



Full wwPDB/EMDataBank EM Map/Model Validation Report ⓘ

Nov 14, 2017 – 11:26 PM EST

PDB ID : 4V7H
EMDB ID: : EMD-1345
Title : Structure of the 80S rRNA and proteins and P/E tRNA for eukaryotic ribosome based on cryo-EM map of *Thermomyces lanuginosus* ribosome at 8.9Å resolution
Authors : Taylor, D.J.; Devkota, B.; Huang, A.D.; Topf, M.; Narayanan, E.; Sali, A.; Harvey, S.C.; Frank, J.
Deposited on : unknown
Resolution : 8.90 Å(reported)

This is a Full wwPDB/EMDataBank EM Map/Model Validation Report
for a publicly released PDB/EMDB entry.

We welcome your comments at validation@mail.wwpdb.org
A user guide is available at
<http://wwpdb.org/validation/2016/EMValidationReportHelp>
with specific help available everywhere you see the ⓘ symbol.

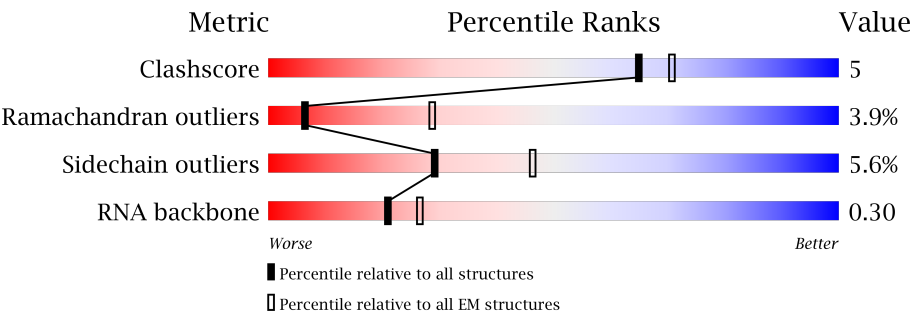
MolProbity : 4.02b-467
Mogul : 1.7.2 (RC1), CSD as538be (2017)
Percentile statistics : 20161228.v01 (using entries in the PDB archive December 28th 2016)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et. al. (1996)
Validation Pipeline (wwPDB-VP) : rb-20030345

1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:
ELECTRON MICROSCOPY

The reported resolution of this entry is 8.90 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 (#Entries) | EM structures (#Entries) |
|-----------------------|-----------------------------|-----------------------------|
| Clashscore | 125131 | 1336 |
| Ramachandran outliers | 121729 | 1120 |
| Sidechain outliers | 121581 | 1026 |
| RNA backbone | 3398 | 335 |

The table below summarises the geometric issues observed across the polymeric chains. The red, orange, yellow and green segments on the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$

| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|--|
| 1 | AA | 1761 | <div><div>72%24%</div><div></div></div> |
| 2 | AB | 193 | <div><div>97%</div><div></div></div> |
| 3 | AC | 188 | <div><div>93%7%</div><div></div></div> |
| 4 | AD | 158 | <div><div>65%12%22%</div><div></div></div> |
| 5 | AE | 162 | <div><div>93%6%</div><div></div></div> |
| 6 | AG | 186 | <div><div>91%8%</div><div></div></div> |
| 7 | AH | 125 | <div><div>89%7%</div><div></div></div> |
| 8 | AI | 138 | <div><div>83%11%</div><div></div></div> |


















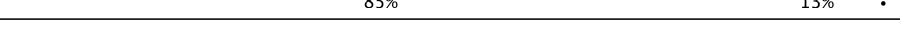


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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|--|
| 9 | AJ | 96 |  |
| 10 | AK | 125 |  |
| 11 | AL | 118 |  |
| 12 | AM | 130 |  |
| 13 | AN | 50 |  |
| 14 | AO | 84 |  |
| 15 | AQ | 80 |  |
| 16 | AS | 71 |  |
| 17 | AR | 313 |  |
| 18 | AT | 141 |  |
| 19 | A7 | 76 |  |
| 20 | B0 | 109 |  |
| 21 | B1 | 48 |  |
| 22 | B2 | 98 |  |
| 23 | B8 | 118 |  |
| 24 | B9 | 72 |  |
| 25 | BA | 213 |  |
| 26 | BB | 243 |  |
| 27 | BC | 362 |  |
| 28 | BD | 257 |  |
| 29 | BE | 237 |  |
| 30 | BF | 213 |  |
| 31 | BG | 113 |  |
| 32 | BH | 179 |  |
| 33 | BI | 165 |  |

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|--|
| 34 | BJ | 151 |  89% 10% . |
| 35 | BK | 138 |  89% 10% . |
| 36 | BL | 192 |  90% 9% . |
| 37 | BM | 178 |  77% 19% . . |
| 38 | BN | 150 |  93% 7% |
| 39 | BO | 121 |  94% 5% . |
| 40 | BP | 176 |  83% 16% . |
| 41 | BQ | 116 |  91% 9% |
| 42 | BR | 131 |  86% 13% . |
| 43 | BS | 45 |  82% 16% . |
| 44 | BT | 80 |  86% 13% . |
| 45 | BU | 116 |  95% . . |
| 46 | BV | 142 |  83% 15% . |
| 47 | BW | 79 |  91% 6% . |
| 48 | BX | 86 |  86% 14% |
| 49 | BY | 52 |  90% 8% . |
| 50 | BZ | 92 |  85% 13% . |
| 51 | B3 | 113 |  . 60% 36% |
| 52 | B4 | 157 |  . 60% 36% . |
| 53 | B5 | 3170 |  . 65% 31% . |

2 Entry composition

There are 53 unique types of molecules in this entry. The entry contains 165754 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, 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 RNA chain called 18S rRNA.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-------|------|-------|------|---------|-------|
| 1 | AA | 1761 | Total | C | N | O | P | 0 | 3 |
| | | | 37458 | 16745 | 6626 | 12327 | 1760 | | |

- Molecule 2 is a protein called 40S ribosomal protein S0(A).

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 2 | AB | 193 | Total | C | N | O | S | 0 | 0 |
| | | | 1500 | 958 | 269 | 271 | 2 | | |

- Molecule 3 is a protein called 40S ribosomal protein S3.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 3 | AC | 188 | Total | C | N | O | S | 0 | 0 |
| | | | 1469 | 929 | 271 | 263 | 6 | | |

- Molecule 4 is a protein called 40S ribosomal protein S9(A).

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 4 | AD | 124 | Total | C | N | O | S | 0 | 0 |
| | | | 1018 | 647 | 189 | 181 | 1 | | |

- Molecule 5 is a protein called 40S ribosomal protein S2.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 5 | AE | 162 | Total | C | N | O | S | 0 | 0 |
| | | | 1207 | 765 | 222 | 218 | 2 | | |

- Molecule 6 is a protein called 40S ribosomal protein S5.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 6 | AG | 186 | Total | C | N | O | S | 0 | 0 |
| | | | 1456 | 908 | 277 | 268 | 3 | | |

- Molecule 7 is a protein called 40S ribosomal protein S22(A).

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 7 | AH | 125 | Total | C | N | O | S | 0 | 0 |
| | | | 992 | 634 | 181 | 174 | 3 | | |

- Molecule 8 is a protein called 40S ribosomal protein S16(A).

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 8 | AI | 138 | Total | C | N | O | S | 0 | 0 |
| | | | 1087 | 695 | 200 | 192 | | | |

- Molecule 9 is a protein called 40S ribosomal protein S20.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 9 | AJ | 96 | Total | C | N | O | S | 0 | 0 |
| | | | 771 | 487 | 140 | 143 | 1 | | |

- Molecule 10 is a protein called 40S ribosomal protein S14(A).

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 10 | AK | 125 | Total | C | N | O | S | 0 | 0 |
| | | | 924 | 566 | 179 | 176 | 3 | | |

- Molecule 11 is a protein called 40S ribosomal protein S23(A).

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 11 | AL | 118 | Total | C | N | O | S | 0 | 0 |
| | | | 906 | 579 | 166 | 159 | 2 | | |

- Molecule 12 is a protein called 40S ribosomal protein S18.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 12 | AM | 130 | Total | C | N | O | S | 0 | 0 |
| | | | 1077 | 669 | 217 | 189 | 2 | | |

- Molecule 13 is a protein called 40S ribosomal protein S29(A).

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|-------|
| 13 | AN | 50 | Total | C | N | O | S | 0 | 0 |
| | | | 417 | 258 | 87 | 68 | 4 | | |

- Molecule 14 is a protein called 40S ribosomal protein S13.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 14 | AO | 84 | Total | C | N | O | S | 0 | 0 |
| | | | 694 | 446 | 129 | 118 | 1 | | |

- Molecule 15 is a protein called 40S ribosomal protein S11.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 15 | AQ | 80 | Total | C | N | O | S | 0 | 0 |
| | | | 643 | 410 | 127 | 104 | 2 | | |

- Molecule 16 is a protein called 40S ribosomal protein S15.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|----|---|---------|-------|
| 16 | AS | 71 | Total | C | N | O | S | 0 | 0 |
| | | | 548 | 348 | 101 | 93 | 6 | | |

- Molecule 17 is a protein called RACK1 protein.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|-------|
| 17 | AR | 313 | Total | C | N | O | S | 0 | 0 |
| | | | 2410 | 1526 | 413 | 463 | 8 | | |

- Molecule 18 is a protein called s19e protein.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 18 | AT | 141 | Total | C | N | O | S | 0 | 0 |
| | | | 1102 | 687 | 206 | 207 | 2 | | |

- Molecule 19 is a RNA chain called P/E tRNA.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|----|---------|-------|
| 19 | A7 | 76 | Total | C | N | O | P | 0 | 0 |
| | | | 1648 | 746 | 294 | 533 | 75 | | |

- Molecule 20 is a protein called 60S ribosomal protein L32.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 20 | B0 | 109 | Total | C | N | O | S | 0 | 0 |
| | | | 881 | 555 | 176 | 149 | 1 | | |

- Molecule 21 is a protein called 60S ribosomal protein L39.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|-------|
| 21 | B1 | 48 | Total | C | N | O | S | 0 | 0 |
| | | | 424 | 263 | 95 | 64 | 2 | | |

- Molecule 22 is a protein called 60S ribosomal protein L30e.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 22 | B2 | 98 | Total | C | N | O | S | 0 | 0 |
| | | | 752 | 484 | 125 | 142 | 1 | | |

- Molecule 23 is a protein called 60S ribosomal protein LP0.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 23 | B8 | 118 | Total | C | N | O | S | 0 | 0 |
| | | | 947 | 609 | 167 | 168 | 3 | | |

- Molecule 24 is a protein called 60S ribosomal protein L43.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|----|---|---------|-------|
| 24 | B9 | 72 | Total | C | N | O | S | 0 | 0 |
| | | | 539 | 332 | 104 | 98 | 5 | | |

- Molecule 25 is a protein called 60S ribosomal protein L1.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|-------|
| 25 | BA | 213 | Total | C | N | O | S | 0 | 0 |
| | | | 1683 | 1074 | 294 | 306 | 9 | | |

- Molecule 26 is a protein called 60S ribosomal protein L2.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|-------|
| 26 | BB | 243 | Total | C | N | O | S | 0 | 0 |
| | | | 1848 | 1150 | 374 | 323 | 1 | | |

- Molecule 27 is a protein called 60S ribosomal protein L3.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|-------|
| 27 | BC | 362 | Total | C | N | O | S | 0 | 0 |
| | | | 2887 | 1833 | 545 | 502 | 7 | | |

- Molecule 28 is a protein called 60S ribosomal protein L4(B).

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|-------|
| 28 | BD | 257 | Total | C | N | O | S | 0 | 0 |
| | | | 1950 | 1226 | 375 | 346 | 3 | | |

- Molecule 29 is a protein called 60S ribosomal protein L5.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|-------|
| 29 | BE | 237 | Total | C | N | O | S | 0 | 0 |
| | | | 1913 | 1210 | 329 | 372 | 2 | | |

- Molecule 30 is a protein called 60S ribosomal protein L7(A).

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|-------|
| 30 | BF | 213 | Total | C | N | O | S | 0 | 0 |
| | | | 1561 | 1010 | 281 | 269 | 1 | | |

- Molecule 31 is a protein called 60S ribosomal protein L8(A).

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 31 | BG | 113 | Total | C | N | O | S | 0 | 0 |
| | | | 844 | 540 | 144 | 158 | 2 | | |

- Molecule 32 is a protein called 60S ribosomal protein L9(A).

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 32 | BH | 179 | Total | C | N | O | S | 0 | 0 |
| | | | 1418 | 896 | 260 | 259 | 3 | | |

- Molecule 33 is a protein called 60S ribosomal protein L10.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 33 | BI | 165 | Total | C | N | O | S | 0 | 0 |
| | | | 1326 | 834 | 257 | 228 | 7 | | |

- Molecule 34 is a protein called 60S ribosomal protein L11(B).

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 34 | BJ | 151 | Total | C | N | O | S | 0 | 0 |
| | | | 1195 | 744 | 229 | 218 | 4 | | |

- Molecule 35 is a protein called 60S ribosomal protein L12.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 35 | BK | 138 | Total | C | N | O | S | 0 | 0 |
| | | | 1038 | 651 | 190 | 195 | 2 | | |

- Molecule 36 is a protein called 60S ribosomal protein L15(A).

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|-------|
| 36 | BL | 192 | Total | C | N | O | S | 0 | 0 |
| | | | 1618 | 1011 | 340 | 266 | 1 | | |

- Molecule 37 is a protein called 60S ribosomal protein L16(A).

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 37 | BM | 178 | Total | C | N | O | S | 0 | 0 |
| | | | 1317 | 845 | 254 | 217 | 1 | | |

- Molecule 38 is a protein called 60S ribosomal protein L17(A).

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|--|---------|-------|
| 38 | BN | 150 | Total | C | N | O | | 0 | 0 |
| | | | 1189 | 742 | 230 | 217 | | | |

- Molecule 39 is a protein called 60S ribosomal protein L18(A).

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 39 | BO | 121 | Total | C | N | O | S | 0 | 0 |
| | | | 931 | 598 | 170 | 162 | 1 | | |

- Molecule 40 is a protein called 60S ribosomal protein L19.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|--|---------|-------|
| 40 | BP | 176 | Total | C | N | O | | 0 | 0 |
| | | | 1317 | 816 | 277 | 224 | | | |

- Molecule 41 is a protein called 60S ribosomal protein L21(A).

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 41 | BQ | 116 | Total | C | N | O | S | 0 | 0 |
| | | | 893 | 564 | 173 | 153 | 3 | | |

- Molecule 42 is a protein called 60S ribosomal protein L23.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 42 | BR | 131 | Total | C | N | O | S | 0 | 0 |
| | | | 977 | 614 | 183 | 173 | 7 | | |

- Molecule 43 is a protein called 60S ribosomal protein L24(A).

| Mol | Chain | Residues | Atoms | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---------|-------|
| 43 | BS | 45 | Total | C | N | O | 0 | 0 |
| | | | 371 | 238 | 73 | 60 | | |

- Molecule 44 is a protein called 60S ribosomal protein L25.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 44 | BT | 80 | Total | C | N | O | S | 0 | 0 |
| | | | 642 | 411 | 108 | 121 | 2 | | |

- Molecule 45 is a protein called 60S ribosomal protein L26(A).

| Mol | Chain | Residues | Atoms | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---------|-------|
| 45 | BU | 116 | Total | C | N | O | 0 | 0 |
| | | | 916 | 576 | 179 | 161 | | |

- Molecule 46 is a protein called 60S ribosomal protein L28.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 46 | BV | 142 | Total | C | N | O | S | 0 | 0 |
| | | | 1123 | 717 | 218 | 185 | 3 | | |

- Molecule 47 is a protein called 60S ribosomal protein L31(A).

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 47 | BW | 79 | Total | C | N | O | S | 0 | 0 |
| | | | 663 | 415 | 135 | 112 | 1 | | |

- Molecule 48 is a protein called 60S ribosomal protein L35.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 48 | BX | 86 | Total | C | N | O | S | 0 | 0 |
| | | | 605 | 379 | 111 | 114 | 1 | | |

- Molecule 49 is a protein called 60S ribosomal protein L37(A).

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|-------|
| 49 | BY | 52 | Total | C | N | O | S | 0 | 0 |
| | | | 403 | 245 | 85 | 69 | 4 | | |

- Molecule 50 is a protein called 60S ribosomal protein L42.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 50 | BZ | 92 | Total | C | N | O | S | 0 | 0 |
| | | | 749 | 472 | 151 | 121 | 5 | | |

- Molecule 51 is a RNA chain called 5S ribosomal RNA.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|-----|---------|-------|
| 51 | B3 | 113 | Total | C | N | O | P | 0 | 0 |
| | | | 2403 | 1075 | 429 | 787 | 112 | | |

- Molecule 52 is a RNA chain called 5.8S ribosomal RNA.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|------|-----|------|-----|---------|-------|
| 52 | B4 | 157 | Total | C | N | O | P | 0 | 0 |
| | | | 3329 | 1490 | 581 | 1102 | 156 | | |

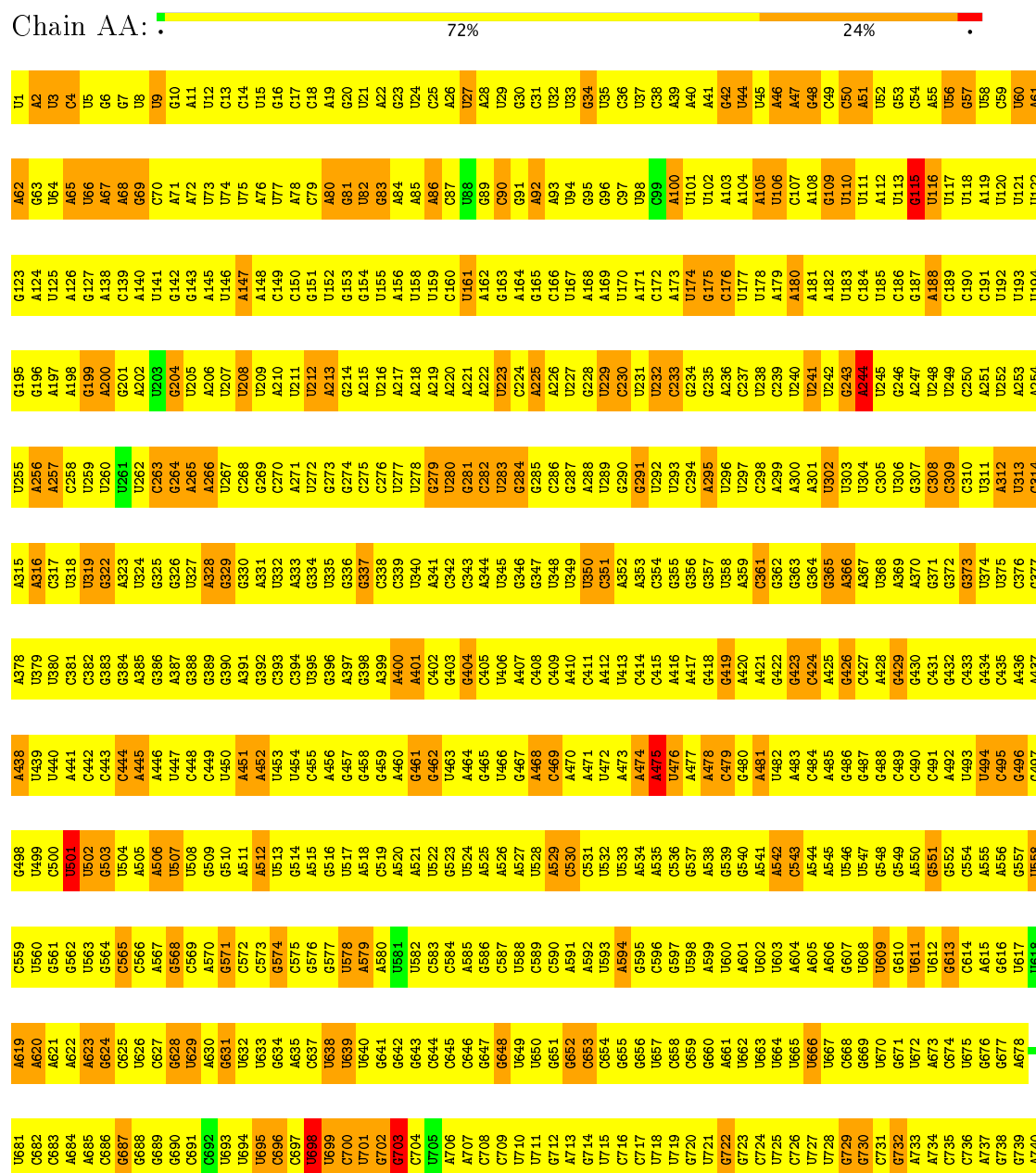
- Molecule 53 is a RNA chain called 26S ribosomal RNA.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|-----|-------|----------|-------|-------|-------|-------|------|---------|-------|
| 53 | B5 | 3170 | Total | C | N | O | P | 0 | 0 |
| | | | 67775 | 30273 | 12178 | 22155 | 3169 | | |

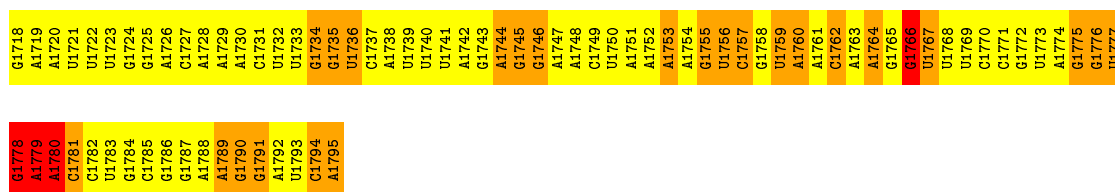
3 Residue-property plots

These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry. 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. 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: 18S rRNA

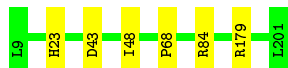


| | | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|------|
| A1653 | A1598 | G1538 | G1478 | G1415 | G1355 | U1295 | A1234 | C1174 | A1113 | G1048 | U988 | A928 | G868 | A804 | C741 |
| U1659 | G1599 | G1539 | C1479 | G1416 | C1356 | G1296 | U1235 | G1175 | U1114 | U1049 | C989 | A929 | A969 | U805 | U742 |
| G1660 | C1600 | G1540 | C1480 | C1417 | A1357 | G1297 | U1236 | C1176 | G1115 | G1050 | C990 | U930 | C870 | A806 | U743 |
| G1661 | U1601 | A1481 | A1481 | A1418 | U1358 | U1298 | G1237 | C1177 | G1116 | U1051 | A991 | U931 | G871 | A807 | U744 |
| C1662 | G1602 | U1542 | G1482 | A1419 | U1359 | U1299 | A1238 | U1178 | U1117 | U1052 | A992 | A932 | G872 | U808 | A746 |
| G1663 | G1603 | A1543 | C1483 | U1420 | U1360 | U1300 | G1239 | A1179 | C1118 | U1053 | G993 | C933 | U873 | A809 | C747 |
| U1664 | G1604 | A1421 | G1484 | A1421 | C1361 | G1301 | A1240 | A1180 | G1119 | U1054 | A994 | U934 | C874 | G810 | U748 |
| A1665 | G1605 | A1422 | A1485 | A1422 | C1362 | U1302 | G1241 | U1181 | C1120 | U1055 | U995 | C935 | C875 | A811 | U749 |
| G1666 | G1606 | C1423 | U1486 | G1423 | U1363 | C1303 | G1242 | U1182 | A1121 | U1056 | G996 | C936 | G876 | A812 | U750 |
| U1667 | U1607 | G1424 | U1487 | A1424 | G1364 | U1304 | U1243 | U1183 | A1122 | U1057 | A997 | G937 | G877 | U813 | G751 |
| G1668 | G1608 | G1425 | A1488 | G1425 | G1365 | U1305 | C1244 | U1184 | G1123 | A1058 | U998 | A938 | G878 | A814 | A752 |
| A1669 | A1609 | G1426 | U1489 | G1426 | U1366 | C1306 | U1245 | A1185 | G1124 | A1059 | C999 | A939 | G879 | G815 | A753 |
| G1670 | U1610 | U1427 | U1490 | U1427 | U1367 | U1307 | U1246 | A1186 | C1125 | U1060 | U1000 | A940 | C880 | G816 | A754 |
| G1671 | U1611 | C1428 | A1491 | C1428 | A1368 | U1308 | U1247 | U1187 | U1126 | G1061 | G1001 | G941 | A881 | A817 | A755 |
| C1672 | A1612 | U1429 | C1492 | U1429 | U1369 | A1309 | C1248 | C1188 | G1127 | A1062 | G1002 | C942 | U882 | C818 | A756 |
| C1673 | C1613 | G1430 | C1493 | A1430 | C1370 | A1310 | U1249 | A1189 | A1128 | C1063 | U1003 | A943 | C883 | U820 | A757 |
| U1674 | G1614 | U1431 | U1494 | U1431 | C1371 | U1311 | U1250 | A1190 | A1129 | C1064 | A1004 | U944 | G884 | U821 | U758 |
| C1675 | U1615 | A1433 | U1495 | A1433 | A1372 | U1312 | G1251 | C1191 | A1130 | A1066 | C1005 | U945 | G885 | U822 | U759 |
| A1676 | C1616 | U1434 | G1496 | U1434 | C1373 | G1313 | A1252 | A1192 | C1131 | C1067 | C1006 | U946 | U886 | G823 | A760 |
| G1677 | C1617 | G1435 | G1497 | G1435 | U1374 | C1314 | U1253 | C1193 | U1132 | U1068 | G1007 | G947 | U887 | G824 | G761 |
| G1678 | U1618 | U1436 | U1498 | U1436 | U1375 | G1315 | U1254 | G1194 | U1133 | C1069 | U1008 | C948 | U888 | U825 | A762 |
| A1679 | U1619 | C1437 | C1499 | C1437 | C1376 | A1316 | U1255 | G1195 | A1134 | G1070 | C1009 | C949 | U889 | U826 | G763 |
| U1680 | G1620 | C1438 | U1500 | C1438 | U1377 | U1317 | U1256 | G1196 | A1135 | G1071 | C1010 | A950 | C890 | C827 | U764 |
| C1681 | C1621 | U1439 | A1501 | U1439 | U1378 | A1318 | G1257 | G1197 | A1136 | U1072 | U1011 | A951 | G891 | U828 | G765 |
| U1682 | U1622 | U1440 | G1502 | U1440 | A1379 | A1319 | U1258 | A1198 | G1137 | A1073 | A892 | G952 | A892 | U829 | U766 |
| C1683 | C1623 | A1443 | A1503 | A1443 | G1380 | C1320 | G1259 | A1199 | G1138 | C1074 | U893 | G953 | U893 | U830 | U767 |
| G1684 | U1624 | U1444 | G1504 | A1444 | A1381 | G1321 | G1260 | A1200 | A1139 | C1075 | U1014 | A954 | U894 | U831 | C768 |
| U1685 | U1625 | C1445 | G1505 | C1445 | G1382 | A1322 | G1261 | C1201 | A1140 | U1076 | C1015 | C955 | G895 | U832 | A769 |
| A1686 | C1626 | U1446 | U1506 | G1446 | G1383 | A1323 | U1262 | U1202 | U1141 | U1077 | U1016 | G956 | U896 | U833 | A770 |
| G1687 | G1627 | U1447 | C1507 | U1447 | G1384 | C1324 | G1263 | C1203 | U1142 | A1078 | U1017 | U957 | C897 | G834 | A771 |
| G1688 | U1628 | U1448 | U1508 | U1448 | A1385 | G1325 | G1264 | A1204 | G1143 | C1079 | A1018 | U958 | G898 | U835 | G772 |
| A1689 | A1629 | C1449 | U1509 | C1449 | C1386 | A1326 | U1265 | C1205 | A1144 | G1080 | A1019 | U959 | A899 | U836 | C773 |
| G1690 | C1630 | U1450 | G1510 | U1450 | U1387 | G1327 | G1266 | C1206 | C1145 | A1081 | C1020 | U960 | G900 | G837 | A774 |
| A1691 | A1631 | G1451 | U1511 | G1451 | A1388 | A1328 | G1267 | A1207 | G1146 | G1082 | C1021 | C961 | G901 | G838 | G775 |
| A1692 | C1632 | U1452 | U1512 | G1452 | U1389 | C1329 | U1268 | G1208 | G1147 | A1083 | A1022 | A962 | U902 | U839 | G776 |
| G1693 | A1633 | G1453 | A1513 | G1453 | C1390 | U1330 | G1269 | G1209 | A1148 | A1084 | U1023 | G963 | G903 | U840 | C777 |
| C1694 | C1634 | U1454 | A1514 | C1454 | G1391 | U1331 | C1270 | U1210 | A1149 | A1085 | A1024 | U964 | A904 | U841 | G778 |
| G1695 | C1635 | C1455 | U1515 | C1455 | G1392 | U1332 | A1271 | C1211 | G1150 | U1086 | A1025 | A965 | A905 | C842 | U779 |
| G1696 | G1636 | U1456 | C1516 | G1456 | U1393 | A1333 | U1272 | C1212 | G1151 | C1087 | A1026 | A966 | A906 | U843 | C780 |
| U1697 | C1637 | C1457 | U1517 | C1457 | U1394 | A1334 | G1273 | A1213 | G1152 | A1088 | C1027 | U967 | U907 | A844 | U781 |
| A1698 | C1638 | C1458 | U1518 | A1458 | U1395 | C1335 | G1274 | G1214 | C1153 | A1089 | U1028 | C968 | U908 | G845 | U782 |
| A1699 | G1639 | U1459 | G1519 | C1459 | C1396 | C1336 | C1275 | A1215 | A1154 | A1090 | A1029 | A969 | C909 | G846 | G783 |
| U1700 | G1640 | G1460 | U1520 | G1460 | A1397 | U1337 | C1276 | C1216 | G1155 | G1091 | U1030 | A970 | U910 | A847 | U784 |
| C1701 | U1641 | C1461 | G1521 | C1461 | A1398 | A1338 | G1277 | A1217 | C1156 | U1092 | G1031 | G971 | U911 | C848 | U785 |
| U1702 | C1642 | G1462 | A1522 | G1462 | G1399 | C1339 | U1278 | C1218 | C1158 | C1093 | C1032 | A972 | G912 | C849 | C786 |
| C1703 | G1643 | A1463 | A1523 | C1463 | C1400 | U1340 | U1279 | A1219 | U1159 | G1098 | C1033 | A973 | G913 | U850 | G787 |
| G1704 | C1644 | G1464 | A1524 | G1464 | C1401 | A1341 | U1280 | A1220 | A1160 | G1099 | G1034 | C974 | A914 | U851 | A788 |
| A1705 | U1645 | C1465 | C1525 | C1465 | G1402 | A1342 | C1281 | U1221 | G1161 | U1100 | A1035 | G975 | U915 | C852 | A789 |
| U1706 | A1646 | U1466 | U1526 | U1466 | A1403 | A1343 | U1282 | A1222 | G1162 | U1101 | G1036 | A976 | U916 | G853 | U790 |
| G1707 | G1647 | A1467 | C1527 | A1467 | U1404 | U1344 | A1284 | A1223 | A1163 | C1102 | U1037 | A977 | U917 | U854 | A791 |
| U1708 | U1648 | C1468 | C1528 | C1468 | G1405 | A1345 | G1285 | G1224 | G1164 | U1103 | A1038 | A978 | A918 | A855 | U792 |
| C1709 | A1649 | U1469 | G1529 | A1469 | G1406 | G1346 | U1286 | G1225 | U1165 | G1104 | G1039 | G979 | U919 | A856 | A796 |
| A1710 | U1650 | U1470 | U1530 | C1470 | A1407 | U1347 | U1287 | A1226 | G1166 | G1105 | A1040 | U980 | U920 | U857 | G797 |
| G1711 | C1651 | U1471 | A1531 | U1471 | A1408 | G1348 | G1288 | U1227 | G1167 | G1106 | U1041 | U981 | G921 | G858 | G798 |
| A1712 | G1652 | G1472 | G1532 | G1472 | G1409 | G1349 | U1289 | U1228 | A1168 | G1107 | C1042 | A982 | A922 | A859 | C799 |
| G1713 | A1653 | U1473 | U1533 | A1473 | U1410 | U1350 | U1290 | G1229 | G1169 | G1108 | G1043 | G983 | A923 | U860 | A799 |
| C1714 | U1654 | C1474 | G1534 | C1474 | U1411 | G1351 | G1291 | A1230 | C1170 | G1109 | G1044 | G984 | G924 | U864 | U800 |
| G1715 | U1655 | G1475 | U1535 | G1475 | U1412 | C1352 | G1292 | C1231 | C1171 | A1110 | U1045 | G985 | A925 | A865 | G801 |
| G1716 | G1656 | G1476 | U1536 | G1476 | C1413 | A1293 | A1293 | C1232 | U1172 | G1111 | U1046 | G986 | C926 | G866 | G802 |
| A1717 | A1657 | C1477 | A1537 | A1477 | A1414 | A1354 | G1294 | G1233 | G1173 | U1112 | G1047 | A987 | U927 | G867 | A803 |



- Molecule 2: 40S ribosomal protein S0(A)

Chain AB:  97%



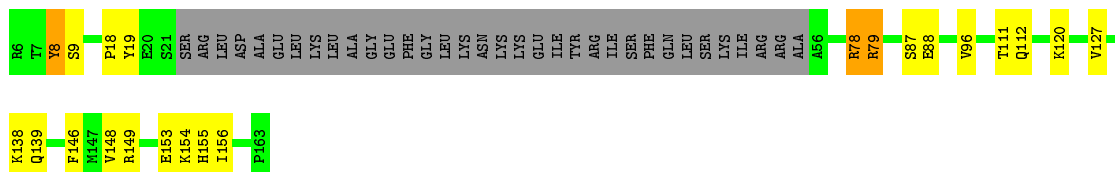
- Molecule 3: 40S ribosomal protein S3

Chain AC:  93%



- Molecule 4: 40S ribosomal protein S9(A)

Chain AD:  65%



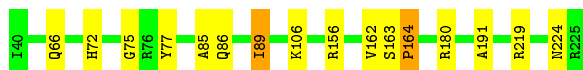
- Molecule 5: 40S ribosomal protein S2

Chain AE:  93%



- Molecule 6: 40S ribosomal protein S5

Chain AG:  91%




- Molecule 7: 40S ribosomal protein S22(A)

Chain AH:  89%




- Molecule 8: 40S ribosomal protein S16(A)

Chain AI:  83% 11% . .



- Molecule 9: 40S ribosomal protein S20

Chain AJ:  86% 10% .



- Molecule 10: 40S ribosomal protein S14(A)

Chain AK:  90% 10% .




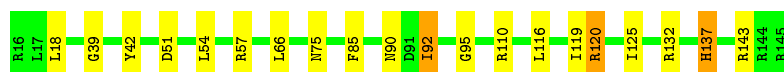
- Molecule 11: 40S ribosomal protein S23(A)

Chain AL:  93% 7%




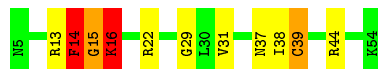
- Molecule 12: 40S ribosomal protein S18

Chain AM:  85% 13% .




- Molecule 13: 40S ribosomal protein S29(A)

Chain AN:  78% 14% . .



- Molecule 14: 40S ribosomal protein S13

Chain AO:  86% 13% .




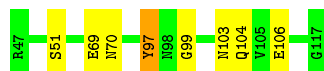
- Molecule 15: 40S ribosomal protein S11

Chain AQ:  93% 6%

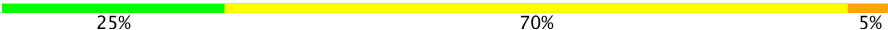


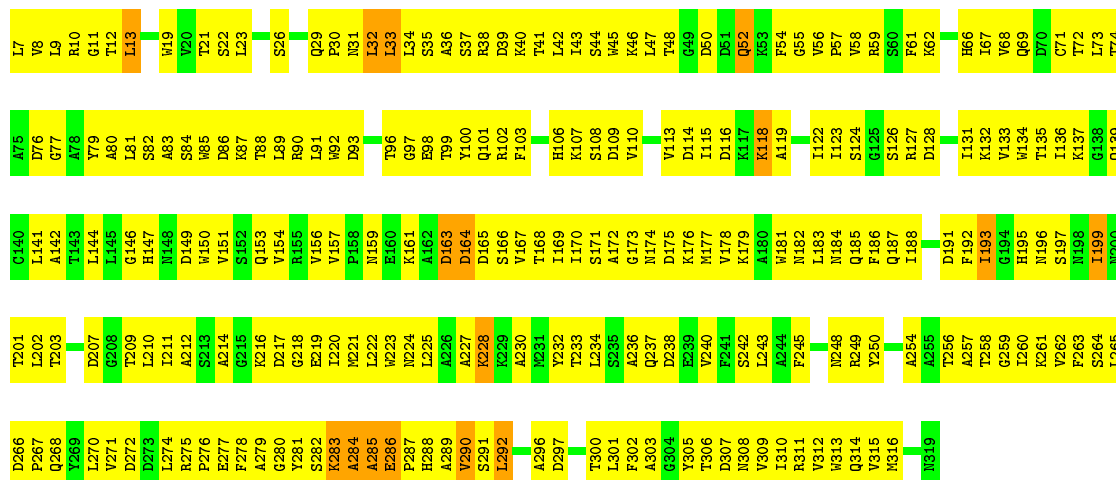
- Molecule 16: 40S ribosomal protein S15

Chain AS:  89% 10%




- Molecule 17: RACK1 protein

Chain AR:  25% 70% 5%



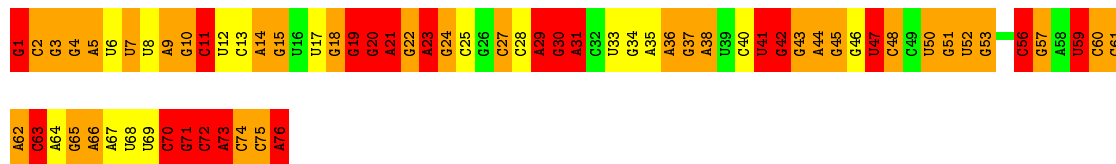
- Molecule 18: s19e protein

Chain AT:  82% 15%




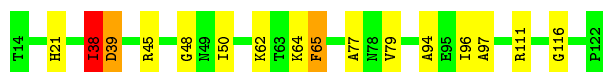
- Molecule 19: P/E tRNA

Chain A7:  11% 21% 42% 26%



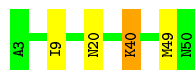
- Molecule 20: 60S ribosomal protein L32

Chain B0:  85% 12%



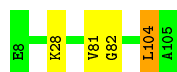
- Molecule 21: 60S ribosomal protein L39

Chain B1: 92% 6% .



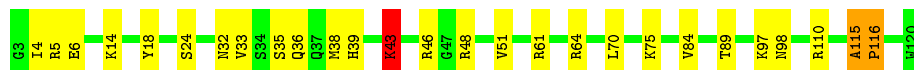
- Molecule 22: 60S ribosomal protein L30e

Chain B2: 96% ..



- Molecule 23: 60S ribosomal protein LP0

Chain B8: 77% 20% ..



- Molecule 24: 60S ribosomal protein L43

Chain B9: 82% 14% .



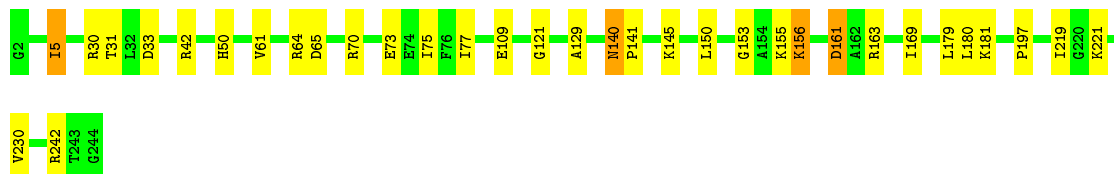
- Molecule 25: 60S ribosomal protein L1

Chain BA: 91% 8% .



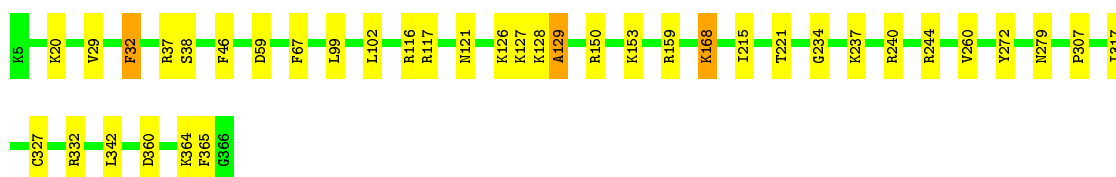
- Molecule 26: 60S ribosomal protein L2

Chain BB: 86% 12% .



- Molecule 27: 60S ribosomal protein L3

Chain BC: 90% 10% .



- Molecule 28: 60S ribosomal protein L4(B)

Chain BD: 91% 8% .



- Molecule 29: 60S ribosomal protein L5

Chain BE: 86% 13% .



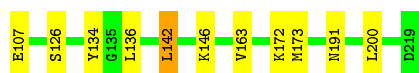
- Molecule 30: 60S ribosomal protein L7(A)

Chain BF: 93% 6% .



- Molecule 31: 60S ribosomal protein L8(A)

Chain BG: 90% 9% .



- Molecule 32: 60S ribosomal protein L9(A)

Chain BH: 88% 11% .



- Molecule 33: 60S ribosomal protein L10

Chain BI: 88% 9% .



- Molecule 34: 60S ribosomal protein L11(B)

Chain BJ: 89% 10% .



- Molecule 35: 60S ribosomal protein L12

Chain BK: 89% 10% .



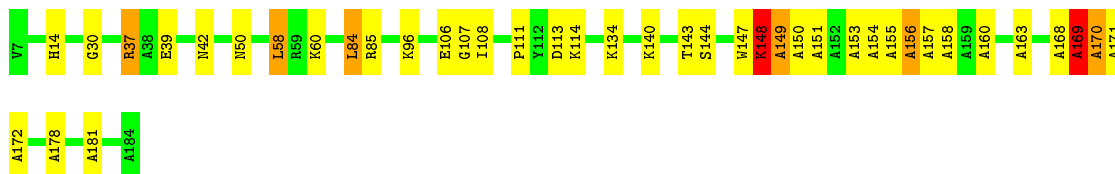
- Molecule 36: 60S ribosomal protein L15(A)

Chain BL: 90% 9% .



- Molecule 37: 60S ribosomal protein L16(A)

Chain BM: 77% 19% . .



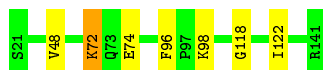
- Molecule 38: 60S ribosomal protein L17(A)

Chain BN: 93% 7%



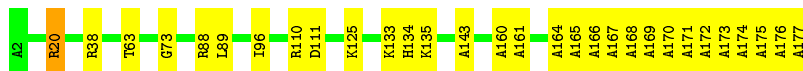
- Molecule 39: 60S ribosomal protein L18(A)

Chain BO: 94% 5% .



- Molecule 40: 60S ribosomal protein L19

Chain BP: 83% 16% .



- Molecule 41: 60S ribosomal protein L21(A)

Chain BQ: 91% 9%



- Molecule 42: 60S ribosomal protein L23

Chain BR: 86% 13% .



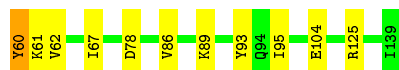
- Molecule 43: 60S ribosomal protein L24(A)

Chain BS: 82% 16% .



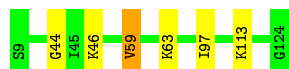
- Molecule 44: 60S ribosomal protein L25

Chain BT: 86% 13% .



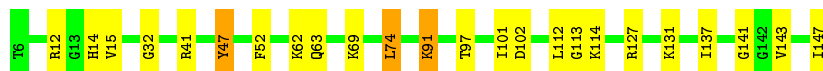
- Molecule 45: 60S ribosomal protein L26(A)

Chain BU: 95% . .



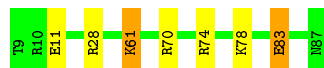
- Molecule 46: 60S ribosomal protein L28

Chain BV: 83% 15% .



- Molecule 47: 60S ribosomal protein L31(A)

Chain BW: 91% 6% .

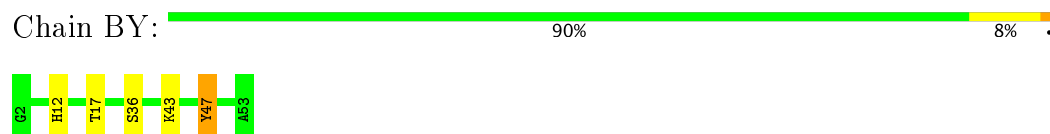


- Molecule 48: 60S ribosomal protein L35

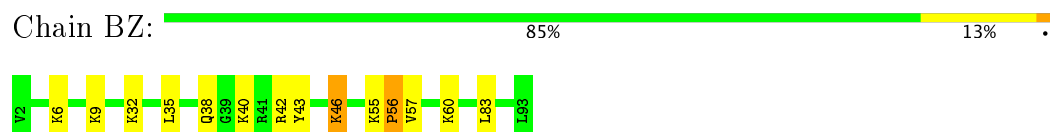
Chain BX: 86% 14%



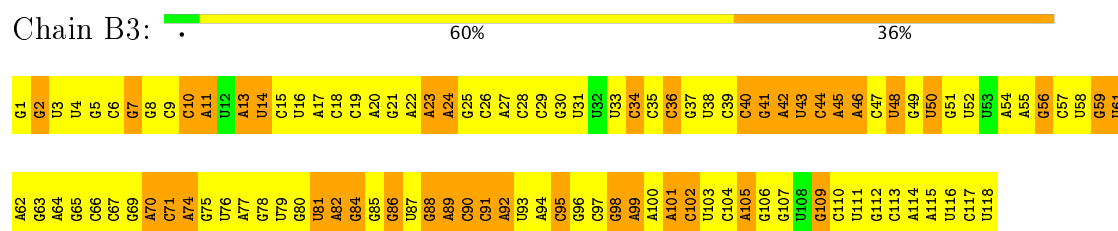
- Molecule 49: 60S ribosomal protein L37(A)



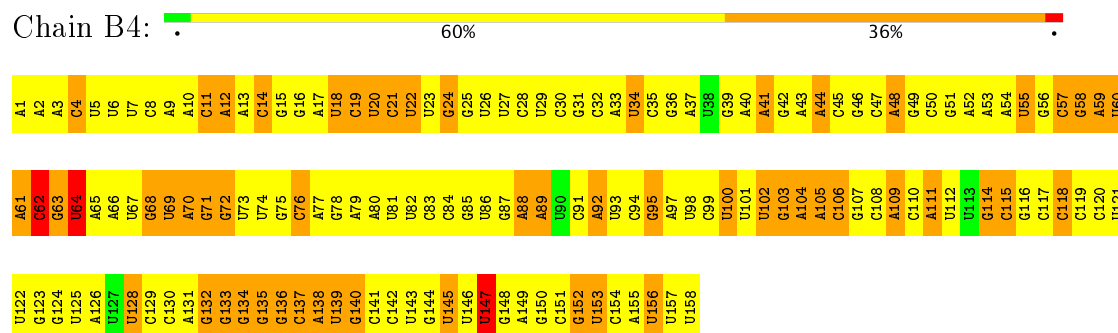
- Molecule 50: 60S ribosomal protein L42



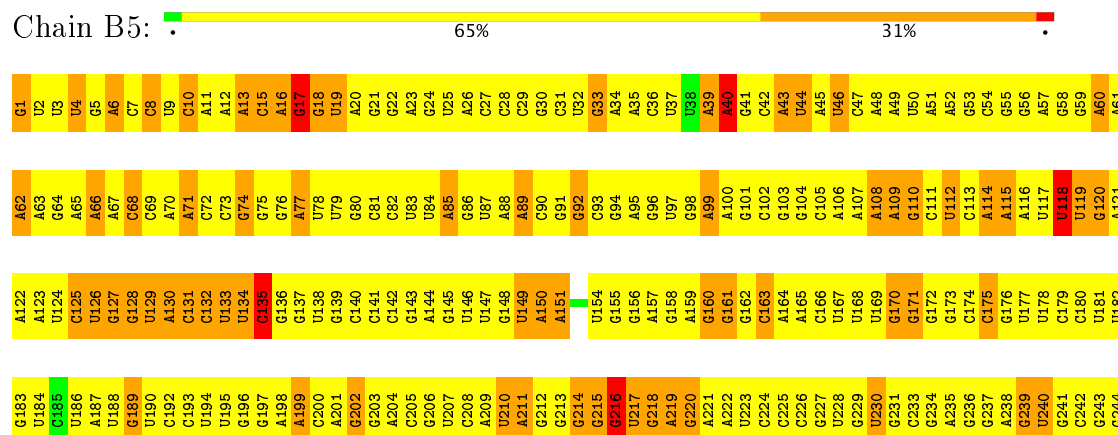
- Molecule 51: 5S ribosomal RNA



- Molecule 52: 5.8S ribosomal RNA



- Molecule 53: 26S ribosomal RNA



| | | | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|------|------|------|------|------|
| A1231 | A1165 | A1105 | U1044 | A974 | A914 | G853 | C793 | G733 | U669 | G609 | U549 | C489 | C427 | A367 | A306 | U245 |
| C1232 | G1166 | G1106 | G1045 | G975 | A915 | G854 | U794 | C734 | C670 | G610 | A550 | A490 | A428 | A368 | A307 | U246 |
| G1233 | U1167 | C1107 | A1046 | C976 | G916 | U855 | G795 | A735 | U671 | A611 | A551 | C491 | U429 | A369 | A308 | C247 |
| G1234 | U1168 | U1108 | A1047 | U977 | A917 | G856 | U796 | A736 | A672 | U612 | G552 | C492 | U430 | U370 | U310 | U248 |
| U1235 | A1169 | U1109 | C1048 | C978 | C918 | G857 | U797 | G737 | U673 | G613 | U553 | G493 | U431 | G371 | U311 | U249 |
| G1236 | A1170 | U1110 | C1049 | G979 | U919 | A858 | G798 | A738 | U674 | G614 | A554 | G494 | G432 | A372 | C312 | U250 |
| G1237 | G1171 | U1111 | U050 | U986 | A920 | G859 | G799 | G739 | C675 | U615 | U555 | G495 | A433 | A373 | A313 | C251 |
| C1238 | G1172 | A1112 | U051 | U987 | A921 | G860 | G800 | G740 | A676 | G616 | U556 | C496 | U434 | A374 | U314 | U252 |
| C1239 | U1173 | U1113 | U052 | U988 | U922 | C861 | A801 | U741 | A677 | G617 | A557 | C497 | U435 | A375 | C315 | A253 |
| A1240 | A1174 | U1114 | A1053 | U989 | C923 | U862 | C802 | G742 | U678 | C618 | U558 | A498 | A438 | G376 | U316 | A254 |
| C1175 | C1175 | G1115 | A1054 | A990 | G924 | C863 | C803 | G743 | U679 | A619 | A559 | G499 | A439 | A377 | U317 | A255 |
| G1242 | G1176 | G1116 | A1055 | U991 | A925 | G864 | C804 | G744 | U680 | U620 | C500 | C500 | A440 | A378 | A318 | G256 |
| G1243 | G1177 | U1117 | U056 | G992 | A926 | U865 | G805 | C745 | U681 | A621 | C560 | C501 | U441 | C379 | A319 | U257 |
| A1244 | G1178 | C1118 | A1057 | A993 | C927 | A866 | A806 | A746 | U682 | A622 | C562 | U502 | G442 | U380 | G320 | G258 |
| A1245 | A1179 | C1119 | U058 | G994 | C928 | G867 | A807 | A747 | U683 | U623 | U563 | C503 | G443 | U381 | C321 | C259 |
| G1246 | A1180 | A1120 | G1059 | G995 | A929 | C868 | U808 | U748 | G684 | G624 | C564 | C504 | U444 | U382 | U322 | C260 |
| U1247 | U1181 | U1121 | U060 | U996 | U930 | G869 | G809 | G749 | G685 | G625 | U565 | G505 | G445 | G383 | G323 | U261 |
| U1248 | A1182 | U1122 | A1061 | A997 | G931 | G870 | A810 | G750 | G688 | U626 | G566 | U506 | U446 | A384 | A324 | U262 |
| G1249 | C1183 | U1123 | A1062 | A998 | U932 | U871 | U811 | A751 | U689 | U627 | G567 | U507 | U447 | A385 | A325 | C263 |
| G1250 | A1184 | U1124 | G1063 | G999 | A933 | U872 | G812 | C752 | A690 | A628 | U568 | U508 | U448 | A386 | U326 | G264 |
| A1251 | C1185 | U1125 | A1064 | C1000 | G934 | U874 | G813 | C753 | A691 | U629 | A569 | U509 | U449 | A387 | A327 | A265 |
| A1252 | G1186 | G1126 | A1065 | A1002 | U935 | G875 | U814 | G754 | A692 | A630 | U570 | C510 | G450 | A388 | U328 | A266 |
| U1253 | C1187 | G1127 | A1066 | A1003 | A936 | A876 | G815 | A755 | C695 | U631 | A571 | G511 | U451 | A389 | U329 | G267 |
| G1254 | U1188 | U1128 | U1067 | U1004 | G937 | C877 | A816 | U756 | C696 | G632 | A572 | U512 | G452 | G390 | G330 | A268 |
| C1255 | C1189 | A1129 | C1068 | G1005 | C938 | G878 | A817 | C757 | A697 | C633 | C573 | G513 | C453 | A391 | G331 | G269 |
| G1256 | A1190 | A1130 | C1069 | A1006 | U939 | U879 | C818 | C758 | U698 | C634 | U574 | G514 | C454 | G392 | C332 | U270 |
| C1257 | U1191 | G1131 | U1070 | A1007 | G940 | G880 | U819 | U759 | A699 | G635 | C575 | C515 | C455 | U393 | G333 | C271 |
| U1258 | C1192 | C1132 | U1071 | U1008 | G941 | C881 | A820 | G760 | C700 | G636 | C576 | A516 | U456 | A394 | C340 | U278 |
| A1259 | U1193 | A1133 | A1072 | A1009 | U942 | A882 | A821 | U761 | U707 | U643 | G584 | A522 | C462 | A401 | G341 | U279 |
| A1260 | A1200 | G1134 | U1073 | G1010 | U943 | A883 | G822 | U762 | C702 | G638 | A578 | G518 | U458 | A395 | G335 | A273 |
| G1261 | C1201 | A1135 | U1074 | A1011 | C944 | A884 | C823 | G763 | G703 | G639 | G579 | A519 | U459 | A397 | A336 | G274 |
| A1262 | A1202 | A1136 | A1075 | G1012 | C945 | U885 | C824 | U764 | U704 | U640 | C580 | U520 | C460 | A398 | A338 | U275 |
| A1263 | C1203 | C1137 | C1076 | G1013 | U946 | C886 | U825 | C765 | A705 | C641 | U581 | A521 | U461 | A399 | C339 | G277 |
| G1264 | A1204 | U1138 | U1077 | U1014 | G947 | G887 | G826 | U766 | U706 | U642 | G582 | A522 | C463 | A402 | C340 | U278 |
| U1265 | A1205 | G1139 | U1078 | C1017 | C948 | A888 | A827 | U767 | G707 | U643 | G583 | A523 | C464 | A403 | G341 | U279 |
| G1266 | G1206 | G1140 | A1079 | G1018 | C949 | U889 | U828 | C768 | A709 | A644 | A585 | C524 | U464 | A404 | A342 | U280 |
| U1267 | C1207 | C1141 | U1080 | G1019 | G950 | C890 | U829 | G769 | A709 | A645 | A586 | C525 | U465 | A405 | U343 | G281 |
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| U1269 | G1209 | A1143 | U1082 | G1021 | A952 | U892 | G831 | A771 | A711 | A647 | U587 | A527 | U467 | U405 | G345 | G283 |
| A1270 | U1210 | U1144 | G1083 | U1022 | G953 | C893 | G832 | U772 | G712 | C648 | G588 | U528 | G468 | G406 | C346 | A284 |
| A1271 | U1211 | G1145 | A1084 | C1023 | U954 | G894 | U834 | G773 | U713 | C649 | A589 | A529 | G469 | A407 | G347 | A285 |
| C1272 | A1212 | C1146 | A1085 | G1024 | U955 | A895 | U834 | G774 | G714 | C650 | G590 | G530 | G470 | A408 | A348 | U286 |
| G1273 | G1213 | G1147 | C1086 | A1025 | U956 | A896 | G835 | A775 | A715 | G651 | U591 | G531 | U471 | A409 | A349 | G287 |
| A1274 | U1214 | G1148 | G1087 | A1026 | C957 | U897 | A836 | U776 | G716 | G652 | G592 | A532 | A472 | U410 | C350 | C288 |
| C1275 | U1215 | G1149 | U1088 | A1027 | C958 | U898 | A837 | U777 | C717 | A653 | A593 | A533 | G473 | U411 | A351 | A289 |
| U1276 | C1216 | A1150 | G1089 | G1029 | C959 | U899 | G838 | U778 | G718 | C654 | A594 | U534 | G474 | G412 | A352 | G290 |
| C1277 | A1217 | G1090 | G1090 | A1030 | U960 | C899 | C839 | G779 | U719 | C655 | A595 | G535 | G475 | U413 | G353 | C291 |
| A1278 | U1218 | C1031 | A1091 | C1031 | C961 | G901 | C840 | A780 | A720 | U656 | U596 | U536 | G476 | U414 | U354 | U292 |
| G1279 | G1219 | C1032 | C1092 | C1032 | A962 | G902 | A841 | G781 | G721 | A657 | G597 | A537 | A477 | G415 | A355 | C293 |
| C1280 | U1220 | A1153 | A1093 | U1033 | G963 | U903 | G842 | U782 | G722 | G658 | A598 | G538 | A478 | A416 | C356 | U294 |
| G1281 | A1221 | C1155 | U1094 | U1034 | G964 | A904 | A843 | A783 | U723 | G659 | C599 | G539 | U479 | A417 | A357 | A295 |
| C1282 | G1222 | U1095 | U1095 | G1035 | A965 | U905 | A844 | A784 | U724 | A660 | G600 | U540 | C480 | A418 | G358 | A296 |
| G1283 | A1223 | G1157 | U1096 | A1036 | U966 | A906 | G845 | G785 | G725 | U661 | U601 | U541 | U481 | G419 | U359 | G297 |
| C1284 | C1224 | G1097 | C1037 | C1037 | A967 | G907 | A846 | A786 | G726 | U662 | A602 | G542 | C482 | G420 | G360 | U298 |
| G1285 | A1225 | A1159 | A1098 | C1038 | G968 | G908 | A847 | G787 | G727 | G663 | A603 | C543 | G483 | G421 | A361 | G299 |
| A1286 | G1226 | U1099 | U1039 | U1039 | C969 | G909 | A848 | G788 | G728 | U664 | G604 | C544 | C484 | A422 | U362 | G300 |
| A1287 | C1227 | G1161 | U1100 | A1040 | A970 | G910 | C849 | A789 | C729 | A665 | U605 | U545 | A485 | A423 | G363 | G301 |
| U1288 | C1228 | U1162 | G1101 | U1041 | G971 | C911 | U850 | A790 | C730 | A666 | C606 | C546 | U486 | G424 | G364 | U302 |
| G1289 | U1229 | A1163 | A1102 | U1042 | C972 | G912 | U851 | A791 | G731 | C667 | A607 | G547 | U487 | G425 | A365 | G303 |
| A1290 | G1230 | G1164 | G1104 | C1043 | A973 | A913 | U852 | G792 | C732 | G668 | A608 | G548 | U488 | G426 | A366 | G304 |

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|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| G2377 | A2317 | C2196 | U2135 | A1921 | G1860 | A1800 | U1737 | G1674 | U1607 | A1546 | G1483 | C1423 | U1361 | A1291 |
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| U2379 | U2319 | A2198 | A2137 | G1923 | A1862 | C1802 | U1739 | A1676 | C1609 | C1548 | G1486 | U1425 | G1363 | U1293 |
| U2380 | A2320 | G1919 | A2138 | U1924 | G1863 | C1803 | U1740 | G1677 | G1610 | U1549 | G1487 | C1426 | C1364 | A1294 |
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| G2382 | A2322 | G2201 | U2140 | C1926 | A1865 | C1805 | U1742 | A1679 | A1612 | C1551 | A1489 | A1428 | A1366 | C1296 |
| G2383 | G2323 | C2202 | U2141 | G1927 | C1866 | A1806 | G1743 | G1680 | A1613 | G1552 | A1490 | G1428 | G1367 | C1297 |
| A2384 | G2324 | U2203 | A2142 | G1928 | A1867 | G1807 | G1744 | U1681 | A1614 | U1553 | A1491 | U1430 | U1368 | C1298 |
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| U2388 | U2328 | A2208 | C2146 | A1932 | U1871 | G1811 | A1748 | G1685 | G1618 | A1557 | G1496 | G1434 | C1372 | A1302 |
| U2389 | U2269 | A2147 | A2147 | A1933 | C1872 | G1812 | U1749 | U1686 | U1622 | A1558 | C1497 | A1435 | C1373 | A1303 |
| A2390 | G2329 | U2209 | U2148 | G1934 | U1873 | A1813 | A1750 | U1687 | G1623 | A1559 | A1498 | U1436 | G1374 | A1304 |
| G2391 | C2331 | U2210 | A2149 | G1935 | A1874 | A1814 | G1751 | U1688 | G1624 | G1560 | C1499 | C1437 | G1375 | U1305 |
| G2392 | A2332 | C2212 | G2150 | A1936 | U1875 | U1815 | A1752 | U1689 | G1626 | G1561 | G1500 | U1438 | C1376 | G1306 |
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| A2398 | C2338 | G2218 | C2156 | U1942 | A1881 | U1821 | G1758 | U1695 | A1632 | U1567 | A1506 | G1444 | G1382 | C1312 |
| A2399 | C2339 | A2219 | G2157 | C1943 | G1882 | C1822 | C1759 | A1696 | C1633 | U1568 | G1507 | U1445 | G1383 | G1313 |
| G2400 | U2340 | A2220 | A2158 | U1944 | A1883 | A1823 | A1760 | A1697 | G1634 | C1508 | A1508 | A1446 | U1384 | C1314 |
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| G2403 | G2343 | A2223 | G2161 | G1947 | A1886 | C1826 | U1763 | G1700 | A1637 | U1572 | U1511 | A1449 | U1388 | A1318 |
| A2404 | U2344 | A2224 | U2162 | U2102 | A1887 | C1827 | U1764 | C1701 | A1638 | G1573 | U1512 | G1450 | G1389 | G1319 |
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| G2414 | C2354 | G2234 | U2173 | U2112 | G1898 | U1837 | C1774 | G1712 | A1648 | A1583 | G1521 | A1460 | U1329 | U1329 |
| G2415 | G2355 | C2235 | G2174 | A2113 | G1899 | G1838 | G1775 | A1714 | U1649 | A1584 | A1524 | A1461 | A1401 | U1330 |
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| A2419 | A2359 | U2239 | A2178 | A2117 | G1903 | A1842 | C1779 | G1718 | G1653 | A1588 | G1528 | U1405 | U1334 | U1334 |
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| U2421 | A2361 | U2241 | G2180 | A2119 | G1905 | C1844 | C1781 | U1720 | G1655 | G1591 | U1530 | A1467 | U1336 | U1336 |
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| U2423 | A2363 | A2243 | A2182 | G2121 | C1907 | C1846 | U1783 | U1722 | C1657 | A1593 | C1532 | C1469 | G1408 | C1338 |
| A2424 | G2364 | A2244 | U2183 | G2122 | A1908 | A1847 | G1784 | A1723 | G1658 | A1594 | U1533 | U1470 | U1410 | C1339 |
| G2425 | C2365 | C2245 | U2184 | G2123 | A1909 | G1848 | A1787 | U1724 | U1659 | U1595 | A1534 | U1471 | G1340 | G1340 |
| U2426 | U2366 | G2246 | G2185 | G2124 | A1910 | C1849 | C1788 | C1725 | C1660 | C1596 | A1535 | U1472 | U1341 | U1341 |
| U2427 | A2367 | G2247 | U2186 | A2125 | A1911 | A1850 | G1789 | C1726 | G1661 | C1597 | G1536 | G1473 | C1342 | C1342 |
| U2428 | C2368 | C2248 | G2187 | A2126 | U1912 | G1851 | G1790 | G1727 | C1665 | G1598 | A1537 | A1474 | A1343 | A1343 |
| G2429 | G2369 | G2249 | U2188 | U2127 | A1913 | G1852 | C1791 | G1728 | G1666 | G1599 | U1538 | A1475 | G1344 | G1344 |
| A2430 | C2370 | U2189 | U2189 | C2128 | G1914 | U1853 | G1793 | A1729 | A1667 | U1600 | A1539 | G1476 | G1345 | G1345 |
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|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
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| G3366 | A3305 | A3244 | A3183 | A3123 | G3062 | C3002 | C2942 | U2882 | U2822 | U2759 | G2698 | C2638 | C2577 | U2517 | A2457 |
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| A3370 | G3309 | U3248 | U3187 | A3127 | U3066 | A3006 | A2946 | U2886 | U2826 | U2763 | A2702 | U2642 | U2581 | U2521 | U2461 |
| G3371 | A3310 | C3249 | G3188 | G3128 | C3067 | U3007 | G2947 | A2887 | U2827 | C2764 | A2703 | A2643 | C2582 | G2522 | U2462 |
| A3372 | C3311 | U3250 | G3189 | A3129 | U3068 | A3008 | C2948 | U2888 | G2828 | C2765 | A2704 | C2644 | C2583 | A2523 | U2463 |
| U3373 | U3312 | U3251 | C3190 | A3130 | G3069 | C3009 | U2949 | C2889 | U2829 | U2766 | A2705 | G2645 | G2584 | A2524 | U2464 |
| U3374 | U3313 | G3252 | G3191 | U3131 | U3070 | U3010 | U2950 | A2890 | G2830 | U2767 | G2706 | C2646 | G2585 | G2525 | U2465 |
| A3375 | A3314 | G3253 | A3185 | C3132 | U3071 | A3011 | G2951 | U2891 | G2831 | U2768 | C2707 | A2647 | G2586 | G2526 | G2466 |
| C3376 | G3315 | G3254 | C3193 | C3133 | C3072 | A3012 | G2952 | A2892 | C2832 | A2769 | C2708 | G2648 | U2587 | G2527 | G2467 |
| U3377 | A3316 | U3255 | C3194 | A3134 | A3073 | U3013 | U2953 | C2893 | A2833 | G2770 | C2709 | A2649 | U2588 | G2528 | G2467 |
| U3380 | U3317 | G3256 | U3195 | U3135 | G3074 | U3014 | U2954 | C2894 | G2834 | C2773 | C2710 | U2650 | G2589 | A2529 | G2468 |
| U3381 | G3318 | C3257 | U3196 | G3136 | G3075 | G3015 | U2955 | C2895 | U2835 | C2774 | C2711 | G2651 | A2590 | G2530 | G2469 |
| U3319 | U3319 | U3258 | C3197 | C3137 | C3076 | A3016 | U2956 | A2896 | C2836 | U2775 | U2712 | U2652 | A2591 | C2531 | U2470 |
| U3384 | A3320 | U3259 | U3198 | U3138 | A3077 | C3017 | G2957 | A2897 | A2837 | C2776 | U2713 | C2653 | G2592 | U2532 | U2471 |
| U3385 | G3321 | G3260 | G3199 | A3139 | U3078 | C3018 | A2958 | G2898 | A2838 | G2778 | G2714 | C2654 | G2593 | G2533 | U2472 |
| G3386 | A3322 | C3261 | G3200 | G3140 | U3079 | U3019 | C2959 | C2899 | G2839 | A2779 | A2715 | U2655 | C2594 | G2534 | C2473 |
| U3387 | A3323 | U3262 | C3201 | A3141 | G3080 | U3020 | C2960 | C2899 | C2840 | A2780 | U2716 | A2656 | A2595 | A2535 | G2474 |
| C3388 | G3324 | G3263 | G3202 | A3142 | C3081 | A3021 | G2961 | G2901 | G2841 | U2781 | U2717 | A2657 | U2596 | A2536 | G2475 |
| U3389 | U3325 | G3264 | G3203 | C3143 | C3082 | G3022 | U2962 | A2902 | U2842 | U2782 | U2718 | G2658 | U2597 | U2537 | C2476 |
| G3390 | G3326 | G3265 | G3144 | G3145 | G3083 | A3023 | C2963 | A2903 | U2843 | U2783 | U2719 | G2659 | G2598 | U2538 | G2477 |
| U3391 | G3327 | C3266 | A3206 | C3146 | C3084 | A3024 | G2964 | U2904 | C2844 | G2784 | G2720 | G2660 | U2599 | C2478 | C2479 |
| U3392 | U3328 | U3267 | C3207 | G3147 | G3085 | C3025 | U2965 | U2905 | A2845 | A2785 | A2721 | G2661 | C2600 | A2540 | U2480 |
| U3393 | U3329 | G3268 | C3208 | G3148 | A3086 | G3026 | G2966 | C2906 | U2846 | G2786 | U2722 | G2662 | A2601 | U2541 | U2481 |
| A3394 | A3330 | A3269 | U3209 | U3149 | A3087 | G3027 | A2967 | U2907 | A2847 | G2787 | U2723 | G2663 | G2602 | U2542 | G2482 |
| G3395 | U3331 | G3270 | U3210 | G3149 | G3088 | G3028 | G2968 | G2908 | C2848 | G2788 | U2724 | C2664 | G2603 | U2543 | U2483 |
| U3396 | G3332 | A3271 | U3211 | A3150 | C3089 | A3029 | A2969 | U2909 | C2849 | U2789 | U2725 | U2665 | U2604 | U2544 | G2484 |
| U3397 | G3333 | U3272 | U3212 | U3151 | U3090 | G3030 | C2970 | A2910 | G2850 | A2790 | C2726 | C2666 | G2605 | C2545 | A2485 |
| U3398 | A3334 | U3273 | G3213 | U3152 | A3091 | G3031 | A2971 | A2911 | A2851 | G2791 | G2728 | A2667 | G2606 | A2546 | A2486 |
| U3399 | U3335 | G3274 | U3214 | U3153 | C3092 | A3032 | G2972 | C2912 | C2852 | A2792 | U2729 | U2668 | G2607 | A2547 | U2487 |
| U3400 | G3337 | A3275 | A3215 | C3154 | A3094 | A3033 | G2973 | C2913 | A2853 | G2793 | G2730 | G2669 | G2608 | G2548 | U2488 |
| U3401 | C3338 | U3276 | U3216 | U3155 | U3095 | C3034 | U2974 | G2914 | U2854 | G2794 | U2731 | G2670 | A2609 | A2549 | A2489 |
| U3402 | A3339 | C3277 | A3217 | U3156 | C3096 | A3035 | U2975 | U2915 | U2855 | U2795 | G2732 | A2671 | G2610 | U2550 | C2490 |
| G3403 | G3340 | U3278 | A3218 | U3157 | C3097 | G3036 | A2976 | U2916 | G2856 | G2796 | A2733 | G2672 | U2611 | C2551 | A2491 |
| U3404 | U3341 | A3279 | G3219 | G3158 | G3098 | U3037 | G2977 | C2917 | C2857 | C2797 | A2734 | A2673 | U2612 | G2552 | C2492 |
| A3405 | G3342 | C3280 | G3220 | C3159 | C3099 | U3038 | U2978 | G2918 | U2858 | C2798 | U2735 | U2674 | U2613 | U2553 | U2493 |
| G3406 | G3343 | U3281 | C3221 | U3160 | U3100 | C3039 | U2979 | A2919 | U2859 | A2799 | A2736 | C2675 | G2614 | U2554 | U2494 |
| U3407 | A3344 | U3282 | U3222 | C3161 | G3101 | U3040 | U2980 | U2920 | U2860 | G2800 | C2737 | A2676 | G2615 | G2555 | G2495 |
| G3408 | G3345 | U3283 | A3223 | C3162 | G3102 | U3041 | U2981 | U2921 | U2861 | A2801 | A2738 | G2677 | C2616 | U2556 | G2496 |
| U3409 | U3346 | G3284 | G3224 | A3163 | A3103 | U3042 | A2982 | G2922 | U2862 | A2802 | A2739 | A2678 | U2617 | G2557 | |

4 Experimental information

| Property | Value | Source |
|--------------------------------------|-------------------|-----------|
| Reconstruction method | SINGLE PARTICLE | Depositor |
| Imposed symmetry | POINT, C1 | Depositor |
| Number of particles used | 102689 | Depositor |
| Resolution determination method | Not provided | Depositor |
| CTF correction method | Not provided | Depositor |
| Microscope | FEI TECNAI F30 | Depositor |
| Voltage (kV) | 300 | Depositor |
| Electron dose ($e^-/\text{\AA}^2$) | 25 | Depositor |
| Minimum defocus (nm) | 1400 | Depositor |
| Maximum defocus (nm) | 4000 | Depositor |
| Magnification | 39000 | Depositor |
| Image detector | KODAK SO-163 FILM | Depositor |

5 Model quality ⓘ

5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: OMC, 5MU, OMG, H2U, YYG, 2MG, 5MC, 1MA, M2G, 7MG, PSU

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 | $\# Z > 2$ | RMSZ | $\# Z > 2$ |
| 1 | AA | 1.91 | 76/41893 (0.2%) | 2.21 | 3096/65278 (4.7%) |
| 10 | AK | 0.93 | 0/935 | 1.07 | 0/1257 |
| 11 | AL | 0.88 | 0/920 | 0.98 | 0/1226 |
| 12 | AM | 0.94 | 0/1094 | 1.08 | 2/1468 (0.1%) |
| 13 | AN | 3.66 | 2/427 (0.5%) | 1.42 | 4/567 (0.7%) |
| 14 | AO | 0.92 | 0/707 | 1.04 | 0/950 |
| 15 | AQ | 0.96 | 0/656 | 1.04 | 0/885 |
| 16 | AS | 0.90 | 0/559 | 1.02 | 2/748 (0.3%) |
| 17 | AR | 0.91 | 1/2463 (0.0%) | 1.24 | 7/3350 (0.2%) |
| 18 | AT | 0.96 | 2/1118 (0.2%) | 1.10 | 6/1498 (0.4%) |
| 19 | A7 | 3.12 | 162/1483 (10.9%) | 3.79 | 362/2311 (15.7%) |
| 2 | AB | 0.87 | 0/1535 | 0.91 | 0/2097 |
| 20 | B0 | 0.91 | 0/898 | 1.03 | 0/1201 |
| 21 | B1 | 1.04 | 0/431 | 1.09 | 0/570 |
| 22 | B2 | 0.85 | 0/760 | 0.89 | 0/1020 |
| 23 | B8 | 0.94 | 0/965 | 1.09 | 4/1298 (0.3%) |
| 24 | B9 | 0.94 | 0/546 | 1.14 | 3/729 (0.4%) |
| 25 | BA | 0.84 | 0/1709 | 0.97 | 0/2295 |
| 26 | BB | 0.95 | 0/1882 | 1.06 | 1/2528 (0.0%) |
| 27 | BC | 0.91 | 0/2953 | 1.05 | 3/3974 (0.1%) |
| 28 | BD | 0.89 | 0/1987 | 0.98 | 4/2690 (0.1%) |
| 29 | BE | 0.94 | 0/1956 | 1.11 | 8/2646 (0.3%) |
| 3 | AC | 0.94 | 0/1488 | 1.00 | 0/1996 |
| 30 | BF | 0.85 | 0/1593 | 0.98 | 2/2160 (0.1%) |
| 31 | BG | 0.80 | 0/853 | 1.01 | 0/1153 |
| 32 | BH | 0.89 | 0/1437 | 1.06 | 0/1935 |
| 33 | BI | 0.96 | 0/1352 | 1.12 | 3/1815 (0.2%) |
| 34 | BJ | 0.97 | 0/1212 | 1.03 | 0/1622 |
| 35 | BK | 1.98 | 6/1049 (0.6%) | 1.04 | 1/1408 (0.1%) |
| 36 | BL | 1.01 | 0/1652 | 1.03 | 1/2211 (0.0%) |
| 37 | BM | 0.97 | 2/1341 (0.1%) | 1.33 | 6/1808 (0.3%) |
| 38 | BN | 0.93 | 0/1212 | 1.03 | 4/1631 (0.2%) |

| Mol | Chain | Bond lengths | | Bond angles | |
|-----|-------|--------------|-------------------|-------------|--------------------|
| | | RMSZ | # Z >2 | RMSZ | # Z >2 |
| 39 | BO | 0.92 | 0/943 | 0.97 | 0/1274 |
| 4 | AD | 0.93 | 0/1035 | 1.13 | 5/1390 (0.4%) |
| 40 | BP | 0.94 | 0/1334 | 0.98 | 0/1791 |
| 41 | BQ | 0.91 | 0/909 | 0.98 | 1/1216 (0.1%) |
| 42 | BR | 0.92 | 0/992 | 1.13 | 2/1333 (0.2%) |
| 43 | BS | 1.03 | 0/380 | 1.12 | 2/504 (0.4%) |
| 44 | BT | 0.85 | 0/649 | 1.00 | 2/873 (0.2%) |
| 45 | BU | 0.93 | 0/927 | 0.96 | 0/1237 |
| 46 | BV | 0.88 | 0/1152 | 1.07 | 2/1542 (0.1%) |
| 47 | BW | 0.99 | 0/673 | 1.06 | 0/894 |
| 48 | BX | 0.82 | 0/607 | 1.03 | 2/818 (0.2%) |
| 49 | BY | 0.95 | 0/413 | 1.10 | 2/548 (0.4%) |
| 5 | AE | 0.86 | 0/1227 | 0.99 | 0/1663 |
| 50 | BZ | 0.91 | 0/761 | 1.12 | 3/1006 (0.3%) |
| 51 | B3 | 1.34 | 1/2686 (0.0%) | 2.18 | 192/4184 (4.6%) |
| 52 | B4 | 1.35 | 0/3719 | 2.19 | 267/5791 (4.6%) |
| 53 | B5 | 1.35 | 3/75857 (0.0%) | 2.17 | 5569/118271 (4.7%) |
| 6 | AG | 0.91 | 0/1472 | 0.98 | 1/1982 (0.1%) |
| 7 | AH | 0.95 | 2/1008 (0.2%) | 1.17 | 2/1351 (0.1%) |
| 8 | AI | 2.93 | 6/1106 (0.5%) | 1.15 | 5/1481 (0.3%) |
| 9 | AJ | 0.85 | 0/781 | 1.04 | 2/1053 (0.2%) |
| All | All | 1.46 | 263/179697 (0.1%) | 1.97 | 9578/268527 (3.6%) |

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

| Mol | Chain | #Chirality outliers | #Planarity outliers |
|-----|-------|---------------------|---------------------|
| 1 | AA | 2 | 28 |
| 10 | AK | 0 | 4 |
| 12 | AM | 0 | 3 |
| 13 | AN | 0 | 2 |
| 14 | AO | 0 | 4 |
| 19 | A7 | 0 | 44 |
| 2 | AB | 0 | 1 |
| 20 | B0 | 0 | 1 |
| 23 | B8 | 0 | 3 |
| 24 | B9 | 0 | 3 |
| 26 | BB | 1 | 4 |
| 27 | BC | 0 | 1 |
| 28 | BD | 0 | 3 |

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| Mol | Chain | #Chirality outliers | #Planarity outliers |
|-----|-------|---------------------|---------------------|
| 29 | BE | 1 | 7 |
| 30 | BF | 1 | 0 |
| 31 | BG | 2 | 2 |
| 32 | BH | 0 | 3 |
| 33 | BI | 0 | 2 |
| 34 | BJ | 0 | 3 |
| 35 | BK | 0 | 2 |
| 36 | BL | 1 | 7 |
| 37 | BM | 0 | 5 |
| 38 | BN | 0 | 2 |
| 39 | BO | 0 | 1 |
| 4 | AD | 0 | 3 |
| 40 | BP | 0 | 4 |
| 42 | BR | 0 | 3 |
| 43 | BS | 0 | 1 |
| 44 | BT | 0 | 1 |
| 45 | BU | 0 | 1 |
| 46 | BV | 0 | 3 |
| 47 | BW | 0 | 2 |
| 48 | BX | 2 | 1 |
| 49 | BY | 0 | 1 |
| 5 | AE | 0 | 1 |
| 50 | BZ | 0 | 5 |
| 51 | B3 | 1 | 0 |
| 52 | B4 | 0 | 6 |
| 53 | B5 | 33 | 112 |
| 7 | AH | 1 | 0 |
| 8 | AI | 0 | 3 |
| 9 | AJ | 0 | 3 |
| All | All | 45 | 285 |

All (263) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|------|------|-------|-------|-------------|----------|
| 1 | AA | 856 | A | N3-C4 | 94.83 | 1.91 | 1.34 |
| 1 | AA | 856 | A | C5-C4 | 83.45 | 1.97 | 1.38 |
| 1 | AA | 1200 | A | N3-C4 | 80.10 | 1.82 | 1.34 |
| 1 | AA | 501 | U | C2-N3 | 76.02 | 1.91 | 1.37 |
| 1 | AA | 856 | A | C6-N1 | 74.78 | 1.87 | 1.35 |
| 13 | AN | 16 | LYS | N-CA | 71.90 | 2.90 | 1.46 |
| 1 | AA | 1200 | A | C5-C4 | 68.16 | 1.86 | 1.38 |
| 1 | AA | 501 | U | C4-C5 | 68.10 | 2.04 | 1.43 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|------|------|---------|--------|-------------|----------|
| 1 | AA | 1200 | A | C6-N1 | 66.53 | 1.82 | 1.35 |
| 1 | AA | 856 | A | C5-C6 | 65.06 | 1.99 | 1.41 |
| 1 | AA | 501 | U | N1-C2 | 62.64 | 1.95 | 1.38 |
| 1 | AA | 501 | U | N1-C6 | 57.45 | 1.89 | 1.38 |
| 1 | AA | 501 | U | N3-C4 | 56.90 | 1.89 | 1.38 |
| 1 | AA | 856 | A | C2-N3 | 56.28 | 1.84 | 1.33 |
| 1 | AA | 856 | A | N1-C2 | 53.59 | 1.82 | 1.34 |
| 1 | AA | 1200 | A | C5-C6 | 51.88 | 1.87 | 1.41 |
| 1 | AA | 1200 | A | C2-N3 | 46.90 | 1.75 | 1.33 |
| 1 | AA | 1200 | A | N1-C2 | 44.72 | 1.74 | 1.34 |
| 8 | AI | 96 | TYR | CE1-CZ | 40.35 | 1.91 | 1.38 |
| 8 | AI | 96 | TYR | CG-CD1 | 39.95 | 1.91 | 1.39 |
| 8 | AI | 96 | TYR | CE2-CZ | 39.90 | 1.90 | 1.38 |
| 8 | AI | 96 | TYR | CG-CD2 | 39.33 | 1.90 | 1.39 |
| 1 | AA | 501 | U | C5-C6 | 36.66 | 1.67 | 1.34 |
| 8 | AI | 96 | TYR | CD1-CE1 | 33.09 | 1.89 | 1.39 |
| 8 | AI | 96 | TYR | CD2-CE2 | 32.79 | 1.88 | 1.39 |
| 35 | BK | 121 | PHE | CG-CD2 | 28.86 | 1.82 | 1.38 |
| 35 | BK | 121 | PHE | CG-CD1 | 28.18 | 1.81 | 1.38 |
| 35 | BK | 121 | PHE | CE2-CZ | 22.09 | 1.79 | 1.37 |
| 35 | BK | 121 | PHE | CE1-CZ | 21.43 | 1.78 | 1.37 |
| 35 | BK | 121 | PHE | CD1-CE1 | 20.51 | 1.80 | 1.39 |
| 35 | BK | 121 | PHE | CD2-CE2 | 18.75 | 1.76 | 1.39 |
| 1 | AA | 858 | G | N3-C4 | 16.40 | 1.47 | 1.35 |
| 1 | AA | 1521 | G | N3-C4 | 15.47 | 1.46 | 1.35 |
| 19 | A7 | 45 | G | N7-C5 | 14.47 | 1.48 | 1.39 |
| 1 | AA | 1520 | U | C4'-C3' | -12.96 | 1.38 | 1.53 |
| 1 | AA | 864 | U | C3'-C2' | -12.93 | 1.38 | 1.52 |
| 19 | A7 | 62 | A | C5-C4 | -11.95 | 1.30 | 1.38 |
| 19 | A7 | 5 | A | N7-C5 | 11.34 | 1.46 | 1.39 |
| 19 | A7 | 36 | A | C6-N1 | -11.27 | 1.27 | 1.35 |
| 1 | AA | 856 | A | N9-C8 | 10.86 | 1.46 | 1.37 |
| 1 | AA | 864 | U | C4'-C3' | 10.53 | 1.64 | 1.53 |
| 19 | A7 | 72 | C | N3-C4 | -10.30 | 1.26 | 1.33 |
| 19 | A7 | 74 | C | P-O5' | 10.25 | 1.70 | 1.59 |
| 19 | A7 | 57 | G | N7-C5 | 10.20 | 1.45 | 1.39 |
| 37 | BM | 148 | LYS | C-N | 9.88 | 1.56 | 1.34 |
| 37 | BM | 169 | ALA | C-N | 9.87 | 1.56 | 1.34 |
| 19 | A7 | 72 | C | C5'-C4' | 9.74 | 1.63 | 1.51 |
| 19 | A7 | 9 | A | C6-N1 | -9.64 | 1.28 | 1.35 |
| 19 | A7 | 36 | A | C5-C4 | 9.61 | 1.45 | 1.38 |
| 19 | A7 | 61 | C | N3-C4 | -9.45 | 1.27 | 1.33 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|------|------|---------|-------|-------------|----------|
| 19 | A7 | 13 | C | C4-N4 | -9.32 | 1.25 | 1.33 |
| 19 | A7 | 1 | G | C6-N1 | -9.26 | 1.33 | 1.39 |
| 19 | A7 | 42 | G | C2-N2 | -9.14 | 1.25 | 1.34 |
| 19 | A7 | 76 | A | C5'-C4' | 9.09 | 1.62 | 1.51 |
| 1 | AA | 1521 | G | N9-C4 | 8.99 | 1.45 | 1.38 |
| 1 | AA | 1635 | C | C5'-C4' | 8.82 | 1.61 | 1.51 |
| 19 | A7 | 15 | G | N9-C4 | 8.73 | 1.45 | 1.38 |
| 19 | A7 | 35 | A | N9-C8 | 8.70 | 1.44 | 1.37 |
| 1 | AA | 858 | G | C2-N2 | 8.64 | 1.43 | 1.34 |
| 19 | A7 | 76 | A | C5-C4 | -8.59 | 1.32 | 1.38 |
| 1 | AA | 1521 | G | C2-N2 | 8.54 | 1.43 | 1.34 |
| 19 | A7 | 43 | G | C2-N2 | -8.53 | 1.26 | 1.34 |
| 19 | A7 | 14 | A | C6-N6 | 8.50 | 1.40 | 1.33 |
| 19 | A7 | 34 | OMG | O3'-P | -8.40 | 1.51 | 1.61 |
| 19 | A7 | 57 | G | N1-C2 | -8.38 | 1.31 | 1.37 |
| 1 | AA | 864 | U | O3'-P | -8.33 | 1.51 | 1.61 |
| 19 | A7 | 41 | U | P-O5' | 8.30 | 1.68 | 1.59 |
| 19 | A7 | 52 | U | P-O5' | 8.25 | 1.68 | 1.59 |
| 19 | A7 | 53 | G | C2'-O2' | -8.15 | 1.31 | 1.41 |
| 19 | A7 | 9 | A | C5-C4 | -8.04 | 1.33 | 1.38 |
| 1 | AA | 1200 | A | N9-C8 | 7.80 | 1.44 | 1.37 |
| 1 | AA | 858 | G | N9-C4 | 7.75 | 1.44 | 1.38 |
| 1 | AA | 1516 | C | P-O5' | -7.72 | 1.52 | 1.59 |
| 19 | A7 | 13 | C | C2-O2 | -7.71 | 1.17 | 1.24 |
| 19 | A7 | 25 | C | C5-C6 | 7.66 | 1.40 | 1.34 |
| 19 | A7 | 11 | C | N3-C4 | -7.63 | 1.28 | 1.33 |
| 19 | A7 | 31 | A | N7-C5 | -7.61 | 1.34 | 1.39 |
| 19 | A7 | 72 | C | C4-C5 | 7.61 | 1.49 | 1.43 |
| 19 | A7 | 19 | G | C2-N2 | -7.58 | 1.26 | 1.34 |
| 13 | AN | 16 | LYS | CA-CB | 7.56 | 1.70 | 1.53 |
| 1 | AA | 856 | A | C8-N7 | 7.50 | 1.36 | 1.31 |
| 19 | A7 | 15 | G | C2-N2 | -7.42 | 1.27 | 1.34 |
| 1 | AA | 857 | U | C5'-C4' | 7.37 | 1.60 | 1.51 |
| 1 | AA | 1584 | A | C5'-C4' | 7.34 | 1.60 | 1.51 |
| 19 | A7 | 2 | C | N1-C6 | 7.33 | 1.41 | 1.37 |
| 19 | A7 | 14 | A | N3-C4 | 7.33 | 1.39 | 1.34 |
| 19 | A7 | 41 | U | C2'-O2' | 7.30 | 1.51 | 1.41 |
| 19 | A7 | 60 | C | C5-C6 | 7.28 | 1.40 | 1.34 |
| 19 | A7 | 71 | G | C5'-C4' | 7.22 | 1.60 | 1.51 |
| 19 | A7 | 64 | A | C5-C6 | 7.17 | 1.47 | 1.41 |
| 19 | A7 | 7 | U | N1-C2 | 7.16 | 1.45 | 1.38 |
| 1 | AA | 1519 | G | C4'-C3' | 7.16 | 1.61 | 1.53 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|------|------|---------|-------|-------------|----------|
| 19 | A7 | 68 | U | N1-C6 | 7.12 | 1.44 | 1.38 |
| 19 | A7 | 36 | A | C5-C6 | 7.12 | 1.47 | 1.41 |
| 19 | A7 | 22 | G | N3-C4 | -7.11 | 1.30 | 1.35 |
| 19 | A7 | 71 | G | C2-N2 | -7.09 | 1.27 | 1.34 |
| 1 | AA | 1547 | C | O3'-P | -7.08 | 1.52 | 1.61 |
| 19 | A7 | 20 | G | N7-C5 | 7.04 | 1.43 | 1.39 |
| 19 | A7 | 23 | A | C6-N1 | -7.03 | 1.30 | 1.35 |
| 1 | AA | 856 | A | C6-N6 | 7.00 | 1.39 | 1.33 |
| 19 | A7 | 12 | U | C4'-O4' | -7.00 | 1.36 | 1.45 |
| 1 | AA | 1200 | A | C6-N6 | 7.00 | 1.39 | 1.33 |
| 19 | A7 | 44 | A | C5-C6 | 7.00 | 1.47 | 1.41 |
| 19 | A7 | 44 | A | N9-C4 | 6.98 | 1.42 | 1.37 |
| 19 | A7 | 47 | U | C5-C6 | 6.96 | 1.40 | 1.34 |
| 19 | A7 | 1 | G | N7-C5 | 6.95 | 1.43 | 1.39 |
| 19 | A7 | 76 | A | N9-C4 | -6.92 | 1.33 | 1.37 |
| 19 | A7 | 13 | C | N3-C4 | -6.91 | 1.29 | 1.33 |
| 19 | A7 | 20 | G | C2-N3 | 6.89 | 1.38 | 1.32 |
| 1 | AA | 859 | A | P-O5' | 6.88 | 1.66 | 1.59 |
| 19 | A7 | 76 | A | N7-C5 | -6.84 | 1.35 | 1.39 |
| 1 | AA | 1583 | U | C5'-C4' | 6.82 | 1.59 | 1.51 |
| 19 | A7 | 30 | G | N3-C4 | 6.78 | 1.40 | 1.35 |
| 19 | A7 | 45 | G | C6-N1 | -6.76 | 1.34 | 1.39 |
| 1 | AA | 1548 | A | P-O5' | -6.76 | 1.52 | 1.59 |
| 19 | A7 | 30 | G | C6-N1 | -6.75 | 1.34 | 1.39 |
| 1 | AA | 1520 | U | O3'-P | -6.65 | 1.53 | 1.61 |
| 19 | A7 | 45 | G | N3-C4 | 6.65 | 1.40 | 1.35 |
| 1 | AA | 1200 | A | C8-N7 | 6.64 | 1.36 | 1.31 |
| 19 | A7 | 59 | U | O3'-P | -6.64 | 1.53 | 1.61 |
| 19 | A7 | 51 | G | N1-C2 | -6.57 | 1.32 | 1.37 |
| 19 | A7 | 18 | G | C2-N2 | -6.54 | 1.28 | 1.34 |
| 1 | AA | 867 | G | C3'-C2' | -6.54 | 1.45 | 1.52 |
| 19 | A7 | 69 | U | O3'-P | -6.52 | 1.53 | 1.61 |
| 19 | A7 | 59 | U | C2-N3 | 6.51 | 1.42 | 1.37 |
| 1 | AA | 1520 | U | C3'-O3' | -6.50 | 1.33 | 1.42 |
| 1 | AA | 858 | G | C2-N3 | 6.44 | 1.38 | 1.32 |
| 19 | A7 | 23 | A | C3'-C2' | -6.43 | 1.45 | 1.52 |
| 1 | AA | 1521 | G | C5'-C4' | 6.42 | 1.59 | 1.51 |
| 19 | A7 | 35 | A | C8-N7 | -6.40 | 1.27 | 1.31 |
| 19 | A7 | 36 | A | N7-C5 | 6.39 | 1.43 | 1.39 |
| 19 | A7 | 64 | A | C2-N3 | -6.37 | 1.27 | 1.33 |
| 19 | A7 | 24 | G | P-O5' | 6.36 | 1.66 | 1.59 |
| 1 | AA | 1547 | C | C3'-O3' | -6.34 | 1.33 | 1.42 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|------|------|---------|-------|-------------|----------|
| 19 | A7 | 53 | G | C3'-C2' | 6.33 | 1.59 | 1.52 |
| 1 | AA | 1547 | C | C4'-C3' | -6.32 | 1.46 | 1.53 |
| 18 | AT | 78 | LYS | CA-C | 6.30 | 1.69 | 1.52 |
| 19 | A7 | 50 | U | C4-O4 | 6.30 | 1.28 | 1.23 |
| 19 | A7 | 4 | G | C4'-O4' | -6.28 | 1.37 | 1.45 |
| 19 | A7 | 4 | G | N3-C4 | 6.25 | 1.39 | 1.35 |
| 19 | A7 | 6 | U | N3-C4 | -6.25 | 1.32 | 1.38 |
| 19 | A7 | 41 | U | C2-O2 | 6.22 | 1.27 | 1.22 |
| 19 | A7 | 56 | C | N3-C4 | -6.19 | 1.29 | 1.33 |
| 1 | AA | 1518 | U | C3'-C2' | -6.18 | 1.46 | 1.52 |
| 19 | A7 | 3 | G | N3-C4 | 6.17 | 1.39 | 1.35 |
| 19 | A7 | 5 | A | P-O5' | -6.16 | 1.53 | 1.59 |
| 1 | AA | 1636 | G | C3'-C2' | 6.15 | 1.59 | 1.52 |
| 1 | AA | 1519 | G | C3'-O3' | -6.15 | 1.33 | 1.42 |
| 19 | A7 | 21 | A | P-O5' | -6.12 | 1.53 | 1.59 |
| 19 | A7 | 57 | G | N9-C4 | -6.12 | 1.33 | 1.38 |
| 19 | A7 | 74 | C | C4-C5 | -6.12 | 1.38 | 1.43 |
| 19 | A7 | 35 | A | N7-C5 | 6.10 | 1.43 | 1.39 |
| 19 | A7 | 46 | 7MG | O3'-P | -6.10 | 1.53 | 1.61 |
| 19 | A7 | 50 | U | P-O5' | -6.08 | 1.53 | 1.59 |
| 19 | A7 | 41 | U | C2-N3 | 6.05 | 1.42 | 1.37 |
| 19 | A7 | 53 | G | N7-C5 | 6.05 | 1.42 | 1.39 |
| 19 | A7 | 42 | G | C5'-C4' | 6.02 | 1.58 | 1.51 |
| 19 | A7 | 24 | G | C2-N2 | -6.00 | 1.28 | 1.34 |
| 19 | A7 | 12 | U | C5'-C4' | 6.00 | 1.58 | 1.51 |
| 19 | A7 | 20 | G | C2'-C1' | 6.00 | 1.59 | 1.53 |
| 19 | A7 | 2 | C | C4-N4 | -5.98 | 1.28 | 1.33 |
| 1 | AA | 1552 | U | C4'-C3' | -5.98 | 1.46 | 1.52 |
| 1 | AA | 1521 | G | C2-N3 | 5.97 | 1.37 | 1.32 |
| 19 | A7 | 61 | C | C4-N4 | -5.97 | 1.28 | 1.33 |
| 19 | A7 | 66 | A | C6-N1 | -5.96 | 1.31 | 1.35 |
| 19 | A7 | 21 | A | O3'-P | -5.95 | 1.54 | 1.61 |
| 1 | AA | 1521 | G | N1-C2 | 5.94 | 1.42 | 1.37 |
| 19 | A7 | 31 | A | C5-C4 | -5.94 | 1.34 | 1.38 |
| 19 | A7 | 76 | A | C8-N7 | -5.93 | 1.27 | 1.31 |
| 19 | A7 | 51 | G | C6-N1 | -5.93 | 1.35 | 1.39 |
| 1 | AA | 1521 | G | C8-N7 | -5.92 | 1.27 | 1.30 |
| 19 | A7 | 27 | C | C4-N4 | -5.92 | 1.28 | 1.33 |
| 51 | B3 | 46 | A | C5'-C4' | 5.91 | 1.58 | 1.51 |
| 19 | A7 | 51 | G | N7-C5 | -5.90 | 1.35 | 1.39 |
| 19 | A7 | 14 | A | C6-N1 | -5.89 | 1.31 | 1.35 |
| 7 | AH | 61 | ILE | CA-CB | 5.89 | 1.68 | 1.54 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|------|------|---------|-------|-------------|----------|
| 19 | A7 | 60 | C | C2'-C1' | 5.89 | 1.59 | 1.53 |
| 19 | A7 | 69 | U | O4'-C1' | 5.89 | 1.49 | 1.41 |
| 19 | A7 | 30 | G | C4'-C3' | 5.88 | 1.59 | 1.53 |
| 19 | A7 | 63 | C | P-O5' | -5.88 | 1.53 | 1.59 |
| 19 | A7 | 64 | A | N3-C4 | 5.88 | 1.38 | 1.34 |
| 17 | AR | 164 | ASP | N-CA | -5.87 | 1.34 | 1.46 |
| 19 | A7 | 3 | G | C2'-O2' | 5.87 | 1.49 | 1.41 |
| 19 | A7 | 29 | A | N3-C4 | 5.87 | 1.38 | 1.34 |
| 19 | A7 | 47 | U | N1-C2 | 5.86 | 1.43 | 1.38 |
| 19 | A7 | 43 | G | P-O5' | 5.84 | 1.65 | 1.59 |
| 19 | A7 | 67 | A | C6-N6 | -5.82 | 1.29 | 1.33 |
| 19 | A7 | 19 | G | C5'-C4' | 5.77 | 1.58 | 1.51 |
| 1 | AA | 1545 | A | C4'-C3' | 5.76 | 1.59 | 1.53 |
| 19 | A7 | 65 | G | C8-N7 | -5.75 | 1.27 | 1.30 |
| 1 | AA | 864 | U | P-O5' | 5.74 | 1.65 | 1.59 |
| 19 | A7 | 70 | C | C4-N4 | -5.73 | 1.28 | 1.33 |
| 19 | A7 | 68 | U | C2-N3 | 5.66 | 1.41 | 1.37 |
| 7 | AH | 32 | LYS | CA-C | 5.65 | 1.67 | 1.52 |
| 19 | A7 | 71 | G | C2-N3 | 5.64 | 1.37 | 1.32 |
| 19 | A7 | 69 | U | C2-O2 | 5.63 | 1.27 | 1.22 |
| 1 | AA | 797 | G | P-O5' | -5.63 | 1.54 | 1.59 |
| 53 | B5 | 2229 | A | C5'-C4' | 5.61 | 1.58 | 1.51 |
| 19 | A7 | 47 | U | C4-O4 | -5.61 | 1.19 | 1.23 |
| 1 | AA | 1519 | G | C3'-C2' | -5.60 | 1.46 | 1.52 |
| 19 | A7 | 67 | A | C2'-O2' | 5.57 | 1.48 | 1.41 |
| 19 | A7 | 47 | U | C1'-N1 | 5.55 | 1.57 | 1.48 |
| 19 | A7 | 57 | G | C5-C6 | 5.55 | 1.48 | 1.42 |
| 19 | A7 | 42 | G | N7-C5 | 5.52 | 1.42 | 1.39 |
| 19 | A7 | 48 | C | C3'-C2' | 5.51 | 1.59 | 1.52 |
| 19 | A7 | 57 | G | C8-N7 | 5.50 | 1.34 | 1.30 |
| 1 | AA | 1635 | C | C4'-C3' | 5.49 | 1.59 | 1.53 |
| 1 | AA | 858 | G | N1-C2 | 5.49 | 1.42 | 1.37 |
| 19 | A7 | 5 | A | C5-C4 | -5.49 | 1.34 | 1.38 |
| 1 | AA | 859 | A | C5'-C4' | 5.48 | 1.57 | 1.51 |
| 19 | A7 | 69 | U | C4-O4 | -5.46 | 1.19 | 1.23 |
| 19 | A7 | 11 | C | C2-O2 | -5.43 | 1.19 | 1.24 |
| 1 | AA | 858 | G | C6-N1 | 5.41 | 1.43 | 1.39 |
| 19 | A7 | 56 | C | N1-C6 | -5.40 | 1.33 | 1.37 |
| 19 | A7 | 73 | A | C8-N7 | 5.40 | 1.35 | 1.31 |
| 19 | A7 | 28 | C | C2'-O2' | -5.39 | 1.34 | 1.41 |
| 19 | A7 | 44 | A | C4'-O4' | -5.39 | 1.38 | 1.45 |
| 1 | AA | 502 | U | C5'-C4' | 5.39 | 1.57 | 1.51 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|------|------|---------|-------|-------------|----------|
| 1 | AA | 1546 | G | P-O5' | 5.39 | 1.65 | 1.59 |
| 19 | A7 | 60 | C | O3'-P | 5.37 | 1.67 | 1.61 |
| 19 | A7 | 3 | G | C5'-C4' | 5.32 | 1.57 | 1.51 |
| 1 | AA | 1612 | A | C5'-C4' | 5.29 | 1.57 | 1.51 |
| 19 | A7 | 64 | A | C4'-C3' | 5.29 | 1.58 | 1.53 |
| 19 | A7 | 72 | C | C3'-C2' | -5.28 | 1.47 | 1.52 |
| 1 | AA | 1515 | U | O3'-P | -5.26 | 1.54 | 1.61 |
| 19 | A7 | 3 | G | N7-C5 | -5.25 | 1.36 | 1.39 |
| 19 | A7 | 3 | G | C4'-O4' | 5.25 | 1.52 | 1.45 |
| 19 | A7 | 63 | C | C5-C6 | -5.25 | 1.30 | 1.34 |
| 19 | A7 | 53 | G | N1-C2 | -5.22 | 1.33 | 1.37 |
| 19 | A7 | 52 | U | C4'-O4' | -5.22 | 1.38 | 1.45 |
| 1 | AA | 1637 | C | O3'-P | -5.21 | 1.54 | 1.61 |
| 19 | A7 | 41 | U | C5-C6 | 5.21 | 1.38 | 1.34 |
| 19 | A7 | 11 | C | N1-C2 | 5.21 | 1.45 | 1.40 |
| 19 | A7 | 12 | U | O4'-C1' | 5.19 | 1.48 | 1.41 |
| 1 | AA | 1520 | U | C5'-C4' | -5.18 | 1.45 | 1.51 |
| 53 | B5 | 1421 | G | C5'-C4' | 5.18 | 1.57 | 1.51 |
| 18 | AT | 79 | LEU | N-CA | 5.18 | 1.56 | 1.46 |
| 19 | A7 | 59 | U | C5-C6 | 5.17 | 1.38 | 1.34 |
| 19 | A7 | 66 | A | C5'-C4' | 5.17 | 1.57 | 1.51 |
| 19 | A7 | 48 | C | C5-C6 | -5.16 | 1.30 | 1.34 |
| 19 | A7 | 56 | C | C5-C6 | 5.16 | 1.38 | 1.34 |
| 1 | AA | 1521 | G | O4'-C1' | 5.16 | 1.48 | 1.41 |
| 19 | A7 | 19 | G | C5-C6 | 5.16 | 1.47 | 1.42 |
| 19 | A7 | 33 | U | C2'-O2' | 5.16 | 1.48 | 1.41 |
| 19 | A7 | 51 | G | C3'-C2' | 5.15 | 1.58 | 1.52 |
| 19 | A7 | 48 | C | O4'-C1' | 5.14 | 1.48 | 1.41 |
| 19 | A7 | 1 | G | O3'-P | -5.13 | 1.54 | 1.61 |
| 19 | A7 | 63 | C | O3'-P | -5.12 | 1.55 | 1.61 |
| 19 | A7 | 62 | A | C2'-C1' | -5.12 | 1.47 | 1.53 |
| 19 | A7 | 6 | U | C4'-O4' | -5.12 | 1.38 | 1.45 |
| 1 | AA | 1518 | U | C3'-O3' | -5.11 | 1.35 | 1.42 |
| 19 | A7 | 35 | A | N3-C4 | 5.10 | 1.38 | 1.34 |
| 19 | A7 | 71 | G | C5-C6 | 5.10 | 1.47 | 1.42 |
| 1 | AA | 796 | A | O3'-P | -5.09 | 1.55 | 1.61 |
| 19 | A7 | 37 | YYG | O3'-P | -5.08 | 1.55 | 1.61 |
| 1 | AA | 1520 | U | P-O5' | -5.08 | 1.54 | 1.59 |
| 19 | A7 | 6 | U | C5'-C4' | 5.08 | 1.57 | 1.51 |
| 19 | A7 | 30 | G | N7-C5 | 5.07 | 1.42 | 1.39 |
| 19 | A7 | 53 | G | N3-C4 | -5.06 | 1.31 | 1.35 |
| 19 | A7 | 28 | C | C3'-O3' | 5.03 | 1.49 | 1.42 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|------|------|---------|------|-------------|----------|
| 19 | A7 | 15 | G | C5-C6 | 5.02 | 1.47 | 1.42 |
| 1 | AA | 799 | A | C5'-C4' | 5.02 | 1.57 | 1.51 |
| 53 | B5 | 2623 | G | C2-N3 | 5.00 | 1.36 | 1.32 |

All (9578) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|--------|-------------|----------|
| 1 | AA | 1545 | A | O5'-P-OP1 | -67.13 | 30.14 | 110.70 |
| 1 | AA | 864 | U | P-O3'-C3' | -44.04 | 66.85 | 119.70 |
| 1 | AA | 1516 | C | O5'-P-OP2 | -30.31 | 74.33 | 110.70 |
| 1 | AA | 1213 | A | O5'-P-OP1 | -23.91 | 82.01 | 110.70 |
| 1 | AA | 1519 | G | O3'-P-O5' | 23.73 | 149.08 | 104.00 |
| 1 | AA | 1213 | A | O5'-P-OP2 | -23.37 | 82.65 | 110.70 |
| 1 | AA | 1520 | U | O3'-P-O5' | 23.19 | 148.06 | 104.00 |
| 1 | AA | 1521 | G | N9-C4-C5 | -22.98 | 96.21 | 105.40 |
| 1 | AA | 1516 | C | O5'-P-OP1 | 22.56 | 137.77 | 110.70 |
| 1 | AA | 856 | A | N7-C8-N9 | 21.87 | 124.73 | 113.80 |
| 1 | AA | 1579 | C | P-O3'-C3' | 21.67 | 145.70 | 119.70 |
| 37 | BM | 148 | LYS | O-C-N | -20.85 | 89.34 | 122.70 |
| 1 | AA | 1547 | C | P-O3'-C3' | -20.45 | 95.16 | 119.70 |
| 37 | BM | 169 | ALA | O-C-N | -19.62 | 91.30 | 122.70 |
| 1 | AA | 1521 | G | C4-C5-N7 | 19.32 | 118.53 | 110.80 |
| 1 | AA | 1548 | A | O5'-P-OP1 | 19.25 | 133.80 | 110.70 |
| 1 | AA | 866 | G | O5'-P-OP2 | -18.88 | 88.05 | 110.70 |
| 19 | A7 | 75 | C | N3-C4-C5 | 18.68 | 129.37 | 121.90 |
| 1 | AA | 856 | A | P-O3'-C3' | 18.65 | 142.08 | 119.70 |
| 19 | A7 | 36 | A | N7-C8-N9 | 18.59 | 123.09 | 113.80 |
| 1 | AA | 867 | G | OP1-P-OP2 | -18.33 | 92.11 | 119.60 |
| 1 | AA | 865 | A | O5'-P-OP2 | -18.23 | 88.82 | 110.70 |
| 1 | AA | 865 | A | P-O3'-C3' | -18.12 | 97.95 | 119.70 |
| 1 | AA | 858 | G | C1'-O4'-C4' | -17.43 | 95.96 | 109.90 |
| 1 | AA | 1520 | U | P-O3'-C3' | -17.41 | 98.80 | 119.70 |
| 1 | AA | 858 | G | O4'-C4'-C3' | -17.05 | 86.95 | 104.00 |
| 1 | AA | 1535 | C | P-O3'-C3' | 17.02 | 140.12 | 119.70 |
| 1 | AA | 852 | C | P-O3'-C3' | 16.93 | 140.01 | 119.70 |
| 1 | AA | 1520 | U | C4'-C3'-O3' | -16.51 | 74.72 | 109.40 |
| 1 | AA | 1196 | G | P-O3'-C3' | 16.48 | 139.48 | 119.70 |
| 53 | B5 | 3143 | C | P-O3'-C3' | 16.18 | 139.12 | 119.70 |
| 19 | A7 | 76 | A | N1-C2-N3 | -16.08 | 121.26 | 129.30 |
| 1 | AA | 1547 | C | C4'-C3'-C2' | 16.08 | 118.68 | 102.60 |
| 1 | AA | 1200 | A | N7-C8-N9 | 16.04 | 121.82 | 113.80 |
| 1 | AA | 748 | U | P-O3'-C3' | 16.03 | 138.94 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|--------|-------------|----------|
| 1 | AA | 856 | A | C4-C5-N7 | -15.97 | 102.72 | 110.70 |
| 53 | B5 | 2787 | G | P-O3'-C3' | 15.89 | 138.77 | 119.70 |
| 1 | AA | 858 | G | O4'-C1'-N9 | 15.82 | 120.86 | 108.20 |
| 1 | AA | 856 | A | N9-C4-C5 | -15.71 | 99.52 | 105.80 |
| 1 | AA | 1520 | U | C3'-C2'-C1' | -15.63 | 88.99 | 101.50 |
| 19 | A7 | 36 | A | C5-N7-C8 | -15.53 | 96.14 | 103.90 |
| 1 | AA | 1318 | A | P-O3'-C3' | 15.52 | 138.33 | 119.70 |
| 1 | AA | 1635 | C | P-O3'-C3' | -15.51 | 101.09 | 119.70 |
| 1 | AA | 652 | G | P-O3'-C3' | 15.30 | 138.06 | 119.70 |
| 1 | AA | 1543 | A | P-O3'-C3' | -15.13 | 101.54 | 119.70 |
| 52 | B4 | 152 | G | P-O3'-C3' | 15.00 | 137.70 | 119.70 |
| 19 | A7 | 75 | C | C2-N3-C4 | -14.77 | 112.52 | 119.90 |
| 53 | B5 | 1582 | C | P-O3'-C3' | 14.74 | 137.39 | 119.70 |
| 19 | A7 | 76 | A | C5-C6-N1 | 14.73 | 125.06 | 117.70 |
| 19 | A7 | 9 | A | C5-C6-N1 | 14.66 | 125.03 | 117.70 |
| 53 | B5 | 475 | G | P-O3'-C3' | 14.64 | 137.26 | 119.70 |
| 53 | B5 | 1163 | A | P-O3'-C3' | 14.56 | 137.18 | 119.70 |
| 53 | B5 | 1302 | A | P-O3'-C3' | 14.53 | 137.13 | 119.70 |
| 52 | B4 | 19 | C | P-O3'-C3' | 14.52 | 137.13 | 119.70 |
| 53 | B5 | 638 | C | P-O3'-C3' | 14.50 | 137.10 | 119.70 |
| 1 | AA | 1521 | G | P-O3'-C3' | -14.48 | 102.33 | 119.70 |
| 19 | A7 | 31 | A | C8-N9-C4 | -14.44 | 100.02 | 105.80 |
| 53 | B5 | 239 | G | P-O3'-C3' | 14.42 | 137.01 | 119.70 |
| 53 | B5 | 712 | G | P-O3'-C3' | 14.35 | 136.92 | 119.70 |
| 19 | A7 | 5 | A | N1-C6-N6 | -14.28 | 110.03 | 118.60 |
| 19 | A7 | 76 | A | C2-N3-C4 | 14.21 | 117.71 | 110.60 |
| 1 | AA | 1213 | A | OP1-P-OP2 | 14.19 | 140.88 | 119.60 |
| 1 | AA | 1560 | G | P-O3'-C3' | 14.14 | 136.67 | 119.70 |
| 19 | A7 | 44 | A | N1-C6-N6 | -14.14 | 110.11 | 118.60 |
| 53 | B5 | 3160 | U | P-O3'-C3' | 14.13 | 136.65 | 119.70 |
| 37 | BM | 148 | LYS | CA-C-N | -14.12 | 86.14 | 117.20 |
| 53 | B5 | 1590 | G | P-O3'-C3' | 14.11 | 136.63 | 119.70 |
| 53 | B5 | 2571 | U | P-O3'-C3' | 14.07 | 136.59 | 119.70 |
| 1 | AA | 1200 | A | C4-C5-N7 | -14.07 | 103.67 | 110.70 |
| 53 | B5 | 1737 | U | P-O3'-C3' | 14.04 | 136.55 | 119.70 |
| 53 | B5 | 1626 | U | P-O3'-C3' | 14.03 | 136.54 | 119.70 |
| 1 | AA | 1098 | G | P-O3'-C3' | 14.00 | 136.50 | 119.70 |
| 1 | AA | 1520 | U | C2'-C3'-O3' | -13.96 | 78.80 | 109.50 |
| 1 | AA | 1488 | C | P-O3'-C3' | 13.95 | 136.44 | 119.70 |
| 1 | AA | 1639 | C | P-O3'-C3' | 13.94 | 136.42 | 119.70 |
| 1 | AA | 1055 | U | P-O3'-C3' | 13.93 | 136.42 | 119.70 |
| 1 | AA | 229 | U | P-O3'-C3' | 13.93 | 136.41 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|--------|-------------|----------|
| 51 | B3 | 23 | A | P-O3'-C3' | 13.93 | 136.41 | 119.70 |
| 1 | AA | 1675 | C | P-O3'-C3' | 13.91 | 136.39 | 119.70 |
| 19 | A7 | 62 | A | N1-C6-N6 | -13.90 | 110.26 | 118.60 |
| 1 | AA | 1518 | U | OP1-P-OP2 | -13.87 | 98.80 | 119.60 |
| 1 | AA | 1429 | U | P-O3'-C3' | 13.80 | 136.26 | 119.70 |
| 1 | AA | 1759 | U | P-O3'-C3' | 13.74 | 136.19 | 119.70 |
| 53 | B5 | 3384 | U | P-O3'-C3' | 13.72 | 136.17 | 119.70 |
| 19 | A7 | 36 | A | C4-C5-C6 | -13.71 | 110.15 | 117.00 |
| 1 | AA | 1478 | G | P-O3'-C3' | 13.67 | 136.11 | 119.70 |
| 1 | AA | 1133 | U | P-O3'-C3' | 13.65 | 136.09 | 119.70 |
| 53 | B5 | 3083 | G | P-O3'-C3' | 13.61 | 136.04 | 119.70 |
| 53 | B5 | 3219 | U | P-O3'-C3' | 13.61 | 136.03 | 119.70 |
| 1 | AA | 759 | U | P-O3'-C3' | 13.59 | 136.00 | 119.70 |
| 1 | AA | 212 | U | P-O3'-C3' | 13.54 | 135.95 | 119.70 |
| 53 | B5 | 2988 | C | P-O3'-C3' | 13.52 | 135.93 | 119.70 |
| 19 | A7 | 53 | G | C5-N7-C8 | -13.51 | 97.55 | 104.30 |
| 53 | B5 | 1033 | U | P-O3'-C3' | 13.50 | 135.90 | 119.70 |
| 19 | A7 | 47 | U | O4'-C1'-N1 | 13.49 | 118.99 | 108.20 |
| 53 | B5 | 3049 | A | P-O3'-C3' | 13.48 | 135.88 | 119.70 |
| 1 | AA | 1629 | A | P-O3'-C3' | -13.43 | 103.59 | 119.70 |
| 1 | AA | 1521 | G | N3-C4-N9 | 13.42 | 134.05 | 126.00 |
| 18 | AT | 78 | LYS | CA-C-O | -13.40 | 91.95 | 120.10 |
| 1 | AA | 1281 | C | P-O3'-C3' | 13.40 | 135.78 | 119.70 |
| 19 | A7 | 76 | A | C4-C5-C6 | -13.39 | 110.31 | 117.00 |
| 53 | B5 | 2913 | C | P-O3'-C3' | 13.38 | 135.76 | 119.70 |
| 1 | AA | 1544 | G | O5'-P-OP2 | -13.37 | 93.67 | 105.70 |
| 53 | B5 | 801 | A | P-O3'-C3' | 13.37 | 135.74 | 119.70 |
| 19 | A7 | 45 | G | C6-C5-N7 | 13.35 | 138.41 | 130.40 |
| 1 | AA | 461 | G | P-O3'-C3' | 13.34 | 135.71 | 119.70 |
| 53 | B5 | 2459 | A | P-O3'-C3' | 13.28 | 135.63 | 119.70 |
| 1 | AA | 66 | U | P-O3'-C3' | 13.26 | 135.61 | 119.70 |
| 1 | AA | 1636 | G | C2'-C3'-O3' | 13.23 | 138.62 | 109.50 |
| 1 | AA | 770 | A | P-O3'-C3' | 13.21 | 135.55 | 119.70 |
| 1 | AA | 922 | A | P-O3'-C3' | 13.21 | 135.55 | 119.70 |
| 53 | B5 | 2538 | U | P-O3'-C3' | 13.20 | 135.54 | 119.70 |
| 52 | B4 | 102 | U | P-O3'-C3' | 13.19 | 135.52 | 119.70 |
| 19 | A7 | 9 | A | N1-C6-N6 | -13.18 | 110.69 | 118.60 |
| 53 | B5 | 1084 | A | P-O3'-C3' | 13.17 | 135.50 | 119.70 |
| 1 | AA | 56 | U | P-O3'-C3' | 13.13 | 135.46 | 119.70 |
| 1 | AA | 199 | G | P-O3'-C3' | 13.12 | 135.44 | 119.70 |
| 1 | AA | 1216 | C | P-O3'-C3' | 13.11 | 135.43 | 119.70 |
| 53 | B5 | 3138 | U | P-O3'-C3' | 13.11 | 135.43 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|--------|-------------|----------|
| 1 | AA | 866 | G | O5'-P-OP1 | -13.10 | 93.91 | 105.70 |
| 19 | A7 | 64 | A | N1-C6-N6 | -13.03 | 110.78 | 118.60 |
| 19 | A7 | 1 | G | C5-C6-O6 | -13.01 | 120.79 | 128.60 |
| 53 | B5 | 215 | G | P-O3'-C3' | 12.97 | 135.26 | 119.70 |
| 1 | AA | 856 | A | N3-C4-N9 | 12.94 | 137.75 | 127.40 |
| 1 | AA | 365 | G | P-O3'-C3' | 12.93 | 135.22 | 119.70 |
| 53 | B5 | 3141 | A | P-O3'-C3' | 12.91 | 135.19 | 119.70 |
| 1 | AA | 175 | G | P-O3'-C3' | 12.89 | 135.17 | 119.70 |
| 1 | AA | 867 | G | O5'-P-OP1 | 12.85 | 126.12 | 110.70 |
| 1 | AA | 1200 | A | N9-C4-C5 | -12.83 | 100.67 | 105.80 |
| 17 | AR | 163 | ASP | C-N-CA | -12.80 | 89.69 | 121.70 |
| 19 | A7 | 27 | C | N3-C2-O2 | -12.79 | 112.95 | 121.90 |
| 1 | AA | 1200 | A | N1-C6-N6 | 12.77 | 126.26 | 118.60 |
| 1 | AA | 501 | U | C2-N3-C4 | -12.76 | 119.34 | 127.00 |
| 51 | B3 | 91 | C | P-O3'-C3' | 12.76 | 135.02 | 119.70 |
| 53 | B5 | 1549 | U | P-O3'-C3' | 12.76 | 135.02 | 119.70 |
| 1 | AA | 1789 | A | P-O3'-C3' | 12.72 | 134.96 | 119.70 |
| 1 | AA | 1457 | C | P-O3'-C3' | 12.71 | 134.95 | 119.70 |
| 1 | AA | 1181 | U | P-O3'-C3' | 12.68 | 134.91 | 119.70 |
| 37 | BM | 169 | ALA | CA-C-N | -12.68 | 89.31 | 117.20 |
| 53 | B5 | 2654 | C | P-O3'-C3' | 12.60 | 134.82 | 119.70 |
| 1 | AA | 438 | A | P-O3'-C3' | 12.56 | 134.77 | 119.70 |
| 1 | AA | 1551 | G | OP1-P-OP2 | -12.53 | 100.80 | 119.60 |
| 53 | B5 | 1390 | A | P-O3'-C3' | 12.52 | 134.72 | 119.70 |
| 1 | AA | 1779 | A | P-O3'-C3' | 12.51 | 134.71 | 119.70 |
| 53 | B5 | 3310 | A | N1-C6-N6 | 12.48 | 126.09 | 118.60 |
| 53 | B5 | 52 | A | N1-C6-N6 | 12.47 | 126.08 | 118.60 |
| 1 | AA | 1635 | C | C2'-C3'-O3' | 12.44 | 136.87 | 109.50 |
| 52 | B4 | 69 | U | P-O3'-C3' | 12.34 | 134.51 | 119.70 |
| 1 | AA | 350 | U | P-O3'-C3' | 12.32 | 134.48 | 119.70 |
| 1 | AA | 1636 | G | O5'-P-OP2 | -12.31 | 94.62 | 105.70 |
| 53 | B5 | 372 | A | P-O3'-C3' | 12.20 | 134.34 | 119.70 |
| 19 | A7 | 6 | U | C5-C6-N1 | -12.20 | 116.60 | 122.70 |
| 1 | AA | 1144 | A | N1-C6-N6 | 12.19 | 125.91 | 118.60 |
| 53 | B5 | 1643 | A | P-O3'-C3' | 12.18 | 134.31 | 119.70 |
| 37 | BM | 169 | ALA | C-N-CA | -12.17 | 91.28 | 121.70 |
| 1 | AA | 864 | U | N1-C1'-C2' | -12.12 | 98.25 | 114.00 |
| 19 | A7 | 21 | A | O4'-C1'-N9 | 12.11 | 117.89 | 108.20 |
| 19 | A7 | 2 | C | N3-C4-N4 | -12.09 | 109.54 | 118.00 |
| 1 | AA | 1238 | A | N1-C6-N6 | 12.08 | 125.85 | 118.60 |
| 19 | A7 | 45 | G | C5-C6-N1 | 12.08 | 117.54 | 111.50 |
| 19 | A7 | 28 | C | O4'-C1'-N1 | 12.07 | 117.85 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|--------|-------------|----------|
| 1 | AA | 1212 | C | O3'-P-O5' | 12.05 | 126.89 | 104.00 |
| 19 | A7 | 8 | U | N3-C4-O4 | 11.97 | 127.78 | 119.40 |
| 53 | B5 | 920 | A | N1-C6-N6 | 11.97 | 125.78 | 118.60 |
| 19 | A7 | 5 | A | N1-C2-N3 | -11.91 | 123.35 | 129.30 |
| 53 | B5 | 134 | U | P-O3'-C3' | 11.88 | 133.95 | 119.70 |
| 13 | AN | 16 | LYS | N-CA-CB | 11.87 | 131.97 | 110.60 |
| 53 | B5 | 2177 | G | P-O3'-C3' | 11.87 | 133.94 | 119.70 |
| 53 | B5 | 3330 | A | P-O3'-C3' | 11.86 | 133.93 | 119.70 |
| 1 | AA | 1200 | A | N3-C4-N9 | 11.86 | 136.88 | 127.40 |
| 52 | B4 | 21 | C | P-O3'-C3' | 11.83 | 133.90 | 119.70 |
| 13 | AN | 15 | GLY | C-N-CA | 11.80 | 151.21 | 121.70 |
| 53 | B5 | 2314 | U | P-O3'-C3' | 11.75 | 133.80 | 119.70 |
| 1 | AA | 1547 | C | C3'-C2'-C1' | -11.75 | 92.10 | 101.50 |
| 19 | A7 | 71 | G | C2-N3-C4 | 11.73 | 117.77 | 111.90 |
| 19 | A7 | 76 | A | N1-C6-N6 | -11.72 | 111.57 | 118.60 |
| 53 | B5 | 2373 | A | P-O3'-C3' | 11.68 | 133.72 | 119.70 |
| 1 | AA | 1585 | A | N1-C6-N6 | 11.66 | 125.60 | 118.60 |
| 19 | A7 | 62 | A | C5-C6-N1 | 11.66 | 123.53 | 117.70 |
| 1 | AA | 1265 | U | P-O3'-C3' | 11.65 | 133.69 | 119.70 |
| 1 | AA | 1520 | U | OP2-P-O3' | -11.63 | 79.61 | 105.20 |
| 53 | B5 | 810 | A | N1-C6-N6 | 11.60 | 125.56 | 118.60 |
| 7 | AH | 32 | LYS | CA-C-O | -11.59 | 95.77 | 120.10 |
| 53 | B5 | 2474 | G | P-O3'-C3' | 11.59 | 133.60 | 119.70 |
| 53 | B5 | 1915 | A | N1-C6-N6 | 11.52 | 125.51 | 118.60 |
| 19 | A7 | 33 | U | O4'-C1'-N1 | 11.51 | 117.41 | 108.20 |
| 53 | B5 | 2833 | A | N1-C6-N6 | 11.49 | 125.50 | 118.60 |
| 19 | A7 | 64 | A | C4-C5-C6 | -11.49 | 111.26 | 117.00 |
| 53 | B5 | 2520 | A | P-O3'-C3' | 11.48 | 133.48 | 119.70 |
| 19 | A7 | 59 | U | C5-C4-O4 | 11.48 | 132.79 | 125.90 |
| 1 | AA | 1212 | C | OP1-P-O3' | -11.47 | 79.96 | 105.20 |
| 53 | B5 | 3086 | A | N1-C6-N6 | 11.46 | 125.48 | 118.60 |
| 1 | AA | 1517 | U | OP1-P-OP2 | -11.46 | 102.41 | 119.60 |
| 53 | B5 | 620 | U | P-O3'-C3' | 11.45 | 133.44 | 119.70 |
| 53 | B5 | 791 | A | N1-C6-N6 | 11.43 | 125.46 | 118.60 |
| 1 | AA | 1521 | G | OP1-P-OP2 | -11.43 | 102.46 | 119.60 |
| 53 | B5 | 3016 | A | N1-C6-N6 | 11.43 | 125.45 | 118.60 |
| 1 | AA | 1520 | U | OP1-P-O3' | -11.42 | 80.08 | 105.20 |
| 53 | B5 | 219 | A | N1-C6-N6 | 11.38 | 125.43 | 118.60 |
| 1 | AA | 1521 | G | O4'-C4'-C3' | -11.35 | 92.65 | 104.00 |
| 53 | B5 | 2231 | C | C2-N1-C1' | 11.35 | 131.28 | 118.80 |
| 53 | B5 | 820 | A | N1-C6-N6 | 11.35 | 125.41 | 118.60 |
| 19 | A7 | 30 | G | C5-C6-N1 | 11.34 | 117.17 | 111.50 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-----------|--------|-------------|----------|
| 19 | A7 | 27 | C | C2-N3-C4 | -11.32 | 114.24 | 119.90 |
| 53 | B5 | 2748 | A | N1-C6-N6 | 11.32 | 125.39 | 118.60 |
| 1 | AA | 856 | A | C2-N3-C4 | 11.31 | 116.25 | 110.60 |
| 53 | B5 | 1271 | A | N1-C6-N6 | 11.29 | 125.38 | 118.60 |
| 1 | AA | 444 | C | P-O3'-C3' | 11.27 | 133.22 | 119.70 |
| 1 | AA | 1553 | A | OP1-P-OP2 | -11.24 | 102.74 | 119.60 |
| 53 | B5 | 997 | A | N1-C6-N6 | 11.23 | 125.34 | 118.60 |
| 1 | AA | 1521 | G | N3-C2-N2 | 11.22 | 127.75 | 119.90 |
| 1 | AA | 1122 | A | N1-C6-N6 | 11.22 | 125.33 | 118.60 |
| 1 | AA | 1788 | A | N1-C6-N6 | 11.21 | 125.33 | 118.60 |
| 53 | B5 | 2172 | A | N1-C6-N6 | 11.21 | 125.33 | 118.60 |
| 19 | A7 | 56 | C | C2-N3-C4 | 11.20 | 125.50 | 119.90 |
| 53 | B5 | 965 | A | N1-C6-N6 | 11.20 | 125.32 | 118.60 |
| 53 | B5 | 2386 | A | N1-C6-N6 | 11.20 | 125.32 | 118.60 |
| 1 | AA | 100 | A | N1-C6-N6 | 11.18 | 125.31 | 118.60 |
| 53 | B5 | 2671 | A | N1-C6-N6 | 11.18 | 125.31 | 118.60 |
| 53 | B5 | 3049 | A | N1-C6-N6 | 11.18 | 125.31 | 118.60 |
| 53 | B5 | 628 | A | N1-C6-N6 | 11.18 | 125.31 | 118.60 |
| 53 | B5 | 277 | G | P-O3'-C3' | 11.17 | 133.11 | 119.70 |
| 53 | B5 | 1813 | A | N1-C6-N6 | 11.16 | 125.30 | 118.60 |
| 53 | B5 | 433 | A | N1-C6-N6 | 11.16 | 125.30 | 118.60 |
| 1 | AA | 685 | A | N1-C6-N6 | 11.15 | 125.29 | 118.60 |
| 53 | B5 | 2295 | A | N1-C6-N6 | 11.14 | 125.29 | 118.60 |
| 53 | B5 | 608 | A | N1-C6-N6 | 11.14 | 125.28 | 118.60 |
| 19 | A7 | 9 | A | N9-C4-C5 | 11.13 | 110.25 | 105.80 |
| 1 | AA | 929 | A | N1-C6-N6 | 11.13 | 125.28 | 118.60 |
| 53 | B5 | 3322 | A | N1-C6-N6 | 11.12 | 125.27 | 118.60 |
| 53 | B5 | 2811 | A | N1-C6-N6 | 11.11 | 125.27 | 118.60 |
| 53 | B5 | 2897 | A | N1-C6-N6 | 11.10 | 125.26 | 118.60 |
| 53 | B5 | 847 | A | N1-C6-N6 | 11.10 | 125.26 | 118.60 |
| 53 | B5 | 1456 | A | N1-C6-N6 | 11.10 | 125.26 | 118.60 |
| 52 | B4 | 92 | A | N1-C6-N6 | 11.09 | 125.25 | 118.60 |
| 53 | B5 | 119 | U | P-O3'-C3' | 11.08 | 132.99 | 119.70 |
| 53 | B5 | 1048 | A | N1-C6-N6 | 11.07 | 125.24 | 118.60 |
| 53 | B5 | 2447 | A | N1-C6-N6 | 11.07 | 125.24 | 118.60 |
| 53 | B5 | 1818 | U | P-O3'-C3' | 11.06 | 132.97 | 119.70 |
| 53 | B5 | 3385 | U | P-O3'-C3' | 11.06 | 132.97 | 119.70 |
| 1 | AA | 1338 | A | N1-C6-N6 | 11.05 | 125.23 | 118.60 |
| 53 | B5 | 1491 | A | N1-C6-N6 | 11.05 | 125.23 | 118.60 |
| 53 | B5 | 318 | A | N1-C6-N6 | 11.05 | 125.23 | 118.60 |
| 53 | B5 | 926 | A | N1-C6-N6 | 11.05 | 125.23 | 118.60 |
| 1 | AA | 867 | G | O5'-P-OP2 | 11.04 | 123.95 | 110.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|--------|-------------|----------|
| 53 | B5 | 1679 | A | N1-C6-N6 | 11.03 | 125.22 | 118.60 |
| 53 | B5 | 827 | A | N1-C6-N6 | 11.03 | 125.22 | 118.60 |
| 53 | B5 | 1904 | C | O4'-C1'-N1 | 11.02 | 117.02 | 108.20 |
| 53 | B5 | 2480 | A | N1-C6-N6 | 11.02 | 125.21 | 118.60 |
| 53 | B5 | 1165 | A | N1-C6-N6 | 11.02 | 125.21 | 118.60 |
| 1 | AA | 1212 | C | OP2-P-O3' | -11.00 | 81.00 | 105.20 |
| 1 | AA | 1159 | U | P-O3'-C3' | 11.00 | 132.90 | 119.70 |
| 1 | AA | 1654 | U | P-O3'-C3' | 10.98 | 132.88 | 119.70 |
| 1 | AA | 1226 | A | N1-C6-N6 | 10.97 | 125.18 | 118.60 |
| 53 | B5 | 1933 | A | N1-C6-N6 | 10.96 | 125.18 | 118.60 |
| 1 | AA | 62 | A | N1-C6-N6 | 10.96 | 125.17 | 118.60 |
| 53 | B5 | 2279 | A | N1-C6-N6 | 10.95 | 125.17 | 118.60 |
| 1 | AA | 1234 | A | N1-C6-N6 | 10.94 | 125.17 | 118.60 |
| 53 | B5 | 817 | A | N1-C6-N6 | 10.92 | 125.15 | 118.60 |
| 1 | AA | 1491 | A | N1-C6-N6 | 10.91 | 125.15 | 118.60 |
| 53 | B5 | 13 | A | N1-C6-N6 | 10.91 | 125.15 | 118.60 |
| 1 | AA | 1518 | U | O5'-P-OP1 | 10.91 | 123.79 | 110.70 |
| 19 | A7 | 30 | G | N1-C6-O6 | -10.90 | 113.36 | 119.90 |
| 53 | B5 | 828 | A | N1-C6-N6 | 10.90 | 125.14 | 118.60 |
| 1 | AA | 1473 | A | N1-C6-N6 | 10.89 | 125.14 | 118.60 |
| 53 | B5 | 26 | A | N1-C6-N6 | 10.89 | 125.14 | 118.60 |
| 53 | B5 | 2149 | A | N1-C6-N6 | 10.89 | 125.14 | 118.60 |
| 53 | B5 | 2796 | G | P-O3'-C3' | 10.89 | 132.77 | 119.70 |
| 51 | B3 | 55 | A | N1-C6-N6 | 10.89 | 125.14 | 118.60 |
| 53 | B5 | 3320 | A | N1-C6-N6 | 10.89 | 125.13 | 118.60 |
| 1 | AA | 756 | A | N1-C6-N6 | 10.88 | 125.12 | 118.60 |
| 53 | B5 | 324 | A | N1-C6-N6 | 10.87 | 125.12 | 118.60 |
| 53 | B5 | 2224 | A | N1-C6-N6 | 10.87 | 125.12 | 118.60 |
| 52 | B4 | 149 | A | N1-C6-N6 | 10.85 | 125.11 | 118.60 |
| 53 | B5 | 705 | A | N1-C6-N6 | 10.85 | 125.11 | 118.60 |
| 19 | A7 | 68 | U | N3-C2-O2 | -10.84 | 114.61 | 122.20 |
| 1 | AA | 1519 | G | OP1-P-O3' | -10.83 | 81.38 | 105.20 |
| 53 | B5 | 2926 | A | N1-C6-N6 | 10.83 | 125.10 | 118.60 |
| 53 | B5 | 2956 | A | N1-C6-N6 | 10.83 | 125.10 | 118.60 |
| 19 | A7 | 7 | U | O4'-C1'-N1 | 10.82 | 116.86 | 108.20 |
| 53 | B5 | 1715 | A | N1-C6-N6 | 10.82 | 125.09 | 118.60 |
| 53 | B5 | 2419 | A | N1-C6-N6 | 10.82 | 125.09 | 118.60 |
| 53 | B5 | 1529 | A | N1-C6-N6 | 10.82 | 125.09 | 118.60 |
| 53 | B5 | 89 | A | N1-C6-N6 | 10.81 | 125.09 | 118.60 |
| 53 | B5 | 2387 | A | N1-C6-N6 | 10.80 | 125.08 | 118.60 |
| 53 | B5 | 2515 | A | N1-C6-N6 | 10.79 | 125.08 | 118.60 |
| 1 | AA | 68 | A | N1-C6-N6 | 10.79 | 125.07 | 118.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|--------|-------------|----------|
| 52 | B4 | 44 | A | N1-C6-N6 | 10.79 | 125.07 | 118.60 |
| 1 | AA | 799 | A | O5'-P-OP2 | -10.78 | 96.00 | 105.70 |
| 53 | B5 | 1643 | A | N1-C6-N6 | 10.78 | 125.07 | 118.60 |
| 53 | B5 | 2691 | A | N1-C6-N6 | 10.78 | 125.07 | 118.60 |
| 19 | A7 | 5 | A | C4-C5-C6 | -10.77 | 111.62 | 117.00 |
| 53 | B5 | 2215 | A | N1-C6-N6 | 10.77 | 125.06 | 118.60 |
| 1 | AA | 1022 | A | N1-C6-N6 | 10.77 | 125.06 | 118.60 |
| 1 | AA | 855 | A | N1-C6-N6 | 10.76 | 125.06 | 118.60 |
| 1 | AA | 417 | A | N1-C6-N6 | 10.76 | 125.05 | 118.60 |
| 1 | AA | 445 | A | N1-C6-N6 | 10.75 | 125.05 | 118.60 |
| 53 | B5 | 2902 | A | N1-C6-N6 | 10.75 | 125.05 | 118.60 |
| 1 | AA | 1185 | A | N1-C6-N6 | 10.74 | 125.05 | 118.60 |
| 1 | AA | 41 | A | N1-C6-N6 | 10.73 | 125.04 | 118.60 |
| 19 | A7 | 66 | A | N1-C6-N6 | -10.73 | 112.16 | 118.60 |
| 53 | B5 | 1203 | A | N1-C6-N6 | 10.72 | 125.03 | 118.60 |
| 1 | AA | 456 | A | N1-C6-N6 | 10.72 | 125.03 | 118.60 |
| 53 | B5 | 2847 | A | N1-C6-N6 | 10.71 | 125.02 | 118.60 |
| 1 | AA | 804 | A | N1-C6-N6 | 10.70 | 125.02 | 118.60 |
| 53 | B5 | 2609 | A | N1-C6-N6 | 10.70 | 125.02 | 118.60 |
| 53 | B5 | 1080 | A | N1-C6-N6 | 10.70 | 125.02 | 118.60 |
| 19 | A7 | 1 | G | C6-N1-C2 | -10.69 | 118.69 | 125.10 |
| 53 | B5 | 808 | A | N1-C6-N6 | 10.69 | 125.01 | 118.60 |
| 19 | A7 | 44 | A | C5'-C4'-O4' | 10.68 | 121.92 | 109.10 |
| 53 | B5 | 1079 | A | P-O3'-C3' | 10.67 | 132.51 | 119.70 |
| 53 | B5 | 3279 | A | N1-C6-N6 | 10.66 | 125.00 | 118.60 |
| 1 | AA | 1730 | A | N1-C6-N6 | 10.64 | 124.99 | 118.60 |
| 52 | B4 | 43 | A | N1-C6-N6 | 10.64 | 124.98 | 118.60 |
| 53 | B5 | 836 | A | N1-C6-N6 | 10.64 | 124.98 | 118.60 |
| 1 | AA | 1085 | A | N1-C6-N6 | 10.63 | 124.98 | 118.60 |
| 53 | B5 | 2229 | A | N1-C6-N6 | 10.63 | 124.98 | 118.60 |
| 53 | B5 | 2838 | A | N1-C6-N6 | 10.63 | 124.98 | 118.60 |
| 53 | B5 | 1064 | A | N1-C6-N6 | 10.63 | 124.98 | 118.60 |
| 53 | B5 | 1504 | A | N1-C6-N6 | 10.63 | 124.98 | 118.60 |
| 53 | B5 | 2703 | A | N1-C6-N6 | 10.63 | 124.98 | 118.60 |
| 19 | A7 | 69 | U | N1-C2-N3 | 10.63 | 121.28 | 114.90 |
| 53 | B5 | 784 | A | N1-C6-N6 | 10.62 | 124.97 | 118.60 |
| 53 | B5 | 1332 | A | N1-C6-N6 | 10.62 | 124.97 | 118.60 |
| 53 | B5 | 1750 | A | N1-C6-N6 | 10.62 | 124.97 | 118.60 |
| 53 | B5 | 3362 | A | N1-C6-N6 | 10.62 | 124.97 | 118.60 |
| 53 | B5 | 439 | C | O4'-C1'-N1 | 10.61 | 116.69 | 108.20 |
| 53 | B5 | 2139 | A | N1-C6-N6 | 10.61 | 124.97 | 118.60 |
| 1 | AA | 188 | A | N1-C6-N6 | 10.60 | 124.96 | 118.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|--------|-------------|----------|
| 53 | B5 | 1112 | A | N1-C6-N6 | 10.60 | 124.96 | 118.60 |
| 53 | B5 | 254 | A | N1-C6-N6 | 10.59 | 124.95 | 118.60 |
| 53 | B5 | 1291 | A | N1-C6-N6 | 10.59 | 124.96 | 118.60 |
| 53 | B5 | 2326 | A | N1-C6-N6 | 10.59 | 124.96 | 118.60 |
| 53 | B5 | 3218 | A | N1-C6-N6 | 10.59 | 124.96 | 118.60 |
| 53 | B5 | 3245 | A | N1-C6-N6 | 10.59 | 124.95 | 118.60 |
| 1 | AA | 1520 | U | O4'-C1'-N1 | -10.59 | 99.73 | 108.20 |
| 53 | B5 | 974 | A | N1-C6-N6 | 10.58 | 124.95 | 118.60 |
| 1 | AA | 951 | A | N1-C6-N6 | 10.58 | 124.95 | 118.60 |
| 1 | AA | 1792 | A | N1-C6-N6 | 10.58 | 124.95 | 118.60 |
| 53 | B5 | 1027 | A | N1-C6-N6 | 10.57 | 124.94 | 118.60 |
| 53 | B5 | 1120 | A | N1-C6-N6 | 10.57 | 124.94 | 118.60 |
| 53 | B5 | 2837 | A | N1-C6-N6 | 10.55 | 124.93 | 118.60 |
| 53 | B5 | 3073 | A | N1-C6-N6 | 10.55 | 124.93 | 118.60 |
| 53 | B5 | 2143 | A | N1-C6-N6 | 10.55 | 124.93 | 118.60 |
| 53 | B5 | 1003 | A | N1-C6-N6 | 10.54 | 124.92 | 118.60 |
| 53 | B5 | 319 | A | N1-C6-N6 | 10.54 | 124.92 | 118.60 |
| 53 | B5 | 917 | A | N1-C6-N6 | 10.54 | 124.92 | 118.60 |
| 53 | B5 | 1804 | A | N1-C6-N6 | 10.53 | 124.92 | 118.60 |
| 53 | B5 | 1446 | A | N1-C6-N6 | 10.52 | 124.92 | 118.60 |
| 1 | AA | 39 | A | N1-C6-N6 | 10.52 | 124.91 | 118.60 |
| 1 | AA | 858 | G | C5'-C4'-C3' | 10.52 | 132.83 | 116.00 |
| 53 | B5 | 386 | A | N1-C6-N6 | 10.52 | 124.91 | 118.60 |
| 19 | A7 | 53 | G | O4'-C4'-C3' | 10.51 | 114.51 | 104.00 |
| 53 | B5 | 70 | A | N1-C6-N6 | 10.51 | 124.91 | 118.60 |
| 53 | B5 | 2958 | A | N1-C6-N6 | 10.51 | 124.90 | 118.60 |
| 1 | AA | 1521 | G | O4'-C1'-N9 | 10.50 | 116.60 | 108.20 |
| 19 | A7 | 31 | A | N9-C4-C5 | 10.50 | 110.00 | 105.80 |
| 1 | AA | 615 | A | N1-C6-N6 | 10.50 | 124.90 | 118.60 |
| 1 | AA | 1700 | A | N1-C6-N6 | 10.50 | 124.90 | 118.60 |
| 53 | B5 | 1245 | A | N1-C6-N6 | 10.50 | 124.90 | 118.60 |
| 53 | B5 | 607 | A | N1-C6-N6 | 10.49 | 124.90 | 118.60 |
| 53 | B5 | 2491 | A | N1-C6-N6 | 10.49 | 124.90 | 118.60 |
| 53 | B5 | 2656 | A | N1-C6-N6 | 10.49 | 124.90 | 118.60 |
| 53 | B5 | 3113 | A | P-O3'-C3' | 10.49 | 132.29 | 119.70 |
| 53 | B5 | 3323 | A | N1-C6-N6 | 10.49 | 124.90 | 118.60 |
| 53 | B5 | 1893 | A | N1-C6-N6 | 10.48 | 124.89 | 118.60 |
| 53 | B5 | 1787 | A | N1-C6-N6 | 10.48 | 124.89 | 118.60 |
| 53 | B5 | 2674 | A | N1-C6-N6 | 10.48 | 124.89 | 118.60 |
| 53 | B5 | 2679 | A | N1-C6-N6 | 10.48 | 124.89 | 118.60 |
| 53 | B5 | 1418 | A | N1-C6-N6 | 10.48 | 124.89 | 118.60 |
| 53 | B5 | 77 | A | N1-C6-N6 | 10.47 | 124.89 | 118.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-----------|-------|-------------|----------|
| 53 | B5 | 710 | A | N1-C6-N6 | 10.47 | 124.89 | 118.60 |
| 53 | B5 | 3027 | A | N1-C6-N6 | 10.47 | 124.88 | 118.60 |
| 53 | B5 | 3305 | A | N1-C6-N6 | 10.47 | 124.89 | 118.60 |
| 53 | B5 | 100 | A | N1-C6-N6 | 10.47 | 124.88 | 118.60 |
| 53 | B5 | 2120 | A | N1-C6-N6 | 10.47 | 124.88 | 118.60 |
| 1 | AA | 1524 | A | N1-C6-N6 | 10.46 | 124.88 | 118.60 |
| 1 | AA | 962 | A | N1-C6-N6 | 10.46 | 124.88 | 118.60 |
| 53 | B5 | 2636 | A | N1-C6-N6 | 10.46 | 124.88 | 118.60 |
| 53 | B5 | 3168 | A | N1-C6-N6 | 10.46 | 124.87 | 118.60 |
| 1 | AA | 1519 | G | P-O3'-C3' | 10.45 | 132.24 | 119.70 |
| 1 | AA | 171 | A | N1-C6-N6 | 10.45 | 124.87 | 118.60 |
| 1 | AA | 521 | A | N1-C6-N6 | 10.45 | 124.87 | 118.60 |
| 1 | AA | 219 | A | N1-C6-N6 | 10.45 | 124.87 | 118.60 |
| 53 | B5 | 1602 | A | N1-C6-N6 | 10.45 | 124.87 | 118.60 |
| 1 | AA | 954 | A | N1-C6-N6 | 10.44 | 124.87 | 118.60 |
| 1 | AA | 1760 | A | N1-C6-N6 | 10.45 | 124.87 | 118.60 |
| 53 | B5 | 201 | A | N1-C6-N6 | 10.45 | 124.87 | 118.60 |
| 53 | B5 | 2892 | A | N1-C6-N6 | 10.44 | 124.87 | 118.60 |
| 53 | B5 | 12 | A | N1-C6-N6 | 10.44 | 124.86 | 118.60 |
| 53 | B5 | 1287 | A | N1-C6-N6 | 10.44 | 124.86 | 118.60 |
| 1 | AA | 939 | A | N1-C6-N6 | 10.44 | 124.86 | 118.60 |
| 53 | B5 | 3227 | A | N1-C6-N6 | 10.44 | 124.86 | 118.60 |
| 1 | AA | 865 | A | O3'-P-O5' | 10.43 | 123.82 | 104.00 |
| 51 | B3 | 92 | A | N1-C6-N6 | 10.43 | 124.86 | 118.60 |
| 53 | B5 | 2367 | A | N1-C6-N6 | 10.43 | 124.86 | 118.60 |
| 1 | AA | 1217 | A | N1-C6-N6 | 10.42 | 124.85 | 118.60 |
| 53 | B5 | 2188 | A | N1-C6-N6 | 10.41 | 124.85 | 118.60 |
| 19 | A7 | 5 | A | C8-N9-C4 | 10.41 | 109.96 | 105.80 |
| 53 | B5 | 1381 | A | N1-C6-N6 | 10.41 | 124.84 | 118.60 |
| 53 | B5 | 2178 | A | N1-C6-N6 | 10.40 | 124.84 | 118.60 |
| 53 | B5 | 1603 | A | N1-C6-N6 | 10.39 | 124.84 | 118.60 |
| 53 | B5 | 761 | A | N1-C6-N6 | 10.39 | 124.83 | 118.60 |
| 53 | B5 | 2903 | A | N1-C6-N6 | 10.39 | 124.83 | 118.60 |
| 1 | AA | 1129 | A | N1-C6-N6 | 10.39 | 124.83 | 118.60 |
| 53 | B5 | 3046 | A | N1-C6-N6 | 10.38 | 124.83 | 118.60 |
| 1 | AA | 1026 | A | N1-C6-N6 | 10.38 | 124.83 | 118.60 |
| 53 | B5 | 1575 | A | N1-C6-N6 | 10.38 | 124.83 | 118.60 |
| 53 | B5 | 352 | A | N1-C6-N6 | 10.38 | 124.83 | 118.60 |
| 1 | AA | 202 | A | N1-C6-N6 | 10.37 | 124.82 | 118.60 |
| 1 | AA | 707 | A | N1-C6-N6 | 10.38 | 124.83 | 118.60 |
| 53 | B5 | 375 | A | N1-C6-N6 | 10.38 | 124.83 | 118.60 |
| 53 | B5 | 690 | A | N1-C6-N6 | 10.37 | 124.82 | 118.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|--------|-------------|----------|
| 53 | B5 | 775 | A | N1-C6-N6 | 10.37 | 124.82 | 118.60 |
| 53 | B5 | 1025 | A | N1-C6-N6 | 10.37 | 124.82 | 118.60 |
| 1 | AA | 485 | A | N1-C6-N6 | 10.37 | 124.82 | 118.60 |
| 53 | B5 | 67 | A | N1-C6-N6 | 10.36 | 124.81 | 118.60 |
| 53 | B5 | 3039 | C | P-O3'-C3' | 10.36 | 132.13 | 119.70 |
| 1 | AA | 86 | A | N1-C6-N6 | 10.36 | 124.81 | 118.60 |
| 53 | B5 | 2851 | A | N1-C6-N6 | 10.35 | 124.81 | 118.60 |
| 1 | AA | 914 | A | N1-C6-N6 | 10.34 | 124.81 | 118.60 |
| 52 | B4 | 40 | A | N1-C6-N6 | 10.34 | 124.80 | 118.60 |
| 53 | B5 | 409 | A | N1-C6-N6 | 10.34 | 124.80 | 118.60 |
| 53 | B5 | 3299 | A | N1-C6-N6 | 10.34 | 124.80 | 118.60 |
| 53 | B5 | 1079 | A | N1-C6-N6 | 10.33 | 124.80 | 118.60 |
| 1 | AA | 928 | A | N1-C6-N6 | 10.33 | 124.80 | 118.60 |
| 1 | AA | 1554 | A | N1-C6-N6 | 10.33 | 124.80 | 118.60 |
| 53 | B5 | 1676 | A | N1-C6-N6 | 10.33 | 124.80 | 118.60 |
| 1 | AA | 1328 | A | N1-C6-N6 | 10.33 | 124.80 | 118.60 |
| 1 | AA | 1134 | A | P-O3'-C3' | 10.33 | 132.09 | 119.70 |
| 53 | B5 | 602 | A | N1-C6-N6 | 10.33 | 124.80 | 118.60 |
| 53 | B5 | 2304 | C | O4'-C1'-N1 | 10.33 | 116.46 | 108.20 |
| 53 | B5 | 377 | A | N1-C6-N6 | 10.32 | 124.79 | 118.60 |
| 53 | B5 | 2445 | A | N1-C6-N6 | 10.32 | 124.79 | 118.60 |
| 53 | B5 | 222 | A | N1-C6-N6 | 10.32 | 124.79 | 118.60 |
| 19 | A7 | 60 | C | C6-N1-C2 | -10.32 | 116.17 | 120.30 |
| 53 | B5 | 2348 | A | N1-C6-N6 | 10.32 | 124.79 | 118.60 |
| 51 | B3 | 24 | A | N1-C6-N6 | 10.32 | 124.79 | 118.60 |
| 53 | B5 | 2113 | A | N1-C6-N6 | 10.32 | 124.79 | 118.60 |
| 1 | AA | 1422 | A | N1-C6-N6 | 10.31 | 124.79 | 118.60 |
| 53 | B5 | 830 | A | N1-C6-N6 | 10.31 | 124.79 | 118.60 |
| 51 | B3 | 54 | A | N1-C6-N6 | 10.31 | 124.79 | 118.60 |
| 53 | B5 | 783 | A | N1-C6-N6 | 10.31 | 124.78 | 118.60 |
| 53 | B5 | 1231 | A | N1-C6-N6 | 10.31 | 124.78 | 118.60 |
| 53 | B5 | 2256 | A | N1-C6-N6 | 10.31 | 124.78 | 118.60 |
| 53 | B5 | 2195 | C | O4'-C1'-N1 | 10.30 | 116.44 | 108.20 |
| 53 | B5 | 2321 | A | N1-C6-N6 | 10.30 | 124.78 | 118.60 |
| 53 | B5 | 744 | A | N1-C6-N6 | 10.30 | 124.78 | 118.60 |
| 53 | B5 | 2357 | A | N1-C6-N6 | 10.30 | 124.78 | 118.60 |
| 51 | B3 | 101 | A | N1-C6-N6 | 10.29 | 124.78 | 118.60 |
| 53 | B5 | 2145 | A | N1-C6-N6 | 10.29 | 124.78 | 118.60 |
| 1 | AA | 940 | A | N1-C6-N6 | 10.29 | 124.78 | 118.60 |
| 53 | B5 | 1133 | A | N1-C6-N6 | 10.29 | 124.77 | 118.60 |
| 53 | B5 | 621 | A | P-O3'-C3' | 10.29 | 132.05 | 119.70 |
| 53 | B5 | 268 | A | N1-C6-N6 | 10.29 | 124.77 | 118.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|--------|-------------|----------|
| 53 | B5 | 3186 | A | N1-C6-N6 | 10.28 | 124.77 | 118.60 |
| 53 | B5 | 3347 | A | N1-C6-N6 | 10.29 | 124.77 | 118.60 |
| 53 | B5 | 1075 | A | N1-C6-N6 | 10.28 | 124.77 | 118.60 |
| 53 | B5 | 2312 | A | N1-C6-N6 | 10.28 | 124.77 | 118.60 |
| 1 | AA | 1761 | A | N1-C6-N6 | 10.28 | 124.77 | 118.60 |
| 52 | B4 | 10 | A | N1-C6-N6 | 10.28 | 124.77 | 118.60 |
| 53 | B5 | 2341 | A | N1-C6-N6 | 10.28 | 124.77 | 118.60 |
| 1 | AA | 734 | A | N1-C6-N6 | 10.27 | 124.76 | 118.60 |
| 53 | B5 | 1697 | A | N1-C6-N6 | 10.27 | 124.76 | 118.60 |
| 1 | AA | 1754 | A | N1-C6-N6 | 10.27 | 124.76 | 118.60 |
| 53 | B5 | 3170 | A | N1-C6-N6 | 10.27 | 124.76 | 118.60 |
| 1 | AA | 1547 | C | C2'-C3'-O3' | -10.27 | 86.91 | 109.50 |
| 1 | AA | 1354 | A | N1-C6-N6 | 10.27 | 124.76 | 118.60 |
| 1 | AA | 244 | A | N1-C6-N6 | 10.26 | 124.76 | 118.60 |
| 51 | B3 | 70 | A | N1-C6-N6 | 10.26 | 124.76 | 118.60 |
| 52 | B4 | 52 | A | N1-C6-N6 | 10.26 | 124.76 | 118.60 |
| 53 | B5 | 1559 | A | N1-C6-N6 | 10.26 | 124.75 | 118.60 |
| 53 | B5 | 619 | A | N1-C6-N6 | 10.26 | 124.75 | 118.60 |
| 1 | AA | 856 | A | C6-C5-N7 | 10.25 | 139.47 | 132.30 |
| 1 | AA | 1160 | A | N1-C6-N6 | 10.25 | 124.75 | 118.60 |
| 1 | AA | 1612 | A | O4'-C1'-N9 | 10.25 | 116.40 | 108.20 |
| 53 | B5 | 417 | A | N1-C6-N6 | 10.25 | 124.75 | 118.60 |
| 53 | B5 | 1741 | A | N1-C6-N6 | 10.24 | 124.75 | 118.60 |
| 53 | B5 | 2456 | A | N1-C6-N6 | 10.24 | 124.75 | 118.60 |
| 53 | B5 | 2705 | A | P-O3'-C3' | 10.24 | 131.99 | 119.70 |
| 1 | AA | 148 | A | N1-C6-N6 | 10.24 | 124.75 | 118.60 |
| 1 | AA | 470 | A | N1-C6-N6 | 10.24 | 124.74 | 118.60 |
| 1 | AA | 341 | A | N1-C6-N6 | 10.24 | 124.74 | 118.60 |
| 1 | AA | 1168 | A | N1-C6-N6 | 10.24 | 124.74 | 118.60 |
| 1 | AA | 1541 | A | N1-C6-N6 | 10.24 | 124.74 | 118.60 |
| 1 | AA | 162 | A | N1-C6-N6 | 10.23 | 124.74 | 118.60 |
| 1 | AA | 1653 | A | N1-C6-N6 | 10.23 | 124.74 | 118.60 |
| 53 | B5 | 1163 | A | N1-C6-N6 | 10.23 | 124.74 | 118.60 |
| 53 | B5 | 1696 | A | N1-C6-N6 | 10.23 | 124.74 | 118.60 |
| 53 | B5 | 2368 | A | N1-C6-N6 | 10.23 | 124.74 | 118.60 |
| 53 | B5 | 354 | U | P-O3'-C3' | 10.23 | 131.98 | 119.70 |
| 53 | B5 | 2523 | A | N1-C6-N6 | 10.23 | 124.74 | 118.60 |
| 53 | B5 | 2640 | A | N1-C6-N6 | 10.23 | 124.74 | 118.60 |
| 1 | AA | 22 | A | N1-C6-N6 | 10.23 | 124.74 | 118.60 |
| 52 | B4 | 131 | A | N1-C6-N6 | 10.23 | 124.74 | 118.60 |
| 53 | B5 | 2167 | A | N1-C6-N6 | 10.23 | 124.74 | 118.60 |
| 53 | B5 | 71 | A | N1-C6-N6 | 10.22 | 124.73 | 118.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|--------|-------------|----------|
| 1 | AA | 67 | A | N1-C6-N6 | 10.22 | 124.73 | 118.60 |
| 53 | B5 | 1566 | A | N1-C6-N6 | 10.22 | 124.73 | 118.60 |
| 19 | A7 | 9 | A | O4'-C1'-N9 | 10.21 | 116.37 | 108.20 |
| 53 | B5 | 973 | A | N1-C6-N6 | 10.21 | 124.73 | 118.60 |
| 53 | B5 | 1153 | A | N1-C6-N6 | 10.21 | 124.73 | 118.60 |
| 53 | B5 | 2946 | A | N1-C6-N6 | 10.21 | 124.73 | 118.60 |
| 19 | A7 | 44 | A | C8-N9-C4 | -10.21 | 101.72 | 105.80 |
| 1 | AA | 905 | A | N1-C6-N6 | 10.21 | 124.72 | 118.60 |
| 53 | B5 | 2130 | G | N1-C6-O6 | 10.21 | 126.03 | 119.90 |
| 1 | AA | 621 | A | N1-C6-N6 | 10.21 | 124.72 | 118.60 |
| 53 | B5 | 1886 | A | N1-C6-N6 | 10.21 | 124.72 | 118.60 |
| 19 | A7 | 11 | C | N3-C4-C5 | 10.20 | 125.98 | 121.90 |
| 53 | B5 | 348 | A | N1-C6-N6 | 10.20 | 124.72 | 118.60 |
| 1 | AA | 1636 | G | P-O3'-C3' | 10.20 | 131.94 | 119.70 |
| 53 | B5 | 387 | A | N1-C6-N6 | 10.20 | 124.72 | 118.60 |
| 53 | B5 | 1910 | A | N1-C6-N6 | 10.20 | 124.72 | 118.60 |
| 53 | B5 | 2779 | A | N1-C6-N6 | 10.20 | 124.72 | 118.60 |
| 4 | AD | 8 | TYR | CB-CG-CD1 | -10.20 | 114.88 | 121.00 |
| 53 | B5 | 1435 | A | N1-C6-N6 | 10.19 | 124.72 | 118.60 |
| 53 | B5 | 2817 | A | N1-C6-N6 | 10.20 | 124.72 | 118.60 |
| 1 | AA | 1485 | A | N1-C6-N6 | 10.19 | 124.72 | 118.60 |
| 53 | B5 | 884 | A | N1-C6-N6 | 10.19 | 124.71 | 118.60 |
| 52 | B4 | 155 | A | N1-C6-N6 | 10.19 | 124.71 | 118.60 |
| 53 | B5 | 308 | A | N1-C6-N6 | 10.19 | 124.71 | 118.60 |
| 53 | B5 | 2317 | A | N1-C6-N6 | 10.19 | 124.71 | 118.60 |
| 53 | B5 | 585 | A | N1-C6-N6 | 10.18 | 124.71 | 118.60 |
| 53 | B5 | 1159 | A | N1-C6-N6 | 10.18 | 124.71 | 118.60 |
| 53 | B5 | 2539 | A | N1-C6-N6 | 10.18 | 124.71 | 118.60 |
| 53 | B5 | 2511 | A | N1-C6-N6 | 10.18 | 124.71 | 118.60 |
| 1 | AA | 247 | A | N1-C6-N6 | 10.18 | 124.71 | 118.60 |
| 53 | B5 | 408 | A | N1-C6-N6 | 10.18 | 124.71 | 118.60 |
| 1 | AA | 771 | A | N1-C6-N6 | 10.17 | 124.70 | 118.60 |
| 1 | AA | 1140 | A | N1-C6-N6 | 10.17 | 124.70 | 118.60 |
| 53 | B5 | 711 | A | N1-C6-N6 | 10.17 | 124.70 | 118.60 |
| 1 | AA | 1319 | A | N1-C6-N6 | 10.17 | 124.70 | 118.60 |
| 53 | B5 | 925 | A | N1-C6-N6 | 10.17 | 124.70 | 118.60 |
| 1 | AA | 370 | A | N1-C6-N6 | 10.17 | 124.70 | 118.60 |
| 1 | AA | 1196 | G | O4'-C1'-N9 | 10.16 | 116.33 | 108.20 |
| 1 | AA | 1310 | A | N1-C6-N6 | 10.16 | 124.70 | 118.60 |
| 53 | B5 | 157 | A | N1-C6-N6 | 10.16 | 124.70 | 118.60 |
| 53 | B5 | 1193 | A | N1-C6-N6 | 10.16 | 124.70 | 118.60 |
| 53 | B5 | 265 | A | N1-C6-N6 | 10.16 | 124.70 | 118.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 1707 | A | N1-C6-N6 | 10.16 | 124.70 | 118.60 |
| 53 | B5 | 611 | A | N1-C6-N6 | 10.16 | 124.69 | 118.60 |
| 53 | B5 | 2569 | A | N1-C6-N6 | 10.16 | 124.69 | 118.60 |
| 1 | AA | 1385 | A | N1-C6-N6 | 10.15 | 124.69 | 118.60 |
| 53 | B5 | 1062 | A | N1-C6-N6 | 10.15 | 124.69 | 118.60 |
| 53 | B5 | 1704 | A | N1-C6-N6 | 10.15 | 124.69 | 118.60 |
| 52 | B4 | 109 | A | N1-C6-N6 | 10.15 | 124.69 | 118.60 |
| 53 | B5 | 402 | A | N1-C6-N6 | 10.15 | 124.69 | 118.60 |
| 53 | B5 | 2443 | A | N1-C6-N6 | 10.15 | 124.69 | 118.60 |
| 1 | AA | 1720 | A | N1-C6-N6 | 10.14 | 124.69 | 118.60 |
| 1 | AA | 437 | A | N1-C6-N6 | 10.14 | 124.68 | 118.60 |
| 19 | A7 | 25 | C | N3-C4-C5 | 10.14 | 125.96 | 121.90 |
| 53 | B5 | 114 | A | N1-C6-N6 | 10.14 | 124.68 | 118.60 |
| 53 | B5 | 1683 | A | N1-C6-N6 | 10.14 | 124.68 | 118.60 |
| 1 | AA | 965 | A | N1-C6-N6 | 10.14 | 124.68 | 118.60 |
| 52 | B4 | 53 | A | N1-C6-N6 | 10.14 | 124.68 | 118.60 |
| 1 | AA | 301 | A | N1-C6-N6 | 10.13 | 124.68 | 118.60 |
| 1 | AA | 1753 | A | N1-C6-N6 | 10.13 | 124.68 | 118.60 |
| 53 | B5 | 65 | A | N1-C6-N6 | 10.13 | 124.68 | 118.60 |
| 52 | B4 | 60 | U | O4'-C1'-N1 | 10.13 | 116.30 | 108.20 |
| 1 | AA | 505 | A | N1-C6-N6 | 10.12 | 124.67 | 118.60 |
| 1 | AA | 1591 | A | N1-C6-N6 | 10.12 | 124.67 | 118.60 |
| 1 | AA | 859 | A | O4'-C1'-N9 | 10.12 | 116.30 | 108.20 |
| 53 | B5 | 2649 | A | N1-C6-N6 | 10.12 | 124.67 | 118.60 |
| 1 | AA | 391 | A | N1-C6-N6 | 10.12 | 124.67 | 118.60 |
| 1 | AA | 1692 | A | N1-C6-N6 | 10.12 | 124.67 | 118.60 |
| 19 | A7 | 36 | A | O4'-C1'-N9 | 10.12 | 116.30 | 108.20 |
| 53 | B5 | 1085 | A | N1-C6-N6 | 10.12 | 124.67 | 118.60 |
| 53 | B5 | 1273 | A | N1-C6-N6 | 10.12 | 124.67 | 118.60 |
| 53 | B5 | 3127 | A | N1-C6-N6 | 10.12 | 124.67 | 118.60 |
| 53 | B5 | 2716 | U | O4'-C1'-N1 | 10.11 | 116.29 | 108.20 |
| 53 | B5 | 1200 | A | P-O3'-C3' | 10.11 | 131.83 | 119.70 |
| 1 | AA | 1584 | A | N1-C6-N6 | 10.11 | 124.67 | 118.60 |
| 52 | B4 | 89 | A | N1-C6-N6 | 10.11 | 124.67 | 118.60 |
| 53 | B5 | 1847 | A | N1-C6-N6 | 10.11 | 124.67 | 118.60 |
| 53 | B5 | 1921 | A | N1-C6-N6 | 10.11 | 124.66 | 118.60 |
| 53 | B5 | 2540 | A | N1-C6-N6 | 10.10 | 124.66 | 118.60 |
| 53 | B5 | 1909 | A | N1-C6-N6 | 10.10 | 124.66 | 118.60 |
| 53 | B5 | 2931 | C | O4'-C1'-N1 | 10.10 | 116.28 | 108.20 |
| 1 | AA | 1199 | A | N1-C6-N6 | 10.10 | 124.66 | 118.60 |
| 53 | B5 | 418 | A | N1-C6-N6 | 10.10 | 124.66 | 118.60 |
| 53 | B5 | 3174 | A | N1-C6-N6 | 10.10 | 124.66 | 118.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|----------|-------|-------------|----------|
| 53 | B5 | 238 | A | N1-C6-N6 | 10.09 | 124.66 | 118.60 |
| 1 | AA | 1744 | A | N1-C6-N6 | 10.09 | 124.66 | 118.60 |
| 53 | B5 | 1946 | A | N1-C6-N6 | 10.09 | 124.66 | 118.60 |
| 53 | B5 | 677 | A | N1-C6-N6 | 10.09 | 124.65 | 118.60 |
| 53 | B5 | 2255 | A | N1-C6-N6 | 10.09 | 124.66 | 118.60 |
| 53 | B5 | 1879 | A | N1-C6-N6 | 10.09 | 124.65 | 118.60 |
| 53 | B5 | 3336 | A | N1-C6-N6 | 10.09 | 124.65 | 118.60 |
| 53 | B5 | 1647 | A | N1-C6-N6 | 10.08 | 124.65 | 118.60 |
| 53 | B5 | 2390 | A | N1-C6-N6 | 10.08 | 124.65 | 118.60 |
| 53 | B5 | 2910 | A | N1-C6-N6 | 10.08 | 124.65 | 118.60 |
| 53 | B5 | 2432 | A | N1-C6-N6 | 10.08 | 124.65 | 118.60 |
| 53 | B5 | 1835 | A | N1-C6-N6 | 10.08 | 124.65 | 118.60 |
| 53 | B5 | 2559 | A | N1-C6-N6 | 10.08 | 124.65 | 118.60 |
| 1 | AA | 400 | A | N1-C6-N6 | 10.08 | 124.65 | 118.60 |
| 53 | B5 | 3234 | A | N1-C6-N6 | 10.08 | 124.64 | 118.60 |
| 1 | AA | 966 | A | N1-C6-N6 | 10.07 | 124.64 | 118.60 |
| 53 | B5 | 385 | A | N1-C6-N6 | 10.07 | 124.64 | 118.60 |
| 53 | B5 | 1509 | A | N1-C6-N6 | 10.07 | 124.64 | 118.60 |
| 1 | AA | 605 | A | N1-C6-N6 | 10.07 | 124.64 | 118.60 |
| 53 | B5 | 1343 | A | N1-C6-N6 | 10.07 | 124.64 | 118.60 |
| 53 | B5 | 1605 | A | N1-C6-N6 | 10.07 | 124.64 | 118.60 |
| 1 | AA | 1318 | A | N1-C6-N6 | 10.06 | 124.64 | 118.60 |
| 53 | B5 | 2358 | A | N1-C6-N6 | 10.06 | 124.64 | 118.60 |
| 1 | AA | 1230 | A | N1-C6-N6 | 10.06 | 124.63 | 118.60 |
| 53 | B5 | 2919 | A | N1-C6-N6 | 10.06 | 124.63 | 118.60 |
| 1 | AA | 1139 | A | N1-C6-N6 | 10.05 | 124.63 | 118.60 |
| 1 | AA | 1154 | A | N1-C6-N6 | 10.05 | 124.63 | 118.60 |
| 53 | B5 | 952 | A | N1-C6-N6 | 10.05 | 124.63 | 118.60 |
| 53 | B5 | 1881 | A | N1-C6-N6 | 10.05 | 124.63 | 118.60 |
| 53 | B5 | 1290 | A | N1-C6-N6 | 10.05 | 124.63 | 118.60 |
| 1 | AA | 399 | A | N1-C6-N6 | 10.05 | 124.63 | 118.60 |
| 1 | AA | 1398 | A | N1-C6-N6 | 10.05 | 124.63 | 118.60 |
| 53 | B5 | 1757 | A | N1-C6-N6 | 10.05 | 124.63 | 118.60 |
| 53 | B5 | 2736 | A | N1-C6-N6 | 10.05 | 124.63 | 118.60 |
| 1 | AA | 1081 | A | N1-C6-N6 | 10.04 | 124.63 | 118.60 |
| 53 | B5 | 416 | A | N1-C6-N6 | 10.04 | 124.63 | 118.60 |
| 53 | B5 | 1093 | A | N1-C6-N6 | 10.05 | 124.63 | 118.60 |
| 53 | B5 | 2590 | A | N1-C6-N6 | 10.05 | 124.63 | 118.60 |
| 53 | B5 | 1539 | A | N1-C6-N6 | 10.04 | 124.63 | 118.60 |
| 53 | B5 | 846 | A | N1-C6-N6 | 10.04 | 124.62 | 118.60 |
| 53 | B5 | 2628 | A | N1-C6-N6 | 10.04 | 124.62 | 118.60 |
| 53 | B5 | 338 | A | N1-C6-N6 | 10.04 | 124.62 | 118.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-----------|--------|-------------|----------|
| 53 | B5 | 1204 | A | N1-C6-N6 | 10.04 | 124.62 | 118.60 |
| 1 | AA | 180 | A | N1-C6-N6 | 10.03 | 124.62 | 118.60 |
| 1 | AA | 755 | A | N1-C6-N6 | 10.03 | 124.62 | 118.60 |
| 53 | B5 | 2969 | A | N1-C6-N6 | 10.03 | 124.62 | 118.60 |
| 1 | AA | 1467 | A | N1-C6-N6 | 10.03 | 124.62 | 118.60 |
| 53 | B5 | 39 | A | N1-C6-N6 | 10.03 | 124.62 | 118.60 |
| 53 | B5 | 3269 | A | N1-C6-N6 | 10.03 | 124.62 | 118.60 |
| 1 | AA | 737 | A | N1-C6-N6 | 10.03 | 124.61 | 118.60 |
| 1 | AA | 1424 | A | N1-C6-N6 | 10.03 | 124.61 | 118.60 |
| 19 | A7 | 44 | A | C4-C5-C6 | -10.03 | 111.99 | 117.00 |
| 53 | B5 | 736 | A | N1-C6-N6 | 10.02 | 124.61 | 118.60 |
| 1 | AA | 1200 | A | C5-C6-N6 | -10.02 | 115.69 | 123.70 |
| 1 | AA | 61 | A | N1-C6-N6 | 10.02 | 124.61 | 118.60 |
| 53 | B5 | 45 | A | N1-C6-N6 | 10.01 | 124.61 | 118.60 |
| 1 | AA | 401 | A | N1-C6-N6 | 10.01 | 124.61 | 118.60 |
| 1 | AA | 1669 | A | N1-C6-N6 | 10.01 | 124.61 | 118.60 |
| 52 | B4 | 70 | A | N1-C6-N6 | 10.01 | 124.61 | 118.60 |
| 53 | B5 | 389 | A | N1-C6-N6 | 10.01 | 124.60 | 118.60 |
| 1 | AA | 1200 | A | C2-N3-C4 | 10.00 | 115.60 | 110.60 |
| 1 | AA | 452 | A | N1-C6-N6 | 10.00 | 124.60 | 118.60 |
| 53 | B5 | 1102 | A | N1-C6-N6 | 10.00 | 124.60 | 118.60 |
| 53 | B5 | 1503 | A | N1-C6-N6 | 10.00 | 124.60 | 118.60 |
| 53 | B5 | 2601 | A | N1-C6-N6 | 10.00 | 124.60 | 118.60 |
| 53 | B5 | 2761 | G | N1-C6-O6 | 10.00 | 125.90 | 119.90 |
| 19 | A7 | 66 | A | C6-C5-N7 | 10.00 | 139.30 | 132.30 |
| 52 | B4 | 41 | A | N1-C6-N6 | 10.00 | 124.60 | 118.60 |
| 53 | B5 | 578 | A | N1-C6-N6 | 10.00 | 124.60 | 118.60 |
| 53 | B5 | 3000 | A | N1-C6-N6 | 10.00 | 124.60 | 118.60 |
| 1 | AA | 1646 | A | N1-C6-N6 | 9.99 | 124.60 | 118.60 |
| 53 | B5 | 1259 | A | N1-C6-N6 | 9.99 | 124.59 | 118.60 |
| 1 | AA | 1443 | A | N1-C6-N6 | 9.99 | 124.59 | 118.60 |
| 53 | B5 | 2252 | A | N1-C6-N6 | 9.99 | 124.59 | 118.60 |
| 53 | B5 | 1648 | A | N1-C6-N6 | 9.99 | 124.59 | 118.60 |
| 53 | B5 | 2967 | A | N1-C6-N6 | 9.99 | 124.59 | 118.60 |
| 1 | AA | 906 | A | N1-C6-N6 | 9.98 | 124.59 | 118.60 |
| 1 | AA | 938 | A | N1-C6-N6 | 9.98 | 124.59 | 118.60 |
| 52 | B4 | 97 | A | N1-C6-N6 | 9.98 | 124.59 | 118.60 |
| 53 | B5 | 1105 | A | N1-C6-N6 | 9.98 | 124.59 | 118.60 |
| 53 | B5 | 1337 | A | N1-C6-N6 | 9.98 | 124.59 | 118.60 |
| 53 | B5 | 1462 | A | N1-C6-N6 | 9.98 | 124.59 | 118.60 |
| 1 | AA | 438 | A | N1-C6-N6 | 9.98 | 124.59 | 118.60 |
| 1 | AA | 916 | U | P-O3'-C3' | 9.98 | 131.68 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-----------|------|-------------|----------|
| 1 | AA | 1222 | A | N1-C6-N6 | 9.98 | 124.59 | 118.60 |
| 53 | B5 | 806 | A | N1-C6-N6 | 9.98 | 124.59 | 118.60 |
| 1 | AA | 72 | A | N1-C6-N6 | 9.97 | 124.58 | 118.60 |
| 53 | B5 | 1883 | A | N1-C6-N6 | 9.97 | 124.58 | 118.60 |
| 53 | B5 | 2259 | A | N1-C6-N6 | 9.97 | 124.58 | 118.60 |
| 53 | B5 | 2373 | A | N1-C6-N6 | 9.97 | 124.58 | 118.60 |
| 53 | B5 | 2438 | A | N1-C6-N6 | 9.97 | 124.58 | 118.60 |
| 53 | B5 | 365 | A | N1-C6-N6 | 9.97 | 124.58 | 118.60 |
| 53 | B5 | 2131 | A | N1-C6-N6 | 9.97 | 124.58 | 118.60 |
| 1 | AA | 1655 | U | P-O3'-C3' | 9.96 | 131.66 | 119.70 |
| 53 | B5 | 61 | A | N1-C6-N6 | 9.96 | 124.58 | 118.60 |
| 53 | B5 | 355 | A | N1-C6-N6 | 9.96 | 124.58 | 118.60 |
| 53 | B5 | 2900 | A | N1-C6-N6 | 9.96 | 124.58 | 118.60 |
| 1 | AA | 1038 | A | N1-C6-N6 | 9.96 | 124.58 | 118.60 |
| 52 | B4 | 9 | A | N1-C6-N6 | 9.96 | 124.58 | 118.60 |
| 53 | B5 | 2689 | A | N1-C6-N6 | 9.96 | 124.58 | 118.60 |
| 53 | B5 | 3183 | A | N1-C6-N6 | 9.96 | 124.58 | 118.60 |
| 53 | B5 | 325 | A | N1-C6-N6 | 9.96 | 124.58 | 118.60 |
| 53 | B5 | 344 | A | N1-C6-N6 | 9.96 | 124.58 | 118.60 |
| 53 | B5 | 2303 | A | N1-C6-N6 | 9.96 | 124.57 | 118.60 |
| 1 | AA | 1062 | A | N1-C6-N6 | 9.95 | 124.57 | 118.60 |
| 53 | B5 | 1221 | A | N1-C6-N6 | 9.95 | 124.57 | 118.60 |
| 53 | B5 | 1731 | A | N1-C6-N6 | 9.96 | 124.57 | 118.60 |
| 1 | AA | 511 | A | N1-C6-N6 | 9.95 | 124.57 | 118.60 |
| 53 | B5 | 735 | A | N1-C6-N6 | 9.95 | 124.57 | 118.60 |
| 53 | B5 | 1642 | A | N1-C6-N6 | 9.95 | 124.57 | 118.60 |
| 53 | B5 | 2790 | A | N1-C6-N6 | 9.95 | 124.57 | 118.60 |
| 1 | AA | 1752 | A | N1-C6-N6 | 9.95 | 124.57 | 118.60 |
| 53 | B5 | 1558 | A | N1-C6-N6 | 9.95 | 124.57 | 118.60 |
| 53 | B5 | 2971 | A | N1-C6-N6 | 9.95 | 124.57 | 118.60 |
| 53 | B5 | 3029 | A | N1-C6-N6 | 9.94 | 124.57 | 118.60 |
| 1 | AA | 1240 | A | N1-C6-N6 | 9.94 | 124.57 | 118.60 |
| 53 | B5 | 1593 | A | N1-C6-N6 | 9.94 | 124.56 | 118.60 |
| 53 | B5 | 1858 | A | N1-C6-N6 | 9.94 | 124.56 | 118.60 |
| 1 | AA | 1388 | A | N1-C6-N6 | 9.94 | 124.56 | 118.60 |
| 53 | B5 | 657 | A | N1-C6-N6 | 9.94 | 124.56 | 118.60 |
| 53 | B5 | 1225 | A | N1-C6-N6 | 9.94 | 124.56 | 118.60 |
| 53 | B5 | 16 | A | N1-C6-N6 | 9.94 | 124.56 | 118.60 |
| 1 | AA | 105 | A | N1-C6-N6 | 9.93 | 124.56 | 118.60 |
| 1 | AA | 1326 | A | N1-C6-N6 | 9.93 | 124.56 | 118.60 |
| 1 | AA | 1379 | A | N1-C6-N6 | 9.93 | 124.56 | 118.60 |
| 53 | B5 | 357 | A | N1-C6-N6 | 9.93 | 124.56 | 118.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 2104 | A | N1-C6-N6 | 9.93 | 124.56 | 118.60 |
| 53 | B5 | 532 | A | N1-C6-N6 | 9.93 | 124.56 | 118.60 |
| 53 | B5 | 2694 | A | N1-C6-N6 | 9.93 | 124.56 | 118.60 |
| 53 | B5 | 374 | A | N1-C6-N6 | 9.93 | 124.56 | 118.60 |
| 53 | B5 | 1911 | A | N1-C6-N6 | 9.92 | 124.56 | 118.60 |
| 1 | AA | 1687 | A | N1-C6-N6 | 9.92 | 124.55 | 118.60 |
| 53 | B5 | 2399 | A | N1-C6-N6 | 9.92 | 124.55 | 118.60 |
| 53 | B5 | 2401 | A | N1-C6-N6 | 9.92 | 124.55 | 118.60 |
| 53 | B5 | 2635 | A | N1-C6-N6 | 9.92 | 124.55 | 118.60 |
| 1 | AA | 757 | A | N1-C6-N6 | 9.91 | 124.55 | 118.60 |
| 53 | B5 | 3165 | A | N1-C6-N6 | 9.91 | 124.55 | 118.60 |
| 53 | B5 | 1419 | A | N1-C6-N6 | 9.91 | 124.55 | 118.60 |
| 53 | B5 | 2462 | A | N1-C6-N6 | 9.91 | 124.55 | 118.60 |
| 53 | B5 | 3372 | A | N1-C6-N6 | 9.91 | 124.55 | 118.60 |
| 1 | AA | 378 | A | N1-C6-N6 | 9.91 | 124.55 | 118.60 |
| 53 | B5 | 3243 | A | N1-C6-N6 | 9.91 | 124.55 | 118.60 |
| 1 | AA | 1583 | U | C4'-C3'-C2' | -9.91 | 92.69 | 102.60 |
| 1 | AA | 1728 | A | N1-C6-N6 | 9.91 | 124.54 | 118.60 |
| 53 | B5 | 62 | A | N1-C6-N6 | 9.91 | 124.54 | 118.60 |
| 1 | AA | 1284 | A | N1-C6-N6 | 9.90 | 124.54 | 118.60 |
| 53 | B5 | 1534 | A | N1-C6-N6 | 9.90 | 124.54 | 118.60 |
| 53 | B5 | 2733 | A | N1-C6-N6 | 9.90 | 124.54 | 118.60 |
| 53 | B5 | 3134 | A | N1-C6-N6 | 9.90 | 124.54 | 118.60 |
| 53 | B5 | 666 | A | N1-C6-N6 | 9.90 | 124.54 | 118.60 |
| 53 | B5 | 3126 | C | O4'-C1'-N1 | 9.90 | 116.12 | 108.20 |
| 1 | AA | 538 | A | N1-C6-N6 | 9.90 | 124.54 | 118.60 |
| 1 | AA | 1408 | A | N1-C6-N6 | 9.90 | 124.54 | 118.60 |
| 53 | B5 | 933 | A | N1-C6-N6 | 9.89 | 124.54 | 118.60 |
| 53 | B5 | 2198 | A | N1-C6-N6 | 9.89 | 124.54 | 118.60 |
| 53 | B5 | 3011 | A | N1-C6-N6 | 9.89 | 124.54 | 118.60 |
| 1 | AA | 85 | A | N1-C6-N6 | 9.89 | 124.54 | 118.60 |
| 53 | B5 | 2676 | A | N1-C6-N6 | 9.89 | 124.54 | 118.60 |
| 1 | AA | 1148 | A | N1-C6-N6 | 9.89 | 124.53 | 118.60 |
| 1 | AA | 1719 | A | N1-C6-N6 | 9.89 | 124.53 | 118.60 |
| 53 | B5 | 2219 | A | N1-C6-N6 | 9.89 | 124.53 | 118.60 |
| 53 | B5 | 998 | A | N1-C6-N6 | 9.89 | 124.53 | 118.60 |
| 53 | B5 | 2982 | A | N1-C6-N6 | 9.89 | 124.53 | 118.60 |
| 53 | B5 | 397 | A | N1-C6-N6 | 9.88 | 124.53 | 118.60 |
| 53 | B5 | 742 | G | P-O3'-C3' | 9.88 | 131.56 | 119.70 |
| 53 | B5 | 1454 | A | N1-C6-N6 | 9.88 | 124.53 | 118.60 |
| 19 | A7 | 38 | A | C4-C5-C6 | -9.88 | 112.06 | 117.00 |
| 1 | AA | 254 | A | N1-C6-N6 | 9.88 | 124.53 | 118.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-----------|------|-------------|----------|
| 1 | AA | 1113 | A | N1-C6-N6 | 9.88 | 124.53 | 118.60 |
| 53 | B5 | 284 | A | N1-C6-N6 | 9.88 | 124.53 | 118.60 |
| 53 | B5 | 307 | A | N1-C6-N6 | 9.88 | 124.53 | 118.60 |
| 1 | AA | 515 | A | N1-C6-N6 | 9.88 | 124.53 | 118.60 |
| 53 | B5 | 313 | A | N1-C6-N6 | 9.88 | 124.53 | 118.60 |
| 53 | B5 | 915 | A | N1-C6-N6 | 9.88 | 124.53 | 118.60 |
| 1 | AA | 28 | A | N1-C6-N6 | 9.88 | 124.53 | 118.60 |
| 53 | B5 | 235 | A | N1-C6-N6 | 9.87 | 124.52 | 118.60 |
| 53 | B5 | 1401 | A | N1-C6-N6 | 9.87 | 124.52 | 118.60 |
| 53 | B5 | 1535 | A | N1-C6-N6 | 9.87 | 124.52 | 118.60 |
| 53 | B5 | 1841 | A | N1-C6-N6 | 9.87 | 124.52 | 118.60 |
| 1 | AA | 367 | A | N1-C6-N6 | 9.87 | 124.52 | 118.60 |
| 1 | AA | 788 | A | N1-C6-N6 | 9.87 | 124.52 | 118.60 |
| 53 | B5 | 1932 | A | N1-C6-N6 | 9.87 | 124.52 | 118.60 |
| 53 | B5 | 2792 | A | N1-C6-N6 | 9.87 | 124.52 | 118.60 |
| 1 | AA | 300 | A | N1-C6-N6 | 9.87 | 124.52 | 118.60 |
| 1 | AA | 352 | A | N1-C6-N6 | 9.86 | 124.52 | 118.60 |
| 53 | B5 | 1040 | A | N1-C6-N6 | 9.86 | 124.52 | 118.60 |
| 53 | B5 | 2144 | A | N1-C6-N6 | 9.86 | 124.52 | 118.60 |
| 53 | B5 | 3185 | A | N1-C6-N6 | 9.86 | 124.52 | 118.60 |
| 1 | AA | 770 | A | N1-C6-N6 | 9.86 | 124.52 | 118.60 |
| 52 | B4 | 57 | C | P-O3'-C3' | 9.86 | 131.53 | 119.70 |
| 53 | B5 | 523 | A | N1-C6-N6 | 9.86 | 124.52 | 118.60 |
| 53 | B5 | 660 | A | N1-C6-N6 | 9.86 | 124.52 | 118.60 |
| 53 | B5 | 1699 | A | N1-C6-N6 | 9.86 | 124.52 | 118.60 |
| 53 | B5 | 3048 | A | N1-C6-N6 | 9.86 | 124.52 | 118.60 |
| 1 | AA | 164 | A | N1-C6-N6 | 9.86 | 124.52 | 118.60 |
| 1 | AA | 1738 | A | N1-C6-N6 | 9.86 | 124.52 | 118.60 |
| 53 | B5 | 3391 | A | N1-C6-N6 | 9.86 | 124.52 | 118.60 |
| 53 | B5 | 6 | A | N1-C6-N6 | 9.86 | 124.51 | 118.60 |
| 1 | AA | 366 | A | N1-C6-N6 | 9.85 | 124.51 | 118.60 |
| 1 | AA | 904 | A | N1-C6-N6 | 9.85 | 124.51 | 118.60 |
| 53 | B5 | 882 | A | N1-C6-N6 | 9.85 | 124.51 | 118.60 |
| 53 | B5 | 3142 | A | N1-C6-N6 | 9.85 | 124.51 | 118.60 |
| 53 | B5 | 3017 | A | N1-C6-N6 | 9.85 | 124.51 | 118.60 |
| 19 | A7 | 76 | A | C6-C5-N7 | 9.85 | 139.19 | 132.30 |
| 51 | B3 | 77 | A | N1-C6-N6 | 9.85 | 124.51 | 118.60 |
| 53 | B5 | 1055 | A | N1-C6-N6 | 9.85 | 124.51 | 118.60 |
| 1 | AA | 156 | A | N1-C6-N6 | 9.85 | 124.51 | 118.60 |
| 1 | AA | 1717 | A | N1-C6-N6 | 9.85 | 124.51 | 118.60 |
| 53 | B5 | 2799 | A | N1-C6-N6 | 9.85 | 124.51 | 118.60 |
| 1 | AA | 471 | A | N1-C6-N6 | 9.84 | 124.51 | 118.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 1945 | A | N1-C6-N6 | 9.84 | 124.50 | 118.60 |
| 1 | AA | 850 | A | N1-C6-N6 | 9.84 | 124.50 | 118.60 |
| 53 | B5 | 557 | A | N1-C6-N6 | 9.84 | 124.50 | 118.60 |
| 1 | AA | 789 | A | N1-C6-N6 | 9.84 | 124.50 | 118.60 |
| 53 | B5 | 2147 | A | N1-C6-N6 | 9.83 | 124.50 | 118.60 |
| 1 | AA | 138 | A | N1-C6-N6 | 9.83 | 124.50 | 118.60 |
| 1 | AA | 359 | A | N1-C6-N6 | 9.83 | 124.50 | 118.60 |
| 53 | B5 | 3035 | A | N1-C6-N6 | 9.83 | 124.50 | 118.60 |
| 53 | B5 | 1235 | U | P-O3'-C3' | 9.83 | 131.50 | 119.70 |
| 4 | AD | 8 | TYR | CB-CG-CD2 | 9.82 | 126.89 | 121.00 |
| 53 | B5 | 1490 | A | N1-C6-N6 | 9.82 | 124.50 | 118.60 |
| 53 | B5 | 2166 | A | N1-C6-N6 | 9.82 | 124.49 | 118.60 |
| 1 | AA | 1163 | A | N1-C6-N6 | 9.82 | 124.49 | 118.60 |
| 53 | B5 | 367 | A | N1-C6-N6 | 9.82 | 124.49 | 118.60 |
| 1 | AA | 387 | A | N1-C6-N6 | 9.82 | 124.49 | 118.60 |
| 1 | AA | 541 | A | N1-C6-N6 | 9.81 | 124.49 | 118.60 |
| 1 | AA | 1544 | G | O5'-P-OP1 | 9.81 | 122.48 | 110.70 |
| 53 | B5 | 144 | A | N1-C6-N6 | 9.81 | 124.49 | 118.60 |
| 53 | B5 | 551 | A | N1-C6-N6 | 9.81 | 124.49 | 118.60 |
| 1 | AA | 140 | A | N1-C6-N6 | 9.81 | 124.49 | 118.60 |
| 53 | B5 | 3175 | C | O4'-C1'-N1 | 9.81 | 116.05 | 108.20 |
| 1 | AA | 542 | A | N1-C6-N6 | 9.81 | 124.48 | 118.60 |
| 1 | AA | 1699 | A | N1-C6-N6 | 9.81 | 124.48 | 118.60 |
| 19 | A7 | 69 | U | C5-C4-O4 | -9.81 | 120.02 | 125.90 |
| 53 | B5 | 598 | A | N1-C6-N6 | 9.81 | 124.48 | 118.60 |
| 1 | AA | 78 | A | N1-C6-N6 | 9.81 | 124.48 | 118.60 |
| 1 | AA | 397 | A | N1-C6-N6 | 9.80 | 124.48 | 118.60 |
| 1 | AA | 922 | A | N1-C6-N6 | 9.80 | 124.48 | 118.60 |
| 1 | AA | 1309 | A | N1-C6-N6 | 9.80 | 124.48 | 118.60 |
| 53 | B5 | 1842 | A | N1-C6-N6 | 9.80 | 124.48 | 118.60 |
| 53 | B5 | 1594 | A | N1-C6-N6 | 9.80 | 124.48 | 118.60 |
| 53 | B5 | 2721 | A | N1-C6-N6 | 9.80 | 124.48 | 118.60 |
| 1 | AA | 1567 | A | N1-C6-N6 | 9.80 | 124.48 | 118.60 |
| 1 | AA | 215 | A | N1-C6-N6 | 9.80 | 124.48 | 118.60 |
| 19 | A7 | 11 | C | C6-N1-C2 | -9.80 | 116.38 | 120.30 |
| 19 | A7 | 53 | G | N7-C8-N9 | 9.80 | 118.00 | 113.10 |
| 51 | B3 | 94 | A | N1-C6-N6 | 9.80 | 124.48 | 118.60 |
| 52 | B4 | 66 | A | N1-C6-N6 | 9.80 | 124.48 | 118.60 |
| 53 | B5 | 1506 | A | N1-C6-N6 | 9.80 | 124.48 | 118.60 |
| 53 | B5 | 2520 | A | N1-C6-N6 | 9.80 | 124.48 | 118.60 |
| 1 | AA | 119 | A | N1-C6-N6 | 9.80 | 124.48 | 118.60 |
| 19 | A7 | 6 | U | C4-C5-C6 | 9.80 | 125.58 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|------|-------------|----------|
| 53 | B5 | 123 | A | N1-C6-N6 | 9.80 | 124.48 | 118.60 |
| 1 | AA | 506 | A | N1-C6-N6 | 9.79 | 124.48 | 118.60 |
| 51 | B3 | 17 | A | N1-C6-N6 | 9.79 | 124.48 | 118.60 |
| 52 | B4 | 33 | A | N1-C6-N6 | 9.79 | 124.48 | 118.60 |
| 53 | B5 | 211 | A | N1-C6-N6 | 9.80 | 124.48 | 118.60 |
| 53 | B5 | 317 | A | N1-C6-N6 | 9.79 | 124.48 | 118.60 |
| 53 | B5 | 2643 | A | N1-C6-N6 | 9.79 | 124.48 | 118.60 |
| 53 | B5 | 3123 | A | N1-C6-N6 | 9.79 | 124.48 | 118.60 |
| 1 | AA | 803 | A | N1-C6-N6 | 9.79 | 124.47 | 118.60 |
| 52 | B4 | 3 | A | N1-C6-N6 | 9.79 | 124.47 | 118.60 |
| 53 | B5 | 187 | A | N1-C6-N6 | 9.79 | 124.47 | 118.60 |
| 53 | B5 | 2561 | A | N1-C6-N6 | 9.79 | 124.47 | 118.60 |
| 1 | AA | 220 | A | N1-C6-N6 | 9.79 | 124.47 | 118.60 |
| 53 | B5 | 1580 | A | N1-C6-N6 | 9.79 | 124.47 | 118.60 |
| 1 | AA | 1397 | A | N1-C6-N6 | 9.79 | 124.47 | 118.60 |
| 53 | B5 | 2734 | A | N1-C6-N6 | 9.79 | 124.47 | 118.60 |
| 53 | B5 | 2872 | A | N1-C6-N6 | 9.79 | 124.47 | 118.60 |
| 53 | B5 | 1084 | A | N1-C6-N6 | 9.79 | 124.47 | 118.60 |
| 1 | AA | 181 | A | N1-C6-N6 | 9.79 | 124.47 | 118.60 |
| 53 | B5 | 2106 | A | N1-C6-N6 | 9.79 | 124.47 | 118.60 |
| 53 | B5 | 1054 | A | N1-C6-N6 | 9.78 | 124.47 | 118.60 |
| 53 | B5 | 1867 | A | N1-C6-N6 | 9.78 | 124.47 | 118.60 |
| 1 | AA | 169 | A | N1-C6-N6 | 9.78 | 124.47 | 118.60 |
| 1 | AA | 271 | A | N1-C6-N6 | 9.78 | 124.47 | 118.60 |
| 1 | AA | 1345 | A | N1-C6-N6 | 9.78 | 124.47 | 118.60 |
| 53 | B5 | 3094 | A | N1-C6-N6 | 9.78 | 124.47 | 118.60 |
| 1 | AA | 570 | A | N1-C6-N6 | 9.78 | 124.47 | 118.60 |
| 1 | AA | 1433 | A | N1-C6-N6 | 9.78 | 124.47 | 118.60 |
| 52 | B4 | 54 | A | N1-C6-N6 | 9.78 | 124.47 | 118.60 |
| 53 | B5 | 423 | A | N1-C6-N6 | 9.78 | 124.47 | 118.60 |
| 53 | B5 | 327 | A | N1-C6-N6 | 9.78 | 124.47 | 118.60 |
| 53 | B5 | 594 | A | N1-C6-N6 | 9.78 | 124.47 | 118.60 |
| 53 | B5 | 285 | A | N1-C6-N6 | 9.78 | 124.47 | 118.60 |
| 1 | AA | 1190 | A | N1-C6-N6 | 9.77 | 124.46 | 118.60 |
| 1 | AA | 1215 | A | N1-C6-N6 | 9.77 | 124.46 | 118.60 |
| 1 | AA | 1220 | A | N1-C6-N6 | 9.77 | 124.46 | 118.60 |
| 53 | B5 | 255 | A | N1-C6-N6 | 9.77 | 124.46 | 118.60 |
| 53 | B5 | 1872 | C | O4'-C1'-N1 | 9.77 | 116.02 | 108.20 |
| 53 | B5 | 680 | G | N1-C6-O6 | 9.77 | 125.76 | 119.90 |
| 53 | B5 | 2397 | A | N1-C6-N6 | 9.77 | 124.46 | 118.60 |
| 53 | B5 | 2500 | A | N1-C6-N6 | 9.77 | 124.46 | 118.60 |
| 52 | B4 | 13 | A | N1-C6-N6 | 9.77 | 124.46 | 118.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|------|-------------|----------|
| 53 | B5 | 936 | A | N1-C6-N6 | 9.77 | 124.46 | 118.60 |
| 53 | B5 | 1205 | A | N1-C6-N6 | 9.77 | 124.46 | 118.60 |
| 53 | B5 | 2535 | A | N1-C6-N6 | 9.77 | 124.46 | 118.60 |
| 53 | B5 | 2673 | A | N1-C6-N6 | 9.77 | 124.46 | 118.60 |
| 53 | B5 | 3039 | C | O4'-C1'-N1 | 9.77 | 116.02 | 108.20 |
| 53 | B5 | 1180 | A | N1-C6-N6 | 9.77 | 124.46 | 118.60 |
| 53 | B5 | 2991 | A | N1-C6-N6 | 9.77 | 124.46 | 118.60 |
| 53 | B5 | 3370 | A | N1-C6-N6 | 9.76 | 124.46 | 118.60 |
| 1 | AA | 1058 | A | N1-C6-N6 | 9.76 | 124.46 | 118.60 |
| 53 | B5 | 3012 | A | N1-C6-N6 | 9.76 | 124.46 | 118.60 |
| 53 | B5 | 876 | A | N1-C6-N6 | 9.76 | 124.45 | 118.60 |
| 53 | B5 | 361 | A | N1-C6-N6 | 9.76 | 124.45 | 118.60 |
| 1 | AA | 1333 | A | N1-C6-N6 | 9.75 | 124.45 | 118.60 |
| 1 | AA | 1779 | A | N1-C6-N6 | 9.75 | 124.45 | 118.60 |
| 53 | B5 | 3223 | A | N1-C6-N6 | 9.75 | 124.45 | 118.60 |
| 1 | AA | 713 | A | N1-C6-N6 | 9.75 | 124.45 | 118.60 |
| 19 | A7 | 7 | U | C4-C5-C6 | 9.75 | 125.55 | 119.70 |
| 53 | B5 | 501 | A | N1-C6-N6 | 9.75 | 124.45 | 118.60 |
| 53 | B5 | 569 | A | N1-C6-N6 | 9.75 | 124.45 | 118.60 |
| 53 | B5 | 697 | A | N1-C6-N6 | 9.75 | 124.45 | 118.60 |
| 1 | AA | 295 | A | N1-C6-N6 | 9.75 | 124.45 | 118.60 |
| 1 | AA | 534 | A | N1-C6-N6 | 9.75 | 124.45 | 118.60 |
| 1 | AA | 684 | A | N1-C6-N6 | 9.75 | 124.45 | 118.60 |
| 1 | AA | 1223 | A | N1-C6-N6 | 9.75 | 124.45 | 118.60 |
| 53 | B5 | 1524 | A | N1-C6-N6 | 9.74 | 124.45 | 118.60 |
| 1 | AA | 1121 | A | N1-C6-N6 | 9.74 | 124.44 | 118.60 |
| 51 | B3 | 82 | A | N1-C6-N6 | 9.74 | 124.45 | 118.60 |
| 53 | B5 | 1200 | A | N1-C6-N6 | 9.74 | 124.44 | 118.60 |
| 53 | B5 | 720 | A | N1-C6-N6 | 9.74 | 124.44 | 118.60 |
| 53 | B5 | 2243 | A | N1-C6-N6 | 9.74 | 124.44 | 118.60 |
| 1 | AA | 265 | A | N1-C6-N6 | 9.74 | 124.44 | 118.60 |
| 1 | AA | 420 | A | N1-C6-N6 | 9.74 | 124.44 | 118.60 |
| 53 | B5 | 580 | C | O4'-C1'-N1 | 9.74 | 115.99 | 108.20 |
| 53 | B5 | 1303 | A | N1-C6-N6 | 9.74 | 124.44 | 118.60 |
| 53 | B5 | 1760 | A | N1-C6-N6 | 9.74 | 124.44 | 118.60 |
| 53 | B5 | 888 | A | N1-C6-N6 | 9.73 | 124.44 | 118.60 |
| 53 | B5 | 1135 | A | N1-C6-N6 | 9.73 | 124.44 | 118.60 |
| 53 | B5 | 2813 | A | N1-C6-N6 | 9.73 | 124.44 | 118.60 |
| 1 | AA | 145 | A | N1-C6-N6 | 9.73 | 124.44 | 118.60 |
| 1 | AA | 527 | A | N1-C6-N6 | 9.73 | 124.44 | 118.60 |
| 53 | B5 | 706 | A | N1-C6-N6 | 9.73 | 124.44 | 118.60 |
| 53 | B5 | 1202 | A | N1-C6-N6 | 9.73 | 124.44 | 118.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|------|-------------|----------|
| 53 | B5 | 2330 | C | O4'-C1'-N1 | 9.73 | 115.99 | 108.20 |
| 53 | B5 | 755 | A | N1-C6-N6 | 9.73 | 124.44 | 118.60 |
| 53 | B5 | 786 | A | N1-C6-N6 | 9.73 | 124.44 | 118.60 |
| 53 | B5 | 1798 | A | N1-C6-N6 | 9.73 | 124.44 | 118.60 |
| 53 | B5 | 122 | A | N1-C6-N6 | 9.73 | 124.44 | 118.60 |
| 1 | AA | 477 | A | N1-C6-N6 | 9.73 | 124.44 | 118.60 |
| 1 | AA | 972 | A | N1-C6-N6 | 9.73 | 124.44 | 118.60 |
| 53 | B5 | 1850 | A | N1-C6-N6 | 9.73 | 124.44 | 118.60 |
| 53 | B5 | 1936 | A | N1-C6-N6 | 9.73 | 124.44 | 118.60 |
| 53 | B5 | 3206 | A | N1-C6-N6 | 9.73 | 124.44 | 118.60 |
| 1 | AA | 1612 | A | N1-C6-N6 | 9.73 | 124.44 | 118.60 |
| 53 | B5 | 113 | C | O4'-C1'-N1 | 9.73 | 115.98 | 108.20 |
| 53 | B5 | 550 | A | N1-C6-N6 | 9.73 | 124.44 | 118.60 |
| 53 | B5 | 738 | A | N1-C6-N6 | 9.73 | 124.44 | 118.60 |
| 53 | B5 | 1169 | A | N1-C6-N6 | 9.73 | 124.44 | 118.60 |
| 1 | AA | 92 | A | N1-C6-N6 | 9.72 | 124.43 | 118.60 |
| 1 | AA | 1090 | A | N1-C6-N6 | 9.72 | 124.44 | 118.60 |
| 1 | AA | 407 | A | N1-C6-N6 | 9.72 | 124.43 | 118.60 |
| 51 | B3 | 45 | A | N1-C6-N6 | 9.72 | 124.44 | 118.60 |
| 53 | B5 | 665 | A | N1-C6-N6 | 9.72 | 124.43 | 118.60 |
| 53 | B5 | 1654 | A | N1-C6-N6 | 9.72 | 124.43 | 118.60 |
| 1 | AA | 1780 | A | N1-C6-N6 | 9.72 | 124.43 | 118.60 |
| 53 | B5 | 1006 | A | N1-C6-N6 | 9.72 | 124.43 | 118.60 |
| 53 | B5 | 1223 | A | N1-C6-N6 | 9.72 | 124.43 | 118.60 |
| 53 | B5 | 2637 | A | N1-C6-N6 | 9.72 | 124.43 | 118.60 |
| 52 | B4 | 77 | A | N1-C6-N6 | 9.72 | 124.43 | 118.60 |
| 53 | B5 | 2642 | A | N1-C6-N6 | 9.71 | 124.43 | 118.60 |
| 53 | B5 | 2896 | A | N1-C6-N6 | 9.72 | 124.43 | 118.60 |
| 53 | B5 | 3344 | A | N1-C6-N6 | 9.72 | 124.43 | 118.60 |
| 53 | B5 | 3113 | A | N1-C6-N6 | 9.71 | 124.43 | 118.60 |
| 1 | AA | 108 | A | N1-C6-N6 | 9.71 | 124.43 | 118.60 |
| 53 | B5 | 715 | A | N1-C6-N6 | 9.71 | 124.43 | 118.60 |
| 1 | AA | 221 | A | N1-C6-N6 | 9.71 | 124.43 | 118.60 |
| 1 | AA | 678 | A | N1-C6-N6 | 9.71 | 124.43 | 118.60 |
| 53 | B5 | 1461 | A | N1-C6-N6 | 9.71 | 124.43 | 118.60 |
| 53 | B5 | 2424 | A | N1-C6-N6 | 9.71 | 124.42 | 118.60 |
| 1 | AA | 47 | A | N1-C6-N6 | 9.71 | 124.42 | 118.60 |
| 19 | A7 | 61 | C | N1-C2-O2 | 9.71 | 124.72 | 118.90 |
| 52 | B4 | 12 | A | N1-C6-N6 | 9.71 | 124.42 | 118.60 |
| 53 | B5 | 334 | A | N1-C6-N6 | 9.70 | 124.42 | 118.60 |
| 1 | AA | 410 | A | N1-C6-N6 | 9.70 | 124.42 | 118.60 |
| 1 | AA | 860 | U | O4'-C1'-N1 | 9.70 | 115.96 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|------|-------------|----------|
| 1 | AA | 1551 | G | O5'-P-OP1 | 9.70 | 122.34 | 110.70 |
| 1 | AA | 1501 | A | N1-C6-N6 | 9.70 | 124.42 | 118.60 |
| 53 | B5 | 653 | A | N1-C6-N6 | 9.70 | 124.42 | 118.60 |
| 53 | B5 | 3375 | A | N1-C6-N6 | 9.70 | 124.42 | 118.60 |
| 53 | B5 | 2488 | A | N1-C6-N6 | 9.69 | 124.42 | 118.60 |
| 53 | B5 | 2746 | A | N1-C6-N6 | 9.70 | 124.42 | 118.60 |
| 1 | AA | 416 | A | N1-C6-N6 | 9.69 | 124.42 | 118.60 |
| 1 | AA | 1421 | A | N1-C6-N6 | 9.69 | 124.42 | 118.60 |
| 1 | AA | 1789 | A | N1-C6-N6 | 9.69 | 124.41 | 118.60 |
| 53 | B5 | 3070 | A | N1-C6-N6 | 9.69 | 124.41 | 118.60 |
| 1 | AA | 1089 | A | N1-C6-N6 | 9.69 | 124.41 | 118.60 |
| 53 | B5 | 165 | A | N1-C6-N6 | 9.69 | 124.41 | 118.60 |
| 53 | B5 | 692 | A | N1-C6-N6 | 9.69 | 124.41 | 118.60 |
| 53 | B5 | 1308 | A | N1-C6-N6 | 9.69 | 124.41 | 118.60 |
| 53 | B5 | 2740 | A | N1-C6-N6 | 9.69 | 124.41 | 118.60 |
| 53 | B5 | 896 | A | N1-C6-N6 | 9.69 | 124.41 | 118.60 |
| 53 | B5 | 990 | A | N1-C6-N6 | 9.69 | 124.41 | 118.60 |
| 53 | B5 | 1452 | A | N1-C6-N6 | 9.69 | 124.41 | 118.60 |
| 1 | AA | 661 | A | N1-C6-N6 | 9.68 | 124.41 | 118.60 |
| 53 | B5 | 645 | A | N1-C6-N6 | 9.68 | 124.41 | 118.60 |
| 1 | AA | 441 | A | N1-C6-N6 | 9.68 | 124.41 | 118.60 |
| 1 | AA | 1088 | A | N1-C6-N6 | 9.68 | 124.41 | 118.60 |
| 1 | AA | 1414 | A | N1-C6-N6 | 9.68 | 124.41 | 118.60 |
| 1 | AA | 1490 | A | N1-C6-N6 | 9.68 | 124.41 | 118.60 |
| 53 | B5 | 2864 | A | N1-C6-N6 | 9.68 | 124.41 | 118.60 |
| 53 | B5 | 2152 | A | N1-C6-N6 | 9.68 | 124.41 | 118.60 |
| 53 | B5 | 621 | A | N1-C6-N6 | 9.68 | 124.41 | 118.60 |
| 53 | B5 | 2692 | A | N1-C6-N6 | 9.68 | 124.41 | 118.60 |
| 51 | B3 | 19 | C | O4'-C1'-N1 | 9.67 | 115.94 | 108.20 |
| 53 | B5 | 1212 | A | N1-C6-N6 | 9.67 | 124.41 | 118.60 |
| 53 | B5 | 1394 | A | N1-C6-N6 | 9.67 | 124.40 | 118.60 |
| 53 | B5 | 1638 | A | N1-C6-N6 | 9.67 | 124.40 | 118.60 |
| 53 | B5 | 529 | A | N1-C6-N6 | 9.67 | 124.40 | 118.60 |
| 53 | B5 | 2887 | A | N1-C6-N6 | 9.67 | 124.40 | 118.60 |
| 53 | B5 | 2890 | A | N1-C6-N6 | 9.67 | 124.40 | 118.60 |
| 53 | B5 | 1459 | C | O4'-C1'-N1 | 9.67 | 115.93 | 108.20 |
| 1 | AA | 222 | A | N1-C6-N6 | 9.66 | 124.40 | 118.60 |
| 1 | AA | 555 | A | N1-C6-N6 | 9.66 | 124.40 | 118.60 |
| 1 | AA | 987 | A | N1-C6-N6 | 9.66 | 124.40 | 118.60 |
| 53 | B5 | 904 | A | N1-C6-N6 | 9.66 | 124.40 | 118.60 |
| 53 | B5 | 1498 | A | N1-C6-N6 | 9.66 | 124.40 | 118.60 |
| 1 | AA | 1503 | A | N1-C6-N6 | 9.66 | 124.40 | 118.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-----------|-------|-------------|----------|
| 19 | A7 | 8 | U | N3-C4-C5 | -9.66 | 108.80 | 114.60 |
| 1 | AA | 1477 | A | N1-C6-N6 | 9.66 | 124.39 | 118.60 |
| 53 | B5 | 789 | A | N1-C6-N6 | 9.66 | 124.39 | 118.60 |
| 1 | AA | 978 | A | N1-C6-N6 | 9.65 | 124.39 | 118.60 |
| 1 | AA | 1609 | A | N1-C6-N6 | 9.65 | 124.39 | 118.60 |
| 53 | B5 | 250 | U | P-O3'-C3' | 9.65 | 131.28 | 119.70 |
| 53 | B5 | 3359 | A | N1-C6-N6 | 9.65 | 124.39 | 118.60 |
| 1 | AA | 1078 | A | N1-C6-N6 | 9.65 | 124.39 | 118.60 |
| 53 | B5 | 121 | A | N1-C6-N6 | 9.65 | 124.39 | 118.60 |
| 1 | AA | 333 | A | N1-C6-N6 | 9.65 | 124.39 | 118.60 |
| 1 | AA | 385 | A | N1-C6-N6 | 9.65 | 124.39 | 118.60 |
| 1 | AA | 1517 | U | O5'-P-OP1 | 9.65 | 122.28 | 110.70 |
| 53 | B5 | 1170 | A | N1-C6-N6 | 9.65 | 124.39 | 118.60 |
| 53 | B5 | 1489 | A | N1-C6-N6 | 9.65 | 124.39 | 118.60 |
| 53 | B5 | 369 | A | N1-C6-N6 | 9.65 | 124.39 | 118.60 |
| 1 | AA | 1083 | A | N1-C6-N6 | 9.64 | 124.39 | 118.60 |
| 1 | AA | 1341 | A | N1-C6-N6 | 9.64 | 124.39 | 118.60 |
| 52 | B4 | 80 | A | N1-C6-N6 | 9.64 | 124.39 | 118.60 |
| 53 | B5 | 1009 | A | N1-C6-N6 | 9.64 | 124.39 | 118.60 |
| 53 | B5 | 1806 | A | N1-C6-N6 | 9.64 | 124.39 | 118.60 |
| 53 | B5 | 2220 | A | N1-C6-N6 | 9.64 | 124.39 | 118.60 |
| 1 | AA | 740 | A | N1-C6-N6 | 9.64 | 124.38 | 118.60 |
| 53 | B5 | 2345 | A | N1-C6-N6 | 9.64 | 124.39 | 118.60 |
| 53 | B5 | 2119 | A | N1-C6-N6 | 9.64 | 124.38 | 118.60 |
| 53 | B5 | 3316 | A | N1-C6-N6 | 9.64 | 124.38 | 118.60 |
| 1 | AA | 40 | A | N1-C6-N6 | 9.64 | 124.38 | 118.60 |
| 1 | AA | 173 | A | N1-C6-N6 | 9.64 | 124.38 | 118.60 |
| 1 | AA | 526 | A | N1-C6-N6 | 9.64 | 124.38 | 118.60 |
| 1 | AA | 791 | A | N1-C6-N6 | 9.64 | 124.38 | 118.60 |
| 53 | B5 | 646 | A | N1-C6-N6 | 9.64 | 124.38 | 118.60 |
| 1 | AA | 421 | A | N1-C6-N6 | 9.64 | 124.38 | 118.60 |
| 53 | B5 | 2207 | A | N1-C6-N6 | 9.64 | 124.38 | 118.60 |
| 53 | B5 | 2549 | A | N1-C6-N6 | 9.64 | 124.38 | 118.60 |
| 53 | B5 | 843 | A | N1-C6-N6 | 9.64 | 124.38 | 118.60 |
| 1 | AA | 858 | G | N3-C2-N2 | 9.63 | 126.64 | 119.90 |
| 53 | B5 | 1823 | A | N1-C6-N6 | 9.63 | 124.38 | 118.60 |
| 53 | B5 | 521 | A | N1-C6-N6 | 9.63 | 124.38 | 118.60 |
| 53 | B5 | 2320 | A | N1-C6-N6 | 9.63 | 124.38 | 118.60 |
| 53 | B5 | 2987 | A | N1-C6-N6 | 9.63 | 124.38 | 118.60 |
| 53 | B5 | 970 | A | N1-C6-N6 | 9.62 | 124.37 | 118.60 |
| 53 | B5 | 3008 | A | N1-C6-N6 | 9.62 | 124.37 | 118.60 |
| 53 | B5 | 3040 | A | N1-C6-N6 | 9.62 | 124.37 | 118.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 1 | AA | 1458 | A | N1-C6-N6 | 9.62 | 124.37 | 118.60 |
| 52 | B4 | 79 | A | N1-C6-N6 | 9.62 | 124.37 | 118.60 |
| 53 | B5 | 43 | A | N1-C6-N6 | 9.62 | 124.37 | 118.60 |
| 53 | B5 | 3106 | A | N1-C6-N6 | 9.62 | 124.37 | 118.60 |
| 51 | B3 | 42 | A | N1-C6-N6 | 9.62 | 124.37 | 118.60 |
| 1 | AA | 1689 | A | N1-C6-N6 | 9.61 | 124.37 | 118.60 |
| 1 | AA | 1763 | A | N1-C6-N6 | 9.62 | 124.37 | 118.60 |
| 53 | B5 | 34 | A | N1-C6-N6 | 9.62 | 124.37 | 118.60 |
| 53 | B5 | 3176 | C | O4'-C1'-N1 | 9.61 | 115.89 | 108.20 |
| 1 | AA | 550 | A | N1-C6-N6 | 9.61 | 124.37 | 118.60 |
| 53 | B5 | 1474 | A | N1-C6-N6 | 9.61 | 124.37 | 118.60 |
| 53 | B5 | 1557 | A | N1-C6-N6 | 9.61 | 124.37 | 118.60 |
| 53 | B5 | 2138 | A | N1-C6-N6 | 9.61 | 124.37 | 118.60 |
| 1 | AA | 525 | A | N1-C6-N6 | 9.61 | 124.37 | 118.60 |
| 51 | B3 | 23 | A | N1-C6-N6 | 9.61 | 124.36 | 118.60 |
| 53 | B5 | 1304 | A | N1-C6-N6 | 9.61 | 124.36 | 118.60 |
| 53 | B5 | 1048 | A | O4'-C1'-N9 | 9.61 | 115.88 | 108.20 |
| 53 | B5 | 2468 | A | N1-C6-N6 | 9.61 | 124.36 | 118.60 |
| 1 | AA | 126 | A | N1-C6-N6 | 9.60 | 124.36 | 118.60 |
| 1 | AA | 604 | A | N1-C6-N6 | 9.60 | 124.36 | 118.60 |
| 19 | A7 | 27 | C | N1-C2-N3 | 9.60 | 125.92 | 119.20 |
| 1 | AA | 1381 | A | N1-C6-N6 | 9.60 | 124.36 | 118.60 |
| 1 | AA | 1549 | U | O4'-C1'-N1 | 9.60 | 115.88 | 108.20 |
| 53 | B5 | 1030 | A | N1-C6-N6 | 9.60 | 124.36 | 118.60 |
| 53 | B5 | 2398 | A | N1-C6-N6 | 9.60 | 124.36 | 118.60 |
| 53 | B5 | 2695 | A | N1-C6-N6 | 9.60 | 124.36 | 118.60 |
| 53 | B5 | 3215 | A | N1-C6-N6 | 9.60 | 124.36 | 118.60 |
| 1 | AA | 34 | G | O4'-C1'-N9 | 9.60 | 115.88 | 108.20 |
| 1 | AA | 65 | A | N1-C6-N6 | 9.60 | 124.36 | 118.60 |
| 53 | B5 | 85 | A | N1-C6-N6 | 9.60 | 124.36 | 118.60 |
| 53 | B5 | 150 | A | N1-C6-N6 | 9.60 | 124.36 | 118.60 |
| 53 | B5 | 2130 | G | C5-C6-O6 | -9.60 | 122.84 | 128.60 |
| 53 | B5 | 3146 | G | O4'-C1'-N9 | 9.60 | 115.88 | 108.20 |
| 1 | AA | 594 | A | N1-C6-N6 | 9.59 | 124.35 | 118.60 |
| 53 | B5 | 1712 | G | O4'-C1'-N9 | 9.59 | 115.87 | 108.20 |
| 1 | AA | 867 | G | P-O3'-C3' | -9.59 | 108.19 | 119.70 |
| 1 | AA | 925 | A | N1-C6-N6 | 9.59 | 124.35 | 118.60 |
| 1 | AA | 1368 | A | N1-C6-N6 | 9.59 | 124.35 | 118.60 |
| 53 | B5 | 2441 | A | N1-C6-N6 | 9.59 | 124.35 | 118.60 |
| 53 | B5 | 422 | A | N1-C6-N6 | 9.58 | 124.35 | 118.60 |
| 53 | B5 | 1908 | A | N1-C6-N6 | 9.58 | 124.35 | 118.60 |
| 1 | AA | 251 | A | N1-C6-N6 | 9.58 | 124.35 | 118.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|------|-------------|----------|
| 1 | AA | 76 | A | N1-C6-N6 | 9.58 | 124.35 | 118.60 |
| 53 | B5 | 490 | A | N1-C6-N6 | 9.58 | 124.35 | 118.60 |
| 53 | B5 | 914 | A | N1-C6-N6 | 9.58 | 124.35 | 118.60 |
| 53 | B5 | 1143 | A | N1-C6-N6 | 9.57 | 124.34 | 118.60 |
| 53 | B5 | 2739 | A | N1-C6-N6 | 9.57 | 124.34 | 118.60 |
| 1 | AA | 182 | A | N1-C6-N6 | 9.57 | 124.34 | 118.60 |
| 1 | AA | 1774 | A | N1-C6-N6 | 9.57 | 124.34 | 118.60 |
| 53 | B5 | 2262 | A | N1-C6-N6 | 9.57 | 124.34 | 118.60 |
| 53 | B5 | 1182 | A | N1-C6-N6 | 9.57 | 124.34 | 118.60 |
| 1 | AA | 344 | A | N1-C6-N6 | 9.57 | 124.34 | 118.60 |
| 19 | A7 | 23 | A | C3'-C2'-C1' | 9.57 | 109.15 | 101.50 |
| 53 | B5 | 378 | A | N1-C6-N6 | 9.57 | 124.34 | 118.60 |
| 53 | B5 | 519 | A | N1-C6-N6 | 9.57 | 124.34 | 118.60 |
| 53 | B5 | 2271 | A | N1-C6-N6 | 9.57 | 124.34 | 118.60 |
| 53 | B5 | 2228 | A | N1-C6-N6 | 9.56 | 124.34 | 118.60 |
| 53 | B5 | 1587 | A | N1-C6-N6 | 9.56 | 124.34 | 118.60 |
| 53 | B5 | 2363 | A | N1-C6-N6 | 9.56 | 124.34 | 118.60 |
| 1 | AA | 1691 | A | N1-C6-N6 | 9.56 | 124.33 | 118.60 |
| 53 | B5 | 296 | A | N1-C6-N6 | 9.56 | 124.33 | 118.60 |
| 1 | AA | 217 | A | N1-C6-N6 | 9.56 | 124.33 | 118.60 |
| 1 | AA | 620 | A | N1-C6-N6 | 9.55 | 124.33 | 118.60 |
| 1 | AA | 754 | A | N1-C6-N6 | 9.55 | 124.33 | 118.60 |
| 1 | AA | 997 | A | N1-C6-N6 | 9.56 | 124.33 | 118.60 |
| 1 | AA | 1712 | A | N1-C6-N6 | 9.56 | 124.33 | 118.60 |
| 1 | AA | 864 | U | C4'-C3'-C2' | 9.55 | 112.15 | 102.60 |
| 53 | B5 | 2519 | A | N1-C6-N6 | 9.55 | 124.33 | 118.60 |
| 53 | B5 | 376 | G | N1-C6-O6 | 9.55 | 125.63 | 119.90 |
| 53 | B5 | 1810 | A | N1-C6-N6 | 9.55 | 124.33 | 118.60 |
| 52 | B4 | 48 | A | N1-C6-N6 | 9.55 | 124.33 | 118.60 |
| 1 | AA | 253 | A | N1-C6-N6 | 9.55 | 124.33 | 118.60 |
| 1 | AA | 1629 | A | N1-C6-N6 | 9.55 | 124.33 | 118.60 |
| 53 | B5 | 1373 | A | N1-C6-N6 | 9.55 | 124.33 | 118.60 |
| 53 | B5 | 2223 | A | N1-C6-N6 | 9.55 | 124.33 | 118.60 |
| 53 | B5 | 3296 | A | N1-C6-N6 | 9.55 | 124.33 | 118.60 |
| 53 | B5 | 533 | A | N1-C6-N6 | 9.54 | 124.33 | 118.60 |
| 53 | B5 | 2802 | A | N1-C6-N6 | 9.55 | 124.33 | 118.60 |
| 53 | B5 | 342 | A | N1-C6-N6 | 9.54 | 124.33 | 118.60 |
| 53 | B5 | 1098 | A | N1-C6-N6 | 9.54 | 124.32 | 118.60 |
| 53 | B5 | 2738 | A | N1-C6-N6 | 9.54 | 124.32 | 118.60 |
| 53 | B5 | 3335 | A | N1-C6-N6 | 9.54 | 124.32 | 118.60 |
| 53 | B5 | 2486 | A | N1-C6-N6 | 9.54 | 124.32 | 118.60 |
| 1 | AA | 1149 | A | N1-C6-N6 | 9.53 | 124.32 | 118.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 2941 | A | N1-C6-N6 | 9.53 | 124.32 | 118.60 |
| 52 | B4 | 61 | A | N1-C6-N6 | 9.53 | 124.32 | 118.60 |
| 53 | B5 | 289 | A | N1-C6-N6 | 9.53 | 124.32 | 118.60 |
| 53 | B5 | 2232 | A | N1-C6-N6 | 9.53 | 124.32 | 118.60 |
| 53 | B5 | 2413 | A | N1-C6-N6 | 9.53 | 124.32 | 118.60 |
| 53 | B5 | 3021 | A | N1-C6-N6 | 9.53 | 124.32 | 118.60 |
| 1 | AA | 923 | A | N1-C6-N6 | 9.53 | 124.32 | 118.60 |
| 1 | AA | 817 | A | N1-C6-N6 | 9.52 | 124.31 | 118.60 |
| 51 | B3 | 100 | A | N1-C6-N6 | 9.52 | 124.31 | 118.60 |
| 53 | B5 | 1061 | A | N1-C6-N6 | 9.52 | 124.31 | 118.60 |
| 1 | AA | 312 | A | N1-C6-N6 | 9.52 | 124.31 | 118.60 |
| 1 | AA | 529 | A | N1-C6-N6 | 9.52 | 124.31 | 118.60 |
| 1 | AA | 606 | A | N1-C6-N6 | 9.52 | 124.31 | 118.60 |
| 1 | AA | 257 | A | N1-C6-N6 | 9.52 | 124.31 | 118.60 |
| 1 | AA | 1658 | A | N1-C6-N6 | 9.52 | 124.31 | 118.60 |
| 53 | B5 | 2484 | A | N1-C6-N6 | 9.51 | 124.31 | 118.60 |
| 1 | AA | 1207 | A | N1-C6-N6 | 9.51 | 124.31 | 118.60 |
| 53 | B5 | 2547 | A | N1-C6-N6 | 9.51 | 124.31 | 118.60 |
| 53 | B5 | 2580 | A | N1-C6-N6 | 9.51 | 124.31 | 118.60 |
| 1 | AA | 982 | A | N1-C6-N6 | 9.51 | 124.30 | 118.60 |
| 19 | A7 | 5 | A | C5-C6-N1 | 9.51 | 122.45 | 117.70 |
| 53 | B5 | 1467 | A | N1-C6-N6 | 9.51 | 124.30 | 118.60 |
| 53 | B5 | 3276 | A | N1-C6-N6 | 9.51 | 124.30 | 118.60 |
| 53 | B5 | 11 | A | N1-C6-N6 | 9.50 | 124.30 | 118.60 |
| 53 | B5 | 273 | A | N1-C6-N6 | 9.50 | 124.30 | 118.60 |
| 53 | B5 | 2803 | A | N1-C6-N6 | 9.50 | 124.30 | 118.60 |
| 53 | B5 | 1026 | A | N1-C6-N6 | 9.50 | 124.30 | 118.60 |
| 1 | AA | 288 | A | N1-C6-N6 | 9.50 | 124.30 | 118.60 |
| 1 | AA | 994 | A | N1-C6-N6 | 9.50 | 124.30 | 118.60 |
| 1 | AA | 1657 | A | N1-C6-N6 | 9.50 | 124.30 | 118.60 |
| 53 | B5 | 1896 | A | N1-C6-N6 | 9.49 | 124.30 | 118.60 |
| 1 | AA | 1549 | U | C3'-C2'-C1' | -9.49 | 93.91 | 101.50 |
| 52 | B4 | 138 | A | N1-C6-N6 | 9.49 | 124.29 | 118.60 |
| 53 | B5 | 107 | A | N1-C6-N6 | 9.49 | 124.29 | 118.60 |
| 53 | B5 | 1330 | A | N1-C6-N6 | 9.49 | 124.29 | 118.60 |
| 53 | B5 | 1465 | A | N1-C6-N6 | 9.49 | 124.29 | 118.60 |
| 1 | AA | 1130 | A | N1-C6-N6 | 9.49 | 124.29 | 118.60 |
| 1 | AA | 1342 | A | N1-C6-N6 | 9.49 | 124.29 | 118.60 |
| 53 | B5 | 2743 | A | N1-C6-N6 | 9.49 | 124.29 | 118.60 |
| 53 | B5 | 1407 | A | N1-C6-N6 | 9.48 | 124.29 | 118.60 |
| 1 | AA | 1297 | A | N1-C6-N6 | 9.48 | 124.29 | 118.60 |
| 53 | B5 | 3114 | A | N1-C6-N6 | 9.48 | 124.29 | 118.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1 | AA | 425 | A | N1-C6-N6 | 9.48 | 124.29 | 118.60 |
| 1 | AA | 556 | A | N1-C6-N6 | 9.48 | 124.29 | 118.60 |
| 1 | AA | 991 | A | N1-C6-N6 | 9.48 | 124.29 | 118.60 |
| 1 | AA | 706 | A | N1-C6-N6 | 9.48 | 124.29 | 118.60 |
| 1 | AA | 811 | A | N1-C6-N6 | 9.48 | 124.29 | 118.60 |
| 1 | AA | 1136 | A | N1-C6-N6 | 9.48 | 124.29 | 118.60 |
| 19 | A7 | 14 | A | N1-C6-N6 | -9.48 | 112.91 | 118.60 |
| 51 | B3 | 89 | A | N1-C6-N6 | 9.48 | 124.29 | 118.60 |
| 53 | B5 | 570 | A | N1-C6-N6 | 9.48 | 124.28 | 118.60 |
| 1 | AA | 84 | A | N1-C6-N6 | 9.47 | 124.28 | 118.60 |
| 1 | AA | 866 | G | C4'-C3'-C2' | 9.47 | 112.07 | 102.60 |
| 53 | B5 | 2485 | A | N1-C6-N6 | 9.47 | 124.28 | 118.60 |
| 53 | B5 | 2820 | A | N1-C6-N6 | 9.47 | 124.28 | 118.60 |
| 1 | AA | 622 | A | N1-C6-N6 | 9.47 | 124.28 | 118.60 |
| 19 | A7 | 1 | G | C5-C6-N1 | 9.47 | 116.23 | 111.50 |
| 1 | AA | 512 | A | N1-C6-N6 | 9.47 | 124.28 | 118.60 |
| 53 | B5 | 1895 | A | N1-C6-N6 | 9.47 | 124.28 | 118.60 |
| 53 | B5 | 2595 | A | N1-C6-N6 | 9.46 | 124.28 | 118.60 |
| 1 | AA | 733 | A | N1-C6-N6 | 9.46 | 124.28 | 118.60 |
| 1 | AA | 1520 | U | P-O5'-C5' | -9.46 | 105.76 | 120.90 |
| 52 | B4 | 37 | A | N1-C6-N6 | 9.46 | 124.28 | 118.60 |
| 1 | AA | 847 | A | N1-C6-N6 | 9.46 | 124.28 | 118.60 |
| 53 | B5 | 2430 | A | N1-C6-N6 | 9.46 | 124.28 | 118.60 |
| 1 | AA | 323 | A | N1-C6-N6 | 9.46 | 124.28 | 118.60 |
| 1 | AA | 630 | A | N1-C6-N6 | 9.46 | 124.28 | 118.60 |
| 1 | AA | 1679 | A | N1-C6-N6 | 9.46 | 124.28 | 118.60 |
| 53 | B5 | 1324 | U | O4'-C1'-N1 | 9.46 | 115.77 | 108.20 |
| 53 | B5 | 23 | A | N1-C6-N6 | 9.46 | 124.27 | 118.60 |
| 53 | B5 | 2529 | A | N1-C6-N6 | 9.46 | 124.27 | 118.60 |
| 1 | AA | 206 | A | N1-C6-N6 | 9.46 | 124.27 | 118.60 |
| 53 | B5 | 603 | A | N1-C6-N6 | 9.46 | 124.27 | 118.60 |
| 1 | AA | 774 | A | N1-C6-N6 | 9.45 | 124.27 | 118.60 |
| 1 | AA | 1514 | A | N1-C6-N6 | 9.46 | 124.27 | 118.60 |
| 53 | B5 | 1468 | A | N1-C6-N6 | 9.46 | 124.27 | 118.60 |
| 53 | B5 | 3045 | G | P-O3'-C3' | 9.46 | 131.05 | 119.70 |
| 1 | AA | 1073 | A | N1-C6-N6 | 9.45 | 124.27 | 118.60 |
| 51 | B3 | 75 | G | N1-C6-O6 | 9.45 | 125.57 | 119.90 |
| 53 | B5 | 3128 | G | N1-C6-O6 | 9.45 | 125.57 | 119.90 |
| 1 | AA | 780 | A | N1-C6-N6 | 9.45 | 124.27 | 118.60 |
| 53 | B5 | 3163 | A | N1-C6-N6 | 9.45 | 124.27 | 118.60 |
| 52 | B4 | 111 | A | N1-C6-N6 | 9.45 | 124.27 | 118.60 |
| 1 | AA | 752 | A | N1-C6-N6 | 9.44 | 124.27 | 118.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|------|-------------|----------|
| 1 | AA | 1025 | A | N1-C6-N6 | 9.44 | 124.27 | 118.60 |
| 1 | AA | 1543 | A | N1-C6-N6 | 9.45 | 124.27 | 118.60 |
| 53 | B5 | 204 | A | N1-C6-N6 | 9.44 | 124.27 | 118.60 |
| 53 | B5 | 1294 | A | N1-C6-N6 | 9.44 | 124.27 | 118.60 |
| 53 | B5 | 2275 | A | N1-C6-N6 | 9.45 | 124.27 | 118.60 |
| 1 | AA | 1128 | A | N1-C6-N6 | 9.44 | 124.27 | 118.60 |
| 1 | AA | 1403 | A | N1-C6-N6 | 9.44 | 124.26 | 118.60 |
| 19 | A7 | 64 | A | C6-C5-N7 | 9.44 | 138.91 | 132.30 |
| 51 | B3 | 35 | C | O4'-C1'-N1 | 9.44 | 115.75 | 108.20 |
| 52 | B4 | 2 | A | N1-C6-N6 | 9.44 | 124.27 | 118.60 |
| 53 | B5 | 672 | A | N1-C6-N6 | 9.44 | 124.27 | 118.60 |
| 53 | B5 | 2183 | A | N1-C6-N6 | 9.44 | 124.26 | 118.60 |
| 53 | B5 | 2280 | A | N1-C6-N6 | 9.44 | 124.27 | 118.60 |
| 1 | AA | 1481 | A | N1-C6-N6 | 9.44 | 124.26 | 118.60 |
| 1 | AA | 71 | A | N1-C6-N6 | 9.44 | 124.26 | 118.60 |
| 53 | B5 | 2994 | A | N1-C6-N6 | 9.44 | 124.26 | 118.60 |
| 53 | B5 | 1460 | A | N1-C6-N6 | 9.43 | 124.26 | 118.60 |
| 1 | AA | 932 | A | N1-C6-N6 | 9.43 | 124.26 | 118.60 |
| 1 | AA | 1729 | A | N1-C6-N6 | 9.43 | 124.26 | 118.60 |
| 53 | B5 | 164 | A | N1-C6-N6 | 9.43 | 124.26 | 118.60 |
| 1 | AA | 328 | A | N1-C6-N6 | 9.43 | 124.26 | 118.60 |
| 1 | AA | 1742 | A | N1-C6-N6 | 9.43 | 124.26 | 118.60 |
| 53 | B5 | 1002 | A | N1-C6-N6 | 9.43 | 124.26 | 118.60 |
| 53 | B5 | 1714 | A | N1-C6-N6 | 9.43 | 124.26 | 118.60 |
| 52 | B4 | 17 | A | N1-C6-N6 | 9.43 | 124.26 | 118.60 |
| 53 | B5 | 472 | A | N1-C6-N6 | 9.43 | 124.26 | 118.60 |
| 53 | B5 | 1900 | A | N1-C6-N6 | 9.43 | 124.25 | 118.60 |
| 1 | AA | 475 | A | N1-C6-N6 | 9.42 | 124.25 | 118.60 |
| 53 | B5 | 51 | A | N1-C6-N6 | 9.42 | 124.25 | 118.60 |
| 1 | AA | 1035 | A | N1-C6-N6 | 9.42 | 124.25 | 118.60 |
| 51 | B3 | 114 | A | N1-C6-N6 | 9.42 | 124.25 | 118.60 |
| 53 | B5 | 1280 | C | O4'-C1'-N1 | 9.42 | 115.73 | 108.20 |
| 53 | B5 | 3024 | A | N1-C6-N6 | 9.42 | 124.25 | 118.60 |
| 53 | B5 | 1656 | A | N1-C6-N6 | 9.41 | 124.25 | 118.60 |
| 1 | AA | 11 | A | N1-C6-N6 | 9.41 | 124.25 | 118.60 |
| 1 | AA | 483 | A | N1-C6-N6 | 9.41 | 124.25 | 118.60 |
| 53 | B5 | 2697 | A | N1-C6-N6 | 9.41 | 124.25 | 118.60 |
| 53 | B5 | 589 | A | N1-C6-N6 | 9.41 | 124.25 | 118.60 |
| 1 | AA | 478 | A | N1-C6-N6 | 9.41 | 124.25 | 118.60 |
| 53 | B5 | 1637 | A | N1-C6-N6 | 9.41 | 124.25 | 118.60 |
| 53 | B5 | 2524 | A | N1-C6-N6 | 9.41 | 124.25 | 118.60 |
| 1 | AA | 814 | A | N1-C6-N6 | 9.41 | 124.24 | 118.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1 | AA | 887 | A | N1-C6-N6 | 9.41 | 124.25 | 118.60 |
| 53 | B5 | 527 | A | N1-C6-N6 | 9.40 | 124.24 | 118.60 |
| 1 | AA | 46 | A | N1-C6-N6 | 9.40 | 124.24 | 118.60 |
| 53 | B5 | 751 | A | N1-C6-N6 | 9.40 | 124.24 | 118.60 |
| 53 | B5 | 49 | A | N1-C6-N6 | 9.40 | 124.24 | 118.60 |
| 53 | B5 | 3077 | A | N1-C6-N6 | 9.40 | 124.24 | 118.60 |
| 1 | AA | 266 | A | N1-C6-N6 | 9.40 | 124.24 | 118.60 |
| 53 | B5 | 1515 | A | N1-C6-N6 | 9.40 | 124.24 | 118.60 |
| 53 | B5 | 2621 | G | N1-C6-O6 | 9.40 | 125.54 | 119.90 |
| 53 | B5 | 2785 | A | N1-C6-N6 | 9.40 | 124.24 | 118.60 |
| 1 | AA | 446 | A | N1-C6-N6 | 9.39 | 124.24 | 118.60 |
| 1 | AA | 544 | A | N1-C6-N6 | 9.39 | 124.24 | 118.60 |
| 1 | AA | 619 | A | N1-C6-N6 | 9.39 | 124.24 | 118.60 |
| 1 | AA | 1316 | A | N1-C6-N6 | 9.39 | 124.24 | 118.60 |
| 53 | B5 | 115 | A | N1-C6-N6 | 9.39 | 124.24 | 118.60 |
| 53 | B5 | 2125 | A | N1-C6-N6 | 9.39 | 124.24 | 118.60 |
| 53 | B5 | 3271 | A | N1-C6-N6 | 9.39 | 124.24 | 118.60 |
| 1 | AA | 1598 | A | N1-C6-N6 | 9.39 | 124.23 | 118.60 |
| 1 | AA | 1059 | A | N1-C6-N6 | 9.39 | 124.23 | 118.60 |
| 53 | B5 | 1179 | A | N1-C6-N6 | 9.39 | 124.23 | 118.60 |
| 53 | B5 | 1809 | A | N1-C6-N6 | 9.39 | 124.23 | 118.60 |
| 52 | B4 | 1 | A | N1-C6-N6 | 9.38 | 124.23 | 118.60 |
| 53 | B5 | 251 | G | P-O3'-C3' | 9.38 | 130.96 | 119.70 |
| 53 | B5 | 1723 | A | N1-C6-N6 | 9.38 | 124.23 | 118.60 |
| 53 | B5 | 1749 | A | N1-C6-N6 | 9.38 | 124.23 | 118.60 |
| 1 | AA | 240 | U | O4'-C1'-N1 | 9.38 | 115.70 | 108.20 |
| 51 | B3 | 27 | A | N1-C6-N6 | 9.38 | 124.23 | 118.60 |
| 53 | B5 | 106 | A | N1-C6-N6 | 9.38 | 124.23 | 118.60 |
| 53 | B5 | 1326 | A | N1-C6-N6 | 9.38 | 124.23 | 118.60 |
| 53 | B5 | 2324 | A | N1-C6-N6 | 9.38 | 124.23 | 118.60 |
| 53 | B5 | 2383 | C | O4'-C1'-N1 | 9.38 | 115.70 | 108.20 |
| 1 | AA | 198 | A | N1-C6-N6 | 9.38 | 124.22 | 118.60 |
| 1 | AA | 197 | A | N1-C6-N6 | 9.37 | 124.22 | 118.60 |
| 53 | B5 | 3110 | C | O4'-C1'-N1 | 9.38 | 115.70 | 108.20 |
| 1 | AA | 210 | A | N1-C6-N6 | 9.37 | 124.22 | 118.60 |
| 53 | B5 | 2591 | A | N1-C6-N6 | 9.37 | 124.22 | 118.60 |
| 19 | A7 | 64 | A | C4'-C3'-C2' | -9.37 | 93.23 | 102.60 |
| 53 | B5 | 1136 | A | N1-C6-N6 | 9.37 | 124.22 | 118.60 |
| 53 | B5 | 1238 | C | O4'-C1'-N1 | 9.37 | 115.69 | 108.20 |
| 53 | B5 | 2801 | A | N1-C6-N6 | 9.37 | 124.22 | 118.60 |
| 53 | B5 | 2164 | A | N1-C6-N6 | 9.37 | 124.22 | 118.60 |
| 53 | B5 | 3032 | A | N1-C6-N6 | 9.37 | 124.22 | 118.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1 | AA | 124 | A | N1-C6-N6 | 9.37 | 124.22 | 118.60 |
| 1 | AA | 1571 | A | N1-C6-N6 | 9.36 | 124.22 | 118.60 |
| 53 | B5 | 691 | A | N1-C6-N6 | 9.37 | 124.22 | 118.60 |
| 53 | B5 | 841 | A | N1-C6-N6 | 9.37 | 124.22 | 118.60 |
| 53 | B5 | 3226 | A | N1-C6-N6 | 9.37 | 124.22 | 118.60 |
| 1 | AA | 200 | A | N1-C6-N6 | 9.36 | 124.22 | 118.60 |
| 1 | AA | 599 | A | N1-C6-N6 | 9.36 | 124.22 | 118.60 |
| 1 | AA | 899 | A | N1-C6-N6 | 9.36 | 124.22 | 118.60 |
| 1 | AA | 218 | A | N1-C6-N6 | 9.36 | 124.22 | 118.60 |
| 1 | AA | 579 | A | N1-C6-N6 | 9.36 | 124.21 | 118.60 |
| 19 | A7 | 66 | A | C4'-C3'-C2' | -9.36 | 93.24 | 102.60 |
| 53 | B5 | 428 | A | N1-C6-N6 | 9.36 | 124.21 | 118.60 |
| 1 | AA | 1180 | A | N1-C6-N6 | 9.36 | 124.21 | 118.60 |
| 53 | B5 | 1816 | A | N1-C6-N6 | 9.36 | 124.21 | 118.60 |
| 1 | AA | 585 | A | N1-C6-N6 | 9.35 | 124.21 | 118.60 |
| 1 | AA | 1040 | A | N1-C6-N6 | 9.35 | 124.21 | 118.60 |
| 53 | B5 | 174 | C | O4'-C1'-N1 | 9.35 | 115.68 | 108.20 |
| 53 | B5 | 1251 | A | N1-C6-N6 | 9.35 | 124.21 | 118.60 |
| 53 | B5 | 2647 | A | N1-C6-N6 | 9.35 | 124.21 | 118.60 |
| 53 | B5 | 391 | A | N1-C6-N6 | 9.35 | 124.21 | 118.60 |
| 53 | B5 | 2769 | A | N1-C6-N6 | 9.35 | 124.21 | 118.60 |
| 53 | B5 | 3330 | A | N1-C6-N6 | 9.35 | 124.21 | 118.60 |
| 1 | AA | 19 | A | N1-C6-N6 | 9.35 | 124.21 | 118.60 |
| 1 | AA | 213 | A | N1-C6-N6 | 9.35 | 124.21 | 118.60 |
| 53 | B5 | 883 | A | N1-C6-N6 | 9.35 | 124.21 | 118.60 |
| 53 | B5 | 1302 | A | N1-C6-N6 | 9.35 | 124.21 | 118.60 |
| 53 | B5 | 1256 | G | N1-C6-O6 | 9.35 | 125.51 | 119.90 |
| 53 | B5 | 504 | A | N1-C6-N6 | 9.35 | 124.21 | 118.60 |
| 53 | B5 | 1036 | A | N1-C6-N6 | 9.35 | 124.21 | 118.60 |
| 53 | B5 | 1270 | A | N1-C6-N6 | 9.35 | 124.21 | 118.60 |
| 1 | AA | 807 | A | N1-C6-N6 | 9.35 | 124.21 | 118.60 |
| 53 | B5 | 2214 | A | N1-C6-N6 | 9.35 | 124.21 | 118.60 |
| 53 | B5 | 2808 | A | N1-C6-N6 | 9.35 | 124.21 | 118.60 |
| 1 | AA | 225 | A | N1-C6-N6 | 9.34 | 124.21 | 118.60 |
| 1 | AA | 1726 | A | N1-C6-N6 | 9.34 | 124.21 | 118.60 |
| 53 | B5 | 3339 | A | N1-C6-N6 | 9.34 | 124.20 | 118.60 |
| 1 | AA | 1513 | A | N1-C6-N6 | 9.34 | 124.20 | 118.60 |
| 53 | B5 | 399 | A | N1-C6-N6 | 9.34 | 124.20 | 118.60 |
| 53 | B5 | 747 | A | N1-C6-N6 | 9.34 | 124.20 | 118.60 |
| 1 | AA | 226 | A | N1-C6-N6 | 9.33 | 124.20 | 118.60 |
| 1 | AA | 977 | A | N1-C6-N6 | 9.33 | 124.20 | 118.60 |
| 52 | B4 | 68 | G | P-O3'-C3' | 9.33 | 130.90 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 1475 | A | N1-C6-N6 | 9.33 | 124.20 | 118.60 |
| 1 | AA | 1751 | A | N1-C6-N6 | 9.33 | 124.20 | 118.60 |
| 52 | B4 | 88 | A | N1-C6-N6 | 9.33 | 124.20 | 118.60 |
| 1 | AA | 673 | A | N1-C6-N6 | 9.33 | 124.20 | 118.60 |
| 13 | AN | 16 | LYS | CB-CA-C | -9.33 | 91.74 | 110.40 |
| 53 | B5 | 1428 | A | N1-C6-N6 | 9.33 | 124.20 | 118.60 |
| 1 | AA | 760 | A | N1-C6-N6 | 9.33 | 124.20 | 118.60 |
| 53 | B5 | 630 | A | N1-C6-N6 | 9.33 | 124.20 | 118.60 |
| 53 | B5 | 649 | A | N1-C6-N6 | 9.33 | 124.20 | 118.60 |
| 53 | B5 | 2936 | A | N1-C6-N6 | 9.33 | 124.20 | 118.60 |
| 53 | B5 | 3028 | G | N1-C6-O6 | 9.33 | 125.50 | 119.90 |
| 53 | B5 | 1884 | A | N1-C6-N6 | 9.32 | 124.19 | 118.60 |
| 1 | AA | 1 | U | O4'-C1'-N1 | 9.32 | 115.66 | 108.20 |
| 1 | AA | 792 | U | OP1-P-OP2 | -9.32 | 105.62 | 119.60 |
| 51 | B3 | 33 | U | O4'-C1'-N1 | 9.32 | 115.66 | 108.20 |
| 53 | B5 | 57 | A | N1-C6-N6 | 9.32 | 124.19 | 118.60 |
| 53 | B5 | 2270 | A | N1-C6-N6 | 9.32 | 124.19 | 118.60 |
| 53 | B5 | 3270 | A | N1-C6-N6 | 9.32 | 124.19 | 118.60 |
| 53 | B5 | 3292 | A | N1-C6-N6 | 9.32 | 124.19 | 118.60 |
| 53 | B5 | 1752 | A | N1-C6-N6 | 9.31 | 124.19 | 118.60 |
| 1 | AA | 812 | A | N1-C6-N6 | 9.30 | 124.18 | 118.60 |
| 1 | AA | 1521 | G | C6-C5-N7 | -9.31 | 124.82 | 130.40 |
| 53 | B5 | 3244 | A | N1-C6-N6 | 9.30 | 124.18 | 118.60 |
| 19 | A7 | 41 | U | C2-N3-C4 | -9.30 | 121.42 | 127.00 |
| 53 | B5 | 1453 | A | N1-C6-N6 | 9.30 | 124.18 | 118.60 |
| 53 | B5 | 1814 | A | N1-C6-N6 | 9.30 | 124.18 | 118.60 |
| 53 | B5 | 478 | A | N1-C6-N6 | 9.29 | 124.18 | 118.60 |
| 53 | B5 | 1154 | A | N1-C6-N6 | 9.29 | 124.18 | 118.60 |
| 1 | AA | 492 | A | N1-C6-N6 | 9.29 | 124.18 | 118.60 |
| 53 | B5 | 1424 | C | O4'-C1'-N1 | 9.29 | 115.63 | 108.20 |
| 1 | AA | 112 | A | N1-C6-N6 | 9.29 | 124.17 | 118.60 |
| 1 | AA | 1012 | A | N1-C6-N6 | 9.29 | 124.17 | 118.60 |
| 53 | B5 | 516 | A | N1-C6-N6 | 9.29 | 124.17 | 118.60 |
| 53 | B5 | 656 | A | N1-C6-N6 | 9.29 | 124.17 | 118.60 |
| 53 | B5 | 780 | A | N1-C6-N6 | 9.29 | 124.17 | 118.60 |
| 1 | AA | 869 | A | N1-C6-N6 | 9.28 | 124.17 | 118.60 |
| 53 | B5 | 349 | A | N1-C6-N6 | 9.28 | 124.17 | 118.60 |
| 53 | B5 | 2352 | A | N1-C6-N6 | 9.28 | 124.17 | 118.60 |
| 53 | B5 | 2863 | G | O4'-C1'-N9 | 9.28 | 115.63 | 108.20 |
| 53 | B5 | 2995 | A | N1-C6-N6 | 9.29 | 124.17 | 118.60 |
| 1 | AA | 950 | A | N1-C6-N6 | 9.28 | 124.17 | 118.60 |
| 1 | AA | 806 | A | N1-C6-N6 | 9.28 | 124.17 | 118.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 1 | AA | 1232 | A | N1-C6-N6 | 9.28 | 124.17 | 118.60 |
| 53 | B5 | 1919 | G | N1-C6-O6 | 9.28 | 125.47 | 119.90 |
| 53 | B5 | 771 | A | N1-C6-N6 | 9.28 | 124.17 | 118.60 |
| 53 | B5 | 1046 | A | N1-C6-N6 | 9.28 | 124.17 | 118.60 |
| 53 | B5 | 1244 | A | N1-C6-N6 | 9.28 | 124.17 | 118.60 |
| 53 | B5 | 1571 | A | N1-C6-N6 | 9.28 | 124.17 | 118.60 |
| 53 | B5 | 2231 | C | C6-N1-C1' | -9.28 | 109.67 | 120.80 |
| 1 | AA | 428 | A | N1-C6-N6 | 9.28 | 124.17 | 118.60 |
| 1 | AA | 753 | A | N1-C6-N6 | 9.28 | 124.17 | 118.60 |
| 1 | AA | 1649 | A | N1-C6-N6 | 9.28 | 124.17 | 118.60 |
| 53 | B5 | 2276 | G | N1-C6-O6 | 9.28 | 125.47 | 119.90 |
| 53 | B5 | 2747 | A | N1-C6-N6 | 9.28 | 124.17 | 118.60 |
| 53 | B5 | 593 | A | N1-C6-N6 | 9.27 | 124.16 | 118.60 |
| 53 | B5 | 3006 | A | N1-C6-N6 | 9.27 | 124.17 | 118.60 |
| 51 | B3 | 105 | A | N1-C6-N6 | 9.27 | 124.16 | 118.60 |
| 53 | B5 | 2948 | C | O4'-C1'-N1 | 9.27 | 115.62 | 108.20 |
| 1 | AA | 1419 | A | N1-C6-N6 | 9.27 | 124.16 | 118.60 |
| 53 | B5 | 2291 | A | N1-C6-N6 | 9.27 | 124.16 | 118.60 |
| 1 | AA | 1252 | A | N1-C6-N6 | 9.27 | 124.16 | 118.60 |
| 53 | B5 | 2222 | A | N1-C6-N6 | 9.26 | 124.16 | 118.60 |
| 1 | AA | 892 | A | N1-C6-N6 | 9.26 | 124.16 | 118.60 |
| 53 | B5 | 1130 | A | N1-C6-N6 | 9.26 | 124.16 | 118.60 |
| 1 | AA | 746 | A | N1-C6-N6 | 9.26 | 124.16 | 118.60 |
| 53 | B5 | 929 | A | N1-C6-N6 | 9.26 | 124.16 | 118.60 |
| 1 | AA | 179 | A | N1-C6-N6 | 9.26 | 124.16 | 118.60 |
| 1 | AA | 1747 | A | N1-C6-N6 | 9.26 | 124.15 | 118.60 |
| 53 | B5 | 1011 | A | N1-C6-N6 | 9.26 | 124.15 | 118.60 |
| 53 | B5 | 1065 | A | N1-C6-N6 | 9.26 | 124.15 | 118.60 |
| 53 | B5 | 2930 | A | N1-C6-N6 | 9.25 | 124.15 | 118.60 |
| 53 | B5 | 398 | A | N1-C6-N6 | 9.25 | 124.15 | 118.60 |
| 53 | B5 | 858 | A | N1-C6-N6 | 9.25 | 124.15 | 118.60 |
| 52 | B4 | 126 | A | N1-C6-N6 | 9.24 | 124.15 | 118.60 |
| 53 | B5 | 2940 | A | N1-C6-N6 | 9.24 | 124.15 | 118.60 |
| 53 | B5 | 2353 | G | N1-C6-O6 | 9.24 | 125.44 | 119.90 |
| 1 | AA | 1357 | A | N1-C6-N6 | 9.24 | 124.14 | 118.60 |
| 53 | B5 | 913 | A | N1-C6-N6 | 9.24 | 124.14 | 118.60 |
| 53 | B5 | 2439 | A | N1-C6-N6 | 9.24 | 124.14 | 118.60 |
| 53 | B5 | 2841 | G | N1-C6-O6 | 9.24 | 125.44 | 119.90 |
| 53 | B5 | 2667 | A | N1-C6-N6 | 9.23 | 124.14 | 118.60 |
| 1 | AA | 520 | A | N1-C6-N6 | 9.23 | 124.14 | 118.60 |
| 53 | B5 | 3314 | A | N1-C6-N6 | 9.23 | 124.14 | 118.60 |
| 1 | AA | 1469 | A | N1-C6-N6 | 9.23 | 124.14 | 118.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 1545 | A | N1-C6-N6 | 9.23 | 124.14 | 118.60 |
| 53 | B5 | 1521 | G | N1-C6-O6 | 9.22 | 125.44 | 119.90 |
| 53 | B5 | 1648 | A | P-O3'-C3' | 9.22 | 130.77 | 119.70 |
| 1 | AA | 1418 | A | N1-C6-N6 | 9.22 | 124.13 | 118.60 |
| 1 | AA | 1029 | A | N1-C6-N6 | 9.22 | 124.13 | 118.60 |
| 1 | AA | 1676 | A | N1-C6-N6 | 9.22 | 124.13 | 118.60 |
| 53 | B5 | 60 | A | N1-C6-N6 | 9.22 | 124.13 | 118.60 |
| 53 | B5 | 3295 | A | N1-C6-N6 | 9.22 | 124.13 | 118.60 |
| 1 | AA | 1665 | A | N1-C6-N6 | 9.22 | 124.13 | 118.60 |
| 53 | B5 | 2657 | A | N1-C6-N6 | 9.21 | 124.13 | 118.60 |
| 1 | AA | 1710 | A | N1-C6-N6 | 9.21 | 124.13 | 118.60 |
| 53 | B5 | 2929 | C | O4'-C1'-N1 | 9.21 | 115.57 | 108.20 |
| 1 | AA | 601 | A | N1-C6-N6 | 9.21 | 124.12 | 118.60 |
| 53 | B5 | 1390 | A | N1-C6-N6 | 9.21 | 124.12 | 118.60 |
| 53 | B5 | 3122 | A | N1-C6-N6 | 9.21 | 124.12 | 118.60 |
| 53 | B5 | 647 | A | N1-C6-N6 | 9.21 | 124.12 | 118.60 |
| 53 | B5 | 709 | A | N1-C6-N6 | 9.20 | 124.12 | 118.60 |
| 1 | AA | 331 | A | N1-C6-N6 | 9.20 | 124.12 | 118.60 |
| 1 | AA | 844 | A | N1-C6-N6 | 9.20 | 124.12 | 118.60 |
| 1 | AA | 1334 | A | N1-C6-N6 | 9.20 | 124.12 | 118.60 |
| 1 | AA | 1795 | A | N1-C6-N6 | 9.20 | 124.12 | 118.60 |
| 19 | A7 | 52 | U | N1-C2-N3 | 9.20 | 120.42 | 114.90 |
| 53 | B5 | 99 | A | N1-C6-N6 | 9.20 | 124.12 | 118.60 |
| 53 | B5 | 1583 | A | N1-C6-N6 | 9.20 | 124.12 | 118.60 |
| 53 | B5 | 1799 | A | N1-C6-N6 | 9.20 | 124.12 | 118.60 |
| 53 | B5 | 395 | A | N1-C6-N6 | 9.20 | 124.12 | 118.60 |
| 53 | B5 | 1150 | A | N1-C6-N6 | 9.20 | 124.12 | 118.60 |
| 53 | B5 | 1263 | A | N1-C6-N6 | 9.20 | 124.12 | 118.60 |
| 53 | B5 | 2402 | A | N1-C6-N6 | 9.20 | 124.12 | 118.60 |
| 51 | B3 | 97 | C | O4'-C1'-N1 | 9.20 | 115.56 | 108.20 |
| 53 | B5 | 807 | A | N1-C6-N6 | 9.20 | 124.12 | 118.60 |
| 53 | B5 | 1240 | A | N1-C6-N6 | 9.20 | 124.12 | 118.60 |
| 53 | B5 | 1286 | A | N1-C6-N6 | 9.19 | 124.11 | 118.60 |
| 53 | B5 | 746 | A | N1-C6-N6 | 9.19 | 124.11 | 118.60 |
| 53 | B5 | 3307 | A | N1-C6-N6 | 9.19 | 124.11 | 118.60 |
| 19 | A7 | 71 | G | N1-C6-O6 | -9.19 | 114.39 | 119.90 |
| 51 | B3 | 99 | A | N1-C6-N6 | 9.19 | 124.11 | 118.60 |
| 53 | B5 | 40 | A | N1-C6-N6 | 9.19 | 124.11 | 118.60 |
| 53 | B5 | 109 | A | N1-C6-N6 | 9.19 | 124.11 | 118.60 |
| 53 | B5 | 485 | A | N1-C6-N6 | 9.19 | 124.11 | 118.60 |
| 1 | AA | 1189 | A | N1-C6-N6 | 9.18 | 124.11 | 118.60 |
| 1 | AA | 1748 | A | N1-C6-N6 | 9.18 | 124.11 | 118.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 1406 | A | N1-C6-N6 | 9.18 | 124.11 | 118.60 |
| 1 | AA | 943 | A | N1-C6-N6 | 9.18 | 124.11 | 118.60 |
| 53 | B5 | 48 | A | N1-C6-N6 | 9.18 | 124.11 | 118.60 |
| 53 | B5 | 453 | C | O4'-C1'-N1 | 9.18 | 115.54 | 108.20 |
| 1 | AA | 1084 | A | N1-C6-N6 | 9.18 | 124.11 | 118.60 |
| 53 | B5 | 1588 | A | N1-C6-N6 | 9.18 | 124.11 | 118.60 |
| 53 | B5 | 1913 | A | N1-C6-N6 | 9.18 | 124.11 | 118.60 |
| 53 | B5 | 1537 | A | N1-C6-N6 | 9.17 | 124.10 | 118.60 |
| 1 | AA | 1192 | A | N1-C6-N6 | 9.17 | 124.10 | 118.60 |
| 53 | B5 | 1274 | A | N1-C6-N6 | 9.17 | 124.10 | 118.60 |
| 53 | B5 | 1346 | G | N1-C6-O6 | 9.17 | 125.40 | 119.90 |
| 1 | AA | 881 | A | N1-C6-N6 | 9.17 | 124.10 | 118.60 |
| 1 | AA | 1590 | A | N1-C6-N6 | 9.17 | 124.10 | 118.60 |
| 19 | A7 | 61 | C | N3-C2-O2 | -9.17 | 115.48 | 121.90 |
| 53 | B5 | 199 | A | N1-C6-N6 | 9.17 | 124.10 | 118.60 |
| 53 | B5 | 2702 | A | N1-C6-N6 | 9.17 | 124.10 | 118.60 |
| 53 | B5 | 2233 | A | N1-C6-N6 | 9.17 | 124.10 | 118.60 |
| 19 | A7 | 69 | U | O4'-C1'-N1 | 9.17 | 115.53 | 108.20 |
| 53 | B5 | 1864 | A | N1-C6-N6 | 9.17 | 124.10 | 118.60 |
| 1 | AA | 797 | G | P-O5'-C5' | -9.16 | 106.24 | 120.90 |
| 53 | B5 | 3034 | C | O4'-C1'-N1 | 9.16 | 115.53 | 108.20 |
| 1 | AA | 545 | A | N1-C6-N6 | 9.16 | 124.10 | 118.60 |
| 1 | AA | 566 | C | O4'-C1'-N1 | 9.16 | 115.53 | 108.20 |
| 53 | B5 | 175 | C | O4'-C1'-N1 | 9.16 | 115.53 | 108.20 |
| 53 | B5 | 2568 | C | O4'-C1'-N1 | 9.16 | 115.53 | 108.20 |
| 1 | AA | 1293 | A | N1-C6-N6 | 9.16 | 124.09 | 118.60 |
| 53 | B5 | 130 | A | N1-C6-N6 | 9.16 | 124.09 | 118.60 |
| 53 | B5 | 1091 | A | N1-C6-N6 | 9.15 | 124.09 | 118.60 |
| 53 | B5 | 1301 | A | N1-C6-N6 | 9.15 | 124.09 | 118.60 |
| 1 | AA | 762 | A | N1-C6-N6 | 9.15 | 124.09 | 118.60 |
| 53 | B5 | 1865 | A | N1-C6-N6 | 9.15 | 124.09 | 118.60 |
| 1 | AA | 1574 | A | N1-C6-N6 | 9.14 | 124.08 | 118.60 |
| 1 | AA | 1323 | A | N1-C6-N6 | 9.14 | 124.08 | 118.60 |
| 53 | B5 | 1384 | U | O4'-C1'-N1 | 9.14 | 115.51 | 108.20 |
| 53 | B5 | 2536 | A | N1-C6-N6 | 9.14 | 124.08 | 118.60 |
| 53 | B5 | 1612 | A | N1-C6-N6 | 9.14 | 124.08 | 118.60 |
| 53 | B5 | 1667 | A | N1-C6-N6 | 9.14 | 124.08 | 118.60 |
| 53 | B5 | 1369 | A | N1-C6-N6 | 9.13 | 124.08 | 118.60 |
| 53 | B5 | 1863 | G | N1-C6-O6 | 9.13 | 125.38 | 119.90 |
| 53 | B5 | 2680 | A | N1-C6-N6 | 9.13 | 124.08 | 118.60 |
| 53 | B5 | 711 | A | P-O3'-C3' | 9.13 | 130.66 | 119.70 |
| 53 | B5 | 2911 | A | N1-C6-N6 | 9.13 | 124.08 | 118.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|------|-------------|----------|
| 1 | AA | 369 | A | N1-C6-N6 | 9.13 | 124.08 | 118.60 |
| 53 | B5 | 1859 | A | N1-C6-N6 | 9.13 | 124.08 | 118.60 |
| 53 | B5 | 3120 | C | O4'-C1'-N1 | 9.13 | 115.50 | 108.20 |
| 1 | AA | 1557 | A | N1-C6-N6 | 9.13 | 124.08 | 118.60 |
| 53 | B5 | 2285 | C | O4'-C1'-N1 | 9.13 | 115.50 | 108.20 |
| 53 | B5 | 1771 | C | O4'-C1'-N1 | 9.13 | 115.50 | 108.20 |
| 53 | B5 | 2382 | G | N1-C6-O6 | 9.13 | 125.38 | 119.90 |
| 53 | B5 | 3005 | A | N1-C6-N6 | 9.12 | 124.08 | 118.60 |
| 1 | AA | 1219 | A | N1-C6-N6 | 9.12 | 124.07 | 118.60 |
| 53 | B5 | 1053 | A | N1-C6-N6 | 9.12 | 124.07 | 118.60 |
| 53 | B5 | 1875 | G | N1-C6-O6 | 9.12 | 125.37 | 119.90 |
| 1 | AA | 51 | A | N1-C6-N6 | 9.12 | 124.07 | 118.60 |
| 53 | B5 | 2372 | A | N1-C6-N6 | 9.12 | 124.07 | 118.60 |
| 53 | B5 | 3112 | G | N1-C6-O6 | 9.12 | 125.37 | 119.90 |
| 51 | B3 | 20 | A | N1-C6-N6 | 9.12 | 124.07 | 118.60 |
| 53 | B5 | 2213 | A | N1-C6-N6 | 9.11 | 124.07 | 118.60 |
| 1 | AA | 809 | A | N1-C6-N6 | 9.11 | 124.07 | 118.60 |
| 1 | AA | 1608 | G | N1-C6-O6 | 9.11 | 125.37 | 119.90 |
| 53 | B5 | 515 | C | O4'-C1'-N1 | 9.11 | 115.49 | 108.20 |
| 53 | B5 | 1477 | A | N1-C6-N6 | 9.11 | 124.07 | 118.60 |
| 53 | B5 | 2804 | A | N1-C6-N6 | 9.11 | 124.07 | 118.60 |
| 53 | B5 | 3103 | A | N1-C6-N6 | 9.11 | 124.06 | 118.60 |
| 1 | AA | 1444 | A | N1-C6-N6 | 9.11 | 124.06 | 118.60 |
| 53 | B5 | 2494 | A | N1-C6-N6 | 9.11 | 124.06 | 118.60 |
| 53 | B5 | 63 | A | N1-C6-N6 | 9.10 | 124.06 | 118.60 |
| 53 | B5 | 967 | A | N1-C6-N6 | 9.10 | 124.06 | 118.60 |
| 53 | B5 | 3087 | A | N1-C6-N6 | 9.10 | 124.06 | 118.60 |
| 1 | AA | 1004 | A | N1-C6-N6 | 9.10 | 124.06 | 118.60 |
| 51 | B3 | 64 | A | N1-C6-N6 | 9.10 | 124.06 | 118.60 |
| 53 | B5 | 1099 | A | N1-C6-N6 | 9.10 | 124.06 | 118.60 |
| 1 | AA | 891 | A | N1-C6-N6 | 9.09 | 124.05 | 118.60 |
| 53 | B5 | 866 | A | N1-C6-N6 | 9.09 | 124.05 | 118.60 |
| 53 | B5 | 3342 | A | N1-C6-N6 | 9.09 | 124.05 | 118.60 |
| 1 | AA | 464 | A | N1-C6-N6 | 9.09 | 124.05 | 118.60 |
| 1 | AA | 1343 | A | N1-C6-N6 | 9.09 | 124.05 | 118.60 |
| 1 | AA | 299 | A | N1-C6-N6 | 9.08 | 124.05 | 118.60 |
| 53 | B5 | 1047 | A | N1-C6-N6 | 9.08 | 124.05 | 118.60 |
| 1 | AA | 481 | A | N1-C6-N6 | 9.08 | 124.05 | 118.60 |
| 19 | A7 | 29 | A | O4'-C1'-N9 | 9.08 | 115.46 | 108.20 |
| 53 | B5 | 3139 | A | N1-C6-N6 | 9.08 | 124.05 | 118.60 |
| 1 | AA | 236 | A | N1-C6-N6 | 9.08 | 124.05 | 118.60 |
| 1 | AA | 468 | A | N1-C6-N6 | 9.08 | 124.05 | 118.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 35 | A | N1-C6-N6 | 9.08 | 124.05 | 118.60 |
| 53 | B5 | 2281 | A | N1-C6-N6 | 9.08 | 124.05 | 118.60 |
| 19 | A7 | 13 | C | O4'-C1'-N1 | 9.08 | 115.46 | 108.20 |
| 51 | B3 | 62 | A | N1-C6-N6 | 9.08 | 124.05 | 118.60 |
| 1 | AA | 104 | A | N1-C6-N6 | 9.07 | 124.04 | 118.60 |
| 53 | B5 | 1433 | A | N1-C6-N6 | 9.07 | 124.04 | 118.60 |
| 19 | A7 | 71 | G | C5-C6-N1 | 9.06 | 116.03 | 111.50 |
| 53 | B5 | 962 | A | N1-C6-N6 | 9.06 | 124.04 | 118.60 |
| 53 | B5 | 1260 | A | N1-C6-N6 | 9.06 | 124.04 | 118.60 |
| 53 | B5 | 2182 | A | N1-C6-N6 | 9.06 | 124.04 | 118.60 |
| 1 | AA | 400 | A | P-O3'-C3' | 9.06 | 130.57 | 119.70 |
| 1 | AA | 635 | A | N1-C6-N6 | 9.06 | 124.04 | 118.60 |
| 53 | B5 | 2244 | A | N1-C6-N6 | 9.06 | 124.04 | 118.60 |
| 53 | B5 | 3217 | A | N1-C6-N6 | 9.06 | 124.04 | 118.60 |
| 53 | B5 | 3130 | A | N1-C6-N6 | 9.06 | 124.04 | 118.60 |
| 53 | B5 | 2988 | C | O4'-C1'-N1 | 9.06 | 115.44 | 108.20 |
| 53 | B5 | 151 | A | N1-C6-N6 | 9.05 | 124.03 | 118.60 |
| 53 | B5 | 912 | G | N1-C6-O6 | 9.05 | 125.33 | 119.90 |
| 1 | AA | 80 | A | N1-C6-N6 | 9.04 | 124.03 | 118.60 |
| 1 | AA | 1705 | A | N1-C6-N6 | 9.04 | 124.03 | 118.60 |
| 52 | B4 | 104 | A | N1-C6-N6 | 9.04 | 124.02 | 118.60 |
| 53 | B5 | 622 | A | N1-C6-N6 | 9.04 | 124.02 | 118.60 |
| 53 | B5 | 1254 | C | O4'-C1'-N1 | 9.04 | 115.43 | 108.20 |
| 53 | B5 | 2853 | A | N1-C6-N6 | 9.04 | 124.02 | 118.60 |
| 1 | AA | 580 | A | N1-C6-N6 | 9.03 | 124.02 | 118.60 |
| 53 | B5 | 993 | A | N1-C6-N6 | 9.03 | 124.02 | 118.60 |
| 53 | B5 | 951 | A | N1-C6-N6 | 9.03 | 124.02 | 118.60 |
| 1 | AA | 256 | A | N1-C6-N6 | 9.03 | 124.02 | 118.60 |
| 1 | AA | 518 | A | N1-C6-N6 | 9.03 | 124.02 | 118.60 |
| 51 | B3 | 13 | A | N1-C6-N6 | 9.03 | 124.02 | 118.60 |
| 53 | B5 | 1252 | A | N1-C6-N6 | 9.03 | 124.02 | 118.60 |
| 1 | AA | 623 | A | N1-C6-N6 | 9.03 | 124.02 | 118.60 |
| 1 | AA | 1179 | A | N1-C6-N6 | 9.03 | 124.02 | 118.60 |
| 53 | B5 | 266 | A | N1-C6-N6 | 9.02 | 124.01 | 118.60 |
| 53 | B5 | 351 | A | N1-C6-N6 | 9.02 | 124.02 | 118.60 |
| 53 | B5 | 977 | U | P-O3'-C3' | 9.02 | 130.53 | 119.70 |
| 53 | B5 | 559 | A | N1-C6-N6 | 9.02 | 124.01 | 118.60 |
| 53 | B5 | 699 | A | N1-C6-N6 | 9.02 | 124.01 | 118.60 |
| 53 | B5 | 1437 | C | O4'-C1'-N1 | 9.02 | 115.42 | 108.20 |
| 1 | AA | 1575 | A | N1-C6-N6 | 9.02 | 124.01 | 118.60 |
| 19 | A7 | 21 | A | C4-C5-C6 | -9.02 | 112.49 | 117.00 |
| 53 | B5 | 205 | C | O4'-C1'-N1 | 9.01 | 115.41 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1 | AA | 1213 | A | N1-C6-N6 | 9.01 | 124.01 | 118.60 |
| 53 | B5 | 1797 | A | N1-C6-N6 | 9.01 | 124.00 | 118.60 |
| 19 | A7 | 45 | G | C4-C5-C6 | -9.01 | 113.40 | 118.80 |
| 53 | B5 | 1685 | C | O4'-C1'-N1 | 9.01 | 115.41 | 108.20 |
| 53 | B5 | 2168 | A | N1-C6-N6 | 9.01 | 124.00 | 118.60 |
| 1 | AA | 353 | A | N1-C6-N6 | 9.00 | 124.00 | 118.60 |
| 1 | AA | 1204 | A | N1-C6-N6 | 9.00 | 124.00 | 118.60 |
| 53 | B5 | 3150 | A | N1-C6-N6 | 9.00 | 124.00 | 118.60 |
| 1 | AA | 829 | A | N1-C6-N6 | 9.00 | 124.00 | 118.60 |
| 1 | AA | 1322 | A | N1-C6-N6 | 9.00 | 124.00 | 118.60 |
| 53 | B5 | 1057 | A | N1-C6-N6 | 9.00 | 124.00 | 118.60 |
| 53 | B5 | 1930 | A | N1-C6-N6 | 9.00 | 124.00 | 118.60 |
| 53 | B5 | 1901 | A | N1-C6-N6 | 9.00 | 124.00 | 118.60 |
| 53 | B5 | 2142 | A | N1-C6-N6 | 9.00 | 124.00 | 118.60 |
| 53 | B5 | 2933 | A | N1-C6-N6 | 9.00 | 124.00 | 118.60 |
| 1 | AA | 1372 | A | N1-C6-N6 | 8.99 | 124.00 | 118.60 |
| 1 | AA | 1407 | A | N1-C6-N6 | 8.99 | 124.00 | 118.60 |
| 1 | AA | 1479 | C | O4'-C1'-N1 | 8.99 | 115.39 | 108.20 |
| 53 | B5 | 674 | G | N1-C6-O6 | 8.99 | 125.30 | 119.90 |
| 53 | B5 | 1129 | A | N1-C6-N6 | 8.99 | 124.00 | 118.60 |
| 53 | B5 | 323 | A | N1-C6-N6 | 8.99 | 124.00 | 118.60 |
| 53 | B5 | 2461 | A | N1-C6-N6 | 8.99 | 124.00 | 118.60 |
| 53 | B5 | 2705 | A | N1-C6-N6 | 8.99 | 124.00 | 118.60 |
| 53 | B5 | 2546 | C | O4'-C1'-N1 | 8.99 | 115.39 | 108.20 |
| 53 | B5 | 1035 | G | N1-C6-O6 | 8.99 | 125.29 | 119.90 |
| 1 | AA | 1066 | A | N1-C6-N6 | 8.98 | 123.99 | 118.60 |
| 1 | AA | 1325 | G | N1-C6-O6 | 8.98 | 125.29 | 119.90 |
| 53 | B5 | 2305 | G | N1-C6-O6 | 8.98 | 125.29 | 119.90 |
| 1 | AA | 1636 | G | C4'-C3'-C2' | -8.98 | 93.62 | 102.60 |
| 19 | A7 | 51 | G | N3-C2-N2 | -8.98 | 113.61 | 119.90 |
| 53 | B5 | 1255 | C | O4'-C1'-N1 | 8.98 | 115.38 | 108.20 |
| 53 | B5 | 2356 | A | N1-C6-N6 | 8.98 | 123.99 | 118.60 |
| 53 | B5 | 2458 | A | N1-C6-N6 | 8.98 | 123.99 | 118.60 |
| 53 | B5 | 2709 | C | O4'-C1'-N1 | 8.98 | 115.38 | 108.20 |
| 53 | B5 | 848 | A | N1-C6-N6 | 8.97 | 123.98 | 118.60 |
| 1 | AA | 1517 | U | P-O3'-C3' | -8.97 | 108.93 | 119.70 |
| 1 | AA | 1595 | A | N1-C6-N6 | 8.97 | 123.98 | 118.60 |
| 53 | B5 | 2361 | A | N1-C6-N6 | 8.97 | 123.98 | 118.60 |
| 51 | B3 | 91 | C | O4'-C1'-N1 | 8.97 | 115.38 | 108.20 |
| 53 | B5 | 1449 | A | N1-C6-N6 | 8.96 | 123.98 | 118.60 |
| 53 | B5 | 1482 | A | N1-C6-N6 | 8.96 | 123.98 | 118.60 |
| 53 | B5 | 193 | C | O4'-C1'-N1 | 8.96 | 115.37 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 438 | A | N1-C6-N6 | 8.96 | 123.98 | 118.60 |
| 53 | B5 | 1666 | G | O4'-C1'-N9 | 8.96 | 115.37 | 108.20 |
| 53 | B5 | 95 | A | N1-C6-N6 | 8.96 | 123.98 | 118.60 |
| 1 | AA | 147 | A | N1-C6-N6 | 8.96 | 123.97 | 118.60 |
| 53 | B5 | 1874 | A | N1-C6-N6 | 8.96 | 123.97 | 118.60 |
| 19 | A7 | 13 | C | N1-C2-O2 | 8.96 | 124.27 | 118.90 |
| 1 | AA | 990 | G | N1-C6-O6 | 8.96 | 125.27 | 119.90 |
| 53 | B5 | 1481 | A | N1-C6-N6 | 8.96 | 123.97 | 118.60 |
| 53 | B5 | 1839 | A | N1-C6-N6 | 8.95 | 123.97 | 118.60 |
| 53 | B5 | 88 | A | N1-C6-N6 | 8.95 | 123.97 | 118.60 |
| 1 | AA | 103 | A | N1-C6-N6 | 8.94 | 123.97 | 118.60 |
| 19 | A7 | 36 | A | C6-N1-C2 | 8.94 | 123.97 | 118.60 |
| 19 | A7 | 52 | U | N3-C2-O2 | -8.95 | 115.94 | 122.20 |
| 53 | B5 | 816 | A | N1-C6-N6 | 8.95 | 123.97 | 118.60 |
| 53 | B5 | 1525 | G | N1-C6-O6 | 8.94 | 125.27 | 119.90 |
| 53 | B5 | 1632 | A | N1-C6-N6 | 8.94 | 123.97 | 118.60 |
| 53 | B5 | 2107 | A | N1-C6-N6 | 8.94 | 123.96 | 118.60 |
| 53 | B5 | 366 | A | N1-C6-N6 | 8.94 | 123.96 | 118.60 |
| 53 | B5 | 1520 | G | N1-C6-O6 | 8.93 | 125.26 | 119.90 |
| 51 | B3 | 22 | A | N1-C6-N6 | 8.93 | 123.96 | 118.60 |
| 53 | B5 | 2196 | C | O4'-C1'-N1 | 8.93 | 115.34 | 108.20 |
| 53 | B5 | 3167 | A | N1-C6-N6 | 8.93 | 123.96 | 118.60 |
| 1 | AA | 1521 | G | O5'-P-OP2 | 8.93 | 121.41 | 110.70 |
| 53 | B5 | 2696 | A | N1-C6-N6 | 8.93 | 123.96 | 118.60 |
| 19 | A7 | 69 | U | C2-N3-C4 | -8.93 | 121.64 | 127.00 |
| 53 | B5 | 837 | A | N1-C6-N6 | 8.93 | 123.96 | 118.60 |
| 53 | B5 | 1317 | A | N1-C6-N6 | 8.93 | 123.95 | 118.60 |
| 53 | B5 | 801 | A | N1-C6-N6 | 8.92 | 123.95 | 118.60 |
| 51 | B3 | 115 | A | N1-C6-N6 | 8.92 | 123.95 | 118.60 |
| 53 | B5 | 209 | A | N1-C6-N6 | 8.92 | 123.95 | 118.60 |
| 53 | B5 | 1800 | A | N1-C6-N6 | 8.92 | 123.95 | 118.60 |
| 53 | B5 | 336 | A | N1-C6-N6 | 8.91 | 123.95 | 118.60 |
| 1 | AA | 93 | A | N1-C6-N6 | 8.91 | 123.95 | 118.60 |
| 53 | B5 | 372 | A | N1-C6-N6 | 8.91 | 123.95 | 118.60 |
| 53 | B5 | 537 | A | N1-C6-N6 | 8.91 | 123.95 | 118.60 |
| 53 | B5 | 1899 | G | N1-C6-O6 | 8.91 | 125.25 | 119.90 |
| 53 | B5 | 3141 | A | N1-C6-N6 | 8.91 | 123.95 | 118.60 |
| 51 | B3 | 11 | A | N1-C6-N6 | 8.91 | 123.94 | 118.60 |
| 53 | B5 | 1546 | A | N1-C6-N6 | 8.91 | 123.94 | 118.60 |
| 53 | B5 | 2758 | A | N1-C6-N6 | 8.91 | 123.94 | 118.60 |
| 53 | B5 | 1363 | A | N1-C6-N6 | 8.90 | 123.94 | 118.60 |
| 53 | B5 | 3161 | C | O4'-C1'-N1 | 8.90 | 115.32 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 306 | A | N1-C6-N6 | 8.90 | 123.94 | 118.60 |
| 53 | B5 | 839 | C | O4'-C1'-N1 | 8.90 | 115.32 | 108.20 |
| 53 | B5 | 3062 | G | N1-C6-O6 | 8.90 | 125.24 | 119.90 |
| 52 | B4 | 59 | A | N1-C6-N6 | 8.90 | 123.94 | 118.60 |
| 53 | B5 | 1275 | C | O4'-C1'-N1 | 8.90 | 115.32 | 108.20 |
| 1 | AA | 316 | A | N1-C6-N6 | 8.90 | 123.94 | 118.60 |
| 51 | B3 | 46 | A | N1-C6-N6 | 8.89 | 123.94 | 118.60 |
| 53 | B5 | 3050 | U | O4'-C1'-N1 | 8.89 | 115.31 | 108.20 |
| 19 | A7 | 12 | U | C5-C6-N1 | -8.88 | 118.26 | 122.70 |
| 1 | AA | 535 | A | N1-C6-N6 | 8.88 | 123.92 | 118.60 |
| 1 | AA | 1518 | U | P-O3'-C3' | -8.87 | 109.06 | 119.70 |
| 53 | B5 | 3053 | G | N1-C6-O6 | 8.87 | 125.22 | 119.90 |
| 1 | AA | 592 | A | N1-C6-N6 | 8.87 | 123.92 | 118.60 |
| 53 | B5 | 728 | G | N1-C6-O6 | 8.87 | 125.22 | 119.90 |
| 53 | B5 | 2467 | G | N1-C6-O6 | 8.87 | 125.22 | 119.90 |
| 1 | AA | 1764 | A | N1-C6-N6 | 8.87 | 123.92 | 118.60 |
| 52 | B4 | 65 | A | N1-C6-N6 | 8.86 | 123.92 | 118.60 |
| 53 | B5 | 2242 | A | N1-C6-N6 | 8.86 | 123.92 | 118.60 |
| 53 | B5 | 1366 | A | N1-C6-N6 | 8.86 | 123.92 | 118.60 |
| 53 | B5 | 1043 | C | O4'-C1'-N1 | 8.86 | 115.28 | 108.20 |
| 53 | B5 | 1500 | G | N1-C6-O6 | 8.85 | 125.21 | 119.90 |
| 53 | B5 | 1183 | C | O4'-C1'-N1 | 8.85 | 115.28 | 108.20 |
| 53 | B5 | 1776 | G | N1-C6-O6 | 8.85 | 125.21 | 119.90 |
| 53 | B5 | 156 | G | N1-C6-O6 | 8.85 | 125.21 | 119.90 |
| 53 | B5 | 1922 | A | N1-C6-N6 | 8.85 | 123.91 | 118.60 |
| 53 | B5 | 1334 | U | O4'-C1'-N1 | 8.85 | 115.28 | 108.20 |
| 53 | B5 | 1613 | A | N1-C6-N6 | 8.85 | 123.91 | 118.60 |
| 1 | AA | 769 | A | N1-C6-N6 | 8.84 | 123.91 | 118.60 |
| 19 | A7 | 69 | U | N3-C2-O2 | -8.84 | 116.01 | 122.20 |
| 53 | B5 | 108 | A | N1-C6-N6 | 8.84 | 123.91 | 118.60 |
| 1 | AA | 436 | A | N1-C6-N6 | 8.84 | 123.91 | 118.60 |
| 1 | AA | 1271 | A | N1-C6-N6 | 8.84 | 123.91 | 118.60 |
| 19 | A7 | 36 | A | N1-C2-N3 | -8.84 | 124.88 | 129.30 |
| 53 | B5 | 2562 | G | N1-C6-O6 | 8.84 | 125.20 | 119.90 |
| 52 | B4 | 154 | C | O4'-C1'-N1 | 8.83 | 115.27 | 108.20 |
| 53 | B5 | 804 | C | O4'-C1'-N1 | 8.83 | 115.27 | 108.20 |
| 53 | B5 | 2449 | A | N1-C6-N6 | 8.83 | 123.90 | 118.60 |
| 53 | B5 | 3172 | G | N1-C6-O6 | 8.83 | 125.20 | 119.90 |
| 1 | AA | 1127 | G | N1-C6-O6 | 8.83 | 125.20 | 119.90 |
| 53 | B5 | 1729 | A | N1-C6-N6 | 8.83 | 123.90 | 118.60 |
| 53 | B5 | 1779 | C | O4'-C1'-N1 | 8.83 | 115.26 | 108.20 |
| 53 | B5 | 2819 | A | N1-C6-N6 | 8.83 | 123.90 | 118.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 19 | A7 | 30 | G | N9-C4-C5 | 8.82 | 108.93 | 105.40 |
| 53 | B5 | 676 | G | N1-C6-O6 | 8.82 | 125.19 | 119.90 |
| 53 | B5 | 1826 | C | O4'-C1'-N1 | 8.82 | 115.26 | 108.20 |
| 53 | B5 | 1887 | A | N1-C6-N6 | 8.82 | 123.89 | 118.60 |
| 53 | B5 | 198 | A | N1-C6-N6 | 8.82 | 123.89 | 118.60 |
| 53 | B5 | 394 | G | N1-C6-O6 | 8.82 | 125.19 | 119.90 |
| 53 | B5 | 1217 | A | N1-C6-N6 | 8.81 | 123.89 | 118.60 |
| 53 | B5 | 1658 | G | N1-C6-O6 | 8.81 | 125.18 | 119.90 |
| 53 | B5 | 2780 | A | N1-C6-N6 | 8.80 | 123.88 | 118.60 |
| 1 | AA | 1018 | A | N1-C6-N6 | 8.80 | 123.88 | 118.60 |
| 53 | B5 | 1184 | A | N1-C6-N6 | 8.80 | 123.88 | 118.60 |
| 51 | B3 | 104 | C | O4'-C1'-N1 | 8.79 | 115.23 | 108.20 |
| 53 | B5 | 66 | A | N1-C6-N6 | 8.79 | 123.88 | 118.60 |
| 53 | B5 | 729 | C | O4'-C1'-N1 | 8.79 | 115.23 | 108.20 |
| 53 | B5 | 1918 | C | O4'-C1'-N1 | 8.78 | 115.23 | 108.20 |
| 1 | AA | 55 | A | N1-C6-N6 | 8.78 | 123.87 | 118.60 |
| 53 | B5 | 73 | C | O4'-C1'-N1 | 8.78 | 115.22 | 108.20 |
| 1 | AA | 346 | G | N1-C6-O6 | 8.78 | 125.17 | 119.90 |
| 1 | AA | 1198 | A | N1-C6-N6 | 8.78 | 123.86 | 118.60 |
| 53 | B5 | 2404 | A | N1-C6-N6 | 8.78 | 123.86 | 118.60 |
| 1 | AA | 1335 | C | O4'-C1'-N1 | 8.77 | 115.22 | 108.20 |
| 53 | B5 | 20 | A | N1-C6-N6 | 8.77 | 123.86 | 118.60 |
| 53 | B5 | 127 | G | N1-C6-O6 | 8.77 | 125.16 | 119.90 |
| 1 | AA | 460 | A | N1-C6-N6 | 8.76 | 123.86 | 118.60 |
| 53 | B5 | 290 | G | N1-C6-O6 | 8.76 | 125.16 | 119.90 |
| 53 | B5 | 2831 | G | N1-C6-O6 | 8.76 | 125.16 | 119.90 |
| 1 | AA | 1520 | U | C4'-C3'-C2' | 8.76 | 111.36 | 102.60 |
| 19 | A7 | 30 | G | N3-C4-C5 | -8.76 | 124.22 | 128.60 |
| 51 | B3 | 40 | C | O4'-C1'-N1 | 8.76 | 115.21 | 108.20 |
| 1 | AA | 1134 | A | N1-C6-N6 | 8.75 | 123.85 | 118.60 |
| 1 | AA | 1019 | A | N1-C6-N6 | 8.74 | 123.85 | 118.60 |
| 1 | AA | 1515 | U | P-O3'-C3' | -8.74 | 109.21 | 119.70 |
| 53 | B5 | 253 | A | N1-C6-N6 | 8.74 | 123.85 | 118.60 |
| 53 | B5 | 2525 | G | N1-C6-O6 | 8.74 | 125.14 | 119.90 |
| 19 | A7 | 18 | G | O4'-C1'-N9 | 8.73 | 115.19 | 108.20 |
| 53 | B5 | 1201 | C | O4'-C1'-N1 | 8.73 | 115.19 | 108.20 |
| 1 | AA | 1627 | G | N1-C6-O6 | 8.73 | 125.14 | 119.90 |
| 53 | B5 | 2308 | C | O4'-C1'-N1 | 8.73 | 115.19 | 108.20 |
| 53 | B5 | 2686 | A | N1-C6-N6 | 8.73 | 123.84 | 118.60 |
| 53 | B5 | 2638 | C | O4'-C1'-N1 | 8.73 | 115.18 | 108.20 |
| 1 | AA | 989 | C | O4'-C1'-N1 | 8.73 | 115.18 | 108.20 |
| 53 | B5 | 3261 | C | O4'-C1'-N1 | 8.73 | 115.18 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 639 | G | N1-C6-O6 | 8.72 | 125.13 | 119.90 |
| 53 | B5 | 680 | G | C5-C6-O6 | -8.72 | 123.36 | 128.60 |
| 53 | B5 | 3313 | U | O4'-C1'-N1 | 8.72 | 115.18 | 108.20 |
| 53 | B5 | 2459 | A | N1-C6-N6 | 8.72 | 123.83 | 118.60 |
| 53 | B5 | 2651 | G | P-O3'-C3' | 8.72 | 130.17 | 119.70 |
| 53 | B5 | 15 | C | O4'-C1'-N1 | 8.72 | 115.18 | 108.20 |
| 1 | AA | 872 | G | N1-C6-O6 | 8.72 | 125.13 | 119.90 |
| 53 | B5 | 321 | C | O4'-C1'-N1 | 8.72 | 115.17 | 108.20 |
| 1 | AA | 315 | A | N1-C6-N6 | 8.71 | 123.83 | 118.60 |
| 53 | B5 | 159 | A | N1-C6-N6 | 8.71 | 123.82 | 118.60 |
| 53 | B5 | 1833 | G | N1-C6-O6 | 8.71 | 125.12 | 119.90 |
| 53 | B5 | 3038 | U | O4'-C1'-N1 | 8.71 | 115.17 | 108.20 |
| 1 | AA | 451 | A | N1-C6-N6 | 8.70 | 123.82 | 118.60 |
| 53 | B5 | 1278 | A | N1-C6-N6 | 8.70 | 123.82 | 118.60 |
| 1 | AA | 970 | A | N1-C6-N6 | 8.70 | 123.82 | 118.60 |
| 53 | B5 | 2150 | G | N1-C6-O6 | 8.70 | 125.12 | 119.90 |
| 19 | A7 | 36 | A | N1-C6-N6 | -8.69 | 113.39 | 118.60 |
| 53 | B5 | 2856 | G | N1-C6-O6 | 8.69 | 125.11 | 119.90 |
| 53 | B5 | 2296 | A | N1-C6-N6 | 8.69 | 123.81 | 118.60 |
| 53 | B5 | 554 | A | N1-C6-N6 | 8.69 | 123.81 | 118.60 |
| 53 | B5 | 151 | A | O4'-C1'-N9 | 8.68 | 115.14 | 108.20 |
| 53 | B5 | 1828 | A | N1-C6-N6 | 8.68 | 123.81 | 118.60 |
| 53 | B5 | 2934 | A | N1-C6-N6 | 8.68 | 123.81 | 118.60 |
| 1 | AA | 918 | A | N1-C6-N6 | 8.68 | 123.81 | 118.60 |
| 1 | AA | 1197 | G | N1-C6-O6 | 8.68 | 125.11 | 119.90 |
| 53 | B5 | 384 | A | N1-C6-N6 | 8.68 | 123.81 | 118.60 |
| 53 | B5 | 440 | A | N1-C6-N6 | 8.68 | 123.81 | 118.60 |
| 53 | B5 | 1383 | G | N1-C6-O6 | 8.68 | 125.11 | 119.90 |
| 53 | B5 | 3088 | G | N1-C6-O6 | 8.68 | 125.11 | 119.90 |
| 53 | B5 | 2108 | C | O4'-C1'-N1 | 8.68 | 115.14 | 108.20 |
| 53 | B5 | 2313 | A | N1-C6-N6 | 8.68 | 123.81 | 118.60 |
| 53 | B5 | 2384 | A | N1-C6-N6 | 8.67 | 123.80 | 118.60 |
| 53 | B5 | 2976 | A | N1-C6-N6 | 8.67 | 123.80 | 118.60 |
| 53 | B5 | 3052 | G | N1-C6-O6 | 8.67 | 125.10 | 119.90 |
| 17 | AR | 164 | ASP | CB-CA-C | 8.67 | 127.74 | 110.40 |
| 53 | B5 | 2852 | C | O4'-C1'-N1 | 8.67 | 115.13 | 108.20 |
| 1 | AA | 473 | A | N1-C6-N6 | 8.66 | 123.80 | 118.60 |
| 53 | B5 | 1947 | G | O4'-C1'-N9 | 8.66 | 115.13 | 108.20 |
| 53 | B5 | 2111 | G | N1-C6-O6 | 8.66 | 125.10 | 119.90 |
| 1 | AA | 1110 | A | N1-C6-N6 | 8.66 | 123.79 | 118.60 |
| 53 | B5 | 1421 | G | N1-C6-O6 | 8.66 | 125.09 | 119.90 |
| 53 | B5 | 2708 | C | O4'-C1'-N1 | 8.66 | 115.13 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 221 | A | N1-C6-N6 | 8.65 | 123.79 | 118.60 |
| 53 | B5 | 2309 | A | N1-C6-N6 | 8.65 | 123.79 | 118.60 |
| 53 | B5 | 3275 | A | N1-C6-N6 | 8.65 | 123.79 | 118.60 |
| 1 | AA | 742 | U | O4'-C1'-N1 | 8.65 | 115.12 | 108.20 |
| 1 | AA | 1024 | A | N1-C6-N6 | 8.65 | 123.79 | 118.60 |
| 53 | B5 | 1031 | C | O4'-C1'-N1 | 8.65 | 115.12 | 108.20 |
| 53 | B5 | 1318 | A | N1-C6-N6 | 8.65 | 123.79 | 118.60 |
| 53 | B5 | 2110 | G | N1-C6-O6 | 8.65 | 125.09 | 119.90 |
| 1 | AA | 26 | A | N1-C6-N6 | 8.64 | 123.79 | 118.60 |
| 1 | AA | 312 | A | P-O3'-C3' | 8.64 | 130.07 | 119.70 |
| 53 | B5 | 259 | C | O4'-C1'-N1 | 8.64 | 115.11 | 108.20 |
| 53 | B5 | 1827 | C | O4'-C1'-N1 | 8.64 | 115.11 | 108.20 |
| 53 | B5 | 2420 | C | O4'-C1'-N1 | 8.64 | 115.11 | 108.20 |
| 53 | B5 | 2177 | G | N1-C6-O6 | 8.63 | 125.08 | 119.90 |
| 51 | B3 | 74 | A | N1-C6-N6 | 8.62 | 123.78 | 118.60 |
| 53 | B5 | 950 | G | N1-C6-O6 | 8.62 | 125.07 | 119.90 |
| 19 | A7 | 3 | G | N3-C4-C5 | -8.62 | 124.29 | 128.60 |
| 53 | B5 | 2619 | G | N1-C6-O6 | 8.62 | 125.07 | 119.90 |
| 53 | B5 | 1257 | C | O4'-C1'-N1 | 8.61 | 115.09 | 108.20 |
| 53 | B5 | 595 | A | N1-C6-N6 | 8.61 | 123.77 | 118.60 |
| 1 | AA | 1568 | A | N1-C6-N6 | 8.61 | 123.77 | 118.60 |
| 53 | B5 | 3152 | U | O4'-C1'-N1 | 8.61 | 115.09 | 108.20 |
| 53 | B5 | 1282 | G | N1-C6-O6 | 8.61 | 125.06 | 119.90 |
| 53 | B5 | 494 | G | P-O3'-C3' | 8.59 | 130.01 | 119.70 |
| 53 | B5 | 2715 | A | N1-C6-N6 | 8.59 | 123.75 | 118.60 |
| 53 | B5 | 3225 | C | O4'-C1'-N1 | 8.58 | 115.07 | 108.20 |
| 53 | B5 | 1718 | G | N1-C6-O6 | 8.58 | 125.05 | 119.90 |
| 53 | B5 | 3061 | G | N1-C6-O6 | 8.58 | 125.05 | 119.90 |
| 53 | B5 | 132 | C | O4'-C1'-N1 | 8.57 | 115.06 | 108.20 |
| 1 | AA | 47 | A | P-O3'-C3' | 8.57 | 129.99 | 119.70 |
| 1 | AA | 857 | U | O4'-C1'-N1 | 8.57 | 115.06 | 108.20 |
| 53 | B5 | 2126 | A | N1-C6-N6 | 8.57 | 123.74 | 118.60 |
| 1 | AA | 865 | A | P-O5'-C5' | -8.57 | 107.19 | 120.90 |
| 53 | B5 | 815 | G | N1-C6-O6 | 8.57 | 125.04 | 119.90 |
| 19 | A7 | 44 | A | C5'-C4'-C3' | -8.56 | 102.30 | 116.00 |
| 19 | A7 | 57 | G | C3'-C2'-C1' | 8.56 | 108.35 | 101.50 |
| 53 | B5 | 116 | A | N1-C6-N6 | 8.56 | 123.74 | 118.60 |
| 53 | B5 | 135 | C | O4'-C1'-N1 | 8.56 | 115.05 | 108.20 |
| 53 | B5 | 3004 | C | O4'-C1'-N1 | 8.56 | 115.05 | 108.20 |
| 53 | B5 | 2216 | G | N1-C6-O6 | 8.55 | 125.03 | 119.90 |
| 53 | B5 | 2192 | C | O4'-C1'-N1 | 8.55 | 115.04 | 108.20 |
| 7 | AH | 61 | ILE | CA-CB-CG1 | -8.54 | 94.77 | 111.00 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1 | AA | 1104 | G | N1-C6-O6 | 8.54 | 125.03 | 119.90 |
| 52 | B4 | 15 | G | N1-C6-O6 | 8.54 | 125.03 | 119.90 |
| 53 | B5 | 94 | G | N1-C6-O6 | 8.54 | 125.02 | 119.90 |
| 51 | B3 | 1 | G | N1-C6-O6 | 8.54 | 125.02 | 119.90 |
| 53 | B5 | 907 | G | N1-C6-O6 | 8.54 | 125.02 | 119.90 |
| 53 | B5 | 3037 | U | O4'-C1'-N1 | 8.54 | 115.03 | 108.20 |
| 53 | B5 | 1902 | G | N1-C6-O6 | 8.53 | 125.02 | 119.90 |
| 53 | B5 | 2117 | A | N1-C6-N6 | 8.53 | 123.72 | 118.60 |
| 1 | AA | 1457 | C | O4'-C1'-N1 | 8.53 | 115.02 | 108.20 |
| 53 | B5 | 2265 | C | O4'-C1'-N1 | 8.53 | 115.02 | 108.20 |
| 1 | AA | 474 | A | N1-C6-N6 | 8.52 | 123.71 | 118.60 |
| 52 | B4 | 112 | U | O4'-C1'-N1 | 8.52 | 115.02 | 108.20 |
| 53 | B5 | 2448 | G | O4'-C1'-N9 | 8.52 | 115.02 | 108.20 |
| 53 | B5 | 2823 | G | N1-C6-O6 | 8.51 | 125.01 | 119.90 |
| 1 | AA | 992 | A | N1-C6-N6 | 8.51 | 123.70 | 118.60 |
| 19 | A7 | 47 | U | C1'-O4'-C4' | -8.51 | 103.10 | 109.90 |
| 53 | B5 | 1232 | C | O4'-C1'-N1 | 8.51 | 115.00 | 108.20 |
| 53 | B5 | 2906 | C | O4'-C1'-N1 | 8.51 | 115.00 | 108.20 |
| 1 | AA | 309 | C | O4'-C1'-N1 | 8.50 | 115.00 | 108.20 |
| 53 | B5 | 477 | A | N1-C6-N6 | 8.50 | 123.70 | 118.60 |
| 53 | B5 | 1049 | C | O4'-C1'-N1 | 8.50 | 115.00 | 108.20 |
| 53 | B5 | 2237 | C | O4'-C1'-N1 | 8.50 | 115.00 | 108.20 |
| 1 | AA | 973 | A | N1-C6-N6 | 8.50 | 123.70 | 118.60 |
| 52 | B4 | 11 | C | O4'-C1'-N1 | 8.50 | 115.00 | 108.20 |
| 1 | AA | 1607 | U | O4'-C1'-N1 | 8.49 | 115.00 | 108.20 |
| 1 | AA | 50 | C | O4'-C1'-N1 | 8.49 | 114.99 | 108.20 |
| 1 | AA | 1499 | C | O4'-C1'-N1 | 8.49 | 114.99 | 108.20 |
| 53 | B5 | 3350 | C | O4'-C1'-N1 | 8.49 | 114.99 | 108.20 |
| 1 | AA | 567 | A | N1-C6-N6 | 8.48 | 123.69 | 118.60 |
| 53 | B5 | 295 | A | N1-C6-N6 | 8.48 | 123.69 | 118.60 |
| 53 | B5 | 373 | A | N1-C6-N6 | 8.48 | 123.69 | 118.60 |
| 53 | B5 | 1140 | G | N1-C6-O6 | 8.48 | 124.99 | 119.90 |
| 53 | B5 | 2489 | C | O4'-C1'-N1 | 8.48 | 114.98 | 108.20 |
| 53 | B5 | 2331 | C | O4'-C1'-N1 | 8.48 | 114.98 | 108.20 |
| 53 | B5 | 2664 | C | O4'-C1'-N1 | 8.48 | 114.98 | 108.20 |
| 53 | B5 | 3116 | G | N1-C6-O6 | 8.48 | 124.99 | 119.90 |
| 19 | A7 | 62 | A | C5-N7-C8 | -8.47 | 99.66 | 103.90 |
| 53 | B5 | 3125 | U | O4'-C1'-N1 | 8.47 | 114.98 | 108.20 |
| 52 | B4 | 142 | C | O4'-C1'-N1 | 8.47 | 114.98 | 108.20 |
| 1 | AA | 168 | A | N1-C6-N6 | 8.47 | 123.68 | 118.60 |
| 1 | AA | 867 | G | C4'-C3'-C2' | 8.47 | 111.07 | 102.60 |
| 53 | B5 | 54 | C | O4'-C1'-N1 | 8.47 | 114.97 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 1748 | G | N1-C6-O6 | 8.47 | 124.98 | 119.90 |
| 53 | B5 | 849 | C | O4'-C1'-N1 | 8.47 | 114.97 | 108.20 |
| 53 | B5 | 196 | G | N1-C6-O6 | 8.46 | 124.98 | 119.90 |
| 53 | B5 | 3129 | A | N1-C6-N6 | 8.47 | 123.68 | 118.60 |
| 1 | AA | 568 | G | N1-C6-O6 | 8.46 | 124.98 | 119.90 |
| 1 | AA | 1354 | A | O4'-C1'-N9 | 8.46 | 114.97 | 108.20 |
| 19 | A7 | 45 | G | N7-C8-N9 | 8.46 | 117.33 | 113.10 |
| 1 | AA | 1548 | A | P-O5'-C5' | -8.46 | 107.37 | 120.90 |
| 53 | B5 | 637 | C | O4'-C1'-N1 | 8.46 | 114.97 | 108.20 |
| 53 | B5 | 2208 | A | N1-C6-N6 | 8.46 | 123.67 | 118.60 |
| 53 | B5 | 2476 | C | O4'-C1'-N1 | 8.46 | 114.97 | 108.20 |
| 1 | AA | 1070 | G | N1-C6-O6 | 8.45 | 124.97 | 119.90 |
| 1 | AA | 412 | A | N1-C6-N6 | 8.45 | 123.67 | 118.60 |
| 19 | A7 | 21 | A | C5'-C4'-O4' | 8.45 | 119.24 | 109.10 |
| 52 | B4 | 141 | C | O4'-C1'-N1 | 8.45 | 114.96 | 108.20 |
| 1 | AA | 1794 | C | O4'-C1'-N1 | 8.45 | 114.96 | 108.20 |
| 53 | B5 | 3274 | G | N1-C6-O6 | 8.44 | 124.97 | 119.90 |
| 19 | A7 | 24 | G | C2-N3-C4 | 8.44 | 116.12 | 111.90 |
| 53 | B5 | 2210 | G | N1-C6-O6 | 8.43 | 124.96 | 119.90 |
| 53 | B5 | 953 | G | N1-C6-O6 | 8.43 | 124.95 | 119.90 |
| 52 | B4 | 130 | C | O4'-C1'-N1 | 8.42 | 114.94 | 108.20 |
| 19 | A7 | 36 | A | C8-N9-C4 | -8.41 | 102.43 | 105.80 |
| 1 | AA | 856 | A | N3-C4-C5 | -8.41 | 120.91 | 126.80 |
| 52 | B4 | 57 | C | O4'-C1'-N1 | 8.41 | 114.93 | 108.20 |
| 53 | B5 | 1117 | G | N1-C6-O6 | 8.41 | 124.95 | 119.90 |
| 53 | B5 | 2510 | U | O4'-C1'-N1 | 8.41 | 114.93 | 108.20 |
| 53 | B5 | 3112 | G | C5-C6-O6 | -8.41 | 123.55 | 128.60 |
| 1 | AA | 591 | A | N1-C6-N6 | 8.41 | 123.64 | 118.60 |
| 19 | A7 | 43 | G | O4'-C1'-N9 | 8.41 | 114.92 | 108.20 |
| 53 | B5 | 2299 | A | N1-C6-N6 | 8.41 | 123.64 | 118.60 |
| 1 | AA | 587 | C | O4'-C1'-N1 | 8.40 | 114.92 | 108.20 |
| 53 | B5 | 1790 | G | N1-C6-O6 | 8.40 | 124.94 | 119.90 |
| 53 | B5 | 3091 | A | N1-C6-N6 | 8.40 | 123.64 | 118.60 |
| 1 | AA | 176 | C | O4'-C1'-N1 | 8.40 | 114.92 | 108.20 |
| 53 | B5 | 1127 | G | N1-C6-O6 | 8.40 | 124.94 | 119.90 |
| 1 | AA | 1071 | G | N1-C6-O6 | 8.40 | 124.94 | 119.90 |
| 1 | AA | 1634 | C | P-O3'-C3' | -8.40 | 109.62 | 119.70 |
| 53 | B5 | 2263 | C | O4'-C1'-N1 | 8.39 | 114.91 | 108.20 |
| 53 | B5 | 2329 | C | O4'-C1'-N1 | 8.39 | 114.91 | 108.20 |
| 53 | B5 | 96 | G | N1-C6-O6 | 8.39 | 124.93 | 119.90 |
| 53 | B5 | 2928 | C | O4'-C1'-N1 | 8.38 | 114.91 | 108.20 |
| 1 | AA | 1079 | C | O4'-C1'-N1 | 8.38 | 114.90 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 64 | G | N1-C6-O6 | 8.38 | 124.93 | 119.90 |
| 53 | B5 | 2566 | C | O4'-C1'-N1 | 8.38 | 114.90 | 108.20 |
| 53 | B5 | 3338 | C | O4'-C1'-N1 | 8.38 | 114.90 | 108.20 |
| 53 | B5 | 1161 | G | N1-C6-O6 | 8.38 | 124.93 | 119.90 |
| 53 | B5 | 2630 | C | O4'-C1'-N1 | 8.38 | 114.90 | 108.20 |
| 53 | B5 | 3332 | U | P-O3'-C3' | 8.38 | 129.75 | 119.70 |
| 1 | AA | 319 | U | O4'-C1'-N1 | 8.38 | 114.90 | 108.20 |
| 53 | B5 | 133 | U | P-O3'-C3' | 8.38 | 129.75 | 119.70 |
| 53 | B5 | 435 | C | O4'-C1'-N1 | 8.38 | 114.90 | 108.20 |
| 1 | AA | 1425 | G | N1-C6-O6 | 8.37 | 124.92 | 119.90 |
| 53 | B5 | 695 | C | O4'-C1'-N1 | 8.37 | 114.90 | 108.20 |
| 51 | B3 | 88 | G | N1-C6-O6 | 8.37 | 124.92 | 119.90 |
| 53 | B5 | 2755 | C | O4'-C1'-N1 | 8.37 | 114.89 | 108.20 |
| 53 | B5 | 2853 | A | O4'-C1'-N9 | 8.37 | 114.89 | 108.20 |
| 19 | A7 | 71 | G | C6-C5-N7 | 8.37 | 135.42 | 130.40 |
| 53 | B5 | 826 | G | N1-C6-O6 | 8.37 | 124.92 | 119.90 |
| 53 | B5 | 2845 | A | O4'-C1'-N9 | 8.37 | 114.89 | 108.20 |
| 53 | B5 | 3033 | A | N1-C6-N6 | 8.36 | 123.62 | 118.60 |
| 1 | AA | 1520 | U | O4'-C4'-C3' | -8.36 | 95.64 | 104.00 |
| 1 | AA | 1093 | C | O4'-C1'-N1 | 8.36 | 114.89 | 108.20 |
| 53 | B5 | 678 | G | N1-C6-O6 | 8.36 | 124.91 | 119.90 |
| 19 | A7 | 27 | C | C4'-C3'-C2' | -8.35 | 94.25 | 102.60 |
| 53 | B5 | 2762 | A | N1-C6-N6 | 8.35 | 123.61 | 118.60 |
| 53 | B5 | 2332 | A | N1-C6-N6 | 8.35 | 123.61 | 118.60 |
| 53 | B5 | 1447 | G | N1-C6-O6 | 8.35 | 124.91 | 119.90 |
| 1 | AA | 1587 | C | O4'-C1'-N1 | 8.35 | 114.88 | 108.20 |
| 51 | B3 | 75 | G | C5-C6-O6 | -8.34 | 123.59 | 128.60 |
| 53 | B5 | 1917 | C | O4'-C1'-N1 | 8.34 | 114.88 | 108.20 |
| 53 | B5 | 1947 | G | P-O3'-C3' | 8.34 | 129.71 | 119.70 |
| 1 | AA | 625 | C | O4'-C1'-N1 | 8.34 | 114.87 | 108.20 |
| 53 | B5 | 1359 | C | O4'-C1'-N1 | 8.34 | 114.87 | 108.20 |
| 53 | B5 | 3248 | C | O4'-C1'-N1 | 8.34 | 114.87 | 108.20 |
| 53 | B5 | 787 | G | N1-C6-O6 | 8.34 | 124.90 | 119.90 |
| 53 | B5 | 1107 | C | O4'-C1'-N1 | 8.34 | 114.87 | 108.20 |
| 53 | B5 | 1735 | G | N1-C6-O6 | 8.34 | 124.90 | 119.90 |
| 53 | B5 | 1139 | G | N1-C6-O6 | 8.34 | 124.90 | 119.90 |
| 53 | B5 | 2845 | A | N1-C6-N6 | 8.34 | 123.60 | 118.60 |
| 19 | A7 | 43 | G | N3-C2-N2 | -8.33 | 114.07 | 119.90 |
| 53 | B5 | 1487 | G | N1-C6-O6 | 8.33 | 124.90 | 119.90 |
| 53 | B5 | 1423 | C | O4'-C1'-N1 | 8.33 | 114.87 | 108.20 |
| 53 | B5 | 2812 | C | O4'-C1'-N1 | 8.33 | 114.86 | 108.20 |
| 53 | B5 | 3190 | C | O4'-C1'-N1 | 8.33 | 114.86 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 68 | C | O4'-C1'-N1 | 8.33 | 114.86 | 108.20 |
| 1 | AA | 866 | G | P-O3'-C3' | -8.33 | 109.71 | 119.70 |
| 1 | AA | 1075 | C | O4'-C1'-N1 | 8.32 | 114.86 | 108.20 |
| 53 | B5 | 727 | G | N1-C6-O6 | 8.32 | 124.89 | 119.90 |
| 53 | B5 | 840 | C | O4'-C1'-N1 | 8.32 | 114.86 | 108.20 |
| 53 | B5 | 1414 | G | N1-C6-O6 | 8.32 | 124.89 | 119.90 |
| 53 | B5 | 2963 | C | O4'-C1'-N1 | 8.32 | 114.85 | 108.20 |
| 1 | AA | 564 | G | N1-C6-O6 | 8.31 | 124.89 | 119.90 |
| 19 | A7 | 2 | C | C5-C6-N1 | -8.31 | 116.84 | 121.00 |
| 1 | AA | 1701 | C | O4'-C1'-N1 | 8.31 | 114.85 | 108.20 |
| 53 | B5 | 1393 | A | N1-C6-N6 | 8.31 | 123.59 | 118.60 |
| 53 | B5 | 2678 | A | N1-C6-N6 | 8.31 | 123.59 | 118.60 |
| 1 | AA | 1521 | G | N1-C2-N3 | -8.31 | 118.91 | 123.90 |
| 52 | B4 | 71 | G | O4'-C1'-N9 | 8.31 | 114.85 | 108.20 |
| 53 | B5 | 572 | A | N1-C6-N6 | 8.31 | 123.58 | 118.60 |
| 53 | B5 | 3102 | G | N1-C6-O6 | 8.31 | 124.89 | 119.90 |
| 52 | B4 | 137 | C | O4'-C1'-N1 | 8.31 | 114.84 | 108.20 |
| 19 | A7 | 59 | U | C6-N1-C2 | -8.30 | 116.02 | 121.00 |
| 53 | B5 | 1420 | C | O4'-C1'-N1 | 8.30 | 114.84 | 108.20 |
| 1 | AA | 858 | G | N3-C4-N9 | 8.30 | 130.98 | 126.00 |
| 1 | AA | 1472 | G | N1-C6-O6 | 8.30 | 124.88 | 119.90 |
| 53 | B5 | 1387 | G | N1-C6-O6 | 8.30 | 124.88 | 119.90 |
| 53 | B5 | 609 | G | N1-C6-O6 | 8.30 | 124.88 | 119.90 |
| 53 | B5 | 1216 | C | O4'-C1'-N1 | 8.30 | 114.84 | 108.20 |
| 53 | B5 | 539 | C | O4'-C1'-N1 | 8.30 | 114.84 | 108.20 |
| 53 | B5 | 1653 | G | N1-C6-O6 | 8.29 | 124.88 | 119.90 |
| 53 | B5 | 1157 | G | N1-C6-O6 | 8.29 | 124.88 | 119.90 |
| 53 | B5 | 2651 | G | N1-C6-O6 | 8.29 | 124.88 | 119.90 |
| 53 | B5 | 2623 | G | N1-C6-O6 | 8.29 | 124.87 | 119.90 |
| 53 | B5 | 2245 | C | O4'-C1'-N1 | 8.29 | 114.83 | 108.20 |
| 19 | A7 | 44 | A | N7-C8-N9 | 8.29 | 117.94 | 113.80 |
| 53 | B5 | 2625 | C | O4'-C1'-N1 | 8.29 | 114.83 | 108.20 |
| 53 | B5 | 906 | A | N1-C6-N6 | 8.29 | 123.57 | 118.60 |
| 53 | B5 | 971 | C | O4'-C1'-N1 | 8.28 | 114.83 | 108.20 |
| 1 | AA | 501 | U | P-O3'-C3' | 8.28 | 129.64 | 119.70 |
| 53 | B5 | 809 | G | N1-C6-O6 | 8.28 | 124.87 | 119.90 |
| 53 | B5 | 1466 | G | N1-C6-O6 | 8.28 | 124.87 | 119.90 |
| 53 | B5 | 2496 | C | O4'-C1'-N1 | 8.28 | 114.83 | 108.20 |
| 1 | AA | 1067 | C | O4'-C1'-N1 | 8.28 | 114.82 | 108.20 |
| 1 | AA | 1277 | G | N1-C6-O6 | 8.28 | 124.87 | 119.90 |
| 53 | B5 | 2323 | G | N1-C6-O6 | 8.28 | 124.87 | 119.90 |
| 53 | B5 | 2682 | C | O4'-C1'-N1 | 8.28 | 114.82 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 19 | A7 | 15 | G | C5-C6-O6 | 8.28 | 133.56 | 128.60 |
| 53 | B5 | 1360 | C | O4'-C1'-N1 | 8.27 | 114.82 | 108.20 |
| 53 | B5 | 1365 | G | N1-C6-O6 | 8.27 | 124.86 | 119.90 |
| 53 | B5 | 2469 | G | N1-C6-O6 | 8.27 | 124.86 | 119.90 |
| 51 | B3 | 26 | C | O4'-C1'-N1 | 8.27 | 114.81 | 108.20 |
| 51 | B3 | 50 | U | O4'-C1'-N1 | 8.27 | 114.81 | 108.20 |
| 52 | B4 | 68 | G | N1-C6-O6 | 8.27 | 124.86 | 119.90 |
| 51 | B3 | 113 | C | O4'-C1'-N1 | 8.26 | 114.81 | 108.20 |
| 53 | B5 | 425 | G | N1-C6-O6 | 8.26 | 124.86 | 119.90 |
| 53 | B5 | 1900 | A | P-O3'-C3' | 8.26 | 129.61 | 119.70 |
| 53 | B5 | 2151 | C | O4'-C1'-N1 | 8.26 | 114.81 | 108.20 |
| 53 | B5 | 2465 | G | N1-C6-O6 | 8.26 | 124.86 | 119.90 |
| 53 | B5 | 2276 | G | C5-C6-O6 | -8.26 | 123.65 | 128.60 |
| 53 | B5 | 1190 | A | N1-C6-N6 | 8.25 | 123.55 | 118.60 |
| 53 | B5 | 2158 | A | N1-C6-N6 | 8.25 | 123.55 | 118.60 |
| 53 | B5 | 3228 | C | O4'-C1'-N1 | 8.25 | 114.80 | 108.20 |
| 53 | B5 | 3264 | G | N1-C6-O6 | 8.25 | 124.85 | 119.90 |
| 1 | AA | 174 | U | O4'-C1'-N1 | 8.25 | 114.80 | 108.20 |
| 53 | B5 | 272 | G | O4'-C1'-N9 | 8.25 | 114.80 | 108.20 |
| 19 | A7 | 63 | C | C1'-O4'-C4' | -8.24 | 103.31 | 109.90 |
| 53 | B5 | 2297 | U | O4'-C1'-N1 | 8.24 | 114.80 | 108.20 |
| 53 | B5 | 1719 | G | N1-C6-O6 | 8.24 | 124.84 | 119.90 |
| 53 | B5 | 3030 | G | N1-C6-O6 | 8.24 | 124.85 | 119.90 |
| 53 | B5 | 824 | C | O4'-C1'-N1 | 8.24 | 114.79 | 108.20 |
| 53 | B5 | 1845 | G | N1-C6-O6 | 8.24 | 124.84 | 119.90 |
| 53 | B5 | 2545 | C | O4'-C1'-N1 | 8.24 | 114.79 | 108.20 |
| 53 | B5 | 3294 | A | N1-C6-N6 | 8.24 | 123.54 | 118.60 |
| 53 | B5 | 910 | G | N1-C6-O6 | 8.24 | 124.84 | 119.90 |
| 53 | B5 | 1186 | G | N1-C6-O6 | 8.24 | 124.84 | 119.90 |
| 53 | B5 | 1870 | C | O4'-C1'-N1 | 8.24 | 114.79 | 108.20 |
| 53 | B5 | 1251 | A | O4'-C1'-N9 | 8.23 | 114.79 | 108.20 |
| 53 | B5 | 968 | G | N1-C6-O6 | 8.23 | 124.84 | 119.90 |
| 53 | B5 | 696 | C | O4'-C1'-N1 | 8.23 | 114.78 | 108.20 |
| 53 | B5 | 522 | A | N1-C6-N6 | 8.23 | 123.54 | 118.60 |
| 53 | B5 | 2511 | A | O4'-C1'-N9 | 8.23 | 114.78 | 108.20 |
| 19 | A7 | 74 | C | O4'-C1'-N1 | 8.22 | 114.78 | 108.20 |
| 53 | B5 | 2704 | A | N1-C6-N6 | 8.22 | 123.53 | 118.60 |
| 53 | B5 | 2382 | G | P-O3'-C3' | 8.22 | 129.56 | 119.70 |
| 52 | B4 | 78 | G | N1-C6-O6 | 8.22 | 124.83 | 119.90 |
| 53 | B5 | 2163 | C | O4'-C1'-N1 | 8.22 | 114.78 | 108.20 |
| 1 | AA | 1581 | A | N1-C6-N6 | 8.21 | 123.53 | 118.60 |
| 53 | B5 | 714 | G | N1-C6-O6 | 8.21 | 124.83 | 119.90 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 2783 | U | O4'-C1'-N1 | 8.22 | 114.77 | 108.20 |
| 53 | B5 | 2849 | C | O4'-C1'-N1 | 8.21 | 114.77 | 108.20 |
| 1 | AA | 1638 | C | OP1-P-OP2 | -8.21 | 107.28 | 119.60 |
| 51 | B3 | 48 | U | O4'-C1'-N1 | 8.21 | 114.77 | 108.20 |
| 53 | B5 | 2407 | C | O4'-C1'-N1 | 8.21 | 114.77 | 108.20 |
| 1 | AA | 307 | G | P-O3'-C3' | 8.21 | 129.55 | 119.70 |
| 53 | B5 | 312 | C | O4'-C1'-N1 | 8.21 | 114.76 | 108.20 |
| 1 | AA | 976 | A | N1-C6-N6 | 8.20 | 123.52 | 118.60 |
| 52 | B4 | 150 | G | N1-C6-O6 | 8.20 | 124.82 | 119.90 |
| 53 | B5 | 258 | G | N1-C6-O6 | 8.20 | 124.82 | 119.90 |
| 53 | B5 | 1582 | C | O4'-C1'-N1 | 8.20 | 114.76 | 108.20 |
| 53 | B5 | 3367 | C | O4'-C1'-N1 | 8.20 | 114.76 | 108.20 |
| 1 | AA | 1370 | C | O4'-C1'-N1 | 8.19 | 114.75 | 108.20 |
| 53 | B5 | 233 | C | O4'-C1'-N1 | 8.19 | 114.75 | 108.20 |
| 53 | B5 | 1119 | C | O4'-C1'-N1 | 8.19 | 114.75 | 108.20 |
| 53 | B5 | 1429 | G | N1-C6-O6 | 8.19 | 124.81 | 119.90 |
| 53 | B5 | 3101 | G | N1-C6-O6 | 8.19 | 124.81 | 119.90 |
| 53 | B5 | 3284 | G | N1-C6-O6 | 8.19 | 124.81 | 119.90 |
| 53 | B5 | 1219 | C | O4'-C1'-N1 | 8.19 | 114.75 | 108.20 |
| 51 | B3 | 18 | C | O4'-C1'-N1 | 8.18 | 114.75 | 108.20 |
| 53 | B5 | 484 | C | O4'-C1'-N1 | 8.18 | 114.75 | 108.20 |
| 53 | B5 | 1276 | U | O4'-C1'-N1 | 8.18 | 114.75 | 108.20 |
| 1 | AA | 1637 | C | P-O3'-C3' | -8.18 | 109.89 | 119.70 |
| 53 | B5 | 1927 | G | N1-C6-O6 | 8.18 | 124.81 | 119.90 |
| 53 | B5 | 3098 | G | N1-C6-O6 | 8.18 | 124.81 | 119.90 |
| 19 | A7 | 43 | G | N1-C2-N3 | 8.18 | 128.81 | 123.90 |
| 53 | B5 | 928 | C | O4'-C1'-N1 | 8.18 | 114.74 | 108.20 |
| 53 | B5 | 1652 | G | N1-C6-O6 | 8.18 | 124.81 | 119.90 |
| 1 | AA | 1201 | C | O4'-C1'-N1 | 8.17 | 114.74 | 108.20 |
| 1 | AA | 1216 | C | O4'-C1'-N1 | 8.17 | 114.74 | 108.20 |
| 53 | B5 | 614 | C | O4'-C1'-N1 | 8.17 | 114.74 | 108.20 |
| 1 | AA | 434 | G | N1-C6-O6 | 8.17 | 124.80 | 119.90 |
| 1 | AA | 1064 | C | O4'-C1'-N1 | 8.17 | 114.74 | 108.20 |
| 52 | B4 | 129 | C | O4'-C1'-N1 | 8.17 | 114.73 | 108.20 |
| 1 | AA | 969 | A | N1-C6-N6 | 8.17 | 123.50 | 118.60 |
| 53 | B5 | 1377 | G | N1-C6-O6 | 8.17 | 124.80 | 119.90 |
| 1 | AA | 2 | A | N1-C6-N6 | 8.16 | 123.50 | 118.60 |
| 1 | AA | 57 | G | N1-C6-O6 | 8.16 | 124.80 | 119.90 |
| 53 | B5 | 1508 | C | O4'-C1'-N1 | 8.16 | 114.73 | 108.20 |
| 53 | B5 | 2267 | C | O4'-C1'-N1 | 8.16 | 114.73 | 108.20 |
| 53 | B5 | 2526 | C | O4'-C1'-N1 | 8.16 | 114.73 | 108.20 |
| 53 | B5 | 2577 | C | O4'-C1'-N1 | 8.16 | 114.73 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 51 | B3 | 66 | C | O4'-C1'-N1 | 8.16 | 114.73 | 108.20 |
| 1 | AA | 4 | C | O4'-C1'-N1 | 8.16 | 114.72 | 108.20 |
| 53 | B5 | 1243 | G | N1-C6-O6 | 8.15 | 124.79 | 119.90 |
| 1 | AA | 1156 | C | O4'-C1'-N1 | 8.15 | 114.72 | 108.20 |
| 1 | AA | 1400 | C | O4'-C1'-N1 | 8.15 | 114.72 | 108.20 |
| 19 | A7 | 31 | A | O4'-C1'-N9 | 8.15 | 114.72 | 108.20 |
| 53 | B5 | 1592 | G | O4'-C1'-N9 | 8.15 | 114.72 | 108.20 |
| 53 | B5 | 3290 | G | N1-C6-O6 | 8.15 | 124.79 | 119.90 |
| 19 | A7 | 3 | G | N1-C6-O6 | -8.15 | 115.01 | 119.90 |
| 53 | B5 | 752 | C | O4'-C1'-N1 | 8.15 | 114.72 | 108.20 |
| 53 | B5 | 3084 | C | O4'-C1'-N1 | 8.15 | 114.72 | 108.20 |
| 1 | AA | 796 | A | OP1-P-OP2 | -8.14 | 107.39 | 119.60 |
| 53 | B5 | 2620 | G | N1-C6-O6 | 8.14 | 124.79 | 119.90 |
| 53 | B5 | 592 | G | N1-C6-O6 | 8.14 | 124.78 | 119.90 |
| 53 | B5 | 768 | C | O4'-C1'-N1 | 8.14 | 114.71 | 108.20 |
| 53 | B5 | 1464 | G | N1-C6-O6 | 8.14 | 124.78 | 119.90 |
| 1 | AA | 298 | C | O4'-C1'-N1 | 8.14 | 114.71 | 108.20 |
| 1 | AA | 1152 | G | N1-C6-O6 | 8.13 | 124.78 | 119.90 |
| 53 | B5 | 1285 | G | N1-C6-O6 | 8.13 | 124.78 | 119.90 |
| 53 | B5 | 1389 | G | N1-C6-O6 | 8.13 | 124.78 | 119.90 |
| 53 | B5 | 22 | G | N1-C6-O6 | 8.13 | 124.78 | 119.90 |
| 53 | B5 | 3128 | G | C5-C6-O6 | -8.13 | 123.72 | 128.60 |
| 1 | AA | 894 | U | O4'-C1'-N1 | 8.13 | 114.70 | 108.20 |
| 19 | A7 | 63 | C | C6-N1-C2 | -8.13 | 117.05 | 120.30 |
| 53 | B5 | 574 | U | O4'-C1'-N1 | 8.13 | 114.70 | 108.20 |
| 53 | B5 | 2307 | G | N1-C6-O6 | 8.13 | 124.78 | 119.90 |
| 53 | B5 | 1340 | G | N1-C6-O6 | 8.13 | 124.78 | 119.90 |
| 53 | B5 | 2616 | C | O4'-C1'-N1 | 8.12 | 114.70 | 108.20 |
| 1 | AA | 860 | U | C4'-C3'-C2' | 8.12 | 110.72 | 102.60 |
| 53 | B5 | 1861 | G | N1-C6-O6 | 8.12 | 124.77 | 119.90 |
| 53 | B5 | 562 | C | O4'-C1'-N1 | 8.12 | 114.70 | 108.20 |
| 53 | B5 | 2583 | C | O4'-C1'-N1 | 8.12 | 114.70 | 108.20 |
| 19 | A7 | 71 | G | N1-C2-N2 | 8.12 | 123.51 | 116.20 |
| 53 | B5 | 460 | C | O4'-C1'-N1 | 8.12 | 114.69 | 108.20 |
| 53 | B5 | 1767 | C | O4'-C1'-N1 | 8.12 | 114.69 | 108.20 |
| 53 | B5 | 421 | G | O4'-C1'-N9 | 8.11 | 114.69 | 108.20 |
| 53 | B5 | 561 | C | O4'-C1'-N1 | 8.11 | 114.69 | 108.20 |
| 53 | B5 | 1068 | C | O4'-C1'-N1 | 8.12 | 114.69 | 108.20 |
| 53 | B5 | 2204 | C | O4'-C1'-N1 | 8.12 | 114.69 | 108.20 |
| 53 | B5 | 3208 | C | O4'-C1'-N1 | 8.12 | 114.69 | 108.20 |
| 1 | AA | 1105 | G | N1-C6-O6 | 8.11 | 124.77 | 119.90 |
| 19 | A7 | 24 | G | N3-C4-C5 | -8.11 | 124.54 | 128.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 76 | G | N1-C6-O6 | 8.11 | 124.77 | 119.90 |
| 1 | AA | 1241 | G | N1-C6-O6 | 8.11 | 124.77 | 119.90 |
| 53 | B5 | 407 | A | N1-C6-N6 | 8.11 | 123.47 | 118.60 |
| 53 | B5 | 1283 | C | O4'-C1'-N1 | 8.11 | 114.69 | 108.20 |
| 19 | A7 | 21 | A | N9-C1'-C2' | -8.11 | 103.08 | 112.00 |
| 53 | B5 | 274 | G | N1-C6-O6 | 8.11 | 124.76 | 119.90 |
| 53 | B5 | 1246 | G | N1-C6-O6 | 8.11 | 124.76 | 119.90 |
| 53 | B5 | 2927 | C | O4'-C1'-N1 | 8.11 | 114.69 | 108.20 |
| 52 | B4 | 25 | G | N1-C6-O6 | 8.10 | 124.76 | 119.90 |
| 53 | B5 | 240 | U | O4'-C1'-N1 | 8.10 | 114.68 | 108.20 |
| 53 | B5 | 1825 | G | N1-C6-O6 | 8.10 | 124.76 | 119.90 |
| 53 | B5 | 1403 | C | O4'-C1'-N1 | 8.10 | 114.68 | 108.20 |
| 51 | B3 | 8 | G | N1-C6-O6 | 8.10 | 124.76 | 119.90 |
| 1 | AA | 1436 | C | O4'-C1'-N1 | 8.09 | 114.67 | 108.20 |
| 53 | B5 | 1794 | G | N1-C6-O6 | 8.09 | 124.75 | 119.90 |
| 53 | B5 | 155 | G | N1-C6-O6 | 8.09 | 124.75 | 119.90 |
| 53 | B5 | 1412 | G | N1-C6-O6 | 8.09 | 124.75 | 119.90 |
| 53 | B5 | 2618 | G | N1-C6-O6 | 8.09 | 124.75 | 119.90 |
| 53 | B5 | 19 | U | O4'-C1'-N1 | 8.09 | 114.67 | 108.20 |
| 53 | B5 | 1592 | G | N1-C6-O6 | 8.09 | 124.75 | 119.90 |
| 53 | B5 | 2202 | C | O4'-C1'-N1 | 8.09 | 114.67 | 108.20 |
| 1 | AA | 1074 | C | O4'-C1'-N1 | 8.08 | 114.66 | 108.20 |
| 53 | B5 | 421 | G | N1-C6-O6 | 8.08 | 124.75 | 119.90 |
| 53 | B5 | 1069 | C | O4'-C1'-N1 | 8.08 | 114.66 | 108.20 |
| 53 | B5 | 1516 | C | O4'-C1'-N1 | 8.08 | 114.67 | 108.20 |
| 1 | AA | 347 | G | N1-C6-O6 | 8.08 | 124.75 | 119.90 |
| 1 | AA | 1371 | C | O4'-C1'-N1 | 8.08 | 114.66 | 108.20 |
| 51 | B3 | 15 | C | O4'-C1'-N1 | 8.08 | 114.66 | 108.20 |
| 1 | AA | 172 | C | O4'-C1'-N1 | 8.07 | 114.66 | 108.20 |
| 1 | AA | 339 | C | O4'-C1'-N1 | 8.07 | 114.66 | 108.20 |
| 53 | B5 | 3240 | C | O4'-C1'-N1 | 8.07 | 114.66 | 108.20 |
| 53 | B5 | 2945 | G | N1-C6-O6 | 8.07 | 124.74 | 119.90 |
| 53 | B5 | 2959 | C | O4'-C1'-N1 | 8.07 | 114.66 | 108.20 |
| 1 | AA | 716 | C | O4'-C1'-N1 | 8.07 | 114.65 | 108.20 |
| 53 | B5 | 192 | C | O4'-C1'-N1 | 8.07 | 114.65 | 108.20 |
| 1 | AA | 1020 | C | O4'-C1'-N1 | 8.06 | 114.65 | 108.20 |
| 53 | B5 | 111 | C | O4'-C1'-N1 | 8.06 | 114.65 | 108.20 |
| 53 | B5 | 427 | C | O4'-C1'-N1 | 8.06 | 114.65 | 108.20 |
| 53 | B5 | 1297 | C | O4'-C1'-N1 | 8.06 | 114.65 | 108.20 |
| 53 | B5 | 2830 | G | O4'-C1'-N9 | 8.06 | 114.65 | 108.20 |
| 1 | AA | 310 | C | O4'-C1'-N1 | 8.06 | 114.65 | 108.20 |
| 1 | AA | 1486 | G | N1-C6-O6 | 8.06 | 124.74 | 119.90 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 332 | C | O4'-C1'-N1 | 8.06 | 114.65 | 108.20 |
| 1 | AA | 184 | C | O4'-C1'-N1 | 8.06 | 114.65 | 108.20 |
| 53 | B5 | 237 | G | N1-C6-O6 | 8.06 | 124.73 | 119.90 |
| 53 | B5 | 1868 | G | N1-C6-O6 | 8.06 | 124.73 | 119.90 |
| 53 | B5 | 3312 | U | O4'-C1'-N1 | 8.06 | 114.65 | 108.20 |
| 53 | B5 | 1624 | G | N1-C6-O6 | 8.06 | 124.73 | 119.90 |
| 53 | B5 | 2483 | G | N1-C6-O6 | 8.06 | 124.73 | 119.90 |
| 53 | B5 | 2905 | U | O4'-C1'-N1 | 8.06 | 114.65 | 108.20 |
| 51 | B3 | 29 | C | O4'-C1'-N1 | 8.06 | 114.64 | 108.20 |
| 1 | AA | 1171 | C | O4'-C1'-N1 | 8.05 | 114.64 | 108.20 |
| 53 | B5 | 1829 | G | N1-C6-O6 | 8.05 | 124.73 | 119.90 |
| 1 | AA | 1401 | C | O4'-C1'-N1 | 8.05 | 114.64 | 108.20 |
| 1 | AA | 645 | C | O4'-C1'-N1 | 8.05 | 114.64 | 108.20 |
| 1 | AA | 1497 | G | N1-C6-O6 | 8.05 | 124.73 | 119.90 |
| 53 | B5 | 792 | G | O4'-C1'-N9 | 8.05 | 114.64 | 108.20 |
| 53 | B5 | 895 | A | N1-C6-N6 | 8.05 | 123.43 | 118.60 |
| 53 | B5 | 1928 | G | N1-C6-O6 | 8.05 | 124.73 | 119.90 |
| 53 | B5 | 3149 | G | N1-C6-O6 | 8.05 | 124.73 | 119.90 |
| 1 | AA | 1336 | C | O4'-C1'-N1 | 8.05 | 114.64 | 108.20 |
| 53 | B5 | 1007 | U | O4'-C1'-N1 | 8.05 | 114.64 | 108.20 |
| 53 | B5 | 966 | U | O4'-C1'-N1 | 8.05 | 114.64 | 108.20 |
| 53 | B5 | 1846 | C | O4'-C1'-N1 | 8.05 | 114.64 | 108.20 |
| 53 | B5 | 2997 | G | N1-C6-O6 | 8.05 | 124.73 | 119.90 |
| 1 | AA | 559 | C | O4'-C1'-N1 | 8.04 | 114.63 | 108.20 |
| 53 | B5 | 1376 | C | O4'-C1'-N1 | 8.04 | 114.63 | 108.20 |
| 1 | AA | 644 | C | O4'-C1'-N1 | 8.04 | 114.63 | 108.20 |
| 51 | B3 | 95 | C | O4'-C1'-N1 | 8.04 | 114.63 | 108.20 |
| 53 | B5 | 2569 | A | P-O3'-C3' | 8.04 | 129.34 | 119.70 |
| 19 | A7 | 9 | A | C6-N1-C2 | -8.04 | 113.78 | 118.60 |
| 53 | B5 | 2303 | A | O4'-C1'-N9 | 8.04 | 114.63 | 108.20 |
| 53 | B5 | 2614 | G | N1-C6-O6 | 8.04 | 124.72 | 119.90 |
| 53 | B5 | 3289 | G | N1-C6-O6 | 8.04 | 124.72 | 119.90 |
| 53 | B5 | 1631 | C | O4'-C1'-N1 | 8.03 | 114.63 | 108.20 |
| 53 | B5 | 131 | C | P-O3'-C3' | 8.03 | 129.34 | 119.70 |
| 53 | B5 | 404 | G | N1-C6-O6 | 8.03 | 124.72 | 119.90 |
| 53 | B5 | 1070 | U | O4'-C1'-N1 | 8.03 | 114.62 | 108.20 |
| 53 | B5 | 2961 | G | N1-C6-O6 | 8.03 | 124.72 | 119.90 |
| 1 | AA | 627 | C | O4'-C1'-N1 | 8.02 | 114.62 | 108.20 |
| 51 | B3 | 39 | C | O4'-C1'-N1 | 8.02 | 114.62 | 108.20 |
| 52 | B4 | 105 | A | N1-C6-N6 | 8.02 | 123.41 | 118.60 |
| 53 | B5 | 1701 | C | O4'-C1'-N1 | 8.02 | 114.62 | 108.20 |
| 53 | B5 | 1725 | C | O4'-C1'-N1 | 8.02 | 114.62 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 3092 | C | O4'-C1'-N1 | 8.02 | 114.61 | 108.20 |
| 53 | B5 | 2964 | G | N1-C6-O6 | 8.02 | 124.71 | 119.90 |
| 53 | B5 | 3241 | G | N1-C6-O6 | 8.02 | 124.71 | 119.90 |
| 1 | AA | 773 | C | O4'-C1'-N1 | 8.01 | 114.61 | 108.20 |
| 1 | AA | 777 | C | O4'-C1'-N1 | 8.01 | 114.61 | 108.20 |
| 1 | AA | 1001 | G | N1-C6-O6 | 8.01 | 124.71 | 119.90 |
| 51 | B3 | 30 | G | N1-C6-O6 | 8.01 | 124.71 | 119.90 |
| 53 | B5 | 3193 | C | O4'-C1'-N1 | 8.01 | 114.61 | 108.20 |
| 53 | B5 | 2761 | G | C5-C6-O6 | -8.01 | 123.79 | 128.60 |
| 53 | B5 | 2885 | C | O4'-C1'-N1 | 8.01 | 114.61 | 108.20 |
| 19 | A7 | 43 | G | N3-C4-C5 | -8.01 | 124.59 | 128.60 |
| 53 | B5 | 139 | G | N1-C6-O6 | 8.01 | 124.71 | 119.90 |
| 53 | B5 | 3288 | G | N1-C6-O6 | 8.01 | 124.70 | 119.90 |
| 53 | B5 | 163 | C | O4'-C1'-N1 | 8.01 | 114.61 | 108.20 |
| 53 | B5 | 3022 | G | N1-C6-O6 | 8.01 | 124.70 | 119.90 |
| 1 | AA | 674 | C | O4'-C1'-N1 | 8.01 | 114.60 | 108.20 |
| 52 | B4 | 144 | G | N1-C6-O6 | 8.01 | 124.70 | 119.90 |
| 53 | B5 | 260 | C | O4'-C1'-N1 | 8.01 | 114.60 | 108.20 |
| 53 | B5 | 281 | G | N1-C6-O6 | 8.01 | 124.70 | 119.90 |
| 53 | B5 | 1319 | G | N1-C6-O6 | 8.01 | 124.70 | 119.90 |
| 53 | B5 | 3197 | G | N1-C6-O6 | 8.00 | 124.70 | 119.90 |
| 53 | B5 | 463 | C | O4'-C1'-N1 | 8.00 | 114.60 | 108.20 |
| 53 | B5 | 1943 | C | O4'-C1'-N1 | 8.00 | 114.60 | 108.20 |
| 1 | AA | 1416 | G | N1-C6-O6 | 8.00 | 124.70 | 119.90 |
| 1 | AA | 784 | C | O4'-C1'-N1 | 8.00 | 114.60 | 108.20 |
| 1 | AA | 961 | C | O4'-C1'-N1 | 8.00 | 114.60 | 108.20 |
| 53 | B5 | 1565 | G | N1-C6-O6 | 8.00 | 124.70 | 119.90 |
| 1 | AA | 1274 | G | N1-C6-O6 | 7.99 | 124.70 | 119.90 |
| 53 | B5 | 1551 | C | O4'-C1'-N1 | 7.99 | 114.59 | 108.20 |
| 53 | B5 | 1654 | A | O4'-C1'-N9 | 7.99 | 114.59 | 108.20 |
| 53 | B5 | 3072 | C | O4'-C1'-N1 | 7.99 | 114.59 | 108.20 |
| 53 | B5 | 573 | C | O4'-C1'-N1 | 7.99 | 114.59 | 108.20 |
| 53 | B5 | 1628 | C | O4'-C1'-N1 | 7.99 | 114.59 | 108.20 |
| 1 | AA | 708 | C | O4'-C1'-N1 | 7.99 | 114.59 | 108.20 |
| 1 | AA | 1446 | G | N1-C6-O6 | 7.99 | 124.69 | 119.90 |
| 53 | B5 | 1764 | U | O4'-C1'-N1 | 7.99 | 114.59 | 108.20 |
| 53 | B5 | 105 | C | O4'-C1'-N1 | 7.98 | 114.59 | 108.20 |
| 52 | B4 | 110 | C | O4'-C1'-N1 | 7.98 | 114.58 | 108.20 |
| 53 | B5 | 190 | U | O4'-C1'-N1 | 7.98 | 114.58 | 108.20 |
| 53 | B5 | 1597 | C | O4'-C1'-N1 | 7.98 | 114.58 | 108.20 |
| 53 | B5 | 1947 | G | N1-C6-O6 | 7.98 | 124.69 | 119.90 |
| 19 | A7 | 8 | U | C4-C5-C6 | 7.98 | 124.49 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 293 | C | O4'-C1'-N1 | 7.98 | 114.58 | 108.20 |
| 1 | AA | 1373 | C | O4'-C1'-N1 | 7.97 | 114.58 | 108.20 |
| 53 | B5 | 849 | C | C2-N1-C1' | 7.97 | 127.57 | 118.80 |
| 53 | B5 | 1668 | G | N1-C6-O6 | 7.97 | 124.69 | 119.90 |
| 53 | B5 | 2841 | G | C5-C6-O6 | -7.97 | 123.81 | 128.60 |
| 1 | AA | 1584 | A | O4'-C1'-N9 | 7.97 | 114.58 | 108.20 |
| 52 | B4 | 115 | C | O4'-C1'-N1 | 7.97 | 114.58 | 108.20 |
| 53 | B5 | 300 | G | N1-C6-O6 | 7.97 | 124.68 | 119.90 |
| 53 | B5 | 1733 | G | N1-C6-O6 | 7.97 | 124.68 | 119.90 |
| 53 | B5 | 2925 | C | O4'-C1'-N1 | 7.97 | 114.58 | 108.20 |
| 53 | B5 | 2710 | C | O4'-C1'-N1 | 7.97 | 114.57 | 108.20 |
| 1 | AA | 1437 | C | O4'-C1'-N1 | 7.96 | 114.57 | 108.20 |
| 1 | AA | 1520 | U | C1'-C2'-O2' | 7.96 | 134.49 | 110.60 |
| 53 | B5 | 1499 | C | O4'-C1'-N1 | 7.96 | 114.57 | 108.20 |
| 53 | B5 | 2504 | U | O4'-C1'-N1 | 7.96 | 114.57 | 108.20 |
| 53 | B5 | 3369 | G | N1-C6-O6 | 7.96 | 124.68 | 119.90 |
| 1 | AA | 703 | G | N1-C6-O6 | 7.96 | 124.68 | 119.90 |
| 52 | B4 | 106 | C | O4'-C1'-N1 | 7.96 | 114.57 | 108.20 |
| 53 | B5 | 1660 | C | O4'-C1'-N1 | 7.96 | 114.57 | 108.20 |
| 53 | B5 | 2189 | U | O4'-C1'-N1 | 7.96 | 114.57 | 108.20 |
| 53 | B5 | 1032 | C | O4'-C1'-N1 | 7.96 | 114.57 | 108.20 |
| 53 | B5 | 2277 | C | O4'-C1'-N1 | 7.95 | 114.56 | 108.20 |
| 53 | B5 | 1358 | C | O4'-C1'-N1 | 7.95 | 114.56 | 108.20 |
| 53 | B5 | 2490 | C | O4'-C1'-N1 | 7.95 | 114.56 | 108.20 |
| 53 | B5 | 881 | C | O4'-C1'-N1 | 7.95 | 114.56 | 108.20 |
| 53 | B5 | 2385 | G | N1-C6-O6 | 7.95 | 124.67 | 119.90 |
| 53 | B5 | 3060 | C | O4'-C1'-N1 | 7.95 | 114.56 | 108.20 |
| 53 | B5 | 3097 | C | O4'-C1'-N1 | 7.95 | 114.56 | 108.20 |
| 1 | AA | 848 | C | O4'-C1'-N1 | 7.95 | 114.56 | 108.20 |
| 53 | B5 | 3366 | G | N1-C6-O6 | 7.95 | 124.67 | 119.90 |
| 51 | B3 | 93 | U | O4'-C1'-N1 | 7.95 | 114.56 | 108.20 |
| 53 | B5 | 2942 | C | O4'-C1'-N1 | 7.95 | 114.56 | 108.20 |
| 53 | B5 | 376 | G | C5-C6-O6 | -7.94 | 123.83 | 128.60 |
| 53 | B5 | 767 | U | O4'-C1'-N1 | 7.94 | 114.55 | 108.20 |
| 53 | B5 | 1544 | G | N1-C6-O6 | 7.94 | 124.67 | 119.90 |
| 53 | B5 | 2836 | C | O4'-C1'-N1 | 7.94 | 114.55 | 108.20 |
| 53 | B5 | 148 | G | N1-C6-O6 | 7.94 | 124.66 | 119.90 |
| 53 | B5 | 1878 | G | N1-C6-O6 | 7.94 | 124.66 | 119.90 |
| 53 | B5 | 2622 | C | O4'-C1'-N1 | 7.94 | 114.55 | 108.20 |
| 1 | AA | 115 | G | N1-C6-O6 | 7.94 | 124.66 | 119.90 |
| 52 | B4 | 133 | G | O4'-C1'-N9 | 7.94 | 114.55 | 108.20 |
| 53 | B5 | 225 | C | O4'-C1'-N1 | 7.93 | 114.55 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 396 | A | N1-C6-N6 | 7.93 | 123.36 | 118.60 |
| 53 | B5 | 247 | C | O4'-C1'-N1 | 7.93 | 114.55 | 108.20 |
| 53 | B5 | 2444 | C | O4'-C1'-N1 | 7.93 | 114.55 | 108.20 |
| 1 | AA | 867 | G | C3'-C2'-C1' | -7.93 | 95.16 | 101.50 |
| 1 | AA | 717 | C | O4'-C1'-N1 | 7.93 | 114.54 | 108.20 |
| 1 | AA | 491 | C | O4'-C1'-N1 | 7.92 | 114.54 | 108.20 |
| 53 | B5 | 1608 | C | O4'-C1'-N1 | 7.92 | 114.54 | 108.20 |
| 52 | B4 | 87 | G | N1-C6-O6 | 7.92 | 124.65 | 119.90 |
| 53 | B5 | 1518 | U | O4'-C1'-N1 | 7.92 | 114.54 | 108.20 |
| 53 | B5 | 1227 | C | O4'-C1'-N1 | 7.92 | 114.53 | 108.20 |
| 53 | B5 | 1357 | G | N1-C6-O6 | 7.92 | 124.65 | 119.90 |
| 53 | B5 | 3096 | C | O4'-C1'-N1 | 7.92 | 114.53 | 108.20 |
| 1 | AA | 1770 | C | O4'-C1'-N1 | 7.92 | 114.53 | 108.20 |
| 53 | B5 | 1666 | G | N1-C6-O6 | 7.92 | 124.65 | 119.90 |
| 53 | B5 | 29 | C | O4'-C1'-N1 | 7.91 | 114.53 | 108.20 |
| 53 | B5 | 1067 | U | O4'-C1'-N1 | 7.91 | 114.53 | 108.20 |
| 53 | B5 | 2274 | U | O4'-C1'-N1 | 7.91 | 114.53 | 108.20 |
| 53 | B5 | 482 | C | O4'-C1'-N1 | 7.91 | 114.53 | 108.20 |
| 53 | B5 | 1416 | C | O4'-C1'-N1 | 7.91 | 114.53 | 108.20 |
| 53 | B5 | 2965 | U | O4'-C1'-N1 | 7.91 | 114.53 | 108.20 |
| 53 | B5 | 2218 | G | N1-C6-O6 | 7.91 | 124.64 | 119.90 |
| 53 | B5 | 2479 | C | O4'-C1'-N1 | 7.91 | 114.53 | 108.20 |
| 53 | B5 | 1131 | G | N1-C6-O6 | 7.91 | 124.64 | 119.90 |
| 52 | B4 | 151 | C | O4'-C1'-N1 | 7.91 | 114.53 | 108.20 |
| 53 | B5 | 3028 | G | C5-C6-O6 | -7.91 | 123.86 | 128.60 |
| 53 | B5 | 927 | C | O4'-C1'-N1 | 7.90 | 114.52 | 108.20 |
| 53 | B5 | 1037 | C | O4'-C1'-N1 | 7.90 | 114.52 | 108.20 |
| 53 | B5 | 2350 | C | O4'-C1'-N1 | 7.90 | 114.52 | 108.20 |
| 53 | B5 | 2477 | G | N1-C6-O6 | 7.90 | 124.64 | 119.90 |
| 53 | B5 | 2542 | U | O4'-C1'-N1 | 7.90 | 114.52 | 108.20 |
| 1 | AA | 442 | C | O4'-C1'-N1 | 7.90 | 114.52 | 108.20 |
| 1 | AA | 974 | C | O4'-C1'-N1 | 7.90 | 114.52 | 108.20 |
| 53 | B5 | 383 | G | N1-C6-O6 | 7.90 | 124.64 | 119.90 |
| 53 | B5 | 1038 | C | O4'-C1'-N1 | 7.90 | 114.52 | 108.20 |
| 53 | B5 | 3311 | C | O4'-C1'-N1 | 7.90 | 114.52 | 108.20 |
| 1 | AA | 1339 | C | O4'-C1'-N1 | 7.90 | 114.52 | 108.20 |
| 53 | B5 | 1905 | G | N1-C6-O6 | 7.90 | 124.64 | 119.90 |
| 52 | B4 | 51 | G | N1-C6-O6 | 7.89 | 124.64 | 119.90 |
| 19 | A7 | 13 | C | C5'-C4'-O4' | 7.89 | 118.57 | 109.10 |
| 53 | B5 | 496 | C | O4'-C1'-N1 | 7.89 | 114.51 | 108.20 |
| 53 | B5 | 1563 | C | O4'-C1'-N1 | 7.89 | 114.51 | 108.20 |
| 53 | B5 | 1803 | C | O4'-C1'-N1 | 7.89 | 114.52 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 2765 | C | O4'-C1'-N1 | 7.89 | 114.51 | 108.20 |
| 1 | AA | 38 | C | O4'-C1'-N1 | 7.89 | 114.51 | 108.20 |
| 1 | AA | 1528 | C | O4'-C1'-N1 | 7.89 | 114.51 | 108.20 |
| 53 | B5 | 206 | G | N1-C6-O6 | 7.89 | 124.63 | 119.90 |
| 53 | B5 | 1164 | G | N1-C6-O6 | 7.89 | 124.63 | 119.90 |
| 53 | B5 | 3233 | C | O4'-C1'-N1 | 7.89 | 114.51 | 108.20 |
| 1 | AA | 1340 | U | O4'-C1'-N1 | 7.89 | 114.51 | 108.20 |
| 53 | B5 | 730 | C | O4'-C1'-N1 | 7.89 | 114.51 | 108.20 |
| 1 | AA | 697 | C | O4'-C1'-N1 | 7.88 | 114.51 | 108.20 |
| 53 | B5 | 42 | C | O4'-C1'-N1 | 7.88 | 114.51 | 108.20 |
| 53 | B5 | 498 | A | N1-C6-N6 | 7.88 | 123.33 | 118.60 |
| 53 | B5 | 769 | G | N1-C6-O6 | 7.88 | 124.63 | 119.90 |
| 53 | B5 | 1658 | G | C5-C6-O6 | -7.88 | 123.87 | 128.60 |
| 53 | B5 | 1497 | C | O4'-C1'-N1 | 7.88 | 114.51 | 108.20 |
| 53 | B5 | 2685 | C | O4'-C1'-N1 | 7.88 | 114.50 | 108.20 |
| 1 | AA | 1675 | C | O4'-C1'-N1 | 7.88 | 114.50 | 108.20 |
| 51 | B3 | 71 | C | O4'-C1'-N1 | 7.88 | 114.50 | 108.20 |
| 53 | B5 | 346 | C | O4'-C1'-N1 | 7.88 | 114.50 | 108.20 |
| 53 | B5 | 3371 | G | N1-C6-O6 | 7.88 | 124.63 | 119.90 |
| 1 | AA | 467 | G | N1-C6-O6 | 7.88 | 124.63 | 119.90 |
| 53 | B5 | 2707 | C | O4'-C1'-N1 | 7.88 | 114.50 | 108.20 |
| 1 | AA | 658 | C | O4'-C1'-N1 | 7.88 | 114.50 | 108.20 |
| 1 | AA | 1637 | C | O5'-P-OP1 | 7.88 | 120.15 | 110.70 |
| 1 | AA | 735 | C | O4'-C1'-N1 | 7.87 | 114.50 | 108.20 |
| 53 | B5 | 1838 | G | N1-C6-O6 | 7.87 | 124.62 | 119.90 |
| 53 | B5 | 2826 | U | P-O3'-C3' | 7.87 | 129.15 | 119.70 |
| 53 | B5 | 795 | G | N1-C6-O6 | 7.87 | 124.62 | 119.90 |
| 53 | B5 | 2646 | C | O4'-C1'-N1 | 7.87 | 114.50 | 108.20 |
| 1 | AA | 1080 | G | N1-C6-O6 | 7.87 | 124.62 | 119.90 |
| 53 | B5 | 2862 | U | O4'-C1'-N1 | 7.87 | 114.50 | 108.20 |
| 53 | B5 | 1422 | G | O4'-C1'-N9 | 7.87 | 114.50 | 108.20 |
| 52 | B4 | 45 | C | O4'-C1'-N1 | 7.87 | 114.49 | 108.20 |
| 1 | AA | 393 | C | O4'-C1'-N1 | 7.86 | 114.49 | 108.20 |
| 19 | A7 | 62 | A | C4-C5-C6 | -7.86 | 113.07 | 117.00 |
| 51 | B3 | 57 | C | O4'-C1'-N1 | 7.86 | 114.49 | 108.20 |
| 19 | A7 | 75 | C | N1-C2-N3 | 7.86 | 124.70 | 119.20 |
| 37 | BM | 148 | LYS | C-N-CA | -7.86 | 102.05 | 121.70 |
| 53 | B5 | 2893 | C | O4'-C1'-N1 | 7.86 | 114.49 | 108.20 |
| 53 | B5 | 158 | G | N1-C6-O6 | 7.86 | 124.62 | 119.90 |
| 53 | B5 | 480 | C | O4'-C1'-N1 | 7.86 | 114.49 | 108.20 |
| 53 | B5 | 2966 | G | N1-C6-O6 | 7.86 | 124.62 | 119.90 |
| 1 | AA | 1616 | C | O4'-C1'-N1 | 7.86 | 114.48 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1 | AA | 1707 | C | O4'-C1'-N1 | 7.86 | 114.48 | 108.20 |
| 53 | B5 | 1024 | G | N1-C6-O6 | 7.86 | 124.61 | 119.90 |
| 53 | B5 | 1209 | G | N1-C6-O6 | 7.86 | 124.61 | 119.90 |
| 53 | B5 | 2355 | G | N1-C6-O6 | 7.86 | 124.61 | 119.90 |
| 53 | B5 | 2913 | C | O4'-C1'-N1 | 7.86 | 114.49 | 108.20 |
| 53 | B5 | 47 | C | O4'-C1'-N1 | 7.86 | 114.48 | 108.20 |
| 53 | B5 | 242 | C | O4'-C1'-N1 | 7.86 | 114.48 | 108.20 |
| 53 | B5 | 2221 | G | N1-C6-O6 | 7.86 | 124.61 | 119.90 |
| 1 | AA | 1453 | G | N1-C6-O6 | 7.85 | 124.61 | 119.90 |
| 53 | B5 | 2562 | G | C5-C6-O6 | -7.85 | 123.89 | 128.60 |
| 53 | B5 | 2666 | C | O4'-C1'-N1 | 7.85 | 114.48 | 108.20 |
| 53 | B5 | 2389 | C | O4'-C1'-N1 | 7.85 | 114.48 | 108.20 |
| 1 | AA | 500 | C | O4'-C1'-N1 | 7.85 | 114.48 | 108.20 |
| 1 | AA | 1050 | G | O4'-C1'-N9 | 7.85 | 114.48 | 108.20 |
| 53 | B5 | 359 | U | O4'-C1'-N1 | 7.85 | 114.48 | 108.20 |
| 53 | B5 | 670 | C | O4'-C1'-N1 | 7.85 | 114.48 | 108.20 |
| 53 | B5 | 1476 | G | N1-C6-O6 | 7.85 | 124.61 | 119.90 |
| 53 | B5 | 2422 | C | O4'-C1'-N1 | 7.85 | 114.48 | 108.20 |
| 53 | B5 | 3242 | G | N1-C6-O6 | 7.85 | 124.61 | 119.90 |
| 53 | B5 | 1756 | C | O4'-C1'-N1 | 7.85 | 114.48 | 108.20 |
| 53 | B5 | 1450 | G | N1-C6-O6 | 7.84 | 124.61 | 119.90 |
| 53 | B5 | 3333 | G | N1-C6-O6 | 7.84 | 124.61 | 119.90 |
| 53 | B5 | 489 | C | O4'-C1'-N1 | 7.84 | 114.47 | 108.20 |
| 19 | A7 | 28 | C | C4-C5-C6 | -7.84 | 113.48 | 117.40 |
| 53 | B5 | 1042 | U | O4'-C1'-N1 | 7.84 | 114.47 | 108.20 |
| 53 | B5 | 1379 | G | N1-C6-O6 | 7.84 | 124.61 | 119.90 |
| 53 | B5 | 2512 | C | O4'-C1'-N1 | 7.84 | 114.47 | 108.20 |
| 53 | B5 | 2567 | C | O4'-C1'-N1 | 7.84 | 114.47 | 108.20 |
| 1 | AA | 1584 | A | O4'-C4'-C3' | -7.84 | 96.16 | 104.00 |
| 53 | B5 | 1292 | C | O4'-C1'-N1 | 7.84 | 114.47 | 108.20 |
| 53 | B5 | 120 | G | N1-C6-O6 | 7.84 | 124.60 | 119.90 |
| 53 | B5 | 457 | C | O4'-C1'-N1 | 7.84 | 114.47 | 108.20 |
| 53 | B5 | 1158 | A | N1-C6-N6 | 7.83 | 123.30 | 118.60 |
| 52 | B4 | 103 | G | N1-C6-O6 | 7.83 | 124.60 | 119.90 |
| 53 | B5 | 753 | C | O4'-C1'-N1 | 7.83 | 114.47 | 108.20 |
| 53 | B5 | 861 | C | O4'-C1'-N1 | 7.83 | 114.47 | 108.20 |
| 53 | B5 | 1244 | A | O4'-C1'-N9 | 7.83 | 114.47 | 108.20 |
| 53 | B5 | 1549 | U | O4'-C1'-N1 | 7.83 | 114.47 | 108.20 |
| 1 | AA | 230 | C | O4'-C1'-N1 | 7.83 | 114.47 | 108.20 |
| 1 | AA | 465 | G | N1-C6-O6 | 7.83 | 124.60 | 119.90 |
| 1 | AA | 1550 | U | C3'-C2'-C1' | -7.83 | 95.23 | 101.50 |
| 53 | B5 | 1185 | C | O4'-C1'-N1 | 7.83 | 114.47 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 1441 | G | N1-C6-O6 | 7.83 | 124.60 | 119.90 |
| 1 | AA | 286 | C | O4'-C1'-N1 | 7.83 | 114.46 | 108.20 |
| 53 | B5 | 92 | G | N1-C6-O6 | 7.83 | 124.60 | 119.90 |
| 53 | B5 | 948 | C | O4'-C1'-N1 | 7.83 | 114.46 | 108.20 |
| 53 | B5 | 2156 | C | O4'-C1'-N1 | 7.83 | 114.46 | 108.20 |
| 1 | AA | 1043 | G | N1-C6-O6 | 7.83 | 124.60 | 119.90 |
| 53 | B5 | 597 | G | N1-C6-O6 | 7.83 | 124.59 | 119.90 |
| 53 | B5 | 2548 | C | O4'-C1'-N1 | 7.83 | 114.46 | 108.20 |
| 53 | B5 | 1422 | G | N1-C6-O6 | 7.82 | 124.59 | 119.90 |
| 53 | B5 | 1222 | G | N1-C6-O6 | 7.82 | 124.59 | 119.90 |
| 1 | AA | 883 | C | O4'-C1'-N1 | 7.82 | 114.46 | 108.20 |
| 19 | A7 | 7 | U | N3-C2-O2 | -7.82 | 116.73 | 122.20 |
| 52 | B4 | 47 | C | O4'-C1'-N1 | 7.82 | 114.45 | 108.20 |
| 19 | A7 | 20 | G | N1-C6-O6 | -7.82 | 115.21 | 119.90 |
| 53 | B5 | 218 | G | N1-C6-O6 | 7.82 | 124.59 | 119.90 |
| 53 | B5 | 667 | C | O4'-C1'-N1 | 7.82 | 114.45 | 108.20 |
| 53 | B5 | 2828 | G | N1-C6-O6 | 7.82 | 124.59 | 119.90 |
| 51 | B3 | 110 | C | O4'-C1'-N1 | 7.82 | 114.45 | 108.20 |
| 53 | B5 | 499 | G | N1-C6-O6 | 7.81 | 124.59 | 119.90 |
| 53 | B5 | 2286 | U | O4'-C1'-N1 | 7.81 | 114.45 | 108.20 |
| 1 | AA | 637 | C | O4'-C1'-N1 | 7.81 | 114.45 | 108.20 |
| 53 | B5 | 788 | C | O4'-C1'-N1 | 7.81 | 114.45 | 108.20 |
| 53 | B5 | 1869 | C | O4'-C1'-N1 | 7.81 | 114.45 | 108.20 |
| 19 | A7 | 22 | G | C5'-C4'-O4' | 7.81 | 118.47 | 109.10 |
| 53 | B5 | 1665 | C | O4'-C1'-N1 | 7.81 | 114.45 | 108.20 |
| 19 | A7 | 48 | C | O4'-C1'-N1 | 7.81 | 114.45 | 108.20 |
| 53 | B5 | 613 | G | N1-C6-O6 | 7.81 | 124.58 | 119.90 |
| 1 | AA | 1409 | G | N1-C6-O6 | 7.80 | 124.58 | 119.90 |
| 52 | B4 | 24 | G | N1-C6-O6 | 7.80 | 124.58 | 119.90 |
| 53 | B5 | 765 | C | O4'-C1'-N1 | 7.80 | 114.44 | 108.20 |
| 1 | AA | 1009 | C | O4'-C1'-N1 | 7.80 | 114.44 | 108.20 |
| 19 | A7 | 66 | A | N9-C4-C5 | 7.80 | 108.92 | 105.80 |
| 53 | B5 | 1076 | C | O4'-C1'-N1 | 7.80 | 114.44 | 108.20 |
| 53 | B5 | 2579 | G | N1-C6-O6 | 7.80 | 124.58 | 119.90 |
| 53 | B5 | 2916 | U | O4'-C1'-N1 | 7.80 | 114.44 | 108.20 |
| 1 | AA | 372 | G | N1-C6-O6 | 7.80 | 124.58 | 119.90 |
| 1 | AA | 1518 | U | O4'-C4'-C3' | -7.80 | 96.20 | 104.00 |
| 53 | B5 | 1578 | C | O4'-C1'-N1 | 7.80 | 114.44 | 108.20 |
| 53 | B5 | 2810 | C | O4'-C1'-N1 | 7.80 | 114.44 | 108.20 |
| 1 | AA | 1352 | C | O4'-C1'-N1 | 7.80 | 114.44 | 108.20 |
| 19 | A7 | 7 | U | C5-C6-N1 | -7.80 | 118.80 | 122.70 |
| 53 | B5 | 957 | C | O4'-C1'-N1 | 7.80 | 114.44 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|------|-------------|----------|
| 53 | B5 | 3132 | C | O4'-C1'-N1 | 7.80 | 114.44 | 108.20 |
| 53 | B5 | 3162 | C | O4'-C1'-N1 | 7.80 | 114.44 | 108.20 |
| 53 | B5 | 818 | C | O4'-C1'-N1 | 7.79 | 114.44 | 108.20 |
| 53 | B5 | 2544 | U | O4'-C1'-N1 | 7.79 | 114.44 | 108.20 |
| 53 | B5 | 908 | G | N1-C6-O6 | 7.79 | 124.58 | 119.90 |
| 53 | B5 | 3213 | G | N1-C6-O6 | 7.79 | 124.58 | 119.90 |
| 53 | B5 | 1333 | C | O4'-C1'-N1 | 7.79 | 114.43 | 108.20 |
| 53 | B5 | 1395 | G | N1-C6-O6 | 7.79 | 124.57 | 119.90 |
| 53 | B5 | 1586 | G | N1-C6-O6 | 7.79 | 124.57 | 119.90 |
| 53 | B5 | 3364 | C | O4'-C1'-N1 | 7.79 | 114.43 | 108.20 |
| 1 | AA | 408 | C | O4'-C1'-N1 | 7.79 | 114.43 | 108.20 |
| 1 | AA | 490 | C | O4'-C1'-N1 | 7.79 | 114.43 | 108.20 |
| 53 | B5 | 959 | C | O4'-C1'-N1 | 7.79 | 114.43 | 108.20 |
| 53 | B5 | 1397 | C | O4'-C1'-N1 | 7.79 | 114.43 | 108.20 |
| 53 | B5 | 1492 | G | N1-C6-O6 | 7.79 | 124.57 | 119.90 |
| 53 | B5 | 2879 | C | O4'-C1'-N1 | 7.79 | 114.43 | 108.20 |
| 53 | B5 | 2337 | C | O4'-C1'-N1 | 7.79 | 114.43 | 108.20 |
| 1 | AA | 1036 | C | O4'-C1'-N1 | 7.79 | 114.43 | 108.20 |
| 53 | B5 | 945 | C | O4'-C1'-N1 | 7.79 | 114.43 | 108.20 |
| 53 | B5 | 3309 | G | N1-C6-O6 | 7.79 | 124.57 | 119.90 |
| 52 | B4 | 39 | G | N1-C6-O6 | 7.78 | 124.57 | 119.90 |
| 53 | B5 | 142 | C | O4'-C1'-N1 | 7.78 | 114.43 | 108.20 |
| 1 | AA | 431 | C | O4'-C1'-N1 | 7.78 | 114.42 | 108.20 |
| 53 | B5 | 1116 | G | N1-C6-O6 | 7.78 | 124.57 | 119.90 |
| 1 | AA | 189 | C | O4'-C1'-N1 | 7.78 | 114.42 | 108.20 |
| 53 | B5 | 785 | G | N1-C6-O6 | 7.78 | 124.57 | 119.90 |
| 53 | B5 | 2744 | U | O4'-C1'-N1 | 7.78 | 114.42 | 108.20 |
| 53 | B5 | 1770 | G | N1-C6-O6 | 7.78 | 124.57 | 119.90 |
| 53 | B5 | 271 | C | O4'-C1'-N1 | 7.78 | 114.42 | 108.20 |
| 1 | AA | 613 | G | N1-C6-O6 | 7.78 | 124.56 | 119.90 |
| 1 | AA | 926 | C | O4'-C1'-N1 | 7.78 | 114.42 | 108.20 |
| 52 | B4 | 95 | G | O4'-C1'-N9 | 7.78 | 114.42 | 108.20 |
| 53 | B5 | 455 | C | O4'-C1'-N1 | 7.78 | 114.42 | 108.20 |
| 53 | B5 | 638 | C | O4'-C1'-N1 | 7.77 | 114.42 | 108.20 |
| 53 | B5 | 1316 | C | O4'-C1'-N1 | 7.77 | 114.42 | 108.20 |
| 53 | B5 | 3285 | C | O4'-C1'-N1 | 7.77 | 114.42 | 108.20 |
| 1 | AA | 1578 | C | O4'-C1'-N1 | 7.77 | 114.42 | 108.20 |
| 53 | B5 | 69 | C | O4'-C1'-N1 | 7.77 | 114.42 | 108.20 |
| 53 | B5 | 576 | C | O4'-C1'-N1 | 7.77 | 114.42 | 108.20 |
| 53 | B5 | 582 | G | O4'-C1'-N9 | 7.77 | 114.42 | 108.20 |
| 53 | B5 | 2370 | G | N1-C6-O6 | 7.77 | 124.56 | 119.90 |
| 53 | B5 | 3390 | G | N1-C6-O6 | 7.77 | 124.56 | 119.90 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 1364 | C | O4'-C1'-N1 | 7.77 | 114.42 | 108.20 |
| 1 | AA | 405 | C | O4'-C1'-N1 | 7.77 | 114.41 | 108.20 |
| 1 | AA | 726 | C | O4'-C1'-N1 | 7.77 | 114.41 | 108.20 |
| 53 | B5 | 82 | C | O4'-C1'-N1 | 7.77 | 114.41 | 108.20 |
| 53 | B5 | 2478 | C | O4'-C1'-N1 | 7.77 | 114.41 | 108.20 |
| 53 | B5 | 3053 | G | C5-C6-O6 | -7.77 | 123.94 | 128.60 |
| 1 | AA | 1749 | C | O4'-C1'-N1 | 7.76 | 114.41 | 108.20 |
| 19 | A7 | 67 | A | O4'-C1'-N9 | 7.76 | 114.41 | 108.20 |
| 53 | B5 | 1693 | C | O4'-C1'-N1 | 7.76 | 114.41 | 108.20 |
| 19 | A7 | 42 | G | N3-C4-C5 | -7.76 | 124.72 | 128.60 |
| 53 | B5 | 3207 | C | O4'-C1'-N1 | 7.76 | 114.41 | 108.20 |
| 1 | AA | 1200 | A | N3-C4-C5 | -7.76 | 121.37 | 126.80 |
| 52 | B4 | 8 | C | O4'-C1'-N1 | 7.76 | 114.41 | 108.20 |
| 1 | AA | 1704 | C | O4'-C1'-N1 | 7.76 | 114.41 | 108.20 |
| 52 | B4 | 117 | C | O4'-C1'-N1 | 7.76 | 114.41 | 108.20 |
| 53 | B5 | 81 | C | O4'-C1'-N1 | 7.76 | 114.41 | 108.20 |
| 53 | B5 | 3235 | C | O4'-C1'-N1 | 7.76 | 114.41 | 108.20 |
| 53 | B5 | 1562 | C | O4'-C1'-N1 | 7.75 | 114.40 | 108.20 |
| 53 | B5 | 3063 | C | O4'-C1'-N1 | 7.75 | 114.40 | 108.20 |
| 1 | AA | 955 | C | O4'-C1'-N1 | 7.75 | 114.40 | 108.20 |
| 53 | B5 | 525 | C | O4'-C1'-N1 | 7.75 | 114.40 | 108.20 |
| 53 | B5 | 757 | C | O4'-C1'-N1 | 7.75 | 114.40 | 108.20 |
| 53 | B5 | 921 | A | N1-C6-N6 | 7.75 | 123.25 | 118.60 |
| 53 | B5 | 1426 | C | O4'-C1'-N1 | 7.75 | 114.40 | 108.20 |
| 1 | AA | 696 | C | O4'-C1'-N1 | 7.75 | 114.40 | 108.20 |
| 53 | B5 | 1132 | C | O4'-C1'-N1 | 7.75 | 114.40 | 108.20 |
| 53 | B5 | 1734 | G | N1-C6-O6 | 7.75 | 124.55 | 119.90 |
| 53 | B5 | 3257 | C | O4'-C1'-N1 | 7.75 | 114.40 | 108.20 |
| 1 | AA | 1608 | G | C5-C6-O6 | -7.75 | 123.95 | 128.60 |
| 53 | B5 | 2351 | U | O4'-C1'-N1 | 7.75 | 114.40 | 108.20 |
| 1 | AA | 190 | C | O4'-C1'-N1 | 7.75 | 114.40 | 108.20 |
| 1 | AA | 1563 | C | O4'-C1'-N1 | 7.75 | 114.40 | 108.20 |
| 53 | B5 | 886 | C | O4'-C1'-N1 | 7.75 | 114.40 | 108.20 |
| 1 | AA | 530 | C | O4'-C1'-N1 | 7.75 | 114.40 | 108.20 |
| 1 | AA | 898 | G | N1-C6-O6 | 7.75 | 124.55 | 119.90 |
| 53 | B5 | 880 | G | N1-C6-O6 | 7.75 | 124.55 | 119.90 |
| 53 | B5 | 3340 | G | N1-C6-O6 | 7.75 | 124.55 | 119.90 |
| 19 | A7 | 19 | G | C4-C5-N7 | 7.74 | 113.90 | 110.80 |
| 53 | B5 | 2475 | G | O4'-C1'-N9 | 7.74 | 114.39 | 108.20 |
| 53 | B5 | 2624 | G | N1-C6-O6 | 7.74 | 124.55 | 119.90 |
| 1 | AA | 827 | C | O4'-C1'-N1 | 7.74 | 114.39 | 108.20 |
| 1 | AA | 489 | C | O4'-C1'-N1 | 7.74 | 114.39 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 19 | A7 | 13 | C | C3'-C2'-C1' | 7.74 | 107.69 | 101.50 |
| 19 | A7 | 19 | G | C8-N9-C4 | -7.74 | 103.31 | 106.40 |
| 53 | B5 | 3015 | G | N1-C6-O6 | 7.74 | 124.54 | 119.90 |
| 53 | B5 | 74 | G | N1-C6-O6 | 7.73 | 124.54 | 119.90 |
| 53 | B5 | 1162 | U | O4'-C1'-N1 | 7.73 | 114.39 | 108.20 |
| 53 | B5 | 2452 | G | N1-C6-O6 | 7.73 | 124.54 | 119.90 |
| 1 | AA | 688 | G | N1-C6-O6 | 7.73 | 124.54 | 119.90 |
| 1 | AA | 1762 | C | O4'-C1'-N1 | 7.73 | 114.38 | 108.20 |
| 53 | B5 | 586 | C | O4'-C1'-N1 | 7.73 | 114.39 | 108.20 |
| 53 | B5 | 1816 | A | O4'-C1'-N9 | 7.73 | 114.38 | 108.20 |
| 53 | B5 | 2600 | C | O4'-C1'-N1 | 7.73 | 114.39 | 108.20 |
| 1 | AA | 54 | C | O4'-C1'-N1 | 7.73 | 114.38 | 108.20 |
| 53 | B5 | 2582 | C | O4'-C1'-N1 | 7.73 | 114.38 | 108.20 |
| 1 | AA | 191 | C | O4'-C1'-N1 | 7.73 | 114.38 | 108.20 |
| 1 | AA | 1362 | C | O4'-C1'-N1 | 7.73 | 114.38 | 108.20 |
| 19 | A7 | 13 | C | N3-C2-O2 | -7.73 | 116.49 | 121.90 |
| 53 | B5 | 3337 | G | N1-C6-O6 | 7.73 | 124.54 | 119.90 |
| 1 | AA | 1768 | U | O4'-C1'-N1 | 7.73 | 114.38 | 108.20 |
| 1 | AA | 1450 | U | O4'-C1'-N1 | 7.72 | 114.38 | 108.20 |
| 1 | AA | 1461 | C | O4'-C1'-N1 | 7.72 | 114.38 | 108.20 |
| 1 | AA | 1638 | C | P-O5'-C5' | -7.72 | 108.54 | 120.90 |
| 53 | B5 | 2899 | C | O4'-C1'-N1 | 7.72 | 114.38 | 108.20 |
| 1 | AA | 1511 | G | N1-C6-O6 | 7.72 | 124.53 | 119.90 |
| 52 | B4 | 76 | C | O4'-C1'-N1 | 7.72 | 114.38 | 108.20 |
| 53 | B5 | 1303 | A | O4'-C1'-N9 | 7.72 | 114.38 | 108.20 |
| 53 | B5 | 1520 | G | C5-C6-O6 | -7.72 | 123.97 | 128.60 |
| 1 | AA | 1275 | C | O4'-C1'-N1 | 7.72 | 114.38 | 108.20 |
| 53 | B5 | 1747 | G | N1-C6-O6 | 7.72 | 124.53 | 119.90 |
| 53 | B5 | 2594 | C | O4'-C1'-N1 | 7.72 | 114.38 | 108.20 |
| 1 | AA | 354 | C | O4'-C1'-N1 | 7.72 | 114.38 | 108.20 |
| 1 | AA | 1125 | C | O4'-C1'-N1 | 7.72 | 114.37 | 108.20 |
| 1 | AA | 1790 | G | N1-C6-O6 | 7.72 | 124.53 | 119.90 |
| 52 | B4 | 21 | C | O4'-C1'-N1 | 7.72 | 114.37 | 108.20 |
| 1 | AA | 402 | C | O4'-C1'-N1 | 7.71 | 114.37 | 108.20 |
| 1 | AA | 342 | C | O4'-C1'-N1 | 7.71 | 114.37 | 108.20 |
| 53 | B5 | 1573 | G | N1-C6-O6 | 7.71 | 124.53 | 119.90 |
| 53 | B5 | 1781 | C | O4'-C1'-N1 | 7.71 | 114.37 | 108.20 |
| 1 | AA | 1651 | C | O4'-C1'-N1 | 7.71 | 114.37 | 108.20 |
| 53 | B5 | 963 | G | N1-C6-O6 | 7.71 | 124.53 | 119.90 |
| 1 | AA | 765 | G | O4'-C1'-N9 | 7.71 | 114.37 | 108.20 |
| 1 | AA | 1642 | C | O4'-C1'-N1 | 7.71 | 114.37 | 108.20 |
| 53 | B5 | 415 | G | N1-C6-O6 | 7.71 | 124.53 | 119.90 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 1 | AA | 1613 | C | O4'-C1'-N1 | 7.71 | 114.37 | 108.20 |
| 53 | B5 | 2518 | C | O4'-C1'-N1 | 7.71 | 114.37 | 108.20 |
| 53 | B5 | 2835 | U | O4'-C1'-N1 | 7.71 | 114.36 | 108.20 |
| 53 | B5 | 3315 | G | N1-C6-O6 | 7.71 | 124.52 | 119.90 |
| 53 | B5 | 3355 | U | O4'-C1'-N1 | 7.71 | 114.36 | 108.20 |
| 53 | B5 | 291 | C | O4'-C1'-N1 | 7.71 | 114.36 | 108.20 |
| 53 | B5 | 2876 | C | O4'-C1'-N1 | 7.71 | 114.36 | 108.20 |
| 53 | B5 | 3148 | U | O4'-C1'-N1 | 7.71 | 114.36 | 108.20 |
| 53 | B5 | 379 | C | O4'-C1'-N1 | 7.70 | 114.36 | 108.20 |
| 53 | B5 | 1675 | G | N1-C6-O6 | 7.70 | 124.52 | 119.90 |
| 53 | B5 | 2729 | U | O4'-C1'-N1 | 7.70 | 114.36 | 108.20 |
| 53 | B5 | 2793 | G | N1-C6-O6 | 7.70 | 124.52 | 119.90 |
| 46 | BV | 47 | TYR | CB-CG-CD2 | 7.70 | 125.62 | 121.00 |
| 1 | AA | 501 | U | N1-C2-N3 | 7.70 | 119.52 | 114.90 |
| 1 | AA | 1253 | U | O4'-C1'-N1 | 7.70 | 114.36 | 108.20 |
| 19 | A7 | 66 | A | C4-C5-N7 | -7.70 | 106.85 | 110.70 |
| 53 | B5 | 644 | G | N1-C6-O6 | 7.70 | 124.52 | 119.90 |
| 1 | AA | 1169 | G | N1-C6-O6 | 7.69 | 124.52 | 119.90 |
| 1 | AA | 425 | A | O4'-C1'-N9 | 7.69 | 114.36 | 108.20 |
| 53 | B5 | 1472 | U | O4'-C1'-N1 | 7.69 | 114.35 | 108.20 |
| 53 | B5 | 1793 | C | O4'-C1'-N1 | 7.69 | 114.35 | 108.20 |
| 1 | AA | 30 | G | N1-C6-O6 | 7.69 | 124.51 | 119.90 |
| 1 | AA | 53 | G | N1-C6-O6 | 7.69 | 124.51 | 119.90 |
| 53 | B5 | 1596 | C | O4'-C1'-N1 | 7.69 | 114.35 | 108.20 |
| 1 | AA | 730 | G | N1-C6-O6 | 7.69 | 124.51 | 119.90 |
| 53 | B5 | 1392 | G | N1-C6-O6 | 7.69 | 124.51 | 119.90 |
| 53 | B5 | 1852 | G | N1-C6-O6 | 7.69 | 124.51 | 119.90 |
| 1 | AA | 1296 | G | N1-C6-O6 | 7.69 | 124.51 | 119.90 |
| 1 | AA | 398 | G | N1-C6-O6 | 7.68 | 124.51 | 119.90 |
| 1 | AA | 1775 | G | N1-C6-O6 | 7.68 | 124.51 | 119.90 |
| 53 | B5 | 140 | C | O4'-C1'-N1 | 7.68 | 114.35 | 108.20 |
| 1 | AA | 986 | G | N1-C6-O6 | 7.68 | 124.51 | 119.90 |
| 1 | AA | 1493 | C | O4'-C1'-N1 | 7.68 | 114.34 | 108.20 |
| 53 | B5 | 3221 | C | O4'-C1'-N1 | 7.68 | 114.34 | 108.20 |
| 53 | B5 | 3386 | G | N1-C6-O6 | 7.68 | 124.51 | 119.90 |
| 1 | AA | 1098 | G | N1-C6-O6 | 7.68 | 124.51 | 119.90 |
| 1 | AA | 1703 | C | O4'-C1'-N1 | 7.68 | 114.34 | 108.20 |
| 53 | B5 | 1277 | C | O4'-C1'-N1 | 7.68 | 114.34 | 108.20 |
| 1 | AA | 1776 | G | N1-C6-O6 | 7.68 | 124.51 | 119.90 |
| 53 | B5 | 1655 | G | N1-C6-O6 | 7.68 | 124.51 | 119.90 |
| 19 | A7 | 18 | G | N3-C4-N9 | -7.67 | 121.39 | 126.00 |
| 53 | B5 | 392 | G | N1-C6-O6 | 7.67 | 124.50 | 119.90 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 3135 | U | O4'-C1'-N1 | 7.67 | 114.34 | 108.20 |
| 53 | B5 | 3360 | C | O4'-C1'-N1 | 7.67 | 114.34 | 108.20 |
| 53 | B5 | 633 | C | O4'-C1'-N1 | 7.67 | 114.34 | 108.20 |
| 19 | A7 | 5 | A | C4'-C3'-C2' | -7.67 | 94.93 | 102.60 |
| 19 | A7 | 66 | A | C5-C6-N1 | 7.67 | 121.53 | 117.70 |
| 53 | B5 | 131 | C | O4'-C1'-N1 | 7.67 | 114.34 | 108.20 |
| 53 | B5 | 1177 | G | N1-C6-O6 | 7.67 | 124.50 | 119.90 |
| 53 | B5 | 1777 | U | O4'-C1'-N1 | 7.67 | 114.33 | 108.20 |
| 53 | B5 | 2589 | G | N1-C6-O6 | 7.67 | 124.50 | 119.90 |
| 53 | B5 | 2677 | G | O4'-C1'-N9 | 7.67 | 114.33 | 108.20 |
| 1 | AA | 1465 | C | O4'-C1'-N1 | 7.67 | 114.33 | 108.20 |
| 1 | AA | 1586 | G | N1-C6-O6 | 7.67 | 124.50 | 119.90 |
| 1 | AA | 1673 | C | O4'-C1'-N1 | 7.67 | 114.33 | 108.20 |
| 53 | B5 | 560 | G | N1-C6-O6 | 7.67 | 124.50 | 119.90 |
| 53 | B5 | 1187 | C | O4'-C1'-N1 | 7.67 | 114.33 | 108.20 |
| 53 | B5 | 2507 | C | O4'-C1'-N1 | 7.67 | 114.33 | 108.20 |
| 53 | B5 | 59 | G | N1-C6-O6 | 7.67 | 124.50 | 119.90 |
| 53 | B5 | 2794 | G | N1-C6-O6 | 7.66 | 124.50 | 119.90 |
| 1 | AA | 502 | U | O4'-C1'-N1 | 7.66 | 114.33 | 108.20 |
| 53 | B5 | 1639 | C | O4'-C1'-N1 | 7.66 | 114.33 | 108.20 |
| 1 | AA | 107 | C | O4'-C1'-N1 | 7.66 | 114.33 | 108.20 |
| 52 | B4 | 120 | C | O4'-C1'-N1 | 7.66 | 114.33 | 108.20 |
| 53 | B5 | 340 | C | O4'-C1'-N1 | 7.66 | 114.33 | 108.20 |
| 53 | B5 | 407 | A | O4'-C1'-N9 | 7.66 | 114.33 | 108.20 |
| 53 | B5 | 462 | C | O4'-C1'-N1 | 7.66 | 114.33 | 108.20 |
| 53 | B5 | 737 | G | N1-C6-O6 | 7.66 | 124.50 | 119.90 |
| 53 | B5 | 3318 | G | N1-C6-O6 | 7.66 | 124.50 | 119.90 |
| 1 | AA | 519 | C | O4'-C1'-N1 | 7.66 | 114.33 | 108.20 |
| 1 | AA | 1507 | C | O4'-C1'-N1 | 7.66 | 114.33 | 108.20 |
| 53 | B5 | 452 | G | N1-C6-O6 | 7.66 | 124.49 | 119.90 |
| 1 | AA | 139 | C | O4'-C1'-N1 | 7.66 | 114.33 | 108.20 |
| 1 | AA | 414 | C | O4'-C1'-N1 | 7.66 | 114.33 | 108.20 |
| 1 | AA | 1594 | C | O4'-C1'-N1 | 7.66 | 114.32 | 108.20 |
| 1 | AA | 1786 | G | N1-C6-O6 | 7.66 | 124.49 | 119.90 |
| 53 | B5 | 599 | C | O4'-C1'-N1 | 7.66 | 114.32 | 108.20 |
| 1 | AA | 1566 | C | O4'-C1'-N1 | 7.65 | 114.32 | 108.20 |
| 53 | B5 | 2318 | U | O4'-C1'-N1 | 7.65 | 114.32 | 108.20 |
| 53 | B5 | 1382 | G | N1-C6-O6 | 7.65 | 124.49 | 119.90 |
| 53 | B5 | 2128 | C | O4'-C1'-N1 | 7.65 | 114.32 | 108.20 |
| 53 | B5 | 3113 | A | O4'-C1'-N9 | 7.65 | 114.32 | 108.20 |
| 53 | B5 | 2174 | G | N1-C6-O6 | 7.65 | 124.49 | 119.90 |
| 53 | B5 | 712 | G | N1-C6-O6 | 7.65 | 124.49 | 119.90 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 2831 | G | C5-C6-O6 | -7.65 | 124.01 | 128.60 |
| 53 | B5 | 3378 | C | O4'-C1'-N1 | 7.65 | 114.32 | 108.20 |
| 1 | AA | 574 | G | N1-C6-O6 | 7.64 | 124.49 | 119.90 |
| 53 | B5 | 568 | G | N1-C6-O6 | 7.64 | 124.49 | 119.90 |
| 53 | B5 | 2756 | C | O4'-C1'-N1 | 7.64 | 114.31 | 108.20 |
| 1 | AA | 241 | U | O4'-C1'-N1 | 7.64 | 114.31 | 108.20 |
| 52 | B4 | 83 | C | O4'-C1'-N1 | 7.64 | 114.31 | 108.20 |
| 53 | B5 | 1919 | G | C5-C6-O6 | -7.64 | 124.02 | 128.60 |
| 53 | B5 | 2264 | U | O4'-C1'-N1 | 7.64 | 114.31 | 108.20 |
| 53 | B5 | 2732 | G | N1-C6-O6 | 7.64 | 124.48 | 119.90 |
| 53 | B5 | 1312 | C | O4'-C1'-N1 | 7.64 | 114.31 | 108.20 |
| 1 | AA | 1200 | A | O4'-C1'-N9 | 7.64 | 114.31 | 108.20 |
| 53 | B5 | 166 | C | O4'-C1'-N1 | 7.64 | 114.31 | 108.20 |
| 53 | B5 | 297 | G | N1-C6-O6 | 7.64 | 124.48 | 119.90 |
| 1 | AA | 1529 | G | N1-C6-O6 | 7.63 | 124.48 | 119.90 |
| 53 | B5 | 503 | C | O4'-C1'-N1 | 7.63 | 114.31 | 108.20 |
| 53 | B5 | 1714 | A | O4'-C1'-N9 | 7.63 | 114.31 | 108.20 |
| 53 | B5 | 3349 | C | O4'-C1'-N1 | 7.63 | 114.31 | 108.20 |
| 53 | B5 | 992 | G | N1-C6-O6 | 7.63 | 124.48 | 119.90 |
| 1 | AA | 1276 | C | O4'-C1'-N1 | 7.63 | 114.31 | 108.20 |
| 53 | B5 | 2431 | C | O4'-C1'-N1 | 7.63 | 114.31 | 108.20 |
| 1 | AA | 880 | C | O4'-C1'-N1 | 7.63 | 114.30 | 108.20 |
| 52 | B4 | 27 | U | O4'-C1'-N1 | 7.63 | 114.30 | 108.20 |
| 53 | B5 | 197 | G | N1-C6-O6 | 7.63 | 124.48 | 119.90 |
| 53 | B5 | 1146 | C | O4'-C1'-N1 | 7.63 | 114.30 | 108.20 |
| 53 | B5 | 2400 | G | N1-C6-O6 | 7.63 | 124.48 | 119.90 |
| 1 | AA | 897 | C | O4'-C1'-N1 | 7.63 | 114.30 | 108.20 |
| 53 | B5 | 2416 | U | O4'-C1'-N1 | 7.63 | 114.30 | 108.20 |
| 53 | B5 | 2531 | C | O4'-C1'-N1 | 7.63 | 114.30 | 108.20 |
| 1 | AA | 1644 | C | O4'-C1'-N1 | 7.62 | 114.30 | 108.20 |
| 52 | B4 | 36 | G | N1-C6-O6 | 7.62 | 124.47 | 119.90 |
| 53 | B5 | 1137 | C | O4'-C1'-N1 | 7.62 | 114.30 | 108.20 |
| 1 | AA | 305 | C | O4'-C1'-N1 | 7.62 | 114.30 | 108.20 |
| 1 | AA | 628 | G | N1-C6-O6 | 7.62 | 124.47 | 119.90 |
| 53 | B5 | 2922 | G | N1-C6-O6 | 7.62 | 124.47 | 119.90 |
| 1 | AA | 846 | G | N1-C6-O6 | 7.62 | 124.47 | 119.90 |
| 1 | AA | 1390 | C | O4'-C1'-N1 | 7.62 | 114.30 | 108.20 |
| 53 | B5 | 2714 | G | N1-C6-O6 | 7.62 | 124.47 | 119.90 |
| 52 | B4 | 4 | C | O4'-C1'-N1 | 7.62 | 114.30 | 108.20 |
| 53 | B5 | 2677 | G | N1-C6-O6 | 7.62 | 124.47 | 119.90 |
| 53 | B5 | 1298 | C | O4'-C1'-N1 | 7.62 | 114.29 | 108.20 |
| 1 | AA | 1158 | C | O4'-C1'-N1 | 7.62 | 114.29 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|------|-------------|----------|
| 1 | AA | 1546 | G | C4'-C3'-C2' | 7.62 | 110.22 | 102.60 |
| 53 | B5 | 800 | G | N1-C6-O6 | 7.62 | 124.47 | 119.90 |
| 53 | B5 | 2199 | G | N1-C6-O6 | 7.62 | 124.47 | 119.90 |
| 53 | B5 | 3133 | C | O4'-C1'-N1 | 7.61 | 114.29 | 108.20 |
| 53 | B5 | 1857 | C | O4'-C1'-N1 | 7.61 | 114.29 | 108.20 |
| 1 | AA | 1273 | G | N1-C6-O6 | 7.61 | 124.47 | 119.90 |
| 1 | AA | 1603 | G | O4'-C1'-N9 | 7.61 | 114.29 | 108.20 |
| 53 | B5 | 3117 | C | O4'-C1'-N1 | 7.61 | 114.29 | 108.20 |
| 1 | AA | 1406 | G | N1-C6-O6 | 7.61 | 124.47 | 119.90 |
| 1 | AA | 683 | C | O4'-C1'-N1 | 7.61 | 114.28 | 108.20 |
| 1 | AA | 1684 | C | O4'-C1'-N1 | 7.61 | 114.29 | 108.20 |
| 23 | B8 | 43 | LYS | CB-CG-CD | 7.61 | 131.38 | 111.60 |
| 53 | B5 | 2475 | G | N1-C6-O6 | 7.61 | 124.47 | 119.90 |
| 1 | AA | 1386 | C | C2-N1-C1' | 7.61 | 127.17 | 118.80 |
| 53 | B5 | 2405 | C | O4'-C1'-N1 | 7.61 | 114.28 | 108.20 |
| 53 | B5 | 2884 | C | O4'-C1'-N1 | 7.60 | 114.28 | 108.20 |
| 1 | AA | 1159 | U | O4'-C1'-N1 | 7.60 | 114.28 | 108.20 |
| 53 | B5 | 1898 | G | O4'-C1'-N9 | 7.60 | 114.28 | 108.20 |
| 1 | AA | 1460 | G | N1-C6-O6 | 7.60 | 124.46 | 119.90 |
| 1 | AA | 1589 | C | O4'-C1'-N1 | 7.60 | 114.28 | 108.20 |
| 53 | B5 | 2711 | C | O4'-C1'-N1 | 7.60 | 114.28 | 108.20 |
| 53 | B5 | 823 | C | O4'-C1'-N1 | 7.60 | 114.28 | 108.20 |
| 1 | AA | 17 | C | O4'-C1'-N1 | 7.59 | 114.28 | 108.20 |
| 1 | AA | 343 | C | O4'-C1'-N1 | 7.59 | 114.28 | 108.20 |
| 1 | AA | 1331 | U | O4'-C1'-N1 | 7.59 | 114.27 | 108.20 |
| 51 | B3 | 21 | G | N1-C6-O6 | 7.59 | 124.45 | 119.90 |
| 53 | B5 | 2180 | G | N1-C6-O6 | 7.59 | 124.45 | 119.90 |
| 53 | B5 | 2918 | G | P-O3'-C3' | 7.59 | 128.81 | 119.70 |
| 1 | AA | 1170 | C | O4'-C1'-N1 | 7.59 | 114.27 | 108.20 |
| 1 | AA | 1355 | G | N1-C6-O6 | 7.59 | 124.45 | 119.90 |
| 53 | B5 | 330 | G | N1-C6-O6 | 7.59 | 124.45 | 119.90 |
| 53 | B5 | 864 | G | N1-C6-O6 | 7.59 | 124.45 | 119.90 |
| 53 | B5 | 2751 | G | N1-C6-O6 | 7.59 | 124.45 | 119.90 |
| 53 | B5 | 3358 | U | O4'-C1'-N1 | 7.59 | 114.27 | 108.20 |
| 53 | B5 | 2273 | G | N1-C6-O6 | 7.59 | 124.45 | 119.90 |
| 1 | AA | 263 | C | O4'-C1'-N1 | 7.59 | 114.27 | 108.20 |
| 1 | AA | 849 | C | O4'-C1'-N1 | 7.59 | 114.27 | 108.20 |
| 51 | B3 | 107 | G | N1-C6-O6 | 7.59 | 124.45 | 119.90 |
| 1 | AA | 1099 | G | N1-C6-O6 | 7.58 | 124.45 | 119.90 |
| 52 | B4 | 30 | C | O4'-C1'-N1 | 7.58 | 114.27 | 108.20 |
| 53 | B5 | 994 | G | N1-C6-O6 | 7.58 | 124.45 | 119.90 |
| 53 | B5 | 2960 | C | O4'-C1'-N1 | 7.58 | 114.27 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1 | AA | 1731 | C | O4'-C1'-N1 | 7.58 | 114.27 | 108.20 |
| 53 | B5 | 28 | C | O4'-C1'-N1 | 7.58 | 114.27 | 108.20 |
| 53 | B5 | 2605 | G | N1-C6-O6 | 7.58 | 124.45 | 119.90 |
| 53 | B5 | 2973 | G | N1-C6-O6 | 7.58 | 124.45 | 119.90 |
| 53 | B5 | 2305 | G | C5-C6-O6 | -7.58 | 124.05 | 128.60 |
| 1 | AA | 596 | C | O4'-C1'-N1 | 7.58 | 114.26 | 108.20 |
| 53 | B5 | 1413 | G | N1-C6-O6 | 7.58 | 124.45 | 119.90 |
| 1 | AA | 543 | C | O4'-C1'-N1 | 7.58 | 114.26 | 108.20 |
| 1 | AA | 1013 | G | N1-C6-O6 | 7.58 | 124.45 | 119.90 |
| 19 | A7 | 70 | C | C5'-C4'-O4' | 7.58 | 118.19 | 109.10 |
| 53 | B5 | 2593 | A | N1-C6-N6 | 7.58 | 123.14 | 118.60 |
| 51 | B3 | 6 | C | O4'-C1'-N1 | 7.57 | 114.26 | 108.20 |
| 53 | B5 | 251 | G | N1-C6-O6 | 7.57 | 124.44 | 119.90 |
| 53 | B5 | 1736 | G | N1-C6-O6 | 7.57 | 124.44 | 119.90 |
| 1 | AA | 949 | C | O4'-C1'-N1 | 7.57 | 114.26 | 108.20 |
| 53 | B5 | 1372 | C | O4'-C1'-N1 | 7.57 | 114.26 | 108.20 |
| 53 | B5 | 2302 | G | N1-C6-O6 | 7.57 | 124.44 | 119.90 |
| 1 | AA | 686 | C | O4'-C1'-N1 | 7.57 | 114.25 | 108.20 |
| 1 | AA | 1534 | G | N1-C6-O6 | 7.57 | 124.44 | 119.90 |
| 1 | AA | 1580 | U | O4'-C1'-N1 | 7.57 | 114.25 | 108.20 |
| 53 | B5 | 360 | G | N1-C6-O6 | 7.57 | 124.44 | 119.90 |
| 53 | B5 | 485 | A | O4'-C1'-N9 | 7.57 | 114.25 | 108.20 |
| 53 | B5 | 1830 | G | N1-C6-O6 | 7.57 | 124.44 | 119.90 |
| 53 | B5 | 283 | G | N1-C6-O6 | 7.57 | 124.44 | 119.90 |
| 53 | B5 | 94 | G | C5-C6-O6 | -7.56 | 124.06 | 128.60 |
| 53 | B5 | 1604 | G | N1-C6-O6 | 7.56 | 124.44 | 119.90 |
| 1 | AA | 700 | C | O4'-C1'-N1 | 7.56 | 114.25 | 108.20 |
| 1 | AA | 798 | C | OP1-P-OP2 | -7.56 | 108.26 | 119.60 |
| 53 | B5 | 1519 | G | N1-C6-O6 | 7.56 | 124.44 | 119.90 |
| 1 | AA | 1459 | C | O4'-C1'-N1 | 7.56 | 114.25 | 108.20 |
| 1 | AA | 1550 | U | OP1-P-OP2 | -7.56 | 108.27 | 119.60 |
| 1 | AA | 1621 | C | O4'-C1'-N1 | 7.56 | 114.25 | 108.20 |
| 53 | B5 | 2719 | U | O4'-C1'-N1 | 7.56 | 114.25 | 108.20 |
| 53 | B5 | 2881 | C | O4'-C1'-N1 | 7.56 | 114.25 | 108.20 |
| 53 | B5 | 3379 | C | O4'-C1'-N1 | 7.56 | 114.25 | 108.20 |
| 19 | A7 | 52 | U | C2-N3-C4 | -7.55 | 122.47 | 127.00 |
| 53 | B5 | 3172 | G | C5-C6-O6 | -7.55 | 124.07 | 128.60 |
| 1 | AA | 49 | C | O4'-C1'-N1 | 7.55 | 114.24 | 108.20 |
| 1 | AA | 952 | G | N1-C6-O6 | 7.55 | 124.43 | 119.90 |
| 53 | B5 | 1156 | C | O4'-C1'-N1 | 7.55 | 114.24 | 108.20 |
| 53 | B5 | 1525 | G | C5-C6-O6 | -7.55 | 124.07 | 128.60 |
| 53 | B5 | 1863 | G | C5-C6-O6 | -7.55 | 124.07 | 128.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 1 | AA | 89 | G | N1-C6-O6 | 7.55 | 124.43 | 119.90 |
| 1 | AA | 1351 | G | O4'-C1'-N9 | 7.55 | 114.24 | 108.20 |
| 53 | B5 | 604 | G | N1-C6-O6 | 7.55 | 124.43 | 119.90 |
| 53 | B5 | 180 | C | O4'-C1'-N1 | 7.55 | 114.24 | 108.20 |
| 53 | B5 | 1411 | C | O4'-C1'-N1 | 7.55 | 114.24 | 108.20 |
| 1 | AA | 224 | C | O4'-C1'-N1 | 7.55 | 114.24 | 108.20 |
| 53 | B5 | 770 | G | N1-C6-O6 | 7.55 | 124.43 | 119.90 |
| 53 | B5 | 2898 | G | N1-C6-O6 | 7.55 | 124.43 | 119.90 |
| 1 | AA | 307 | G | N1-C6-O6 | 7.54 | 124.43 | 119.90 |
| 53 | B5 | 1017 | C | O4'-C1'-N1 | 7.54 | 114.24 | 108.20 |
| 53 | B5 | 3130 | A | O4'-C1'-N9 | 7.54 | 114.24 | 108.20 |
| 53 | B5 | 3365 | U | O4'-C1'-N1 | 7.54 | 114.24 | 108.20 |
| 1 | AA | 568 | G | C5-C6-O6 | -7.54 | 124.07 | 128.60 |
| 1 | AA | 1625 | U | O4'-C1'-N1 | 7.54 | 114.23 | 108.20 |
| 51 | B3 | 63 | G | N1-C6-O6 | 7.54 | 124.43 | 119.90 |
| 53 | B5 | 1480 | G | N1-C6-O6 | 7.54 | 124.43 | 119.90 |
| 53 | B5 | 2203 | U | O4'-C1'-N1 | 7.54 | 114.23 | 108.20 |
| 53 | B5 | 2653 | C | O4'-C1'-N1 | 7.54 | 114.23 | 108.20 |
| 53 | B5 | 2972 | G | N1-C6-O6 | 7.54 | 124.42 | 119.90 |
| 1 | AA | 731 | C | O4'-C1'-N1 | 7.54 | 114.23 | 108.20 |
| 53 | B5 | 1152 | G | N1-C6-O6 | 7.54 | 124.42 | 119.90 |
| 53 | B5 | 1555 | U | O4'-C1'-N1 | 7.54 | 114.23 | 108.20 |
| 53 | B5 | 3009 | G | N1-C6-O6 | 7.54 | 124.42 | 119.90 |
| 53 | B5 | 893 | C | O4'-C1'-N1 | 7.54 | 114.23 | 108.20 |
| 1 | AA | 365 | G | N1-C6-O6 | 7.54 | 124.42 | 119.90 |
| 1 | AA | 1588 | G | N1-C6-O6 | 7.54 | 124.42 | 119.90 |
| 53 | B5 | 2371 | G | N1-C6-O6 | 7.54 | 124.42 | 119.90 |
| 53 | B5 | 2770 | G | N1-C6-O6 | 7.54 | 124.42 | 119.90 |
| 53 | B5 | 3329 | U | O4'-C1'-N1 | 7.54 | 114.23 | 108.20 |
| 1 | AA | 325 | G | O4'-C1'-N9 | 7.54 | 114.23 | 108.20 |
| 1 | AA | 595 | G | N1-C6-O6 | 7.53 | 124.42 | 119.90 |
| 53 | B5 | 2346 | C | O4'-C1'-N1 | 7.53 | 114.23 | 108.20 |
| 1 | AA | 235 | G | N1-C6-O6 | 7.53 | 124.42 | 119.90 |
| 1 | AA | 1320 | C | O4'-C1'-N1 | 7.53 | 114.23 | 108.20 |
| 53 | B5 | 1010 | G | N1-C6-O6 | 7.53 | 124.42 | 119.90 |
| 53 | B5 | 1171 | G | N1-C6-O6 | 7.53 | 124.42 | 119.90 |
| 53 | B5 | 1550 | C | O4'-C1'-N1 | 7.53 | 114.22 | 108.20 |
| 1 | AA | 1604 | C | O4'-C1'-N1 | 7.53 | 114.22 | 108.20 |
| 1 | AA | 1662 | C | O4'-C1'-N1 | 7.53 | 114.22 | 108.20 |
| 1 | AA | 736 | C | O4'-C1'-N1 | 7.53 | 114.22 | 108.20 |
| 53 | B5 | 320 | G | O4'-C1'-N9 | 7.53 | 114.22 | 108.20 |
| 53 | B5 | 916 | G | N1-C6-O6 | 7.53 | 124.42 | 119.90 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 949 | C | O4'-C1'-N1 | 7.53 | 114.22 | 108.20 |
| 19 | A7 | 12 | U | N1-C2-N3 | 7.53 | 119.42 | 114.90 |
| 53 | B5 | 31 | C | O4'-C1'-N1 | 7.53 | 114.22 | 108.20 |
| 53 | B5 | 212 | G | N1-C6-O6 | 7.53 | 124.42 | 119.90 |
| 53 | B5 | 544 | C | O4'-C1'-N1 | 7.53 | 114.22 | 108.20 |
| 53 | B5 | 1293 | U | O4'-C1'-N1 | 7.53 | 114.22 | 108.20 |
| 53 | B5 | 224 | C | O4'-C1'-N1 | 7.52 | 114.22 | 108.20 |
| 53 | B5 | 2284 | C | O4'-C1'-N1 | 7.52 | 114.22 | 108.20 |
| 1 | AA | 1570 | G | N1-C6-O6 | 7.52 | 124.41 | 119.90 |
| 1 | AA | 394 | C | O4'-C1'-N1 | 7.52 | 114.22 | 108.20 |
| 53 | B5 | 1012 | G | N1-C6-O6 | 7.52 | 124.41 | 119.90 |
| 53 | B5 | 2786 | G | N1-C6-O6 | 7.52 | 124.41 | 119.90 |
| 53 | B5 | 290 | G | C5-C6-O6 | -7.52 | 124.09 | 128.60 |
| 1 | AA | 409 | C | O4'-C1'-N1 | 7.52 | 114.21 | 108.20 |
| 1 | AA | 1082 | G | N1-C6-O6 | 7.52 | 124.41 | 119.90 |
| 1 | AA | 761 | G | N1-C6-O6 | 7.51 | 124.41 | 119.90 |
| 53 | B5 | 805 | G | N1-C6-O6 | 7.51 | 124.41 | 119.90 |
| 53 | B5 | 2365 | C | O4'-C1'-N1 | 7.51 | 114.21 | 108.20 |
| 1 | AA | 523 | G | N1-C6-O6 | 7.51 | 124.41 | 119.90 |
| 53 | B5 | 498 | A | O4'-C1'-N9 | 7.51 | 114.21 | 108.20 |
| 53 | B5 | 1327 | C | O4'-C1'-N1 | 7.51 | 114.21 | 108.20 |
| 53 | B5 | 1611 | G | N1-C6-O6 | 7.51 | 124.41 | 119.90 |
| 51 | B3 | 51 | G | N1-C6-O6 | 7.51 | 124.41 | 119.90 |
| 53 | B5 | 493 | G | N1-C6-O6 | 7.51 | 124.41 | 119.90 |
| 53 | B5 | 1711 | C | O4'-C1'-N1 | 7.51 | 114.21 | 108.20 |
| 53 | B5 | 2325 | G | N1-C6-O6 | 7.51 | 124.41 | 119.90 |
| 53 | B5 | 2798 | C | O4'-C1'-N1 | 7.51 | 114.21 | 108.20 |
| 1 | AA | 1525 | C | O4'-C1'-N1 | 7.51 | 114.21 | 108.20 |
| 52 | B4 | 56 | G | N1-C6-O6 | 7.51 | 124.41 | 119.90 |
| 53 | B5 | 2238 | G | N1-C6-O6 | 7.51 | 124.41 | 119.90 |
| 53 | B5 | 3083 | G | O4'-C1'-N9 | 7.51 | 114.21 | 108.20 |
| 53 | B5 | 3136 | G | N1-C6-O6 | 7.51 | 124.41 | 119.90 |
| 51 | B3 | 28 | C | O4'-C1'-N1 | 7.51 | 114.20 | 108.20 |
| 53 | B5 | 1328 | C | O4'-C1'-N1 | 7.50 | 114.20 | 108.20 |
| 53 | B5 | 567 | G | N1-C6-O6 | 7.50 | 124.40 | 119.90 |
| 53 | B5 | 3249 | C | O4'-C1'-N1 | 7.50 | 114.20 | 108.20 |
| 1 | AA | 583 | C | O4'-C1'-N1 | 7.50 | 114.20 | 108.20 |
| 53 | B5 | 91 | G | N1-C6-O6 | 7.50 | 124.40 | 119.90 |
| 53 | B5 | 3180 | U | O4'-C1'-N1 | 7.50 | 114.20 | 108.20 |
| 53 | B5 | 2338 | C | O4'-C1'-N1 | 7.50 | 114.20 | 108.20 |
| 53 | B5 | 2784 | G | N1-C6-O6 | 7.50 | 124.40 | 119.90 |
| 53 | B5 | 2838 | A | O4'-C1'-N9 | 7.50 | 114.20 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1 | AA | 1766 | G | N1-C6-O6 | 7.50 | 124.40 | 119.90 |
| 53 | B5 | 335 | G | N1-C6-O6 | 7.50 | 124.40 | 119.90 |
| 53 | B5 | 3085 | G | N1-C6-O6 | 7.50 | 124.40 | 119.90 |
| 1 | AA | 948 | C | O4'-C1'-N1 | 7.50 | 114.20 | 108.20 |
| 51 | B3 | 98 | G | N1-C6-O6 | 7.50 | 124.40 | 119.90 |
| 53 | B5 | 1513 | G | N1-C6-O6 | 7.50 | 124.40 | 119.90 |
| 53 | B5 | 2206 | G | N1-C6-O6 | 7.50 | 124.40 | 119.90 |
| 53 | B5 | 2564 | G | N1-C6-O6 | 7.50 | 124.40 | 119.90 |
| 1 | AA | 860 | U | C3'-C2'-C1' | -7.49 | 95.50 | 101.50 |
| 1 | AA | 1174 | C | O4'-C1'-N1 | 7.49 | 114.19 | 108.20 |
| 53 | B5 | 1815 | U | O4'-C1'-N1 | 7.49 | 114.19 | 108.20 |
| 53 | B5 | 2687 | G | N1-C6-O6 | 7.49 | 124.39 | 119.90 |
| 1 | AA | 1202 | U | O4'-C1'-N1 | 7.49 | 114.19 | 108.20 |
| 53 | B5 | 1362 | G | N1-C6-O6 | 7.49 | 124.39 | 119.90 |
| 1 | AA | 779 | U | O4'-C1'-N1 | 7.49 | 114.19 | 108.20 |
| 1 | AA | 1270 | C | O4'-C1'-N1 | 7.49 | 114.19 | 108.20 |
| 1 | AA | 1583 | U | P-O3'-C3' | 7.49 | 128.69 | 119.70 |
| 53 | B5 | 138 | U | O4'-C1'-N1 | 7.49 | 114.19 | 108.20 |
| 53 | B5 | 741 | U | O4'-C1'-N1 | 7.49 | 114.19 | 108.20 |
| 1 | AA | 1449 | C | O4'-C1'-N1 | 7.49 | 114.19 | 108.20 |
| 53 | B5 | 213 | G | N1-C6-O6 | 7.49 | 124.39 | 119.90 |
| 53 | B5 | 276 | U | O4'-C1'-N1 | 7.49 | 114.19 | 108.20 |
| 1 | AA | 936 | C | O4'-C1'-N1 | 7.48 | 114.19 | 108.20 |
| 19 | A7 | 71 | G | C4-C5-C6 | -7.48 | 114.31 | 118.80 |
| 1 | AA | 641 | G | N1-C6-O6 | 7.48 | 124.39 | 119.90 |
| 53 | B5 | 33 | G | N1-C6-O6 | 7.48 | 124.39 | 119.90 |
| 1 | AA | 228 | G | N1-C6-O6 | 7.48 | 124.39 | 119.90 |
| 53 | B5 | 1224 | C | O4'-C1'-N1 | 7.48 | 114.18 | 108.20 |
| 53 | B5 | 2323 | G | C5-C6-O6 | -7.48 | 124.11 | 128.60 |
| 53 | B5 | 1751 | G | N1-C6-O6 | 7.48 | 124.39 | 119.90 |
| 52 | B4 | 135 | G | N1-C6-O6 | 7.48 | 124.39 | 119.90 |
| 53 | B5 | 663 | C | O4'-C1'-N1 | 7.48 | 114.18 | 108.20 |
| 53 | B5 | 1738 | C | O4'-C1'-N1 | 7.48 | 114.18 | 108.20 |
| 51 | B3 | 47 | C | O4'-C1'-N1 | 7.48 | 114.18 | 108.20 |
| 1 | AA | 1539 | G | N1-C6-O6 | 7.47 | 124.39 | 119.90 |
| 53 | B5 | 479 | U | O4'-C1'-N1 | 7.47 | 114.18 | 108.20 |
| 53 | B5 | 867 | G | N1-C6-O6 | 7.47 | 124.39 | 119.90 |
| 53 | B5 | 3052 | G | C5-C6-O6 | -7.47 | 124.11 | 128.60 |
| 53 | B5 | 1072 | G | N1-C6-O6 | 7.47 | 124.38 | 119.90 |
| 1 | AA | 495 | C | O4'-C1'-N1 | 7.47 | 114.18 | 108.20 |
| 1 | AA | 503 | G | N1-C6-O6 | 7.47 | 124.38 | 119.90 |
| 53 | B5 | 2621 | G | C5-C6-O6 | -7.47 | 124.12 | 128.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 2764 | C | O4'-C1'-N1 | 7.47 | 114.18 | 108.20 |
| 1 | AA | 270 | C | O4'-C1'-N1 | 7.47 | 114.17 | 108.20 |
| 53 | B5 | 3062 | G | C5-C6-O6 | -7.47 | 124.12 | 128.60 |
| 1 | AA | 101 | U | O4'-C1'-N1 | 7.46 | 114.17 | 108.20 |
| 1 | AA | 1177 | C | O4'-C1'-N1 | 7.46 | 114.17 | 108.20 |
| 53 | B5 | 1778 | G | N1-C6-O6 | 7.46 | 124.38 | 119.90 |
| 1 | AA | 1325 | G | C5-C6-O6 | -7.46 | 124.12 | 128.60 |
| 53 | B5 | 1640 | G | O4'-C1'-N9 | 7.46 | 114.17 | 108.20 |
| 53 | B5 | 2415 | C | O4'-C1'-N1 | 7.46 | 114.17 | 108.20 |
| 1 | AA | 377 | G | N1-C6-O6 | 7.46 | 124.38 | 119.90 |
| 53 | B5 | 3201 | C | O4'-C1'-N1 | 7.46 | 114.17 | 108.20 |
| 53 | B5 | 3232 | G | O4'-C1'-N9 | 7.46 | 114.17 | 108.20 |
| 53 | B5 | 102 | C | O4'-C1'-N1 | 7.46 | 114.17 | 108.20 |
| 1 | AA | 166 | C | O4'-C1'-N1 | 7.46 | 114.17 | 108.20 |
| 1 | AA | 569 | C | O4'-C1'-N1 | 7.46 | 114.17 | 108.20 |
| 53 | B5 | 916 | G | O4'-C1'-N9 | 7.46 | 114.17 | 108.20 |
| 1 | AA | 1564 | U | O4'-C1'-N1 | 7.46 | 114.17 | 108.20 |
| 1 | AA | 455 | C | O4'-C1'-N1 | 7.45 | 114.16 | 108.20 |
| 1 | AA | 1620 | G | N1-C6-O6 | 7.45 | 124.37 | 119.90 |
| 53 | B5 | 1706 | C | O4'-C1'-N1 | 7.45 | 114.16 | 108.20 |
| 53 | B5 | 1836 | C | O4'-C1'-N1 | 7.45 | 114.16 | 108.20 |
| 53 | B5 | 1931 | U | O4'-C1'-N1 | 7.45 | 114.16 | 108.20 |
| 53 | B5 | 2393 | G | N1-C6-O6 | 7.45 | 124.37 | 119.90 |
| 53 | B5 | 30 | G | N1-C6-O6 | 7.45 | 124.37 | 119.90 |
| 1 | AA | 433 | C | O4'-C1'-N1 | 7.45 | 114.16 | 108.20 |
| 53 | B5 | 716 | G | N1-C6-O6 | 7.45 | 124.37 | 119.90 |
| 53 | B5 | 1118 | C | O4'-C1'-N1 | 7.45 | 114.16 | 108.20 |
| 53 | B5 | 606 | C | O4'-C1'-N1 | 7.45 | 114.16 | 108.20 |
| 1 | AA | 1123 | G | N1-C6-O6 | 7.45 | 124.37 | 119.90 |
| 53 | B5 | 3357 | U | O4'-C1'-N1 | 7.45 | 114.16 | 108.20 |
| 52 | B4 | 71 | G | N1-C6-O6 | 7.45 | 124.37 | 119.90 |
| 53 | B5 | 1543 | G | N1-C6-O6 | 7.45 | 124.37 | 119.90 |
| 1 | AA | 1135 | A | N1-C6-N6 | 7.44 | 123.07 | 118.60 |
| 53 | B5 | 2425 | G | N1-C6-O6 | 7.44 | 124.36 | 119.90 |
| 53 | B5 | 2993 | G | N1-C6-O6 | 7.44 | 124.36 | 119.90 |
| 53 | B5 | 3254 | G | O4'-C1'-N9 | 7.44 | 114.15 | 108.20 |
| 1 | AA | 303 | U | O4'-C1'-N1 | 7.44 | 114.15 | 108.20 |
| 53 | B5 | 701 | G | N1-C6-O6 | 7.44 | 124.36 | 119.90 |
| 53 | B5 | 1635 | G | N1-C6-O6 | 7.44 | 124.36 | 119.90 |
| 52 | B4 | 12 | A | O4'-C1'-N9 | 7.44 | 114.15 | 108.20 |
| 53 | B5 | 115 | A | O4'-C1'-N9 | 7.44 | 114.15 | 108.20 |
| 53 | B5 | 1671 | C | O4'-C1'-N1 | 7.44 | 114.15 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 52 | B4 | 49 | G | N1-C6-O6 | 7.44 | 124.36 | 119.90 |
| 53 | B5 | 1690 | C | O4'-C1'-N1 | 7.44 | 114.15 | 108.20 |
| 53 | B5 | 538 | G | N1-C6-O6 | 7.43 | 124.36 | 119.90 |
| 53 | B5 | 3105 | U | O4'-C1'-N1 | 7.43 | 114.15 | 108.20 |
| 1 | AA | 1231 | C | O4'-C1'-N1 | 7.43 | 114.15 | 108.20 |
| 19 | A7 | 7 | U | C2-N3-C4 | -7.43 | 122.54 | 127.00 |
| 53 | B5 | 1256 | G | C5-C6-O6 | -7.43 | 124.14 | 128.60 |
| 53 | B5 | 1595 | U | O4'-C1'-N1 | 7.43 | 114.15 | 108.20 |
| 53 | B5 | 2532 | U | O4'-C1'-N1 | 7.43 | 114.15 | 108.20 |
| 1 | AA | 1131 | C | O4'-C1'-N1 | 7.43 | 114.14 | 108.20 |
| 53 | B5 | 2825 | C | O4'-C1'-N1 | 7.43 | 114.14 | 108.20 |
| 53 | B5 | 547 | G | N1-C6-O6 | 7.43 | 124.36 | 119.90 |
| 53 | B5 | 773 | G | N1-C6-O6 | 7.43 | 124.36 | 119.90 |
| 53 | B5 | 1375 | G | N1-C6-O6 | 7.43 | 124.36 | 119.90 |
| 53 | B5 | 1527 | C | O4'-C1'-N1 | 7.43 | 114.14 | 108.20 |
| 52 | B4 | 119 | C | O4'-C1'-N1 | 7.43 | 114.14 | 108.20 |
| 53 | B5 | 380 | U | O4'-C1'-N1 | 7.43 | 114.14 | 108.20 |
| 1 | AA | 1612 | A | C5'-C4'-O4' | 7.43 | 118.01 | 109.10 |
| 52 | B4 | 107 | G | N1-C6-O6 | 7.43 | 124.36 | 119.90 |
| 53 | B5 | 2552 | C | O4'-C1'-N1 | 7.43 | 114.14 | 108.20 |
| 53 | B5 | 3390 | G | O4'-C1'-N9 | 7.43 | 114.14 | 108.20 |
| 1 | AA | 1431 | U | O4'-C1'-N1 | 7.42 | 114.14 | 108.20 |
| 19 | A7 | 73 | A | C4'-C3'-C2' | -7.42 | 95.18 | 102.60 |
| 53 | B5 | 363 | G | N1-C6-O6 | 7.42 | 124.35 | 119.90 |
| 53 | B5 | 2375 | G | N1-C6-O6 | 7.42 | 124.36 | 119.90 |
| 19 | A7 | 45 | G | C4-C5-N7 | -7.42 | 107.83 | 110.80 |
| 53 | B5 | 337 | G | N1-C6-O6 | 7.42 | 124.35 | 119.90 |
| 53 | B5 | 475 | G | N1-C6-O6 | 7.42 | 124.35 | 119.90 |
| 1 | AA | 141 | U | O4'-C1'-N1 | 7.42 | 114.14 | 108.20 |
| 1 | AA | 396 | G | N1-C6-O6 | 7.42 | 124.35 | 119.90 |
| 1 | AA | 720 | G | N1-C6-O6 | 7.42 | 124.35 | 119.90 |
| 53 | B5 | 420 | G | N1-C6-O6 | 7.42 | 124.35 | 119.90 |
| 53 | B5 | 868 | C | O4'-C1'-N1 | 7.42 | 114.14 | 108.20 |
| 1 | AA | 937 | G | N1-C6-O6 | 7.42 | 124.35 | 119.90 |
| 52 | B4 | 34 | U | O4'-C1'-N1 | 7.42 | 114.13 | 108.20 |
| 53 | B5 | 1791 | C | O4'-C1'-N1 | 7.42 | 114.14 | 108.20 |
| 53 | B5 | 3031 | G | N1-C6-O6 | 7.42 | 124.35 | 119.90 |
| 53 | B5 | 1111 | U | O4'-C1'-N1 | 7.42 | 114.13 | 108.20 |
| 53 | B5 | 1755 | C | O4'-C1'-N1 | 7.42 | 114.13 | 108.20 |
| 53 | B5 | 732 | C | O4'-C1'-N1 | 7.42 | 114.13 | 108.20 |
| 53 | B5 | 2639 | G | N1-C6-O6 | 7.42 | 124.35 | 119.90 |
| 1 | AA | 358 | U | O4'-C1'-N1 | 7.41 | 114.13 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 1811 | G | N1-C6-O6 | 7.41 | 124.35 | 119.90 |
| 53 | B5 | 2457 | G | N1-C6-O6 | 7.41 | 124.35 | 119.90 |
| 1 | AA | 799 | A | O5'-P-OP1 | -7.41 | 99.03 | 105.70 |
| 53 | B5 | 2414 | G | N1-C6-O6 | 7.41 | 124.35 | 119.90 |
| 53 | B5 | 177 | U | O4'-C1'-N1 | 7.41 | 114.13 | 108.20 |
| 53 | B5 | 353 | G | N1-C6-O6 | 7.41 | 124.35 | 119.90 |
| 53 | B5 | 1272 | C | O4'-C1'-N1 | 7.41 | 114.13 | 108.20 |
| 53 | B5 | 2381 | G | N1-C6-O6 | 7.41 | 124.35 | 119.90 |
| 53 | B5 | 1035 | G | C5-C6-O6 | -7.41 | 124.16 | 128.60 |
| 53 | B5 | 1451 | C | O4'-C1'-N1 | 7.41 | 114.13 | 108.20 |
| 53 | B5 | 2335 | G | O4'-C1'-N9 | 7.41 | 114.13 | 108.20 |
| 1 | AA | 909 | C | O4'-C1'-N1 | 7.41 | 114.12 | 108.20 |
| 1 | AA | 1709 | C | O4'-C1'-N1 | 7.41 | 114.12 | 108.20 |
| 52 | B4 | 139 | U | O4'-C1'-N1 | 7.41 | 114.12 | 108.20 |
| 53 | B5 | 1346 | G | C5-C6-O6 | -7.41 | 124.16 | 128.60 |
| 53 | B5 | 2109 | U | O4'-C1'-N1 | 7.41 | 114.12 | 108.20 |
| 53 | B5 | 2487 | U | O4'-C1'-N1 | 7.41 | 114.12 | 108.20 |
| 53 | B5 | 3018 | C | O4'-C1'-N1 | 7.41 | 114.12 | 108.20 |
| 1 | AA | 536 | C | O4'-C1'-N1 | 7.40 | 114.12 | 108.20 |
| 1 | AA | 1379 | A | O4'-C1'-N9 | 7.40 | 114.12 | 108.20 |
| 52 | B4 | 32 | C | O4'-C1'-N1 | 7.40 | 114.12 | 108.20 |
| 53 | B5 | 150 | A | O4'-C1'-N9 | 7.40 | 114.12 | 108.20 |
| 53 | B5 | 424 | G | N1-C6-O6 | 7.40 | 124.34 | 119.90 |
| 53 | B5 | 476 | G | N1-C6-O6 | 7.40 | 124.34 | 119.90 |
| 53 | B5 | 1678 | G | N1-C6-O6 | 7.40 | 124.34 | 119.90 |
| 1 | AA | 1781 | C | O4'-C1'-N1 | 7.40 | 114.12 | 108.20 |
| 53 | B5 | 566 | G | N1-C6-O6 | 7.40 | 124.34 | 119.90 |
| 1 | AA | 1778 | G | N1-C6-O6 | 7.40 | 124.34 | 119.90 |
| 53 | B5 | 434 | U | O4'-C1'-N1 | 7.40 | 114.12 | 108.20 |
| 53 | B5 | 1923 | C | O4'-C1'-N1 | 7.39 | 114.11 | 108.20 |
| 52 | B4 | 46 | G | N1-C6-O6 | 7.39 | 124.33 | 119.90 |
| 53 | B5 | 270 | U | O4'-C1'-N1 | 7.39 | 114.11 | 108.20 |
| 1 | AA | 691 | C | O4'-C1'-N1 | 7.39 | 114.11 | 108.20 |
| 51 | B3 | 65 | G | N1-C6-O6 | 7.39 | 124.33 | 119.90 |
| 53 | B5 | 112 | U | O4'-C1'-N1 | 7.39 | 114.11 | 108.20 |
| 53 | B5 | 1444 | G | N1-C6-O6 | 7.39 | 124.33 | 119.90 |
| 53 | B5 | 1493 | G | N1-C6-O6 | 7.39 | 124.33 | 119.90 |
| 53 | B5 | 110 | G | O4'-C1'-N9 | 7.39 | 114.11 | 108.20 |
| 53 | B5 | 2435 | G | N1-C6-O6 | 7.39 | 124.33 | 119.90 |
| 53 | B5 | 3118 | C | O4'-C1'-N1 | 7.39 | 114.11 | 108.20 |
| 1 | AA | 1521 | G | C8-N9-C1' | -7.39 | 117.40 | 127.00 |
| 19 | A7 | 43 | G | C4'-C3'-C2' | -7.39 | 95.21 | 102.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 2354 | C | O4'-C1'-N1 | 7.39 | 114.11 | 108.20 |
| 53 | B5 | 287 | G | N1-C6-O6 | 7.39 | 124.33 | 119.90 |
| 53 | B5 | 2686 | A | O4'-C1'-N9 | 7.39 | 114.11 | 108.20 |
| 52 | B4 | 16 | G | N1-C6-O6 | 7.38 | 124.33 | 119.90 |
| 53 | B5 | 679 | U | O4'-C1'-N1 | 7.38 | 114.11 | 108.20 |
| 53 | B5 | 2675 | C | O4'-C1'-N1 | 7.38 | 114.11 | 108.20 |
| 53 | B5 | 3001 | C | O4'-C1'-N1 | 7.38 | 114.11 | 108.20 |
| 1 | AA | 1444 | A | O4'-C1'-N9 | 7.38 | 114.11 | 108.20 |
| 1 | AA | 870 | C | O4'-C1'-N1 | 7.38 | 114.11 | 108.20 |
| 1 | AA | 1516 | C | O5'-C5'-C4' | -7.38 | 97.68 | 111.70 |
| 1 | AA | 1579 | C | O4'-C1'-N1 | 7.38 | 114.11 | 108.20 |
| 53 | B5 | 1230 | G | O4'-C1'-N9 | 7.38 | 114.11 | 108.20 |
| 53 | B5 | 1796 | G | N1-C6-O6 | 7.38 | 124.33 | 119.90 |
| 53 | B5 | 2717 | U | O4'-C1'-N1 | 7.38 | 114.11 | 108.20 |
| 53 | B5 | 3043 | C | O4'-C1'-N1 | 7.38 | 114.11 | 108.20 |
| 52 | B4 | 118 | C | O4'-C1'-N1 | 7.38 | 114.10 | 108.20 |
| 53 | B5 | 406 | G | N1-C6-O6 | 7.38 | 124.33 | 119.90 |
| 1 | AA | 448 | C | O4'-C1'-N1 | 7.38 | 114.10 | 108.20 |
| 1 | AA | 741 | C | O4'-C1'-N1 | 7.38 | 114.10 | 108.20 |
| 1 | AA | 1306 | C | O4'-C1'-N1 | 7.38 | 114.10 | 108.20 |
| 1 | AA | 1494 | U | O4'-C1'-N1 | 7.38 | 114.10 | 108.20 |
| 19 | A7 | 41 | U | C4'-C3'-C2' | -7.38 | 95.22 | 102.60 |
| 53 | B5 | 774 | G | N1-C6-O6 | 7.38 | 124.33 | 119.90 |
| 53 | B5 | 2951 | G | N1-C6-O6 | 7.38 | 124.33 | 119.90 |
| 53 | B5 | 1882 | G | N1-C6-O6 | 7.38 | 124.33 | 119.90 |
| 1 | AA | 1118 | C | O4'-C1'-N1 | 7.37 | 114.10 | 108.20 |
| 53 | B5 | 2288 | G | N1-C6-O6 | 7.37 | 124.33 | 119.90 |
| 53 | B5 | 2335 | G | N1-C6-O6 | 7.37 | 124.32 | 119.90 |
| 53 | B5 | 2821 | C | O4'-C1'-N1 | 7.37 | 114.10 | 108.20 |
| 1 | AA | 150 | C | O4'-C1'-N1 | 7.37 | 114.10 | 108.20 |
| 1 | AA | 208 | U | O4'-C1'-N1 | 7.37 | 114.10 | 108.20 |
| 53 | B5 | 497 | C | O4'-C1'-N1 | 7.37 | 114.10 | 108.20 |
| 53 | B5 | 2467 | G | C5-C6-O6 | -7.37 | 124.18 | 128.60 |
| 1 | AA | 1218 | C | O4'-C1'-N1 | 7.37 | 114.10 | 108.20 |
| 1 | AA | 1381 | A | O4'-C1'-N9 | 7.37 | 114.09 | 108.20 |
| 19 | A7 | 15 | G | C8-N9-C4 | -7.37 | 103.45 | 106.40 |
| 53 | B5 | 1773 | C | O4'-C1'-N1 | 7.37 | 114.09 | 108.20 |
| 1 | AA | 1248 | C | O4'-C1'-N1 | 7.37 | 114.09 | 108.20 |
| 53 | B5 | 2527 | G | N1-C6-O6 | 7.37 | 124.32 | 119.90 |
| 1 | AA | 1496 | G | N1-C6-O6 | 7.36 | 124.32 | 119.90 |
| 53 | B5 | 728 | G | C5-C6-O6 | -7.36 | 124.18 | 128.60 |
| 53 | B5 | 1175 | C | O4'-C1'-N1 | 7.36 | 114.09 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 1 | AA | 852 | C | O4'-C1'-N1 | 7.36 | 114.09 | 108.20 |
| 53 | B5 | 350 | C | O4'-C1'-N1 | 7.36 | 114.09 | 108.20 |
| 1 | AA | 702 | G | O4'-C1'-N9 | 7.36 | 114.09 | 108.20 |
| 53 | B5 | 1161 | G | C5-C6-O6 | -7.36 | 124.18 | 128.60 |
| 53 | B5 | 1178 | G | N1-C6-O6 | 7.36 | 124.32 | 119.90 |
| 53 | B5 | 2943 | G | N1-C6-O6 | 7.36 | 124.31 | 119.90 |
| 53 | B5 | 3089 | C | O4'-C1'-N1 | 7.36 | 114.09 | 108.20 |
| 53 | B5 | 502 | U | O4'-C1'-N1 | 7.36 | 114.09 | 108.20 |
| 1 | AA | 152 | U | O4'-C1'-N1 | 7.36 | 114.08 | 108.20 |
| 1 | AA | 646 | C | O4'-C1'-N1 | 7.36 | 114.08 | 108.20 |
| 52 | B4 | 63 | G | N1-C6-O6 | 7.36 | 124.31 | 119.90 |
| 53 | B5 | 2737 | C | O4'-C1'-N1 | 7.36 | 114.08 | 108.20 |
| 1 | AA | 381 | C | O4'-C1'-N1 | 7.35 | 114.08 | 108.20 |
| 53 | B5 | 2239 | G | N1-C6-O6 | 7.35 | 124.31 | 119.90 |
| 53 | B5 | 1314 | C | O4'-C1'-N1 | 7.35 | 114.08 | 108.20 |
| 53 | B5 | 3229 | G | N1-C6-O6 | 7.35 | 124.31 | 119.90 |
| 1 | AA | 1002 | G | N1-C6-O6 | 7.35 | 124.31 | 119.90 |
| 53 | B5 | 2895 | G | N1-C6-O6 | 7.35 | 124.31 | 119.90 |
| 1 | AA | 362 | G | N1-C6-O6 | 7.35 | 124.31 | 119.90 |
| 1 | AA | 1173 | G | N1-C6-O6 | 7.35 | 124.31 | 119.90 |
| 19 | A7 | 61 | C | C4-C5-C6 | -7.35 | 113.72 | 117.40 |
| 53 | B5 | 842 | G | N1-C6-O6 | 7.35 | 124.31 | 119.90 |
| 53 | B5 | 2830 | G | N1-C6-O6 | 7.35 | 124.31 | 119.90 |
| 1 | AA | 1787 | G | N1-C6-O6 | 7.35 | 124.31 | 119.90 |
| 53 | B5 | 744 | A | O4'-C1'-N9 | 7.35 | 114.08 | 108.20 |
| 1 | AA | 990 | G | C5-C6-O6 | -7.34 | 124.19 | 128.60 |
| 53 | B5 | 448 | U | O4'-C1'-N1 | 7.34 | 114.08 | 108.20 |
| 53 | B5 | 1383 | G | C5-C6-O6 | -7.34 | 124.19 | 128.60 |
| 53 | B5 | 2481 | G | N1-C6-O6 | 7.34 | 124.31 | 119.90 |
| 1 | AA | 7 | G | N1-C6-O6 | 7.34 | 124.31 | 119.90 |
| 51 | B3 | 96 | G | N1-C6-O6 | 7.34 | 124.31 | 119.90 |
| 53 | B5 | 486 | U | O4'-C1'-N1 | 7.34 | 114.07 | 108.20 |
| 53 | B5 | 612 | U | O4'-C1'-N1 | 7.34 | 114.07 | 108.20 |
| 53 | B5 | 2778 | G | N1-C6-O6 | 7.34 | 124.31 | 119.90 |
| 53 | B5 | 2788 | C | O4'-C1'-N1 | 7.34 | 114.07 | 108.20 |
| 1 | AA | 711 | U | O4'-C1'-N1 | 7.34 | 114.07 | 108.20 |
| 1 | AA | 1206 | C | O4'-C1'-N1 | 7.34 | 114.07 | 108.20 |
| 1 | AA | 1492 | C | O4'-C1'-N1 | 7.34 | 114.07 | 108.20 |
| 53 | B5 | 505 | G | N1-C6-O6 | 7.34 | 124.30 | 119.90 |
| 53 | B5 | 1086 | C | O4'-C1'-N1 | 7.34 | 114.07 | 108.20 |
| 53 | B5 | 1814 | A | O4'-C1'-N9 | 7.34 | 114.07 | 108.20 |
| 51 | B3 | 44 | C | O4'-C1'-N1 | 7.34 | 114.07 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 288 | C | O4'-C1'-N1 | 7.34 | 114.07 | 108.20 |
| 1 | AA | 1304 | U | O4'-C1'-N1 | 7.33 | 114.07 | 108.20 |
| 1 | AA | 317 | C | O4'-C1'-N1 | 7.33 | 114.06 | 108.20 |
| 53 | B5 | 2235 | C | O4'-C1'-N1 | 7.33 | 114.06 | 108.20 |
| 53 | B5 | 2857 | C | O4'-C1'-N1 | 7.33 | 114.06 | 108.20 |
| 1 | AA | 1392 | G | N1-C6-O6 | 7.33 | 124.30 | 119.90 |
| 1 | AA | 1015 | C | O4'-C1'-N1 | 7.33 | 114.06 | 108.20 |
| 51 | B3 | 106 | G | N1-C6-O6 | 7.33 | 124.30 | 119.90 |
| 53 | B5 | 758 | C | O4'-C1'-N1 | 7.33 | 114.06 | 108.20 |
| 53 | B5 | 1609 | C | O4'-C1'-N1 | 7.33 | 114.06 | 108.20 |
| 53 | B5 | 1821 | U | O4'-C1'-N1 | 7.33 | 114.06 | 108.20 |
| 53 | B5 | 1167 | U | O4'-C1'-N1 | 7.33 | 114.06 | 108.20 |
| 53 | B5 | 1458 | U | O4'-C1'-N1 | 7.33 | 114.06 | 108.20 |
| 53 | B5 | 1744 | G | N1-C6-O6 | 7.33 | 124.30 | 119.90 |
| 53 | B5 | 3171 | U | O4'-C1'-N1 | 7.33 | 114.06 | 108.20 |
| 1 | AA | 614 | C | O4'-C1'-N1 | 7.33 | 114.06 | 108.20 |
| 53 | B5 | 1633 | C | O4'-C1'-N1 | 7.33 | 114.06 | 108.20 |
| 53 | B5 | 2301 | U | O4'-C1'-N1 | 7.33 | 114.06 | 108.20 |
| 53 | B5 | 2466 | G | N1-C6-O6 | 7.33 | 124.30 | 119.90 |
| 1 | AA | 1303 | C | O4'-C1'-N1 | 7.32 | 114.06 | 108.20 |
| 19 | A7 | 35 | A | N1-C2-N3 | -7.32 | 125.64 | 129.30 |
| 1 | AA | 723 | G | N1-C6-O6 | 7.32 | 124.29 | 119.90 |
| 53 | B5 | 659 | G | N1-C6-O6 | 7.32 | 124.29 | 119.90 |
| 1 | AA | 934 | U | O4'-C1'-N1 | 7.32 | 114.06 | 108.20 |
| 1 | AA | 1330 | C | O4'-C1'-N1 | 7.32 | 114.06 | 108.20 |
| 52 | B4 | 19 | C | O4'-C1'-N1 | 7.32 | 114.06 | 108.20 |
| 53 | B5 | 1761 | C | O4'-C1'-N1 | 7.32 | 114.06 | 108.20 |
| 53 | B5 | 3220 | G | N1-C6-O6 | 7.32 | 124.29 | 119.90 |
| 53 | B5 | 3388 | C | O4'-C1'-N1 | 7.32 | 114.06 | 108.20 |
| 1 | AA | 1211 | C | O4'-C1'-N1 | 7.32 | 114.06 | 108.20 |
| 53 | B5 | 93 | C | O4'-C1'-N1 | 7.32 | 114.06 | 108.20 |
| 1 | AA | 346 | G | C5-C6-O6 | -7.32 | 124.21 | 128.60 |
| 1 | AA | 1145 | C | O4'-C1'-N1 | 7.32 | 114.05 | 108.20 |
| 1 | AA | 631 | G | N1-C6-O6 | 7.32 | 124.29 | 119.90 |
| 1 | AA | 1314 | C | O4'-C1'-N1 | 7.32 | 114.05 | 108.20 |
| 53 | B5 | 179 | C | O4'-C1'-N1 | 7.32 | 114.05 | 108.20 |
| 53 | B5 | 227 | G | N1-C6-O6 | 7.32 | 124.29 | 119.90 |
| 53 | B5 | 310 | U | O4'-C1'-N1 | 7.32 | 114.05 | 108.20 |
| 53 | B5 | 1941 | C | O4'-C1'-N1 | 7.32 | 114.05 | 108.20 |
| 53 | B5 | 2382 | G | C5-C6-O6 | -7.32 | 124.21 | 128.60 |
| 53 | B5 | 2839 | G | P-O3'-C3' | 7.32 | 128.48 | 119.70 |
| 1 | AA | 858 | G | N3-C4-C5 | -7.31 | 124.94 | 128.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 1 | AA | 1623 | C | O4'-C1'-N1 | 7.31 | 114.05 | 108.20 |
| 53 | B5 | 708 | G | N1-C6-O6 | 7.31 | 124.29 | 119.90 |
| 53 | B5 | 2856 | G | C5-C6-O6 | -7.31 | 124.21 | 128.60 |
| 53 | B5 | 918 | C | O4'-C1'-N1 | 7.31 | 114.05 | 108.20 |
| 1 | AA | 1409 | G | O4'-C1'-N9 | 7.31 | 114.05 | 108.20 |
| 51 | B3 | 61 | U | O4'-C1'-N1 | 7.31 | 114.05 | 108.20 |
| 1 | AA | 648 | G | N1-C6-O6 | 7.31 | 124.28 | 119.90 |
| 1 | AA | 1622 | C | O4'-C1'-N1 | 7.31 | 114.05 | 108.20 |
| 53 | B5 | 412 | G | O4'-C1'-N9 | 7.31 | 114.05 | 108.20 |
| 53 | B5 | 2508 | U | O4'-C1'-N1 | 7.31 | 114.05 | 108.20 |
| 46 | BV | 47 | TYR | CB-CG-CD1 | -7.31 | 116.62 | 121.00 |
| 53 | B5 | 1284 | C | O4'-C1'-N1 | 7.31 | 114.05 | 108.20 |
| 53 | B5 | 1398 | U | O4'-C1'-N1 | 7.31 | 114.05 | 108.20 |
| 53 | B5 | 2241 | U | O4'-C1'-N1 | 7.31 | 114.05 | 108.20 |
| 53 | B5 | 2440 | G | N1-C6-O6 | 7.31 | 124.28 | 119.90 |
| 1 | AA | 275 | C | O4'-C1'-N1 | 7.30 | 114.04 | 108.20 |
| 53 | B5 | 1488 | G | N1-C6-O6 | 7.30 | 124.28 | 119.90 |
| 1 | AA | 338 | C | O4'-C1'-N1 | 7.30 | 114.04 | 108.20 |
| 1 | AA | 1287 | U | O4'-C1'-N1 | 7.30 | 114.04 | 108.20 |
| 53 | B5 | 2344 | U | O4'-C1'-N1 | 7.30 | 114.04 | 108.20 |
| 1 | AA | 386 | G | N1-C6-O6 | 7.30 | 124.28 | 119.90 |
| 1 | AA | 1191 | C | O4'-C1'-N1 | 7.30 | 114.04 | 108.20 |
| 19 | A7 | 31 | A | N7-C8-N9 | 7.30 | 117.45 | 113.80 |
| 51 | B3 | 78 | G | N1-C6-O6 | 7.30 | 124.28 | 119.90 |
| 51 | B3 | 87 | U | O4'-C1'-N1 | 7.30 | 114.04 | 108.20 |
| 53 | B5 | 763 | G | N1-C6-O6 | 7.30 | 124.28 | 119.90 |
| 53 | B5 | 1325 | U | O4'-C1'-N1 | 7.30 | 114.04 | 108.20 |
| 53 | B5 | 1746 | U | O4'-C1'-N1 | 7.30 | 114.04 | 108.20 |
| 53 | B5 | 912 | G | C5-C6-O6 | -7.30 | 124.22 | 128.60 |
| 53 | B5 | 1149 | G | N1-C6-O6 | 7.30 | 124.28 | 119.90 |
| 53 | B5 | 1895 | A | O4'-C1'-N9 | 7.30 | 114.04 | 108.20 |
| 53 | B5 | 2118 | C | O4'-C1'-N1 | 7.30 | 114.04 | 108.20 |
| 53 | B5 | 2176 | U | O4'-C1'-N1 | 7.30 | 114.04 | 108.20 |
| 1 | AA | 1627 | G | C5-C6-O6 | -7.30 | 124.22 | 128.60 |
| 1 | AA | 1758 | G | N1-C6-O6 | 7.30 | 124.28 | 119.90 |
| 53 | B5 | 845 | G | N1-C6-O6 | 7.30 | 124.28 | 119.90 |
| 53 | B5 | 1731 | A | O4'-C1'-N9 | 7.30 | 114.04 | 108.20 |
| 53 | B5 | 2146 | C | O4'-C1'-N1 | 7.30 | 114.04 | 108.20 |
| 53 | B5 | 3075 | G | N1-C6-O6 | 7.30 | 124.28 | 119.90 |
| 1 | AA | 443 | C | O4'-C1'-N1 | 7.30 | 114.04 | 108.20 |
| 24 | B9 | 14 | TYR | CB-CG-CD1 | -7.30 | 116.62 | 121.00 |
| 53 | B5 | 388 | G | O4'-C1'-N9 | 7.29 | 114.04 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 1 | AA | 382 | C | O4'-C1'-N1 | 7.29 | 114.03 | 108.20 |
| 1 | AA | 851 | U | O4'-C1'-N1 | 7.29 | 114.03 | 108.20 |
| 1 | AA | 930 | C | O4'-C1'-N1 | 7.29 | 114.03 | 108.20 |
| 53 | B5 | 2378 | C | O4'-C1'-N1 | 7.29 | 114.03 | 108.20 |
| 1 | AA | 18 | C | O4'-C1'-N1 | 7.29 | 114.03 | 108.20 |
| 1 | AA | 160 | C | O4'-C1'-N1 | 7.29 | 114.03 | 108.20 |
| 52 | B4 | 28 | C | O4'-C1'-N1 | 7.29 | 114.03 | 108.20 |
| 53 | B5 | 698 | U | O4'-C1'-N1 | 7.29 | 114.03 | 108.20 |
| 53 | B5 | 803 | C | O4'-C1'-N1 | 7.29 | 114.03 | 108.20 |
| 53 | B5 | 2124 | G | P-O3'-C3' | 7.29 | 128.45 | 119.70 |
| 53 | B5 | 3230 | G | N1-C6-O6 | 7.29 | 124.27 | 119.90 |
| 53 | B5 | 548 | G | O4'-C1'-N9 | 7.29 | 114.03 | 108.20 |
| 53 | B5 | 1623 | G | N1-C6-O6 | 7.29 | 124.27 | 119.90 |
| 1 | AA | 853 | G | N1-C6-O6 | 7.29 | 124.27 | 119.90 |
| 1 | AA | 967 | U | O4'-C1'-N1 | 7.29 | 114.03 | 108.20 |
| 19 | A7 | 62 | A | C2-N3-C4 | 7.29 | 114.24 | 110.60 |
| 19 | A7 | 1 | G | N3-C4-C5 | -7.29 | 124.96 | 128.60 |
| 53 | B5 | 1299 | U | O4'-C1'-N1 | 7.29 | 114.03 | 108.20 |
| 1 | AA | 495 | C | C2-N1-C1' | 7.29 | 126.81 | 118.80 |
| 1 | AA | 1405 | G | N1-C6-O6 | 7.29 | 124.27 | 119.90 |
| 53 | B5 | 911 | C | O4'-C1'-N1 | 7.29 | 114.03 | 108.20 |
| 53 | B5 | 2659 | G | N1-C6-O6 | 7.29 | 124.27 | 119.90 |
| 1 | AA | 469 | C | O4'-C1'-N1 | 7.28 | 114.03 | 108.20 |
| 1 | AA | 504 | U | O4'-C1'-N1 | 7.28 | 114.03 | 108.20 |
| 53 | B5 | 86 | G | N1-C6-O6 | 7.28 | 124.27 | 119.90 |
| 53 | B5 | 2654 | C | O4'-C1'-N1 | 7.28 | 114.03 | 108.20 |
| 53 | B5 | 75 | G | N1-C6-O6 | 7.28 | 124.27 | 119.90 |
| 53 | B5 | 1005 | G | N1-C6-O6 | 7.28 | 124.27 | 119.90 |
| 53 | B5 | 1094 | U | O4'-C1'-N1 | 7.28 | 114.03 | 108.20 |
| 53 | B5 | 1250 | G | N1-C6-O6 | 7.28 | 124.27 | 119.90 |
| 53 | B5 | 2408 | U | O4'-C1'-N1 | 7.28 | 114.02 | 108.20 |
| 1 | AA | 1672 | C | O4'-C1'-N1 | 7.28 | 114.02 | 108.20 |
| 19 | A7 | 68 | U | C6-N1-C2 | -7.28 | 116.63 | 121.00 |
| 53 | B5 | 979 | G | N1-C6-O6 | 7.28 | 124.27 | 119.90 |
| 53 | B5 | 1541 | G | N1-C6-O6 | 7.28 | 124.27 | 119.90 |
| 1 | AA | 1527 | C | O4'-C1'-N1 | 7.28 | 114.02 | 108.20 |
| 1 | AA | 824 | G | N1-C6-O6 | 7.28 | 124.27 | 119.90 |
| 53 | B5 | 226 | C | O4'-C1'-N1 | 7.28 | 114.02 | 108.20 |
| 53 | B5 | 315 | C | O4'-C1'-N1 | 7.27 | 114.02 | 108.20 |
| 53 | B5 | 944 | C | O4'-C1'-N1 | 7.27 | 114.02 | 108.20 |
| 1 | AA | 552 | G | N1-C6-O6 | 7.27 | 124.26 | 119.90 |
| 1 | AA | 682 | C | O4'-C1'-N1 | 7.27 | 114.02 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 1371 | G | N1-C6-O6 | 7.27 | 124.26 | 119.90 |
| 53 | B5 | 1443 | G | N1-C6-O6 | 7.27 | 124.26 | 119.90 |
| 1 | AA | 1071 | G | C5-C6-O6 | -7.27 | 124.24 | 128.60 |
| 51 | B3 | 45 | A | P-O3'-C3' | 7.27 | 128.43 | 119.70 |
| 53 | B5 | 565 | U | O4'-C1'-N1 | 7.27 | 114.02 | 108.20 |
| 53 | B5 | 1342 | C | O4'-C1'-N1 | 7.27 | 114.02 | 108.20 |
| 53 | B5 | 1500 | G | C5-C6-O6 | -7.27 | 124.24 | 128.60 |
| 1 | AA | 1193 | C | O4'-C1'-N1 | 7.27 | 114.02 | 108.20 |
| 53 | B5 | 2889 | C | O4'-C1'-N1 | 7.27 | 114.02 | 108.20 |
| 53 | B5 | 3300 | U | O4'-C1'-N1 | 7.27 | 114.02 | 108.20 |
| 1 | AA | 419 | G | N1-C6-O6 | 7.27 | 124.26 | 119.90 |
| 53 | B5 | 446 | U | O4'-C1'-N1 | 7.27 | 114.01 | 108.20 |
| 53 | B5 | 3385 | U | O4'-C1'-N1 | 7.27 | 114.01 | 108.20 |
| 1 | AA | 1162 | G | N1-C6-O6 | 7.27 | 124.26 | 119.90 |
| 51 | B3 | 4 | U | O4'-C1'-N1 | 7.27 | 114.01 | 108.20 |
| 53 | B5 | 1300 | G | N1-C6-O6 | 7.27 | 124.26 | 119.90 |
| 53 | B5 | 2293 | C | O4'-C1'-N1 | 7.27 | 114.01 | 108.20 |
| 19 | A7 | 21 | A | N1-C2-N3 | -7.26 | 125.67 | 129.30 |
| 53 | B5 | 1759 | C | O4'-C1'-N1 | 7.26 | 114.01 | 108.20 |
| 53 | B5 | 832 | G | N1-C6-O6 | 7.26 | 124.26 | 119.90 |
| 1 | AA | 1771 | C | O4'-C1'-N1 | 7.26 | 114.01 | 108.20 |
| 53 | B5 | 46 | U | O4'-C1'-N1 | 7.26 | 114.01 | 108.20 |
| 53 | B5 | 931 | C | O4'-C1'-N1 | 7.26 | 114.01 | 108.20 |
| 53 | B5 | 2718 | U | O4'-C1'-N1 | 7.26 | 114.01 | 108.20 |
| 53 | B5 | 1313 | G | N1-C6-O6 | 7.26 | 124.26 | 119.90 |
| 53 | B5 | 1567 | U | O4'-C1'-N1 | 7.26 | 114.01 | 108.20 |
| 1 | AA | 1070 | G | C5-C6-O6 | -7.26 | 124.25 | 128.60 |
| 1 | AA | 1650 | C | O4'-C1'-N1 | 7.26 | 114.00 | 108.20 |
| 53 | B5 | 1765 | U | O4'-C1'-N1 | 7.26 | 114.01 | 108.20 |
| 53 | B5 | 2985 | C | O4'-C1'-N1 | 7.26 | 114.00 | 108.20 |
| 53 | B5 | 1323 | G | O4'-C1'-N9 | 7.25 | 114.00 | 108.20 |
| 1 | AA | 616 | G | N1-C6-O6 | 7.25 | 124.25 | 119.90 |
| 1 | AA | 639 | U | O4'-C1'-N1 | 7.25 | 114.00 | 108.20 |
| 53 | B5 | 264 | G | N1-C6-O6 | 7.25 | 124.25 | 119.90 |
| 53 | B5 | 2359 | C | O4'-C1'-N1 | 7.25 | 114.00 | 108.20 |
| 53 | B5 | 2528 | G | N1-C6-O6 | 7.25 | 124.25 | 119.90 |
| 53 | B5 | 2894 | C | O4'-C1'-N1 | 7.25 | 114.00 | 108.20 |
| 53 | B5 | 2944 | U | O4'-C1'-N1 | 7.25 | 114.00 | 108.20 |
| 1 | AA | 281 | G | N1-C6-O6 | 7.25 | 124.25 | 119.90 |
| 1 | AA | 859 | A | C3'-C2'-C1' | -7.25 | 95.70 | 101.50 |
| 19 | A7 | 69 | U | N3-C4-O4 | 7.25 | 124.48 | 119.40 |
| 53 | B5 | 16 | A | O4'-C1'-N9 | 7.25 | 114.00 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 443 | G | N1-C6-O6 | 7.25 | 124.25 | 119.90 |
| 53 | B5 | 1396 | C | O4'-C1'-N1 | 7.25 | 114.00 | 108.20 |
| 53 | B5 | 2170 | U | O4'-C1'-N1 | 7.25 | 114.00 | 108.20 |
| 53 | B5 | 2240 | G | N1-C6-O6 | 7.25 | 124.25 | 119.90 |
| 53 | B5 | 3253 | G | O4'-C1'-N9 | 7.25 | 114.00 | 108.20 |
| 1 | AA | 1116 | G | N1-C6-O6 | 7.25 | 124.25 | 119.90 |
| 53 | B5 | 546 | C | P-O3'-C3' | 7.25 | 128.40 | 119.70 |
| 53 | B5 | 2283 | G | O4'-C1'-N9 | 7.25 | 114.00 | 108.20 |
| 51 | B3 | 2 | G | O4'-C1'-N9 | 7.25 | 114.00 | 108.20 |
| 53 | B5 | 855 | U | O4'-C1'-N1 | 7.25 | 114.00 | 108.20 |
| 1 | AA | 204 | G | O4'-C1'-N9 | 7.25 | 114.00 | 108.20 |
| 1 | AA | 1596 | U | O4'-C1'-N1 | 7.25 | 114.00 | 108.20 |
| 53 | B5 | 2185 | G | N1-C6-O6 | 7.25 | 124.25 | 119.90 |
| 53 | B5 | 2563 | G | N1-C6-O6 | 7.25 | 124.25 | 119.90 |
| 53 | B5 | 125 | C | O4'-C1'-N1 | 7.25 | 114.00 | 108.20 |
| 53 | B5 | 1296 | C | O4'-C1'-N1 | 7.25 | 114.00 | 108.20 |
| 53 | B5 | 1404 | G | N1-C6-O6 | 7.25 | 124.25 | 119.90 |
| 53 | B5 | 2861 | U | O4'-C1'-N1 | 7.25 | 114.00 | 108.20 |
| 1 | AA | 653 | C | O4'-C1'-N1 | 7.24 | 114.00 | 108.20 |
| 53 | B5 | 442 | G | N1-C6-O6 | 7.24 | 124.25 | 119.90 |
| 53 | B5 | 454 | C | O4'-C1'-N1 | 7.24 | 114.00 | 108.20 |
| 53 | B5 | 1820 | U | O4'-C1'-N1 | 7.24 | 114.00 | 108.20 |
| 53 | B5 | 2904 | U | O4'-C1'-N1 | 7.24 | 114.00 | 108.20 |
| 53 | B5 | 60 | A | O4'-C1'-N9 | 7.24 | 113.99 | 108.20 |
| 53 | B5 | 143 | G | N1-C6-O6 | 7.24 | 124.24 | 119.90 |
| 53 | B5 | 650 | C | O4'-C1'-N1 | 7.24 | 113.99 | 108.20 |
| 53 | B5 | 1281 | G | N1-C6-O6 | 7.24 | 124.25 | 119.90 |
| 1 | AA | 269 | G | N1-C6-O6 | 7.24 | 124.24 | 119.90 |
| 51 | B3 | 31 | U | O4'-C1'-N1 | 7.24 | 113.99 | 108.20 |
| 53 | B5 | 1210 | U | O4'-C1'-N1 | 7.24 | 113.99 | 108.20 |
| 53 | B5 | 1410 | U | O4'-C1'-N1 | 7.24 | 113.99 | 108.20 |
| 53 | B5 | 676 | G | C5-C6-O6 | -7.24 | 124.26 | 128.60 |
| 53 | B5 | 1496 | C | C6-N1-C2 | -7.24 | 117.41 | 120.30 |
| 53 | B5 | 1899 | G | C5-C6-O6 | -7.24 | 124.26 | 128.60 |
| 1 | AA | 758 | U | O4'-C1'-N1 | 7.23 | 113.99 | 108.20 |
| 1 | AA | 1298 | U | O4'-C1'-N1 | 7.23 | 113.99 | 108.20 |
| 53 | B5 | 104 | G | N1-C6-O6 | 7.23 | 124.24 | 119.90 |
| 52 | B4 | 134 | G | O4'-C1'-N9 | 7.23 | 113.99 | 108.20 |
| 53 | B5 | 877 | C | O4'-C1'-N1 | 7.23 | 113.98 | 108.20 |
| 53 | B5 | 2194 | G | O4'-C1'-N9 | 7.23 | 113.99 | 108.20 |
| 53 | B5 | 2486 | A | O4'-C1'-N9 | 7.23 | 113.99 | 108.20 |
| 1 | AA | 654 | C | O4'-C1'-N1 | 7.23 | 113.98 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 2364 | G | N1-C6-O6 | 7.23 | 124.24 | 119.90 |
| 53 | B5 | 2409 | G | N1-C6-O6 | 7.23 | 124.24 | 119.90 |
| 53 | B5 | 2471 | U | O4'-C1'-N1 | 7.23 | 113.98 | 108.20 |
| 1 | AA | 453 | U | O4'-C1'-N1 | 7.23 | 113.98 | 108.20 |
| 53 | B5 | 374 | A | P-O3'-C3' | 7.23 | 128.37 | 119.70 |
| 53 | B5 | 668 | G | N1-C6-O6 | 7.23 | 124.24 | 119.90 |
| 53 | B5 | 1802 | C | O4'-C1'-N1 | 7.23 | 113.98 | 108.20 |
| 53 | B5 | 2197 | C | O4'-C1'-N1 | 7.23 | 113.98 | 108.20 |
| 53 | B5 | 1206 | G | N1-C6-O6 | 7.23 | 124.23 | 119.90 |
| 53 | B5 | 3345 | G | N1-C6-O6 | 7.23 | 124.24 | 119.90 |
| 1 | AA | 90 | C | O4'-C1'-N1 | 7.22 | 113.98 | 108.20 |
| 1 | AA | 186 | C | O4'-C1'-N1 | 7.22 | 113.98 | 108.20 |
| 53 | B5 | 634 | C | O4'-C1'-N1 | 7.22 | 113.98 | 108.20 |
| 53 | B5 | 1436 | U | O4'-C1'-N1 | 7.22 | 113.98 | 108.20 |
| 53 | B5 | 2395 | G | N1-C6-O6 | 7.22 | 124.23 | 119.90 |
| 53 | B5 | 2403 | G | O4'-C1'-N9 | 7.22 | 113.98 | 108.20 |
| 1 | AA | 153 | G | N1-C6-O6 | 7.22 | 124.23 | 119.90 |
| 53 | B5 | 1388 | U | O4'-C1'-N1 | 7.22 | 113.98 | 108.20 |
| 53 | B5 | 1610 | G | N1-C6-O6 | 7.22 | 124.23 | 119.90 |
| 53 | B5 | 2730 | G | N1-C6-O6 | 7.22 | 124.23 | 119.90 |
| 19 | A7 | 35 | A | C6-N1-C2 | 7.22 | 122.93 | 118.60 |
| 53 | B5 | 494 | G | N1-C6-O6 | 7.22 | 124.23 | 119.90 |
| 53 | B5 | 999 | G | N1-C6-O6 | 7.22 | 124.23 | 119.90 |
| 1 | AA | 942 | C | O4'-C1'-N1 | 7.22 | 113.97 | 108.20 |
| 53 | B5 | 890 | C | O4'-C1'-N1 | 7.22 | 113.98 | 108.20 |
| 53 | B5 | 2148 | U | O4'-C1'-N1 | 7.22 | 113.97 | 108.20 |
| 1 | AA | 1605 | G | N1-C6-O6 | 7.22 | 124.23 | 119.90 |
| 53 | B5 | 286 | U | P-O3'-C3' | 7.22 | 128.36 | 119.70 |
| 1 | AA | 875 | G | N1-C6-O6 | 7.22 | 124.23 | 119.90 |
| 19 | A7 | 3 | G | C5-C6-O6 | 7.22 | 132.93 | 128.60 |
| 53 | B5 | 815 | G | C5-C6-O6 | -7.22 | 124.27 | 128.60 |
| 53 | B5 | 2551 | C | O4'-C1'-N1 | 7.22 | 113.97 | 108.20 |
| 53 | B5 | 2834 | G | N1-C6-O6 | 7.22 | 124.23 | 119.90 |
| 1 | AA | 1262 | U | O4'-C1'-N1 | 7.21 | 113.97 | 108.20 |
| 53 | B5 | 2110 | G | C5-C6-O6 | -7.21 | 124.27 | 128.60 |
| 53 | B5 | 2254 | U | O4'-C1'-N1 | 7.21 | 113.97 | 108.20 |
| 53 | B5 | 491 | C | O4'-C1'-N1 | 7.21 | 113.97 | 108.20 |
| 53 | B5 | 2921 | U | O4'-C1'-N1 | 7.21 | 113.97 | 108.20 |
| 53 | B5 | 3124 | G | N1-C6-O6 | 7.21 | 124.23 | 119.90 |
| 1 | AA | 598 | U | O4'-C1'-N1 | 7.21 | 113.97 | 108.20 |
| 1 | AA | 668 | C | O4'-C1'-N1 | 7.21 | 113.97 | 108.20 |
| 1 | AA | 781 | U | O4'-C1'-N1 | 7.21 | 113.97 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 52 | B4 | 136 | G | P-O3'-C3' | 7.21 | 128.35 | 119.70 |
| 53 | B5 | 2169 | G | N1-C6-O6 | 7.21 | 124.23 | 119.90 |
| 53 | B5 | 2353 | G | C5-C6-O6 | -7.21 | 124.27 | 128.60 |
| 53 | B5 | 2451 | G | N1-C6-O6 | 7.21 | 124.23 | 119.90 |
| 1 | AA | 1186 | C | O4'-C1'-N1 | 7.21 | 113.97 | 108.20 |
| 53 | B5 | 391 | A | O4'-C1'-N9 | 7.21 | 113.97 | 108.20 |
| 53 | B5 | 3258 | U | O4'-C1'-N1 | 7.21 | 113.97 | 108.20 |
| 1 | AA | 844 | A | P-O3'-C3' | 7.21 | 128.35 | 119.70 |
| 1 | AA | 856 | A | C5-C6-N6 | -7.21 | 117.93 | 123.70 |
| 1 | AA | 1039 | G | N1-C6-O6 | 7.21 | 124.22 | 119.90 |
| 1 | AA | 1430 | G | O4'-C1'-N9 | 7.21 | 113.97 | 108.20 |
| 53 | B5 | 500 | C | O4'-C1'-N1 | 7.21 | 113.97 | 108.20 |
| 1 | AA | 237 | C | O4'-C1'-N1 | 7.21 | 113.97 | 108.20 |
| 53 | B5 | 2283 | G | N1-C6-O6 | 7.21 | 124.22 | 119.90 |
| 1 | AA | 51 | A | O4'-C1'-N9 | 7.21 | 113.96 | 108.20 |
| 1 | AA | 590 | C | O4'-C1'-N1 | 7.21 | 113.96 | 108.20 |
| 1 | AA | 1005 | C | O4'-C1'-N1 | 7.20 | 113.96 | 108.20 |
| 53 | B5 | 1672 | U | O4'-C1'-N1 | 7.20 | 113.96 | 108.20 |
| 53 | B5 | 1810 | A | P-O3'-C3' | 7.20 | 128.34 | 119.70 |
| 53 | B5 | 1875 | G | C5-C6-O6 | -7.20 | 124.28 | 128.60 |
| 53 | B5 | 3343 | G | N1-C6-O6 | 7.20 | 124.22 | 119.90 |
| 1 | AA | 584 | C | O4'-C1'-N1 | 7.20 | 113.96 | 108.20 |
| 53 | B5 | 715 | A | O4'-C1'-N9 | 7.20 | 113.96 | 108.20 |
| 1 | AA | 1127 | G | C5-C6-O6 | -7.20 | 124.28 | 128.60 |
| 53 | B5 | 136 | G | N1-C6-O6 | 7.20 | 124.22 | 119.90 |
| 53 | B5 | 674 | G | C5-C6-O6 | -7.20 | 124.28 | 128.60 |
| 53 | B5 | 745 | C | O4'-C1'-N1 | 7.20 | 113.96 | 108.20 |
| 53 | B5 | 1521 | G | C5-C6-O6 | -7.20 | 124.28 | 128.60 |
| 53 | B5 | 1753 | G | N1-C6-O6 | 7.20 | 124.22 | 119.90 |
| 53 | B5 | 1776 | G | C5-C6-O6 | -7.20 | 124.28 | 128.60 |
| 53 | B5 | 2412 | G | N1-C6-O6 | 7.20 | 124.22 | 119.90 |
| 1 | AA | 872 | G | C5-C6-O6 | -7.20 | 124.28 | 128.60 |
| 53 | B5 | 1239 | C | O4'-C1'-N1 | 7.20 | 113.96 | 108.20 |
| 53 | B5 | 2200 | U | O4'-C1'-N1 | 7.20 | 113.96 | 108.20 |
| 53 | B5 | 813 | G | N1-C6-O6 | 7.20 | 124.22 | 119.90 |
| 53 | B5 | 1766 | G | N1-C6-O6 | 7.19 | 124.22 | 119.90 |
| 1 | AA | 763 | G | N1-C6-O6 | 7.19 | 124.22 | 119.90 |
| 53 | B5 | 3341 | U | O4'-C1'-N1 | 7.19 | 113.95 | 108.20 |
| 1 | AA | 1538 | G | N1-C6-O6 | 7.19 | 124.21 | 119.90 |
| 53 | B5 | 1152 | G | O4'-C1'-N9 | 7.19 | 113.95 | 108.20 |
| 53 | B5 | 1234 | G | N1-C6-O6 | 7.19 | 124.21 | 119.90 |
| 1 | AA | 6 | G | N1-C6-O6 | 7.19 | 124.21 | 119.90 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 1556 | C | O4'-C1'-N1 | 7.19 | 113.95 | 108.20 |
| 53 | B5 | 2132 | C | O4'-C1'-N1 | 7.19 | 113.95 | 108.20 |
| 53 | B5 | 299 | G | N1-C6-O6 | 7.19 | 124.21 | 119.90 |
| 1 | AA | 1237 | G | N1-C6-O6 | 7.19 | 124.21 | 119.90 |
| 1 | AA | 1374 | U | O4'-C1'-N1 | 7.19 | 113.95 | 108.20 |
| 53 | B5 | 412 | G | N1-C6-O6 | 7.19 | 124.21 | 119.90 |
| 53 | B5 | 579 | G | N1-C6-O6 | 7.19 | 124.21 | 119.90 |
| 53 | B5 | 1374 | G | N1-C6-O6 | 7.19 | 124.21 | 119.90 |
| 1 | AA | 1244 | C | O4'-C1'-N1 | 7.18 | 113.95 | 108.20 |
| 1 | AA | 1337 | U | O4'-C1'-N1 | 7.18 | 113.95 | 108.20 |
| 1 | AA | 1545 | A | OP1-P-OP2 | 7.18 | 130.38 | 119.60 |
| 1 | AA | 1647 | G | N1-C6-O6 | 7.18 | 124.21 | 119.90 |
| 1 | AA | 373 | G | N1-C6-O6 | 7.18 | 124.21 | 119.90 |
| 1 | AA | 1552 | U | OP1-P-OP2 | -7.18 | 108.83 | 119.60 |
| 53 | B5 | 56 | G | N1-C6-O6 | 7.18 | 124.21 | 119.90 |
| 53 | B5 | 236 | G | N1-C6-O6 | 7.18 | 124.21 | 119.90 |
| 53 | B5 | 639 | G | C5-C6-O6 | -7.18 | 124.29 | 128.60 |
| 53 | B5 | 2753 | G | N1-C6-O6 | 7.18 | 124.21 | 119.90 |
| 53 | B5 | 3291 | G | O4'-C1'-N9 | 7.18 | 113.94 | 108.20 |
| 1 | AA | 16 | G | N1-C6-O6 | 7.18 | 124.21 | 119.90 |
| 53 | B5 | 2805 | G | N1-C6-O6 | 7.18 | 124.21 | 119.90 |
| 51 | B3 | 25 | G | N1-C6-O6 | 7.18 | 124.21 | 119.90 |
| 53 | B5 | 156 | G | C5-C6-O6 | -7.18 | 124.29 | 128.60 |
| 53 | B5 | 661 | G | N1-C6-O6 | 7.18 | 124.21 | 119.90 |
| 1 | AA | 1120 | C | O4'-C1'-N1 | 7.18 | 113.94 | 108.20 |
| 19 | A7 | 5 | A | C5-N7-C8 | -7.18 | 100.31 | 103.90 |
| 52 | B4 | 15 | G | C5-C6-O6 | -7.18 | 124.29 | 128.60 |
| 53 | B5 | 1088 | U | O4'-C1'-N1 | 7.18 | 113.94 | 108.20 |
| 53 | B5 | 1207 | G | N1-C6-O6 | 7.18 | 124.21 | 119.90 |
| 53 | B5 | 2115 | G | N1-C6-O6 | 7.18 | 124.21 | 119.90 |
| 1 | AA | 1463 | C | O4'-C1'-N1 | 7.17 | 113.94 | 108.20 |
| 1 | AA | 1648 | U | O4'-C1'-N1 | 7.17 | 113.94 | 108.20 |
| 53 | B5 | 514 | G | N1-C6-O6 | 7.17 | 124.20 | 119.90 |
| 53 | B5 | 1230 | G | N1-C6-O6 | 7.17 | 124.20 | 119.90 |
| 53 | B5 | 3025 | C | O4'-C1'-N1 | 7.17 | 113.94 | 108.20 |
| 1 | AA | 273 | G | N1-C6-O6 | 7.17 | 124.20 | 119.90 |
| 1 | AA | 1757 | C | O4'-C1'-N1 | 7.17 | 113.94 | 108.20 |
| 51 | B3 | 58 | U | O4'-C1'-N1 | 7.17 | 113.94 | 108.20 |
| 51 | B3 | 102 | C | O4'-C1'-N1 | 7.17 | 113.94 | 108.20 |
| 53 | B5 | 1425 | U | O4'-C1'-N1 | 7.17 | 113.94 | 108.20 |
| 53 | B5 | 3023 | U | O4'-C1'-N1 | 7.17 | 113.94 | 108.20 |
| 1 | AA | 1277 | G | C5-C6-O6 | -7.17 | 124.30 | 128.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 450 | G | N1-C6-O6 | 7.17 | 124.20 | 119.90 |
| 53 | B5 | 1267 | U | O4'-C1'-N1 | 7.17 | 113.94 | 108.20 |
| 1 | AA | 175 | G | N1-C6-O6 | 7.17 | 124.20 | 119.90 |
| 1 | AA | 1305 | G | N1-C6-O6 | 7.17 | 124.20 | 119.90 |
| 53 | B5 | 2603 | G | O4'-C1'-N9 | 7.17 | 113.94 | 108.20 |
| 53 | B5 | 3173 | U | O4'-C1'-N1 | 7.17 | 113.94 | 108.20 |
| 1 | AA | 1033 | C | O4'-C1'-N1 | 7.17 | 113.94 | 108.20 |
| 1 | AA | 1119 | G | N1-C6-O6 | 7.17 | 124.20 | 119.90 |
| 52 | B4 | 72 | G | N1-C6-O6 | 7.17 | 124.20 | 119.90 |
| 53 | B5 | 950 | G | C5-C6-O6 | -7.17 | 124.30 | 128.60 |
| 53 | B5 | 1574 | C | O4'-C1'-N1 | 7.17 | 113.94 | 108.20 |
| 53 | B5 | 1718 | G | C5-C6-O6 | -7.17 | 124.30 | 128.60 |
| 53 | B5 | 2832 | C | O4'-C1'-N1 | 7.17 | 113.94 | 108.20 |
| 19 | A7 | 19 | G | C5-N7-C8 | -7.17 | 100.72 | 104.30 |
| 51 | B3 | 90 | C | O4'-C1'-N1 | 7.17 | 113.93 | 108.20 |
| 52 | B4 | 68 | G | C5-C6-O6 | -7.17 | 124.30 | 128.60 |
| 53 | B5 | 1155 | C | O4'-C1'-N1 | 7.17 | 113.93 | 108.20 |
| 53 | B5 | 1940 | G | N1-C6-O6 | 7.17 | 124.20 | 119.90 |
| 53 | B5 | 2877 | G | N1-C6-O6 | 7.17 | 124.20 | 119.90 |
| 53 | B5 | 230 | U | O4'-C1'-N1 | 7.17 | 113.93 | 108.20 |
| 53 | B5 | 277 | G | O4'-C1'-N9 | 7.17 | 113.93 | 108.20 |
| 53 | B5 | 2722 | U | O4'-C1'-N1 | 7.17 | 113.93 | 108.20 |
| 1 | AA | 1510 | G | N1-C6-O6 | 7.16 | 124.20 | 119.90 |
| 53 | B5 | 543 | C | O4'-C1'-N1 | 7.16 | 113.93 | 108.20 |
| 53 | B5 | 856 | G | N1-C6-O6 | 7.16 | 124.20 | 119.90 |
| 53 | B5 | 875 | G | N1-C6-O6 | 7.16 | 124.20 | 119.90 |
| 53 | B5 | 1432 | C | O4'-C1'-N1 | 7.16 | 113.93 | 108.20 |
| 1 | AA | 825 | U | O4'-C1'-N1 | 7.16 | 113.93 | 108.20 |
| 1 | AA | 1195 | G | N1-C6-O6 | 7.16 | 124.20 | 119.90 |
| 52 | B4 | 91 | C | O4'-C1'-N1 | 7.16 | 113.93 | 108.20 |
| 53 | B5 | 583 | G | N1-C6-O6 | 7.16 | 124.20 | 119.90 |
| 53 | B5 | 277 | G | N1-C6-O6 | 7.16 | 124.19 | 119.90 |
| 53 | B5 | 292 | U | O4'-C1'-N1 | 7.16 | 113.93 | 108.20 |
| 53 | B5 | 526 | C | O4'-C1'-N1 | 7.16 | 113.93 | 108.20 |
| 53 | B5 | 1279 | C | O4'-C1'-N1 | 7.16 | 113.93 | 108.20 |
| 53 | B5 | 1320 | C | O4'-C1'-N1 | 7.16 | 113.93 | 108.20 |
| 53 | B5 | 2757 | U | O4'-C1'-N1 | 7.16 | 113.93 | 108.20 |
| 1 | AA | 857 | U | P-O3'-C3' | -7.16 | 111.11 | 119.70 |
| 53 | B5 | 1854 | C | O4'-C1'-N1 | 7.16 | 113.92 | 108.20 |
| 1 | AA | 1240 | A | O4'-C1'-N9 | 7.16 | 113.92 | 108.20 |
| 52 | B4 | 124 | G | N1-C6-O6 | 7.16 | 124.19 | 119.90 |
| 1 | AA | 403 | G | N1-C6-O6 | 7.15 | 124.19 | 119.90 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1 | AA | 1404 | U | O4'-C1'-N1 | 7.15 | 113.92 | 108.20 |
| 53 | B5 | 781 | G | N1-C6-O6 | 7.15 | 124.19 | 119.90 |
| 53 | B5 | 854 | G | O4'-C1'-N9 | 7.15 | 113.92 | 108.20 |
| 53 | B5 | 1140 | G | C5-C6-O6 | -7.15 | 124.31 | 128.60 |
| 1 | AA | 1624 | U | O4'-C1'-N1 | 7.15 | 113.92 | 108.20 |
| 53 | B5 | 1041 | U | O4'-C1'-N1 | 7.15 | 113.92 | 108.20 |
| 53 | B5 | 1226 | G | N1-C6-O6 | 7.15 | 124.19 | 119.90 |
| 53 | B5 | 2700 | G | N1-C6-O6 | 7.15 | 124.19 | 119.90 |
| 53 | B5 | 3301 | U | O4'-C1'-N1 | 7.15 | 113.92 | 108.20 |
| 1 | AA | 432 | G | N1-C6-O6 | 7.15 | 124.19 | 119.90 |
| 1 | AA | 302 | U | O4'-C1'-N1 | 7.15 | 113.92 | 108.20 |
| 1 | AA | 1698 | C | O4'-C1'-N1 | 7.15 | 113.92 | 108.20 |
| 53 | B5 | 24 | G | N1-C6-O6 | 7.15 | 124.19 | 119.90 |
| 53 | B5 | 1338 | C | O4'-C1'-N1 | 7.15 | 113.92 | 108.20 |
| 53 | B5 | 2450 | G | N1-C6-O6 | 7.15 | 124.19 | 119.90 |
| 53 | B5 | 2827 | U | O4'-C1'-N1 | 7.15 | 113.92 | 108.20 |
| 52 | B4 | 134 | G | N1-C6-O6 | 7.15 | 124.19 | 119.90 |
| 53 | B5 | 2287 | C | O4'-C1'-N1 | 7.15 | 113.92 | 108.20 |
| 53 | B5 | 1269 | U | O4'-C1'-N1 | 7.14 | 113.92 | 108.20 |
| 53 | B5 | 1514 | G | O4'-C1'-N9 | 7.14 | 113.92 | 108.20 |
| 53 | B5 | 2957 | G | N1-C6-O6 | 7.14 | 124.19 | 119.90 |
| 53 | B5 | 1542 | G | N1-C6-O6 | 7.14 | 124.19 | 119.90 |
| 1 | AA | 1261 | G | N1-C6-O6 | 7.14 | 124.18 | 119.90 |
| 19 | A7 | 12 | U | C4-C5-C6 | 7.14 | 123.98 | 119.70 |
| 19 | A7 | 13 | C | C6-N1-C2 | -7.14 | 117.44 | 120.30 |
| 53 | B5 | 869 | G | N1-C6-O6 | 7.14 | 124.18 | 119.90 |
| 53 | B5 | 1023 | C | O4'-C1'-N1 | 7.14 | 113.91 | 108.20 |
| 1 | AA | 724 | C | O4'-C1'-N1 | 7.14 | 113.91 | 108.20 |
| 1 | AA | 1782 | C | O4'-C1'-N1 | 7.14 | 113.91 | 108.20 |
| 53 | B5 | 675 | C | O4'-C1'-N1 | 7.14 | 113.91 | 108.20 |
| 53 | B5 | 2516 | U | O4'-C1'-N1 | 7.14 | 113.91 | 108.20 |
| 1 | AA | 1295 | U | O4'-C1'-N1 | 7.14 | 113.91 | 108.20 |
| 53 | B5 | 1142 | G | N1-C6-O6 | 7.14 | 124.18 | 119.90 |
| 1 | AA | 427 | C | O4'-C1'-N1 | 7.13 | 113.91 | 108.20 |
| 1 | AA | 1363 | U | O4'-C1'-N1 | 7.13 | 113.91 | 108.20 |
| 1 | AA | 1542 | U | O4'-C1'-N1 | 7.13 | 113.91 | 108.20 |
| 1 | AA | 1633 | A | C1'-O4'-C4' | -7.13 | 104.19 | 109.90 |
| 1 | AA | 1737 | C | O4'-C1'-N1 | 7.13 | 113.91 | 108.20 |
| 53 | B5 | 1310 | G | N1-C6-O6 | 7.13 | 124.18 | 119.90 |
| 53 | B5 | 1501 | U | O4'-C1'-N1 | 7.13 | 113.91 | 108.20 |
| 53 | B5 | 1758 | G | N1-C6-O6 | 7.13 | 124.18 | 119.90 |
| 53 | B5 | 3090 | U | O4'-C1'-N1 | 7.13 | 113.91 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 929 | A | O4'-C1'-N9 | 7.13 | 113.91 | 108.20 |
| 53 | B5 | 1336 | U | O4'-C1'-N1 | 7.13 | 113.91 | 108.20 |
| 1 | AA | 415 | C | O4'-C1'-N1 | 7.13 | 113.90 | 108.20 |
| 53 | B5 | 2796 | G | N1-C6-O6 | 7.13 | 124.18 | 119.90 |
| 53 | B5 | 3308 | C | O4'-C1'-N1 | 7.13 | 113.90 | 108.20 |
| 1 | AA | 1562 | U | O4'-C1'-N1 | 7.13 | 113.90 | 108.20 |
| 51 | B3 | 105 | A | O4'-C1'-N9 | 7.13 | 113.90 | 108.20 |
| 52 | B4 | 35 | C | O4'-C1'-N1 | 7.13 | 113.90 | 108.20 |
| 53 | B5 | 934 | G | N1-C6-O6 | 7.13 | 124.18 | 119.90 |
| 53 | B5 | 1822 | C | O4'-C1'-N1 | 7.13 | 113.90 | 108.20 |
| 53 | B5 | 2585 | G | N1-C6-O6 | 7.13 | 124.18 | 119.90 |
| 53 | B5 | 2624 | G | O4'-C1'-N9 | 7.13 | 113.90 | 108.20 |
| 19 | A7 | 62 | A | C6-N1-C2 | -7.13 | 114.32 | 118.60 |
| 53 | B5 | 1912 | U | O4'-C1'-N1 | 7.13 | 113.90 | 108.20 |
| 1 | AA | 463 | U | O4'-C1'-N1 | 7.12 | 113.90 | 108.20 |
| 1 | AA | 1495 | U | O4'-C1'-N1 | 7.12 | 113.90 | 108.20 |
| 53 | B5 | 1789 | G | N1-C6-O6 | 7.12 | 124.17 | 119.90 |
| 53 | B5 | 21 | G | O4'-C1'-N9 | 7.12 | 113.90 | 108.20 |
| 53 | B5 | 474 | G | N1-C6-O6 | 7.12 | 124.17 | 119.90 |
| 53 | B5 | 1629 | U | O4'-C1'-N1 | 7.12 | 113.90 | 108.20 |
| 53 | B5 | 1686 | U | O4'-C1'-N1 | 7.12 | 113.90 | 108.20 |
| 53 | B5 | 2658 | G | N1-C6-O6 | 7.12 | 124.17 | 119.90 |
| 1 | AA | 1341 | A | O4'-C1'-N9 | 7.12 | 113.90 | 108.20 |
| 1 | AA | 1630 | C | P-O3'-C3' | -7.12 | 111.16 | 119.70 |
| 53 | B5 | 851 | C | O4'-C1'-N1 | 7.12 | 113.90 | 108.20 |
| 1 | AA | 710 | U | O4'-C1'-N1 | 7.12 | 113.90 | 108.20 |
| 1 | AA | 1153 | C | O4'-C1'-N1 | 7.12 | 113.90 | 108.20 |
| 1 | AA | 1239 | G | N1-C6-O6 | 7.12 | 124.17 | 119.90 |
| 1 | AA | 97 | C | O4'-C1'-N1 | 7.12 | 113.90 | 108.20 |
| 51 | B3 | 117 | C | O4'-C1'-N1 | 7.12 | 113.89 | 108.20 |
| 53 | B5 | 1579 | C | O4'-C1'-N1 | 7.12 | 113.89 | 108.20 |
| 53 | B5 | 2150 | G | C5-C6-O6 | -7.12 | 124.33 | 128.60 |
| 53 | B5 | 2543 | U | O4'-C1'-N1 | 7.12 | 113.89 | 108.20 |
| 1 | AA | 941 | G | N1-C6-O6 | 7.12 | 124.17 | 119.90 |
| 1 | AA | 1743 | G | N1-C6-O6 | 7.12 | 124.17 | 119.90 |
| 53 | B5 | 743 | C | O4'-C1'-N1 | 7.12 | 113.89 | 108.20 |
| 53 | B5 | 1237 | G | O4'-C1'-N9 | 7.12 | 113.89 | 108.20 |
| 53 | B5 | 1868 | G | C5-C6-O6 | -7.12 | 124.33 | 128.60 |
| 53 | B5 | 3059 | G | N1-C6-O6 | 7.12 | 124.17 | 119.90 |
| 1 | AA | 246 | G | N1-C6-O6 | 7.11 | 124.17 | 119.90 |
| 19 | A7 | 28 | C | N1-C2-O2 | 7.11 | 123.17 | 118.90 |
| 53 | B5 | 2286 | U | P-O3'-C3' | 7.11 | 128.24 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1 | AA | 1087 | C | O4'-C1'-N1 | 7.11 | 113.89 | 108.20 |
| 53 | B5 | 3074 | G | N1-C6-O6 | 7.11 | 124.17 | 119.90 |
| 1 | AA | 1032 | C | O4'-C1'-N1 | 7.11 | 113.89 | 108.20 |
| 52 | B4 | 136 | G | N1-C6-O6 | 7.11 | 124.17 | 119.90 |
| 53 | B5 | 96 | G | C5-C6-O6 | -7.11 | 124.33 | 128.60 |
| 1 | AA | 577 | G | N1-C6-O6 | 7.11 | 124.17 | 119.90 |
| 19 | A7 | 65 | G | O4'-C1'-N9 | 7.11 | 113.89 | 108.20 |
| 1 | AA | 1292 | G | N1-C6-O6 | 7.11 | 124.16 | 119.90 |
| 53 | B5 | 835 | G | N1-C6-O6 | 7.11 | 124.16 | 119.90 |
| 1 | AA | 1356 | C | O4'-C1'-N1 | 7.11 | 113.88 | 108.20 |
| 1 | AA | 1784 | G | N1-C6-O6 | 7.11 | 124.16 | 119.90 |
| 19 | A7 | 18 | G | O4'-C4'-C3' | 7.11 | 111.78 | 106.10 |
| 53 | B5 | 50 | U | O4'-C1'-N1 | 7.11 | 113.89 | 108.20 |
| 53 | B5 | 239 | G | N1-C6-O6 | 7.11 | 124.16 | 119.90 |
| 53 | B5 | 1561 | G | N1-C6-O6 | 7.11 | 124.16 | 119.90 |
| 53 | B5 | 1646 | G | N1-C6-O6 | 7.11 | 124.16 | 119.90 |
| 53 | B5 | 2155 | G | N1-C6-O6 | 7.11 | 124.16 | 119.90 |
| 53 | B5 | 118 | U | O4'-C1'-N1 | 7.10 | 113.88 | 108.20 |
| 1 | AA | 459 | G | N1-C6-O6 | 7.10 | 124.16 | 119.90 |
| 53 | B5 | 1268 | G | N1-C6-O6 | 7.10 | 124.16 | 119.90 |
| 53 | B5 | 2525 | G | C5-C6-O6 | -7.10 | 124.34 | 128.60 |
| 1 | AA | 287 | G | N1-C6-O6 | 7.10 | 124.16 | 119.90 |
| 1 | AA | 1115 | G | N1-C6-O6 | 7.10 | 124.16 | 119.90 |
| 1 | AA | 1660 | G | N1-C6-O6 | 7.10 | 124.16 | 119.90 |
| 53 | B5 | 2133 | U | O4'-C1'-N1 | 7.10 | 113.88 | 108.20 |
| 1 | AA | 183 | U | O4'-C1'-N1 | 7.10 | 113.88 | 108.20 |
| 51 | B3 | 34 | C | O4'-C1'-N1 | 7.10 | 113.88 | 108.20 |
| 53 | B5 | 79 | U | O4'-C1'-N1 | 7.10 | 113.88 | 108.20 |
| 53 | B5 | 2463 | G | O4'-C1'-N9 | 7.10 | 113.88 | 108.20 |
| 53 | B5 | 3361 | G | N1-C6-O6 | 7.10 | 124.16 | 119.90 |
| 1 | AA | 573 | C | O4'-C1'-N1 | 7.10 | 113.88 | 108.20 |
| 1 | AA | 1516 | C | C4'-C3'-C2' | 7.10 | 109.70 | 102.60 |
| 1 | AA | 242 | U | O4'-C1'-N1 | 7.09 | 113.88 | 108.20 |
| 1 | AA | 380 | U | O4'-C1'-N1 | 7.09 | 113.88 | 108.20 |
| 53 | B5 | 1476 | G | O4'-C1'-N9 | 7.09 | 113.88 | 108.20 |
| 1 | AA | 838 | G | N1-C6-O6 | 7.09 | 124.16 | 119.90 |
| 51 | B3 | 41 | G | N1-C6-O6 | 7.09 | 124.16 | 119.90 |
| 53 | B5 | 516 | A | O4'-C1'-N9 | 7.09 | 113.87 | 108.20 |
| 1 | AA | 1434 | U | O4'-C1'-N1 | 7.09 | 113.87 | 108.20 |
| 1 | AA | 1714 | C | O4'-C1'-N1 | 7.09 | 113.87 | 108.20 |
| 53 | B5 | 2503 | G | N1-C6-O6 | 7.09 | 124.15 | 119.90 |
| 1 | AA | 858 | G | N1-C2-N3 | -7.09 | 119.65 | 123.90 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 3298 | C | O4'-C1'-N1 | 7.09 | 113.87 | 108.20 |
| 53 | B5 | 724 | U | O4'-C1'-N1 | 7.09 | 113.87 | 108.20 |
| 1 | AA | 227 | U | O4'-C1'-N1 | 7.09 | 113.87 | 108.20 |
| 1 | AA | 935 | G | N1-C6-O6 | 7.09 | 124.15 | 119.90 |
| 1 | AA | 1027 | C | O4'-C1'-N1 | 7.09 | 113.87 | 108.20 |
| 1 | AA | 1785 | C | O4'-C1'-N1 | 7.09 | 113.87 | 108.20 |
| 53 | B5 | 1090 | G | N1-C6-O6 | 7.09 | 124.15 | 119.90 |
| 53 | B5 | 1832 | C | O4'-C1'-N1 | 7.09 | 113.87 | 108.20 |
| 53 | B5 | 2366 | C | O4'-C1'-N1 | 7.09 | 113.87 | 108.20 |
| 1 | AA | 376 | C | O4'-C1'-N1 | 7.08 | 113.87 | 108.20 |
| 1 | AA | 59 | C | O4'-C1'-N1 | 7.08 | 113.87 | 108.20 |
| 1 | AA | 1102 | C | O4'-C1'-N1 | 7.08 | 113.87 | 108.20 |
| 53 | B5 | 682 | U | O4'-C1'-N1 | 7.08 | 113.87 | 108.20 |
| 53 | B5 | 1581 | C | O4'-C1'-N1 | 7.08 | 113.87 | 108.20 |
| 53 | B5 | 1784 | G | N1-C6-O6 | 7.08 | 124.15 | 119.90 |
| 53 | B5 | 1538 | G | N1-C6-O6 | 7.08 | 124.15 | 119.90 |
| 53 | B5 | 1824 | U | O4'-C1'-N1 | 7.08 | 113.86 | 108.20 |
| 1 | AA | 865 | A | C4'-C3'-O3' | 7.08 | 127.16 | 113.00 |
| 53 | B5 | 469 | G | O4'-C1'-N9 | 7.08 | 113.86 | 108.20 |
| 53 | B5 | 1831 | U | O4'-C1'-N1 | 7.08 | 113.86 | 108.20 |
| 53 | B5 | 2340 | U | O4'-C1'-N1 | 7.08 | 113.86 | 108.20 |
| 53 | B5 | 2749 | G | N1-C6-O6 | 7.08 | 124.15 | 119.90 |
| 53 | B5 | 776 | U | O4'-C1'-N1 | 7.08 | 113.86 | 108.20 |
| 53 | B5 | 1414 | G | C5-C6-O6 | -7.08 | 124.35 | 128.60 |
| 53 | B5 | 1587 | A | O4'-C1'-N9 | 7.08 | 113.86 | 108.20 |
| 53 | B5 | 3121 | U | P-O3'-C3' | 7.08 | 128.19 | 119.70 |
| 1 | AA | 996 | G | N1-C6-O6 | 7.08 | 124.15 | 119.90 |
| 1 | AA | 1350 | U | O4'-C1'-N1 | 7.08 | 113.86 | 108.20 |
| 23 | B8 | 18 | TYR | CB-CG-CD2 | -7.08 | 116.75 | 121.00 |
| 53 | B5 | 1410 | U | P-O3'-C3' | 7.08 | 128.19 | 119.70 |
| 53 | B5 | 1935 | G | O4'-C1'-N9 | 7.08 | 113.86 | 108.20 |
| 53 | B5 | 3140 | G | N1-C6-O6 | 7.08 | 124.14 | 119.90 |
| 1 | AA | 1197 | G | C5-C6-O6 | -7.07 | 124.36 | 128.60 |
| 53 | B5 | 654 | C | O4'-C1'-N1 | 7.07 | 113.86 | 108.20 |
| 53 | B5 | 1215 | U | O4'-C1'-N1 | 7.07 | 113.86 | 108.20 |
| 1 | AA | 1104 | G | C5-C6-O6 | -7.07 | 124.36 | 128.60 |
| 1 | AA | 326 | G | N1-C6-O6 | 7.07 | 124.14 | 119.90 |
| 53 | B5 | 874 | U | O4'-C1'-N1 | 7.07 | 113.86 | 108.20 |
| 53 | B5 | 2248 | C | O4'-C1'-N1 | 7.07 | 113.86 | 108.20 |
| 53 | B5 | 2291 | A | O4'-C1'-N9 | 7.07 | 113.86 | 108.20 |
| 52 | B4 | 51 | G | C5-C6-O6 | -7.07 | 124.36 | 128.60 |
| 53 | B5 | 127 | G | C5-C6-O6 | -7.07 | 124.36 | 128.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 1059 | G | N1-C6-O6 | 7.07 | 124.14 | 119.90 |
| 1 | AA | 666 | U | O4'-C1'-N1 | 7.07 | 113.85 | 108.20 |
| 1 | AA | 1196 | G | N1-C6-O6 | 7.07 | 124.14 | 119.90 |
| 1 | AA | 1522 | A | C3'-C2'-C1' | -7.07 | 95.85 | 101.50 |
| 53 | B5 | 690 | A | O4'-C1'-N9 | 7.07 | 113.85 | 108.20 |
| 53 | B5 | 1402 | C | O4'-C1'-N1 | 7.07 | 113.86 | 108.20 |
| 53 | B5 | 3003 | G | N1-C6-O6 | 7.07 | 124.14 | 119.90 |
| 1 | AA | 818 | C | O4'-C1'-N1 | 7.07 | 113.85 | 108.20 |
| 53 | B5 | 137 | G | N1-C6-O6 | 7.07 | 124.14 | 119.90 |
| 1 | AA | 209 | U | O4'-C1'-N1 | 7.06 | 113.85 | 108.20 |
| 53 | B5 | 1335 | C | O4'-C1'-N1 | 7.06 | 113.85 | 108.20 |
| 53 | B5 | 3280 | U | O4'-C1'-N1 | 7.06 | 113.85 | 108.20 |
| 1 | AA | 127 | G | N1-C6-O6 | 7.06 | 124.14 | 119.90 |
| 53 | B5 | 356 | C | O4'-C1'-N1 | 7.06 | 113.85 | 108.20 |
| 53 | B5 | 600 | G | N1-C6-O6 | 7.06 | 124.14 | 119.90 |
| 1 | AA | 384 | G | N1-C6-O6 | 7.06 | 124.14 | 119.90 |
| 51 | B3 | 9 | C | O4'-C1'-N1 | 7.06 | 113.85 | 108.20 |
| 53 | B5 | 256 | G | N1-C6-O6 | 7.06 | 124.14 | 119.90 |
| 1 | AA | 1143 | G | N1-C6-O6 | 7.06 | 124.14 | 119.90 |
| 1 | AA | 1600 | C | O4'-C1'-N1 | 7.06 | 113.85 | 108.20 |
| 53 | B5 | 635 | G | N1-C6-O6 | 7.06 | 124.14 | 119.90 |
| 53 | B5 | 3265 | C | O4'-C1'-N1 | 7.06 | 113.85 | 108.20 |
| 1 | AA | 1286 | U | O4'-C1'-N1 | 7.06 | 113.85 | 108.20 |
| 19 | A7 | 11 | C | O3'-P-O5' | 7.06 | 117.41 | 104.00 |
| 53 | B5 | 473 | G | N1-C6-O6 | 7.06 | 124.13 | 119.90 |
| 53 | B5 | 1265 | U | O4'-C1'-N1 | 7.06 | 113.84 | 108.20 |
| 1 | AA | 1617 | C | O4'-C1'-N1 | 7.05 | 113.84 | 108.20 |
| 53 | B5 | 1266 | G | N1-C6-O6 | 7.05 | 124.13 | 119.90 |
| 53 | B5 | 1548 | C | O4'-C1'-N1 | 7.05 | 113.84 | 108.20 |
| 53 | B5 | 1684 | U | O4'-C1'-N1 | 7.05 | 113.84 | 108.20 |
| 19 | A7 | 70 | C | N3-C2-O2 | -7.05 | 116.96 | 121.90 |
| 52 | B4 | 84 | C | O4'-C1'-N1 | 7.05 | 113.84 | 108.20 |
| 53 | B5 | 269 | G | N1-C6-O6 | 7.05 | 124.13 | 119.90 |
| 53 | B5 | 1083 | G | N1-C6-O6 | 7.05 | 124.13 | 119.90 |
| 53 | B5 | 2784 | G | O4'-C1'-N9 | 7.05 | 113.84 | 108.20 |
| 53 | B5 | 2878 | G | N1-C6-O6 | 7.05 | 124.13 | 119.90 |
| 52 | B4 | 147 | U | O4'-C1'-N1 | 7.05 | 113.84 | 108.20 |
| 53 | B5 | 1073 | U | O4'-C1'-N1 | 7.05 | 113.84 | 108.20 |
| 53 | B5 | 3124 | G | O4'-C1'-N9 | 7.05 | 113.84 | 108.20 |
| 53 | B5 | 891 | G | N1-C6-O6 | 7.05 | 124.13 | 119.90 |
| 53 | B5 | 2171 | G | N1-C6-O6 | 7.05 | 124.13 | 119.90 |
| 1 | AA | 31 | C | O4'-C1'-N1 | 7.05 | 113.84 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 1 | AA | 250 | C | O4'-C1'-N1 | 7.05 | 113.84 | 108.20 |
| 53 | B5 | 1108 | U | O4'-C1'-N1 | 7.05 | 113.84 | 108.20 |
| 53 | B5 | 2804 | A | O4'-C1'-N9 | 7.05 | 113.84 | 108.20 |
| 53 | B5 | 2984 | C | O4'-C1'-N1 | 7.05 | 113.84 | 108.20 |
| 53 | B5 | 1907 | C | O4'-C1'-N1 | 7.05 | 113.84 | 108.20 |
| 1 | AA | 214 | G | N1-C6-O6 | 7.04 | 124.13 | 119.90 |
| 1 | AA | 314 | C | O4'-C1'-N1 | 7.04 | 113.84 | 108.20 |
| 1 | AA | 481 | A | O4'-C1'-N9 | 7.04 | 113.84 | 108.20 |
| 1 | AA | 1521 | G | C8-N9-C4 | 7.04 | 109.22 | 106.40 |
| 1 | AA | 1545 | A | P-O3'-C3' | 7.04 | 128.15 | 119.70 |
| 53 | B5 | 367 | A | O4'-C1'-N9 | 7.04 | 113.83 | 108.20 |
| 1 | AA | 634 | G | N1-C6-O6 | 7.04 | 124.12 | 119.90 |
| 1 | AA | 648 | G | O4'-C1'-N9 | 7.04 | 113.83 | 108.20 |
| 53 | B5 | 1192 | C | O4'-C1'-N1 | 7.04 | 113.83 | 108.20 |
| 53 | B5 | 1344 | G | N1-C6-O6 | 7.04 | 124.12 | 119.90 |
| 1 | AA | 13 | C | O4'-C1'-N1 | 7.04 | 113.83 | 108.20 |
| 1 | AA | 1254 | U | O4'-C1'-N1 | 7.04 | 113.83 | 108.20 |
| 53 | B5 | 208 | C | O4'-C1'-N1 | 7.04 | 113.83 | 108.20 |
| 30 | BF | 138 | TYR | CB-CG-CD2 | -7.04 | 116.78 | 121.00 |
| 52 | B4 | 31 | G | N1-C6-O6 | 7.04 | 124.12 | 119.90 |
| 1 | AA | 454 | U | O4'-C1'-N1 | 7.04 | 113.83 | 108.20 |
| 1 | AA | 792 | U | O5'-P-OP1 | 7.04 | 119.14 | 110.70 |
| 1 | AA | 424 | C | O4'-C1'-N1 | 7.04 | 113.83 | 108.20 |
| 1 | AA | 1447 | U | O4'-C1'-N1 | 7.04 | 113.83 | 108.20 |
| 19 | A7 | 65 | G | C8-N9-C4 | -7.04 | 103.59 | 106.40 |
| 53 | B5 | 1440 | G | N1-C6-O6 | 7.04 | 124.12 | 119.90 |
| 53 | B5 | 2648 | G | N1-C6-O6 | 7.04 | 124.12 | 119.90 |
| 53 | B5 | 3067 | C | O4'-C1'-N1 | 7.04 | 113.83 | 108.20 |
| 1 | AA | 404 | G | O4'-C1'-N9 | 7.03 | 113.83 | 108.20 |
| 52 | B4 | 114 | G | N1-C6-O6 | 7.03 | 124.12 | 119.90 |
| 53 | B5 | 1229 | G | O4'-C1'-N9 | 7.03 | 113.83 | 108.20 |
| 1 | AA | 1077 | U | O4'-C1'-N1 | 7.03 | 113.83 | 108.20 |
| 53 | B5 | 955 | U | O4'-C1'-N1 | 7.03 | 113.83 | 108.20 |
| 53 | B5 | 1510 | G | N1-C6-O6 | 7.03 | 124.12 | 119.90 |
| 53 | B5 | 3239 | G | N1-C6-O6 | 7.03 | 124.12 | 119.90 |
| 1 | AA | 1635 | C | O4'-C1'-N1 | 7.03 | 113.82 | 108.20 |
| 19 | A7 | 9 | A | C4-C5-N7 | -7.03 | 107.19 | 110.70 |
| 19 | A7 | 71 | G | N1-C2-N3 | -7.03 | 119.68 | 123.90 |
| 52 | B4 | 157 | U | O4'-C1'-N1 | 7.03 | 113.83 | 108.20 |
| 53 | B5 | 655 | C | O4'-C1'-N1 | 7.03 | 113.82 | 108.20 |
| 1 | AA | 681 | U | O4'-C1'-N1 | 7.03 | 113.82 | 108.20 |
| 53 | B5 | 245 | U | O4'-C1'-N1 | 7.03 | 113.82 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 590 | G | N1-C6-O6 | 7.03 | 124.12 | 119.90 |
| 1 | AA | 1021 | C | O4'-C1'-N1 | 7.03 | 113.82 | 108.20 |
| 1 | AA | 1291 | G | N1-C6-O6 | 7.03 | 124.12 | 119.90 |
| 53 | B5 | 1769 | G | N1-C6-O6 | 7.03 | 124.12 | 119.90 |
| 53 | B5 | 2977 | G | N1-C6-O6 | 7.03 | 124.12 | 119.90 |
| 1 | AA | 383 | G | N1-C6-O6 | 7.03 | 124.12 | 119.90 |
| 1 | AA | 890 | C | O4'-C1'-N1 | 7.03 | 113.82 | 108.20 |
| 19 | A7 | 31 | A | N1-C6-N6 | -7.03 | 114.38 | 118.60 |
| 53 | B5 | 978 | C | O4'-C1'-N1 | 7.03 | 113.82 | 108.20 |
| 53 | B5 | 1736 | G | O4'-C1'-N9 | 7.03 | 113.82 | 108.20 |
| 53 | B5 | 1866 | C | O4'-C1'-N1 | 7.03 | 113.82 | 108.20 |
| 53 | B5 | 2615 | G | N1-C6-O6 | 7.03 | 124.11 | 119.90 |
| 53 | B5 | 2990 | G | N1-C6-O6 | 7.03 | 124.11 | 119.90 |
| 19 | A7 | 64 | A | N7-C8-N9 | -7.02 | 110.29 | 113.80 |
| 53 | B5 | 1439 | U | O4'-C1'-N1 | 7.02 | 113.82 | 108.20 |
| 1 | AA | 800 | U | O4'-C1'-N1 | 7.02 | 113.82 | 108.20 |
| 51 | B3 | 37 | G | N1-C6-O6 | 7.02 | 124.11 | 119.90 |
| 53 | B5 | 871 | U | O4'-C1'-N1 | 7.02 | 113.82 | 108.20 |
| 1 | AA | 158 | U | O4'-C1'-N1 | 7.02 | 113.81 | 108.20 |
| 1 | AA | 1468 | C | O4'-C1'-N1 | 7.02 | 113.81 | 108.20 |
| 1 | AA | 1203 | C | O4'-C1'-N1 | 7.02 | 113.81 | 108.20 |
| 1 | AA | 1210 | U | O4'-C1'-N1 | 7.02 | 113.81 | 108.20 |
| 53 | B5 | 149 | U | O4'-C1'-N1 | 7.02 | 113.81 | 108.20 |
| 53 | B5 | 176 | G | N1-C6-O6 | 7.02 | 124.11 | 119.90 |
| 19 | A7 | 18 | G | C3'-C2'-C1' | 7.02 | 107.11 | 101.50 |
| 53 | B5 | 909 | G | N1-C6-O6 | 7.02 | 124.11 | 119.90 |
| 53 | B5 | 2611 | U | O4'-C1'-N1 | 7.02 | 113.81 | 108.20 |
| 1 | AA | 572 | C | O4'-C1'-N1 | 7.01 | 113.81 | 108.20 |
| 53 | B5 | 2328 | U | O4'-C1'-N1 | 7.01 | 113.81 | 108.20 |
| 1 | AA | 968 | C | O4'-C1'-N1 | 7.01 | 113.81 | 108.20 |
| 53 | B5 | 3268 | G | N1-C6-O6 | 7.01 | 124.11 | 119.90 |
| 1 | AA | 281 | G | P-O3'-C3' | 7.01 | 128.11 | 119.70 |
| 53 | B5 | 1106 | G | N1-C6-O6 | 7.01 | 124.11 | 119.90 |
| 53 | B5 | 3053 | G | O4'-C1'-N9 | 7.01 | 113.81 | 108.20 |
| 53 | B5 | 3144 | G | N1-C6-O6 | 7.01 | 124.11 | 119.90 |
| 53 | B5 | 605 | U | O4'-C1'-N1 | 7.01 | 113.81 | 108.20 |
| 53 | B5 | 1939 | G | N1-C6-O6 | 7.01 | 124.11 | 119.90 |
| 53 | B5 | 2126 | A | O4'-C1'-N9 | 7.01 | 113.81 | 108.20 |
| 53 | B5 | 3256 | G | N1-C6-O6 | 7.01 | 124.11 | 119.90 |
| 1 | AA | 709 | C | O4'-C1'-N1 | 7.01 | 113.81 | 108.20 |
| 53 | B5 | 90 | C | O4'-C1'-N1 | 7.01 | 113.81 | 108.20 |
| 53 | B5 | 358 | G | N1-C6-O6 | 7.00 | 124.10 | 119.90 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1 | AA | 35 | U | O4'-C1'-N1 | 7.00 | 113.80 | 108.20 |
| 1 | AA | 1755 | G | N1-C6-O6 | 7.00 | 124.10 | 119.90 |
| 53 | B5 | 754 | G | N1-C6-O6 | 7.00 | 124.10 | 119.90 |
| 1 | AA | 677 | G | N1-C6-O6 | 7.00 | 124.10 | 119.90 |
| 53 | B5 | 834 | U | O4'-C1'-N1 | 7.00 | 113.80 | 108.20 |
| 53 | B5 | 1614 | C | O4'-C1'-N1 | 7.00 | 113.80 | 108.20 |
| 1 | AA | 871 | G | N1-C6-O6 | 7.00 | 124.10 | 119.90 |
| 1 | AA | 36 | C | O4'-C1'-N1 | 7.00 | 113.80 | 108.20 |
| 1 | AA | 371 | G | N1-C6-O6 | 7.00 | 124.10 | 119.90 |
| 1 | AA | 657 | U | O4'-C1'-N1 | 7.00 | 113.80 | 108.20 |
| 1 | AA | 1272 | U | O4'-C1'-N1 | 7.00 | 113.80 | 108.20 |
| 1 | AA | 1626 | U | O4'-C1'-N1 | 7.00 | 113.80 | 108.20 |
| 1 | AA | 1636 | G | O4'-C4'-C3' | 7.00 | 111.70 | 106.10 |
| 53 | B5 | 723 | U | O4'-C1'-N1 | 7.00 | 113.80 | 108.20 |
| 53 | B5 | 2292 | U | O4'-C1'-N1 | 7.00 | 113.80 | 108.20 |
| 1 | AA | 422 | G | N1-C6-O6 | 7.00 | 124.10 | 119.90 |
| 1 | AA | 488 | G | N1-C6-O6 | 7.00 | 124.10 | 119.90 |
| 1 | AA | 503 | G | O4'-C1'-N9 | 7.00 | 113.80 | 108.20 |
| 1 | AA | 1435 | G | N1-C6-O6 | 7.00 | 124.10 | 119.90 |
| 38 | BN | 4 | TYR | CB-CG-CD2 | -7.00 | 116.80 | 121.00 |
| 44 | BT | 60 | TYR | CB-CG-CD1 | 7.00 | 125.20 | 121.00 |
| 53 | B5 | 3328 | G | N1-C6-O6 | 7.00 | 124.10 | 119.90 |
| 1 | AA | 92 | A | O4'-C1'-N9 | 7.00 | 113.80 | 108.20 |
| 1 | AA | 194 | U | O4'-C1'-N1 | 7.00 | 113.80 | 108.20 |
| 1 | AA | 1654 | U | O4'-C1'-N1 | 7.00 | 113.80 | 108.20 |
| 1 | AA | 1790 | G | O4'-C1'-N9 | 7.00 | 113.80 | 108.20 |
| 53 | B5 | 968 | G | C5-C6-O6 | -7.00 | 124.40 | 128.60 |
| 51 | B3 | 106 | G | O4'-C1'-N9 | 6.99 | 113.79 | 108.20 |
| 1 | AA | 151 | G | N1-C6-O6 | 6.99 | 124.09 | 119.90 |
| 53 | B5 | 540 | U | O4'-C1'-N1 | 6.99 | 113.79 | 108.20 |
| 53 | B5 | 819 | U | O4'-C1'-N1 | 6.99 | 113.79 | 108.20 |
| 53 | B5 | 2194 | G | N1-C6-O6 | 6.99 | 124.09 | 119.90 |
| 53 | B5 | 3309 | G | O4'-C1'-N9 | 6.99 | 113.79 | 108.20 |
| 1 | AA | 123 | G | N1-C6-O6 | 6.99 | 124.09 | 119.90 |
| 53 | B5 | 2652 | U | O4'-C1'-N1 | 6.99 | 113.79 | 108.20 |
| 1 | AA | 1565 | U | O4'-C1'-N1 | 6.99 | 113.79 | 108.20 |
| 1 | AA | 1480 | C | O4'-C1'-N1 | 6.98 | 113.79 | 108.20 |
| 53 | B5 | 1843 | C | O4'-C1'-N1 | 6.98 | 113.79 | 108.20 |
| 53 | B5 | 2134 | G | N1-C6-O6 | 6.98 | 124.09 | 119.90 |
| 53 | B5 | 3274 | G | C5-C6-O6 | -6.98 | 124.41 | 128.60 |
| 19 | A7 | 29 | A | N1-C6-N6 | -6.98 | 114.41 | 118.60 |
| 53 | B5 | 196 | G | C5-C6-O6 | -6.98 | 124.41 | 128.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 575 | G | N1-C6-O6 | 6.98 | 124.09 | 119.90 |
| 53 | B5 | 2690 | G | N1-C6-O6 | 6.98 | 124.09 | 119.90 |
| 1 | AA | 1512 | U | O4'-C1'-N1 | 6.98 | 113.78 | 108.20 |
| 53 | B5 | 126 | U | O4'-C1'-N1 | 6.98 | 113.78 | 108.20 |
| 53 | B5 | 831 | G | N1-C6-O6 | 6.98 | 124.09 | 119.90 |
| 1 | AA | 624 | G | N1-C6-O6 | 6.98 | 124.09 | 119.90 |
| 1 | AA | 1772 | G | N1-C6-O6 | 6.98 | 124.09 | 119.90 |
| 53 | B5 | 1213 | G | N1-C6-O6 | 6.98 | 124.09 | 119.90 |
| 53 | B5 | 2240 | G | O4'-C1'-N9 | 6.98 | 113.78 | 108.20 |
| 53 | B5 | 2850 | G | O4'-C1'-N9 | 6.98 | 113.78 | 108.20 |
| 1 | AA | 1327 | G | N1-C6-O6 | 6.97 | 124.08 | 119.90 |
| 53 | B5 | 545 | U | O4'-C1'-N1 | 6.97 | 113.78 | 108.20 |
| 53 | B5 | 1615 | C | O4'-C1'-N1 | 6.97 | 113.78 | 108.20 |
| 53 | B5 | 1694 | U | O4'-C1'-N1 | 6.97 | 113.78 | 108.20 |
| 51 | B3 | 86 | G | N1-C6-O6 | 6.97 | 124.08 | 119.90 |
| 53 | B5 | 809 | G | C5-C6-O6 | -6.97 | 124.42 | 128.60 |
| 53 | B5 | 826 | G | C5-C6-O6 | -6.97 | 124.42 | 128.60 |
| 1 | AA | 1383 | G | N1-C6-O6 | 6.97 | 124.08 | 119.90 |
| 1 | AA | 1471 | U | O4'-C1'-N1 | 6.97 | 113.78 | 108.20 |
| 53 | B5 | 1807 | G | O4'-C1'-N9 | 6.97 | 113.78 | 108.20 |
| 53 | B5 | 2789 | U | O4'-C1'-N1 | 6.97 | 113.78 | 108.20 |
| 53 | B5 | 2914 | G | N1-C6-O6 | 6.97 | 124.08 | 119.90 |
| 1 | AA | 589 | C | O4'-C1'-N1 | 6.97 | 113.77 | 108.20 |
| 1 | AA | 1242 | C | O4'-C1'-N1 | 6.97 | 113.77 | 108.20 |
| 53 | B5 | 2728 | G | N1-C6-O6 | 6.97 | 124.08 | 119.90 |
| 1 | AA | 1640 | G | N1-C6-O6 | 6.97 | 124.08 | 119.90 |
| 53 | B5 | 615 | U | O4'-C1'-N1 | 6.97 | 113.77 | 108.20 |
| 53 | B5 | 1768 | U | O4'-C1'-N1 | 6.97 | 113.77 | 108.20 |
| 53 | B5 | 394 | G | C5-C6-O6 | -6.96 | 124.42 | 128.60 |
| 53 | B5 | 907 | G | C5-C6-O6 | -6.96 | 124.42 | 128.60 |
| 53 | B5 | 1313 | G | O4'-C1'-N9 | 6.96 | 113.77 | 108.20 |
| 53 | B5 | 3116 | G | C5-C6-O6 | -6.96 | 124.42 | 128.60 |
| 53 | B5 | 3303 | G | N1-C6-O6 | 6.96 | 124.08 | 119.90 |
| 1 | AA | 276 | C | O4'-C1'-N1 | 6.96 | 113.77 | 108.20 |
| 1 | AA | 1324 | C | O4'-C1'-N1 | 6.96 | 113.77 | 108.20 |
| 53 | B5 | 1898 | G | N1-C6-O6 | 6.96 | 124.08 | 119.90 |
| 53 | B5 | 2672 | G | O4'-C1'-N9 | 6.96 | 113.77 | 108.20 |
| 1 | AA | 1547 | C | O4'-C4'-C3' | -6.96 | 97.04 | 104.00 |
| 1 | AA | 1668 | G | N1-C6-O6 | 6.96 | 124.08 | 119.90 |
| 53 | B5 | 1044 | U | O4'-C1'-N1 | 6.96 | 113.77 | 108.20 |
| 53 | B5 | 1653 | G | O4'-C1'-N9 | 6.96 | 113.77 | 108.20 |
| 53 | B5 | 2619 | G | C5-C6-O6 | -6.96 | 124.42 | 128.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1 | AA | 796 | A | C2'-C3'-O3' | 6.96 | 124.84 | 113.70 |
| 1 | AA | 1470 | C | O4'-C1'-N1 | 6.96 | 113.77 | 108.20 |
| 53 | B5 | 678 | G | C5-C6-O6 | -6.96 | 124.42 | 128.60 |
| 53 | B5 | 1367 | G | N1-C6-O6 | 6.96 | 124.08 | 119.90 |
| 53 | B5 | 3351 | U | O4'-C1'-N1 | 6.96 | 113.77 | 108.20 |
| 1 | AA | 985 | G | N1-C6-O6 | 6.96 | 124.08 | 119.90 |
| 1 | AA | 1680 | U | O4'-C1'-N1 | 6.96 | 113.77 | 108.20 |
| 19 | A7 | 51 | G | C8-N9-C4 | -6.96 | 103.62 | 106.40 |
| 53 | B5 | 234 | G | N1-C6-O6 | 6.96 | 124.08 | 119.90 |
| 53 | B5 | 1377 | G | C5-C6-O6 | -6.96 | 124.42 | 128.60 |
| 53 | B5 | 1448 | U | O4'-C1'-N1 | 6.96 | 113.77 | 108.20 |
| 53 | B5 | 1754 | G | N1-C6-O6 | 6.96 | 124.08 | 119.90 |
| 53 | B5 | 2655 | U | O4'-C1'-N1 | 6.96 | 113.77 | 108.20 |
| 53 | B5 | 3262 | U | O4'-C1'-N1 | 6.96 | 113.77 | 108.20 |
| 1 | AA | 154 | G | N1-C6-O6 | 6.96 | 124.07 | 119.90 |
| 1 | AA | 629 | U | O4'-C1'-N1 | 6.96 | 113.77 | 108.20 |
| 53 | B5 | 2585 | G | O4'-C1'-N9 | 6.96 | 113.77 | 108.20 |
| 1 | AA | 1420 | U | O4'-C1'-N1 | 6.96 | 113.76 | 108.20 |
| 53 | B5 | 1063 | G | N1-C6-O6 | 6.96 | 124.07 | 119.90 |
| 53 | B5 | 2577 | C | P-O3'-C3' | 6.96 | 128.05 | 119.70 |
| 1 | AA | 499 | U | O4'-C1'-N1 | 6.95 | 113.76 | 108.20 |
| 1 | AA | 560 | U | O4'-C1'-N1 | 6.95 | 113.76 | 108.20 |
| 51 | B3 | 112 | G | N1-C6-O6 | 6.95 | 124.07 | 119.90 |
| 53 | B5 | 432 | G | N1-C6-O6 | 6.95 | 124.07 | 119.90 |
| 53 | B5 | 700 | C | O4'-C1'-N1 | 6.95 | 113.76 | 108.20 |
| 1 | AA | 329 | G | N1-C6-O6 | 6.95 | 124.07 | 119.90 |
| 53 | B5 | 3191 | G | N1-C6-O6 | 6.95 | 124.07 | 119.90 |
| 1 | AA | 149 | C | O4'-C1'-N1 | 6.95 | 113.76 | 108.20 |
| 1 | AA | 1290 | U | O4'-C1'-N1 | 6.95 | 113.76 | 108.20 |
| 53 | B5 | 740 | G | N1-C6-O6 | 6.95 | 124.07 | 119.90 |
| 53 | B5 | 1321 | G | N1-C6-O6 | 6.95 | 124.07 | 119.90 |
| 53 | B5 | 1745 | C | O4'-C1'-N1 | 6.95 | 113.76 | 108.20 |
| 53 | B5 | 2320 | A | O4'-C1'-N9 | 6.95 | 113.76 | 108.20 |
| 1 | AA | 110 | U | O4'-C1'-N1 | 6.94 | 113.75 | 108.20 |
| 53 | B5 | 368 | G | N1-C6-O6 | 6.94 | 124.07 | 119.90 |
| 53 | B5 | 1680 | G | N1-C6-O6 | 6.94 | 124.07 | 119.90 |
| 1 | AA | 704 | C | O4'-C1'-N1 | 6.94 | 113.75 | 108.20 |
| 1 | AA | 1205 | C | O4'-C1'-N1 | 6.94 | 113.75 | 108.20 |
| 1 | AA | 1618 | C | O4'-C1'-N1 | 6.94 | 113.75 | 108.20 |
| 53 | B5 | 2181 | C | O4'-C1'-N1 | 6.94 | 113.75 | 108.20 |
| 1 | AA | 1451 | G | N1-C6-O6 | 6.94 | 124.06 | 119.90 |
| 19 | A7 | 38 | A | C5-C6-N1 | 6.94 | 121.17 | 117.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 51 | B3 | 59 | G | N1-C6-O6 | 6.94 | 124.06 | 119.90 |
| 53 | B5 | 124 | U | O4'-C1'-N1 | 6.94 | 113.75 | 108.20 |
| 53 | B5 | 2672 | G | P-O3'-C3' | 6.94 | 128.03 | 119.70 |
| 1 | AA | 798 | C | C2'-C3'-O3' | 6.94 | 124.80 | 113.70 |
| 1 | AA | 1666 | G | N1-C6-O6 | 6.94 | 124.06 | 119.90 |
| 51 | B3 | 76 | U | O4'-C1'-N1 | 6.94 | 113.75 | 108.20 |
| 53 | B5 | 2782 | U | O4'-C1'-N1 | 6.94 | 113.75 | 108.20 |
| 19 | A7 | 29 | A | C4-C5-C6 | -6.93 | 113.53 | 117.00 |
| 53 | B5 | 785 | G | C5-C6-O6 | -6.93 | 124.44 | 128.60 |
| 53 | B5 | 1013 | G | N1-C6-O6 | 6.93 | 124.06 | 119.90 |
| 53 | B5 | 1307 | G | N1-C6-O6 | 6.93 | 124.06 | 119.90 |
| 53 | B5 | 2530 | G | N1-C6-O6 | 6.93 | 124.06 | 119.90 |
| 1 | AA | 229 | U | O4'-C1'-N1 | 6.93 | 113.75 | 108.20 |
| 1 | AA | 1006 | C | O4'-C1'-N1 | 6.93 | 113.75 | 108.20 |
| 53 | B5 | 1883 | A | O4'-C1'-N9 | 6.93 | 113.75 | 108.20 |
| 1 | AA | 282 | C | O4'-C1'-N1 | 6.93 | 113.75 | 108.20 |
| 1 | AA | 750 | U | O4'-C1'-N1 | 6.93 | 113.75 | 108.20 |
| 1 | AA | 64 | U | O4'-C1'-N1 | 6.93 | 113.74 | 108.20 |
| 1 | AA | 759 | U | O4'-C1'-N1 | 6.93 | 113.74 | 108.20 |
| 1 | AA | 1184 | G | N1-C6-O6 | 6.93 | 124.06 | 119.90 |
| 1 | AA | 1474 | C | O4'-C1'-N1 | 6.93 | 113.74 | 108.20 |
| 19 | A7 | 20 | G | N9-C1'-C2' | 6.93 | 123.01 | 114.00 |
| 51 | B3 | 88 | G | C5-C6-O6 | -6.93 | 124.44 | 128.60 |
| 53 | B5 | 703 | G | N1-C6-O6 | 6.93 | 124.06 | 119.90 |
| 53 | B5 | 2920 | U | O4'-C1'-N1 | 6.93 | 113.74 | 108.20 |
| 53 | B5 | 850 | U | O4'-C1'-N1 | 6.93 | 113.74 | 108.20 |
| 53 | B5 | 1322 | U | O4'-C1'-N1 | 6.93 | 113.74 | 108.20 |
| 53 | B5 | 1936 | A | O4'-C1'-N9 | 6.93 | 113.74 | 108.20 |
| 53 | B5 | 5 | G | N1-C6-O6 | 6.93 | 124.06 | 119.90 |
| 53 | B5 | 2632 | G | N1-C6-O6 | 6.93 | 124.06 | 119.90 |
| 53 | B5 | 3153 | U | O4'-C1'-N1 | 6.93 | 113.74 | 108.20 |
| 19 | A7 | 41 | U | N1-C2-N3 | 6.92 | 119.06 | 114.90 |
| 53 | B5 | 1607 | U | O4'-C1'-N1 | 6.92 | 113.74 | 108.20 |
| 1 | AA | 626 | U | O4'-C1'-N1 | 6.92 | 113.74 | 108.20 |
| 1 | AA | 776 | G | N1-C6-O6 | 6.92 | 124.05 | 119.90 |
| 52 | B4 | 152 | G | N1-C6-O6 | 6.92 | 124.05 | 119.90 |
| 53 | B5 | 903 | U | O4'-C1'-N1 | 6.92 | 113.74 | 108.20 |
| 53 | B5 | 1363 | A | O4'-C1'-N9 | 6.92 | 113.74 | 108.20 |
| 53 | B5 | 1788 | C | O4'-C1'-N1 | 6.92 | 113.74 | 108.20 |
| 53 | B5 | 2940 | A | O4'-C1'-N9 | 6.92 | 113.74 | 108.20 |
| 1 | AA | 953 | G | N1-C6-O6 | 6.92 | 124.05 | 119.90 |
| 52 | B4 | 140 | G | N1-C6-O6 | 6.92 | 124.05 | 119.90 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 217 | U | O4'-C1'-N1 | 6.92 | 113.74 | 108.20 |
| 53 | B5 | 447 | U | O4'-C1'-N1 | 6.92 | 113.74 | 108.20 |
| 53 | B5 | 1138 | U | O4'-C1'-N1 | 6.92 | 113.74 | 108.20 |
| 53 | B5 | 3380 | U | O4'-C1'-N1 | 6.92 | 113.74 | 108.20 |
| 1 | AA | 1425 | G | C5-C6-O6 | -6.92 | 124.45 | 128.60 |
| 53 | B5 | 636 | C | O4'-C1'-N1 | 6.92 | 113.73 | 108.20 |
| 53 | B5 | 954 | U | O4'-C1'-N1 | 6.92 | 113.73 | 108.20 |
| 53 | B5 | 1897 | G | N1-C6-O6 | 6.92 | 124.05 | 119.90 |
| 1 | AA | 146 | U | O4'-C1'-N1 | 6.92 | 113.73 | 108.20 |
| 1 | AA | 297 | U | O4'-C1'-N1 | 6.92 | 113.73 | 108.20 |
| 1 | AA | 1639 | C | O4'-C1'-N1 | 6.92 | 113.73 | 108.20 |
| 53 | B5 | 702 | C | O4'-C1'-N1 | 6.92 | 113.73 | 108.20 |
| 53 | B5 | 2754 | G | N1-C6-O6 | 6.92 | 124.05 | 119.90 |
| 1 | AA | 94 | U | O4'-C1'-N1 | 6.92 | 113.73 | 108.20 |
| 1 | AA | 243 | G | N1-C6-O6 | 6.92 | 124.05 | 119.90 |
| 1 | AA | 823 | G | N1-C6-O6 | 6.92 | 124.05 | 119.90 |
| 1 | AA | 1505 | G | N1-C6-O6 | 6.92 | 124.05 | 119.90 |
| 53 | B5 | 1618 | G | N1-C6-O6 | 6.92 | 124.05 | 119.90 |
| 1 | AA | 715 | U | O4'-C1'-N1 | 6.91 | 113.73 | 108.20 |
| 53 | B5 | 1700 | G | N1-C6-O6 | 6.91 | 124.05 | 119.90 |
| 53 | B5 | 1889 | G | N1-C6-O6 | 6.91 | 124.05 | 119.90 |
| 53 | B5 | 2162 | U | O4'-C1'-N1 | 6.91 | 113.73 | 108.20 |
| 53 | B5 | 3238 | G | N1-C6-O6 | 6.91 | 124.05 | 119.90 |
| 1 | AA | 1046 | U | O4'-C1'-N1 | 6.91 | 113.73 | 108.20 |
| 1 | AA | 449 | C | O4'-C1'-N1 | 6.91 | 113.73 | 108.20 |
| 1 | AA | 1531 | C | O4'-C1'-N1 | 6.91 | 113.73 | 108.20 |
| 19 | A7 | 64 | A | C5-C6-N1 | 6.91 | 121.16 | 117.70 |
| 53 | B5 | 52 | A | C5-C6-N6 | -6.91 | 118.17 | 123.70 |
| 53 | B5 | 223 | U | O4'-C1'-N1 | 6.91 | 113.73 | 108.20 |
| 53 | B5 | 746 | A | O4'-C1'-N9 | 6.91 | 113.73 | 108.20 |
| 53 | B5 | 1078 | U | O4'-C1'-N1 | 6.91 | 113.73 | 108.20 |
| 53 | B5 | 833 | G | N1-C6-O6 | 6.91 | 124.05 | 119.90 |
| 53 | B5 | 1081 | U | O4'-C1'-N1 | 6.91 | 113.73 | 108.20 |
| 53 | B5 | 1092 | C | O4'-C1'-N1 | 6.91 | 113.73 | 108.20 |
| 53 | B5 | 1772 | U | O4'-C1'-N1 | 6.91 | 113.73 | 108.20 |
| 53 | B5 | 2981 | U | O4'-C1'-N1 | 6.91 | 113.73 | 108.20 |
| 53 | B5 | 2406 | C | O4'-C1'-N1 | 6.91 | 113.72 | 108.20 |
| 1 | AA | 1243 | U | O4'-C1'-N1 | 6.91 | 113.72 | 108.20 |
| 1 | AA | 1569 | C | O4'-C1'-N1 | 6.91 | 113.72 | 108.20 |
| 53 | B5 | 10 | C | O4'-C1'-N1 | 6.91 | 113.72 | 108.20 |
| 53 | B5 | 2704 | A | O4'-C1'-N9 | 6.91 | 113.72 | 108.20 |
| 1 | AA | 102 | U | O4'-C1'-N1 | 6.90 | 113.72 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 1 | AA | 703 | G | O4'-C1'-N9 | 6.90 | 113.72 | 108.20 |
| 1 | AA | 1007 | G | N1-C6-O6 | 6.90 | 124.04 | 119.90 |
| 53 | B5 | 231 | G | O4'-C1'-N9 | 6.90 | 113.72 | 108.20 |
| 53 | B5 | 1228 | C | O4'-C1'-N1 | 6.90 | 113.72 | 108.20 |
| 53 | B5 | 1775 | G | N1-C6-O6 | 6.90 | 124.04 | 119.90 |
| 53 | B5 | 2554 | U | O4'-C1'-N1 | 6.90 | 113.72 | 108.20 |
| 53 | B5 | 2937 | G | N1-C6-O6 | 6.90 | 124.04 | 119.90 |
| 53 | B5 | 3192 | U | O4'-C1'-N1 | 6.90 | 113.72 | 108.20 |
| 53 | B5 | 2396 | G | N1-C6-O6 | 6.90 | 124.04 | 119.90 |
| 53 | B5 | 2972 | G | O4'-C1'-N9 | 6.90 | 113.72 | 108.20 |
| 1 | AA | 413 | U | O4'-C1'-N1 | 6.90 | 113.72 | 108.20 |
| 53 | B5 | 582 | G | N1-C6-O6 | 6.90 | 124.04 | 119.90 |
| 53 | B5 | 1121 | U | O4'-C1'-N1 | 6.90 | 113.72 | 108.20 |
| 53 | B5 | 2826 | U | O4'-C1'-N1 | 6.90 | 113.72 | 108.20 |
| 1 | AA | 698 | U | O4'-C1'-N1 | 6.89 | 113.72 | 108.20 |
| 53 | B5 | 507 | U | O4'-C1'-N1 | 6.89 | 113.72 | 108.20 |
| 53 | B5 | 762 | U | O4'-C1'-N1 | 6.89 | 113.72 | 108.20 |
| 1 | AA | 901 | G | N1-C6-O6 | 6.89 | 124.03 | 119.90 |
| 53 | B5 | 464 | U | O4'-C1'-N1 | 6.89 | 113.71 | 108.20 |
| 53 | B5 | 1478 | C | O4'-C1'-N1 | 6.89 | 113.71 | 108.20 |
| 53 | B5 | 2216 | G | C5-C6-O6 | -6.89 | 124.47 | 128.60 |
| 53 | B5 | 362 | U | O4'-C1'-N1 | 6.89 | 113.71 | 108.20 |
| 52 | B4 | 74 | U | O4'-C1'-N1 | 6.89 | 113.71 | 108.20 |
| 53 | B5 | 2134 | G | O4'-C1'-N9 | 6.89 | 113.71 | 108.20 |
| 53 | B5 | 2998 | U | O4'-C1'-N1 | 6.89 | 113.71 | 108.20 |
| 53 | B5 | 3363 | U | O4'-C1'-N1 | 6.89 | 113.71 | 108.20 |
| 53 | B5 | 1817 | G | N1-C6-O6 | 6.89 | 124.03 | 119.90 |
| 1 | AA | 1164 | G | O4'-C1'-N9 | 6.89 | 113.71 | 108.20 |
| 1 | AA | 1602 | U | O4'-C1'-N1 | 6.89 | 113.71 | 108.20 |
| 53 | B5 | 1014 | U | O4'-C1'-N1 | 6.89 | 113.71 | 108.20 |
| 1 | AA | 786 | C | O4'-C1'-N1 | 6.88 | 113.71 | 108.20 |
| 53 | B5 | 1127 | G | C5-C6-O6 | -6.88 | 124.47 | 128.60 |
| 52 | B4 | 126 | A | O4'-C1'-N9 | 6.88 | 113.71 | 108.20 |
| 53 | B5 | 143 | G | O4'-C1'-N9 | 6.88 | 113.71 | 108.20 |
| 53 | B5 | 419 | G | N1-C6-O6 | 6.88 | 124.03 | 119.90 |
| 53 | B5 | 1591 | G | N1-C6-O6 | 6.88 | 124.03 | 119.90 |
| 53 | B5 | 756 | U | O4'-C1'-N1 | 6.88 | 113.70 | 108.20 |
| 53 | B5 | 892 | U | O4'-C1'-N1 | 6.88 | 113.70 | 108.20 |
| 53 | B5 | 1233 | G | O4'-C1'-N9 | 6.88 | 113.70 | 108.20 |
| 53 | B5 | 2555 | G | N1-C6-O6 | 6.88 | 124.03 | 119.90 |
| 53 | B5 | 3253 | G | N1-C6-O6 | 6.88 | 124.03 | 119.90 |
| 1 | AA | 1472 | G | C5-C6-O6 | -6.88 | 124.47 | 128.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 1 | AA | 1555 | U | O4'-C1'-N1 | 6.88 | 113.70 | 108.20 |
| 1 | AA | 1683 | G | N1-C6-O6 | 6.88 | 124.03 | 119.90 |
| 53 | B5 | 97 | U | O4'-C1'-N1 | 6.88 | 113.70 | 108.20 |
| 53 | B5 | 2604 | U | O4'-C1'-N1 | 6.88 | 113.70 | 108.20 |
| 53 | B5 | 2720 | G | N1-C6-O6 | 6.88 | 124.03 | 119.90 |
| 53 | B5 | 2762 | A | O4'-C1'-N9 | 6.88 | 113.70 | 108.20 |
| 53 | B5 | 3321 | C | O4'-C1'-N1 | 6.88 | 113.70 | 108.20 |
| 1 | AA | 885 | G | N1-C6-O6 | 6.88 | 124.03 | 119.90 |
| 1 | AA | 1483 | C | O4'-C1'-N1 | 6.88 | 113.70 | 108.20 |
| 52 | B4 | 116 | G | N1-C6-O6 | 6.88 | 124.03 | 119.90 |
| 53 | B5 | 512 | U | P-O3'-C3' | 6.88 | 127.95 | 119.70 |
| 53 | B5 | 821 | U | O4'-C1'-N1 | 6.88 | 113.70 | 108.20 |
| 53 | B5 | 2791 | G | N1-C6-O6 | 6.88 | 124.03 | 119.90 |
| 53 | B5 | 3109 | G | O4'-C1'-N9 | 6.88 | 113.70 | 108.20 |
| 53 | B5 | 58 | G | N1-C6-O6 | 6.88 | 124.03 | 119.90 |
| 53 | B5 | 1700 | G | O4'-C1'-N9 | 6.88 | 113.70 | 108.20 |
| 1 | AA | 1227 | U | O4'-C1'-N1 | 6.87 | 113.70 | 108.20 |
| 1 | AA | 1264 | G | N1-C6-O6 | 6.87 | 124.02 | 119.90 |
| 23 | B8 | 43 | LYS | CG-CD-CE | 6.87 | 132.52 | 111.90 |
| 53 | B5 | 1211 | U | O4'-C1'-N1 | 6.87 | 113.70 | 108.20 |
| 53 | B5 | 1427 | U | O4'-C1'-N1 | 6.87 | 113.70 | 108.20 |
| 53 | B5 | 1593 | A | O4'-C1'-N9 | 6.87 | 113.70 | 108.20 |
| 1 | AA | 285 | G | N1-C6-O6 | 6.87 | 124.02 | 119.90 |
| 53 | B5 | 339 | C | O4'-C1'-N1 | 6.87 | 113.70 | 108.20 |
| 1 | AA | 294 | C | O4'-C1'-N1 | 6.87 | 113.70 | 108.20 |
| 1 | AA | 988 | U | O4'-C1'-N1 | 6.87 | 113.69 | 108.20 |
| 1 | AA | 1478 | G | N1-C6-O6 | 6.87 | 124.02 | 119.90 |
| 53 | B5 | 779 | G | N1-C6-O6 | 6.87 | 124.02 | 119.90 |
| 53 | B5 | 786 | A | O4'-C1'-N9 | 6.87 | 113.70 | 108.20 |
| 53 | B5 | 1218 | U | O4'-C1'-N1 | 6.87 | 113.69 | 108.20 |
| 53 | B5 | 1902 | G | C5-C6-O6 | -6.87 | 124.48 | 128.60 |
| 53 | B5 | 2706 | G | N1-C6-O6 | 6.87 | 124.02 | 119.90 |
| 1 | AA | 612 | U | O4'-C1'-N1 | 6.87 | 113.69 | 108.20 |
| 53 | B5 | 546 | C | O4'-C1'-N1 | 6.87 | 113.69 | 108.20 |
| 53 | B5 | 798 | G | N1-C6-O6 | 6.87 | 124.02 | 119.90 |
| 53 | B5 | 1536 | G | N1-C6-O6 | 6.87 | 124.02 | 119.90 |
| 53 | B5 | 811 | U | O4'-C1'-N1 | 6.87 | 113.69 | 108.20 |
| 53 | B5 | 1157 | G | C5-C6-O6 | -6.87 | 124.48 | 128.60 |
| 53 | B5 | 1661 | G | N1-C6-O6 | 6.87 | 124.02 | 119.90 |
| 53 | B5 | 2201 | G | N1-C6-O6 | 6.87 | 124.02 | 119.90 |
| 1 | AA | 1438 | C | O4'-C1'-N1 | 6.86 | 113.69 | 108.20 |
| 53 | B5 | 261 | U | O4'-C1'-N1 | 6.86 | 113.69 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 52 | B4 | 81 | U | O4'-C1'-N1 | 6.86 | 113.69 | 108.20 |
| 53 | B5 | 3259 | U | O4'-C1'-N1 | 6.86 | 113.69 | 108.20 |
| 1 | AA | 121 | U | O4'-C1'-N1 | 6.86 | 113.69 | 108.20 |
| 1 | AA | 1384 | G | N1-C6-O6 | 6.86 | 124.02 | 119.90 |
| 1 | AA | 1557 | A | O4'-C1'-N9 | 6.86 | 113.69 | 108.20 |
| 19 | A7 | 60 | C | O4'-C1'-N1 | 6.86 | 113.69 | 108.20 |
| 51 | B3 | 10 | C | O4'-C1'-N1 | 6.86 | 113.69 | 108.20 |
| 53 | B5 | 1795 | U | P-O3'-C3' | 6.86 | 127.93 | 119.70 |
| 53 | B5 | 937 | G | N1-C6-O6 | 6.86 | 124.02 | 119.90 |
| 53 | B5 | 1033 | U | O4'-C1'-N1 | 6.86 | 113.69 | 108.20 |
| 1 | AA | 1063 | C | O4'-C1'-N1 | 6.86 | 113.69 | 108.20 |
| 1 | AA | 1228 | U | O4'-C1'-N1 | 6.86 | 113.69 | 108.20 |
| 51 | B3 | 11 | A | O4'-C1'-N9 | 6.86 | 113.69 | 108.20 |
| 53 | B5 | 27 | C | O4'-C1'-N1 | 6.86 | 113.69 | 108.20 |
| 53 | B5 | 1634 | G | N1-C6-O6 | 6.86 | 124.01 | 119.90 |
| 53 | B5 | 1790 | G | C5-C6-O6 | -6.86 | 124.49 | 128.60 |
| 53 | B5 | 2647 | A | O4'-C1'-N9 | 6.86 | 113.69 | 108.20 |
| 53 | B5 | 3065 | G | N1-C6-O6 | 6.86 | 124.02 | 119.90 |
| 53 | B5 | 160 | G | N1-C6-O6 | 6.86 | 124.01 | 119.90 |
| 53 | B5 | 220 | G | N1-C6-O6 | 6.86 | 124.01 | 119.90 |
| 53 | B5 | 1000 | C | O4'-C1'-N1 | 6.86 | 113.68 | 108.20 |
| 1 | AA | 787 | G | O4'-C1'-N9 | 6.85 | 113.68 | 108.20 |
| 19 | A7 | 70 | C | O4'-C1'-N1 | 6.85 | 113.68 | 108.20 |
| 53 | B5 | 2177 | G | C5-C6-O6 | -6.85 | 124.49 | 128.60 |
| 1 | AA | 1347 | U | O4'-C1'-N1 | 6.85 | 113.68 | 108.20 |
| 51 | B3 | 56 | G | O4'-C1'-N9 | 6.85 | 113.68 | 108.20 |
| 53 | B5 | 587 | U | O4'-C1'-N1 | 6.85 | 113.68 | 108.20 |
| 53 | B5 | 2210 | G | C5-C6-O6 | -6.85 | 124.49 | 128.60 |
| 13 | AN | 16 | LYS | N-CA-C | 6.85 | 129.49 | 111.00 |
| 53 | B5 | 120 | G | C5-C6-O6 | -6.85 | 124.49 | 128.60 |
| 53 | B5 | 793 | C | O4'-C1'-N1 | 6.85 | 113.68 | 108.20 |
| 53 | B5 | 2436 | U | O4'-C1'-N1 | 6.85 | 113.68 | 108.20 |
| 53 | B5 | 3255 | U | O4'-C1'-N1 | 6.85 | 113.68 | 108.20 |
| 1 | AA | 279 | G | N1-C6-O6 | 6.85 | 124.01 | 119.90 |
| 1 | AA | 1614 | G | N1-C6-O6 | 6.85 | 124.01 | 119.90 |
| 53 | B5 | 84 | U | O4'-C1'-N1 | 6.85 | 113.68 | 108.20 |
| 53 | B5 | 204 | A | O4'-C1'-N9 | 6.85 | 113.68 | 108.20 |
| 53 | B5 | 601 | U | O4'-C1'-N1 | 6.85 | 113.68 | 108.20 |
| 53 | B5 | 995 | G | N1-C6-O6 | 6.85 | 124.01 | 119.90 |
| 53 | B5 | 1650 | G | N1-C6-O6 | 6.85 | 124.01 | 119.90 |
| 53 | B5 | 2843 | U | O4'-C1'-N1 | 6.85 | 113.68 | 108.20 |
| 1 | AA | 1462 | G | N1-C6-O6 | 6.85 | 124.01 | 119.90 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 3026 | G | N1-C6-O6 | 6.85 | 124.01 | 119.90 |
| 1 | AA | 785 | U | O4'-C1'-N1 | 6.84 | 113.68 | 108.20 |
| 1 | AA | 1452 | G | N1-C6-O6 | 6.84 | 124.01 | 119.90 |
| 19 | A7 | 45 | G | N9-C4-C5 | 6.84 | 108.14 | 105.40 |
| 51 | B3 | 84 | G | N1-C6-O6 | 6.84 | 124.01 | 119.90 |
| 53 | B5 | 506 | U | O4'-C1'-N1 | 6.84 | 113.67 | 108.20 |
| 53 | B5 | 2111 | G | C5-C6-O6 | -6.84 | 124.49 | 128.60 |
| 53 | B5 | 3102 | G | C5-C6-O6 | -6.84 | 124.49 | 128.60 |
| 1 | AA | 1365 | G | N1-C6-O6 | 6.84 | 124.01 | 119.90 |
| 53 | B5 | 1089 | G | N1-C6-O6 | 6.84 | 124.00 | 119.90 |
| 53 | B5 | 1126 | G | N1-C6-O6 | 6.84 | 124.00 | 119.90 |
| 53 | B5 | 1457 | U | O4'-C1'-N1 | 6.84 | 113.67 | 108.20 |
| 53 | B5 | 1710 | C | O4'-C1'-N1 | 6.84 | 113.67 | 108.20 |
| 53 | B5 | 1837 | U | O4'-C1'-N1 | 6.84 | 113.67 | 108.20 |
| 53 | B5 | 3071 | U | O4'-C1'-N1 | 6.84 | 113.67 | 108.20 |
| 1 | AA | 336 | G | N1-C6-O6 | 6.84 | 124.00 | 119.90 |
| 53 | B5 | 1532 | C | O4'-C1'-N1 | 6.84 | 113.67 | 108.20 |
| 53 | B5 | 2270 | A | O4'-C1'-N9 | 6.84 | 113.67 | 108.20 |
| 53 | B5 | 1415 | U | O4'-C1'-N1 | 6.84 | 113.67 | 108.20 |
| 53 | B5 | 1894 | U | O4'-C1'-N1 | 6.84 | 113.67 | 108.20 |
| 53 | B5 | 2645 | G | N1-C6-O6 | 6.84 | 124.00 | 119.90 |
| 1 | AA | 212 | U | O4'-C1'-N1 | 6.84 | 113.67 | 108.20 |
| 53 | B5 | 181 | U | O4'-C1'-N1 | 6.84 | 113.67 | 108.20 |
| 1 | AA | 915 | U | O4'-C1'-N1 | 6.83 | 113.67 | 108.20 |
| 1 | AA | 999 | C | O4'-C1'-N1 | 6.83 | 113.67 | 108.20 |
| 53 | B5 | 145 | G | N1-C6-O6 | 6.83 | 124.00 | 119.90 |
| 53 | B5 | 2112 | U | O4'-C1'-N1 | 6.83 | 113.67 | 108.20 |
| 53 | B5 | 2651 | G | C5-C6-O6 | -6.83 | 124.50 | 128.60 |
| 53 | B5 | 445 | G | N1-C6-O6 | 6.83 | 124.00 | 119.90 |
| 1 | AA | 1656 | G | O4'-C1'-N9 | 6.83 | 113.67 | 108.20 |
| 53 | B5 | 969 | C | O4'-C1'-N1 | 6.83 | 113.67 | 108.20 |
| 53 | B5 | 1274 | A | O4'-C1'-N9 | 6.83 | 113.67 | 108.20 |
| 53 | B5 | 2388 | U | O4'-C1'-N1 | 6.83 | 113.67 | 108.20 |
| 1 | AA | 14 | C | O4'-C1'-N1 | 6.83 | 113.66 | 108.20 |
| 1 | AA | 867 | G | O4'-C4'-C3' | -6.83 | 97.17 | 104.00 |
| 1 | AA | 1008 | U | O4'-C1'-N1 | 6.83 | 113.66 | 108.20 |
| 1 | AA | 1746 | G | N1-C6-O6 | 6.83 | 124.00 | 119.90 |
| 53 | B5 | 2207 | A | O4'-C1'-N9 | 6.83 | 113.66 | 108.20 |
| 53 | B5 | 2474 | G | N1-C6-O6 | 6.83 | 124.00 | 119.90 |
| 1 | AA | 647 | G | N1-C6-O6 | 6.83 | 124.00 | 119.90 |
| 1 | AA | 946 | U | O4'-C1'-N1 | 6.83 | 113.66 | 108.20 |
| 53 | B5 | 2506 | U | O4'-C1'-N1 | 6.83 | 113.66 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 18 | G | N1-C6-O6 | 6.83 | 124.00 | 119.90 |
| 53 | B5 | 178 | U | O4'-C1'-N1 | 6.83 | 113.66 | 108.20 |
| 53 | B5 | 2322 | C | O4'-C1'-N1 | 6.83 | 113.66 | 108.20 |
| 1 | AA | 842 | C | O4'-C1'-N1 | 6.82 | 113.66 | 108.20 |
| 53 | B5 | 1340 | G | C5-C6-O6 | -6.82 | 124.51 | 128.60 |
| 53 | B5 | 2823 | G | C5-C6-O6 | -6.82 | 124.51 | 128.60 |
| 1 | AA | 1716 | G | N1-C6-O6 | 6.82 | 123.99 | 119.90 |
| 53 | B5 | 2454 | G | N1-C6-O6 | 6.82 | 123.99 | 119.90 |
| 1 | AA | 888 | U | O4'-C1'-N1 | 6.82 | 113.66 | 108.20 |
| 52 | B4 | 133 | G | N1-C6-O6 | 6.82 | 123.99 | 119.90 |
| 53 | B5 | 1097 | G | N1-C6-O6 | 6.82 | 123.99 | 119.90 |
| 53 | B5 | 1748 | G | C5-C6-O6 | -6.82 | 124.51 | 128.60 |
| 1 | AA | 1051 | U | O4'-C1'-N1 | 6.82 | 113.66 | 108.20 |
| 53 | B5 | 1855 | U | O4'-C1'-N1 | 6.82 | 113.66 | 108.20 |
| 53 | B5 | 2369 | G | N1-C6-O6 | 6.82 | 123.99 | 119.90 |
| 1 | AA | 120 | U | O4'-C1'-N1 | 6.82 | 113.65 | 108.20 |
| 51 | B3 | 1 | G | C5-C6-O6 | -6.82 | 124.51 | 128.60 |
| 53 | B5 | 3231 | U | O4'-C1'-N1 | 6.82 | 113.65 | 108.20 |
| 1 | AA | 185 | U | O4'-C1'-N1 | 6.82 | 113.65 | 108.20 |
| 53 | B5 | 1117 | G | C5-C6-O6 | -6.82 | 124.51 | 128.60 |
| 53 | B5 | 2548 | C | C6-N1-C2 | -6.82 | 117.57 | 120.30 |
| 1 | AA | 1453 | G | C5-C6-O6 | -6.81 | 124.51 | 128.60 |
| 53 | B5 | 838 | G | N1-C6-O6 | 6.81 | 123.99 | 119.90 |
| 53 | B5 | 2598 | G | N1-C6-O6 | 6.81 | 123.99 | 119.90 |
| 53 | B5 | 2829 | U | O4'-C1'-N1 | 6.81 | 113.65 | 108.20 |
| 1 | AA | 858 | G | C6-C5-N7 | -6.81 | 126.31 | 130.40 |
| 53 | B5 | 64 | G | C5-C6-O6 | -6.81 | 124.51 | 128.60 |
| 53 | B5 | 2333 | C | O4'-C1'-N1 | 6.81 | 113.65 | 108.20 |
| 53 | B5 | 2394 | G | O4'-C1'-N9 | 6.81 | 113.65 | 108.20 |
| 1 | AA | 1576 | U | O4'-C1'-N1 | 6.81 | 113.65 | 108.20 |
| 1 | AA | 304 | U | O4'-C1'-N1 | 6.81 | 113.65 | 108.20 |
| 52 | B4 | 122 | U | O4'-C1'-N1 | 6.81 | 113.65 | 108.20 |
| 52 | B4 | 158 | U | O4'-C1'-N1 | 6.81 | 113.65 | 108.20 |
| 53 | B5 | 1370 | G | N1-C6-O6 | 6.81 | 123.99 | 119.90 |
| 1 | AA | 1312 | U | O4'-C1'-N1 | 6.81 | 113.65 | 108.20 |
| 53 | B5 | 1833 | G | C5-C6-O6 | -6.81 | 124.52 | 128.60 |
| 53 | B5 | 1844 | C | O4'-C1'-N1 | 6.81 | 113.65 | 108.20 |
| 53 | B5 | 2723 | U | O4'-C1'-N1 | 6.81 | 113.65 | 108.20 |
| 53 | B5 | 3232 | G | N1-C6-O6 | 6.81 | 123.98 | 119.90 |
| 1 | AA | 468 | A | O4'-C1'-N9 | 6.81 | 113.64 | 108.20 |
| 1 | AA | 1042 | C | O4'-C1'-N1 | 6.81 | 113.64 | 108.20 |
| 1 | AA | 1076 | U | O4'-C1'-N1 | 6.81 | 113.64 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 1 | AA | 1466 | U | O4'-C1'-N1 | 6.81 | 113.64 | 108.20 |
| 53 | B5 | 331 | G | N1-C6-O6 | 6.81 | 123.98 | 119.90 |
| 53 | B5 | 1673 | G | N1-C6-O6 | 6.81 | 123.98 | 119.90 |
| 53 | B5 | 2446 | U | O4'-C1'-N1 | 6.81 | 113.64 | 108.20 |
| 53 | B5 | 2776 | C | O4'-C1'-N1 | 6.81 | 113.64 | 108.20 |
| 53 | B5 | 3082 | C | O4'-C1'-N1 | 6.81 | 113.64 | 108.20 |
| 1 | AA | 96 | G | N1-C6-O6 | 6.80 | 123.98 | 119.90 |
| 53 | B5 | 1848 | G | N1-C6-O6 | 6.80 | 123.98 | 119.90 |
| 53 | B5 | 2541 | U | O4'-C1'-N1 | 6.80 | 113.64 | 108.20 |
| 53 | B5 | 2745 | G | N1-C6-O6 | 6.80 | 123.98 | 119.90 |
| 53 | B5 | 2763 | U | O4'-C1'-N1 | 6.80 | 113.64 | 108.20 |
| 1 | AA | 659 | C | O4'-C1'-N1 | 6.80 | 113.64 | 108.20 |
| 51 | B3 | 36 | C | O4'-C1'-N1 | 6.80 | 113.64 | 108.20 |
| 51 | B3 | 49 | G | N1-C6-O6 | 6.80 | 123.98 | 119.90 |
| 53 | B5 | 938 | C | O4'-C1'-N1 | 6.80 | 113.64 | 108.20 |
| 53 | B5 | 1242 | G | N1-C6-O6 | 6.80 | 123.98 | 119.90 |
| 53 | B5 | 1782 | U | O4'-C1'-N1 | 6.80 | 113.64 | 108.20 |
| 53 | B5 | 2581 | U | O4'-C1'-N1 | 6.80 | 113.64 | 108.20 |
| 53 | B5 | 3080 | G | N1-C6-O6 | 6.80 | 123.98 | 119.90 |
| 53 | B5 | 1186 | G | C5-C6-O6 | -6.80 | 124.52 | 128.60 |
| 53 | B5 | 1417 | G | N1-C6-O6 | 6.80 | 123.98 | 119.90 |
| 53 | B5 | 1794 | G | C5-C6-O6 | -6.80 | 124.52 | 128.60 |
| 53 | B5 | 3263 | G | N1-C6-O6 | 6.80 | 123.98 | 119.90 |
| 53 | B5 | 2411 | U | O4'-C1'-N1 | 6.80 | 113.64 | 108.20 |
| 53 | B5 | 3064 | U | O4'-C1'-N1 | 6.80 | 113.64 | 108.20 |
| 19 | A7 | 18 | G | C2-N3-C4 | -6.80 | 108.50 | 111.90 |
| 53 | B5 | 641 | C | O4'-C1'-N1 | 6.80 | 113.64 | 108.20 |
| 53 | B5 | 1659 | U | O4'-C1'-N1 | 6.80 | 113.64 | 108.20 |
| 53 | B5 | 299 | G | O4'-C1'-N9 | 6.79 | 113.64 | 108.20 |
| 53 | B5 | 887 | G | N1-C6-O6 | 6.79 | 123.98 | 119.90 |
| 19 | A7 | 30 | G | C2-N3-C4 | 6.79 | 115.30 | 111.90 |
| 19 | A7 | 44 | A | N1-C2-N3 | -6.79 | 125.91 | 129.30 |
| 53 | B5 | 2596 | U | O4'-C1'-N1 | 6.79 | 113.63 | 108.20 |
| 53 | B5 | 3100 | U | O4'-C1'-N1 | 6.79 | 113.63 | 108.20 |
| 52 | B4 | 55 | U | O4'-C1'-N1 | 6.79 | 113.63 | 108.20 |
| 53 | B5 | 1431 | G | N1-C6-O6 | 6.79 | 123.97 | 119.90 |
| 53 | B5 | 2983 | C | O4'-C1'-N1 | 6.79 | 113.63 | 108.20 |
| 1 | AA | 447 | U | O4'-C1'-N1 | 6.79 | 113.63 | 108.20 |
| 1 | AA | 575 | C | O4'-C1'-N1 | 6.79 | 113.63 | 108.20 |
| 52 | B4 | 100 | U | O4'-C1'-N1 | 6.79 | 113.63 | 108.20 |
| 52 | B4 | 123 | G | N1-C6-O6 | 6.79 | 123.97 | 119.90 |
| 53 | B5 | 17 | G | N1-C6-O6 | 6.79 | 123.97 | 119.90 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 1101 | G | N1-C6-O6 | 6.79 | 123.97 | 119.90 |
| 53 | B5 | 2219 | A | P-O3'-C3' | 6.79 | 127.85 | 119.70 |
| 1 | AA | 361 | C | O4'-C1'-N1 | 6.79 | 113.63 | 108.20 |
| 1 | AA | 1545 | A | C2'-C3'-O3' | 6.79 | 124.56 | 113.70 |
| 53 | B5 | 1769 | G | O4'-C1'-N9 | 6.79 | 113.63 | 108.20 |
| 53 | B5 | 1808 | G | N1-C6-O6 | 6.79 | 123.97 | 119.90 |
| 53 | B5 | 2668 | U | O4'-C1'-N1 | 6.79 | 113.63 | 108.20 |
| 1 | AA | 1454 | C | O4'-C1'-N1 | 6.78 | 113.63 | 108.20 |
| 19 | A7 | 75 | C | C5-C4-N4 | -6.78 | 115.45 | 120.20 |
| 51 | B3 | 67 | C | O4'-C1'-N1 | 6.78 | 113.63 | 108.20 |
| 53 | B5 | 41 | G | N1-C6-O6 | 6.78 | 123.97 | 119.90 |
| 53 | B5 | 168 | U | O4'-C1'-N1 | 6.78 | 113.63 | 108.20 |
| 53 | B5 | 322 | U | O4'-C1'-N1 | 6.78 | 113.63 | 108.20 |
| 52 | B4 | 20 | U | O4'-C1'-N1 | 6.78 | 113.63 | 108.20 |
| 53 | B5 | 588 | G | N1-C6-O6 | 6.78 | 123.97 | 119.90 |
| 1 | AA | 240 | U | C2-N1-C1' | 6.78 | 125.84 | 117.70 |
| 53 | B5 | 764 | U | O4'-C1'-N1 | 6.78 | 113.62 | 108.20 |
| 53 | B5 | 1113 | G | N1-C6-O6 | 6.78 | 123.97 | 119.90 |
| 53 | B5 | 2676 | A | O4'-C1'-N9 | 6.78 | 113.62 | 108.20 |
| 1 | AA | 57 | G | C5-C6-O6 | -6.78 | 124.53 | 128.60 |
| 1 | AA | 1019 | A | O4'-C1'-N9 | 6.78 | 113.62 | 108.20 |
| 1 | AA | 1274 | G | C5-C6-O6 | -6.78 | 124.53 | 128.60 |
| 1 | AA | 1497 | G | C5-C6-O6 | -6.78 | 124.53 | 128.60 |
| 53 | B5 | 320 | G | N1-C6-O6 | 6.78 | 123.97 | 119.90 |
| 53 | B5 | 814 | U | O4'-C1'-N1 | 6.78 | 113.62 | 108.20 |
| 53 | B5 | 2105 | G | N1-C6-O6 | 6.78 | 123.97 | 119.90 |
| 53 | B5 | 2939 | G | O4'-C1'-N9 | 6.78 | 113.62 | 108.20 |
| 53 | B5 | 3339 | A | O4'-C1'-N9 | 6.78 | 113.62 | 108.20 |
| 1 | AA | 588 | U | O4'-C1'-N1 | 6.78 | 113.62 | 108.20 |
| 1 | AA | 635 | A | O4'-C1'-N9 | 6.78 | 113.62 | 108.20 |
| 1 | AA | 1518 | U | C4'-C3'-C2' | 6.78 | 109.38 | 102.60 |
| 1 | AA | 1522 | A | P-O3'-C3' | -6.78 | 111.57 | 119.70 |
| 1 | AA | 1547 | C | C1'-C2'-O2' | 6.78 | 130.92 | 110.60 |
| 1 | AA | 1681 | C | O4'-C1'-N1 | 6.78 | 113.62 | 108.20 |
| 53 | B5 | 141 | C | O4'-C1'-N1 | 6.78 | 113.62 | 108.20 |
| 53 | B5 | 3354 | U | O4'-C1'-N1 | 6.78 | 113.62 | 108.20 |
| 1 | AA | 1484 | G | N1-C6-O6 | 6.77 | 123.97 | 119.90 |
| 19 | A7 | 3 | G | C8-N9-C4 | -6.77 | 103.69 | 106.40 |
| 19 | A7 | 62 | A | C5'-C4'-C3' | -6.77 | 105.17 | 116.00 |
| 53 | B5 | 1528 | G | N1-C6-O6 | 6.77 | 123.96 | 119.90 |
| 53 | B5 | 1825 | G | C5-C6-O6 | -6.77 | 124.54 | 128.60 |
| 1 | AA | 1034 | G | N1-C6-O6 | 6.77 | 123.96 | 119.90 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 2614 | G | C5-C6-O6 | -6.77 | 124.54 | 128.60 |
| 1 | AA | 893 | U | O4'-C1'-N1 | 6.77 | 113.61 | 108.20 |
| 53 | B5 | 1877 | U | O4'-C1'-N1 | 6.77 | 113.61 | 108.20 |
| 1 | AA | 660 | G | N1-C6-O6 | 6.77 | 123.96 | 119.90 |
| 1 | AA | 1194 | G | N1-C6-O6 | 6.77 | 123.96 | 119.90 |
| 52 | B4 | 75 | G | N1-C6-O6 | 6.77 | 123.96 | 119.90 |
| 53 | B5 | 78 | U | O4'-C1'-N1 | 6.77 | 113.61 | 108.20 |
| 53 | B5 | 1058 | U | O4'-C1'-N1 | 6.77 | 113.61 | 108.20 |
| 53 | B5 | 1184 | A | O4'-C1'-N9 | 6.77 | 113.61 | 108.20 |
| 53 | B5 | 1141 | C | O4'-C1'-N1 | 6.77 | 113.61 | 108.20 |
| 53 | B5 | 1421 | G | C5-C6-O6 | -6.77 | 124.54 | 128.60 |
| 53 | B5 | 2617 | U | O4'-C1'-N1 | 6.76 | 113.61 | 108.20 |
| 53 | B5 | 36 | C | O4'-C1'-N1 | 6.76 | 113.61 | 108.20 |
| 53 | B5 | 977 | U | O4'-C1'-N1 | 6.76 | 113.61 | 108.20 |
| 53 | B5 | 1319 | G | C5-C6-O6 | -6.76 | 124.54 | 128.60 |
| 53 | B5 | 1365 | G | C5-C6-O6 | -6.76 | 124.54 | 128.60 |
| 1 | AA | 1209 | G | O4'-C1'-N9 | 6.76 | 113.61 | 108.20 |
| 53 | B5 | 727 | G | C5-C6-O6 | -6.76 | 124.54 | 128.60 |
| 53 | B5 | 900 | G | N1-C6-O6 | 6.76 | 123.96 | 119.90 |
| 53 | B5 | 1411 | C | P-O3'-C3' | 6.76 | 127.81 | 119.70 |
| 53 | B5 | 1581 | C | P-O3'-C3' | 6.76 | 127.81 | 119.70 |
| 53 | B5 | 2499 | U | O4'-C1'-N1 | 6.76 | 113.61 | 108.20 |
| 1 | AA | 87 | C | O4'-C1'-N1 | 6.76 | 113.61 | 108.20 |
| 51 | B3 | 111 | U | O4'-C1'-N1 | 6.76 | 113.61 | 108.20 |
| 53 | B5 | 712 | G | O4'-C1'-N9 | 6.76 | 113.61 | 108.20 |
| 53 | B5 | 994 | G | O4'-C1'-N9 | 6.76 | 113.61 | 108.20 |
| 1 | AA | 1456 | G | N1-C6-O6 | 6.76 | 123.95 | 119.90 |
| 19 | A7 | 75 | C | C4-C5-C6 | -6.76 | 114.02 | 117.40 |
| 53 | B5 | 1123 | U | O4'-C1'-N1 | 6.76 | 113.61 | 108.20 |
| 53 | B5 | 2426 | U | O4'-C1'-N1 | 6.76 | 113.61 | 108.20 |
| 1 | AA | 722 | G | N1-C6-O6 | 6.76 | 123.95 | 119.90 |
| 1 | AA | 1285 | G | N1-C6-O6 | 6.76 | 123.95 | 119.90 |
| 52 | B4 | 150 | G | C5-C6-O6 | -6.76 | 124.55 | 128.60 |
| 53 | B5 | 800 | G | C5-C6-O6 | -6.76 | 124.55 | 128.60 |
| 53 | B5 | 2693 | C | O4'-C1'-N1 | 6.76 | 113.61 | 108.20 |
| 52 | B4 | 1 | A | O4'-C1'-N9 | 6.75 | 113.60 | 108.20 |
| 1 | AA | 944 | U | O4'-C1'-N1 | 6.75 | 113.60 | 108.20 |
| 53 | B5 | 749 | C | O4'-C1'-N1 | 6.75 | 113.60 | 108.20 |
| 53 | B5 | 1531 | C | O4'-C1'-N1 | 6.75 | 113.60 | 108.20 |
| 53 | B5 | 2121 | G | N1-C6-O6 | 6.75 | 123.95 | 119.90 |
| 53 | B5 | 2850 | G | N1-C6-O6 | 6.75 | 123.95 | 119.90 |
| 1 | AA | 70 | C | O4'-C1'-N1 | 6.75 | 113.60 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1 | AA | 426 | G | N1-C6-O6 | 6.75 | 123.95 | 119.90 |
| 1 | AA | 747 | C | O4'-C1'-N1 | 6.75 | 113.60 | 108.20 |
| 1 | AA | 826 | U | O4'-C1'-N1 | 6.75 | 113.60 | 108.20 |
| 1 | AA | 903 | G | N1-C6-O6 | 6.75 | 123.95 | 119.90 |
| 1 | AA | 1552 | U | C4'-C3'-C2' | 6.75 | 109.35 | 102.60 |
| 53 | B5 | 897 | U | O4'-C1'-N1 | 6.75 | 113.60 | 108.20 |
| 53 | B5 | 2437 | G | N1-C6-O6 | 6.75 | 123.95 | 119.90 |
| 1 | AA | 29 | U | O4'-C1'-N1 | 6.75 | 113.60 | 108.20 |
| 53 | B5 | 3088 | G | C5-C6-O6 | -6.75 | 124.55 | 128.60 |
| 1 | AA | 461 | G | N1-C6-O6 | 6.75 | 123.95 | 119.90 |
| 1 | AA | 1426 | G | N1-C6-O6 | 6.75 | 123.95 | 119.90 |
| 1 | AA | 1561 | C | O4'-C1'-N1 | 6.75 | 113.60 | 108.20 |
| 51 | B3 | 16 | U | O4'-C1'-N1 | 6.75 | 113.60 | 108.20 |
| 1 | AA | 1516 | C | O4'-C1'-N1 | 6.75 | 113.60 | 108.20 |
| 1 | AA | 1517 | U | O4'-C4'-C3' | -6.75 | 97.25 | 104.00 |
| 53 | B5 | 2173 | U | O4'-C1'-N1 | 6.75 | 113.60 | 108.20 |
| 1 | AA | 1198 | A | O4'-C1'-N9 | 6.74 | 113.59 | 108.20 |
| 1 | AA | 1208 | G | N1-C6-O6 | 6.74 | 123.94 | 119.90 |
| 1 | AA | 667 | U | O4'-C1'-N1 | 6.74 | 113.59 | 108.20 |
| 1 | AA | 895 | G | N1-C6-O6 | 6.74 | 123.94 | 119.90 |
| 53 | B5 | 1164 | G | C5-C6-O6 | -6.74 | 124.56 | 128.60 |
| 1 | AA | 768 | C | O4'-C1'-N1 | 6.74 | 113.59 | 108.20 |
| 53 | B5 | 631 | U | O4'-C1'-N1 | 6.74 | 113.59 | 108.20 |
| 53 | B5 | 2912 | G | N1-C6-O6 | 6.74 | 123.94 | 119.90 |
| 1 | AA | 179 | A | O4'-C1'-N9 | 6.74 | 113.59 | 108.20 |
| 1 | AA | 540 | G | N1-C6-O6 | 6.74 | 123.94 | 119.90 |
| 1 | AA | 546 | U | O4'-C1'-N1 | 6.74 | 113.59 | 108.20 |
| 1 | AA | 1013 | G | C5-C6-O6 | -6.74 | 124.56 | 128.60 |
| 1 | AA | 1582 | G | N1-C6-O6 | 6.74 | 123.94 | 119.90 |
| 53 | B5 | 616 | G | N1-C6-O6 | 6.74 | 123.94 | 119.90 |
| 53 | B5 | 1668 | G | C5-C6-O6 | -6.74 | 124.56 | 128.60 |
| 53 | B5 | 2724 | U | O4'-C1'-N1 | 6.74 | 113.59 | 108.20 |
| 53 | B5 | 3107 | U | O4'-C1'-N1 | 6.74 | 113.59 | 108.20 |
| 53 | B5 | 1429 | G | C5-C6-O6 | -6.73 | 124.56 | 128.60 |
| 53 | B5 | 1544 | G | C5-C6-O6 | -6.73 | 124.56 | 128.60 |
| 53 | B5 | 2418 | G | N1-C6-O6 | 6.73 | 123.94 | 119.90 |
| 1 | AA | 551 | G | N1-C6-O6 | 6.73 | 123.94 | 119.90 |
| 1 | AA | 1144 | A | C5-C6-N6 | -6.73 | 118.32 | 123.70 |
| 52 | B4 | 121 | U | O4'-C1'-N1 | 6.73 | 113.58 | 108.20 |
| 53 | B5 | 872 | U | O4'-C1'-N1 | 6.73 | 113.58 | 108.20 |
| 53 | B5 | 2234 | G | N1-C6-O6 | 6.73 | 123.94 | 119.90 |
| 53 | B5 | 2465 | G | C5-C6-O6 | -6.73 | 124.56 | 128.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 1 | AA | 334 | G | N1-C6-O6 | 6.73 | 123.94 | 119.90 |
| 1 | AA | 1221 | U | O4'-C1'-N1 | 6.73 | 113.58 | 108.20 |
| 53 | B5 | 101 | G | N1-C6-O6 | 6.73 | 123.94 | 119.90 |
| 53 | B5 | 176 | G | O4'-C1'-N9 | 6.73 | 113.58 | 108.20 |
| 53 | B5 | 946 | U | O4'-C1'-N1 | 6.73 | 113.58 | 108.20 |
| 1 | AA | 347 | G | C5-C6-O6 | -6.72 | 124.56 | 128.60 |
| 1 | AA | 1755 | G | O4'-C1'-N9 | 6.72 | 113.58 | 108.20 |
| 19 | A7 | 47 | U | C2-N3-C4 | -6.72 | 122.97 | 127.00 |
| 53 | B5 | 1530 | U | O4'-C1'-N1 | 6.72 | 113.58 | 108.20 |
| 53 | B5 | 2962 | U | O4'-C1'-N1 | 6.72 | 113.58 | 108.20 |
| 1 | AA | 42 | G | N1-C6-O6 | 6.72 | 123.93 | 119.90 |
| 51 | B3 | 63 | G | O4'-C1'-N9 | 6.72 | 113.58 | 108.20 |
| 53 | B5 | 1568 | U | O4'-C1'-N1 | 6.72 | 113.58 | 108.20 |
| 53 | B5 | 2307 | G | C5-C6-O6 | -6.72 | 124.57 | 128.60 |
| 53 | B5 | 2570 | U | O4'-C1'-N1 | 6.72 | 113.58 | 108.20 |
| 1 | AA | 154 | G | O4'-C1'-N9 | 6.72 | 113.58 | 108.20 |
| 1 | AA | 95 | G | N1-C6-O6 | 6.72 | 123.93 | 119.90 |
| 1 | AA | 1146 | G | N1-C6-O6 | 6.72 | 123.93 | 119.90 |
| 52 | B4 | 94 | C | O4'-C1'-N1 | 6.72 | 113.58 | 108.20 |
| 53 | B5 | 83 | U | O4'-C1'-N1 | 6.72 | 113.58 | 108.20 |
| 53 | B5 | 280 | U | O4'-C1'-N1 | 6.72 | 113.58 | 108.20 |
| 53 | B5 | 742 | G | N1-C6-O6 | 6.72 | 123.93 | 119.90 |
| 53 | B5 | 1916 | U | O4'-C1'-N1 | 6.72 | 113.58 | 108.20 |
| 53 | B5 | 2623 | G | C5-C6-O6 | -6.72 | 124.57 | 128.60 |
| 53 | B5 | 2760 | C | O4'-C1'-N1 | 6.72 | 113.58 | 108.20 |
| 53 | B5 | 3074 | G | O4'-C1'-N9 | 6.72 | 113.58 | 108.20 |
| 53 | B5 | 2374 | C | O4'-C1'-N1 | 6.72 | 113.57 | 108.20 |
| 1 | AA | 411 | C | O4'-C1'-N1 | 6.72 | 113.57 | 108.20 |
| 53 | B5 | 1214 | U | O4'-C1'-N1 | 6.72 | 113.57 | 108.20 |
| 53 | B5 | 2227 | C | O4'-C1'-N1 | 6.72 | 113.57 | 108.20 |
| 1 | AA | 958 | U | O4'-C1'-N1 | 6.71 | 113.57 | 108.20 |
| 1 | AA | 1329 | C | O4'-C1'-N1 | 6.71 | 113.57 | 108.20 |
| 53 | B5 | 1517 | G | N1-C6-O6 | 6.71 | 123.93 | 119.90 |
| 1 | AA | 571 | G | N1-C6-O6 | 6.71 | 123.93 | 119.90 |
| 1 | AA | 586 | G | N1-C6-O6 | 6.71 | 123.93 | 119.90 |
| 1 | AA | 1010 | G | N1-C6-O6 | 6.71 | 123.93 | 119.90 |
| 1 | AA | 1053 | U | O4'-C1'-N1 | 6.71 | 113.57 | 108.20 |
| 53 | B5 | 1564 | U | O4'-C1'-N1 | 6.71 | 113.57 | 108.20 |
| 53 | B5 | 2125 | A | O4'-C1'-N9 | 6.71 | 113.57 | 108.20 |
| 53 | B5 | 509 | U | O4'-C1'-N1 | 6.71 | 113.57 | 108.20 |
| 53 | B5 | 549 | U | O4'-C1'-N1 | 6.71 | 113.57 | 108.20 |
| 53 | B5 | 2565 | U | O4'-C1'-N1 | 6.71 | 113.57 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1 | AA | 196 | G | N1-C6-O6 | 6.71 | 123.92 | 119.90 |
| 1 | AA | 1745 | G | N1-C6-O6 | 6.71 | 123.92 | 119.90 |
| 52 | B4 | 156 | U | O4'-C1'-N1 | 6.71 | 113.57 | 108.20 |
| 53 | B5 | 237 | G | C5-C6-O6 | -6.71 | 124.58 | 128.60 |
| 53 | B5 | 591 | U | O4'-C1'-N1 | 6.71 | 113.57 | 108.20 |
| 53 | B5 | 2153 | U | O4'-C1'-N1 | 6.71 | 113.57 | 108.20 |
| 53 | B5 | 2992 | U | O4'-C1'-N1 | 6.71 | 113.57 | 108.20 |
| 1 | AA | 1592 | G | N1-C6-O6 | 6.71 | 123.92 | 119.90 |
| 1 | AA | 1645 | U | O4'-C1'-N1 | 6.71 | 113.56 | 108.20 |
| 53 | B5 | 1066 | G | N1-C6-O6 | 6.71 | 123.92 | 119.90 |
| 53 | B5 | 2592 | G | N1-C6-O6 | 6.71 | 123.92 | 119.90 |
| 1 | AA | 921 | G | N1-C6-O6 | 6.71 | 123.92 | 119.90 |
| 53 | B5 | 2253 | G | N1-C6-O6 | 6.71 | 123.92 | 119.90 |
| 53 | B5 | 2699 | G | N1-C6-O6 | 6.71 | 123.92 | 119.90 |
| 53 | B5 | 2815 | G | N1-C6-O6 | 6.71 | 123.92 | 119.90 |
| 53 | B5 | 2875 | U | O4'-C1'-N1 | 6.71 | 113.56 | 108.20 |
| 1 | AA | 292 | U | O4'-C1'-N1 | 6.70 | 113.56 | 108.20 |
| 1 | AA | 1559 | U | O4'-C1'-N1 | 6.70 | 113.56 | 108.20 |
| 53 | B5 | 2429 | G | N1-C6-O6 | 6.70 | 123.92 | 119.90 |
| 51 | B3 | 103 | U | O4'-C1'-N1 | 6.70 | 113.56 | 108.20 |
| 1 | AA | 778 | G | N1-C6-O6 | 6.70 | 123.92 | 119.90 |
| 1 | AA | 831 | U | O4'-C1'-N1 | 6.70 | 113.56 | 108.20 |
| 1 | AA | 1546 | G | C2'-C3'-O3' | -6.70 | 94.76 | 109.50 |
| 1 | AA | 1769 | U | O4'-C1'-N1 | 6.70 | 113.56 | 108.20 |
| 1 | AA | 1795 | A | O4'-C1'-N9 | 6.70 | 113.56 | 108.20 |
| 53 | B5 | 2607 | G | N1-C6-O6 | 6.70 | 123.92 | 119.90 |
| 53 | B5 | 2620 | G | C5-C6-O6 | -6.70 | 124.58 | 128.60 |
| 1 | AA | 797 | G | OP1-P-OP2 | -6.70 | 109.55 | 119.60 |
| 1 | AA | 1549 | U | C2'-C3'-O3' | 6.70 | 124.42 | 113.70 |
| 19 | A7 | 65 | G | N7-C8-N9 | 6.70 | 116.45 | 113.10 |
| 53 | B5 | 505 | G | O4'-C1'-N9 | 6.70 | 113.56 | 108.20 |
| 53 | B5 | 2901 | G | N1-C6-O6 | 6.70 | 123.92 | 119.90 |
| 53 | B5 | 2266 | U | O4'-C1'-N1 | 6.70 | 113.56 | 108.20 |
| 1 | AA | 268 | C | O4'-C1'-N1 | 6.70 | 113.56 | 108.20 |
| 19 | A7 | 14 | A | C5-N7-C8 | 6.70 | 107.25 | 103.90 |
| 30 | BF | 138 | TYR | CB-CG-CD1 | 6.70 | 125.02 | 121.00 |
| 52 | B4 | 50 | C | O4'-C1'-N1 | 6.70 | 113.56 | 108.20 |
| 53 | B5 | 494 | G | O4'-C1'-N9 | 6.70 | 113.56 | 108.20 |
| 53 | B5 | 714 | G | C5-C6-O6 | -6.70 | 124.58 | 128.60 |
| 53 | B5 | 1463 | U | O4'-C1'-N1 | 6.70 | 113.56 | 108.20 |
| 53 | B5 | 3061 | G | C5-C6-O6 | -6.70 | 124.58 | 128.60 |
| 53 | B5 | 564 | G | N1-C6-O6 | 6.69 | 123.92 | 119.90 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1 | AA | 1577 | U | O4'-C1'-N1 | 6.69 | 113.55 | 108.20 |
| 24 | B9 | 14 | TYR | CB-CG-CD2 | 6.69 | 125.02 | 121.00 |
| 53 | B5 | 2190 | U | O4'-C1'-N1 | 6.69 | 113.55 | 108.20 |
| 1 | AA | 857 | U | O5'-C5'-C4' | 6.69 | 124.41 | 111.70 |
| 1 | AA | 1540 | G | N1-C6-O6 | 6.69 | 123.91 | 119.90 |
| 52 | B4 | 29 | U | O4'-C1'-N1 | 6.69 | 113.55 | 108.20 |
| 53 | B5 | 2442 | G | N1-C6-O6 | 6.69 | 123.91 | 119.90 |
| 53 | B5 | 2880 | U | O4'-C1'-N1 | 6.69 | 113.55 | 108.20 |
| 53 | B5 | 3199 | G | N1-C6-O6 | 6.69 | 123.91 | 119.90 |
| 1 | AA | 1260 | G | N1-C6-O6 | 6.69 | 123.91 | 119.90 |
| 53 | B5 | 1737 | U | O4'-C1'-N1 | 6.69 | 113.55 | 108.20 |
| 53 | B5 | 147 | U | O4'-C1'-N1 | 6.69 | 113.55 | 108.20 |
| 53 | B5 | 1487 | G | C5-C6-O6 | -6.69 | 124.59 | 128.60 |
| 53 | B5 | 3116 | G | O4'-C1'-N9 | 6.69 | 113.55 | 108.20 |
| 1 | AA | 484 | C | O4'-C1'-N1 | 6.68 | 113.55 | 108.20 |
| 1 | AA | 907 | U | O4'-C1'-N1 | 6.68 | 113.55 | 108.20 |
| 1 | AA | 1464 | G | N1-C6-O6 | 6.68 | 123.91 | 119.90 |
| 1 | AA | 1690 | G | N1-C6-O6 | 6.68 | 123.91 | 119.90 |
| 19 | A7 | 14 | A | N7-C8-N9 | -6.68 | 110.46 | 113.80 |
| 53 | B5 | 3264 | G | C5-C6-O6 | -6.68 | 124.59 | 128.60 |
| 1 | AA | 1161 | G | N1-C6-O6 | 6.68 | 123.91 | 119.90 |
| 1 | AA | 1382 | G | O4'-C1'-N9 | 6.68 | 113.55 | 108.20 |
| 1 | AA | 1671 | G | N1-C6-O6 | 6.68 | 123.91 | 119.90 |
| 19 | A7 | 4 | G | C6-C5-N7 | 6.68 | 134.41 | 130.40 |
| 42 | BR | 94 | TYR | CB-CG-CD1 | -6.68 | 116.99 | 121.00 |
| 53 | B5 | 354 | U | O4'-C1'-N1 | 6.68 | 113.55 | 108.20 |
| 53 | B5 | 1380 | G | O4'-C1'-N9 | 6.68 | 113.55 | 108.20 |
| 53 | B5 | 2534 | G | N1-C6-O6 | 6.68 | 123.91 | 119.90 |
| 1 | AA | 1344 | U | O4'-C1'-N1 | 6.68 | 113.55 | 108.20 |
| 53 | B5 | 2618 | G | C5-C6-O6 | -6.68 | 124.59 | 128.60 |
| 1 | AA | 1506 | U | O4'-C1'-N1 | 6.68 | 113.54 | 108.20 |
| 1 | AA | 1636 | G | C1'-O4'-C4' | -6.68 | 104.56 | 109.90 |
| 53 | B5 | 2158 | A | P-O3'-C3' | 6.68 | 127.72 | 119.70 |
| 53 | B5 | 2809 | C | O4'-C1'-N1 | 6.68 | 113.54 | 108.20 |
| 53 | B5 | 3115 | C | O4'-C1'-N1 | 6.68 | 113.54 | 108.20 |
| 53 | B5 | 1172 | G | N1-C6-O6 | 6.68 | 123.91 | 119.90 |
| 53 | B5 | 1819 | U | O4'-C1'-N1 | 6.68 | 113.54 | 108.20 |
| 53 | B5 | 2986 | U | O4'-C1'-N1 | 6.68 | 113.54 | 108.20 |
| 53 | B5 | 3019 | U | O4'-C1'-N1 | 6.68 | 113.54 | 108.20 |
| 1 | AA | 106 | U | O4'-C1'-N1 | 6.68 | 113.54 | 108.20 |
| 53 | B5 | 3098 | G | C5-C6-O6 | -6.68 | 124.59 | 128.60 |
| 1 | AA | 1632 | C | P-O3'-C3' | -6.67 | 111.69 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 263 | C | O4'-C1'-N1 | 6.67 | 113.54 | 108.20 |
| 53 | B5 | 1408 | G | N1-C6-O6 | 6.67 | 123.91 | 119.90 |
| 53 | B5 | 1470 | U | O4'-C1'-N1 | 6.67 | 113.54 | 108.20 |
| 53 | B5 | 3284 | G | C5-C6-O6 | -6.67 | 124.60 | 128.60 |
| 53 | B5 | 1612 | A | O4'-C1'-N9 | 6.67 | 113.54 | 108.20 |
| 1 | AA | 1249 | U | O4'-C1'-N1 | 6.67 | 113.54 | 108.20 |
| 1 | AA | 1448 | U | O4'-C1'-N1 | 6.67 | 113.54 | 108.20 |
| 53 | B5 | 410 | U | O4'-C1'-N1 | 6.67 | 113.54 | 108.20 |
| 53 | B5 | 996 | U | O4'-C1'-N1 | 6.67 | 113.54 | 108.20 |
| 1 | AA | 496 | G | N1-C6-O6 | 6.67 | 123.90 | 119.90 |
| 53 | B5 | 155 | G | C5-C6-O6 | -6.67 | 124.60 | 128.60 |
| 53 | B5 | 739 | G | O4'-C1'-N9 | 6.67 | 113.54 | 108.20 |
| 53 | B5 | 2469 | G | C5-C6-O6 | -6.67 | 124.60 | 128.60 |
| 51 | B3 | 5 | G | O4'-C1'-N9 | 6.67 | 113.53 | 108.20 |
| 53 | B5 | 471 | U | O4'-C1'-N1 | 6.67 | 113.53 | 108.20 |
| 53 | B5 | 524 | C | O4'-C1'-N1 | 6.67 | 113.53 | 108.20 |
| 53 | B5 | 619 | A | O4'-C1'-N9 | 6.67 | 113.53 | 108.20 |
| 53 | B5 | 625 | G | N1-C6-O6 | 6.67 | 123.90 | 119.90 |
| 53 | B5 | 627 | U | O4'-C1'-N1 | 6.67 | 113.53 | 108.20 |
| 53 | B5 | 609 | G | C5-C6-O6 | -6.67 | 124.60 | 128.60 |
| 53 | B5 | 2610 | G | N1-C6-O6 | 6.67 | 123.90 | 119.90 |
| 53 | B5 | 2806 | U | O4'-C1'-N1 | 6.67 | 113.53 | 108.20 |
| 53 | B5 | 733 | G | N1-C6-O6 | 6.67 | 123.90 | 119.90 |
| 53 | B5 | 2599 | U | O4'-C1'-N1 | 6.67 | 113.53 | 108.20 |
| 1 | AA | 633 | U | O4'-C1'-N1 | 6.66 | 113.53 | 108.20 |
| 1 | AA | 834 | G | O4'-C1'-N9 | 6.66 | 113.53 | 108.20 |
| 51 | B3 | 46 | A | O4'-C1'-N9 | 6.66 | 113.53 | 108.20 |
| 53 | B5 | 632 | G | N1-C6-O6 | 6.66 | 123.90 | 119.90 |
| 1 | AA | 699 | U | O4'-C1'-N1 | 6.66 | 113.53 | 108.20 |
| 1 | AA | 610 | G | N1-C6-O6 | 6.66 | 123.90 | 119.90 |
| 16 | AS | 97 | TYR | CB-CG-CD2 | -6.66 | 117.00 | 121.00 |
| 53 | B5 | 860 | G | N1-C6-O6 | 6.66 | 123.90 | 119.90 |
| 53 | B5 | 1651 | U | O4'-C1'-N1 | 6.66 | 113.53 | 108.20 |
| 1 | AA | 1200 | A | C6-C5-N7 | 6.66 | 136.96 | 132.30 |
| 52 | B4 | 31 | G | O4'-C1'-N9 | 6.66 | 113.53 | 108.20 |
| 53 | B5 | 1683 | A | O4'-C1'-N9 | 6.66 | 113.53 | 108.20 |
| 53 | B5 | 1874 | A | O4'-C1'-N9 | 6.66 | 113.53 | 108.20 |
| 53 | B5 | 1942 | U | O4'-C1'-N1 | 6.66 | 113.53 | 108.20 |
| 1 | AA | 1233 | G | N1-C6-O6 | 6.66 | 123.89 | 119.90 |
| 53 | B5 | 618 | C | O4'-C1'-N1 | 6.66 | 113.53 | 108.20 |
| 1 | AA | 702 | G | N1-C6-O6 | 6.66 | 123.89 | 119.90 |
| 19 | A7 | 18 | G | C6-C5-N7 | 6.66 | 134.39 | 130.40 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 51 | B3 | 118 | U | O4'-C1'-N1 | 6.66 | 113.52 | 108.20 |
| 53 | B5 | 3045 | G | N1-C6-O6 | 6.66 | 123.89 | 119.90 |
| 53 | B5 | 3310 | A | C5-C6-N6 | -6.66 | 118.38 | 123.70 |
| 53 | B5 | 2886 | U | O4'-C1'-N1 | 6.65 | 113.52 | 108.20 |
| 53 | B5 | 2915 | U | O4'-C1'-N1 | 6.65 | 113.52 | 108.20 |
| 53 | B5 | 3075 | G | O4'-C1'-N9 | 6.65 | 113.52 | 108.20 |
| 1 | AA | 1723 | U | O4'-C1'-N1 | 6.65 | 113.52 | 108.20 |
| 53 | B5 | 58 | G | O4'-C1'-N9 | 6.65 | 113.52 | 108.20 |
| 53 | B5 | 2791 | G | O4'-C1'-N9 | 6.65 | 113.52 | 108.20 |
| 53 | B5 | 2839 | G | N1-C6-O6 | 6.65 | 123.89 | 119.90 |
| 53 | B5 | 3346 | U | O4'-C1'-N1 | 6.65 | 113.52 | 108.20 |
| 51 | B3 | 85 | G | N1-C6-O6 | 6.65 | 123.89 | 119.90 |
| 53 | B5 | 2945 | G | C5-C6-O6 | -6.65 | 124.61 | 128.60 |
| 1 | AA | 1750 | U | O4'-C1'-N1 | 6.65 | 113.52 | 108.20 |
| 53 | B5 | 137 | G | O4'-C1'-N9 | 6.65 | 113.52 | 108.20 |
| 1 | AA | 830 | U | O4'-C1'-N1 | 6.64 | 113.52 | 108.20 |
| 52 | B4 | 153 | U | O4'-C1'-N1 | 6.64 | 113.52 | 108.20 |
| 53 | B5 | 2324 | A | O4'-C1'-N9 | 6.64 | 113.52 | 108.20 |
| 53 | B5 | 3286 | G | N1-C6-O6 | 6.64 | 123.89 | 119.90 |
| 1 | AA | 23 | G | N1-C6-O6 | 6.64 | 123.89 | 119.90 |
| 1 | AA | 822 | U | O4'-C1'-N1 | 6.64 | 113.51 | 108.20 |
| 1 | AA | 886 | U | O4'-C1'-N1 | 6.64 | 113.51 | 108.20 |
| 19 | A7 | 15 | G | C1'-O4'-C4' | -6.64 | 104.59 | 109.90 |
| 53 | B5 | 189 | G | O4'-C1'-N9 | 6.64 | 113.51 | 108.20 |
| 1 | AA | 1610 | U | P-O3'-C3' | 6.64 | 127.67 | 119.70 |
| 53 | B5 | 1469 | C | O4'-C1'-N1 | 6.64 | 113.51 | 108.20 |
| 53 | B5 | 1570 | U | O4'-C1'-N1 | 6.64 | 113.51 | 108.20 |
| 53 | B5 | 1914 | G | N1-C6-O6 | 6.64 | 123.88 | 119.90 |
| 53 | B5 | 2300 | G | N1-C6-O6 | 6.64 | 123.88 | 119.90 |
| 1 | AA | 73 | U | O4'-C1'-N1 | 6.64 | 113.51 | 108.20 |
| 53 | B5 | 301 | G | O4'-C1'-N9 | 6.64 | 113.51 | 108.20 |
| 1 | AA | 404 | G | N1-C6-O6 | 6.64 | 123.88 | 119.90 |
| 1 | AA | 554 | C | O4'-C1'-N1 | 6.64 | 113.51 | 108.20 |
| 1 | AA | 48 | G | O4'-C1'-N9 | 6.63 | 113.51 | 108.20 |
| 1 | AA | 1092 | U | O4'-C1'-N1 | 6.63 | 113.51 | 108.20 |
| 18 | AT | 18 | TYR | CB-CG-CD2 | -6.63 | 117.02 | 121.00 |
| 53 | B5 | 1379 | G | C5-C6-O6 | -6.63 | 124.62 | 128.60 |
| 53 | B5 | 1387 | G | C5-C6-O6 | -6.63 | 124.62 | 128.60 |
| 53 | B5 | 2470 | C | C2-N1-C1' | 6.63 | 126.10 | 118.80 |
| 53 | B5 | 2883 | U | O4'-C1'-N1 | 6.63 | 113.51 | 108.20 |
| 1 | AA | 289 | U | O4'-C1'-N1 | 6.63 | 113.51 | 108.20 |
| 53 | B5 | 70 | A | P-O3'-C3' | 6.63 | 127.66 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1 | AA | 91 | G | N1-C6-O6 | 6.63 | 123.88 | 119.90 |
| 1 | AA | 1000 | U | O4'-C1'-N1 | 6.63 | 113.50 | 108.20 |
| 1 | AA | 1150 | G | N1-C6-O6 | 6.63 | 123.88 | 119.90 |
| 1 | AA | 1315 | G | N1-C6-O6 | 6.63 | 123.88 | 119.90 |
| 1 | AA | 1706 | U | O4'-C1'-N1 | 6.63 | 113.50 | 108.20 |
| 53 | B5 | 328 | U | O4'-C1'-N1 | 6.63 | 113.50 | 108.20 |
| 53 | B5 | 632 | G | O4'-C1'-N9 | 6.63 | 113.50 | 108.20 |
| 53 | B5 | 1409 | G | N1-C6-O6 | 6.63 | 123.88 | 119.90 |
| 53 | B5 | 2343 | C | O4'-C1'-N1 | 6.63 | 113.50 | 108.20 |
| 53 | B5 | 2575 | G | O4'-C1'-N9 | 6.63 | 113.51 | 108.20 |
| 1 | AA | 858 | G | N7-C8-N9 | 6.63 | 116.42 | 113.10 |
| 53 | B5 | 1811 | G | O4'-C1'-N9 | 6.63 | 113.50 | 108.20 |
| 53 | B5 | 2497 | U | O4'-C1'-N1 | 6.63 | 113.50 | 108.20 |
| 53 | B5 | 3149 | G | C5-C6-O6 | -6.63 | 124.62 | 128.60 |
| 1 | AA | 976 | A | O4'-C1'-N9 | 6.63 | 113.50 | 108.20 |
| 1 | AA | 1224 | G | N1-C6-O6 | 6.63 | 123.88 | 119.90 |
| 53 | B5 | 795 | G | C5-C6-O6 | -6.63 | 124.62 | 128.60 |
| 53 | B5 | 1122 | U | O4'-C1'-N1 | 6.63 | 113.50 | 108.20 |
| 53 | B5 | 1217 | A | O4'-C1'-N9 | 6.63 | 113.50 | 108.20 |
| 53 | B5 | 2427 | U | O4'-C1'-N1 | 6.63 | 113.50 | 108.20 |
| 53 | B5 | 2505 | U | O4'-C1'-N1 | 6.63 | 113.50 | 108.20 |
| 1 | AA | 467 | G | C5-C6-O6 | -6.63 | 124.62 | 128.60 |
| 1 | AA | 1599 | G | N1-C6-O6 | 6.63 | 123.88 | 119.90 |
| 53 | B5 | 563 | U | O4'-C1'-N1 | 6.63 | 113.50 | 108.20 |
| 53 | B5 | 1339 | C | O4'-C1'-N1 | 6.63 | 113.50 | 108.20 |
| 53 | B5 | 1514 | G | N1-C6-O6 | 6.62 | 123.88 | 119.90 |
| 52 | B4 | 14 | C | O4'-C1'-N1 | 6.62 | 113.50 | 108.20 |
| 53 | B5 | 22 | G | C5-C6-O6 | -6.62 | 124.63 | 128.60 |
| 53 | B5 | 1295 | G | N1-C6-O6 | 6.62 | 123.87 | 119.90 |
| 53 | B5 | 2559 | A | P-O3'-C3' | 6.62 | 127.65 | 119.70 |
| 1 | AA | 83 | G | N1-C6-O6 | 6.62 | 123.87 | 119.90 |
| 1 | AA | 418 | G | N1-C6-O6 | 6.62 | 123.87 | 119.90 |
| 1 | AA | 1549 | U | C1'-C2'-O2' | 6.62 | 130.46 | 110.60 |
| 52 | B4 | 78 | G | C5-C6-O6 | -6.62 | 124.63 | 128.60 |
| 53 | B5 | 286 | U | O4'-C1'-N1 | 6.62 | 113.50 | 108.20 |
| 53 | B5 | 601 | U | P-O3'-C3' | 6.62 | 127.64 | 119.70 |
| 53 | B5 | 2252 | A | O4'-C1'-N9 | 6.62 | 113.50 | 108.20 |
| 1 | AA | 1263 | G | N1-C6-O6 | 6.62 | 123.87 | 119.90 |
| 51 | B3 | 84 | G | O4'-C1'-N9 | 6.62 | 113.50 | 108.20 |
| 53 | B5 | 623 | U | O4'-C1'-N1 | 6.62 | 113.49 | 108.20 |
| 53 | B5 | 939 | U | O4'-C1'-N1 | 6.62 | 113.50 | 108.20 |
| 53 | B5 | 1400 | G | N1-C6-O6 | 6.62 | 123.87 | 119.90 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 1735 | G | C5-C6-O6 | -6.62 | 124.63 | 128.60 |
| 53 | B5 | 1735 | G | O4'-C1'-N9 | 6.62 | 113.50 | 108.20 |
| 53 | B5 | 3359 | A | O4'-C1'-N9 | 6.62 | 113.49 | 108.20 |
| 53 | B5 | 3394 | U | O4'-C1'-N1 | 6.62 | 113.50 | 108.20 |
| 1 | AA | 1572 | G | N1-C6-O6 | 6.62 | 123.87 | 119.90 |
| 53 | B5 | 1282 | G | C5-C6-O6 | -6.62 | 124.63 | 128.60 |
| 1 | AA | 1563 | C | P-O3'-C3' | 6.62 | 127.64 | 119.70 |
| 53 | B5 | 74 | G | O4'-C1'-N9 | 6.62 | 113.49 | 108.20 |
| 53 | B5 | 620 | U | O4'-C1'-N1 | 6.62 | 113.49 | 108.20 |
| 53 | B5 | 212 | G | O4'-C1'-N9 | 6.61 | 113.49 | 108.20 |
| 53 | B5 | 1062 | A | O4'-C1'-N9 | 6.61 | 113.49 | 108.20 |
| 53 | B5 | 3278 | U | O4'-C1'-N1 | 6.61 | 113.49 | 108.20 |
| 53 | B5 | 1586 | G | C5-C6-O6 | -6.61 | 124.63 | 128.60 |
| 1 | AA | 671 | G | N1-C6-O6 | 6.61 | 123.87 | 119.90 |
| 53 | B5 | 857 | G | N1-C6-O6 | 6.61 | 123.87 | 119.90 |
| 53 | B5 | 1653 | G | C5-C6-O6 | -6.61 | 124.63 | 128.60 |
| 53 | B5 | 2184 | U | O4'-C1'-N1 | 6.61 | 113.49 | 108.20 |
| 19 | A7 | 4 | G | C4-C5-C6 | -6.61 | 114.83 | 118.80 |
| 53 | B5 | 218 | G | C5-C6-O6 | -6.61 | 124.64 | 128.60 |
| 53 | B5 | 535 | G | N1-C6-O6 | 6.61 | 123.86 | 119.90 |
| 53 | B5 | 1485 | G | N1-C6-O6 | 6.61 | 123.87 | 119.90 |
| 53 | B5 | 2807 | U | O4'-C1'-N1 | 6.61 | 113.49 | 108.20 |
| 1 | AA | 462 | G | N1-C6-O6 | 6.61 | 123.86 | 119.90 |
| 53 | B5 | 44 | U | O4'-C1'-N1 | 6.61 | 113.48 | 108.20 |
| 53 | B5 | 257 | U | O4'-C1'-N1 | 6.61 | 113.48 | 108.20 |
| 53 | B5 | 467 | U | O4'-C1'-N1 | 6.61 | 113.48 | 108.20 |
| 53 | B5 | 953 | G | C5-C6-O6 | -6.61 | 124.64 | 128.60 |
| 53 | B5 | 1600 | U | O4'-C1'-N1 | 6.61 | 113.48 | 108.20 |
| 53 | B5 | 1880 | U | O4'-C1'-N1 | 6.61 | 113.48 | 108.20 |
| 53 | B5 | 2650 | U | O4'-C1'-N1 | 6.61 | 113.48 | 108.20 |
| 1 | AA | 1182 | U | O4'-C1'-N1 | 6.60 | 113.48 | 108.20 |
| 53 | B5 | 258 | G | C5-C6-O6 | -6.60 | 124.64 | 128.60 |
| 53 | B5 | 2391 | G | N1-C6-O6 | 6.60 | 123.86 | 119.90 |
| 53 | B5 | 3326 | G | O4'-C1'-N9 | 6.60 | 113.48 | 108.20 |
| 1 | AA | 739 | G | N1-C6-O6 | 6.60 | 123.86 | 119.90 |
| 53 | B5 | 2591 | A | O4'-C1'-N9 | 6.60 | 113.48 | 108.20 |
| 1 | AA | 12 | U | O4'-C1'-N1 | 6.60 | 113.48 | 108.20 |
| 1 | AA | 24 | U | O4'-C1'-N1 | 6.60 | 113.48 | 108.20 |
| 52 | B4 | 58 | G | N1-C6-O6 | 6.60 | 123.86 | 119.90 |
| 53 | B5 | 940 | G | N1-C6-O6 | 6.60 | 123.86 | 119.90 |
| 53 | B5 | 3159 | C | O4'-C1'-N1 | 6.60 | 113.48 | 108.20 |
| 1 | AA | 857 | U | C5'-C4'-C3' | 6.60 | 126.56 | 116.00 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 19 | A7 | 36 | A | C4'-C3'-C2' | -6.60 | 96.00 | 102.60 |
| 53 | B5 | 1845 | G | C5-C6-O6 | -6.60 | 124.64 | 128.60 |
| 1 | AA | 1178 | U | P-O3'-C3' | 6.60 | 127.62 | 119.70 |
| 53 | B5 | 495 | G | P-O3'-C3' | 6.60 | 127.62 | 119.70 |
| 53 | B5 | 1876 | U | O4'-C1'-N1 | 6.60 | 113.48 | 108.20 |
| 53 | B5 | 2537 | U | O4'-C1'-N1 | 6.60 | 113.48 | 108.20 |
| 1 | AA | 357 | G | O4'-C1'-N9 | 6.60 | 113.48 | 108.20 |
| 1 | AA | 1721 | U | O4'-C1'-N1 | 6.60 | 113.48 | 108.20 |
| 53 | B5 | 2522 | G | N1-C6-O6 | 6.60 | 123.86 | 119.90 |
| 1 | AA | 496 | G | O4'-C1'-N9 | 6.59 | 113.48 | 108.20 |
| 1 | AA | 971 | G | N1-C6-O6 | 6.59 | 123.86 | 119.90 |
| 1 | AA | 1597 | C | O4'-C1'-N1 | 6.59 | 113.48 | 108.20 |
| 52 | B4 | 25 | G | C5-C6-O6 | -6.59 | 124.64 | 128.60 |
| 53 | B5 | 429 | U | O4'-C1'-N1 | 6.59 | 113.47 | 108.20 |
| 53 | B5 | 2327 | U | O4'-C1'-N1 | 6.59 | 113.48 | 108.20 |
| 53 | B5 | 2874 | G | N1-C6-O6 | 6.59 | 123.86 | 119.90 |
| 53 | B5 | 1927 | G | C5-C6-O6 | -6.59 | 124.64 | 128.60 |
| 1 | AA | 21 | U | O4'-C1'-N1 | 6.59 | 113.47 | 108.20 |
| 1 | AA | 874 | C | O4'-C1'-N1 | 6.59 | 113.47 | 108.20 |
| 1 | AA | 1601 | U | O4'-C1'-N1 | 6.59 | 113.47 | 108.20 |
| 1 | AA | 945 | U | O4'-C1'-N1 | 6.59 | 113.47 | 108.20 |
| 1 | AA | 1256 | U | O4'-C1'-N1 | 6.59 | 113.47 | 108.20 |
| 1 | AA | 1697 | G | N1-C6-O6 | 6.59 | 123.85 | 119.90 |
| 16 | AS | 97 | TYR | CB-CG-CD1 | 6.59 | 124.95 | 121.00 |
| 53 | B5 | 456 | U | O4'-C1'-N1 | 6.59 | 113.47 | 108.20 |
| 53 | B5 | 1261 | G | O4'-C1'-N9 | 6.59 | 113.47 | 108.20 |
| 53 | B5 | 1716 | U | O4'-C1'-N1 | 6.59 | 113.47 | 108.20 |
| 53 | B5 | 1861 | G | C5-C6-O6 | -6.59 | 124.65 | 128.60 |
| 1 | AA | 1391 | G | N1-C6-O6 | 6.59 | 123.85 | 119.90 |
| 1 | AA | 1558 | U | O4'-C1'-N1 | 6.59 | 113.47 | 108.20 |
| 53 | B5 | 487 | U | O4'-C1'-N1 | 6.59 | 113.47 | 108.20 |
| 53 | B5 | 520 | U | O4'-C1'-N1 | 6.59 | 113.47 | 108.20 |
| 53 | B5 | 3036 | G | O4'-C1'-N9 | 6.59 | 113.47 | 108.20 |
| 1 | AA | 430 | G | N1-C6-O6 | 6.58 | 123.85 | 119.90 |
| 53 | B5 | 458 | U | O4'-C1'-N1 | 6.58 | 113.47 | 108.20 |
| 53 | B5 | 1139 | G | C5-C6-O6 | -6.58 | 124.65 | 128.60 |
| 53 | B5 | 2586 | G | N1-C6-O6 | 6.58 | 123.85 | 119.90 |
| 1 | AA | 703 | G | C5-C6-O6 | -6.58 | 124.65 | 128.60 |
| 1 | AA | 1725 | G | N1-C6-O6 | 6.58 | 123.85 | 119.90 |
| 53 | B5 | 517 | G | N1-C6-O6 | 6.58 | 123.85 | 119.90 |
| 53 | B5 | 1565 | G | C5-C6-O6 | -6.58 | 124.65 | 128.60 |
| 53 | B5 | 2997 | G | C5-C6-O6 | -6.58 | 124.65 | 128.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 508 | U | O4'-C1'-N1 | 6.58 | 113.47 | 108.20 |
| 49 | BY | 47 | TYR | CB-CG-CD1 | -6.58 | 117.05 | 121.00 |
| 53 | B5 | 459 | G | N1-C6-O6 | 6.58 | 123.85 | 119.90 |
| 53 | B5 | 942 | U | O4'-C1'-N1 | 6.58 | 113.46 | 108.20 |
| 1 | AA | 984 | G | N1-C6-O6 | 6.58 | 123.85 | 119.90 |
| 53 | B5 | 80 | G | N1-C6-O6 | 6.58 | 123.85 | 119.90 |
| 53 | B5 | 404 | G | C5-C6-O6 | -6.58 | 124.65 | 128.60 |
| 53 | B5 | 2907 | G | N1-C6-O6 | 6.58 | 123.85 | 119.90 |
| 1 | AA | 457 | G | N1-C6-O6 | 6.58 | 123.84 | 119.90 |
| 53 | B5 | 859 | G | N1-C6-O6 | 6.58 | 123.84 | 119.90 |
| 53 | B5 | 1158 | A | O4'-C1'-N9 | 6.58 | 113.46 | 108.20 |
| 53 | B5 | 2731 | U | O4'-C1'-N1 | 6.58 | 113.46 | 108.20 |
| 53 | B5 | 3387 | U | O4'-C1'-N1 | 6.58 | 113.46 | 108.20 |
| 1 | AA | 296 | U | O4'-C1'-N1 | 6.57 | 113.46 | 108.20 |
| 1 | AA | 1603 | G | N1-C6-O6 | 6.57 | 123.84 | 119.90 |
| 53 | B5 | 347 | G | N1-C6-O6 | 6.57 | 123.84 | 119.90 |
| 53 | B5 | 421 | G | C5-C6-O6 | -6.57 | 124.66 | 128.60 |
| 53 | B5 | 2261 | G | N1-C6-O6 | 6.57 | 123.84 | 119.90 |
| 1 | AA | 195 | G | N1-C6-O6 | 6.57 | 123.84 | 119.90 |
| 1 | AA | 1409 | G | C5-C6-O6 | -6.57 | 124.66 | 128.60 |
| 1 | AA | 1715 | G | N1-C6-O6 | 6.57 | 123.84 | 119.90 |
| 1 | AA | 828 | U | O4'-C1'-N1 | 6.57 | 113.46 | 108.20 |
| 19 | A7 | 12 | U | O4'-C4'-C3' | 6.57 | 111.36 | 106.10 |
| 19 | A7 | 28 | C | N3-C4-C5 | 6.57 | 124.53 | 121.90 |
| 53 | B5 | 76 | G | C5-C6-O6 | -6.57 | 124.66 | 128.60 |
| 53 | B5 | 139 | G | C5-C6-O6 | -6.57 | 124.66 | 128.60 |
| 53 | B5 | 1269 | U | P-O3'-C3' | 6.57 | 127.59 | 119.70 |
| 53 | B5 | 2481 | G | O4'-C1'-N9 | 6.57 | 113.46 | 108.20 |
| 53 | B5 | 2909 | U | O4'-C1'-N1 | 6.57 | 113.46 | 108.20 |
| 44 | BT | 60 | TYR | CB-CG-CD2 | -6.57 | 117.06 | 121.00 |
| 52 | B4 | 148 | G | O4'-C1'-N9 | 6.57 | 113.45 | 108.20 |
| 53 | B5 | 1692 | U | O4'-C1'-N1 | 6.57 | 113.45 | 108.20 |
| 1 | AA | 205 | U | O4'-C1'-N1 | 6.57 | 113.45 | 108.20 |
| 1 | AA | 1727 | C | O4'-C1'-N1 | 6.57 | 113.45 | 108.20 |
| 53 | B5 | 2154 | U | O4'-C1'-N1 | 6.57 | 113.45 | 108.20 |
| 53 | B5 | 2380 | U | O4'-C1'-N1 | 6.57 | 113.45 | 108.20 |
| 53 | B5 | 3040 | A | O4'-C1'-N9 | 6.57 | 113.45 | 108.20 |
| 53 | B5 | 1468 | A | O4'-C1'-N9 | 6.56 | 113.45 | 108.20 |
| 1 | AA | 248 | U | O4'-C1'-N1 | 6.56 | 113.45 | 108.20 |
| 1 | AA | 1713 | G | N1-C6-O6 | 6.56 | 123.84 | 119.90 |
| 53 | B5 | 1361 | U | O4'-C1'-N1 | 6.56 | 113.45 | 108.20 |
| 53 | B5 | 1505 | C | O4'-C1'-N1 | 6.56 | 113.45 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1 | AA | 1151 | G | N1-C6-O6 | 6.56 | 123.84 | 119.90 |
| 1 | AA | 1402 | G | N1-C6-O6 | 6.56 | 123.84 | 119.90 |
| 53 | B5 | 421 | G | P-O3'-C3' | 6.56 | 127.57 | 119.70 |
| 53 | B5 | 844 | G | N1-C6-O6 | 6.56 | 123.84 | 119.90 |
| 53 | B5 | 2379 | U | O4'-C1'-N1 | 6.56 | 113.45 | 108.20 |
| 1 | AA | 727 | U | O4'-C1'-N1 | 6.56 | 113.45 | 108.20 |
| 53 | B5 | 1743 | G | N1-C6-O6 | 6.56 | 123.84 | 119.90 |
| 1 | AA | 1048 | G | O4'-C1'-N9 | 6.56 | 113.45 | 108.20 |
| 1 | AA | 1688 | G | N1-C6-O6 | 6.56 | 123.83 | 119.90 |
| 1 | AA | 1763 | A | O4'-C1'-N9 | 6.56 | 113.45 | 108.20 |
| 53 | B5 | 2123 | G | O4'-C1'-N9 | 6.56 | 113.45 | 108.20 |
| 53 | B5 | 3247 | G | N1-C6-O6 | 6.56 | 123.83 | 119.90 |
| 1 | AA | 330 | G | N1-C6-O6 | 6.56 | 123.83 | 119.90 |
| 1 | AA | 1152 | G | C5-C6-O6 | -6.56 | 124.67 | 128.60 |
| 52 | B4 | 102 | U | O4'-C1'-N1 | 6.56 | 113.44 | 108.20 |
| 53 | B5 | 167 | U | O4'-C1'-N1 | 6.56 | 113.44 | 108.20 |
| 53 | B5 | 592 | G | C5-C6-O6 | -6.56 | 124.67 | 128.60 |
| 1 | AA | 866 | G | OP1-P-OP2 | 6.55 | 129.43 | 119.60 |
| 1 | AA | 1520 | U | C5'-C4'-O4' | 6.55 | 116.97 | 109.10 |
| 53 | B5 | 1464 | G | C5-C6-O6 | -6.55 | 124.67 | 128.60 |
| 53 | B5 | 2767 | U | O4'-C1'-N1 | 6.55 | 113.44 | 108.20 |
| 53 | B5 | 2854 | U | O4'-C1'-N1 | 6.55 | 113.44 | 108.20 |
| 1 | AA | 561 | G | N1-C6-O6 | 6.55 | 123.83 | 119.90 |
| 1 | AA | 959 | U | O4'-C1'-N1 | 6.55 | 113.44 | 108.20 |
| 1 | AA | 1137 | G | N1-C6-O6 | 6.55 | 123.83 | 119.90 |
| 1 | AA | 1482 | G | N1-C6-O6 | 6.55 | 123.83 | 119.90 |
| 48 | BX | 7 | TYR | CB-CG-CD1 | 6.55 | 124.93 | 121.00 |
| 53 | B5 | 425 | G | C5-C6-O6 | -6.55 | 124.67 | 128.60 |
| 53 | B5 | 110 | G | N1-C6-O6 | 6.55 | 123.83 | 119.90 |
| 53 | B5 | 304 | G | N1-C6-O6 | 6.55 | 123.83 | 119.90 |
| 53 | B5 | 581 | U | O4'-C1'-N1 | 6.55 | 113.44 | 108.20 |
| 53 | B5 | 1264 | G | N1-C6-O6 | 6.55 | 123.83 | 119.90 |
| 53 | B5 | 1466 | G | C5-C6-O6 | -6.55 | 124.67 | 128.60 |
| 53 | B5 | 2575 | G | P-O3'-C3' | 6.55 | 127.56 | 119.70 |
| 53 | B5 | 3200 | G | N1-C6-O6 | 6.55 | 123.83 | 119.90 |
| 53 | B5 | 169 | U | O4'-C1'-N1 | 6.55 | 113.44 | 108.20 |
| 53 | B5 | 1533 | U | O4'-C1'-N1 | 6.55 | 113.44 | 108.20 |
| 53 | B5 | 2696 | A | O4'-C1'-N9 | 6.55 | 113.44 | 108.20 |
| 1 | AA | 975 | G | N1-C6-O6 | 6.55 | 123.83 | 119.90 |
| 1 | AA | 1105 | G | C5-C6-O6 | -6.55 | 124.67 | 128.60 |
| 1 | AA | 1175 | G | N1-C6-O6 | 6.55 | 123.83 | 119.90 |
| 1 | AA | 1553 | A | P-O5'-C5' | -6.55 | 110.43 | 120.90 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 19 | A7 | 57 | G | C5-N7-C8 | -6.55 | 101.03 | 104.30 |
| 51 | B3 | 30 | G | C5-C6-O6 | -6.55 | 124.67 | 128.60 |
| 53 | B5 | 2816 | G | N1-C6-O6 | 6.55 | 123.83 | 119.90 |
| 53 | B5 | 3302 | U | O4'-C1'-N1 | 6.55 | 113.44 | 108.20 |
| 1 | AA | 187 | G | N1-C6-O6 | 6.54 | 123.83 | 119.90 |
| 53 | B5 | 214 | G | N1-C6-O6 | 6.54 | 123.83 | 119.90 |
| 1 | AA | 192 | U | O4'-C1'-N1 | 6.54 | 113.44 | 108.20 |
| 1 | AA | 510 | G | N1-C6-O6 | 6.54 | 123.83 | 119.90 |
| 1 | AA | 1486 | G | C5-C6-O6 | -6.54 | 124.67 | 128.60 |
| 53 | B5 | 9 | U | O4'-C1'-N1 | 6.54 | 113.43 | 108.20 |
| 53 | B5 | 1641 | U | O4'-C1'-N1 | 6.54 | 113.44 | 108.20 |
| 53 | B5 | 2244 | A | O4'-C1'-N9 | 6.54 | 113.44 | 108.20 |
| 53 | B5 | 2482 | U | O4'-C1'-N1 | 6.54 | 113.44 | 108.20 |
| 53 | B5 | 528 | U | O4'-C1'-N1 | 6.54 | 113.43 | 108.20 |
| 53 | B5 | 1243 | G | C5-C6-O6 | -6.54 | 124.67 | 128.60 |
| 53 | B5 | 1285 | G | C5-C6-O6 | -6.54 | 124.67 | 128.60 |
| 53 | B5 | 2576 | G | N1-C6-O6 | 6.54 | 123.83 | 119.90 |
| 53 | B5 | 3344 | A | O4'-C1'-N9 | 6.54 | 113.43 | 108.20 |
| 1 | AA | 920 | U | O4'-C1'-N1 | 6.54 | 113.43 | 108.20 |
| 53 | B5 | 783 | A | O4'-C1'-N9 | 6.54 | 113.43 | 108.20 |
| 53 | B5 | 1022 | U | O4'-C1'-N1 | 6.54 | 113.43 | 108.20 |
| 1 | AA | 20 | G | N1-C6-O6 | 6.54 | 123.82 | 119.90 |
| 1 | AA | 1271 | A | O4'-C1'-N9 | 6.54 | 113.43 | 108.20 |
| 53 | B5 | 651 | G | N1-C6-O6 | 6.54 | 123.82 | 119.90 |
| 53 | B5 | 1104 | G | N1-C6-O6 | 6.54 | 123.82 | 119.90 |
| 53 | B5 | 2138 | A | P-O3'-C3' | 6.54 | 127.54 | 119.70 |
| 1 | AA | 864 | U | O4'-C1'-C2' | 6.54 | 113.48 | 107.60 |
| 52 | B4 | 6 | U | O4'-C1'-N1 | 6.54 | 113.43 | 108.20 |
| 53 | B5 | 935 | U | O4'-C1'-N1 | 6.54 | 113.43 | 108.20 |
| 53 | B5 | 2690 | G | O4'-C1'-N9 | 6.54 | 113.43 | 108.20 |
| 1 | AA | 562 | G | N1-C6-O6 | 6.53 | 123.82 | 119.90 |
| 53 | B5 | 3272 | U | O4'-C1'-N1 | 6.53 | 113.43 | 108.20 |
| 1 | AA | 1056 | U | O4'-C1'-N1 | 6.53 | 113.43 | 108.20 |
| 53 | B5 | 228 | U | O4'-C1'-N1 | 6.53 | 113.43 | 108.20 |
| 53 | B5 | 790 | U | O4'-C1'-N1 | 6.53 | 113.42 | 108.20 |
| 1 | AA | 539 | G | N1-C6-O6 | 6.53 | 123.82 | 119.90 |
| 1 | AA | 1586 | G | O4'-C1'-N9 | 6.53 | 113.42 | 108.20 |
| 52 | B4 | 87 | G | C5-C6-O6 | -6.53 | 124.68 | 128.60 |
| 53 | B5 | 3046 | A | O4'-C1'-N9 | 6.53 | 113.42 | 108.20 |
| 1 | AA | 274 | G | N1-C6-O6 | 6.53 | 123.82 | 119.90 |
| 1 | AA | 1358 | U | O4'-C1'-N1 | 6.53 | 113.42 | 108.20 |
| 51 | B3 | 38 | U | O4'-C1'-N1 | 6.53 | 113.42 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 531 | G | O4'-C1'-N9 | 6.53 | 113.42 | 108.20 |
| 53 | B5 | 777 | U | O4'-C1'-N1 | 6.53 | 113.42 | 108.20 |
| 53 | B5 | 1294 | A | O4'-C1'-N9 | 6.53 | 113.42 | 108.20 |
| 1 | AA | 858 | G | C8-N9-C4 | -6.53 | 103.79 | 106.40 |
| 1 | AA | 941 | G | O4'-C1'-N9 | 6.53 | 113.42 | 108.20 |
| 1 | AA | 1294 | G | N1-C6-O6 | 6.53 | 123.81 | 119.90 |
| 53 | B5 | 103 | G | N1-C6-O6 | 6.53 | 123.82 | 119.90 |
| 53 | B5 | 206 | G | C5-C6-O6 | -6.53 | 124.68 | 128.60 |
| 1 | AA | 1164 | G | N1-C6-O6 | 6.52 | 123.81 | 119.90 |
| 53 | B5 | 1389 | G | C5-C6-O6 | -6.52 | 124.69 | 128.60 |
| 53 | B5 | 3181 | G | N1-C6-O6 | 6.52 | 123.81 | 119.90 |
| 1 | AA | 1289 | G | N1-C6-O6 | 6.52 | 123.81 | 119.90 |
| 1 | AA | 1380 | G | N1-C6-O6 | 6.52 | 123.81 | 119.90 |
| 53 | B5 | 532 | A | O4'-C1'-N9 | 6.52 | 113.42 | 108.20 |
| 53 | B5 | 1098 | A | O4'-C1'-N9 | 6.52 | 113.42 | 108.20 |
| 53 | B5 | 1512 | U | O4'-C1'-N1 | 6.52 | 113.42 | 108.20 |
| 53 | B5 | 1572 | U | O4'-C1'-N1 | 6.52 | 113.42 | 108.20 |
| 53 | B5 | 2947 | G | N1-C6-O6 | 6.52 | 123.81 | 119.90 |
| 53 | B5 | 3277 | C | O4'-C1'-N1 | 6.52 | 113.42 | 108.20 |
| 53 | B5 | 1248 | C | O4'-C1'-N1 | 6.52 | 113.42 | 108.20 |
| 53 | B5 | 2681 | U | O4'-C1'-N1 | 6.52 | 113.42 | 108.20 |
| 1 | AA | 947 | G | N1-C6-O6 | 6.52 | 123.81 | 119.90 |
| 1 | AA | 1346 | G | O4'-C1'-N9 | 6.52 | 113.42 | 108.20 |
| 53 | B5 | 451 | U | O4'-C1'-N1 | 6.52 | 113.42 | 108.20 |
| 53 | B5 | 1173 | U | O4'-C1'-N1 | 6.52 | 113.42 | 108.20 |
| 53 | B5 | 2410 | U | O4'-C1'-N1 | 6.52 | 113.42 | 108.20 |
| 53 | B5 | 2629 | U | O4'-C1'-N1 | 6.52 | 113.42 | 108.20 |
| 53 | B5 | 2701 | U | O4'-C1'-N1 | 6.52 | 113.42 | 108.20 |
| 53 | B5 | 2849 | C | P-O3'-C3' | 6.52 | 127.52 | 119.70 |
| 53 | B5 | 173 | G | O4'-C1'-N9 | 6.52 | 113.41 | 108.20 |
| 53 | B5 | 262 | U | O4'-C1'-N1 | 6.52 | 113.41 | 108.20 |
| 53 | B5 | 275 | U | O4'-C1'-N1 | 6.52 | 113.41 | 108.20 |
| 53 | B5 | 716 | G | O4'-C1'-N9 | 6.52 | 113.41 | 108.20 |
| 53 | B5 | 2421 | U | O4'-C1'-N1 | 6.52 | 113.41 | 108.20 |
| 53 | B5 | 2773 | C | O4'-C1'-N1 | 6.52 | 113.41 | 108.20 |
| 1 | AA | 864 | U | O4'-C1'-N1 | 6.52 | 113.41 | 108.20 |
| 1 | AA | 873 | U | O4'-C1'-N1 | 6.52 | 113.41 | 108.20 |
| 1 | AA | 1101 | U | O4'-C1'-N1 | 6.52 | 113.41 | 108.20 |
| 53 | B5 | 849 | C | C6-N1-C1' | -6.52 | 112.98 | 120.80 |
| 1 | AA | 979 | G | N1-C6-O6 | 6.51 | 123.81 | 119.90 |
| 19 | A7 | 75 | C | P-O3'-C3' | 6.51 | 127.52 | 119.70 |
| 53 | B5 | 792 | G | N1-C6-O6 | 6.51 | 123.81 | 119.90 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 899 | U | O4'-C1'-N1 | 6.51 | 113.41 | 108.20 |
| 53 | B5 | 3014 | U | O4'-C1'-N1 | 6.51 | 113.41 | 108.20 |
| 53 | B5 | 3356 | G | O4'-C1'-N9 | 6.51 | 113.41 | 108.20 |
| 53 | B5 | 2517 | U | O4'-C1'-N1 | 6.51 | 113.41 | 108.20 |
| 53 | B5 | 3252 | G | N1-C6-O6 | 6.51 | 123.81 | 119.90 |
| 1 | AA | 712 | G | N1-C6-O6 | 6.51 | 123.81 | 119.90 |
| 19 | A7 | 24 | G | N3-C4-N9 | 6.51 | 129.91 | 126.00 |
| 53 | B5 | 1520 | G | O4'-C1'-N9 | 6.51 | 113.41 | 108.20 |
| 51 | B3 | 74 | A | O4'-C1'-N9 | 6.51 | 113.41 | 108.20 |
| 53 | B5 | 921 | A | O4'-C1'-N9 | 6.51 | 113.41 | 108.20 |
| 53 | B5 | 2819 | A | O4'-C1'-N9 | 6.51 | 113.41 | 108.20 |
| 53 | B5 | 2855 | U | O4'-C1'-N1 | 6.51 | 113.41 | 108.20 |
| 53 | B5 | 3030 | G | C5-C6-O6 | -6.51 | 124.69 | 128.60 |
| 53 | B5 | 2486 | A | P-O3'-C3' | 6.51 | 127.51 | 119.70 |
| 19 | A7 | 5 | A | O4'-C4'-C3' | 6.51 | 111.31 | 106.10 |
| 19 | A7 | 66 | A | C5-N7-C8 | 6.51 | 107.15 | 103.90 |
| 52 | B4 | 93 | U | O4'-C1'-N1 | 6.51 | 113.41 | 108.20 |
| 52 | B4 | 146 | U | O4'-C1'-N1 | 6.51 | 113.40 | 108.20 |
| 53 | B5 | 1636 | U | O4'-C1'-N1 | 6.51 | 113.41 | 108.20 |
| 53 | B5 | 1947 | G | C5-C6-O6 | -6.51 | 124.70 | 128.60 |
| 53 | B5 | 2735 | U | O4'-C1'-N1 | 6.51 | 113.41 | 108.20 |
| 53 | B5 | 3197 | G | C5-C6-O6 | -6.51 | 124.70 | 128.60 |
| 51 | B3 | 13 | A | P-O3'-C3' | 6.50 | 127.51 | 119.70 |
| 53 | B5 | 370 | U | O4'-C1'-N1 | 6.50 | 113.40 | 108.20 |
| 53 | B5 | 510 | G | N1-C6-O6 | 6.50 | 123.80 | 119.90 |
| 1 | AA | 835 | U | O4'-C1'-N1 | 6.50 | 113.40 | 108.20 |
| 1 | AA | 478 | A | O4'-C1'-N9 | 6.50 | 113.40 | 108.20 |
| 1 | AA | 672 | U | O4'-C1'-N1 | 6.50 | 113.40 | 108.20 |
| 19 | A7 | 35 | A | C8-N9-C4 | -6.50 | 103.20 | 105.80 |
| 53 | B5 | 173 | G | N1-C6-O6 | 6.50 | 123.80 | 119.90 |
| 53 | B5 | 531 | G | N1-C6-O6 | 6.50 | 123.80 | 119.90 |
| 53 | B5 | 930 | U | O4'-C1'-N1 | 6.50 | 113.40 | 108.20 |
| 53 | B5 | 2187 | G | N1-C6-O6 | 6.50 | 123.80 | 119.90 |
| 53 | B5 | 2770 | G | C5-C6-O6 | -6.50 | 124.70 | 128.60 |
| 53 | B5 | 3188 | G | N1-C6-O6 | 6.50 | 123.80 | 119.90 |
| 1 | AA | 783 | G | N1-C6-O6 | 6.50 | 123.80 | 119.90 |
| 1 | AA | 1111 | G | N1-C6-O6 | 6.50 | 123.80 | 119.90 |
| 1 | AA | 1643 | G | N1-C6-O6 | 6.50 | 123.80 | 119.90 |
| 1 | AA | 805 | U | O4'-C1'-N1 | 6.50 | 113.40 | 108.20 |
| 1 | AA | 1378 | U | O4'-C1'-N1 | 6.50 | 113.40 | 108.20 |
| 19 | A7 | 51 | G | N9-C1'-C2' | -6.50 | 104.85 | 112.00 |
| 53 | B5 | 878 | G | N1-C6-O6 | 6.50 | 123.80 | 119.90 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 1623 | G | O4'-C1'-N9 | 6.50 | 113.40 | 108.20 |
| 53 | B5 | 2470 | C | O4'-C1'-N1 | 6.50 | 113.40 | 108.20 |
| 1 | AA | 234 | G | N1-C6-O6 | 6.50 | 123.80 | 119.90 |
| 1 | AA | 1072 | U | O4'-C1'-N1 | 6.50 | 113.40 | 108.20 |
| 1 | AA | 1313 | G | N1-C6-O6 | 6.50 | 123.80 | 119.90 |
| 51 | B3 | 79 | U | O4'-C1'-N1 | 6.50 | 113.40 | 108.20 |
| 53 | B5 | 947 | G | N1-C6-O6 | 6.50 | 123.80 | 119.90 |
| 53 | B5 | 1851 | G | N1-C6-O6 | 6.50 | 123.80 | 119.90 |
| 1 | AA | 778 | G | O4'-C1'-N9 | 6.49 | 113.39 | 108.20 |
| 1 | AA | 924 | G | N1-C6-O6 | 6.49 | 123.80 | 119.90 |
| 53 | B5 | 831 | G | O4'-C1'-N9 | 6.49 | 113.39 | 108.20 |
| 53 | B5 | 2945 | G | O4'-C1'-N9 | 6.49 | 113.39 | 108.20 |
| 53 | B5 | 3288 | G | C5-C6-O6 | -6.49 | 124.70 | 128.60 |
| 1 | AA | 743 | U | O4'-C1'-N1 | 6.49 | 113.39 | 108.20 |
| 53 | B5 | 2627 | C | O4'-C1'-N1 | 6.49 | 113.39 | 108.20 |
| 1 | AA | 690 | G | N1-C6-O6 | 6.49 | 123.79 | 119.90 |
| 1 | AA | 1399 | G | N1-C6-O6 | 6.49 | 123.79 | 119.90 |
| 1 | AA | 1779 | A | O4'-C1'-N9 | 6.49 | 113.39 | 108.20 |
| 53 | B5 | 333 | G | N1-C6-O6 | 6.49 | 123.79 | 119.90 |
| 53 | B5 | 1719 | G | C5-C6-O6 | -6.49 | 124.71 | 128.60 |
| 53 | B5 | 1860 | G | N1-C6-O6 | 6.49 | 123.79 | 119.90 |
| 1 | AA | 211 | U | O4'-C1'-N1 | 6.49 | 113.39 | 108.20 |
| 1 | AA | 815 | G | N1-C6-O6 | 6.49 | 123.79 | 119.90 |
| 1 | AA | 1718 | G | N1-C6-O6 | 6.49 | 123.79 | 119.90 |
| 1 | AA | 1735 | G | N1-C6-O6 | 6.49 | 123.79 | 119.90 |
| 53 | B5 | 3289 | G | C5-C6-O6 | -6.49 | 124.71 | 128.60 |
| 53 | B5 | 59 | G | C5-C6-O6 | -6.49 | 124.71 | 128.60 |
| 53 | B5 | 712 | G | C5-C6-O6 | -6.49 | 124.71 | 128.60 |
| 53 | B5 | 1924 | U | O4'-C1'-N1 | 6.49 | 113.39 | 108.20 |
| 1 | AA | 434 | G | C5-C6-O6 | -6.49 | 124.71 | 128.60 |
| 1 | AA | 1416 | G | C5-C6-O6 | -6.49 | 124.71 | 128.60 |
| 53 | B5 | 92 | G | C5-C6-O6 | -6.49 | 124.71 | 128.60 |
| 53 | B5 | 311 | U | O4'-C1'-N1 | 6.49 | 113.39 | 108.20 |
| 53 | B5 | 1061 | A | O4'-C1'-N9 | 6.49 | 113.39 | 108.20 |
| 53 | B5 | 1829 | G | C5-C6-O6 | -6.49 | 124.71 | 128.60 |
| 53 | B5 | 1925 | U | O4'-C1'-N1 | 6.49 | 113.39 | 108.20 |
| 1 | AA | 1080 | G | C5-C6-O6 | -6.48 | 124.71 | 128.60 |
| 53 | B5 | 513 | G | N1-C6-O6 | 6.48 | 123.79 | 119.90 |
| 53 | B5 | 1174 | G | O4'-C1'-N9 | 6.48 | 113.39 | 108.20 |
| 53 | B5 | 1486 | G | N1-C6-O6 | 6.48 | 123.79 | 119.90 |
| 53 | B5 | 1727 | G | N1-C6-O6 | 6.48 | 123.79 | 119.90 |
| 1 | AA | 79 | C | O4'-C1'-N1 | 6.48 | 113.38 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 52 | B4 | 7 | U | O4'-C1'-N1 | 6.48 | 113.39 | 108.20 |
| 53 | B5 | 1479 | U | O4'-C1'-N1 | 6.48 | 113.38 | 108.20 |
| 53 | B5 | 1906 | G | O4'-C1'-N9 | 6.48 | 113.38 | 108.20 |
| 53 | B5 | 2349 | U | O4'-C1'-N1 | 6.48 | 113.38 | 108.20 |
| 1 | AA | 45 | U | O4'-C1'-N1 | 6.48 | 113.38 | 108.20 |
| 1 | AA | 375 | U | O4'-C1'-N1 | 6.48 | 113.38 | 108.20 |
| 1 | AA | 565 | C | O4'-C1'-N1 | 6.48 | 113.38 | 108.20 |
| 1 | AA | 1393 | U | O4'-C1'-N1 | 6.48 | 113.38 | 108.20 |
| 53 | B5 | 1732 | U | O4'-C1'-N1 | 6.48 | 113.38 | 108.20 |
| 53 | B5 | 3194 | C | O4'-C1'-N1 | 6.48 | 113.38 | 108.20 |
| 1 | AA | 1011 | U | O4'-C1'-N1 | 6.48 | 113.38 | 108.20 |
| 51 | B3 | 33 | U | C2-N1-C1' | 6.48 | 125.47 | 117.70 |
| 53 | B5 | 98 | G | N1-C6-O6 | 6.48 | 123.79 | 119.90 |
| 53 | B5 | 440 | A | O4'-C1'-N9 | 6.48 | 113.38 | 108.20 |
| 53 | B5 | 1008 | U | O4'-C1'-N1 | 6.48 | 113.38 | 108.20 |
| 53 | B5 | 1060 | U | O4'-C1'-N1 | 6.48 | 113.38 | 108.20 |
| 53 | B5 | 2376 | G | N1-C6-O6 | 6.48 | 123.79 | 119.90 |
| 53 | B5 | 3222 | U | O4'-C1'-N1 | 6.48 | 113.38 | 108.20 |
| 1 | AA | 474 | A | O4'-C1'-N9 | 6.48 | 113.38 | 108.20 |
| 53 | B5 | 1125 | U | O4'-C1'-N1 | 6.48 | 113.38 | 108.20 |
| 53 | B5 | 1168 | U | O4'-C1'-N1 | 6.48 | 113.38 | 108.20 |
| 53 | B5 | 2663 | G | N1-C6-O6 | 6.48 | 123.79 | 119.90 |
| 53 | B5 | 274 | G | C5-C6-O6 | -6.47 | 124.72 | 128.60 |
| 53 | B5 | 889 | U | O4'-C1'-N1 | 6.47 | 113.38 | 108.20 |
| 53 | B5 | 941 | G | N1-C6-O6 | 6.47 | 123.78 | 119.90 |
| 53 | B5 | 1368 | U | O4'-C1'-N1 | 6.47 | 113.38 | 108.20 |
| 1 | AA | 122 | U | O4'-C1'-N1 | 6.47 | 113.38 | 108.20 |
| 51 | B3 | 3 | U | O4'-C1'-N1 | 6.47 | 113.38 | 108.20 |
| 51 | B3 | 14 | U | O4'-C1'-N1 | 6.47 | 113.38 | 108.20 |
| 53 | B5 | 162 | G | P-O3'-C3' | 6.47 | 127.47 | 119.70 |
| 53 | B5 | 1627 | U | O4'-C1'-N1 | 6.47 | 113.38 | 108.20 |
| 53 | B5 | 2168 | A | O4'-C1'-N9 | 6.47 | 113.38 | 108.20 |
| 53 | B5 | 2428 | U | O4'-C1'-N1 | 6.47 | 113.38 | 108.20 |
| 53 | B5 | 2663 | G | O4'-C1'-N9 | 6.47 | 113.38 | 108.20 |
| 1 | AA | 688 | G | C5-C6-O6 | -6.47 | 124.72 | 128.60 |
| 1 | AA | 1150 | G | O4'-C1'-N9 | 6.47 | 113.38 | 108.20 |
| 53 | B5 | 75 | G | O4'-C1'-N9 | 6.47 | 113.38 | 108.20 |
| 53 | B5 | 495 | G | N1-C6-O6 | 6.47 | 123.78 | 119.90 |
| 53 | B5 | 1030 | A | O4'-C1'-N9 | 6.47 | 113.38 | 108.20 |
| 53 | B5 | 3254 | G | N1-C6-O6 | 6.47 | 123.78 | 119.90 |
| 53 | B5 | 3369 | G | C5-C6-O6 | -6.47 | 124.72 | 128.60 |
| 53 | B5 | 72 | C | O4'-C1'-N1 | 6.47 | 113.37 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 1617 | G | N1-C6-O6 | 6.47 | 123.78 | 119.90 |
| 53 | B5 | 2572 | C | O4'-C1'-N1 | 6.47 | 113.37 | 108.20 |
| 53 | B5 | 3016 | A | O4'-C1'-N9 | 6.47 | 113.38 | 108.20 |
| 1 | AA | 199 | G | N1-C6-O6 | 6.47 | 123.78 | 119.90 |
| 1 | AA | 246 | G | O4'-C1'-N9 | 6.47 | 113.37 | 108.20 |
| 1 | AA | 277 | U | O4'-C1'-N1 | 6.47 | 113.37 | 108.20 |
| 53 | B5 | 865 | U | O4'-C1'-N1 | 6.47 | 113.37 | 108.20 |
| 53 | B5 | 2966 | G | C5-C6-O6 | -6.47 | 124.72 | 128.60 |
| 53 | B5 | 3327 | G | O4'-C1'-N9 | 6.47 | 113.37 | 108.20 |
| 53 | B5 | 300 | G | C5-C6-O6 | -6.46 | 124.72 | 128.60 |
| 53 | B5 | 558 | U | O4'-C1'-N1 | 6.46 | 113.37 | 108.20 |
| 53 | B5 | 2451 | G | P-O3'-C3' | 6.46 | 127.46 | 119.70 |
| 53 | B5 | 2768 | U | O4'-C1'-N1 | 6.46 | 113.37 | 108.20 |
| 1 | AA | 1322 | A | O4'-C1'-N9 | 6.46 | 113.37 | 108.20 |
| 1 | AA | 1584 | A | C8-N9-C4 | -6.46 | 103.22 | 105.80 |
| 1 | AA | 1783 | U | O4'-C1'-N1 | 6.46 | 113.37 | 108.20 |
| 52 | B4 | 61 | A | O4'-C1'-N9 | 6.46 | 113.37 | 108.20 |
| 52 | B4 | 145 | U | O4'-C1'-N1 | 6.46 | 113.37 | 108.20 |
| 53 | B5 | 553 | U | O4'-C1'-N1 | 6.46 | 113.37 | 108.20 |
| 53 | B5 | 2684 | C | O4'-C1'-N1 | 6.46 | 113.37 | 108.20 |
| 1 | AA | 656 | G | N1-C6-O6 | 6.46 | 123.78 | 119.90 |
| 19 | A7 | 15 | G | N9-C1'-C2' | -6.46 | 104.89 | 112.00 |
| 19 | A7 | 30 | G | C8-N9-C4 | -6.46 | 103.81 | 106.40 |
| 53 | B5 | 2251 | G | O4'-C1'-N9 | 6.46 | 113.37 | 108.20 |
| 1 | AA | 766 | U | O4'-C1'-N1 | 6.46 | 113.37 | 108.20 |
| 53 | B5 | 894 | G | N1-C6-O6 | 6.46 | 123.78 | 119.90 |
| 1 | AA | 174 | U | C2-N1-C1' | 6.46 | 125.45 | 117.70 |
| 1 | AA | 232 | U | O4'-C1'-N1 | 6.46 | 113.37 | 108.20 |
| 19 | A7 | 27 | C | C5'-C4'-O4' | 6.46 | 116.85 | 109.10 |
| 19 | A7 | 76 | A | O4'-C1'-N9 | 6.46 | 113.37 | 108.20 |
| 53 | B5 | 413 | U | O4'-C1'-N1 | 6.46 | 113.37 | 108.20 |
| 1 | AA | 509 | G | N1-C6-O6 | 6.46 | 123.77 | 119.90 |
| 1 | AA | 801 | G | N1-C6-O6 | 6.46 | 123.77 | 119.90 |
| 1 | AA | 1229 | G | N1-C6-O6 | 6.46 | 123.77 | 119.90 |
| 49 | BY | 47 | TYR | CB-CG-CD2 | 6.46 | 124.87 | 121.00 |
| 1 | AA | 479 | C | O4'-C1'-N1 | 6.45 | 113.36 | 108.20 |
| 53 | B5 | 1674 | G | N1-C6-O6 | 6.45 | 123.77 | 119.90 |
| 1 | AA | 231 | U | O4'-C1'-N1 | 6.45 | 113.36 | 108.20 |
| 1 | AA | 839 | U | O4'-C1'-N1 | 6.45 | 113.36 | 108.20 |
| 53 | B5 | 541 | U | O4'-C1'-N1 | 6.45 | 113.36 | 108.20 |
| 53 | B5 | 2103 | U | O4'-C1'-N1 | 6.45 | 113.36 | 108.20 |
| 1 | AA | 1724 | G | N1-C6-O6 | 6.45 | 123.77 | 119.90 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 19 | A7 | 43 | G | N1-C6-O6 | -6.45 | 116.03 | 119.90 |
| 53 | B5 | 2530 | G | O4'-C1'-N9 | 6.45 | 113.36 | 108.20 |
| 1 | AA | 613 | G | C5-C6-O6 | -6.45 | 124.73 | 128.60 |
| 1 | AA | 760 | A | O4'-C1'-N9 | 6.45 | 113.36 | 108.20 |
| 1 | AA | 902 | U | O4'-C1'-N1 | 6.45 | 113.36 | 108.20 |
| 53 | B5 | 1733 | G | C5-C6-O6 | -6.45 | 124.73 | 128.60 |
| 1 | AA | 238 | U | O4'-C1'-N1 | 6.45 | 113.36 | 108.20 |
| 53 | B5 | 1560 | G | N1-C6-O6 | 6.45 | 123.77 | 119.90 |
| 53 | B5 | 3366 | G | C5-C6-O6 | -6.45 | 124.73 | 128.60 |
| 53 | B5 | 1445 | U | O4'-C1'-N1 | 6.44 | 113.36 | 108.20 |
| 53 | B5 | 713 | U | O4'-C1'-N1 | 6.44 | 113.35 | 108.20 |
| 53 | B5 | 2477 | G | C5-C6-O6 | -6.44 | 124.73 | 128.60 |
| 53 | B5 | 3066 | U | O4'-C1'-N1 | 6.44 | 113.35 | 108.20 |
| 53 | B5 | 1430 | U | O4'-C1'-N1 | 6.44 | 113.35 | 108.20 |
| 53 | B5 | 1442 | U | O4'-C1'-N1 | 6.44 | 113.35 | 108.20 |
| 53 | B5 | 2974 | U | O4'-C1'-N1 | 6.44 | 113.35 | 108.20 |
| 53 | B5 | 3371 | G | C5-C6-O6 | -6.44 | 124.73 | 128.60 |
| 1 | AA | 884 | G | N1-C6-O6 | 6.44 | 123.76 | 119.90 |
| 1 | AA | 1511 | G | C5-C6-O6 | -6.44 | 124.74 | 128.60 |
| 1 | AA | 882 | U | O4'-C1'-N1 | 6.44 | 113.35 | 108.20 |
| 1 | AA | 1652 | G | N1-C6-O6 | 6.44 | 123.76 | 119.90 |
| 53 | B5 | 129 | U | O4'-C1'-N1 | 6.44 | 113.35 | 108.20 |
| 53 | B5 | 1853 | U | O4'-C1'-N1 | 6.44 | 113.35 | 108.20 |
| 1 | AA | 258 | C | O4'-C1'-N1 | 6.44 | 113.35 | 108.20 |
| 1 | AA | 1674 | U | O4'-C1'-N1 | 6.43 | 113.35 | 108.20 |
| 53 | B5 | 411 | U | O4'-C1'-N1 | 6.43 | 113.35 | 108.20 |
| 53 | B5 | 1109 | U | O4'-C1'-N1 | 6.43 | 113.35 | 108.20 |
| 53 | B5 | 1751 | G | O4'-C1'-N9 | 6.43 | 113.35 | 108.20 |
| 53 | B5 | 3069 | G | N1-C6-O6 | 6.43 | 123.76 | 119.90 |
| 1 | AA | 1353 | U | O4'-C1'-N1 | 6.43 | 113.35 | 108.20 |
| 52 | B4 | 143 | U | O4'-C1'-N1 | 6.43 | 113.35 | 108.20 |
| 53 | B5 | 721 | G | N1-C6-O6 | 6.43 | 123.76 | 119.90 |
| 53 | B5 | 769 | G | C5-C6-O6 | -6.43 | 124.74 | 128.60 |
| 53 | B5 | 802 | C | O4'-C1'-N1 | 6.43 | 113.34 | 108.20 |
| 53 | B5 | 1029 | G | N1-C6-O6 | 6.43 | 123.76 | 119.90 |
| 1 | AA | 1138 | G | N1-C6-O6 | 6.43 | 123.76 | 119.90 |
| 53 | B5 | 787 | G | C5-C6-O6 | -6.43 | 124.74 | 128.60 |
| 53 | B5 | 1611 | G | O4'-C1'-N9 | 6.43 | 113.34 | 108.20 |
| 1 | AA | 675 | U | O4'-C1'-N1 | 6.43 | 113.34 | 108.20 |
| 1 | AA | 1151 | G | O4'-C1'-N9 | 6.43 | 113.34 | 108.20 |
| 53 | B5 | 128 | G | O4'-C1'-N9 | 6.43 | 113.34 | 108.20 |
| 1 | AA | 1361 | G | N1-C6-O6 | 6.43 | 123.75 | 119.90 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 52 | B4 | 101 | U | P-O3'-C3' | 6.43 | 127.41 | 119.70 |
| 53 | B5 | 123 | A | O4'-C1'-N9 | 6.43 | 113.34 | 108.20 |
| 53 | B5 | 1250 | G | P-O3'-C3' | 6.43 | 127.41 | 119.70 |
| 53 | B5 | 1345 | G | N1-C6-O6 | 6.43 | 123.76 | 119.90 |
| 53 | B5 | 3081 | C | O4'-C1'-N1 | 6.43 | 113.34 | 108.20 |
| 1 | AA | 465 | G | C5-C6-O6 | -6.42 | 124.75 | 128.60 |
| 1 | AA | 1560 | G | N1-C6-O6 | 6.42 | 123.75 | 119.90 |
| 19 | A7 | 33 | U | N1-C2-N3 | 6.42 | 118.75 | 114.90 |
| 53 | B5 | 1473 | G | N1-C6-O6 | 6.42 | 123.75 | 119.90 |
| 53 | B5 | 1717 | U | O4'-C1'-N1 | 6.42 | 113.34 | 108.20 |
| 53 | B5 | 2797 | C | O4'-C1'-N1 | 6.42 | 113.34 | 108.20 |
| 1 | AA | 843 | U | O4'-C1'-N1 | 6.42 | 113.34 | 108.20 |
| 1 | AA | 256 | A | O4'-C1'-N9 | 6.42 | 113.34 | 108.20 |
| 1 | AA | 603 | U | O4'-C1'-N1 | 6.42 | 113.34 | 108.20 |
| 1 | AA | 718 | U | O4'-C1'-N1 | 6.42 | 113.34 | 108.20 |
| 1 | AA | 1739 | U | O4'-C1'-N1 | 6.42 | 113.34 | 108.20 |
| 51 | B3 | 13 | A | O4'-C1'-N9 | 6.42 | 113.34 | 108.20 |
| 53 | B5 | 243 | G | O4'-C1'-N9 | 6.42 | 113.34 | 108.20 |
| 53 | B5 | 988 | U | O4'-C1'-N1 | 6.42 | 113.34 | 108.20 |
| 53 | B5 | 2157 | G | N1-C6-O6 | 6.42 | 123.75 | 119.90 |
| 53 | B5 | 282 | G | N1-C6-O6 | 6.42 | 123.75 | 119.90 |
| 1 | AA | 111 | U | O4'-C1'-N1 | 6.42 | 113.34 | 108.20 |
| 1 | AA | 363 | G | N1-C6-O6 | 6.42 | 123.75 | 119.90 |
| 1 | AA | 374 | U | O4'-C1'-N1 | 6.42 | 113.33 | 108.20 |
| 53 | B5 | 626 | U | O4'-C1'-N1 | 6.42 | 113.33 | 108.20 |
| 53 | B5 | 3189 | G | N1-C6-O6 | 6.42 | 123.75 | 119.90 |
| 53 | B5 | 3333 | G | C5-C6-O6 | -6.42 | 124.75 | 128.60 |
| 1 | AA | 58 | U | O4'-C1'-N1 | 6.42 | 113.33 | 108.20 |
| 51 | B3 | 81 | U | O4'-C1'-N1 | 6.42 | 113.33 | 108.20 |
| 53 | B5 | 688 | G | N1-C6-O6 | 6.42 | 123.75 | 119.90 |
| 53 | B5 | 772 | U | O4'-C1'-N1 | 6.42 | 113.33 | 108.20 |
| 1 | AA | 155 | U | O4'-C1'-N1 | 6.42 | 113.33 | 108.20 |
| 53 | B5 | 2610 | G | O4'-C1'-N9 | 6.42 | 113.33 | 108.20 |
| 1 | AA | 611 | U | O4'-C1'-N1 | 6.41 | 113.33 | 108.20 |
| 1 | AA | 1386 | C | C6-N1-C1' | -6.41 | 113.10 | 120.80 |
| 53 | B5 | 444 | U | O4'-C1'-N1 | 6.41 | 113.33 | 108.20 |
| 53 | B5 | 652 | G | N1-C6-O6 | 6.41 | 123.75 | 119.90 |
| 53 | B5 | 852 | U | O4'-C1'-N1 | 6.41 | 113.33 | 108.20 |
| 53 | B5 | 1395 | G | C5-C6-O6 | -6.41 | 124.75 | 128.60 |
| 1 | AA | 1791 | G | N1-C6-O6 | 6.41 | 123.75 | 119.90 |
| 53 | B5 | 2509 | U | O4'-C1'-N1 | 6.41 | 113.33 | 108.20 |
| 1 | AA | 318 | U | O4'-C1'-N1 | 6.41 | 113.33 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 1616 | U | O4'-C1'-N1 | 6.41 | 113.33 | 108.20 |
| 53 | B5 | 2124 | G | O4'-C1'-N9 | 6.41 | 113.33 | 108.20 |
| 1 | AA | 719 | U | O4'-C1'-N1 | 6.41 | 113.33 | 108.20 |
| 53 | B5 | 441 | U | O4'-C1'-N1 | 6.41 | 113.33 | 108.20 |
| 53 | B5 | 750 | G | N1-C6-O6 | 6.41 | 123.75 | 119.90 |
| 53 | B5 | 2787 | G | N1-C6-O6 | 6.41 | 123.75 | 119.90 |
| 53 | B5 | 2842 | U | O4'-C1'-N1 | 6.41 | 113.33 | 108.20 |
| 1 | AA | 797 | G | O4'-C4'-C3' | -6.41 | 97.59 | 104.00 |
| 53 | B5 | 1592 | G | C5-C6-O6 | -6.41 | 124.76 | 128.60 |
| 53 | B5 | 2994 | A | O4'-C1'-N9 | 6.41 | 113.33 | 108.20 |
| 1 | AA | 1736 | U | O4'-C1'-N1 | 6.41 | 113.32 | 108.20 |
| 53 | B5 | 183 | G | N1-C6-O6 | 6.41 | 123.74 | 119.90 |
| 53 | B5 | 449 | U | O4'-C1'-N1 | 6.41 | 113.32 | 108.20 |
| 53 | B5 | 1077 | U | O4'-C1'-N1 | 6.41 | 113.33 | 108.20 |
| 53 | B5 | 2659 | G | C5-C6-O6 | -6.41 | 124.76 | 128.60 |
| 53 | B5 | 2698 | G | N1-C6-O6 | 6.41 | 123.74 | 119.90 |
| 53 | B5 | 470 | G | O4'-C1'-N9 | 6.40 | 113.32 | 108.20 |
| 53 | B5 | 1095 | U | O4'-C1'-N1 | 6.40 | 113.32 | 108.20 |
| 1 | AA | 452 | A | O4'-C1'-N9 | 6.40 | 113.32 | 108.20 |
| 1 | AA | 1619 | U | O4'-C1'-N1 | 6.40 | 113.32 | 108.20 |
| 53 | B5 | 584 | G | N1-C6-O6 | 6.40 | 123.74 | 119.90 |
| 53 | B5 | 643 | U | O4'-C1'-N1 | 6.40 | 113.32 | 108.20 |
| 53 | B5 | 1246 | G | C5-C6-O6 | -6.40 | 124.76 | 128.60 |
| 53 | B5 | 1577 | G | N1-C6-O6 | 6.40 | 123.74 | 119.90 |
| 53 | B5 | 2694 | A | O4'-C1'-N9 | 6.40 | 113.32 | 108.20 |
| 53 | B5 | 2814 | G | N1-C6-O6 | 6.40 | 123.74 | 119.90 |
| 53 | B5 | 3348 | G | N1-C6-O6 | 6.40 | 123.74 | 119.90 |
| 53 | B5 | 32 | U | O4'-C1'-N1 | 6.40 | 113.32 | 108.20 |
| 53 | B5 | 162 | G | O4'-C1'-N9 | 6.40 | 113.32 | 108.20 |
| 53 | B5 | 2793 | G | C5-C6-O6 | -6.40 | 124.76 | 128.60 |
| 1 | AA | 912 | G | N1-C6-O6 | 6.40 | 123.74 | 119.90 |
| 53 | B5 | 2918 | G | O4'-C1'-N9 | 6.40 | 113.32 | 108.20 |
| 23 | B8 | 18 | TYR | CB-CG-CD1 | 6.40 | 124.84 | 121.00 |
| 1 | AA | 459 | G | O4'-C1'-N9 | 6.40 | 113.32 | 108.20 |
| 1 | AA | 1446 | G | C5-C6-O6 | -6.40 | 124.76 | 128.60 |
| 53 | B5 | 1116 | G | C5-C6-O6 | -6.40 | 124.76 | 128.60 |
| 53 | B5 | 172 | G | O4'-C1'-N9 | 6.39 | 113.31 | 108.20 |
| 53 | B5 | 669 | U | O4'-C1'-N1 | 6.39 | 113.31 | 108.20 |
| 53 | B5 | 1295 | G | O4'-C1'-N9 | 6.39 | 113.31 | 108.20 |
| 53 | B5 | 1624 | G | C5-C6-O6 | -6.39 | 124.76 | 128.60 |
| 53 | B5 | 2442 | G | O4'-C1'-N9 | 6.39 | 113.31 | 108.20 |
| 1 | AA | 48 | G | N1-C6-O6 | 6.39 | 123.74 | 119.90 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 1 | AA | 1389 | U | O4'-C1'-N1 | 6.39 | 113.31 | 108.20 |
| 1 | AA | 81 | G | N1-C6-O6 | 6.39 | 123.73 | 119.90 |
| 1 | AA | 642 | G | N1-C6-O6 | 6.39 | 123.73 | 119.90 |
| 53 | B5 | 548 | G | N1-C6-O6 | 6.39 | 123.73 | 119.90 |
| 53 | B5 | 2122 | G | O4'-C1'-N9 | 6.39 | 113.31 | 108.20 |
| 53 | B5 | 2598 | G | O4'-C1'-N9 | 6.39 | 113.31 | 108.20 |
| 53 | B5 | 3202 | G | N1-C6-O6 | 6.39 | 123.73 | 119.90 |
| 53 | B5 | 1576 | G | O4'-C1'-N9 | 6.39 | 113.31 | 108.20 |
| 53 | B5 | 1689 | U | O4'-C1'-N1 | 6.39 | 113.31 | 108.20 |
| 53 | B5 | 3260 | G | O4'-C1'-N9 | 6.39 | 113.31 | 108.20 |
| 51 | B3 | 112 | G | O4'-C1'-N9 | 6.39 | 113.31 | 108.20 |
| 53 | B5 | 326 | U | O4'-C1'-N1 | 6.39 | 113.31 | 108.20 |
| 53 | B5 | 1422 | G | C5-C6-O6 | -6.39 | 124.77 | 128.60 |
| 53 | B5 | 3101 | G | C5-C6-O6 | -6.39 | 124.77 | 128.60 |
| 1 | AA | 163 | G | N1-C6-O6 | 6.39 | 123.73 | 119.90 |
| 53 | B5 | 158 | G | C5-C6-O6 | -6.39 | 124.77 | 128.60 |
| 53 | B5 | 2199 | G | O4'-C1'-N9 | 6.39 | 113.31 | 108.20 |
| 53 | B5 | 2236 | G | N1-C6-O6 | 6.39 | 123.73 | 119.90 |
| 53 | B5 | 2310 | U | O4'-C1'-N1 | 6.39 | 113.31 | 108.20 |
| 53 | B5 | 2908 | G | N1-C6-O6 | 6.39 | 123.73 | 119.90 |
| 1 | AA | 487 | G | N1-C6-O6 | 6.38 | 123.73 | 119.90 |
| 1 | AA | 1786 | G | C5-C6-O6 | -6.38 | 124.77 | 128.60 |
| 53 | B5 | 297 | G | C5-C6-O6 | -6.38 | 124.77 | 128.60 |
| 53 | B5 | 1752 | A | O4'-C1'-N9 | 6.38 | 113.31 | 108.20 |
| 52 | B4 | 5 | U | O4'-C1'-N1 | 6.38 | 113.31 | 108.20 |
| 53 | B5 | 1385 | C | O4'-C1'-N1 | 6.38 | 113.31 | 108.20 |
| 1 | AA | 1054 | U | O4'-C1'-N1 | 6.38 | 113.31 | 108.20 |
| 1 | AA | 1124 | G | N1-C6-O6 | 6.38 | 123.73 | 119.90 |
| 51 | B3 | 56 | G | N1-C6-O6 | 6.38 | 123.73 | 119.90 |
| 53 | B5 | 2923 | U | O4'-C1'-N1 | 6.38 | 113.31 | 108.20 |
| 53 | B5 | 3022 | G | C5-C6-O6 | -6.38 | 124.77 | 128.60 |
| 1 | AA | 27 | U | O4'-C1'-N1 | 6.38 | 113.30 | 108.20 |
| 1 | AA | 63 | G | N1-C6-O6 | 6.38 | 123.73 | 119.90 |
| 1 | AA | 1023 | U | O4'-C1'-N1 | 6.38 | 113.30 | 108.20 |
| 53 | B5 | 2423 | U | O4'-C1'-N1 | 6.38 | 113.30 | 108.20 |
| 53 | B5 | 2790 | A | O4'-C1'-N9 | 6.38 | 113.30 | 108.20 |
| 1 | AA | 540 | G | O4'-C1'-N9 | 6.38 | 113.30 | 108.20 |
| 53 | B5 | 910 | G | C5-C6-O6 | -6.38 | 124.77 | 128.60 |
| 53 | B5 | 739 | G | N1-C6-O6 | 6.38 | 123.73 | 119.90 |
| 53 | B5 | 879 | U | O4'-C1'-N1 | 6.38 | 113.30 | 108.20 |
| 53 | B5 | 2891 | U | O4'-C1'-N1 | 6.38 | 113.30 | 108.20 |
| 53 | B5 | 2964 | G | C5-C6-O6 | -6.38 | 124.78 | 128.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 3111 | U | O4'-C1'-N1 | 6.38 | 113.30 | 108.20 |
| 1 | AA | 652 | G | N1-C6-O6 | 6.38 | 123.72 | 119.90 |
| 1 | AA | 1247 | U | O4'-C1'-N1 | 6.38 | 113.30 | 108.20 |
| 53 | B5 | 3077 | A | O4'-C1'-N9 | 6.38 | 113.30 | 108.20 |
| 1 | AA | 200 | A | O4'-C1'-N9 | 6.37 | 113.30 | 108.20 |
| 52 | B4 | 103 | G | C5-C6-O6 | -6.37 | 124.78 | 128.60 |
| 53 | B5 | 468 | G | O4'-C1'-N9 | 6.37 | 113.30 | 108.20 |
| 53 | B5 | 1928 | G | C5-C6-O6 | -6.37 | 124.78 | 128.60 |
| 53 | B5 | 2725 | U | O4'-C1'-N1 | 6.37 | 113.30 | 108.20 |
| 19 | A7 | 22 | G | P-O3'-C3' | 6.37 | 127.35 | 119.70 |
| 19 | A7 | 42 | G | C5-N7-C8 | -6.37 | 101.11 | 104.30 |
| 53 | B5 | 400 | G | N1-C6-O6 | 6.37 | 123.72 | 119.90 |
| 53 | B5 | 2683 | U | O4'-C1'-N1 | 6.37 | 113.30 | 108.20 |
| 1 | AA | 1241 | G | C5-C6-O6 | -6.37 | 124.78 | 128.60 |
| 1 | AA | 1575 | A | O4'-C1'-N9 | 6.37 | 113.30 | 108.20 |
| 53 | B5 | 317 | A | P-O3'-C3' | 6.37 | 127.34 | 119.70 |
| 53 | B5 | 1289 | G | N1-C6-O6 | 6.37 | 123.72 | 119.90 |
| 53 | B5 | 1871 | U | O4'-C1'-N1 | 6.37 | 113.30 | 108.20 |
| 1 | AA | 1533 | U | O4'-C1'-N1 | 6.37 | 113.29 | 108.20 |
| 51 | B3 | 2 | G | N1-C6-O6 | 6.37 | 123.72 | 119.90 |
| 53 | B5 | 21 | G | N1-C6-O6 | 6.37 | 123.72 | 119.90 |
| 53 | B5 | 1080 | A | O4'-C1'-N9 | 6.37 | 113.29 | 108.20 |
| 53 | B5 | 1467 | A | O4'-C1'-N9 | 6.37 | 113.29 | 108.20 |
| 53 | B5 | 3386 | G | C5-C6-O6 | -6.36 | 124.78 | 128.60 |
| 1 | AA | 1267 | G | N1-C6-O6 | 6.36 | 123.72 | 119.90 |
| 19 | A7 | 68 | U | C4'-C3'-C2' | -6.36 | 96.24 | 102.60 |
| 53 | B5 | 1174 | G | N1-C6-O6 | 6.36 | 123.72 | 119.90 |
| 53 | B5 | 3158 | G | N1-C6-O6 | 6.36 | 123.72 | 119.90 |
| 1 | AA | 159 | U | O4'-C1'-N1 | 6.36 | 113.29 | 108.20 |
| 53 | B5 | 1720 | U | O4'-C1'-N1 | 6.36 | 113.29 | 108.20 |
| 1 | AA | 676 | G | N1-C6-O6 | 6.36 | 123.71 | 119.90 |
| 1 | AA | 1142 | U | O4'-C1'-N1 | 6.36 | 113.29 | 108.20 |
| 53 | B5 | 3356 | G | N1-C6-O6 | 6.36 | 123.71 | 119.90 |
| 53 | B5 | 1747 | G | O4'-C1'-N9 | 6.36 | 113.28 | 108.20 |
| 53 | B5 | 2882 | U | O4'-C1'-N1 | 6.36 | 113.28 | 108.20 |
| 53 | B5 | 3196 | U | O4'-C1'-N1 | 6.36 | 113.28 | 108.20 |
| 53 | B5 | 3212 | U | O4'-C1'-N1 | 6.36 | 113.28 | 108.20 |
| 1 | AA | 1711 | G | N1-C6-O6 | 6.35 | 123.71 | 119.90 |
| 52 | B4 | 26 | U | O4'-C1'-N1 | 6.35 | 113.28 | 108.20 |
| 53 | B5 | 56 | G | O4'-C1'-N9 | 6.35 | 113.28 | 108.20 |
| 53 | B5 | 1021 | G | N1-C6-O6 | 6.35 | 123.71 | 119.90 |
| 53 | B5 | 1189 | C | O4'-C1'-N1 | 6.35 | 113.28 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 2833 | A | C5-C6-N6 | -6.35 | 118.62 | 123.70 |
| 53 | B5 | 3241 | G | C5-C6-O6 | -6.35 | 124.79 | 128.60 |
| 1 | AA | 142 | G | N1-C6-O6 | 6.35 | 123.71 | 119.90 |
| 1 | AA | 1539 | G | C5-C6-O6 | -6.35 | 124.79 | 128.60 |
| 19 | A7 | 68 | U | N1-C2-N3 | 6.35 | 118.71 | 114.90 |
| 53 | B5 | 640 | U | O4'-C1'-N1 | 6.35 | 113.28 | 108.20 |
| 53 | B5 | 658 | G | N1-C6-O6 | 6.35 | 123.71 | 119.90 |
| 53 | B5 | 3384 | U | O4'-C1'-N1 | 6.35 | 113.28 | 108.20 |
| 1 | AA | 1208 | G | O4'-C1'-N9 | 6.35 | 113.28 | 108.20 |
| 1 | AA | 1415 | G | N1-C6-O6 | 6.35 | 123.71 | 119.90 |
| 53 | B5 | 2481 | G | C5-C6-O6 | -6.35 | 124.79 | 128.60 |
| 53 | B5 | 2980 | U | O4'-C1'-N1 | 6.35 | 113.28 | 108.20 |
| 53 | B5 | 3246 | G | N1-C6-O6 | 6.35 | 123.71 | 119.90 |
| 1 | AA | 1476 | G | N1-C6-O6 | 6.34 | 123.71 | 119.90 |
| 19 | A7 | 59 | U | N3-C4-C5 | -6.34 | 110.79 | 114.60 |
| 53 | B5 | 1666 | G | C5-C6-O6 | -6.34 | 124.79 | 128.60 |
| 53 | B5 | 2385 | G | C5-C6-O6 | -6.34 | 124.79 | 128.60 |
| 53 | B5 | 3290 | G | C5-C6-O6 | -6.34 | 124.79 | 128.60 |
| 1 | AA | 1250 | U | O4'-C1'-N1 | 6.34 | 113.28 | 108.20 |
| 1 | AA | 1375 | U | O4'-C1'-N1 | 6.34 | 113.27 | 108.20 |
| 53 | B5 | 2332 | A | O4'-C1'-N9 | 6.34 | 113.27 | 108.20 |
| 53 | B5 | 2355 | G | C5-C6-O6 | -6.34 | 124.79 | 128.60 |
| 1 | AA | 372 | G | O4'-C1'-N9 | 6.34 | 113.27 | 108.20 |
| 1 | AA | 1166 | G | N1-C6-O6 | 6.34 | 123.70 | 119.90 |
| 1 | AA | 1348 | G | O4'-C1'-N9 | 6.34 | 113.27 | 108.20 |
| 53 | B5 | 2342 | U | O4'-C1'-N1 | 6.34 | 113.27 | 108.20 |
| 1 | AA | 291 | G | N1-C6-O6 | 6.34 | 123.70 | 119.90 |
| 53 | B5 | 2417 | U | O4'-C1'-N1 | 6.34 | 113.27 | 108.20 |
| 53 | B5 | 2498 | U | O4'-C1'-N1 | 6.34 | 113.27 | 108.20 |
| 1 | AA | 595 | G | O4'-C1'-N9 | 6.34 | 113.27 | 108.20 |
| 51 | B3 | 21 | G | C5-C6-O6 | -6.34 | 124.80 | 128.60 |
| 52 | B4 | 58 | G | P-O3'-C3' | 6.34 | 127.31 | 119.70 |
| 19 | A7 | 66 | A | C4-C5-C6 | -6.34 | 113.83 | 117.00 |
| 53 | B5 | 975 | G | N1-C6-O6 | 6.34 | 123.70 | 119.90 |
| 53 | B5 | 1677 | G | N1-C6-O6 | 6.34 | 123.70 | 119.90 |
| 53 | B5 | 3352 | U | O4'-C1'-N1 | 6.34 | 113.27 | 108.20 |
| 53 | B5 | 333 | G | O4'-C1'-N9 | 6.33 | 113.27 | 108.20 |
| 1 | AA | 379 | U | O4'-C1'-N1 | 6.33 | 113.27 | 108.20 |
| 1 | AA | 806 | A | O4'-C1'-N9 | 6.33 | 113.27 | 108.20 |
| 1 | AA | 908 | U | O4'-C1'-N1 | 6.33 | 113.27 | 108.20 |
| 1 | AA | 916 | U | O4'-C1'-N1 | 6.33 | 113.27 | 108.20 |
| 53 | B5 | 461 | U | O4'-C1'-N1 | 6.33 | 113.27 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 760 | G | N1-C6-O6 | 6.33 | 123.70 | 119.90 |
| 53 | B5 | 1115 | G | N1-C6-O6 | 6.33 | 123.70 | 119.90 |
| 53 | B5 | 3325 | G | O4'-C1'-N9 | 6.33 | 113.27 | 108.20 |
| 1 | AA | 648 | G | C5-C6-O6 | -6.33 | 124.80 | 128.60 |
| 19 | A7 | 57 | G | N1-C6-O6 | -6.33 | 116.10 | 119.90 |
| 52 | B4 | 10 | A | O4'-C1'-N9 | 6.33 | 113.27 | 108.20 |
| 52 | B4 | 42 | G | N1-C6-O6 | 6.33 | 123.70 | 119.90 |
| 53 | B5 | 281 | G | C5-C6-O6 | -6.33 | 124.80 | 128.60 |
| 53 | B5 | 390 | G | N1-C6-O6 | 6.33 | 123.70 | 119.90 |
| 53 | B5 | 495 | G | O4'-C1'-N9 | 6.33 | 113.27 | 108.20 |
| 53 | B5 | 2574 | G | O4'-C1'-N9 | 6.33 | 113.27 | 108.20 |
| 1 | AA | 1016 | U | O4'-C1'-N1 | 6.33 | 113.26 | 108.20 |
| 19 | A7 | 19 | G | N3-C2-N2 | -6.33 | 115.47 | 119.90 |
| 53 | B5 | 164 | A | O4'-C1'-N9 | 6.33 | 113.26 | 108.20 |
| 53 | B5 | 2247 | G | O4'-C1'-N9 | 6.33 | 113.26 | 108.20 |
| 53 | B5 | 829 | U | O4'-C1'-N1 | 6.33 | 113.26 | 108.20 |
| 53 | B5 | 2864 | A | P-O3'-C3' | 6.33 | 127.29 | 119.70 |
| 53 | B5 | 1498 | A | O4'-C1'-N9 | 6.33 | 113.26 | 108.20 |
| 53 | B5 | 564 | G | O4'-C1'-N9 | 6.33 | 113.26 | 108.20 |
| 53 | B5 | 878 | G | O4'-C1'-N9 | 6.33 | 113.26 | 108.20 |
| 53 | B5 | 1412 | G | C5-C6-O6 | -6.33 | 124.80 | 128.60 |
| 53 | B5 | 1780 | G | N1-C6-O6 | 6.33 | 123.70 | 119.90 |
| 1 | AA | 695 | U | O4'-C1'-N1 | 6.32 | 113.26 | 108.20 |
| 1 | AA | 1001 | G | C5-C6-O6 | -6.32 | 124.81 | 128.60 |
| 1 | AA | 1583 | U | O4'-C1'-N1 | 6.32 | 113.26 | 108.20 |
| 51 | B3 | 82 | A | O4'-C1'-N9 | 6.32 | 113.26 | 108.20 |
| 53 | B5 | 87 | U | O4'-C1'-N1 | 6.32 | 113.26 | 108.20 |
| 53 | B5 | 314 | U | O4'-C1'-N1 | 6.32 | 113.26 | 108.20 |
| 1 | AA | 1109 | G | N1-C6-O6 | 6.32 | 123.69 | 119.90 |
| 1 | AA | 1433 | A | O4'-C1'-N9 | 6.32 | 113.26 | 108.20 |
| 52 | B4 | 98 | U | O4'-C1'-N1 | 6.32 | 113.26 | 108.20 |
| 53 | B5 | 924 | G | N1-C6-O6 | 6.32 | 123.69 | 119.90 |
| 53 | B5 | 2336 | U | O4'-C1'-N1 | 6.32 | 113.26 | 108.20 |
| 1 | AA | 1259 | G | N1-C6-O6 | 6.32 | 123.69 | 119.90 |
| 1 | AA | 1609 | A | O4'-C1'-N9 | 6.32 | 113.26 | 108.20 |
| 1 | AA | 1267 | G | O4'-C1'-N9 | 6.32 | 113.25 | 108.20 |
| 53 | B5 | 1024 | G | P-O3'-C3' | 6.32 | 127.28 | 119.70 |
| 53 | B5 | 2943 | G | C5-C6-O6 | -6.32 | 124.81 | 128.60 |
| 1 | AA | 368 | U | O4'-C1'-N1 | 6.32 | 113.25 | 108.20 |
| 1 | AA | 858 | G | C2-N3-C4 | 6.32 | 115.06 | 111.90 |
| 1 | AA | 1656 | G | N1-C6-O6 | 6.32 | 123.69 | 119.90 |
| 53 | B5 | 1718 | G | P-O3'-C3' | 6.32 | 127.28 | 119.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 2317 | A | O4'-C1'-N9 | 6.32 | 113.25 | 108.20 |
| 53 | B5 | 3156 | U | O4'-C1'-N1 | 6.32 | 113.25 | 108.20 |
| 53 | B5 | 3390 | G | C5-C6-O6 | -6.32 | 124.81 | 128.60 |
| 53 | B5 | 1393 | A | O4'-C1'-N9 | 6.31 | 113.25 | 108.20 |
| 1 | AA | 564 | G | C5-C6-O6 | -6.31 | 124.81 | 128.60 |
| 52 | B4 | 144 | G | C5-C6-O6 | -6.31 | 124.81 | 128.60 |
| 53 | B5 | 512 | U | O4'-C1'-N1 | 6.31 | 113.25 | 108.20 |
| 53 | B5 | 2250 | G | O4'-C1'-N9 | 6.31 | 113.25 | 108.20 |
| 53 | B5 | 1927 | G | O4'-C1'-N9 | 6.31 | 113.25 | 108.20 |
| 1 | AA | 960 | U | O4'-C1'-N1 | 6.31 | 113.25 | 108.20 |
| 1 | AA | 1427 | U | O4'-C1'-N1 | 6.31 | 113.25 | 108.20 |
| 1 | AA | 1759 | U | O4'-C1'-N1 | 6.31 | 113.25 | 108.20 |
| 53 | B5 | 1056 | U | O4'-C1'-N1 | 6.31 | 113.25 | 108.20 |
| 1 | AA | 548 | G | O4'-C1'-N9 | 6.31 | 113.25 | 108.20 |
| 1 | AA | 1550 | U | C4'-C3'-C2' | 6.31 | 108.91 | 102.60 |
| 52 | B4 | 39 | G | C5-C6-O6 | -6.31 | 124.81 | 128.60 |
| 53 | B5 | 2 | U | O4'-C1'-N1 | 6.31 | 113.25 | 108.20 |
| 53 | B5 | 853 | G | O4'-C1'-N9 | 6.31 | 113.25 | 108.20 |
| 53 | B5 | 1082 | U | O4'-C1'-N1 | 6.31 | 113.25 | 108.20 |
| 53 | B5 | 1134 | G | O4'-C1'-N9 | 6.31 | 113.25 | 108.20 |
| 53 | B5 | 1233 | G | N1-C6-O6 | 6.31 | 123.69 | 119.90 |
| 53 | B5 | 2534 | G | O4'-C1'-N9 | 6.31 | 113.25 | 108.20 |
| 53 | B5 | 2631 | U | O4'-C1'-N1 | 6.31 | 113.25 | 108.20 |
| 53 | B5 | 2787 | G | O4'-C1'-N9 | 6.31 | 113.25 | 108.20 |
| 1 | AA | 52 | U | O4'-C1'-N1 | 6.30 | 113.24 | 108.20 |
| 1 | AA | 643 | G | N1-C6-O6 | 6.30 | 123.68 | 119.90 |
| 38 | BN | 4 | TYR | CB-CG-CD1 | 6.30 | 124.78 | 121.00 |
| 53 | B5 | 731 | U | O4'-C1'-N1 | 6.30 | 113.24 | 108.20 |
| 53 | B5 | 1036 | A | O4'-C1'-N9 | 6.30 | 113.24 | 108.20 |
| 53 | B5 | 1492 | G | C5-C6-O6 | -6.30 | 124.82 | 128.60 |
| 53 | B5 | 1905 | G | C5-C6-O6 | -6.30 | 124.82 | 128.60 |
| 53 | B5 | 1552 | G | N1-C6-O6 | 6.30 | 123.68 | 119.90 |
| 1 | AA | 482 | U | O4'-C1'-N1 | 6.30 | 113.24 | 108.20 |
| 1 | AA | 1732 | U | O4'-C1'-N1 | 6.30 | 113.24 | 108.20 |
| 53 | B5 | 244 | G | N1-C6-O6 | 6.30 | 123.68 | 119.90 |
| 53 | B5 | 3199 | G | P-O3'-C3' | 6.30 | 127.26 | 119.70 |
| 53 | B5 | 3242 | G | C5-C6-O6 | -6.30 | 124.82 | 128.60 |
| 53 | B5 | 3267 | U | O4'-C1'-N1 | 6.30 | 113.24 | 108.20 |
| 1 | AA | 1520 | U | O5'-P-OP1 | -6.30 | 100.03 | 105.70 |
| 53 | B5 | 20 | A | O4'-C1'-N9 | 6.30 | 113.24 | 108.20 |
| 53 | B5 | 355 | A | O4'-C1'-N9 | 6.30 | 113.24 | 108.20 |
| 53 | B5 | 2584 | G | N1-C6-O6 | 6.30 | 123.68 | 119.90 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 2907 | G | O4'-C1'-N9 | 6.30 | 113.24 | 108.20 |
| 53 | B5 | 673 | U | O4'-C1'-N1 | 6.30 | 113.24 | 108.20 |
| 53 | B5 | 1476 | G | C5-C6-O6 | -6.30 | 124.82 | 128.60 |
| 53 | B5 | 2325 | G | C5-C6-O6 | -6.30 | 124.82 | 128.60 |
| 53 | B5 | 2403 | G | N1-C6-O6 | 6.30 | 123.68 | 119.90 |
| 53 | B5 | 2968 | G | N1-C6-O6 | 6.30 | 123.68 | 119.90 |
| 1 | AA | 327 | U | O4'-C1'-N1 | 6.29 | 113.24 | 108.20 |
| 1 | AA | 1695 | G | O4'-C1'-N9 | 6.29 | 113.24 | 108.20 |
| 53 | B5 | 295 | A | O4'-C1'-N9 | 6.29 | 113.24 | 108.20 |
| 1 | AA | 167 | U | O4'-C1'-N1 | 6.29 | 113.23 | 108.20 |
| 1 | AA | 1321 | G | N1-C6-O6 | 6.29 | 123.68 | 119.90 |
| 1 | AA | 1523 | A | OP1-P-OP2 | -6.29 | 110.16 | 119.60 |
| 51 | B3 | 43 | U | P-O3'-C3' | 6.29 | 127.25 | 119.70 |
| 51 | B3 | 109 | G | O4'-C1'-N9 | 6.29 | 113.23 | 108.20 |
| 52 | B4 | 82 | U | O4'-C1'-N1 | 6.29 | 113.23 | 108.20 |
| 52 | B4 | 128 | U | O4'-C1'-N1 | 6.29 | 113.23 | 108.20 |
| 53 | B5 | 104 | G | O4'-C1'-N9 | 6.29 | 113.23 | 108.20 |
| 53 | B5 | 705 | A | C5-C6-N6 | -6.29 | 118.67 | 123.70 |
| 53 | B5 | 1331 | U | O4'-C1'-N1 | 6.29 | 113.23 | 108.20 |
| 1 | AA | 669 | G | N1-C6-O6 | 6.29 | 123.67 | 119.90 |
| 53 | B5 | 55 | G | N1-C6-O6 | 6.29 | 123.67 | 119.90 |
| 53 | B5 | 413 | U | P-O3'-C3' | 6.29 | 127.25 | 119.70 |
| 53 | B5 | 1329 | U | O4'-C1'-N1 | 6.29 | 113.23 | 108.20 |
| 53 | B5 | 1475 | A | O4'-C1'-N9 | 6.29 | 113.23 | 108.20 |
| 53 | B5 | 1630 | U | O4'-C1'-N1 | 6.29 | 113.23 | 108.20 |
| 53 | B5 | 2769 | A | O4'-C1'-N9 | 6.29 | 113.23 | 108.20 |
| 1 | AA | 77 | U | O4'-C1'-N1 | 6.29 | 113.23 | 108.20 |
| 19 | A7 | 60 | C | C3'-C2'-C1' | -6.29 | 96.47 | 101.50 |
| 53 | B5 | 1222 | G | C5-C6-O6 | -6.29 | 124.83 | 128.60 |
| 1 | AA | 738 | G | N1-C6-O6 | 6.29 | 123.67 | 119.90 |
| 1 | AA | 1255 | U | O4'-C1'-N1 | 6.29 | 113.23 | 108.20 |
| 1 | AA | 1462 | G | O4'-C1'-N9 | 6.29 | 113.23 | 108.20 |
| 19 | A7 | 2 | C | N3-C4-C5 | 6.29 | 124.42 | 121.90 |
| 53 | B5 | 426 | G | N1-C6-O6 | 6.29 | 123.67 | 119.90 |
| 53 | B5 | 1131 | G | C5-C6-O6 | -6.29 | 124.83 | 128.60 |
| 53 | B5 | 1229 | G | N1-C6-O6 | 6.29 | 123.67 | 119.90 |
| 1 | AA | 1332 | U | O4'-C1'-N1 | 6.29 | 113.23 | 108.20 |
| 19 | A7 | 71 | G | C4-C5-N7 | -6.29 | 108.28 | 110.80 |
| 53 | B5 | 1493 | G | C5-C6-O6 | -6.29 | 124.83 | 128.60 |
| 1 | AA | 89 | G | C5-C6-O6 | -6.29 | 124.83 | 128.60 |
| 1 | AA | 980 | U | O4'-C1'-N1 | 6.29 | 113.23 | 108.20 |
| 53 | B5 | 754 | G | O4'-C1'-N9 | 6.29 | 113.23 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 1114 | U | O4'-C1'-N1 | 6.29 | 113.23 | 108.20 |
| 53 | B5 | 1486 | G | O4'-C1'-N9 | 6.29 | 113.23 | 108.20 |
| 53 | B5 | 1886 | A | O4'-C1'-N9 | 6.29 | 113.23 | 108.20 |
| 53 | B5 | 3389 | U | O4'-C1'-N1 | 6.29 | 113.23 | 108.20 |
| 1 | AA | 306 | U | O4'-C1'-N1 | 6.28 | 113.23 | 108.20 |
| 1 | AA | 423 | G | N1-C6-O6 | 6.28 | 123.67 | 119.90 |
| 1 | AA | 511 | A | O4'-C1'-N9 | 6.28 | 113.23 | 108.20 |
| 1 | AA | 774 | A | O4'-C1'-N9 | 6.28 | 113.23 | 108.20 |
| 1 | AA | 1189 | A | O4'-C1'-N9 | 6.28 | 113.23 | 108.20 |
| 1 | AA | 1269 | G | O4'-C1'-N9 | 6.28 | 113.23 | 108.20 |
| 53 | B5 | 222 | A | O4'-C1'-N9 | 6.28 | 113.23 | 108.20 |
| 53 | B5 | 726 | G | N1-C6-O6 | 6.28 | 123.67 | 119.90 |
| 1 | AA | 1112 | U | O4'-C1'-N1 | 6.28 | 113.22 | 108.20 |
| 1 | AA | 1777 | U | O4'-C1'-N1 | 6.28 | 113.23 | 108.20 |
| 53 | B5 | 1842 | A | O4'-C1'-N9 | 6.28 | 113.22 | 108.20 |
| 1 | AA | 390 | G | O4'-C1'-N9 | 6.28 | 113.22 | 108.20 |
| 52 | B4 | 64 | U | O4'-C1'-N1 | 6.28 | 113.22 | 108.20 |
| 53 | B5 | 25 | U | O4'-C1'-N1 | 6.28 | 113.22 | 108.20 |
| 53 | B5 | 1249 | G | O4'-C1'-N9 | 6.28 | 113.22 | 108.20 |
| 53 | B5 | 1577 | G | O4'-C1'-N9 | 6.28 | 113.22 | 108.20 |
| 53 | B5 | 3306 | U | O4'-C1'-N1 | 6.28 | 113.22 | 108.20 |
| 1 | AA | 714 | G | O4'-C1'-N9 | 6.28 | 113.22 | 108.20 |
| 1 | AA | 900 | G | N1-C6-O6 | 6.28 | 123.67 | 119.90 |
| 51 | B3 | 8 | G | C5-C6-O6 | -6.28 | 124.83 | 128.60 |
| 53 | B5 | 3083 | G | N1-C6-O6 | 6.28 | 123.67 | 119.90 |
| 1 | AA | 115 | G | O4'-C1'-N9 | 6.28 | 113.22 | 108.20 |
| 1 | AA | 663 | U | O4'-C1'-N1 | 6.28 | 113.22 | 108.20 |
| 1 | AA | 1213 | A | O4'-C1'-N9 | 6.28 | 113.22 | 108.20 |
| 36 | BL | 141 | ALA | N-CA-CB | 6.28 | 118.89 | 110.10 |
| 53 | B5 | 161 | G | O4'-C1'-N9 | 6.28 | 113.22 | 108.20 |
| 53 | B5 | 383 | G | C5-C6-O6 | -6.28 | 124.83 | 128.60 |
| 53 | B5 | 716 | G | C5-C6-O6 | -6.28 | 124.83 | 128.60 |
| 53 | B5 | 1134 | G | N1-C6-O6 | 6.28 | 123.67 | 119.90 |
| 53 | B5 | 1483 | G | N1-C6-O6 | 6.28 | 123.67 | 119.90 |
| 53 | B5 | 2871 | G | N1-C6-O6 | 6.28 | 123.67 | 119.90 |
| 1 | AA | 20 | G | O4'-C1'-N9 | 6.28 | 113.22 | 108.20 |
| 1 | AA | 585 | A | O4'-C1'-N9 | 6.28 | 113.22 | 108.20 |
| 1 | AA | 1114 | U | O4'-C1'-N1 | 6.28 | 113.22 | 108.20 |
| 1 | AA | 1176 | G | N1-C6-O6 | 6.28 | 123.67 | 119.90 |
| 1 | AA | 1252 | A | O4'-C1'-N9 | 6.28 | 113.22 | 108.20 |
| 19 | A7 | 18 | G | C4'-C3'-C2' | -6.28 | 96.33 | 102.60 |
| 53 | B5 | 3147 | G | N1-C6-O6 | 6.28 | 123.67 | 119.90 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 17 | AR | 285 | ALA | C-N-CA | 6.27 | 137.38 | 121.70 |
| 52 | B4 | 13 | A | O4'-C1'-N9 | 6.27 | 113.22 | 108.20 |
| 1 | AA | 983 | G | O4'-C1'-N9 | 6.27 | 113.22 | 108.20 |
| 53 | B5 | 1890 | U | O4'-C1'-N1 | 6.27 | 113.22 | 108.20 |
| 1 | AA | 1165 | U | O4'-C1'-N1 | 6.27 | 113.22 | 108.20 |
| 53 | B5 | 371 | G | N1-C6-O6 | 6.27 | 123.66 | 119.90 |
| 53 | B5 | 603 | A | O4'-C1'-N9 | 6.27 | 113.22 | 108.20 |
| 53 | B5 | 722 | G | N1-C6-O6 | 6.27 | 123.66 | 119.90 |
| 53 | B5 | 885 | U | O4'-C1'-N1 | 6.27 | 113.22 | 108.20 |
| 53 | B5 | 2454 | G | O4'-C1'-N9 | 6.27 | 113.22 | 108.20 |
| 53 | B5 | 2472 | U | O4'-C1'-N1 | 6.27 | 113.21 | 108.20 |
| 53 | B5 | 2800 | G | N1-C6-O6 | 6.27 | 123.66 | 119.90 |
| 53 | B5 | 1377 | G | O4'-C1'-N9 | 6.27 | 113.21 | 108.20 |
| 53 | B5 | 2253 | G | O4'-C1'-N9 | 6.27 | 113.21 | 108.20 |
| 53 | B5 | 3274 | G | O4'-C1'-N9 | 6.27 | 113.21 | 108.20 |
| 1 | AA | 201 | G | N1-C6-O6 | 6.26 | 123.66 | 119.90 |
| 1 | AA | 252 | U | O4'-C1'-N1 | 6.26 | 113.21 | 108.20 |
| 1 | AA | 714 | G | N1-C6-O6 | 6.26 | 123.66 | 119.90 |
| 53 | B5 | 2105 | G | O4'-C1'-N9 | 6.26 | 113.21 | 108.20 |
| 53 | B5 | 2672 | G | N1-C6-O6 | 6.26 | 123.66 | 119.90 |
| 53 | B5 | 1649 | U | O4'-C1'-N1 | 6.26 | 113.21 | 108.20 |
| 53 | B5 | 1770 | G | C5-C6-O6 | -6.26 | 124.84 | 128.60 |
| 53 | B5 | 3146 | G | N1-C6-O6 | 6.26 | 123.66 | 119.90 |
| 1 | AA | 392 | G | O4'-C1'-N9 | 6.26 | 113.21 | 108.20 |
| 1 | AA | 802 | G | O4'-C1'-N9 | 6.26 | 113.21 | 108.20 |
| 1 | AA | 896 | U | O4'-C1'-N1 | 6.26 | 113.21 | 108.20 |
| 1 | AA | 919 | U | O4'-C1'-N1 | 6.26 | 113.21 | 108.20 |
| 1 | AA | 1107 | G | N1-C6-O6 | 6.26 | 123.66 | 119.90 |
| 1 | AA | 1307 | U | O4'-C1'-N1 | 6.26 | 113.21 | 108.20 |
| 53 | B5 | 3058 | U | O4'-C1'-N1 | 6.26 | 113.21 | 108.20 |
| 1 | AA | 1048 | G | N1-C6-O6 | 6.26 | 123.66 | 119.90 |
| 1 | AA | 1443 | A | O4'-C1'-N9 | 6.26 | 113.21 | 108.20 |
| 1 | AA | 1693 | G | O4'-C1'-N9 | 6.26 | 113.21 | 108.20 |
| 1 | AA | 823 | G | O4'-C1'-N9 | 6.26 | 113.21 | 108.20 |
| 1 | AA | 1532 | G | N1-C6-O6 | 6.26 | 123.66 | 119.90 |
| 53 | B5 | 3179 | U | O4'-C1'-N1 | 6.26 | 113.21 | 108.20 |
| 1 | AA | 53 | G | C5-C6-O6 | -6.26 | 124.85 | 128.60 |
| 42 | BR | 94 | TYR | CB-CG-CD2 | 6.26 | 124.75 | 121.00 |
| 52 | B4 | 116 | G | O4'-C1'-N9 | 6.26 | 113.20 | 108.20 |
| 53 | B5 | 685 | G | O4'-C1'-N9 | 6.26 | 113.20 | 108.20 |
| 1 | AA | 143 | G | N1-C6-O6 | 6.25 | 123.65 | 119.90 |
| 1 | AA | 609 | U | O4'-C1'-N1 | 6.25 | 113.20 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1 | AA | 1103 | U | O4'-C1'-N1 | 6.25 | 113.20 | 108.20 |
| 1 | AA | 1628 | U | O4'-C1'-N1 | 6.25 | 113.20 | 108.20 |
| 1 | AA | 239 | C | O4'-C1'-N1 | 6.25 | 113.20 | 108.20 |
| 1 | AA | 1091 | G | N1-C6-O6 | 6.25 | 123.65 | 119.90 |
| 1 | AA | 1288 | G | O4'-C1'-N9 | 6.25 | 113.20 | 108.20 |
| 1 | AA | 1488 | C | O4'-C1'-N1 | 6.25 | 113.20 | 108.20 |
| 53 | B5 | 972 | G | N1-C6-O6 | 6.25 | 123.65 | 119.90 |
| 53 | B5 | 1892 | G | N1-C6-O6 | 6.25 | 123.65 | 119.90 |
| 53 | B5 | 2249 | G | O4'-C1'-N9 | 6.25 | 113.20 | 108.20 |
| 1 | AA | 1147 | G | N1-C6-O6 | 6.25 | 123.65 | 119.90 |
| 53 | B5 | 3309 | G | C5-C6-O6 | -6.25 | 124.85 | 128.60 |
| 1 | AA | 33 | U | O4'-C1'-N1 | 6.25 | 113.20 | 108.20 |
| 1 | AA | 348 | U | O4'-C1'-N1 | 6.25 | 113.20 | 108.20 |
| 53 | B5 | 2975 | U | O4'-C1'-N1 | 6.25 | 113.20 | 108.20 |
| 53 | B5 | 3055 | U | O4'-C1'-N1 | 6.25 | 113.20 | 108.20 |
| 1 | AA | 549 | G | N1-C6-O6 | 6.25 | 123.65 | 119.90 |
| 1 | AA | 857 | U | C5'-C4'-O4' | 6.25 | 116.59 | 109.10 |
| 18 | AT | 18 | TYR | CB-CG-CD1 | 6.25 | 124.75 | 121.00 |
| 53 | B5 | 302 | U | O4'-C1'-N1 | 6.25 | 113.20 | 108.20 |
| 53 | B5 | 2191 | U | O4'-C1'-N1 | 6.25 | 113.20 | 108.20 |
| 1 | AA | 641 | G | C5-C6-O6 | -6.25 | 124.85 | 128.60 |
| 53 | B5 | 748 | U | O4'-C1'-N1 | 6.25 | 113.20 | 108.20 |
| 53 | B5 | 1753 | G | O4'-C1'-N9 | 6.25 | 113.20 | 108.20 |
| 1 | AA | 1100 | U | O4'-C1'-N1 | 6.24 | 113.19 | 108.20 |
| 1 | AA | 1167 | G | N1-C6-O6 | 6.24 | 123.65 | 119.90 |
| 1 | AA | 1183 | U | O4'-C1'-N1 | 6.24 | 113.19 | 108.20 |
| 1 | AA | 1380 | G | O4'-C1'-N9 | 6.24 | 113.19 | 108.20 |
| 52 | B4 | 85 | G | O4'-C1'-N9 | 6.24 | 113.19 | 108.20 |
| 53 | B5 | 2579 | G | C5-C6-O6 | -6.24 | 124.85 | 128.60 |
| 1 | AA | 1299 | U | O4'-C1'-N1 | 6.24 | 113.19 | 108.20 |
| 1 | AA | 685 | A | C5-C6-N6 | -6.24 | 118.71 | 123.70 |
| 53 | B5 | 215 | G | N1-C6-O6 | 6.24 | 123.64 | 119.90 |
| 53 | B5 | 671 | U | O4'-C1'-N1 | 6.24 | 113.19 | 108.20 |
| 53 | B5 | 2218 | G | C5-C6-O6 | -6.24 | 124.86 | 128.60 |
| 53 | B5 | 2863 | G | N1-C6-O6 | 6.24 | 123.64 | 119.90 |
| 1 | AA | 458 | G | N1-C6-O6 | 6.24 | 123.64 | 119.90 |
| 19 | A7 | 22 | G | C5-N7-C8 | -6.24 | 101.18 | 104.30 |
| 52 | B4 | 3 | A | O4'-C1'-N9 | 6.24 | 113.19 | 108.20 |
| 53 | B5 | 542 | G | N1-C6-O6 | 6.24 | 123.64 | 119.90 |
| 53 | B5 | 898 | U | O4'-C1'-N1 | 6.24 | 113.19 | 108.20 |
| 53 | B5 | 1670 | C | O4'-C1'-N1 | 6.24 | 113.19 | 108.20 |
| 53 | B5 | 1677 | G | O4'-C1'-N9 | 6.24 | 113.19 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 2177 | G | O4'-C1'-N9 | 6.24 | 113.19 | 108.20 |
| 53 | B5 | 2221 | G | C5-C6-O6 | -6.24 | 124.86 | 128.60 |
| 53 | B5 | 3283 | U | O4'-C1'-N1 | 6.24 | 113.19 | 108.20 |
| 53 | B5 | 171 | G | O4'-C1'-N9 | 6.24 | 113.19 | 108.20 |
| 53 | B5 | 2116 | G | N1-C6-O6 | 6.24 | 123.64 | 119.90 |
| 1 | AA | 632 | U | O4'-C1'-N1 | 6.24 | 113.19 | 108.20 |
| 1 | AA | 782 | U | O4'-C1'-N1 | 6.24 | 113.19 | 108.20 |
| 1 | AA | 810 | G | O4'-C1'-N9 | 6.24 | 113.19 | 108.20 |
| 1 | AA | 910 | U | O4'-C1'-N1 | 6.24 | 113.19 | 108.20 |
| 53 | B5 | 294 | U | O4'-C1'-N1 | 6.24 | 113.19 | 108.20 |
| 53 | B5 | 1634 | G | O4'-C1'-N9 | 6.24 | 113.19 | 108.20 |
| 53 | B5 | 2741 | C | O4'-C1'-N1 | 6.24 | 113.19 | 108.20 |
| 53 | B5 | 613 | G | C5-C6-O6 | -6.23 | 124.86 | 128.60 |
| 1 | AA | 1630 | C | O5'-P-OP2 | -6.23 | 100.09 | 105.70 |
| 53 | B5 | 207 | U | O4'-C1'-N1 | 6.23 | 113.19 | 108.20 |
| 53 | B5 | 880 | G | C5-C6-O6 | -6.23 | 124.86 | 128.60 |
| 53 | B5 | 1807 | G | N1-C6-O6 | 6.23 | 123.64 | 119.90 |
| 53 | B5 | 1828 | A | O4'-C1'-N9 | 6.23 | 113.19 | 108.20 |
| 1 | AA | 1522 | A | O4'-C1'-N9 | -6.23 | 103.22 | 108.20 |
| 1 | AA | 1793 | U | O4'-C1'-N1 | 6.23 | 113.19 | 108.20 |
| 19 | A7 | 1 | G | N3-C2-N2 | -6.23 | 115.54 | 119.90 |
| 51 | B3 | 109 | G | N1-C6-O6 | 6.23 | 123.64 | 119.90 |
| 53 | B5 | 536 | U | O4'-C1'-N1 | 6.23 | 113.19 | 108.20 |
| 53 | B5 | 1705 | U | O4'-C1'-N1 | 6.23 | 113.19 | 108.20 |
| 53 | B5 | 148 | G | C5-C6-O6 | -6.23 | 124.86 | 128.60 |
| 1 | AA | 1536 | U | O4'-C1'-N1 | 6.23 | 113.18 | 108.20 |
| 1 | AA | 1734 | G | O4'-C1'-N9 | 6.23 | 113.18 | 108.20 |
| 52 | B4 | 58 | G | O4'-C1'-N9 | 6.23 | 113.18 | 108.20 |
| 53 | B5 | 231 | G | N1-C6-O6 | 6.23 | 123.64 | 119.90 |
| 53 | B5 | 341 | G | N1-C6-O6 | 6.23 | 123.64 | 119.90 |
| 53 | B5 | 2547 | A | O4'-C1'-N9 | 6.23 | 113.18 | 108.20 |
| 53 | B5 | 2662 | G | O4'-C1'-N9 | 6.23 | 113.18 | 108.20 |
| 53 | B5 | 3104 | U | O4'-C1'-N1 | 6.23 | 113.18 | 108.20 |
| 1 | AA | 772 | G | O4'-C1'-N9 | 6.23 | 113.18 | 108.20 |
| 53 | B5 | 1747 | G | C5-C6-O6 | -6.23 | 124.86 | 128.60 |
| 53 | B5 | 3076 | C | O4'-C1'-N1 | 6.23 | 113.18 | 108.20 |
| 1 | AA | 1355 | G | C5-C6-O6 | -6.22 | 124.87 | 128.60 |
| 53 | B5 | 979 | G | O4'-C1'-N9 | 6.22 | 113.18 | 108.20 |
| 1 | AA | 952 | G | C5-C6-O6 | -6.22 | 124.87 | 128.60 |
| 1 | AA | 1257 | G | N1-C6-O6 | 6.22 | 123.63 | 119.90 |
| 53 | B5 | 992 | G | C5-C6-O6 | -6.22 | 124.87 | 128.60 |
| 53 | B5 | 3149 | G | O4'-C1'-N9 | 6.22 | 113.18 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 3213 | G | C5-C6-O6 | -6.22 | 124.87 | 128.60 |
| 53 | B5 | 3318 | G | C5-C6-O6 | -6.22 | 124.87 | 128.60 |
| 1 | AA | 913 | G | N1-C6-O6 | 6.22 | 123.63 | 119.90 |
| 53 | B5 | 488 | U | O4'-C1'-N1 | 6.22 | 113.18 | 108.20 |
| 53 | B5 | 2759 | U | O4'-C1'-N1 | 6.22 | 113.18 | 108.20 |
| 1 | AA | 418 | G | O4'-C1'-N9 | 6.22 | 113.18 | 108.20 |
| 1 | AA | 1573 | G | N1-C6-O6 | 6.22 | 123.63 | 119.90 |
| 52 | B4 | 148 | G | N1-C6-O6 | 6.22 | 123.63 | 119.90 |
| 53 | B5 | 3332 | U | O4'-C1'-N1 | 6.22 | 113.18 | 108.20 |
| 53 | B5 | 518 | G | N1-C6-O6 | 6.22 | 123.63 | 119.90 |
| 53 | B5 | 2394 | G | N1-C6-O6 | 6.22 | 123.63 | 119.90 |
| 17 | AR | 286 | GLU | CB-CA-C | -6.21 | 97.97 | 110.40 |
| 51 | B3 | 80 | G | N1-C6-O6 | 6.21 | 123.63 | 119.90 |
| 53 | B5 | 301 | G | N1-C6-O6 | 6.21 | 123.63 | 119.90 |
| 53 | B5 | 1450 | G | C5-C6-O6 | -6.21 | 124.87 | 128.60 |
| 53 | B5 | 1830 | G | C5-C6-O6 | -6.21 | 124.87 | 128.60 |
| 53 | B5 | 2393 | G | C5-C6-O6 | -6.21 | 124.87 | 128.60 |
| 53 | B5 | 3230 | G | O4'-C1'-N9 | 6.21 | 113.17 | 108.20 |
| 53 | B5 | 2483 | G | C5-C6-O6 | -6.21 | 124.87 | 128.60 |
| 53 | B5 | 3224 | G | O4'-C1'-N9 | 6.21 | 113.17 | 108.20 |
| 29 | BE | 224 | LYS | N-CA-CB | 6.21 | 121.78 | 110.60 |
| 53 | B5 | 414 | U | O4'-C1'-N1 | 6.21 | 113.17 | 108.20 |
| 53 | B5 | 2726 | C | O4'-C1'-N1 | 6.21 | 113.17 | 108.20 |
| 53 | B5 | 3297 | U | O4'-C1'-N1 | 6.21 | 113.17 | 108.20 |
| 1 | AA | 364 | G | N1-C6-O6 | 6.21 | 123.63 | 119.90 |
| 1 | AA | 1360 | U | O4'-C1'-N1 | 6.21 | 113.17 | 108.20 |
| 19 | A7 | 38 | A | C6-C5-N7 | 6.21 | 136.65 | 132.30 |
| 53 | B5 | 3035 | A | O4'-C1'-N9 | 6.21 | 113.17 | 108.20 |
| 1 | AA | 1790 | G | C5-C6-O6 | -6.21 | 124.88 | 128.60 |
| 19 | A7 | 33 | U | C6-N1-C2 | -6.21 | 117.28 | 121.00 |
| 53 | B5 | 1087 | G | P-O3'-C3' | 6.21 | 127.15 | 119.70 |
| 53 | B5 | 1777 | U | C2-N1-C1' | 6.21 | 125.15 | 117.70 |
| 1 | AA | 1117 | U | O4'-C1'-N1 | 6.21 | 113.17 | 108.20 |
| 1 | AA | 1282 | U | O4'-C1'-N1 | 6.21 | 113.17 | 108.20 |
| 53 | B5 | 246 | U | O4'-C1'-N1 | 6.21 | 113.17 | 108.20 |
| 53 | B5 | 2319 | U | O4'-C1'-N1 | 6.21 | 113.17 | 108.20 |
| 1 | AA | 1740 | U | O4'-C1'-N1 | 6.20 | 113.16 | 108.20 |
| 19 | A7 | 42 | G | C6-C5-N7 | -6.20 | 126.68 | 130.40 |
| 53 | B5 | 624 | G | N1-C6-O6 | 6.20 | 123.62 | 119.90 |
| 53 | B5 | 1576 | G | N1-C6-O6 | 6.20 | 123.62 | 119.90 |
| 53 | B5 | 2624 | G | C5-C6-O6 | -6.20 | 124.88 | 128.60 |
| 1 | AA | 1349 | G | N1-C6-O6 | 6.20 | 123.62 | 119.90 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 644 | G | C5-C6-O6 | -6.20 | 124.88 | 128.60 |
| 1 | AA | 1047 | G | O4'-C1'-N9 | 6.20 | 113.16 | 108.20 |
| 19 | A7 | 2 | C | C5'-C4'-O4' | 6.20 | 116.54 | 109.10 |
| 53 | B5 | 511 | G | N1-C6-O6 | 6.20 | 123.62 | 119.90 |
| 53 | B5 | 901 | G | O4'-C1'-N9 | 6.20 | 113.16 | 108.20 |
| 53 | B5 | 1536 | G | O4'-C1'-N9 | 6.20 | 113.16 | 108.20 |
| 53 | B5 | 3220 | G | O4'-C1'-N9 | 6.20 | 113.16 | 108.20 |
| 1 | AA | 774 | A | P-O3'-C3' | -6.20 | 112.26 | 119.70 |
| 1 | AA | 1702 | U | O4'-C1'-N1 | 6.20 | 113.16 | 108.20 |
| 53 | B5 | 212 | G | C5-C6-O6 | -6.20 | 124.88 | 128.60 |
| 53 | B5 | 499 | G | C5-C6-O6 | -6.20 | 124.88 | 128.60 |
| 53 | B5 | 833 | G | O4'-C1'-N9 | 6.20 | 113.16 | 108.20 |
| 1 | AA | 517 | U | O4'-C1'-N1 | 6.20 | 113.16 | 108.20 |
| 53 | B5 | 1089 | G | O4'-C1'-N9 | 6.20 | 113.16 | 108.20 |
| 1 | AA | 597 | G | N1-C6-O6 | 6.20 | 123.62 | 119.90 |
| 1 | AA | 816 | G | O4'-C1'-N9 | 6.20 | 113.16 | 108.20 |
| 1 | AA | 1044 | G | O4'-C1'-N9 | 6.20 | 113.16 | 108.20 |
| 53 | B5 | 92 | G | O4'-C1'-N9 | 6.20 | 113.16 | 108.20 |
| 53 | B5 | 651 | G | O4'-C1'-N9 | 6.20 | 113.16 | 108.20 |
| 1 | AA | 165 | G | N1-C6-O6 | 6.19 | 123.61 | 119.90 |
| 1 | AA | 834 | G | N1-C6-O6 | 6.19 | 123.61 | 119.90 |
| 53 | B5 | 1542 | G | O4'-C1'-N9 | 6.19 | 113.15 | 108.20 |
| 53 | B5 | 2127 | U | O4'-C1'-N1 | 6.19 | 113.15 | 108.20 |
| 1 | AA | 201 | G | O4'-C1'-N9 | 6.19 | 113.15 | 108.20 |
| 1 | AA | 783 | G | O4'-C1'-N9 | 6.19 | 113.15 | 108.20 |
| 1 | AA | 1126 | U | O4'-C1'-N1 | 6.19 | 113.15 | 108.20 |
| 1 | AA | 1708 | U | O4'-C1'-N1 | 6.19 | 113.15 | 108.20 |
| 53 | B5 | 203 | G | N1-C6-O6 | 6.19 | 123.61 | 119.90 |
| 53 | B5 | 1006 | A | O4'-C1'-N9 | 6.19 | 113.15 | 108.20 |
| 53 | B5 | 1460 | A | O4'-C1'-N9 | 6.19 | 113.15 | 108.20 |
| 53 | B5 | 2671 | A | O4'-C1'-N9 | 6.19 | 113.15 | 108.20 |
| 53 | B5 | 2870 | C | O4'-C1'-N1 | 6.19 | 113.15 | 108.20 |
| 1 | AA | 30 | G | C5-C6-O6 | -6.19 | 124.89 | 128.60 |
| 51 | B3 | 85 | G | O4'-C1'-N9 | 6.19 | 113.15 | 108.20 |
| 53 | B5 | 1152 | G | C5-C6-O6 | -6.19 | 124.89 | 128.60 |
| 1 | AA | 600 | U | O4'-C1'-N1 | 6.19 | 113.15 | 108.20 |
| 52 | B4 | 62 | C | C2-N1-C1' | 6.19 | 125.61 | 118.80 |
| 53 | B5 | 250 | U | O4'-C1'-N1 | 6.19 | 113.15 | 108.20 |
| 53 | B5 | 1266 | G | O4'-C1'-N9 | 6.19 | 113.15 | 108.20 |
| 1 | AA | 858 | G | C5'-C4'-O4' | 6.19 | 116.52 | 109.10 |
| 1 | AA | 1214 | G | N1-C6-O6 | 6.19 | 123.61 | 119.90 |
| 1 | AA | 701 | U | O4'-C1'-N1 | 6.18 | 113.15 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1 | AA | 1238 | A | C5-C6-N6 | -6.18 | 118.75 | 123.70 |
| 1 | AA | 1426 | G | O4'-C1'-N9 | 6.18 | 113.15 | 108.20 |
| 53 | B5 | 1166 | G | O4'-C1'-N9 | 6.18 | 113.15 | 108.20 |
| 53 | B5 | 3343 | G | O4'-C1'-N9 | 6.18 | 113.15 | 108.20 |
| 1 | AA | 1394 | U | O4'-C1'-N1 | 6.18 | 113.15 | 108.20 |
| 53 | B5 | 1447 | G | C5-C6-O6 | -6.18 | 124.89 | 128.60 |
| 53 | B5 | 2973 | G | O4'-C1'-N9 | 6.18 | 113.15 | 108.20 |
| 1 | AA | 1296 | G | C5-C6-O6 | -6.18 | 124.89 | 128.60 |
| 51 | B3 | 116 | U | O4'-C1'-N1 | 6.18 | 113.14 | 108.20 |
| 53 | B5 | 1808 | G | O4'-C1'-N9 | 6.18 | 113.14 | 108.20 |
| 1 | AA | 753 | A | O4'-C1'-N9 | 6.18 | 113.14 | 108.20 |
| 1 | AA | 1069 | C | O4'-C1'-N1 | 6.18 | 113.14 | 108.20 |
| 1 | AA | 1260 | G | O4'-C1'-N9 | 6.18 | 113.14 | 108.20 |
| 1 | AA | 1504 | G | N1-C6-O6 | 6.18 | 123.61 | 119.90 |
| 19 | A7 | 66 | A | O4'-C4'-C3' | 6.18 | 111.04 | 106.10 |
| 53 | B5 | 371 | G | O4'-C1'-N9 | 6.18 | 113.14 | 108.20 |
| 53 | B5 | 1148 | G | O4'-C1'-N9 | 6.18 | 113.14 | 108.20 |
| 53 | B5 | 1944 | U | O4'-C1'-N1 | 6.18 | 113.14 | 108.20 |
| 1 | AA | 1500 | G | N1-C6-O6 | 6.18 | 123.61 | 119.90 |
| 53 | B5 | 597 | G | C5-C6-O6 | -6.18 | 124.89 | 128.60 |
| 1 | AA | 528 | U | O4'-C1'-N1 | 6.18 | 113.14 | 108.20 |
| 1 | AA | 1521 | G | C6-N1-C2 | 6.18 | 128.81 | 125.10 |
| 1 | AA | 1775 | G | C5-C6-O6 | -6.18 | 124.89 | 128.60 |
| 52 | B4 | 24 | G | C5-C6-O6 | -6.18 | 124.89 | 128.60 |
| 53 | B5 | 1673 | G | O4'-C1'-N9 | 6.18 | 113.14 | 108.20 |
| 1 | AA | 223 | U | O4'-C1'-N1 | 6.17 | 113.14 | 108.20 |
| 1 | AA | 272 | U | O4'-C1'-N1 | 6.17 | 113.14 | 108.20 |
| 1 | AA | 307 | G | C5-C6-O6 | -6.17 | 124.89 | 128.60 |
| 1 | AA | 1776 | G | C5-C6-O6 | -6.17 | 124.90 | 128.60 |
| 53 | B5 | 128 | G | N1-C6-O6 | 6.17 | 123.61 | 119.90 |
| 53 | B5 | 963 | G | C5-C6-O6 | -6.17 | 124.90 | 128.60 |
| 53 | B5 | 1392 | G | C5-C6-O6 | -6.17 | 124.89 | 128.60 |
| 1 | AA | 833 | U | O4'-C1'-N1 | 6.17 | 113.14 | 108.20 |
| 1 | AA | 1508 | U | O4'-C1'-N1 | 6.17 | 113.14 | 108.20 |
| 53 | B5 | 1901 | A | O4'-C1'-N9 | 6.17 | 113.14 | 108.20 |
| 1 | AA | 392 | G | N1-C6-O6 | 6.17 | 123.60 | 119.90 |
| 53 | B5 | 2370 | G | C5-C6-O6 | -6.17 | 124.90 | 128.60 |
| 19 | A7 | 75 | C | N3-C2-O2 | -6.17 | 117.58 | 121.90 |
| 53 | B5 | 1838 | G | C5-C6-O6 | -6.17 | 124.90 | 128.60 |
| 1 | AA | 1685 | U | O4'-C1'-N1 | 6.17 | 113.13 | 108.20 |
| 1 | AA | 1696 | G | O4'-C1'-N9 | 6.17 | 113.13 | 108.20 |
| 19 | A7 | 9 | A | C8-N9-C4 | -6.17 | 103.33 | 105.80 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 251 | G | C5-C6-O6 | -6.17 | 124.90 | 128.60 |
| 53 | B5 | 1543 | G | C5-C6-O6 | -6.17 | 124.90 | 128.60 |
| 53 | B5 | 2954 | U | O4'-C1'-N1 | 6.17 | 113.13 | 108.20 |
| 1 | AA | 216 | U | O4'-C1'-N1 | 6.17 | 113.13 | 108.20 |
| 1 | AA | 370 | A | O4'-C1'-N9 | 6.17 | 113.13 | 108.20 |
| 1 | AA | 957 | U | O4'-C1'-N1 | 6.17 | 113.13 | 108.20 |
| 1 | AA | 975 | G | O4'-C1'-N9 | 6.17 | 113.13 | 108.20 |
| 1 | AA | 1606 | U | O4'-C1'-N1 | 6.17 | 113.13 | 108.20 |
| 1 | AA | 986 | G | C5-C6-O6 | -6.16 | 124.90 | 128.60 |
| 19 | A7 | 56 | C | O4'-C1'-C2' | 6.16 | 113.15 | 107.60 |
| 48 | BX | 7 | TYR | CB-CG-CD2 | -6.16 | 117.30 | 121.00 |
| 52 | B4 | 71 | G | C5-C6-O6 | -6.16 | 124.90 | 128.60 |
| 53 | B5 | 74 | G | C5-C6-O6 | -6.16 | 124.90 | 128.60 |
| 53 | B5 | 472 | A | O4'-C1'-N9 | 6.16 | 113.13 | 108.20 |
| 53 | B5 | 1090 | G | O4'-C1'-N9 | 6.16 | 113.13 | 108.20 |
| 53 | B5 | 2475 | G | C5-C6-O6 | -6.16 | 124.90 | 128.60 |
| 53 | B5 | 725 | G | N1-C6-O6 | 6.16 | 123.60 | 119.90 |
| 53 | B5 | 2712 | U | O4'-C1'-N1 | 6.16 | 113.13 | 108.20 |
| 53 | B5 | 272 | G | N1-C6-O6 | 6.16 | 123.60 | 119.90 |
| 53 | B5 | 2503 | G | O4'-C1'-N9 | 6.16 | 113.13 | 108.20 |
| 53 | B5 | 2533 | G | N1-C6-O6 | 6.16 | 123.60 | 119.90 |
| 1 | AA | 351 | C | O4'-C1'-N1 | 6.16 | 113.13 | 108.20 |
| 1 | AA | 1281 | C | O4'-C1'-N1 | 6.16 | 113.13 | 108.20 |
| 53 | B5 | 717 | C | C2-N1-C1' | 6.16 | 125.58 | 118.80 |
| 53 | B5 | 990 | A | O4'-C1'-N9 | 6.16 | 113.13 | 108.20 |
| 53 | B5 | 1929 | G | N1-C6-O6 | 6.16 | 123.59 | 119.90 |
| 1 | AA | 898 | G | C5-C6-O6 | -6.16 | 124.91 | 128.60 |
| 1 | AA | 1677 | G | N1-C6-O6 | 6.16 | 123.59 | 119.90 |
| 19 | A7 | 74 | C | N1-C2-O2 | 6.16 | 122.59 | 118.90 |
| 43 | BS | 21 | PHE | CB-CG-CD2 | 6.16 | 125.11 | 120.80 |
| 53 | B5 | 55 | G | O4'-C1'-N9 | 6.16 | 113.12 | 108.20 |
| 53 | B5 | 139 | G | O4'-C1'-N9 | 6.16 | 113.12 | 108.20 |
| 53 | B5 | 283 | G | C5-C6-O6 | -6.16 | 124.91 | 128.60 |
| 53 | B5 | 2314 | U | O4'-C1'-N1 | 6.16 | 113.12 | 108.20 |
| 53 | B5 | 2973 | G | C5-C6-O6 | -6.16 | 124.91 | 128.60 |
| 53 | B5 | 1695 | U | O4'-C1'-N1 | 6.15 | 113.12 | 108.20 |
| 53 | B5 | 2182 | A | O4'-C1'-N9 | 6.15 | 113.12 | 108.20 |
| 53 | B5 | 210 | U | O4'-C1'-N1 | 6.15 | 113.12 | 108.20 |
| 53 | B5 | 1795 | U | O4'-C1'-N1 | 6.15 | 113.12 | 108.20 |
| 53 | B5 | 1873 | U | O4'-C1'-N1 | 6.15 | 113.12 | 108.20 |
| 53 | B5 | 3251 | U | O4'-C1'-N1 | 6.15 | 113.12 | 108.20 |
| 53 | B5 | 3340 | G | C5-C6-O6 | -6.15 | 124.91 | 128.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 1 | AA | 1169 | G | C5-C6-O6 | -6.15 | 124.91 | 128.60 |
| 1 | AA | 1187 | U | O4'-C1'-N1 | 6.15 | 113.12 | 108.20 |
| 1 | AA | 1667 | U | O4'-C1'-N1 | 6.15 | 113.12 | 108.20 |
| 53 | B5 | 989 | U | O4'-C1'-N1 | 6.15 | 113.12 | 108.20 |
| 53 | B5 | 1441 | G | C5-C6-O6 | -6.15 | 124.91 | 128.60 |
| 53 | B5 | 1920 | U | O4'-C1'-N1 | 6.15 | 113.12 | 108.20 |
| 53 | B5 | 2660 | G | O4'-C1'-N9 | 6.15 | 113.12 | 108.20 |
| 53 | B5 | 3137 | C | O4'-C1'-N1 | 6.15 | 113.12 | 108.20 |
| 53 | B5 | 2824 | G | N1-C6-O6 | 6.15 | 123.59 | 119.90 |
| 53 | B5 | 3226 | A | O4'-C1'-N9 | 6.15 | 113.12 | 108.20 |
| 1 | AA | 495 | C | C6-N1-C1' | -6.15 | 113.42 | 120.80 |
| 53 | B5 | 2822 | U | O4'-C1'-N1 | 6.15 | 113.12 | 108.20 |
| 1 | AA | 177 | U | O4'-C1'-N1 | 6.15 | 113.12 | 108.20 |
| 1 | AA | 595 | G | C5-C6-O6 | -6.15 | 124.91 | 128.60 |
| 53 | B5 | 504 | A | O4'-C1'-N9 | 6.15 | 113.12 | 108.20 |
| 53 | B5 | 1878 | G | C5-C6-O6 | -6.15 | 124.91 | 128.60 |
| 53 | B5 | 2874 | G | O4'-C1'-N9 | 6.15 | 113.12 | 108.20 |
| 53 | B5 | 3009 | G | O4'-C1'-N9 | 6.15 | 113.12 | 108.20 |
| 1 | AA | 548 | G | N1-C6-O6 | 6.14 | 123.59 | 119.90 |
| 1 | AA | 856 | A | O3'-P-O5' | 6.14 | 115.68 | 104.00 |
| 1 | AA | 1289 | G | O4'-C1'-N9 | 6.14 | 113.11 | 108.20 |
| 53 | B5 | 345 | G | N1-C6-O6 | 6.14 | 123.59 | 119.90 |
| 53 | B5 | 678 | G | O4'-C1'-N9 | 6.14 | 113.11 | 108.20 |
| 53 | B5 | 3353 | G | O4'-C1'-N9 | 6.14 | 113.12 | 108.20 |
| 1 | AA | 32 | U | O4'-C1'-N1 | 6.14 | 113.11 | 108.20 |
| 53 | B5 | 2302 | G | C5-C6-O6 | -6.14 | 124.91 | 128.60 |
| 53 | B5 | 3158 | G | O4'-C1'-N9 | 6.14 | 113.11 | 108.20 |
| 1 | AA | 430 | G | O4'-C1'-N9 | 6.14 | 113.11 | 108.20 |
| 53 | B5 | 1573 | G | C5-C6-O6 | -6.14 | 124.92 | 128.60 |
| 53 | B5 | 3073 | A | O4'-C1'-N9 | 6.14 | 113.11 | 108.20 |
| 53 | B5 | 452 | G | C5-C6-O6 | -6.14 | 124.92 | 128.60 |
| 53 | B5 | 799 | G | N1-C6-O6 | 6.14 | 123.58 | 119.90 |
| 53 | B5 | 2174 | G | C5-C6-O6 | -6.14 | 124.92 | 128.60 |
| 53 | B5 | 3085 | G | C5-C6-O6 | -6.14 | 124.92 | 128.60 |
| 53 | B5 | 2268 | U | O4'-C1'-N1 | 6.14 | 113.11 | 108.20 |
| 53 | B5 | 2858 | U | O4'-C1'-N1 | 6.14 | 113.11 | 108.20 |
| 53 | B5 | 2900 | A | O4'-C1'-N9 | 6.14 | 113.11 | 108.20 |
| 53 | B5 | 530 | G | O4'-C1'-N9 | 6.14 | 113.11 | 108.20 |
| 53 | B5 | 822 | G | O4'-C1'-N9 | 6.14 | 113.11 | 108.20 |
| 1 | AA | 419 | G | O4'-C1'-N9 | 6.13 | 113.11 | 108.20 |
| 1 | AA | 522 | U | O4'-C1'-N1 | 6.13 | 113.11 | 108.20 |
| 1 | AA | 586 | G | O4'-C1'-N9 | 6.13 | 113.11 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 624 | G | O4'-C1'-N9 | 6.13 | 113.11 | 108.20 |
| 53 | B5 | 825 | U | O4'-C1'-N1 | 6.13 | 113.11 | 108.20 |
| 1 | AA | 15 | U | O4'-C1'-N1 | 6.13 | 113.11 | 108.20 |
| 1 | AA | 25 | C | O4'-C1'-N1 | 6.13 | 113.11 | 108.20 |
| 1 | AA | 516 | G | O4'-C1'-N9 | 6.13 | 113.11 | 108.20 |
| 53 | B5 | 2781 | U | O4'-C1'-N1 | 6.13 | 113.11 | 108.20 |
| 1 | AA | 109 | G | N1-C6-O6 | 6.13 | 123.58 | 119.90 |
| 1 | AA | 113 | U | O4'-C1'-N1 | 6.13 | 113.10 | 108.20 |
| 1 | AA | 921 | G | O4'-C1'-N9 | 6.13 | 113.10 | 108.20 |
| 1 | AA | 993 | G | N1-C6-O6 | 6.13 | 123.58 | 119.90 |
| 1 | AA | 1452 | G | O4'-C1'-N9 | 6.13 | 113.10 | 108.20 |
| 53 | B5 | 216 | G | O4'-C1'-N9 | 6.13 | 113.10 | 108.20 |
| 53 | B5 | 685 | G | N1-C6-O6 | 6.13 | 123.58 | 119.90 |
| 53 | B5 | 1004 | U | O4'-C1'-N1 | 6.13 | 113.10 | 108.20 |
| 53 | B5 | 2400 | G | C5-C6-O6 | -6.13 | 124.92 | 128.60 |
| 1 | AA | 1268 | U | O4'-C1'-N1 | 6.13 | 113.10 | 108.20 |
| 1 | AA | 1722 | U | O4'-C1'-N1 | 6.13 | 113.10 | 108.20 |
| 53 | B5 | 848 | A | O4'-C1'-N9 | 6.13 | 113.10 | 108.20 |
| 53 | B5 | 1206 | G | O4'-C1'-N9 | 6.13 | 113.10 | 108.20 |
| 53 | B5 | 2677 | G | C5-C6-O6 | -6.13 | 124.92 | 128.60 |
| 1 | AA | 1163 | A | O4'-C1'-N9 | 6.12 | 113.10 | 108.20 |
| 53 | B5 | 1547 | G | N1-C6-O6 | 6.12 | 123.58 | 119.90 |
| 53 | B5 | 2246 | G | N1-C6-O6 | 6.12 | 123.58 | 119.90 |
| 53 | B5 | 2573 | G | N1-C6-O6 | 6.12 | 123.58 | 119.90 |
| 53 | B5 | 3392 | U | O4'-C1'-N1 | 6.12 | 113.10 | 108.20 |
| 1 | AA | 313 | U | O4'-C1'-N1 | 6.12 | 113.10 | 108.20 |
| 1 | AA | 640 | U | O4'-C1'-N1 | 6.12 | 113.10 | 108.20 |
| 1 | AA | 1311 | U | O4'-C1'-N1 | 6.12 | 113.10 | 108.20 |
| 53 | B5 | 35 | A | O4'-C1'-N9 | 6.12 | 113.10 | 108.20 |
| 53 | B5 | 267 | G | N1-C6-O6 | 6.12 | 123.57 | 119.90 |
| 53 | B5 | 1691 | U | O4'-C1'-N1 | 6.12 | 113.10 | 108.20 |
| 53 | B5 | 2605 | G | C5-C6-O6 | -6.12 | 124.93 | 128.60 |
| 1 | AA | 647 | G | O4'-C1'-N9 | 6.12 | 113.10 | 108.20 |
| 1 | AA | 813 | U | O4'-C1'-N1 | 6.12 | 113.10 | 108.20 |
| 1 | AA | 1002 | G | O4'-C1'-N9 | 6.12 | 113.10 | 108.20 |
| 1 | AA | 1341 | A | C1'-O4'-C4' | -6.12 | 105.00 | 109.90 |
| 1 | AA | 1521 | G | C5-N7-C8 | -6.12 | 101.24 | 104.30 |
| 1 | AA | 1551 | G | O4'-C4'-C3' | -6.12 | 97.88 | 104.00 |
| 19 | A7 | 48 | C | N1-C2-O2 | 6.12 | 122.57 | 118.90 |
| 53 | B5 | 1024 | G | C5-C6-O6 | -6.12 | 124.93 | 128.60 |
| 53 | B5 | 2633 | U | O4'-C1'-N1 | 6.12 | 113.10 | 108.20 |
| 53 | B5 | 2660 | G | N1-C6-O6 | 6.12 | 123.57 | 119.90 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1 | AA | 514 | G | O4'-C1'-N9 | 6.12 | 113.09 | 108.20 |
| 1 | AA | 514 | G | N1-C6-O6 | 6.12 | 123.57 | 119.90 |
| 1 | AA | 1031 | G | N1-C6-O6 | 6.12 | 123.57 | 119.90 |
| 1 | AA | 1108 | G | N1-C6-O6 | 6.12 | 123.57 | 119.90 |
| 1 | AA | 1553 | A | O5'-P-OP2 | 6.12 | 118.04 | 110.70 |
| 1 | AA | 1756 | U | O4'-C1'-N1 | 6.12 | 113.09 | 108.20 |
| 52 | B4 | 116 | G | C5-C6-O6 | -6.12 | 124.93 | 128.60 |
| 53 | B5 | 1382 | G | O4'-C1'-N9 | 6.12 | 113.09 | 108.20 |
| 53 | B5 | 3191 | G | O4'-C1'-N9 | 6.12 | 113.09 | 108.20 |
| 1 | AA | 1043 | G | C5-C6-O6 | -6.12 | 124.93 | 128.60 |
| 53 | B5 | 3209 | U | O4'-C1'-N1 | 6.12 | 113.09 | 108.20 |
| 1 | AA | 845 | G | N1-C6-O6 | 6.12 | 123.57 | 119.90 |
| 19 | A7 | 75 | C | C4'-C3'-C2' | -6.12 | 96.48 | 102.60 |
| 53 | B5 | 2246 | G | O4'-C1'-N9 | 6.12 | 113.09 | 108.20 |
| 1 | AA | 1367 | U | O4'-C1'-N1 | 6.11 | 113.09 | 108.20 |
| 19 | A7 | 74 | C | O4'-C4'-C3' | 6.11 | 110.99 | 106.10 |
| 53 | B5 | 227 | G | O4'-C1'-N9 | 6.11 | 113.09 | 108.20 |
| 53 | B5 | 2687 | G | C5-C6-O6 | -6.11 | 124.93 | 128.60 |
| 53 | B5 | 3091 | A | O4'-C1'-N9 | 6.11 | 113.09 | 108.20 |
| 53 | B5 | 3318 | G | O4'-C1'-N9 | 6.11 | 113.09 | 108.20 |
| 1 | AA | 807 | A | O4'-C1'-N9 | 6.11 | 113.09 | 108.20 |
| 53 | B5 | 853 | G | N1-C6-O6 | 6.11 | 123.57 | 119.90 |
| 1 | AA | 563 | U | O4'-C1'-N1 | 6.11 | 113.09 | 108.20 |
| 1 | AA | 1523 | A | N1-C6-N6 | 6.11 | 122.27 | 118.60 |
| 1 | AA | 1551 | G | C2'-C3'-O3' | -6.11 | 96.06 | 109.50 |
| 53 | B5 | 353 | G | O4'-C1'-N9 | 6.11 | 113.09 | 108.20 |
| 53 | B5 | 958 | C | O4'-C1'-N1 | 6.11 | 113.09 | 108.20 |
| 53 | B5 | 2922 | G | O4'-C1'-N9 | 6.11 | 113.09 | 108.20 |
| 53 | B5 | 3269 | A | O4'-C1'-N9 | 6.11 | 113.09 | 108.20 |
| 53 | B5 | 2369 | G | O4'-C1'-N9 | 6.11 | 113.09 | 108.20 |
| 53 | B5 | 197 | G | O4'-C1'-N9 | 6.11 | 113.09 | 108.20 |
| 53 | B5 | 2104 | A | O4'-C1'-N9 | 6.11 | 113.09 | 108.20 |
| 53 | B5 | 2922 | G | C5-C6-O6 | -6.11 | 124.94 | 128.60 |
| 53 | B5 | 3177 | U | O4'-C1'-N1 | 6.11 | 113.09 | 108.20 |
| 1 | AA | 860 | U | C2'-C3'-O3' | -6.11 | 96.07 | 109.50 |
| 53 | B5 | 530 | G | N1-C6-O6 | 6.11 | 123.56 | 119.90 |
| 53 | B5 | 568 | G | C5-C6-O6 | -6.11 | 124.94 | 128.60 |
| 53 | B5 | 964 | G | N1-C6-O6 | 6.11 | 123.56 | 119.90 |
| 53 | B5 | 1222 | G | O4'-C1'-N9 | 6.11 | 113.08 | 108.20 |
| 53 | B5 | 2669 | G | N1-C6-O6 | 6.11 | 123.56 | 119.90 |
| 53 | B5 | 2938 | G | N1-C6-O6 | 6.11 | 123.56 | 119.90 |
| 1 | AA | 859 | A | C4-C5-C6 | 6.10 | 120.05 | 117.00 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1 | AA | 866 | G | O4'-C4'-C3' | -6.10 | 97.90 | 104.00 |
| 53 | B5 | 419 | G | O4'-C1'-N9 | 6.10 | 113.08 | 108.20 |
| 53 | B5 | 552 | G | O4'-C1'-N9 | 6.10 | 113.08 | 108.20 |
| 53 | B5 | 684 | G | N1-C6-O6 | 6.10 | 123.56 | 119.90 |
| 53 | B5 | 820 | A | C5-C6-N6 | -6.10 | 118.82 | 123.70 |
| 53 | B5 | 2848 | G | O4'-C1'-N9 | 6.10 | 113.08 | 108.20 |
| 53 | B5 | 3260 | G | N1-C6-O6 | 6.10 | 123.56 | 119.90 |
| 1 | AA | 140 | A | O4'-C1'-N9 | 6.10 | 113.08 | 108.20 |
| 1 | AA | 450 | U | O4'-C1'-N1 | 6.10 | 113.08 | 108.20 |
| 53 | B5 | 2107 | A | O4'-C1'-N9 | 6.10 | 113.08 | 108.20 |
| 53 | B5 | 2433 | U | O4'-C1'-N1 | 6.10 | 113.08 | 108.20 |
| 53 | B5 | 2714 | G | C5-C6-O6 | -6.10 | 124.94 | 128.60 |
| 53 | B5 | 510 | G | O4'-C1'-N9 | 6.10 | 113.08 | 108.20 |
| 53 | B5 | 2794 | G | C5-C6-O6 | -6.10 | 124.94 | 128.60 |
| 1 | AA | 74 | U | O4'-C1'-N1 | 6.10 | 113.08 | 108.20 |
| 52 | B4 | 135 | G | C5-C6-O6 | -6.10 | 124.94 | 128.60 |
| 53 | B5 | 583 | G | C5-C6-O6 | -6.10 | 124.94 | 128.60 |
| 53 | B5 | 986 | U | O4'-C1'-N1 | 6.10 | 113.08 | 108.20 |
| 53 | B5 | 1933 | A | C5-C6-N6 | -6.10 | 118.82 | 123.70 |
| 1 | AA | 429 | G | N1-C6-O6 | 6.10 | 123.56 | 119.90 |
| 1 | AA | 981 | U | O4'-C1'-N1 | 6.10 | 113.08 | 108.20 |
| 53 | B5 | 604 | G | C5-C6-O6 | -6.10 | 124.94 | 128.60 |
| 53 | B5 | 1598 | G | O4'-C1'-N9 | 6.10 | 113.08 | 108.20 |
| 53 | B5 | 1903 | U | O4'-C1'-N1 | 6.10 | 113.08 | 108.20 |
| 53 | B5 | 2608 | G | O4'-C1'-N9 | 6.10 | 113.08 | 108.20 |
| 53 | B5 | 1019 | G | N1-C6-O6 | 6.10 | 123.56 | 119.90 |
| 1 | AA | 199 | G | O4'-C1'-N9 | 6.09 | 113.08 | 108.20 |
| 52 | B4 | 56 | G | O4'-C1'-N9 | 6.09 | 113.08 | 108.20 |
| 53 | B5 | 511 | G | O4'-C1'-N9 | 6.09 | 113.07 | 108.20 |
| 53 | B5 | 1413 | G | C5-C6-O6 | -6.09 | 124.94 | 128.60 |
| 53 | B5 | 3044 | G | N1-C6-O6 | 6.09 | 123.56 | 119.90 |
| 1 | AA | 597 | G | O4'-C1'-N9 | 6.09 | 113.07 | 108.20 |
| 19 | A7 | 11 | C | C2-N3-C4 | -6.09 | 116.85 | 119.90 |
| 53 | B5 | 474 | G | O4'-C1'-N9 | 6.09 | 113.07 | 108.20 |
| 53 | B5 | 1178 | G | C5-C6-O6 | -6.09 | 124.94 | 128.60 |
| 53 | B5 | 2713 | U | O4'-C1'-N1 | 6.09 | 113.07 | 108.20 |
| 1 | AA | 331 | A | O4'-C1'-N9 | 6.09 | 113.07 | 108.20 |
| 1 | AA | 761 | G | C5-C6-O6 | -6.09 | 124.95 | 128.60 |
| 1 | AA | 1251 | G | N1-C6-O6 | 6.09 | 123.55 | 119.90 |
| 1 | AA | 1502 | G | N1-C6-O6 | 6.09 | 123.55 | 119.90 |
| 1 | AA | 1661 | G | N1-C6-O6 | 6.09 | 123.55 | 119.90 |
| 52 | B4 | 95 | G | N1-C6-O6 | 6.09 | 123.55 | 119.90 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 1471 | U | O4'-C1'-N1 | 6.09 | 113.07 | 108.20 |
| 53 | B5 | 3205 | U | O4'-C1'-N1 | 6.09 | 113.07 | 108.20 |
| 1 | AA | 762 | A | O4'-C1'-N9 | 6.09 | 113.07 | 108.20 |
| 53 | B5 | 3068 | U | O4'-C1'-N1 | 6.09 | 113.07 | 108.20 |
| 1 | AA | 544 | A | O4'-C1'-N9 | 6.09 | 113.07 | 108.20 |
| 1 | AA | 1584 | A | C4-C5-C6 | 6.09 | 120.04 | 117.00 |
| 1 | AA | 1585 | A | C5-C6-N6 | -6.09 | 118.83 | 123.70 |
| 1 | AA | 1590 | A | O4'-C1'-N9 | 6.09 | 113.07 | 108.20 |
| 1 | AA | 1694 | G | N1-C6-O6 | 6.09 | 123.55 | 119.90 |
| 51 | B3 | 64 | A | O4'-C1'-N9 | 6.09 | 113.07 | 108.20 |
| 53 | B5 | 1235 | U | O4'-C1'-N1 | 6.09 | 113.07 | 108.20 |
| 53 | B5 | 1400 | G | O4'-C1'-N9 | 6.09 | 113.07 | 108.20 |
| 53 | B5 | 1652 | G | C5-C6-O6 | -6.09 | 124.95 | 128.60 |
| 53 | B5 | 2970 | C | O4'-C1'-N1 | 6.09 | 113.07 | 108.20 |
| 53 | B5 | 2997 | G | O4'-C1'-N9 | 6.08 | 113.07 | 108.20 |
| 1 | AA | 1372 | A | O4'-C1'-N9 | 6.08 | 113.07 | 108.20 |
| 1 | AA | 1635 | C | C5'-C4'-O4' | -6.08 | 101.80 | 109.10 |
| 19 | A7 | 62 | A | C1'-O4'-C4' | -6.08 | 105.03 | 109.90 |
| 53 | B5 | 229 | G | N1-C6-O6 | 6.08 | 123.55 | 119.90 |
| 1 | AA | 75 | U | O4'-C1'-N1 | 6.08 | 113.07 | 108.20 |
| 1 | AA | 576 | G | N1-C6-O6 | 6.08 | 123.55 | 119.90 |
| 1 | AA | 592 | A | O4'-C1'-N9 | 6.08 | 113.06 | 108.20 |
| 53 | B5 | 1227 | C | P-O3'-C3' | 6.08 | 127.00 | 119.70 |
| 53 | B5 | 2452 | G | C5-C6-O6 | -6.08 | 124.95 | 128.60 |
| 1 | AA | 744 | U | O4'-C1'-N1 | 6.08 | 113.06 | 108.20 |
| 1 | AA | 1745 | G | O4'-C1'-N9 | 6.08 | 113.06 | 108.20 |
| 53 | B5 | 2315 | G | O4'-C1'-N9 | 6.08 | 113.06 | 108.20 |
| 53 | B5 | 3287 | U | O4'-C1'-N1 | 6.08 | 113.06 | 108.20 |
| 1 | AA | 371 | G | O4'-C1'-N9 | 6.08 | 113.06 | 108.20 |
| 1 | AA | 1724 | G | O4'-C1'-N9 | 6.08 | 113.06 | 108.20 |
| 53 | B5 | 2441 | A | O4'-C1'-N9 | 6.08 | 113.06 | 108.20 |
| 1 | AA | 337 | G | N1-C6-O6 | 6.08 | 123.55 | 119.90 |
| 53 | B5 | 647 | A | O4'-C1'-N9 | 6.08 | 113.06 | 108.20 |
| 53 | B5 | 1341 | U | O4'-C1'-N1 | 6.08 | 113.06 | 108.20 |
| 1 | AA | 608 | U | O4'-C1'-N1 | 6.07 | 113.06 | 108.20 |
| 1 | AA | 1235 | U | O4'-C1'-N1 | 6.07 | 113.06 | 108.20 |
| 53 | B5 | 1241 | U | O4'-C1'-N1 | 6.07 | 113.06 | 108.20 |
| 53 | B5 | 1804 | A | O4'-C1'-N9 | 6.07 | 113.06 | 108.20 |
| 53 | B5 | 2193 | U | O4'-C1'-N1 | 6.07 | 113.06 | 108.20 |
| 28 | BD | 194 | TYR | CB-CG-CD1 | -6.07 | 117.36 | 121.00 |
| 53 | B5 | 770 | G | O4'-C1'-N9 | 6.07 | 113.06 | 108.20 |
| 53 | B5 | 1599 | G | O4'-C1'-N9 | 6.07 | 113.06 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 1655 | G | C5-C6-O6 | -6.07 | 124.96 | 128.60 |
| 1 | AA | 1377 | U | O4'-C1'-N1 | 6.07 | 113.06 | 108.20 |
| 53 | B5 | 2936 | A | O4'-C1'-N9 | 6.07 | 113.06 | 108.20 |
| 53 | B5 | 1262 | G | N1-C6-O6 | 6.07 | 123.54 | 119.90 |
| 1 | AA | 810 | G | N1-C6-O6 | 6.07 | 123.54 | 119.90 |
| 1 | AA | 1047 | G | N1-C6-O6 | 6.07 | 123.54 | 119.90 |
| 1 | AA | 1460 | G | O4'-C1'-N9 | 6.07 | 113.05 | 108.20 |
| 1 | AA | 1735 | G | O4'-C1'-N9 | 6.07 | 113.05 | 108.20 |
| 50 | BZ | 43 | TYR | CB-CG-CD2 | -6.07 | 117.36 | 121.00 |
| 51 | B3 | 107 | G | C5-C6-O6 | -6.07 | 124.96 | 128.60 |
| 53 | B5 | 11 | A | O4'-C1'-N9 | 6.07 | 113.05 | 108.20 |
| 53 | B5 | 778 | U | O4'-C1'-N1 | 6.07 | 113.06 | 108.20 |
| 1 | AA | 497 | G | O4'-C1'-N9 | 6.07 | 113.05 | 108.20 |
| 1 | AA | 541 | A | O4'-C1'-N9 | 6.07 | 113.05 | 108.20 |
| 1 | AA | 655 | G | O4'-C1'-N9 | 6.06 | 113.05 | 108.20 |
| 19 | A7 | 66 | A | N1-C2-N3 | -6.06 | 126.27 | 129.30 |
| 53 | B5 | 1650 | G | O4'-C1'-N9 | 6.06 | 113.05 | 108.20 |
| 1 | AA | 557 | G | N1-C6-O6 | 6.06 | 123.54 | 119.90 |
| 1 | AA | 881 | A | O4'-C1'-N9 | 6.06 | 113.05 | 108.20 |
| 38 | BN | 60 | PHE | CB-CG-CD1 | 6.06 | 125.04 | 120.80 |
| 53 | B5 | 805 | G | C5-C6-O6 | -6.06 | 124.96 | 128.60 |
| 53 | B5 | 908 | G | C5-C6-O6 | -6.06 | 124.96 | 128.60 |
| 53 | B5 | 1278 | A | O4'-C1'-N9 | 6.06 | 113.05 | 108.20 |
| 53 | B5 | 197 | G | C5-C6-O6 | -6.06 | 124.96 | 128.60 |
| 1 | AA | 1106 | G | N1-C6-O6 | 6.06 | 123.54 | 119.90 |
| 52 | B4 | 36 | G | C5-C6-O6 | -6.06 | 124.97 | 128.60 |
| 53 | B5 | 468 | G | N1-C6-O6 | 6.06 | 123.53 | 119.90 |
| 53 | B5 | 770 | G | C5-C6-O6 | -6.06 | 124.96 | 128.60 |
| 53 | B5 | 2121 | G | O4'-C1'-N9 | 6.06 | 113.05 | 108.20 |
| 53 | B5 | 2553 | U | O4'-C1'-N1 | 6.06 | 113.05 | 108.20 |
| 53 | B5 | 3199 | G | O4'-C1'-N9 | 6.06 | 113.05 | 108.20 |
| 1 | AA | 9 | U | O4'-C1'-N1 | 6.06 | 113.05 | 108.20 |
| 1 | AA | 290 | G | N1-C6-O6 | 6.06 | 123.53 | 119.90 |
| 1 | AA | 466 | U | O4'-C1'-N1 | 6.06 | 113.05 | 108.20 |
| 1 | AA | 739 | G | O4'-C1'-N9 | 6.06 | 113.05 | 108.20 |
| 1 | AA | 918 | A | O4'-C1'-N9 | 6.06 | 113.05 | 108.20 |
| 1 | AA | 923 | A | O4'-C1'-N9 | 6.06 | 113.05 | 108.20 |
| 1 | AA | 1688 | G | O4'-C1'-N9 | 6.06 | 113.05 | 108.20 |
| 53 | B5 | 960 | U | O4'-C1'-N1 | 6.06 | 113.05 | 108.20 |
| 53 | B5 | 1288 | U | O4'-C1'-N1 | 6.06 | 113.05 | 108.20 |
| 53 | B5 | 2425 | G | C5-C6-O6 | -6.06 | 124.97 | 128.60 |
| 1 | AA | 332 | U | O4'-C1'-N1 | 6.06 | 113.05 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 1253 | U | O4'-C1'-N1 | 6.06 | 113.05 | 108.20 |
| 53 | B5 | 1897 | G | O4'-C1'-N9 | 6.06 | 113.05 | 108.20 |
| 51 | B3 | 49 | G | O4'-C1'-N9 | 6.05 | 113.04 | 108.20 |
| 53 | B5 | 244 | G | O4'-C1'-N9 | 6.05 | 113.04 | 108.20 |
| 1 | AA | 336 | G | O4'-C1'-N9 | 6.05 | 113.04 | 108.20 |
| 53 | B5 | 1177 | G | C5-C6-O6 | -6.05 | 124.97 | 128.60 |
| 53 | B5 | 1182 | A | O4'-C1'-N9 | 6.05 | 113.04 | 108.20 |
| 53 | B5 | 3131 | U | O4'-C1'-N1 | 6.05 | 113.04 | 108.20 |
| 52 | B4 | 132 | G | O4'-C1'-N9 | 6.05 | 113.04 | 108.20 |
| 53 | B5 | 1144 | U | O4'-C1'-N1 | 6.05 | 113.04 | 108.20 |
| 1 | AA | 319 | U | C2-N1-C1' | 6.05 | 124.96 | 117.70 |
| 43 | BS | 21 | PHE | CB-CG-CD1 | -6.05 | 116.56 | 120.80 |
| 53 | B5 | 1409 | G | O4'-C1'-N9 | 6.05 | 113.04 | 108.20 |
| 1 | AA | 115 | G | C5-C6-O6 | -6.05 | 124.97 | 128.60 |
| 53 | B5 | 445 | G | O4'-C1'-N9 | 6.05 | 113.04 | 108.20 |
| 53 | B5 | 1813 | A | O4'-C1'-N9 | 6.05 | 113.04 | 108.20 |
| 53 | B5 | 2535 | A | O4'-C1'-N9 | 6.05 | 113.04 | 108.20 |
| 53 | B5 | 998 | A | O4'-C1'-N9 | 6.05 | 113.04 | 108.20 |
| 53 | B5 | 2860 | U | O4'-C1'-N1 | 6.05 | 113.04 | 108.20 |
| 1 | AA | 1108 | G | O4'-C1'-N9 | 6.04 | 113.04 | 108.20 |
| 1 | AA | 808 | U | O4'-C1'-N1 | 6.04 | 113.03 | 108.20 |
| 1 | AA | 998 | U | O4'-C1'-N1 | 6.04 | 113.03 | 108.20 |
| 1 | AA | 1188 | C | O4'-C1'-N1 | 6.04 | 113.03 | 108.20 |
| 53 | B5 | 1021 | G | O4'-C1'-N9 | 6.04 | 113.03 | 108.20 |
| 53 | B5 | 2180 | G | C5-C6-O6 | -6.04 | 124.97 | 128.60 |
| 53 | B5 | 2377 | G | N1-C6-O6 | 6.04 | 123.53 | 119.90 |
| 53 | B5 | 2573 | G | O4'-C1'-N9 | 6.04 | 113.03 | 108.20 |
| 53 | B5 | 2867 | C | O4'-C1'-N1 | 6.04 | 113.03 | 108.20 |
| 1 | AA | 161 | U | O4'-C1'-N1 | 6.04 | 113.03 | 108.20 |
| 1 | AA | 844 | A | O4'-C1'-N9 | 6.04 | 113.03 | 108.20 |
| 19 | A7 | 56 | C | N1-C2-N3 | -6.04 | 114.97 | 119.20 |
| 19 | A7 | 61 | C | C5'-C4'-O4' | 6.04 | 116.35 | 109.10 |
| 1 | AA | 899 | A | P-O3'-C3' | 6.04 | 126.95 | 119.70 |
| 53 | B5 | 514 | G | O4'-C1'-N9 | 6.04 | 113.03 | 108.20 |
| 53 | B5 | 2680 | A | O4'-C1'-N9 | 6.04 | 113.03 | 108.20 |
| 1 | AA | 10 | G | N1-C6-O6 | 6.04 | 123.52 | 119.90 |
| 1 | AA | 973 | A | O4'-C1'-N9 | 6.04 | 113.03 | 108.20 |
| 1 | AA | 1655 | U | O4'-C1'-N1 | 6.04 | 113.03 | 108.20 |
| 19 | A7 | 57 | G | N1-C2-N3 | 6.04 | 127.52 | 123.90 |
| 51 | B3 | 51 | G | C5-C6-O6 | -6.04 | 124.98 | 128.60 |
| 52 | B4 | 97 | A | O4'-C1'-N9 | 6.04 | 113.03 | 108.20 |
| 53 | B5 | 737 | G | C5-C6-O6 | -6.04 | 124.98 | 128.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 1188 | U | O4'-C1'-N1 | 6.04 | 113.03 | 108.20 |
| 53 | B5 | 1934 | G | O4'-C1'-N9 | 6.04 | 113.03 | 108.20 |
| 53 | B5 | 3381 | U | O4'-C1'-N1 | 6.04 | 113.03 | 108.20 |
| 1 | AA | 1453 | G | O4'-C1'-N9 | 6.04 | 113.03 | 108.20 |
| 53 | B5 | 864 | G | C5-C6-O6 | -6.04 | 124.98 | 128.60 |
| 53 | B5 | 2278 | C | C6-N1-C2 | -6.04 | 117.89 | 120.30 |
| 53 | B5 | 2390 | A | O4'-C1'-N9 | 6.04 | 113.03 | 108.20 |
| 53 | B5 | 2746 | A | O4'-C1'-N9 | 6.04 | 113.03 | 108.20 |
| 53 | B5 | 3075 | G | C5-C6-O6 | -6.04 | 124.98 | 128.60 |
| 53 | B5 | 596 | U | O4'-C1'-N1 | 6.03 | 113.03 | 108.20 |
| 19 | A7 | 11 | C | N3-C4-N4 | -6.03 | 113.78 | 118.00 |
| 53 | B5 | 1675 | G | C5-C6-O6 | -6.03 | 124.98 | 128.60 |
| 53 | B5 | 1796 | G | C5-C6-O6 | -6.03 | 124.98 | 128.60 |
| 1 | AA | 395 | U | O4'-C1'-N1 | 6.03 | 113.02 | 108.20 |
| 1 | AA | 1659 | U | O4'-C1'-N1 | 6.03 | 113.03 | 108.20 |
| 53 | B5 | 920 | A | C5-C6-N6 | -6.03 | 118.88 | 123.70 |
| 53 | B5 | 2732 | G | C5-C6-O6 | -6.03 | 124.98 | 128.60 |
| 1 | AA | 879 | G | N1-C6-O6 | 6.03 | 123.52 | 119.90 |
| 53 | B5 | 252 | U | O4'-C1'-N1 | 6.03 | 113.02 | 108.20 |
| 53 | B5 | 595 | A | O4'-C1'-N9 | 6.03 | 113.02 | 108.20 |
| 53 | B5 | 1166 | G | N1-C6-O6 | 6.03 | 123.52 | 119.90 |
| 53 | B5 | 2796 | G | O4'-C1'-N9 | 6.03 | 113.02 | 108.20 |
| 53 | B5 | 629 | U | O4'-C1'-N1 | 6.03 | 113.02 | 108.20 |
| 1 | AA | 1414 | A | O4'-C1'-N9 | 6.02 | 113.02 | 108.20 |
| 53 | B5 | 3266 | G | O4'-C1'-N9 | 6.02 | 113.02 | 108.20 |
| 1 | AA | 801 | G | O4'-C1'-N9 | 6.02 | 113.02 | 108.20 |
| 1 | AA | 1713 | G | O4'-C1'-N9 | 6.02 | 113.02 | 108.20 |
| 53 | B5 | 3395 | G | N1-C6-O6 | 6.02 | 123.51 | 119.90 |
| 1 | AA | 221 | A | O4'-C1'-N9 | 6.02 | 113.02 | 108.20 |
| 1 | AA | 676 | G | O4'-C1'-N9 | 6.02 | 113.02 | 108.20 |
| 51 | B3 | 88 | G | O4'-C1'-N9 | 6.02 | 113.02 | 108.20 |
| 53 | B5 | 915 | A | O4'-C1'-N9 | 6.02 | 113.02 | 108.20 |
| 1 | AA | 1132 | U | O4'-C1'-N1 | 6.02 | 113.02 | 108.20 |
| 1 | AA | 1788 | A | C5-C6-N6 | -6.02 | 118.88 | 123.70 |
| 53 | B5 | 267 | G | O4'-C1'-N9 | 6.02 | 113.02 | 108.20 |
| 53 | B5 | 1534 | A | O4'-C1'-N9 | 6.02 | 113.02 | 108.20 |
| 53 | B5 | 1613 | A | O4'-C1'-N9 | 6.02 | 113.02 | 108.20 |
| 53 | B5 | 2470 | C | C6-N1-C1' | -6.02 | 113.58 | 120.80 |
| 53 | B5 | 2996 | U | O4'-C1'-N1 | 6.02 | 113.02 | 108.20 |
| 1 | AA | 994 | A | O4'-C1'-N9 | 6.02 | 113.02 | 108.20 |
| 1 | AA | 1748 | A | O4'-C1'-N9 | 6.02 | 113.01 | 108.20 |
| 53 | B5 | 1546 | A | O4'-C1'-N9 | 6.02 | 113.01 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 1661 | G | O4'-C1'-N9 | 6.02 | 113.01 | 108.20 |
| 53 | B5 | 2961 | G | C5-C6-O6 | -6.02 | 124.99 | 128.60 |
| 1 | AA | 497 | G | N1-C6-O6 | 6.02 | 123.51 | 119.90 |
| 1 | AA | 44 | U | O4'-C1'-N1 | 6.01 | 113.01 | 108.20 |
| 1 | AA | 1634 | C | O4'-C1'-N1 | 6.01 | 113.01 | 108.20 |
| 1 | AA | 1711 | G | O4'-C1'-N9 | 6.01 | 113.01 | 108.20 |
| 52 | B4 | 92 | A | C5-C6-N6 | -6.01 | 118.89 | 123.70 |
| 53 | B5 | 483 | G | N1-C6-O6 | 6.01 | 123.51 | 119.90 |
| 53 | B5 | 905 | U | O4'-C1'-N1 | 6.01 | 113.01 | 108.20 |
| 53 | B5 | 1736 | G | C5-C6-O6 | -6.01 | 124.99 | 128.60 |
| 53 | B5 | 1823 | A | P-O3'-C3' | 6.01 | 126.92 | 119.70 |
| 53 | B5 | 2576 | G | O4'-C1'-N9 | 6.01 | 113.01 | 108.20 |
| 1 | AA | 512 | A | O4'-C1'-N9 | 6.01 | 113.01 | 108.20 |
| 1 | AA | 1746 | G | O4'-C1'-N9 | 6.01 | 113.01 | 108.20 |
| 53 | B5 | 2275 | A | O4'-C1'-N9 | 6.01 | 113.01 | 108.20 |
| 1 | AA | 670 | U | O4'-C1'-N1 | 6.01 | 113.01 | 108.20 |
| 19 | A7 | 41 | U | N1-C2-O2 | -6.01 | 118.59 | 122.80 |
| 53 | B5 | 810 | A | C5-C6-N6 | -6.01 | 118.89 | 123.70 |
| 53 | B5 | 1148 | G | N1-C6-O6 | 6.01 | 123.51 | 119.90 |
| 53 | B5 | 2739 | A | O4'-C1'-N9 | 6.01 | 113.01 | 108.20 |
| 53 | B5 | 3160 | U | O4'-C1'-N1 | 6.01 | 113.01 | 108.20 |
| 53 | B5 | 3281 | U | O4'-C1'-N1 | 6.01 | 113.01 | 108.20 |
| 1 | AA | 1475 | G | N1-C6-O6 | 6.01 | 123.50 | 119.90 |
| 1 | AA | 1225 | G | O4'-C1'-N9 | 6.01 | 113.01 | 108.20 |
| 1 | AA | 1773 | U | O4'-C1'-N1 | 6.01 | 113.00 | 108.20 |
| 53 | B5 | 1012 | G | C5-C6-O6 | -6.01 | 125.00 | 128.60 |
| 53 | B5 | 2361 | A | O4'-C1'-N9 | 6.01 | 113.00 | 108.20 |
| 1 | AA | 1530 | U | O4'-C1'-N1 | 6.00 | 113.00 | 108.20 |
| 19 | A7 | 27 | C | O4'-C1'-N1 | 6.00 | 113.00 | 108.20 |
| 53 | B5 | 867 | G | C5-C6-O6 | -6.00 | 125.00 | 128.60 |
| 53 | B5 | 1124 | U | O4'-C1'-N1 | 6.00 | 113.00 | 108.20 |
| 1 | AA | 349 | U | O4'-C1'-N1 | 6.00 | 113.00 | 108.20 |
| 1 | AA | 1515 | U | O3'-P-O5' | -6.00 | 92.60 | 104.00 |
| 52 | B4 | 73 | U | O4'-C1'-N1 | 6.00 | 113.00 | 108.20 |
| 53 | B5 | 1387 | G | O4'-C1'-N9 | 6.00 | 113.00 | 108.20 |
| 53 | B5 | 2158 | A | O4'-C1'-N9 | 6.00 | 113.00 | 108.20 |
| 53 | B5 | 2589 | G | C5-C6-O6 | -6.00 | 125.00 | 128.60 |
| 53 | B5 | 300 | G | O4'-C1'-N9 | 6.00 | 113.00 | 108.20 |
| 1 | AA | 1359 | U | O4'-C1'-N1 | 6.00 | 113.00 | 108.20 |
| 53 | B5 | 1133 | A | O4'-C1'-N9 | 6.00 | 113.00 | 108.20 |
| 53 | B5 | 1447 | G | P-O3'-C3' | 6.00 | 126.90 | 119.70 |
| 1 | AA | 233 | C | O4'-C1'-N1 | 6.00 | 113.00 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1 | AA | 398 | G | C5-C6-O6 | -6.00 | 125.00 | 128.60 |
| 1 | AA | 749 | U | O4'-C1'-N1 | 6.00 | 113.00 | 108.20 |
| 1 | AA | 1614 | G | O4'-C1'-N9 | 6.00 | 113.00 | 108.20 |
| 53 | B5 | 459 | G | O4'-C1'-N9 | 6.00 | 113.00 | 108.20 |
| 1 | AA | 1516 | C | O4'-C4'-C3' | -6.00 | 98.00 | 104.00 |
| 1 | AA | 617 | U | O4'-C1'-N1 | 5.99 | 113.00 | 108.20 |
| 1 | AA | 725 | U | O4'-C1'-N1 | 5.99 | 112.99 | 108.20 |
| 1 | AA | 1099 | G | C5-C6-O6 | -5.99 | 125.00 | 128.60 |
| 53 | B5 | 870 | G | N1-C6-O6 | 5.99 | 123.50 | 119.90 |
| 53 | B5 | 1020 | G | O4'-C1'-N9 | 5.99 | 113.00 | 108.20 |
| 53 | B5 | 2276 | G | O4'-C1'-N9 | 5.99 | 113.00 | 108.20 |
| 53 | B5 | 2429 | G | O4'-C1'-N9 | 5.99 | 113.00 | 108.20 |
| 1 | AA | 388 | G | N1-C6-O6 | 5.99 | 123.50 | 119.90 |
| 1 | AA | 599 | A | O4'-C1'-N9 | 5.99 | 112.99 | 108.20 |
| 53 | B5 | 527 | A | O4'-C1'-N9 | 5.99 | 112.99 | 108.20 |
| 53 | B5 | 2955 | U | O4'-C1'-N1 | 5.99 | 112.99 | 108.20 |
| 1 | AA | 198 | A | O4'-C1'-N9 | 5.99 | 112.99 | 108.20 |
| 1 | AA | 1366 | U | O4'-C1'-N1 | 5.99 | 112.99 | 108.20 |
| 53 | B5 | 381 | U | O4'-C1'-N1 | 5.99 | 112.99 | 108.20 |
| 53 | B5 | 1018 | G | O4'-C1'-N9 | 5.99 | 112.99 | 108.20 |
| 1 | AA | 355 | G | O4'-C1'-N9 | 5.99 | 112.99 | 108.20 |
| 1 | AA | 738 | G | O4'-C1'-N9 | 5.99 | 112.99 | 108.20 |
| 1 | AA | 757 | A | O4'-C1'-N9 | 5.99 | 112.99 | 108.20 |
| 53 | B5 | 812 | G | N1-C6-O6 | 5.99 | 123.49 | 119.90 |
| 53 | B5 | 1040 | A | O4'-C1'-N9 | 5.99 | 112.99 | 108.20 |
| 53 | B5 | 2856 | G | O4'-C1'-N9 | 5.99 | 112.99 | 108.20 |
| 1 | AA | 117 | U | O4'-C1'-N1 | 5.99 | 112.99 | 108.20 |
| 1 | AA | 406 | U | O4'-C1'-N1 | 5.99 | 112.99 | 108.20 |
| 53 | B5 | 316 | U | O4'-C1'-N1 | 5.99 | 112.99 | 108.20 |
| 53 | B5 | 360 | G | O4'-C1'-N9 | 5.99 | 112.99 | 108.20 |
| 53 | B5 | 1456 | A | C4-C5-C6 | 5.99 | 119.99 | 117.00 |
| 53 | B5 | 2950 | G | N1-C6-O6 | 5.99 | 123.49 | 119.90 |
| 53 | B5 | 947 | G | O4'-C1'-N9 | 5.99 | 112.99 | 108.20 |
| 53 | B5 | 1440 | G | O4'-C1'-N9 | 5.99 | 112.99 | 108.20 |
| 1 | AA | 472 | U | O4'-C1'-N1 | 5.98 | 112.99 | 108.20 |
| 53 | B5 | 358 | G | O4'-C1'-N9 | 5.98 | 112.99 | 108.20 |
| 1 | AA | 330 | G | O4'-C1'-N9 | 5.98 | 112.99 | 108.20 |
| 1 | AA | 372 | G | C5-C6-O6 | -5.98 | 125.01 | 128.60 |
| 1 | AA | 356 | G | O4'-C1'-N9 | 5.98 | 112.98 | 108.20 |
| 1 | AA | 476 | U | O4'-C1'-N1 | 5.98 | 112.98 | 108.20 |
| 51 | B3 | 98 | G | C5-C6-O6 | -5.98 | 125.01 | 128.60 |
| 53 | B5 | 1599 | G | N1-C6-O6 | 5.98 | 123.49 | 119.90 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 1640 | G | N1-C6-O6 | 5.98 | 123.49 | 119.90 |
| 53 | B5 | 3258 | U | P-O3'-C3' | 5.98 | 126.88 | 119.70 |
| 1 | AA | 1141 | U | O4'-C1'-N1 | 5.98 | 112.98 | 108.20 |
| 1 | AA | 1787 | G | C5-C6-O6 | -5.98 | 125.01 | 128.60 |
| 53 | B5 | 1519 | G | C5-C6-O6 | -5.98 | 125.01 | 128.60 |
| 1 | AA | 118 | U | O4'-C1'-N1 | 5.98 | 112.98 | 108.20 |
| 1 | AA | 537 | G | O4'-C1'-N9 | 5.98 | 112.98 | 108.20 |
| 1 | AA | 767 | U | O4'-C1'-N1 | 5.98 | 112.98 | 108.20 |
| 53 | B5 | 216 | G | N1-C6-O6 | 5.98 | 123.49 | 119.90 |
| 53 | B5 | 721 | G | O4'-C1'-N9 | 5.98 | 112.98 | 108.20 |
| 53 | B5 | 3328 | G | O4'-C1'-N9 | 5.98 | 112.98 | 108.20 |
| 1 | AA | 1018 | A | O4'-C1'-N9 | 5.98 | 112.98 | 108.20 |
| 52 | B4 | 101 | U | O4'-C1'-N1 | 5.98 | 112.98 | 108.20 |
| 53 | B5 | 1209 | G | C5-C6-O6 | -5.98 | 125.01 | 128.60 |
| 1 | AA | 7 | G | C5-C6-O6 | -5.97 | 125.02 | 128.60 |
| 1 | AA | 299 | A | O4'-C1'-N9 | 5.97 | 112.98 | 108.20 |
| 1 | AA | 775 | G | O4'-C1'-N9 | 5.97 | 112.98 | 108.20 |
| 1 | AA | 235 | G | C5-C6-O6 | -5.97 | 125.02 | 128.60 |
| 53 | B5 | 1020 | G | N1-C6-O6 | 5.97 | 123.48 | 119.90 |
| 53 | B5 | 2278 | C | O4'-C1'-N1 | 5.97 | 112.98 | 108.20 |
| 53 | B5 | 2603 | G | N1-C6-O6 | 5.97 | 123.48 | 119.90 |
| 53 | B5 | 3224 | G | N1-C6-O6 | 5.97 | 123.48 | 119.90 |
| 53 | B5 | 30 | G | O4'-C1'-N9 | 5.97 | 112.98 | 108.20 |
| 1 | AA | 280 | U | O4'-C1'-N1 | 5.97 | 112.98 | 108.20 |
| 1 | AA | 656 | G | O4'-C1'-N9 | 5.97 | 112.98 | 108.20 |
| 1 | AA | 772 | G | N1-C6-O6 | 5.97 | 123.48 | 119.90 |
| 1 | AA | 983 | G | N1-C6-O6 | 5.97 | 123.48 | 119.90 |
| 53 | B5 | 745 | C | N3-C4-N4 | 5.97 | 122.18 | 118.00 |
| 53 | B5 | 1598 | G | N1-C6-O6 | 5.97 | 123.48 | 119.90 |
| 53 | B5 | 1818 | U | O4'-C1'-N1 | 5.97 | 112.98 | 108.20 |
| 53 | B5 | 1892 | G | O4'-C1'-N9 | 5.97 | 112.97 | 108.20 |
| 53 | B5 | 2376 | G | O4'-C1'-N9 | 5.97 | 112.98 | 108.20 |
| 53 | B5 | 2670 | G | O4'-C1'-N9 | 5.97 | 112.98 | 108.20 |
| 1 | AA | 748 | U | O4'-C1'-N1 | 5.97 | 112.97 | 108.20 |
| 53 | B5 | 2602 | G | O4'-C1'-N9 | 5.97 | 112.97 | 108.20 |
| 53 | B5 | 3393 | U | O4'-C1'-N1 | 5.97 | 112.97 | 108.20 |
| 53 | B5 | 1 | G | O4'-C1'-N9 | 5.97 | 112.97 | 108.20 |
| 53 | B5 | 165 | A | O4'-C1'-N9 | 5.97 | 112.97 | 108.20 |
| 53 | B5 | 401 | U | O4'-C1'-N1 | 5.97 | 112.97 | 108.20 |
| 53 | B5 | 2918 | G | N1-C6-O6 | 5.97 | 123.48 | 119.90 |
| 1 | AA | 356 | G | N1-C6-O6 | 5.96 | 123.48 | 119.90 |
| 1 | AA | 712 | G | O4'-C1'-N9 | 5.96 | 112.97 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 1 | AA | 850 | A | O4'-C1'-N9 | 5.96 | 112.97 | 108.20 |
| 1 | AA | 1273 | G | C5-C6-O6 | -5.96 | 125.02 | 128.60 |
| 51 | B3 | 7 | G | N1-C6-O6 | 5.96 | 123.48 | 119.90 |
| 51 | B3 | 25 | G | O4'-C1'-N9 | 5.96 | 112.97 | 108.20 |
| 53 | B5 | 393 | U | O4'-C1'-N1 | 5.96 | 112.97 | 108.20 |
| 53 | B5 | 999 | G | O4'-C1'-N9 | 5.96 | 112.97 | 108.20 |
| 53 | B5 | 1750 | A | O4'-C1'-N9 | 5.96 | 112.97 | 108.20 |
| 53 | B5 | 2602 | G | N1-C6-O6 | 5.96 | 123.48 | 119.90 |
| 53 | B5 | 2606 | G | N1-C6-O6 | 5.96 | 123.48 | 119.90 |
| 53 | B5 | 3009 | G | C5-C6-O6 | -5.96 | 125.02 | 128.60 |
| 1 | AA | 577 | G | O4'-C1'-N9 | 5.96 | 112.97 | 108.20 |
| 1 | AA | 728 | U | O4'-C1'-N1 | 5.96 | 112.97 | 108.20 |
| 1 | AA | 730 | G | C5-C6-O6 | -5.96 | 125.02 | 128.60 |
| 53 | B5 | 415 | G | C5-C6-O6 | -5.96 | 125.02 | 128.60 |
| 53 | B5 | 726 | G | O4'-C1'-N9 | 5.96 | 112.97 | 108.20 |
| 1 | AA | 593 | U | O4'-C1'-N1 | 5.96 | 112.97 | 108.20 |
| 1 | AA | 1031 | G | O4'-C1'-N9 | 5.96 | 112.97 | 108.20 |
| 53 | B5 | 470 | G | N1-C6-O6 | 5.96 | 123.48 | 119.90 |
| 53 | B5 | 1242 | G | O4'-C1'-N9 | 5.96 | 112.97 | 108.20 |
| 53 | B5 | 2898 | G | C5-C6-O6 | -5.96 | 125.02 | 128.60 |
| 53 | B5 | 3036 | G | N1-C6-O6 | 5.96 | 123.48 | 119.90 |
| 53 | B5 | 518 | G | O4'-C1'-N9 | 5.96 | 112.97 | 108.20 |
| 1 | AA | 1522 | A | O5'-P-OP2 | -5.96 | 100.34 | 105.70 |
| 53 | B5 | 2339 | C | O4'-C1'-N1 | 5.96 | 112.97 | 108.20 |
| 53 | B5 | 2536 | A | O4'-C1'-N9 | 5.96 | 112.97 | 108.20 |
| 53 | B5 | 2877 | G | C5-C6-O6 | -5.96 | 125.03 | 128.60 |
| 1 | AA | 98 | U | O4'-C1'-N1 | 5.96 | 112.97 | 108.20 |
| 1 | AA | 1200 | A | C5-N7-C8 | 5.96 | 106.88 | 103.90 |
| 1 | AA | 1219 | A | O4'-C1'-N9 | 5.96 | 112.97 | 108.20 |
| 53 | B5 | 575 | G | O4'-C1'-N9 | 5.96 | 112.97 | 108.20 |
| 53 | B5 | 1906 | G | N1-C6-O6 | 5.96 | 123.47 | 119.90 |
| 53 | B5 | 2238 | G | C5-C6-O6 | -5.96 | 125.03 | 128.60 |
| 53 | B5 | 3315 | G | C5-C6-O6 | -5.96 | 125.03 | 128.60 |
| 53 | B5 | 3353 | G | N1-C6-O6 | 5.96 | 123.47 | 119.90 |
| 1 | AA | 790 | U | O4'-C1'-N1 | 5.96 | 112.96 | 108.20 |
| 53 | B5 | 392 | G | C5-C6-O6 | -5.96 | 125.03 | 128.60 |
| 53 | B5 | 769 | G | O4'-C1'-N9 | 5.96 | 112.96 | 108.20 |
| 53 | B5 | 858 | A | O4'-C1'-N9 | 5.96 | 112.96 | 108.20 |
| 53 | B5 | 2947 | G | O4'-C1'-N9 | 5.95 | 112.96 | 108.20 |
| 53 | B5 | 1496 | C | O4'-C1'-N1 | 5.95 | 112.96 | 108.20 |
| 53 | B5 | 773 | G | C5-C6-O6 | -5.95 | 125.03 | 128.60 |
| 53 | B5 | 1306 | G | N1-C6-O6 | 5.95 | 123.47 | 119.90 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 2206 | G | C5-C6-O6 | -5.95 | 125.03 | 128.60 |
| 53 | B5 | 2751 | G | C5-C6-O6 | -5.95 | 125.03 | 128.60 |
| 53 | B5 | 3178 | U | O4'-C1'-N1 | 5.95 | 112.96 | 108.20 |
| 1 | AA | 1 | U | C2-N1-C1' | 5.95 | 124.84 | 117.70 |
| 1 | AA | 377 | G | C5-C6-O6 | -5.95 | 125.03 | 128.60 |
| 1 | AA | 503 | G | C5-C6-O6 | -5.95 | 125.03 | 128.60 |
| 1 | AA | 887 | A | O4'-C1'-N9 | 5.95 | 112.96 | 108.20 |
| 1 | AA | 1411 | U | O4'-C1'-N1 | 5.95 | 112.96 | 108.20 |
| 19 | A7 | 9 | A | C2-N3-C4 | 5.95 | 113.57 | 110.60 |
| 19 | A7 | 56 | C | C1'-O4'-C4' | -5.95 | 105.14 | 109.90 |
| 53 | B5 | 619 | A | C5-C6-N6 | -5.95 | 118.94 | 123.70 |
| 53 | B5 | 860 | G | C4-N9-C1' | 5.95 | 134.23 | 126.50 |
| 53 | B5 | 1357 | G | C5-C6-O6 | -5.95 | 125.03 | 128.60 |
| 53 | B5 | 2135 | U | O4'-C1'-N1 | 5.95 | 112.96 | 108.20 |
| 53 | B5 | 2142 | A | O4'-C1'-N9 | 5.95 | 112.96 | 108.20 |
| 53 | B5 | 2969 | A | O4'-C1'-N9 | 5.95 | 112.96 | 108.20 |
| 1 | AA | 257 | A | O4'-C1'-N9 | 5.95 | 112.96 | 108.20 |
| 1 | AA | 1263 | G | O4'-C1'-N9 | 5.95 | 112.96 | 108.20 |
| 53 | B5 | 364 | G | O4'-C1'-N9 | 5.95 | 112.96 | 108.20 |
| 53 | B5 | 1557 | A | O4'-C1'-N9 | 5.95 | 112.96 | 108.20 |
| 1 | AA | 574 | G | C5-C6-O6 | -5.95 | 125.03 | 128.60 |
| 1 | AA | 578 | U | O4'-C1'-N1 | 5.95 | 112.96 | 108.20 |
| 1 | AA | 876 | G | N1-C6-O6 | 5.95 | 123.47 | 119.90 |
| 1 | AA | 1615 | U | O4'-C1'-N1 | 5.95 | 112.96 | 108.20 |
| 19 | A7 | 30 | G | N9-C1'-C2' | -5.95 | 105.46 | 112.00 |
| 53 | B5 | 552 | G | N1-C6-O6 | 5.95 | 123.47 | 119.90 |
| 53 | B5 | 1728 | G | N1-C6-O6 | 5.95 | 123.47 | 119.90 |
| 53 | B5 | 1896 | A | O4'-C1'-N9 | 5.95 | 112.96 | 108.20 |
| 53 | B5 | 2466 | G | O4'-C1'-N9 | 5.95 | 112.96 | 108.20 |
| 1 | AA | 243 | G | O4'-C1'-N9 | 5.94 | 112.95 | 108.20 |
| 1 | AA | 1570 | G | C5-C6-O6 | -5.94 | 125.03 | 128.60 |
| 52 | B4 | 77 | A | O4'-C1'-N9 | 5.94 | 112.95 | 108.20 |
| 53 | B5 | 567 | G | C5-C6-O6 | -5.94 | 125.03 | 128.60 |
| 53 | B5 | 1074 | U | O4'-C1'-N1 | 5.94 | 112.95 | 108.20 |
| 53 | B5 | 1326 | A | O4'-C1'-N9 | 5.94 | 112.95 | 108.20 |
| 53 | B5 | 1635 | G | C5-C6-O6 | -5.94 | 125.03 | 128.60 |
| 53 | B5 | 1801 | U | O4'-C1'-N1 | 5.94 | 112.95 | 108.20 |
| 1 | AA | 816 | G | N1-C6-O6 | 5.94 | 123.46 | 119.90 |
| 1 | AA | 1123 | G | C5-C6-O6 | -5.94 | 125.04 | 128.60 |
| 1 | AA | 1496 | G | C5-C6-O6 | -5.94 | 125.03 | 128.60 |
| 53 | B5 | 363 | G | C5-C6-O6 | -5.94 | 125.03 | 128.60 |
| 53 | B5 | 1611 | G | C5-C6-O6 | -5.94 | 125.04 | 128.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 1881 | A | O4'-C1'-N9 | 5.94 | 112.95 | 108.20 |
| 53 | B5 | 2247 | G | N1-C6-O6 | 5.94 | 123.47 | 119.90 |
| 1 | AA | 335 | U | O4'-C1'-N1 | 5.94 | 112.95 | 108.20 |
| 52 | B4 | 135 | G | O4'-C1'-N9 | 5.94 | 112.95 | 108.20 |
| 53 | B5 | 382 | U | O4'-C1'-N1 | 5.94 | 112.95 | 108.20 |
| 53 | B5 | 415 | G | O4'-C1'-N9 | 5.94 | 112.95 | 108.20 |
| 53 | B5 | 1311 | G | N1-C6-O6 | 5.94 | 123.46 | 119.90 |
| 53 | B5 | 2102 | U | O4'-C1'-N1 | 5.94 | 112.95 | 108.20 |
| 53 | B5 | 416 | A | O4'-C1'-N9 | 5.94 | 112.95 | 108.20 |
| 52 | B4 | 132 | G | N1-C6-O6 | 5.93 | 123.46 | 119.90 |
| 53 | B5 | 608 | A | P-O3'-C3' | 5.93 | 126.82 | 119.70 |
| 53 | B5 | 1063 | G | O4'-C1'-N9 | 5.93 | 112.95 | 108.20 |
| 53 | B5 | 1763 | U | O4'-C1'-N1 | 5.93 | 112.95 | 108.20 |
| 53 | B5 | 2844 | C | O4'-C1'-N1 | 5.93 | 112.95 | 108.20 |
| 1 | AA | 706 | A | O4'-C1'-N9 | 5.93 | 112.95 | 108.20 |
| 1 | AA | 713 | A | O4'-C1'-N9 | 5.93 | 112.94 | 108.20 |
| 1 | AA | 841 | U | O4'-C1'-N1 | 5.93 | 112.95 | 108.20 |
| 1 | AA | 1251 | G | O4'-C1'-N9 | 5.93 | 112.94 | 108.20 |
| 1 | AA | 1620 | G | C5-C6-O6 | -5.93 | 125.04 | 128.60 |
| 1 | AA | 1699 | A | O4'-C1'-N9 | 5.93 | 112.95 | 108.20 |
| 53 | B5 | 364 | G | N1-C6-O6 | 5.93 | 123.46 | 119.90 |
| 53 | B5 | 664 | U | O4'-C1'-N1 | 5.93 | 112.95 | 108.20 |
| 1 | AA | 108 | A | O4'-C1'-N9 | 5.93 | 112.94 | 108.20 |
| 1 | AA | 832 | U | O4'-C1'-N1 | 5.93 | 112.94 | 108.20 |
| 1 | AA | 1143 | G | O4'-C1'-N9 | 5.93 | 112.94 | 108.20 |
| 51 | B3 | 5 | G | N1-C6-O6 | 5.93 | 123.46 | 119.90 |
| 53 | B5 | 875 | G | O4'-C1'-N9 | 5.93 | 112.94 | 108.20 |
| 1 | AA | 1529 | G | C5-C6-O6 | -5.93 | 125.04 | 128.60 |
| 19 | A7 | 70 | C | C3'-C2'-C1' | -5.93 | 96.76 | 101.50 |
| 53 | B5 | 2851 | A | O4'-C1'-N9 | 5.93 | 112.94 | 108.20 |
| 53 | B5 | 3174 | A | O4'-C1'-N9 | 5.93 | 112.94 | 108.20 |
| 1 | AA | 284 | G | N1-C6-O6 | 5.93 | 123.46 | 119.90 |
| 1 | AA | 1044 | G | N1-C6-O6 | 5.93 | 123.46 | 119.90 |
| 53 | B5 | 1513 | G | C5-C6-O6 | -5.93 | 125.04 | 128.60 |
| 53 | B5 | 1141 | C | P-O3'-C3' | 5.93 | 126.81 | 119.70 |
| 1 | AA | 764 | U | O4'-C1'-N1 | 5.92 | 112.94 | 108.20 |
| 1 | AA | 1175 | G | O4'-C1'-N9 | 5.92 | 112.94 | 108.20 |
| 52 | B4 | 69 | U | O4'-C1'-N1 | 5.92 | 112.94 | 108.20 |
| 53 | B5 | 203 | G | O4'-C1'-N9 | 5.92 | 112.94 | 108.20 |
| 53 | B5 | 1186 | G | O4'-C1'-N9 | 5.92 | 112.94 | 108.20 |
| 53 | B5 | 1313 | G | C5-C6-O6 | -5.92 | 125.05 | 128.60 |
| 53 | B5 | 3049 | A | C5-C6-N6 | -5.92 | 118.96 | 123.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 3059 | G | O4'-C1'-N9 | 5.92 | 112.94 | 108.20 |
| 53 | B5 | 3220 | G | C5-C6-O6 | -5.92 | 125.05 | 128.60 |
| 1 | AA | 815 | G | O4'-C1'-N9 | 5.92 | 112.94 | 108.20 |
| 1 | AA | 964 | U | O4'-C1'-N1 | 5.92 | 112.94 | 108.20 |
| 53 | B5 | 1029 | G | O4'-C1'-N9 | 5.92 | 112.94 | 108.20 |
| 1 | AA | 365 | G | C5-C6-O6 | -5.92 | 125.05 | 128.60 |
| 1 | AA | 492 | A | O4'-C1'-N9 | 5.92 | 112.94 | 108.20 |
| 1 | AA | 616 | G | C5-C6-O6 | -5.92 | 125.05 | 128.60 |
| 1 | AA | 1547 | C | O3'-P-O5' | -5.92 | 92.75 | 104.00 |
| 1 | AA | 1716 | G | O4'-C1'-N9 | 5.92 | 112.94 | 108.20 |
| 53 | B5 | 1778 | G | O4'-C1'-N9 | 5.92 | 112.94 | 108.20 |
| 53 | B5 | 2419 | A | C4-C5-C6 | 5.92 | 119.96 | 117.00 |
| 53 | B5 | 24 | G | O4'-C1'-N9 | 5.92 | 112.94 | 108.20 |
| 53 | B5 | 718 | G | N1-C6-O6 | 5.92 | 123.45 | 119.90 |
| 53 | B5 | 2863 | G | C1'-O4'-C4' | -5.92 | 105.16 | 109.90 |
| 53 | B5 | 759 | U | O4'-C1'-N1 | 5.92 | 112.93 | 108.20 |
| 53 | B5 | 791 | A | C5-C6-N6 | -5.92 | 118.97 | 123.70 |
| 53 | B5 | 854 | G | N1-C6-O6 | 5.92 | 123.45 | 119.90 |
| 53 | B5 | 1678 | G | C5-C6-O6 | -5.92 | 125.05 | 128.60 |
| 53 | B5 | 1811 | G | C5-C6-O6 | -5.92 | 125.05 | 128.60 |
| 53 | B5 | 2455 | U | O4'-C1'-N1 | 5.92 | 112.94 | 108.20 |
| 53 | B5 | 2775 | U | O4'-C1'-N1 | 5.92 | 112.93 | 108.20 |
| 28 | BD | 50 | TYR | CB-CG-CD1 | -5.92 | 117.45 | 121.00 |
| 52 | B4 | 56 | G | C5-C6-O6 | -5.92 | 125.05 | 128.60 |
| 53 | B5 | 812 | G | O4'-C1'-N9 | 5.92 | 112.93 | 108.20 |
| 53 | B5 | 1590 | G | N1-C6-O6 | 5.92 | 123.45 | 119.90 |
| 53 | B5 | 3136 | G | C5-C6-O6 | -5.92 | 125.05 | 128.60 |
| 1 | AA | 1534 | G | O4'-C1'-N9 | 5.91 | 112.93 | 108.20 |
| 52 | B4 | 70 | A | O4'-C1'-N9 | 5.91 | 112.93 | 108.20 |
| 53 | B5 | 3141 | A | O4'-C1'-N9 | 5.91 | 112.93 | 108.20 |
| 1 | AA | 249 | U | O4'-C1'-N1 | 5.91 | 112.93 | 108.20 |
| 1 | AA | 1383 | G | O4'-C1'-N9 | 5.91 | 112.93 | 108.20 |
| 53 | B5 | 2937 | G | O4'-C1'-N9 | 5.91 | 112.93 | 108.20 |
| 51 | B3 | 65 | G | C5-C6-O6 | -5.91 | 125.05 | 128.60 |
| 53 | B5 | 2609 | A | O4'-C1'-N9 | 5.91 | 112.93 | 108.20 |
| 53 | B5 | 219 | A | C5-C6-N6 | -5.91 | 118.97 | 123.70 |
| 1 | AA | 537 | G | N1-C6-O6 | 5.91 | 123.44 | 119.90 |
| 1 | AA | 740 | A | O4'-C1'-N9 | 5.91 | 112.93 | 108.20 |
| 1 | AA | 1498 | C | O4'-C1'-N1 | 5.91 | 112.93 | 108.20 |
| 53 | B5 | 1687 | U | O4'-C1'-N1 | 5.91 | 112.93 | 108.20 |
| 1 | AA | 547 | U | O4'-C1'-N1 | 5.91 | 112.92 | 108.20 |
| 1 | AA | 1294 | G | O4'-C1'-N9 | 5.91 | 112.92 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 1 | AA | 1517 | U | O4'-C1'-N1 | 5.91 | 112.92 | 108.20 |
| 1 | AA | 1766 | G | C5-C6-O6 | -5.91 | 125.06 | 128.60 |
| 53 | B5 | 335 | G | O4'-C1'-N9 | 5.91 | 112.92 | 108.20 |
| 53 | B5 | 420 | G | C5-C6-O6 | -5.91 | 125.06 | 128.60 |
| 53 | B5 | 916 | G | C5-C6-O6 | -5.91 | 125.06 | 128.60 |
| 53 | B5 | 2587 | U | O4'-C1'-N1 | 5.91 | 112.92 | 108.20 |
| 53 | B5 | 2788 | C | C2-N1-C1' | 5.90 | 125.29 | 118.80 |
| 1 | AA | 1405 | G | C5-C6-O6 | -5.90 | 125.06 | 128.60 |
| 1 | AA | 1641 | U | O4'-C1'-N1 | 5.90 | 112.92 | 108.20 |
| 53 | B5 | 2185 | G | C5-C6-O6 | -5.90 | 125.06 | 128.60 |
| 1 | AA | 787 | G | N1-C6-O6 | 5.90 | 123.44 | 119.90 |
| 1 | AA | 993 | G | O4'-C1'-N9 | 5.90 | 112.92 | 108.20 |
| 1 | AA | 1349 | G | O4'-C1'-N9 | 5.90 | 112.92 | 108.20 |
| 1 | AA | 1747 | A | O4'-C1'-N9 | 5.90 | 112.92 | 108.20 |
| 53 | B5 | 219 | A | C4-C5-C6 | 5.90 | 119.95 | 117.00 |
| 53 | B5 | 1357 | G | O4'-C1'-N9 | 5.90 | 112.92 | 108.20 |
| 53 | B5 | 2919 | A | O4'-C1'-N9 | 5.90 | 112.92 | 108.20 |
| 1 | AA | 623 | A | O4'-C1'-N9 | 5.90 | 112.92 | 108.20 |
| 1 | AA | 1002 | G | C5-C6-O6 | -5.90 | 125.06 | 128.60 |
| 1 | AA | 1266 | G | O4'-C1'-N9 | 5.90 | 112.92 | 108.20 |
| 53 | B5 | 3051 | U | O4'-C1'-N1 | 5.90 | 112.92 | 108.20 |
| 1 | AA | 720 | G | C5-C6-O6 | -5.90 | 125.06 | 128.60 |
| 53 | B5 | 101 | G | O4'-C1'-N9 | 5.90 | 112.92 | 108.20 |
| 53 | B5 | 964 | G | O4'-C1'-N9 | 5.90 | 112.92 | 108.20 |
| 53 | B5 | 1346 | G | O4'-C1'-N9 | 5.90 | 112.92 | 108.20 |
| 53 | B5 | 1434 | G | N1-C6-O6 | 5.90 | 123.44 | 119.90 |
| 1 | AA | 837 | G | N1-C6-O6 | 5.90 | 123.44 | 119.90 |
| 53 | B5 | 3386 | G | O4'-C1'-N9 | 5.90 | 112.92 | 108.20 |
| 1 | AA | 1705 | A | O4'-C1'-N9 | 5.89 | 112.92 | 108.20 |
| 52 | B4 | 104 | A | O4'-C1'-N9 | 5.89 | 112.92 | 108.20 |
| 53 | B5 | 610 | G | N1-C6-O6 | 5.89 | 123.44 | 119.90 |
| 53 | B5 | 1072 | G | O4'-C1'-N9 | 5.89 | 112.92 | 108.20 |
| 53 | B5 | 1271 | A | O4'-C1'-N9 | 5.89 | 112.92 | 108.20 |
| 1 | AA | 752 | A | O4'-C1'-N9 | 5.89 | 112.91 | 108.20 |
| 53 | B5 | 1236 | G | O4'-C1'-N9 | 5.89 | 112.91 | 108.20 |
| 53 | B5 | 1473 | G | O4'-C1'-N9 | 5.89 | 112.91 | 108.20 |
| 53 | B5 | 2828 | G | P-O3'-C3' | 5.89 | 126.77 | 119.70 |
| 53 | B5 | 2908 | G | O4'-C1'-N9 | 5.89 | 112.91 | 108.20 |
| 1 | AA | 142 | G | O4'-C1'-N9 | 5.89 | 112.91 | 108.20 |
| 1 | AA | 1666 | G | O4'-C1'-N9 | 5.89 | 112.91 | 108.20 |
| 53 | B5 | 2186 | U | O4'-C1'-N1 | 5.89 | 112.91 | 108.20 |
| 1 | AA | 884 | G | O4'-C1'-N9 | 5.89 | 112.91 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1 | AA | 1694 | G | O4'-C1'-N9 | 5.89 | 112.91 | 108.20 |
| 51 | B3 | 63 | G | C5-C6-O6 | -5.89 | 125.07 | 128.60 |
| 53 | B5 | 2131 | A | C5-C6-N6 | -5.89 | 118.99 | 123.70 |
| 19 | A7 | 19 | G | C6-C5-N7 | -5.88 | 126.87 | 130.40 |
| 52 | B4 | 85 | G | N1-C6-O6 | 5.88 | 123.43 | 119.90 |
| 53 | B5 | 837 | A | O4'-C1'-N9 | 5.88 | 112.91 | 108.20 |
| 53 | B5 | 1054 | A | O4'-C1'-N9 | 5.88 | 112.91 | 108.20 |
| 53 | B5 | 1106 | G | O4'-C1'-N9 | 5.88 | 112.91 | 108.20 |
| 53 | B5 | 2124 | G | N1-C6-O6 | 5.88 | 123.43 | 119.90 |
| 53 | B5 | 3155 | U | O4'-C1'-N1 | 5.88 | 112.91 | 108.20 |
| 1 | AA | 234 | G | O4'-C1'-N9 | 5.88 | 112.91 | 108.20 |
| 1 | AA | 651 | G | N1-C6-O6 | 5.88 | 123.43 | 119.90 |
| 53 | B5 | 1096 | U | O4'-C1'-N1 | 5.88 | 112.91 | 108.20 |
| 1 | AA | 532 | U | O4'-C1'-N1 | 5.88 | 112.91 | 108.20 |
| 1 | AA | 1526 | U | O4'-C1'-N1 | 5.88 | 112.91 | 108.20 |
| 53 | B5 | 1764 | U | C2-N1-C1' | 5.88 | 124.76 | 117.70 |
| 53 | B5 | 2335 | G | C5-C6-O6 | -5.88 | 125.07 | 128.60 |
| 53 | B5 | 2828 | G | C5-C6-O6 | -5.88 | 125.07 | 128.60 |
| 1 | AA | 1551 | G | O4'-C1'-N9 | 5.88 | 112.90 | 108.20 |
| 53 | B5 | 80 | G | O4'-C1'-N9 | 5.88 | 112.90 | 108.20 |
| 53 | B5 | 202 | G | O4'-C1'-N9 | 5.88 | 112.90 | 108.20 |
| 53 | B5 | 2280 | A | O4'-C1'-N9 | 5.88 | 112.90 | 108.20 |
| 53 | B5 | 3327 | G | N1-C6-O6 | 5.88 | 123.43 | 119.90 |
| 1 | AA | 1346 | G | N1-C6-O6 | 5.88 | 123.43 | 119.90 |
| 52 | B4 | 123 | G | O4'-C1'-N9 | 5.88 | 112.90 | 108.20 |
| 53 | B5 | 2269 | U | O4'-C1'-N1 | 5.88 | 112.90 | 108.20 |
| 1 | AA | 613 | G | O4'-C1'-N9 | 5.88 | 112.90 | 108.20 |
| 1 | AA | 866 | G | C3'-C2'-C1' | -5.88 | 96.80 | 101.50 |
| 1 | AA | 1082 | G | C5-C6-O6 | -5.88 | 125.07 | 128.60 |
| 1 | AA | 1109 | G | O4'-C1'-N9 | 5.88 | 112.90 | 108.20 |
| 53 | B5 | 579 | G | O4'-C1'-N9 | 5.88 | 112.90 | 108.20 |
| 53 | B5 | 583 | G | O4'-C1'-N9 | 5.88 | 112.90 | 108.20 |
| 53 | B5 | 2607 | G | O4'-C1'-N9 | 5.88 | 112.90 | 108.20 |
| 53 | B5 | 2895 | G | O4'-C1'-N9 | 5.88 | 112.90 | 108.20 |
| 53 | B5 | 219 | A | O4'-C1'-N9 | 5.88 | 112.90 | 108.20 |
| 53 | B5 | 1701 | C | P-O3'-C3' | 5.88 | 126.75 | 119.70 |
| 53 | B5 | 2949 | U | O4'-C1'-N1 | 5.88 | 112.90 | 108.20 |
| 1 | AA | 1487 | U | O4'-C1'-N1 | 5.87 | 112.90 | 108.20 |
| 1 | AA | 1634 | C | C4'-C3'-C2' | 5.87 | 108.47 | 102.60 |
| 1 | AA | 1686 | U | O4'-C1'-N1 | 5.87 | 112.90 | 108.20 |
| 53 | B5 | 799 | G | O4'-C1'-N9 | 5.87 | 112.90 | 108.20 |
| 53 | B5 | 2615 | G | O4'-C1'-N9 | 5.87 | 112.90 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 2784 | G | C5-C6-O6 | -5.87 | 125.08 | 128.60 |
| 53 | B5 | 2786 | G | C5-C6-O6 | -5.87 | 125.08 | 128.60 |
| 53 | B5 | 3247 | G | O4'-C1'-N9 | 5.87 | 112.90 | 108.20 |
| 1 | AA | 751 | G | O4'-C1'-N9 | 5.87 | 112.90 | 108.20 |
| 1 | AA | 1522 | A | O4'-C4'-C3' | -5.87 | 98.13 | 104.00 |
| 53 | B5 | 2140 | U | O4'-C1'-N1 | 5.87 | 112.90 | 108.20 |
| 53 | B5 | 2371 | G | C5-C6-O6 | -5.87 | 125.08 | 128.60 |
| 53 | B5 | 2586 | G | O4'-C1'-N9 | 5.87 | 112.90 | 108.20 |
| 53 | B5 | 2815 | G | O4'-C1'-N9 | 5.87 | 112.90 | 108.20 |
| 53 | B5 | 2938 | G | O4'-C1'-N9 | 5.87 | 112.90 | 108.20 |
| 53 | B5 | 1371 | G | C5-C6-O6 | -5.87 | 125.08 | 128.60 |
| 53 | B5 | 1455 | U | O4'-C1'-N1 | 5.87 | 112.89 | 108.20 |
| 53 | B5 | 3003 | G | C5-C6-O6 | -5.87 | 125.08 | 128.60 |
| 1 | AA | 284 | G | O4'-C1'-N9 | 5.87 | 112.89 | 108.20 |
| 1 | AA | 1288 | G | N1-C6-O6 | 5.87 | 123.42 | 119.90 |
| 53 | B5 | 590 | G | O4'-C1'-N9 | 5.87 | 112.89 | 108.20 |
| 53 | B5 | 2558 | U | O4'-C1'-N1 | 5.87 | 112.89 | 108.20 |
| 1 | AA | 956 | G | N1-C6-O6 | 5.87 | 123.42 | 119.90 |
| 1 | AA | 1265 | U | O4'-C1'-N1 | 5.87 | 112.89 | 108.20 |
| 1 | AA | 1293 | A | O4'-C1'-N9 | 5.87 | 112.89 | 108.20 |
| 53 | B5 | 424 | G | C5-C6-O6 | -5.87 | 125.08 | 128.60 |
| 53 | B5 | 994 | G | C5-C6-O6 | -5.87 | 125.08 | 128.60 |
| 53 | B5 | 2656 | A | O4'-C1'-N9 | 5.87 | 112.89 | 108.20 |
| 53 | B5 | 2978 | U | O4'-C1'-N1 | 5.87 | 112.89 | 108.20 |
| 1 | AA | 516 | G | N1-C6-O6 | 5.86 | 123.42 | 119.90 |
| 1 | AA | 1017 | U | O4'-C1'-N1 | 5.86 | 112.89 | 108.20 |
| 1 | AA | 1720 | A | O4'-C1'-N9 | 5.86 | 112.89 | 108.20 |
| 52 | B4 | 49 | G | C5-C6-O6 | -5.86 | 125.08 | 128.60 |
| 53 | B5 | 493 | G | C5-C6-O6 | -5.86 | 125.08 | 128.60 |
| 53 | B5 | 2489 | C | N3-C4-N4 | 5.86 | 122.10 | 118.00 |
| 1 | AA | 5 | U | O4'-C1'-N1 | 5.86 | 112.89 | 108.20 |
| 1 | AA | 1014 | U | O4'-C1'-N1 | 5.86 | 112.89 | 108.20 |
| 19 | A7 | 9 | A | N3-C4-C5 | -5.86 | 122.70 | 126.80 |
| 53 | B5 | 1135 | A | O4'-C1'-N9 | 5.86 | 112.89 | 108.20 |
| 53 | B5 | 1250 | G | O4'-C1'-N9 | 5.86 | 112.89 | 108.20 |
| 53 | B5 | 3045 | G | O4'-C1'-N9 | 5.86 | 112.89 | 108.20 |
| 1 | AA | 165 | G | O4'-C1'-N9 | 5.86 | 112.89 | 108.20 |
| 1 | AA | 498 | G | O4'-C1'-N9 | 5.86 | 112.89 | 108.20 |
| 1 | AA | 771 | A | O4'-C1'-N9 | 5.86 | 112.89 | 108.20 |
| 1 | AA | 853 | G | O4'-C1'-N9 | 5.86 | 112.89 | 108.20 |
| 53 | B5 | 566 | G | C5-C6-O6 | -5.86 | 125.08 | 128.60 |
| 53 | B5 | 1374 | G | O4'-C1'-N9 | 5.86 | 112.89 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1 | AA | 340 | U | O4'-C1'-N1 | 5.86 | 112.88 | 108.20 |
| 1 | AA | 1402 | G | O4'-C1'-N9 | 5.86 | 112.89 | 108.20 |
| 1 | AA | 1509 | U | O4'-C1'-N1 | 5.86 | 112.88 | 108.20 |
| 52 | B4 | 124 | G | O4'-C1'-N9 | 5.86 | 112.89 | 108.20 |
| 53 | B5 | 146 | U | O4'-C1'-N1 | 5.86 | 112.89 | 108.20 |
| 53 | B5 | 1852 | G | C5-C6-O6 | -5.86 | 125.09 | 128.60 |
| 53 | B5 | 2728 | G | O4'-C1'-N9 | 5.86 | 112.88 | 108.20 |
| 53 | B5 | 3108 | G | O4'-C1'-N9 | 5.86 | 112.88 | 108.20 |
| 1 | AA | 1343 | A | O4'-C1'-N9 | 5.85 | 112.88 | 108.20 |
| 1 | AA | 1430 | G | N1-C6-O6 | 5.85 | 123.41 | 119.90 |
| 53 | B5 | 635 | G | O4'-C1'-N9 | 5.85 | 112.88 | 108.20 |
| 53 | B5 | 3250 | U | O4'-C1'-N1 | 5.85 | 112.88 | 108.20 |
| 1 | AA | 123 | G | O4'-C1'-N9 | 5.85 | 112.88 | 108.20 |
| 1 | AA | 765 | G | N1-C6-O6 | 5.85 | 123.41 | 119.90 |
| 1 | AA | 824 | G | O4'-C1'-N9 | 5.85 | 112.88 | 108.20 |
| 1 | AA | 1303 | C | C6-N1-C2 | -5.85 | 117.96 | 120.30 |
| 26 | BB | 156 | LYS | N-CA-CB | 5.85 | 121.13 | 110.60 |
| 53 | B5 | 298 | U | O4'-C1'-N1 | 5.85 | 112.88 | 108.20 |
| 53 | B5 | 2199 | G | C5-C6-O6 | -5.85 | 125.09 | 128.60 |
| 6 | AG | 164 | PRO | CA-N-CD | -5.85 | 103.31 | 111.50 |
| 28 | BD | 194 | TYR | CB-CG-CD2 | 5.85 | 124.51 | 121.00 |
| 52 | B4 | 9 | A | O4'-C1'-N9 | 5.85 | 112.88 | 108.20 |
| 53 | B5 | 1018 | G | N1-C6-O6 | 5.85 | 123.41 | 119.90 |
| 53 | B5 | 3031 | G | C5-C6-O6 | -5.85 | 125.09 | 128.60 |
| 53 | B5 | 3291 | G | N1-C6-O6 | 5.85 | 123.41 | 119.90 |
| 1 | AA | 677 | G | O4'-C1'-N9 | 5.85 | 112.88 | 108.20 |
| 1 | AA | 1538 | G | C5-C6-O6 | -5.85 | 125.09 | 128.60 |
| 53 | B5 | 430 | U | O4'-C1'-N1 | 5.85 | 112.88 | 108.20 |
| 53 | B5 | 2273 | G | C5-C6-O6 | -5.85 | 125.09 | 128.60 |
| 1 | AA | 889 | U | O4'-C1'-N1 | 5.85 | 112.88 | 108.20 |
| 1 | AA | 1693 | G | N1-C6-O6 | 5.85 | 123.41 | 119.90 |
| 53 | B5 | 2239 | G | C5-C6-O6 | -5.85 | 125.09 | 128.60 |
| 53 | B5 | 2297 | U | C1'-O4'-C4' | -5.85 | 105.22 | 109.90 |
| 53 | B5 | 2501 | U | O4'-C1'-N1 | 5.85 | 112.88 | 108.20 |
| 1 | AA | 643 | G | O4'-C1'-N9 | 5.84 | 112.88 | 108.20 |
| 19 | A7 | 60 | C | C4'-C3'-C2' | 5.84 | 108.44 | 102.60 |
| 53 | B5 | 360 | G | C5-C6-O6 | -5.84 | 125.09 | 128.60 |
| 53 | B5 | 717 | C | O4'-C1'-N1 | 5.84 | 112.88 | 108.20 |
| 53 | B5 | 1944 | U | P-O3'-C3' | 5.84 | 126.71 | 119.70 |
| 1 | AA | 480 | G | N1-C6-O6 | 5.84 | 123.41 | 119.90 |
| 1 | AA | 607 | G | N1-C6-O6 | 5.84 | 123.41 | 119.90 |
| 1 | AA | 1534 | G | C5-C6-O6 | -5.84 | 125.09 | 128.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 1208 | U | O4'-C1'-N1 | 5.84 | 112.88 | 108.20 |
| 1 | AA | 779 | U | C2-N1-C1' | 5.84 | 124.71 | 117.70 |
| 1 | AA | 836 | U | O4'-C1'-N1 | 5.84 | 112.87 | 108.20 |
| 1 | AA | 840 | U | O4'-C1'-N1 | 5.84 | 112.87 | 108.20 |
| 1 | AA | 1500 | G | O4'-C1'-N9 | 5.84 | 112.87 | 108.20 |
| 53 | B5 | 372 | A | O4'-C1'-N9 | 5.84 | 112.87 | 108.20 |
| 53 | B5 | 882 | A | C4-C5-C6 | 5.84 | 119.92 | 117.00 |
| 1 | AA | 524 | U | O4'-C1'-N1 | 5.84 | 112.87 | 108.20 |
| 53 | B5 | 774 | G | C5-C6-O6 | -5.84 | 125.10 | 128.60 |
| 53 | B5 | 2492 | C | O4'-C1'-N1 | 5.84 | 112.87 | 108.20 |
| 53 | B5 | 2878 | G | O4'-C1'-N9 | 5.84 | 112.87 | 108.20 |
| 53 | B5 | 3015 | G | C5-C6-O6 | -5.84 | 125.10 | 128.60 |
| 1 | AA | 287 | G | O4'-C1'-N9 | 5.84 | 112.87 | 108.20 |
| 1 | AA | 1406 | G | C5-C6-O6 | -5.84 | 125.10 | 128.60 |
| 53 | B5 | 1253 | U | P-O3'-C3' | 5.84 | 126.71 | 119.70 |
| 53 | B5 | 2209 | U | O4'-C1'-N1 | 5.84 | 112.87 | 108.20 |
| 1 | AA | 1321 | G | O4'-C1'-N9 | 5.84 | 112.87 | 108.20 |
| 53 | B5 | 442 | G | C5-C6-O6 | -5.84 | 125.10 | 128.60 |
| 53 | B5 | 1271 | A | C5-C6-N6 | -5.84 | 119.03 | 123.70 |
| 19 | A7 | 11 | C | C4'-C3'-C2' | -5.83 | 96.77 | 102.60 |
| 53 | B5 | 215 | G | O4'-C1'-N9 | 5.83 | 112.87 | 108.20 |
| 53 | B5 | 336 | A | O4'-C1'-N9 | 5.83 | 112.87 | 108.20 |
| 53 | B5 | 1169 | A | O4'-C1'-N9 | 5.83 | 112.87 | 108.20 |
| 53 | B5 | 2917 | G | O4'-C1'-N9 | 5.83 | 112.87 | 108.20 |
| 1 | AA | 1259 | G | O4'-C1'-N9 | 5.83 | 112.87 | 108.20 |
| 1 | AA | 1351 | G | N1-C6-O6 | 5.83 | 123.40 | 119.90 |
| 1 | AA | 1758 | G | C5-C6-O6 | -5.83 | 125.10 | 128.60 |
| 53 | B5 | 1140 | G | O4'-C1'-N9 | 5.83 | 112.87 | 108.20 |
| 53 | B5 | 1489 | A | O4'-C1'-N9 | 5.83 | 112.87 | 108.20 |
| 53 | B5 | 2953 | U | O4'-C1'-N1 | 5.83 | 112.87 | 108.20 |
| 53 | B5 | 2999 | U | O4'-C1'-N1 | 5.83 | 112.87 | 108.20 |
| 53 | B5 | 3123 | A | O4'-C1'-N9 | 5.83 | 112.87 | 108.20 |
| 1 | AA | 1696 | G | N1-C6-O6 | 5.83 | 123.40 | 119.90 |
| 19 | A7 | 15 | G | N1-C6-O6 | -5.83 | 116.40 | 119.90 |
| 19 | A7 | 62 | A | C4-C5-N7 | 5.83 | 113.62 | 110.70 |
| 53 | B5 | 560 | G | C5-C6-O6 | -5.83 | 125.10 | 128.60 |
| 53 | B5 | 822 | G | N1-C6-O6 | 5.83 | 123.40 | 119.90 |
| 53 | B5 | 1465 | A | O4'-C1'-N9 | 5.83 | 112.86 | 108.20 |
| 53 | B5 | 2434 | U | O4'-C1'-N1 | 5.83 | 112.87 | 108.20 |
| 53 | B5 | 2564 | G | C5-C6-O6 | -5.83 | 125.10 | 128.60 |
| 53 | B5 | 2743 | A | O4'-C1'-N9 | 5.83 | 112.87 | 108.20 |
| 53 | B5 | 1851 | G | O4'-C1'-N9 | 5.83 | 112.86 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 3305 | A | O4'-C1'-N9 | 5.83 | 112.86 | 108.20 |
| 52 | B4 | 140 | G | O4'-C1'-N9 | 5.83 | 112.86 | 108.20 |
| 53 | B5 | 353 | G | P-O3'-C3' | 5.83 | 126.69 | 119.70 |
| 53 | B5 | 1091 | A | O4'-C1'-N9 | 5.83 | 112.86 | 108.20 |
| 53 | B5 | 2435 | G | C5-C6-O6 | -5.83 | 125.10 | 128.60 |
| 53 | B5 | 2914 | G | O4'-C1'-N9 | 5.83 | 112.86 | 108.20 |
| 53 | B5 | 3325 | G | N1-C6-O6 | 5.83 | 123.40 | 119.90 |
| 53 | B5 | 3345 | G | O4'-C1'-N9 | 5.83 | 112.86 | 108.20 |
| 53 | B5 | 53 | G | N1-C6-O6 | 5.83 | 123.39 | 119.90 |
| 53 | B5 | 827 | A | C5-C6-N6 | -5.83 | 119.04 | 123.70 |
| 53 | B5 | 828 | A | C5-C6-N6 | -5.83 | 119.04 | 123.70 |
| 53 | B5 | 926 | A | C5-C6-N6 | -5.83 | 119.04 | 123.70 |
| 53 | B5 | 1171 | G | C5-C6-O6 | -5.83 | 125.11 | 128.60 |
| 53 | B5 | 1247 | U | O4'-C1'-N1 | 5.83 | 112.86 | 108.20 |
| 53 | B5 | 1438 | U | O4'-C1'-N1 | 5.83 | 112.86 | 108.20 |
| 53 | B5 | 1469 | C | C2-N1-C1' | 5.83 | 125.21 | 118.80 |
| 53 | B5 | 2262 | A | O4'-C1'-N9 | 5.83 | 112.86 | 108.20 |
| 53 | B5 | 306 | A | O4'-C1'-N9 | 5.82 | 112.86 | 108.20 |
| 53 | B5 | 538 | G | C5-C6-O6 | -5.82 | 125.11 | 128.60 |
| 53 | B5 | 1052 | U | O4'-C1'-N1 | 5.82 | 112.86 | 108.20 |
| 53 | B5 | 1480 | G | O4'-C1'-N9 | 5.82 | 112.86 | 108.20 |
| 1 | AA | 733 | A | O4'-C1'-N9 | 5.82 | 112.86 | 108.20 |
| 19 | A7 | 9 | A | C5-N7-C8 | 5.82 | 106.81 | 103.90 |
| 51 | B3 | 86 | G | O4'-C1'-N9 | 5.82 | 112.86 | 108.20 |
| 53 | B5 | 2559 | A | O4'-C1'-N9 | 5.82 | 112.86 | 108.20 |
| 1 | AA | 1780 | A | O4'-C1'-N9 | 5.82 | 112.86 | 108.20 |
| 53 | B5 | 235 | A | O4'-C1'-N9 | 5.82 | 112.86 | 108.20 |
| 53 | B5 | 3015 | G | O4'-C1'-N9 | 5.82 | 112.86 | 108.20 |
| 1 | AA | 1612 | A | P-O5'-C5' | -5.82 | 111.59 | 120.90 |
| 1 | AA | 285 | G | O4'-C1'-N9 | 5.82 | 112.86 | 108.20 |
| 1 | AA | 1481 | A | O4'-C1'-N9 | 5.82 | 112.85 | 108.20 |
| 53 | B5 | 1011 | A | O4'-C1'-N9 | 5.82 | 112.85 | 108.20 |
| 53 | B5 | 1321 | G | O4'-C1'-N9 | 5.82 | 112.85 | 108.20 |
| 53 | B5 | 2315 | G | N1-C6-O6 | 5.82 | 123.39 | 119.90 |
| 53 | B5 | 2462 | A | O4'-C1'-N9 | 5.82 | 112.85 | 108.20 |
| 53 | B5 | 2639 | G | C5-C6-O6 | -5.82 | 125.11 | 128.60 |
| 53 | B5 | 3345 | G | C5-C6-O6 | -5.82 | 125.11 | 128.60 |
| 1 | AA | 400 | A | O4'-C1'-N9 | 5.82 | 112.85 | 108.20 |
| 1 | AA | 751 | G | N1-C6-O6 | 5.82 | 123.39 | 119.90 |
| 1 | AA | 846 | G | C5-C6-O6 | -5.82 | 125.11 | 128.60 |
| 1 | AA | 1278 | U | O4'-C1'-N1 | 5.82 | 112.85 | 108.20 |
| 53 | B5 | 1323 | G | N1-C6-O6 | 5.82 | 123.39 | 119.90 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 1 | AA | 631 | G | C5-C6-O6 | -5.81 | 125.11 | 128.60 |
| 1 | AA | 1066 | A | O4'-C1'-N9 | 5.81 | 112.85 | 108.20 |
| 53 | B5 | 2396 | G | O4'-C1'-N9 | 5.81 | 112.85 | 108.20 |
| 53 | B5 | 2457 | G | O4'-C1'-N9 | 5.81 | 112.85 | 108.20 |
| 1 | AA | 507 | U | O4'-C1'-N1 | 5.81 | 112.85 | 108.20 |
| 1 | AA | 1086 | U | O4'-C1'-N1 | 5.81 | 112.85 | 108.20 |
| 53 | B5 | 1270 | A | O4'-C1'-N9 | 5.81 | 112.85 | 108.20 |
| 53 | B5 | 1362 | G | C5-C6-O6 | -5.81 | 125.11 | 128.60 |
| 53 | B5 | 845 | G | P-O3'-C3' | 5.81 | 126.67 | 119.70 |
| 1 | AA | 220 | A | O4'-C1'-N9 | 5.81 | 112.85 | 108.20 |
| 1 | AA | 734 | A | O4'-C1'-N9 | 5.81 | 112.85 | 108.20 |
| 1 | AA | 1478 | G | O4'-C1'-N9 | 5.81 | 112.85 | 108.20 |
| 1 | AA | 1657 | A | O4'-C1'-N9 | 5.81 | 112.85 | 108.20 |
| 19 | A7 | 45 | G | C8-N9-C4 | -5.81 | 104.08 | 106.40 |
| 53 | B5 | 1226 | G | O4'-C1'-N9 | 5.81 | 112.85 | 108.20 |
| 53 | B5 | 2311 | G | N1-C6-O6 | 5.81 | 123.39 | 119.90 |
| 1 | AA | 875 | G | C5-C6-O6 | -5.81 | 125.12 | 128.60 |
| 53 | B5 | 30 | G | C5-C6-O6 | -5.81 | 125.11 | 128.60 |
| 1 | AA | 1664 | U | O4'-C1'-N1 | 5.81 | 112.84 | 108.20 |
| 53 | B5 | 335 | G | C5-C6-O6 | -5.81 | 125.12 | 128.60 |
| 1 | AA | 206 | A | O4'-C1'-N9 | 5.80 | 112.84 | 108.20 |
| 1 | AA | 606 | A | O4'-C1'-N9 | 5.80 | 112.84 | 108.20 |
| 1 | AA | 689 | G | N1-C6-O6 | 5.80 | 123.38 | 119.90 |
| 53 | B5 | 213 | G | C5-C6-O6 | -5.80 | 125.12 | 128.60 |
| 53 | B5 | 2661 | G | N1-C6-O6 | 5.80 | 123.38 | 119.90 |
| 53 | B5 | 3013 | U | O4'-C1'-N1 | 5.80 | 112.84 | 108.20 |
| 53 | B5 | 3363 | U | P-O3'-C3' | 5.80 | 126.66 | 119.70 |
| 53 | B5 | 475 | G | C5-C6-O6 | -5.80 | 125.12 | 128.60 |
| 53 | B5 | 2917 | G | N1-C6-O6 | 5.80 | 123.38 | 119.90 |
| 1 | AA | 535 | A | O4'-C1'-N9 | 5.80 | 112.84 | 108.20 |
| 17 | AR | 164 | ASP | N-CA-C | -5.80 | 95.33 | 111.00 |
| 53 | B5 | 269 | G | C5-C6-O6 | -5.80 | 125.12 | 128.60 |
| 53 | B5 | 1375 | G | C5-C6-O6 | -5.80 | 125.12 | 128.60 |
| 53 | B5 | 1742 | U | O4'-C1'-N1 | 5.80 | 112.84 | 108.20 |
| 1 | AA | 3 | U | O4'-C1'-N1 | 5.80 | 112.84 | 108.20 |
| 1 | AA | 236 | A | O4'-C1'-N9 | 5.80 | 112.84 | 108.20 |
| 53 | B5 | 1753 | G | C5-C6-O6 | -5.80 | 125.12 | 128.60 |
| 53 | B5 | 2161 | G | N1-C6-O6 | 5.80 | 123.38 | 119.90 |
| 19 | A7 | 51 | G | N1-C2-N3 | 5.80 | 127.38 | 123.90 |
| 53 | B5 | 337 | G | O4'-C1'-N9 | 5.80 | 112.84 | 108.20 |
| 53 | B5 | 737 | G | O4'-C1'-N9 | 5.80 | 112.84 | 108.20 |
| 53 | B5 | 2748 | A | C5-C6-N6 | -5.80 | 119.06 | 123.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 3320 | A | C5-C6-N6 | -5.80 | 119.06 | 123.70 |
| 53 | B5 | 2766 | U | O4'-C1'-N1 | 5.79 | 112.84 | 108.20 |
| 53 | B5 | 2995 | A | O4'-C1'-N9 | 5.79 | 112.84 | 108.20 |
| 1 | AA | 396 | G | C5-C6-O6 | -5.79 | 125.12 | 128.60 |
| 1 | AA | 1364 | G | O4'-C1'-N9 | 5.79 | 112.83 | 108.20 |
| 1 | AA | 1430 | G | P-O3'-C3' | 5.79 | 126.65 | 119.70 |
| 1 | AA | 1678 | G | N1-C6-O6 | 5.79 | 123.38 | 119.90 |
| 53 | B5 | 1790 | G | O4'-C1'-N9 | 5.79 | 112.83 | 108.20 |
| 53 | B5 | 2968 | G | O4'-C1'-N9 | 5.79 | 112.83 | 108.20 |
| 1 | AA | 1098 | G | C5-C6-O6 | -5.79 | 125.12 | 128.60 |
| 19 | A7 | 43 | G | C4-C5-N7 | -5.79 | 108.48 | 110.80 |
| 19 | A7 | 60 | C | N1-C2-N3 | 5.79 | 123.25 | 119.20 |
| 51 | B3 | 106 | G | C5-C6-O6 | -5.79 | 125.12 | 128.60 |
| 53 | B5 | 1474 | A | O4'-C1'-N9 | 5.79 | 112.83 | 108.20 |
| 53 | B5 | 1581 | C | N3-C4-N4 | 5.79 | 122.06 | 118.00 |
| 53 | B5 | 2972 | G | C5-C6-O6 | -5.79 | 125.12 | 128.60 |
| 53 | B5 | 3198 | U | O4'-C1'-N1 | 5.79 | 112.83 | 108.20 |
| 1 | AA | 1588 | G | C5-C6-O6 | -5.79 | 125.13 | 128.60 |
| 1 | AA | 1535 | C | O4'-C1'-N1 | 5.79 | 112.83 | 108.20 |
| 53 | B5 | 766 | U | O4'-C1'-N1 | 5.79 | 112.83 | 108.20 |
| 1 | AA | 533 | U | O4'-C1'-N1 | 5.79 | 112.83 | 108.20 |
| 1 | AA | 1045 | G | N1-C6-O6 | 5.79 | 123.37 | 119.90 |
| 1 | AA | 1586 | G | C5-C6-O6 | -5.79 | 125.13 | 128.60 |
| 19 | A7 | 14 | A | C5-C6-N1 | 5.79 | 120.59 | 117.70 |
| 1 | AA | 37 | U | O4'-C1'-N1 | 5.79 | 112.83 | 108.20 |
| 1 | AA | 877 | G | N1-C6-O6 | 5.79 | 123.37 | 119.90 |
| 53 | B5 | 1635 | G | O4'-C1'-N9 | 5.79 | 112.83 | 108.20 |
| 53 | B5 | 1778 | G | C5-C6-O6 | -5.79 | 125.13 | 128.60 |
| 1 | AA | 308 | C | O4'-C1'-N1 | 5.78 | 112.83 | 108.20 |
| 1 | AA | 1582 | G | C5-C6-O6 | -5.78 | 125.13 | 128.60 |
| 1 | AA | 1670 | G | N1-C6-O6 | 5.78 | 123.37 | 119.90 |
| 53 | B5 | 534 | U | O4'-C1'-N1 | 5.78 | 112.83 | 108.20 |
| 53 | B5 | 1709 | C | O4'-C1'-N1 | 5.78 | 112.83 | 108.20 |
| 53 | B5 | 2240 | G | C5-C6-O6 | -5.78 | 125.13 | 128.60 |
| 53 | B5 | 1443 | G | C5-C6-O6 | -5.78 | 125.13 | 128.60 |
| 1 | AA | 311 | U | O4'-C1'-N1 | 5.78 | 112.82 | 108.20 |
| 1 | AA | 602 | U | O4'-C1'-N1 | 5.78 | 112.82 | 108.20 |
| 1 | AA | 1034 | G | O4'-C1'-N9 | 5.78 | 112.82 | 108.20 |
| 53 | B5 | 1048 | A | C5-C6-N6 | -5.78 | 119.08 | 123.70 |
| 53 | B5 | 1591 | G | O4'-C1'-N9 | 5.78 | 112.83 | 108.20 |
| 53 | B5 | 2912 | G | O4'-C1'-N9 | 5.78 | 112.83 | 108.20 |
| 53 | B5 | 3223 | A | O4'-C1'-N9 | 5.78 | 112.83 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 3241 | G | O4'-C1'-N9 | 5.78 | 112.82 | 108.20 |
| 19 | A7 | 70 | C | N1-C1'-C2' | -5.78 | 105.64 | 112.00 |
| 53 | B5 | 24 | G | C5-C6-O6 | -5.78 | 125.13 | 128.60 |
| 1 | AA | 969 | A | O4'-C1'-N9 | 5.78 | 112.82 | 108.20 |
| 53 | B5 | 273 | A | O4'-C1'-N9 | 5.78 | 112.82 | 108.20 |
| 53 | B5 | 2952 | G | N1-C6-O6 | 5.78 | 123.37 | 119.90 |
| 1 | AA | 228 | G | O4'-C1'-N9 | 5.78 | 112.82 | 108.20 |
| 1 | AA | 1489 | U | O4'-C1'-N1 | 5.78 | 112.82 | 108.20 |
| 1 | AA | 1593 | U | P-O3'-C3' | 5.78 | 126.63 | 119.70 |
| 53 | B5 | 2902 | A | O4'-C1'-N9 | 5.78 | 112.82 | 108.20 |
| 53 | B5 | 3229 | G | C5-C6-O6 | -5.78 | 125.13 | 128.60 |
| 1 | AA | 979 | G | O4'-C1'-N9 | 5.77 | 112.82 | 108.20 |
| 52 | B4 | 149 | A | C5-C6-N6 | -5.77 | 119.08 | 123.70 |
| 53 | B5 | 842 | G | C5-C6-O6 | -5.77 | 125.14 | 128.60 |
| 53 | B5 | 1537 | A | O4'-C1'-N9 | 5.77 | 112.82 | 108.20 |
| 1 | AA | 428 | A | O4'-C1'-N9 | 5.77 | 112.82 | 108.20 |
| 1 | AA | 984 | G | O4'-C1'-N9 | 5.77 | 112.82 | 108.20 |
| 19 | A7 | 42 | G | O4'-C1'-N9 | 5.77 | 112.82 | 108.20 |
| 53 | B5 | 2171 | G | O4'-C1'-N9 | 5.77 | 112.82 | 108.20 |
| 53 | B5 | 3087 | A | C4-C5-C6 | 5.77 | 119.89 | 117.00 |
| 53 | B5 | 3216 | U | O4'-C1'-N1 | 5.77 | 112.82 | 108.20 |
| 1 | AA | 373 | G | C5-C6-O6 | -5.77 | 125.14 | 128.60 |
| 19 | A7 | 73 | A | N1-C6-N6 | -5.77 | 115.14 | 118.60 |
| 53 | B5 | 53 | G | O4'-C1'-N9 | 5.77 | 112.82 | 108.20 |
| 1 | AA | 207 | U | O4'-C1'-N1 | 5.77 | 112.82 | 108.20 |
| 1 | AA | 1050 | G | N1-C6-O6 | 5.77 | 123.36 | 119.90 |
| 12 | AM | 85 | PHE | CB-CG-CD1 | 5.77 | 124.84 | 120.80 |
| 19 | A7 | 53 | G | C8-N9-C4 | -5.77 | 104.09 | 106.40 |
| 1 | AA | 1237 | G | O4'-C1'-N9 | 5.77 | 112.81 | 108.20 |
| 1 | AA | 1679 | A | O4'-C1'-N9 | 5.77 | 112.81 | 108.20 |
| 1 | AA | 1719 | A | O4'-C1'-N9 | 5.77 | 112.81 | 108.20 |
| 52 | B4 | 144 | G | O4'-C1'-N9 | 5.77 | 112.81 | 108.20 |
| 53 | B5 | 170 | G | N1-C6-O6 | 5.77 | 123.36 | 119.90 |
| 53 | B5 | 909 | G | O4'-C1'-N9 | 5.77 | 112.81 | 108.20 |
| 53 | B5 | 2194 | G | C5-C6-O6 | -5.77 | 125.14 | 128.60 |
| 18 | AT | 33 | TYR | CB-CG-CD2 | -5.77 | 117.54 | 121.00 |
| 53 | B5 | 2278 | C | C2-N1-C1' | 5.77 | 125.14 | 118.80 |
| 1 | AA | 432 | G | C5-C6-O6 | -5.76 | 125.14 | 128.60 |
| 51 | B3 | 30 | G | O4'-C1'-N9 | 5.76 | 112.81 | 108.20 |
| 53 | B5 | 710 | A | C5-C6-N6 | -5.76 | 119.09 | 123.70 |
| 1 | AA | 1678 | G | O4'-C1'-N9 | 5.76 | 112.81 | 108.20 |
| 19 | A7 | 4 | G | C1'-O4'-C4' | 5.76 | 114.51 | 109.90 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 1 | AA | 34 | G | N1-C6-O6 | 5.76 | 123.36 | 119.90 |
| 1 | AA | 558 | U | O4'-C1'-N1 | 5.76 | 112.81 | 108.20 |
| 1 | AA | 1291 | G | O4'-C1'-N9 | 5.76 | 112.81 | 108.20 |
| 1 | AA | 1733 | U | O4'-C1'-N1 | 5.76 | 112.81 | 108.20 |
| 51 | B3 | 96 | G | C5-C6-O6 | -5.76 | 125.14 | 128.60 |
| 53 | B5 | 307 | A | O4'-C1'-N9 | 5.76 | 112.81 | 108.20 |
| 53 | B5 | 1915 | A | C4-C5-C6 | 5.76 | 119.88 | 117.00 |
| 53 | B5 | 2563 | G | C5-C6-O6 | -5.76 | 125.14 | 128.60 |
| 1 | AA | 1382 | G | N1-C6-O6 | 5.76 | 123.36 | 119.90 |
| 19 | A7 | 44 | A | C5-C6-N6 | 5.76 | 128.31 | 123.70 |
| 53 | B5 | 571 | U | O4'-C1'-N1 | 5.76 | 112.81 | 108.20 |
| 53 | B5 | 1206 | G | C5-C6-O6 | -5.76 | 125.14 | 128.60 |
| 53 | B5 | 2622 | C | N3-C4-N4 | 5.76 | 122.03 | 118.00 |
| 53 | B5 | 2993 | G | C5-C6-O6 | -5.76 | 125.14 | 128.60 |
| 1 | AA | 1751 | A | O4'-C1'-N9 | 5.76 | 112.81 | 108.20 |
| 53 | B5 | 195 | U | O4'-C1'-N1 | 5.76 | 112.81 | 108.20 |
| 53 | B5 | 702 | C | N3-C4-N4 | 5.76 | 122.03 | 118.00 |
| 53 | B5 | 1799 | A | O4'-C1'-N9 | 5.76 | 112.81 | 108.20 |
| 1 | AA | 143 | G | O4'-C1'-N9 | 5.76 | 112.81 | 108.20 |
| 1 | AA | 1560 | G | O4'-C1'-N9 | 5.76 | 112.81 | 108.20 |
| 53 | B5 | 1010 | G | C5-C6-O6 | -5.76 | 125.15 | 128.60 |
| 53 | B5 | 1310 | G | C5-C6-O6 | -5.76 | 125.15 | 128.60 |
| 53 | B5 | 1604 | G | O4'-C1'-N9 | 5.76 | 112.81 | 108.20 |
| 53 | B5 | 2606 | G | O4'-C1'-N9 | 5.76 | 112.81 | 108.20 |
| 53 | B5 | 3270 | A | O4'-C1'-N9 | 5.76 | 112.81 | 108.20 |
| 1 | AA | 359 | A | O4'-C1'-N9 | 5.75 | 112.80 | 108.20 |
| 1 | AA | 1556 | U | O4'-C1'-N1 | 5.75 | 112.80 | 108.20 |
| 53 | B5 | 1882 | G | C5-C6-O6 | -5.75 | 125.15 | 128.60 |
| 53 | B5 | 2169 | G | O4'-C1'-N9 | 5.75 | 112.80 | 108.20 |
| 1 | AA | 11 | A | O4'-C1'-N9 | 5.75 | 112.80 | 108.20 |
| 1 | AA | 539 | G | O4'-C1'-N9 | 5.75 | 112.80 | 108.20 |
| 1 | AA | 690 | G | O4'-C1'-N9 | 5.75 | 112.80 | 108.20 |
| 1 | AA | 1671 | G | O4'-C1'-N9 | 5.75 | 112.80 | 108.20 |
| 53 | B5 | 755 | A | O4'-C1'-N9 | 5.75 | 112.80 | 108.20 |
| 53 | B5 | 1039 | U | O4'-C1'-N1 | 5.75 | 112.80 | 108.20 |
| 53 | B5 | 1743 | G | O4'-C1'-N9 | 5.75 | 112.80 | 108.20 |
| 51 | B3 | 59 | G | O4'-C1'-N9 | 5.75 | 112.80 | 108.20 |
| 53 | B5 | 1010 | G | O4'-C1'-N9 | 5.75 | 112.80 | 108.20 |
| 1 | AA | 1229 | G | O4'-C1'-N9 | 5.75 | 112.80 | 108.20 |
| 53 | B5 | 714 | G | O4'-C1'-N9 | 5.75 | 112.80 | 108.20 |
| 53 | B5 | 2679 | A | C5-C6-N6 | -5.75 | 119.10 | 123.70 |
| 53 | B5 | 2830 | G | C5-C6-O6 | -5.75 | 125.15 | 128.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 1 | AA | 1122 | A | C5-C6-N6 | -5.75 | 119.10 | 123.70 |
| 1 | AA | 1173 | G | C5-C6-O6 | -5.75 | 125.15 | 128.60 |
| 1 | AA | 1400 | C | N3-C4-N4 | 5.75 | 122.02 | 118.00 |
| 1 | AA | 1574 | A | O4'-C1'-N9 | 5.75 | 112.80 | 108.20 |
| 53 | B5 | 1751 | G | C5-C6-O6 | -5.75 | 125.15 | 128.60 |
| 53 | B5 | 2721 | A | O4'-C1'-N9 | 5.75 | 112.80 | 108.20 |
| 1 | AA | 1403 | A | O4'-C1'-N9 | 5.75 | 112.80 | 108.20 |
| 1 | AA | 1767 | U | O4'-C1'-N1 | 5.75 | 112.80 | 108.20 |
| 53 | B5 | 1142 | G | C5-C6-O6 | -5.75 | 125.15 | 128.60 |
| 53 | B5 | 1734 | G | C5-C6-O6 | -5.75 | 125.15 | 128.60 |
| 53 | B5 | 2614 | G | O4'-C1'-N9 | 5.75 | 112.80 | 108.20 |
| 53 | B5 | 366 | A | O4'-C1'-N9 | 5.75 | 112.80 | 108.20 |
| 53 | B5 | 1766 | G | O4'-C1'-N9 | 5.75 | 112.80 | 108.20 |
| 1 | AA | 8 | U | O4'-C1'-N1 | 5.74 | 112.80 | 108.20 |
| 1 | AA | 175 | G | C5-C6-O6 | -5.74 | 125.15 | 128.60 |
| 1 | AA | 362 | G | C5-C6-O6 | -5.74 | 125.15 | 128.60 |
| 1 | AA | 855 | A | C5-C6-N6 | -5.74 | 119.11 | 123.70 |
| 1 | AA | 1423 | C | O4'-C1'-N1 | 5.74 | 112.80 | 108.20 |
| 53 | B5 | 1638 | A | O4'-C1'-N9 | 5.74 | 112.80 | 108.20 |
| 53 | B5 | 1509 | A | O4'-C1'-N9 | 5.74 | 112.79 | 108.20 |
| 1 | AA | 153 | G | C5-C6-O6 | -5.74 | 125.16 | 128.60 |
| 1 | AA | 1665 | A | O4'-C1'-N9 | 5.74 | 112.79 | 108.20 |
| 53 | B5 | 1517 | G | O4'-C1'-N9 | 5.74 | 112.79 | 108.20 |
| 53 | B5 | 3170 | A | O4'-C1'-N9 | 5.74 | 112.79 | 108.20 |
| 53 | B5 | 3373 | U | O4'-C1'-N1 | 5.74 | 112.79 | 108.20 |
| 1 | AA | 996 | G | O4'-C1'-N9 | 5.74 | 112.79 | 108.20 |
| 1 | AA | 1238 | A | O4'-C1'-N9 | 5.74 | 112.79 | 108.20 |
| 53 | B5 | 182 | U | O4'-C1'-N1 | 5.74 | 112.79 | 108.20 |
| 53 | B5 | 662 | U | O4'-C1'-N1 | 5.74 | 112.79 | 108.20 |
| 53 | B5 | 1220 | U | O4'-C1'-N1 | 5.74 | 112.79 | 108.20 |
| 53 | B5 | 450 | G | C5-C6-O6 | -5.74 | 125.16 | 128.60 |
| 53 | B5 | 505 | G | C5-C6-O6 | -5.74 | 125.16 | 128.60 |
| 53 | B5 | 1529 | A | O4'-C1'-N9 | 5.74 | 112.79 | 108.20 |
| 53 | B5 | 2802 | A | O4'-C1'-N9 | 5.74 | 112.79 | 108.20 |
| 53 | B5 | 2864 | A | O4'-C1'-N9 | 5.74 | 112.79 | 108.20 |
| 1 | AA | 168 | A | O4'-C1'-N9 | 5.74 | 112.79 | 108.20 |
| 53 | B5 | 75 | G | C5-C6-O6 | -5.74 | 125.16 | 128.60 |
| 53 | B5 | 227 | G | C5-C6-O6 | -5.74 | 125.16 | 128.60 |
| 53 | B5 | 1087 | G | O4'-C1'-N9 | 5.74 | 112.79 | 108.20 |
| 53 | B5 | 2160 | G | N1-C6-O6 | 5.74 | 123.34 | 119.90 |
| 53 | B5 | 2295 | A | P-O5'-C5' | -5.74 | 111.72 | 120.90 |
| 53 | B5 | 2347 | U | O4'-C1'-N1 | 5.74 | 112.79 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 1 | AA | 1391 | G | O4'-C1'-N9 | 5.73 | 112.79 | 108.20 |
| 53 | B5 | 443 | G | C5-C6-O6 | -5.73 | 125.16 | 128.60 |
| 53 | B5 | 3290 | G | O4'-C1'-N9 | 5.73 | 112.79 | 108.20 |
| 1 | AA | 761 | G | O4'-C1'-N9 | 5.73 | 112.79 | 108.20 |
| 53 | B5 | 566 | G | O4'-C1'-N9 | 5.73 | 112.79 | 108.20 |
| 53 | B5 | 1259 | A | O4'-C1'-N9 | 5.73 | 112.79 | 108.20 |
| 53 | B5 | 1381 | A | O4'-C1'-N9 | 5.73 | 112.79 | 108.20 |
| 53 | B5 | 2738 | A | O4'-C1'-N9 | 5.73 | 112.79 | 108.20 |
| 1 | AA | 1052 | U | O4'-C1'-N1 | 5.73 | 112.78 | 108.20 |
| 1 | AA | 1591 | A | O4'-C1'-N9 | 5.73 | 112.78 | 108.20 |
| 53 | B5 | 189 | G | N1-C6-O6 | 5.73 | 123.34 | 119.90 |
| 53 | B5 | 229 | G | P-O3'-C3' | 5.73 | 126.58 | 119.70 |
| 53 | B5 | 993 | A | O4'-C1'-N9 | 5.73 | 112.78 | 108.20 |
| 53 | B5 | 1145 | G | O4'-C1'-N9 | 5.73 | 112.78 | 108.20 |
| 53 | B5 | 1658 | G | O4'-C1'-N9 | 5.73 | 112.78 | 108.20 |
| 53 | B5 | 1724 | U | O4'-C1'-N1 | 5.73 | 112.78 | 108.20 |
| 53 | B5 | 3147 | G | O4'-C1'-N9 | 5.73 | 112.78 | 108.20 |
| 1 | AA | 281 | G | C5-C6-O6 | -5.73 | 125.16 | 128.60 |
| 53 | B5 | 220 | G | C5-C6-O6 | -5.73 | 125.16 | 128.60 |
| 53 | B5 | 1676 | A | O4'-C1'-N9 | 5.73 | 112.78 | 108.20 |
| 53 | B5 | 1770 | G | O4'-C1'-N9 | 5.73 | 112.78 | 108.20 |
| 53 | B5 | 2699 | G | O4'-C1'-N9 | 5.73 | 112.78 | 108.20 |
| 1 | AA | 324 | U | O4'-C1'-N1 | 5.73 | 112.78 | 108.20 |
| 1 | AA | 1413 | G | O4'-C1'-N9 | 5.73 | 112.78 | 108.20 |
| 53 | B5 | 705 | A | O4'-C1'-N9 | 5.73 | 112.78 | 108.20 |
| 53 | B5 | 779 | G | O4'-C1'-N9 | 5.73 | 112.78 | 108.20 |
| 1 | AA | 722 | G | O4'-C1'-N9 | 5.73 | 112.78 | 108.20 |
| 53 | B5 | 26 | A | C5-C6-N6 | -5.73 | 119.12 | 123.70 |
| 53 | B5 | 513 | G | O4'-C1'-N9 | 5.73 | 112.78 | 108.20 |
| 53 | B5 | 1699 | A | O4'-C1'-N9 | 5.73 | 112.78 | 108.20 |
| 53 | B5 | 1817 | G | O4'-C1'-N9 | 5.73 | 112.78 | 108.20 |
| 1 | AA | 222 | A | O4'-C1'-N9 | 5.72 | 112.78 | 108.20 |
| 1 | AA | 326 | G | C5-C6-O6 | -5.72 | 125.17 | 128.60 |
| 1 | AA | 1460 | G | C5-C6-O6 | -5.72 | 125.17 | 128.60 |
| 19 | A7 | 6 | U | N1-C2-N3 | 5.72 | 118.33 | 114.90 |
| 53 | B5 | 846 | A | O4'-C1'-N9 | 5.72 | 112.78 | 108.20 |
| 53 | B5 | 1590 | G | O4'-C1'-N9 | 5.72 | 112.78 | 108.20 |
| 53 | B5 | 2271 | A | O4'-C1'-N9 | 5.72 | 112.78 | 108.20 |
| 1 | AA | 662 | U | O4'-C1'-N1 | 5.72 | 112.78 | 108.20 |
| 53 | B5 | 176 | G | C5-C6-O6 | -5.72 | 125.17 | 128.60 |
| 53 | B5 | 2865 | U | O4'-C1'-N1 | 5.72 | 112.78 | 108.20 |
| 1 | AA | 182 | A | O4'-C1'-N9 | 5.72 | 112.78 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1 | AA | 228 | G | C5-C6-O6 | -5.72 | 125.17 | 128.60 |
| 1 | AA | 732 | G | N1-C6-O6 | 5.72 | 123.33 | 119.90 |
| 1 | AA | 1522 | A | O5'-P-OP1 | -5.72 | 100.55 | 105.70 |
| 19 | A7 | 29 | A | C5-C6-N1 | 5.72 | 120.56 | 117.70 |
| 53 | B5 | 2273 | G | O4'-C1'-N9 | 5.72 | 112.78 | 108.20 |
| 53 | B5 | 2457 | G | C5-C6-O6 | -5.72 | 125.17 | 128.60 |
| 53 | B5 | 2778 | G | C5-C6-O6 | -5.72 | 125.17 | 128.60 |
| 53 | B5 | 1444 | G | C5-C6-O6 | -5.72 | 125.17 | 128.60 |
| 1 | AA | 1178 | U | O4'-C1'-N1 | 5.72 | 112.77 | 108.20 |
| 1 | AA | 1323 | A | O4'-C1'-N9 | 5.72 | 112.78 | 108.20 |
| 1 | AA | 1712 | A | O4'-C1'-N9 | 5.72 | 112.77 | 108.20 |
| 53 | B5 | 701 | G | C5-C6-O6 | -5.72 | 125.17 | 128.60 |
| 1 | AA | 464 | A | O4'-C1'-N9 | 5.72 | 112.77 | 108.20 |
| 1 | AA | 552 | G | C5-C6-O6 | -5.72 | 125.17 | 128.60 |
| 1 | AA | 937 | G | C5-C6-O6 | -5.72 | 125.17 | 128.60 |
| 1 | AA | 1778 | G | C5-C6-O6 | -5.72 | 125.17 | 128.60 |
| 52 | B4 | 41 | A | C5-C6-N6 | -5.72 | 119.13 | 123.70 |
| 53 | B5 | 213 | G | O4'-C1'-N9 | 5.72 | 112.77 | 108.20 |
| 53 | B5 | 483 | G | O4'-C1'-N9 | 5.72 | 112.77 | 108.20 |
| 53 | B5 | 722 | G | O4'-C1'-N9 | 5.72 | 112.77 | 108.20 |
| 53 | B5 | 2688 | U | O4'-C1'-N1 | 5.72 | 112.77 | 108.20 |
| 53 | B5 | 3033 | A | O4'-C1'-N9 | 5.72 | 112.77 | 108.20 |
| 1 | AA | 95 | G | O4'-C1'-N9 | 5.71 | 112.77 | 108.20 |
| 1 | AA | 386 | G | C5-C6-O6 | -5.71 | 125.17 | 128.60 |
| 1 | AA | 1388 | A | O4'-C1'-N9 | 5.71 | 112.77 | 108.20 |
| 19 | A7 | 21 | A | N1-C6-N6 | -5.71 | 115.17 | 118.60 |
| 53 | B5 | 234 | G | O4'-C1'-N9 | 5.71 | 112.77 | 108.20 |
| 1 | AA | 520 | A | O4'-C1'-N9 | 5.71 | 112.77 | 108.20 |
| 53 | B5 | 1726 | C | O4'-C1'-N1 | 5.71 | 112.77 | 108.20 |
| 53 | B5 | 2529 | A | O4'-C1'-N9 | 5.71 | 112.77 | 108.20 |
| 1 | AA | 293 | U | O4'-C1'-N1 | 5.71 | 112.77 | 108.20 |
| 1 | AA | 471 | A | O4'-C1'-N9 | 5.71 | 112.77 | 108.20 |
| 1 | AA | 498 | G | N1-C6-O6 | 5.71 | 123.33 | 119.90 |
| 1 | AA | 775 | G | N1-C6-O6 | 5.71 | 123.33 | 119.90 |
| 19 | A7 | 5 | A | C5'-C4'-O4' | 5.71 | 115.95 | 109.10 |
| 53 | B5 | 426 | G | O4'-C1'-N9 | 5.71 | 112.77 | 108.20 |
| 53 | B5 | 1149 | G | C5-C6-O6 | -5.71 | 125.17 | 128.60 |
| 53 | B5 | 2381 | G | C5-C6-O6 | -5.71 | 125.17 | 128.60 |
| 19 | A7 | 30 | G | C4-C5-N7 | -5.71 | 108.52 | 110.80 |
| 53 | B5 | 466 | G | N1-C6-O6 | 5.71 | 123.33 | 119.90 |
| 53 | B5 | 926 | A | C4-C5-C6 | 5.71 | 119.86 | 117.00 |
| 53 | B5 | 3049 | A | O4'-C1'-N9 | 5.71 | 112.77 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 1 | AA | 458 | G | O4'-C1'-N9 | 5.71 | 112.77 | 108.20 |
| 1 | AA | 630 | A | O4'-C1'-N9 | 5.71 | 112.77 | 108.20 |
| 1 | AA | 1345 | A | O4'-C1'-N9 | 5.71 | 112.77 | 108.20 |
| 50 | BZ | 46 | LYS | N-CA-CB | 5.71 | 120.88 | 110.60 |
| 53 | B5 | 96 | G | O4'-C1'-N9 | 5.71 | 112.77 | 108.20 |
| 53 | B5 | 494 | G | C5-C6-O6 | -5.71 | 125.17 | 128.60 |
| 53 | B5 | 1258 | U | O4'-C1'-N1 | 5.71 | 112.77 | 108.20 |
| 53 | B5 | 2164 | A | O4'-C1'-N9 | 5.71 | 112.77 | 108.20 |
| 53 | B5 | 2414 | G | C5-C6-O6 | -5.71 | 125.17 | 128.60 |
| 53 | B5 | 3157 | U | O4'-C1'-N1 | 5.71 | 112.77 | 108.20 |
| 1 | AA | 721 | U | O4'-C1'-N1 | 5.71 | 112.77 | 108.20 |
| 1 | AA | 1236 | U | O4'-C1'-N1 | 5.71 | 112.77 | 108.20 |
| 53 | B5 | 551 | A | O4'-C1'-N9 | 5.71 | 112.77 | 108.20 |
| 53 | B5 | 1318 | A | O4'-C1'-N9 | 5.71 | 112.77 | 108.20 |
| 53 | B5 | 1441 | G | P-O3'-C3' | 5.71 | 126.55 | 119.70 |
| 53 | B5 | 1823 | A | O4'-C1'-N9 | 5.71 | 112.76 | 108.20 |
| 53 | B5 | 1935 | G | N1-C6-O6 | 5.71 | 123.32 | 119.90 |
| 53 | B5 | 2658 | G | C5-C6-O6 | -5.71 | 125.18 | 128.60 |
| 53 | B5 | 2662 | G | N1-C6-O6 | 5.71 | 123.32 | 119.90 |
| 1 | AA | 290 | G | O4'-C1'-N9 | 5.70 | 112.76 | 108.20 |
| 1 | AA | 389 | G | N1-C6-O6 | 5.70 | 123.32 | 119.90 |
| 1 | AA | 1758 | G | O4'-C1'-N9 | 5.70 | 112.76 | 108.20 |
| 53 | B5 | 318 | A | C5-C6-N6 | -5.70 | 119.14 | 123.70 |
| 53 | B5 | 1526 | U | O4'-C1'-N1 | 5.70 | 112.76 | 108.20 |
| 1 | AA | 515 | A | O4'-C1'-N9 | 5.70 | 112.76 | 108.20 |
| 1 | AA | 1317 | U | O4'-C1'-N1 | 5.70 | 112.76 | 108.20 |
| 51 | B3 | 45 | A | O4'-C1'-N9 | 5.70 | 112.76 | 108.20 |
| 53 | B5 | 162 | G | N1-C6-O6 | 5.70 | 123.32 | 119.90 |
| 53 | B5 | 478 | A | O4'-C1'-N9 | 5.70 | 112.76 | 108.20 |
| 53 | B5 | 608 | A | C5-C6-N6 | -5.70 | 119.14 | 123.70 |
| 53 | B5 | 2295 | A | C5-C6-N6 | -5.70 | 119.14 | 123.70 |
| 1 | AA | 125 | U | O4'-C1'-N1 | 5.70 | 112.76 | 108.20 |
| 1 | AA | 577 | G | C5-C6-O6 | -5.70 | 125.18 | 128.60 |
| 1 | AA | 931 | U | O4'-C1'-N1 | 5.70 | 112.76 | 108.20 |
| 1 | AA | 1149 | A | O4'-C1'-N9 | 5.70 | 112.76 | 108.20 |
| 1 | AA | 1338 | A | C5-C6-N6 | -5.70 | 119.14 | 123.70 |
| 53 | B5 | 241 | G | N1-C6-O6 | 5.70 | 123.32 | 119.90 |
| 53 | B5 | 800 | G | C4-N9-C1' | 5.70 | 133.91 | 126.50 |
| 53 | B5 | 1333 | C | N3-C4-C5 | -5.70 | 119.62 | 121.90 |
| 53 | B5 | 1493 | G | O4'-C1'-N9 | 5.70 | 112.76 | 108.20 |
| 53 | B5 | 1728 | G | O4'-C1'-N9 | 5.70 | 112.76 | 108.20 |
| 53 | B5 | 2279 | A | C5-C6-N6 | -5.70 | 119.14 | 123.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 3213 | G | O4'-C1'-N9 | 5.70 | 112.76 | 108.20 |
| 1 | AA | 763 | G | C5-C6-O6 | -5.70 | 125.18 | 128.60 |
| 1 | AA | 1524 | A | O4'-C1'-N9 | 5.70 | 112.76 | 108.20 |
| 52 | B4 | 79 | A | O4'-C1'-N9 | 5.70 | 112.76 | 108.20 |
| 53 | B5 | 3042 | U | O4'-C1'-N1 | 5.70 | 112.76 | 108.20 |
| 1 | AA | 100 | A | C5-C6-N6 | -5.70 | 119.14 | 123.70 |
| 1 | AA | 488 | G | O4'-C1'-N9 | 5.70 | 112.76 | 108.20 |
| 19 | A7 | 70 | C | N1-C2-O2 | 5.70 | 122.32 | 118.90 |
| 52 | B4 | 60 | U | C5'-C4'-C3' | 5.70 | 125.11 | 116.00 |
| 53 | B5 | 1019 | G | O4'-C1'-N9 | 5.70 | 112.76 | 108.20 |
| 53 | B5 | 1626 | U | O4'-C1'-N1 | 5.70 | 112.76 | 108.20 |
| 53 | B5 | 1788 | C | N3-C4-N4 | 5.70 | 121.99 | 118.00 |
| 1 | AA | 255 | U | O4'-C1'-N1 | 5.69 | 112.75 | 108.20 |
| 1 | AA | 804 | A | O4'-C1'-N9 | 5.69 | 112.75 | 108.20 |
| 53 | B5 | 1083 | G | O4'-C1'-N9 | 5.69 | 112.76 | 108.20 |
| 53 | B5 | 1859 | A | O4'-C1'-N9 | 5.69 | 112.75 | 108.20 |
| 53 | B5 | 1734 | G | O4'-C1'-N9 | 5.69 | 112.75 | 108.20 |
| 53 | B5 | 2316 | G | N1-C6-O6 | 5.69 | 123.31 | 119.90 |
| 53 | B5 | 2468 | A | P-O3'-C3' | 5.69 | 126.53 | 119.70 |
| 53 | B5 | 2877 | G | O4'-C1'-N9 | 5.69 | 112.75 | 108.20 |
| 1 | AA | 30 | G | O4'-C1'-N9 | 5.69 | 112.75 | 108.20 |
| 1 | AA | 1585 | A | C4-C5-C6 | 5.69 | 119.84 | 117.00 |
| 53 | B5 | 209 | A | O4'-C1'-N9 | 5.69 | 112.75 | 108.20 |
| 53 | B5 | 1268 | G | O4'-C1'-N9 | 5.69 | 112.75 | 108.20 |
| 53 | B5 | 1667 | A | P-O3'-C3' | 5.69 | 126.53 | 119.70 |
| 1 | AA | 892 | A | O4'-C1'-N9 | 5.69 | 112.75 | 108.20 |
| 53 | B5 | 476 | G | C5-C6-O6 | -5.69 | 125.19 | 128.60 |
| 53 | B5 | 554 | A | O4'-C1'-N9 | 5.69 | 112.75 | 108.20 |
| 53 | B5 | 999 | G | C5-C6-O6 | -5.69 | 125.19 | 128.60 |
| 53 | B5 | 1485 | G | O4'-C1'-N9 | 5.69 | 112.75 | 108.20 |
| 53 | B5 | 1921 | A | O4'-C1'-N9 | 5.69 | 112.75 | 108.20 |
| 53 | B5 | 2801 | A | O4'-C1'-N9 | 5.69 | 112.75 | 108.20 |
| 1 | AA | 16 | G | C5-C6-O6 | -5.69 | 125.19 | 128.60 |
| 1 | AA | 357 | G | N1-C6-O6 | 5.69 | 123.31 | 119.90 |
| 1 | AA | 1305 | G | O4'-C1'-N9 | 5.69 | 112.75 | 108.20 |
| 52 | B4 | 63 | G | C5-C6-O6 | -5.69 | 125.19 | 128.60 |
| 53 | B5 | 1244 | A | C1'-O4'-C4' | -5.69 | 105.35 | 109.90 |
| 53 | B5 | 1332 | A | C4-C5-C6 | 5.69 | 119.84 | 117.00 |
| 53 | B5 | 763 | G | O4'-C1'-N9 | 5.68 | 112.75 | 108.20 |
| 53 | B5 | 1766 | G | C5-C6-O6 | -5.68 | 125.19 | 128.60 |
| 53 | B5 | 2895 | G | C5-C6-O6 | -5.68 | 125.19 | 128.60 |
| 1 | AA | 391 | A | O4'-C1'-N9 | 5.68 | 112.75 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1 | AA | 720 | G | O4'-C1'-N9 | 5.68 | 112.75 | 108.20 |
| 1 | AA | 788 | A | O4'-C1'-N9 | 5.68 | 112.75 | 108.20 |
| 53 | B5 | 547 | G | C5-C6-O6 | -5.68 | 125.19 | 128.60 |
| 53 | B5 | 876 | A | O4'-C1'-N9 | 5.68 | 112.75 | 108.20 |
| 53 | B5 | 1669 | C | N3-C4-N4 | 5.68 | 121.98 | 118.00 |
| 53 | B5 | 2519 | A | O4'-C1'-N9 | 5.68 | 112.75 | 108.20 |
| 1 | AA | 789 | A | O4'-C1'-N9 | 5.68 | 112.75 | 108.20 |
| 53 | B5 | 798 | G | O4'-C1'-N9 | 5.68 | 112.75 | 108.20 |
| 53 | B5 | 2375 | G | C5-C6-O6 | -5.68 | 125.19 | 128.60 |
| 1 | AA | 362 | G | O4'-C1'-N9 | 5.68 | 112.74 | 108.20 |
| 1 | AA | 508 | U | O4'-C1'-N1 | 5.68 | 112.74 | 108.20 |
| 1 | AA | 634 | G | O4'-C1'-N9 | 5.68 | 112.74 | 108.20 |
| 1 | AA | 1620 | G | O4'-C1'-N9 | 5.68 | 112.74 | 108.20 |
| 29 | BE | 142 | PHE | CB-CG-CD1 | 5.68 | 124.78 | 120.80 |
| 53 | B5 | 8 | C | O4'-C1'-N1 | 5.68 | 112.74 | 108.20 |
| 53 | B5 | 241 | G | O4'-C1'-N9 | 5.68 | 112.74 | 108.20 |
| 53 | B5 | 3214 | U | O4'-C1'-N1 | 5.68 | 112.74 | 108.20 |
| 53 | B5 | 3286 | G | O4'-C1'-N9 | 5.68 | 112.74 | 108.20 |
| 1 | AA | 867 | G | C2'-C3'-O3' | -5.68 | 97.01 | 109.50 |
| 1 | AA | 1734 | G | N1-C6-O6 | 5.68 | 123.31 | 119.90 |
| 53 | B5 | 684 | G | O4'-C1'-N9 | 5.68 | 112.74 | 108.20 |
| 1 | AA | 486 | G | N1-C6-O6 | 5.68 | 123.31 | 119.90 |
| 1 | AA | 951 | A | O4'-C1'-N9 | 5.68 | 112.74 | 108.20 |
| 19 | A7 | 64 | A | C5-N7-C8 | 5.68 | 106.74 | 103.90 |
| 53 | B5 | 542 | G | O4'-C1'-N9 | 5.68 | 112.74 | 108.20 |
| 53 | B5 | 617 | G | N1-C6-O6 | 5.68 | 123.31 | 119.90 |
| 53 | B5 | 1414 | G | O4'-C1'-N9 | 5.68 | 112.74 | 108.20 |
| 53 | B5 | 2440 | G | O4'-C1'-N9 | 5.68 | 112.74 | 108.20 |
| 1 | AA | 291 | G | O4'-C1'-N9 | 5.67 | 112.74 | 108.20 |
| 1 | AA | 838 | G | C5-C6-O6 | -5.67 | 125.19 | 128.60 |
| 53 | B5 | 389 | A | O4'-C1'-N9 | 5.67 | 112.74 | 108.20 |
| 53 | B5 | 740 | G | C5-C6-O6 | -5.67 | 125.19 | 128.60 |
| 53 | B5 | 1112 | A | C5-C6-N6 | -5.67 | 119.16 | 123.70 |
| 53 | B5 | 2463 | G | N1-C6-O6 | 5.67 | 123.30 | 119.90 |
| 53 | B5 | 2491 | A | O4'-C1'-N9 | 5.67 | 112.74 | 108.20 |
| 53 | B5 | 3331 | U | O4'-C1'-N1 | 5.67 | 112.74 | 108.20 |
| 1 | AA | 60 | U | O4'-C1'-N1 | 5.67 | 112.74 | 108.20 |
| 53 | B5 | 1813 | A | C5-C6-N6 | -5.67 | 119.16 | 123.70 |
| 1 | AA | 756 | A | O4'-C1'-N9 | 5.67 | 112.74 | 108.20 |
| 1 | AA | 1238 | A | C4-C5-C6 | 5.67 | 119.84 | 117.00 |
| 53 | B5 | 1059 | G | C5-C6-O6 | -5.67 | 125.20 | 128.60 |
| 53 | B5 | 1373 | A | O4'-C1'-N9 | 5.67 | 112.74 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 2897 | A | C5-C6-N6 | -5.67 | 119.16 | 123.70 |
| 50 | BZ | 43 | TYR | CB-CG-CD1 | 5.67 | 124.40 | 121.00 |
| 53 | B5 | 70 | A | O4'-C1'-N9 | 5.67 | 112.74 | 108.20 |
| 53 | B5 | 2734 | A | O4'-C1'-N9 | 5.67 | 112.74 | 108.20 |
| 53 | B5 | 2933 | A | O4'-C1'-N9 | 5.67 | 112.74 | 108.20 |
| 1 | AA | 66 | U | O4'-C1'-N1 | 5.67 | 112.74 | 108.20 |
| 1 | AA | 1635 | C | C4'-C3'-C2' | -5.67 | 96.93 | 102.60 |
| 19 | A7 | 3 | G | N9-C4-C5 | 5.67 | 107.67 | 105.40 |
| 53 | B5 | 1889 | G | O4'-C1'-N9 | 5.67 | 112.73 | 108.20 |
| 53 | B5 | 2749 | G | C5-C6-O6 | -5.67 | 125.20 | 128.60 |
| 52 | B4 | 63 | G | O4'-C1'-N9 | 5.67 | 112.73 | 108.20 |
| 53 | B5 | 736 | A | O4'-C1'-N9 | 5.67 | 112.73 | 108.20 |
| 53 | B5 | 1072 | G | C5-C6-O6 | -5.67 | 125.20 | 128.60 |
| 1 | AA | 41 | A | C5-C6-N6 | -5.67 | 119.17 | 123.70 |
| 51 | B3 | 55 | A | C5-C6-N6 | -5.67 | 119.17 | 123.70 |
| 53 | B5 | 720 | A | O4'-C1'-N9 | 5.66 | 112.73 | 108.20 |
| 53 | B5 | 1552 | G | O4'-C1'-N9 | 5.66 | 112.73 | 108.20 |
| 53 | B5 | 1610 | G | O4'-C1'-N9 | 5.66 | 112.73 | 108.20 |
| 53 | B5 | 1940 | G | C5-C6-O6 | -5.66 | 125.20 | 128.60 |
| 1 | AA | 935 | G | O4'-C1'-N9 | 5.66 | 112.73 | 108.20 |
| 1 | AA | 523 | G | C5-C6-O6 | -5.66 | 125.20 | 128.60 |
| 52 | B4 | 107 | G | C5-C6-O6 | -5.66 | 125.20 | 128.60 |
| 53 | B5 | 2258 | U | O4'-C1'-N1 | 5.66 | 112.73 | 108.20 |
| 1 | AA | 755 | A | O4'-C1'-N9 | 5.66 | 112.73 | 108.20 |
| 52 | B4 | 80 | A | O4'-C1'-N9 | 5.66 | 112.73 | 108.20 |
| 53 | B5 | 1005 | G | C5-C6-O6 | -5.66 | 125.20 | 128.60 |
| 53 | B5 | 2313 | A | O4'-C1'-N9 | 5.66 | 112.73 | 108.20 |
| 1 | AA | 1643 | G | O4'-C1'-N9 | 5.66 | 112.73 | 108.20 |
| 53 | B5 | 6 | A | O4'-C1'-N9 | 5.66 | 112.73 | 108.20 |
| 1 | AA | 363 | G | O4'-C1'-N9 | 5.66 | 112.72 | 108.20 |
| 1 | AA | 1045 | G | O4'-C1'-N9 | 5.66 | 112.72 | 108.20 |
| 1 | AA | 1111 | G | O4'-C1'-N9 | 5.66 | 112.72 | 108.20 |
| 17 | AR | 284 | ALA | C-N-CA | -5.66 | 107.56 | 121.70 |
| 53 | B5 | 965 | A | C5-C6-N6 | -5.66 | 119.17 | 123.70 |
| 53 | B5 | 600 | G | O4'-C1'-N9 | 5.65 | 112.72 | 108.20 |
| 53 | B5 | 1087 | G | N1-C6-O6 | 5.65 | 123.29 | 119.90 |
| 53 | B5 | 2964 | G | O4'-C1'-N9 | 5.65 | 112.72 | 108.20 |
| 1 | AA | 1162 | G | C5-C6-O6 | -5.65 | 125.21 | 128.60 |
| 1 | AA | 1261 | G | C5-C6-O6 | -5.65 | 125.21 | 128.60 |
| 1 | AA | 1387 | U | O4'-C1'-N1 | 5.65 | 112.72 | 108.20 |
| 53 | B5 | 136 | G | C5-C6-O6 | -5.65 | 125.21 | 128.60 |
| 53 | B5 | 1739 | U | O4'-C1'-N1 | 5.65 | 112.72 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 2226 | U | O4'-C1'-N1 | 5.65 | 112.72 | 108.20 |
| 53 | B5 | 2387 | A | C5-C6-N6 | -5.65 | 119.18 | 123.70 |
| 53 | B5 | 2480 | A | C5-C6-N6 | -5.65 | 119.18 | 123.70 |
| 53 | B5 | 3330 | A | O4'-C1'-N9 | 5.65 | 112.72 | 108.20 |
| 1 | AA | 210 | A | O4'-C1'-N9 | 5.65 | 112.72 | 108.20 |
| 1 | AA | 403 | G | C5-C6-O6 | -5.65 | 125.21 | 128.60 |
| 1 | AA | 1269 | G | N1-C6-O6 | 5.65 | 123.29 | 119.90 |
| 1 | AA | 1348 | G | N1-C6-O6 | 5.65 | 123.29 | 119.90 |
| 1 | AA | 1413 | G | N1-C6-O6 | 5.65 | 123.29 | 119.90 |
| 53 | B5 | 604 | G | O4'-C1'-N9 | 5.65 | 112.72 | 108.20 |
| 53 | B5 | 1413 | G | O4'-C1'-N9 | 5.65 | 112.72 | 108.20 |
| 53 | B5 | 2409 | G | C5-C6-O6 | -5.65 | 125.21 | 128.60 |
| 1 | AA | 1273 | G | O4'-C1'-N9 | 5.65 | 112.72 | 108.20 |
| 1 | AA | 1308 | U | O4'-C1'-N1 | 5.65 | 112.72 | 108.20 |
| 53 | B5 | 2698 | G | O4'-C1'-N9 | 5.65 | 112.72 | 108.20 |
| 53 | B5 | 334 | A | O4'-C1'-N9 | 5.65 | 112.72 | 108.20 |
| 53 | B5 | 657 | A | O4'-C1'-N9 | 5.65 | 112.72 | 108.20 |
| 53 | B5 | 845 | G | C5-C6-O6 | -5.65 | 125.21 | 128.60 |
| 53 | B5 | 2386 | A | C5-C6-N6 | -5.65 | 119.18 | 123.70 |
| 1 | AA | 869 | A | O4'-C1'-N9 | 5.65 | 112.72 | 108.20 |
| 29 | BE | 207 | TYR | CB-CG-CD2 | -5.65 | 117.61 | 121.00 |
| 53 | B5 | 2805 | G | C5-C6-O6 | -5.65 | 125.21 | 128.60 |
| 1 | AA | 456 | A | C5-C6-N6 | -5.64 | 119.18 | 123.70 |
| 1 | AA | 494 | U | O4'-C1'-N1 | 5.64 | 112.72 | 108.20 |
| 53 | B5 | 3 | U | O4'-C1'-N1 | 5.64 | 112.72 | 108.20 |
| 19 | A7 | 1 | G | C8-N9-C4 | 5.64 | 108.66 | 106.40 |
| 53 | B5 | 1679 | A | C5-C6-N6 | -5.64 | 119.19 | 123.70 |
| 53 | B5 | 2503 | G | C5-C6-O6 | -5.64 | 125.22 | 128.60 |
| 53 | B5 | 388 | G | N1-C6-O6 | 5.64 | 123.28 | 119.90 |
| 1 | AA | 39 | A | O4'-C1'-N9 | 5.64 | 112.71 | 108.20 |
| 1 | AA | 509 | G | O4'-C1'-N9 | 5.64 | 112.71 | 108.20 |
| 1 | AA | 510 | G | O4'-C1'-N9 | 5.64 | 112.71 | 108.20 |
| 1 | AA | 732 | G | O4'-C1'-N9 | 5.64 | 112.71 | 108.20 |
| 1 | AA | 899 | A | O4'-C1'-N9 | 5.64 | 112.71 | 108.20 |
| 1 | AA | 1502 | G | O4'-C1'-N9 | 5.64 | 112.71 | 108.20 |
| 53 | B5 | 1147 | G | N1-C6-O6 | 5.64 | 123.28 | 119.90 |
| 53 | B5 | 1428 | A | O4'-C1'-N9 | 5.64 | 112.71 | 108.20 |
| 53 | B5 | 3129 | A | O4'-C1'-N9 | 5.64 | 112.71 | 108.20 |
| 1 | AA | 1258 | U | O4'-C1'-N1 | 5.64 | 112.71 | 108.20 |
| 53 | B5 | 236 | G | O4'-C1'-N9 | 5.64 | 112.71 | 108.20 |
| 53 | B5 | 717 | C | C6-N1-C1' | -5.64 | 114.03 | 120.80 |
| 1 | AA | 1710 | A | O4'-C1'-N9 | 5.64 | 112.71 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 91 | G | C5-C6-O6 | -5.64 | 125.22 | 128.60 |
| 53 | B5 | 668 | G | C5-C6-O6 | -5.64 | 125.22 | 128.60 |
| 53 | B5 | 817 | A | C5-C6-N6 | -5.64 | 119.19 | 123.70 |
| 53 | B5 | 976 | C | N3-C4-C5 | -5.64 | 119.65 | 121.90 |
| 53 | B5 | 1573 | G | O4'-C1'-N9 | 5.64 | 112.71 | 108.20 |
| 53 | B5 | 1744 | G | O4'-C1'-N9 | 5.64 | 112.71 | 108.20 |
| 53 | B5 | 2381 | G | O4'-C1'-N9 | 5.64 | 112.71 | 108.20 |
| 53 | B5 | 683 | U | O4'-C1'-N1 | 5.63 | 112.71 | 108.20 |
| 1 | AA | 444 | C | O4'-C1'-N1 | 5.63 | 112.71 | 108.20 |
| 1 | AA | 1548 | A | C5'-C4'-C3' | -5.63 | 106.99 | 116.00 |
| 1 | AA | 1743 | G | C5-C6-O6 | -5.63 | 125.22 | 128.60 |
| 51 | B3 | 114 | A | O4'-C1'-N9 | 5.63 | 112.71 | 108.20 |
| 53 | B5 | 2939 | G | N1-C6-O6 | 5.63 | 123.28 | 119.90 |
| 1 | AA | 42 | G | P-O3'-C3' | 5.63 | 126.46 | 119.70 |
| 53 | B5 | 3361 | G | C5-C6-O6 | -5.63 | 125.22 | 128.60 |
| 53 | B5 | 1289 | G | O4'-C1'-N9 | 5.63 | 112.70 | 108.20 |
| 1 | AA | 68 | A | O4'-C1'-N9 | 5.63 | 112.70 | 108.20 |
| 1 | AA | 803 | A | O4'-C1'-N9 | 5.63 | 112.70 | 108.20 |
| 51 | B3 | 69 | G | N1-C6-O6 | 5.63 | 123.28 | 119.90 |
| 53 | B5 | 1249 | G | N1-C6-O6 | 5.63 | 123.28 | 119.90 |
| 53 | B5 | 1313 | G | C5'-C4'-O4' | 5.63 | 115.85 | 109.10 |
| 1 | AA | 105 | A | O4'-C1'-N9 | 5.62 | 112.70 | 108.20 |
| 1 | AA | 127 | G | O4'-C1'-N9 | 5.62 | 112.70 | 108.20 |
| 1 | AA | 1266 | G | N1-C6-O6 | 5.62 | 123.27 | 119.90 |
| 53 | B5 | 264 | G | C5-C6-O6 | -5.62 | 125.23 | 128.60 |
| 53 | B5 | 774 | G | O4'-C1'-N9 | 5.62 | 112.70 | 108.20 |
| 53 | B5 | 997 | A | C5-C6-N6 | -5.62 | 119.20 | 123.70 |
| 53 | B5 | 1273 | A | O4'-C1'-N9 | 5.62 | 112.70 | 108.20 |
| 53 | B5 | 1561 | G | O4'-C1'-N9 | 5.62 | 112.70 | 108.20 |
| 53 | B5 | 2232 | A | O4'-C1'-N9 | 5.62 | 112.70 | 108.20 |
| 53 | B5 | 2609 | A | C5-C6-N6 | -5.62 | 119.20 | 123.70 |
| 53 | B5 | 3256 | G | O4'-C1'-N9 | 5.62 | 112.70 | 108.20 |
| 53 | B5 | 3368 | U | O4'-C1'-N1 | 5.62 | 112.70 | 108.20 |
| 1 | AA | 451 | A | P-O3'-C3' | 5.62 | 126.44 | 119.70 |
| 1 | AA | 1510 | G | O4'-C1'-N9 | 5.62 | 112.70 | 108.20 |
| 53 | B5 | 330 | G | C5-C6-O6 | -5.62 | 125.23 | 128.60 |
| 53 | B5 | 714 | G | P-O3'-C3' | 5.62 | 126.45 | 119.70 |
| 53 | B5 | 1245 | A | C5-C6-N6 | -5.62 | 119.20 | 123.70 |
| 53 | B5 | 1300 | G | C5-C6-O6 | -5.62 | 125.23 | 128.60 |
| 53 | B5 | 1456 | A | C5-C6-N6 | -5.62 | 119.20 | 123.70 |
| 53 | B5 | 1654 | A | C5'-C4'-O4' | 5.62 | 115.84 | 109.10 |
| 1 | AA | 871 | G | O4'-C1'-N9 | 5.62 | 112.70 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1 | AA | 956 | G | O4'-C1'-N9 | 5.62 | 112.70 | 108.20 |
| 1 | AA | 1511 | G | O4'-C1'-N9 | 5.62 | 112.70 | 108.20 |
| 19 | A7 | 62 | A | O4'-C1'-C2' | 5.62 | 112.66 | 107.60 |
| 53 | B5 | 3027 | A | P-O3'-C3' | 5.62 | 126.44 | 119.70 |
| 53 | B5 | 3230 | G | C5-C6-O6 | -5.62 | 125.23 | 128.60 |
| 1 | AA | 1234 | A | C5-C6-N6 | -5.62 | 119.20 | 123.70 |
| 53 | B5 | 913 | A | O4'-C1'-N9 | 5.62 | 112.69 | 108.20 |
| 53 | B5 | 1602 | A | C5-C6-N6 | -5.62 | 119.20 | 123.70 |
| 53 | B5 | 2460 | U | O4'-C1'-N1 | 5.62 | 112.69 | 108.20 |
| 53 | B5 | 2671 | A | C5-C6-N6 | -5.62 | 119.21 | 123.70 |
| 1 | AA | 235 | G | O4'-C1'-N9 | 5.62 | 112.69 | 108.20 |
| 1 | AA | 853 | G | C5-C6-O6 | -5.62 | 125.23 | 128.60 |
| 1 | AA | 1647 | G | C5-C6-O6 | -5.62 | 125.23 | 128.60 |
| 53 | B5 | 412 | G | C5-C6-O6 | -5.62 | 125.23 | 128.60 |
| 53 | B5 | 473 | G | C5-C6-O6 | -5.62 | 125.23 | 128.60 |
| 53 | B5 | 625 | G | O4'-C1'-N9 | 5.62 | 112.69 | 108.20 |
| 1 | AA | 922 | A | O4'-C1'-N9 | 5.61 | 112.69 | 108.20 |
| 53 | B5 | 1488 | G | O4'-C1'-N9 | 5.61 | 112.69 | 108.20 |
| 53 | B5 | 1646 | G | C5-C6-O6 | -5.61 | 125.23 | 128.60 |
| 53 | B5 | 2137 | U | O4'-C1'-N1 | 5.61 | 112.69 | 108.20 |
| 53 | B5 | 3052 | G | O4'-C1'-N9 | 5.61 | 112.69 | 108.20 |
| 53 | B5 | 3263 | G | O4'-C1'-N9 | 5.61 | 112.69 | 108.20 |
| 19 | A7 | 23 | A | C5-C6-N1 | 5.61 | 120.50 | 117.70 |
| 53 | B5 | 3119 | U | O4'-C1'-N1 | 5.61 | 112.69 | 108.20 |
| 1 | AA | 1168 | A | O4'-C1'-N9 | 5.61 | 112.69 | 108.20 |
| 1 | AA | 244 | A | O4'-C1'-N9 | 5.61 | 112.69 | 108.20 |
| 1 | AA | 995 | U | O4'-C1'-N1 | 5.61 | 112.69 | 108.20 |
| 1 | AA | 1784 | G | C5-C6-O6 | -5.61 | 125.24 | 128.60 |
| 53 | B5 | 161 | G | N1-C6-O6 | 5.61 | 123.26 | 119.90 |
| 53 | B5 | 832 | G | C5-C6-O6 | -5.61 | 125.23 | 128.60 |
| 53 | B5 | 902 | G | O4'-C1'-N9 | 5.61 | 112.69 | 108.20 |
| 53 | B5 | 2288 | G | C5-C6-O6 | -5.61 | 125.23 | 128.60 |
| 53 | B5 | 2538 | U | O4'-C1'-N1 | 5.61 | 112.69 | 108.20 |
| 53 | B5 | 2661 | G | O4'-C1'-N9 | 5.61 | 112.69 | 108.20 |
| 1 | AA | 28 | A | O4'-C1'-N9 | 5.61 | 112.68 | 108.20 |
| 1 | AA | 273 | G | C5-C6-O6 | -5.61 | 125.24 | 128.60 |
| 1 | AA | 345 | U | O4'-C1'-N1 | 5.61 | 112.69 | 108.20 |
| 1 | AA | 355 | G | N1-C6-O6 | 5.61 | 123.26 | 119.90 |
| 1 | AA | 1107 | G | O4'-C1'-N9 | 5.61 | 112.68 | 108.20 |
| 1 | AA | 1225 | G | N1-C6-O6 | 5.61 | 123.26 | 119.90 |
| 1 | AA | 1521 | G | N1-C6-O6 | -5.61 | 116.54 | 119.90 |
| 53 | B5 | 1212 | A | O4'-C1'-N9 | 5.61 | 112.68 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 2615 | G | C5-C6-O6 | -5.61 | 125.24 | 128.60 |
| 1 | AA | 829 | A | O4'-C1'-N9 | 5.60 | 112.68 | 108.20 |
| 1 | AA | 1697 | G | O4'-C1'-N9 | 5.60 | 112.68 | 108.20 |
| 53 | B5 | 136 | G | O4'-C1'-N9 | 5.60 | 112.68 | 108.20 |
| 53 | B5 | 2557 | G | N1-C6-O6 | 5.60 | 123.26 | 119.90 |
| 1 | AA | 197 | A | O4'-C1'-N9 | 5.60 | 112.68 | 108.20 |
| 1 | AA | 329 | G | O4'-C1'-N9 | 5.60 | 112.68 | 108.20 |
| 1 | AA | 1119 | G | C5-C6-O6 | -5.60 | 125.24 | 128.60 |
| 53 | B5 | 847 | A | C5-C6-N6 | -5.60 | 119.22 | 123.70 |
| 53 | B5 | 1027 | A | P-O3'-C3' | 5.60 | 126.42 | 119.70 |
| 53 | B5 | 2447 | A | C5-C6-N6 | -5.60 | 119.22 | 123.70 |
| 1 | AA | 1129 | A | O4'-C1'-N9 | 5.60 | 112.68 | 108.20 |
| 19 | A7 | 24 | G | C8-N9-C4 | -5.60 | 104.16 | 106.40 |
| 51 | B3 | 78 | G | C5-C6-O6 | -5.60 | 125.24 | 128.60 |
| 53 | B5 | 170 | G | O4'-C1'-N9 | 5.60 | 112.68 | 108.20 |
| 53 | B5 | 1311 | G | O4'-C1'-N9 | 5.60 | 112.68 | 108.20 |
| 1 | AA | 770 | A | O4'-C1'-N9 | 5.60 | 112.68 | 108.20 |
| 1 | AA | 1119 | G | O4'-C1'-N9 | 5.60 | 112.68 | 108.20 |
| 1 | AA | 1196 | G | O4'-C4'-C3' | -5.60 | 98.40 | 104.00 |
| 53 | B5 | 287 | G | C5-C6-O6 | -5.60 | 125.24 | 128.60 |
| 53 | B5 | 477 | A | O4'-C1'-N9 | 5.60 | 112.68 | 108.20 |
| 53 | B5 | 1207 | G | C5-C6-O6 | -5.60 | 125.24 | 128.60 |
| 53 | B5 | 2700 | G | C5-C6-O6 | -5.60 | 125.24 | 128.60 |
| 1 | AA | 538 | A | O4'-C1'-N9 | 5.60 | 112.68 | 108.20 |
| 1 | AA | 1115 | G | O4'-C1'-N9 | 5.60 | 112.68 | 108.20 |
| 1 | AA | 1143 | G | C5-C6-O6 | -5.60 | 125.24 | 128.60 |
| 1 | AA | 1392 | G | O4'-C1'-N9 | 5.60 | 112.68 | 108.20 |
| 1 | AA | 1631 | A | OP1-P-OP2 | -5.60 | 111.20 | 119.60 |
| 52 | B4 | 46 | G | C5-C6-O6 | -5.60 | 125.24 | 128.60 |
| 53 | B5 | 810 | A | C4-C5-C6 | 5.60 | 119.80 | 117.00 |
| 53 | B5 | 2289 | U | O4'-C1'-N1 | 5.60 | 112.68 | 108.20 |
| 53 | B5 | 2375 | G | O4'-C1'-N9 | 5.60 | 112.68 | 108.20 |
| 53 | B5 | 2730 | G | C5-C6-O6 | -5.60 | 125.24 | 128.60 |
| 53 | B5 | 2868 | U | O4'-C1'-N1 | 5.60 | 112.68 | 108.20 |
| 1 | AA | 322 | G | N1-C6-O6 | 5.60 | 123.26 | 119.90 |
| 53 | B5 | 104 | G | C5-C6-O6 | -5.60 | 125.24 | 128.60 |
| 53 | B5 | 400 | G | O4'-C1'-N9 | 5.60 | 112.68 | 108.20 |
| 53 | B5 | 887 | G | O4'-C1'-N9 | 5.60 | 112.68 | 108.20 |
| 53 | B5 | 3041 | U | O4'-C1'-N1 | 5.60 | 112.68 | 108.20 |
| 1 | AA | 689 | G | O4'-C1'-N9 | 5.59 | 112.67 | 108.20 |
| 1 | AA | 859 | A | C8-N9-C4 | -5.59 | 103.56 | 105.80 |
| 53 | B5 | 3016 | A | C4-C5-C6 | 5.59 | 119.80 | 117.00 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 3146 | G | C1'-O4'-C4' | -5.59 | 105.42 | 109.90 |
| 1 | AA | 845 | G | O4'-C1'-N9 | 5.59 | 112.67 | 108.20 |
| 53 | B5 | 133 | U | O4'-C1'-N1 | 5.59 | 112.67 | 108.20 |
| 53 | B5 | 2311 | G | O4'-C1'-N9 | 5.59 | 112.67 | 108.20 |
| 19 | A7 | 56 | C | N1-C2-O2 | 5.59 | 122.25 | 118.90 |
| 53 | B5 | 428 | A | O4'-C1'-N9 | 5.59 | 112.67 | 108.20 |
| 53 | B5 | 646 | A | O4'-C1'-N9 | 5.59 | 112.67 | 108.20 |
| 53 | B5 | 1213 | G | O4'-C1'-N9 | 5.59 | 112.67 | 108.20 |
| 53 | B5 | 2846 | U | O4'-C1'-N1 | 5.59 | 112.67 | 108.20 |
| 53 | B5 | 2957 | G | O4'-C1'-N9 | 5.59 | 112.67 | 108.20 |
| 1 | AA | 1091 | G | O4'-C1'-N9 | 5.59 | 112.67 | 108.20 |
| 53 | B5 | 1099 | A | O4'-C1'-N9 | 5.59 | 112.67 | 108.20 |
| 53 | B5 | 1147 | G | O4'-C1'-N9 | 5.59 | 112.67 | 108.20 |
| 53 | B5 | 2488 | A | C4-C5-C6 | 5.59 | 119.80 | 117.00 |
| 53 | B5 | 2585 | G | C5-C6-O6 | -5.59 | 125.25 | 128.60 |
| 53 | B5 | 2364 | G | C5-C6-O6 | -5.59 | 125.25 | 128.60 |
| 53 | B5 | 2632 | G | O4'-C1'-N9 | 5.59 | 112.67 | 108.20 |
| 53 | B5 | 2749 | G | O4'-C1'-N9 | 5.59 | 112.67 | 108.20 |
| 53 | B5 | 2800 | G | O4'-C1'-N9 | 5.59 | 112.67 | 108.20 |
| 1 | AA | 288 | A | O4'-C1'-N9 | 5.59 | 112.67 | 108.20 |
| 1 | AA | 997 | A | O4'-C1'-N9 | 5.59 | 112.67 | 108.20 |
| 1 | AA | 1364 | G | N1-C6-O6 | 5.59 | 123.25 | 119.90 |
| 53 | B5 | 387 | A | O4'-C1'-N9 | 5.59 | 112.67 | 108.20 |
| 53 | B5 | 1542 | G | C5-C6-O6 | -5.59 | 125.25 | 128.60 |
| 1 | AA | 259 | U | O4'-C1'-N1 | 5.58 | 112.67 | 108.20 |
| 53 | B5 | 1097 | G | O4'-C1'-N9 | 5.58 | 112.67 | 108.20 |
| 53 | B5 | 1237 | G | N1-C6-O6 | 5.58 | 123.25 | 119.90 |
| 53 | B5 | 1929 | G | O4'-C1'-N9 | 5.58 | 112.67 | 108.20 |
| 53 | B5 | 2818 | U | O4'-C1'-N1 | 5.58 | 112.67 | 108.20 |
| 1 | AA | 390 | G | N1-C6-O6 | 5.58 | 123.25 | 119.90 |
| 1 | AA | 419 | G | C5-C6-O6 | -5.58 | 125.25 | 128.60 |
| 1 | AA | 1162 | G | O4'-C1'-N9 | 5.58 | 112.67 | 108.20 |
| 51 | B3 | 75 | G | O4'-C1'-N9 | 5.58 | 112.67 | 108.20 |
| 53 | B5 | 341 | G | O4'-C1'-N9 | 5.58 | 112.67 | 108.20 |
| 53 | B5 | 628 | A | C5-C6-N6 | -5.58 | 119.23 | 123.70 |
| 53 | B5 | 1446 | A | O4'-C1'-N9 | 5.58 | 112.67 | 108.20 |
| 1 | AA | 898 | G | O4'-C1'-N9 | 5.58 | 112.67 | 108.20 |
| 1 | AA | 947 | G | O4'-C1'-N9 | 5.58 | 112.67 | 108.20 |
| 1 | AA | 1392 | G | C5-C6-O6 | -5.58 | 125.25 | 128.60 |
| 53 | B5 | 16 | A | P-O3'-C3' | 5.58 | 126.40 | 119.70 |
| 53 | B5 | 265 | A | O4'-C1'-N9 | 5.58 | 112.66 | 108.20 |
| 53 | B5 | 725 | G | O4'-C1'-N9 | 5.58 | 112.67 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 2160 | G | O4'-C1'-N9 | 5.58 | 112.67 | 108.20 |
| 53 | B5 | 3322 | A | C5-C6-N6 | -5.58 | 119.23 | 123.70 |
| 53 | B5 | 145 | G | C5-C6-O6 | -5.58 | 125.25 | 128.60 |
| 1 | AA | 673 | A | O4'-C1'-N9 | 5.58 | 112.66 | 108.20 |
| 1 | AA | 729 | G | N1-C6-O6 | 5.58 | 123.25 | 119.90 |
| 53 | B5 | 712 | G | C4-N9-C1' | 5.58 | 133.75 | 126.50 |
| 53 | B5 | 1488 | G | C5-C6-O6 | -5.58 | 125.25 | 128.60 |
| 53 | B5 | 2770 | G | P-O3'-C3' | 5.58 | 126.39 | 119.70 |
| 53 | B5 | 902 | G | N1-C6-O6 | 5.58 | 123.25 | 119.90 |
| 53 | B5 | 1250 | G | C5-C6-O6 | -5.58 | 125.25 | 128.60 |
| 53 | B5 | 2386 | A | O4'-C1'-N9 | 5.58 | 112.66 | 108.20 |
| 1 | AA | 194 | U | C2-N1-C1' | 5.57 | 124.39 | 117.70 |
| 53 | B5 | 33 | G | O4'-C1'-N9 | 5.57 | 112.66 | 108.20 |
| 53 | B5 | 206 | G | O4'-C1'-N9 | 5.57 | 112.66 | 108.20 |
| 53 | B5 | 1051 | U | O4'-C1'-N1 | 5.57 | 112.66 | 108.20 |
| 53 | B5 | 1083 | G | C5-C6-O6 | -5.57 | 125.26 | 128.60 |
| 53 | B5 | 3102 | G | O4'-C1'-N9 | 5.57 | 112.66 | 108.20 |
| 52 | B4 | 19 | C | N3-C4-N4 | 5.57 | 121.90 | 118.00 |
| 53 | B5 | 1480 | G | C5-C6-O6 | -5.57 | 125.26 | 128.60 |
| 53 | B5 | 2224 | A | C5-C6-N6 | -5.57 | 119.24 | 123.70 |
| 1 | AA | 971 | G | O4'-C1'-N9 | 5.57 | 112.66 | 108.20 |
| 1 | AA | 1715 | G | O4'-C1'-N9 | 5.57 | 112.66 | 108.20 |
| 1 | AA | 1744 | A | O4'-C1'-N9 | 5.57 | 112.66 | 108.20 |
| 53 | B5 | 406 | G | C5-C6-O6 | -5.57 | 125.26 | 128.60 |
| 53 | B5 | 1190 | A | P-O3'-C3' | 5.57 | 126.38 | 119.70 |
| 53 | B5 | 1375 | G | O4'-C1'-N9 | 5.57 | 112.66 | 108.20 |
| 53 | B5 | 2560 | U | O4'-C1'-N1 | 5.57 | 112.66 | 108.20 |
| 53 | B5 | 2648 | G | C5-C6-O6 | -5.57 | 125.26 | 128.60 |
| 1 | AA | 300 | A | O4'-C1'-N9 | 5.57 | 112.66 | 108.20 |
| 1 | AA | 438 | A | O4'-C1'-N9 | 5.57 | 112.66 | 108.20 |
| 1 | AA | 982 | A | O4'-C1'-N9 | 5.57 | 112.66 | 108.20 |
| 1 | AA | 996 | G | C5-C6-O6 | -5.57 | 125.26 | 128.60 |
| 19 | A7 | 42 | G | N9-C4-C5 | 5.57 | 107.63 | 105.40 |
| 53 | B5 | 537 | A | O4'-C1'-N9 | 5.57 | 112.66 | 108.20 |
| 53 | B5 | 1252 | A | O4'-C1'-N9 | 5.57 | 112.66 | 108.20 |
| 53 | B5 | 1812 | G | N1-C6-O6 | 5.57 | 123.24 | 119.90 |
| 53 | B5 | 1888 | U | O4'-C1'-N1 | 5.57 | 112.66 | 108.20 |
| 53 | B5 | 2440 | G | C5-C6-O6 | -5.57 | 125.26 | 128.60 |
| 1 | AA | 763 | G | O4'-C1'-N9 | 5.57 | 112.65 | 108.20 |
| 1 | AA | 1068 | U | O4'-C1'-N1 | 5.57 | 112.65 | 108.20 |
| 1 | AA | 1660 | G | C5-C6-O6 | -5.57 | 125.26 | 128.60 |
| 53 | B5 | 277 | G | C5-C6-O6 | -5.57 | 125.26 | 128.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 1385 | C | N3-C4-C5 | -5.57 | 119.67 | 121.90 |
| 53 | B5 | 1637 | A | O4'-C1'-N9 | 5.57 | 112.65 | 108.20 |
| 1 | AA | 1741 | U | O4'-C1'-N1 | 5.57 | 112.65 | 108.20 |
| 18 | AT | 33 | TYR | CB-CG-CD1 | 5.57 | 124.34 | 121.00 |
| 51 | B3 | 25 | G | C5-C6-O6 | -5.57 | 125.26 | 128.60 |
| 53 | B5 | 1680 | G | C5-C6-O6 | -5.57 | 125.26 | 128.60 |
| 53 | B5 | 1885 | U | O4'-C1'-N1 | 5.57 | 112.65 | 108.20 |
| 53 | B5 | 2634 | U | O4'-C1'-N1 | 5.57 | 112.65 | 108.20 |
| 53 | B5 | 2659 | G | O4'-C1'-N9 | 5.57 | 112.65 | 108.20 |
| 53 | B5 | 3078 | U | O4'-C1'-N1 | 5.57 | 112.65 | 108.20 |
| 1 | AA | 865 | A | OP1-P-OP2 | 5.56 | 127.95 | 119.60 |
| 53 | B5 | 33 | G | C5-C6-O6 | -5.56 | 125.26 | 128.60 |
| 53 | B5 | 900 | G | O4'-C1'-N9 | 5.56 | 112.65 | 108.20 |
| 53 | B5 | 2149 | A | O4'-C1'-N9 | 5.56 | 112.65 | 108.20 |
| 53 | B5 | 3069 | G | O4'-C1'-N9 | 5.56 | 112.65 | 108.20 |
| 1 | AA | 642 | G | O4'-C1'-N9 | 5.56 | 112.65 | 108.20 |
| 1 | AA | 1003 | U | O4'-C1'-N1 | 5.56 | 112.65 | 108.20 |
| 53 | B5 | 337 | G | C5-C6-O6 | -5.56 | 125.26 | 128.60 |
| 53 | B5 | 835 | G | C5-C6-O6 | -5.56 | 125.26 | 128.60 |
| 53 | B5 | 1528 | G | C5-C6-O6 | -5.56 | 125.26 | 128.60 |
| 53 | B5 | 1575 | A | O4'-C1'-N9 | 5.56 | 112.65 | 108.20 |
| 53 | B5 | 659 | G | C5-C6-O6 | -5.56 | 125.26 | 128.60 |
| 53 | B5 | 1571 | A | O4'-C1'-N9 | 5.56 | 112.65 | 108.20 |
| 1 | AA | 6 | G | C5-C6-O6 | -5.56 | 125.26 | 128.60 |
| 1 | AA | 811 | A | O4'-C1'-N9 | 5.56 | 112.65 | 108.20 |
| 19 | A7 | 24 | G | C4-C5-N7 | 5.56 | 113.02 | 110.80 |
| 53 | B5 | 1271 | A | C4-C5-C6 | 5.56 | 119.78 | 117.00 |
| 53 | B5 | 2550 | U | O4'-C1'-N1 | 5.56 | 112.65 | 108.20 |
| 1 | AA | 562 | G | O4'-C1'-N9 | 5.56 | 112.65 | 108.20 |
| 1 | AA | 1039 | G | C5-C6-O6 | -5.56 | 125.27 | 128.60 |
| 1 | AA | 1179 | A | O4'-C1'-N9 | 5.56 | 112.64 | 108.20 |
| 1 | AA | 1640 | G | O4'-C1'-N9 | 5.56 | 112.65 | 108.20 |
| 51 | B3 | 21 | G | O4'-C1'-N9 | 5.56 | 112.65 | 108.20 |
| 53 | B5 | 432 | G | C5-C6-O6 | -5.56 | 125.27 | 128.60 |
| 53 | B5 | 2533 | G | O4'-C1'-N9 | 5.56 | 112.65 | 108.20 |
| 53 | B5 | 3124 | G | C5-C6-O6 | -5.56 | 125.27 | 128.60 |
| 53 | B5 | 1789 | G | C5-C6-O6 | -5.56 | 125.27 | 128.60 |
| 53 | B5 | 3266 | G | N1-C6-O6 | 5.56 | 123.23 | 119.90 |
| 19 | A7 | 67 | A | C3'-C2'-C1' | 5.55 | 105.94 | 101.50 |
| 53 | B5 | 1 | G | N1-C6-O6 | 5.55 | 123.23 | 119.90 |
| 53 | B5 | 2395 | G | O4'-C1'-N9 | 5.55 | 112.64 | 108.20 |
| 53 | B5 | 2451 | G | C5-C6-O6 | -5.55 | 125.27 | 128.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 2747 | A | O4'-C1'-N9 | 5.55 | 112.64 | 108.20 |
| 1 | AA | 1140 | A | O4'-C1'-N9 | 5.55 | 112.64 | 108.20 |
| 1 | AA | 1194 | G | P-O3'-C3' | 5.55 | 126.36 | 119.70 |
| 53 | B5 | 1849 | C | O4'-C1'-N1 | 5.55 | 112.64 | 108.20 |
| 1 | AA | 821 | U | O4'-C1'-N1 | 5.55 | 112.64 | 108.20 |
| 1 | AA | 895 | G | O4'-C1'-N9 | 5.55 | 112.64 | 108.20 |
| 1 | AA | 1080 | G | O4'-C1'-N9 | 5.55 | 112.64 | 108.20 |
| 1 | AA | 1491 | A | C5-C6-N6 | -5.55 | 119.26 | 123.70 |
| 1 | AA | 1772 | G | C5-C6-O6 | -5.55 | 125.27 | 128.60 |
| 51 | B3 | 94 | A | O4'-C1'-N9 | 5.55 | 112.64 | 108.20 |
| 53 | B5 | 738 | A | O4'-C1'-N9 | 5.55 | 112.64 | 108.20 |
| 53 | B5 | 2779 | A | O4'-C1'-N9 | 5.55 | 112.64 | 108.20 |
| 53 | B5 | 70 | A | C4-C5-C6 | 5.55 | 119.77 | 117.00 |
| 53 | B5 | 1057 | A | O4'-C1'-N9 | 5.55 | 112.64 | 108.20 |
| 53 | B5 | 2221 | G | O4'-C1'-N9 | 5.55 | 112.64 | 108.20 |
| 53 | B5 | 2281 | A | O4'-C1'-N9 | 5.55 | 112.64 | 108.20 |
| 53 | B5 | 2754 | G | C5-C6-O6 | -5.55 | 125.27 | 128.60 |
| 53 | B5 | 2814 | G | O4'-C1'-N9 | 5.55 | 112.64 | 108.20 |
| 53 | B5 | 2896 | A | O4'-C1'-N9 | 5.55 | 112.64 | 108.20 |
| 1 | AA | 723 | G | C5-C6-O6 | -5.55 | 125.27 | 128.60 |
| 1 | AA | 1518 | U | O5'-P-OP2 | 5.55 | 117.36 | 110.70 |
| 53 | B5 | 1673 | G | P-O3'-C3' | 5.55 | 126.36 | 119.70 |
| 53 | B5 | 1727 | G | O4'-C1'-N9 | 5.55 | 112.64 | 108.20 |
| 53 | B5 | 3016 | A | C5-C6-N6 | -5.55 | 119.26 | 123.70 |
| 1 | AA | 1554 | A | O4'-C1'-N9 | 5.55 | 112.64 | 108.20 |
| 53 | B5 | 718 | G | O4'-C1'-N9 | 5.55 | 112.64 | 108.20 |
| 53 | B5 | 1236 | G | N1-C6-O6 | 5.55 | 123.23 | 119.90 |
| 53 | B5 | 1491 | A | C5-C6-N6 | -5.55 | 119.26 | 123.70 |
| 53 | B5 | 2412 | G | C5-C6-O6 | -5.55 | 125.27 | 128.60 |
| 53 | B5 | 2670 | G | N1-C6-O6 | 5.55 | 123.23 | 119.90 |
| 53 | B5 | 2780 | A | O4'-C1'-N9 | 5.55 | 112.64 | 108.20 |
| 53 | B5 | 2341 | A | O4'-C1'-N9 | 5.54 | 112.64 | 108.20 |
| 53 | B5 | 3252 | G | O4'-C1'-N9 | 5.54 | 112.64 | 108.20 |
| 1 | AA | 1647 | G | O4'-C1'-N9 | 5.54 | 112.64 | 108.20 |
| 19 | A7 | 53 | G | C4'-C3'-C2' | -5.54 | 97.06 | 102.60 |
| 53 | B5 | 86 | G | C5-C6-O6 | -5.54 | 125.27 | 128.60 |
| 53 | B5 | 866 | A | O4'-C1'-N9 | 5.54 | 112.64 | 108.20 |
| 53 | B5 | 870 | G | O4'-C1'-N9 | 5.54 | 112.64 | 108.20 |
| 53 | B5 | 1064 | A | O4'-C1'-N9 | 5.54 | 112.64 | 108.20 |
| 53 | B5 | 1798 | A | O4'-C1'-N9 | 5.54 | 112.64 | 108.20 |
| 53 | B5 | 2811 | A | C5-C6-N6 | -5.54 | 119.27 | 123.70 |
| 53 | B5 | 3218 | A | C5-C6-N6 | -5.54 | 119.27 | 123.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1 | AA | 328 | A | O4'-C1'-N9 | 5.54 | 112.63 | 108.20 |
| 1 | AA | 1220 | A | O4'-C1'-N9 | 5.54 | 112.63 | 108.20 |
| 17 | AR | 286 | GLU | CA-CB-CG | 5.54 | 125.59 | 113.40 |
| 19 | A7 | 68 | U | N1-C2-O2 | 5.54 | 126.68 | 122.80 |
| 53 | B5 | 13 | A | C5-C6-N6 | -5.54 | 119.27 | 123.70 |
| 53 | B5 | 39 | A | C4-C5-C6 | 5.54 | 119.77 | 117.00 |
| 53 | B5 | 582 | G | C5-C6-O6 | -5.54 | 125.28 | 128.60 |
| 53 | B5 | 1744 | G | C5-C6-O6 | -5.54 | 125.28 | 128.60 |
| 1 | AA | 154 | G | C5-C6-O6 | -5.54 | 125.28 | 128.60 |
| 1 | AA | 170 | U | O4'-C1'-N1 | 5.54 | 112.63 | 108.20 |
| 53 | B5 | 236 | G | C5-C6-O6 | -5.54 | 125.28 | 128.60 |
| 1 | AA | 989 | C | C1'-O4'-C4' | -5.54 | 105.47 | 109.90 |
| 53 | B5 | 979 | G | C5-C6-O6 | -5.54 | 125.28 | 128.60 |
| 53 | B5 | 1729 | A | O4'-C1'-N9 | 5.54 | 112.63 | 108.20 |
| 53 | B5 | 1775 | G | O4'-C1'-N9 | 5.54 | 112.63 | 108.20 |
| 53 | B5 | 3337 | G | C5-C6-O6 | -5.54 | 125.28 | 128.60 |
| 1 | AA | 1729 | A | O4'-C1'-N9 | 5.54 | 112.63 | 108.20 |
| 53 | B5 | 160 | G | C5-C6-O6 | -5.54 | 125.28 | 128.60 |
| 1 | AA | 247 | A | O4'-C1'-N9 | 5.54 | 112.63 | 108.20 |
| 51 | B3 | 41 | G | C5-C6-O6 | -5.54 | 125.28 | 128.60 |
| 51 | B3 | 80 | G | O4'-C1'-N9 | 5.54 | 112.63 | 108.20 |
| 53 | B5 | 243 | G | N1-C6-O6 | 5.54 | 123.22 | 119.90 |
| 53 | B5 | 1230 | G | C5-C6-O6 | -5.54 | 125.28 | 128.60 |
| 53 | B5 | 2665 | U | O4'-C1'-N1 | 5.54 | 112.63 | 108.20 |
| 53 | B5 | 2728 | G | C5-C6-O6 | -5.54 | 125.28 | 128.60 |
| 53 | B5 | 3140 | G | C5-C6-O6 | -5.54 | 125.28 | 128.60 |
| 53 | B5 | 3256 | G | C5-C6-O6 | -5.54 | 125.28 | 128.60 |
| 1 | AA | 1301 | G | N1-C6-O6 | 5.53 | 123.22 | 119.90 |
| 53 | B5 | 1384 | U | C2-N1-C1' | 5.53 | 124.34 | 117.70 |
| 53 | B5 | 2235 | C | N3-C4-N4 | 5.53 | 121.87 | 118.00 |
| 53 | B5 | 2236 | G | O4'-C1'-N9 | 5.53 | 112.63 | 108.20 |
| 53 | B5 | 2753 | G | C5-C6-O6 | -5.53 | 125.28 | 128.60 |
| 1 | AA | 871 | G | C5-C6-O6 | -5.53 | 125.28 | 128.60 |
| 53 | B5 | 324 | A | C5-C6-N6 | -5.53 | 119.28 | 123.70 |
| 53 | B5 | 2669 | G | O4'-C1'-N9 | 5.53 | 112.62 | 108.20 |
| 53 | B5 | 386 | A | C5-C6-N6 | -5.53 | 119.28 | 123.70 |
| 53 | B5 | 936 | A | O4'-C1'-N9 | 5.53 | 112.62 | 108.20 |
| 53 | B5 | 2283 | G | C5-C6-O6 | -5.53 | 125.28 | 128.60 |
| 53 | B5 | 2377 | G | O4'-C1'-N9 | 5.53 | 112.62 | 108.20 |
| 53 | B5 | 2466 | G | C5-C6-O6 | -5.53 | 125.28 | 128.60 |
| 53 | B5 | 3103 | A | O4'-C1'-N9 | 5.53 | 112.62 | 108.20 |
| 53 | B5 | 3239 | G | C5-C6-O6 | -5.53 | 125.28 | 128.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1 | AA | 1195 | G | C5-C6-O6 | -5.53 | 125.28 | 128.60 |
| 1 | AA | 866 | G | C6-C5-N7 | -5.53 | 127.08 | 130.40 |
| 1 | AA | 1022 | A | C5-C6-N6 | -5.53 | 119.28 | 123.70 |
| 1 | AA | 1106 | G | O4'-C1'-N9 | 5.53 | 112.62 | 108.20 |
| 53 | B5 | 378 | A | O4'-C1'-N9 | 5.53 | 112.62 | 108.20 |
| 53 | B5 | 965 | A | O4'-C1'-N9 | 5.53 | 112.62 | 108.20 |
| 53 | B5 | 1401 | A | O4'-C1'-N9 | 5.53 | 112.62 | 108.20 |
| 53 | B5 | 1711 | C | N3-C4-N4 | 5.53 | 121.87 | 118.00 |
| 53 | B5 | 2279 | A | C4-C5-C6 | 5.53 | 119.76 | 117.00 |
| 1 | AA | 180 | A | O4'-C1'-N9 | 5.53 | 112.62 | 108.20 |
| 1 | AA | 549 | G | O4'-C1'-N9 | 5.53 | 112.62 | 108.20 |
| 1 | AA | 950 | A | O4'-C1'-N9 | 5.53 | 112.62 | 108.20 |
| 1 | AA | 992 | A | O4'-C1'-N9 | 5.53 | 112.62 | 108.20 |
| 53 | B5 | 57 | A | O4'-C1'-N9 | 5.53 | 112.62 | 108.20 |
| 53 | B5 | 187 | A | O4'-C1'-N9 | 5.53 | 112.62 | 108.20 |
| 53 | B5 | 1282 | G | O4'-C1'-N9 | 5.53 | 112.62 | 108.20 |
| 1 | AA | 1399 | G | O4'-C1'-N9 | 5.52 | 112.62 | 108.20 |
| 53 | B5 | 2834 | G | C5-C6-O6 | -5.52 | 125.29 | 128.60 |
| 1 | AA | 1190 | A | O4'-C1'-N9 | 5.52 | 112.62 | 108.20 |
| 1 | AA | 1292 | G | C5-C6-O6 | -5.52 | 125.29 | 128.60 |
| 53 | B5 | 198 | A | O4'-C1'-N9 | 5.52 | 112.62 | 108.20 |
| 53 | B5 | 1234 | G | C5-C6-O6 | -5.52 | 125.29 | 128.60 |
| 53 | B5 | 1623 | G | C5-C6-O6 | -5.52 | 125.29 | 128.60 |
| 53 | B5 | 2367 | A | O4'-C1'-N9 | 5.52 | 112.62 | 108.20 |
| 53 | B5 | 3326 | G | N1-C6-O6 | 5.52 | 123.21 | 119.90 |
| 1 | AA | 1545 | A | C4'-C3'-C2' | -5.52 | 97.08 | 102.60 |
| 53 | B5 | 365 | A | O4'-C1'-N9 | 5.52 | 112.62 | 108.20 |
| 53 | B5 | 1654 | A | C4-C5-C6 | 5.52 | 119.76 | 117.00 |
| 1 | AA | 879 | G | O4'-C1'-N9 | 5.52 | 112.62 | 108.20 |
| 1 | AA | 891 | A | O4'-C1'-N9 | 5.52 | 112.62 | 108.20 |
| 53 | B5 | 997 | A | O4'-C1'-N9 | 5.52 | 112.62 | 108.20 |
| 53 | B5 | 1059 | G | O4'-C1'-N9 | 5.52 | 112.61 | 108.20 |
| 53 | B5 | 1374 | G | C5-C6-O6 | -5.52 | 125.29 | 128.60 |
| 1 | AA | 116 | U | O4'-C1'-N1 | 5.52 | 112.61 | 108.20 |
| 1 | AA | 383 | G | O4'-C1'-N9 | 5.52 | 112.61 | 108.20 |
| 53 | B5 | 1064 | A | C5-C6-N1 | -5.52 | 114.94 | 117.70 |
| 53 | B5 | 1204 | A | O4'-C1'-N9 | 5.52 | 112.61 | 108.20 |
| 53 | B5 | 1287 | A | O4'-C1'-N9 | 5.52 | 112.61 | 108.20 |
| 53 | B5 | 1541 | G | C5-C6-O6 | -5.52 | 125.29 | 128.60 |
| 53 | B5 | 1587 | A | C4-C5-C6 | 5.52 | 119.76 | 117.00 |
| 53 | B5 | 1784 | G | C5-C6-O6 | -5.52 | 125.29 | 128.60 |
| 1 | AA | 1658 | A | O4'-C1'-N9 | 5.52 | 112.61 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 33 | BI | 104 | SER | N-CA-CB | 5.52 | 118.77 | 110.50 |
| 52 | B4 | 131 | A | O4'-C1'-N9 | 5.52 | 112.61 | 108.20 |
| 53 | B5 | 622 | A | O4'-C1'-N9 | 5.52 | 112.61 | 108.20 |
| 53 | B5 | 3008 | A | O4'-C1'-N9 | 5.52 | 112.61 | 108.20 |
| 1 | AA | 506 | A | O4'-C1'-N9 | 5.51 | 112.61 | 108.20 |
| 1 | AA | 1038 | A | O4'-C1'-N9 | 5.51 | 112.61 | 108.20 |
| 1 | AA | 1205 | C | N3-C4-N4 | 5.51 | 121.86 | 118.00 |
| 8 | AI | 97 | VAL | CB-CA-C | 5.51 | 121.88 | 111.40 |
| 52 | B4 | 16 | G | C5-C6-O6 | -5.51 | 125.29 | 128.60 |
| 53 | B5 | 521 | A | O4'-C1'-N9 | 5.51 | 112.61 | 108.20 |
| 53 | B5 | 904 | A | O4'-C1'-N9 | 5.51 | 112.61 | 108.20 |
| 53 | B5 | 1856 | C | O4'-C1'-N1 | 5.51 | 112.61 | 108.20 |
| 53 | B5 | 2395 | G | C5-C6-O6 | -5.51 | 125.29 | 128.60 |
| 1 | AA | 69 | G | N1-C6-O6 | 5.51 | 123.21 | 119.90 |
| 53 | B5 | 514 | G | C5-C6-O6 | -5.51 | 125.29 | 128.60 |
| 53 | B5 | 917 | A | C5-C6-N6 | -5.51 | 119.29 | 123.70 |
| 53 | B5 | 1084 | A | O4'-C1'-N9 | 5.51 | 112.61 | 108.20 |
| 53 | B5 | 1232 | C | N3-C4-N4 | 5.51 | 121.86 | 118.00 |
| 53 | B5 | 1249 | G | P-O3'-C3' | 5.51 | 126.31 | 119.70 |
| 1 | AA | 246 | G | C5-C6-O6 | -5.51 | 125.30 | 128.60 |
| 1 | AA | 746 | A | O4'-C1'-N9 | 5.51 | 112.61 | 108.20 |
| 1 | AA | 1264 | G | C5-C6-O6 | -5.51 | 125.29 | 128.60 |
| 1 | AA | 1292 | G | O4'-C1'-N9 | 5.51 | 112.61 | 108.20 |
| 53 | B5 | 419 | G | C5-C6-O6 | -5.51 | 125.29 | 128.60 |
| 53 | B5 | 607 | A | O4'-C1'-N9 | 5.51 | 112.61 | 108.20 |
| 53 | B5 | 771 | A | O4'-C1'-N9 | 5.51 | 112.61 | 108.20 |
| 53 | B5 | 1806 | A | P-O3'-C3' | 5.51 | 126.31 | 119.70 |
| 53 | B5 | 1922 | A | O4'-C1'-N9 | 5.51 | 112.61 | 108.20 |
| 53 | B5 | 2290 | C | O4'-C1'-N1 | 5.51 | 112.61 | 108.20 |
| 53 | B5 | 3187 | U | O4'-C1'-N1 | 5.51 | 112.61 | 108.20 |
| 1 | AA | 153 | G | O4'-C1'-N9 | 5.51 | 112.61 | 108.20 |
| 53 | B5 | 661 | G | C5-C6-O6 | -5.51 | 125.30 | 128.60 |
| 1 | AA | 1246 | U | O4'-C1'-N1 | 5.51 | 112.61 | 108.20 |
| 19 | A7 | 28 | C | N3-C4-N4 | -5.51 | 114.15 | 118.00 |
| 53 | B5 | 608 | A | O4'-C1'-N9 | 5.51 | 112.60 | 108.20 |
| 53 | B5 | 2951 | G | C5-C6-O6 | -5.50 | 125.30 | 128.60 |
| 1 | AA | 634 | G | C5-C6-O6 | -5.50 | 125.30 | 128.60 |
| 1 | AA | 1196 | G | C5-C6-O6 | -5.50 | 125.30 | 128.60 |
| 1 | AA | 1792 | A | C5-C6-N6 | -5.50 | 119.30 | 123.70 |
| 51 | B3 | 70 | A | C5-C6-N6 | -5.50 | 119.30 | 123.70 |
| 52 | B4 | 125 | U | O4'-C1'-N1 | 5.50 | 112.60 | 108.20 |
| 53 | B5 | 1261 | G | N1-C6-O6 | 5.50 | 123.20 | 119.90 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 1603 | A | C5-C6-N6 | -5.50 | 119.30 | 123.70 |
| 53 | B5 | 1789 | G | O4'-C1'-N9 | 5.50 | 112.60 | 108.20 |
| 53 | B5 | 2172 | A | C5-C6-N6 | -5.50 | 119.30 | 123.70 |
| 1 | AA | 970 | A | O4'-C1'-N9 | 5.50 | 112.60 | 108.20 |
| 1 | AA | 1137 | G | O4'-C1'-N9 | 5.50 | 112.60 | 108.20 |
| 53 | B5 | 813 | G | C5-C6-O6 | -5.50 | 125.30 | 128.60 |
| 53 | B5 | 3189 | G | O4'-C1'-N9 | 5.50 | 112.60 | 108.20 |
| 27 | BC | 129 | ALA | N-CA-CB | 5.50 | 117.80 | 110.10 |
| 53 | B5 | 856 | G | O4'-C1'-N9 | 5.50 | 112.60 | 108.20 |
| 53 | B5 | 2574 | G | N1-C6-O6 | 5.50 | 123.20 | 119.90 |
| 1 | AA | 173 | A | O4'-C1'-N9 | 5.50 | 112.60 | 108.20 |
| 1 | AA | 287 | G | C5-C6-O6 | -5.50 | 125.30 | 128.60 |
| 53 | B5 | 34 | A | C4-C5-C6 | 5.50 | 119.75 | 117.00 |
| 53 | B5 | 287 | G | O4'-C1'-N9 | 5.50 | 112.60 | 108.20 |
| 53 | B5 | 567 | G | O4'-C1'-N9 | 5.50 | 112.60 | 108.20 |
| 53 | B5 | 856 | G | C5-C6-O6 | -5.50 | 125.30 | 128.60 |
| 53 | B5 | 1538 | G | C5-C6-O6 | -5.50 | 125.30 | 128.60 |
| 53 | B5 | 2794 | G | O4'-C1'-N9 | 5.50 | 112.60 | 108.20 |
| 1 | AA | 838 | G | O4'-C1'-N9 | 5.50 | 112.60 | 108.20 |
| 19 | A7 | 8 | U | C5-C6-N1 | -5.50 | 119.95 | 122.70 |
| 53 | B5 | 66 | A | O4'-C1'-N9 | 5.50 | 112.60 | 108.20 |
| 53 | B5 | 77 | A | C5-C6-N6 | -5.50 | 119.30 | 123.70 |
| 53 | B5 | 171 | G | N1-C6-O6 | 5.50 | 123.20 | 119.90 |
| 53 | B5 | 299 | G | C5-C6-O6 | -5.50 | 125.30 | 128.60 |
| 53 | B5 | 2255 | A | O4'-C1'-N9 | 5.50 | 112.60 | 108.20 |
| 53 | B5 | 3017 | A | O4'-C1'-N9 | 5.50 | 112.60 | 108.20 |
| 53 | B5 | 3396 | U | O4'-C1'-N1 | 5.50 | 112.60 | 108.20 |
| 1 | AA | 1518 | U | C3'-C2'-C1' | -5.50 | 97.10 | 101.50 |
| 53 | B5 | 2748 | A | O4'-C1'-N9 | 5.50 | 112.60 | 108.20 |
| 19 | A7 | 53 | G | C2-N3-C4 | 5.49 | 114.65 | 111.90 |
| 53 | B5 | 529 | A | O4'-C1'-N9 | 5.49 | 112.59 | 108.20 |
| 1 | AA | 112 | A | O4'-C1'-N9 | 5.49 | 112.59 | 108.20 |
| 1 | AA | 437 | A | C5-C6-N6 | -5.49 | 119.31 | 123.70 |
| 1 | AA | 925 | A | O4'-C1'-N9 | 5.49 | 112.59 | 108.20 |
| 53 | B5 | 3317 | U | O4'-C1'-N1 | 5.49 | 112.59 | 108.20 |
| 1 | AA | 1435 | G | C5-C6-O6 | -5.49 | 125.31 | 128.60 |
| 53 | B5 | 2623 | G | O4'-C1'-N9 | 5.49 | 112.59 | 108.20 |
| 1 | AA | 457 | G | O4'-C1'-N9 | 5.49 | 112.59 | 108.20 |
| 1 | AA | 601 | A | O4'-C1'-N9 | 5.49 | 112.59 | 108.20 |
| 1 | AA | 1062 | A | O4'-C1'-N9 | 5.49 | 112.59 | 108.20 |
| 1 | AA | 1415 | G | P-O3'-C3' | 5.49 | 126.28 | 119.70 |
| 1 | AA | 1567 | A | O4'-C1'-N9 | 5.49 | 112.59 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 214 | G | O4'-C1'-N9 | 5.49 | 112.59 | 108.20 |
| 53 | B5 | 1418 | A | C4-C5-C6 | 5.49 | 119.74 | 117.00 |
| 53 | B5 | 3059 | G | C5-C6-O6 | -5.49 | 125.31 | 128.60 |
| 53 | B5 | 3282 | U | O4'-C1'-N1 | 5.49 | 112.59 | 108.20 |
| 52 | B4 | 124 | G | C5-C6-O6 | -5.49 | 125.31 | 128.60 |
| 53 | B5 | 188 | U | O4'-C1'-N1 | 5.49 | 112.59 | 108.20 |
| 53 | B5 | 689 | U | O4'-C1'-N1 | 5.49 | 112.59 | 108.20 |
| 1 | AA | 429 | G | O4'-C1'-N9 | 5.49 | 112.59 | 108.20 |
| 1 | AA | 432 | G | O4'-C1'-N9 | 5.49 | 112.59 | 108.20 |
| 1 | AA | 1216 | C | N3-C4-N4 | 5.49 | 121.84 | 118.00 |
| 52 | B4 | 46 | G | O4'-C1'-N9 | 5.49 | 112.59 | 108.20 |
| 53 | B5 | 433 | A | C5-C6-N6 | -5.49 | 119.31 | 123.70 |
| 53 | B5 | 517 | G | O4'-C1'-N9 | 5.49 | 112.59 | 108.20 |
| 53 | B5 | 960 | U | C2-N1-C1' | 5.49 | 124.28 | 117.70 |
| 53 | B5 | 1139 | G | O4'-C1'-N9 | 5.49 | 112.59 | 108.20 |
| 53 | B5 | 2291 | A | C5-C6-N1 | -5.49 | 114.96 | 117.70 |
| 53 | B5 | 2295 | A | O4'-C1'-N9 | 5.49 | 112.59 | 108.20 |
| 53 | B5 | 3322 | A | O4'-C1'-N9 | 5.49 | 112.59 | 108.20 |
| 53 | B5 | 838 | G | O4'-C1'-N9 | 5.48 | 112.59 | 108.20 |
| 53 | B5 | 2370 | G | O4'-C1'-N9 | 5.48 | 112.59 | 108.20 |
| 1 | AA | 253 | A | O4'-C1'-N9 | 5.48 | 112.59 | 108.20 |
| 1 | AA | 1765 | G | N1-C6-O6 | 5.48 | 123.19 | 119.90 |
| 52 | B4 | 42 | G | O4'-C1'-N9 | 5.48 | 112.59 | 108.20 |
| 53 | B5 | 279 | U | O4'-C1'-N1 | 5.48 | 112.59 | 108.20 |
| 53 | B5 | 987 | U | O4'-C1'-N1 | 5.48 | 112.59 | 108.20 |
| 53 | B5 | 1310 | G | O4'-C1'-N9 | 5.48 | 112.59 | 108.20 |
| 53 | B5 | 1610 | G | C5-C6-O6 | -5.48 | 125.31 | 128.60 |
| 53 | B5 | 3074 | G | C5-C6-O6 | -5.48 | 125.31 | 128.60 |
| 53 | B5 | 3305 | A | C4-C5-C6 | 5.48 | 119.74 | 117.00 |
| 1 | AA | 39 | A | C5-C6-N6 | -5.48 | 119.31 | 123.70 |
| 1 | AA | 156 | A | O4'-C1'-N9 | 5.48 | 112.58 | 108.20 |
| 1 | AA | 837 | G | O4'-C1'-N9 | 5.48 | 112.58 | 108.20 |
| 1 | AA | 1116 | G | C5-C6-O6 | -5.48 | 125.31 | 128.60 |
| 1 | AA | 1407 | A | O4'-C1'-N9 | 5.48 | 112.58 | 108.20 |
| 53 | B5 | 616 | G | O4'-C1'-N9 | 5.48 | 112.58 | 108.20 |
| 53 | B5 | 875 | G | C5-C6-O6 | -5.48 | 125.31 | 128.60 |
| 53 | B5 | 3206 | A | O4'-C1'-N9 | 5.48 | 112.58 | 108.20 |
| 1 | AA | 985 | G | C5-C6-O6 | -5.48 | 125.31 | 128.60 |
| 53 | B5 | 2718 | U | C5'-C4'-O4' | 5.48 | 115.67 | 109.10 |
| 1 | AA | 10 | G | O4'-C1'-N9 | 5.48 | 112.58 | 108.20 |
| 1 | AA | 1610 | U | O4'-C1'-N1 | 5.48 | 112.58 | 108.20 |
| 1 | AA | 1668 | G | O4'-C1'-N9 | 5.48 | 112.58 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 781 | G | C5-C6-O6 | -5.48 | 125.31 | 128.60 |
| 53 | B5 | 891 | G | O4'-C1'-N9 | 5.48 | 112.58 | 108.20 |
| 53 | B5 | 1812 | G | O4'-C1'-N9 | 5.48 | 112.58 | 108.20 |
| 53 | B5 | 2294 | U | O4'-C1'-N1 | 5.48 | 112.58 | 108.20 |
| 53 | B5 | 2447 | A | O4'-C1'-N9 | 5.48 | 112.58 | 108.20 |
| 53 | B5 | 134 | U | O4'-C1'-N1 | 5.48 | 112.58 | 108.20 |
| 53 | B5 | 2169 | G | C5-C6-O6 | -5.48 | 125.31 | 128.60 |
| 53 | B5 | 2326 | A | C5-C6-N6 | -5.48 | 119.32 | 123.70 |
| 53 | B5 | 2984 | C | N3-C4-N4 | 5.48 | 121.83 | 118.00 |
| 1 | AA | 195 | G | O4'-C1'-N9 | 5.47 | 112.58 | 108.20 |
| 1 | AA | 264 | G | N1-C6-O6 | 5.47 | 123.18 | 119.90 |
| 1 | AA | 383 | G | C5-C6-O6 | -5.47 | 125.31 | 128.60 |
| 53 | B5 | 127 | G | O4'-C1'-N9 | 5.47 | 112.58 | 108.20 |
| 53 | B5 | 1207 | G | O4'-C1'-N9 | 5.47 | 112.58 | 108.20 |
| 53 | B5 | 2249 | G | N1-C6-O6 | 5.47 | 123.19 | 119.90 |
| 53 | B5 | 256 | G | O4'-C1'-N9 | 5.47 | 112.58 | 108.20 |
| 1 | AA | 260 | U | O4'-C1'-N1 | 5.47 | 112.58 | 108.20 |
| 1 | AA | 1234 | A | O4'-C1'-N9 | 5.47 | 112.58 | 108.20 |
| 53 | B5 | 3343 | G | C5-C6-O6 | -5.47 | 125.32 | 128.60 |
| 53 | B5 | 3367 | C | P-O3'-C3' | 5.47 | 126.27 | 119.70 |
| 1 | AA | 650 | U | O4'-C1'-N1 | 5.47 | 112.58 | 108.20 |
| 1 | AA | 978 | A | O4'-C1'-N9 | 5.47 | 112.58 | 108.20 |
| 1 | AA | 1305 | G | C5-C6-O6 | -5.47 | 125.32 | 128.60 |
| 1 | AA | 1476 | G | O4'-C1'-N9 | 5.47 | 112.58 | 108.20 |
| 28 | BD | 50 | TYR | CB-CG-CD2 | 5.47 | 124.28 | 121.00 |
| 53 | B5 | 1643 | A | C5-C6-N6 | -5.47 | 119.33 | 123.70 |
| 1 | AA | 437 | A | O4'-C1'-N9 | 5.47 | 112.58 | 108.20 |
| 53 | B5 | 65 | A | P-O3'-C3' | 5.47 | 126.26 | 119.70 |
| 1 | AA | 364 | G | O4'-C1'-N9 | 5.47 | 112.57 | 108.20 |
| 53 | B5 | 1382 | G | C5-C6-O6 | -5.47 | 125.32 | 128.60 |
| 53 | B5 | 1497 | C | N3-C4-N4 | 5.47 | 121.83 | 118.00 |
| 53 | B5 | 1721 | U | O4'-C1'-N1 | 5.47 | 112.57 | 108.20 |
| 53 | B5 | 2385 | G | O4'-C1'-N9 | 5.47 | 112.57 | 108.20 |
| 53 | B5 | 2453 | U | O4'-C1'-N1 | 5.47 | 112.57 | 108.20 |
| 53 | B5 | 2847 | A | C5-C6-N6 | -5.47 | 119.33 | 123.70 |
| 1 | AA | 84 | A | O4'-C1'-N9 | 5.46 | 112.57 | 108.20 |
| 1 | AA | 866 | G | O5'-C5'-C4' | 5.46 | 122.08 | 111.70 |
| 51 | B3 | 99 | A | O4'-C1'-N9 | 5.46 | 112.57 | 108.20 |
| 52 | B4 | 18 | U | O4'-C1'-N1 | 5.46 | 112.57 | 108.20 |
| 53 | B5 | 635 | G | C5-C6-O6 | -5.46 | 125.32 | 128.60 |
| 53 | B5 | 1090 | G | C5-C6-O6 | -5.46 | 125.32 | 128.60 |
| 53 | B5 | 3061 | G | O4'-C1'-N9 | 5.46 | 112.57 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1 | AA | 422 | G | O4'-C1'-N9 | 5.46 | 112.57 | 108.20 |
| 53 | B5 | 2987 | A | O4'-C1'-N9 | 5.46 | 112.57 | 108.20 |
| 1 | AA | 1172 | U | O4'-C1'-N1 | 5.46 | 112.57 | 108.20 |
| 1 | AA | 1634 | C | C1'-O4'-C4' | -5.46 | 105.53 | 109.90 |
| 19 | A7 | 21 | A | P-O3'-C3' | 5.46 | 126.25 | 119.70 |
| 19 | A7 | 43 | G | C5-C6-O6 | 5.46 | 131.88 | 128.60 |
| 53 | B5 | 137 | G | C5-C6-O6 | -5.46 | 125.32 | 128.60 |
| 53 | B5 | 490 | A | O4'-C1'-N9 | 5.46 | 112.57 | 108.20 |
| 53 | B5 | 869 | G | O4'-C1'-N9 | 5.46 | 112.57 | 108.20 |
| 53 | B5 | 891 | G | C5-C6-O6 | -5.46 | 125.32 | 128.60 |
| 53 | B5 | 2115 | G | C5-C6-O6 | -5.46 | 125.32 | 128.60 |
| 53 | B5 | 2201 | G | C5-C6-O6 | -5.46 | 125.32 | 128.60 |
| 53 | B5 | 2368 | A | O4'-C1'-N9 | 5.46 | 112.57 | 108.20 |
| 53 | B5 | 2703 | A | C5-C6-N6 | -5.46 | 119.33 | 123.70 |
| 53 | B5 | 3323 | A | O4'-C1'-N9 | 5.46 | 112.57 | 108.20 |
| 1 | AA | 485 | A | C5-C6-N6 | -5.46 | 119.33 | 123.70 |
| 53 | B5 | 1808 | G | C5-C6-O6 | -5.46 | 125.32 | 128.60 |
| 53 | B5 | 2590 | A | O4'-C1'-N9 | 5.46 | 112.57 | 108.20 |
| 53 | B5 | 3150 | A | O4'-C1'-N9 | 5.46 | 112.57 | 108.20 |
| 53 | B5 | 3065 | G | C5-C6-O6 | -5.46 | 125.33 | 128.60 |
| 1 | AA | 551 | G | O4'-C1'-N9 | 5.46 | 112.56 | 108.20 |
| 1 | AA | 824 | G | C5-C6-O6 | -5.46 | 125.33 | 128.60 |
| 1 | AA | 985 | G | O4'-C1'-N9 | 5.46 | 112.56 | 108.20 |
| 1 | AA | 1240 | A | C4-C5-C6 | 5.46 | 119.73 | 117.00 |
| 1 | AA | 1505 | G | O4'-C1'-N9 | 5.46 | 112.56 | 108.20 |
| 52 | B4 | 134 | G | C5-C6-O6 | -5.46 | 125.33 | 128.60 |
| 53 | B5 | 550 | A | O4'-C1'-N9 | 5.46 | 112.56 | 108.20 |
| 53 | B5 | 2530 | G | C5-C6-O6 | -5.46 | 125.33 | 128.60 |
| 53 | B5 | 2850 | G | C5-C6-O6 | -5.46 | 125.33 | 128.60 |
| 1 | AA | 885 | G | O4'-C1'-N9 | 5.46 | 112.56 | 108.20 |
| 53 | B5 | 347 | G | O4'-C1'-N9 | 5.46 | 112.56 | 108.20 |
| 19 | A7 | 15 | G | C5-N7-C8 | 5.45 | 107.03 | 104.30 |
| 19 | A7 | 20 | G | C5-N7-C8 | -5.45 | 101.57 | 104.30 |
| 53 | B5 | 56 | G | C5-C6-O6 | -5.45 | 125.33 | 128.60 |
| 53 | B5 | 143 | G | C5-C6-O6 | -5.45 | 125.33 | 128.60 |
| 53 | B5 | 934 | G | C5-C6-O6 | -5.45 | 125.33 | 128.60 |
| 53 | B5 | 1908 | A | O4'-C1'-N9 | 5.45 | 112.56 | 108.20 |
| 53 | B5 | 2690 | G | C5-C6-O6 | -5.45 | 125.33 | 128.60 |
| 19 | A7 | 76 | A | C1'-O4'-C4' | -5.45 | 105.54 | 109.90 |
| 53 | B5 | 3099 | C | N3-C4-C5 | -5.45 | 119.72 | 121.90 |
| 1 | AA | 461 | G | O4'-C1'-N9 | 5.45 | 112.56 | 108.20 |
| 1 | AA | 1259 | G | C5-C6-O6 | -5.45 | 125.33 | 128.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 956 | U | O4'-C1'-N1 | 5.45 | 112.56 | 108.20 |
| 53 | B5 | 1431 | G | C5-C6-O6 | -5.45 | 125.33 | 128.60 |
| 53 | B5 | 3144 | G | O4'-C1'-N9 | 5.45 | 112.56 | 108.20 |
| 53 | B5 | 3348 | G | O4'-C1'-N9 | 5.45 | 112.56 | 108.20 |
| 1 | AA | 23 | G | O4'-C1'-N9 | 5.45 | 112.56 | 108.20 |
| 1 | AA | 1429 | U | O4'-C1'-N1 | 5.45 | 112.56 | 108.20 |
| 33 | BI | 159 | PHE | CB-CG-CD1 | 5.45 | 124.61 | 120.80 |
| 53 | B5 | 353 | G | C5-C6-O6 | -5.45 | 125.33 | 128.60 |
| 53 | B5 | 433 | A | C4-C5-C6 | 5.45 | 119.72 | 117.00 |
| 53 | B5 | 711 | A | C5-C6-N6 | -5.45 | 119.34 | 123.70 |
| 53 | B5 | 2201 | G | O4'-C1'-N9 | 5.45 | 112.56 | 108.20 |
| 53 | B5 | 2636 | A | C5-C6-N6 | -5.45 | 119.34 | 123.70 |
| 53 | B5 | 2957 | G | C5-C6-O6 | -5.45 | 125.33 | 128.60 |
| 1 | AA | 1124 | G | O4'-C1'-N9 | 5.45 | 112.56 | 108.20 |
| 53 | B5 | 187 | A | C4-C5-C6 | 5.45 | 119.72 | 117.00 |
| 53 | B5 | 575 | G | C5-C6-O6 | -5.45 | 125.33 | 128.60 |
| 53 | B5 | 1780 | G | O4'-C1'-N9 | 5.45 | 112.56 | 108.20 |
| 53 | B5 | 2129 | U | O4'-C1'-N1 | 5.45 | 112.56 | 108.20 |
| 53 | B5 | 2136 | C | O4'-C1'-N1 | 5.45 | 112.56 | 108.20 |
| 1 | AA | 422 | G | C5-C6-O6 | -5.45 | 125.33 | 128.60 |
| 1 | AA | 655 | G | N1-C6-O6 | 5.45 | 123.17 | 119.90 |
| 1 | AA | 1230 | A | O4'-C1'-N9 | 5.45 | 112.56 | 108.20 |
| 1 | AA | 1683 | G | O4'-C1'-N9 | 5.45 | 112.56 | 108.20 |
| 19 | A7 | 72 | C | O3'-P-O5' | 5.45 | 114.35 | 104.00 |
| 53 | B5 | 585 | A | O4'-C1'-N9 | 5.45 | 112.56 | 108.20 |
| 53 | B5 | 843 | A | O4'-C1'-N9 | 5.45 | 112.56 | 108.20 |
| 1 | AA | 83 | G | O4'-C1'-N9 | 5.44 | 112.56 | 108.20 |
| 1 | AA | 127 | G | C5-C6-O6 | -5.44 | 125.33 | 128.60 |
| 1 | AA | 171 | A | O4'-C1'-N9 | 5.44 | 112.56 | 108.20 |
| 53 | B5 | 1266 | G | C5-C6-O6 | -5.44 | 125.33 | 128.60 |
| 1 | AA | 100 | A | C4-C5-C6 | 5.44 | 119.72 | 117.00 |
| 1 | AA | 1473 | A | C5-C6-N6 | -5.44 | 119.35 | 123.70 |
| 27 | BC | 116 | ARG | NE-CZ-NH1 | 5.44 | 123.02 | 120.30 |
| 53 | B5 | 2608 | G | N1-C6-O6 | 5.44 | 123.17 | 119.90 |
| 53 | B5 | 3232 | G | C5-C6-O6 | -5.44 | 125.33 | 128.60 |
| 1 | AA | 465 | G | O4'-C1'-N9 | 5.44 | 112.55 | 108.20 |
| 53 | B5 | 394 | G | O4'-C1'-N9 | 5.44 | 112.55 | 108.20 |
| 1 | AA | 278 | U | O4'-C1'-N1 | 5.44 | 112.55 | 108.20 |
| 1 | AA | 624 | G | C5-C6-O6 | -5.44 | 125.34 | 128.60 |
| 51 | B3 | 96 | G | O4'-C1'-N9 | 5.44 | 112.55 | 108.20 |
| 53 | B5 | 3337 | G | O4'-C1'-N9 | 5.44 | 112.55 | 108.20 |
| 53 | B5 | 1394 | A | O4'-C1'-N9 | 5.44 | 112.55 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 1715 | A | O4'-C1'-N9 | 5.44 | 112.55 | 108.20 |
| 53 | B5 | 2592 | G | O4'-C1'-N9 | 5.44 | 112.55 | 108.20 |
| 1 | AA | 1212 | C | O4'-C1'-N1 | 5.44 | 112.55 | 108.20 |
| 1 | AA | 1338 | A | O4'-C1'-N9 | 5.44 | 112.55 | 108.20 |
| 35 | BK | 121 | PHE | CB-CG-CD2 | -5.44 | 117.00 | 120.80 |
| 53 | B5 | 72 | C | N3-C4-N4 | 5.44 | 121.81 | 118.00 |
| 53 | B5 | 692 | A | O4'-C1'-N9 | 5.44 | 112.55 | 108.20 |
| 53 | B5 | 2279 | A | O4'-C1'-N9 | 5.44 | 112.55 | 108.20 |
| 53 | B5 | 3310 | A | C4-C5-C6 | 5.44 | 119.72 | 117.00 |
| 1 | AA | 373 | G | O4'-C1'-N9 | 5.43 | 112.55 | 108.20 |
| 53 | B5 | 331 | G | O4'-C1'-N9 | 5.43 | 112.55 | 108.20 |
| 53 | B5 | 374 | A | O4'-C1'-N9 | 5.43 | 112.55 | 108.20 |
| 53 | B5 | 932 | U | P-O3'-C3' | 5.43 | 126.22 | 119.70 |
| 53 | B5 | 1048 | A | C4-C5-C6 | 5.43 | 119.72 | 117.00 |
| 53 | B5 | 1097 | G | C5-C6-O6 | -5.43 | 125.34 | 128.60 |
| 53 | B5 | 1915 | A | C5-C6-N6 | -5.43 | 119.35 | 123.70 |
| 53 | B5 | 3268 | G | C5-C6-O6 | -5.43 | 125.34 | 128.60 |
| 1 | AA | 283 | U | O4'-C1'-N1 | 5.43 | 112.55 | 108.20 |
| 1 | AA | 1133 | U | O4'-C1'-N1 | 5.43 | 112.55 | 108.20 |
| 1 | AA | 1135 | A | O4'-C1'-N9 | 5.43 | 112.55 | 108.20 |
| 1 | AA | 1752 | A | O4'-C1'-N9 | 5.43 | 112.55 | 108.20 |
| 19 | A7 | 68 | U | C4-C5-C6 | 5.43 | 122.96 | 119.70 |
| 53 | B5 | 239 | G | C5-C6-O6 | -5.43 | 125.34 | 128.60 |
| 53 | B5 | 1066 | G | O4'-C1'-N9 | 5.43 | 112.55 | 108.20 |
| 53 | B5 | 2902 | A | C5-C6-N6 | -5.43 | 119.35 | 123.70 |
| 53 | B5 | 3054 | U | O4'-C1'-N1 | 5.43 | 112.55 | 108.20 |
| 53 | B5 | 2145 | A | C4-C5-C6 | 5.43 | 119.72 | 117.00 |
| 1 | AA | 17 | C | N3-C4-N4 | 5.43 | 121.80 | 118.00 |
| 1 | AA | 62 | A | C5-C6-N6 | -5.43 | 119.36 | 123.70 |
| 1 | AA | 1040 | A | P-O3'-C3' | 5.43 | 126.21 | 119.70 |
| 1 | AA | 1049 | U | P-O3'-C3' | 5.43 | 126.22 | 119.70 |
| 1 | AA | 1061 | G | N1-C6-O6 | 5.43 | 123.16 | 119.90 |
| 1 | AA | 1660 | G | O4'-C1'-N9 | 5.43 | 112.54 | 108.20 |
| 53 | B5 | 350 | C | N3-C4-C5 | -5.43 | 119.73 | 121.90 |
| 53 | B5 | 740 | G | O4'-C1'-N9 | 5.43 | 112.54 | 108.20 |
| 53 | B5 | 1113 | G | C5-C6-O6 | -5.43 | 125.34 | 128.60 |
| 53 | B5 | 2192 | C | N3-C4-N4 | 5.43 | 121.80 | 118.00 |
| 53 | B5 | 2840 | C | O4'-C1'-N1 | 5.43 | 112.54 | 108.20 |
| 53 | B5 | 3188 | G | O4'-C1'-N9 | 5.43 | 112.54 | 108.20 |
| 53 | B5 | 3245 | A | C4-C5-C6 | 5.43 | 119.72 | 117.00 |
| 1 | AA | 1646 | A | O4'-C1'-N9 | 5.43 | 112.54 | 108.20 |
| 19 | A7 | 73 | A | C5-C6-N1 | 5.43 | 120.41 | 117.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 117 | U | O4'-C1'-N1 | 5.43 | 112.54 | 108.20 |
| 1 | AA | 1653 | A | O4'-C1'-N9 | 5.43 | 112.54 | 108.20 |
| 19 | A7 | 6 | U | C4'-C3'-C2' | -5.43 | 97.17 | 102.60 |
| 19 | A7 | 45 | G | C5'-C4'-C3' | -5.43 | 107.32 | 116.00 |
| 53 | B5 | 538 | G | O4'-C1'-N9 | 5.43 | 112.54 | 108.20 |
| 53 | B5 | 617 | G | O4'-C1'-N9 | 5.43 | 112.54 | 108.20 |
| 53 | B5 | 1519 | G | O4'-C1'-N9 | 5.43 | 112.54 | 108.20 |
| 53 | B5 | 3142 | A | O4'-C1'-N9 | 5.43 | 112.54 | 108.20 |
| 1 | AA | 262 | U | O4'-C1'-N1 | 5.42 | 112.54 | 108.20 |
| 1 | AA | 608 | U | P-O3'-C3' | 5.42 | 126.21 | 119.70 |
| 1 | AA | 1754 | A | O4'-C1'-N9 | 5.42 | 112.54 | 108.20 |
| 1 | AA | 1784 | G | O4'-C1'-N9 | 5.42 | 112.54 | 108.20 |
| 29 | BE | 187 | THR | C-N-CA | 5.42 | 135.26 | 121.70 |
| 53 | B5 | 1536 | G | C5-C6-O6 | -5.42 | 125.34 | 128.60 |
| 53 | B5 | 3128 | G | O4'-C1'-N9 | 5.42 | 112.54 | 108.20 |
| 53 | B5 | 103 | G | O4'-C1'-N9 | 5.42 | 112.54 | 108.20 |
| 53 | B5 | 3294 | A | O4'-C1'-N9 | 5.42 | 112.54 | 108.20 |
| 1 | AA | 47 | A | C4-C5-C6 | 5.42 | 119.71 | 117.00 |
| 1 | AA | 953 | G | C5-C6-O6 | -5.42 | 125.35 | 128.60 |
| 1 | AA | 1035 | A | O4'-C1'-N9 | 5.42 | 112.54 | 108.20 |
| 1 | AA | 1522 | A | C4'-C3'-C2' | 5.42 | 108.02 | 102.60 |
| 1 | AA | 1522 | A | N1-C6-N6 | 5.42 | 121.85 | 118.60 |
| 1 | AA | 1786 | G | O4'-C1'-N9 | 5.42 | 112.54 | 108.20 |
| 19 | A7 | 48 | C | N3-C2-O2 | -5.42 | 118.11 | 121.90 |
| 53 | B5 | 719 | U | O4'-C1'-N1 | 5.42 | 112.54 | 108.20 |
| 53 | B5 | 3086 | A | C5-C6-N6 | -5.42 | 119.36 | 123.70 |
| 1 | AA | 913 | G | O4'-C1'-N9 | 5.42 | 112.54 | 108.20 |
| 1 | AA | 1760 | A | C5-C6-N6 | -5.42 | 119.36 | 123.70 |
| 53 | B5 | 2937 | G | C5-C6-O6 | -5.42 | 125.35 | 128.60 |
| 1 | AA | 213 | A | O4'-C1'-N9 | 5.42 | 112.53 | 108.20 |
| 1 | AA | 1226 | A | C5-C6-N6 | -5.42 | 119.36 | 123.70 |
| 1 | AA | 1239 | G | C5-C6-O6 | -5.42 | 125.35 | 128.60 |
| 1 | AA | 1357 | A | O4'-C1'-N9 | 5.42 | 112.53 | 108.20 |
| 9 | AJ | 72 | ASN | N-CA-CB | 5.42 | 120.35 | 110.60 |
| 53 | B5 | 699 | A | O4'-C1'-N9 | 5.42 | 112.53 | 108.20 |
| 53 | B5 | 888 | A | O4'-C1'-N9 | 5.42 | 112.53 | 108.20 |
| 53 | B5 | 1093 | A | O4'-C1'-N9 | 5.42 | 112.53 | 108.20 |
| 53 | B5 | 1848 | G | C5-C6-O6 | -5.42 | 125.35 | 128.60 |
| 53 | B5 | 2230 | C | O4'-C1'-N1 | 5.42 | 112.53 | 108.20 |
| 53 | B5 | 2337 | C | N3-C4-N4 | 5.42 | 121.79 | 118.00 |
| 53 | B5 | 2796 | G | C5-C6-O6 | -5.42 | 125.35 | 128.60 |
| 1 | AA | 196 | G | O4'-C1'-N9 | 5.42 | 112.53 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1 | AA | 1426 | G | C5-C6-O6 | -5.42 | 125.35 | 128.60 |
| 1 | AA | 1510 | G | C5-C6-O6 | -5.42 | 125.35 | 128.60 |
| 53 | B5 | 1157 | G | O4'-C1'-N9 | 5.42 | 112.53 | 108.20 |
| 1 | AA | 1116 | G | O4'-C1'-N9 | 5.42 | 112.53 | 108.20 |
| 52 | B4 | 72 | G | C5-C6-O6 | -5.42 | 125.35 | 128.60 |
| 53 | B5 | 709 | A | O4'-C1'-N9 | 5.42 | 112.53 | 108.20 |
| 53 | B5 | 1862 | U | O4'-C1'-N1 | 5.42 | 112.53 | 108.20 |
| 1 | AA | 78 | A | O4'-C1'-N9 | 5.41 | 112.53 | 108.20 |
| 1 | AA | 397 | A | O4'-C1'-N9 | 5.41 | 112.53 | 108.20 |
| 1 | AA | 1491 | A | C4-C5-C6 | 5.41 | 119.71 | 117.00 |
| 52 | B4 | 112 | U | C2-N1-C1' | 5.41 | 124.20 | 117.70 |
| 53 | B5 | 58 | G | C5-C6-O6 | -5.41 | 125.35 | 128.60 |
| 53 | B5 | 1829 | G | O4'-C1'-N9 | 5.41 | 112.53 | 108.20 |
| 53 | B5 | 3340 | G | O4'-C1'-N9 | 5.41 | 112.53 | 108.20 |
| 1 | AA | 389 | G | O4'-C1'-N9 | 5.41 | 112.53 | 108.20 |
| 53 | B5 | 775 | A | O4'-C1'-N9 | 5.41 | 112.53 | 108.20 |
| 53 | B5 | 2607 | G | C5-C6-O6 | -5.41 | 125.35 | 128.60 |
| 1 | AA | 865 | A | N9-C4-C5 | 5.41 | 107.96 | 105.80 |
| 1 | AA | 1614 | G | C5-C6-O6 | -5.41 | 125.35 | 128.60 |
| 4 | AD | 79 | ARG | NE-CZ-NH1 | 5.41 | 123.00 | 120.30 |
| 53 | B5 | 1017 | C | N3-C4-N4 | 5.41 | 121.79 | 118.00 |
| 53 | B5 | 2528 | G | O4'-C1'-N9 | 5.41 | 112.53 | 108.20 |
| 1 | AA | 628 | G | C5-C6-O6 | -5.41 | 125.36 | 128.60 |
| 19 | A7 | 69 | U | O5'-C5'-C4' | 5.41 | 121.98 | 111.70 |
| 53 | B5 | 481 | U | O4'-C1'-N1 | 5.41 | 112.53 | 108.20 |
| 53 | B5 | 557 | A | O4'-C1'-N9 | 5.41 | 112.53 | 108.20 |
| 53 | B5 | 754 | G | C5-C6-O6 | -5.41 | 125.36 | 128.60 |
| 53 | B5 | 1813 | A | C4-C5-C6 | 5.41 | 119.70 | 117.00 |
| 53 | B5 | 2188 | A | O4'-C1'-N9 | 5.41 | 112.53 | 108.20 |
| 53 | B5 | 2412 | G | O4'-C1'-N9 | 5.41 | 112.53 | 108.20 |
| 1 | AA | 1090 | A | O4'-C1'-N9 | 5.41 | 112.53 | 108.20 |
| 53 | B5 | 808 | A | C5-C6-N6 | -5.41 | 119.37 | 123.70 |
| 53 | B5 | 1113 | G | O4'-C1'-N9 | 5.41 | 112.53 | 108.20 |
| 1 | AA | 326 | G | O4'-C1'-N9 | 5.41 | 112.52 | 108.20 |
| 1 | AA | 624 | G | O4'-C1'-N9 | 5.41 | 112.52 | 108.20 |
| 1 | AA | 952 | G | O4'-C1'-N9 | 5.41 | 112.53 | 108.20 |
| 52 | B4 | 152 | G | C5-C6-O6 | -5.41 | 125.36 | 128.60 |
| 53 | B5 | 733 | G | O4'-C1'-N9 | 5.41 | 112.53 | 108.20 |
| 53 | B5 | 869 | G | C5-C6-O6 | -5.41 | 125.36 | 128.60 |
| 53 | B5 | 2362 | C | N3-C4-N4 | 5.41 | 121.78 | 118.00 |
| 1 | AA | 457 | G | C5-C6-O6 | -5.40 | 125.36 | 128.60 |
| 53 | B5 | 901 | G | N1-C6-O6 | 5.40 | 123.14 | 119.90 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 1860 | G | O4'-C1'-N9 | 5.40 | 112.52 | 108.20 |
| 1 | AA | 366 | A | O4'-C1'-N9 | 5.40 | 112.52 | 108.20 |
| 1 | AA | 901 | G | C5-C6-O6 | -5.40 | 125.36 | 128.60 |
| 1 | AA | 1280 | U | O4'-C1'-N1 | 5.40 | 112.52 | 108.20 |
| 53 | B5 | 308 | A | O4'-C1'-N9 | 5.40 | 112.52 | 108.20 |
| 53 | B5 | 579 | G | C5-C6-O6 | -5.40 | 125.36 | 128.60 |
| 53 | B5 | 2316 | G | O4'-C1'-N9 | 5.40 | 112.52 | 108.20 |
| 53 | B5 | 3096 | C | N3-C4-C5 | -5.40 | 119.74 | 121.90 |
| 1 | AA | 1742 | A | O4'-C1'-N9 | 5.40 | 112.52 | 108.20 |
| 53 | B5 | 258 | G | O4'-C1'-N9 | 5.40 | 112.52 | 108.20 |
| 19 | A7 | 63 | C | C5-C6-N1 | 5.40 | 123.70 | 121.00 |
| 52 | B4 | 136 | G | C5-C6-O6 | -5.40 | 125.36 | 128.60 |
| 53 | B5 | 141 | C | P-O3'-C3' | 5.40 | 126.18 | 119.70 |
| 53 | B5 | 630 | A | O4'-C1'-N9 | 5.40 | 112.52 | 108.20 |
| 53 | B5 | 3292 | A | C4-C5-C6 | 5.40 | 119.70 | 117.00 |
| 53 | B5 | 864 | G | O4'-C1'-N9 | 5.40 | 112.52 | 108.20 |
| 53 | B5 | 1372 | C | N3-C4-N4 | 5.40 | 121.78 | 118.00 |
| 53 | B5 | 2425 | G | O4'-C1'-N9 | 5.40 | 112.52 | 108.20 |
| 1 | AA | 865 | A | C8-N9-C4 | -5.39 | 103.64 | 105.80 |
| 53 | B5 | 22 | G | O4'-C1'-N9 | 5.39 | 112.52 | 108.20 |
| 53 | B5 | 1025 | A | O4'-C1'-N9 | 5.39 | 112.52 | 108.20 |
| 53 | B5 | 1307 | G | C5-C6-O6 | -5.39 | 125.36 | 128.60 |
| 53 | B5 | 2171 | G | C5-C6-O6 | -5.39 | 125.36 | 128.60 |
| 53 | B5 | 2224 | A | C4-C5-C6 | 5.39 | 119.70 | 117.00 |
| 1 | AA | 802 | G | N1-C6-O6 | 5.39 | 123.14 | 119.90 |
| 1 | AA | 1209 | G | N1-C6-O6 | 5.39 | 123.14 | 119.90 |
| 53 | B5 | 932 | U | O4'-C1'-N1 | 5.39 | 112.51 | 108.20 |
| 53 | B5 | 1281 | G | C5-C6-O6 | -5.39 | 125.36 | 128.60 |
| 53 | B5 | 2387 | A | C4-C5-C6 | 5.39 | 119.70 | 117.00 |
| 1 | AA | 325 | G | N1-C6-O6 | 5.39 | 123.14 | 119.90 |
| 1 | AA | 604 | A | O4'-C1'-N9 | 5.39 | 112.51 | 108.20 |
| 1 | AA | 1123 | G | O4'-C1'-N9 | 5.39 | 112.51 | 108.20 |
| 53 | B5 | 2563 | G | O4'-C1'-N9 | 5.39 | 112.51 | 108.20 |
| 53 | B5 | 2745 | G | O4'-C1'-N9 | 5.39 | 112.51 | 108.20 |
| 1 | AA | 953 | G | O4'-C1'-N9 | 5.39 | 112.51 | 108.20 |
| 1 | AA | 1185 | A | C5-C6-N6 | -5.39 | 119.39 | 123.70 |
| 1 | AA | 1690 | G | O4'-C1'-N9 | 5.39 | 112.51 | 108.20 |
| 52 | B4 | 31 | G | C5-C6-O6 | -5.39 | 125.37 | 128.60 |
| 53 | B5 | 937 | G | C5-C6-O6 | -5.39 | 125.37 | 128.60 |
| 1 | AA | 62 | A | C4-C5-C6 | 5.39 | 119.69 | 117.00 |
| 1 | AA | 462 | G | O4'-C1'-N9 | 5.39 | 112.51 | 108.20 |
| 1 | AA | 526 | A | C4-C5-C6 | 5.39 | 119.69 | 117.00 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 23 | A | O4'-C1'-N9 | 5.39 | 112.51 | 108.20 |
| 53 | B5 | 385 | A | C4-C5-C6 | 5.39 | 119.69 | 117.00 |
| 53 | B5 | 3191 | G | C5-C6-O6 | -5.39 | 125.37 | 128.60 |
| 1 | AA | 756 | A | C5-C6-N6 | -5.39 | 119.39 | 123.70 |
| 1 | AA | 911 | U | O4'-C1'-N1 | 5.39 | 112.51 | 108.20 |
| 1 | AA | 1083 | A | O4'-C1'-N9 | 5.39 | 112.51 | 108.20 |
| 1 | AA | 1232 | A | O4'-C1'-N9 | 5.39 | 112.51 | 108.20 |
| 52 | B4 | 14 | C | N3-C4-N4 | 5.39 | 121.77 | 118.00 |
| 53 | B5 | 357 | A | O4'-C1'-N9 | 5.39 | 112.51 | 108.20 |
| 53 | B5 | 836 | A | C5-C6-N6 | -5.39 | 119.39 | 123.70 |
| 53 | B5 | 1477 | A | O4'-C1'-N9 | 5.39 | 112.51 | 108.20 |
| 53 | B5 | 2215 | A | C4-C5-C6 | 5.39 | 119.69 | 117.00 |
| 1 | AA | 151 | G | O4'-C1'-N9 | 5.38 | 112.51 | 108.20 |
| 1 | AA | 878 | G | N1-C6-O6 | 5.38 | 123.13 | 119.90 |
| 1 | AA | 1316 | A | O4'-C1'-N9 | 5.38 | 112.51 | 108.20 |
| 53 | B5 | 42 | C | N3-C4-N4 | 5.38 | 121.77 | 118.00 |
| 53 | B5 | 1026 | A | O4'-C1'-N9 | 5.38 | 112.51 | 108.20 |
| 53 | B5 | 2195 | C | N3-C4-C5 | -5.38 | 119.75 | 121.90 |
| 53 | B5 | 2430 | A | O4'-C1'-N9 | 5.38 | 112.51 | 108.20 |
| 1 | AA | 561 | G | O4'-C1'-N9 | 5.38 | 112.50 | 108.20 |
| 1 | AA | 876 | G | O4'-C1'-N9 | 5.38 | 112.50 | 108.20 |
| 1 | AA | 975 | G | C5-C6-O6 | -5.38 | 125.37 | 128.60 |
| 1 | AA | 1376 | C | O4'-C1'-N1 | 5.38 | 112.51 | 108.20 |
| 19 | A7 | 1 | G | N1-C2-N3 | 5.38 | 127.13 | 123.90 |
| 19 | A7 | 11 | C | N1-C2-N3 | 5.38 | 122.97 | 119.20 |
| 53 | B5 | 1769 | G | C5-C6-O6 | -5.38 | 125.37 | 128.60 |
| 1 | AA | 1128 | A | O4'-C1'-N9 | 5.38 | 112.50 | 108.20 |
| 1 | AA | 1184 | G | O4'-C1'-N9 | 5.38 | 112.50 | 108.20 |
| 53 | B5 | 936 | A | P-O3'-C3' | 5.38 | 126.16 | 119.70 |
| 53 | B5 | 2139 | A | C5-C6-N6 | -5.38 | 119.40 | 123.70 |
| 53 | B5 | 2837 | A | O4'-C1'-N9 | 5.38 | 112.50 | 108.20 |
| 53 | B5 | 3362 | A | C5-C6-N6 | -5.38 | 119.40 | 123.70 |
| 1 | AA | 1233 | G | O4'-C1'-N9 | 5.38 | 112.50 | 108.20 |
| 1 | AA | 1541 | A | C4-C5-C6 | 5.38 | 119.69 | 117.00 |
| 53 | B5 | 1492 | G | O4'-C1'-N9 | 5.38 | 112.50 | 108.20 |
| 53 | B5 | 2773 | C | C2-N1-C1' | 5.38 | 124.72 | 118.80 |
| 19 | A7 | 5 | A | C4-C5-N7 | 5.38 | 113.39 | 110.70 |
| 53 | B5 | 1027 | A | C5-C6-N6 | -5.38 | 119.40 | 123.70 |
| 53 | B5 | 1162 | U | P-O5'-C5' | -5.38 | 112.30 | 120.90 |
| 53 | B5 | 2312 | A | C5-C6-N6 | -5.38 | 119.40 | 123.70 |
| 1 | AA | 987 | A | O4'-C1'-N9 | 5.38 | 112.50 | 108.20 |
| 53 | B5 | 319 | A | C4-C5-C6 | 5.38 | 119.69 | 117.00 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 373 | A | C5-C6-N1 | -5.38 | 115.01 | 117.70 |
| 53 | B5 | 390 | G | P-O3'-C3' | 5.38 | 126.15 | 119.70 |
| 53 | B5 | 773 | G | O4'-C1'-N9 | 5.38 | 112.50 | 108.20 |
| 53 | B5 | 1367 | G | C5-C6-O6 | -5.38 | 125.38 | 128.60 |
| 1 | AA | 1089 | A | C4-C5-C6 | 5.37 | 119.69 | 117.00 |
| 1 | AA | 1505 | G | C5-C6-O6 | -5.37 | 125.38 | 128.60 |
| 19 | A7 | 5 | A | C2-N3-C4 | 5.37 | 113.29 | 110.60 |
| 51 | B3 | 37 | G | C5-C6-O6 | -5.37 | 125.38 | 128.60 |
| 52 | B4 | 37 | A | C4-C5-C6 | 5.37 | 119.69 | 117.00 |
| 53 | B5 | 474 | G | C5-C6-O6 | -5.37 | 125.38 | 128.60 |
| 53 | B5 | 1884 | A | O4'-C1'-N9 | 5.37 | 112.50 | 108.20 |
| 53 | B5 | 2956 | A | C5-C6-N6 | -5.37 | 119.40 | 123.70 |
| 1 | AA | 924 | G | O4'-C1'-N9 | 5.37 | 112.50 | 108.20 |
| 1 | AA | 938 | A | C5-C6-N6 | -5.37 | 119.40 | 123.70 |
| 1 | AA | 1515 | U | O4'-C1'-N1 | 5.37 | 112.50 | 108.20 |
| 1 | AA | 1518 | U | O4'-C1'-N1 | 5.37 | 112.50 | 108.20 |
| 53 | B5 | 862 | U | O4'-C1'-N1 | 5.37 | 112.50 | 108.20 |
| 53 | B5 | 1817 | G | C5-C6-O6 | -5.37 | 125.38 | 128.60 |
| 53 | B5 | 2149 | A | C5-C6-N6 | -5.37 | 119.40 | 123.70 |
| 53 | B5 | 2172 | A | C4-C5-C6 | 5.37 | 119.69 | 117.00 |
| 53 | B5 | 2488 | A | O4'-C1'-N9 | 5.37 | 112.50 | 108.20 |
| 53 | B5 | 2903 | A | O4'-C1'-N9 | 5.37 | 112.50 | 108.20 |
| 53 | B5 | 3080 | G | O4'-C1'-N9 | 5.37 | 112.50 | 108.20 |
| 53 | B5 | 1914 | G | O4'-C1'-N9 | 5.37 | 112.50 | 108.20 |
| 1 | AA | 219 | A | O4'-C1'-N9 | 5.37 | 112.50 | 108.20 |
| 1 | AA | 951 | A | C5-C6-N6 | -5.37 | 119.41 | 123.70 |
| 1 | AA | 1115 | G | C5-C6-O6 | -5.37 | 125.38 | 128.60 |
| 1 | AA | 1257 | G | O4'-C1'-N9 | 5.37 | 112.49 | 108.20 |
| 1 | AA | 1501 | A | O4'-C1'-N9 | 5.37 | 112.50 | 108.20 |
| 51 | B3 | 89 | A | O4'-C1'-N9 | 5.37 | 112.50 | 108.20 |
| 53 | B5 | 938 | C | N3-C4-N4 | 5.37 | 121.76 | 118.00 |
| 53 | B5 | 2260 | U | O4'-C1'-N1 | 5.37 | 112.50 | 108.20 |
| 53 | B5 | 2398 | A | O4'-C1'-N9 | 5.37 | 112.50 | 108.20 |
| 53 | B5 | 761 | A | O4'-C1'-N9 | 5.37 | 112.49 | 108.20 |
| 53 | B5 | 1213 | G | C5-C6-O6 | -5.37 | 125.38 | 128.60 |
| 53 | B5 | 2185 | G | O4'-C1'-N9 | 5.37 | 112.49 | 108.20 |
| 1 | AA | 885 | G | C5-C6-O6 | -5.37 | 125.38 | 128.60 |
| 1 | AA | 1007 | G | C5-C6-O6 | -5.37 | 125.38 | 128.60 |
| 1 | AA | 1060 | U | O4'-C1'-N1 | 5.37 | 112.49 | 108.20 |
| 1 | AA | 1573 | G | O4'-C1'-N9 | 5.37 | 112.49 | 108.20 |
| 1 | AA | 1700 | A | C4-C5-C6 | 5.37 | 119.68 | 117.00 |
| 19 | A7 | 2 | C | C2-N3-C4 | -5.37 | 117.22 | 119.90 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 19 | A7 | 9 | A | C6-C5-N7 | 5.37 | 136.06 | 132.30 |
| 53 | B5 | 522 | A | O4'-C1'-N9 | 5.37 | 112.49 | 108.20 |
| 53 | B5 | 1503 | A | O4'-C1'-N9 | 5.37 | 112.49 | 108.20 |
| 53 | B5 | 3044 | G | O4'-C1'-N9 | 5.37 | 112.49 | 108.20 |
| 1 | AA | 163 | G | O4'-C1'-N9 | 5.36 | 112.49 | 108.20 |
| 1 | AA | 243 | G | C5-C6-O6 | -5.36 | 125.38 | 128.60 |
| 1 | AA | 445 | A | C5-C6-N6 | -5.36 | 119.41 | 123.70 |
| 1 | AA | 905 | A | O4'-C1'-N9 | 5.36 | 112.49 | 108.20 |
| 1 | AA | 972 | A | O4'-C1'-N9 | 5.36 | 112.49 | 108.20 |
| 1 | AA | 1395 | U | O4'-C1'-N1 | 5.36 | 112.49 | 108.20 |
| 52 | B4 | 49 | G | O4'-C1'-N9 | 5.36 | 112.49 | 108.20 |
| 53 | B5 | 358 | G | C5-C6-O6 | -5.36 | 125.38 | 128.60 |
| 53 | B5 | 1461 | A | O4'-C1'-N9 | 5.36 | 112.49 | 108.20 |
| 53 | B5 | 2730 | G | O4'-C1'-N9 | 5.36 | 112.49 | 108.20 |
| 53 | B5 | 3172 | G | O4'-C1'-N9 | 5.36 | 112.49 | 108.20 |
| 53 | B5 | 3285 | C | N3-C4-N4 | 5.36 | 121.75 | 118.00 |
| 1 | AA | 460 | A | O4'-C1'-N9 | 5.36 | 112.49 | 108.20 |
| 1 | AA | 1208 | G | C5-C6-O6 | -5.36 | 125.38 | 128.60 |
| 1 | AA | 1478 | G | C5-C6-O6 | -5.36 | 125.38 | 128.60 |
| 19 | A7 | 2 | C | C5-C4-N4 | 5.36 | 123.95 | 120.20 |
| 53 | B5 | 2106 | A | O4'-C1'-N9 | 5.36 | 112.49 | 108.20 |
| 53 | B5 | 2805 | G | O4'-C1'-N9 | 5.36 | 112.49 | 108.20 |
| 51 | B3 | 46 | A | C5'-C4'-C3' | 5.36 | 124.58 | 116.00 |
| 52 | B4 | 109 | A | O4'-C1'-N9 | 5.36 | 112.49 | 108.20 |
| 53 | B5 | 184 | U | O4'-C1'-N1 | 5.36 | 112.49 | 108.20 |
| 53 | B5 | 900 | G | C5-C6-O6 | -5.36 | 125.38 | 128.60 |
| 1 | AA | 1327 | G | C5-C6-O6 | -5.36 | 125.39 | 128.60 |
| 1 | AA | 1522 | A | C1'-O4'-C4' | -5.36 | 105.61 | 109.90 |
| 1 | AA | 41 | A | O4'-C1'-N9 | 5.36 | 112.49 | 108.20 |
| 1 | AA | 702 | G | C5-C6-O6 | -5.36 | 125.39 | 128.60 |
| 29 | BE | 22 | ARG | NE-CZ-NH1 | 5.36 | 122.98 | 120.30 |
| 52 | B4 | 22 | U | O4'-C1'-N1 | 5.36 | 112.49 | 108.20 |
| 53 | B5 | 1462 | A | O4'-C1'-N9 | 5.36 | 112.49 | 108.20 |
| 53 | B5 | 1510 | G | C5-C6-O6 | -5.36 | 125.39 | 128.60 |
| 53 | B5 | 1901 | A | P-O3'-C3' | 5.36 | 126.13 | 119.70 |
| 53 | B5 | 3039 | C | N3-C4-C5 | -5.36 | 119.76 | 121.90 |
| 1 | AA | 315 | A | O4'-C1'-N9 | 5.36 | 112.48 | 108.20 |
| 19 | A7 | 74 | C | C4-C5-C6 | 5.36 | 120.08 | 117.40 |
| 53 | B5 | 1419 | A | C5-C6-N6 | -5.36 | 119.42 | 123.70 |
| 53 | B5 | 2161 | G | O4'-C1'-N9 | 5.36 | 112.48 | 108.20 |
| 53 | B5 | 2601 | A | O4'-C1'-N9 | 5.36 | 112.48 | 108.20 |
| 53 | B5 | 2656 | A | C4-C5-C6 | 5.36 | 119.68 | 117.00 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 2924 | U | O4'-C1'-N1 | 5.36 | 112.48 | 108.20 |
| 1 | AA | 1222 | A | O4'-C1'-N9 | 5.35 | 112.48 | 108.20 |
| 53 | B5 | 5 | G | O4'-C1'-N9 | 5.35 | 112.48 | 108.20 |
| 53 | B5 | 1781 | C | N3-C4-N4 | 5.35 | 121.75 | 118.00 |
| 53 | B5 | 2331 | C | N3-C4-C5 | -5.35 | 119.76 | 121.90 |
| 1 | AA | 1319 | A | C4-C5-C6 | 5.35 | 119.68 | 117.00 |
| 53 | B5 | 602 | A | C5-C6-N6 | -5.35 | 119.42 | 123.70 |
| 53 | B5 | 2234 | G | O4'-C1'-N9 | 5.35 | 112.48 | 108.20 |
| 53 | B5 | 2632 | G | C5-C6-O6 | -5.35 | 125.39 | 128.60 |
| 53 | B5 | 3143 | C | O4'-C1'-N1 | 5.35 | 112.48 | 108.20 |
| 1 | AA | 1730 | A | C5-C6-N6 | -5.35 | 119.42 | 123.70 |
| 53 | B5 | 1622 | U | O4'-C1'-N1 | 5.35 | 112.48 | 108.20 |
| 1 | AA | 279 | G | C5-C6-O6 | -5.35 | 125.39 | 128.60 |
| 1 | AA | 1192 | A | O4'-C1'-N9 | 5.35 | 112.48 | 108.20 |
| 1 | AA | 1445 | C | O4'-C1'-N1 | 5.35 | 112.48 | 108.20 |
| 1 | AA | 1550 | U | C1'-C2'-O2' | 5.35 | 126.64 | 110.60 |
| 1 | AA | 1761 | A | O4'-C1'-N9 | 5.35 | 112.48 | 108.20 |
| 51 | B3 | 8 | G | O4'-C1'-N9 | 5.35 | 112.48 | 108.20 |
| 53 | B5 | 254 | A | C5-C6-N6 | -5.35 | 119.42 | 123.70 |
| 53 | B5 | 1661 | G | C5-C6-O6 | -5.35 | 125.39 | 128.60 |
| 53 | B5 | 1835 | A | C4-C5-C6 | 5.35 | 119.67 | 117.00 |
| 53 | B5 | 3099 | C | O4'-C1'-N1 | 5.35 | 112.48 | 108.20 |
| 53 | B5 | 1898 | G | C5-C6-O6 | -5.35 | 125.39 | 128.60 |
| 53 | B5 | 2897 | A | C4-C5-C6 | 5.35 | 119.67 | 117.00 |
| 1 | AA | 96 | G | O4'-C1'-N9 | 5.34 | 112.47 | 108.20 |
| 1 | AA | 687 | G | O4'-C1'-N9 | 5.34 | 112.47 | 108.20 |
| 1 | AA | 940 | A | C4-C5-C6 | 5.34 | 119.67 | 117.00 |
| 52 | B4 | 44 | A | C5-C6-N6 | -5.34 | 119.42 | 123.70 |
| 53 | B5 | 62 | A | O4'-C1'-N9 | 5.34 | 112.48 | 108.20 |
| 53 | B5 | 157 | A | O4'-C1'-N9 | 5.34 | 112.48 | 108.20 |
| 53 | B5 | 303 | G | N1-C6-O6 | 5.34 | 123.11 | 119.90 |
| 53 | B5 | 937 | G | O4'-C1'-N9 | 5.34 | 112.48 | 108.20 |
| 53 | B5 | 1203 | A | C5-C6-N6 | -5.34 | 119.42 | 123.70 |
| 53 | B5 | 1306 | G | O4'-C1'-N9 | 5.34 | 112.47 | 108.20 |
| 53 | B5 | 1547 | G | O4'-C1'-N9 | 5.34 | 112.47 | 108.20 |
| 53 | B5 | 1634 | G | C5-C6-O6 | -5.34 | 125.39 | 128.60 |
| 53 | B5 | 2251 | G | N1-C6-O6 | 5.34 | 123.11 | 119.90 |
| 53 | B5 | 3367 | C | N3-C4-C5 | -5.34 | 119.76 | 121.90 |
| 1 | AA | 367 | A | O4'-C1'-N9 | 5.34 | 112.47 | 108.20 |
| 1 | AA | 1700 | A | O4'-C1'-N9 | 5.34 | 112.47 | 108.20 |
| 53 | B5 | 2645 | G | C5-C6-O6 | -5.34 | 125.39 | 128.60 |
| 53 | B5 | 2943 | G | O4'-C1'-N9 | 5.34 | 112.47 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 3065 | G | O4'-C1'-N9 | 5.34 | 112.47 | 108.20 |
| 1 | AA | 459 | G | C5-C6-O6 | -5.34 | 125.40 | 128.60 |
| 53 | B5 | 373 | A | O4'-C1'-N9 | 5.34 | 112.47 | 108.20 |
| 53 | B5 | 1260 | A | O4'-C1'-N9 | 5.34 | 112.47 | 108.20 |
| 1 | AA | 1435 | G | O4'-C1'-N9 | 5.34 | 112.47 | 108.20 |
| 53 | B5 | 597 | G | O4'-C1'-N9 | 5.34 | 112.47 | 108.20 |
| 53 | B5 | 600 | G | C5-C6-O6 | -5.34 | 125.40 | 128.60 |
| 53 | B5 | 1264 | G | O4'-C1'-N9 | 5.34 | 112.47 | 108.20 |
| 53 | B5 | 2486 | A | C4-C5-C6 | 5.34 | 119.67 | 117.00 |
| 53 | B5 | 2691 | A | C5-C6-N6 | -5.34 | 119.43 | 123.70 |
| 53 | B5 | 1926 | C | O4'-C1'-N1 | 5.34 | 112.47 | 108.20 |
| 53 | B5 | 2830 | G | C5'-C4'-O4' | 5.34 | 115.50 | 109.10 |
| 1 | AA | 865 | A | C1'-O4'-C4' | -5.34 | 105.63 | 109.90 |
| 53 | B5 | 98 | G | O4'-C1'-N9 | 5.34 | 112.47 | 108.20 |
| 53 | B5 | 833 | G | C5-C6-O6 | -5.34 | 125.40 | 128.60 |
| 53 | B5 | 1153 | A | C4-C5-C6 | 5.34 | 119.67 | 117.00 |
| 53 | B5 | 2265 | C | N3-C4-C5 | -5.34 | 119.77 | 121.90 |
| 53 | B5 | 3127 | A | O4'-C1'-N9 | 5.34 | 112.47 | 108.20 |
| 53 | B5 | 1242 | G | C5-C6-O6 | -5.33 | 125.40 | 128.60 |
| 1 | AA | 1085 | A | C5-C6-N6 | -5.33 | 119.43 | 123.70 |
| 1 | AA | 1139 | A | O4'-C1'-N9 | 5.33 | 112.47 | 108.20 |
| 19 | A7 | 64 | A | C5-C6-N6 | 5.33 | 127.97 | 123.70 |
| 51 | B3 | 20 | A | O4'-C1'-N9 | 5.33 | 112.47 | 108.20 |
| 53 | B5 | 116 | A | P-O3'-C3' | 5.33 | 126.10 | 119.70 |
| 53 | B5 | 844 | G | O4'-C1'-N9 | 5.33 | 112.47 | 108.20 |
| 53 | B5 | 1540 | U | O4'-C1'-N1 | 5.33 | 112.47 | 108.20 |
| 51 | B3 | 52 | U | O4'-C1'-N1 | 5.33 | 112.46 | 108.20 |
| 53 | B5 | 708 | G | C5-C6-O6 | -5.33 | 125.40 | 128.60 |
| 53 | B5 | 1333 | C | N3-C4-N4 | 5.33 | 121.73 | 118.00 |
| 53 | B5 | 1365 | G | O4'-C1'-N9 | 5.33 | 112.47 | 108.20 |
| 53 | B5 | 2399 | A | O4'-C1'-N9 | 5.33 | 112.47 | 108.20 |
| 53 | B5 | 2720 | G | O4'-C1'-N9 | 5.33 | 112.47 | 108.20 |
| 1 | AA | 173 | A | P-O3'-C3' | 5.33 | 126.10 | 119.70 |
| 1 | AA | 1078 | A | O4'-C1'-N9 | 5.33 | 112.46 | 108.20 |
| 1 | AA | 1274 | G | O4'-C1'-N9 | 5.33 | 112.46 | 108.20 |
| 51 | B3 | 7 | G | O4'-C1'-N9 | 5.33 | 112.46 | 108.20 |
| 53 | B5 | 568 | G | O4'-C1'-N9 | 5.33 | 112.46 | 108.20 |
| 53 | B5 | 2705 | A | O4'-C1'-N9 | 5.33 | 112.46 | 108.20 |
| 51 | B3 | 59 | G | C5-C6-O6 | -5.33 | 125.40 | 128.60 |
| 53 | B5 | 4 | U | O4'-C1'-N1 | 5.33 | 112.46 | 108.20 |
| 53 | B5 | 499 | G | O4'-C1'-N9 | 5.33 | 112.46 | 108.20 |
| 53 | B5 | 813 | G | O4'-C1'-N9 | 5.33 | 112.46 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 1193 | A | C5-C6-N6 | -5.33 | 119.44 | 123.70 |
| 53 | B5 | 1239 | C | N3-C4-C5 | -5.33 | 119.77 | 121.90 |
| 53 | B5 | 1287 | A | C5-C6-N6 | -5.33 | 119.44 | 123.70 |
| 1 | AA | 1022 | A | C4-C5-C6 | 5.33 | 119.66 | 117.00 |
| 53 | B5 | 106 | A | O4'-C1'-N9 | 5.33 | 112.46 | 108.20 |
| 53 | B5 | 1804 | A | P-O3'-C3' | 5.33 | 126.09 | 119.70 |
| 1 | AA | 274 | G | O4'-C1'-N9 | 5.33 | 112.46 | 108.20 |
| 1 | AA | 1361 | G | O4'-C1'-N9 | 5.33 | 112.46 | 108.20 |
| 19 | A7 | 70 | C | O5'-P-OP2 | -5.33 | 100.91 | 105.70 |
| 52 | B4 | 114 | G | P-O3'-C3' | 5.33 | 126.09 | 119.70 |
| 53 | B5 | 37 | U | O4'-C1'-N1 | 5.33 | 112.46 | 108.20 |
| 53 | B5 | 1025 | A | C5-C6-N6 | -5.33 | 119.44 | 123.70 |
| 53 | B5 | 1101 | G | C5-C6-O6 | -5.33 | 125.41 | 128.60 |
| 53 | B5 | 1516 | C | N3-C4-N4 | 5.33 | 121.73 | 118.00 |
| 53 | B5 | 2183 | A | O4'-C1'-N9 | 5.33 | 112.46 | 108.20 |
| 53 | B5 | 2222 | A | O4'-C1'-N9 | 5.33 | 112.46 | 108.20 |
| 53 | B5 | 2838 | A | C5-C6-N6 | -5.33 | 119.44 | 123.70 |
| 53 | B5 | 3047 | U | O4'-C1'-N1 | 5.33 | 112.46 | 108.20 |
| 1 | AA | 859 | A | N9-C1'-C2' | 5.32 | 120.92 | 114.00 |
| 53 | B5 | 590 | G | C5-C6-O6 | -5.32 | 125.41 | 128.60 |
| 53 | B5 | 1441 | G | O4'-C1'-N9 | 5.32 | 112.46 | 108.20 |
| 53 | B5 | 1504 | A | O4'-C1'-N9 | 5.32 | 112.46 | 108.20 |
| 53 | B5 | 2121 | G | C5-C6-O6 | -5.32 | 125.41 | 128.60 |
| 53 | B5 | 2288 | G | O4'-C1'-N9 | 5.32 | 112.46 | 108.20 |
| 1 | AA | 1136 | A | O4'-C1'-N9 | 5.32 | 112.46 | 108.20 |
| 1 | AA | 1417 | C | O4'-C1'-N1 | 5.32 | 112.46 | 108.20 |
| 53 | B5 | 145 | G | O4'-C1'-N9 | 5.32 | 112.46 | 108.20 |
| 53 | B5 | 1440 | G | C5-C6-O6 | -5.32 | 125.41 | 128.60 |
| 1 | AA | 1383 | G | C5-C6-O6 | -5.32 | 125.41 | 128.60 |
| 52 | B4 | 53 | A | O4'-C1'-N9 | 5.32 | 112.46 | 108.20 |
| 53 | B5 | 704 | U | O4'-C1'-N1 | 5.32 | 112.46 | 108.20 |
| 53 | B5 | 2528 | G | C5-C6-O6 | -5.32 | 125.41 | 128.60 |
| 53 | B5 | 2592 | G | C5-C6-O6 | -5.32 | 125.41 | 128.60 |
| 53 | B5 | 2977 | G | O4'-C1'-N9 | 5.32 | 112.46 | 108.20 |
| 53 | B5 | 1937 | U | O4'-C1'-N1 | 5.32 | 112.45 | 108.20 |
| 1 | AA | 124 | A | O4'-C1'-N9 | 5.32 | 112.45 | 108.20 |
| 53 | B5 | 775 | A | C5-C6-N6 | -5.32 | 119.45 | 123.70 |
| 53 | B5 | 830 | A | O4'-C1'-N9 | 5.32 | 112.45 | 108.20 |
| 53 | B5 | 1063 | G | C5-C6-O6 | -5.32 | 125.41 | 128.60 |
| 53 | B5 | 1446 | A | C5-C6-N6 | -5.32 | 119.44 | 123.70 |
| 53 | B5 | 1643 | A | O4'-C1'-N9 | 5.32 | 112.45 | 108.20 |
| 53 | B5 | 1910 | A | O4'-C1'-N9 | 5.32 | 112.45 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 2439 | A | O4'-C1'-N9 | 5.32 | 112.45 | 108.20 |
| 1 | AA | 1129 | A | C4-C5-C6 | 5.32 | 119.66 | 117.00 |
| 1 | AA | 1327 | G | O4'-C1'-N9 | 5.32 | 112.45 | 108.20 |
| 1 | AA | 16 | G | O4'-C1'-N9 | 5.31 | 112.45 | 108.20 |
| 53 | B5 | 303 | G | O4'-C1'-N9 | 5.31 | 112.45 | 108.20 |
| 53 | B5 | 3031 | G | O4'-C1'-N9 | 5.31 | 112.45 | 108.20 |
| 1 | AA | 61 | A | C5-C6-N6 | -5.31 | 119.45 | 123.70 |
| 1 | AA | 71 | A | O4'-C1'-N9 | 5.31 | 112.45 | 108.20 |
| 1 | AA | 72 | A | O4'-C1'-N9 | 5.31 | 112.45 | 108.20 |
| 1 | AA | 671 | G | O4'-C1'-N9 | 5.31 | 112.45 | 108.20 |
| 1 | AA | 941 | G | C5-C6-O6 | -5.31 | 125.41 | 128.60 |
| 1 | AA | 1176 | G | O4'-C1'-N9 | 5.31 | 112.45 | 108.20 |
| 53 | B5 | 52 | A | C4-C5-C6 | 5.31 | 119.66 | 117.00 |
| 53 | B5 | 160 | G | O4'-C1'-N9 | 5.31 | 112.45 | 108.20 |
| 53 | B5 | 201 | A | C5-C6-N6 | -5.31 | 119.45 | 123.70 |
| 53 | B5 | 613 | G | O4'-C1'-N9 | 5.31 | 112.45 | 108.20 |
| 53 | B5 | 1604 | G | C5-C6-O6 | -5.31 | 125.41 | 128.60 |
| 53 | B5 | 2198 | A | O4'-C1'-N9 | 5.31 | 112.45 | 108.20 |
| 53 | B5 | 3238 | G | O4'-C1'-N9 | 5.31 | 112.45 | 108.20 |
| 1 | AA | 63 | G | O4'-C1'-N9 | 5.31 | 112.45 | 108.20 |
| 1 | AA | 384 | G | C5-C6-O6 | -5.31 | 125.41 | 128.60 |
| 1 | AA | 776 | G | O4'-C1'-N9 | 5.31 | 112.45 | 108.20 |
| 53 | B5 | 2321 | A | O4'-C1'-N9 | 5.31 | 112.45 | 108.20 |
| 53 | B5 | 3361 | G | O4'-C1'-N9 | 5.31 | 112.45 | 108.20 |
| 1 | AA | 615 | A | C5-C6-N6 | -5.31 | 119.45 | 123.70 |
| 1 | AA | 1548 | A | C4-C5-C6 | 5.31 | 119.66 | 117.00 |
| 1 | AA | 1640 | G | C5-C6-O6 | -5.31 | 125.41 | 128.60 |
| 1 | AA | 1718 | G | O4'-C1'-N9 | 5.31 | 112.45 | 108.20 |
| 1 | AA | 1755 | G | C5-C6-O6 | -5.31 | 125.42 | 128.60 |
| 53 | B5 | 319 | A | C5-C6-N1 | -5.31 | 115.05 | 117.70 |
| 53 | B5 | 2450 | G | C5-C6-O6 | -5.31 | 125.41 | 128.60 |
| 53 | B5 | 2847 | A | C4-C5-C6 | 5.31 | 119.66 | 117.00 |
| 53 | B5 | 2848 | G | P-O3'-C3' | 5.31 | 126.07 | 119.70 |
| 53 | B5 | 2848 | G | N1-C6-O6 | 5.31 | 123.09 | 119.90 |
| 53 | B5 | 3144 | G | C5-C6-O6 | -5.31 | 125.41 | 128.60 |
| 1 | AA | 631 | G | O4'-C1'-N9 | 5.31 | 112.45 | 108.20 |
| 1 | AA | 900 | G | O4'-C1'-N9 | 5.31 | 112.45 | 108.20 |
| 1 | AA | 1291 | G | C5-C6-O6 | -5.31 | 125.42 | 128.60 |
| 1 | AA | 1428 | C | O4'-C1'-N1 | 5.31 | 112.45 | 108.20 |
| 19 | A7 | 7 | U | N1-C2-N3 | 5.31 | 118.08 | 114.90 |
| 53 | B5 | 1079 | A | C5-C6-N6 | -5.31 | 119.45 | 123.70 |
| 53 | B5 | 2791 | G | C5-C6-O6 | -5.31 | 125.42 | 128.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 3328 | G | C5-C6-O6 | -5.31 | 125.42 | 128.60 |
| 53 | B5 | 319 | A | O4'-C1'-N9 | 5.31 | 112.44 | 108.20 |
| 53 | B5 | 2878 | G | C5-C6-O6 | -5.31 | 125.42 | 128.60 |
| 1 | AA | 81 | G | O4'-C1'-N9 | 5.30 | 112.44 | 108.20 |
| 1 | AA | 1144 | A | C4-C5-C6 | 5.30 | 119.65 | 117.00 |
| 51 | B3 | 115 | A | O4'-C1'-N9 | 5.30 | 112.44 | 108.20 |
| 53 | B5 | 648 | C | O4'-C1'-N1 | 5.30 | 112.44 | 108.20 |
| 53 | B5 | 1136 | A | O4'-C1'-N9 | 5.30 | 112.44 | 108.20 |
| 53 | B5 | 1300 | G | O4'-C1'-N9 | 5.30 | 112.44 | 108.20 |
| 53 | B5 | 1385 | C | N3-C4-N4 | 5.30 | 121.71 | 118.00 |
| 53 | B5 | 1650 | G | C5-C6-O6 | -5.30 | 125.42 | 128.60 |
| 53 | B5 | 3030 | G | O4'-C1'-N9 | 5.30 | 112.44 | 108.20 |
| 1 | AA | 26 | A | O4'-C1'-N9 | 5.30 | 112.44 | 108.20 |
| 1 | AA | 776 | G | C5-C6-O6 | -5.30 | 125.42 | 128.60 |
| 1 | AA | 92 | A | C4-C5-C6 | 5.30 | 119.65 | 117.00 |
| 1 | AA | 809 | A | O4'-C1'-N9 | 5.30 | 112.44 | 108.20 |
| 1 | AA | 1194 | G | C5-C6-O6 | -5.30 | 125.42 | 128.60 |
| 53 | B5 | 707 | U | O4'-C1'-N1 | 5.30 | 112.44 | 108.20 |
| 53 | B5 | 997 | A | C4-C5-C6 | 5.30 | 119.65 | 117.00 |
| 53 | B5 | 2134 | G | C5-C6-O6 | -5.30 | 125.42 | 128.60 |
| 19 | A7 | 9 | A | N9-C1'-C2' | -5.30 | 106.17 | 112.00 |
| 53 | B5 | 114 | A | O4'-C1'-N9 | 5.30 | 112.44 | 108.20 |
| 53 | B5 | 1344 | G | C5-C6-O6 | -5.30 | 125.42 | 128.60 |
| 53 | B5 | 1380 | G | N1-C6-O6 | 5.30 | 123.08 | 119.90 |
| 1 | AA | 488 | G | C5-C6-O6 | -5.30 | 125.42 | 128.60 |
| 53 | B5 | 27 | C | N3-C4-N4 | 5.30 | 121.71 | 118.00 |
| 1 | AA | 1421 | A | O4'-C1'-N9 | 5.30 | 112.44 | 108.20 |
| 1 | AA | 1477 | A | O4'-C1'-N9 | 5.30 | 112.44 | 108.20 |
| 29 | BE | 207 | TYR | CB-CG-CD1 | 5.30 | 124.18 | 121.00 |
| 53 | B5 | 196 | G | O4'-C1'-N9 | 5.30 | 112.44 | 108.20 |
| 53 | B5 | 234 | G | C5-C6-O6 | -5.30 | 125.42 | 128.60 |
| 53 | B5 | 1165 | A | C5-C6-N6 | -5.30 | 119.46 | 123.70 |
| 53 | B5 | 2575 | G | N1-C6-O6 | 5.30 | 123.08 | 119.90 |
| 1 | AA | 1746 | G | C5-C6-O6 | -5.29 | 125.42 | 128.60 |
| 53 | B5 | 1939 | G | C5-C6-O6 | -5.29 | 125.42 | 128.60 |
| 53 | B5 | 2610 | G | C5-C6-O6 | -5.29 | 125.42 | 128.60 |
| 1 | AA | 215 | A | O4'-C1'-N9 | 5.29 | 112.44 | 108.20 |
| 53 | B5 | 476 | G | O4'-C1'-N9 | 5.29 | 112.44 | 108.20 |
| 53 | B5 | 700 | C | N3-C4-N4 | 5.29 | 121.70 | 118.00 |
| 53 | B5 | 831 | G | C5-C6-O6 | -5.29 | 125.42 | 128.60 |
| 53 | B5 | 2366 | C | N3-C4-N4 | 5.29 | 121.71 | 118.00 |
| 53 | B5 | 3335 | A | O4'-C1'-N9 | 5.29 | 112.44 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1 | AA | 470 | A | O4'-C1'-N9 | 5.29 | 112.43 | 108.20 |
| 1 | AA | 684 | A | O4'-C1'-N9 | 5.29 | 112.43 | 108.20 |
| 51 | B3 | 54 | A | C5-C6-N6 | -5.29 | 119.47 | 123.70 |
| 53 | B5 | 71 | A | C4-C5-C6 | 5.29 | 119.65 | 117.00 |
| 53 | B5 | 1155 | C | N3-C4-N4 | 5.29 | 121.70 | 118.00 |
| 53 | B5 | 2202 | C | N3-C4-N4 | 5.29 | 121.70 | 118.00 |
| 53 | B5 | 2901 | G | O4'-C1'-N9 | 5.29 | 112.43 | 108.20 |
| 53 | B5 | 3079 | U | O4'-C1'-N1 | 5.29 | 112.43 | 108.20 |
| 1 | AA | 929 | A | C5-C6-N6 | -5.29 | 119.47 | 123.70 |
| 1 | AA | 935 | G | C5-C6-O6 | -5.29 | 125.43 | 128.60 |
| 1 | AA | 1726 | A | O4'-C1'-N9 | 5.29 | 112.43 | 108.20 |
| 53 | B5 | 1171 | G | O4'-C1'-N9 | 5.29 | 112.43 | 108.20 |
| 53 | B5 | 2437 | G | O4'-C1'-N9 | 5.29 | 112.43 | 108.20 |
| 1 | AA | 214 | G | C5-C6-O6 | -5.29 | 125.43 | 128.60 |
| 1 | AA | 404 | G | C5-C6-O6 | -5.29 | 125.43 | 128.60 |
| 1 | AA | 610 | G | C5-C6-O6 | -5.29 | 125.43 | 128.60 |
| 52 | B4 | 62 | C | C6-N1-C1' | -5.29 | 114.45 | 120.80 |
| 53 | B5 | 201 | A | C4-C5-C6 | 5.29 | 119.64 | 117.00 |
| 53 | B5 | 584 | G | C5-C6-O6 | -5.29 | 125.43 | 128.60 |
| 53 | B5 | 1075 | A | O4'-C1'-N9 | 5.29 | 112.43 | 108.20 |
| 53 | B5 | 2687 | G | O4'-C1'-N9 | 5.29 | 112.43 | 108.20 |
| 53 | B5 | 2820 | A | O4'-C1'-N9 | 5.29 | 112.43 | 108.20 |
| 53 | B5 | 2911 | A | O4'-C1'-N9 | 5.29 | 112.43 | 108.20 |
| 53 | B5 | 3284 | G | O4'-C1'-N9 | 5.29 | 112.43 | 108.20 |
| 1 | AA | 723 | G | O4'-C1'-N9 | 5.29 | 112.43 | 108.20 |
| 53 | B5 | 312 | C | N3-C4-N4 | 5.29 | 121.70 | 118.00 |
| 53 | B5 | 2454 | G | C5-C6-O6 | -5.29 | 125.43 | 128.60 |
| 1 | AA | 123 | G | C5-C6-O6 | -5.29 | 125.43 | 128.60 |
| 1 | AA | 669 | G | O4'-C1'-N9 | 5.29 | 112.43 | 108.20 |
| 19 | A7 | 21 | A | C5'-C4'-C3' | -5.29 | 107.54 | 116.00 |
| 51 | B3 | 24 | A | O4'-C1'-N9 | 5.29 | 112.43 | 108.20 |
| 53 | B5 | 1409 | G | C5-C6-O6 | -5.29 | 125.43 | 128.60 |
| 53 | B5 | 1605 | A | C5-C6-N6 | -5.29 | 119.47 | 123.70 |
| 53 | B5 | 1758 | G | O4'-C1'-N9 | 5.29 | 112.43 | 108.20 |
| 53 | B5 | 2612 | U | O4'-C1'-N1 | 5.29 | 112.43 | 108.20 |
| 1 | AA | 647 | G | C5-C6-O6 | -5.28 | 125.43 | 128.60 |
| 1 | AA | 929 | A | C4-C5-C6 | 5.28 | 119.64 | 117.00 |
| 1 | AA | 1087 | C | N3-C4-N4 | 5.28 | 121.70 | 118.00 |
| 53 | B5 | 15 | C | N3-C4-N4 | 5.28 | 121.70 | 118.00 |
| 53 | B5 | 109 | A | O4'-C1'-N9 | 5.28 | 112.43 | 108.20 |
| 53 | B5 | 264 | G | O4'-C1'-N9 | 5.28 | 112.43 | 108.20 |
| 53 | B5 | 274 | G | O4'-C1'-N9 | 5.28 | 112.43 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 469 | G | N1-C6-O6 | 5.28 | 123.07 | 119.90 |
| 53 | B5 | 1182 | A | C4-C5-C6 | 5.28 | 119.64 | 117.00 |
| 53 | B5 | 1715 | A | C5-C6-N1 | -5.28 | 115.06 | 117.70 |
| 53 | B5 | 1893 | A | O4'-C1'-N9 | 5.28 | 112.43 | 108.20 |
| 53 | B5 | 2515 | A | C5-C6-N6 | -5.28 | 119.47 | 123.70 |
| 53 | B5 | 3027 | A | O4'-C1'-N9 | 5.28 | 112.43 | 108.20 |
| 1 | AA | 1043 | G | O4'-C1'-N9 | 5.28 | 112.43 | 108.20 |
| 1 | AA | 1605 | G | C5-C6-O6 | -5.28 | 125.43 | 128.60 |
| 53 | B5 | 450 | G | O4'-C1'-N9 | 5.28 | 112.42 | 108.20 |
| 53 | B5 | 570 | A | O4'-C1'-N9 | 5.28 | 112.42 | 108.20 |
| 53 | B5 | 1079 | A | C4-C5-C6 | 5.28 | 119.64 | 117.00 |
| 53 | B5 | 1396 | C | N3-C4-N4 | 5.28 | 121.70 | 118.00 |
| 53 | B5 | 1618 | G | C5-C6-O6 | -5.28 | 125.43 | 128.60 |
| 1 | AA | 661 | A | O4'-C1'-N9 | 5.28 | 112.42 | 108.20 |
| 19 | A7 | 4 | G | N3-C4-C5 | 5.28 | 131.24 | 128.60 |
| 51 | B3 | 84 | G | C5-C6-O6 | -5.28 | 125.43 | 128.60 |
| 53 | B5 | 5 | G | C5-C6-O6 | -5.28 | 125.43 | 128.60 |
| 53 | B5 | 1879 | A | C5-C6-N6 | -5.28 | 119.48 | 123.70 |
| 1 | AA | 371 | G | C5-C6-O6 | -5.28 | 125.43 | 128.60 |
| 19 | A7 | 25 | C | O4'-C1'-N1 | 5.28 | 112.42 | 108.20 |
| 53 | B5 | 3067 | C | N3-C4-N4 | 5.28 | 121.69 | 118.00 |
| 1 | AA | 269 | G | C5-C6-O6 | -5.28 | 125.43 | 128.60 |
| 1 | AA | 384 | G | O4'-C1'-N9 | 5.28 | 112.42 | 108.20 |
| 1 | AA | 399 | A | O4'-C1'-N9 | 5.28 | 112.42 | 108.20 |
| 1 | AA | 1634 | C | N1-C1'-C2' | 5.28 | 120.86 | 114.00 |
| 53 | B5 | 3101 | G | O4'-C1'-N9 | 5.28 | 112.42 | 108.20 |
| 53 | B5 | 3299 | A | O4'-C1'-N9 | 5.28 | 112.42 | 108.20 |
| 53 | B5 | 384 | A | O4'-C1'-N9 | 5.28 | 112.42 | 108.20 |
| 53 | B5 | 656 | A | O4'-C1'-N9 | 5.28 | 112.42 | 108.20 |
| 53 | B5 | 1932 | A | C5-C6-N6 | -5.28 | 119.48 | 123.70 |
| 53 | B5 | 2208 | A | O4'-C1'-N9 | 5.28 | 112.42 | 108.20 |
| 53 | B5 | 2243 | A | O4'-C1'-N9 | 5.28 | 112.42 | 108.20 |
| 53 | B5 | 3279 | A | C5-C6-N6 | -5.28 | 119.48 | 123.70 |
| 1 | AA | 40 | A | O4'-C1'-N9 | 5.27 | 112.42 | 108.20 |
| 1 | AA | 1007 | G | O4'-C1'-N9 | 5.27 | 112.42 | 108.20 |
| 19 | A7 | 18 | G | N3-C4-C5 | 5.27 | 131.24 | 128.60 |
| 53 | B5 | 703 | G | C5-C6-O6 | -5.27 | 125.44 | 128.60 |
| 53 | B5 | 1760 | A | O4'-C1'-N9 | 5.27 | 112.42 | 108.20 |
| 1 | AA | 651 | G | O4'-C1'-N9 | 5.27 | 112.42 | 108.20 |
| 19 | A7 | 44 | A | C5-C6-N1 | 5.27 | 120.34 | 117.70 |
| 53 | B5 | 17 | G | O4'-C1'-N9 | 5.27 | 112.42 | 108.20 |
| 53 | B5 | 89 | A | C5-C6-N6 | -5.27 | 119.48 | 123.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 1071 | U | O4'-C1'-N1 | 5.27 | 112.42 | 108.20 |
| 53 | B5 | 1165 | A | C4-C5-C6 | 5.27 | 119.64 | 117.00 |
| 53 | B5 | 1648 | A | O4'-C1'-N9 | 5.27 | 112.42 | 108.20 |
| 53 | B5 | 3122 | A | C4-C5-C6 | 5.27 | 119.64 | 117.00 |
| 53 | B5 | 3316 | A | O4'-C1'-N9 | 5.27 | 112.42 | 108.20 |
| 1 | AA | 729 | G | O4'-C1'-N9 | 5.27 | 112.42 | 108.20 |
| 53 | B5 | 931 | C | N3-C4-N4 | 5.27 | 121.69 | 118.00 |
| 53 | B5 | 2384 | A | O4'-C1'-N9 | 5.27 | 112.42 | 108.20 |
| 53 | B5 | 2523 | A | O4'-C1'-N9 | 5.27 | 112.42 | 108.20 |
| 53 | B5 | 3239 | G | O4'-C1'-N9 | 5.27 | 112.42 | 108.20 |
| 1 | AA | 251 | A | O4'-C1'-N9 | 5.27 | 112.42 | 108.20 |
| 1 | AA | 754 | A | O4'-C1'-N9 | 5.27 | 112.42 | 108.20 |
| 52 | B4 | 150 | G | O4'-C1'-N9 | 5.27 | 112.42 | 108.20 |
| 53 | B5 | 1131 | G | O4'-C1'-N9 | 5.27 | 112.42 | 108.20 |
| 53 | B5 | 1291 | A | O4'-C1'-N9 | 5.27 | 112.42 | 108.20 |
| 53 | B5 | 2557 | G | O4'-C1'-N9 | 5.27 | 112.42 | 108.20 |
| 53 | B5 | 71 | A | C5-C6-N1 | -5.27 | 115.07 | 117.70 |
| 53 | B5 | 594 | A | O4'-C1'-N9 | 5.27 | 112.41 | 108.20 |
| 53 | B5 | 692 | A | C4-C5-C6 | 5.27 | 119.63 | 117.00 |
| 53 | B5 | 1163 | A | C5-C6-N6 | -5.27 | 119.48 | 123.70 |
| 53 | B5 | 2684 | C | N3-C4-C5 | -5.27 | 119.79 | 121.90 |
| 1 | AA | 1240 | A | C1'-O4'-C4' | -5.27 | 105.69 | 109.90 |
| 1 | AA | 1263 | G | C5-C6-O6 | -5.27 | 125.44 | 128.60 |
| 1 | AA | 1519 | G | O4'-C1'-N9 | 5.27 | 112.41 | 108.20 |
| 1 | AA | 1446 | G | O4'-C1'-N9 | 5.26 | 112.41 | 108.20 |
| 1 | AA | 1458 | A | O4'-C1'-N9 | 5.26 | 112.41 | 108.20 |
| 52 | B4 | 44 | A | C4-C5-C6 | 5.26 | 119.63 | 117.00 |
| 53 | B5 | 31 | C | N3-C4-C5 | -5.26 | 119.79 | 121.90 |
| 53 | B5 | 393 | U | P-O3'-C3' | 5.26 | 126.02 | 119.70 |
| 53 | B5 | 1226 | G | C5-C6-O6 | -5.26 | 125.44 | 128.60 |
| 53 | B5 | 1404 | G | C5-C6-O6 | -5.26 | 125.44 | 128.60 |
| 53 | B5 | 2445 | A | O4'-C1'-N9 | 5.26 | 112.41 | 108.20 |
| 53 | B5 | 2816 | G | C5-C6-O6 | -5.26 | 125.44 | 128.60 |
| 1 | AA | 1365 | G | O4'-C1'-N9 | 5.26 | 112.41 | 108.20 |
| 53 | B5 | 909 | G | C5-C6-O6 | -5.26 | 125.44 | 128.60 |
| 1 | AA | 545 | A | O4'-C1'-N9 | 5.26 | 112.41 | 108.20 |
| 1 | AA | 664 | U | O4'-C1'-N1 | 5.26 | 112.41 | 108.20 |
| 53 | B5 | 95 | A | O4'-C1'-N9 | 5.26 | 112.41 | 108.20 |
| 53 | B5 | 859 | G | C5-C6-O6 | -5.26 | 125.44 | 128.60 |
| 53 | B5 | 1688 | U | O4'-C1'-N1 | 5.26 | 112.41 | 108.20 |
| 53 | B5 | 1745 | C | P-O3'-C3' | 5.26 | 126.01 | 119.70 |
| 53 | B5 | 2239 | G | O4'-C1'-N9 | 5.26 | 112.41 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 1 | AA | 1041 | U | O4'-C1'-N1 | 5.26 | 112.41 | 108.20 |
| 53 | B5 | 1461 | A | C5-C6-N1 | -5.26 | 115.07 | 117.70 |
| 53 | B5 | 2720 | G | C5-C6-O6 | -5.26 | 125.44 | 128.60 |
| 53 | B5 | 2779 | A | C5-C6-N6 | -5.26 | 119.49 | 123.70 |
| 53 | B5 | 3245 | A | C5-C6-N6 | -5.26 | 119.49 | 123.70 |
| 53 | B5 | 3342 | A | O4'-C1'-N9 | 5.26 | 112.41 | 108.20 |
| 1 | AA | 53 | G | O4'-C1'-N9 | 5.26 | 112.41 | 108.20 |
| 1 | AA | 812 | A | O4'-C1'-N9 | 5.26 | 112.41 | 108.20 |
| 1 | AA | 1386 | C | O4'-C1'-N1 | 5.26 | 112.41 | 108.20 |
| 53 | B5 | 2414 | G | O4'-C1'-N9 | 5.26 | 112.41 | 108.20 |
| 1 | AA | 1384 | G | C5-C6-O6 | -5.26 | 125.45 | 128.60 |
| 1 | AA | 1424 | A | C5-C6-N6 | -5.26 | 119.49 | 123.70 |
| 1 | AA | 1519 | G | OP1-P-OP2 | -5.26 | 111.72 | 119.60 |
| 9 | AJ | 90 | TYR | CB-CG-CD2 | -5.26 | 117.85 | 121.00 |
| 29 | BE | 142 | PHE | CB-CG-CD2 | -5.26 | 117.12 | 120.80 |
| 53 | B5 | 313 | A | O4'-C1'-N9 | 5.26 | 112.41 | 108.20 |
| 53 | B5 | 1423 | C | N3-C4-N4 | 5.26 | 121.68 | 118.00 |
| 53 | B5 | 1858 | A | C4-C5-C6 | 5.26 | 119.63 | 117.00 |
| 53 | B5 | 1882 | G | O4'-C1'-N9 | 5.26 | 112.41 | 108.20 |
| 53 | B5 | 2119 | A | O4'-C1'-N9 | 5.26 | 112.40 | 108.20 |
| 1 | AA | 93 | A | O4'-C1'-N9 | 5.25 | 112.40 | 108.20 |
| 1 | AA | 571 | G | C5-C6-O6 | -5.25 | 125.45 | 128.60 |
| 53 | B5 | 3227 | A | O4'-C1'-N9 | 5.25 | 112.40 | 108.20 |
| 1 | AA | 91 | G | O4'-C1'-N9 | 5.25 | 112.40 | 108.20 |
| 1 | AA | 245 | U | O4'-C1'-N1 | 5.25 | 112.40 | 108.20 |
| 1 | AA | 550 | A | O4'-C1'-N9 | 5.25 | 112.40 | 108.20 |
| 1 | AA | 1300 | U | O4'-C1'-N1 | 5.25 | 112.40 | 108.20 |
| 1 | AA | 1456 | G | O4'-C1'-N9 | 5.25 | 112.40 | 108.20 |
| 53 | B5 | 1003 | A | C5-C6-N6 | -5.25 | 119.50 | 123.70 |
| 53 | B5 | 3026 | G | C5-C6-O6 | -5.25 | 125.45 | 128.60 |
| 1 | AA | 480 | G | O4'-C1'-N9 | 5.25 | 112.40 | 108.20 |
| 19 | A7 | 35 | A | N9-C1'-C2' | -5.25 | 106.22 | 112.00 |
| 53 | B5 | 67 | A | C5-C6-N6 | -5.25 | 119.50 | 123.70 |
| 53 | B5 | 934 | G | O4'-C1'-N9 | 5.25 | 112.40 | 108.20 |
| 53 | B5 | 2302 | G | O4'-C1'-N9 | 5.25 | 112.40 | 108.20 |
| 1 | AA | 804 | A | C5-C6-N6 | -5.25 | 119.50 | 123.70 |
| 1 | AA | 1669 | A | O4'-C1'-N9 | 5.25 | 112.40 | 108.20 |
| 1 | AA | 1778 | G | O4'-C1'-N9 | 5.25 | 112.40 | 108.20 |
| 53 | B5 | 815 | G | O4'-C1'-N9 | 5.25 | 112.40 | 108.20 |
| 53 | B5 | 1005 | G | O4'-C1'-N9 | 5.25 | 112.40 | 108.20 |
| 53 | B5 | 2817 | A | C4-C5-C6 | 5.25 | 119.62 | 117.00 |
| 53 | B5 | 2990 | G | C5-C6-O6 | -5.25 | 125.45 | 128.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 1 | AA | 580 | A | O4'-C1'-N9 | 5.25 | 112.40 | 108.20 |
| 53 | B5 | 330 | G | O4'-C1'-N9 | 5.25 | 112.40 | 108.20 |
| 53 | B5 | 348 | A | O4'-C1'-N9 | 5.25 | 112.40 | 108.20 |
| 53 | B5 | 375 | A | C4-C5-C6 | 5.25 | 119.62 | 117.00 |
| 53 | B5 | 1159 | A | O4'-C1'-N9 | 5.25 | 112.40 | 108.20 |
| 53 | B5 | 1758 | G | C5-C6-O6 | -5.25 | 125.45 | 128.60 |
| 53 | B5 | 1933 | A | O4'-C1'-N9 | 5.25 | 112.40 | 108.20 |
| 53 | B5 | 2415 | C | N3-C4-N4 | 5.25 | 121.67 | 118.00 |
| 53 | B5 | 2467 | G | O4'-C1'-N9 | 5.25 | 112.40 | 108.20 |
| 53 | B5 | 3336 | A | C5-C6-N6 | -5.25 | 119.50 | 123.70 |
| 1 | AA | 914 | A | C4-C5-C6 | 5.25 | 119.62 | 117.00 |
| 1 | AA | 1239 | G | O4'-C1'-N9 | 5.25 | 112.40 | 108.20 |
| 53 | B5 | 577 | C | O4'-C1'-N1 | 5.25 | 112.40 | 108.20 |
| 53 | B5 | 2597 | U | O4'-C1'-N1 | 5.25 | 112.40 | 108.20 |
| 53 | B5 | 2642 | A | C4-C5-C6 | 5.25 | 119.62 | 117.00 |
| 1 | AA | 927 | U | O4'-C1'-N1 | 5.25 | 112.40 | 108.20 |
| 1 | AA | 929 | A | O4'-C1'-N9 | 5.25 | 112.40 | 108.20 |
| 53 | B5 | 1934 | G | N1-C6-O6 | 5.25 | 123.05 | 119.90 |
| 1 | AA | 204 | G | N1-C6-O6 | 5.24 | 123.05 | 119.90 |
| 1 | AA | 1598 | A | C4-C5-C6 | 5.24 | 119.62 | 117.00 |
| 53 | B5 | 320 | G | C5-C6-O6 | -5.24 | 125.45 | 128.60 |
| 53 | B5 | 789 | A | O4'-C1'-N9 | 5.24 | 112.40 | 108.20 |
| 53 | B5 | 991 | U | O4'-C1'-N1 | 5.24 | 112.39 | 108.20 |
| 53 | B5 | 1286 | A | O4'-C1'-N9 | 5.24 | 112.39 | 108.20 |
| 53 | B5 | 2257 | C | O4'-C1'-N1 | 5.24 | 112.39 | 108.20 |
| 53 | B5 | 2474 | G | C5-C6-O6 | -5.24 | 125.45 | 128.60 |
| 53 | B5 | 3372 | A | C4-C5-C6 | 5.24 | 119.62 | 117.00 |
| 1 | AA | 219 | A | C5-C6-N6 | -5.24 | 119.51 | 123.70 |
| 8 | AI | 126 | PRO | C-N-CA | 5.24 | 134.81 | 121.70 |
| 53 | B5 | 820 | A | C4-C5-C6 | 5.24 | 119.62 | 117.00 |
| 53 | B5 | 1909 | A | O4'-C1'-N9 | 5.24 | 112.39 | 108.20 |
| 53 | B5 | 3186 | A | O4'-C1'-N9 | 5.24 | 112.39 | 108.20 |
| 1 | AA | 417 | A | C5-C6-N6 | -5.24 | 119.51 | 123.70 |
| 1 | AA | 737 | A | O4'-C1'-N9 | 5.24 | 112.39 | 108.20 |
| 1 | AA | 1439 | U | O4'-C1'-N1 | 5.24 | 112.39 | 108.20 |
| 1 | AA | 1695 | G | N1-C6-O6 | 5.24 | 123.04 | 119.90 |
| 51 | B3 | 49 | G | C5-C6-O6 | -5.24 | 125.46 | 128.60 |
| 53 | B5 | 668 | G | O4'-C1'-N9 | 5.24 | 112.39 | 108.20 |
| 53 | B5 | 1110 | U | O4'-C1'-N1 | 5.24 | 112.39 | 108.20 |
| 53 | B5 | 2396 | G | C5-C6-O6 | -5.24 | 125.46 | 128.60 |
| 53 | B5 | 3168 | A | C5-C6-N6 | -5.24 | 119.51 | 123.70 |
| 1 | AA | 202 | A | C5-C6-N6 | -5.24 | 119.51 | 123.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 1 | AA | 858 | G | C4-N9-C1' | 5.24 | 133.31 | 126.50 |
| 29 | BE | 22 | ARG | NE-CZ-NH2 | -5.24 | 117.68 | 120.30 |
| 53 | B5 | 288 | C | N3-C4-N4 | 5.24 | 121.67 | 118.00 |
| 53 | B5 | 338 | A | C4-C5-C6 | 5.24 | 119.62 | 117.00 |
| 53 | B5 | 390 | G | O4'-C1'-N9 | 5.24 | 112.39 | 108.20 |
| 53 | B5 | 968 | G | O4'-C1'-N9 | 5.24 | 112.39 | 108.20 |
| 53 | B5 | 1202 | A | C4-C5-C6 | 5.24 | 119.62 | 117.00 |
| 53 | B5 | 1580 | A | C4-C5-C6 | 5.24 | 119.62 | 117.00 |
| 53 | B5 | 1889 | G | C5-C6-O6 | -5.24 | 125.46 | 128.60 |
| 53 | B5 | 2172 | A | P-O3'-C3' | 5.24 | 125.99 | 119.70 |
| 1 | AA | 1521 | G | P-O5'-C5' | -5.24 | 112.52 | 120.90 |
| 1 | AA | 505 | A | C5-C6-N6 | -5.24 | 119.51 | 123.70 |
| 53 | B5 | 665 | A | O4'-C1'-N9 | 5.24 | 112.39 | 108.20 |
| 53 | B5 | 1776 | G | O4'-C1'-N9 | 5.24 | 112.39 | 108.20 |
| 53 | B5 | 1900 | A | C4-C5-C6 | 5.24 | 119.62 | 117.00 |
| 53 | B5 | 1921 | A | C5-C6-N1 | -5.24 | 115.08 | 117.70 |
| 53 | B5 | 2113 | A | C5-C6-N6 | -5.24 | 119.51 | 123.70 |
| 53 | B5 | 2562 | G | O4'-C1'-N9 | 5.24 | 112.39 | 108.20 |
| 1 | AA | 164 | A | O4'-C1'-N9 | 5.23 | 112.39 | 108.20 |
| 1 | AA | 707 | A | C5-C6-N6 | -5.23 | 119.51 | 123.70 |
| 1 | AA | 1668 | G | C5-C6-O6 | -5.23 | 125.46 | 128.60 |
| 53 | B5 | 1756 | C | N3-C4-N4 | 5.23 | 121.66 | 118.00 |
| 53 | B5 | 2888 | U | O4'-C1'-N1 | 5.23 | 112.39 | 108.20 |
| 1 | AA | 1184 | G | C5-C6-O6 | -5.23 | 125.46 | 128.60 |
| 1 | AA | 1419 | A | C4-C5-C6 | 5.23 | 119.62 | 117.00 |
| 53 | B5 | 183 | G | O4'-C1'-N9 | 5.23 | 112.39 | 108.20 |
| 53 | B5 | 523 | A | O4'-C1'-N9 | 5.23 | 112.39 | 108.20 |
| 53 | B5 | 614 | C | N3-C4-N4 | 5.23 | 121.66 | 118.00 |
| 53 | B5 | 1002 | A | O4'-C1'-N9 | 5.23 | 112.39 | 108.20 |
| 53 | B5 | 2198 | A | P-O3'-C3' | 5.23 | 125.98 | 119.70 |
| 53 | B5 | 2458 | A | O4'-C1'-N9 | 5.23 | 112.39 | 108.20 |
| 53 | B5 | 2711 | C | N3-C4-N4 | 5.23 | 121.66 | 118.00 |
| 53 | B5 | 3183 | A | O4'-C1'-N9 | 5.23 | 112.38 | 108.20 |
| 1 | AA | 1030 | U | O4'-C1'-N1 | 5.23 | 112.38 | 108.20 |
| 52 | B4 | 75 | G | C5-C6-O6 | -5.23 | 125.46 | 128.60 |
| 53 | B5 | 2155 | G | C5-C6-O6 | -5.23 | 125.46 | 128.60 |
| 53 | B5 | 3238 | G | C5-C6-O6 | -5.23 | 125.46 | 128.60 |
| 1 | AA | 685 | A | O4'-C1'-N9 | 5.23 | 112.38 | 108.20 |
| 1 | AA | 687 | G | N1-C6-O6 | 5.23 | 123.04 | 119.90 |
| 1 | AA | 966 | A | C5-C6-N6 | -5.23 | 119.52 | 123.70 |
| 1 | AA | 1024 | A | O4'-C1'-N9 | 5.23 | 112.38 | 108.20 |
| 1 | AA | 1223 | A | O4'-C1'-N9 | 5.23 | 112.38 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 417 | A | C5-C6-N6 | -5.23 | 119.52 | 123.70 |
| 53 | B5 | 1203 | A | O4'-C1'-N9 | 5.23 | 112.38 | 108.20 |
| 53 | B5 | 2418 | G | C5-C6-O6 | -5.23 | 125.46 | 128.60 |
| 53 | B5 | 2811 | A | C4-C5-C6 | 5.23 | 119.61 | 117.00 |
| 53 | B5 | 3202 | G | O4'-C1'-N9 | 5.23 | 112.38 | 108.20 |
| 1 | AA | 440 | U | O4'-C1'-N1 | 5.23 | 112.38 | 108.20 |
| 53 | B5 | 1697 | A | C5-C6-N6 | -5.23 | 119.52 | 123.70 |
| 53 | B5 | 2837 | A | C4-C5-C6 | 5.23 | 119.61 | 117.00 |
| 1 | AA | 80 | A | O4'-C1'-N9 | 5.22 | 112.38 | 108.20 |
| 1 | AA | 1173 | G | O4'-C1'-N9 | 5.22 | 112.38 | 108.20 |
| 41 | BQ | 14 | MET | CG-SD-CE | -5.22 | 91.84 | 100.20 |
| 53 | B5 | 402 | A | C4-C5-C6 | 5.22 | 119.61 | 117.00 |
| 53 | B5 | 1491 | A | C4-C5-C6 | 5.22 | 119.61 | 117.00 |
| 53 | B5 | 1603 | A | C4-C5-C6 | 5.22 | 119.61 | 117.00 |
| 53 | B5 | 2325 | G | O4'-C1'-N9 | 5.22 | 112.38 | 108.20 |
| 53 | B5 | 2452 | G | O4'-C1'-N9 | 5.22 | 112.38 | 108.20 |
| 53 | B5 | 3126 | C | C5'-C4'-O4' | 5.22 | 115.37 | 109.10 |
| 53 | B5 | 3200 | G | O4'-C1'-N9 | 5.22 | 112.38 | 108.20 |
| 53 | B5 | 3322 | A | C4-C5-C6 | 5.22 | 119.61 | 117.00 |
| 1 | AA | 707 | A | O4'-C1'-N9 | 5.22 | 112.38 | 108.20 |
| 1 | AA | 1521 | G | C4-N9-C1' | 5.22 | 133.29 | 126.50 |
| 1 | AA | 1548 | A | C1'-O4'-C4' | -5.22 | 105.72 | 109.90 |
| 52 | B4 | 92 | A | O4'-C1'-N9 | 5.22 | 112.38 | 108.20 |
| 53 | B5 | 967 | A | O4'-C1'-N9 | 5.22 | 112.38 | 108.20 |
| 53 | B5 | 995 | G | C5-C6-O6 | -5.22 | 125.47 | 128.60 |
| 53 | B5 | 1595 | U | P-O3'-C3' | 5.22 | 125.97 | 119.70 |
| 53 | B5 | 2667 | A | O4'-C1'-N9 | 5.22 | 112.38 | 108.20 |
| 1 | AA | 1303 | C | N3-C4-N4 | 5.22 | 121.66 | 118.00 |
| 19 | A7 | 70 | C | N3-C4-N4 | -5.22 | 114.34 | 118.00 |
| 53 | B5 | 920 | A | C4-C5-C6 | 5.22 | 119.61 | 117.00 |
| 53 | B5 | 1245 | A | C4-C5-C6 | 5.22 | 119.61 | 117.00 |
| 53 | B5 | 2925 | C | N3-C4-N4 | 5.22 | 121.66 | 118.00 |
| 53 | B5 | 3099 | C | C2-N1-C1' | 5.22 | 124.54 | 118.80 |
| 1 | AA | 823 | G | C5-C6-O6 | -5.22 | 125.47 | 128.60 |
| 1 | AA | 937 | G | O4'-C1'-N9 | 5.22 | 112.38 | 108.20 |
| 1 | AA | 1146 | G | C5-C6-O6 | -5.22 | 125.47 | 128.60 |
| 1 | AA | 1380 | G | C5-C6-O6 | -5.22 | 125.47 | 128.60 |
| 12 | AM | 85 | PHE | CB-CG-CD2 | -5.22 | 117.15 | 120.80 |
| 52 | B4 | 140 | G | C5-C6-O6 | -5.22 | 125.47 | 128.60 |
| 53 | B5 | 256 | G | C5-C6-O6 | -5.22 | 125.47 | 128.60 |
| 53 | B5 | 917 | A | C4-C5-C6 | 5.22 | 119.61 | 117.00 |
| 53 | B5 | 2215 | A | C5-C6-N6 | -5.22 | 119.53 | 123.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 2527 | G | C5-C6-O6 | -5.22 | 125.47 | 128.60 |
| 53 | B5 | 2926 | A | C4-C5-C6 | 5.22 | 119.61 | 117.00 |
| 53 | B5 | 3170 | A | C4-C5-C6 | 5.22 | 119.61 | 117.00 |
| 1 | AA | 906 | A | O4'-C1'-N9 | 5.22 | 112.37 | 108.20 |
| 19 | A7 | 18 | G | C5-C6-O6 | 5.22 | 131.73 | 128.60 |
| 19 | A7 | 51 | G | C4-C5-N7 | -5.22 | 108.71 | 110.80 |
| 53 | B5 | 632 | G | C5-C6-O6 | -5.22 | 125.47 | 128.60 |
| 53 | B5 | 1085 | A | C5-C6-N6 | -5.22 | 119.53 | 123.70 |
| 53 | B5 | 1647 | A | C4-C5-C6 | 5.22 | 119.61 | 117.00 |
| 1 | AA | 344 | A | O4'-C1'-N9 | 5.22 | 112.37 | 108.20 |
| 1 | AA | 780 | A | O4'-C1'-N9 | 5.22 | 112.37 | 108.20 |
| 1 | AA | 1073 | A | C4-C5-C6 | 5.22 | 119.61 | 117.00 |
| 1 | AA | 1160 | A | C5-C6-N1 | -5.22 | 115.09 | 117.70 |
| 19 | A7 | 66 | A | C3'-C2'-C1' | 5.22 | 105.67 | 101.50 |
| 38 | BN | 60 | PHE | CB-CG-CD2 | -5.22 | 117.15 | 120.80 |
| 53 | B5 | 259 | C | N3-C4-C5 | -5.22 | 119.81 | 121.90 |
| 53 | B5 | 841 | A | O4'-C1'-N9 | 5.22 | 112.37 | 108.20 |
| 53 | B5 | 925 | A | C4-C5-C6 | 5.22 | 119.61 | 117.00 |
| 53 | B5 | 1106 | G | C5-C6-O6 | -5.22 | 125.47 | 128.60 |
| 53 | B5 | 1176 | C | O4'-C1'-N1 | 5.22 | 112.37 | 108.20 |
| 53 | B5 | 2564 | G | O4'-C1'-N9 | 5.22 | 112.37 | 108.20 |
| 53 | B5 | 2769 | A | C5-C6-N1 | -5.22 | 115.09 | 117.70 |
| 53 | B5 | 189 | G | P-O3'-C3' | 5.21 | 125.96 | 119.70 |
| 53 | B5 | 965 | A | C4-C5-C6 | 5.21 | 119.61 | 117.00 |
| 53 | B5 | 1418 | A | O4'-C1'-N9 | 5.21 | 112.37 | 108.20 |
| 53 | B5 | 2733 | A | O4'-C1'-N9 | 5.21 | 112.37 | 108.20 |
| 53 | B5 | 2752 | U | O4'-C1'-N1 | 5.21 | 112.37 | 108.20 |
| 53 | B5 | 2993 | G | O4'-C1'-N9 | 5.21 | 112.37 | 108.20 |
| 53 | B5 | 3391 | A | O4'-C1'-N9 | 5.21 | 112.37 | 108.20 |
| 1 | AA | 1084 | A | O4'-C1'-N9 | 5.21 | 112.37 | 108.20 |
| 51 | B3 | 112 | G | C5-C6-O6 | -5.21 | 125.47 | 128.60 |
| 1 | AA | 1155 | C | N3-C4-N4 | 5.21 | 121.65 | 118.00 |
| 1 | AA | 1761 | A | C4-C5-C6 | 5.21 | 119.61 | 117.00 |
| 51 | B3 | 92 | A | O4'-C1'-N9 | 5.21 | 112.37 | 108.20 |
| 52 | B4 | 120 | C | N3-C4-N4 | 5.21 | 121.65 | 118.00 |
| 53 | B5 | 1532 | C | N3-C4-N4 | 5.21 | 121.65 | 118.00 |
| 53 | B5 | 1805 | C | O4'-C1'-N1 | 5.21 | 112.37 | 108.20 |
| 53 | B5 | 1893 | A | C5-C6-N6 | -5.21 | 119.53 | 123.70 |
| 53 | B5 | 2256 | A | C5-C6-N6 | -5.21 | 119.53 | 123.70 |
| 1 | AA | 67 | A | O4'-C1'-N9 | 5.21 | 112.37 | 108.20 |
| 53 | B5 | 39 | A | C5-C6-N1 | -5.21 | 115.09 | 117.70 |
| 53 | B5 | 2770 | G | O4'-C1'-N9 | 5.21 | 112.37 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1 | AA | 189 | C | N3-C4-N4 | 5.21 | 121.65 | 118.00 |
| 1 | AA | 814 | A | O4'-C1'-N9 | 5.21 | 112.37 | 108.20 |
| 1 | AA | 1233 | G | C5-C6-O6 | -5.21 | 125.47 | 128.60 |
| 1 | AA | 1716 | G | C5-C6-O6 | -5.21 | 125.47 | 128.60 |
| 19 | A7 | 67 | A | C5-C6-N6 | 5.21 | 127.87 | 123.70 |
| 53 | B5 | 222 | A | C5-C6-N6 | -5.21 | 119.53 | 123.70 |
| 53 | B5 | 783 | A | C4-C5-C6 | 5.21 | 119.61 | 117.00 |
| 53 | B5 | 1521 | G | O4'-C1'-N9 | 5.21 | 112.37 | 108.20 |
| 53 | B5 | 1538 | G | O4'-C1'-N9 | 5.21 | 112.37 | 108.20 |
| 1 | AA | 264 | G | O4'-C1'-N9 | 5.21 | 112.36 | 108.20 |
| 1 | AA | 576 | G | O4'-C1'-N9 | 5.21 | 112.37 | 108.20 |
| 1 | AA | 1520 | U | C5'-C4'-C3' | -5.21 | 107.67 | 116.00 |
| 53 | B5 | 18 | G | C5-C6-O6 | -5.21 | 125.48 | 128.60 |
| 53 | B5 | 809 | G | O4'-C1'-N9 | 5.21 | 112.36 | 108.20 |
| 53 | B5 | 1126 | G | C5-C6-O6 | -5.21 | 125.48 | 128.60 |
| 53 | B5 | 1426 | C | N3-C4-C5 | -5.21 | 119.82 | 121.90 |
| 53 | B5 | 2175 | U | O4'-C1'-N1 | 5.21 | 112.37 | 108.20 |
| 1 | AA | 68 | A | C4-C5-C6 | 5.21 | 119.60 | 117.00 |
| 1 | AA | 1717 | A | O4'-C1'-N9 | 5.20 | 112.36 | 108.20 |
| 53 | B5 | 51 | A | O4'-C1'-N9 | 5.20 | 112.36 | 108.20 |
| 53 | B5 | 383 | G | O4'-C1'-N9 | 5.20 | 112.36 | 108.20 |
| 53 | B5 | 588 | G | C5-C6-O6 | -5.20 | 125.48 | 128.60 |
| 53 | B5 | 1075 | A | C5-C6-N6 | -5.20 | 119.54 | 123.70 |
| 53 | B5 | 1268 | G | C5-C6-O6 | -5.20 | 125.48 | 128.60 |
| 53 | B5 | 1618 | G | O4'-C1'-N9 | 5.20 | 112.36 | 108.20 |
| 53 | B5 | 2442 | G | C5-C6-O6 | -5.20 | 125.48 | 128.60 |
| 53 | B5 | 2539 | A | C5-C6-N6 | -5.20 | 119.54 | 123.70 |
| 53 | B5 | 3193 | C | N3-C4-C5 | -5.20 | 119.82 | 121.90 |
| 1 | AA | 1028 | U | O4'-C1'-N1 | 5.20 | 112.36 | 108.20 |
| 1 | AA | 1503 | A | O4'-C1'-N9 | 5.20 | 112.36 | 108.20 |
| 8 | AI | 138 | PHE | CB-CG-CD2 | 5.20 | 124.44 | 120.80 |
| 19 | A7 | 73 | A | N9-C1'-C2' | -5.20 | 106.28 | 112.00 |
| 53 | B5 | 1841 | A | O4'-C1'-N9 | 5.20 | 112.36 | 108.20 |
| 19 | A7 | 25 | C | C3'-C2'-C1' | -5.20 | 97.34 | 101.50 |
| 19 | A7 | 57 | G | N3-C2-N2 | -5.20 | 116.26 | 119.90 |
| 53 | B5 | 172 | G | N1-C6-O6 | 5.20 | 123.02 | 119.90 |
| 53 | B5 | 791 | A | C4-C5-C6 | 5.20 | 119.60 | 117.00 |
| 53 | B5 | 830 | A | C5-C6-N6 | -5.20 | 119.54 | 123.70 |
| 53 | B5 | 1254 | C | N3-C4-N4 | 5.20 | 121.64 | 118.00 |
| 53 | B5 | 1754 | G | C5-C6-O6 | -5.20 | 125.48 | 128.60 |
| 53 | B5 | 2676 | A | C4-C5-C6 | 5.20 | 119.60 | 117.00 |
| 53 | B5 | 2697 | A | O4'-C1'-N9 | 5.20 | 112.36 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 3073 | A | C5-C6-N1 | -5.20 | 115.10 | 117.70 |
| 1 | AA | 1588 | G | O4'-C1'-N9 | 5.20 | 112.36 | 108.20 |
| 53 | B5 | 80 | G | C5-C6-O6 | -5.20 | 125.48 | 128.60 |
| 53 | B5 | 1370 | G | C5-C6-O6 | -5.20 | 125.48 | 128.60 |
| 53 | B5 | 2903 | A | C5-C6-N6 | -5.20 | 119.54 | 123.70 |
| 53 | B5 | 3029 | A | O4'-C1'-N9 | 5.20 | 112.36 | 108.20 |
| 53 | B5 | 2290 | C | N3-C4-C5 | -5.20 | 119.82 | 121.90 |
| 1 | AA | 240 | U | C6-N1-C1' | -5.20 | 113.92 | 121.20 |
| 1 | AA | 336 | G | C5-C6-O6 | -5.20 | 125.48 | 128.60 |
| 1 | AA | 446 | A | O4'-C1'-N9 | 5.20 | 112.36 | 108.20 |
| 53 | B5 | 1149 | G | P-O3'-C3' | 5.20 | 125.93 | 119.70 |
| 53 | B5 | 1787 | A | C4-C5-C6 | 5.20 | 119.60 | 117.00 |
| 53 | B5 | 2929 | C | N3-C4-N4 | 5.20 | 121.64 | 118.00 |
| 1 | AA | 401 | A | C4-C5-C6 | 5.19 | 119.60 | 117.00 |
| 53 | B5 | 39 | A | O4'-C1'-N9 | 5.19 | 112.36 | 108.20 |
| 53 | B5 | 651 | G | P-O3'-C3' | -5.19 | 113.47 | 119.70 |
| 53 | B5 | 2489 | C | N3-C4-C5 | -5.19 | 119.82 | 121.90 |
| 53 | B5 | 2745 | G | C5-C6-O6 | -5.19 | 125.48 | 128.60 |
| 53 | B5 | 2801 | A | C4-C5-C6 | 5.19 | 119.60 | 117.00 |
| 1 | AA | 1273 | G | P-O3'-C3' | 5.19 | 125.93 | 119.70 |
| 1 | AA | 1666 | G | C5-C6-O6 | -5.19 | 125.48 | 128.60 |
| 53 | B5 | 61 | A | P-O3'-C3' | 5.19 | 125.93 | 119.70 |
| 53 | B5 | 1132 | C | N3-C4-N4 | 5.19 | 121.63 | 118.00 |
| 53 | B5 | 1417 | G | C5-C6-O6 | -5.19 | 125.48 | 128.60 |
| 53 | B5 | 1759 | C | N3-C4-N4 | 5.19 | 121.64 | 118.00 |
| 53 | B5 | 2367 | A | C5-C6-N6 | -5.19 | 119.55 | 123.70 |
| 53 | B5 | 2674 | A | O4'-C1'-N9 | 5.19 | 112.35 | 108.20 |
| 53 | B5 | 3362 | A | O4'-C1'-N9 | 5.19 | 112.35 | 108.20 |
| 1 | AA | 82 | U | O4'-C1'-N1 | 5.19 | 112.35 | 108.20 |
| 1 | AA | 386 | G | O4'-C1'-N9 | 5.19 | 112.35 | 108.20 |
| 1 | AA | 407 | A | C5-C6-N1 | -5.19 | 115.11 | 117.70 |
| 1 | AA | 1217 | A | O4'-C1'-N9 | 5.19 | 112.35 | 108.20 |
| 1 | AA | 1592 | G | C5-C6-O6 | -5.19 | 125.49 | 128.60 |
| 19 | A7 | 56 | C | N3-C4-C5 | -5.19 | 119.82 | 121.90 |
| 51 | B3 | 34 | C | N3-C4-N4 | 5.19 | 121.63 | 118.00 |
| 53 | B5 | 247 | C | N3-C4-C5 | -5.19 | 119.82 | 121.90 |
| 53 | B5 | 1145 | G | N1-C6-O6 | 5.19 | 123.01 | 119.90 |
| 53 | B5 | 1155 | C | N3-C4-C5 | -5.19 | 119.82 | 121.90 |
| 53 | B5 | 1504 | A | C4-C5-C6 | 5.19 | 119.59 | 117.00 |
| 53 | B5 | 2116 | G | O4'-C1'-N9 | 5.19 | 112.35 | 108.20 |
| 53 | B5 | 2152 | A | O4'-C1'-N9 | 5.19 | 112.35 | 108.20 |
| 53 | B5 | 1793 | C | N3-C4-N4 | 5.19 | 121.63 | 118.00 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 2559 | A | C4-C5-C6 | 5.19 | 119.59 | 117.00 |
| 1 | AA | 105 | A | P-O3'-C3' | 5.19 | 125.92 | 119.70 |
| 1 | AA | 187 | G | O4'-C1'-N9 | 5.19 | 112.35 | 108.20 |
| 53 | B5 | 1647 | A | O4'-C1'-N9 | 5.19 | 112.35 | 108.20 |
| 53 | B5 | 2813 | A | O4'-C1'-N9 | 5.19 | 112.35 | 108.20 |
| 1 | AA | 1285 | G | C5-C6-O6 | -5.19 | 125.49 | 128.60 |
| 19 | A7 | 74 | C | C5-C6-N1 | -5.19 | 118.41 | 121.00 |
| 1 | AA | 417 | A | C4-C5-C6 | 5.18 | 119.59 | 117.00 |
| 1 | AA | 938 | A | C4-C5-C6 | 5.18 | 119.59 | 117.00 |
| 1 | AA | 1398 | A | C4-C5-C6 | 5.18 | 119.59 | 117.00 |
| 19 | A7 | 3 | G | C6-C5-N7 | -5.18 | 127.29 | 130.40 |
| 19 | A7 | 69 | U | C4-C5-C6 | 5.18 | 122.81 | 119.70 |
| 24 | B9 | 36 | ARG | NE-CZ-NH1 | 5.18 | 122.89 | 120.30 |
| 52 | B4 | 89 | A | C5-C6-N6 | -5.18 | 119.55 | 123.70 |
| 53 | B5 | 77 | A | O4'-C1'-N9 | 5.18 | 112.35 | 108.20 |
| 53 | B5 | 100 | A | C5-C6-N6 | -5.18 | 119.55 | 123.70 |
| 53 | B5 | 621 | A | O4'-C1'-N9 | 5.18 | 112.35 | 108.20 |
| 53 | B5 | 2253 | G | C5-C6-O6 | -5.18 | 125.49 | 128.60 |
| 53 | B5 | 2864 | A | C5'-C4'-O4' | 5.18 | 115.32 | 109.10 |
| 53 | B5 | 3021 | A | C5-C6-N1 | -5.18 | 115.11 | 117.70 |
| 1 | AA | 301 | A | C4-C5-C6 | 5.18 | 119.59 | 117.00 |
| 1 | AA | 901 | G | O4'-C1'-N9 | 5.18 | 112.34 | 108.20 |
| 53 | B5 | 409 | A | C5-C6-N6 | -5.18 | 119.55 | 123.70 |
| 53 | B5 | 432 | G | O4'-C1'-N9 | 5.18 | 112.35 | 108.20 |
| 53 | B5 | 1842 | A | C4-C5-C6 | 5.18 | 119.59 | 117.00 |
| 53 | B5 | 2839 | G | O4'-C1'-N9 | 5.18 | 112.35 | 108.20 |
| 1 | AA | 468 | A | C4-C5-C6 | 5.18 | 119.59 | 117.00 |
| 1 | AA | 1130 | A | C4-C5-C6 | 5.18 | 119.59 | 117.00 |
| 53 | B5 | 193 | C | N3-C4-C5 | -5.18 | 119.83 | 121.90 |
| 53 | B5 | 940 | G | O4'-C1'-N9 | 5.18 | 112.34 | 108.20 |
| 53 | B5 | 1915 | A | C5-C6-N1 | -5.18 | 115.11 | 117.70 |
| 53 | B5 | 2527 | G | O4'-C1'-N9 | 5.18 | 112.34 | 108.20 |
| 1 | AA | 68 | A | C5-C6-N6 | -5.18 | 119.56 | 123.70 |
| 1 | AA | 1415 | G | O4'-C1'-N9 | 5.18 | 112.34 | 108.20 |
| 1 | AA | 1416 | G | O4'-C1'-N9 | 5.18 | 112.34 | 108.20 |
| 1 | AA | 1422 | A | C5-C6-N6 | -5.18 | 119.56 | 123.70 |
| 52 | B4 | 52 | A | C4-C5-C6 | 5.18 | 119.59 | 117.00 |
| 53 | B5 | 102 | C | N3-C4-N4 | 5.18 | 121.62 | 118.00 |
| 53 | B5 | 787 | G | O4'-C1'-N9 | 5.18 | 112.34 | 108.20 |
| 53 | B5 | 1624 | G | O4'-C1'-N9 | 5.18 | 112.34 | 108.20 |
| 52 | B4 | 48 | A | O4'-C1'-N9 | 5.18 | 112.34 | 108.20 |
| 1 | AA | 151 | G | C5-C6-O6 | -5.18 | 125.49 | 128.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 1 | AA | 928 | A | C5-C6-N6 | -5.18 | 119.56 | 123.70 |
| 52 | B4 | 37 | A | O4'-C1'-N9 | 5.18 | 112.34 | 108.20 |
| 52 | B4 | 110 | C | N3-C4-C5 | -5.18 | 119.83 | 121.90 |
| 53 | B5 | 361 | A | O4'-C1'-N9 | 5.18 | 112.34 | 108.20 |
| 53 | B5 | 2540 | A | C5-C6-N6 | -5.18 | 119.56 | 123.70 |
| 53 | B5 | 2691 | A | O4'-C1'-N9 | 5.18 | 112.34 | 108.20 |
| 1 | AA | 1581 | A | C4-C5-C6 | 5.17 | 119.59 | 117.00 |
| 53 | B5 | 217 | U | P-O3'-C3' | 5.17 | 125.91 | 119.70 |
| 53 | B5 | 573 | C | N3-C4-C5 | -5.17 | 119.83 | 121.90 |
| 53 | B5 | 639 | G | O4'-C1'-N9 | 5.17 | 112.34 | 108.20 |
| 53 | B5 | 2961 | G | O4'-C1'-N9 | 5.17 | 112.34 | 108.20 |
| 1 | AA | 671 | G | C5-C6-O6 | -5.17 | 125.50 | 128.60 |
| 1 | AA | 1226 | A | O4'-C1'-N9 | 5.17 | 112.34 | 108.20 |
| 53 | B5 | 194 | U | O4'-C1'-N1 | 5.17 | 112.34 | 108.20 |
| 53 | B5 | 1319 | G | O4'-C1'-N9 | 5.17 | 112.34 | 108.20 |
| 1 | AA | 551 | G | C5-C6-O6 | -5.17 | 125.50 | 128.60 |
| 1 | AA | 820 | U | O4'-C1'-N1 | 5.17 | 112.34 | 108.20 |
| 1 | AA | 1136 | A | C4-C5-C6 | 5.17 | 119.59 | 117.00 |
| 1 | AA | 1730 | A | O4'-C1'-N9 | 5.17 | 112.34 | 108.20 |
| 52 | B4 | 43 | A | C5-C6-N6 | -5.17 | 119.56 | 123.70 |
| 53 | B5 | 1469 | C | C6-N1-C1' | -5.17 | 114.59 | 120.80 |
| 53 | B5 | 2122 | G | N1-C6-O6 | 5.17 | 123.00 | 119.90 |
| 53 | B5 | 2330 | C | N3-C4-C5 | -5.17 | 119.83 | 121.90 |
| 1 | AA | 660 | G | O4'-C1'-N9 | 5.17 | 112.34 | 108.20 |
| 19 | A7 | 14 | A | C6-N1-C2 | -5.17 | 115.50 | 118.60 |
| 53 | B5 | 806 | A | C4-C5-C6 | 5.17 | 119.58 | 117.00 |
| 53 | B5 | 2120 | A | C4-C5-C6 | 5.17 | 119.58 | 117.00 |
| 1 | AA | 496 | G | C5-C6-O6 | -5.17 | 125.50 | 128.60 |
| 19 | A7 | 73 | A | C4-C5-C6 | -5.17 | 114.42 | 117.00 |
| 53 | B5 | 202 | G | N1-C6-O6 | 5.17 | 123.00 | 119.90 |
| 53 | B5 | 750 | G | O4'-C1'-N9 | 5.17 | 112.33 | 108.20 |
| 53 | B5 | 2419 | A | C5-C6-N6 | -5.17 | 119.56 | 123.70 |
| 53 | B5 | 2682 | C | N3-C4-N4 | 5.17 | 121.62 | 118.00 |
| 53 | B5 | 2750 | U | O4'-C1'-N1 | 5.17 | 112.33 | 108.20 |
| 1 | AA | 19 | A | O4'-C1'-N9 | 5.17 | 112.33 | 108.20 |
| 1 | AA | 571 | G | O4'-C1'-N9 | 5.17 | 112.33 | 108.20 |
| 1 | AA | 895 | G | C5-C6-O6 | -5.17 | 125.50 | 128.60 |
| 1 | AA | 949 | C | N3-C4-N4 | 5.17 | 121.62 | 118.00 |
| 1 | AA | 1653 | A | C4-C5-C6 | 5.17 | 119.58 | 117.00 |
| 51 | B3 | 86 | G | C5-C6-O6 | -5.17 | 125.50 | 128.60 |
| 52 | B4 | 40 | A | C5-C6-N6 | -5.17 | 119.57 | 123.70 |
| 52 | B4 | 69 | U | P-O5'-C5' | -5.17 | 112.63 | 120.90 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 12 | A | C5-C6-N6 | -5.17 | 119.57 | 123.70 |
| 53 | B5 | 1787 | A | O4'-C1'-N9 | 5.17 | 112.33 | 108.20 |
| 53 | B5 | 1915 | A | O4'-C1'-N9 | 5.17 | 112.33 | 108.20 |
| 53 | B5 | 3004 | C | N3-C4-C5 | -5.17 | 119.83 | 121.90 |
| 53 | B5 | 3366 | G | O4'-C1'-N9 | 5.17 | 112.33 | 108.20 |
| 1 | AA | 1630 | C | O5'-P-OP1 | 5.16 | 116.90 | 110.70 |
| 53 | B5 | 100 | A | O4'-C1'-N9 | 5.16 | 112.33 | 108.20 |
| 53 | B5 | 910 | G | O4'-C1'-N9 | 5.16 | 112.33 | 108.20 |
| 53 | B5 | 1383 | G | O4'-C1'-N9 | 5.16 | 112.33 | 108.20 |
| 53 | B5 | 1390 | A | O4'-C1'-N9 | 5.16 | 112.33 | 108.20 |
| 53 | B5 | 2256 | A | O4'-C1'-N9 | 5.16 | 112.33 | 108.20 |
| 53 | B5 | 2649 | A | O4'-C1'-N9 | 5.16 | 112.33 | 108.20 |
| 53 | B5 | 2958 | A | C5-C6-N6 | -5.16 | 119.57 | 123.70 |
| 53 | B5 | 1757 | A | C4-C5-C6 | 5.16 | 119.58 | 117.00 |
| 1 | AA | 95 | G | C5-C6-O6 | -5.16 | 125.50 | 128.60 |
| 1 | AA | 1071 | G | O4'-C1'-N9 | 5.16 | 112.33 | 108.20 |
| 52 | B4 | 24 | G | O4'-C1'-N9 | 5.16 | 112.33 | 108.20 |
| 52 | B4 | 123 | G | C5-C6-O6 | -5.16 | 125.50 | 128.60 |
| 53 | B5 | 763 | G | C5-C6-O6 | -5.16 | 125.50 | 128.60 |
| 53 | B5 | 1203 | A | C4-C5-C6 | 5.16 | 119.58 | 117.00 |
| 53 | B5 | 1496 | C | C2-N1-C1' | 5.16 | 124.48 | 118.80 |
| 53 | B5 | 2178 | A | C4-C5-C6 | 5.16 | 119.58 | 117.00 |
| 53 | B5 | 2219 | A | C4-C5-C6 | 5.16 | 119.58 | 117.00 |
| 53 | B5 | 2357 | A | C5-C6-N6 | -5.16 | 119.57 | 123.70 |
| 53 | B5 | 2490 | C | N3-C4-N4 | 5.16 | 121.61 | 118.00 |
| 1 | AA | 109 | G | O4'-C1'-N9 | 5.16 | 112.33 | 108.20 |
| 1 | AA | 677 | G | C5-C6-O6 | -5.16 | 125.50 | 128.60 |
| 53 | B5 | 285 | A | C4-C5-C6 | 5.16 | 119.58 | 117.00 |
| 53 | B5 | 418 | A | C5-C6-N6 | -5.16 | 119.57 | 123.70 |
| 53 | B5 | 1776 | G | P-O3'-C3' | 5.16 | 125.89 | 119.70 |
| 52 | B4 | 14 | C | N3-C4-C5 | -5.16 | 119.84 | 121.90 |
| 53 | B5 | 2637 | A | O4'-C1'-N9 | 5.16 | 112.33 | 108.20 |
| 1 | AA | 23 | G | C5-C6-O6 | -5.16 | 125.51 | 128.60 |
| 1 | AA | 273 | G | O4'-C1'-N9 | 5.16 | 112.32 | 108.20 |
| 1 | AA | 962 | A | O4'-C1'-N9 | 5.16 | 112.32 | 108.20 |
| 1 | AA | 1451 | G | O4'-C1'-N9 | 5.16 | 112.33 | 108.20 |
| 53 | B5 | 1013 | G | O4'-C1'-N9 | 5.16 | 112.32 | 108.20 |
| 53 | B5 | 1514 | G | C5-C6-O6 | -5.16 | 125.51 | 128.60 |
| 53 | B5 | 1901 | A | C4-C5-C6 | 5.16 | 119.58 | 117.00 |
| 53 | B5 | 2353 | G | O4'-C1'-N9 | 5.16 | 112.33 | 108.20 |
| 53 | B5 | 2424 | A | O4'-C1'-N9 | 5.16 | 112.32 | 108.20 |
| 53 | B5 | 2640 | A | C4-C5-C6 | 5.16 | 119.58 | 117.00 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 3275 | A | O4'-C1'-N9 | 5.16 | 112.32 | 108.20 |
| 1 | AA | 1761 | A | C5-C6-N6 | -5.15 | 119.58 | 123.70 |
| 53 | B5 | 70 | A | C5-C6-N6 | -5.15 | 119.58 | 123.70 |
| 53 | B5 | 157 | A | C4-C5-C6 | 5.15 | 119.58 | 117.00 |
| 53 | B5 | 593 | A | O4'-C1'-N9 | 5.15 | 112.32 | 108.20 |
| 53 | B5 | 695 | C | N3-C4-C5 | -5.15 | 119.84 | 121.90 |
| 53 | B5 | 1704 | A | C5-C6-N6 | -5.15 | 119.58 | 123.70 |
| 53 | B5 | 1787 | A | C5-C6-N6 | -5.15 | 119.58 | 123.70 |
| 1 | AA | 730 | G | O4'-C1'-N9 | 5.15 | 112.32 | 108.20 |
| 1 | AA | 1217 | A | C5-C6-N6 | -5.15 | 119.58 | 123.70 |
| 53 | B5 | 131 | C | N3-C4-N4 | 5.15 | 121.61 | 118.00 |
| 53 | B5 | 503 | C | N3-C4-N4 | 5.15 | 121.61 | 118.00 |
| 53 | B5 | 618 | C | N3-C4-C5 | -5.15 | 119.84 | 121.90 |
| 53 | B5 | 621 | A | C4-C5-C6 | 5.15 | 119.58 | 117.00 |
| 53 | B5 | 697 | A | O4'-C1'-N9 | 5.15 | 112.32 | 108.20 |
| 53 | B5 | 1676 | A | C5-C6-N6 | -5.15 | 119.58 | 123.70 |
| 53 | B5 | 3264 | G | O4'-C1'-N9 | 5.15 | 112.32 | 108.20 |
| 1 | AA | 85 | A | O4'-C1'-N9 | 5.15 | 112.32 | 108.20 |
| 1 | AA | 1006 | C | N3-C4-N4 | 5.15 | 121.61 | 118.00 |
| 1 | AA | 1260 | G | C5-C6-O6 | -5.15 | 125.51 | 128.60 |
| 51 | B3 | 46 | A | C4-C5-C6 | 5.15 | 119.58 | 117.00 |
| 53 | B5 | 1285 | G | O4'-C1'-N9 | 5.15 | 112.32 | 108.20 |
| 53 | B5 | 2947 | G | C5-C6-O6 | -5.15 | 125.51 | 128.60 |
| 1 | AA | 977 | A | O4'-C1'-N9 | 5.15 | 112.32 | 108.20 |
| 1 | AA | 1484 | G | C5-C6-O6 | -5.15 | 125.51 | 128.60 |
| 53 | B5 | 1454 | A | C4-C5-C6 | 5.15 | 119.57 | 117.00 |
| 53 | B5 | 3253 | G | C5-C6-O6 | -5.15 | 125.51 | 128.60 |
| 53 | B5 | 810 | A | O4'-C1'-N9 | 5.15 | 112.32 | 108.20 |
| 53 | B5 | 1450 | G | O4'-C1'-N9 | 5.15 | 112.32 | 108.20 |
| 53 | B5 | 1872 | C | N3-C4-C5 | -5.15 | 119.84 | 121.90 |
| 53 | B5 | 2398 | A | C4-C5-C6 | 5.15 | 119.57 | 117.00 |
| 53 | B5 | 2740 | A | C4-C5-C6 | 5.15 | 119.57 | 117.00 |
| 1 | AA | 864 | U | O3'-P-O5' | 5.14 | 113.78 | 104.00 |
| 1 | AA | 903 | G | C5-C6-O6 | -5.14 | 125.51 | 128.60 |
| 1 | AA | 1475 | G | O4'-C1'-N9 | 5.14 | 112.32 | 108.20 |
| 19 | A7 | 69 | U | C5-C6-N1 | -5.14 | 120.13 | 122.70 |
| 53 | B5 | 1825 | G | O4'-C1'-N9 | 5.14 | 112.31 | 108.20 |
| 53 | B5 | 1847 | A | C4-C5-C6 | 5.14 | 119.57 | 117.00 |
| 53 | B5 | 1918 | C | N3-C4-C5 | -5.14 | 119.84 | 121.90 |
| 53 | B5 | 2689 | A | C4-C5-C6 | 5.14 | 119.57 | 117.00 |
| 53 | B5 | 3148 | U | P-O3'-C3' | 5.14 | 125.87 | 119.70 |
| 1 | AA | 529 | A | O4'-C1'-N9 | 5.14 | 112.31 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1 | AA | 565 | C | N3-C4-N4 | 5.14 | 121.60 | 118.00 |
| 53 | B5 | 166 | C | N3-C4-N4 | 5.14 | 121.60 | 118.00 |
| 53 | B5 | 1120 | A | O4'-C1'-N9 | 5.14 | 112.31 | 108.20 |
| 53 | B5 | 1517 | G | C5-C6-O6 | -5.14 | 125.51 | 128.60 |
| 53 | B5 | 2437 | G | C5-C6-O6 | -5.14 | 125.51 | 128.60 |
| 53 | B5 | 2456 | A | O4'-C1'-N9 | 5.14 | 112.31 | 108.20 |
| 53 | B5 | 2736 | A | C4-C5-C6 | 5.14 | 119.57 | 117.00 |
| 1 | AA | 412 | A | O4'-C1'-N9 | 5.14 | 112.31 | 108.20 |
| 1 | AA | 1787 | G | O4'-C1'-N9 | 5.14 | 112.31 | 108.20 |
| 52 | B4 | 86 | U | O4'-C1'-N1 | 5.14 | 112.31 | 108.20 |
| 53 | B5 | 675 | C | N3-C4-C5 | -5.14 | 119.84 | 121.90 |
| 53 | B5 | 1089 | G | C5-C6-O6 | -5.14 | 125.52 | 128.60 |
| 1 | AA | 1663 | U | O4'-C1'-N1 | 5.14 | 112.31 | 108.20 |
| 1 | AA | 1792 | A | C4-C5-C6 | 5.14 | 119.57 | 117.00 |
| 52 | B4 | 67 | U | O4'-C1'-N1 | 5.14 | 112.31 | 108.20 |
| 53 | B5 | 961 | C | O4'-C1'-N1 | 5.14 | 112.31 | 108.20 |
| 53 | B5 | 2438 | A | O4'-C1'-N9 | 5.14 | 112.31 | 108.20 |
| 53 | B5 | 3076 | C | N3-C4-N4 | 5.14 | 121.60 | 118.00 |
| 53 | B5 | 3086 | A | C5-C6-N1 | -5.14 | 115.13 | 117.70 |
| 1 | AA | 1144 | A | O4'-C1'-N9 | 5.14 | 112.31 | 108.20 |
| 52 | B4 | 114 | G | C5-C6-O6 | -5.14 | 125.52 | 128.60 |
| 53 | B5 | 718 | G | C4-N9-C1' | 5.14 | 133.18 | 126.50 |
| 53 | B5 | 1013 | G | C5-C6-O6 | -5.14 | 125.52 | 128.60 |
| 53 | B5 | 2448 | G | N1-C6-O6 | 5.14 | 122.98 | 119.90 |
| 53 | B5 | 2568 | C | N3-C4-C5 | -5.14 | 119.84 | 121.90 |
| 53 | B5 | 2737 | C | N3-C4-N4 | 5.14 | 121.60 | 118.00 |
| 53 | B5 | 3140 | G | O4'-C1'-N9 | 5.14 | 112.31 | 108.20 |
| 1 | AA | 933 | C | O4'-C1'-N1 | 5.14 | 112.31 | 108.20 |
| 1 | AA | 940 | A | O4'-C1'-N9 | 5.14 | 112.31 | 108.20 |
| 53 | B5 | 1850 | A | O4'-C1'-N9 | 5.14 | 112.31 | 108.20 |
| 53 | B5 | 2371 | G | O4'-C1'-N9 | 5.14 | 112.31 | 108.20 |
| 1 | AA | 1362 | C | N3-C4-N4 | 5.13 | 121.59 | 118.00 |
| 53 | B5 | 2958 | A | C4-C5-C6 | 5.13 | 119.57 | 117.00 |
| 1 | AA | 484 | C | N3-C4-N4 | 5.13 | 121.59 | 118.00 |
| 1 | AA | 1593 | U | O4'-C1'-N1 | 5.13 | 112.31 | 108.20 |
| 1 | AA | 322 | G | O4'-C1'-N9 | 5.13 | 112.31 | 108.20 |
| 1 | AA | 441 | A | O4'-C1'-N9 | 5.13 | 112.31 | 108.20 |
| 1 | AA | 1089 | A | C5-C6-N6 | -5.13 | 119.59 | 123.70 |
| 1 | AA | 1462 | G | C5-C6-O6 | -5.13 | 125.52 | 128.60 |
| 1 | AA | 1676 | A | O4'-C1'-N9 | 5.13 | 112.31 | 108.20 |
| 19 | A7 | 1 | G | C5'-C4'-C3' | 5.13 | 124.21 | 116.00 |
| 53 | B5 | 1843 | C | N3-C4-C5 | -5.13 | 119.85 | 121.90 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 2120 | A | O4'-C1'-N9 | 5.13 | 112.31 | 108.20 |
| 53 | B5 | 3271 | A | O4'-C1'-N9 | 5.13 | 112.31 | 108.20 |
| 52 | B4 | 9 | A | C4-C5-C6 | 5.13 | 119.56 | 117.00 |
| 53 | B5 | 3235 | C | N3-C4-N4 | 5.13 | 121.59 | 118.00 |
| 1 | AA | 46 | A | O4'-C1'-N9 | 5.13 | 112.30 | 108.20 |
| 1 | AA | 939 | A | C4-C5-C6 | 5.13 | 119.56 | 117.00 |
| 1 | AA | 1354 | A | C5-C6-N6 | -5.13 | 119.60 | 123.70 |
| 1 | AA | 1730 | A | C4-C5-C6 | 5.13 | 119.56 | 117.00 |
| 53 | B5 | 365 | A | C5-C6-N6 | -5.13 | 119.60 | 123.70 |
| 53 | B5 | 710 | A | C4-C5-C6 | 5.13 | 119.56 | 117.00 |
| 53 | B5 | 784 | A | C5-C6-N1 | -5.13 | 115.14 | 117.70 |
| 53 | B5 | 951 | A | O4'-C1'-N9 | 5.13 | 112.30 | 108.20 |
| 53 | B5 | 2867 | C | N3-C4-C5 | -5.13 | 119.85 | 121.90 |
| 53 | B5 | 2914 | G | C5-C6-O6 | -5.13 | 125.52 | 128.60 |
| 1 | AA | 86 | A | O4'-C1'-N9 | 5.13 | 112.30 | 108.20 |
| 1 | AA | 1661 | G | O4'-C1'-N9 | 5.13 | 112.30 | 108.20 |
| 53 | B5 | 845 | G | O4'-C1'-N9 | 5.13 | 112.30 | 108.20 |
| 53 | B5 | 2580 | A | O4'-C1'-N9 | 5.13 | 112.30 | 108.20 |
| 53 | B5 | 2676 | A | C5-C6-N6 | -5.13 | 119.60 | 123.70 |
| 53 | B5 | 2963 | C | N3-C4-C5 | -5.13 | 119.85 | 121.90 |
| 1 | AA | 370 | A | C4-C5-C6 | 5.12 | 119.56 | 117.00 |
| 51 | B3 | 85 | G | C5-C6-O6 | -5.12 | 125.53 | 128.60 |
| 1 | AA | 279 | G | O4'-C1'-N9 | 5.12 | 112.30 | 108.20 |
| 1 | AA | 638 | U | O4'-C1'-N1 | 5.12 | 112.30 | 108.20 |
| 8 | AI | 142 | TYR | CA-CB-CG | -5.12 | 103.66 | 113.40 |
| 53 | B5 | 832 | G | O4'-C1'-N9 | 5.12 | 112.30 | 108.20 |
| 53 | B5 | 1656 | A | O4'-C1'-N9 | 5.12 | 112.30 | 108.20 |
| 53 | B5 | 3126 | C | N3-C4-C5 | -5.12 | 119.85 | 121.90 |
| 1 | AA | 285 | G | C5-C6-O6 | -5.12 | 125.53 | 128.60 |
| 1 | AA | 1313 | G | O4'-C1'-N9 | 5.12 | 112.30 | 108.20 |
| 1 | AA | 1464 | G | O4'-C1'-N9 | 5.12 | 112.30 | 108.20 |
| 53 | B5 | 1504 | A | C5-C6-N6 | -5.12 | 119.60 | 123.70 |
| 53 | B5 | 1670 | C | N3-C4-N4 | 5.12 | 121.58 | 118.00 |
| 53 | B5 | 2369 | G | C5-C6-O6 | -5.12 | 125.53 | 128.60 |
| 53 | B5 | 2479 | C | N3-C4-N4 | 5.12 | 121.58 | 118.00 |
| 1 | AA | 646 | C | N3-C4-N4 | 5.12 | 121.58 | 118.00 |
| 53 | B5 | 826 | G | O4'-C1'-N9 | 5.12 | 112.30 | 108.20 |
| 53 | B5 | 1085 | A | O4'-C1'-N9 | 5.12 | 112.30 | 108.20 |
| 53 | B5 | 2555 | G | C5-C6-O6 | -5.12 | 125.53 | 128.60 |
| 53 | B5 | 2956 | A | C4-C5-C6 | 5.12 | 119.56 | 117.00 |
| 1 | AA | 178 | U | O4'-C1'-N1 | 5.12 | 112.30 | 108.20 |
| 1 | AA | 534 | A | O4'-C1'-N9 | 5.12 | 112.30 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 1 | AA | 1368 | A | O4'-C1'-N9 | 5.12 | 112.30 | 108.20 |
| 1 | AA | 1473 | A | O4'-C1'-N9 | 5.12 | 112.30 | 108.20 |
| 52 | B4 | 144 | G | P-O3'-C3' | 5.12 | 125.84 | 119.70 |
| 53 | B5 | 251 | G | O4'-C1'-N9 | 5.12 | 112.29 | 108.20 |
| 53 | B5 | 603 | A | C4-C5-C6 | 5.12 | 119.56 | 117.00 |
| 53 | B5 | 1528 | G | O4'-C1'-N9 | 5.12 | 112.30 | 108.20 |
| 53 | B5 | 2961 | G | P-O3'-C3' | 5.12 | 125.84 | 119.70 |
| 1 | AA | 1078 | A | C4-C5-C6 | 5.12 | 119.56 | 117.00 |
| 53 | B5 | 435 | C | P-O3'-C3' | 5.12 | 125.84 | 119.70 |
| 53 | B5 | 975 | G | C5-C6-O6 | -5.12 | 125.53 | 128.60 |
| 53 | B5 | 1741 | A | C4-C5-C6 | 5.12 | 119.56 | 117.00 |
| 53 | B5 | 2445 | A | C5-C6-N6 | -5.12 | 119.61 | 123.70 |
| 1 | AA | 1524 | A | C5-C6-N6 | -5.12 | 119.61 | 123.70 |
| 53 | B5 | 798 | G | C5-C6-O6 | -5.12 | 125.53 | 128.60 |
| 53 | B5 | 838 | G | C5-C6-O6 | -5.12 | 125.53 | 128.60 |
| 53 | B5 | 1743 | G | C5-C6-O6 | -5.12 | 125.53 | 128.60 |
| 53 | B5 | 2421 | U | P-O3'-C3' | 5.12 | 125.84 | 119.70 |
| 53 | B5 | 2706 | G | C5-C6-O6 | -5.12 | 125.53 | 128.60 |
| 53 | B5 | 2741 | C | N3-C4-N4 | 5.12 | 121.58 | 118.00 |
| 53 | B5 | 3021 | A | C4-C5-C6 | 5.12 | 119.56 | 117.00 |
| 53 | B5 | 3081 | C | N3-C4-N4 | 5.12 | 121.58 | 118.00 |
| 53 | B5 | 3086 | A | C4-C5-C6 | 5.12 | 119.56 | 117.00 |
| 1 | AA | 42 | G | C5-C6-O6 | -5.11 | 125.53 | 128.60 |
| 1 | AA | 388 | G | O4'-C1'-N9 | 5.11 | 112.29 | 108.20 |
| 1 | AA | 467 | G | O4'-C1'-N9 | 5.11 | 112.29 | 108.20 |
| 1 | AA | 1385 | A | C5-C6-N6 | -5.11 | 119.61 | 123.70 |
| 1 | AA | 1568 | A | O4'-C1'-N9 | 5.11 | 112.29 | 108.20 |
| 1 | AA | 1763 | A | C4-C5-C6 | 5.11 | 119.56 | 117.00 |
| 53 | B5 | 2628 | A | C5-C6-N6 | -5.11 | 119.61 | 123.70 |
| 1 | AA | 1683 | G | C5-C6-O6 | -5.11 | 125.53 | 128.60 |
| 53 | B5 | 1529 | A | C5-C6-N6 | -5.11 | 119.61 | 123.70 |
| 53 | B5 | 1868 | G | O4'-C1'-N9 | 5.11 | 112.29 | 108.20 |
| 53 | B5 | 3299 | A | C5-C6-N6 | -5.11 | 119.61 | 123.70 |
| 1 | AA | 425 | A | C4-C5-C6 | 5.11 | 119.56 | 117.00 |
| 1 | AA | 778 | G | C5-C6-O6 | -5.11 | 125.53 | 128.60 |
| 53 | B5 | 318 | A | O4'-C1'-N9 | 5.11 | 112.29 | 108.20 |
| 53 | B5 | 417 | A | O4'-C1'-N9 | 5.11 | 112.29 | 108.20 |
| 53 | B5 | 1830 | G | O4'-C1'-N9 | 5.11 | 112.29 | 108.20 |
| 53 | B5 | 1946 | A | C4-C5-C6 | 5.11 | 119.56 | 117.00 |
| 1 | AA | 160 | C | N3-C4-N4 | 5.11 | 121.58 | 118.00 |
| 1 | AA | 649 | U | O4'-C1'-N1 | 5.11 | 112.29 | 108.20 |
| 53 | B5 | 16 | A | C4-C5-C6 | 5.11 | 119.55 | 117.00 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 1227 | C | N3-C4-C5 | -5.11 | 119.86 | 121.90 |
| 53 | B5 | 1575 | A | C5-C6-N6 | -5.11 | 119.61 | 123.70 |
| 53 | B5 | 1750 | A | C4-C5-C6 | 5.11 | 119.55 | 117.00 |
| 53 | B5 | 1883 | A | C5-C6-N1 | -5.11 | 115.14 | 117.70 |
| 53 | B5 | 2360 | C | O4'-C1'-N1 | 5.11 | 112.29 | 108.20 |
| 53 | B5 | 3313 | U | C5'-C4'-O4' | 5.11 | 115.23 | 109.10 |
| 1 | AA | 490 | C | N3-C4-N4 | 5.11 | 121.58 | 118.00 |
| 1 | AA | 500 | C | N3-C4-C5 | -5.11 | 119.86 | 121.90 |
| 1 | AA | 878 | G | O4'-C1'-N9 | 5.11 | 112.29 | 108.20 |
| 1 | AA | 1001 | G | O4'-C1'-N9 | 5.11 | 112.29 | 108.20 |
| 1 | AA | 1529 | G | O4'-C1'-N9 | 5.11 | 112.29 | 108.20 |
| 53 | B5 | 76 | G | O4'-C1'-N9 | 5.11 | 112.29 | 108.20 |
| 53 | B5 | 199 | A | O4'-C1'-N9 | 5.11 | 112.29 | 108.20 |
| 53 | B5 | 1332 | A | O4'-C1'-N9 | 5.11 | 112.29 | 108.20 |
| 53 | B5 | 1907 | C | N3-C4-N4 | 5.11 | 121.58 | 118.00 |
| 53 | B5 | 2733 | A | C4-C5-C6 | 5.11 | 119.55 | 117.00 |
| 53 | B5 | 3234 | A | C4-C5-C6 | 5.11 | 119.55 | 117.00 |
| 51 | B3 | 37 | G | O4'-C1'-N9 | 5.11 | 112.28 | 108.20 |
| 53 | B5 | 742 | G | C5-C6-O6 | -5.11 | 125.54 | 128.60 |
| 53 | B5 | 796 | U | O4'-C1'-N1 | 5.11 | 112.28 | 108.20 |
| 53 | B5 | 1080 | A | C5-C6-N6 | -5.11 | 119.61 | 123.70 |
| 53 | B5 | 1231 | A | C5-C6-N6 | -5.11 | 119.61 | 123.70 |
| 53 | B5 | 2120 | A | C5-C6-N6 | -5.11 | 119.61 | 123.70 |
| 53 | B5 | 2180 | G | O4'-C1'-N9 | 5.11 | 112.28 | 108.20 |
| 53 | B5 | 3218 | A | O4'-C1'-N9 | 5.11 | 112.28 | 108.20 |
| 53 | B5 | 3237 | U | O4'-C1'-N1 | 5.11 | 112.28 | 108.20 |
| 53 | B5 | 400 | G | C5-C6-O6 | -5.10 | 125.54 | 128.60 |
| 53 | B5 | 2188 | A | C5-C6-N6 | -5.10 | 119.62 | 123.70 |
| 53 | B5 | 2872 | A | C4-C5-C6 | 5.10 | 119.55 | 117.00 |
| 1 | AA | 1133 | U | C2'-C3'-O3' | 5.10 | 121.86 | 113.70 |
| 52 | B4 | 129 | C | N3-C4-N4 | 5.10 | 121.57 | 118.00 |
| 53 | B5 | 192 | C | N3-C4-C5 | -5.10 | 119.86 | 121.90 |
| 53 | B5 | 1358 | C | N3-C4-C5 | -5.10 | 119.86 | 121.90 |
| 53 | B5 | 2229 | A | C5-C6-N6 | -5.10 | 119.62 | 123.70 |
| 53 | B5 | 2867 | C | N3-C4-N4 | 5.10 | 121.57 | 118.00 |
| 1 | AA | 410 | A | O4'-C1'-N9 | 5.10 | 112.28 | 108.20 |
| 1 | AA | 858 | G | C4-C5-N7 | 5.10 | 112.84 | 110.80 |
| 8 | AI | 96 | TYR | CB-CG-CD1 | -5.10 | 117.94 | 121.00 |
| 19 | A7 | 25 | C | N3-C2-O2 | -5.10 | 118.33 | 121.90 |
| 53 | B5 | 45 | A | O4'-C1'-N9 | 5.10 | 112.28 | 108.20 |
| 53 | B5 | 547 | G | O4'-C1'-N9 | 5.10 | 112.28 | 108.20 |
| 1 | AA | 329 | G | C5-C6-O6 | -5.10 | 125.54 | 128.60 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1 | AA | 1467 | A | O4'-C1'-N9 | 5.10 | 112.28 | 108.20 |
| 53 | B5 | 151 | A | C1'-O4'-C4' | -5.10 | 105.82 | 109.90 |
| 53 | B5 | 355 | A | C4-C5-C6 | 5.10 | 119.55 | 117.00 |
| 53 | B5 | 368 | G | C5-C6-O6 | -5.10 | 125.54 | 128.60 |
| 53 | B5 | 1066 | G | C5-C6-O6 | -5.10 | 125.54 | 128.60 |
| 53 | B5 | 1574 | C | N3-C4-N4 | 5.10 | 121.57 | 118.00 |
| 53 | B5 | 1683 | A | C4-C5-C6 | 5.10 | 119.55 | 117.00 |
| 53 | B5 | 2825 | C | N3-C4-N4 | 5.10 | 121.57 | 118.00 |
| 1 | AA | 438 | A | C4-C5-C6 | 5.10 | 119.55 | 117.00 |
| 1 | AA | 1490 | A | O4'-C1'-N9 | 5.10 | 112.28 | 108.20 |
| 1 | AA | 1537 | G | N1-C6-O6 | 5.10 | 122.96 | 119.90 |
| 51 | B3 | 101 | A | C5-C6-N6 | -5.10 | 119.62 | 123.70 |
| 53 | B5 | 1726 | C | N3-C4-N4 | 5.10 | 121.57 | 118.00 |
| 53 | B5 | 1911 | A | O4'-C1'-N9 | 5.10 | 112.28 | 108.20 |
| 53 | B5 | 2494 | A | O4'-C1'-N9 | 5.10 | 112.28 | 108.20 |
| 53 | B5 | 535 | G | O4'-C1'-N9 | 5.09 | 112.28 | 108.20 |
| 53 | B5 | 1655 | G | O4'-C1'-N9 | 5.09 | 112.28 | 108.20 |
| 53 | B5 | 2710 | C | N3-C4-N4 | 5.09 | 121.57 | 118.00 |
| 53 | B5 | 3321 | C | N3-C4-N4 | 5.09 | 121.57 | 118.00 |
| 1 | AA | 83 | G | C5-C6-O6 | -5.09 | 125.54 | 128.60 |
| 1 | AA | 1137 | G | C5-C6-O6 | -5.09 | 125.54 | 128.60 |
| 53 | B5 | 2892 | A | C5-C6-N6 | -5.09 | 119.63 | 123.70 |
| 1 | AA | 67 | A | C5-C6-N6 | -5.09 | 119.63 | 123.70 |
| 1 | AA | 421 | A | O4'-C1'-N9 | 5.09 | 112.27 | 108.20 |
| 1 | AA | 665 | U | O4'-C1'-N1 | 5.09 | 112.27 | 108.20 |
| 1 | AA | 1333 | A | O4'-C1'-N9 | 5.09 | 112.27 | 108.20 |
| 1 | AA | 1452 | G | C5-C6-O6 | -5.09 | 125.55 | 128.60 |
| 1 | AA | 1473 | A | C4-C5-C6 | 5.09 | 119.55 | 117.00 |
| 53 | B5 | 288 | C | N3-C4-C5 | -5.09 | 119.86 | 121.90 |
| 53 | B5 | 402 | A | C5-C6-N6 | -5.09 | 119.63 | 123.70 |
| 53 | B5 | 2146 | C | N3-C4-N4 | 5.09 | 121.56 | 118.00 |
| 53 | B5 | 2586 | G | C5-C6-O6 | -5.09 | 125.55 | 128.60 |
| 53 | B5 | 2628 | A | C4-C5-C6 | 5.09 | 119.55 | 117.00 |
| 53 | B5 | 2869 | U | O4'-C1'-N1 | 5.09 | 112.27 | 108.20 |
| 1 | AA | 96 | G | C5-C6-O6 | -5.09 | 125.55 | 128.60 |
| 1 | AA | 263 | C | N3-C4-N4 | 5.09 | 121.56 | 118.00 |
| 1 | AA | 1026 | A | C5-C6-N6 | -5.09 | 119.63 | 123.70 |
| 1 | AA | 1692 | A | C5-C6-N6 | -5.09 | 119.63 | 123.70 |
| 19 | A7 | 28 | C | C1'-O4'-C4' | -5.09 | 105.83 | 109.90 |
| 53 | B5 | 211 | A | C4-C5-C6 | 5.09 | 119.55 | 117.00 |
| 53 | B5 | 392 | G | O4'-C1'-N9 | 5.09 | 112.27 | 108.20 |
| 53 | B5 | 696 | C | N3-C4-C5 | -5.09 | 119.86 | 121.90 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 1335 | C | N3-C4-N4 | 5.09 | 121.56 | 118.00 |
| 53 | B5 | 2143 | A | O4'-C1'-N9 | 5.09 | 112.27 | 108.20 |
| 53 | B5 | 2802 | A | C4-C5-C6 | 5.09 | 119.55 | 117.00 |
| 53 | B5 | 2958 | A | O4'-C1'-N9 | 5.09 | 112.27 | 108.20 |
| 1 | AA | 860 | U | C1'-C2'-O2' | 5.09 | 125.86 | 110.60 |
| 53 | B5 | 805 | G | O4'-C1'-N9 | 5.09 | 112.27 | 108.20 |
| 53 | B5 | 1674 | G | O4'-C1'-N9 | 5.09 | 112.27 | 108.20 |
| 53 | B5 | 2143 | A | C5-C6-N6 | -5.09 | 119.63 | 123.70 |
| 1 | AA | 582 | U | O4'-C1'-N1 | 5.09 | 112.27 | 108.20 |
| 1 | AA | 866 | G | C1'-C2'-O2' | 5.09 | 125.86 | 110.60 |
| 53 | B5 | 154 | U | O4'-C1'-N1 | 5.09 | 112.27 | 108.20 |
| 53 | B5 | 552 | G | P-O3'-C3' | 5.09 | 125.80 | 119.70 |
| 53 | B5 | 1566 | A | O4'-C1'-N9 | 5.09 | 112.27 | 108.20 |
| 53 | B5 | 1615 | C | N3-C4-N4 | 5.09 | 121.56 | 118.00 |
| 53 | B5 | 2138 | A | O4'-C1'-N9 | 5.09 | 112.27 | 108.20 |
| 53 | B5 | 2348 | A | O4'-C1'-N9 | 5.09 | 112.27 | 108.20 |
| 53 | B5 | 2413 | A | O4'-C1'-N9 | 5.09 | 112.27 | 108.20 |
| 53 | B5 | 2666 | C | N3-C4-N4 | 5.09 | 121.56 | 118.00 |
| 53 | B5 | 2887 | A | C4-C5-C6 | 5.09 | 119.54 | 117.00 |
| 53 | B5 | 2946 | A | O4'-C1'-N9 | 5.09 | 112.27 | 108.20 |
| 53 | B5 | 3062 | G | O4'-C1'-N9 | 5.09 | 112.27 | 108.20 |
| 1 | AA | 521 | A | O4'-C1'-N9 | 5.08 | 112.27 | 108.20 |
| 1 | AA | 1670 | G | O4'-C1'-N9 | 5.08 | 112.27 | 108.20 |
| 53 | B5 | 1560 | G | O4'-C1'-N9 | 5.08 | 112.27 | 108.20 |
| 53 | B5 | 2788 | C | C6-N1-C1' | -5.08 | 114.70 | 120.80 |
| 1 | AA | 341 | A | O4'-C1'-N9 | 5.08 | 112.27 | 108.20 |
| 1 | AA | 399 | A | C4-C5-C6 | 5.08 | 119.54 | 117.00 |
| 1 | AA | 531 | C | O4'-C1'-N1 | 5.08 | 112.27 | 108.20 |
| 1 | AA | 1134 | A | O4'-C1'-N9 | 5.08 | 112.27 | 108.20 |
| 52 | B4 | 131 | A | C4-C5-C6 | 5.08 | 119.54 | 117.00 |
| 53 | B5 | 808 | A | O4'-C1'-N9 | 5.08 | 112.27 | 108.20 |
| 53 | B5 | 835 | G | O4'-C1'-N9 | 5.08 | 112.27 | 108.20 |
| 53 | B5 | 1254 | C | N3-C4-C5 | -5.08 | 119.87 | 121.90 |
| 53 | B5 | 1291 | A | C5-C6-N6 | -5.08 | 119.63 | 123.70 |
| 53 | B5 | 1434 | G | O4'-C1'-N9 | 5.08 | 112.27 | 108.20 |
| 53 | B5 | 1561 | G | C5-C6-O6 | -5.08 | 125.55 | 128.60 |
| 53 | B5 | 2521 | U | O4'-C1'-N1 | 5.08 | 112.27 | 108.20 |
| 53 | B5 | 2801 | A | C5-C6-N1 | -5.08 | 115.16 | 117.70 |
| 53 | B5 | 2984 | C | N3-C4-C5 | -5.08 | 119.87 | 121.90 |
| 53 | B5 | 2988 | C | N3-C4-C5 | -5.08 | 119.87 | 121.90 |
| 1 | AA | 586 | G | C5-C6-O6 | -5.08 | 125.55 | 128.60 |
| 1 | AA | 817 | A | O4'-C1'-N9 | 5.08 | 112.27 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1 | AA | 1081 | A | C5-C6-N6 | -5.08 | 119.64 | 123.70 |
| 1 | AA | 1185 | A | C4-C5-C6 | 5.08 | 119.54 | 117.00 |
| 1 | AA | 1522 | A | C5-C6-N1 | -5.08 | 115.16 | 117.70 |
| 1 | AA | 1599 | G | C5-C6-O6 | -5.08 | 125.55 | 128.60 |
| 19 | A7 | 5 | A | O3'-P-O5' | 5.08 | 113.66 | 104.00 |
| 53 | B5 | 248 | U | O4'-C1'-N1 | 5.08 | 112.27 | 108.20 |
| 53 | B5 | 844 | G | C5-C6-O6 | -5.08 | 125.55 | 128.60 |
| 53 | B5 | 904 | A | C5-C6-N1 | -5.08 | 115.16 | 117.70 |
| 53 | B5 | 2458 | A | C4-C5-C6 | 5.08 | 119.54 | 117.00 |
| 53 | B5 | 2988 | C | N3-C4-N4 | 5.08 | 121.56 | 118.00 |
| 53 | B5 | 3020 | U | O4'-C1'-N1 | 5.08 | 112.27 | 108.20 |
| 1 | AA | 394 | C | N3-C4-N4 | 5.08 | 121.56 | 118.00 |
| 51 | B3 | 65 | G | O4'-C1'-N9 | 5.08 | 112.26 | 108.20 |
| 53 | B5 | 761 | A | C4-C5-C6 | 5.08 | 119.54 | 117.00 |
| 53 | B5 | 1719 | G | O4'-C1'-N9 | 5.08 | 112.26 | 108.20 |
| 53 | B5 | 2952 | G | P-O3'-C3' | 5.08 | 125.80 | 119.70 |
| 1 | AA | 145 | A | O4'-C1'-N9 | 5.08 | 112.26 | 108.20 |
| 1 | AA | 179 | A | C4-C5-C6 | 5.08 | 119.54 | 117.00 |
| 1 | AA | 502 | U | C5'-C4'-C3' | 5.08 | 124.13 | 116.00 |
| 1 | AA | 734 | A | C5-C6-N6 | -5.08 | 119.64 | 123.70 |
| 1 | AA | 1454 | C | N3-C4-N4 | 5.08 | 121.56 | 118.00 |
| 1 | AA | 1788 | A | C4-C5-C6 | 5.08 | 119.54 | 117.00 |
| 19 | A7 | 71 | G | N9-C1'-C2' | -5.08 | 106.41 | 112.00 |
| 53 | B5 | 473 | G | O4'-C1'-N9 | 5.08 | 112.26 | 108.20 |
| 53 | B5 | 495 | G | C5-C6-O6 | -5.08 | 125.55 | 128.60 |
| 53 | B5 | 1003 | A | C4-C5-C6 | 5.08 | 119.54 | 117.00 |
| 53 | B5 | 1531 | C | N3-C4-C5 | -5.08 | 119.87 | 121.90 |
| 53 | B5 | 2833 | A | C4-C5-C6 | 5.08 | 119.54 | 117.00 |
| 1 | AA | 1297 | A | C5-C6-N1 | -5.08 | 115.16 | 117.70 |
| 19 | A7 | 35 | A | O4'-C1'-C2' | 5.08 | 112.17 | 107.60 |
| 53 | B5 | 1302 | A | O4'-C1'-N9 | 5.08 | 112.26 | 108.20 |
| 53 | B5 | 1852 | G | O4'-C1'-N9 | 5.08 | 112.26 | 108.20 |
| 1 | AA | 351 | C | N3-C4-N4 | 5.08 | 121.55 | 118.00 |
| 1 | AA | 660 | G | C5-C6-O6 | -5.08 | 125.55 | 128.60 |
| 1 | AA | 1315 | G | O4'-C1'-N9 | 5.08 | 112.26 | 108.20 |
| 53 | B5 | 18 | G | O4'-C1'-N9 | 5.08 | 112.26 | 108.20 |
| 53 | B5 | 114 | A | C5-C6-N6 | -5.08 | 119.64 | 123.70 |
| 53 | B5 | 397 | A | C4-C5-C6 | 5.08 | 119.54 | 117.00 |
| 53 | B5 | 659 | G | O4'-C1'-N9 | 5.08 | 112.26 | 108.20 |
| 53 | B5 | 1745 | C | N3-C4-C5 | -5.08 | 119.87 | 121.90 |
| 53 | B5 | 1854 | C | N3-C4-N4 | 5.08 | 121.55 | 118.00 |
| 53 | B5 | 2443 | A | C5-C6-N6 | -5.08 | 119.64 | 123.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 2705 | A | C4-C5-C6 | 5.08 | 119.54 | 117.00 |
| 1 | AA | 218 | A | O4'-C1'-N9 | 5.07 | 112.26 | 108.20 |
| 19 | A7 | 3 | G | C4-C5-C6 | 5.07 | 121.84 | 118.80 |
| 19 | A7 | 45 | G | N1-C6-O6 | -5.07 | 116.86 | 119.90 |
| 53 | B5 | 884 | A | O4'-C1'-N9 | 5.07 | 112.26 | 108.20 |
| 53 | B5 | 1408 | G | C5-C6-O6 | -5.07 | 125.56 | 128.60 |
| 53 | B5 | 1896 | A | C5-C6-N1 | -5.07 | 115.16 | 117.70 |
| 53 | B5 | 2256 | A | C4-C5-C6 | 5.07 | 119.54 | 117.00 |
| 53 | B5 | 2352 | A | C5-C6-N1 | -5.07 | 115.16 | 117.70 |
| 1 | AA | 594 | A | O4'-C1'-N9 | 5.07 | 112.26 | 108.20 |
| 1 | AA | 1440 | U | O4'-C1'-N1 | 5.07 | 112.26 | 108.20 |
| 1 | AA | 1524 | A | C4-C5-C6 | 5.07 | 119.54 | 117.00 |
| 53 | B5 | 349 | A | C5-C6-N1 | -5.07 | 115.16 | 117.70 |
| 53 | B5 | 1055 | A | O4'-C1'-N9 | 5.07 | 112.26 | 108.20 |
| 1 | AA | 1289 | G | C5-C6-O6 | -5.07 | 125.56 | 128.60 |
| 1 | AA | 1438 | C | N3-C4-N4 | 5.07 | 121.55 | 118.00 |
| 53 | B5 | 29 | C | N3-C4-N4 | 5.07 | 121.55 | 118.00 |
| 53 | B5 | 238 | A | C5-C6-N6 | -5.07 | 119.64 | 123.70 |
| 53 | B5 | 329 | U | O4'-C1'-N1 | 5.07 | 112.26 | 108.20 |
| 53 | B5 | 1252 | A | C5-C6-N1 | -5.07 | 115.17 | 117.70 |
| 53 | B5 | 1338 | C | N3-C4-N4 | 5.07 | 121.55 | 118.00 |
| 53 | B5 | 1588 | A | C4-C5-C6 | 5.07 | 119.54 | 117.00 |
| 53 | B5 | 3369 | G | C4-N9-C1' | 5.07 | 133.09 | 126.50 |
| 1 | AA | 771 | A | C5-C6-N6 | -5.07 | 119.64 | 123.70 |
| 1 | AA | 1365 | G | C5-C6-O6 | -5.07 | 125.56 | 128.60 |
| 53 | B5 | 1248 | C | N3-C4-N4 | 5.07 | 121.55 | 118.00 |
| 53 | B5 | 1893 | A | C4-C5-C6 | 5.07 | 119.53 | 117.00 |
| 53 | B5 | 2879 | C | N3-C4-N4 | 5.07 | 121.55 | 118.00 |
| 53 | B5 | 3247 | G | C5-C6-O6 | -5.07 | 125.56 | 128.60 |
| 1 | AA | 350 | U | O4'-C1'-N1 | 5.07 | 112.25 | 108.20 |
| 1 | AA | 365 | G | O4'-C1'-N9 | 5.07 | 112.25 | 108.20 |
| 1 | AA | 445 | A | C4-C5-C6 | 5.07 | 119.53 | 117.00 |
| 1 | AA | 903 | G | O4'-C1'-N9 | 5.07 | 112.25 | 108.20 |
| 1 | AA | 954 | A | C5-C6-N6 | -5.07 | 119.65 | 123.70 |
| 1 | AA | 1150 | G | C5-C6-O6 | -5.07 | 125.56 | 128.60 |
| 1 | AA | 1319 | A | O4'-C1'-N9 | 5.07 | 112.25 | 108.20 |
| 1 | AA | 1516 | C | P-O5'-C5' | -5.07 | 112.79 | 120.90 |
| 1 | AA | 1612 | A | C5-C6-N1 | -5.07 | 115.17 | 117.70 |
| 52 | B4 | 1 | A | C4-C5-C6 | 5.07 | 119.53 | 117.00 |
| 53 | B5 | 318 | A | C4-C5-C6 | 5.07 | 119.53 | 117.00 |
| 53 | B5 | 363 | G | O4'-C1'-N9 | 5.07 | 112.25 | 108.20 |
| 53 | B5 | 653 | A | C4-C5-C6 | 5.07 | 119.53 | 117.00 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 1000 | C | N3-C4-N4 | 5.07 | 121.55 | 118.00 |
| 53 | B5 | 2658 | G | O4'-C1'-N9 | 5.07 | 112.25 | 108.20 |
| 53 | B5 | 2674 | A | C5-C6-N6 | -5.07 | 119.65 | 123.70 |
| 53 | B5 | 2732 | G | O4'-C1'-N9 | 5.07 | 112.25 | 108.20 |
| 53 | B5 | 2857 | C | N3-C4-N4 | 5.07 | 121.55 | 118.00 |
| 53 | B5 | 2991 | A | C5-C6-N1 | -5.07 | 115.17 | 117.70 |
| 53 | B5 | 3245 | A | O4'-C1'-N9 | 5.07 | 112.25 | 108.20 |
| 1 | AA | 948 | C | N3-C4-N4 | 5.07 | 121.55 | 118.00 |
| 1 | AA | 962 | A | C4-C5-C6 | 5.07 | 119.53 | 117.00 |
| 1 | AA | 1148 | A | O4'-C1'-N9 | 5.07 | 112.25 | 108.20 |
| 1 | AA | 1237 | G | C5-C6-O6 | -5.07 | 125.56 | 128.60 |
| 52 | B4 | 40 | A | C4-C5-C6 | 5.07 | 119.53 | 117.00 |
| 53 | B5 | 304 | G | O4'-C1'-N9 | 5.07 | 112.25 | 108.20 |
| 53 | B5 | 711 | A | C4-C5-C6 | 5.07 | 119.53 | 117.00 |
| 53 | B5 | 1482 | A | C4-C5-C6 | 5.07 | 119.53 | 117.00 |
| 53 | B5 | 1490 | A | O4'-C1'-N9 | 5.07 | 112.25 | 108.20 |
| 53 | B5 | 1671 | C | N3-C4-N4 | 5.07 | 121.55 | 118.00 |
| 53 | B5 | 2656 | A | C5-C6-N1 | -5.07 | 115.17 | 117.70 |
| 53 | B5 | 3308 | C | N3-C4-N4 | 5.07 | 121.55 | 118.00 |
| 1 | AA | 962 | A | C5-C6-N6 | -5.06 | 119.65 | 123.70 |
| 1 | AA | 1451 | G | C5-C6-O6 | -5.06 | 125.56 | 128.60 |
| 19 | A7 | 51 | G | N9-C4-C5 | 5.06 | 107.43 | 105.40 |
| 53 | B5 | 135 | C | C6-N1-C2 | -5.06 | 118.28 | 120.30 |
| 53 | B5 | 728 | G | O4'-C1'-N9 | 5.06 | 112.25 | 108.20 |
| 53 | B5 | 1497 | C | N3-C4-C5 | -5.06 | 119.87 | 121.90 |
| 1 | AA | 199 | G | C5-C6-O6 | -5.06 | 125.56 | 128.60 |
| 1 | AA | 724 | C | N3-C4-C5 | -5.06 | 119.88 | 121.90 |
| 1 | AA | 1140 | A | C4-C5-C6 | 5.06 | 119.53 | 117.00 |
| 1 | AA | 1310 | A | C5-C6-N6 | -5.06 | 119.65 | 123.70 |
| 53 | B5 | 1673 | G | C5-C6-O6 | -5.06 | 125.56 | 128.60 |
| 53 | B5 | 2267 | C | N3-C4-C5 | -5.06 | 119.88 | 121.90 |
| 53 | B5 | 3279 | A | C4-C5-C6 | 5.06 | 119.53 | 117.00 |
| 53 | B5 | 3347 | A | C4-C5-C6 | 5.06 | 119.53 | 117.00 |
| 1 | AA | 858 | G | N9-C1'-C2' | 5.06 | 120.58 | 114.00 |
| 1 | AA | 1649 | A | O4'-C1'-N9 | 5.06 | 112.25 | 108.20 |
| 53 | B5 | 2443 | A | O4'-C1'-N9 | 5.06 | 112.25 | 108.20 |
| 1 | AA | 540 | G | C5-C6-O6 | -5.06 | 125.56 | 128.60 |
| 1 | AA | 731 | C | N3-C4-N4 | 5.06 | 121.54 | 118.00 |
| 1 | AA | 1744 | A | C4-C5-C6 | 5.06 | 119.53 | 117.00 |
| 52 | B4 | 133 | G | C5-C6-O6 | -5.06 | 125.56 | 128.60 |
| 53 | B5 | 268 | A | C4-C5-C6 | 5.06 | 119.53 | 117.00 |
| 53 | B5 | 781 | G | O4'-C1'-N9 | 5.06 | 112.25 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 2208 | A | C5-C6-N1 | -5.06 | 115.17 | 117.70 |
| 53 | B5 | 2400 | G | O4'-C1'-N9 | 5.06 | 112.25 | 108.20 |
| 53 | B5 | 2646 | C | N3-C4-C5 | -5.06 | 119.88 | 121.90 |
| 53 | B5 | 3179 | U | P-O3'-C3' | 5.06 | 125.77 | 119.70 |
| 1 | AA | 552 | G | O4'-C1'-N9 | 5.06 | 112.25 | 108.20 |
| 1 | AA | 696 | C | N3-C4-C5 | -5.06 | 119.88 | 121.90 |
| 1 | AA | 1085 | A | C4-C5-C6 | 5.06 | 119.53 | 117.00 |
| 52 | B4 | 70 | A | C4-C5-C6 | 5.06 | 119.53 | 117.00 |
| 52 | B4 | 94 | C | N3-C4-C5 | -5.06 | 119.88 | 121.90 |
| 53 | B5 | 61 | A | C4-C5-C6 | 5.06 | 119.53 | 117.00 |
| 53 | B5 | 101 | G | C5-C6-O6 | -5.06 | 125.57 | 128.60 |
| 53 | B5 | 709 | A | C5-C6-N6 | -5.06 | 119.66 | 123.70 |
| 53 | B5 | 1295 | G | C5-C6-O6 | -5.06 | 125.57 | 128.60 |
| 53 | B5 | 1733 | G | O4'-C1'-N9 | 5.06 | 112.25 | 108.20 |
| 53 | B5 | 2178 | A | C5-C6-N1 | -5.06 | 115.17 | 117.70 |
| 53 | B5 | 2469 | G | O4'-C1'-N9 | 5.06 | 112.25 | 108.20 |
| 53 | B5 | 3048 | A | C5-C6-N1 | -5.06 | 115.17 | 117.70 |
| 1 | AA | 518 | A | O4'-C1'-N9 | 5.06 | 112.25 | 108.20 |
| 1 | AA | 1639 | C | N3-C4-N4 | 5.06 | 121.54 | 118.00 |
| 4 | AD | 78 | ARG | NE-CZ-NH2 | -5.06 | 117.77 | 120.30 |
| 19 | A7 | 52 | U | C6-N1-C2 | -5.06 | 117.97 | 121.00 |
| 52 | B4 | 130 | C | N3-C4-N4 | 5.06 | 121.54 | 118.00 |
| 53 | B5 | 2645 | G | O4'-C1'-N9 | 5.06 | 112.25 | 108.20 |
| 53 | B5 | 2911 | A | C4-C5-C6 | 5.06 | 119.53 | 117.00 |
| 53 | B5 | 3112 | G | O4'-C1'-N9 | 5.06 | 112.25 | 108.20 |
| 1 | AA | 188 | A | C4-C5-C6 | 5.05 | 119.53 | 117.00 |
| 1 | AA | 1166 | G | O4'-C1'-N9 | 5.05 | 112.24 | 108.20 |
| 1 | AA | 1682 | U | O4'-C1'-N1 | 5.05 | 112.24 | 108.20 |
| 52 | B4 | 54 | A | C4-C5-C6 | 5.05 | 119.53 | 117.00 |
| 53 | B5 | 701 | G | O4'-C1'-N9 | 5.05 | 112.24 | 108.20 |
| 53 | B5 | 1120 | A | C4-C5-C6 | 5.05 | 119.53 | 117.00 |
| 53 | B5 | 3374 | U | O4'-C1'-N1 | 5.05 | 112.24 | 108.20 |
| 1 | AA | 338 | C | N3-C4-C5 | -5.05 | 119.88 | 121.90 |
| 51 | B3 | 27 | A | O4'-C1'-N9 | 5.05 | 112.24 | 108.20 |
| 52 | B4 | 149 | A | C4-C5-C6 | 5.05 | 119.53 | 117.00 |
| 53 | B5 | 144 | A | C4-C5-C6 | 5.05 | 119.53 | 117.00 |
| 53 | B5 | 1193 | A | O4'-C1'-N9 | 5.05 | 112.24 | 108.20 |
| 53 | B5 | 1608 | C | N3-C4-N4 | 5.05 | 121.54 | 118.00 |
| 53 | B5 | 1857 | C | N3-C4-C5 | -5.05 | 119.88 | 121.90 |
| 53 | B5 | 2901 | G | C5-C6-O6 | -5.05 | 125.57 | 128.60 |
| 53 | B5 | 2926 | A | C5-C6-N1 | -5.05 | 115.17 | 117.70 |
| 1 | AA | 226 | A | O4'-C1'-N9 | 5.05 | 112.24 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 1 | AA | 1334 | A | O4'-C1'-N9 | 5.05 | 112.24 | 108.20 |
| 1 | AA | 1572 | G | C5-C6-O6 | -5.05 | 125.57 | 128.60 |
| 53 | B5 | 445 | G | C5-C6-O6 | -5.05 | 125.57 | 128.60 |
| 53 | B5 | 978 | C | P-O3'-C3' | 5.05 | 125.76 | 119.70 |
| 53 | B5 | 1086 | C | N3-C4-N4 | 5.05 | 121.54 | 118.00 |
| 1 | AA | 295 | A | O4'-C1'-N9 | 5.05 | 112.24 | 108.20 |
| 1 | AA | 605 | A | O4'-C1'-N9 | 5.05 | 112.24 | 108.20 |
| 1 | AA | 859 | A | C4'-C3'-C2' | 5.05 | 107.65 | 102.60 |
| 1 | AA | 1224 | G | O4'-C1'-N9 | 5.05 | 112.24 | 108.20 |
| 1 | AA | 1789 | A | C5-C6-N6 | -5.05 | 119.66 | 123.70 |
| 53 | B5 | 973 | A | C4-C5-C6 | 5.05 | 119.53 | 117.00 |
| 53 | B5 | 1118 | C | N3-C4-N4 | 5.05 | 121.53 | 118.00 |
| 53 | B5 | 1487 | G | O4'-C1'-N9 | 5.05 | 112.24 | 108.20 |
| 53 | B5 | 1525 | G | O4'-C1'-N9 | 5.05 | 112.24 | 108.20 |
| 53 | B5 | 1700 | G | C5-C6-O6 | -5.05 | 125.57 | 128.60 |
| 53 | B5 | 3017 | A | C4-C5-C6 | 5.05 | 119.53 | 117.00 |
| 53 | B5 | 3169 | U | O4'-C1'-N1 | 5.05 | 112.24 | 108.20 |
| 1 | AA | 188 | A | C5-C6-N6 | -5.05 | 119.66 | 123.70 |
| 53 | B5 | 2225 | U | O4'-C1'-N1 | 5.05 | 112.24 | 108.20 |
| 53 | B5 | 2468 | A | C5-C6-N6 | -5.05 | 119.66 | 123.70 |
| 1 | AA | 89 | G | O4'-C1'-N9 | 5.05 | 112.24 | 108.20 |
| 1 | AA | 274 | G | C5-C6-O6 | -5.05 | 125.57 | 128.60 |
| 1 | AA | 1201 | C | N3-C4-N4 | 5.05 | 121.53 | 118.00 |
| 1 | AA | 1728 | A | O4'-C1'-N9 | 5.05 | 112.24 | 108.20 |
| 19 | A7 | 20 | G | N9-C4-C5 | 5.05 | 107.42 | 105.40 |
| 53 | B5 | 265 | A | C4-C5-C6 | 5.05 | 119.52 | 117.00 |
| 53 | B5 | 304 | G | C5-C6-O6 | -5.05 | 125.57 | 128.60 |
| 53 | B5 | 593 | A | C5-C6-N1 | -5.05 | 115.18 | 117.70 |
| 53 | B5 | 739 | G | C5-C6-O6 | -5.05 | 125.57 | 128.60 |
| 53 | B5 | 743 | C | N3-C4-N4 | 5.05 | 121.53 | 118.00 |
| 53 | B5 | 1236 | G | N3-C2-N2 | 5.05 | 123.43 | 119.90 |
| 53 | B5 | 1339 | C | N3-C4-N4 | 5.05 | 121.53 | 118.00 |
| 53 | B5 | 1704 | A | O4'-C1'-N9 | 5.05 | 112.24 | 108.20 |
| 53 | B5 | 1741 | A | C5-C6-N6 | -5.05 | 119.66 | 123.70 |
| 53 | B5 | 1750 | A | C5-C6-N6 | -5.05 | 119.66 | 123.70 |
| 53 | B5 | 2699 | G | C5-C6-O6 | -5.05 | 125.57 | 128.60 |
| 1 | AA | 755 | A | C5-C6-N6 | -5.04 | 119.66 | 123.70 |
| 53 | B5 | 12 | A | O4'-C1'-N9 | 5.04 | 112.24 | 108.20 |
| 53 | B5 | 1238 | C | N3-C4-N4 | 5.04 | 121.53 | 118.00 |
| 1 | AA | 510 | G | C5-C6-O6 | -5.04 | 125.57 | 128.60 |
| 1 | AA | 914 | A | C5-C6-N6 | -5.04 | 119.67 | 123.70 |
| 1 | AA | 1552 | U | P-O5'-C5' | -5.04 | 112.83 | 120.90 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 19 | A7 | 15 | G | C8-N9-C1' | 5.04 | 133.56 | 127.00 |
| 52 | B4 | 131 | A | C5-C6-N1 | -5.04 | 115.18 | 117.70 |
| 53 | B5 | 808 | A | C4-C5-C6 | 5.04 | 119.52 | 117.00 |
| 53 | B5 | 3165 | A | O4'-C1'-N9 | 5.04 | 112.23 | 108.20 |
| 1 | AA | 1 | U | C6-N1-C1' | -5.04 | 114.14 | 121.20 |
| 1 | AA | 939 | A | C5-C6-N1 | -5.04 | 115.18 | 117.70 |
| 1 | AA | 1170 | C | N3-C4-C5 | -5.04 | 119.88 | 121.90 |
| 52 | B4 | 45 | C | N3-C4-C5 | -5.04 | 119.88 | 121.90 |
| 53 | B5 | 208 | C | N3-C4-N4 | 5.04 | 121.53 | 118.00 |
| 53 | B5 | 352 | A | C4-C5-C6 | 5.04 | 119.52 | 117.00 |
| 53 | B5 | 661 | G | O4'-C1'-N9 | 5.04 | 112.23 | 108.20 |
| 53 | B5 | 887 | G | C5-C6-O6 | -5.04 | 125.58 | 128.60 |
| 53 | B5 | 2243 | A | C5-C6-N6 | -5.04 | 119.67 | 123.70 |
| 53 | B5 | 2622 | C | N3-C4-C5 | -5.04 | 119.88 | 121.90 |
| 53 | B5 | 2721 | A | C4-C5-C6 | 5.04 | 119.52 | 117.00 |
| 53 | B5 | 2989 | U | O4'-C1'-N1 | 5.04 | 112.23 | 108.20 |
| 53 | B5 | 3303 | G | C5-C6-O6 | -5.04 | 125.58 | 128.60 |
| 53 | B5 | 533 | A | O4'-C1'-N9 | 5.04 | 112.23 | 108.20 |
| 53 | B5 | 1779 | C | N3-C4-C5 | -5.04 | 119.88 | 121.90 |
| 53 | B5 | 2598 | G | C5-C6-O6 | -5.04 | 125.58 | 128.60 |
| 1 | AA | 67 | A | C4-C5-C6 | 5.04 | 119.52 | 117.00 |
| 51 | B3 | 92 | A | C5-C6-N6 | -5.04 | 119.67 | 123.70 |
| 53 | B5 | 347 | G | C5-C6-O6 | -5.04 | 125.58 | 128.60 |
| 53 | B5 | 715 | A | C1'-O4'-C4' | -5.04 | 105.87 | 109.90 |
| 53 | B5 | 1797 | A | C4-C5-C6 | 5.04 | 119.52 | 117.00 |
| 1 | AA | 954 | A | O4'-C1'-N9 | 5.04 | 112.23 | 108.20 |
| 1 | AA | 1281 | C | N3-C4-C5 | -5.04 | 119.89 | 121.90 |
| 1 | AA | 1456 | G | C5-C6-O6 | -5.04 | 125.58 | 128.60 |
| 1 | AA | 1468 | C | N3-C4-N4 | 5.04 | 121.53 | 118.00 |
| 1 | AA | 1725 | G | C5-C6-O6 | -5.04 | 125.58 | 128.60 |
| 53 | B5 | 17 | G | C5-C6-O6 | -5.04 | 125.58 | 128.60 |
| 53 | B5 | 878 | G | C5-C6-O6 | -5.04 | 125.58 | 128.60 |
| 53 | B5 | 1797 | A | O4'-C1'-N9 | 5.04 | 112.23 | 108.20 |
| 53 | B5 | 2196 | C | N3-C4-C5 | -5.04 | 119.89 | 121.90 |
| 1 | AA | 509 | G | C5-C6-O6 | -5.04 | 125.58 | 128.60 |
| 1 | AA | 864 | U | OP1-P-OP2 | -5.04 | 112.05 | 119.60 |
| 1 | AA | 1245 | U | O4'-C1'-N1 | 5.04 | 112.23 | 108.20 |
| 1 | AA | 1635 | C | O3'-P-O5' | 5.04 | 113.57 | 104.00 |
| 53 | B5 | 255 | A | C4-C5-C6 | 5.04 | 119.52 | 117.00 |
| 53 | B5 | 690 | A | C4-C5-C6 | 5.04 | 119.52 | 117.00 |
| 53 | B5 | 1239 | C | N3-C4-N4 | 5.04 | 121.53 | 118.00 |
| 53 | B5 | 2144 | A | C4-C5-C6 | 5.04 | 119.52 | 117.00 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 2432 | A | O4'-C1'-N9 | 5.04 | 112.23 | 108.20 |
| 53 | B5 | 2491 | A | C4-C5-C6 | 5.04 | 119.52 | 117.00 |
| 53 | B5 | 2534 | G | C5-C6-O6 | -5.04 | 125.58 | 128.60 |
| 53 | B5 | 2987 | A | C4-C5-C6 | 5.04 | 119.52 | 117.00 |
| 53 | B5 | 3254 | G | C5-C6-O6 | -5.04 | 125.58 | 128.60 |
| 1 | AA | 22 | A | O4'-C1'-N9 | 5.03 | 112.23 | 108.20 |
| 1 | AA | 202 | A | O4'-C1'-N9 | 5.03 | 112.23 | 108.20 |
| 1 | AA | 531 | C | N3-C4-N4 | 5.03 | 121.52 | 118.00 |
| 19 | A7 | 60 | C | C4-C5-C6 | -5.03 | 114.88 | 117.40 |
| 53 | B5 | 229 | G | O4'-C1'-N9 | 5.03 | 112.23 | 108.20 |
| 53 | B5 | 975 | G | O4'-C1'-N9 | 5.03 | 112.23 | 108.20 |
| 53 | B5 | 1321 | G | C5-C6-O6 | -5.03 | 125.58 | 128.60 |
| 53 | B5 | 2114 | C | N3-C4-N4 | 5.03 | 121.52 | 118.00 |
| 53 | B5 | 2479 | C | N3-C4-C5 | -5.03 | 119.89 | 121.90 |
| 1 | AA | 1279 | U | O4'-C1'-N1 | 5.03 | 112.23 | 108.20 |
| 19 | A7 | 14 | A | O4'-C1'-N9 | 5.03 | 112.23 | 108.20 |
| 33 | BI | 159 | PHE | CB-CG-CD2 | -5.03 | 117.28 | 120.80 |
| 53 | B5 | 397 | A | C5-C6-N6 | -5.03 | 119.67 | 123.70 |
| 53 | B5 | 817 | A | C4-C5-C6 | 5.03 | 119.52 | 117.00 |
| 53 | B5 | 1225 | A | O4'-C1'-N9 | 5.03 | 112.22 | 108.20 |
| 53 | B5 | 3323 | A | C5-C6-N6 | -5.03 | 119.67 | 123.70 |
| 1 | AA | 202 | A | C4-C5-C6 | 5.03 | 119.52 | 117.00 |
| 1 | AA | 783 | G | C5-C6-O6 | -5.03 | 125.58 | 128.60 |
| 1 | AA | 1099 | G | O4'-C1'-N9 | 5.03 | 112.22 | 108.20 |
| 1 | AA | 1580 | U | O5'-P-OP2 | -5.03 | 101.17 | 105.70 |
| 53 | B5 | 807 | A | O4'-C1'-N9 | 5.03 | 112.22 | 108.20 |
| 53 | B5 | 842 | G | O4'-C1'-N9 | 5.03 | 112.22 | 108.20 |
| 53 | B5 | 1159 | A | C5-C6-N6 | -5.03 | 119.68 | 123.70 |
| 53 | B5 | 1184 | A | C5-C6-N1 | -5.03 | 115.19 | 117.70 |
| 53 | B5 | 1933 | A | C4-C5-C6 | 5.03 | 119.52 | 117.00 |
| 53 | B5 | 2798 | C | N3-C4-N4 | 5.03 | 121.52 | 118.00 |
| 53 | B5 | 2824 | G | O4'-C1'-N9 | 5.03 | 112.22 | 108.20 |
| 53 | B5 | 3210 | U | P-O3'-C3' | 5.03 | 125.74 | 119.70 |
| 1 | AA | 1088 | A | C4-C5-C6 | 5.03 | 119.51 | 117.00 |
| 1 | AA | 1397 | A | O4'-C1'-N9 | 5.03 | 112.22 | 108.20 |
| 53 | B5 | 1133 | A | C5-C6-N6 | -5.03 | 119.68 | 123.70 |
| 53 | B5 | 1496 | C | N3-C4-N4 | 5.03 | 121.52 | 118.00 |
| 53 | B5 | 2105 | G | C5-C6-O6 | -5.03 | 125.58 | 128.60 |
| 1 | AA | 1328 | A | C5-C6-N6 | -5.03 | 119.68 | 123.70 |
| 1 | AA | 1631 | A | C4'-C3'-C2' | 5.03 | 107.63 | 102.60 |
| 1 | AA | 1690 | G | C5-C6-O6 | -5.03 | 125.58 | 128.60 |
| 18 | AT | 78 | LYS | N-CA-C | 5.03 | 124.57 | 111.00 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 578 | A | C4-C5-C6 | 5.03 | 119.51 | 117.00 |
| 53 | B5 | 1043 | C | N3-C4-C5 | -5.03 | 119.89 | 121.90 |
| 53 | B5 | 1423 | C | N3-C4-C5 | -5.03 | 119.89 | 121.90 |
| 53 | B5 | 2259 | A | O4'-C1'-N9 | 5.03 | 112.22 | 108.20 |
| 53 | B5 | 2356 | A | O4'-C1'-N9 | 5.03 | 112.22 | 108.20 |
| 53 | B5 | 3164 | C | O4'-C1'-N1 | 5.03 | 112.22 | 108.20 |
| 1 | AA | 470 | A | C4-C5-C6 | 5.03 | 119.51 | 117.00 |
| 1 | AA | 1485 | A | C4-C5-C6 | 5.03 | 119.51 | 117.00 |
| 51 | B3 | 71 | C | N3-C4-N4 | 5.03 | 121.52 | 118.00 |
| 53 | B5 | 41 | G | C5-C6-O6 | -5.03 | 125.58 | 128.60 |
| 53 | B5 | 65 | A | C5-C6-N6 | -5.03 | 119.68 | 123.70 |
| 53 | B5 | 578 | A | C5-C6-N1 | -5.03 | 115.19 | 117.70 |
| 53 | B5 | 827 | A | C4-C5-C6 | 5.03 | 119.51 | 117.00 |
| 53 | B5 | 973 | A | O4'-C1'-N9 | 5.03 | 112.22 | 108.20 |
| 53 | B5 | 1221 | A | C5-C6-N6 | -5.03 | 119.68 | 123.70 |
| 53 | B5 | 2156 | C | N3-C4-N4 | 5.03 | 121.52 | 118.00 |
| 1 | AA | 928 | A | O4'-C1'-N9 | 5.02 | 112.22 | 108.20 |
| 53 | B5 | 1569 | U | O4'-C1'-N1 | 5.02 | 112.22 | 108.20 |
| 1 | AA | 91 | G | C5-C6-O6 | -5.02 | 125.59 | 128.60 |
| 1 | AA | 1215 | A | C5-C6-N6 | -5.02 | 119.68 | 123.70 |
| 1 | AA | 1294 | G | C5-C6-O6 | -5.02 | 125.59 | 128.60 |
| 1 | AA | 1492 | C | N3-C4-N4 | 5.02 | 121.52 | 118.00 |
| 53 | B5 | 41 | G | O4'-C1'-N9 | 5.02 | 112.22 | 108.20 |
| 53 | B5 | 307 | A | C5-C6-N1 | -5.02 | 115.19 | 117.70 |
| 53 | B5 | 1696 | A | C5-C6-N6 | -5.02 | 119.68 | 123.70 |
| 53 | B5 | 2166 | A | O4'-C1'-N9 | 5.02 | 112.22 | 108.20 |
| 53 | B5 | 3184 | U | O4'-C1'-N1 | 5.02 | 112.22 | 108.20 |
| 53 | B5 | 238 | A | O4'-C1'-N9 | 5.02 | 112.22 | 108.20 |
| 53 | B5 | 1867 | A | C4-C5-C6 | 5.02 | 119.51 | 117.00 |
| 53 | B5 | 2220 | A | C4-C5-C6 | 5.02 | 119.51 | 117.00 |
| 53 | B5 | 2228 | A | C4-C5-C6 | 5.02 | 119.51 | 117.00 |
| 1 | AA | 1772 | G | O4'-C1'-N9 | 5.02 | 112.22 | 108.20 |
| 27 | BC | 67 | PHE | CB-CG-CD2 | 5.02 | 124.31 | 120.80 |
| 51 | B3 | 42 | A | C4-C5-C6 | 5.02 | 119.51 | 117.00 |
| 51 | B3 | 102 | C | N3-C4-C5 | -5.02 | 119.89 | 121.90 |
| 53 | B5 | 278 | U | O4'-C1'-N1 | 5.02 | 112.22 | 108.20 |
| 53 | B5 | 625 | G | C5-C6-O6 | -5.02 | 125.59 | 128.60 |
| 53 | B5 | 973 | A | C5-C6-N1 | -5.02 | 115.19 | 117.70 |
| 53 | B5 | 2234 | G | C5-C6-O6 | -5.02 | 125.59 | 128.60 |
| 53 | B5 | 2350 | C | N3-C4-N4 | 5.02 | 121.51 | 118.00 |
| 53 | B5 | 2708 | C | N3-C4-C5 | -5.02 | 119.89 | 121.90 |
| 53 | B5 | 2847 | A | O4'-C1'-N9 | 5.02 | 112.22 | 108.20 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|-------------|-------|-------------|----------|
| 53 | B5 | 3018 | C | N3-C4-C5 | -5.02 | 119.89 | 121.90 |
| 53 | B5 | 3032 | A | C5-C6-N6 | -5.02 | 119.68 | 123.70 |
| 53 | B5 | 3033 | A | C4-C5-C6 | 5.02 | 119.51 | 117.00 |
| 1 | AA | 965 | A | C5-C6-N6 | -5.02 | 119.69 | 123.70 |
| 1 | AA | 1122 | A | C4-C5-C6 | 5.02 | 119.51 | 117.00 |
| 1 | AA | 1795 | A | C4-C5-C6 | 5.02 | 119.51 | 117.00 |
| 19 | A7 | 15 | G | O4'-C4'-C3' | 5.02 | 110.11 | 106.10 |
| 53 | B5 | 26 | A | C4-C5-C6 | 5.02 | 119.51 | 117.00 |
| 53 | B5 | 717 | C | N3-C4-N4 | 5.02 | 121.51 | 118.00 |
| 53 | B5 | 1225 | A | C5-C6-N6 | -5.02 | 119.69 | 123.70 |
| 53 | B5 | 1304 | A | O4'-C1'-N9 | 5.02 | 112.21 | 108.20 |
| 53 | B5 | 2874 | G | C5-C6-O6 | -5.02 | 125.59 | 128.60 |
| 1 | AA | 190 | C | N3-C4-N4 | 5.02 | 121.51 | 118.00 |
| 53 | B5 | 745 | C | N3-C4-C5 | -5.02 | 119.89 | 121.90 |
| 53 | B5 | 1205 | A | O4'-C1'-N9 | 5.02 | 112.21 | 108.20 |
| 53 | B5 | 1418 | A | C5-C6-N6 | -5.02 | 119.69 | 123.70 |
| 53 | B5 | 1834 | U | O4'-C1'-N1 | 5.02 | 112.21 | 108.20 |
| 53 | B5 | 2932 | U | O4'-C1'-N1 | 5.02 | 112.21 | 108.20 |
| 53 | B5 | 3073 | A | C4-C5-C6 | 5.02 | 119.51 | 117.00 |
| 1 | AA | 570 | A | C4-C5-C6 | 5.01 | 119.51 | 117.00 |
| 1 | AA | 1503 | A | C5-C6-N6 | -5.01 | 119.69 | 123.70 |
| 4 | AD | 78 | ARG | NE-CZ-NH1 | 5.01 | 122.81 | 120.30 |
| 51 | B3 | 101 | A | C4-C5-C6 | 5.01 | 119.51 | 117.00 |
| 53 | B5 | 408 | A | O4'-C1'-N9 | 5.01 | 112.21 | 108.20 |
| 53 | B5 | 455 | C | P-O3'-C3' | 5.01 | 125.72 | 119.70 |
| 53 | B5 | 735 | A | C5-C6-N6 | -5.01 | 119.69 | 123.70 |
| 53 | B5 | 1804 | A | C5-C6-N6 | -5.01 | 119.69 | 123.70 |
| 53 | B5 | 2736 | A | O4'-C1'-N9 | 5.01 | 112.21 | 108.20 |
| 53 | B5 | 2977 | G | C5-C6-O6 | -5.01 | 125.59 | 128.60 |
| 53 | B5 | 3181 | G | C5-C6-O6 | -5.01 | 125.59 | 128.60 |
| 53 | B5 | 3370 | A | C4-C5-C6 | 5.01 | 119.51 | 117.00 |
| 1 | AA | 1315 | G | C5-C6-O6 | -5.01 | 125.59 | 128.60 |
| 1 | AA | 1540 | G | C5-C6-O6 | -5.01 | 125.59 | 128.60 |
| 1 | AA | 1770 | C | N3-C4-N4 | 5.01 | 121.51 | 118.00 |
| 53 | B5 | 963 | G | O4'-C1'-N9 | 5.01 | 112.21 | 108.20 |
| 53 | B5 | 1424 | C | N3-C4-C5 | -5.01 | 119.89 | 121.90 |
| 53 | B5 | 2580 | A | C5-C6-N6 | -5.01 | 119.69 | 123.70 |
| 53 | B5 | 2971 | A | O4'-C1'-N9 | 5.01 | 112.21 | 108.20 |
| 53 | B5 | 3168 | A | C4-C5-C6 | 5.01 | 119.51 | 117.00 |
| 1 | AA | 6 | G | O4'-C1'-N9 | 5.01 | 112.21 | 108.20 |
| 1 | AA | 301 | A | C5-C6-N6 | -5.01 | 119.69 | 123.70 |
| 1 | AA | 874 | C | N3-C4-N4 | 5.01 | 121.51 | 118.00 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 1 | AA | 1038 | A | C5-C6-N6 | -5.01 | 119.69 | 123.70 |
| 51 | B3 | 70 | A | C4-C5-C6 | 5.01 | 119.50 | 117.00 |
| 53 | B5 | 846 | A | C5-C6-N6 | -5.01 | 119.69 | 123.70 |
| 53 | B5 | 923 | C | N3-C4-N4 | 5.01 | 121.51 | 118.00 |
| 53 | B5 | 1153 | A | C5-C6-N6 | -5.01 | 119.69 | 123.70 |
| 53 | B5 | 1507 | G | N1-C6-O6 | 5.01 | 122.91 | 119.90 |
| 53 | B5 | 1835 | A | O4'-C1'-N9 | 5.01 | 112.21 | 108.20 |
| 53 | B5 | 2306 | C | O4'-C1'-N1 | 5.01 | 112.21 | 108.20 |
| 53 | B5 | 2649 | A | C4-C5-C6 | 5.01 | 119.51 | 117.00 |
| 53 | B5 | 3026 | G | O4'-C1'-N9 | 5.01 | 112.21 | 108.20 |
| 53 | B5 | 3135 | U | P-O3'-C3' | 5.01 | 125.71 | 119.70 |
| 1 | AA | 334 | G | C5-C6-O6 | -5.01 | 125.59 | 128.60 |
| 1 | AA | 696 | C | N3-C4-N4 | 5.01 | 121.51 | 118.00 |
| 1 | AA | 1164 | G | C5-C6-O6 | -5.01 | 125.59 | 128.60 |
| 1 | AA | 1775 | G | O4'-C1'-N9 | 5.01 | 112.21 | 108.20 |
| 1 | AA | 1791 | G | C5-C6-O6 | -5.01 | 125.59 | 128.60 |
| 19 | A7 | 44 | A | C6-C5-N7 | 5.01 | 135.81 | 132.30 |
| 53 | B5 | 580 | C | N3-C4-C5 | -5.01 | 119.90 | 121.90 |
| 53 | B5 | 1009 | A | O4'-C1'-N9 | 5.01 | 112.21 | 108.20 |
| 53 | B5 | 1290 | A | O4'-C1'-N9 | 5.01 | 112.21 | 108.20 |
| 53 | B5 | 1806 | A | C4-C5-C6 | 5.01 | 119.50 | 117.00 |
| 53 | B5 | 2703 | A | C4-C5-C6 | 5.01 | 119.50 | 117.00 |
| 53 | B5 | 3002 | C | N3-C4-C5 | -5.01 | 119.90 | 121.90 |
| 53 | B5 | 3347 | A | C5-C6-N6 | -5.01 | 119.69 | 123.70 |
| 1 | AA | 1330 | C | N3-C4-C5 | -5.01 | 119.90 | 121.90 |
| 53 | B5 | 2296 | A | C5-C6-N1 | -5.01 | 115.20 | 117.70 |
| 53 | B5 | 3207 | C | N3-C4-N4 | 5.01 | 121.50 | 118.00 |
| 53 | B5 | 379 | C | N3-C4-C5 | -5.01 | 119.90 | 121.90 |
| 53 | B5 | 1947 | G | C4-N9-C1' | 5.01 | 133.01 | 126.50 |
| 53 | B5 | 2312 | A | C4-C5-C6 | 5.01 | 119.50 | 117.00 |
| 53 | B5 | 2779 | A | C4-C5-C6 | 5.01 | 119.50 | 117.00 |
| 53 | B5 | 2952 | G | O4'-C1'-N9 | 5.01 | 112.20 | 108.20 |
| 53 | B5 | 3016 | A | P-O3'-C3' | 5.01 | 125.71 | 119.70 |
| 53 | B5 | 3133 | C | N3-C4-C5 | -5.01 | 119.90 | 121.90 |
| 53 | B5 | 13 | A | C4-C5-C6 | 5.00 | 119.50 | 117.00 |
| 53 | B5 | 466 | G | O4'-C1'-N9 | 5.00 | 112.20 | 108.20 |
| 53 | B5 | 598 | A | O4'-C1'-N9 | 5.00 | 112.20 | 108.20 |
| 53 | B5 | 2106 | A | C5-C6-N1 | -5.00 | 115.20 | 117.70 |
| 53 | B5 | 3218 | A | C4-C5-C6 | 5.00 | 119.50 | 117.00 |
| 1 | AA | 341 | A | C4-C5-C6 | 5.00 | 119.50 | 117.00 |
| 1 | AA | 1326 | A | C5-C6-N6 | -5.00 | 119.70 | 123.70 |
| 53 | B5 | 408 | A | C5-C6-N6 | -5.00 | 119.70 | 123.70 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 53 | B5 | 2157 | G | C5-C6-O6 | -5.00 | 125.60 | 128.60 |
| 1 | AA | 1160 | A | C4-C5-C6 | 5.00 | 119.50 | 117.00 |
| 51 | B3 | 2 | G | C5-C6-O6 | -5.00 | 125.60 | 128.60 |
| 51 | B3 | 102 | C | N3-C4-N4 | 5.00 | 121.50 | 118.00 |
| 53 | B5 | 747 | A | O4'-C1'-N9 | 5.00 | 112.20 | 108.20 |
| 53 | B5 | 2251 | G | P-O3'-C3' | 5.00 | 125.70 | 119.70 |
| 53 | B5 | 2447 | A | C4-C5-C6 | 5.00 | 119.50 | 117.00 |
| 53 | B5 | 3263 | G | C5-C6-O6 | -5.00 | 125.60 | 128.60 |
| 53 | B5 | 3279 | A | O4'-C1'-N9 | 5.00 | 112.20 | 108.20 |

All (45) chirality outliers are listed below:

| Mol | Chain | Res | Type | Atom |
|-----|-------|------|------|---------|
| 1 | AA | 109 | G | C3' |
| 1 | AA | 933 | C | C2' |
| 7 | AH | 34 | ILE | CB |
| 26 | BB | 161 | ASP | CA |
| 29 | BE | 216 | GLU | CA |
| 30 | BF | 83 | LEU | CA |
| 31 | BG | 141 | ALA | CA |
| 31 | BG | 142 | LEU | CA |
| 36 | BL | 56 | LYS | CA |
| 48 | BX | 70 | ALA | CA |
| 48 | BX | 80 | ALA | CA |
| 51 | B3 | 70 | A | C4' |
| 53 | B5 | 114 | A | C3' |
| 53 | B5 | 279 | U | C3' |
| 53 | B5 | 355 | A | C4' |
| 53 | B5 | 477 | A | C3' |
| 53 | B5 | 481 | U | C3' |
| 53 | B5 | 554 | A | C3' |
| 53 | B5 | 596 | U | C3' |
| 53 | B5 | 705 | A | C3' |
| 53 | B5 | 711 | A | C2' |
| 53 | B5 | 735 | A | C2',C3' |
| 53 | B5 | 786 | A | C3' |
| 53 | B5 | 970 | A | C3' |
| 53 | B5 | 1347 | U | C3' |
| 53 | B5 | 1583 | A | C2',C3' |
| 53 | B5 | 1590 | G | C3' |
| 53 | B5 | 1644 | C | C2' |
| 53 | B5 | 1737 | U | C3' |

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| Mol | Chain | Res | Type | Atom |
|-----|-------|------|------|---------|
| 53 | B5 | 1947 | G | C1' |
| 53 | B5 | 2214 | A | C3' |
| 53 | B5 | 2224 | A | C3' |
| 53 | B5 | 2225 | U | C3' |
| 53 | B5 | 2229 | A | C3' |
| 53 | B5 | 2469 | G | C2',C1' |
| 53 | B5 | 2477 | G | C1' |
| 53 | B5 | 2999 | U | C2' |
| 53 | B5 | 3051 | U | C4' |
| 53 | B5 | 3142 | A | C3' |
| 53 | B5 | 3246 | G | C4' |
| 53 | B5 | 3303 | G | C2' |
| 53 | B5 | 3304 | U | C3' |

All (285) planarity outliers are listed below:

| Mol | Chain | Res | Type | Group |
|-----|-------|-----|------|-----------|
| 19 | A7 | 1 | G | Sidechain |
| 19 | A7 | 11 | C | Sidechain |
| 19 | A7 | 14 | A | Sidechain |
| 19 | A7 | 15 | G | Sidechain |
| 19 | A7 | 18 | G | Sidechain |
| 19 | A7 | 19 | G | Sidechain |
| 19 | A7 | 2 | C | Sidechain |
| 19 | A7 | 20 | G | Sidechain |
| 19 | A7 | 21 | A | Sidechain |
| 19 | A7 | 23 | A | Sidechain |
| 19 | A7 | 24 | G | Sidechain |
| 19 | A7 | 27 | C | Sidechain |
| 19 | A7 | 29 | A | Sidechain |
| 19 | A7 | 3 | G | Sidechain |
| 19 | A7 | 30 | G | Sidechain |
| 19 | A7 | 31 | A | Sidechain |
| 19 | A7 | 36 | A | Sidechain |
| 19 | A7 | 4 | G | Sidechain |
| 19 | A7 | 41 | U | Sidechain |
| 19 | A7 | 42 | G | Sidechain |
| 19 | A7 | 43 | G | Sidechain |
| 19 | A7 | 45 | G | Sidechain |
| 19 | A7 | 47 | U | Sidechain |
| 19 | A7 | 5 | A | Sidechain |
| 19 | A7 | 50 | U | Sidechain |

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| Mol | Chain | Res | Type | Group |
|-----|-------|------|------|-----------|
| 19 | A7 | 51 | G | Sidechain |
| 19 | A7 | 52 | U | Sidechain |
| 19 | A7 | 53 | G | Sidechain |
| 19 | A7 | 56 | C | Sidechain |
| 19 | A7 | 57 | G | Sidechain |
| 19 | A7 | 59 | U | Sidechain |
| 19 | A7 | 61 | C | Sidechain |
| 19 | A7 | 63 | C | Sidechain |
| 19 | A7 | 65 | G | Sidechain |
| 19 | A7 | 66 | A | Sidechain |
| 19 | A7 | 7 | U | Sidechain |
| 19 | A7 | 70 | C | Sidechain |
| 19 | A7 | 71 | G | Sidechain |
| 19 | A7 | 72 | C | Sidechain |
| 19 | A7 | 73 | A | Sidechain |
| 19 | A7 | 74 | C | Sidechain |
| 19 | A7 | 75 | C | Sidechain |
| 19 | A7 | 76 | A | Sidechain |
| 19 | A7 | 9 | A | Sidechain |
| 1 | AA | 1089 | A | Sidechain |
| 1 | AA | 1196 | G | Sidechain |
| 1 | AA | 1200 | A | Sidechain |
| 1 | AA | 1202 | U | Sidechain |
| 1 | AA | 1237 | G | Sidechain |
| 1 | AA | 1303 | C | Sidechain |
| 1 | AA | 1309 | A | Sidechain |
| 1 | AA | 1327 | G | Sidechain |
| 1 | AA | 1440 | U | Sidechain |
| 1 | AA | 1502 | G | Sidechain |
| 1 | AA | 1514 | A | Sidechain |
| 1 | AA | 1520 | U | Sidechain |
| 1 | AA | 1551 | G | Sidechain |
| 1 | AA | 1583 | U | Sidechain |
| 1 | AA | 1584 | A | Sidechain |
| 1 | AA | 1586 | G | Sidechain |
| 1 | AA | 1766 | G | Sidechain |
| 1 | AA | 225 | A | Sidechain |
| 1 | AA | 244 | A | Sidechain |
| 1 | AA | 474 | A | Sidechain |
| 1 | AA | 475 | A | Sidechain |
| 1 | AA | 476 | U | Sidechain |
| 1 | AA | 529 | A | Sidechain |

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| Mol | Chain | Res | Type | Group |
|-----|-------|------|------|-------------------|
| 1 | AA | 80 | A | Sidechain |
| 1 | AA | 843 | U | Sidechain |
| 1 | AA | 855 | A | Sidechain |
| 1 | AA | 856 | A | Sidechain |
| 1 | AA | 877 | G | Sidechain |
| 2 | AB | 84 | ARG | Sidechain |
| 4 | AD | 149 | ARG | Sidechain |
| 4 | AD | 78 | ARG | Sidechain |
| 4 | AD | 79 | ARG | Sidechain |
| 5 | AE | 226 | THR | Peptide |
| 8 | AI | 135 | ARG | Sidechain |
| 8 | AI | 142 | TYR | Sidechain |
| 8 | AI | 96 | TYR | Sidechain |
| 9 | AJ | 23 | ARG | Sidechain |
| 9 | AJ | 53 | LYS | Peptide |
| 9 | AJ | 90 | TYR | Sidechain |
| 10 | AK | 132 | ARG | Sidechain,Peptide |
| 10 | AK | 48 | VAL | Peptide |
| 10 | AK | 52 | ARG | Sidechain |
| 12 | AM | 120 | ARG | Peptide |
| 12 | AM | 137 | HIS | Peptide |
| 12 | AM | 143 | ARG | Sidechain |
| 13 | AN | 13 | ARG | Sidechain |
| 13 | AN | 14 | PHE | Sidechain |
| 14 | AO | 114 | ARG | Sidechain |
| 14 | AO | 121 | ARG | Sidechain |
| 14 | AO | 124 | ARG | Sidechain |
| 14 | AO | 135 | LEU | Peptide |
| 20 | B0 | 45 | ARG | Sidechain |
| 52 | B4 | 132 | G | Sidechain |
| 52 | B4 | 147 | U | Sidechain |
| 52 | B4 | 41 | A | Sidechain |
| 52 | B4 | 44 | A | Sidechain |
| 52 | B4 | 62 | C | Sidechain |
| 52 | B4 | 64 | U | Sidechain |
| 53 | B5 | 1 | G | Sidechain |
| 53 | B5 | 10 | C | Sidechain |
| 53 | B5 | 1005 | G | Sidechain |
| 53 | B5 | 1026 | A | Sidechain |
| 53 | B5 | 1104 | G | Sidechain |
| 53 | B5 | 1132 | C | Sidechain |
| 53 | B5 | 1169 | A | Sidechain |

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| Mol | Chain | Res | Type | Group |
|-----|-------|------|------|-----------|
| 53 | B5 | 118 | U | Sidechain |
| 53 | B5 | 1181 | U | Sidechain |
| 53 | B5 | 1200 | A | Sidechain |
| 53 | B5 | 1236 | G | Sidechain |
| 53 | B5 | 1239 | C | Sidechain |
| 53 | B5 | 1240 | A | Sidechain |
| 53 | B5 | 1257 | C | Sidechain |
| 53 | B5 | 1290 | A | Sidechain |
| 53 | B5 | 130 | A | Sidechain |
| 53 | B5 | 1346 | G | Sidechain |
| 53 | B5 | 1347 | U | Sidechain |
| 53 | B5 | 135 | C | Sidechain |
| 53 | B5 | 1357 | G | Sidechain |
| 53 | B5 | 1362 | G | Sidechain |
| 53 | B5 | 1368 | U | Sidechain |
| 53 | B5 | 1378 | U | Sidechain |
| 53 | B5 | 1385 | C | Sidechain |
| 53 | B5 | 1417 | G | Sidechain |
| 53 | B5 | 1421 | G | Sidechain |
| 53 | B5 | 1496 | C | Sidechain |
| 53 | B5 | 1510 | G | Sidechain |
| 53 | B5 | 1544 | G | Sidechain |
| 53 | B5 | 1558 | A | Sidechain |
| 53 | B5 | 1622 | U | Sidechain |
| 53 | B5 | 1658 | G | Sidechain |
| 53 | B5 | 17 | G | Sidechain |
| 53 | B5 | 1714 | A | Sidechain |
| 53 | B5 | 1734 | G | Sidechain |
| 53 | B5 | 1783 | U | Sidechain |
| 53 | B5 | 1790 | G | Sidechain |
| 53 | B5 | 18 | G | Sidechain |
| 53 | B5 | 1811 | G | Sidechain |
| 53 | B5 | 1812 | G | Sidechain |
| 53 | B5 | 1831 | U | Sidechain |
| 53 | B5 | 1874 | A | Sidechain |
| 53 | B5 | 1896 | A | Sidechain |
| 53 | B5 | 1927 | G | Sidechain |
| 53 | B5 | 2112 | U | Sidechain |
| 53 | B5 | 2130 | G | Sidechain |
| 53 | B5 | 2133 | U | Sidechain |
| 53 | B5 | 216 | G | Sidechain |
| 53 | B5 | 2167 | A | Sidechain |

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| Mol | Chain | Res | Type | Group |
|-----|-------|------|------|-----------|
| 53 | B5 | 2176 | U | Sidechain |
| 53 | B5 | 2178 | A | Sidechain |
| 53 | B5 | 2180 | G | Sidechain |
| 53 | B5 | 2185 | G | Sidechain |
| 53 | B5 | 2186 | U | Sidechain |
| 53 | B5 | 2224 | A | Sidechain |
| 53 | B5 | 2300 | G | Sidechain |
| 53 | B5 | 2356 | A | Sidechain |
| 53 | B5 | 2394 | G | Sidechain |
| 53 | B5 | 2396 | G | Sidechain |
| 53 | B5 | 2448 | G | Sidechain |
| 53 | B5 | 2468 | A | Sidechain |
| 53 | B5 | 2481 | G | Sidechain |
| 53 | B5 | 2482 | U | Sidechain |
| 53 | B5 | 251 | G | Sidechain |
| 53 | B5 | 2548 | C | Sidechain |
| 53 | B5 | 2586 | G | Sidechain |
| 53 | B5 | 2593 | A | Sidechain |
| 53 | B5 | 2607 | G | Sidechain |
| 53 | B5 | 2621 | G | Sidechain |
| 53 | B5 | 2677 | G | Sidechain |
| 53 | B5 | 2681 | U | Sidechain |
| 53 | B5 | 2696 | A | Sidechain |
| 53 | B5 | 270 | U | Sidechain |
| 53 | B5 | 2744 | U | Sidechain |
| 53 | B5 | 2751 | G | Sidechain |
| 53 | B5 | 2768 | U | Sidechain |
| 53 | B5 | 2774 | C | Sidechain |
| 53 | B5 | 2789 | U | Sidechain |
| 53 | B5 | 2839 | G | Sidechain |
| 53 | B5 | 2876 | C | Sidechain |
| 53 | B5 | 2901 | G | Sidechain |
| 53 | B5 | 2943 | G | Sidechain |
| 53 | B5 | 2951 | G | Sidechain |
| 53 | B5 | 3003 | G | Sidechain |
| 53 | B5 | 3009 | G | Sidechain |
| 53 | B5 | 3032 | A | Sidechain |
| 53 | B5 | 3049 | A | Sidechain |
| 53 | B5 | 3144 | G | Sidechain |
| 53 | B5 | 3172 | G | Sidechain |
| 53 | B5 | 3303 | G | Sidechain |
| 53 | B5 | 3337 | G | Sidechain |

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| Mol | Chain | Res | Type | Group |
|-----|-------|-----|------|-----------|
| 53 | B5 | 337 | G | Sidechain |
| 53 | B5 | 366 | A | Sidechain |
| 53 | B5 | 40 | A | Sidechain |
| 53 | B5 | 494 | G | Sidechain |
| 53 | B5 | 495 | G | Sidechain |
| 53 | B5 | 496 | C | Sidechain |
| 53 | B5 | 498 | A | Sidechain |
| 53 | B5 | 584 | G | Sidechain |
| 53 | B5 | 619 | A | Sidechain |
| 53 | B5 | 652 | G | Sidechain |
| 53 | B5 | 662 | U | Sidechain |
| 53 | B5 | 709 | A | Sidechain |
| 53 | B5 | 8 | C | Sidechain |
| 53 | B5 | 847 | A | Sidechain |
| 53 | B5 | 855 | U | Sidechain |
| 53 | B5 | 859 | G | Sidechain |
| 53 | B5 | 860 | G | Sidechain |
| 53 | B5 | 895 | A | Sidechain |
| 53 | B5 | 975 | G | Sidechain |
| 53 | B5 | 977 | U | Sidechain |
| 53 | B5 | 992 | G | Sidechain |
| 23 | B8 | 115 | ALA | Peptide |
| 23 | B8 | 5 | ARG | Sidechain |
| 23 | B8 | 61 | ARG | Sidechain |
| 24 | B9 | 18 | TYR | Sidechain |
| 24 | B9 | 34 | HIS | Peptide |
| 24 | B9 | 43 | GLY | Peptide |
| 26 | BB | 150 | LEU | Peptide |
| 26 | BB | 161 | ASP | Peptide |
| 26 | BB | 163 | ARG | Sidechain |
| 26 | BB | 242 | ARG | Sidechain |
| 27 | BC | 117 | ARG | Sidechain |
| 28 | BD | 202 | ARG | Sidechain |
| 28 | BD | 31 | ARG | Sidechain |
| 28 | BD | 98 | ARG | Sidechain |
| 29 | BE | 112 | ARG | Sidechain |
| 29 | BE | 192 | PRO | Peptide |
| 29 | BE | 198 | TYR | Sidechain |
| 29 | BE | 213 | ASP | Peptide |
| 29 | BE | 219 | PHE | Peptide |
| 29 | BE | 85 | ARG | Sidechain |
| 29 | BE | 86 | TYR | Sidechain |

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| Mol | Chain | Res | Type | Group |
|-----|-------|-----|------|-------------------|
| 31 | BG | 142 | LEU | Peptide |
| 31 | BG | 173 | MET | Peptide |
| 32 | BH | 173 | ARG | Sidechain |
| 32 | BH | 23 | ARG | Sidechain |
| 32 | BH | 69 | ARG | Sidechain |
| 33 | BI | 69 | ARG | Sidechain |
| 33 | BI | 7 | ARG | Sidechain |
| 34 | BJ | 47 | GLN | Peptide |
| 34 | BJ | 61 | ARG | Sidechain |
| 34 | BJ | 92 | ARG | Sidechain |
| 35 | BK | 16 | ARG | Sidechain |
| 35 | BK | 90 | ARG | Sidechain |
| 36 | BL | 153 | ASP | Peptide |
| 36 | BL | 172 | ARG | Sidechain |
| 36 | BL | 174 | ILE | Peptide |
| 36 | BL | 33 | LYS | Peptide |
| 36 | BL | 38 | ARG | Sidechain |
| 36 | BL | 71 | ARG | Sidechain |
| 36 | BL | 81 | TYR | Sidechain |
| 37 | BM | 148 | LYS | Mainchain,Peptide |
| 37 | BM | 169 | ALA | Mainchain |
| 37 | BM | 84 | LEU | Peptide |
| 37 | BM | 85 | ARG | Sidechain |
| 38 | BN | 116 | HIS | Peptide |
| 38 | BN | 131 | ARG | Sidechain |
| 39 | BO | 72 | LYS | Peptide |
| 40 | BP | 110 | ARG | Sidechain |
| 40 | BP | 20 | ARG | Sidechain |
| 40 | BP | 38 | ARG | Sidechain |
| 40 | BP | 89 | LEU | Peptide |
| 42 | BR | 12 | ARG | Sidechain |
| 42 | BR | 32 | ARG | Sidechain |
| 42 | BR | 86 | ARG | Sidechain |
| 43 | BS | 47 | ARG | Sidechain |
| 44 | BT | 125 | ARG | Sidechain |
| 45 | BU | 63 | LYS | Peptide |
| 46 | BV | 112 | LEU | Peptide |
| 46 | BV | 12 | ARG | Sidechain |
| 46 | BV | 91 | LYS | Peptide |
| 47 | BW | 28 | ARG | Sidechain |
| 47 | BW | 74 | ARG | Sidechain |
| 48 | BX | 10 | ARG | Sidechain |

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| Mol | Chain | Res | Type | Group |
|-----|-------|-----|------|-----------|
| 49 | BY | 47 | TYR | Sidechain |
| 50 | BZ | 32 | LYS | Peptide |
| 50 | BZ | 42 | ARG | Sidechain |
| 50 | BZ | 55 | LYS | Peptide |
| 50 | BZ | 56 | PRO | Peptide |
| 50 | BZ | 60 | LYS | Peptide |

5.2 Too-close contacts

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

| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 1 | AA | 37458 | 0 | 18828 | 602 | 0 |
| 2 | AB | 1500 | 0 | 1524 | 1 | 0 |
| 3 | AC | 1469 | 0 | 1534 | 1 | 0 |
| 4 | AD | 1018 | 0 | 1067 | 1 | 0 |
| 5 | AE | 1207 | 0 | 1274 | 0 | 0 |
| 6 | AG | 1456 | 0 | 1523 | 2 | 0 |
| 7 | AH | 992 | 0 | 1027 | 39 | 0 |
| 8 | AI | 1087 | 0 | 1145 | 19 | 0 |
| 9 | AJ | 771 | 0 | 829 | 2 | 0 |
| 10 | AK | 924 | 0 | 949 | 0 | 0 |
| 11 | AL | 906 | 0 | 970 | 1 | 0 |
| 12 | AM | 1077 | 0 | 1107 | 19 | 0 |
| 13 | AN | 417 | 0 | 408 | 22 | 0 |
| 14 | AO | 694 | 0 | 740 | 13 | 0 |
| 15 | AQ | 643 | 0 | 688 | 2 | 0 |
| 16 | AS | 548 | 0 | 574 | 3 | 0 |
| 17 | AR | 2410 | 0 | 2367 | 538 | 0 |
| 18 | AT | 1102 | 0 | 1112 | 38 | 0 |
| 19 | A7 | 1648 | 0 | 830 | 56 | 0 |
| 20 | B0 | 881 | 0 | 926 | 1 | 0 |
| 21 | B1 | 424 | 0 | 459 | 1 | 0 |
| 22 | B2 | 752 | 0 | 803 | 1 | 0 |
| 23 | B8 | 947 | 0 | 972 | 19 | 0 |
| 24 | B9 | 539 | 0 | 555 | 1 | 0 |
| 25 | BA | 1683 | 0 | 1772 | 3 | 0 |
| 26 | BB | 1848 | 0 | 1908 | 16 | 0 |
| 27 | BC | 2887 | 0 | 2964 | 3 | 0 |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|--------|----------|----------|---------|--------------|
| 28 | BD | 1950 | 0 | 2019 | 3 | 0 |
| 29 | BE | 1913 | 0 | 1842 | 1 | 0 |
| 30 | BF | 1561 | 0 | 1633 | 1 | 0 |
| 31 | BG | 844 | 0 | 909 | 0 | 0 |
| 32 | BH | 1418 | 0 | 1483 | 4 | 0 |
| 33 | BI | 1326 | 0 | 1368 | 2 | 0 |
| 34 | BJ | 1195 | 0 | 1230 | 15 | 0 |
| 35 | BK | 1038 | 0 | 1110 | 23 | 0 |
| 36 | BL | 1618 | 0 | 1673 | 1 | 0 |
| 37 | BM | 1317 | 0 | 1407 | 63 | 0 |
| 38 | BN | 1189 | 0 | 1201 | 0 | 0 |
| 39 | BO | 931 | 0 | 1010 | 0 | 0 |
| 40 | BP | 1317 | 0 | 1389 | 113 | 0 |
| 41 | BQ | 893 | 0 | 924 | 0 | 0 |
| 42 | BR | 977 | 0 | 1026 | 15 | 0 |
| 43 | BS | 371 | 0 | 382 | 1 | 0 |
| 44 | BT | 642 | 0 | 679 | 0 | 0 |
| 45 | BU | 916 | 0 | 996 | 0 | 0 |
| 46 | BV | 1123 | 0 | 1160 | 2 | 0 |
| 47 | BW | 663 | 0 | 700 | 0 | 0 |
| 48 | BX | 605 | 0 | 661 | 1 | 0 |
| 49 | BY | 403 | 0 | 398 | 0 | 0 |
| 50 | BZ | 749 | 0 | 815 | 0 | 0 |
| 51 | B3 | 2403 | 0 | 1219 | 0 | 0 |
| 52 | B4 | 3329 | 0 | 1685 | 0 | 0 |
| 53 | B5 | 67775 | 0 | 34047 | 227 | 0 |
| All | All | 165754 | 0 | 111821 | 1335 | 0 |

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 5.

All (1335) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 35:BK:121:PHE:CZ | 35:BK:121:PHE:CE1 | 1.78 | 1.71 |
| 35:BK:121:PHE:CE2 | 35:BK:121:PHE:CZ | 1.79 | 1.69 |
| 35:BK:121:PHE:CE2 | 35:BK:121:PHE:CD2 | 1.76 | 1.69 |
| 35:BK:121:PHE:CD1 | 35:BK:121:PHE:CE1 | 1.80 | 1.69 |
| 35:BK:121:PHE:CG | 35:BK:121:PHE:CD2 | 1.82 | 1.68 |
| 35:BK:121:PHE:CD1 | 35:BK:121:PHE:CG | 1.81 | 1.67 |
| 1:AA:1501:A:H1' | 1:AA:1546:G:C2 | 1.33 | 1.62 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:1756:U:H5' | 53:B5:2262:A:C2 | 1.34 | 1.62 |
| 8:AI:96:TYR:CE1 | 8:AI:96:TYR:CD1 | 1.89 | 1.59 |
| 8:AI:96:TYR:CD2 | 8:AI:96:TYR:CE2 | 1.88 | 1.58 |
| 8:AI:96:TYR:CD2 | 8:AI:96:TYR:CG | 1.90 | 1.58 |
| 8:AI:96:TYR:CE1 | 8:AI:96:TYR:CZ | 1.91 | 1.57 |
| 8:AI:96:TYR:CG | 8:AI:96:TYR:CD1 | 1.91 | 1.56 |
| 1:AA:1200:A:C5 | 1:AA:1200:A:C6 | 1.87 | 1.56 |
| 8:AI:96:TYR:CE2 | 8:AI:96:TYR:CZ | 1.90 | 1.55 |
| 1:AA:1200:A:N3 | 1:AA:1200:A:C2 | 1.75 | 1.54 |
| 1:AA:1200:A:N1 | 1:AA:1200:A:C2 | 1.74 | 1.54 |
| 37:BM:111:PRO:HA | 37:BM:163:ALA:CB | 1.36 | 1.52 |
| 12:AM:110:ARG:NE | 34:BJ:116:TYR:CD1 | 1.76 | 1.52 |
| 1:AA:702:G:C4 | 40:BP:172:ALA:O | 1.64 | 1.50 |
| 1:AA:856:A:C6 | 1:AA:856:A:C5 | 1.99 | 1.50 |
| 37:BM:111:PRO:CA | 37:BM:163:ALA:HB1 | 1.04 | 1.50 |
| 1:AA:702:G:C6 | 40:BP:172:ALA:HB1 | 0.98 | 1.49 |
| 1:AA:1200:A:C4 | 1:AA:1200:A:C5 | 1.86 | 1.48 |
| 1:AA:1630:C:H4' | 1:AA:1636:G:N2 | 1.16 | 1.48 |
| 1:AA:1776:G:C4' | 53:B5:2194:G:H5'' | 1.43 | 1.48 |
| 1:AA:702:G:C6 | 40:BP:172:ALA:CB | 1.93 | 1.48 |
| 1:AA:1200:A:N1 | 1:AA:1200:A:C6 | 1.82 | 1.48 |
| 1:AA:699:U:H3' | 40:BP:169:ALA:CB | 1.42 | 1.47 |
| 1:AA:856:A:C2 | 1:AA:856:A:N1 | 1.82 | 1.47 |
| 37:BM:111:PRO:HB3 | 37:BM:163:ALA:CA | 1.41 | 1.47 |
| 1:AA:1200:A:N3 | 1:AA:1200:A:C4 | 1.82 | 1.47 |
| 1:AA:1501:A:C6 | 1:AA:1546:G:C8 | 2.02 | 1.46 |
| 1:AA:1200:A:C4 | 13:AN:16:LYS:HA | 1.46 | 1.45 |
| 1:AA:701:U:C4 | 40:BP:169:ALA:O | 1.67 | 1.44 |
| 1:AA:856:A:C5 | 1:AA:856:A:C4 | 1.97 | 1.44 |
| 1:AA:501:U:C4 | 1:AA:501:U:C5 | 2.04 | 1.43 |
| 1:AA:856:A:C2 | 1:AA:856:A:N3 | 1.84 | 1.43 |
| 12:AM:110:ARG:NH2 | 34:BJ:116:TYR:CZ | 1.82 | 1.42 |
| 1:AA:1501:A:N7 | 1:AA:1546:G:H2' | 1.29 | 1.42 |
| 1:AA:702:G:C8 | 40:BP:175:ALA:HB3 | 1.54 | 1.40 |
| 1:AA:501:U:C6 | 1:AA:501:U:N1 | 1.89 | 1.40 |
| 1:AA:856:A:C6 | 1:AA:856:A:N1 | 1.87 | 1.40 |
| 1:AA:1756:U:H5' | 53:B5:2262:A:N1 | 1.17 | 1.39 |
| 1:AA:501:U:C4 | 1:AA:501:U:N3 | 1.89 | 1.38 |
| 1:AA:856:A:N3 | 1:AA:856:A:C4 | 1.91 | 1.38 |
| 1:AA:501:U:N3 | 1:AA:501:U:C2 | 1.91 | 1.38 |
| 1:AA:1776:G:OP1 | 53:B5:2193:U:C5' | 1.71 | 1.37 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:1755:G:N2 | 53:B5:2262:A:O2' | 1.57 | 1.36 |
| 1:AA:1757:C:O4' | 53:B5:2263:C:C5' | 1.74 | 1.35 |
| 1:AA:1501:A:C6 | 1:AA:1546:G:N7 | 1.93 | 1.35 |
| 1:AA:1200:A:C5 | 13:AN:16:LYS:HA | 1.58 | 1.35 |
| 1:AA:501:U:C2 | 1:AA:501:U:N1 | 1.94 | 1.34 |
| 1:AA:1756:U:C5' | 53:B5:2262:A:C2 | 2.09 | 1.33 |
| 37:BM:169:ALA:C | 37:BM:171:ALA:N | 1.78 | 1.33 |
| 1:AA:702:G:O6 | 40:BP:172:ALA:CB | 1.68 | 1.33 |
| 1:AA:1501:A:H1' | 1:AA:1546:G:N2 | 1.43 | 1.33 |
| 12:AM:110:ARG:NE | 34:BJ:116:TYR:CE1 | 1.74 | 1.33 |
| 14:AO:149:LEU:HD12 | 53:B5:847:A:OP1 | 1.22 | 1.33 |
| 1:AA:1521:G:H5'' | 1:AA:1522:A:P | 1.68 | 1.32 |
| 1:AA:1630:C:C4' | 1:AA:1636:G:N2 | 1.90 | 1.32 |
| 1:AA:702:G:N3 | 40:BP:176:ALA:HB3 | 1.44 | 1.32 |
| 1:AA:1665:A:OP1 | 53:B5:1936:A:C5' | 1.78 | 1.32 |
| 1:AA:699:U:C3' | 40:BP:169:ALA:HB3 | 1.60 | 1.31 |
| 1:AA:1501:A:N1 | 1:AA:1546:G:N7 | 1.77 | 1.31 |
| 1:AA:1756:U:O3' | 53:B5:2263:C:C4' | 1.64 | 1.31 |
| 1:AA:1502:G:C5 | 1:AA:1547:C:C4 | 2.17 | 1.30 |
| 1:AA:1501:A:C1' | 1:AA:1546:G:C2 | 2.11 | 1.30 |
| 1:AA:1655:U:C4 | 53:B5:2329:C:H1' | 1.50 | 1.30 |
| 1:AA:972:A:H5' | 53:B5:848:A:C2 | 1.64 | 1.29 |
| 37:BM:108:ILE:HG23 | 37:BM:160:ALA:CB | 1.60 | 1.28 |
| 1:AA:1755:G:O2' | 53:B5:2262:A:C2 | 1.84 | 1.27 |
| 1:AA:1521:G:C2 | 18:AT:78:LYS:CG | 2.16 | 1.27 |
| 1:AA:972:A:H5' | 53:B5:848:A:N3 | 1.48 | 1.27 |
| 1:AA:1735:G:H4' | 53:B5:1933:A:O2' | 1.31 | 1.27 |
| 1:AA:858:G:C2 | 7:AH:61:ILE:CB | 2.16 | 1.27 |
| 1:AA:858:G:C6 | 7:AH:61:ILE:CB | 2.18 | 1.27 |
| 37:BM:108:ILE:CG2 | 37:BM:160:ALA:CB | 2.11 | 1.27 |
| 1:AA:858:G:N1 | 7:AH:61:ILE:CB | 1.99 | 1.26 |
| 1:AA:1501:A:C8 | 1:AA:1546:G:H2' | 1.70 | 1.26 |
| 1:AA:1630:C:C4' | 1:AA:1636:G:H21 | 1.46 | 1.26 |
| 1:AA:1501:A:C4 | 1:AA:1546:G:C4 | 2.16 | 1.26 |
| 1:AA:1521:G:C2 | 18:AT:78:LYS:HG3 | 1.68 | 1.25 |
| 1:AA:1776:G:OP1 | 53:B5:2193:U:H5'' | 1.14 | 1.25 |
| 1:AA:698:U:N1 | 40:BP:164:ALA:O | 1.58 | 1.25 |
| 1:AA:698:U:C2 | 40:BP:164:ALA:O | 1.90 | 1.24 |
| 37:BM:111:PRO:CA | 37:BM:163:ALA:CB | 2.01 | 1.24 |
| 1:AA:699:U:C3' | 40:BP:169:ALA:CB | 2.13 | 1.24 |
| 12:AM:110:ARG:NH2 | 34:BJ:116:TYR:CE2 | 2.04 | 1.23 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 14:AO:123:HIS:ND1 | 53:B5:846:A:N3 | 1.84 | 1.23 |
| 1:AA:1502:G:N7 | 1:AA:1547:C:C2 | 2.07 | 1.23 |
| 1:AA:1776:G:H5'' | 53:B5:2194:G:C5' | 1.69 | 1.22 |
| 1:AA:702:G:C5 | 40:BP:172:ALA:HB1 | 1.75 | 1.22 |
| 1:AA:698:U:C6 | 40:BP:164:ALA:O | 1.91 | 1.22 |
| 1:AA:1574:A:N3 | 19:A7:41:U:O4' | 1.70 | 1.21 |
| 1:AA:971:G:H21 | 53:B5:846:A:N6 | 1.37 | 1.21 |
| 1:AA:1574:A:N3 | 19:A7:41:U:C4' | 1.84 | 1.21 |
| 1:AA:1653:A:C6 | 53:B5:2302:G:C5' | 2.16 | 1.20 |
| 1:AA:1657:A:H5'' | 42:BR:67:PRO:CD | 1.72 | 1.20 |
| 1:AA:702:G:O6 | 40:BP:172:ALA:HB1 | 1.02 | 1.19 |
| 37:BM:111:PRO:CB | 37:BM:163:ALA:HB1 | 1.72 | 1.19 |
| 1:AA:1776:G:O3' | 53:B5:2194:G:C4' | 1.90 | 1.19 |
| 1:AA:1756:U:C1' | 53:B5:2262:A:H2' | 1.72 | 1.19 |
| 1:AA:799:A:N3 | 40:BP:161:ALA:CB | 1.99 | 1.19 |
| 1:AA:1756:U:C3' | 53:B5:2263:C:H4' | 1.52 | 1.18 |
| 1:AA:1635:C:C4' | 1:AA:1636:G:OP2 | 1.84 | 1.18 |
| 1:AA:1757:C:O4' | 53:B5:2263:C:H5' | 1.31 | 1.17 |
| 1:AA:1461:C:OP1 | 19:A7:30:G:H1' | 1.40 | 1.17 |
| 1:AA:1776:G:O3' | 53:B5:2194:G:H4' | 0.99 | 1.17 |
| 1:AA:1630:C:C5' | 1:AA:1636:G:H21 | 1.56 | 1.16 |
| 1:AA:1756:U:H1' | 53:B5:2262:A:C2' | 1.75 | 1.15 |
| 1:AA:921:G:H4' | 26:BB:141:PRO:HD3 | 1.28 | 1.15 |
| 1:AA:1776:G:H4' | 53:B5:2194:G:C5' | 1.76 | 1.15 |
| 17:AR:34:LEU:HD21 | 17:AR:42:LEU:HD21 | 1.27 | 1.15 |
| 1:AA:1521:G:N1 | 18:AT:78:LYS:CG | 2.01 | 1.15 |
| 1:AA:1635:C:H4' | 1:AA:1636:G:OP2 | 1.43 | 1.15 |
| 17:AR:34:LEU:HG | 17:AR:42:LEU:HD11 | 1.24 | 1.15 |
| 1:AA:1655:U:C4 | 53:B5:2329:C:C1' | 2.26 | 1.15 |
| 1:AA:1121:A:C1' | 53:B5:2191:U:C5' | 2.24 | 1.14 |
| 1:AA:1776:G:C5' | 53:B5:2194:G:C5' | 2.23 | 1.14 |
| 17:AR:38:ARG:HA | 17:AR:67:ILE:HG23 | 1.29 | 1.14 |
| 1:AA:1121:A:H1' | 53:B5:2191:U:H5'' | 1.16 | 1.14 |
| 1:AA:1521:G:H1' | 18:AT:86:ARG:NH2 | 1.63 | 1.14 |
| 37:BM:111:PRO:CB | 37:BM:163:ALA:CA | 2.26 | 1.14 |
| 1:AA:1502:G:C5 | 1:AA:1547:C:N3 | 2.14 | 1.13 |
| 1:AA:1653:A:H1' | 53:B5:2302:G:OP2 | 1.45 | 1.13 |
| 1:AA:1502:G:C8 | 1:AA:1547:C:N3 | 2.17 | 1.13 |
| 1:AA:1521:G:N2 | 18:AT:78:LYS:CD | 2.10 | 1.13 |
| 1:AA:1521:G:O2' | 18:AT:83:ALA:HA | 1.48 | 1.13 |
| 1:AA:1502:G:C6 | 1:AA:1547:C:C4 | 2.35 | 1.13 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 37:BM:108:ILE:CG2 | 37:BM:160:ALA:HB1 | 1.72 | 1.13 |
| 1:AA:1521:G:N1 | 18:AT:78:LYS:HG3 | 1.28 | 1.13 |
| 1:AA:1521:G:C5 | 18:AT:79:LEU:N | 2.17 | 1.12 |
| 1:AA:1200:A:C5 | 13:AN:16:LYS:CA | 2.32 | 1.12 |
| 1:AA:1200:A:C4 | 13:AN:16:LYS:CA | 2.32 | 1.12 |
| 1:AA:1502:G:N7 | 1:AA:1547:C:N3 | 1.97 | 1.12 |
| 1:AA:1501:A:C5 | 1:AA:1546:G:C4 | 2.36 | 1.12 |
| 1:AA:1630:C:H4' | 1:AA:1636:G:C2 | 1.83 | 1.12 |
| 1:AA:1200:A:C2 | 13:AN:16:LYS:CA | 2.33 | 1.12 |
| 37:BM:108:ILE:CG2 | 37:BM:160:ALA:HB2 | 1.76 | 1.12 |
| 1:AA:1757:C:O4' | 53:B5:2263:C:H5'' | 1.50 | 1.12 |
| 17:AR:209:THR:HG23 | 17:AR:210:LEU:HD22 | 1.16 | 1.12 |
| 1:AA:1776:G:C5' | 53:B5:2194:G:H5' | 1.78 | 1.12 |
| 1:AA:1756:U:C5' | 53:B5:2262:A:N1 | 2.07 | 1.12 |
| 1:AA:1776:G:C4' | 53:B5:2194:G:C5' | 2.26 | 1.12 |
| 1:AA:1665:A:OP1 | 53:B5:1936:A:H5' | 0.94 | 1.12 |
| 1:AA:1778:G:OP1 | 53:B5:2274:U:H5' | 1.44 | 1.11 |
| 1:AA:858:G:C5 | 7:AH:61:ILE:CB | 2.31 | 1.11 |
| 37:BM:151:ALA:O | 37:BM:155:ALA:CB | 1.98 | 1.11 |
| 14:AO:149:LEU:CD1 | 53:B5:847:A:OP1 | 1.98 | 1.10 |
| 1:AA:1653:A:C1' | 53:B5:2302:G:OP2 | 1.96 | 1.10 |
| 14:AO:149:LEU:HD13 | 53:B5:847:A:H5' | 1.21 | 1.10 |
| 1:AA:1521:G:H5'' | 1:AA:1522:A:OP2 | 1.47 | 1.10 |
| 1:AA:1665:A:O4' | 53:B5:1935:G:H5' | 1.52 | 1.09 |
| 1:AA:1657:A:C5' | 42:BR:67:PRO:HG2 | 1.81 | 1.09 |
| 1:AA:1574:A:H2' | 19:A7:40:5MC:O2' | 1.41 | 1.09 |
| 1:AA:699:U:O2 | 40:BP:170:ALA:HB3 | 1.35 | 1.09 |
| 37:BM:169:ALA:O | 37:BM:170:ALA:C | 1.79 | 1.09 |
| 1:AA:1501:A:N7 | 1:AA:1546:G:C2' | 2.15 | 1.08 |
| 1:AA:1664:U:O3' | 53:B5:1935:G:O2' | 1.71 | 1.08 |
| 1:AA:1756:U:C3' | 53:B5:2263:C:C4' | 2.16 | 1.08 |
| 17:AR:211:ILE:HD11 | 17:AR:225:LEU:HD13 | 1.16 | 1.08 |
| 1:AA:1574:A:C2 | 19:A7:41:U:O4' | 2.05 | 1.08 |
| 1:AA:1632:C:H4' | 1:AA:1633:A:OP2 | 1.50 | 1.08 |
| 1:AA:856:A:C5 | 7:AH:33:VAL:N | 2.22 | 1.08 |
| 1:AA:1200:A:C6 | 13:AN:16:LYS:CA | 2.37 | 1.08 |
| 1:AA:1776:G:H5' | 53:B5:2194:G:OP1 | 1.54 | 1.07 |
| 1:AA:1521:G:C5' | 1:AA:1522:A:OP2 | 2.03 | 1.07 |
| 1:AA:1521:G:C2 | 18:AT:78:LYS:CB | 2.38 | 1.07 |
| 1:AA:972:A:C5' | 53:B5:848:A:N3 | 2.16 | 1.07 |
| 1:AA:1521:G:C5' | 1:AA:1522:A:P | 2.33 | 1.06 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 17:AR:164:ASP:HB2 | 17:AR:168:THR:HA | 1.09 | 1.06 |
| 1:AA:856:A:C4 | 7:AH:32:LYS:C | 2.29 | 1.06 |
| 1:AA:1501:A:C5 | 1:AA:1546:G:C8 | 2.44 | 1.06 |
| 37:BM:108:ILE:HG23 | 37:BM:160:ALA:HB1 | 1.32 | 1.06 |
| 14:AO:149:LEU:HD12 | 53:B5:847:A:P | 1.95 | 1.06 |
| 37:BM:111:PRO:CB | 37:BM:163:ALA:CB | 2.28 | 1.06 |
| 1:AA:1757:C:C4' | 53:B5:2263:C:H5'' | 1.78 | 1.05 |
| 1:AA:702:G:N7 | 40:BP:172:ALA:HA | 1.71 | 1.05 |
| 1:AA:699:U:O2 | 40:BP:170:ALA:CB | 1.77 | 1.05 |
| 1:AA:699:U:C1' | 40:BP:169:ALA:HB3 | 1.77 | 1.05 |
| 1:AA:800:U:OP1 | 40:BP:160:ALA:HB1 | 1.56 | 1.05 |
| 1:AA:858:G:C4 | 7:AH:61:ILE:CB | 2.39 | 1.05 |
| 17:AR:260:ILE:HG13 | 17:AR:284:ALA:HB1 | 1.38 | 1.05 |
| 1:AA:1657:A:H5' | 42:BR:67:PRO:HG2 | 1.33 | 1.05 |
| 17:AR:164:ASP:HB2 | 17:AR:168:THR:CA | 1.87 | 1.05 |
| 17:AR:258:THR:HG21 | 17:AR:261:LYS:HE2 | 1.39 | 1.05 |
| 1:AA:1744:A:C2 | 53:B5:2302:G:O5' | 2.09 | 1.05 |
| 1:AA:856:A:C4 | 7:AH:33:VAL:N | 2.24 | 1.05 |
| 1:AA:856:A:C5 | 7:AH:32:LYS:C | 2.30 | 1.05 |
| 1:AA:1200:A:C5 | 13:AN:16:LYS:N | 2.25 | 1.04 |
| 1:AA:1734:G:H21 | 53:B5:1934:G:H4' | 1.19 | 1.04 |
| 12:AM:110:ARG:CZ | 34:BJ:116:TYR:CE1 | 2.40 | 1.04 |
| 23:B8:43:LYS:NZ | 35:BK:121:PHE:CE1 | 2.25 | 1.04 |
| 1:AA:856:A:C6 | 7:AH:33:VAL:N | 2.26 | 1.04 |
| 14:AO:149:LEU:HD13 | 53:B5:847:A:C5' | 1.87 | 1.04 |
| 37:BM:111:PRO:CB | 37:BM:163:ALA:HA | 1.86 | 1.04 |
| 1:AA:702:G:C5 | 40:BP:172:ALA:O | 2.10 | 1.03 |
| 1:AA:856:A:C2 | 7:AH:33:VAL:N | 2.26 | 1.03 |
| 8:AI:93:HIS:CE1 | 17:AR:59:ARG:HH22 | 1.76 | 1.03 |
| 1:AA:1200:A:C4 | 13:AN:16:LYS:N | 2.25 | 1.03 |
| 1:AA:799:A:C4' | 40:BP:161:ALA:O | 2.04 | 1.03 |
| 17:AR:83:ALA:HB2 | 17:AR:113:VAL:HG13 | 1.41 | 1.03 |
| 17:AR:257:ALA:HA | 17:AR:283:LYS:HD2 | 1.07 | 1.03 |
| 1:AA:699:U:O4' | 40:BP:166:ALA:HA | 1.56 | 1.03 |
| 1:AA:922:A:H5' | 26:BB:109:GLU:OE1 | 1.57 | 1.03 |
| 1:AA:1501:A:N6 | 1:AA:1546:G:C8 | 2.26 | 1.03 |
| 1:AA:1744:A:H4' | 53:B5:2291:A:H1' | 1.37 | 1.03 |
| 1:AA:1630:C:C5' | 1:AA:1636:G:N2 | 2.18 | 1.03 |
| 17:AR:93:ASP:HB3 | 17:AR:96:THR:HG22 | 1.41 | 1.03 |
| 37:BM:111:PRO:HB3 | 37:BM:163:ALA:HA | 1.07 | 1.03 |
| 1:AA:856:A:C2 | 7:AH:32:LYS:C | 2.32 | 1.03 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:1200:A:C2 | 13:AN:16:LYS:N | 2.27 | 1.02 |
| 1:AA:699:U:C2' | 40:BP:169:ALA:HB3 | 1.89 | 1.02 |
| 1:AA:699:U:H3' | 40:BP:169:ALA:HB1 | 1.04 | 1.02 |
| 1:AA:701:U:C5 | 40:BP:169:ALA:O | 2.11 | 1.02 |
| 19:A7:71:G:H5' | 53:B5:2236:G:H4' | 1.42 | 1.02 |
| 1:AA:1521:G:N2 | 18:AT:78:LYS:HD2 | 1.73 | 1.02 |
| 1:AA:702:G:C8 | 40:BP:175:ALA:CB | 2.41 | 1.02 |
| 1:AA:1121:A:H1' | 53:B5:2191:U:C5' | 1.85 | 1.02 |
| 1:AA:702:G:C5 | 40:BP:172:ALA:CA | 2.43 | 1.02 |
| 17:AR:286:GLU:HG2 | 17:AR:289:ALA:HA | 1.41 | 1.02 |
| 1:AA:1000:U:OP1 | 19:A7:38:A:H5' | 1.58 | 1.01 |
| 1:AA:1653:A:C6 | 53:B5:2302:G:H5'' | 1.88 | 1.01 |
| 17:AR:210:LEU:HD12 | 17:AR:222:LEU:HD21 | 1.40 | 1.01 |
| 1:AA:799:A:N3 | 40:BP:161:ALA:HB2 | 1.43 | 1.01 |
| 1:AA:1520:U:H5'' | 1:AA:1522:A:OP2 | 1.59 | 1.01 |
| 1:AA:1574:A:C2 | 19:A7:41:U:C4' | 2.42 | 1.01 |
| 1:AA:799:A:O4' | 40:BP:161:ALA:O | 1.71 | 1.01 |
| 1:AA:699:U:O4' | 40:BP:166:ALA:CA | 2.07 | 1.01 |
| 1:AA:1755:G:O2' | 53:B5:2262:A:H2 | 1.25 | 1.00 |
| 1:AA:1756:U:H1' | 53:B5:2262:A:H2' | 1.01 | 1.00 |
| 1:AA:1200:A:C6 | 13:AN:16:LYS:N | 2.29 | 1.00 |
| 1:AA:1657:A:C5' | 42:BR:67:PRO:CG | 2.39 | 1.00 |
| 1:AA:1501:A:C5 | 1:AA:1546:G:C5 | 2.44 | 1.00 |
| 1:AA:1756:U:O4' | 53:B5:2262:A:N3 | 1.93 | 1.00 |
| 1:AA:856:A:C6 | 7:AH:32:LYS:C | 2.35 | 1.00 |
| 1:AA:1777:U:P | 53:B5:2194:G:H4' | 2.02 | 1.00 |
| 1:AA:1121:A:C4' | 53:B5:2191:U:H5' | 1.92 | 0.99 |
| 1:AA:912:G:O6 | 53:B5:2207:A:O5' | 1.71 | 0.99 |
| 1:AA:1744:A:C4' | 53:B5:2291:A:H1' | 1.92 | 0.99 |
| 17:AR:12:THR:HG22 | 17:AR:311:ARG:HG2 | 1.40 | 0.99 |
| 1:AA:1574:A:C2' | 19:A7:40:5MC:O2' | 2.11 | 0.99 |
| 1:AA:1635:C:C5' | 1:AA:1636:G:OP2 | 2.10 | 0.99 |
| 1:AA:1501:A:C1' | 1:AA:1546:G:N2 | 2.15 | 0.99 |
| 1:AA:702:G:H1' | 40:BP:175:ALA:CB | 1.78 | 0.99 |
| 17:AR:259:GLY:HA2 | 17:AR:284:ALA:HA | 1.41 | 0.99 |
| 1:AA:1756:U:C4' | 53:B5:2262:A:C2 | 2.46 | 0.98 |
| 1:AA:1502:G:C6 | 1:AA:1547:C:C5 | 2.52 | 0.98 |
| 1:AA:1502:G:C8 | 1:AA:1547:C:C2 | 2.50 | 0.98 |
| 1:AA:1657:A:H5' | 42:BR:67:PRO:CG | 1.93 | 0.98 |
| 1:AA:1121:A:C1' | 53:B5:2191:U:H5' | 1.91 | 0.98 |
| 1:AA:993:G:H5'' | 53:B5:2195:C:OP2 | 1.64 | 0.98 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:1460:G:H4' | 19:A7:30:G:H5' | 1.46 | 0.97 |
| 1:AA:1521:G:N2 | 18:AT:78:LYS:NZ | 2.11 | 0.97 |
| 1:AA:1756:U:O3' | 53:B5:2263:C:C1' | 1.98 | 0.97 |
| 1:AA:1756:U:C2' | 53:B5:2263:C:OP1 | 2.12 | 0.97 |
| 1:AA:1653:A:H2 | 53:B5:2301:U:HO2' | 1.02 | 0.97 |
| 1:AA:1756:U:O2' | 53:B5:2263:C:O5' | 1.80 | 0.97 |
| 1:AA:971:G:N2 | 53:B5:846:A:N6 | 2.12 | 0.96 |
| 12:AM:110:ARG:CZ | 34:BJ:116:TYR:CZ | 2.48 | 0.96 |
| 1:AA:972:A:C5' | 53:B5:848:A:C2 | 2.49 | 0.96 |
| 1:AA:1655:U:O2 | 53:B5:2124:G:N2 | 1.99 | 0.96 |
| 1:AA:701:U:O4 | 40:BP:169:ALA:O | 1.80 | 0.96 |
| 1:AA:699:U:C2 | 40:BP:167:ALA:O | 2.20 | 0.95 |
| 17:AR:40:LYS:HE2 | 17:AR:66:HIS:HA | 1.48 | 0.95 |
| 1:AA:699:U:C2 | 40:BP:167:ALA:C | 2.39 | 0.95 |
| 37:BM:111:PRO:HB3 | 37:BM:163:ALA:C | 1.86 | 0.95 |
| 37:BM:108:ILE:HG22 | 37:BM:160:ALA:HB2 | 1.46 | 0.95 |
| 1:AA:1502:G:C4 | 1:AA:1547:C:N4 | 2.35 | 0.94 |
| 17:AR:286:GLU:HG3 | 17:AR:305:TYR:CG | 2.02 | 0.94 |
| 17:AR:34:LEU:CG | 17:AR:42:LEU:HD11 | 1.97 | 0.94 |
| 17:AR:164:ASP:CB | 17:AR:168:THR:HA | 1.97 | 0.94 |
| 37:BM:151:ALA:O | 37:BM:155:ALA:HB3 | 1.66 | 0.94 |
| 37:BM:169:ALA:C | 37:BM:171:ALA:H | 1.68 | 0.94 |
| 17:AR:257:ALA:CA | 17:AR:283:LYS:HD2 | 1.97 | 0.93 |
| 19:A7:63:C:H5'' | 25:BA:45:ARG:HD2 | 1.49 | 0.93 |
| 1:AA:1735:G:C4' | 53:B5:1933:A:O2' | 2.16 | 0.93 |
| 1:AA:1776:G:C5' | 53:B5:2194:G:H5'' | 1.92 | 0.93 |
| 1:AA:1520:U:H4' | 1:AA:1522:A:C8 | 2.03 | 0.93 |
| 1:AA:1657:A:H5'' | 42:BR:67:PRO:HD2 | 1.48 | 0.93 |
| 1:AA:865:A:OP1 | 1:AA:865:A:H8 | 1.51 | 0.93 |
| 1:AA:1735:G:H4' | 53:B5:1933:A:HO2' | 1.31 | 0.93 |
| 1:AA:1776:G:H5'' | 53:B5:2194:G:H5' | 0.94 | 0.93 |
| 1:AA:1521:G:C2 | 18:AT:78:LYS:HB2 | 2.02 | 0.93 |
| 17:AR:46:LYS:HB2 | 17:AR:58:VAL:CG1 | 1.98 | 0.93 |
| 17:AR:164:ASP:HB3 | 17:AR:183:LEU:H | 1.33 | 0.92 |
| 37:BM:155:ALA:O | 37:BM:158:ALA:N | 2.01 | 0.92 |
| 17:AR:36:ALA:HB1 | 17:AR:68:VAL:HG13 | 1.46 | 0.92 |
| 1:AA:993:G:C5' | 53:B5:2195:C:OP2 | 2.17 | 0.92 |
| 1:AA:1501:A:C5 | 1:AA:1546:G:N9 | 2.37 | 0.92 |
| 1:AA:702:G:N9 | 40:BP:175:ALA:HB3 | 1.84 | 0.92 |
| 1:AA:702:G:N3 | 40:BP:176:ALA:CB | 2.30 | 0.92 |
| 17:AR:156:VAL:HB | 17:AR:167:VAL:CG2 | 2.00 | 0.92 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 12:AM:110:ARG:CD | 34:BJ:116:TYR:CD1 | 2.53 | 0.92 |
| 1:AA:1655:U:C5 | 53:B5:2329:C:H1' | 2.05 | 0.92 |
| 17:AR:83:ALA:HB2 | 17:AR:113:VAL:CG1 | 1.99 | 0.92 |
| 1:AA:1501:A:C6 | 1:AA:1546:G:C5 | 2.57 | 0.92 |
| 1:AA:1756:U:C1' | 53:B5:2263:C:OP1 | 2.18 | 0.92 |
| 23:B8:43:LYS:NZ | 35:BK:121:PHE:CD1 | 2.38 | 0.92 |
| 1:AA:1755:G:C2' | 53:B5:2262:A:H2 | 1.83 | 0.91 |
| 1:AA:1501:A:C2 | 1:AA:1546:G:N7 | 2.25 | 0.91 |
| 1:AA:1657:A:C5' | 42:BR:67:PRO:CD | 2.49 | 0.91 |
| 1:AA:1744:A:C5 | 53:B5:2303:A:OP2 | 2.24 | 0.91 |
| 1:AA:1460:G:O3' | 19:A7:30:G:O4' | 1.87 | 0.91 |
| 17:AR:258:THR:CG2 | 17:AR:261:LYS:HE2 | 2.00 | 0.91 |
| 17:AR:286:GLU:HB3 | 17:AR:288:HIS:H | 1.36 | 0.91 |
| 19:A7:56:C:C5 | 53:B5:2484:A:H1' | 2.06 | 0.91 |
| 1:AA:1521:G:H22 | 18:AT:78:LYS:NZ | 1.69 | 0.90 |
| 1:AA:1756:U:O3' | 53:B5:2263:C:H4' | 1.42 | 0.90 |
| 17:AR:259:GLY:HA2 | 17:AR:284:ALA:CA | 2.00 | 0.90 |
| 8:AI:93:HIS:CE1 | 17:AR:59:ARG:NH2 | 2.40 | 0.90 |
| 14:AO:149:LEU:CD1 | 53:B5:847:A:P | 2.58 | 0.90 |
| 1:AA:1460:G:C4' | 19:A7:30:G:H5' | 2.02 | 0.90 |
| 23:B8:43:LYS:CE | 35:BK:121:PHE:CD1 | 2.55 | 0.90 |
| 1:AA:1744:A:N7 | 53:B5:2303:A:OP2 | 1.89 | 0.90 |
| 1:AA:1756:U:O3' | 53:B5:2263:C:O4' | 1.89 | 0.89 |
| 17:AR:283:LYS:HD3 | 17:AR:288:HIS:HA | 1.54 | 0.89 |
| 17:AR:61:PHE:CE2 | 17:AR:97:GLY:HA2 | 2.06 | 0.89 |
| 8:AI:93:HIS:HE1 | 17:AR:59:ARG:HH22 | 1.09 | 0.89 |
| 17:AR:266:ASP:HB3 | 17:AR:267:PRO:HD3 | 1.52 | 0.89 |
| 1:AA:1521:G:H1 | 18:AT:78:LYS:HG3 | 1.07 | 0.89 |
| 1:AA:800:U:OP1 | 40:BP:160:ALA:CB | 2.21 | 0.89 |
| 1:AA:701:U:O2 | 40:BP:174:ALA:N | 2.04 | 0.88 |
| 17:AR:93:ASP:HB3 | 17:AR:96:THR:CG2 | 2.03 | 0.88 |
| 1:AA:972:A:O4' | 53:B5:847:A:H2 | 1.56 | 0.88 |
| 1:AA:1520:U:H4' | 1:AA:1522:A:N7 | 1.86 | 0.88 |
| 1:AA:1757:C:OP1 | 53:B5:2264:U:C5' | 2.21 | 0.88 |
| 1:AA:972:A:O4' | 53:B5:847:A:C2 | 2.25 | 0.88 |
| 1:AA:1632:C:C4' | 1:AA:1633:A:OP2 | 2.21 | 0.88 |
| 17:AR:257:ALA:HA | 17:AR:283:LYS:CD | 2.01 | 0.88 |
| 1:AA:1502:G:C4 | 1:AA:1547:C:C4 | 2.62 | 0.88 |
| 1:AA:1200:A:N1 | 13:AN:16:LYS:CA | 2.37 | 0.88 |
| 1:AA:922:A:C5' | 26:BB:109:GLU:OE1 | 2.21 | 0.88 |
| 1:AA:1121:A:O4' | 53:B5:2191:U:H5' | 1.73 | 0.88 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:1756:U:H2' | 53:B5:2263:C:C5' | 2.02 | 0.88 |
| 37:BM:151:ALA:O | 37:BM:155:ALA:HB2 | 1.73 | 0.88 |
| 1:AA:1521:G:H1' | 18:AT:86:ARG:HH22 | 1.35 | 0.88 |
| 1:AA:1777:U:OP1 | 53:B5:2194:G:H1' | 1.72 | 0.88 |
| 17:AR:283:LYS:HD3 | 17:AR:288:HIS:CA | 2.04 | 0.88 |
| 17:AR:286:GLU:HG2 | 17:AR:289:ALA:CA | 2.04 | 0.88 |
| 1:AA:1521:G:H22 | 18:AT:78:LYS:HZ2 | 1.18 | 0.88 |
| 1:AA:702:G:C5 | 40:BP:172:ALA:C | 2.47 | 0.88 |
| 17:AR:38:ARG:HA | 17:AR:67:ILE:CG2 | 2.03 | 0.88 |
| 23:B8:43:LYS:HB2 | 35:BK:121:PHE:CD1 | 2.10 | 0.87 |
| 1:AA:1121:A:C1' | 53:B5:2191:U:H5'' | 1.77 | 0.87 |
| 1:AA:1501:A:N9 | 1:AA:1546:G:N3 | 2.23 | 0.87 |
| 17:AR:260:ILE:HG13 | 17:AR:284:ALA:CB | 2.03 | 0.87 |
| 17:AR:197:SER:CB | 17:AR:216:LYS:HB3 | 2.04 | 0.87 |
| 1:AA:1521:G:N2 | 18:AT:78:LYS:CG | 2.34 | 0.87 |
| 17:AR:89:LEU:HD21 | 17:AR:124:SER:HB3 | 1.53 | 0.87 |
| 1:AA:856:A:C5 | 7:AH:32:LYS:HA | 2.08 | 0.87 |
| 1:AA:1521:G:N2 | 18:AT:78:LYS:HG3 | 1.90 | 0.87 |
| 37:BM:108:ILE:HG23 | 37:BM:160:ALA:HB2 | 1.42 | 0.87 |
| 1:AA:1756:U:H2' | 53:B5:2263:C:H5' | 1.57 | 0.86 |
| 23:B8:43:LYS:HE3 | 35:BK:121:PHE:HD1 | 1.40 | 0.86 |
| 17:AR:283:LYS:CB | 17:AR:288:HIS:HA | 2.05 | 0.86 |
| 23:B8:43:LYS:CG | 35:BK:121:PHE:CE1 | 2.58 | 0.86 |
| 17:AR:52:GLN:HA | 17:AR:52:GLN:HE21 | 1.41 | 0.86 |
| 1:AA:1757:C:OP1 | 53:B5:2264:U:H5' | 1.76 | 0.86 |
| 1:AA:865:A:C8 | 1:AA:865:A:OP1 | 2.28 | 0.86 |
| 1:AA:922:A:OP1 | 26:BB:109:GLU:OE2 | 1.93 | 0.86 |
| 1:AA:702:G:C5 | 40:BP:172:ALA:CB | 2.41 | 0.86 |
| 1:AA:1516:C:OP2 | 1:AA:1516:C:H6 | 1.57 | 0.86 |
| 1:AA:1744:A:N3 | 53:B5:2302:G:O5' | 2.04 | 0.86 |
| 37:BM:111:PRO:HB3 | 37:BM:163:ALA:CB | 1.99 | 0.86 |
| 1:AA:1776:G:OP1 | 53:B5:2193:U:H5' | 1.72 | 0.85 |
| 17:AR:164:ASP:O | 17:AR:183:LEU:HB2 | 1.75 | 0.85 |
| 1:AA:701:U:C2' | 40:BP:176:ALA:O | 2.23 | 0.85 |
| 1:AA:699:U:H3 | 40:BP:171:ALA:H | 1.24 | 0.85 |
| 1:AA:1574:A:C2 | 19:A7:41:U:H4' | 2.08 | 0.85 |
| 17:AR:165:ASP:HB2 | 17:AR:183:LEU:O | 1.77 | 0.85 |
| 17:AR:281:TYR:O | 17:AR:287:PRO:HA | 1.76 | 0.85 |
| 17:AR:283:LYS:CG | 17:AR:288:HIS:HA | 2.06 | 0.85 |
| 12:AM:110:ARG:CZ | 34:BJ:116:TYR:CD1 | 2.57 | 0.85 |
| 1:AA:1000:U:OP1 | 19:A7:38:A:C5' | 2.24 | 0.85 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:1501:A:N9 | 1:AA:1546:G:C2 | 2.45 | 0.85 |
| 1:AA:1653:A:C5 | 53:B5:2302:G:H5' | 2.08 | 0.85 |
| 17:AR:164:ASP:HB3 | 17:AR:183:LEU:N | 1.91 | 0.84 |
| 1:AA:1777:U:OP1 | 53:B5:2194:G:C1' | 2.24 | 0.84 |
| 17:AR:209:THR:HG23 | 17:AR:210:LEU:CD2 | 2.05 | 0.84 |
| 17:AR:29:GLN:HB2 | 17:AR:296:ALA:HB3 | 1.57 | 0.84 |
| 1:AA:1734:G:N2 | 53:B5:1934:G:H4' | 1.91 | 0.84 |
| 17:AR:164:ASP:CB | 17:AR:183:LEU:H | 1.90 | 0.84 |
| 17:AR:193:ILE:HD13 | 17:AR:193:ILE:H | 1.42 | 0.84 |
| 37:BM:150:ALA:O | 37:BM:154:ALA:N | 2.10 | 0.83 |
| 1:AA:702:G:H8 | 40:BP:175:ALA:HB3 | 1.36 | 0.83 |
| 17:AR:288:HIS:HB3 | 17:AR:306:THR:CG2 | 2.09 | 0.83 |
| 17:AR:164:ASP:CG | 17:AR:182:ASN:HA | 1.98 | 0.83 |
| 17:AR:197:SER:HB3 | 17:AR:216:LYS:HB3 | 1.59 | 0.83 |
| 17:AR:33:LEU:CD2 | 17:AR:45:TRP:HB2 | 2.08 | 0.83 |
| 1:AA:858:G:N3 | 7:AH:61:ILE:CB | 2.41 | 0.83 |
| 17:AR:169:ILE:HG13 | 17:AR:183:LEU:HD21 | 1.60 | 0.83 |
| 19:A7:71:G:H5' | 53:B5:2236:G:C4' | 2.08 | 0.83 |
| 1:AA:699:U:C4' | 40:BP:169:ALA:HB3 | 2.09 | 0.83 |
| 1:AA:1200:A:N3 | 13:AN:16:LYS:CA | 2.42 | 0.82 |
| 1:AA:1653:A:H2 | 53:B5:2301:U:O2' | 1.61 | 0.82 |
| 17:AR:262:VAL:HG23 | 17:AR:271:VAL:HG12 | 1.61 | 0.82 |
| 17:AR:133:VAL:HG13 | 17:AR:141:LEU:HB2 | 1.60 | 0.82 |
| 1:AA:1339:C:H5' | 17:AR:102:ARG:NH2 | 1.94 | 0.82 |
| 1:AA:699:U:N3 | 40:BP:167:ALA:O | 2.13 | 0.82 |
| 1:AA:921:G:H1' | 26:BB:141:PRO:HG3 | 1.59 | 0.82 |
| 17:AR:21:THR:HG21 | 17:AR:68:VAL:O | 1.79 | 0.82 |
| 23:B8:43:LYS:HE3 | 35:BK:121:PHE:CD1 | 2.14 | 0.82 |
| 17:AR:163:ASP:HB2 | 17:AR:165:ASP:O | 1.80 | 0.82 |
| 17:AR:203:THR:HG22 | 17:AR:212:ALA:HB3 | 1.62 | 0.82 |
| 1:AA:799:A:C4' | 40:BP:161:ALA:C | 2.47 | 0.82 |
| 17:AR:276:PRO:N | 17:AR:285:ALA:HA | 1.95 | 0.82 |
| 12:AM:110:ARG:HE | 34:BJ:116:TYR:HE1 | 1.18 | 0.81 |
| 17:AR:305:TYR:CZ | 17:AR:311:ARG:HB2 | 2.15 | 0.81 |
| 17:AR:177:MET:SD | 17:AR:191:ASP:HB2 | 2.20 | 0.81 |
| 1:AA:1665:A:O4' | 53:B5:1935:G:C5' | 2.28 | 0.81 |
| 17:AR:34:LEU:CD2 | 17:AR:42:LEU:HD21 | 2.10 | 0.81 |
| 1:AA:1573:G:N1 | 19:A7:41:U:O2' | 1.93 | 0.81 |
| 1:AA:699:U:H2' | 40:BP:169:ALA:C | 2.00 | 0.81 |
| 17:AR:38:ARG:HG2 | 17:AR:67:ILE:HG21 | 1.62 | 0.81 |
| 1:AA:702:G:C1' | 40:BP:175:ALA:CB | 2.58 | 0.81 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 37:BM:148:LYS:HB2 | 37:BM:149:ALA:CB | 2.11 | 0.80 |
| 1:AA:699:U:H2' | 40:BP:170:ALA:N | 1.95 | 0.80 |
| 1:AA:1501:A:C8 | 1:AA:1546:G:C2' | 2.62 | 0.80 |
| 17:AR:164:ASP:HB3 | 17:AR:182:ASN:HA | 1.62 | 0.80 |
| 1:AA:702:G:N9 | 40:BP:172:ALA:O | 2.14 | 0.80 |
| 1:AA:702:G:N7 | 40:BP:172:ALA:CA | 2.42 | 0.80 |
| 1:AA:1501:A:H1' | 1:AA:1546:G:N1 | 1.95 | 0.80 |
| 17:AR:283:LYS:CD | 17:AR:288:HIS:HA | 2.10 | 0.80 |
| 1:AA:1521:G:N3 | 18:AT:78:LYS:HB2 | 1.90 | 0.80 |
| 19:A7:56:C:C6 | 53:B5:2484:A:H1' | 2.17 | 0.80 |
| 17:AR:164:ASP:CG | 17:AR:168:THR:HG22 | 2.02 | 0.80 |
| 1:AA:1665:A:P | 53:B5:1935:G:O2' | 2.39 | 0.80 |
| 1:AA:1776:G:C5' | 53:B5:2194:G:OP1 | 2.30 | 0.80 |
| 1:AA:700:C:C6 | 40:BP:173:ALA:HB3 | 2.17 | 0.80 |
| 17:AR:283:LYS:HD3 | 17:AR:288:HIS:CG | 2.16 | 0.80 |
| 1:AA:1655:U:O4 | 53:B5:2328:U:O2 | 1.99 | 0.80 |
| 17:AR:96:THR:HG23 | 17:AR:98:GLU:H | 1.45 | 0.80 |
| 1:AA:1653:A:C2' | 53:B5:2302:G:OP2 | 2.29 | 0.79 |
| 1:AA:856:A:C5 | 7:AH:32:LYS:CA | 2.66 | 0.79 |
| 17:AR:164:ASP:CB | 17:AR:182:ASN:HA | 2.11 | 0.79 |
| 1:AA:699:U:C2' | 40:BP:169:ALA:CB | 2.56 | 0.79 |
| 1:AA:1521:G:O2' | 18:AT:83:ALA:CA | 2.30 | 0.79 |
| 1:AA:856:A:N1 | 7:AH:33:VAL:N | 2.31 | 0.79 |
| 1:AA:856:A:N1 | 7:AH:32:LYS:C | 2.36 | 0.79 |
| 17:AR:285:ALA:HB3 | 17:AR:313:TRP:CZ2 | 2.17 | 0.79 |
| 1:AA:921:G:C4' | 26:BB:141:PRO:HD3 | 2.09 | 0.79 |
| 23:B8:43:LYS:CD | 35:BK:121:PHE:CE1 | 2.66 | 0.79 |
| 1:AA:1657:A:H5'' | 42:BR:67:PRO:HD3 | 1.64 | 0.79 |
| 17:AR:115:ILE:CG2 | 17:AR:119:ALA:HA | 2.13 | 0.78 |
| 1:AA:1573:G:H1 | 19:A7:41:U:HO2' | 0.80 | 0.78 |
| 1:AA:1775:G:O3' | 53:B5:2193:U:OP1 | 2.00 | 0.78 |
| 17:AR:83:ALA:HB1 | 17:AR:110:VAL:CG1 | 2.12 | 0.78 |
| 1:AA:1776:G:P | 53:B5:2193:U:H5'' | 2.23 | 0.78 |
| 1:AA:1516:C:C6 | 1:AA:1516:C:OP2 | 2.36 | 0.78 |
| 1:AA:1521:G:N2 | 18:AT:78:LYS:CE | 2.46 | 0.78 |
| 37:BM:168:ALA:C | 37:BM:171:ALA:HB3 | 2.04 | 0.78 |
| 17:AR:211:ILE:HD11 | 17:AR:225:LEU:CD1 | 2.09 | 0.78 |
| 17:AR:13:LEU:HD11 | 17:AR:54:PHE:HB3 | 1.64 | 0.77 |
| 1:AA:699:U:C3' | 40:BP:169:ALA:HB1 | 1.94 | 0.77 |
| 1:AA:1744:A:H4' | 53:B5:2291:A:C1' | 2.13 | 0.77 |
| 1:AA:1200:A:N3 | 13:AN:16:LYS:N | 2.33 | 0.77 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 8:AI:97:VAL:HG21 | 17:AR:59:ARG:CZ | 2.14 | 0.77 |
| 1:AA:1756:U:O2' | 53:B5:2263:C:P | 2.42 | 0.77 |
| 19:A7:63:C:H5'' | 25:BA:45:ARG:CD | 2.14 | 0.77 |
| 1:AA:1745:G:O3' | 53:B5:2303:A:H3' | 1.81 | 0.77 |
| 37:BM:108:ILE:HG22 | 37:BM:160:ALA:CB | 2.03 | 0.77 |
| 1:AA:1521:G:H5'' | 1:AA:1522:A:OP1 | 1.82 | 0.77 |
| 1:AA:1736:U:H5' | 53:B5:1932:A:H61 | 1.48 | 0.77 |
| 1:AA:856:A:N3 | 7:AH:33:VAL:N | 2.33 | 0.77 |
| 1:AA:700:C:C5 | 40:BP:169:ALA:O | 2.36 | 0.77 |
| 1:AA:1573:G:C4 | 19:A7:42:G:OP1 | 2.34 | 0.76 |
| 1:AA:1502:G:C2 | 1:AA:1547:C:N4 | 2.54 | 0.76 |
| 1:AA:1521:G:N2 | 18:AT:78:LYS:HZ2 | 1.78 | 0.76 |
| 17:AR:286:GLU:HA | 17:AR:305:TYR:CD2 | 2.19 | 0.76 |
| 37:BM:111:PRO:HA | 37:BM:163:ALA:HB3 | 1.60 | 0.76 |
| 17:AR:286:GLU:HG3 | 17:AR:305:TYR:CD2 | 2.20 | 0.76 |
| 1:AA:1501:A:N9 | 1:AA:1546:G:C4 | 2.53 | 0.76 |
| 1:AA:702:G:C1' | 40:BP:175:ALA:HB3 | 2.16 | 0.76 |
| 1:AA:856:A:N3 | 7:AH:32:LYS:C | 2.39 | 0.76 |
| 17:AR:173:GLY:H | 17:AR:199:ILE:CG2 | 1.99 | 0.76 |
| 17:AR:286:GLU:HB3 | 17:AR:288:HIS:N | 2.00 | 0.76 |
| 17:AR:170:ILE:HG22 | 17:AR:202:LEU:HD13 | 1.68 | 0.76 |
| 1:AA:702:G:N3 | 40:BP:172:ALA:O | 2.18 | 0.76 |
| 1:AA:1200:A:N1 | 13:AN:16:LYS:N | 2.33 | 0.76 |
| 1:AA:1338:A:O3' | 17:AR:102:ARG:CZ | 2.33 | 0.76 |
| 8:AI:97:VAL:HG21 | 17:AR:59:ARG:NH2 | 1.99 | 0.75 |
| 17:AR:164:ASP:CA | 17:AR:183:LEU:H | 1.98 | 0.75 |
| 17:AR:19:TRP:CB | 17:AR:38:ARG:HD2 | 2.16 | 0.75 |
| 1:AA:1502:G:C4 | 1:AA:1547:C:N3 | 2.54 | 0.75 |
| 1:AA:1000:U:H5' | 19:A7:38:A:OP1 | 1.86 | 0.75 |
| 17:AR:172:ALA:CB | 17:AR:199:ILE:HD12 | 2.16 | 0.75 |
| 1:AA:1521:G:H1' | 18:AT:86:ARG:HH21 | 1.52 | 0.75 |
| 1:AA:1520:U:C4' | 1:AA:1522:A:N7 | 2.49 | 0.75 |
| 17:AR:164:ASP:HB3 | 17:AR:182:ASN:CA | 2.16 | 0.75 |
| 17:AR:305:TYR:OH | 17:AR:311:ARG:HB2 | 1.86 | 0.75 |
| 17:AR:288:HIS:HB3 | 17:AR:306:THR:HG23 | 1.69 | 0.75 |
| 17:AR:33:LEU:HD23 | 17:AR:45:TRP:HB2 | 1.66 | 0.75 |
| 17:AR:13:LEU:CD1 | 17:AR:54:PHE:HB3 | 2.16 | 0.75 |
| 1:AA:701:U:O4 | 40:BP:172:ALA:CB | 2.26 | 0.75 |
| 17:AR:86:ASP:OD1 | 17:AR:88:THR:HG22 | 1.87 | 0.75 |
| 1:AA:1776:G:H4' | 53:B5:2194:G:H5'' | 0.79 | 0.75 |
| 1:AA:1519:G:H4' | 1:AA:1520:U:OP1 | 1.87 | 0.75 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:1635:C:H5' | 1:AA:1636:G:OP2 | 1.87 | 0.75 |
| 1:AA:1657:A:C4' | 42:BR:67:PRO:HG2 | 2.17 | 0.75 |
| 1:AA:1756:U:C4' | 53:B5:2262:A:N3 | 2.49 | 0.75 |
| 1:AA:1502:G:C5 | 1:AA:1547:C:N4 | 2.53 | 0.74 |
| 1:AA:701:U:O4 | 40:BP:169:ALA:HA | 1.87 | 0.74 |
| 1:AA:1521:G:C2 | 18:AT:78:LYS:CD | 2.66 | 0.74 |
| 17:AR:114:ASP:OD1 | 17:AR:123:ILE:HG13 | 1.87 | 0.74 |
| 17:AR:126:SER:HB3 | 17:AR:128:ASP:OD1 | 1.87 | 0.74 |
| 8:AI:93:HIS:HE1 | 17:AR:59:ARG:NH2 | 1.82 | 0.74 |
| 17:AR:173:GLY:O | 17:AR:199:ILE:HG22 | 1.87 | 0.74 |
| 17:AR:46:LYS:HB2 | 17:AR:58:VAL:HG13 | 1.69 | 0.74 |
| 1:AA:1757:C:OP1 | 53:B5:2264:U:O5' | 2.05 | 0.74 |
| 1:AA:1501:A:C4 | 1:AA:1546:G:C2 | 2.74 | 0.74 |
| 17:AR:41:THR:HG23 | 17:AR:61:PHE:O | 1.88 | 0.74 |
| 17:AR:19:TRP:HB3 | 17:AR:38:ARG:HD2 | 1.70 | 0.74 |
| 1:AA:1665:A:P | 53:B5:1936:A:H5' | 2.27 | 0.74 |
| 1:AA:1756:U:H2' | 53:B5:2263:C:OP1 | 1.87 | 0.74 |
| 17:AR:44:SER:O | 17:AR:58:VAL:HG22 | 1.87 | 0.74 |
| 1:AA:701:U:O4 | 40:BP:172:ALA:HB3 | 1.33 | 0.74 |
| 14:AO:123:HIS:CE1 | 53:B5:846:A:N3 | 2.56 | 0.73 |
| 37:BM:147:TRP:CZ2 | 37:BM:153:ALA:CB | 2.70 | 0.73 |
| 1:AA:1521:G:C4 | 18:AT:79:LEU:N | 2.55 | 0.73 |
| 1:AA:1521:G:H4' | 1:AA:1522:A:OP1 | 1.88 | 0.73 |
| 17:AR:42:LEU:HD13 | 17:AR:43:ILE:N | 2.03 | 0.73 |
| 17:AR:36:ALA:HB1 | 17:AR:68:VAL:CG1 | 2.18 | 0.73 |
| 17:AR:40:LYS:HG2 | 17:AR:66:HIS:C | 2.08 | 0.73 |
| 1:AA:1521:G:C5' | 1:AA:1522:A:OP1 | 2.34 | 0.73 |
| 1:AA:702:G:O6 | 40:BP:172:ALA:HB2 | 1.82 | 0.73 |
| 17:AR:203:THR:HG23 | 17:AR:245:PHE:HE1 | 1.54 | 0.73 |
| 1:AA:1200:A:C6 | 13:AN:16:LYS:C | 2.62 | 0.73 |
| 37:BM:147:TRP:HZ2 | 37:BM:153:ALA:CB | 2.02 | 0.73 |
| 1:AA:799:A:N3 | 40:BP:161:ALA:HB3 | 1.99 | 0.73 |
| 1:AA:699:U:C2' | 40:BP:170:ALA:N | 2.50 | 0.72 |
| 1:AA:972:A:C1' | 53:B5:847:A:H2 | 2.01 | 0.72 |
| 17:AR:262:VAL:HG22 | 17:AR:272:ASP:O | 1.89 | 0.72 |
| 1:AA:700:C:H5 | 40:BP:169:ALA:O | 1.55 | 0.72 |
| 17:AR:199:ILE:HD11 | 17:AR:201:THR:O | 1.90 | 0.72 |
| 17:AR:222:LEU:HD13 | 17:AR:232:TYR:OH | 1.89 | 0.72 |
| 1:AA:1501:A:C4 | 1:AA:1546:G:N3 | 2.57 | 0.72 |
| 1:AA:1653:A:H2 | 53:B5:2301:U:C2' | 1.96 | 0.72 |
| 1:AA:799:A:H4' | 40:BP:161:ALA:O | 1.87 | 0.72 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 17:AR:165:ASP:HB2 | 17:AR:183:LEU:C | 2.10 | 0.72 |
| 23:B8:43:LYS:CE | 35:BK:121:PHE:CE1 | 2.73 | 0.72 |
| 23:B8:43:LYS:CB | 35:BK:121:PHE:CE1 | 2.73 | 0.72 |
| 17:AR:172:ALA:HB2 | 17:AR:202:LEU:HG | 1.70 | 0.71 |
| 17:AR:172:ALA:HB1 | 17:AR:199:ILE:HD12 | 1.73 | 0.71 |
| 17:AR:34:LEU:HD11 | 17:AR:80:ALA:HB1 | 1.71 | 0.71 |
| 17:AR:34:LEU:CD2 | 17:AR:42:LEU:HD11 | 2.19 | 0.71 |
| 1:AA:698:U:C2 | 40:BP:164:ALA:C | 2.57 | 0.71 |
| 12:AM:110:ARG:NH2 | 34:BJ:116:TYR:CE1 | 2.50 | 0.71 |
| 17:AR:164:ASP:OD2 | 17:AR:168:THR:HG22 | 1.90 | 0.71 |
| 17:AR:275:ARG:C | 17:AR:285:ALA:HA | 2.11 | 0.71 |
| 17:AR:283:LYS:HB3 | 17:AR:288:HIS:HA | 1.73 | 0.71 |
| 17:AR:115:ILE:HG22 | 17:AR:116:ASP:O | 1.90 | 0.71 |
| 17:AR:207:ASP:HB3 | 17:AR:209:THR:HG22 | 1.72 | 0.71 |
| 1:AA:1461:C:P | 19:A7:30:G:H1' | 2.31 | 0.71 |
| 1:AA:1633:A:O3' | 1:AA:1634:C:H4' | 1.91 | 0.71 |
| 17:AR:66:HIS:CE1 | 17:AR:67:ILE:HD13 | 2.26 | 0.71 |
| 12:AM:110:ARG:CZ | 34:BJ:116:TYR:CE2 | 2.71 | 0.71 |
| 1:AA:1657:A:H4' | 42:BR:67:PRO:HG2 | 1.73 | 0.71 |
| 1:AA:1756:U:O4' | 53:B5:2262:A:C2 | 2.42 | 0.71 |
| 1:AA:1776:G:O3' | 53:B5:2194:G:C5' | 2.38 | 0.70 |
| 1:AA:702:G:H8 | 40:BP:175:ALA:CB | 1.93 | 0.70 |
| 1:AA:1573:G:N3 | 19:A7:41:U:H5'' | 2.06 | 0.70 |
| 1:AA:698:U:C5 | 40:BP:164:ALA:O | 2.43 | 0.70 |
| 1:AA:1501:A:C1' | 1:AA:1546:G:N3 | 2.53 | 0.70 |
| 37:BM:108:ILE:HG21 | 37:BM:160:ALA:HB1 | 1.73 | 0.70 |
| 1:AA:1121:A:H4' | 53:B5:2191:U:H5' | 1.74 | 0.70 |
| 17:AR:283:LYS:HD3 | 17:AR:288:HIS:CB | 2.22 | 0.70 |
| 17:AR:285:ALA:HB3 | 17:AR:313:TRP:HZ2 | 1.54 | 0.70 |
| 17:AR:96:THR:HG23 | 17:AR:98:GLU:N | 2.05 | 0.70 |
| 1:AA:1461:C:OP1 | 19:A7:30:G:C1' | 2.32 | 0.70 |
| 1:AA:702:G:OP1 | 40:BP:177:ALA:HA | 1.91 | 0.70 |
| 1:AA:857:U:H2' | 1:AA:858:G:O5' | 1.91 | 0.70 |
| 1:AA:1502:G:O6 | 1:AA:1547:C:C5 | 2.45 | 0.70 |
| 17:AR:263:PHE:CE1 | 17:AR:270:LEU:HG | 2.26 | 0.70 |
| 17:AR:34:LEU:HG | 17:AR:42:LEU:CD1 | 2.14 | 0.70 |
| 1:AA:1502:G:C8 | 1:AA:1547:C:O2 | 2.45 | 0.69 |
| 1:AA:856:A:C2 | 7:AH:32:LYS:O | 2.45 | 0.69 |
| 17:AR:275:ARG:HB3 | 17:AR:276:PRO:HD2 | 1.75 | 0.69 |
| 1:AA:1521:G:H22 | 18:AT:78:LYS:CE | 2.04 | 0.69 |
| 17:AR:26:SER:HB2 | 17:AR:30:PRO:HD2 | 1.75 | 0.69 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:1756:U:H4' | 53:B5:2262:A:C4 | 2.28 | 0.69 |
| 17:AR:34:LEU:HD12 | 17:AR:73:LEU:HD21 | 1.75 | 0.69 |
| 17:AR:170:ILE:CG2 | 17:AR:202:LEU:HD13 | 2.23 | 0.69 |
| 17:AR:26:SER:CB | 17:AR:30:PRO:HD2 | 2.23 | 0.69 |
| 17:AR:135:THR:HG23 | 17:AR:137:LYS:H | 1.58 | 0.69 |
| 1:AA:1390:C:OP2 | 17:AR:281:TYR:OH | 2.10 | 0.69 |
| 17:AR:164:ASP:H | 17:AR:168:THR:N | 1.91 | 0.68 |
| 17:AR:203:THR:HG23 | 17:AR:245:PHE:CE1 | 2.28 | 0.68 |
| 23:B8:43:LYS:NZ | 35:BK:121:PHE:HE1 | 1.88 | 0.68 |
| 17:AR:173:GLY:H | 17:AR:199:ILE:HG23 | 1.57 | 0.68 |
| 14:AO:149:LEU:CD1 | 53:B5:846:A:O3' | 2.42 | 0.68 |
| 1:AA:702:G:H1' | 40:BP:175:ALA:HB1 | 1.70 | 0.68 |
| 1:AA:1630:C:H5'' | 1:AA:1636:G:H21 | 1.51 | 0.68 |
| 17:AR:283:LYS:HE2 | 17:AR:289:ALA:N | 2.09 | 0.68 |
| 32:BH:40:HIS:CG | 32:BH:41:ILE:H | 2.11 | 0.68 |
| 1:AA:1521:G:C2 | 18:AT:78:LYS:HD2 | 2.29 | 0.68 |
| 17:AR:211:ILE:CD1 | 17:AR:225:LEU:HD13 | 2.09 | 0.68 |
| 17:AR:314:GLN:HG2 | 17:AR:315:VAL:N | 2.09 | 0.68 |
| 17:AR:87:LYS:HD2 | 17:AR:106:HIS:O | 1.93 | 0.68 |
| 17:AR:240:VAL:HG22 | 17:AR:256:THR:HG22 | 1.75 | 0.68 |
| 17:AR:276:PRO:CA | 17:AR:285:ALA:HA | 2.24 | 0.68 |
| 1:AA:699:U:O4' | 40:BP:169:ALA:HB3 | 1.93 | 0.68 |
| 17:AR:170:ILE:HG22 | 17:AR:202:LEU:CD1 | 2.24 | 0.67 |
| 17:AR:34:LEU:HD21 | 17:AR:71:CYS:SG | 2.33 | 0.67 |
| 17:AR:169:ILE:CG1 | 17:AR:183:LEU:HD21 | 2.25 | 0.67 |
| 17:AR:257:ALA:O | 17:AR:283:LYS:HA | 1.95 | 0.67 |
| 1:AA:1521:G:C4' | 1:AA:1522:A:OP1 | 2.37 | 0.67 |
| 17:AR:33:LEU:HD23 | 17:AR:33:LEU:H | 1.59 | 0.67 |
| 37:BM:107:GLY:HA3 | 37:BM:156:ALA:HB1 | 1.77 | 0.67 |
| 1:AA:1516:C:C2' | 1:AA:1517:U:O5' | 2.42 | 0.67 |
| 1:AA:1390:C:P | 17:AR:281:TYR:OH | 2.50 | 0.67 |
| 17:AR:259:GLY:HA2 | 17:AR:284:ALA:N | 2.08 | 0.67 |
| 37:BM:168:ALA:O | 37:BM:172:ALA:N | 2.28 | 0.67 |
| 17:AR:199:ILE:HD11 | 17:AR:202:LEU:HD23 | 1.77 | 0.67 |
| 17:AR:259:GLY:CA | 17:AR:284:ALA:HA | 2.22 | 0.66 |
| 1:AA:698:U:C6 | 40:BP:164:ALA:C | 2.62 | 0.66 |
| 17:AR:10:ARG:HG2 | 17:AR:54:PHE:CE1 | 2.30 | 0.66 |
| 17:AR:32:LEU:HD22 | 17:AR:32:LEU:O | 1.95 | 0.66 |
| 37:BM:150:ALA:O | 37:BM:154:ALA:HB3 | 1.96 | 0.66 |
| 17:AR:21:THR:HA | 17:AR:290:VAL:HG11 | 1.78 | 0.66 |
| 17:AR:285:ALA:O | 17:AR:305:TYR:HE2 | 1.78 | 0.66 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 17:AR:12:THR:HG22 | 17:AR:311:ARG:CG | 2.23 | 0.66 |
| 17:AR:203:THR:CG2 | 17:AR:212:ALA:HB3 | 2.25 | 0.66 |
| 17:AR:286:GLU:CD | 17:AR:289:ALA:HB2 | 2.15 | 0.66 |
| 1:AA:1502:G:N3 | 1:AA:1547:C:N4 | 2.44 | 0.66 |
| 1:AA:1756:U:H4' | 53:B5:2263:C:H1' | 1.77 | 0.66 |
| 17:AR:83:ALA:HB1 | 17:AR:110:VAL:HG12 | 1.75 | 0.65 |
| 17:AR:67:ILE:O | 17:AR:84:SER:HB2 | 1.95 | 0.65 |
| 17:AR:93:ASP:CB | 17:AR:96:THR:HG22 | 2.23 | 0.65 |
| 1:AA:921:G:C1' | 26:BB:141:PRO:HG3 | 2.26 | 0.65 |
| 12:AM:110:ARG:NE | 34:BJ:116:TYR:CG | 2.60 | 0.65 |
| 17:AR:11:GLY:N | 17:AR:312:VAL:HG23 | 2.11 | 0.65 |
| 17:AR:32:LEU:N | 17:AR:32:LEU:HD13 | 2.11 | 0.65 |
| 17:AR:46:LYS:HB2 | 17:AR:58:VAL:HG11 | 1.76 | 0.65 |
| 17:AR:81:LEU:HD13 | 17:AR:91:LEU:HD23 | 1.78 | 0.65 |
| 1:AA:629:U:H5' | 53:B5:846:A:H1' | 1.78 | 0.65 |
| 23:B8:43:LYS:CE | 35:BK:121:PHE:HD1 | 2.01 | 0.65 |
| 17:AR:260:ILE:CG1 | 17:AR:284:ALA:HB1 | 2.23 | 0.65 |
| 17:AR:209:THR:CG2 | 17:AR:210:LEU:HD22 | 2.10 | 0.65 |
| 1:AA:1521:G:N7 | 18:AT:79:LEU:N | 2.44 | 0.65 |
| 17:AR:196:ASN:HD21 | 17:AR:217:ASP:HB2 | 1.61 | 0.65 |
| 17:AR:35:SER:O | 17:AR:42:LEU:HD22 | 1.97 | 0.65 |
| 17:AR:283:LYS:HG2 | 17:AR:284:ALA:H | 1.61 | 0.65 |
| 17:AR:38:ARG:O | 17:AR:67:ILE:HG13 | 1.96 | 0.65 |
| 12:AM:110:ARG:CZ | 34:BJ:116:TYR:CG | 2.80 | 0.65 |
| 1:AA:799:A:H4' | 40:BP:161:ALA:C | 2.16 | 0.64 |
| 17:AR:33:LEU:HD22 | 17:AR:47:LEU:HD21 | 1.78 | 0.64 |
| 19:A7:19:G:N7 | 53:B5:2454:G:C8 | 2.65 | 0.64 |
| 1:AA:702:G:P | 40:BP:177:ALA:HA | 2.38 | 0.64 |
| 1:AA:1756:U:H1' | 53:B5:2263:C:OP1 | 1.96 | 0.64 |
| 17:AR:34:LEU:HD21 | 17:AR:42:LEU:CD2 | 2.16 | 0.64 |
| 17:AR:74:THR:HG22 | 17:AR:79:TYR:H | 1.61 | 0.64 |
| 1:AA:1502:G:C6 | 1:AA:1547:C:N4 | 2.65 | 0.64 |
| 1:AA:1736:U:C5' | 53:B5:1932:A:H61 | 2.11 | 0.64 |
| 17:AR:7:LEU:HA | 17:AR:315:VAL:CG2 | 2.28 | 0.64 |
| 17:AR:7:LEU:HA | 17:AR:315:VAL:HG22 | 1.78 | 0.64 |
| 1:AA:1460:G:H4' | 19:A7:30:G:C5' | 2.26 | 0.64 |
| 1:AA:921:G:H5'' | 26:BB:140:ASN:HD21 | 1.62 | 0.64 |
| 17:AR:22:SER:O | 17:AR:23:LEU:HD23 | 1.98 | 0.64 |
| 17:AR:256:THR:O | 17:AR:283:LYS:HE3 | 1.97 | 0.64 |
| 17:AR:90:ARG:NH1 | 17:AR:99:THR:HG21 | 2.12 | 0.64 |
| 1:AA:1756:U:C2' | 53:B5:2263:C:C5' | 2.43 | 0.64 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 17:AR:34:LEU:HD11 | 17:AR:80:ALA:CB | 2.28 | 0.64 |
| 1:AA:1755:G:HO2' | 53:B5:2262:A:H2 | 0.65 | 0.63 |
| 17:AR:262:VAL:HG23 | 17:AR:272:ASP:H | 1.63 | 0.63 |
| 1:AA:1630:C:H5' | 1:AA:1636:G:N2 | 2.08 | 0.63 |
| 17:AR:274:LEU:HD13 | 17:AR:313:TRP:CD2 | 2.33 | 0.63 |
| 17:AR:286:GLU:HA | 17:AR:305:TYR:HD2 | 1.63 | 0.63 |
| 1:AA:1501:A:O4' | 1:AA:1546:G:N2 | 2.31 | 0.63 |
| 1:AA:1636:G:O6 | 1:AA:1762:C:O2 | 2.16 | 0.63 |
| 17:AR:13:LEU:N | 17:AR:13:LEU:HD22 | 2.13 | 0.63 |
| 17:AR:274:LEU:O | 17:AR:284:ALA:HA | 1.99 | 0.63 |
| 17:AR:40:LYS:HG2 | 17:AR:66:HIS:O | 1.96 | 0.63 |
| 17:AR:214:ALA:HB1 | 17:AR:240:VAL:HB | 1.81 | 0.63 |
| 1:AA:1756:U:C4' | 53:B5:2262:A:C4 | 2.81 | 0.63 |
| 1:AA:1516:C:H2' | 1:AA:1517:U:O5' | 1.99 | 0.63 |
| 1:AA:701:U:O4 | 40:BP:169:ALA:C | 2.35 | 0.63 |
| 1:AA:972:A:H5' | 53:B5:848:A:H2 | 1.57 | 0.63 |
| 37:BM:168:ALA:O | 37:BM:172:ALA:HB2 | 1.99 | 0.63 |
| 1:AA:1736:U:H5' | 53:B5:1932:A:N6 | 2.13 | 0.63 |
| 17:AR:164:ASP:C | 17:AR:183:LEU:HB2 | 2.19 | 0.63 |
| 17:AR:181:TRP:CZ3 | 17:AR:188:ILE:HB | 2.34 | 0.62 |
| 17:AR:86:ASP:O | 17:AR:87:LYS:HG2 | 1.99 | 0.62 |
| 1:AA:1776:G:C3' | 53:B5:2194:G:H5'' | 2.26 | 0.62 |
| 1:AA:699:U:O2 | 40:BP:167:ALA:O | 2.17 | 0.62 |
| 1:AA:699:U:N3 | 40:BP:167:ALA:C | 2.50 | 0.62 |
| 1:AA:701:U:O4 | 40:BP:169:ALA:CA | 2.47 | 0.62 |
| 17:AR:170:ILE:N | 17:AR:170:ILE:HD12 | 2.14 | 0.62 |
| 17:AR:19:TRP:CZ3 | 17:AR:306:THR:HG22 | 2.34 | 0.62 |
| 1:AA:1120:C:O2' | 53:B5:2190:U:H5'' | 1.99 | 0.62 |
| 17:AR:238:ASP:OD2 | 17:AR:258:THR:HB | 2.00 | 0.62 |
| 1:AA:972:A:C4' | 53:B5:847:A:C2 | 2.83 | 0.62 |
| 37:BM:168:ALA:CA | 37:BM:171:ALA:HB3 | 2.29 | 0.62 |
| 1:AA:1460:G:O3' | 19:A7:30:G:C4' | 2.47 | 0.62 |
| 17:AR:178:VAL:HB | 17:AR:192:PHE:HB2 | 1.81 | 0.62 |
| 1:AA:858:G:H3' | 7:AH:27:ILE:HB | 1.79 | 0.61 |
| 17:AR:175:ASP:O | 17:AR:176:LYS:HG2 | 2.00 | 0.61 |
| 17:AR:86:ASP:CG | 17:AR:88:THR:HG22 | 2.19 | 0.61 |
| 1:AA:1574:A:C2 | 19:A7:41:U:C1' | 2.83 | 0.61 |
| 1:AA:921:G:H5'' | 26:BB:140:ASN:ND2 | 2.15 | 0.61 |
| 17:AR:286:GLU:HG2 | 17:AR:289:ALA:N | 2.15 | 0.61 |
| 1:AA:1519:G:C4' | 1:AA:1520:U:OP1 | 2.44 | 0.61 |
| 17:AR:283:LYS:HZ3 | 17:AR:288:HIS:CD2 | 2.18 | 0.61 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 17:AR:131:ILE:CD1 | 17:AR:151:VAL:HG11 | 2.31 | 0.61 |
| 17:AR:100:TYR:CD2 | 17:AR:101:GLN:HG3 | 2.36 | 0.61 |
| 17:AR:242:SER:OG | 17:AR:292:LEU:HD22 | 2.01 | 0.61 |
| 1:AA:1653:A:C2 | 53:B5:2301:U:C2' | 2.82 | 0.61 |
| 17:AR:256:THR:O | 17:AR:283:LYS:HG3 | 2.01 | 0.61 |
| 17:AR:288:HIS:HB3 | 17:AR:306:THR:HG21 | 1.82 | 0.61 |
| 17:AR:220:ILE:N | 17:AR:220:ILE:HD12 | 2.16 | 0.61 |
| 17:AR:287:PRO:HG3 | 17:AR:307:ASP:HB3 | 1.83 | 0.61 |
| 17:AR:9:LEU:HD21 | 17:AR:311:ARG:HB3 | 1.83 | 0.61 |
| 1:AA:1121:A:H1' | 53:B5:2191:U:OP1 | 2.01 | 0.61 |
| 17:AR:276:PRO:HB2 | 17:AR:278:PHE:CE1 | 2.35 | 0.61 |
| 37:BM:111:PRO:HA | 37:BM:163:ALA:HB1 | 0.62 | 0.61 |
| 37:BM:111:PRO:N | 37:BM:163:ALA:HB1 | 2.04 | 0.61 |
| 1:AA:699:U:C4' | 40:BP:166:ALA:HA | 2.31 | 0.61 |
| 1:AA:1665:A:OP1 | 53:B5:1935:G:O2' | 2.19 | 0.61 |
| 23:B8:43:LYS:CD | 35:BK:121:PHE:HE1 | 2.12 | 0.61 |
| 17:AR:164:ASP:HB2 | 17:AR:168:THR:N | 2.16 | 0.60 |
| 17:AR:8:VAL:HG12 | 17:AR:9:LEU:N | 2.16 | 0.60 |
| 17:AR:238:ASP:CG | 17:AR:258:THR:HB | 2.20 | 0.60 |
| 14:AO:149:LEU:CD1 | 53:B5:847:A:H5' | 2.14 | 0.60 |
| 17:AR:144:LEU:N | 17:AR:144:LEU:HD12 | 2.16 | 0.60 |
| 17:AR:222:LEU:HD23 | 17:AR:223:TRP:N | 2.16 | 0.60 |
| 17:AR:30:PRO:HB2 | 17:AR:32:LEU:HD11 | 1.82 | 0.60 |
| 17:AR:223:TRP:CZ3 | 17:AR:230:ALA:HB2 | 2.37 | 0.60 |
| 17:AR:156:VAL:HB | 17:AR:167:VAL:HG21 | 1.80 | 0.60 |
| 1:AA:1200:A:C2 | 13:AN:16:LYS:CB | 2.84 | 0.60 |
| 17:AR:262:VAL:CG2 | 17:AR:271:VAL:HG12 | 2.31 | 0.60 |
| 1:AA:701:U:H2' | 40:BP:176:ALA:O | 2.02 | 0.60 |
| 17:AR:164:ASP:H | 17:AR:167:VAL:C | 2.05 | 0.59 |
| 17:AR:266:ASP:CB | 17:AR:267:PRO:HD3 | 2.26 | 0.59 |
| 37:BM:111:PRO:HB3 | 37:BM:163:ALA:O | 2.01 | 0.59 |
| 1:AA:1501:A:C8 | 1:AA:1546:G:C4 | 2.90 | 0.59 |
| 17:AR:193:ILE:H | 17:AR:193:ILE:CD1 | 2.12 | 0.59 |
| 17:AR:41:THR:HG22 | 17:AR:42:LEU:N | 2.17 | 0.59 |
| 1:AA:1579:C:H3' | 8:AI:131:GLY:H | 1.67 | 0.59 |
| 17:AR:264:SER:HB3 | 17:AR:267:PRO:HD2 | 1.83 | 0.59 |
| 12:AM:110:ARG:CZ | 34:BJ:116:TYR:CD2 | 2.86 | 0.59 |
| 17:AR:11:GLY:O | 17:AR:312:VAL:HG22 | 2.01 | 0.59 |
| 17:AR:33:LEU:HD23 | 17:AR:33:LEU:N | 2.17 | 0.59 |
| 1:AA:1778:G:O5' | 53:B5:2274:U:C5' | 2.47 | 0.59 |
| 1:AA:1521:G:H21 | 18:AT:78:LYS:NZ | 2.00 | 0.59 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 37:BM:111:PRO:CG | 37:BM:163:ALA:HA | 2.33 | 0.59 |
| 1:AA:699:U:C5' | 40:BP:166:ALA:HA | 2.32 | 0.59 |
| 1:AA:703:G:OP2 | 40:BP:176:ALA:HB1 | 2.01 | 0.59 |
| 1:AA:864:U:H5'' | 1:AA:865:A:H5' | 1.85 | 0.59 |
| 17:AR:201:THR:O | 17:AR:202:LEU:HD23 | 2.02 | 0.59 |
| 17:AR:42:LEU:HD13 | 17:AR:43:ILE:H | 1.68 | 0.59 |
| 1:AA:995:U:OP1 | 53:B5:2197:C:OP2 | 2.21 | 0.59 |
| 53:B5:1018:G:H1 | 53:B5:1034:U:H3 | 1.51 | 0.59 |
| 17:AR:199:ILE:HD11 | 17:AR:202:LEU:CD2 | 2.32 | 0.59 |
| 17:AR:284:ALA:HB3 | 17:AR:286:GLU:OE1 | 2.01 | 0.59 |
| 1:AA:971:G:H21 | 53:B5:846:A:H62 | 1.43 | 0.59 |
| 1:AA:1200:A:C6 | 13:AN:16:LYS:HA | 2.37 | 0.58 |
| 1:AA:856:A:C6 | 7:AH:32:LYS:CA | 2.85 | 0.58 |
| 1:AA:1573:G:N2 | 19:A7:42:G:P | 2.57 | 0.58 |
| 1:AA:1574:A:C5 | 19:A7:41:U:H4' | 2.23 | 0.58 |
| 1:AA:1775:G:H5'' | 53:B5:2193:U:OP1 | 2.03 | 0.58 |
| 1:AA:1746:G:P | 53:B5:2303:A:H3' | 2.43 | 0.58 |
| 1:AA:1777:U:P | 53:B5:2194:G:C4' | 2.82 | 0.58 |
| 1:AA:1502:G:N9 | 1:AA:1547:C:N3 | 2.51 | 0.58 |
| 1:AA:1637:C:C2' | 1:AA:1638:C:O5' | 2.49 | 0.58 |
| 1:AA:1744:A:C2 | 53:B5:2302:G:H8 | 2.21 | 0.58 |
| 17:AR:197:SER:HB2 | 17:AR:216:LYS:HB3 | 1.83 | 0.58 |
| 17:AR:72:THR:HG22 | 17:AR:73:LEU:N | 2.18 | 0.58 |
| 37:BM:148:LYS:HB2 | 37:BM:149:ALA:HB3 | 1.85 | 0.58 |
| 17:AR:42:LEU:HD21 | 17:AR:71:CYS:CB | 2.34 | 0.58 |
| 1:AA:1637:C:H2' | 1:AA:1638:C:O5' | 2.04 | 0.58 |
| 17:AR:106:HIS:CE1 | 17:AR:132:LYS:HD2 | 2.39 | 0.58 |
| 1:AA:972:A:P | 53:B5:848:A:H2 | 2.27 | 0.58 |
| 17:AR:114:ASP:OD1 | 17:AR:154:VAL:HG23 | 2.03 | 0.58 |
| 17:AR:21:THR:HG22 | 17:AR:36:ALA:C | 2.23 | 0.58 |
| 17:AR:224:ASN:ND2 | 17:AR:227:ALA:HB3 | 2.19 | 0.58 |
| 17:AR:33:LEU:HD21 | 17:AR:45:TRP:HB2 | 1.86 | 0.57 |
| 1:AA:698:U:N3 | 40:BP:164:ALA:O | 2.35 | 0.57 |
| 1:AA:1573:G:N2 | 19:A7:41:U:O5' | 2.37 | 0.57 |
| 17:AR:135:THR:HG23 | 17:AR:137:LYS:N | 2.18 | 0.57 |
| 17:AR:283:LYS:HG2 | 17:AR:289:ALA:H | 1.69 | 0.57 |
| 17:AR:166:SER:O | 17:AR:167:VAL:HG13 | 2.05 | 0.57 |
| 17:AR:169:ILE:HD11 | 17:AR:181:TRP:CD1 | 2.40 | 0.57 |
| 1:AA:1390:C:P | 17:AR:281:TYR:HH | 2.28 | 0.57 |
| 1:AA:1501:A:N6 | 1:AA:1546:G:H8 | 1.97 | 0.57 |
| 17:AR:301:LEU:HB3 | 17:AR:313:TRP:HB2 | 1.85 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 17:AR:164:ASP:H | 17:AR:167:VAL:CA | 2.17 | 0.57 |
| 17:AR:22:SER:HA | 17:AR:291:SER:OG | 2.04 | 0.57 |
| 17:AR:283:LYS:HE2 | 17:AR:289:ALA:O | 2.04 | 0.57 |
| 27:BC:99:LEU:HD21 | 27:BC:159:ARG:HH22 | 1.68 | 0.57 |
| 1:AA:702:G:C4 | 40:BP:176:ALA:HB3 | 2.32 | 0.57 |
| 1:AA:1521:G:O5' | 1:AA:1522:A:OP2 | 2.23 | 0.57 |
| 1:AA:702:G:C4 | 40:BP:176:ALA:CB | 2.88 | 0.57 |
| 17:AR:21:THR:HG22 | 17:AR:36:ALA:O | 2.05 | 0.57 |
| 17:AR:262:VAL:HG23 | 17:AR:271:VAL:CG1 | 2.34 | 0.57 |
| 17:AR:34:LEU:HD11 | 17:AR:71:CYS:SG | 2.45 | 0.57 |
| 37:BM:148:LYS:HB2 | 37:BM:149:ALA:HB2 | 1.84 | 0.57 |
| 37:BM:150:ALA:O | 37:BM:154:ALA:CB | 2.53 | 0.57 |
| 17:AR:286:GLU:CG | 17:AR:305:TYR:CD2 | 2.87 | 0.57 |
| 1:AA:701:U:O2 | 40:BP:171:ALA:O | 2.22 | 0.57 |
| 17:AR:31:ASN:HA | 17:AR:47:LEU:HD12 | 1.87 | 0.56 |
| 1:AA:1756:U:C2' | 53:B5:2263:C:P | 2.94 | 0.56 |
| 17:AR:106:HIS:HA | 17:AR:132:LYS:HE3 | 1.87 | 0.56 |
| 17:AR:156:VAL:HB | 17:AR:167:VAL:HG23 | 1.85 | 0.56 |
| 17:AR:83:ALA:CB | 17:AR:113:VAL:HG13 | 2.25 | 0.56 |
| 17:AR:10:ARG:HB3 | 17:AR:312:VAL:HG23 | 1.88 | 0.56 |
| 17:AR:34:LEU:HD23 | 17:AR:35:SER:N | 2.20 | 0.56 |
| 1:AA:799:A:H5' | 40:BP:165:ALA:N | 2.20 | 0.56 |
| 17:AR:141:LEU:N | 17:AR:141:LEU:HD12 | 2.21 | 0.56 |
| 17:AR:224:ASN:CG | 17:AR:227:ALA:HB3 | 2.26 | 0.56 |
| 20:B0:38:ILE:HG23 | 20:B0:39:ASP:H | 1.69 | 0.56 |
| 1:AA:972:A:C4' | 53:B5:847:A:H2 | 2.18 | 0.56 |
| 17:AR:163:ASP:HA | 17:AR:167:VAL:HA | 1.87 | 0.56 |
| 17:AR:284:ALA:HB3 | 17:AR:289:ALA:HB2 | 1.86 | 0.56 |
| 1:AA:858:G:O4' | 1:AA:858:G:OP2 | 2.24 | 0.56 |
| 17:AR:237:GLN:HG2 | 17:AR:237:GLN:O | 2.06 | 0.56 |
| 1:AA:1777:U:H5'' | 53:B5:2194:G:O2' | 2.05 | 0.56 |
| 1:AA:1756:U:H4' | 53:B5:2262:A:C5 | 2.41 | 0.56 |
| 17:AR:259:GLY:HA2 | 17:AR:283:LYS:C | 2.25 | 0.56 |
| 26:BB:50:HIS:H | 53:B5:1796:G:H5'' | 1.71 | 0.56 |
| 1:AA:1776:G:C3' | 53:B5:2194:G:C5' | 2.82 | 0.56 |
| 1:AA:1777:U:C5' | 53:B5:2194:G:O2' | 2.54 | 0.56 |
| 1:AA:867:G:H5'' | 1:AA:868:G:OP2 | 2.06 | 0.56 |
| 17:AR:275:ARG:HB3 | 17:AR:276:PRO:CD | 2.35 | 0.56 |
| 17:AR:305:TYR:HB2 | 17:AR:309:VAL:O | 2.06 | 0.56 |
| 37:BM:106:GLU:OE1 | 37:BM:153:ALA:O | 2.24 | 0.56 |
| 1:AA:1461:C:P | 19:A7:30:G:C1' | 2.94 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:1518:U:H5'' | 1:AA:1519:G:OP2 | 2.06 | 0.55 |
| 14:AO:149:LEU:HD12 | 53:B5:846:A:O3' | 2.04 | 0.55 |
| 17:AR:179:LYS:HD3 | 17:AR:181:TRP:CZ2 | 2.41 | 0.55 |
| 17:AR:9:LEU:CD2 | 17:AR:311:ARG:HB3 | 2.36 | 0.55 |
| 17:AR:34:LEU:HD12 | 17:AR:73:LEU:CD2 | 2.35 | 0.55 |
| 1:AA:1631:A:OP1 | 1:AA:1636:G:O2' | 2.13 | 0.55 |
| 7:AH:32:LYS:C | 7:AH:33:VAL:N | 2.59 | 0.55 |
| 17:AR:302:PHE:CD2 | 17:AR:312:VAL:HG12 | 2.42 | 0.55 |
| 1:AA:858:G:C4 | 7:AH:61:ILE:CG1 | 2.88 | 0.55 |
| 6:AG:72:HIS:CD2 | 6:AG:89:ILE:H | 2.24 | 0.55 |
| 17:AR:169:ILE:HD12 | 17:AR:169:ILE:C | 2.27 | 0.55 |
| 17:AR:276:PRO:HB2 | 17:AR:278:PHE:CD1 | 2.40 | 0.55 |
| 18:AT:28:LEU:HD21 | 18:AT:111:ILE:HD11 | 1.88 | 0.55 |
| 1:AA:972:A:H5'' | 53:B5:848:A:N3 | 2.14 | 0.55 |
| 17:AR:34:LEU:HD23 | 17:AR:34:LEU:C | 2.27 | 0.55 |
| 1:AA:1734:G:H21 | 53:B5:1934:G:C4' | 2.06 | 0.55 |
| 17:AR:210:LEU:HD12 | 17:AR:222:LEU:CD2 | 2.26 | 0.55 |
| 17:AR:283:LYS:CG | 17:AR:284:ALA:H | 2.19 | 0.55 |
| 1:AA:1756:U:H1' | 53:B5:2262:A:O2' | 2.05 | 0.55 |
| 17:AR:264:SER:CB | 17:AR:267:PRO:HD2 | 2.37 | 0.55 |
| 23:B8:43:LYS:HB2 | 35:BK:121:PHE:CE1 | 2.41 | 0.55 |
| 1:AA:699:U:C2' | 40:BP:169:ALA:C | 2.72 | 0.55 |
| 17:AR:315:VAL:HG12 | 17:AR:316:MET:N | 2.22 | 0.55 |
| 17:AR:19:TRP:CG | 17:AR:38:ARG:HD2 | 2.42 | 0.55 |
| 17:AR:199:ILE:C | 17:AR:199:ILE:HD13 | 2.28 | 0.54 |
| 1:AA:1521:G:N2 | 18:AT:78:LYS:HZ3 | 2.03 | 0.54 |
| 17:AR:250:TYR:O | 17:AR:265:LEU:HG | 2.06 | 0.54 |
| 17:AR:222:LEU:C | 17:AR:222:LEU:HD23 | 2.27 | 0.54 |
| 19:A7:56:C:N4 | 53:B5:2484:A:N3 | 2.55 | 0.54 |
| 37:BM:155:ALA:O | 37:BM:157:ALA:N | 2.41 | 0.54 |
| 1:AA:1756:U:C5' | 53:B5:2262:A:C6 | 2.88 | 0.54 |
| 17:AR:150:TRP:HB2 | 17:AR:174:ASN:ND2 | 2.22 | 0.54 |
| 17:AR:31:ASN:C | 17:AR:32:LEU:HD13 | 2.28 | 0.54 |
| 1:AA:702:G:C5 | 40:BP:172:ALA:HA | 2.23 | 0.54 |
| 1:AA:1501:A:C8 | 1:AA:1546:G:N3 | 2.76 | 0.54 |
| 17:AR:21:THR:HG23 | 17:AR:36:ALA:HB3 | 1.90 | 0.54 |
| 1:AA:1521:G:C8 | 18:AT:79:LEU:N | 2.75 | 0.54 |
| 37:BM:111:PRO:CB | 37:BM:163:ALA:C | 2.68 | 0.54 |
| 17:AR:188:ILE:HG23 | 17:AR:188:ILE:O | 2.07 | 0.54 |
| 1:AA:1200:A:C2 | 13:AN:16:LYS:HB2 | 2.42 | 0.54 |
| 17:AR:276:PRO:HA | 17:AR:285:ALA:CA | 2.38 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:1735:G:C5' | 53:B5:1933:A:O2' | 2.56 | 0.54 |
| 17:AR:262:VAL:HG23 | 17:AR:272:ASP:N | 2.23 | 0.54 |
| 1:AA:799:A:O3' | 40:BP:164:ALA:HB2 | 2.08 | 0.54 |
| 17:AR:199:ILE:HG23 | 17:AR:199:ILE:O | 2.08 | 0.53 |
| 17:AR:248:ASN:ND2 | 17:AR:249:ARG:HG2 | 2.22 | 0.53 |
| 1:AA:858:G:C3' | 7:AH:27:ILE:HB | 2.38 | 0.53 |
| 1:AA:864:U:C5' | 1:AA:865:A:H5' | 2.37 | 0.53 |
| 17:AR:13:LEU:HB2 | 17:AR:310:ILE:HB | 1.89 | 0.53 |
| 1:AA:701:U:O2 | 40:BP:171:ALA:C | 2.45 | 0.53 |
| 17:AR:270:LEU:HD12 | 17:AR:270:LEU:N | 2.24 | 0.53 |
| 1:AA:1664:U:H1' | 53:B5:1934:G:O2' | 2.09 | 0.53 |
| 1:AA:1521:G:H21 | 18:AT:78:LYS:HZ3 | 1.56 | 0.53 |
| 37:BM:111:PRO:CG | 37:BM:163:ALA:CB | 2.87 | 0.53 |
| 17:AR:263:PHE:HE1 | 17:AR:270:LEU:CD1 | 2.22 | 0.53 |
| 1:AA:701:U:C4' | 40:BP:173:ALA:HB1 | 2.05 | 0.53 |
| 17:AR:136:ILE:HG23 | 17:AR:137:LYS:N | 2.23 | 0.53 |
| 17:AR:220:ILE:HB | 17:AR:234:LEU:HB2 | 1.90 | 0.53 |
| 17:AR:193:ILE:O | 17:AR:223:TRP:HH2 | 1.91 | 0.53 |
| 19:A7:19:G:N1 | 53:B5:2454:G:C6 | 2.69 | 0.53 |
| 17:AR:170:ILE:HG22 | 17:AR:171:SER:N | 2.24 | 0.53 |
| 1:AA:1339:C:H5' | 17:AR:102:ARG:HH21 | 1.68 | 0.53 |
| 1:AA:1574:A:H2' | 19:A7:40:5MC:HO2' | 1.68 | 0.53 |
| 17:AR:164:ASP:H | 17:AR:167:VAL:HA | 1.74 | 0.53 |
| 17:AR:178:VAL:HG13 | 17:AR:202:LEU:HD11 | 1.91 | 0.53 |
| 17:AR:276:PRO:HB3 | 17:AR:286:GLU:N | 2.23 | 0.53 |
| 17:AR:98:GLU:HG2 | 17:AR:99:THR:N | 2.24 | 0.53 |
| 21:B1:40:LYS:H | 53:B5:355:A:H4' | 1.74 | 0.53 |
| 17:AR:284:ALA:C | 17:AR:286:GLU:H | 2.13 | 0.52 |
| 19:A7:56:C:N4 | 53:B5:2484:A:C2 | 2.77 | 0.52 |
| 1:AA:1744:A:N3 | 53:B5:2302:G:C8 | 2.77 | 0.52 |
| 1:AA:858:G:C2 | 7:AH:61:ILE:CA | 2.92 | 0.52 |
| 17:AR:172:ALA:HB1 | 17:AR:199:ILE:CD1 | 2.40 | 0.52 |
| 40:BP:134:HIS:CG | 40:BP:135:LYS:H | 2.27 | 0.52 |
| 1:AA:1735:G:H4' | 53:B5:1933:A:C2' | 2.33 | 0.52 |
| 17:AR:170:ILE:HG12 | 17:AR:211:ILE:HD13 | 1.90 | 0.52 |
| 17:AR:287:PRO:HG2 | 17:AR:306:THR:OG1 | 2.09 | 0.52 |
| 1:AA:1755:G:C2' | 53:B5:2262:A:C2 | 2.70 | 0.52 |
| 17:AR:85:TRP:HB3 | 17:AR:109:ASP:OD1 | 2.10 | 0.52 |
| 17:AR:263:PHE:HE1 | 17:AR:270:LEU:HD11 | 1.75 | 0.52 |
| 19:A7:59:U:C5 | 19:A7:60:C:C4 | 2.98 | 0.52 |
| 1:AA:1120:C:O2' | 53:B5:2190:U:H4' | 2.09 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:1502:G:N1 | 1:AA:1547:C:N4 | 2.57 | 0.52 |
| 26:BB:5:ILE:H | 26:BB:5:ILE:HD13 | 1.75 | 0.52 |
| 1:AA:722:G:H22 | 1:AA:732:G:H1 | 1.58 | 0.52 |
| 17:AR:270:LEU:HD12 | 17:AR:270:LEU:H | 1.75 | 0.52 |
| 17:AR:74:THR:HG23 | 17:AR:77:GLY:H | 1.75 | 0.52 |
| 17:AR:256:THR:OG1 | 17:AR:258:THR:HG22 | 2.10 | 0.52 |
| 19:A7:56:C:O4' | 53:B5:2484:A:H4' | 2.10 | 0.52 |
| 1:AA:1460:G:H5' | 19:A7:29:A:O2' | 2.10 | 0.52 |
| 17:AR:149:ASP:HB3 | 17:AR:174:ASN:HB2 | 1.92 | 0.52 |
| 17:AR:69:GLN:HG2 | 17:AR:85:TRP:CD1 | 2.45 | 0.52 |
| 17:AR:9:LEU:HD13 | 17:AR:9:LEU:C | 2.29 | 0.52 |
| 17:AR:285:ALA:CB | 17:AR:313:TRP:CH2 | 2.93 | 0.51 |
| 1:AA:1657:A:C5' | 42:BR:67:PRO:HD2 | 2.28 | 0.51 |
| 1:AA:1777:U:OP1 | 53:B5:2194:G:O2' | 2.22 | 0.51 |
| 17:AR:118:LYS:HD2 | 17:AR:118:LYS:N | 2.25 | 0.51 |
| 17:AR:283:LYS:HD3 | 17:AR:288:HIS:CD2 | 2.44 | 0.51 |
| 17:AR:19:TRP:HE1 | 17:AR:290:VAL:HG21 | 1.76 | 0.51 |
| 17:AR:93:ASP:O | 17:AR:96:THR:HG22 | 2.10 | 0.51 |
| 1:AA:922:A:H5'' | 26:BB:109:GLU:OE1 | 2.06 | 0.51 |
| 17:AR:26:SER:HB3 | 17:AR:30:PRO:HD2 | 1.92 | 0.51 |
| 17:AR:66:HIS:ND1 | 17:AR:67:ILE:HD13 | 2.25 | 0.51 |
| 37:BM:168:ALA:O | 37:BM:172:ALA:CB | 2.58 | 0.51 |
| 1:AA:1744:A:N3 | 53:B5:2302:G:H8 | 2.08 | 0.51 |
| 17:AR:89:LEU:HB2 | 17:AR:103:PHE:HB2 | 1.93 | 0.51 |
| 1:AA:1521:G:C6 | 18:AT:79:LEU:N | 2.76 | 0.51 |
| 1:AA:1636:G:H2' | 1:AA:1637:C:O4' | 2.11 | 0.51 |
| 17:AR:292:LEU:O | 17:AR:292:LEU:HD23 | 2.11 | 0.51 |
| 17:AR:30:PRO:HB2 | 17:AR:32:LEU:CD1 | 2.41 | 0.51 |
| 1:AA:1501:A:N7 | 1:AA:1546:G:N9 | 2.59 | 0.50 |
| 1:AA:699:U:C2 | 40:BP:168:ALA:N | 2.79 | 0.50 |
| 1:AA:857:U:C2' | 1:AA:858:G:O5' | 2.59 | 0.50 |
| 17:AR:157:VAL:O | 17:AR:167:VAL:HG21 | 2.11 | 0.50 |
| 23:B8:43:LYS:HG2 | 35:BK:121:PHE:CE1 | 2.45 | 0.50 |
| 1:AA:799:A:H4' | 40:BP:164:ALA:H | 1.76 | 0.50 |
| 15:AQ:131:ILE:HD13 | 15:AQ:131:ILE:H | 1.74 | 0.50 |
| 17:AR:173:GLY:N | 17:AR:199:ILE:HG23 | 2.26 | 0.50 |
| 17:AR:276:PRO:HA | 17:AR:285:ALA:HA | 1.93 | 0.50 |
| 17:AR:305:TYR:HD2 | 17:AR:311:ARG:HH21 | 1.56 | 0.50 |
| 1:AA:1460:G:C4' | 19:A7:30:G:C5' | 2.84 | 0.50 |
| 17:AR:290:VAL:HG13 | 17:AR:290:VAL:O | 2.06 | 0.50 |
| 17:AR:81:LEU:HD21 | 17:AR:122:ILE:CG2 | 2.41 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 17:AR:114:ASP:OD2 | 17:AR:156:VAL:HG13 | 2.11 | 0.50 |
| 1:AA:1776:G:OP1 | 53:B5:2193:U:C4' | 2.53 | 0.50 |
| 17:AR:176:LYS:HD3 | 17:AR:195:HIS:O | 2.11 | 0.50 |
| 17:AR:19:TRP:CZ3 | 17:AR:306:THR:CG2 | 2.95 | 0.50 |
| 17:AR:285:ALA:HB3 | 17:AR:313:TRP:CH2 | 2.47 | 0.50 |
| 17:AR:314:GLN:HG2 | 17:AR:315:VAL:H | 1.76 | 0.50 |
| 17:AR:99:THR:O | 17:AR:99:THR:HG23 | 2.11 | 0.50 |
| 1:AA:972:A:C1' | 53:B5:847:A:C2 | 2.87 | 0.50 |
| 1:AA:971:G:N2 | 53:B5:846:A:H61 | 2.05 | 0.50 |
| 17:AR:169:ILE:CD1 | 17:AR:181:TRP:CD1 | 2.95 | 0.50 |
| 17:AR:305:TYR:CD1 | 17:AR:305:TYR:N | 2.80 | 0.50 |
| 17:AR:7:LEU:N | 17:AR:7:LEU:HD12 | 2.27 | 0.50 |
| 17:AR:89:LEU:HD21 | 17:AR:124:SER:CB | 2.34 | 0.50 |
| 33:BI:121:LYS:H | 33:BI:121:LYS:HD2 | 1.76 | 0.50 |
| 37:BM:147:TRP:HZ2 | 37:BM:153:ALA:HB1 | 1.73 | 0.50 |
| 17:AR:96:THR:CG2 | 17:AR:98:GLU:H | 2.20 | 0.50 |
| 17:AR:256:THR:C | 17:AR:283:LYS:HE3 | 2.32 | 0.49 |
| 1:AA:701:U:C5' | 40:BP:173:ALA:HB1 | 2.41 | 0.49 |
| 17:AR:115:ILE:HG22 | 17:AR:119:ALA:HA | 1.93 | 0.49 |
| 17:AR:81:LEU:HD21 | 17:AR:122:ILE:HG21 | 1.93 | 0.49 |
| 17:AR:164:ASP:HB3 | 17:AR:182:ASN:C | 2.31 | 0.49 |
| 1:AA:1744:A:C2 | 53:B5:2302:G:C5' | 2.77 | 0.49 |
| 1:AA:699:U:C6 | 40:BP:165:ALA:O | 2.66 | 0.49 |
| 17:AR:277:GLU:O | 17:AR:278:PHE:HB3 | 2.12 | 0.49 |
| 17:AR:44:SER:OG | 17:AR:58:VAL:HG23 | 2.11 | 0.49 |
| 1:AA:1338:A:O3' | 17:AR:102:ARG:NH2 | 2.44 | 0.49 |
| 17:AR:13:LEU:HD23 | 17:AR:310:ILE:CG2 | 2.43 | 0.49 |
| 1:AA:1665:A:OP1 | 53:B5:1936:A:O5' | 2.28 | 0.49 |
| 17:AR:263:PHE:CE1 | 17:AR:270:LEU:CD1 | 2.95 | 0.49 |
| 17:AR:69:GLN:CG | 17:AR:85:TRP:HE1 | 2.26 | 0.49 |
| 1:AA:700:C:C5 | 40:BP:173:ALA:HB3 | 2.47 | 0.49 |
| 17:AR:131:ILE:HD11 | 17:AR:151:VAL:HG11 | 1.94 | 0.49 |
| 17:AR:185:GLN:O | 17:AR:186:PHE:HB2 | 2.12 | 0.49 |
| 17:AR:29:GLN:OE1 | 17:AR:297:ASP:HB3 | 2.12 | 0.49 |
| 53:B5:512:U:H3 | 53:B5:579:G:H1 | 1.61 | 0.49 |
| 1:AA:972:A:O4' | 53:B5:847:A:N1 | 2.43 | 0.49 |
| 17:AR:159:ASN:O | 17:AR:167:VAL:HG12 | 2.13 | 0.49 |
| 17:AR:187:GLN:OE1 | 17:AR:187:GLN:HA | 2.13 | 0.49 |
| 17:AR:52:GLN:HA | 17:AR:52:GLN:NE2 | 2.20 | 0.49 |
| 17:AR:123:ILE:HG22 | 17:AR:133:VAL:HA | 1.95 | 0.49 |
| 17:AR:131:ILE:HD13 | 17:AR:151:VAL:HG11 | 1.95 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 17:AR:258:THR:HG23 | 17:AR:261:LYS:HE2 | 1.90 | 0.49 |
| 17:AR:286:GLU:CA | 17:AR:305:TYR:CD2 | 2.93 | 0.49 |
| 17:AR:34:LEU:CD2 | 17:AR:71:CYS:HB3 | 2.43 | 0.49 |
| 17:AR:8:VAL:HG12 | 17:AR:9:LEU:H | 1.77 | 0.49 |
| 17:AR:9:LEU:HD13 | 17:AR:11:GLY:N | 2.27 | 0.49 |
| 37:BM:147:TRP:CZ2 | 37:BM:153:ALA:HB2 | 2.48 | 0.49 |
| 17:AR:286:GLU:OE2 | 17:AR:289:ALA:HB2 | 2.12 | 0.48 |
| 17:AR:29:GLN:O | 17:AR:29:GLN:HG2 | 2.13 | 0.48 |
| 16:AS:69:GLU:HG3 | 16:AS:70:ASN:H | 1.78 | 0.48 |
| 17:AR:123:ILE:HD13 | 17:AR:169:ILE:HG21 | 1.95 | 0.48 |
| 17:AR:178:VAL:HG13 | 17:AR:202:LEU:CD1 | 2.43 | 0.48 |
| 1:AA:1460:G:O3' | 19:A7:30:G:C1' | 2.60 | 0.48 |
| 1:AA:1520:U:C2' | 1:AA:1521:G:OP1 | 2.58 | 0.48 |
| 1:AA:1552:U:OP1 | 13:AN:14:PHE:CG | 2.67 | 0.48 |
| 17:AR:54:PHE:CD1 | 17:AR:312:VAL:HG21 | 2.49 | 0.48 |
| 17:AR:87:LYS:HD3 | 17:AR:107:LYS:O | 2.13 | 0.48 |
| 17:AR:33:LEU:HD13 | 17:AR:302:PHE:CD2 | 2.48 | 0.48 |
| 32:BH:40:HIS:CG | 32:BH:41:ILE:N | 2.78 | 0.48 |
| 1:AA:698:U:C4 | 40:BP:164:ALA:O | 2.67 | 0.48 |
| 17:AR:183:LEU:N | 17:AR:183:LEU:HD22 | 2.28 | 0.48 |
| 17:AR:154:VAL:O | 17:AR:154:VAL:HG23 | 2.12 | 0.48 |
| 17:AR:169:ILE:HG23 | 17:AR:183:LEU:CD2 | 2.43 | 0.48 |
| 17:AR:218:GLY:O | 17:AR:236:ALA:HB3 | 2.14 | 0.48 |
| 17:AR:309:VAL:HG12 | 17:AR:310:ILE:N | 2.29 | 0.48 |
| 17:AR:41:THR:HG22 | 17:AR:42:LEU:O | 2.13 | 0.48 |
| 14:AO:149:LEU:HB2 | 53:B5:847:A:OP1 | 2.14 | 0.48 |
| 1:AA:1779:A:H2' | 1:AA:1780:A:C8 | 2.49 | 0.48 |
| 17:AR:100:TYR:CE2 | 17:AR:101:GLN:HG3 | 2.49 | 0.48 |
| 17:AR:286:GLU:HG2 | 17:AR:288:HIS:C | 2.34 | 0.48 |
| 1:AA:1520:U:O4' | 1:AA:1522:A:N7 | 2.47 | 0.47 |
| 1:AA:1756:U:H4' | 53:B5:2263:C:C1' | 2.44 | 0.47 |
| 1:AA:698:U:C6 | 1:AA:799:A:OP2 | 2.67 | 0.47 |
| 1:AA:1775:G:C4' | 53:B5:2193:U:OP1 | 2.62 | 0.47 |
| 17:AR:109:ASP:HB2 | 17:AR:127:ARG:HD2 | 1.95 | 0.47 |
| 17:AR:83:ALA:HB2 | 17:AR:113:VAL:HG11 | 1.93 | 0.47 |
| 22:B2:104:LEU:H | 22:B2:104:LEU:HD13 | 1.79 | 0.47 |
| 19:A7:62:A:H2' | 19:A7:63:C:C6 | 2.50 | 0.47 |
| 1:AA:858:G:N1 | 7:AH:61:ILE:CA | 2.77 | 0.47 |
| 17:AR:146:GLY:C | 17:AR:179:LYS:HE2 | 2.33 | 0.47 |
| 1:AA:1200:A:C6 | 13:AN:15:GLY:HA2 | 2.48 | 0.47 |
| 17:AR:210:LEU:CD1 | 17:AR:222:LEU:HD21 | 2.28 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 17:AR:221:MET:SD | 17:AR:223:TRP:CZ2 | 3.07 | 0.47 |
| 17:AR:81:LEU:HD13 | 17:AR:91:LEU:CD2 | 2.45 | 0.47 |
| 1:AA:702:G:C8 | 40:BP:172:ALA:HA | 2.42 | 0.47 |
| 1:AA:629:U:H5' | 53:B5:846:A:C1' | 2.44 | 0.47 |
| 17:AR:48:THR:HG22 | 17:AR:50:ASP:CG | 2.35 | 0.47 |
| 1:AA:856:A:C4 | 7:AH:33:VAL:CA | 2.96 | 0.47 |
| 1:AA:1582:G:H21 | 8:AI:134:ALA:HB1 | 1.79 | 0.47 |
| 17:AR:165:ASP:CB | 17:AR:183:LEU:CB | 2.93 | 0.47 |
| 17:AR:222:LEU:HD13 | 17:AR:232:TYR:CZ | 2.49 | 0.47 |
| 17:AR:276:PRO:HB3 | 17:AR:286:GLU:O | 2.15 | 0.47 |
| 17:AR:11:GLY:H | 17:AR:312:VAL:HG23 | 1.79 | 0.47 |
| 37:BM:148:LYS:HB3 | 37:BM:149:ALA:H | 1.28 | 0.47 |
| 37:BM:151:ALA:O | 37:BM:155:ALA:N | 2.46 | 0.47 |
| 17:AR:10:ARG:NE | 17:AR:54:PHE:HE1 | 2.13 | 0.47 |
| 1:AA:698:U:C6 | 40:BP:165:ALA:O | 2.61 | 0.47 |
| 17:AR:13:LEU:HD13 | 17:AR:54:PHE:HB3 | 1.94 | 0.47 |
| 17:AR:227:ALA:O | 17:AR:228:LYS:HG3 | 2.15 | 0.47 |
| 1:AA:1120:C:O2' | 53:B5:2190:U:C5' | 2.62 | 0.47 |
| 1:AA:1520:U:C6 | 1:AA:1520:U:C3' | 2.97 | 0.47 |
| 17:AR:34:LEU:HD21 | 17:AR:71:CYS:CB | 2.45 | 0.47 |
| 17:AR:66:HIS:CE1 | 17:AR:85:TRP:CE3 | 3.03 | 0.47 |
| 28:BD:148:ILE:H | 28:BD:148:ILE:HD13 | 1.79 | 0.47 |
| 17:AR:278:PHE:CD2 | 17:AR:279:ALA:N | 2.83 | 0.46 |
| 17:AR:278:PHE:HZ | 17:AR:287:PRO:CA | 2.27 | 0.46 |
| 17:AR:67:ILE:HD12 | 17:AR:67:ILE:N | 2.30 | 0.46 |
| 8:AI:42:GLU:HB3 | 8:AI:74:HIS:CE1 | 2.49 | 0.46 |
| 17:AR:164:ASP:OD2 | 17:AR:182:ASN:HA | 2.15 | 0.46 |
| 17:AR:185:GLN:HB3 | 17:AR:187:GLN:HG2 | 1.96 | 0.46 |
| 17:AR:262:VAL:HG23 | 17:AR:262:VAL:O | 2.16 | 0.46 |
| 17:AR:281:TYR:H | 17:AR:281:TYR:HD1 | 1.61 | 0.46 |
| 17:AR:283:LYS:CD | 17:AR:288:HIS:CA | 2.81 | 0.46 |
| 1:AA:1778:G:O5' | 53:B5:2274:U:H5'' | 2.14 | 0.46 |
| 19:A7:37:YYG:H31 | 19:A7:37:YYG:H1' | 1.95 | 0.46 |
| 17:AR:87:LYS:HA | 17:AR:110:VAL:HG23 | 1.97 | 0.46 |
| 17:AR:93:ASP:HB3 | 17:AR:96:THR:HG21 | 1.95 | 0.46 |
| 1:AA:1200:A:C4 | 1:AA:1200:A:C2 | 3.03 | 0.46 |
| 17:AR:283:LYS:HB3 | 17:AR:288:HIS:CA | 2.43 | 0.46 |
| 17:AR:283:LYS:CD | 17:AR:288:HIS:CD2 | 2.98 | 0.46 |
| 1:AA:1746:G:OP2 | 53:B5:2303:A:H3' | 2.16 | 0.46 |
| 17:AR:19:TRP:HB3 | 17:AR:38:ARG:CD | 2.41 | 0.46 |
| 17:AR:274:LEU:HD13 | 17:AR:313:TRP:CE3 | 2.50 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 17:AR:285:ALA:CB | 17:AR:313:TRP:CZ2 | 2.95 | 0.46 |
| 1:AA:1521:G:H22 | 18:AT:78:LYS:HG3 | 1.76 | 0.46 |
| 19:A7:72:C:H5' | 53:B5:2234:G:O6 | 2.16 | 0.46 |
| 1:AA:866:G:OP1 | 1:AA:866:G:H8 | 1.98 | 0.46 |
| 12:AM:110:ARG:CD | 34:BJ:116:TYR:HD1 | 2.23 | 0.46 |
| 24:B9:51:ALA:HB3 | 24:B9:54:ILE:HB | 1.97 | 0.46 |
| 19:A7:1:G:C6 | 19:A7:73:A:C2 | 3.04 | 0.46 |
| 1:AA:1547:C:H2' | 1:AA:1547:C:H6 | 1.60 | 0.46 |
| 1:AA:1744:A:H3' | 53:B5:2303:A:OP1 | 2.16 | 0.46 |
| 17:AR:157:VAL:HG12 | 17:AR:167:VAL:HB | 1.97 | 0.46 |
| 17:AR:218:GLY:HA2 | 17:AR:238:ASP:O | 2.16 | 0.46 |
| 17:AR:48:THR:HG22 | 17:AR:50:ASP:H | 1.81 | 0.46 |
| 17:AR:96:THR:HG23 | 17:AR:97:GLY:N | 2.30 | 0.46 |
| 1:AA:702:G:C8 | 40:BP:172:ALA:O | 2.69 | 0.46 |
| 17:AR:10:ARG:HE | 17:AR:54:PHE:HE1 | 1.60 | 0.46 |
| 1:AA:1521:G:HO2' | 18:AT:83:ALA:HA | 1.70 | 0.46 |
| 1:AA:1460:G:H4' | 19:A7:29:A:O2' | 2.16 | 0.46 |
| 1:AA:506:A:H3' | 1:AA:507:U:C5' | 2.46 | 0.46 |
| 1:AA:858:G:H1' | 7:AH:34:ILE:HG21 | 1.97 | 0.46 |
| 17:AR:134:TRP:CA | 17:AR:141:LEU:HD13 | 2.46 | 0.46 |
| 17:AR:153:GLN:HG3 | 17:AR:154:VAL:N | 2.31 | 0.46 |
| 1:AA:700:C:OP2 | 40:BP:169:ALA:HB1 | 2.15 | 0.45 |
| 1:AA:858:G:O3' | 7:AH:29:PRO:HD2 | 2.17 | 0.45 |
| 17:AR:108:SER:OG | 17:AR:127:ARG:HB2 | 2.16 | 0.45 |
| 1:AA:1121:A:C1' | 53:B5:2191:U:OP1 | 2.64 | 0.45 |
| 1:AA:701:U:O2' | 40:BP:176:ALA:O | 2.34 | 0.45 |
| 15:AQ:82:ARG:HB3 | 15:AQ:110:HIS:CE1 | 2.51 | 0.45 |
| 17:AR:156:VAL:HG12 | 17:AR:169:ILE:HG22 | 1.97 | 0.45 |
| 17:AR:276:PRO:CA | 17:AR:285:ALA:CA | 2.94 | 0.45 |
| 17:AR:276:PRO:HG3 | 17:AR:282:SER:HA | 1.97 | 0.45 |
| 17:AR:286:GLU:HG3 | 17:AR:305:TYR:HA | 1.97 | 0.45 |
| 17:AR:69:GLN:CG | 17:AR:85:TRP:NE1 | 2.80 | 0.45 |
| 23:B8:43:LYS:CB | 35:BK:121:PHE:CD1 | 2.93 | 0.45 |
| 1:AA:1756:U:O2' | 53:B5:2262:A:H3' | 2.17 | 0.45 |
| 12:AM:119:ILE:HG22 | 16:AS:106:GLU:H | 1.81 | 0.45 |
| 1:AA:701:U:C4 | 40:BP:169:ALA:C | 2.71 | 0.45 |
| 12:AM:120:ARG:HD3 | 16:AS:103:ASN:H | 1.80 | 0.45 |
| 17:AR:283:LYS:CG | 17:AR:284:ALA:N | 2.78 | 0.45 |
| 37:BM:155:ALA:O | 37:BM:156:ALA:C | 2.54 | 0.45 |
| 17:AR:284:ALA:CB | 17:AR:289:ALA:HB2 | 2.46 | 0.45 |
| 46:BV:113:GLY:HA3 | 53:B5:716:G:C4 | 2.51 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:1630:C:H5' | 1:AA:1636:G:H22 | 1.82 | 0.45 |
| 1:AA:856:A:C6 | 7:AH:32:LYS:N | 2.85 | 0.45 |
| 17:AR:10:ARG:CG | 17:AR:54:PHE:CE1 | 2.97 | 0.45 |
| 17:AR:31:ASN:HB3 | 17:AR:47:LEU:HB2 | 1.99 | 0.45 |
| 53:B5:1003:A:H61 | 53:B5:1046:A:H61 | 1.64 | 0.45 |
| 1:AA:1584:A:C8 | 8:AI:127:LYS:HB2 | 2.52 | 0.45 |
| 1:AA:1200:A:N3 | 13:AN:16:LYS:CB | 2.79 | 0.45 |
| 17:AR:169:ILE:O | 17:AR:169:ILE:HD12 | 2.17 | 0.45 |
| 17:AR:262:VAL:CG2 | 17:AR:271:VAL:CG1 | 2.94 | 0.45 |
| 26:BB:30:ARG:HG2 | 26:BB:31:THR:H | 1.81 | 0.45 |
| 37:BM:37:ARG:NH2 | 37:BM:157:ALA:HA | 2.32 | 0.45 |
| 17:AR:164:ASP:N | 17:AR:167:VAL:HA | 2.32 | 0.45 |
| 26:BB:77:ILE:HD11 | 26:BB:169:ILE:HD11 | 1.98 | 0.45 |
| 37:BM:111:PRO:CB | 37:BM:163:ALA:O | 2.65 | 0.45 |
| 1:AA:856:A:C2 | 7:AH:33:VAL:HB | 2.52 | 0.45 |
| 1:AA:856:A:N3 | 7:AH:33:VAL:CA | 2.79 | 0.45 |
| 1:AA:1521:G:H21 | 18:AT:78:LYS:HD2 | 1.69 | 0.45 |
| 3:AC:164:VAL:HG13 | 3:AC:165:ASN:H | 1.82 | 0.44 |
| 17:AR:34:LEU:CD1 | 17:AR:73:LEU:CD2 | 2.95 | 0.44 |
| 17:AR:34:LEU:CD1 | 17:AR:80:ALA:HB2 | 2.47 | 0.44 |
| 1:AA:1777:U:OP1 | 53:B5:2194:G:C2' | 2.65 | 0.44 |
| 17:AR:106:HIS:ND1 | 17:AR:126:SER:HB2 | 2.32 | 0.44 |
| 1:AA:972:A:H4' | 53:B5:847:A:C2 | 2.52 | 0.44 |
| 17:AR:123:ILE:HA | 17:AR:132:LYS:O | 2.18 | 0.44 |
| 19:A7:73:A:OP1 | 53:B5:2603:G:OP1 | 2.36 | 0.44 |
| 30:BF:118:LYS:H | 30:BF:118:LYS:HD3 | 1.82 | 0.44 |
| 17:AR:133:VAL:CG1 | 17:AR:141:LEU:HB2 | 2.40 | 0.44 |
| 17:AR:259:GLY:HA2 | 17:AR:283:LYS:O | 2.18 | 0.44 |
| 17:AR:278:PHE:CE2 | 17:AR:280:GLY:N | 2.85 | 0.44 |
| 17:AR:91:LEU:HG | 17:AR:103:PHE:CE1 | 2.52 | 0.44 |
| 18:AT:22:LEU:HD12 | 18:AT:55:TYR:HA | 2.00 | 0.44 |
| 1:AA:1756:U:C3' | 53:B5:2263:C:C1' | 2.89 | 0.44 |
| 35:BK:121:PHE:CD2 | 35:BK:121:PHE:CB | 2.86 | 0.44 |
| 17:AR:172:ALA:HB1 | 17:AR:199:ILE:O | 2.18 | 0.44 |
| 17:AR:286:GLU:CD | 17:AR:305:TYR:CZ | 2.91 | 0.44 |
| 19:A7:70:C:O2' | 53:B5:2236:G:H4' | 2.18 | 0.44 |
| 17:AR:115:ILE:HG22 | 17:AR:116:ASP:N | 2.32 | 0.44 |
| 17:AR:68:VAL:HA | 17:AR:84:SER:HB3 | 2.00 | 0.44 |
| 17:AR:8:VAL:CG1 | 17:AR:9:LEU:N | 2.80 | 0.44 |
| 32:BH:129:ARG:H | 32:BH:157:ASN:HD21 | 1.66 | 0.44 |
| 37:BM:108:ILE:HG23 | 37:BM:160:ALA:CA | 2.39 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:1778:G:OP1 | 53:B5:2274:U:C5' | 2.34 | 0.44 |
| 17:AR:56:VAL:HB | 17:AR:57:PRO:HD2 | 1.99 | 0.44 |
| 17:AR:38:ARG:CA | 17:AR:67:ILE:HG23 | 2.22 | 0.44 |
| 17:AR:34:LEU:CD1 | 17:AR:80:ALA:CB | 2.94 | 0.44 |
| 1:AA:1516:C:O5' | 1:AA:1516:C:H6 | 2.01 | 0.44 |
| 17:AR:42:LEU:HD21 | 17:AR:71:CYS:SG | 2.58 | 0.44 |
| 17:AR:91:LEU:HG | 17:AR:103:PHE:HE1 | 1.83 | 0.44 |
| 1:AA:1501:A:C4' | 1:AA:1546:G:N2 | 2.81 | 0.43 |
| 1:AA:856:A:N3 | 7:AH:32:LYS:O | 2.50 | 0.43 |
| 17:AR:54:PHE:CE2 | 17:AR:302:PHE:CE2 | 3.06 | 0.43 |
| 17:AR:68:VAL:HG23 | 17:AR:84:SER:HB3 | 2.00 | 0.43 |
| 1:AA:1776:G:P | 53:B5:2193:U:C5' | 2.94 | 0.43 |
| 1:AA:1520:U:H1' | 1:AA:1522:A:H62 | 1.82 | 0.43 |
| 1:AA:1581:A:C8 | 8:AI:137:ARG:HA | 2.54 | 0.43 |
| 17:AR:161:LYS:HA | 17:AR:161:LYS:HE2 | 2.00 | 0.43 |
| 17:AR:262:VAL:CG2 | 17:AR:272:ASP:N | 2.81 | 0.43 |
| 17:AR:47:LEU:HD22 | 17:AR:54:PHE:CE2 | 2.53 | 0.43 |
| 27:BC:342:LEU:H | 27:BC:342:LEU:HD23 | 1.83 | 0.43 |
| 17:AR:116:ASP:OD2 | 17:AR:166:SER:HB2 | 2.19 | 0.43 |
| 17:AR:193:ILE:N | 17:AR:193:ILE:HD13 | 2.20 | 0.43 |
| 17:AR:196:ASN:OD1 | 17:AR:217:ASP:HB3 | 2.19 | 0.43 |
| 37:BM:155:ALA:C | 37:BM:157:ALA:N | 2.72 | 0.43 |
| 17:AR:41:THR:OG1 | 17:AR:62:LYS:HG2 | 2.18 | 0.43 |
| 42:BR:22:ILE:H | 53:B5:1899:G:H5'' | 1.83 | 0.43 |
| 1:AA:699:U:N3 | 40:BP:171:ALA:N | 2.57 | 0.43 |
| 1:AA:857:U:C6 | 7:AH:33:VAL:O | 2.71 | 0.43 |
| 17:AR:48:THR:H | 17:AR:55:GLY:HA2 | 1.84 | 0.43 |
| 17:AR:74:THR:HG23 | 17:AR:76:ASP:N | 2.34 | 0.43 |
| 1:AA:858:G:C4 | 7:AH:61:ILE:HG12 | 2.53 | 0.43 |
| 17:AR:13:LEU:CD1 | 17:AR:55:GLY:N | 2.82 | 0.43 |
| 17:AR:285:ALA:CB | 17:AR:313:TRP:HH2 | 2.32 | 0.43 |
| 17:AR:300:THR:HG23 | 17:AR:313:TRP:O | 2.19 | 0.43 |
| 1:AA:700:C:C6 | 40:BP:173:ALA:CB | 2.98 | 0.43 |
| 1:AA:1777:U:OP1 | 53:B5:2194:G:C4' | 2.66 | 0.43 |
| 33:BI:140:THR:HG22 | 33:BI:141:LYS:H | 1.83 | 0.43 |
| 1:AA:1520:U:H4' | 1:AA:1522:A:H8 | 1.75 | 0.43 |
| 17:AR:19:TRP:NE1 | 17:AR:290:VAL:HG21 | 2.34 | 0.43 |
| 17:AR:54:PHE:CE2 | 17:AR:302:PHE:HE2 | 2.36 | 0.43 |
| 37:BM:106:GLU:OE1 | 37:BM:156:ALA:CB | 2.67 | 0.43 |
| 1:AA:796:A:C2' | 1:AA:797:G:O5' | 2.67 | 0.43 |
| 17:AR:133:VAL:HG12 | 17:AR:142:ALA:N | 2.33 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 17:AR:240:VAL:HG22 | 17:AR:256:THR:CG2 | 2.46 | 0.43 |
| 1:AA:1734:G:C2 | 53:B5:1934:G:H4' | 2.50 | 0.43 |
| 12:AM:39:GLY:H | 12:AM:42:TYR:HB2 | 1.85 | 0.42 |
| 17:AR:10:ARG:HG2 | 17:AR:54:PHE:HE1 | 1.81 | 0.42 |
| 17:AR:185:GLN:NE2 | 17:AR:187:GLN:HG3 | 2.34 | 0.42 |
| 17:AR:172:ALA:HB2 | 17:AR:199:ILE:HD12 | 1.96 | 0.42 |
| 17:AR:262:VAL:HG21 | 17:AR:272:ASP:HB3 | 2.01 | 0.42 |
| 17:AR:292:LEU:CD2 | 17:AR:292:LEU:N | 2.82 | 0.42 |
| 17:AR:71:CYS:SG | 17:AR:80:ALA:HB1 | 2.59 | 0.42 |
| 17:AR:83:ALA:HB1 | 17:AR:110:VAL:HG11 | 1.95 | 0.42 |
| 17:AR:89:LEU:HD12 | 17:AR:89:LEU:N | 2.33 | 0.42 |
| 1:AA:1755:G:H2' | 53:B5:2262:A:H2 | 1.77 | 0.42 |
| 42:BR:7:GLN:N | 53:B5:3016:A:HO2' | 2.17 | 0.42 |
| 1:AA:1664:U:O3' | 53:B5:1935:G:C2' | 2.62 | 0.42 |
| 1:AA:701:U:O5' | 40:BP:173:ALA:HB1 | 2.18 | 0.42 |
| 17:AR:134:TRP:C | 17:AR:141:LEU:HD13 | 2.39 | 0.42 |
| 17:AR:263:PHE:CE1 | 17:AR:270:LEU:CG | 2.99 | 0.42 |
| 17:AR:41:THR:CG2 | 17:AR:42:LEU:N | 2.81 | 0.42 |
| 17:AR:35:SER:CB | 17:AR:45:TRP:HE1 | 2.33 | 0.42 |
| 17:AR:284:ALA:HB3 | 17:AR:286:GLU:CD | 2.39 | 0.42 |
| 17:AR:33:LEU:N | 17:AR:33:LEU:CD2 | 2.82 | 0.42 |
| 1:AA:1461:C:H4' | 19:A7:31:A:O5' | 2.20 | 0.42 |
| 1:AA:1573:G:N2 | 19:A7:41:U:C5' | 2.39 | 0.42 |
| 17:AR:133:VAL:CG1 | 17:AR:142:ALA:N | 2.82 | 0.42 |
| 53:B5:271:C:C5 | 53:B5:272:G:H1' | 2.55 | 0.42 |
| 23:B8:4:ILE:HG12 | 23:B8:6:GLU:H | 1.84 | 0.42 |
| 17:AR:118:LYS:O | 17:AR:119:ALA:HB3 | 2.20 | 0.42 |
| 17:AR:106:HIS:NE2 | 17:AR:132:LYS:HD2 | 2.35 | 0.42 |
| 32:BH:40:HIS:CD2 | 32:BH:41:ILE:H | 2.37 | 0.42 |
| 48:BX:81:ALA:HA | 53:B5:17:G:C4 | 2.54 | 0.42 |
| 17:AR:147:HIS:CD2 | 17:AR:151:VAL:HG22 | 2.55 | 0.42 |
| 17:AR:288:HIS:O | 17:AR:306:THR:HG23 | 2.19 | 0.42 |
| 53:B5:126:U:H2' | 53:B5:127:G:C8 | 2.55 | 0.42 |
| 27:BC:32:PHE:CD1 | 53:B5:3003:G:H4' | 2.53 | 0.42 |
| 28:BD:208:VAL:HG11 | 28:BD:250:TRP:CZ3 | 2.55 | 0.42 |
| 29:BE:193:GLU:H | 29:BE:213:ASP:H | 1.68 | 0.42 |
| 1:AA:115:G:H1 | 1:AA:302:U:H1' | 1.85 | 0.42 |
| 17:AR:285:ALA:C | 17:AR:305:TYR:HE2 | 2.22 | 0.42 |
| 17:AR:29:GLN:N | 17:AR:30:PRO:CD | 2.83 | 0.42 |
| 17:AR:164:ASP:C | 17:AR:183:LEU:H | 2.21 | 0.42 |
| 17:AR:96:THR:CG2 | 17:AR:97:GLY:N | 2.82 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:1574:A:C6 | 19:A7:41:U:H4' | 2.54 | 0.42 |
| 17:AR:139:GLN:HA | 17:AR:139:GLN:OE1 | 2.20 | 0.42 |
| 17:AR:135:THR:N | 17:AR:141:LEU:CD1 | 2.83 | 0.42 |
| 17:AR:165:ASP:N | 17:AR:184:ASN:N | 2.68 | 0.42 |
| 17:AR:165:ASP:CB | 17:AR:183:LEU:HB3 | 2.50 | 0.42 |
| 17:AR:203:THR:CG2 | 17:AR:245:PHE:CE1 | 3.01 | 0.42 |
| 17:AR:260:ILE:HG13 | 17:AR:284:ALA:HB2 | 1.98 | 0.42 |
| 17:AR:313:TRP:O | 17:AR:314:GLN:HB2 | 2.20 | 0.42 |
| 17:AR:33:LEU:HD21 | 17:AR:45:TRP:CB | 2.50 | 0.42 |
| 1:AA:1520:U:C5' | 1:AA:1521:G:P | 3.05 | 0.41 |
| 1:AA:1657:A:H4' | 42:BR:67:PRO:CG | 2.47 | 0.41 |
| 1:AA:865:A:H2' | 1:AA:866:G:OP2 | 2.19 | 0.41 |
| 17:AR:172:ALA:CB | 17:AR:199:ILE:CD1 | 2.94 | 0.41 |
| 17:AR:245:PHE:HE2 | 17:AR:265:LEU:HD11 | 1.84 | 0.41 |
| 37:BM:178:ALA:O | 37:BM:181:ALA:HB3 | 2.21 | 0.41 |
| 1:AA:703:G:H4' | 40:BP:176:ALA:HB2 | 2.02 | 0.41 |
| 1:AA:1502:G:O6 | 1:AA:1547:C:C6 | 2.72 | 0.41 |
| 1:AA:1520:U:C6 | 1:AA:1520:U:H3' | 2.55 | 0.41 |
| 17:AR:135:THR:N | 17:AR:141:LEU:HD11 | 2.34 | 0.41 |
| 17:AR:157:VAL:O | 17:AR:157:VAL:HG13 | 2.20 | 0.41 |
| 17:AR:224:ASN:OD1 | 17:AR:227:ALA:HB3 | 2.20 | 0.41 |
| 17:AR:262:VAL:CG2 | 17:AR:272:ASP:HB3 | 2.49 | 0.41 |
| 1:AA:1755:G:H2' | 53:B5:2262:A:C2 | 2.54 | 0.41 |
| 42:BR:48:ARG:HA | 53:B5:2338:C:H4' | 2.01 | 0.41 |
| 1:AA:1120:C:O2' | 53:B5:2190:U:C4' | 2.68 | 0.41 |
| 17:AR:79:TYR:HD2 | 17:AR:92:TRP:O | 2.03 | 0.41 |
| 17:AR:13:LEU:CD2 | 17:AR:13:LEU:N | 2.83 | 0.41 |
| 17:AR:243:LEU:HD23 | 17:AR:254:ALA:HA | 2.01 | 0.41 |
| 1:AA:1775:G:C5' | 53:B5:2193:U:OP1 | 2.68 | 0.41 |
| 53:B5:2621:G:C8 | 53:B5:2622:C:C5 | 3.09 | 0.41 |
| 1:AA:223:U:H3 | 1:AA:244:A:H61 | 1.68 | 0.41 |
| 1:AA:501:U:C1' | 1:AA:501:U:C6 | 2.93 | 0.41 |
| 9:AJ:56:VAL:HG22 | 9:AJ:57:ARG:N | 2.36 | 0.41 |
| 12:AM:92:ILE:H | 12:AM:92:ILE:HD13 | 1.84 | 0.41 |
| 14:AO:149:LEU:HD13 | 53:B5:847:A:P | 2.46 | 0.41 |
| 17:AR:131:ILE:HD12 | 17:AR:154:VAL:HG11 | 2.01 | 0.41 |
| 17:AR:233:THR:O | 17:AR:234:LEU:HD23 | 2.21 | 0.41 |
| 17:AR:278:PHE:CZ | 17:AR:281:TYR:O | 2.73 | 0.41 |
| 17:AR:300:THR:HG22 | 17:AR:301:LEU:N | 2.36 | 0.41 |
| 53:B5:1384:U:H1' | 53:B5:1385:C:C2 | 2.55 | 0.41 |
| 2:AB:23:HIS:HA | 2:AB:48:ILE:HG22 | 2.03 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 17:AR:136:ILE:CG2 | 17:AR:137:LYS:N | 2.83 | 0.41 |
| 17:AR:157:VAL:CG1 | 17:AR:167:VAL:HB | 2.51 | 0.41 |
| 17:AR:267:PRO:O | 17:AR:268:GLN:HB2 | 2.20 | 0.41 |
| 17:AR:256:THR:O | 17:AR:283:LYS:CG | 2.66 | 0.41 |
| 17:AR:305:TYR:CE2 | 17:AR:311:ARG:NE | 2.85 | 0.41 |
| 17:AR:315:VAL:CG1 | 17:AR:316:MET:N | 2.83 | 0.41 |
| 1:AA:628:G:H4' | 53:B5:846:A:N3 | 2.36 | 0.41 |
| 19:A7:21:A:C6 | 19:A7:48:C:C6 | 3.09 | 0.41 |
| 1:AA:799:A:O3' | 40:BP:160:ALA:O | 2.39 | 0.41 |
| 1:AA:921:G:O2' | 26:BB:141:PRO:HG3 | 2.20 | 0.41 |
| 4:AD:155:HIS:CG | 4:AD:156:ILE:H | 2.39 | 0.41 |
| 6:AG:77:TYR:H | 6:AG:191:ALA:HB2 | 1.85 | 0.41 |
| 8:AI:93:HIS:CE1 | 17:AR:59:ARG:CZ | 3.03 | 0.41 |
| 8:AI:97:VAL:HG12 | 8:AI:98:ASP:N | 2.36 | 0.41 |
| 17:AR:170:ILE:N | 17:AR:170:ILE:CD1 | 2.82 | 0.41 |
| 1:AA:1573:G:N3 | 19:A7:41:U:C5' | 2.67 | 0.41 |
| 17:AR:276:PRO:N | 17:AR:284:ALA:O | 2.54 | 0.41 |
| 17:AR:72:THR:CG2 | 17:AR:73:LEU:N | 2.82 | 0.41 |
| 1:AA:921:G:O3' | 26:BB:140:ASN:ND2 | 2.54 | 0.41 |
| 17:AR:219:GLU:HG2 | 17:AR:220:ILE:N | 2.36 | 0.41 |
| 43:BS:49:ILE:H | 43:BS:49:ILE:HD12 | 1.86 | 0.41 |
| 19:A7:10:2MG:HM23 | 19:A7:11:C:H1' | 2.03 | 0.41 |
| 1:AA:1120:C:HO2' | 53:B5:2190:U:C4' | 2.34 | 0.41 |
| 37:BM:150:ALA:C | 37:BM:154:ALA:HB3 | 2.41 | 0.41 |
| 1:AA:856:A:C2 | 7:AH:33:VAL:CA | 3.04 | 0.40 |
| 1:AA:1430:G:H1' | 13:AN:38:ILE:HD11 | 2.03 | 0.40 |
| 36:BL:80:THR:HG23 | 53:B5:2607:G:H22 | 1.86 | 0.40 |
| 28:BD:55:LYS:HA | 28:BD:58:HIS:CD2 | 2.56 | 0.40 |
| 17:AR:286:GLU:OE2 | 17:AR:305:TYR:CE1 | 2.74 | 0.40 |
| 17:AR:303:ALA:O | 17:AR:305:TYR:CE1 | 2.74 | 0.40 |
| 17:AR:13:LEU:HD23 | 17:AR:310:ILE:HG22 | 2.03 | 0.40 |
| 17:AR:37:SER:HB3 | 17:AR:39:ASP:OD1 | 2.21 | 0.40 |
| 17:AR:61:PHE:HE2 | 17:AR:97:GLY:HA2 | 1.73 | 0.40 |
| 25:BA:105:LYS:HE2 | 53:B5:2477:G:C5 | 2.57 | 0.40 |
| 46:BV:74:LEU:HD13 | 46:BV:74:LEU:H | 1.86 | 0.40 |
| 17:AR:183:LEU:HA | 17:AR:183:LEU:HD13 | 1.98 | 0.40 |
| 17:AR:172:ALA:HB1 | 17:AR:199:ILE:HG23 | 2.02 | 0.40 |
| 17:AR:285:ALA:HB2 | 17:AR:313:TRP:CH2 | 2.57 | 0.40 |
| 9:AJ:30:LYS:HG3 | 9:AJ:31:VAL:H | 1.85 | 0.40 |
| 11:AL:62:LYS:HG2 | 11:AL:63:GLN:H | 1.86 | 0.40 |
| 17:AR:133:VAL:HG12 | 17:AR:142:ALA:H | 1.87 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 17:AR:199:ILE:CD1 | 17:AR:202:LEU:CD2 | 2.97 | 0.40 |
| 17:AR:234:LEU:HD13 | 17:AR:263:PHE:CD2 | 2.57 | 0.40 |
| 17:AR:286:GLU:CD | 17:AR:305:TYR:CE2 | 2.95 | 0.40 |
| 17:AR:285:ALA:HB2 | 17:AR:313:TRP:HH2 | 1.86 | 0.40 |
| 17:AR:68:VAL:HG21 | 17:AR:82:SER:HB2 | 2.04 | 0.40 |
| 17:AR:42:LEU:CD2 | 17:AR:71:CYS:HB2 | 2.52 | 0.40 |
| 17:AR:34:LEU:CD1 | 17:AR:73:LEU:HD21 | 2.48 | 0.40 |
| 17:AR:79:TYR:CD2 | 17:AR:93:ASP:HA | 2.55 | 0.40 |
| 1:AA:1744:A:C5' | 53:B5:2291:A:H1' | 2.47 | 0.40 |
| 37:BM:143:THR:HG23 | 37:BM:144:SER:H | 1.86 | 0.40 |
| 1:AA:701:U:C2 | 40:BP:171:ALA:C | 2.91 | 0.40 |
| 1:AA:858:G:H2' | 7:AH:28:ARG:N | 2.37 | 0.40 |
| 17:AR:106:HIS:CD2 | 17:AR:132:LYS:HD2 | 2.56 | 0.40 |
| 17:AR:262:VAL:CG2 | 17:AR:272:ASP:H | 2.30 | 0.40 |
| 23:B8:24:SER:HA | 23:B8:115:ALA:H | 1.86 | 0.40 |
| 23:B8:84:VAL:HG23 | 23:B8:110:ARG:HE | 1.87 | 0.40 |

There are no symmetry-related clashes.

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 PDB entries followed by that with respect to all EM entries.

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 | |
|-----|-------|---------------|-----------|----------|----------|-------------|----|
| 2 | AB | 191/193 (99%) | 173 (91%) | 16 (8%) | 2 (1%) | 18 | 61 |
| 3 | AC | 186/188 (99%) | 148 (80%) | 28 (15%) | 10 (5%) | 2 | 25 |
| 4 | AD | 120/158 (76%) | 97 (81%) | 16 (13%) | 7 (6%) | 2 | 24 |
| 5 | AE | 160/162 (99%) | 141 (88%) | 13 (8%) | 6 (4%) | 4 | 32 |
| 6 | AG | 184/186 (99%) | 156 (85%) | 20 (11%) | 8 (4%) | 3 | 29 |
| 7 | AH | 121/125 (97%) | 105 (87%) | 11 (9%) | 5 (4%) | 3 | 30 |
| 8 | AI | 136/138 (99%) | 106 (78%) | 21 (15%) | 9 (7%) | 1 | 21 |

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| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|-----|-------|---------------|-----------|----------|----------|-------------|----|
| 9 | AJ | 94/96 (98%) | 77 (82%) | 14 (15%) | 3 (3%) | 5 | 36 |
| 10 | AK | 123/125 (98%) | 99 (80%) | 20 (16%) | 4 (3%) | 4 | 35 |
| 11 | AL | 116/118 (98%) | 89 (77%) | 25 (22%) | 2 (2%) | 11 | 50 |
| 12 | AM | 128/130 (98%) | 103 (80%) | 20 (16%) | 5 (4%) | 3 | 31 |
| 13 | AN | 48/50 (96%) | 36 (75%) | 8 (17%) | 4 (8%) | 1 | 16 |
| 14 | AO | 82/84 (98%) | 68 (83%) | 11 (13%) | 3 (4%) | 4 | 33 |
| 15 | AQ | 78/80 (98%) | 66 (85%) | 11 (14%) | 1 (1%) | 14 | 56 |
| 16 | AS | 69/71 (97%) | 54 (78%) | 12 (17%) | 3 (4%) | 3 | 29 |
| 17 | AR | 311/313 (99%) | 282 (91%) | 28 (9%) | 1 (0%) | 44 | 81 |
| 18 | AT | 137/141 (97%) | 110 (80%) | 21 (15%) | 6 (4%) | 3 | 29 |
| 20 | B0 | 107/109 (98%) | 75 (70%) | 20 (19%) | 12 (11%) | 0 | 9 |
| 21 | B1 | 46/48 (96%) | 36 (78%) | 9 (20%) | 1 (2%) | 8 | 44 |
| 22 | B2 | 96/98 (98%) | 87 (91%) | 7 (7%) | 2 (2%) | 8 | 45 |
| 23 | B8 | 116/118 (98%) | 85 (73%) | 25 (22%) | 6 (5%) | 2 | 26 |
| 24 | B9 | 70/72 (97%) | 48 (69%) | 16 (23%) | 6 (9%) | 1 | 15 |
| 25 | BA | 211/213 (99%) | 172 (82%) | 30 (14%) | 9 (4%) | 3 | 29 |
| 26 | BB | 241/243 (99%) | 174 (72%) | 53 (22%) | 14 (6%) | 2 | 24 |
| 27 | BC | 360/362 (99%) | 279 (78%) | 68 (19%) | 13 (4%) | 4 | 33 |
| 28 | BD | 255/257 (99%) | 208 (82%) | 41 (16%) | 6 (2%) | 7 | 42 |
| 29 | BE | 235/237 (99%) | 175 (74%) | 47 (20%) | 13 (6%) | 2 | 25 |
| 30 | BF | 211/213 (99%) | 150 (71%) | 55 (26%) | 6 (3%) | 6 | 39 |
| 31 | BG | 111/113 (98%) | 88 (79%) | 20 (18%) | 3 (3%) | 6 | 40 |
| 32 | BH | 177/179 (99%) | 146 (82%) | 25 (14%) | 6 (3%) | 4 | 35 |
| 33 | BI | 163/165 (99%) | 123 (76%) | 31 (19%) | 9 (6%) | 2 | 25 |
| 34 | BJ | 149/151 (99%) | 112 (75%) | 33 (22%) | 4 (3%) | 6 | 40 |
| 35 | BK | 136/138 (99%) | 107 (79%) | 22 (16%) | 7 (5%) | 2 | 26 |
| 36 | BL | 190/192 (99%) | 156 (82%) | 29 (15%) | 5 (3%) | 6 | 40 |
| 37 | BM | 176/178 (99%) | 134 (76%) | 34 (19%) | 8 (4%) | 3 | 29 |
| 38 | BN | 148/150 (99%) | 122 (82%) | 23 (16%) | 3 (2%) | 9 | 46 |
| 39 | BO | 119/121 (98%) | 92 (77%) | 23 (19%) | 4 (3%) | 4 | 35 |
| 40 | BP | 174/176 (99%) | 155 (89%) | 15 (9%) | 4 (2%) | 7 | 43 |

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| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|-----|-------|-----------------|------------|------------|----------|-------------|-----|
| 41 | BQ | 114/116 (98%) | 94 (82%) | 16 (14%) | 4 (4%) | 4 | 34 |
| 42 | BR | 129/131 (98%) | 96 (74%) | 28 (22%) | 5 (4%) | 3 | 31 |
| 43 | BS | 43/45 (96%) | 33 (77%) | 10 (23%) | 0 | 100 | 100 |
| 44 | BT | 78/80 (98%) | 59 (76%) | 16 (20%) | 3 (4%) | 4 | 32 |
| 45 | BU | 114/116 (98%) | 95 (83%) | 15 (13%) | 4 (4%) | 4 | 34 |
| 46 | BV | 140/142 (99%) | 98 (70%) | 31 (22%) | 11 (8%) | 1 | 17 |
| 47 | BW | 77/79 (98%) | 58 (75%) | 16 (21%) | 3 (4%) | 3 | 31 |
| 48 | BX | 84/86 (98%) | 63 (75%) | 14 (17%) | 7 (8%) | 1 | 16 |
| 49 | BY | 50/52 (96%) | 39 (78%) | 10 (20%) | 1 (2%) | 9 | 46 |
| 50 | BZ | 90/92 (98%) | 68 (76%) | 18 (20%) | 4 (4%) | 3 | 29 |
| All | All | 6694/6830 (98%) | 5337 (80%) | 1095 (16%) | 262 (4%) | 6 | 31 |

All (262) Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 3 | AC | 81 | PRO |
| 3 | AC | 179 | GLN |
| 4 | AD | 96 | VAL |
| 5 | AE | 86 | VAL |
| 5 | AE | 226 | THR |
| 5 | AE | 227 | PRO |
| 6 | AG | 89 | ILE |
| 6 | AG | 164 | PRO |
| 7 | AH | 35 | ILE |
| 8 | AI | 97 | VAL |
| 8 | AI | 134 | ALA |
| 8 | AI | 136 | SER |
| 9 | AJ | 72 | ASN |
| 11 | AL | 53 | VAL |
| 12 | AM | 51 | ASP |
| 13 | AN | 16 | LYS |
| 14 | AO | 108 | ASP |
| 16 | AS | 104 | GLN |
| 18 | AT | 51 | GLU |
| 20 | B0 | 38 | ILE |
| 20 | B0 | 50 | ILE |
| 20 | B0 | 64 | LYS |
| 24 | B9 | 14 | TYR |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 24 | B9 | 34 | HIS |
| 25 | BA | 60 | ARG |
| 26 | BB | 140 | ASN |
| 26 | BB | 161 | ASP |
| 26 | BB | 197 | PRO |
| 27 | BC | 168 | LYS |
| 27 | BC | 279 | ASN |
| 29 | BE | 188 | GLU |
| 29 | BE | 212 | ALA |
| 29 | BE | 216 | GLU |
| 30 | BF | 83 | LEU |
| 30 | BF | 123 | THR |
| 33 | BI | 18 | PRO |
| 33 | BI | 104 | SER |
| 35 | BK | 78 | SER |
| 35 | BK | 92 | ARG |
| 36 | BL | 56 | LYS |
| 37 | BM | 149 | ALA |
| 37 | BM | 170 | ALA |
| 46 | BV | 41 | ARG |
| 48 | BX | 68 | ALA |
| 48 | BX | 70 | ALA |
| 48 | BX | 80 | ALA |
| 50 | BZ | 46 | LYS |
| 50 | BZ | 57 | VAL |
| 2 | AB | 43 | ASP |
| 2 | AB | 68 | PRO |
| 3 | AC | 163 | PRO |
| 3 | AC | 164 | VAL |
| 4 | AD | 18 | PRO |
| 4 | AD | 148 | VAL |
| 5 | AE | 205 | ARG |
| 7 | AH | 58 | SER |
| 7 | AH | 98 | GLN |
| 8 | AI | 15 | SER |
| 11 | AL | 144 | ARG |
| 12 | AM | 137 | HIS |
| 14 | AO | 128 | TYR |
| 18 | AT | 37 | VAL |
| 20 | B0 | 77 | ALA |
| 20 | B0 | 116 | GLY |
| 23 | B8 | 35 | SER |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 25 | BA | 36 | VAL |
| 25 | BA | 105 | LYS |
| 25 | BA | 162 | VAL |
| 26 | BB | 156 | LYS |
| 27 | BC | 128 | LYS |
| 27 | BC | 129 | ALA |
| 28 | BD | 180 | LYS |
| 29 | BE | 167 | SER |
| 29 | BE | 183 | TRP |
| 29 | BE | 224 | LYS |
| 31 | BG | 142 | LEU |
| 33 | BI | 142 | ASP |
| 35 | BK | 10 | VAL |
| 36 | BL | 40 | ALA |
| 37 | BM | 60 | LYS |
| 37 | BM | 156 | ALA |
| 40 | BP | 88 | ARG |
| 40 | BP | 143 | ALA |
| 42 | BR | 37 | ILE |
| 46 | BV | 52 | PHE |
| 46 | BV | 101 | ILE |
| 47 | BW | 61 | LYS |
| 48 | BX | 86 | ALA |
| 3 | AC | 83 | THR |
| 3 | AC | 112 | GLY |
| 3 | AC | 145 | ALA |
| 3 | AC | 148 | LYS |
| 4 | AD | 9 | SER |
| 4 | AD | 87 | SER |
| 4 | AD | 88 | GLU |
| 6 | AG | 66 | GLN |
| 6 | AG | 75 | GLY |
| 6 | AG | 85 | ALA |
| 6 | AG | 163 | SER |
| 7 | AH | 28 | ARG |
| 7 | AH | 84 | GLY |
| 8 | AI | 42 | GLU |
| 8 | AI | 139 | GLN |
| 17 | AR | 283 | LYS |
| 18 | AT | 53 | TRP |
| 18 | AT | 86 | ARG |
| 20 | B0 | 48 | GLY |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 20 | B0 | 62 | LYS |
| 20 | B0 | 65 | PHE |
| 21 | B1 | 40 | LYS |
| 23 | B8 | 89 | THR |
| 24 | B9 | 59 | CYS |
| 24 | B9 | 66 | GLY |
| 26 | BB | 70 | ARG |
| 27 | BC | 38 | SER |
| 27 | BC | 46 | PHE |
| 27 | BC | 365 | PHE |
| 29 | BE | 36 | LEU |
| 29 | BE | 194 | LEU |
| 29 | BE | 219 | PHE |
| 30 | BF | 120 | THR |
| 31 | BG | 191 | ASN |
| 32 | BH | 22 | SER |
| 33 | BI | 105 | CYS |
| 33 | BI | 144 | ASN |
| 34 | BJ | 147 | THR |
| 35 | BK | 20 | GLY |
| 35 | BK | 88 | PRO |
| 37 | BM | 169 | ALA |
| 38 | BN | 122 | ALA |
| 39 | BO | 118 | GLY |
| 39 | BO | 122 | ILE |
| 40 | BP | 73 | GLY |
| 40 | BP | 133 | LYS |
| 41 | BQ | 10 | ARG |
| 44 | BT | 62 | VAL |
| 46 | BV | 14 | HIS |
| 47 | BW | 78 | LYS |
| 48 | BX | 48 | ARG |
| 50 | BZ | 35 | LEU |
| 3 | AC | 9 | ARG |
| 4 | AD | 19 | TYR |
| 8 | AI | 125 | GLU |
| 10 | AK | 97 | GLY |
| 12 | AM | 90 | ASN |
| 13 | AN | 39 | CYS |
| 14 | AO | 147 | SER |
| 20 | B0 | 94 | ALA |
| 22 | B2 | 82 | GLY |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 23 | B8 | 116 | PRO |
| 24 | B9 | 61 | LYS |
| 25 | BA | 58 | CYS |
| 25 | BA | 196 | LYS |
| 25 | BA | 208 | SER |
| 26 | BB | 73 | GLU |
| 26 | BB | 129 | ALA |
| 26 | BB | 153 | GLY |
| 26 | BB | 179 | LEU |
| 26 | BB | 221 | LYS |
| 26 | BB | 230 | VAL |
| 27 | BC | 102 | LEU |
| 27 | BC | 234 | GLY |
| 27 | BC | 272 | TYR |
| 28 | BD | 186 | LYS |
| 28 | BD | 213 | ASN |
| 28 | BD | 242 | ALA |
| 29 | BE | 227 | LEU |
| 30 | BF | 30 | ALA |
| 30 | BF | 177 | GLY |
| 30 | BF | 226 | GLY |
| 31 | BG | 126 | SER |
| 32 | BH | 129 | ARG |
| 33 | BI | 25 | ALA |
| 34 | BJ | 4 | LYS |
| 35 | BK | 26 | ALA |
| 37 | BM | 37 | ARG |
| 39 | BO | 74 | GLU |
| 41 | BQ | 18 | ASP |
| 41 | BQ | 69 | LYS |
| 42 | BR | 72 | LYS |
| 42 | BR | 96 | GLU |
| 44 | BT | 104 | GLU |
| 45 | BU | 59 | VAL |
| 46 | BV | 63 | GLN |
| 46 | BV | 114 | LYS |
| 47 | BW | 83 | GLU |
| 48 | BX | 38 | ARG |
| 48 | BX | 82 | ALA |
| 3 | AC | 152 | PHE |
| 6 | AG | 86 | GLN |
| 8 | AI | 32 | ASN |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 9 | AJ | 97 | VAL |
| 10 | AK | 47 | LYS |
| 10 | AK | 55 | SER |
| 13 | AN | 37 | ASN |
| 16 | AS | 51 | SER |
| 18 | AT | 89 | ARG |
| 23 | B8 | 32 | ASN |
| 23 | B8 | 46 | ARG |
| 26 | BB | 33 | ASP |
| 26 | BB | 180 | LEU |
| 28 | BD | 15 | ALA |
| 32 | BH | 50 | ASN |
| 32 | BH | 118 | LEU |
| 32 | BH | 122 | LYS |
| 33 | BI | 101 | LYS |
| 33 | BI | 111 | LEU |
| 41 | BQ | 17 | ARG |
| 42 | BR | 21 | ALA |
| 45 | BU | 46 | LYS |
| 46 | BV | 32 | GLY |
| 46 | BV | 102 | ASP |
| 46 | BV | 141 | GLY |
| 49 | BY | 36 | SER |
| 8 | AI | 126 | PRO |
| 18 | AT | 90 | PRO |
| 20 | B0 | 97 | ALA |
| 25 | BA | 125 | GLY |
| 27 | BC | 29 | VAL |
| 29 | BE | 87 | GLY |
| 29 | BE | 201 | GLY |
| 29 | BE | 223 | PHE |
| 32 | BH | 106 | LYS |
| 34 | BJ | 12 | LEU |
| 35 | BK | 86 | LYS |
| 36 | BL | 173 | GLY |
| 36 | BL | 191 | TRP |
| 37 | BM | 58 | LEU |
| 38 | BN | 65 | SER |
| 42 | BR | 44 | SER |
| 45 | BU | 113 | LYS |
| 5 | AE | 145 | GLY |
| 12 | AM | 75 | ASN |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 15 | AQ | 111 | VAL |
| 16 | AS | 99 | GLY |
| 20 | B0 | 96 | ILE |
| 24 | B9 | 43 | GLY |
| 25 | BA | 37 | GLY |
| 34 | BJ | 58 | GLY |
| 39 | BO | 96 | PHE |
| 44 | BT | 86 | VAL |
| 46 | BV | 143 | VAL |
| 50 | BZ | 56 | PRO |
| 6 | AG | 162 | VAL |
| 9 | AJ | 91 | ILE |
| 22 | B2 | 81 | VAL |
| 27 | BC | 260 | VAL |
| 37 | BM | 30 | GLY |
| 5 | AE | 109 | GLY |
| 12 | AM | 95 | GLY |
| 28 | BD | 139 | GLY |
| 38 | BN | 19 | GLY |
| 45 | BU | 44 | GLY |
| 46 | BV | 15 | VAL |
| 10 | AK | 35 | GLY |
| 13 | AN | 29 | GLY |
| 23 | B8 | 70 | LEU |
| 26 | BB | 121 | GLY |
| 33 | BI | 114 | GLY |
| 36 | BL | 52 | GLY |
| 20 | B0 | 79 | VAL |
| 27 | BC | 307 | 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 PDB entries followed by that with respect to all EM entries.

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 | |
|-----|-------|----------------|-----------|----------|-------------|----|
| 2 | AB | 161/161 (100%) | 160 (99%) | 1 (1%) | 89 | 94 |
| 3 | AC | 152/152 (100%) | 149 (98%) | 3 (2%) | 60 | 82 |

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| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles | |
|-----|-------|----------------|-----------|----------|-------------|----|
| 4 | AD | 113/142 (80%) | 103 (91%) | 10 (9%) | 12 | 39 |
| 5 | AE | 127/127 (100%) | 122 (96%) | 5 (4%) | 37 | 66 |
| 6 | AG | 155/155 (100%) | 150 (97%) | 5 (3%) | 44 | 71 |
| 7 | AH | 106/106 (100%) | 100 (94%) | 6 (6%) | 24 | 56 |
| 8 | AI | 115/115 (100%) | 107 (93%) | 8 (7%) | 18 | 50 |
| 9 | AJ | 90/90 (100%) | 86 (96%) | 4 (4%) | 33 | 63 |
| 10 | AK | 95/95 (100%) | 88 (93%) | 7 (7%) | 16 | 48 |
| 11 | AL | 98/98 (100%) | 94 (96%) | 4 (4%) | 35 | 65 |
| 12 | AM | 115/115 (100%) | 107 (93%) | 8 (7%) | 18 | 50 |
| 13 | AN | 45/45 (100%) | 40 (89%) | 5 (11%) | 7 | 29 |
| 14 | AO | 74/74 (100%) | 70 (95%) | 4 (5%) | 26 | 58 |
| 15 | AQ | 71/71 (100%) | 68 (96%) | 3 (4%) | 34 | 64 |
| 16 | AS | 57/57 (100%) | 56 (98%) | 1 (2%) | 64 | 84 |
| 17 | AR | 257/257 (100%) | 246 (96%) | 11 (4%) | 33 | 64 |
| 18 | AT | 114/114 (100%) | 102 (90%) | 12 (10%) | 8 | 32 |
| 20 | B0 | 94/94 (100%) | 89 (95%) | 5 (5%) | 26 | 59 |
| 21 | B1 | 44/44 (100%) | 41 (93%) | 3 (7%) | 18 | 51 |
| 22 | B2 | 82/82 (100%) | 80 (98%) | 2 (2%) | 54 | 78 |
| 23 | B8 | 100/100 (100%) | 87 (87%) | 13 (13%) | 5 | 25 |
| 24 | B9 | 55/55 (100%) | 52 (94%) | 3 (6%) | 25 | 58 |
| 25 | BA | 194/194 (100%) | 183 (94%) | 11 (6%) | 24 | 56 |
| 26 | BB | 186/186 (100%) | 176 (95%) | 10 (5%) | 26 | 58 |
| 27 | BC | 302/302 (100%) | 282 (93%) | 20 (7%) | 19 | 52 |
| 28 | BD | 199/199 (100%) | 188 (94%) | 11 (6%) | 25 | 58 |
| 29 | BE | 199/199 (100%) | 187 (94%) | 12 (6%) | 22 | 55 |
| 30 | BF | 143/143 (100%) | 135 (94%) | 8 (6%) | 25 | 57 |
| 31 | BG | 89/89 (100%) | 82 (92%) | 7 (8%) | 14 | 45 |
| 32 | BH | 160/160 (100%) | 151 (94%) | 9 (6%) | 25 | 57 |
| 33 | BI | 141/141 (100%) | 134 (95%) | 7 (5%) | 28 | 60 |
| 34 | BJ | 129/129 (100%) | 120 (93%) | 9 (7%) | 18 | 50 |
| 35 | BK | 112/112 (100%) | 107 (96%) | 5 (4%) | 32 | 63 |

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| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles | |
|-----|-------|------------------|------------|----------|-------------|----|
| 36 | BL | 164/164 (100%) | 157 (96%) | 7 (4%) | 33 | 64 |
| 37 | BM | 119/119 (100%) | 108 (91%) | 11 (9%) | 11 | 37 |
| 38 | BN | 122/122 (100%) | 118 (97%) | 4 (3%) | 43 | 70 |
| 39 | BO | 99/99 (100%) | 96 (97%) | 3 (3%) | 46 | 72 |
| 40 | BP | 118/118 (100%) | 113 (96%) | 5 (4%) | 34 | 64 |
| 41 | BQ | 87/87 (100%) | 81 (93%) | 6 (7%) | 18 | 51 |
| 42 | BR | 102/102 (100%) | 96 (94%) | 6 (6%) | 23 | 55 |
| 43 | BS | 38/38 (100%) | 32 (84%) | 6 (16%) | 3 | 18 |
| 44 | BT | 71/71 (100%) | 64 (90%) | 7 (10%) | 9 | 34 |
| 45 | BU | 100/100 (100%) | 98 (98%) | 2 (2%) | 60 | 82 |
| 46 | BV | 113/113 (100%) | 103 (91%) | 10 (9%) | 12 | 39 |
| 47 | BW | 69/69 (100%) | 65 (94%) | 4 (6%) | 23 | 56 |
| 48 | BX | 55/55 (100%) | 53 (96%) | 2 (4%) | 40 | 68 |
| 49 | BY | 42/42 (100%) | 39 (93%) | 3 (7%) | 17 | 49 |
| 50 | BZ | 81/81 (100%) | 76 (94%) | 5 (6%) | 21 | 54 |
| All | All | 5554/5583 (100%) | 5241 (94%) | 313 (6%) | 29 | 57 |

All (313) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2 | AB | 179 | ARG |
| 3 | AC | 7 | LYS |
| 3 | AC | 132 | LYS |
| 3 | AC | 143 | ARG |
| 4 | AD | 8 | TYR |
| 4 | AD | 111 | THR |
| 4 | AD | 112 | GLN |
| 4 | AD | 120 | LYS |
| 4 | AD | 127 | VAL |
| 4 | AD | 138 | LYS |
| 4 | AD | 139 | GLN |
| 4 | AD | 146 | PHE |
| 4 | AD | 153 | GLU |
| 4 | AD | 154 | LYS |
| 5 | AE | 82 | ASN |
| 5 | AE | 111 | VAL |
| 5 | AE | 139 | ILE |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 5 | AE | 178 | ILE |
| 5 | AE | 204 | THR |
| 6 | AG | 106 | LYS |
| 6 | AG | 156 | ARG |
| 6 | AG | 180 | ARG |
| 6 | AG | 219 | ARG |
| 6 | AG | 224 | ASN |
| 7 | AH | 9 | ASP |
| 7 | AH | 27 | ILE |
| 7 | AH | 32 | LYS |
| 7 | AH | 35 | ILE |
| 7 | AH | 37 | PHE |
| 7 | AH | 50 | PHE |
| 8 | AI | 8 | GLN |
| 8 | AI | 43 | ILE |
| 8 | AI | 45 | ARG |
| 8 | AI | 89 | LEU |
| 8 | AI | 96 | TYR |
| 8 | AI | 98 | ASP |
| 8 | AI | 127 | LYS |
| 8 | AI | 142 | TYR |
| 9 | AJ | 21 | LYS |
| 9 | AJ | 43 | LYS |
| 9 | AJ | 74 | GLU |
| 9 | AJ | 91 | ILE |
| 10 | AK | 26 | THR |
| 10 | AK | 33 | LEU |
| 10 | AK | 39 | ILE |
| 10 | AK | 47 | LYS |
| 10 | AK | 66 | ASP |
| 10 | AK | 115 | ILE |
| 10 | AK | 128 | LYS |
| 11 | AL | 117 | ILE |
| 11 | AL | 136 | TRP |
| 11 | AL | 140 | LYS |
| 11 | AL | 141 | GLU |
| 12 | AM | 18 | LEU |
| 12 | AM | 54 | LEU |
| 12 | AM | 57 | ARG |
| 12 | AM | 66 | LEU |
| 12 | AM | 92 | ILE |
| 12 | AM | 116 | LEU |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 12 | AM | 125 | ILE |
| 12 | AM | 132 | ARG |
| 13 | AN | 14 | PHE |
| 13 | AN | 22 | ARG |
| 13 | AN | 31 | VAL |
| 13 | AN | 39 | CYS |
| 13 | AN | 44 | ARG |
| 14 | AO | 78 | ASN |
| 14 | AO | 114 | ARG |
| 14 | AO | 125 | LEU |
| 14 | AO | 134 | VAL |
| 15 | AQ | 67 | ARG |
| 15 | AQ | 80 | MET |
| 15 | AQ | 131 | ILE |
| 16 | AS | 97 | TYR |
| 17 | AR | 13 | LEU |
| 17 | AR | 32 | LEU |
| 17 | AR | 33 | LEU |
| 17 | AR | 52 | GLN |
| 17 | AR | 118 | LYS |
| 17 | AR | 193 | ILE |
| 17 | AR | 199 | ILE |
| 17 | AR | 228 | LYS |
| 17 | AR | 290 | VAL |
| 17 | AR | 292 | LEU |
| 17 | AR | 308 | ASN |
| 18 | AT | 6 | VAL |
| 18 | AT | 7 | ARG |
| 18 | AT | 24 | ARG |
| 18 | AT | 29 | GLU |
| 18 | AT | 77 | ASN |
| 18 | AT | 86 | ARG |
| 18 | AT | 89 | ARG |
| 18 | AT | 92 | LYS |
| 18 | AT | 94 | ILE |
| 18 | AT | 103 | LYS |
| 18 | AT | 123 | ARG |
| 18 | AT | 126 | GLU |
| 20 | B0 | 21 | HIS |
| 20 | B0 | 38 | ILE |
| 20 | B0 | 39 | ASP |
| 20 | B0 | 65 | PHE |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 20 | B0 | 111 | ARG |
| 21 | B1 | 9 | ILE |
| 21 | B1 | 20 | ASN |
| 21 | B1 | 49 | MET |
| 22 | B2 | 28 | LYS |
| 22 | B2 | 104 | LEU |
| 23 | B8 | 14 | LYS |
| 23 | B8 | 33 | VAL |
| 23 | B8 | 36 | GLN |
| 23 | B8 | 38 | MET |
| 23 | B8 | 39 | HIS |
| 23 | B8 | 43 | LYS |
| 23 | B8 | 48 | ARG |
| 23 | B8 | 51 | VAL |
| 23 | B8 | 64 | ARG |
| 23 | B8 | 75 | LYS |
| 23 | B8 | 97 | LYS |
| 23 | B8 | 98 | ASN |
| 23 | B8 | 116 | PRO |
| 24 | B9 | 22 | LEU |
| 24 | B9 | 41 | PHE |
| 24 | B9 | 45 | LYS |
| 25 | BA | 4 | ILE |
| 25 | BA | 12 | HIS |
| 25 | BA | 29 | LEU |
| 25 | BA | 31 | THR |
| 25 | BA | 45 | ARG |
| 25 | BA | 61 | PRO |
| 25 | BA | 76 | ARG |
| 25 | BA | 162 | VAL |
| 25 | BA | 199 | GLN |
| 25 | BA | 200 | ASN |
| 25 | BA | 214 | PHE |
| 26 | BB | 5 | ILE |
| 26 | BB | 42 | ARG |
| 26 | BB | 61 | VAL |
| 26 | BB | 64 | ARG |
| 26 | BB | 65 | ASP |
| 26 | BB | 75 | ILE |
| 26 | BB | 145 | LYS |
| 26 | BB | 155 | LYS |
| 26 | BB | 181 | LYS |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 26 | BB | 219 | ILE |
| 27 | BC | 20 | LYS |
| 27 | BC | 32 | PHE |
| 27 | BC | 37 | ARG |
| 27 | BC | 59 | ASP |
| 27 | BC | 121 | ASN |
| 27 | BC | 126 | LYS |
| 27 | BC | 127 | LYS |
| 27 | BC | 150 | ARG |
| 27 | BC | 153 | LYS |
| 27 | BC | 168 | LYS |
| 27 | BC | 215 | ILE |
| 27 | BC | 221 | THR |
| 27 | BC | 237 | LYS |
| 27 | BC | 240 | ARG |
| 27 | BC | 244 | ARG |
| 27 | BC | 317 | ILE |
| 27 | BC | 327 | CYS |
| 27 | BC | 332 | ARG |
| 27 | BC | 360 | ASP |
| 27 | BC | 364 | LYS |
| 28 | BD | 33 | ASP |
| 28 | BD | 50 | TYR |
| 28 | BD | 69 | ARG |
| 28 | BD | 113 | VAL |
| 28 | BD | 119 | ARG |
| 28 | BD | 126 | ILE |
| 28 | BD | 148 | ILE |
| 28 | BD | 170 | LYS |
| 28 | BD | 191 | LYS |
| 28 | BD | 194 | TYR |
| 28 | BD | 215 | ILE |
| 29 | BE | 23 | ARG |
| 29 | BE | 48 | LYS |
| 29 | BE | 50 | ARG |
| 29 | BE | 105 | ILE |
| 29 | BE | 131 | LEU |
| 29 | BE | 151 | GLN |
| 29 | BE | 173 | VAL |
| 29 | BE | 196 | ARG |
| 29 | BE | 213 | ASP |
| 29 | BE | 217 | GLU |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 29 | BE | 219 | PHE |
| 29 | BE | 247 | ILE |
| 30 | BF | 83 | LEU |
| 30 | BF | 84 | VAL |
| 30 | BF | 111 | ILE |
| 30 | BF | 118 | LYS |
| 30 | BF | 125 | GLU |
| 30 | BF | 129 | LEU |
| 30 | BF | 185 | ILE |
| 30 | BF | 244 | ASN |
| 31 | BG | 107 | GLU |
| 31 | BG | 134 | TYR |
| 31 | BG | 136 | LEU |
| 31 | BG | 146 | LYS |
| 31 | BG | 163 | VAL |
| 31 | BG | 172 | LYS |
| 31 | BG | 200 | LEU |
| 32 | BH | 11 | GLU |
| 32 | BH | 79 | ILE |
| 32 | BH | 116 | ASN |
| 32 | BH | 149 | ASN |
| 32 | BH | 167 | VAL |
| 32 | BH | 170 | LYS |
| 32 | BH | 172 | ILE |
| 32 | BH | 177 | ASP |
| 32 | BH | 183 | HIS |
| 33 | BI | 69 | ARG |
| 33 | BI | 82 | ARG |
| 33 | BI | 103 | LEU |
| 33 | BI | 115 | MET |
| 33 | BI | 121 | LYS |
| 33 | BI | 134 | ILE |
| 33 | BI | 159 | PHE |
| 34 | BJ | 10 | ARG |
| 34 | BJ | 44 | THR |
| 34 | BJ | 47 | GLN |
| 34 | BJ | 52 | TYR |
| 34 | BJ | 78 | GLU |
| 34 | BJ | 94 | ARG |
| 34 | BJ | 123 | PHE |
| 34 | BJ | 131 | MET |
| 34 | BJ | 137 | ARG |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 35 | BK | 18 | VAL |
| 35 | BK | 60 | VAL |
| 35 | BK | 87 | GLU |
| 35 | BK | 93 | LYS |
| 35 | BK | 96 | LYS |
| 36 | BL | 13 | LYS |
| 36 | BL | 56 | LYS |
| 36 | BL | 67 | ARG |
| 36 | BL | 77 | LYS |
| 36 | BL | 86 | ASN |
| 36 | BL | 122 | ASN |
| 36 | BL | 191 | TRP |
| 37 | BM | 14 | HIS |
| 37 | BM | 39 | GLU |
| 37 | BM | 42 | ASN |
| 37 | BM | 50 | ASN |
| 37 | BM | 58 | LEU |
| 37 | BM | 84 | LEU |
| 37 | BM | 96 | LYS |
| 37 | BM | 113 | ASP |
| 37 | BM | 114 | LYS |
| 37 | BM | 134 | LYS |
| 37 | BM | 140 | LYS |
| 38 | BN | 69 | ARG |
| 38 | BN | 118 | GLN |
| 38 | BN | 124 | LYS |
| 38 | BN | 153 | LYS |
| 39 | BO | 48 | VAL |
| 39 | BO | 72 | LYS |
| 39 | BO | 98 | LYS |
| 40 | BP | 20 | ARG |
| 40 | BP | 63 | THR |
| 40 | BP | 96 | ILE |
| 40 | BP | 111 | ASP |
| 40 | BP | 125 | LYS |
| 41 | BQ | 26 | HIS |
| 41 | BQ | 27 | LEU |
| 41 | BQ | 35 | LYS |
| 41 | BQ | 78 | LYS |
| 41 | BQ | 84 | TYR |
| 41 | BQ | 91 | LEU |
| 42 | BR | 11 | PHE |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 42 | BR | 36 | ILE |
| 42 | BR | 59 | MET |
| 42 | BR | 66 | LYS |
| 42 | BR | 88 | ARG |
| 42 | BR | 94 | TYR |
| 43 | BS | 14 | TYR |
| 43 | BS | 21 | PHE |
| 43 | BS | 28 | ILE |
| 43 | BS | 30 | ARG |
| 43 | BS | 43 | ARG |
| 43 | BS | 48 | ARG |
| 44 | BT | 60 | TYR |
| 44 | BT | 61 | LYS |
| 44 | BT | 67 | ILE |
| 44 | BT | 78 | ASP |
| 44 | BT | 89 | LYS |
| 44 | BT | 93 | TYR |
| 44 | BT | 95 | ILE |
| 45 | BU | 59 | VAL |
| 45 | BU | 97 | ILE |
| 46 | BV | 47 | TYR |
| 46 | BV | 62 | LYS |
| 46 | BV | 69 | LYS |
| 46 | BV | 74 | LEU |
| 46 | BV | 91 | LYS |
| 46 | BV | 97 | THR |
| 46 | BV | 127 | ARG |
| 46 | BV | 131 | LYS |
| 46 | BV | 137 | ILE |
| 46 | BV | 147 | ILE |
| 47 | BW | 11 | GLU |
| 47 | BW | 61 | LYS |
| 47 | BW | 70 | ARG |
| 47 | BW | 83 | GLU |
| 48 | BX | 43 | LYS |
| 48 | BX | 45 | LYS |
| 49 | BY | 12 | HIS |
| 49 | BY | 17 | THR |
| 49 | BY | 43 | LYS |
| 50 | BZ | 6 | LYS |
| 50 | BZ | 9 | LYS |
| 50 | BZ | 38 | GLN |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 50 | BZ | 40 | LYS |
| 50 | BZ | 83 | LEU |

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (47) such sidechains are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2 | AB | 23 | HIS |
| 3 | AC | 159 | HIS |
| 4 | AD | 124 | HIS |
| 5 | AE | 233 | GLN |
| 6 | AG | 66 | GLN |
| 6 | AG | 72 | HIS |
| 8 | AI | 74 | HIS |
| 8 | AI | 93 | HIS |
| 12 | AM | 78 | HIS |
| 12 | AM | 122 | HIS |
| 15 | AQ | 110 | HIS |
| 16 | AS | 79 | HIS |
| 16 | AS | 98 | ASN |
| 17 | AR | 31 | ASN |
| 17 | AR | 52 | GLN |
| 17 | AR | 101 | GLN |
| 17 | AR | 185 | GLN |
| 17 | AR | 198 | ASN |
| 20 | B0 | 71 | HIS |
| 25 | BA | 12 | HIS |
| 25 | BA | 44 | GLN |
| 27 | BC | 173 | GLN |
| 27 | BC | 177 | HIS |
| 27 | BC | 313 | HIS |
| 28 | BD | 36 | HIS |
| 28 | BD | 58 | HIS |
| 30 | BF | 112 | ASN |
| 30 | BF | 194 | HIS |
| 30 | BF | 231 | ASN |
| 31 | BG | 191 | ASN |
| 32 | BH | 40 | HIS |
| 32 | BH | 116 | ASN |
| 32 | BH | 157 | ASN |
| 33 | BI | 92 | HIS |
| 33 | BI | 95 | HIS |
| 34 | BJ | 47 | GLN |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 36 | BL | 123 | GLN |
| 36 | BL | 138 | GLN |
| 36 | BL | 156 | HIS |
| 37 | BM | 14 | HIS |
| 39 | BO | 135 | GLN |
| 41 | BQ | 22 | HIS |
| 46 | BV | 14 | HIS |
| 46 | BV | 39 | HIS |
| 46 | BV | 119 | ASN |
| 49 | BY | 16 | HIS |
| 50 | BZ | 23 | HIS |

5.3.3 RNA ⓘ

| Mol | Chain | Analysed | Backbone Outliers | Pucker Outliers |
|-----|-------|-----------------|-------------------|-----------------|
| 1 | AA | 1757/1761 (99%) | 380 (21%) | 79 (4%) |
| 19 | A7 | 75/76 (98%) | 8 (10%) | 3 (4%) |
| 51 | B3 | 112/113 (99%) | 40 (35%) | 4 (3%) |
| 52 | B4 | 156/157 (99%) | 55 (35%) | 10 (6%) |
| 53 | B5 | 3169/3170 (99%) | 942 (29%) | 139 (4%) |
| All | All | 5269/5277 (99%) | 1425 (27%) | 235 (4%) |

All (1425) RNA backbone outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | AA | 2 | A |
| 1 | AA | 3 | U |
| 1 | AA | 4 | C |
| 1 | AA | 9 | U |
| 1 | AA | 27 | U |
| 1 | AA | 34 | G |
| 1 | AA | 42 | G |
| 1 | AA | 44 | U |
| 1 | AA | 46 | A |
| 1 | AA | 47 | A |
| 1 | AA | 48 | G |
| 1 | AA | 50 | C |
| 1 | AA | 51 | A |
| 1 | AA | 57 | G |
| 1 | AA | 60 | U |
| 1 | AA | 61 | A |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | AA | 62 | A |
| 1 | AA | 65 | A |
| 1 | AA | 67 | A |
| 1 | AA | 68 | A |
| 1 | AA | 69 | G |
| 1 | AA | 81 | G |
| 1 | AA | 82 | U |
| 1 | AA | 83 | G |
| 1 | AA | 86 | A |
| 1 | AA | 90 | C |
| 1 | AA | 92 | A |
| 1 | AA | 100 | A |
| 1 | AA | 105 | A |
| 1 | AA | 106 | U |
| 1 | AA | 109 | G |
| 1 | AA | 110 | U |
| 1 | AA | 115 | G |
| 1 | AA | 116 | U |
| 1 | AA | 147 | A |
| 1 | AA | 161 | U |
| 1 | AA | 174 | U |
| 1 | AA | 176 | C |
| 1 | AA | 180 | A |
| 1 | AA | 188 | A |
| 1 | AA | 193 | U |
| 1 | AA | 200 | A |
| 1 | AA | 204 | G |
| 1 | AA | 208 | U |
| 1 | AA | 213 | A |
| 1 | AA | 230 | C |
| 1 | AA | 232 | U |
| 1 | AA | 233 | C |
| 1 | AA | 241 | U |
| 1 | AA | 243 | G |
| 1 | AA | 256 | A |
| 1 | AA | 257 | A |
| 1 | AA | 263 | C |
| 1 | AA | 264 | G |
| 1 | AA | 265 | A |
| 1 | AA | 266 | A |
| 1 | AA | 267 | U |
| 1 | AA | 279 | G |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | AA | 280 | U |
| 1 | AA | 281 | G |
| 1 | AA | 282 | C |
| 1 | AA | 283 | U |
| 1 | AA | 284 | G |
| 1 | AA | 291 | G |
| 1 | AA | 295 | A |
| 1 | AA | 308 | C |
| 1 | AA | 309 | C |
| 1 | AA | 312 | A |
| 1 | AA | 313 | U |
| 1 | AA | 314 | C |
| 1 | AA | 316 | A |
| 1 | AA | 319 | U |
| 1 | AA | 322 | G |
| 1 | AA | 328 | A |
| 1 | AA | 329 | G |
| 1 | AA | 337 | G |
| 1 | AA | 351 | C |
| 1 | AA | 361 | C |
| 1 | AA | 365 | G |
| 1 | AA | 366 | A |
| 1 | AA | 373 | G |
| 1 | AA | 400 | A |
| 1 | AA | 401 | A |
| 1 | AA | 404 | G |
| 1 | AA | 419 | G |
| 1 | AA | 423 | G |
| 1 | AA | 424 | C |
| 1 | AA | 426 | G |
| 1 | AA | 429 | G |
| 1 | AA | 435 | C |
| 1 | AA | 439 | U |
| 1 | AA | 445 | A |
| 1 | AA | 451 | A |
| 1 | AA | 452 | A |
| 1 | AA | 462 | G |
| 1 | AA | 468 | A |
| 1 | AA | 469 | C |
| 1 | AA | 475 | A |
| 1 | AA | 478 | A |
| 1 | AA | 479 | C |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | AA | 481 | A |
| 1 | AA | 493 | U |
| 1 | AA | 494 | U |
| 1 | AA | 495 | C |
| 1 | AA | 496 | G |
| 1 | AA | 501 | U |
| 1 | AA | 503 | G |
| 1 | AA | 512 | A |
| 1 | AA | 513 | U |
| 1 | AA | 530 | C |
| 1 | AA | 542 | A |
| 1 | AA | 543 | C |
| 1 | AA | 551 | G |
| 1 | AA | 558 | U |
| 1 | AA | 565 | C |
| 1 | AA | 568 | G |
| 1 | AA | 571 | G |
| 1 | AA | 574 | G |
| 1 | AA | 578 | U |
| 1 | AA | 579 | A |
| 1 | AA | 594 | A |
| 1 | AA | 609 | U |
| 1 | AA | 611 | U |
| 1 | AA | 613 | G |
| 1 | AA | 619 | A |
| 1 | AA | 620 | A |
| 1 | AA | 623 | A |
| 1 | AA | 624 | G |
| 1 | AA | 631 | G |
| 1 | AA | 638 | U |
| 1 | AA | 639 | U |
| 1 | AA | 648 | G |
| 1 | AA | 653 | C |
| 1 | AA | 666 | U |
| 1 | AA | 687 | G |
| 1 | AA | 693 | U |
| 1 | AA | 694 | U |
| 1 | AA | 695 | U |
| 1 | AA | 696 | C |
| 1 | AA | 698 | U |
| 1 | AA | 703 | G |
| 1 | AA | 729 | G |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | AA | 730 | G |
| 1 | AA | 746 | A |
| 1 | AA | 749 | U |
| 1 | AA | 760 | A |
| 1 | AA | 765 | G |
| 1 | AA | 771 | A |
| 1 | AA | 774 | A |
| 1 | AA | 775 | G |
| 1 | AA | 776 | G |
| 1 | AA | 778 | G |
| 1 | AA | 779 | U |
| 1 | AA | 780 | A |
| 1 | AA | 781 | U |
| 1 | AA | 792 | U |
| 1 | AA | 797 | G |
| 1 | AA | 800 | U |
| 1 | AA | 818 | C |
| 1 | AA | 821 | U |
| 1 | AA | 822 | U |
| 1 | AA | 824 | G |
| 1 | AA | 844 | A |
| 1 | AA | 845 | G |
| 1 | AA | 853 | G |
| 1 | AA | 855 | A |
| 1 | AA | 856 | A |
| 1 | AA | 857 | U |
| 1 | AA | 858 | G |
| 1 | AA | 860 | U |
| 1 | AA | 864 | U |
| 1 | AA | 865 | A |
| 1 | AA | 866 | G |
| 1 | AA | 867 | G |
| 1 | AA | 868 | G |
| 1 | AA | 869 | A |
| 1 | AA | 877 | G |
| 1 | AA | 896 | U |
| 1 | AA | 898 | G |
| 1 | AA | 899 | A |
| 1 | AA | 900 | G |
| 1 | AA | 905 | A |
| 1 | AA | 923 | A |
| 1 | AA | 931 | U |

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| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 1 | AA | 934 | U |
| 1 | AA | 957 | U |
| 1 | AA | 958 | U |
| 1 | AA | 961 | C |
| 1 | AA | 962 | A |
| 1 | AA | 963 | U |
| 1 | AA | 965 | A |
| 1 | AA | 971 | G |
| 1 | AA | 987 | A |
| 1 | AA | 989 | C |
| 1 | AA | 990 | G |
| 1 | AA | 993 | G |
| 1 | AA | 1003 | U |
| 1 | AA | 1004 | A |
| 1 | AA | 1022 | A |
| 1 | AA | 1025 | A |
| 1 | AA | 1027 | C |
| 1 | AA | 1029 | A |
| 1 | AA | 1031 | G |
| 1 | AA | 1036 | C |
| 1 | AA | 1038 | A |
| 1 | AA | 1039 | G |
| 1 | AA | 1040 | A |
| 1 | AA | 1041 | U |
| 1 | AA | 1042 | C |
| 1 | AA | 1049 | U |
| 1 | AA | 1050 | G |
| 1 | AA | 1056 | U |
| 1 | AA | 1058 | A |
| 1 | AA | 1059 | A |
| 1 | AA | 1060 | U |
| 1 | AA | 1074 | C |
| 1 | AA | 1090 | A |
| 1 | AA | 1092 | U |
| 1 | AA | 1098 | G |
| 1 | AA | 1099 | G |
| 1 | AA | 1110 | A |
| 1 | AA | 1127 | G |
| 1 | AA | 1134 | A |
| 1 | AA | 1135 | A |
| 1 | AA | 1148 | A |
| 1 | AA | 1152 | G |

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| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 1 | AA | 1155 | C |
| 1 | AA | 1156 | C |
| 1 | AA | 1160 | A |
| 1 | AA | 1171 | C |
| 1 | AA | 1178 | U |
| 1 | AA | 1179 | A |
| 1 | AA | 1181 | U |
| 1 | AA | 1182 | U |
| 1 | AA | 1187 | U |
| 1 | AA | 1188 | C |
| 1 | AA | 1189 | A |
| 1 | AA | 1190 | A |
| 1 | AA | 1192 | A |
| 1 | AA | 1195 | G |
| 1 | AA | 1196 | G |
| 1 | AA | 1197 | G |
| 1 | AA | 1198 | A |
| 1 | AA | 1199 | A |
| 1 | AA | 1201 | C |
| 1 | AA | 1202 | U |
| 1 | AA | 1213 | A |
| 1 | AA | 1214 | G |
| 1 | AA | 1215 | A |
| 1 | AA | 1216 | C |
| 1 | AA | 1217 | A |
| 1 | AA | 1225 | G |
| 1 | AA | 1241 | G |
| 1 | AA | 1242 | C |
| 1 | AA | 1243 | U |
| 1 | AA | 1246 | U |
| 1 | AA | 1247 | U |
| 1 | AA | 1248 | C |
| 1 | AA | 1249 | U |
| 1 | AA | 1261 | G |
| 1 | AA | 1262 | U |
| 1 | AA | 1263 | G |
| 1 | AA | 1265 | U |
| 1 | AA | 1266 | G |
| 1 | AA | 1267 | G |
| 1 | AA | 1270 | C |
| 1 | AA | 1271 | A |
| 1 | AA | 1272 | U |

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| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 1 | AA | 1274 | G |
| 1 | AA | 1281 | C |
| 1 | AA | 1282 | U |
| 1 | AA | 1318 | A |
| 1 | AA | 1319 | A |
| 1 | AA | 1325 | G |
| 1 | AA | 1329 | C |
| 1 | AA | 1341 | A |
| 1 | AA | 1342 | A |
| 1 | AA | 1350 | U |
| 1 | AA | 1351 | G |
| 1 | AA | 1355 | G |
| 1 | AA | 1366 | U |
| 1 | AA | 1378 | U |
| 1 | AA | 1379 | A |
| 1 | AA | 1386 | C |
| 1 | AA | 1387 | U |
| 1 | AA | 1396 | C |
| 1 | AA | 1402 | G |
| 1 | AA | 1409 | G |
| 1 | AA | 1410 | U |
| 1 | AA | 1411 | U |
| 1 | AA | 1416 | G |
| 1 | AA | 1424 | A |
| 1 | AA | 1425 | G |
| 1 | AA | 1430 | G |
| 1 | AA | 1431 | U |
| 1 | AA | 1438 | C |
| 1 | AA | 1443 | A |
| 1 | AA | 1444 | A |
| 1 | AA | 1445 | C |
| 1 | AA | 1446 | G |
| 1 | AA | 1447 | U |
| 1 | AA | 1452 | G |
| 1 | AA | 1455 | C |
| 1 | AA | 1456 | G |
| 1 | AA | 1457 | C |
| 1 | AA | 1458 | A |
| 1 | AA | 1459 | C |
| 1 | AA | 1471 | U |
| 1 | AA | 1472 | G |
| 1 | AA | 1479 | C |

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Continued from previous page...

| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 1 | AA | 1489 | U |
| 1 | AA | 1490 | A |
| 1 | AA | 1491 | A |
| 1 | AA | 1496 | G |
| 1 | AA | 1504 | G |
| 1 | AA | 1506 | U |
| 1 | AA | 1507 | C |
| 1 | AA | 1513 | A |
| 1 | AA | 1515 | U |
| 1 | AA | 1517 | U |
| 1 | AA | 1518 | U |
| 1 | AA | 1519 | G |
| 1 | AA | 1520 | U |
| 1 | AA | 1521 | G |
| 1 | AA | 1522 | A |
| 1 | AA | 1533 | U |
| 1 | AA | 1536 | U |
| 1 | AA | 1540 | G |
| 1 | AA | 1546 | G |
| 1 | AA | 1547 | C |
| 1 | AA | 1548 | A |
| 1 | AA | 1549 | U |
| 1 | AA | 1550 | U |
| 1 | AA | 1552 | U |
| 1 | AA | 1553 | A |
| 1 | AA | 1555 | U |
| 1 | AA | 1556 | U |
| 1 | AA | 1561 | C |
| 1 | AA | 1564 | U |
| 1 | AA | 1571 | A |
| 1 | AA | 1580 | U |
| 1 | AA | 1581 | A |
| 1 | AA | 1582 | G |
| 1 | AA | 1583 | U |
| 1 | AA | 1584 | A |
| 1 | AA | 1585 | A |
| 1 | AA | 1588 | G |
| 1 | AA | 1594 | C |
| 1 | AA | 1599 | G |
| 1 | AA | 1607 | U |
| 1 | AA | 1609 | A |
| 1 | AA | 1610 | U |

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Continued from previous page...

| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 1 | AA | 1612 | A |
| 1 | AA | 1613 | C |
| 1 | AA | 1614 | G |
| 1 | AA | 1615 | U |
| 1 | AA | 1631 | A |
| 1 | AA | 1633 | A |
| 1 | AA | 1634 | C |
| 1 | AA | 1635 | C |
| 1 | AA | 1636 | G |
| 1 | AA | 1637 | C |
| 1 | AA | 1638 | C |
| 1 | AA | 1640 | G |
| 1 | AA | 1655 | U |
| 1 | AA | 1656 | G |
| 1 | AA | 1676 | A |
| 1 | AA | 1753 | A |
| 1 | AA | 1760 | A |
| 1 | AA | 1764 | A |
| 1 | AA | 1766 | G |
| 1 | AA | 1767 | U |
| 1 | AA | 1778 | G |
| 1 | AA | 1779 | A |
| 1 | AA | 1780 | A |
| 1 | AA | 1781 | C |
| 1 | AA | 1790 | G |
| 1 | AA | 1791 | G |
| 1 | AA | 1794 | C |
| 1 | AA | 1795 | A |
| 19 | A7 | 10 | 2MG |
| 19 | A7 | 11 | C |
| 19 | A7 | 17 | H2U |
| 19 | A7 | 20 | G |
| 19 | A7 | 23 | A |
| 19 | A7 | 44 | A |
| 19 | A7 | 47 | U |
| 19 | A7 | 76 | A |
| 51 | B3 | 2 | G |
| 51 | B3 | 7 | G |
| 51 | B3 | 10 | C |
| 51 | B3 | 11 | A |
| 51 | B3 | 13 | A |
| 51 | B3 | 14 | U |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 51 | B3 | 24 | A |
| 51 | B3 | 34 | C |
| 51 | B3 | 36 | C |
| 51 | B3 | 40 | C |
| 51 | B3 | 41 | G |
| 51 | B3 | 42 | A |
| 51 | B3 | 43 | U |
| 51 | B3 | 44 | C |
| 51 | B3 | 45 | A |
| 51 | B3 | 46 | A |
| 51 | B3 | 48 | U |
| 51 | B3 | 50 | U |
| 51 | B3 | 56 | G |
| 51 | B3 | 59 | G |
| 51 | B3 | 61 | U |
| 51 | B3 | 70 | A |
| 51 | B3 | 71 | C |
| 51 | B3 | 74 | A |
| 51 | B3 | 81 | U |
| 51 | B3 | 82 | A |
| 51 | B3 | 84 | G |
| 51 | B3 | 86 | G |
| 51 | B3 | 88 | G |
| 51 | B3 | 89 | A |
| 51 | B3 | 90 | C |
| 51 | B3 | 91 | C |
| 51 | B3 | 92 | A |
| 51 | B3 | 95 | C |
| 51 | B3 | 98 | G |
| 51 | B3 | 99 | A |
| 51 | B3 | 101 | A |
| 51 | B3 | 102 | C |
| 51 | B3 | 105 | A |
| 51 | B3 | 109 | G |
| 52 | B4 | 4 | C |
| 52 | B4 | 11 | C |
| 52 | B4 | 12 | A |
| 52 | B4 | 14 | C |
| 52 | B4 | 18 | U |
| 52 | B4 | 20 | U |
| 52 | B4 | 22 | U |
| 52 | B4 | 23 | U |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 52 | B4 | 24 | G |
| 52 | B4 | 34 | U |
| 52 | B4 | 48 | A |
| 52 | B4 | 55 | U |
| 52 | B4 | 58 | G |
| 52 | B4 | 59 | A |
| 52 | B4 | 60 | U |
| 52 | B4 | 61 | A |
| 52 | B4 | 62 | C |
| 52 | B4 | 63 | G |
| 52 | B4 | 64 | U |
| 52 | B4 | 68 | G |
| 52 | B4 | 69 | U |
| 52 | B4 | 70 | A |
| 52 | B4 | 71 | G |
| 52 | B4 | 72 | G |
| 52 | B4 | 76 | C |
| 52 | B4 | 88 | A |
| 52 | B4 | 89 | A |
| 52 | B4 | 92 | A |
| 52 | B4 | 95 | G |
| 52 | B4 | 99 | C |
| 52 | B4 | 100 | U |
| 52 | B4 | 102 | U |
| 52 | B4 | 103 | G |
| 52 | B4 | 104 | A |
| 52 | B4 | 105 | A |
| 52 | B4 | 106 | C |
| 52 | B4 | 108 | C |
| 52 | B4 | 109 | A |
| 52 | B4 | 111 | A |
| 52 | B4 | 114 | G |
| 52 | B4 | 115 | C |
| 52 | B4 | 118 | C |
| 52 | B4 | 128 | U |
| 52 | B4 | 133 | G |
| 52 | B4 | 134 | G |
| 52 | B4 | 135 | G |
| 52 | B4 | 136 | G |
| 52 | B4 | 137 | C |
| 52 | B4 | 138 | A |
| 52 | B4 | 139 | U |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 52 | B4 | 140 | G |
| 52 | B4 | 145 | U |
| 52 | B4 | 147 | U |
| 52 | B4 | 153 | U |
| 52 | B4 | 156 | U |
| 53 | B5 | 4 | U |
| 53 | B5 | 6 | A |
| 53 | B5 | 7 | C |
| 53 | B5 | 13 | A |
| 53 | B5 | 15 | C |
| 53 | B5 | 16 | A |
| 53 | B5 | 17 | G |
| 53 | B5 | 19 | U |
| 53 | B5 | 33 | G |
| 53 | B5 | 39 | A |
| 53 | B5 | 40 | A |
| 53 | B5 | 43 | A |
| 53 | B5 | 44 | U |
| 53 | B5 | 46 | U |
| 53 | B5 | 60 | A |
| 53 | B5 | 62 | A |
| 53 | B5 | 66 | A |
| 53 | B5 | 68 | C |
| 53 | B5 | 71 | A |
| 53 | B5 | 74 | G |
| 53 | B5 | 77 | A |
| 53 | B5 | 85 | A |
| 53 | B5 | 89 | A |
| 53 | B5 | 92 | G |
| 53 | B5 | 99 | A |
| 53 | B5 | 108 | A |
| 53 | B5 | 109 | A |
| 53 | B5 | 110 | G |
| 53 | B5 | 112 | U |
| 53 | B5 | 114 | A |
| 53 | B5 | 115 | A |
| 53 | B5 | 118 | U |
| 53 | B5 | 120 | G |
| 53 | B5 | 125 | C |
| 53 | B5 | 128 | G |
| 53 | B5 | 129 | U |
| 53 | B5 | 131 | C |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 53 | B5 | 132 | C |
| 53 | B5 | 133 | U |
| 53 | B5 | 134 | U |
| 53 | B5 | 135 | C |
| 53 | B5 | 149 | U |
| 53 | B5 | 150 | A |
| 53 | B5 | 151 | A |
| 53 | B5 | 160 | G |
| 53 | B5 | 161 | G |
| 53 | B5 | 163 | C |
| 53 | B5 | 170 | G |
| 53 | B5 | 171 | G |
| 53 | B5 | 175 | C |
| 53 | B5 | 186 | U |
| 53 | B5 | 189 | G |
| 53 | B5 | 199 | A |
| 53 | B5 | 200 | C |
| 53 | B5 | 202 | G |
| 53 | B5 | 210 | U |
| 53 | B5 | 211 | A |
| 53 | B5 | 214 | G |
| 53 | B5 | 216 | G |
| 53 | B5 | 217 | U |
| 53 | B5 | 218 | G |
| 53 | B5 | 219 | A |
| 53 | B5 | 220 | G |
| 53 | B5 | 230 | U |
| 53 | B5 | 240 | U |
| 53 | B5 | 250 | U |
| 53 | B5 | 251 | G |
| 53 | B5 | 252 | U |
| 53 | B5 | 265 | A |
| 53 | B5 | 268 | A |
| 53 | B5 | 269 | G |
| 53 | B5 | 272 | G |
| 53 | B5 | 274 | G |
| 53 | B5 | 278 | U |
| 53 | B5 | 279 | U |
| 53 | B5 | 280 | U |
| 53 | B5 | 281 | G |
| 53 | B5 | 287 | G |
| 53 | B5 | 288 | C |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 53 | B5 | 291 | C |
| 53 | B5 | 298 | U |
| 53 | B5 | 304 | G |
| 53 | B5 | 310 | U |
| 53 | B5 | 315 | C |
| 53 | B5 | 318 | A |
| 53 | B5 | 330 | G |
| 53 | B5 | 338 | A |
| 53 | B5 | 341 | G |
| 53 | B5 | 343 | U |
| 53 | B5 | 352 | A |
| 53 | B5 | 354 | U |
| 53 | B5 | 355 | A |
| 53 | B5 | 356 | C |
| 53 | B5 | 362 | U |
| 53 | B5 | 364 | G |
| 53 | B5 | 368 | G |
| 53 | B5 | 370 | U |
| 53 | B5 | 372 | A |
| 53 | B5 | 373 | A |
| 53 | B5 | 375 | A |
| 53 | B5 | 376 | G |
| 53 | B5 | 384 | A |
| 53 | B5 | 387 | A |
| 53 | B5 | 391 | A |
| 53 | B5 | 394 | G |
| 53 | B5 | 398 | A |
| 53 | B5 | 399 | A |
| 53 | B5 | 402 | A |
| 53 | B5 | 403 | C |
| 53 | B5 | 404 | G |
| 53 | B5 | 406 | G |
| 53 | B5 | 411 | U |
| 53 | B5 | 413 | U |
| 53 | B5 | 414 | U |
| 53 | B5 | 415 | G |
| 53 | B5 | 423 | A |
| 53 | B5 | 434 | U |
| 53 | B5 | 438 | A |
| 53 | B5 | 440 | A |
| 53 | B5 | 441 | U |
| 53 | B5 | 451 | U |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 53 | B5 | 453 | C |
| 53 | B5 | 455 | C |
| 53 | B5 | 457 | C |
| 53 | B5 | 465 | U |
| 53 | B5 | 467 | U |
| 53 | B5 | 471 | U |
| 53 | B5 | 476 | G |
| 53 | B5 | 477 | A |
| 53 | B5 | 478 | A |
| 53 | B5 | 479 | U |
| 53 | B5 | 480 | C |
| 53 | B5 | 481 | U |
| 53 | B5 | 482 | C |
| 53 | B5 | 483 | G |
| 53 | B5 | 484 | C |
| 53 | B5 | 485 | A |
| 53 | B5 | 486 | U |
| 53 | B5 | 492 | U |
| 53 | B5 | 494 | G |
| 53 | B5 | 496 | C |
| 53 | B5 | 500 | C |
| 53 | B5 | 513 | G |
| 53 | B5 | 515 | C |
| 53 | B5 | 532 | A |
| 53 | B5 | 533 | A |
| 53 | B5 | 547 | G |
| 53 | B5 | 548 | G |
| 53 | B5 | 553 | U |
| 53 | B5 | 554 | A |
| 53 | B5 | 555 | U |
| 53 | B5 | 556 | U |
| 53 | B5 | 570 | A |
| 53 | B5 | 572 | A |
| 53 | B5 | 576 | C |
| 53 | B5 | 578 | A |
| 53 | B5 | 585 | A |
| 53 | B5 | 590 | G |
| 53 | B5 | 592 | G |
| 53 | B5 | 596 | U |
| 53 | B5 | 597 | G |
| 53 | B5 | 602 | A |
| 53 | B5 | 604 | G |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 53 | B5 | 605 | U |
| 53 | B5 | 606 | C |
| 53 | B5 | 607 | A |
| 53 | B5 | 608 | A |
| 53 | B5 | 609 | G |
| 53 | B5 | 611 | A |
| 53 | B5 | 612 | U |
| 53 | B5 | 616 | G |
| 53 | B5 | 619 | A |
| 53 | B5 | 620 | U |
| 53 | B5 | 621 | A |
| 53 | B5 | 622 | A |
| 53 | B5 | 627 | U |
| 53 | B5 | 629 | U |
| 53 | B5 | 636 | C |
| 53 | B5 | 638 | C |
| 53 | B5 | 639 | G |
| 53 | B5 | 647 | A |
| 53 | B5 | 648 | C |
| 53 | B5 | 649 | A |
| 53 | B5 | 652 | G |
| 53 | B5 | 653 | A |
| 53 | B5 | 654 | C |
| 53 | B5 | 663 | C |
| 53 | B5 | 664 | U |
| 53 | B5 | 677 | A |
| 53 | B5 | 678 | G |
| 53 | B5 | 681 | U |
| 53 | B5 | 688 | G |
| 53 | B5 | 689 | U |
| 53 | B5 | 690 | A |
| 53 | B5 | 691 | A |
| 53 | B5 | 695 | C |
| 53 | B5 | 704 | U |
| 53 | B5 | 705 | A |
| 53 | B5 | 706 | A |
| 53 | B5 | 708 | G |
| 53 | B5 | 710 | A |
| 53 | B5 | 711 | A |
| 53 | B5 | 712 | G |
| 53 | B5 | 713 | U |
| 53 | B5 | 715 | A |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 53 | B5 | 716 | G |
| 53 | B5 | 717 | C |
| 53 | B5 | 718 | G |
| 53 | B5 | 735 | A |
| 53 | B5 | 736 | A |
| 53 | B5 | 742 | G |
| 53 | B5 | 743 | C |
| 53 | B5 | 744 | A |
| 53 | B5 | 748 | U |
| 53 | B5 | 766 | U |
| 53 | B5 | 767 | U |
| 53 | B5 | 783 | A |
| 53 | B5 | 784 | A |
| 53 | B5 | 785 | G |
| 53 | B5 | 786 | A |
| 53 | B5 | 787 | G |
| 53 | B5 | 800 | G |
| 53 | B5 | 801 | A |
| 53 | B5 | 802 | C |
| 53 | B5 | 808 | A |
| 53 | B5 | 817 | A |
| 53 | B5 | 819 | U |
| 53 | B5 | 820 | A |
| 53 | B5 | 833 | G |
| 53 | B5 | 837 | A |
| 53 | B5 | 844 | G |
| 53 | B5 | 846 | A |
| 53 | B5 | 848 | A |
| 53 | B5 | 851 | C |
| 53 | B5 | 856 | G |
| 53 | B5 | 858 | A |
| 53 | B5 | 860 | G |
| 53 | B5 | 861 | C |
| 53 | B5 | 879 | U |
| 53 | B5 | 880 | G |
| 53 | B5 | 882 | A |
| 53 | B5 | 884 | A |
| 53 | B5 | 894 | G |
| 53 | B5 | 896 | A |
| 53 | B5 | 907 | G |
| 53 | B5 | 913 | A |
| 53 | B5 | 914 | A |

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| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 53 | B5 | 915 | A |
| 53 | B5 | 916 | G |
| 53 | B5 | 917 | A |
| 53 | B5 | 921 | A |
| 53 | B5 | 923 | C |
| 53 | B5 | 925 | A |
| 53 | B5 | 932 | U |
| 53 | B5 | 933 | A |
| 53 | B5 | 934 | G |
| 53 | B5 | 937 | G |
| 53 | B5 | 944 | C |
| 53 | B5 | 951 | A |
| 53 | B5 | 959 | C |
| 53 | B5 | 962 | A |
| 53 | B5 | 963 | G |
| 53 | B5 | 965 | A |
| 53 | B5 | 970 | A |
| 53 | B5 | 971 | C |
| 53 | B5 | 972 | G |
| 53 | B5 | 973 | A |
| 53 | B5 | 978 | C |
| 53 | B5 | 979 | G |
| 53 | B5 | 987 | U |
| 53 | B5 | 990 | A |
| 53 | B5 | 994 | G |
| 53 | B5 | 1009 | A |
| 53 | B5 | 1011 | A |
| 53 | B5 | 1017 | C |
| 53 | B5 | 1024 | G |
| 53 | B5 | 1025 | A |
| 53 | B5 | 1027 | A |
| 53 | B5 | 1029 | G |
| 53 | B5 | 1030 | A |
| 53 | B5 | 1033 | U |
| 53 | B5 | 1034 | U |
| 53 | B5 | 1035 | G |
| 53 | B5 | 1036 | A |
| 53 | B5 | 1041 | U |
| 53 | B5 | 1047 | A |
| 53 | B5 | 1054 | A |
| 53 | B5 | 1056 | U |
| 53 | B5 | 1065 | A |

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| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 53 | B5 | 1066 | G |
| 53 | B5 | 1078 | U |
| 53 | B5 | 1079 | A |
| 53 | B5 | 1080 | A |
| 53 | B5 | 1085 | A |
| 53 | B5 | 1088 | U |
| 53 | B5 | 1093 | A |
| 53 | B5 | 1099 | A |
| 53 | B5 | 1101 | G |
| 53 | B5 | 1104 | G |
| 53 | B5 | 1105 | A |
| 53 | B5 | 1110 | U |
| 53 | B5 | 1111 | U |
| 53 | B5 | 1112 | A |
| 53 | B5 | 1116 | G |
| 53 | B5 | 1117 | G |
| 53 | B5 | 1126 | G |
| 53 | B5 | 1127 | G |
| 53 | B5 | 1128 | U |
| 53 | B5 | 1129 | A |
| 53 | B5 | 1133 | A |
| 53 | B5 | 1135 | A |
| 53 | B5 | 1142 | G |
| 53 | B5 | 1144 | U |
| 53 | B5 | 1150 | A |
| 53 | B5 | 1153 | A |
| 53 | B5 | 1160 | C |
| 53 | B5 | 1162 | U |
| 53 | B5 | 1164 | G |
| 53 | B5 | 1166 | G |
| 53 | B5 | 1173 | U |
| 53 | B5 | 1174 | G |
| 53 | B5 | 1175 | C |
| 53 | B5 | 1177 | G |
| 53 | B5 | 1181 | U |
| 53 | B5 | 1182 | A |
| 53 | B5 | 1191 | U |
| 53 | B5 | 1200 | A |
| 53 | B5 | 1201 | C |
| 53 | B5 | 1208 | U |
| 53 | B5 | 1219 | C |
| 53 | B5 | 1227 | C |

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| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 53 | B5 | 1228 | C |
| 53 | B5 | 1229 | G |
| 53 | B5 | 1231 | A |
| 53 | B5 | 1232 | C |
| 53 | B5 | 1235 | U |
| 53 | B5 | 1236 | G |
| 53 | B5 | 1237 | G |
| 53 | B5 | 1238 | C |
| 53 | B5 | 1244 | A |
| 53 | B5 | 1245 | A |
| 53 | B5 | 1248 | C |
| 53 | B5 | 1250 | G |
| 53 | B5 | 1251 | A |
| 53 | B5 | 1253 | U |
| 53 | B5 | 1254 | C |
| 53 | B5 | 1257 | C |
| 53 | B5 | 1258 | U |
| 53 | B5 | 1263 | A |
| 53 | B5 | 1264 | G |
| 53 | B5 | 1268 | G |
| 53 | B5 | 1273 | A |
| 53 | B5 | 1274 | A |
| 53 | B5 | 1279 | C |
| 53 | B5 | 1282 | G |
| 53 | B5 | 1287 | A |
| 53 | B5 | 1291 | A |
| 53 | B5 | 1298 | C |
| 53 | B5 | 1303 | A |
| 53 | B5 | 1304 | A |
| 53 | B5 | 1305 | U |
| 53 | B5 | 1306 | G |
| 53 | B5 | 1307 | G |
| 53 | B5 | 1308 | A |
| 53 | B5 | 1309 | U |
| 53 | B5 | 1311 | G |
| 53 | B5 | 1313 | G |
| 53 | B5 | 1318 | A |
| 53 | B5 | 1319 | G |
| 53 | B5 | 1347 | U |
| 53 | B5 | 1357 | G |
| 53 | B5 | 1358 | C |
| 53 | B5 | 1359 | C |

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| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 53 | B5 | 1360 | C |
| 53 | B5 | 1361 | U |
| 53 | B5 | 1363 | A |
| 53 | B5 | 1370 | G |
| 53 | B5 | 1384 | U |
| 53 | B5 | 1385 | C |
| 53 | B5 | 1391 | C |
| 53 | B5 | 1392 | G |
| 53 | B5 | 1402 | C |
| 53 | B5 | 1404 | G |
| 53 | B5 | 1406 | A |
| 53 | B5 | 1407 | A |
| 53 | B5 | 1408 | G |
| 53 | B5 | 1412 | G |
| 53 | B5 | 1418 | A |
| 53 | B5 | 1421 | G |
| 53 | B5 | 1422 | G |
| 53 | B5 | 1423 | C |
| 53 | B5 | 1425 | U |
| 53 | B5 | 1426 | C |
| 53 | B5 | 1429 | G |
| 53 | B5 | 1431 | G |
| 53 | B5 | 1434 | G |
| 53 | B5 | 1439 | U |
| 53 | B5 | 1442 | U |
| 53 | B5 | 1447 | G |
| 53 | B5 | 1452 | A |
| 53 | B5 | 1453 | A |
| 53 | B5 | 1455 | U |
| 53 | B5 | 1456 | A |
| 53 | B5 | 1457 | U |
| 53 | B5 | 1481 | A |
| 53 | B5 | 1482 | A |
| 53 | B5 | 1507 | G |
| 53 | B5 | 1510 | G |
| 53 | B5 | 1515 | A |
| 53 | B5 | 1526 | U |
| 53 | B5 | 1529 | A |
| 53 | B5 | 1530 | U |
| 53 | B5 | 1532 | C |
| 53 | B5 | 1533 | U |
| 53 | B5 | 1548 | C |

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| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 53 | B5 | 1550 | C |
| 53 | B5 | 1554 | U |
| 53 | B5 | 1555 | U |
| 53 | B5 | 1571 | A |
| 53 | B5 | 1572 | U |
| 53 | B5 | 1580 | A |
| 53 | B5 | 1582 | C |
| 53 | B5 | 1583 | A |
| 53 | B5 | 1584 | U |
| 53 | B5 | 1588 | A |
| 53 | B5 | 1590 | G |
| 53 | B5 | 1591 | G |
| 53 | B5 | 1592 | G |
| 53 | B5 | 1593 | A |
| 53 | B5 | 1598 | G |
| 53 | B5 | 1602 | A |
| 53 | B5 | 1607 | U |
| 53 | B5 | 1617 | G |
| 53 | B5 | 1622 | U |
| 53 | B5 | 1623 | G |
| 53 | B5 | 1624 | G |
| 53 | B5 | 1627 | U |
| 53 | B5 | 1628 | C |
| 53 | B5 | 1637 | A |
| 53 | B5 | 1639 | C |
| 53 | B5 | 1640 | G |
| 53 | B5 | 1642 | A |
| 53 | B5 | 1644 | C |
| 53 | B5 | 1647 | A |
| 53 | B5 | 1648 | A |
| 53 | B5 | 1649 | U |
| 53 | B5 | 1650 | G |
| 53 | B5 | 1657 | C |
| 53 | B5 | 1658 | G |
| 53 | B5 | 1666 | G |
| 53 | B5 | 1668 | G |
| 53 | B5 | 1669 | C |
| 53 | B5 | 1670 | C |
| 53 | B5 | 1671 | C |
| 53 | B5 | 1672 | U |
| 53 | B5 | 1681 | U |
| 53 | B5 | 1682 | U |

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| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 53 | B5 | 1683 | A |
| 53 | B5 | 1688 | U |
| 53 | B5 | 1689 | U |
| 53 | B5 | 1697 | A |
| 53 | B5 | 1698 | C |
| 53 | B5 | 1701 | C |
| 53 | B5 | 1702 | U |
| 53 | B5 | 1703 | U |
| 53 | B5 | 1704 | A |
| 53 | B5 | 1709 | C |
| 53 | B5 | 1710 | C |
| 53 | B5 | 1712 | G |
| 53 | B5 | 1715 | A |
| 53 | B5 | 1718 | G |
| 53 | B5 | 1719 | G |
| 53 | B5 | 1720 | U |
| 53 | B5 | 1721 | U |
| 53 | B5 | 1722 | U |
| 53 | B5 | 1727 | G |
| 53 | B5 | 1729 | A |
| 53 | B5 | 1733 | G |
| 53 | B5 | 1735 | G |
| 53 | B5 | 1736 | G |
| 53 | B5 | 1737 | U |
| 53 | B5 | 1738 | C |
| 53 | B5 | 1744 | G |
| 53 | B5 | 1745 | C |
| 53 | B5 | 1746 | U |
| 53 | B5 | 1750 | A |
| 53 | B5 | 1751 | G |
| 53 | B5 | 1759 | C |
| 53 | B5 | 1762 | C |
| 53 | B5 | 1764 | U |
| 53 | B5 | 1765 | U |
| 53 | B5 | 1768 | U |
| 53 | B5 | 1769 | G |
| 53 | B5 | 1774 | C |
| 53 | B5 | 1775 | G |
| 53 | B5 | 1777 | U |
| 53 | B5 | 1784 | G |
| 53 | B5 | 1797 | A |
| 53 | B5 | 1805 | C |

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| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 53 | B5 | 1806 | A |
| 53 | B5 | 1813 | A |
| 53 | B5 | 1814 | A |
| 53 | B5 | 1817 | G |
| 53 | B5 | 1819 | U |
| 53 | B5 | 1824 | U |
| 53 | B5 | 1826 | C |
| 53 | B5 | 1830 | G |
| 53 | B5 | 1832 | C |
| 53 | B5 | 1840 | U |
| 53 | B5 | 1841 | A |
| 53 | B5 | 1842 | A |
| 53 | B5 | 1849 | C |
| 53 | B5 | 1853 | U |
| 53 | B5 | 1855 | U |
| 53 | B5 | 1859 | A |
| 53 | B5 | 1864 | A |
| 53 | B5 | 1866 | C |
| 53 | B5 | 1867 | A |
| 53 | B5 | 1880 | U |
| 53 | B5 | 1886 | A |
| 53 | B5 | 1889 | G |
| 53 | B5 | 1890 | U |
| 53 | B5 | 1892 | G |
| 53 | B5 | 1895 | A |
| 53 | B5 | 1900 | A |
| 53 | B5 | 1901 | A |
| 53 | B5 | 1902 | G |
| 53 | B5 | 1906 | G |
| 53 | B5 | 1909 | A |
| 53 | B5 | 1918 | C |
| 53 | B5 | 1919 | G |
| 53 | B5 | 1927 | G |
| 53 | B5 | 1932 | A |
| 53 | B5 | 1933 | A |
| 53 | B5 | 1934 | G |
| 53 | B5 | 1935 | G |
| 53 | B5 | 1946 | A |
| 53 | B5 | 2102 | U |
| 53 | B5 | 2103 | U |
| 53 | B5 | 2104 | A |
| 53 | B5 | 2114 | C |

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| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 53 | B5 | 2115 | G |
| 53 | B5 | 2116 | G |
| 53 | B5 | 2120 | A |
| 53 | B5 | 2122 | G |
| 53 | B5 | 2125 | A |
| 53 | B5 | 2126 | A |
| 53 | B5 | 2131 | A |
| 53 | B5 | 2134 | G |
| 53 | B5 | 2138 | A |
| 53 | B5 | 2139 | A |
| 53 | B5 | 2140 | U |
| 53 | B5 | 2142 | A |
| 53 | B5 | 2159 | U |
| 53 | B5 | 2160 | G |
| 53 | B5 | 2161 | G |
| 53 | B5 | 2167 | A |
| 53 | B5 | 2170 | U |
| 53 | B5 | 2173 | U |
| 53 | B5 | 2174 | G |
| 53 | B5 | 2175 | U |
| 53 | B5 | 2178 | A |
| 53 | B5 | 2189 | U |
| 53 | B5 | 2199 | G |
| 53 | B5 | 2208 | A |
| 53 | B5 | 2209 | U |
| 53 | B5 | 2210 | G |
| 53 | B5 | 2212 | C |
| 53 | B5 | 2213 | A |
| 53 | B5 | 2214 | A |
| 53 | B5 | 2215 | A |
| 53 | B5 | 2216 | G |
| 53 | B5 | 2217 | U |
| 53 | B5 | 2219 | A |
| 53 | B5 | 2220 | A |
| 53 | B5 | 2221 | G |
| 53 | B5 | 2222 | A |
| 53 | B5 | 2223 | A |
| 53 | B5 | 2224 | A |
| 53 | B5 | 2225 | U |
| 53 | B5 | 2226 | U |
| 53 | B5 | 2227 | C |
| 53 | B5 | 2228 | A |

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| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 53 | B5 | 2229 | A |
| 53 | B5 | 2230 | C |
| 53 | B5 | 2237 | C |
| 53 | B5 | 2242 | A |
| 53 | B5 | 2244 | A |
| 53 | B5 | 2249 | G |
| 53 | B5 | 2252 | A |
| 53 | B5 | 2255 | A |
| 53 | B5 | 2256 | A |
| 53 | B5 | 2257 | C |
| 53 | B5 | 2259 | A |
| 53 | B5 | 2263 | C |
| 53 | B5 | 2273 | G |
| 53 | B5 | 2279 | A |
| 53 | B5 | 2285 | C |
| 53 | B5 | 2286 | U |
| 53 | B5 | 2287 | C |
| 53 | B5 | 2288 | G |
| 53 | B5 | 2297 | U |
| 53 | B5 | 2298 | U |
| 53 | B5 | 2301 | U |
| 53 | B5 | 2303 | A |
| 53 | B5 | 2306 | C |
| 53 | B5 | 2308 | C |
| 53 | B5 | 2309 | A |
| 53 | B5 | 2310 | U |
| 53 | B5 | 2313 | A |
| 53 | B5 | 2314 | U |
| 53 | B5 | 2315 | G |
| 53 | B5 | 2317 | A |
| 53 | B5 | 2319 | U |
| 53 | B5 | 2326 | A |
| 53 | B5 | 2335 | G |
| 53 | B5 | 2336 | U |
| 53 | B5 | 2340 | U |
| 53 | B5 | 2347 | U |
| 53 | B5 | 2350 | C |
| 53 | B5 | 2355 | G |
| 53 | B5 | 2360 | C |
| 53 | B5 | 2362 | C |
| 53 | B5 | 2363 | A |
| 53 | B5 | 2365 | C |

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| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 53 | B5 | 2368 | A |
| 53 | B5 | 2371 | G |
| 53 | B5 | 2372 | A |
| 53 | B5 | 2373 | A |
| 53 | B5 | 2374 | C |
| 53 | B5 | 2379 | U |
| 53 | B5 | 2383 | C |
| 53 | B5 | 2385 | G |
| 53 | B5 | 2388 | U |
| 53 | B5 | 2394 | G |
| 53 | B5 | 2397 | A |
| 53 | B5 | 2402 | A |
| 53 | B5 | 2403 | G |
| 53 | B5 | 2411 | U |
| 53 | B5 | 2415 | C |
| 53 | B5 | 2417 | U |
| 53 | B5 | 2419 | A |
| 53 | B5 | 2435 | G |
| 53 | B5 | 2446 | U |
| 53 | B5 | 2452 | G |
| 53 | B5 | 2454 | G |
| 53 | B5 | 2457 | G |
| 53 | B5 | 2458 | A |
| 53 | B5 | 2460 | U |
| 53 | B5 | 2461 | A |
| 53 | B5 | 2462 | A |
| 53 | B5 | 2463 | G |
| 53 | B5 | 2464 | U |
| 53 | B5 | 2468 | A |
| 53 | B5 | 2469 | G |
| 53 | B5 | 2470 | C |
| 53 | B5 | 2472 | U |
| 53 | B5 | 2473 | C |
| 53 | B5 | 2474 | G |
| 53 | B5 | 2475 | G |
| 53 | B5 | 2477 | G |
| 53 | B5 | 2478 | C |
| 53 | B5 | 2479 | C |
| 53 | B5 | 2484 | A |
| 53 | B5 | 2487 | U |
| 53 | B5 | 2494 | A |
| 53 | B5 | 2497 | U |

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| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 53 | B5 | 2498 | U |
| 53 | B5 | 2499 | U |
| 53 | B5 | 2506 | U |
| 53 | B5 | 2510 | U |
| 53 | B5 | 2514 | U |
| 53 | B5 | 2515 | A |
| 53 | B5 | 2521 | U |
| 53 | B5 | 2524 | A |
| 53 | B5 | 2539 | A |
| 53 | B5 | 2540 | A |
| 53 | B5 | 2541 | U |
| 53 | B5 | 2542 | U |
| 53 | B5 | 2543 | U |
| 53 | B5 | 2546 | C |
| 53 | B5 | 2548 | C |
| 53 | B5 | 2550 | U |
| 53 | B5 | 2551 | C |
| 53 | B5 | 2552 | C |
| 53 | B5 | 2556 | U |
| 53 | B5 | 2560 | U |
| 53 | B5 | 2561 | A |
| 53 | B5 | 2562 | G |
| 53 | B5 | 2570 | U |
| 53 | B5 | 2572 | C |
| 53 | B5 | 2573 | G |
| 53 | B5 | 2575 | G |
| 53 | B5 | 2576 | G |
| 53 | B5 | 2577 | C |
| 53 | B5 | 2578 | U |
| 53 | B5 | 2585 | G |
| 53 | B5 | 2586 | G |
| 53 | B5 | 2593 | A |
| 53 | B5 | 2596 | U |
| 53 | B5 | 2606 | G |
| 53 | B5 | 2607 | G |
| 53 | B5 | 2608 | G |
| 53 | B5 | 2610 | G |
| 53 | B5 | 2618 | G |
| 53 | B5 | 2619 | G |
| 53 | B5 | 2623 | G |
| 53 | B5 | 2638 | C |
| 53 | B5 | 2652 | U |

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| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 53 | B5 | 2655 | U |
| 53 | B5 | 2656 | A |
| 53 | B5 | 2658 | G |
| 53 | B5 | 2674 | A |
| 53 | B5 | 2675 | C |
| 53 | B5 | 2676 | A |
| 53 | B5 | 2677 | G |
| 53 | B5 | 2678 | A |
| 53 | B5 | 2680 | A |
| 53 | B5 | 2690 | G |
| 53 | B5 | 2691 | A |
| 53 | B5 | 2694 | A |
| 53 | B5 | 2698 | G |
| 53 | B5 | 2703 | A |
| 53 | B5 | 2704 | A |
| 53 | B5 | 2706 | G |
| 53 | B5 | 2714 | G |
| 53 | B5 | 2715 | A |
| 53 | B5 | 2718 | U |
| 53 | B5 | 2719 | U |
| 53 | B5 | 2725 | U |
| 53 | B5 | 2735 | U |
| 53 | B5 | 2736 | A |
| 53 | B5 | 2749 | G |
| 53 | B5 | 2752 | U |
| 53 | B5 | 2755 | C |
| 53 | B5 | 2757 | U |
| 53 | B5 | 2758 | A |
| 53 | B5 | 2765 | C |
| 53 | B5 | 2773 | C |
| 53 | B5 | 2774 | C |
| 53 | B5 | 2775 | U |
| 53 | B5 | 2776 | C |
| 53 | B5 | 2778 | G |
| 53 | B5 | 2780 | A |
| 53 | B5 | 2781 | U |
| 53 | B5 | 2783 | U |
| 53 | B5 | 2788 | C |
| 53 | B5 | 2794 | G |
| 53 | B5 | 2795 | U |
| 53 | B5 | 2796 | G |
| 53 | B5 | 2797 | C |

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| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 53 | B5 | 2799 | A |
| 53 | B5 | 2800 | G |
| 53 | B5 | 2801 | A |
| 53 | B5 | 2802 | A |
| 53 | B5 | 2809 | C |
| 53 | B5 | 2810 | C |
| 53 | B5 | 2816 | G |
| 53 | B5 | 2817 | A |
| 53 | B5 | 2818 | U |
| 53 | B5 | 2827 | U |
| 53 | B5 | 2829 | U |
| 53 | B5 | 2830 | G |
| 53 | B5 | 2837 | A |
| 53 | B5 | 2838 | A |
| 53 | B5 | 2839 | G |
| 53 | B5 | 2840 | C |
| 53 | B5 | 2841 | G |
| 53 | B5 | 2842 | U |
| 53 | B5 | 2845 | A |
| 53 | B5 | 2849 | C |
| 53 | B5 | 2850 | G |
| 53 | B5 | 2852 | C |
| 53 | B5 | 2853 | A |
| 53 | B5 | 2860 | U |
| 53 | B5 | 2863 | G |
| 53 | B5 | 2864 | A |
| 53 | B5 | 2865 | U |
| 53 | B5 | 2866 | U |
| 53 | B5 | 2867 | C |
| 53 | B5 | 2868 | U |
| 53 | B5 | 2872 | A |
| 53 | B5 | 2874 | G |
| 53 | B5 | 2875 | U |
| 53 | B5 | 2877 | G |
| 53 | B5 | 2882 | U |
| 53 | B5 | 2887 | A |
| 53 | B5 | 2888 | U |
| 53 | B5 | 2899 | C |
| 53 | B5 | 2902 | A |
| 53 | B5 | 2904 | U |
| 53 | B5 | 2905 | U |
| 53 | B5 | 2910 | A |

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| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 53 | B5 | 2914 | G |
| 53 | B5 | 2915 | U |
| 53 | B5 | 2919 | A |
| 53 | B5 | 2921 | U |
| 53 | B5 | 2931 | C |
| 53 | B5 | 2936 | A |
| 53 | B5 | 2941 | A |
| 53 | B5 | 2942 | C |
| 53 | B5 | 2943 | G |
| 53 | B5 | 2944 | U |
| 53 | B5 | 2945 | G |
| 53 | B5 | 2947 | G |
| 53 | B5 | 2953 | U |
| 53 | B5 | 2962 | U |
| 53 | B5 | 2965 | U |
| 53 | B5 | 2975 | U |
| 53 | B5 | 2978 | U |
| 53 | B5 | 2980 | U |
| 53 | B5 | 2981 | U |
| 53 | B5 | 2988 | C |
| 53 | B5 | 2989 | U |
| 53 | B5 | 2996 | U |
| 53 | B5 | 2997 | G |
| 53 | B5 | 3001 | C |
| 53 | B5 | 3002 | C |
| 53 | B5 | 3004 | C |
| 53 | B5 | 3010 | U |
| 53 | B5 | 3012 | A |
| 53 | B5 | 3019 | U |
| 53 | B5 | 3028 | G |
| 53 | B5 | 3030 | G |
| 53 | B5 | 3034 | C |
| 53 | B5 | 3040 | A |
| 53 | B5 | 3046 | A |
| 53 | B5 | 3048 | A |
| 53 | B5 | 3049 | A |
| 53 | B5 | 3050 | U |
| 53 | B5 | 3051 | U |
| 53 | B5 | 3052 | G |
| 53 | B5 | 3055 | U |
| 53 | B5 | 3056 | U |
| 53 | B5 | 3057 | U |

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| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 53 | B5 | 3058 | U |
| 53 | B5 | 3061 | G |
| 53 | B5 | 3062 | G |
| 53 | B5 | 3081 | C |
| 53 | B5 | 3083 | G |
| 53 | B5 | 3084 | C |
| 53 | B5 | 3086 | A |
| 53 | B5 | 3088 | G |
| 53 | B5 | 3100 | U |
| 53 | B5 | 3112 | G |
| 53 | B5 | 3113 | A |
| 53 | B5 | 3114 | A |
| 53 | B5 | 3116 | G |
| 53 | B5 | 3120 | C |
| 53 | B5 | 3121 | U |
| 53 | B5 | 3122 | A |
| 53 | B5 | 3123 | A |
| 53 | B5 | 3124 | G |
| 53 | B5 | 3126 | C |
| 53 | B5 | 3134 | A |
| 53 | B5 | 3136 | G |
| 53 | B5 | 3139 | A |
| 53 | B5 | 3140 | G |
| 53 | B5 | 3141 | A |
| 53 | B5 | 3142 | A |
| 53 | B5 | 3143 | C |
| 53 | B5 | 3144 | G |
| 53 | B5 | 3149 | G |
| 53 | B5 | 3151 | U |
| 53 | B5 | 3152 | U |
| 53 | B5 | 3154 | C |
| 53 | B5 | 3158 | G |
| 53 | B5 | 3159 | C |
| 53 | B5 | 3160 | U |
| 53 | B5 | 3161 | C |
| 53 | B5 | 3162 | C |
| 53 | B5 | 3165 | A |
| 53 | B5 | 3166 | C |
| 53 | B5 | 3167 | A |
| 53 | B5 | 3170 | A |
| 53 | B5 | 3171 | U |
| 53 | B5 | 3174 | A |

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| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 53 | B5 | 3175 | C |
| 53 | B5 | 3176 | C |
| 53 | B5 | 3182 | U |
| 53 | B5 | 3183 | A |
| 53 | B5 | 3184 | U |
| 53 | B5 | 3186 | A |
| 53 | B5 | 3188 | G |
| 53 | B5 | 3198 | U |
| 53 | B5 | 3199 | G |
| 53 | B5 | 3200 | G |
| 53 | B5 | 3205 | U |
| 53 | B5 | 3206 | A |
| 53 | B5 | 3208 | C |
| 53 | B5 | 3211 | U |
| 53 | B5 | 3216 | U |
| 53 | B5 | 3217 | A |
| 53 | B5 | 3220 | G |
| 53 | B5 | 3229 | G |
| 53 | B5 | 3230 | G |
| 53 | B5 | 3235 | C |
| 53 | B5 | 3243 | A |
| 53 | B5 | 3245 | A |
| 53 | B5 | 3246 | G |
| 53 | B5 | 3247 | G |
| 53 | B5 | 3248 | C |
| 53 | B5 | 3249 | C |
| 53 | B5 | 3252 | G |
| 53 | B5 | 3253 | G |
| 53 | B5 | 3259 | U |
| 53 | B5 | 3266 | G |
| 53 | B5 | 3267 | U |
| 53 | B5 | 3277 | C |
| 53 | B5 | 3290 | G |
| 53 | B5 | 3295 | A |
| 53 | B5 | 3296 | A |
| 53 | B5 | 3298 | C |
| 53 | B5 | 3304 | U |
| 53 | B5 | 3305 | A |
| 53 | B5 | 3306 | U |
| 53 | B5 | 3307 | A |
| 53 | B5 | 3317 | U |
| 53 | B5 | 3320 | A |

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| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 53 | B5 | 3325 | G |
| 53 | B5 | 3326 | G |
| 53 | B5 | 3327 | G |
| 53 | B5 | 3328 | G |
| 53 | B5 | 3330 | A |
| 53 | B5 | 3331 | U |
| 53 | B5 | 3332 | U |
| 53 | B5 | 3333 | G |
| 53 | B5 | 3334 | U |
| 53 | B5 | 3337 | G |
| 53 | B5 | 3338 | C |
| 53 | B5 | 3354 | U |
| 53 | B5 | 3355 | U |
| 53 | B5 | 3364 | C |
| 53 | B5 | 3368 | U |
| 53 | B5 | 3369 | G |
| 53 | B5 | 3374 | U |
| 53 | B5 | 3385 | U |
| 53 | B5 | 3386 | G |
| 53 | B5 | 3389 | U |
| 53 | B5 | 3391 | A |
| 53 | B5 | 3395 | G |
| 53 | B5 | 3396 | U |

All (235) RNA pucker outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | AA | 2 | A |
| 1 | AA | 42 | G |
| 1 | AA | 47 | A |
| 1 | AA | 56 | U |
| 1 | AA | 60 | U |
| 1 | AA | 66 | U |
| 1 | AA | 109 | G |
| 1 | AA | 175 | G |
| 1 | AA | 199 | G |
| 1 | AA | 212 | U |
| 1 | AA | 229 | U |
| 1 | AA | 312 | A |
| 1 | AA | 350 | U |
| 1 | AA | 365 | G |
| 1 | AA | 400 | A |

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| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 1 | AA | 438 | A |
| 1 | AA | 444 | C |
| 1 | AA | 461 | G |
| 1 | AA | 478 | A |
| 1 | AA | 502 | U |
| 1 | AA | 578 | U |
| 1 | AA | 652 | G |
| 1 | AA | 748 | U |
| 1 | AA | 759 | U |
| 1 | AA | 770 | A |
| 1 | AA | 796 | A |
| 1 | AA | 852 | C |
| 1 | AA | 857 | U |
| 1 | AA | 864 | U |
| 1 | AA | 922 | A |
| 1 | AA | 1049 | U |
| 1 | AA | 1055 | U |
| 1 | AA | 1090 | A |
| 1 | AA | 1098 | G |
| 1 | AA | 1133 | U |
| 1 | AA | 1134 | A |
| 1 | AA | 1159 | U |
| 1 | AA | 1181 | U |
| 1 | AA | 1192 | A |
| 1 | AA | 1196 | G |
| 1 | AA | 1199 | A |
| 1 | AA | 1216 | C |
| 1 | AA | 1240 | A |
| 1 | AA | 1241 | G |
| 1 | AA | 1265 | U |
| 1 | AA | 1281 | C |
| 1 | AA | 1318 | A |
| 1 | AA | 1328 | A |
| 1 | AA | 1341 | A |
| 1 | AA | 1378 | U |
| 1 | AA | 1429 | U |
| 1 | AA | 1457 | C |
| 1 | AA | 1478 | G |
| 1 | AA | 1488 | C |
| 1 | AA | 1520 | U |
| 1 | AA | 1521 | G |
| 1 | AA | 1535 | C |

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| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 1 | AA | 1545 | A |
| 1 | AA | 1546 | G |
| 1 | AA | 1547 | C |
| 1 | AA | 1560 | G |
| 1 | AA | 1566 | C |
| 1 | AA | 1579 | C |
| 1 | AA | 1583 | U |
| 1 | AA | 1584 | A |
| 1 | AA | 1612 | A |
| 1 | AA | 1632 | C |
| 1 | AA | 1634 | C |
| 1 | AA | 1635 | C |
| 1 | AA | 1636 | G |
| 1 | AA | 1639 | C |
| 1 | AA | 1654 | U |
| 1 | AA | 1655 | U |
| 1 | AA | 1675 | C |
| 1 | AA | 1759 | U |
| 1 | AA | 1766 | G |
| 1 | AA | 1779 | A |
| 1 | AA | 1789 | A |
| 1 | AA | 1790 | G |
| 19 | A7 | 10 | 2MG |
| 19 | A7 | 22 | G |
| 19 | A7 | 41 | U |
| 51 | B3 | 23 | A |
| 51 | B3 | 70 | A |
| 51 | B3 | 89 | A |
| 51 | B3 | 91 | C |
| 52 | B4 | 19 | C |
| 52 | B4 | 21 | C |
| 52 | B4 | 57 | C |
| 52 | B4 | 60 | U |
| 52 | B4 | 61 | A |
| 52 | B4 | 69 | U |
| 52 | B4 | 71 | G |
| 52 | B4 | 102 | U |
| 52 | B4 | 106 | C |
| 52 | B4 | 152 | G |
| 53 | B5 | 114 | A |
| 53 | B5 | 119 | U |
| 53 | B5 | 133 | U |

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| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 53 | B5 | 134 | U |
| 53 | B5 | 210 | U |
| 53 | B5 | 215 | G |
| 53 | B5 | 239 | G |
| 53 | B5 | 250 | U |
| 53 | B5 | 251 | G |
| 53 | B5 | 267 | G |
| 53 | B5 | 277 | G |
| 53 | B5 | 279 | U |
| 53 | B5 | 355 | A |
| 53 | B5 | 372 | A |
| 53 | B5 | 374 | A |
| 53 | B5 | 397 | A |
| 53 | B5 | 475 | G |
| 53 | B5 | 477 | A |
| 53 | B5 | 481 | U |
| 53 | B5 | 554 | A |
| 53 | B5 | 596 | U |
| 53 | B5 | 620 | U |
| 53 | B5 | 621 | A |
| 53 | B5 | 638 | C |
| 53 | B5 | 677 | A |
| 53 | B5 | 705 | A |
| 53 | B5 | 711 | A |
| 53 | B5 | 712 | G |
| 53 | B5 | 714 | G |
| 53 | B5 | 715 | A |
| 53 | B5 | 735 | A |
| 53 | B5 | 742 | G |
| 53 | B5 | 786 | A |
| 53 | B5 | 801 | A |
| 53 | B5 | 860 | G |
| 53 | B5 | 914 | A |
| 53 | B5 | 932 | U |
| 53 | B5 | 970 | A |
| 53 | B5 | 977 | U |
| 53 | B5 | 979 | G |
| 53 | B5 | 1033 | U |
| 53 | B5 | 1079 | A |
| 53 | B5 | 1084 | A |
| 53 | B5 | 1163 | A |
| 53 | B5 | 1181 | U |

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| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 53 | B5 | 1200 | A |
| 53 | B5 | 1235 | U |
| 53 | B5 | 1240 | A |
| 53 | B5 | 1244 | A |
| 53 | B5 | 1258 | U |
| 53 | B5 | 1263 | A |
| 53 | B5 | 1302 | A |
| 53 | B5 | 1303 | A |
| 53 | B5 | 1318 | A |
| 53 | B5 | 1331 | U |
| 53 | B5 | 1347 | U |
| 53 | B5 | 1390 | A |
| 53 | B5 | 1514 | G |
| 53 | B5 | 1549 | U |
| 53 | B5 | 1553 | U |
| 53 | B5 | 1582 | C |
| 53 | B5 | 1583 | A |
| 53 | B5 | 1590 | G |
| 53 | B5 | 1623 | G |
| 53 | B5 | 1626 | U |
| 53 | B5 | 1643 | A |
| 53 | B5 | 1648 | A |
| 53 | B5 | 1654 | A |
| 53 | B5 | 1666 | G |
| 53 | B5 | 1720 | U |
| 53 | B5 | 1721 | U |
| 53 | B5 | 1737 | U |
| 53 | B5 | 1776 | G |
| 53 | B5 | 1818 | U |
| 53 | B5 | 1842 | A |
| 53 | B5 | 1900 | A |
| 53 | B5 | 1925 | U |
| 53 | B5 | 1947 | G |
| 53 | B5 | 2138 | A |
| 53 | B5 | 2174 | G |
| 53 | B5 | 2177 | G |
| 53 | B5 | 2214 | A |
| 53 | B5 | 2219 | A |
| 53 | B5 | 2224 | A |
| 53 | B5 | 2225 | U |
| 53 | B5 | 2229 | A |
| 53 | B5 | 2283 | G |

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| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 53 | B5 | 2286 | U |
| 53 | B5 | 2297 | U |
| 53 | B5 | 2314 | U |
| 53 | B5 | 2360 | C |
| 53 | B5 | 2373 | A |
| 53 | B5 | 2459 | A |
| 53 | B5 | 2468 | A |
| 53 | B5 | 2469 | G |
| 53 | B5 | 2474 | G |
| 53 | B5 | 2477 | G |
| 53 | B5 | 2520 | A |
| 53 | B5 | 2538 | U |
| 53 | B5 | 2569 | A |
| 53 | B5 | 2571 | U |
| 53 | B5 | 2618 | G |
| 53 | B5 | 2644 | C |
| 53 | B5 | 2651 | G |
| 53 | B5 | 2654 | C |
| 53 | B5 | 2677 | G |
| 53 | B5 | 2705 | A |
| 53 | B5 | 2714 | G |
| 53 | B5 | 2778 | G |
| 53 | B5 | 2787 | G |
| 53 | B5 | 2796 | G |
| 53 | B5 | 2830 | G |
| 53 | B5 | 2837 | A |
| 53 | B5 | 2875 | U |
| 53 | B5 | 2913 | C |
| 53 | B5 | 2941 | A |
| 53 | B5 | 2988 | C |
| 53 | B5 | 3039 | C |
| 53 | B5 | 3045 | G |
| 53 | B5 | 3049 | A |
| 53 | B5 | 3051 | U |
| 53 | B5 | 3077 | A |
| 53 | B5 | 3083 | G |
| 53 | B5 | 3110 | C |
| 53 | B5 | 3113 | A |
| 53 | B5 | 3121 | U |
| 53 | B5 | 3138 | U |
| 53 | B5 | 3141 | A |
| 53 | B5 | 3142 | A |

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| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 53 | B5 | 3143 | C |
| 53 | B5 | 3160 | U |
| 53 | B5 | 3195 | U |
| 53 | B5 | 3219 | U |
| 53 | B5 | 3246 | G |
| 53 | B5 | 3304 | U |
| 53 | B5 | 3313 | U |
| 53 | B5 | 3330 | A |
| 53 | B5 | 3384 | U |
| 53 | B5 | 3385 | U |

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

14 non-standard protein/DNA/RNA residues are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. 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 $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

| Mol | Type | Chain | Res | Link | Bond lengths | | | Bond angles | | |
|-----|------|-------|-----|------|--------------|------|----------|-------------|------|----------|
| | | | | | Counts | RMSZ | # Z > 2 | Counts | RMSZ | # Z > 2 |
| 19 | 2MG | A7 | 10 | 19 | 19,26,27 | 1.96 | 9 (47%) | 20,38,41 | 2.84 | 10 (50%) |
| 19 | H2U | A7 | 16 | 19 | 17,21,22 | 2.16 | 4 (23%) | 21,30,33 | 1.99 | 7 (33%) |
| 19 | H2U | A7 | 17 | 19 | 17,21,22 | 2.62 | 6 (35%) | 21,30,33 | 2.61 | 5 (23%) |
| 19 | M2G | A7 | 26 | 19 | 20,27,28 | 1.96 | 5 (25%) | 21,40,43 | 3.58 | 10 (47%) |
| 19 | OMC | A7 | 32 | 19 | 15,22,23 | 2.06 | 4 (26%) | 19,31,34 | 1.55 | 4 (21%) |
| 19 | OMG | A7 | 34 | 19 | 18,26,27 | 1.87 | 4 (22%) | 22,38,41 | 2.70 | 4 (18%) |
| 19 | YYG | A7 | 37 | 19 | 29,42,43 | 1.71 | 8 (27%) | 29,62,65 | 2.89 | 13 (44%) |
| 19 | PSU | A7 | 39 | 19 | 16,21,22 | 1.80 | 7 (43%) | 20,30,33 | 4.33 | 7 (35%) |
| 19 | 5MC | A7 | 40 | 19 | 15,22,23 | 2.34 | 4 (26%) | 17,32,35 | 2.43 | 5 (29%) |
| 19 | 7MG | A7 | 46 | 19 | 20,26,27 | 1.97 | 6 (30%) | 22,39,42 | 2.30 | 5 (22%) |
| 19 | 5MC | A7 | 49 | 19 | 15,22,23 | 1.78 | 2 (13%) | 17,32,35 | 2.37 | 6 (35%) |
| 19 | 5MU | A7 | 54 | 19 | 14,22,23 | 1.09 | 1 (7%) | 16,32,35 | 4.32 | 7 (43%) |
| 19 | PSU | A7 | 55 | 19 | 16,21,22 | 1.63 | 1 (6%) | 20,30,33 | 5.88 | 7 (35%) |
| 19 | 1MA | A7 | 58 | 19 | 16,25,26 | 1.10 | 2 (12%) | 13,37,40 | 1.99 | 3 (23%) |

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

| Mol | Type | Chain | Res | Link | Chirals | Torsions | Rings |
|-----|------|-------|-----|------|---------|------------|---------|
| 19 | 2MG | A7 | 10 | 19 | - | 0/5/27/28 | 0/3/3/3 |
| 19 | H2U | A7 | 16 | 19 | - | 0/7/38/39 | 0/2/2/2 |
| 19 | H2U | A7 | 17 | 19 | - | 0/7/38/39 | 0/2/2/2 |
| 19 | M2G | A7 | 26 | 19 | - | 0/7/29/30 | 0/3/3/3 |
| 19 | OMC | A7 | 32 | 19 | - | 0/5/27/28 | 0/2/2/2 |
| 19 | OMG | A7 | 34 | 19 | - | 0/5/27/28 | 0/3/3/3 |
| 19 | YYG | A7 | 37 | 19 | - | 0/20/42/43 | 0/4/4/4 |
| 19 | PSU | A7 | 39 | 19 | - | 0/7/25/26 | 0/2/2/2 |
| 19 | 5MC | A7 | 40 | 19 | - | 0/3/25/26 | 0/2/2/2 |
| 19 | 7MG | A7 | 46 | 19 | - | 0/7/37/38 | 0/3/3/3 |
| 19 | 5MC | A7 | 49 | 19 | - | 0/3/25/26 | 0/2/2/2 |
| 19 | 5MU | A7 | 54 | 19 | - | 0/3/25/26 | 0/2/2/2 |
| 19 | PSU | A7 | 55 | 19 | - | 0/7/25/26 | 0/2/2/2 |
| 19 | 1MA | A7 | 58 | 19 | - | 0/3/25/26 | 0/3/3/3 |

All (63) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 19 | A7 | 17 | H2U | C4-N3 | -6.15 | 1.28 | 1.37 |
| 19 | A7 | 17 | H2U | C2-N3 | -6.10 | 1.26 | 1.38 |
| 19 | A7 | 55 | PSU | C6-C5 | -4.62 | 1.32 | 1.38 |
| 19 | A7 | 40 | 5MC | C2'-C1' | -4.37 | 1.46 | 1.53 |
| 19 | A7 | 10 | 2MG | C2-N2 | -4.35 | 1.30 | 1.34 |
| 19 | A7 | 46 | 7MG | O5'-C5' | -4.30 | 1.38 | 1.44 |
| 19 | A7 | 32 | OMC | O5'-C5' | -4.21 | 1.38 | 1.44 |
| 19 | A7 | 40 | 5MC | C4-N3 | -4.15 | 1.28 | 1.35 |
| 19 | A7 | 37 | YYG | C3-N3 | -3.99 | 1.43 | 1.49 |
| 19 | A7 | 16 | H2U | O5'-C5' | -3.97 | 1.39 | 1.44 |
| 19 | A7 | 16 | H2U | C2-N3 | -3.77 | 1.31 | 1.38 |
| 19 | A7 | 26 | M2G | O4'-C1' | -3.71 | 1.36 | 1.41 |
| 19 | A7 | 16 | H2U | C4-N3 | -3.69 | 1.31 | 1.37 |
| 19 | A7 | 34 | OMG | O5'-C5' | -3.59 | 1.39 | 1.44 |
| 19 | A7 | 34 | OMG | O4'-C1' | -3.32 | 1.36 | 1.41 |
| 19 | A7 | 32 | OMC | O2'-C2' | -3.01 | 1.34 | 1.42 |
| 19 | A7 | 39 | PSU | O2'-C2' | -3.00 | 1.36 | 1.43 |
| 19 | A7 | 37 | YYG | C2'-C1' | -2.97 | 1.48 | 1.53 |
| 19 | A7 | 10 | 2MG | O2'-C2' | -2.95 | 1.36 | 1.43 |
| 19 | A7 | 39 | PSU | O4'-C1' | -2.83 | 1.40 | 1.44 |
| 19 | A7 | 26 | M2G | C8-N7 | -2.76 | 1.29 | 1.34 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 19 | A7 | 37 | YYG | O5'-C5' | -2.70 | 1.41 | 1.44 |
| 19 | A7 | 39 | PSU | C5-C1' | -2.64 | 1.50 | 1.52 |
| 19 | A7 | 46 | 7MG | C8-N9 | -2.62 | 1.41 | 1.45 |
| 19 | A7 | 17 | H2U | O4'-C4' | -2.55 | 1.39 | 1.45 |
| 19 | A7 | 58 | 1MA | O5'-C5' | -2.35 | 1.41 | 1.44 |
| 19 | A7 | 39 | PSU | O4'-C4' | -2.34 | 1.39 | 1.45 |
| 19 | A7 | 32 | OMC | C2-N3 | -2.33 | 1.33 | 1.38 |
| 19 | A7 | 54 | 5MU | O5'-C5' | -2.15 | 1.41 | 1.44 |
| 19 | A7 | 10 | 2MG | C4-N3 | -2.13 | 1.32 | 1.35 |
| 19 | A7 | 10 | 2MG | C5-C4 | -2.13 | 1.35 | 1.40 |
| 19 | A7 | 39 | PSU | C6-C5 | -2.11 | 1.35 | 1.38 |
| 19 | A7 | 17 | H2U | C2'-C1' | -2.10 | 1.46 | 1.53 |
| 19 | A7 | 39 | PSU | C2-N1 | -2.10 | 1.34 | 1.38 |
| 19 | A7 | 39 | PSU | C2'-C1' | -2.09 | 1.51 | 1.53 |
| 19 | A7 | 10 | 2MG | C8-N7 | -2.04 | 1.30 | 1.34 |
| 19 | A7 | 46 | 7MG | C4-N3 | -2.03 | 1.31 | 1.34 |
| 19 | A7 | 37 | YYG | O3'-C3' | 2.03 | 1.47 | 1.43 |
| 19 | A7 | 37 | YYG | C6-C5 | 2.07 | 1.44 | 1.41 |
| 19 | A7 | 10 | 2MG | C6-N1 | 2.15 | 1.36 | 1.33 |
| 19 | A7 | 37 | YYG | C2-N2 | 2.22 | 1.38 | 1.35 |
| 19 | A7 | 37 | YYG | O4'-C1' | 2.29 | 1.44 | 1.41 |
| 19 | A7 | 37 | YYG | C14-C15 | 2.39 | 1.59 | 1.53 |
| 19 | A7 | 10 | 2MG | O4'-C1' | 2.40 | 1.44 | 1.41 |
| 19 | A7 | 26 | M2G | C5'-C4' | 2.45 | 1.59 | 1.51 |
| 19 | A7 | 10 | 2MG | C6-C5 | 2.51 | 1.46 | 1.41 |
| 19 | A7 | 17 | H2U | C2-N1 | 2.56 | 1.39 | 1.35 |
| 19 | A7 | 58 | 1MA | C6-N6 | 2.58 | 1.33 | 1.27 |
| 19 | A7 | 10 | 2MG | C2'-C3' | 2.67 | 1.60 | 1.53 |
| 19 | A7 | 46 | 7MG | CM7-N7 | 2.75 | 1.50 | 1.46 |
| 19 | A7 | 34 | OMG | C6-N1 | 3.09 | 1.38 | 1.33 |
| 19 | A7 | 46 | 7MG | C6-C5 | 3.45 | 1.45 | 1.41 |
| 19 | A7 | 17 | H2U | C6-N1 | 3.49 | 1.51 | 1.47 |
| 19 | A7 | 46 | 7MG | C6-N1 | 3.53 | 1.39 | 1.33 |
| 19 | A7 | 49 | 5MC | CM5-C5 | 3.58 | 1.58 | 1.51 |
| 19 | A7 | 34 | OMG | C3'-C2' | 3.80 | 1.61 | 1.53 |
| 19 | A7 | 26 | M2G | O5'-C5' | 3.93 | 1.50 | 1.44 |
| 19 | A7 | 32 | OMC | O4'-C1' | 3.97 | 1.46 | 1.41 |
| 19 | A7 | 40 | 5MC | C5-C4 | 4.09 | 1.47 | 1.41 |
| 19 | A7 | 26 | M2G | C6-N1 | 4.21 | 1.40 | 1.33 |
| 19 | A7 | 40 | 5MC | O4'-C1' | 4.36 | 1.47 | 1.41 |
| 19 | A7 | 16 | H2U | C2-N1 | 4.47 | 1.42 | 1.35 |
| 19 | A7 | 49 | 5MC | C5-C4 | 4.61 | 1.48 | 1.41 |

All (93) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|--------|-------------|----------|
| 19 | A7 | 55 | PSU | N1-C2-N3 | -16.48 | 116.55 | 128.40 |
| 19 | A7 | 55 | PSU | C5-C4-N3 | -14.03 | 113.93 | 125.43 |
| 19 | A7 | 39 | PSU | N1-C2-N3 | -12.86 | 119.15 | 128.40 |
| 19 | A7 | 39 | PSU | C5-C4-N3 | -9.73 | 117.45 | 125.43 |
| 19 | A7 | 34 | OMG | C5-C6-N1 | -9.27 | 110.29 | 123.48 |
| 19 | A7 | 54 | 5MU | C5-C4-N3 | -9.26 | 115.03 | 125.24 |
| 19 | A7 | 26 | M2G | C5-C6-N1 | -8.21 | 111.80 | 123.48 |
| 19 | A7 | 46 | 7MG | C5-C6-N1 | -7.27 | 111.97 | 123.37 |
| 19 | A7 | 10 | 2MG | C6-C5-C4 | -6.59 | 114.29 | 120.84 |
| 19 | A7 | 54 | 5MU | C4'-O4'-C1' | -6.27 | 103.10 | 109.77 |
| 19 | A7 | 40 | 5MC | C4'-O4'-C1' | -6.10 | 103.28 | 109.77 |
| 19 | A7 | 40 | 5MC | C5-C6-N1 | -5.27 | 116.45 | 122.15 |
| 19 | A7 | 55 | PSU | O2'-C2'-C1' | -5.10 | 100.66 | 112.21 |
| 19 | A7 | 54 | 5MU | C5-C6-N1 | -4.95 | 116.79 | 122.15 |
| 19 | A7 | 58 | 1MA | C1'-N9-C4 | -4.82 | 118.31 | 126.64 |
| 19 | A7 | 10 | 2MG | C5-C6-N1 | -4.25 | 117.43 | 123.48 |
| 19 | A7 | 37 | YYG | C4-C5-N7 | -4.23 | 105.33 | 109.41 |
| 19 | A7 | 39 | PSU | C5-C6-N1 | -4.19 | 118.96 | 124.39 |
| 19 | A7 | 37 | YYG | O23-C21-O22 | -4.10 | 118.99 | 124.60 |
| 19 | A7 | 17 | H2U | O2-C2-N1 | -4.07 | 118.01 | 123.12 |
| 19 | A7 | 26 | M2G | C6-C5-C4 | -3.97 | 116.90 | 120.84 |
| 19 | A7 | 54 | 5MU | C5M-C5-C4 | -3.89 | 115.68 | 120.17 |
| 19 | A7 | 40 | 5MC | N4-C4-N3 | -3.77 | 111.44 | 117.00 |
| 19 | A7 | 39 | PSU | C4'-O4'-C1' | -3.59 | 105.31 | 109.48 |
| 19 | A7 | 49 | 5MC | O2'-C2'-C1' | -3.52 | 100.61 | 111.61 |
| 19 | A7 | 49 | 5MC | C2'-C3'-C4' | -3.26 | 96.27 | 102.62 |
| 19 | A7 | 55 | PSU | O4'-C1'-C5 | -3.25 | 104.89 | 109.93 |
| 19 | A7 | 46 | 7MG | C4-N9-C1' | -3.23 | 118.77 | 126.58 |
| 19 | A7 | 49 | 5MC | C5-C6-N1 | -3.18 | 118.70 | 122.15 |
| 19 | A7 | 32 | OMC | C6-N1-C2 | -3.16 | 116.15 | 121.28 |
| 19 | A7 | 34 | OMG | C2-N3-C4 | -3.13 | 111.50 | 115.16 |
| 19 | A7 | 10 | 2MG | N3-C2-N1 | -3.11 | 121.53 | 126.23 |
| 19 | A7 | 58 | 1MA | C4-C5-N7 | -3.10 | 106.41 | 109.41 |
| 19 | A7 | 17 | H2U | O2-C2-N3 | -3.04 | 115.75 | 121.50 |
| 19 | A7 | 16 | H2U | O2'-C2'-C1' | -2.95 | 100.00 | 109.96 |
| 19 | A7 | 26 | M2G | C2-N3-C4 | -2.84 | 111.87 | 115.11 |
| 19 | A7 | 17 | H2U | C4-N3-C2 | -2.80 | 123.42 | 125.81 |
| 19 | A7 | 32 | OMC | N4-C4-N3 | -2.75 | 112.02 | 116.64 |
| 19 | A7 | 37 | YYG | O2'-C2'-C1' | -2.60 | 103.48 | 111.61 |
| 19 | A7 | 40 | 5MC | C2'-C3'-C4' | -2.42 | 97.91 | 102.62 |
| 19 | A7 | 55 | PSU | C2'-C3'-C4' | -2.41 | 97.92 | 102.62 |
| 19 | A7 | 46 | 7MG | N2-C2-N3 | -2.40 | 113.41 | 117.24 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 19 | A7 | 17 | H2U | C3'-C2'-C1' | -2.40 | 96.82 | 101.43 |
| 19 | A7 | 40 | 5MC | O3'-C3'-C2' | -2.39 | 104.18 | 111.83 |
| 19 | A7 | 46 | 7MG | N2-C2-N1 | -2.37 | 113.44 | 117.24 |
| 19 | A7 | 34 | OMG | C2'-C3'-C4' | -2.36 | 96.59 | 101.95 |
| 19 | A7 | 26 | M2G | O3'-C3'-C4' | -2.29 | 104.41 | 111.09 |
| 19 | A7 | 32 | OMC | CM2-O2'-C2' | -2.18 | 108.59 | 114.54 |
| 19 | A7 | 10 | 2MG | O2'-C2'-C1' | -2.14 | 104.91 | 111.61 |
| 19 | A7 | 16 | H2U | O2-C2-N3 | -2.12 | 117.49 | 121.50 |
| 19 | A7 | 37 | YYG | C14-C15-N20 | -2.09 | 106.58 | 110.90 |
| 19 | A7 | 16 | H2U | O2-C2-N1 | -2.08 | 120.51 | 123.12 |
| 19 | A7 | 10 | 2MG | C5'-C4'-C3' | -2.07 | 107.39 | 115.29 |
| 19 | A7 | 26 | M2G | CM2-N2-CM1 | -2.02 | 109.48 | 116.03 |
| 19 | A7 | 37 | YYG | O3'-C3'-C4' | 2.12 | 117.27 | 111.09 |
| 19 | A7 | 10 | 2MG | C4'-O4'-C1' | 2.18 | 112.09 | 109.77 |
| 19 | A7 | 32 | OMC | O4'-C1'-N1 | 2.22 | 112.53 | 108.08 |
| 19 | A7 | 16 | H2U | O4'-C4'-C3' | 2.27 | 109.67 | 105.17 |
| 19 | A7 | 54 | 5MU | O4'-C4'-C5' | 2.36 | 117.38 | 109.40 |
| 19 | A7 | 49 | 5MC | O5'-C5'-C4' | 2.46 | 117.65 | 109.01 |
| 19 | A7 | 10 | 2MG | C2-N3-C4 | 2.46 | 117.92 | 115.11 |
| 19 | A7 | 54 | 5MU | O4'-C4'-C3' | 2.48 | 110.10 | 105.17 |
| 19 | A7 | 58 | 1MA | O2'-C2'-C1' | 2.55 | 119.59 | 111.61 |
| 19 | A7 | 49 | 5MC | O3'-C3'-C4' | 2.69 | 118.93 | 111.09 |
| 19 | A7 | 16 | H2U | C5-C4-N3 | 2.77 | 119.47 | 116.72 |
| 19 | A7 | 37 | YYG | C4'-O4'-C1' | 2.93 | 112.89 | 109.77 |
| 19 | A7 | 37 | YYG | C19-O18-C16 | 2.96 | 122.90 | 115.97 |
| 19 | A7 | 39 | PSU | O4'-C1'-C2' | 3.16 | 109.52 | 104.45 |
| 19 | A7 | 26 | M2G | CM1-N2-C2 | 3.23 | 124.41 | 121.34 |
| 19 | A7 | 16 | H2U | C5-C6-N1 | 3.23 | 114.06 | 110.70 |
| 19 | A7 | 55 | PSU | C6-N1-C2 | 3.46 | 120.90 | 115.36 |
| 19 | A7 | 10 | 2MG | C6-N1-C2 | 3.52 | 121.49 | 115.18 |
| 19 | A7 | 37 | YYG | O23-C21-N20 | 3.68 | 117.88 | 110.82 |
| 19 | A7 | 26 | M2G | N1-C2-N2 | 3.93 | 121.20 | 117.16 |
| 19 | A7 | 37 | YYG | C14-C15-C16 | 4.13 | 122.53 | 110.29 |
| 19 | A7 | 10 | 2MG | N2-C2-N3 | 4.52 | 121.34 | 116.95 |
| 19 | A7 | 26 | M2G | C4-C5-N7 | 4.71 | 113.96 | 109.41 |
| 19 | A7 | 46 | 7MG | N1-C2-N3 | 4.73 | 133.12 | 125.45 |
| 19 | A7 | 39 | PSU | C6-N1-C2 | 4.75 | 122.97 | 115.36 |
| 19 | A7 | 37 | YYG | C15-N20-C21 | 4.77 | 133.14 | 120.96 |
| 19 | A7 | 37 | YYG | C6-C5-C4 | 4.86 | 123.28 | 119.92 |
| 19 | A7 | 26 | M2G | CM2-N2-C2 | 4.88 | 125.99 | 121.34 |
| 19 | A7 | 10 | 2MG | CM2-N2-C2 | 5.18 | 129.93 | 123.63 |
| 19 | A7 | 16 | H2U | N3-C2-N1 | 5.28 | 121.98 | 116.73 |

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| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 19 | A7 | 37 | YYG | C3-N3-C4 | 6.04 | 126.91 | 118.31 |
| 19 | A7 | 34 | OMG | C6-N1-C2 | 6.15 | 124.91 | 116.06 |
| 19 | A7 | 39 | PSU | C4-N3-C2 | 6.23 | 120.61 | 115.16 |
| 19 | A7 | 37 | YYG | C24-O23-C21 | 6.35 | 123.52 | 115.68 |
| 19 | A7 | 49 | 5MC | C4'-O4'-C1' | 6.40 | 116.58 | 109.77 |
| 19 | A7 | 26 | M2G | C6-N1-C2 | 9.18 | 127.11 | 116.18 |
| 19 | A7 | 17 | H2U | N3-C2-N1 | 9.34 | 126.03 | 116.73 |
| 19 | A7 | 54 | 5MU | C4-N3-C2 | 10.63 | 124.45 | 115.16 |
| 19 | A7 | 55 | PSU | C4-N3-C2 | 12.39 | 126.00 | 115.16 |

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

3 monomers are involved in 5 short contacts:

| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|-----|-------|-----|------|---------|--------------|
| 19 | A7 | 10 | 2MG | 1 | 0 |
| 19 | A7 | 37 | YYG | 1 | 0 |
| 19 | A7 | 40 | 5MC | 3 | 0 |

5.5 Carbohydrates [i](#)

There are no carbohydrates in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

| Mol | Chain | Number of breaks |
|-----|-------|------------------|
| 7 | AH | 1 |

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| Mol | Chain | Number of breaks |
|-----|-------|------------------|
| 18 | AT | 1 |

All chain breaks are listed below:

| Model | Chain | Residue-1 | Atom-1 | Residue-2 | Atom-2 | Distance (Å) |
|-------|-------|-----------|--------|-----------|--------|--------------|
| 1 | AH | 32:LYS | C | 33:VAL | N | 2.59 |
| 1 | AT | 78:LYS | C | 79:LEU | N | 2.49 |