



# Full wwPDB X-ray Structure Validation Report ⓘ

Dec 18, 2023 – 02:13 PM EST

PDB ID : 1VY6  
Title : Crystal structure of the *Thermus thermophilus* 70S ribosome in the pre-attack state of peptide bond formation containing short substrate-mimic Cytidine-Puromycin in the A site and acylated tRNA in the P site.  
Authors : Polikanov, Y.S.; Steitz, T.A.; Innis, C.A.  
Deposited on : 2014-05-13  
Resolution : 2.90 Å(reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

MolProbity : 4.02b-467  
Mogul : 1.8.5 (274361), CSD as541be (2020)  
Xtriage (Phenix) : 1.13  
EDS : 2.36  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
Refmac : 5.8.0158  
CCP4 : 7.0.044 (Gargrove)  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.36

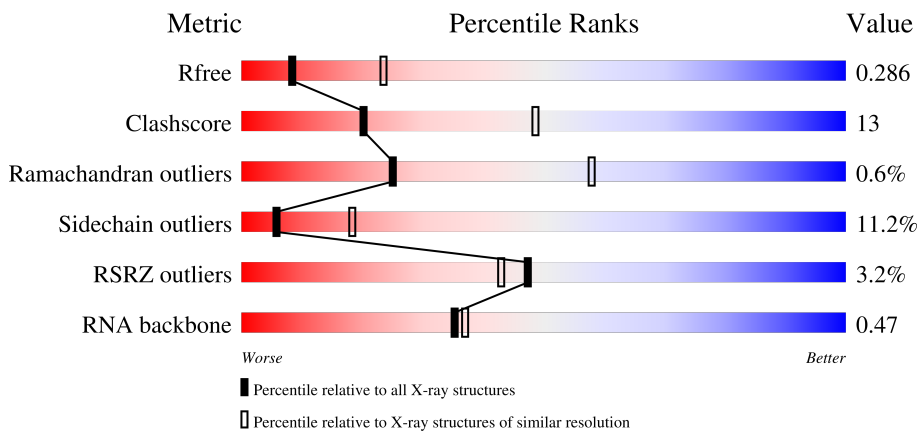
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*X-RAY DIFFRACTION*

The reported resolution of this entry is 2.90 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) | Similar resolution (#Entries, resolution range(Å)) |
|-----------------------|--------------------------|--|
| $R_{free}$            | 130704                   | 1957 (2.90-2.90)                                   |
| Clashscore            | 141614                   | 2172 (2.90-2.90)                                   |
| Ramachandran outliers | 138981                   | 2115 (2.90-2.90)                                   |
| Sidechain outliers    | 138945                   | 2117 (2.90-2.90)                                   |
| RSRZ outliers         | 127900                   | 1906 (2.90-2.90)                                   |
| RNA backbone          | 3102                     | 1007 (3.16-2.64)                                   |

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

| Mol | Chain | Length | Quality of chain         |
|-----|-------|--------|--------------------------|
| 1   | AA    | 1521   | <br>43% 41% 13% ••       |
| 1   | CA    | 1521   | <br>40% 44% 14% ••       |
| 2   | AB    | 256    | <br>41% 41% 8% • 10%     |
| 2   | CB    | 256    | <br>12% 37% 45% 8% • 10% |







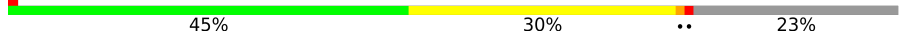

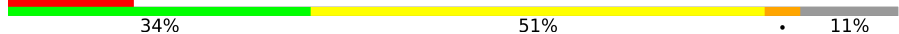


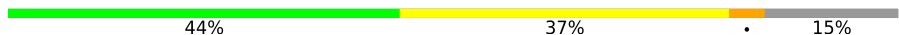
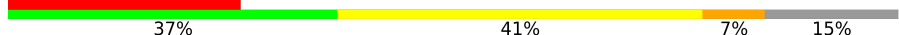




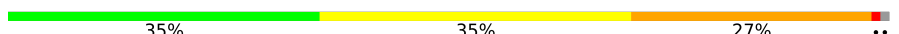
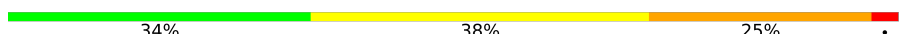






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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 3   | AC    | 239    |                  |
| 3   | CC    | 239    |                  |
| 4   | AD    | 209    |                  |
| 4   | CD    | 209    |                  |
| 5   | AE    | 162    |                  |
| 5   | CE    | 162    |                  |
| 6   | AF    | 101    |                  |
| 6   | CF    | 101    |                  |
| 7   | AG    | 156    |                  |
| 7   | CG    | 156    |                  |
| 8   | AH    | 138    |                  |
| 8   | CH    | 138    |                  |
| 9   | AI    | 128    |                  |
| 9   | CI    | 128    |                  |
| 10  | AJ    | 105    |                  |
| 10  | CJ    | 105    |                  |
| 11  | AK    | 129    |                  |
| 11  | CK    | 129    |                  |
| 12  | AL    | 132    |                  |
| 12  | CL    | 132    |                  |
| 13  | AM    | 126    |                  |
| 13  | CM    | 126    |                  |
| 14  | AN    | 61     |                  |
| 14  | CN    | 61     |                  |
| 15  | AO    | 89     |                  |

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| Mol | Chain | Length | Quality of chain   |
|-----|-------|--------|--|
| 15  | CO    | 89     |    |
| 16  | AP    | 88     |    |
| 16  | CP    | 88     |    |
| 17  | AQ    | 105    |    |
| 17  | CQ    | 105    |    |
| 18  | AR    | 88     |    |
| 18  | CR    | 88     |    |
| 19  | AS    | 93     |    |
| 19  | CS    | 93     |    |
| 20  | AT    | 106    |    |
| 20  | CT    | 106    |    |
| 21  | AU    | 27     |   |
| 21  | CU    | 27     |  |
| 22  | AV    | 24     |  |
| 22  | CV    | 24     |  |
| 23  | AW    | 2      |  |
| 23  | CW    | 2      |  |
| 24  | AX    | 77     |  |
| 24  | CX    | 77     |  |
| 25  | BA    | 2915   |  |
| 25  | DA    | 2915   |  |
| 26  | BB    | 121    |  |
| 26  | DB    | 121    |  |
| 27  | BD    | 276    |  |
| 27  | DD    | 276    |  |

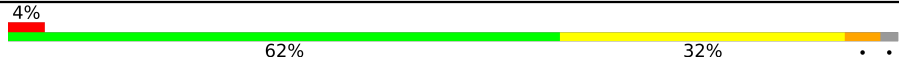
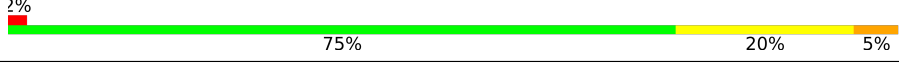
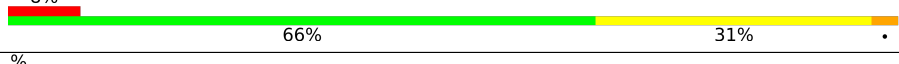


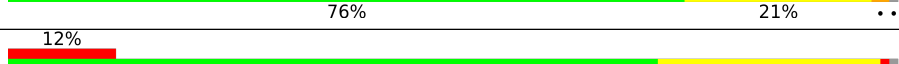
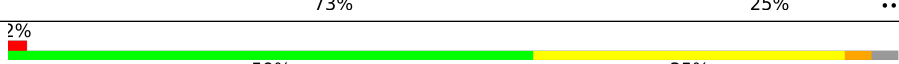
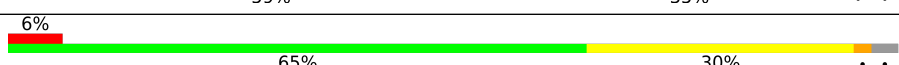
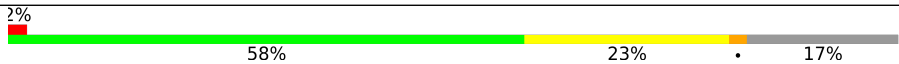


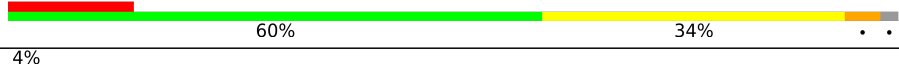
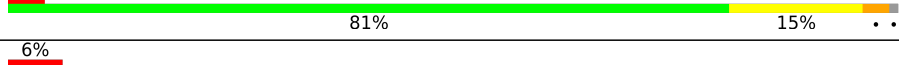

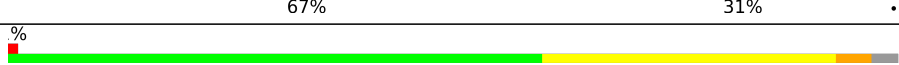










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| Mol | Chain | Length | Quality of chain     |
|-----|-------|--------|----------------------|
| 28  | BE    | 206    | %<br>66% 29% . .     |
| 28  | DE    | 206    | 2%<br>65% 27% 6% . . |
| 29  | BF    | 210    | 71% 22% . .          |
| 29  | DF    | 210    | %<br>55% 37% 5% .    |
| 30  | BG    | 182    | 3%<br>66% 25% 8% .   |
| 30  | DG    | 182    | 19%<br>50% 39% 10% . |
| 31  | BH    | 180    | 2%<br>69% 26% . .    |
| 31  | DH    | 180    | 14%<br>61% 31% 5% .  |
| 32  | BI    | 148    | 64% 26% 9% .         |
| 32  | DI    | 148    | 7%<br>63% 28% 7% . . |
| 33  | BN    | 140    | %<br>71% 25% .       |
| 33  | DN    | 140    | 5%<br>65% 29% 6%     |
| 34  | BO    | 122    | 66% 32% .            |
| 34  | DO    | 122    | %<br>62% 35% .       |
| 35  | BP    | 150    | 3%<br>69% 26% . . .  |
| 35  | DP    | 150    | 3%<br>61% 33% . . .  |
| 36  | BQ    | 141    | 2%<br>65% 32% .      |
| 36  | DQ    | 141    | %<br>60% 35% .       |
| 37  | BR    | 118    | 2%<br>63% 30% 8%     |
| 37  | DR    | 118    | 3%<br>69% 25% 6%     |
| 38  | BS    | 112    | 69% 24% 5% .         |
| 38  | DS    | 112    | 2%<br>48% 44% 6% .   |
| 39  | BT    | 146    | 58% 28% . 10%        |
| 39  | DT    | 146    | 3%<br>56% 27% 6% 10% |
| 40  | BU    | 118    | 3%<br>78% 18% . .    |

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| Mol | Chain | Length | Quality of chain   |
|-----|-------|--------|--|
| 40  | DU    | 118    |    |
| 41  | BV    | 101    |    |
| 41  | DV    | 101    |    |
| 42  | BW    | 113    |    |
| 42  | DW    | 113    |    |
| 43  | BX    | 96     |    |
| 43  | DX    | 96     |    |
| 44  | BY    | 110    |    |
| 44  | DY    | 110    |    |
| 45  | BZ    | 206    |    |
| 45  | DZ    | 206    |   |
| 46  | B0    | 85     |  |
| 46  | D0    | 85     |  |
| 47  | B1    | 98     |  |
| 47  | D1    | 98     |  |
| 48  | B2    | 72     |  |
| 48  | D2    | 72     |  |
| 49  | B3    | 60     |  |
| 49  | D3    | 60     |  |
| 50  | B4    | 71     |  |
| 50  | D4    | 71     |  |
| 51  | B5    | 60     |  |
| 51  | D5    | 60     |  |
| 52  | B6    | 54     |  |
| 52  | D6    | 54     |  |

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 53  | B7    | 49     |                  |
| 53  | D7    | 49     |                  |
| 54  | B8    | 65     |                  |
| 54  | D8    | 65     |                  |
| 55  | B9    | 37     |                  |
| 55  | D9    | 37     |                  |

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

| Mol | Type | Chain | Res  | Chirality | Geometry | Clashes | Electron density |
|-----|------|-------|------|-----------|----------|---------|------------------|
| 56  | MG   | DA    | 3121 | -         | -        | -       | X                |

## 2 Entry composition

There are 60 unique types of molecules in this entry. The entry contains 289646 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a RNA chain called 16S Ribosomal RNA.

| Mol | Chain | Residues | Atoms |       |      |       |      | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-------|------|-------|------|---------|---------|-------|
|     |       |          | Total | C     | N    | O     | P    |         |         |       |
| 1   | AA    | 1498     | Total | C     | N    | O     | P    | 0       | 0       | 0     |
|     |       |          | 32205 | 14333 | 5970 | 10404 | 1498 |         |         |       |
| 1   | CA    | 1503     | Total | C     | N    | O     | P    | 0       | 0       | 0     |
|     |       |          | 32312 | 14381 | 5990 | 10438 | 1503 |         |         |       |

- Molecule 2 is a protein called 30S ribosomal protein S2.

| Mol | Chain | Residues | Atoms |      |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|---------|-------|
|     |       |          | Total | C    | N   | O   | S |         |         |       |
| 2   | AB    | 231      | Total | C    | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 1846  | 1179 | 331 | 331 | 5 |         |         |       |
| 2   | CB    | 231      | Total | C    | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 1825  | 1167 | 326 | 327 | 5 |         |         |       |

- Molecule 3 is a protein called 30S ribosomal protein S3.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
|     |       |          | Total | C   | N   | O   | S |         |         |       |
| 3   | AC    | 206      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 1552  | 976 | 302 | 273 | 1 |         |         |       |
| 3   | CC    | 206      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 1542  | 968 | 300 | 273 | 1 |         |         |       |

- Molecule 4 is a protein called 30S ribosomal protein S4.

| Mol | Chain | Residues | Atoms |      |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|---------|-------|
|     |       |          | Total | C    | N   | O   | S |         |         |       |
| 4   | AD    | 208      | Total | C    | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 1659  | 1040 | 326 | 286 | 7 |         |         |       |
| 4   | CD    | 208      | Total | C    | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 1670  | 1047 | 332 | 284 | 7 |         |         |       |

- Molecule 5 is a protein called 30S ribosomal protein S5.



| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 5   | AE    | 148      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 1129  | 714 | 213 | 198 | 4 |         |         |       |
| 5   | CE    | 148      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 1133  | 716 | 214 | 199 | 4 |         |         |       |

- Molecule 6 is a protein called 30S ribosomal protein S6.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 6   | AF    | 100      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 806   | 511 | 143 | 149 | 3 |         |         |       |
| 6   | CF    | 100      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 816   | 516 | 146 | 151 | 3 |         |         |       |

- Molecule 7 is a protein called 30S ribosomal protein S7.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 7   | AG    | 155      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 1231  | 766 | 243 | 216 | 6 |         |         |       |
| 7   | CG    | 155      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 1235  | 769 | 244 | 216 | 6 |         |         |       |

- Molecule 8 is a protein called 30S ribosomal protein S8.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 8   | AH    | 137      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 1088  | 689 | 206 | 191 | 2 |         |         |       |
| 8   | CH    | 137      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 1088  | 689 | 206 | 191 | 2 |         |         |       |

- Molecule 9 is a protein called 30S ribosomal protein S9.

| Mol | Chain | Residues | Atoms |     |     |     | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---------|---------|-------|
| 9   | AI    | 127      | Total | C   | N   | O   | 0       | 0       | 0     |
|     |       |          | 983   | 623 | 193 | 167 |         |         |       |
| 9   | CI    | 127      | Total | C   | N   | O   | 0       | 0       | 0     |
|     |       |          | 978   | 619 | 190 | 169 |         |         |       |

- Molecule 10 is a protein called 30S ribosomal protein S10.

| Mol | Chain | Residues | Atoms |     |     |     | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---------|---------|-------|
| 10  | AJ    | 97       | Total | C   | N   | O   | 0       | 0       | 0     |
|     |       |          | 709   | 440 | 138 | 131 |         |         |       |

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| Mol | Chain | Residues | Atoms |     |     |     | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---------|---------|-------|
|     |       |          | Total | C   | N   | O   |         |         |       |
| 10  | CJ    | 96       | 714   | 445 | 138 | 131 | 0       | 0       | 0     |

- Molecule 11 is a protein called 30S ribosomal protein S11.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
|     |       |          | Total | C   | N   | O   | S |         |         |       |
| 11  | AK    | 114      | 829   | 516 | 155 | 155 | 3 | 0       | 0       | 0     |
| 11  | CK    | 114      | 833   | 519 | 156 | 155 | 3 | 0       | 0       | 0     |

- Molecule 12 is a protein called 30S ribosomal protein S12.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
|     |       |          | Total | C   | N   | O   | S |         |         |       |
| 12  | AL    | 122      | 930   | 585 | 185 | 159 | 1 | 0       | 0       | 0     |
| 12  | CL    | 122      | 930   | 585 | 185 | 159 | 1 | 0       | 0       | 0     |

- Molecule 13 is a protein called 30S ribosomal protein S13.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
|     |       |          | Total | C   | N   | O   | S |         |         |       |
| 13  | AM    | 123      | 958   | 592 | 198 | 166 | 2 | 0       | 0       | 0     |
| 13  | CM    | 122      | 950   | 586 | 197 | 165 | 2 | 0       | 0       | 0     |

- Molecule 14 is a protein called 30S ribosomal protein S14 type Z.

| Mol | Chain | Residues | Atoms |     |     |    |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|----|---|---------|---------|-------|
|     |       |          | Total | C   | N   | O  | S |         |         |       |
| 14  | AN    | 60       | 492   | 312 | 104 | 72 | 4 | 0       | 0       | 0     |
| 14  | CN    | 60       | 492   | 312 | 104 | 72 | 4 | 0       | 0       | 0     |

- Molecule 15 is a protein called 30S ribosomal protein S15.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
|     |       |          | Total | C   | N   | O   | S |         |         |       |
| 15  | AO    | 88       | 728   | 456 | 144 | 126 | 2 | 0       | 0       | 0     |
| 15  | CO    | 88       | 728   | 456 | 144 | 126 | 2 | 0       | 0       | 0     |

- Molecule 16 is a protein called 30S ribosomal protein S16.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 16  | AP    | 82       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 681   | 433 | 134 | 113 | 1 |         |         |       |
| 16  | CP    | 82       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 677   | 430 | 133 | 113 | 1 |         |         |       |

- Molecule 17 is a protein called 30S ribosomal protein S17.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 17  | AQ    | 99       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 823   | 528 | 151 | 142 | 2 |         |         |       |
| 17  | CQ    | 99       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 823   | 528 | 151 | 142 | 2 |         |         |       |

- Molecule 18 is a protein called 30S ribosomal protein S18.

| Mol | Chain | Residues | Atoms |     |     |    | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|----|---------|---------|-------|
| 18  | AR    | 68       | Total | C   | N   | O  | 0       | 0       | 0     |
|     |       |          | 555   | 355 | 108 | 92 |         |         |       |
| 18  | CR    | 68       | Total | C   | N   | O  | 0       | 0       | 0     |
|     |       |          | 555   | 355 | 108 | 92 |         |         |       |

- Molecule 19 is a protein called 30S ribosomal protein S19.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 19  | AS    | 83       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 652   | 417 | 120 | 113 | 2 |         |         |       |
| 19  | CS    | 83       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 646   | 412 | 119 | 113 | 2 |         |         |       |

- Molecule 20 is a protein called 30S ribosomal protein S20.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 20  | AT    | 96       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 728   | 446 | 156 | 124 | 2 |         |         |       |
| 20  | CT    | 96       | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 727   | 446 | 155 | 124 | 2 |         |         |       |

- Molecule 21 is a protein called 30S ribosomal protein Thx.

| Mol | Chain | Residues | Atoms |     |    |    | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---------|---------|-------|
| 21  | AU    | 23       | Total | C   | N  | O  | 0       | 0       | 0     |
|     |       |          | 199   | 122 | 48 | 29 |         |         |       |
| 21  | CU    | 23       | Total | C   | N  | O  | 0       | 0       | 0     |
|     |       |          | 199   | 122 | 48 | 29 |         |         |       |

- Molecule 22 is a RNA chain called mRNA.

| Mol | Chain | Residues | Atoms |     |    |    |    | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|----|---------|---------|-------|
| 22  | AV    | 13       | Total | C   | N  | O  | P  | 0       | 0       | 0     |
|     |       |          | 277   | 125 | 51 | 88 | 13 |         |         |       |
| 22  | CV    | 12       | Total | C   | N  | O  | P  | 0       | 0       | 0     |
|     |       |          | 252   | 115 | 46 | 80 | 11 |         |         |       |

- Molecule 23 is a RNA chain called Cytidine-Puromycin.

| Mol | Chain | Residues | Atoms |    |    |    |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|----|----|----|---|---------|---------|-------|
| 23  | AW    | 2        | Total | C  | N  | O  | P | 0       | 0       | 0     |
|     |       |          | 54    | 31 | 10 | 12 | 1 |         |         |       |
| 23  | CW    | 2        | Total | C  | N  | O  | P | 0       | 0       | 0     |
|     |       |          | 54    | 31 | 10 | 12 | 1 |         |         |       |

- Molecule 24 is a RNA chain called P-site tRNA.

| Mol | Chain | Residues | Atoms |     |     |     |    |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|----|---|---------|---------|-------|
| 24  | AX    | 76       | Total | C   | N   | O   | P  | S | 0       | 0       | 0     |
|     |       |          | 1635  | 731 | 296 | 530 | 76 | 2 |         |         |       |
| 24  | CX    | 76       | Total | C   | N   | O   | P  | S | 0       | 0       | 0     |
|     |       |          | 1635  | 731 | 296 | 530 | 76 | 2 |         |         |       |

- Molecule 25 is a RNA chain called 23S Ribosomal RNA.

| Mol | Chain | Residues | Atoms |       |       |       |      | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-------|-------|-------|------|---------|---------|-------|
| 25  | BA    | 2819     | Total | C     | N     | O     | P    | 0       | 0       | 0     |
|     |       |          | 60729 | 27026 | 11370 | 19515 | 2818 |         |         |       |
| 25  | DA    | 2800     | Total | C     | N     | O     | P    | 0       | 0       | 0     |
|     |       |          | 60311 | 26840 | 11284 | 19388 | 2799 |         |         |       |

- Molecule 26 is a RNA chain called 5S Ribosomal RNA.

| Mol | Chain | Residues | Atoms |      |     |     |     | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|-----|---------|---------|-------|
| 26  | BB    | 120      | Total | C    | N   | O   | P   | 0       | 0       | 0     |
|     |       |          | 2573  | 1146 | 476 | 832 | 119 |         |         |       |

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| Mol | Chain | Residues | Atoms |      |     |     |     | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|-----|---------|---------|-------|
|     |       |          | Total | C    | N   | O   | P   |         |         |       |
| 26  | DB    | 120      | 2573  | 1146 | 476 | 832 | 119 | 0       | 0       | 0     |

- Molecule 27 is a protein called 50S ribosomal protein L2.

| Mol | Chain | Residues | Atoms |      |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|---------|-------|
|     |       |          | Total | C    | N   | O   | S |         |         |       |
| 27  | BD    | 275      | 2136  | 1349 | 423 | 361 | 3 | 0       | 0       | 0     |
| 27  | DD    | 275      | 2136  | 1349 | 423 | 361 | 3 | 0       | 0       | 0     |

- Molecule 28 is a protein called 50S ribosomal protein L3.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
|     |       |          | Total | C   | N   | O   | S |         |         |       |
| 28  | BE    | 204      | 1559  | 985 | 298 | 270 | 6 | 0       | 0       | 0     |
| 28  | DE    | 204      | 1559  | 985 | 298 | 270 | 6 | 0       | 0       | 0     |

- Molecule 29 is a protein called 50S ribosomal protein L4.

| Mol | Chain | Residues | Atoms |      |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|---------|-------|
|     |       |          | Total | C    | N   | O   | S |         |         |       |
| 29  | BF    | 203      | 1584  | 1009 | 298 | 275 | 2 | 0       | 0       | 1     |
| 29  | DF    | 203      | 1580  | 1007 | 297 | 274 | 2 | 0       | 0       | 1     |

- Molecule 30 is a protein called 50S ribosomal protein L5.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
|     |       |          | Total | C   | N   | O   | S |         |         |       |
| 30  | BG    | 181      | 1425  | 914 | 256 | 251 | 4 | 0       | 0       | 0     |
| 30  | DG    | 181      | 1424  | 911 | 258 | 251 | 4 | 0       | 0       | 0     |

- Molecule 31 is a protein called 50S ribosomal protein L6.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
|     |       |          | Total | C   | N   | O   | S |         |         |       |
| 31  | BH    | 174      | 1330  | 845 | 248 | 236 | 1 | 0       | 0       | 0     |
| 31  | DH    | 174      | 1330  | 845 | 248 | 236 | 1 | 0       | 0       | 0     |

- Molecule 32 is a protein called 50S ribosomal protein L9.

| Mol | Chain | Residues | Atoms         |          |          |          |        | ZeroOcc | AltConf | Trace |
|-----|-------|----------|---------------|----------|----------|----------|--------|---------|---------|-------|
|     |       |          | Total         | C        | N        | O        | S      |         |         |       |
| 32  | BI    | 146      | Total<br>1085 | C<br>693 | N<br>189 | O<br>202 | S<br>1 | 0       | 0       | 0     |
| 32  | DI    | 146      | Total<br>1061 | C<br>680 | N<br>186 | O<br>194 | S<br>1 | 0       | 0       | 0     |

- Molecule 33 is a protein called 50S ribosomal protein L13.

| Mol | Chain | Residues | Atoms         |          |          |          |        | ZeroOcc | AltConf | Trace |
|-----|-------|----------|---------------|----------|----------|----------|--------|---------|---------|-------|
|     |       |          | Total         | C        | N        | O        | S      |         |         |       |
| 33  | BN    | 140      | Total<br>1117 | C<br>719 | N<br>207 | O<br>187 | S<br>4 | 0       | 0       | 0     |
| 33  | DN    | 140      | Total<br>1117 | C<br>719 | N<br>207 | O<br>187 | S<br>4 | 0       | 0       | 0     |

- Molecule 34 is a protein called 50S ribosomal protein L14.

| Mol | Chain | Residues | Atoms        |          |          |          |        | ZeroOcc | AltConf | Trace |
|-----|-------|----------|--------------|----------|----------|----------|--------|---------|---------|-------|
|     |       |          | Total        | C        | N        | O        | S      |         |         |       |
| 34  | BO    | 122      | Total<br>933 | C<br>588 | N<br>171 | O<br>170 | S<br>4 | 0       | 0       | 0     |
| 34  | DO    | 122      | Total<br>933 | C<br>588 | N<br>171 | O<br>170 | S<br>4 | 0       | 0       | 0     |

- Molecule 35 is a protein called 50S ribosomal protein L15.

| Mol | Chain | Residues | Atoms         |          |          |          |        | ZeroOcc | AltConf | Trace |
|-----|-------|----------|---------------|----------|----------|----------|--------|---------|---------|-------|
|     |       |          | Total         | C        | N        | O        | S      |         |         |       |
| 35  | BP    | 149      | Total<br>1135 | C<br>706 | N<br>230 | O<br>196 | S<br>3 | 0       | 0       | 0     |
| 35  | DP    | 149      | Total<br>1135 | C<br>706 | N<br>230 | O<br>196 | S<br>3 | 0       | 0       | 0     |

- Molecule 36 is a protein called 50S ribosomal protein L16.

| Mol | Chain | Residues | Atoms         |          |          |          |        | ZeroOcc | AltConf | Trace |
|-----|-------|----------|---------------|----------|----------|----------|--------|---------|---------|-------|
|     |       |          | Total         | C        | N        | O        | S      |         |         |       |
| 36  | BQ    | 141      | Total<br>1122 | C<br>715 | N<br>212 | O<br>188 | S<br>7 | 0       | 0       | 0     |
| 36  | DQ    | 141      | Total<br>1122 | C<br>715 | N<br>212 | O<br>188 | S<br>7 | 0       | 0       | 0     |

- Molecule 37 is a protein called 50S ribosomal protein L17.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 37  | BR    | 118      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 968   | 604 | 203 | 160 | 1 |         |         |       |
| 37  | DR    | 118      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 968   | 604 | 203 | 160 | 1 |         |         |       |

- Molecule 38 is a protein called 50S ribosomal protein L18.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 38  | BS    | 110      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 877   | 553 | 175 | 149 |   |         |         |       |
| 38  | DS    | 110      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 870   | 549 | 173 | 148 |   |         |         |       |

- Molecule 39 is a protein called 50S ribosomal protein L19.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 39  | BT    | 131      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 1091  | 680 | 225 | 185 | 1 |         |         |       |
| 39  | DT    | 131      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 1083  | 675 | 224 | 183 | 1 |         |         |       |

- Molecule 40 is a protein called 50S ribosomal protein L20.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 40  | BU    | 116      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 959   | 608 | 201 | 149 | 1 |         |         |       |
| 40  | DU    | 116      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 959   | 608 | 201 | 149 | 1 |         |         |       |

- Molecule 41 is a protein called 50S ribosomal protein L21.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 41  | BV    | 101      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 771   | 495 | 140 | 135 | 1 |         |         |       |
| 41  | DV    | 101      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 771   | 495 | 140 | 135 | 1 |         |         |       |

- Molecule 42 is a protein called 50S ribosomal protein L22.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 42  | BW    | 112      | Total | C   | N   | O   | S | 0       | 0       | 0     |
|     |       |          | 886   | 557 | 174 | 153 | 2 |         |         |       |

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| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
|     |       |          | Total | C   | N   | O   | S |         |         |       |
| 42  | DW    | 112      | 886   | 557 | 174 | 153 | 2 | 0       | 0       | 0     |

- Molecule 43 is a protein called 50S ribosomal protein L23.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
|     |       |          | Total | C   | N   | O   | S |         |         |       |
| 43  | BX    | 95       | 750   | 488 | 135 | 126 | 1 | 0       | 0       | 0     |
| 43  | DX    | 95       | 750   | 488 | 135 | 126 | 1 | 0       | 0       | 0     |

- Molecule 44 is a protein called 50S ribosomal protein L24.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
|     |       |          | Total | C   | N   | O   | S |         |         |       |
| 44  | BY    | 107      | 806   | 517 | 152 | 131 | 6 | 0       | 0       | 0     |
| 44  | DY    | 107      | 806   | 517 | 152 | 131 | 6 | 0       | 0       | 0     |

- Molecule 45 is a protein called 50S ribosomal protein L25.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
|     |       |          | Total | C   | N   | O   | S |         |         |       |
| 45  | BZ    | 171      | 1349  | 862 | 243 | 242 | 2 | 0       | 0       | 0     |
| 45  | DZ    | 174      | 1360  | 870 | 243 | 245 | 2 | 0       | 0       | 0     |

- Molecule 46 is a protein called 50S ribosomal protein L27.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
|     |       |          | Total | C   | N   | O   | S |         |         |       |
| 46  | B0    | 83       | 653   | 404 | 139 | 109 | 1 | 0       | 0       | 0     |
| 46  | D0    | 83       | 653   | 404 | 139 | 109 | 1 | 0       | 0       | 0     |

- Molecule 47 is a protein called 50S ribosomal protein L28.

| Mol | Chain | Residues | Atoms |     |     |     |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
|     |       |          | Total | C   | N   | O   | S |         |         |       |
| 47  | B1    | 97       | 755   | 475 | 148 | 131 | 1 | 0       | 0       | 0     |
| 47  | D1    | 97       | 755   | 475 | 148 | 131 | 1 | 0       | 0       | 0     |



- Molecule 48 is a protein called 50S ribosomal protein L29.

| Mol | Chain | Residues | Atoms        |          |          |          |        | ZeroOcc | AltConf | Trace |
|-----|-------|----------|--------------|----------|----------|----------|--------|---------|---------|-------|
|     |       |          | Total        | C        | N        | O        | S      |         |         |       |
| 48  | B2    | 70       | Total<br>588 | C<br>365 | N<br>118 | O<br>103 | S<br>2 | 0       | 0       | 0     |
| 48  | D2    | 70       | Total<br>588 | C<br>365 | N<br>118 | O<br>103 | S<br>2 | 0       | 0       | 0     |

- Molecule 49 is a protein called 50S ribosomal protein L30.

| Mol | Chain | Residues | Atoms        |          |         |         | ZeroOcc | AltConf | Trace |
|-----|-------|----------|--------------|----------|---------|---------|---------|---------|-------|
|     |       |          | Total        | C        | N       | O       |         |         |       |
| 49  | B3    | 59       | Total<br>469 | C<br>298 | N<br>90 | O<br>81 | 0       | 0       | 0     |
| 49  | D3    | 59       | Total<br>464 | C<br>296 | N<br>90 | O<br>78 | 0       | 0       | 0     |

- Molecule 50 is a protein called 50S ribosomal protein L31.

| Mol | Chain | Residues | Atoms        |          |         |         |        | ZeroOcc | AltConf | Trace |
|-----|-------|----------|--------------|----------|---------|---------|--------|---------|---------|-------|
|     |       |          | Total        | C        | N       | O       | S      |         |         |       |
| 50  | B4    | 69       | Total<br>552 | C<br>349 | N<br>99 | O<br>99 | S<br>5 | 0       | 0       | 0     |
| 50  | D4    | 69       | Total<br>532 | C<br>339 | N<br>97 | O<br>91 | S<br>5 | 0       | 0       | 0     |

- Molecule 51 is a protein called 50S ribosomal protein L32.

| Mol | Chain | Residues | Atoms        |          |         |         |        | ZeroOcc | AltConf | Trace |
|-----|-------|----------|--------------|----------|---------|---------|--------|---------|---------|-------|
|     |       |          | Total        | C        | N       | O       | S      |         |         |       |
| 51  | B5    | 59       | Total<br>455 | C<br>285 | N<br>89 | O<br>76 | S<br>5 | 0       | 0       | 0     |
| 51  | D5    | 59       | Total<br>455 | C<br>285 | N<br>89 | O<br>76 | S<br>5 | 0       | 0       | 0     |

- Molecule 52 is a protein called 50S ribosomal protein L33.

| Mol | Chain | Residues | Atoms        |          |         |         |        | ZeroOcc | AltConf | Trace |
|-----|-------|----------|--------------|----------|---------|---------|--------|---------|---------|-------|
|     |       |          | Total        | C        | N       | O       | S      |         |         |       |
| 52  | B6    | 53       | Total<br>453 | C<br>281 | N<br>91 | O<br>77 | S<br>4 | 0       | 0       | 0     |
| 52  | D6    | 53       | Total<br>449 | C<br>279 | N<br>91 | O<br>75 | S<br>4 | 0       | 0       | 0     |

- Molecule 53 is a protein called 50S ribosomal protein L34.

| Mol | Chain | Residues | Atoms |     |     |    |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|----|---|---------|---------|-------|
| 53  | B7    | 48       | Total | C   | N   | O  | S | 0       | 0       | 0     |
|     |       |          | 418   | 257 | 104 | 55 | 2 |         |         |       |
| 53  | D7    | 48       | Total | C   | N   | O  | S | 0       | 0       | 0     |
|     |       |          | 418   | 257 | 104 | 55 | 2 |         |         |       |

- Molecule 54 is a protein called 50S ribosomal protein L35.

| Mol | Chain | Residues | Atoms |     |     |    |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|----|---|---------|---------|-------|
| 54  | B8    | 64       | Total | C   | N   | O  | S | 0       | 0       | 0     |
|     |       |          | 511   | 328 | 99  | 82 | 2 |         |         |       |
| 54  | D8    | 64       | Total | C   | N   | O  | S | 0       | 0       | 0     |
|     |       |          | 517   | 331 | 102 | 82 | 2 |         |         |       |

- Molecule 55 is a protein called 50S ribosomal protein L36.

| Mol | Chain | Residues | Atoms |     |    |    |   | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|---------|-------|
| 55  | B9    | 37       | Total | C   | N  | O  | S | 0       | 0       | 0     |
|     |       |          | 307   | 188 | 68 | 47 | 4 |         |         |       |
| 55  | D9    | 37       | Total | C   | N  | O  | S | 0       | 0       | 0     |
|     |       |          | 307   | 188 | 68 | 47 | 4 |         |         |       |

- Molecule 56 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

| Mol | Chain | Residues | Atoms |     | ZeroOcc | AltConf |
|-----|-------|----------|-------|-----|---------|---------|
| 56  | AA    | 187      | Total | Mg  | 0       | 0       |
|     |       |          | 187   | 187 |         |         |
| 56  | AD    | 1        | Total | Mg  | 0       | 0       |
|     |       |          | 1     | 1   |         |         |
| 56  | AE    | 2        | Total | Mg  | 0       | 0       |
|     |       |          | 2     | 2   |         |         |
| 56  | AF    | 1        | Total | Mg  | 0       | 0       |
|     |       |          | 1     | 1   |         |         |
| 56  | AK    | 1        | Total | Mg  | 0       | 0       |
|     |       |          | 1     | 1   |         |         |
| 56  | AL    | 1        | Total | Mg  | 0       | 0       |
|     |       |          | 1     | 1   |         |         |
| 56  | AM    | 1        | Total | Mg  | 0       | 0       |
|     |       |          | 1     | 1   |         |         |
| 56  | AN    | 1        | Total | Mg  | 0       | 0       |
|     |       |          | 1     | 1   |         |         |
| 56  | AX    | 7        | Total | Mg  | 0       | 0       |
|     |       |          | 7     | 7   |         |         |

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| Mol | Chain | Residues | Atoms               | ZeroOcc | AltConf |
|-----|-------|----------|---------------------|---------|---------|
| 56  | BA    | 675      | Total Mg<br>675 675 | 0       | 0       |
| 56  | BB    | 18       | Total Mg<br>18 18   | 0       | 0       |
| 56  | BD    | 8        | Total Mg<br>8 8     | 0       | 0       |
| 56  | BE    | 6        | Total Mg<br>6 6     | 0       | 0       |
| 56  | BF    | 5        | Total Mg<br>5 5     | 0       | 0       |
| 56  | BG    | 3        | Total Mg<br>3 3     | 0       | 0       |
| 56  | BH    | 1        | Total Mg<br>1 1     | 0       | 0       |
| 56  | BN    | 2        | Total Mg<br>2 2     | 0       | 0       |
| 56  | BO    | 1        | Total Mg<br>1 1     | 0       | 0       |
| 56  | BP    | 4        | Total Mg<br>4 4     | 0       | 0       |
| 56  | BQ    | 3        | Total Mg<br>3 3     | 0       | 0       |
| 56  | BR    | 3        | Total Mg<br>3 3     | 0       | 0       |
| 56  | BU    | 5        | Total Mg<br>5 5     | 0       | 0       |
| 56  | BV    | 3        | Total Mg<br>3 3     | 0       | 0       |
| 56  | BW    | 4        | Total Mg<br>4 4     | 0       | 0       |
| 56  | BX    | 3        | Total Mg<br>3 3     | 0       | 0       |
| 56  | BY    | 2        | Total Mg<br>2 2     | 0       | 0       |
| 56  | BZ    | 1        | Total Mg<br>1 1     | 0       | 0       |
| 56  | B0    | 5        | Total Mg<br>5 5     | 0       | 0       |
| 56  | B3    | 2        | Total Mg<br>2 2     | 0       | 0       |
| 56  | B4    | 1        | Total Mg<br>1 1     | 0       | 0       |

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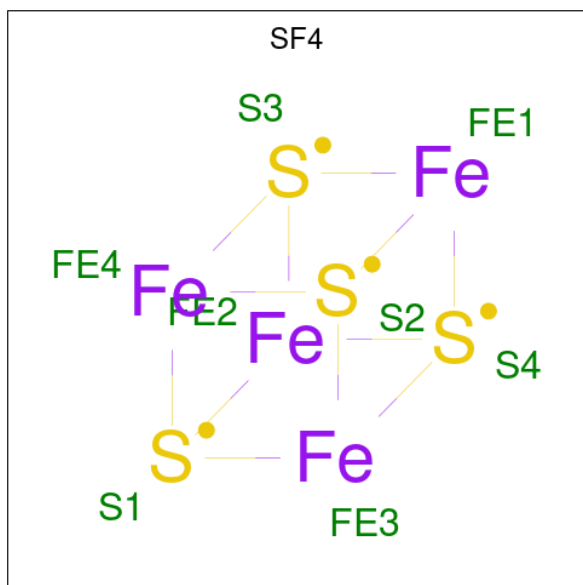
| Mol | Chain | Residues | Atoms        |           | ZeroOcc | AltConf |
|-----|-------|----------|--------------|-----------|---------|---------|
| 56  | B5    | 2        | Total<br>2   | Mg<br>2   | 0       | 0       |
| 56  | B7    | 4        | Total<br>4   | Mg<br>4   | 0       | 0       |
| 56  | B8    | 1        | Total<br>1   | Mg<br>1   | 0       | 0       |
| 56  | B9    | 1        | Total<br>1   | Mg<br>1   | 0       | 0       |
| 56  | CA    | 154      | Total<br>154 | Mg<br>154 | 0       | 0       |
| 56  | CE    | 2        | Total<br>2   | Mg<br>2   | 0       | 0       |
| 56  | CF    | 1        | Total<br>1   | Mg<br>1   | 0       | 0       |
| 56  | CJ    | 1        | Total<br>1   | Mg<br>1   | 0       | 0       |
| 56  | CK    | 1        | Total<br>1   | Mg<br>1   | 0       | 0       |
| 56  | CT    | 1        | Total<br>1   | Mg<br>1   | 0       | 0       |
| 56  | CX    | 1        | Total<br>1   | Mg<br>1   | 0       | 0       |
| 56  | DA    | 595      | Total<br>595 | Mg<br>595 | 0       | 0       |
| 56  | DB    | 12       | Total<br>12  | Mg<br>12  | 0       | 0       |
| 56  | DD    | 2        | Total<br>2   | Mg<br>2   | 0       | 0       |
| 56  | DE    | 5        | Total<br>5   | Mg<br>5   | 0       | 0       |
| 56  | DF    | 3        | Total<br>3   | Mg<br>3   | 0       | 0       |
| 56  | DG    | 1        | Total<br>1   | Mg<br>1   | 0       | 0       |
| 56  | DN    | 1        | Total<br>1   | Mg<br>1   | 0       | 0       |
| 56  | DP    | 1        | Total<br>1   | Mg<br>1   | 0       | 0       |
| 56  | DQ    | 3        | Total<br>3   | Mg<br>3   | 0       | 0       |
| 56  | DR    | 2        | Total<br>2   | Mg<br>2   | 0       | 0       |

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| Mol | Chain | Residues | Atoms           | ZeroOcc | AltConf |
|-----|-------|----------|-----------------|---------|---------|
| 56  | DT    | 1        | Total Mg<br>1 1 | 0       | 0       |
| 56  | DU    | 1        | Total Mg<br>1 1 | 0       | 0       |
| 56  | DV    | 2        | Total Mg<br>2 2 | 0       | 0       |
| 56  | DW    | 2        | Total Mg<br>2 2 | 0       | 0       |
| 56  | DY    | 1        | Total Mg<br>1 1 | 0       | 0       |
| 56  | D0    | 1        | Total Mg<br>1 1 | 0       | 0       |
| 56  | D3    | 1        | Total Mg<br>1 1 | 0       | 0       |
| 56  | D5    | 1        | Total Mg<br>1 1 | 0       | 0       |
| 56  | D7    | 1        | Total Mg<br>1 1 | 0       | 0       |
| 56  | D8    | 2        | Total Mg<br>2 2 | 0       | 0       |

- Molecule 57 is IRON/SULFUR CLUSTER (three-letter code: SF4) (formula: Fe<sub>4</sub>S<sub>4</sub>).



| Mol | Chain | Residues | Atoms               | ZeroOcc | AltConf |
|-----|-------|----------|---------------------|---------|---------|
| 57  | AD    | 1        | Total Fe S<br>8 4 4 | 0       | 0       |

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| Mol | Chain | Residues | Atoms |    |   | ZeroOcc | AltConf |
|-----|-------|----------|-------|----|---|---------|---------|
|     |       |          | Total | Fe | S |         |         |
| 57  | CD    | 1        | 8     | 4  | 4 | 0       | 0       |

- Molecule 58 is ZINC ION (three-letter code: ZN) (formula: Zn).

| Mol | Chain | Residues | Atoms |    | ZeroOcc | AltConf |
|-----|-------|----------|-------|----|---------|---------|
|     |       |          | Total | Zn |         |         |
| 58  | AN    | 1        | 1     | 1  | 0       | 0       |
| 58  | BY    | 1        | 1     | 1  | 0       | 0       |
| 58  | B4    | 1        | 1     | 1  | 0       | 0       |
| 58  | B5    | 1        | 1     | 1  | 0       | 0       |
| 58  | B6    | 1        | 1     | 1  | 0       | 0       |
| 58  | B9    | 1        | 1     | 1  | 0       | 0       |
| 58  | CN    | 1        | 1     | 1  | 0       | 0       |
| 58  | DY    | 1        | 1     | 1  | 0       | 0       |
| 58  | D4    | 1        | 1     | 1  | 0       | 0       |
| 58  | D5    | 1        | 1     | 1  | 0       | 0       |
| 58  | D6    | 1        | 1     | 1  | 0       | 0       |
| 58  | D9    | 1        | 1     | 1  | 0       | 0       |

- Molecule 59 is POTASSIUM ION (three-letter code: K) (formula: K).

| Mol | Chain | Residues | Atoms |   | ZeroOcc | AltConf |
|-----|-------|----------|-------|---|---------|---------|
|     |       |          | Total | K |         |         |
| 59  | AX    | 1        | 1     | 1 | 0       | 0       |
| 59  | DA    | 1        | 1     | 1 | 0       | 0       |

- Molecule 60 is water.

| Mol | Chain | Residues | Atoms              | ZeroOcc | AltConf |
|-----|-------|----------|--------------------|---------|---------|
| 60  | AA    | 165      | Total O<br>165 165 | 0       | 0       |
| 60  | AJ    | 1        | Total O<br>1 1     | 0       | 0       |
| 60  | AL    | 3        | Total O<br>3 3     | 0       | 0       |
| 60  | AP    | 1        | Total O<br>1 1     | 0       | 0       |
| 60  | AU    | 1        | Total O<br>1 1     | 0       | 0       |
| 60  | AV    | 2        | Total O<br>2 2     | 0       | 0       |
| 60  | AW    | 3        | Total O<br>3 3     | 0       | 0       |
| 60  | BA    | 924      | Total O<br>924 924 | 0       | 0       |
| 60  | BB    | 27       | Total O<br>27 27   | 0       | 0       |
| 60  | BD    | 6        | Total O<br>6 6     | 0       | 0       |
| 60  | BE    | 8        | Total O<br>8 8     | 0       | 0       |
| 60  | BF    | 6        | Total O<br>6 6     | 0       | 0       |
| 60  | BG    | 1        | Total O<br>1 1     | 0       | 0       |
| 60  | BH    | 1        | Total O<br>1 1     | 0       | 0       |
| 60  | BN    | 3        | Total O<br>3 3     | 0       | 0       |
| 60  | BO    | 1        | Total O<br>1 1     | 0       | 0       |
| 60  | BP    | 14       | Total O<br>14 14   | 0       | 0       |
| 60  | BQ    | 2        | Total O<br>2 2     | 0       | 0       |
| 60  | BS    | 1        | Total O<br>1 1     | 0       | 0       |
| 60  | BT    | 4        | Total O<br>4 4     | 0       | 0       |
| 60  | BU    | 2        | Total O<br>2 2     | 0       | 0       |
| 60  | BV    | 5        | Total O<br>5 5     | 0       | 0       |

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| Mol | Chain | Residues | Atoms              | ZeroOcc | AltConf |
|-----|-------|----------|--------------------|---------|---------|
| 60  | BW    | 1        | Total O<br>1 1     | 0       | 0       |
| 60  | BX    | 2        | Total O<br>2 2     | 0       | 0       |
| 60  | BZ    | 1        | Total O<br>1 1     | 0       | 0       |
| 60  | B0    | 4        | Total O<br>4 4     | 0       | 0       |
| 60  | B1    | 2        | Total O<br>2 2     | 0       | 0       |
| 60  | B2    | 1        | Total O<br>1 1     | 0       | 0       |
| 60  | B3    | 1        | Total O<br>1 1     | 0       | 0       |
| 60  | B5    | 2        | Total O<br>2 2     | 0       | 0       |
| 60  | B7    | 2        | Total O<br>2 2     | 0       | 0       |
| 60  | B8    | 8        | Total O<br>8 8     | 0       | 0       |
| 60  | CA    | 113      | Total O<br>113 113 | 0       | 0       |
| 60  | CE    | 2        | Total O<br>2 2     | 0       | 0       |
| 60  | CJ    | 2        | Total O<br>2 2     | 0       | 0       |
| 60  | CL    | 1        | Total O<br>1 1     | 0       | 0       |
| 60  | CO    | 1        | Total O<br>1 1     | 0       | 0       |
| 60  | CW    | 1        | Total O<br>1 1     | 0       | 0       |
| 60  | CX    | 1        | Total O<br>1 1     | 0       | 0       |
| 60  | DA    | 689      | Total O<br>689 689 | 0       | 0       |
| 60  | DB    | 9        | Total O<br>9 9     | 0       | 0       |
| 60  | DD    | 11       | Total O<br>11 11   | 0       | 0       |
| 60  | DE    | 5        | Total O<br>5 5     | 0       | 0       |

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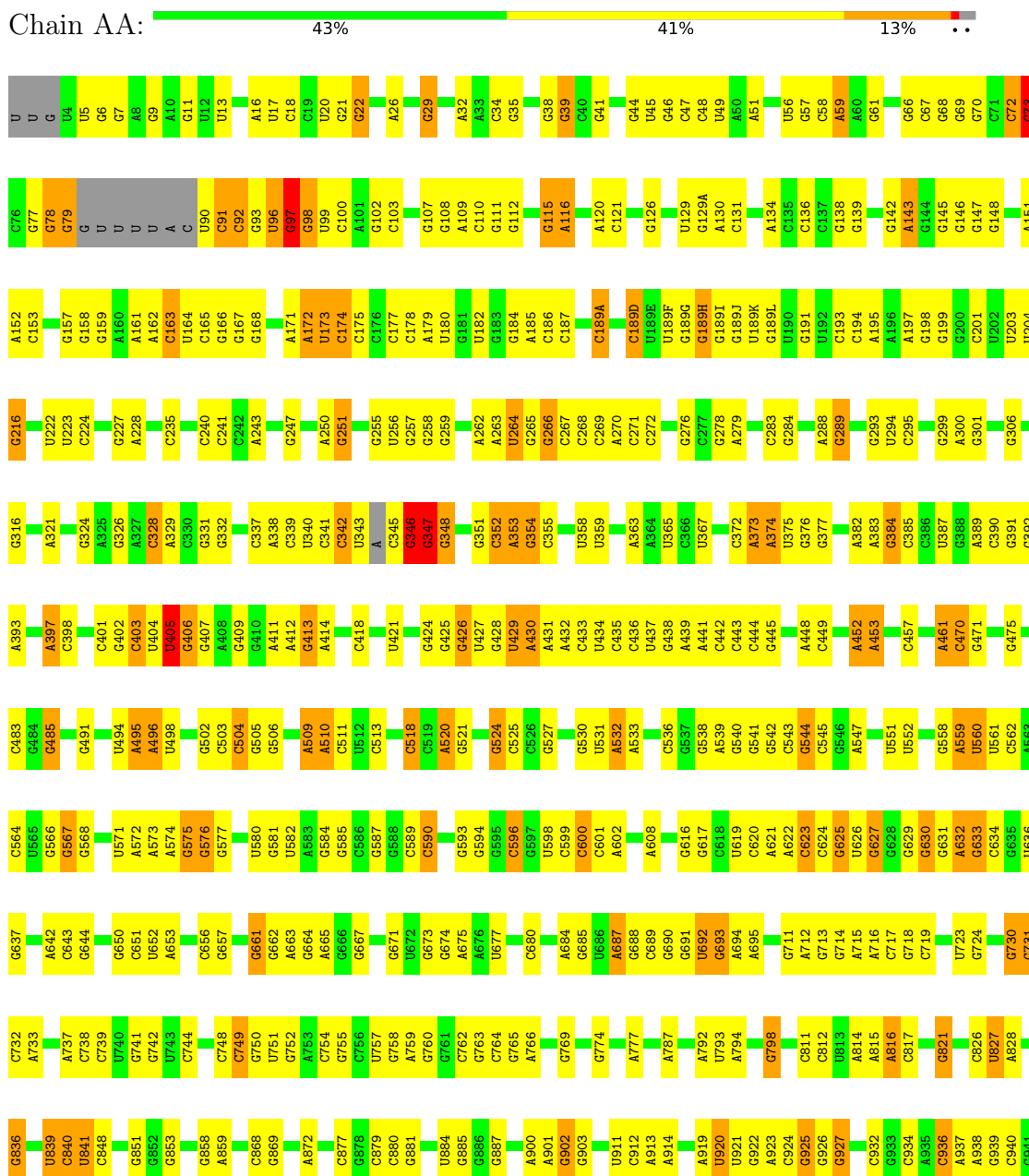
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| <b>Mol</b> | <b>Chain</b> | <b>Residues</b> | <b>Atoms</b> |        | <b>ZeroOcc</b> | <b>AltConf</b> |
|------------|--------------|-----------------|--------------|--------|----------------|----------------|
| 60         | DF           | 6               | Total<br>6   | O<br>6 | 0              | 0              |
| 60         | DO           | 1               | Total<br>1   | O<br>1 | 0              | 0              |
| 60         | DP           | 6               | Total<br>6   | O<br>6 | 0              | 0              |
| 60         | DU           | 3               | Total<br>3   | O<br>3 | 0              | 0              |
| 60         | DV           | 1               | Total<br>1   | O<br>1 | 0              | 0              |
| 60         | DW           | 1               | Total<br>1   | O<br>1 | 0              | 0              |
| 60         | DX           | 3               | Total<br>3   | O<br>3 | 0              | 0              |
| 60         | D0           | 5               | Total<br>5   | O<br>5 | 0              | 0              |
| 60         | D1           | 1               | Total<br>1   | O<br>1 | 0              | 0              |
| 60         | D3           | 1               | Total<br>1   | O<br>1 | 0              | 0              |
| 60         | D8           | 3               | Total<br>3   | O<br>3 | 0              | 0              |

### 3 Residue-property plots

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

- Molecule 1: 16S Ribosomal RNA

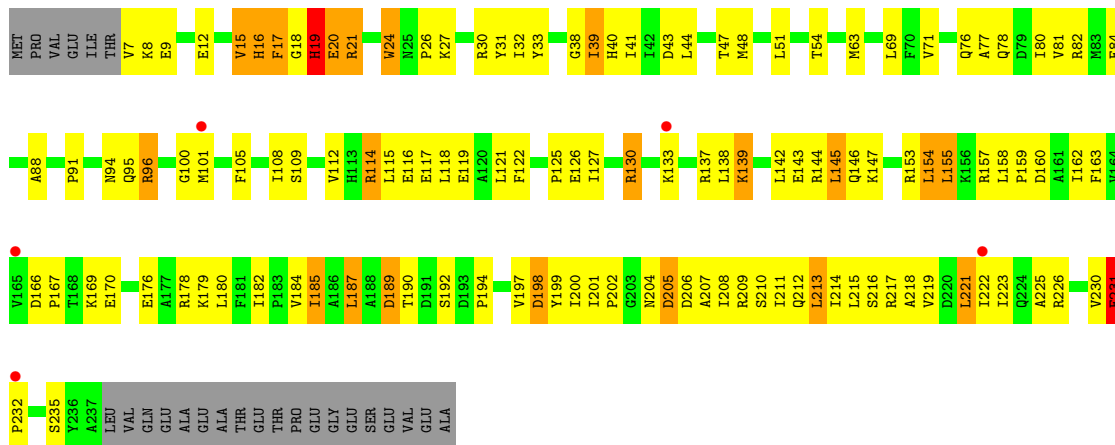




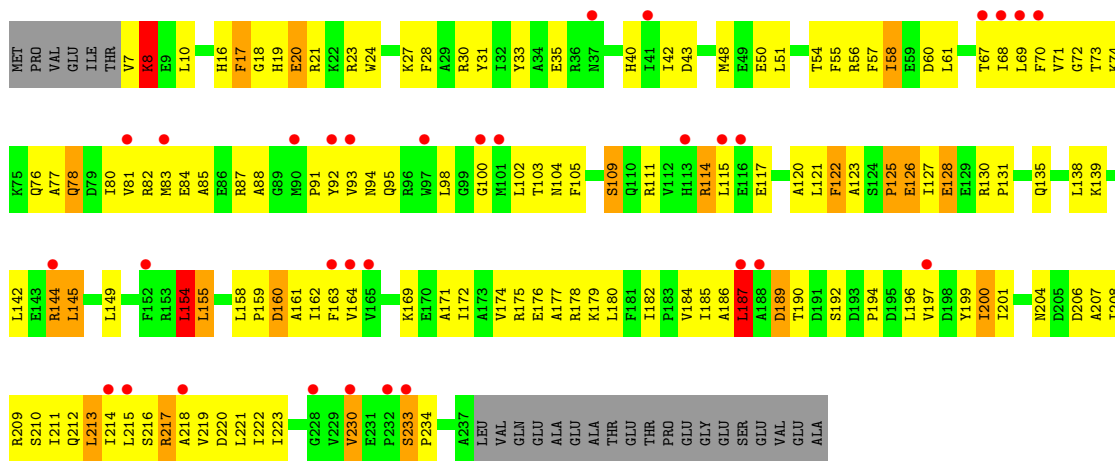
|       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |       |       |       |       |       |       |       |       |       |       |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |        |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| U1383 | U1384 | C1387 | A1398 | C1399 | C1400 | G1401 | C1402 | U1406 | C1409 | C1412 | C1413 | G1414 | G1415 | G1416 | G1417 | G1418 | G1419 | G1420 | G1421 | G1422 | G1423 | G1424 | G1425 | G1426 | G1427 | G1428 | A430  | C433   | U434  | C435  | U436  | C437  | U438  | U439  | C440  | C441  | C442  | C443  | C444   | C445   | C446  | C447  | C448  | A452  | A453  | C454  | C455  | G460  | A461  | C470  | C471  | G472  | A472  | G476  | G481  | A482  | C483  | G484  | G485  | U404  | U405 | C406 | G407 | A408 | G409 | G410 | A411 | A412 | G413 | A414 | C418 | C419 | C501 | C502 | C503 | U420 | C504 | U421 | C422 | G505 | G506 | G423 | G424 | A509 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |        |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| U1199 | C1200 | A1201 | C1202 | C1203 | U1204 | U1205 | G1206 | C1209 | C1210 | U1211 | C1212 | A1213 | C1214 | G1215 | C1216 | U1217 | A1218 | C1219 | U1220 | G1221 | C1222 | C1223 | U1224 | A1225 | C1226 | A1227 | C1228 | A1229  | C1230 | C1231 | U1232 | G1233 | C1234 | A1235 | C1236 | C1237 | A1238 | C1244 | A1245  | C1246  | U1247 | A1248 | C1249 | A1250 | U1251 | A1252 | G1255 | U1256 | U1257 | A1258 | C1319 | C1320 | C1321 | C1322 | U1323 | U1324 | C1325 | C1326 | C1327 | C1267 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |        |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| A1268 | A1269 | C1270 | C1271 | G1272 | G1273 | G1274 | A1275 | C1276 | C1277 | U1278 | A1279 | C1280 | U1281 | C1282 | U1283 | C1284 | A1285 | C1286 | A1287 | A1288 | A1289 | G1290 | G1291 | U1292 | C1293 | G1294 | C1295 | C1296  | C1297 | C1298 | C1299 | A1300 | U1301 | C1302 | C1303 | C1304 | G1305 | A1306 | U1307  | U1308  | C1309 | A1310 | G1311 | C1312 | U1313 | C1314 | U1315 | U1316 | C1317 | A1318 | C1319 | C1320 | C1321 | C1322 | U1323 | U1324 | C1325 | C1326 | C1327 |       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |        |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| C1328 | A1329 | U1330 | C1331 | A1332 | C1333 | G1338 | A1339 | U1340 | C1341 | C1342 | U1343 | C1344 | U1345 | C1346 | U1347 | A1348 | C1349 | C1352 | C1353 | C1354 | C1355 | U1358 | C1359 | A1360 | C1361 | C1362 | C1363 | A1363A | C1366 | C1367 | C1368 | C1369 | G1370 | C1371 | C1372 | G1373 | A1374 | C1375 | U1376  | A1377  | C1378 | C1379 | U1380 | U1381 | C1382 | C1383 | C1384 | C1385 | C1386 | C1387 | C1388 | C1389 | U1390 | U1391 | C1392 |       |       |       |       |       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |        |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| U1393 | A1394 | C1397 | A1398 | C1399 | C1400 | G1401 | C1402 | U1406 | C1409 | C1412 | C1413 | G1414 | G1415 | G1416 | G1417 | G1418 | G1419 | G1420 | G1421 | G1422 | G1423 | C1424 | U1425 | U1426 | A1427 | A1428 | C1429 | C1430  | C1431 | C1432 | A1433 | A1434 | G1435 | U1436 | C1437 | C1438 | C1439 | G1442 | G1442A | A1442B | C1443 | C1444 | A1447 | C1452 | C1456 | C1457 | C1458 | C1459 | G1464 | A1468 | C1469 | C1470 | C1487 | C1488 | C1489 |       |       |       |       |       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |        |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| C352  | A353  | G354  | U358  | U359  | A360  | A364  | U365  | C366  | U367  | C372  | A373  | A374  | U375  | G376  | G377  | A382  | A383  | G384  | C385  | C386  | U387  | G388  | A389  | C390  | G391  | G392  | A393  | A397   | C398  | G399  | C400  | C401  | G402  | C403  | U404  | U405  | C406  | G407  | A408   | G409   | G410  | A411  | A412  | G413  | A414  | C418  | C419  | C501  | C502  | C503  | U420  | C504  | U421  | C422  | G505  | G506  | G423  | G424  | A509  |       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |        |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| G426  | U427  | G428  | U429  | A430  | C433  | U434  | C435  | U436  | C437  | U438  | U439  | C440  | C441  | C442  | C443  | C444  | C445  | C446  | C447  | C448  | A452  | A453  | C454  | C455  | G460  | A461  | C470  | C471   | G472  | A472  | G476  | G481  | A482  | C483  | G484  | G485  | U486  | U487  | C488   | C489   | G490  | G491  | G492  | A495  | A496  | U498  | C501  | C502  | C503  | U420  | C504  | U421  | C422  | G505  | G506  | G423  | G424  | A509  |       |       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |        |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| A510  | C511  | U512  | C513  | U514  | G515  | C518  | U519  | A520  | G521  | C522  | A523  | G527  | U531  | A532  | A533  | C536  | G537  | G538  | A539  | G540  | G541  | G542  | G543  | G544  | A547  | A553  | C554  | A559   | U560  | U561  | G567  | G568  | U571  | A572  | A573  | A574  | G575  | G576  | G577   | U580   | G581  | U582  | G586  | G587  | G588  | C589  | C590  | C591  | C592  | C593  | C594  | C595  | C596  | C597  |       |       |       |       |       |       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |        |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| G592  | G593  | C596  | G597  | U598  | C599  | G600  | C601  | A602  | G603  | A607  | A608  | C613  | G623  | A624  | G625  | U626  | G627  | G628  | G629  | G630  | G631  | A632  | G633  | A642  | G643  | G644  | G645  | U646   | G650  | G651  | U652  | A653  | A659  | U659  | G660  | G661  | G662  | A663  | G664   | A665   | G666  | G667  | G671  | G672  | G673  | G674  | A675  | G686  | C589  | C590  | C591  | C592  | C593  | C594  | C595  | C596  | C597  |       |       |       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |        |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| C680  | G685  | U686  | A687  | G688  | C689  | G690  | A691  | U692  | G693  | A694  | A695  | A696  | G697  | G698  | U700  | G701  | A702  | C707  | C708  | U708  | U709  | A712  | C717  | G718  | G719  | C720  | G721  | A722   | U723  | G724  | G725  | A728  | U729  | G730  | G731  | C732  | A733  | G734  | C738   | G741   | G742  | U831  | U838  | U839  | C840  | U841  | U842  | U843  | C844  | U845  | U846  | U847  | U848  | U849  | U850  | U851  | U852  | U853  | U854  | U855  | U856 | U857 | U858 | U859 | U860 | U861 | U862 | U863 | U864 | U865 | U866 | U867 | U868 | U869 | U870 | U871 | U872 | U873 | U874 | U875 | U876 | U877 | U878 | U879 | U880 | U881 | U882 | U883 | U884 | U885 | U886 | U887 | U888 | U889 | U890 | U891 | U892 | U893 | U894 | U895 | U896 | U897 | U898 | U899 | U900 | U901 | U902 | U903 | U904 | U905 | U906 | U907 | U908 | U909 | U910 | U911 | U912 | U913 | U914 | U915 | U916 | U917 | U918 | U919 | U920 | U921 | U922 | U923 | U924 | U925 | U926 | U927 | U928 | U929 | U930 | U931 | U932 | U933 | U934 | U935 | U936 | U937 | U938 | U939 | U940 | U941 | U942 | U943 | U944 | U945 | U946 | U947 | U948 | U949 | U950 | U951 | U952 | U953 | U954 | U955 | U956 | U957 | U958 | U959 | U960 | U961 | U962 | U963 | U964 | U965 | U966 | U967 | U968 | U969 | U970 | U971 | U972 | U973 | U974 | U975 | U976 | U977 | U978 | U979 | U980 | U981 | U982 | U983 | U984 | U985 | U986 | U987 | U988 | U989 | U990 | U991 | U992 | U993 | U994 | U995 | U996 | U997 | U998 | U999 | U1000 | U1001 | U1002 | U1003 | U1004 | U1005 | U1006 | U1007 | U1008 | U1009 | U1010 | U1011 | U1012 | U1013 | U1014 | U1015 | U1016 | U1017 | U1018 | U1019 | U1020 | U1021 | U1022 | U1023 | U1024 | U1025 | U1026 | U1027 | U1028 | U1029 | U1030 | U1030A | U1030B | U1030C | U1030D | U1031 | U1032 | U1033 | U1034 | U1035 | U1036 | U1037 | U1038 | U1039 | U1040 | U1041 | U1042 | U1043 | U1044 | U1045 | U1046 | U1047 | U1048 | U1053 | U1054 | U1055 | U1056 | U1057 | U1058 | U1059 | U1060 | U1061 | U1062 | U1063 | U1064 | U1065 | U1066 | U1067 |
| G1068 | C1069 | U1070 | U1071 | U1072 | U1073 | U1074 | C1075 | U1076 | U1077 | U1078 | U1079 | U1080 | U1081 | U1084 | U1085 | U1086 | U1087 | U1088 | U1089 | U1090 | U1091 | U1092 | U1093 | U1094 | U1095 | U1096 | U1097 | U1098  | U1099 | U1100 | U1101 | U1102 | U1103 | U1104 | U1105 | U1106 | U1107 | U1108 | C1112  | C1113  | C1114 | U1117 | C1118 | C1119 | C1120 | U1121 | U1122 | U1123 | U1124 | U1125 | U1126 | U1127 | U1128 | U1129 | U1130 | U1131 | U1132 | U1133 |       |       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |        |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| G1134 | U1135 | C1136 | C1137 | U1138 | G1139 | C1140 | C1141 | G1142 | G1143 | G1144 | C1145 | C1146 | C1147 | U1148 | G1149 | U1150 | U1151 | U1152 | C1153 | C1154 | G1155 | G1156 | U1157 | C1158 | U1159 | C1162 | G1163 | C1164  | C1165 | U1166 | A1168 | A1169 | A1170 | G1171 | C1172 | G1173 | G1174 | A1179 | A1180  | G1181  | G1182 | A1183 | G1184 | G1185 | G1186 | G1187 | A1188 | C1189 | G1190 | A1191 | C1192 | C1193 | U1194 | C1195 | U1196 | U1197 | G1198 |       |       |       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |        |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| U1199 | C1200 | A1201 | C1202 | C1203 | U1204 | U1205 | G1206 | C1209 | C1210 | U1211 | C1212 | A1213 | C1214 | G1215 | C1216 | U1217 | A1218 | C1219 | U1220 | G1221 | C1222 | C1223 | U1224 | A1225 | C1226 | A1227 | C1228 | A1229  | C1230 | C1231 | U1232 | G1233 | C1234 | A1235 | C1236 | C1237 | A1238 | C1244 | A1245  | C1246  | U1247 | A1248 | C1249 | A1250 | U1251 | A1252 | G1255 | U1256 | U1257 | A1258 | C1319 | C1320 | C1321 | C1322 | U1323 | U1324 | C1325 | C1326 | C1327 | C1267 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |        |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| A1268 | A1269 | C1270 | C1271 | G1272 | G1273 | G1274 | A1275 | C1276 | C1277 | U1278 | A1279 | C1280 | U1281 | C1282 | U1283 | C1284 | A1285 | C1286 | A1287 | A1288 | A1289 | G1290 | G1291 | U1292 | C1293 | G1294 | C1295 | C1296  | C1297 | C1298 | C1299 | A1300 | U1301 | C1302 | C1303 | C1304 | G1305 | A1306 | U1307  | U1308  | C1309 | A1310 | G1311 | C1312 | U1313 | C1314 | U1315 | U1316 | C1317 | A1318 | C1319 | C1320 | C1321 | C1322 | U1323 | U1324 | C1325 | C1326 | C1327 |       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |        |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| C1328 | A1329 | U1330 | C1331 | A1332 | C1333 | G1338 | A1339 | U1340 | C1341 | C1342 | U1343 | C1344 | U1345 | C1346 | U1347 | A1348 | C1349 | C1352 | C1353 | C1354 | C1355 | U1358 | C1359 | A1360 | C1361 | C1362 | C1363 | A1363A | C1366 | C1367 | C1368 | C1369 | G1370 | C1371 | C1372 | G1373 | A1374 | C1375 | U1376  | A1377  | C1378 | C1379 | U1380 | U1381 | C1382 | C1383 | C1384 | C1385 | C1386 | C1387 | C1388 | C1389 | U1390 | U1391 | C1392 |       |       |       |       |       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |        |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| U1393 | A1394 | C1397 | A1398 | C1399 | C1400 | G1401 | C1402 | U1406 | C1409 | C1412 | C1413 | G1414 | G1415 | G1416 | G1417 | G1418 | G1419 | G1420 | G1421 | G1422 | G1423 | C1424 | U1425 | U1426 | A1427 | A1428 | C1429 | C1430  | C1431 | C1432 | A1433 | A1434 | G1435 | U1436 | C1437 | C1438 | C1439 | G1442 | G1442A | A1442B | C1443 | C1444 | A1447 | C1452 | C1456 | C1457 | C1458 | C1459 | G1464 | A1468 | C1469 | C1470 | C1487 | C1488 | C1489 |       |       |       |       |       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |        |        |        |        |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |



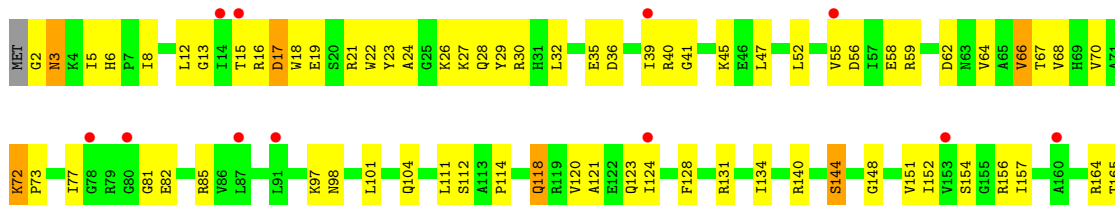
- Molecule 2: 30S ribosomal protein S2



- Molecule 2: 30S ribosomal protein S2

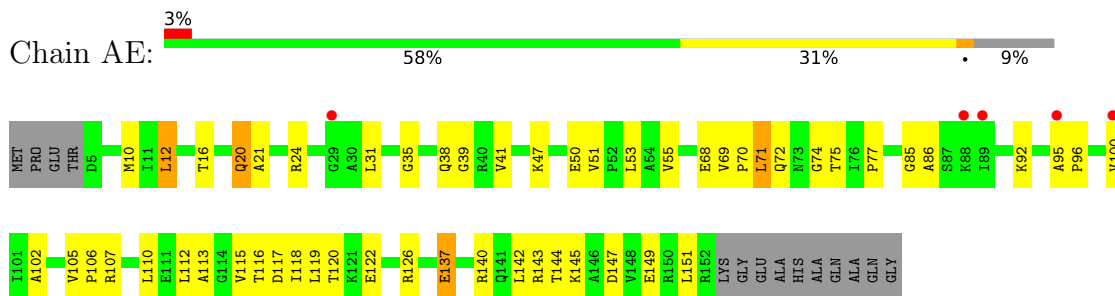


- Molecule 3: 30S ribosomal protein S3

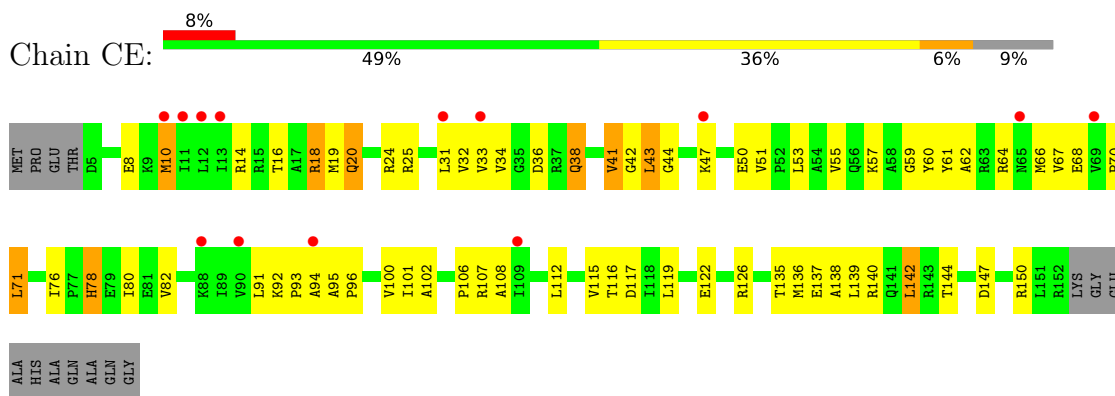




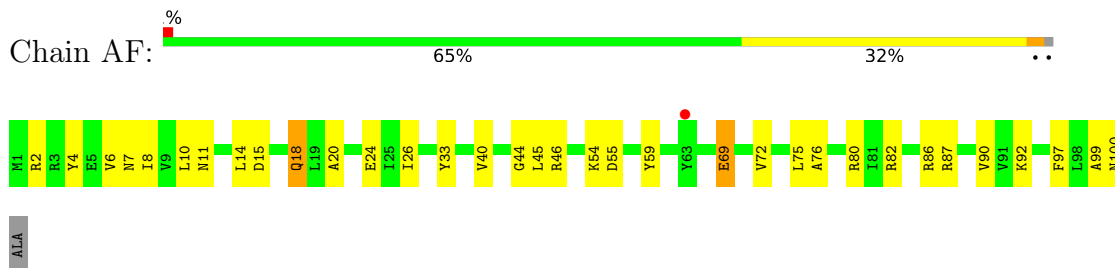
- Molecule 5: 30S ribosomal protein S5



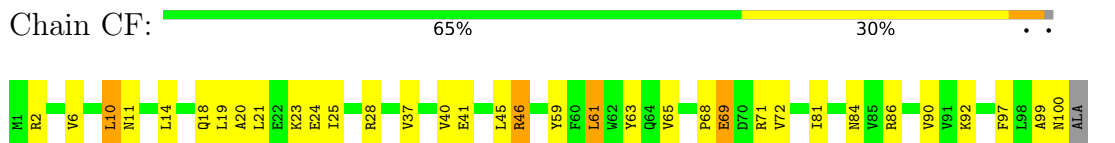
- Molecule 5: 30S ribosomal protein S5



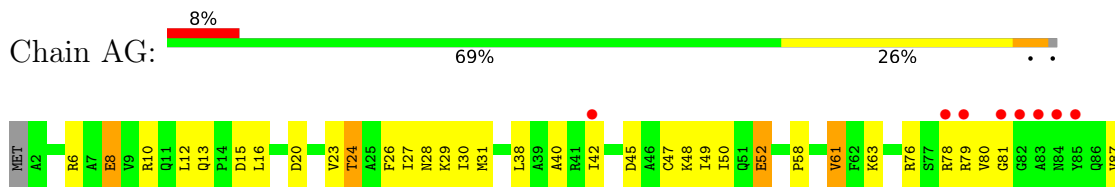
- Molecule 6: 30S ribosomal protein S6



- Molecule 6: 30S ribosomal protein S6



- Molecule 7: 30S ribosomal protein S7

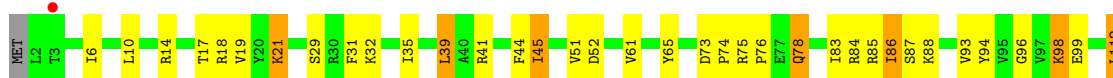




- Molecule 7: 30S ribosomal protein S7



- Molecule 8: 30S ribosomal protein S8



- Molecule 8: 30S ribosomal protein S8



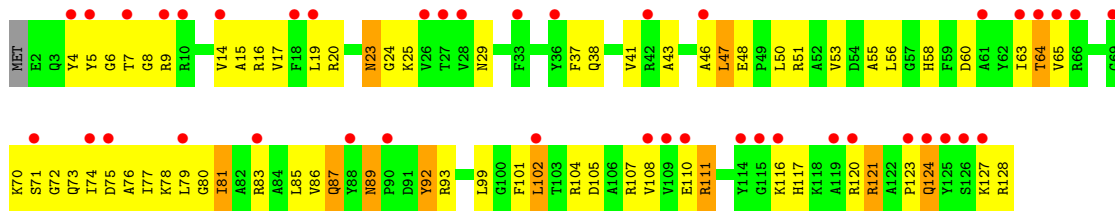
- Molecule 9: 30S ribosomal protein S9



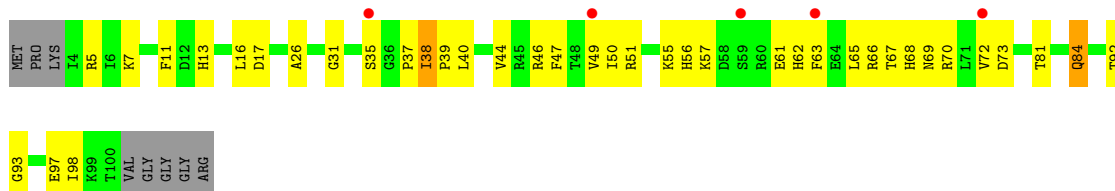
- Molecule 9: 30S ribosomal protein S9







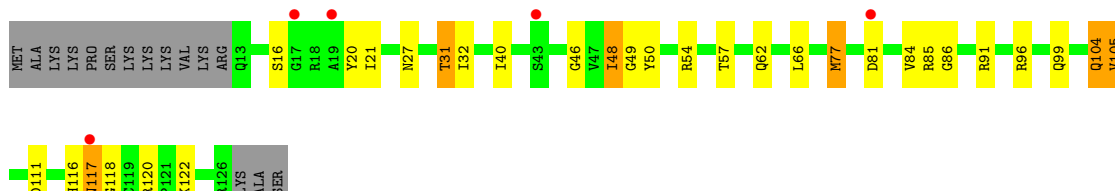
• Molecule 10: 30S ribosomal protein S10



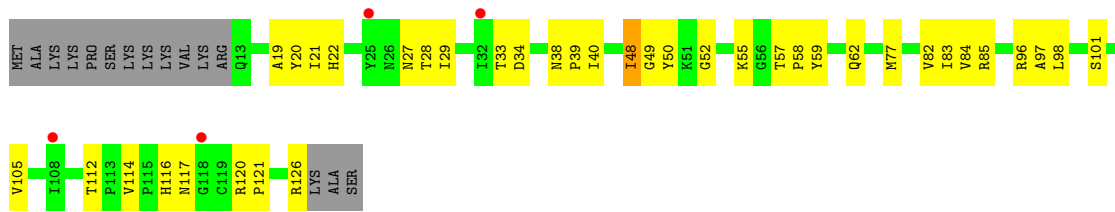
• Molecule 10: 30S ribosomal protein S10



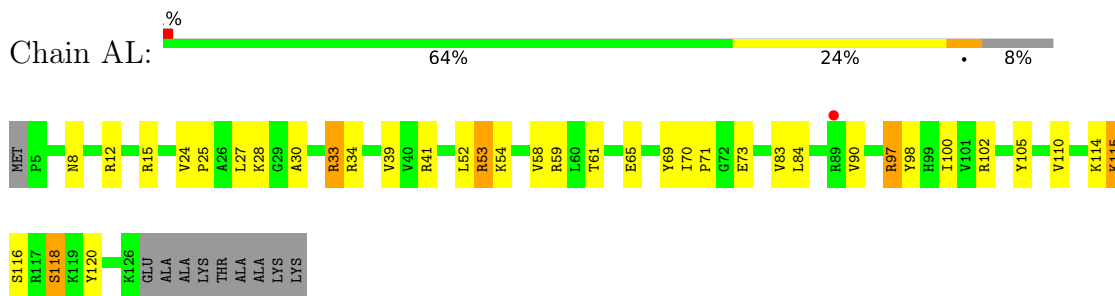
• Molecule 11: 30S ribosomal protein S11



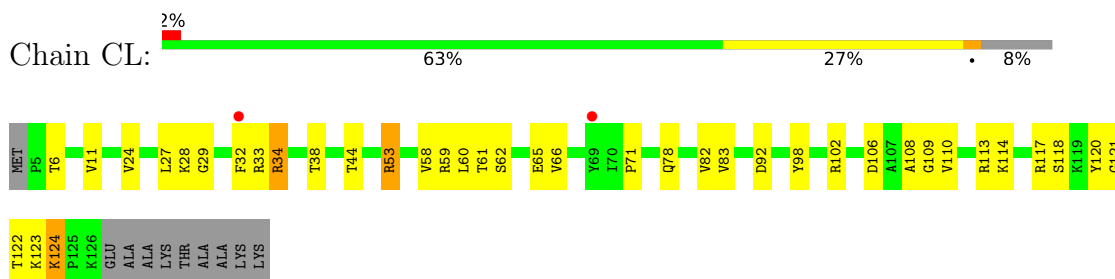
• Molecule 11: 30S ribosomal protein S11



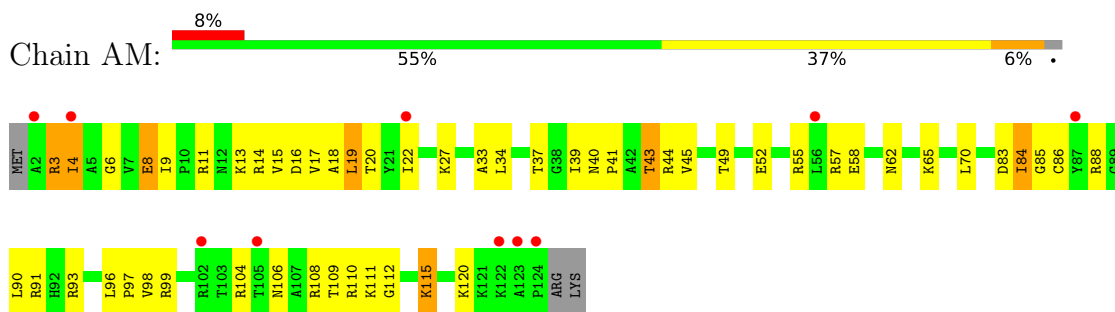
- Molecule 12: 30S ribosomal protein S12



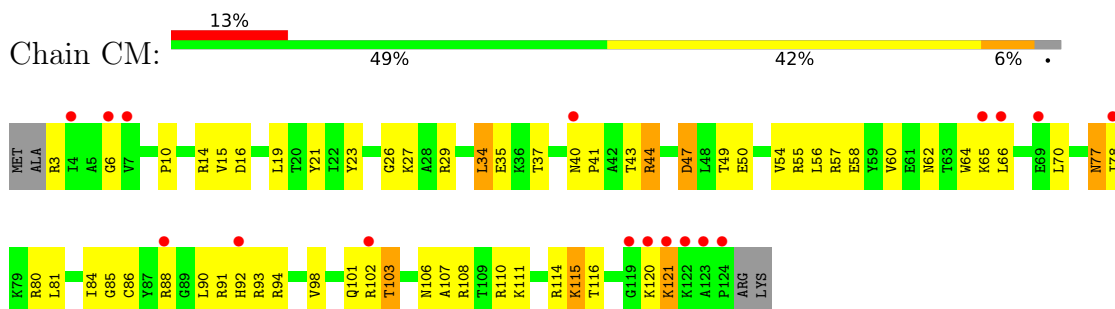
- Molecule 12: 30S ribosomal protein S12



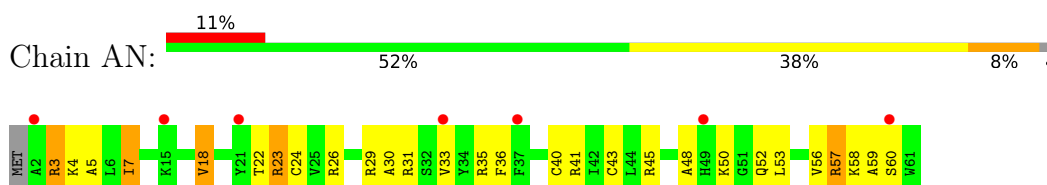
- Molecule 13: 30S ribosomal protein S13



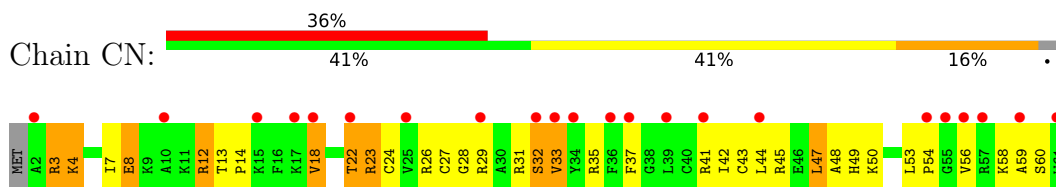
- Molecule 13: 30S ribosomal protein S13



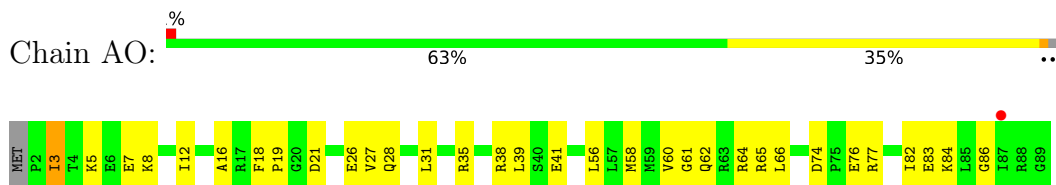
- Molecule 14: 30S ribosomal protein S14 type Z



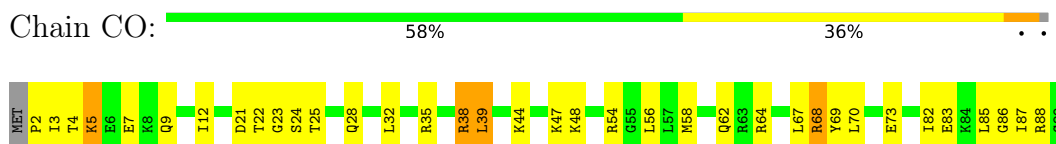
- Molecule 14: 30S ribosomal protein S14 type Z



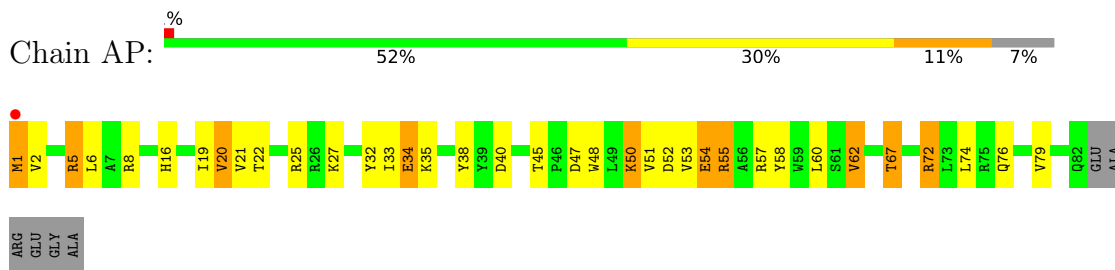
- Molecule 15: 30S ribosomal protein S15



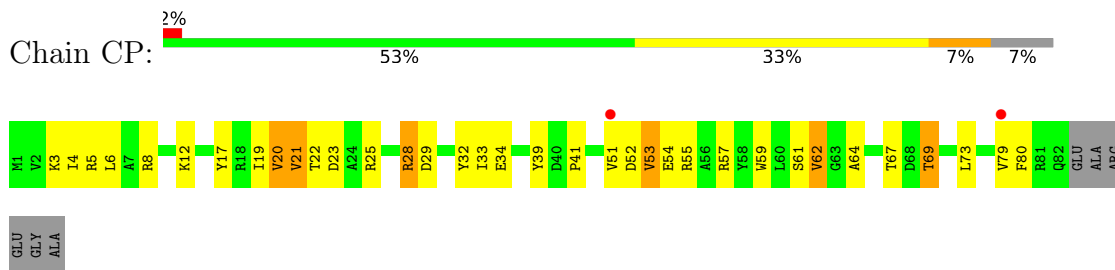
- Molecule 15: 30S ribosomal protein S15



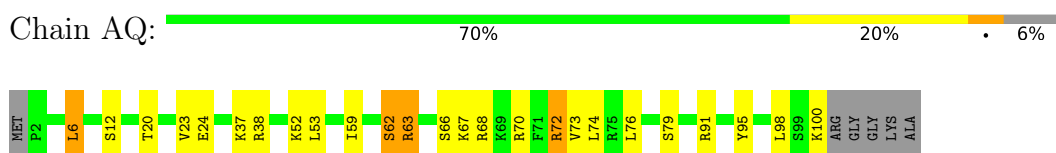
- Molecule 16: 30S ribosomal protein S16



- Molecule 16: 30S ribosomal protein S16



- Molecule 17: 30S ribosomal protein S17



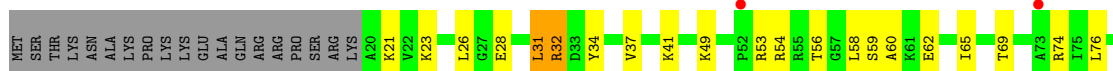
- Molecule 17: 30S ribosomal protein S17

Chain CQ:  63% 30% 6%



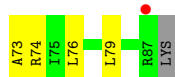
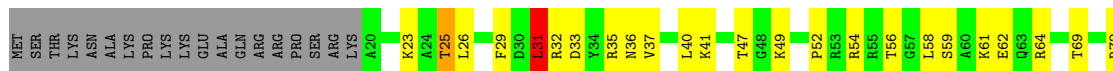
• Molecule 18: 30S ribosomal protein S18

Chain AR:  2% 52% 23% 23%



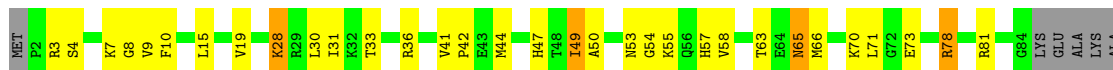
• Molecule 18: 30S ribosomal protein S18

Chain CR:  45% 30% 23%



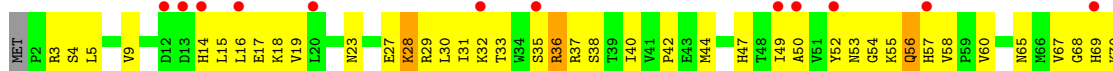
• Molecule 19: 30S ribosomal protein S19

Chain AS:  55% 30% 11%



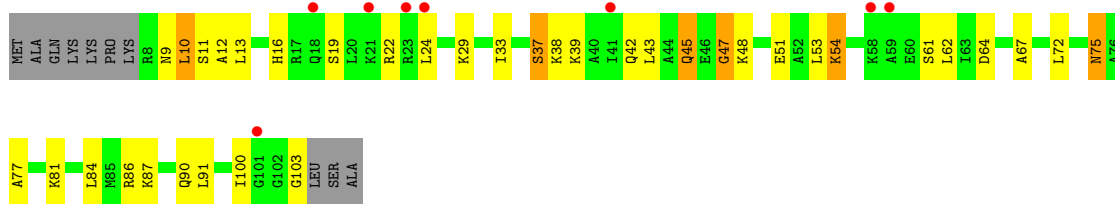
• Molecule 19: 30S ribosomal protein S19

Chain CS:  14% 34% 51% 11%

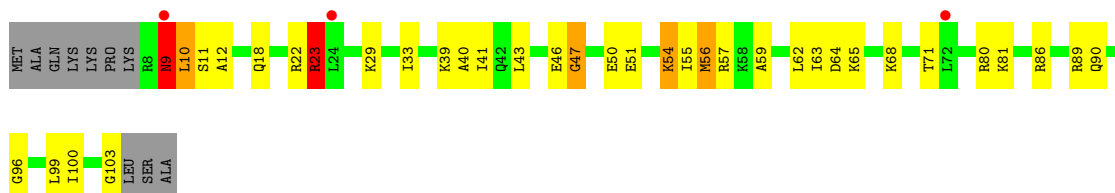


• Molecule 20: 30S ribosomal protein S20

Chain AT:  8% 56% 29% 6% 9%



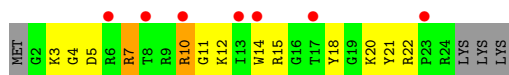
● Molecule 20: 30S ribosomal protein S20



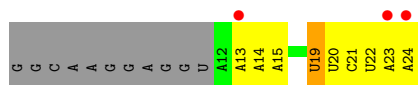
● Molecule 21: 30S ribosomal protein Thx



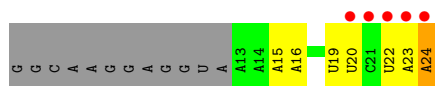
● Molecule 21: 30S ribosomal protein Thx



● Molecule 22: mRNA



● Molecule 22: mRNA



● Molecule 23: Cytidine-Puromycin



C75  
A76

• Molecule 23: Cytidine-Puromycin



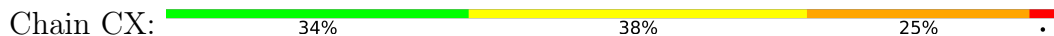
C75  
A76

• Molecule 24: P-site tRNA



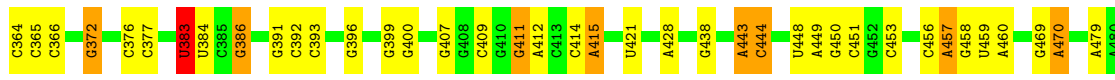
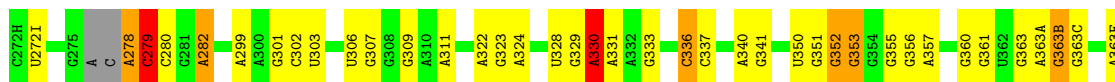
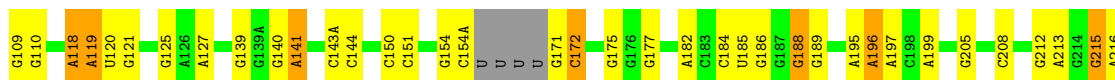
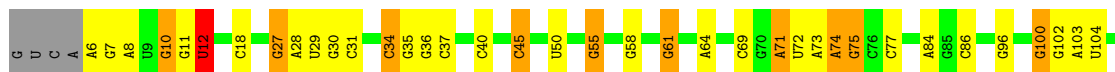
31H76

• Molecule 24: P-site tRNA

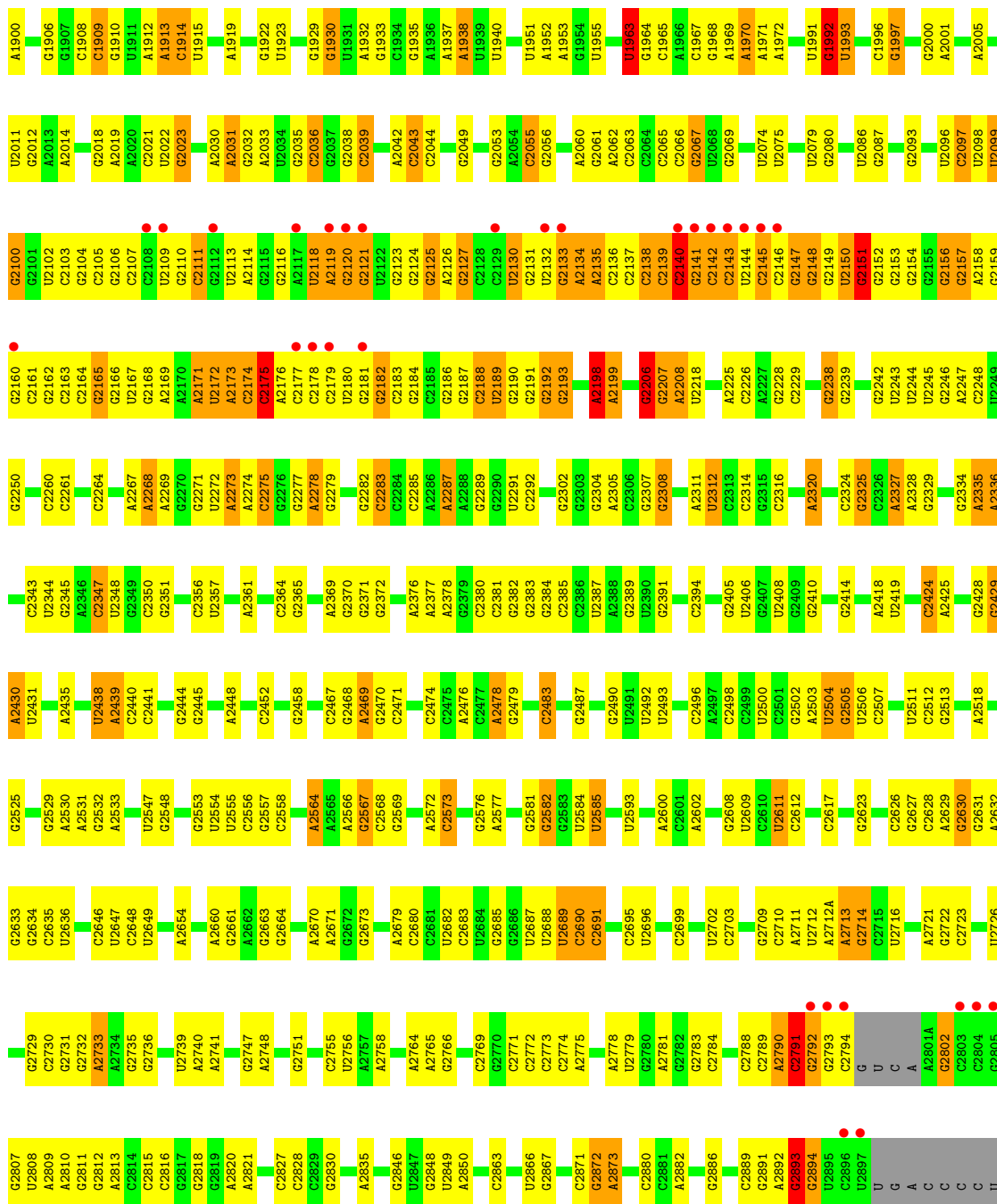


C68  
C69  
G70  
C75  
31H76

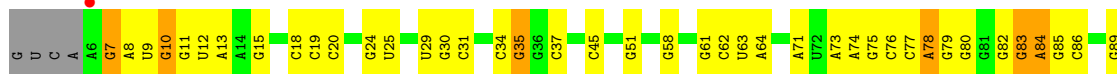
• Molecule 25: 23S Ribosomal RNA



|       |        |        |        |       |       |        |       |       |      |      |   |      |
|-------|--------|--------|--------|-------|-------|--------|-------|-------|------|------|---|------|
| U1796 | C1683  | A1572  | G1482  | C1293 | U1199 | U      | C1041 | G952  | U858 | C772 | C | G481 |
| C1797 | U1688  | C1577  | G1484  | G1296 | G1200 | C      | G1042 | G952  | U859 | U773 | A | C484 |
| U1798 | G1485  | C1578  | G1486  | C1297 | C1201 | A      | C1043 | G956  | U860 | A774 | C | C581 |
| G1800 | G1799  | A1579  | A1486  | C1298 | C1202 | C      | G1044 | G957  | U861 | G775 | G | C485 |
| C1801 | A1580  | A1579  | A1487  | C1299 | G1203 | U      | A1045 | U958  | A862 | G776 | C | G494 |
| A1802 | C1581  | G1487  | U1405  | U1300 | A1204 | G1107  | G1046 | A959  | G864 | U779 | C | U504 |
| A1803 | C1493  | C1407  | U1406  | A1301 | A1210 | U1108  | A1048 | A960  | C865 | A782 | C | A505 |
| A1804 | A1494  | C1408  | C1408  | C1305 | G1210 | C1109  | C1049 | G961  | A866 | A783 | C | G508 |
| U1805 | A1495  | C1408  | C1408  | C1306 | G1211 | G1110  | G1050 | U969  | C873 | A784 | C | C509 |
| G1814 | G1592  | C1416  | U1416  | A1308 | G1212 | A1111  | G1051 | C970  | G874 | G785 | C | C510 |
| A1815 | C1593  | G1417  | G1418  | G1309 | G1213 | U1112  | C1052 | C971  | G875 | C786 | C | U511 |
| G1816 | G1594  | G1418  | G1418  | G1310 | C1218 | U1113  | C     | C972  | C876 | U787 | C | U512 |
| G1817 | C1504  | U1419  | U1419  | G1311 | C1218 | G1114  | A     | A973  | U877 | A788 | C | A513 |
| G1823 | C1505  | U1420  | U1420  | U1312 | A1226 | C1119  | G     | G974  | A878 | A789 | C | G602 |
| A1824 | C1506  | G1421  | G1421  | C1313 | G1227 | G1122  | G     | C975  | C879 | G792 | C | A603 |
| A1825 | A1507  | G1422  | G1422  | C1314 | G1227 | G1123  | A     | C976  | G880 | A793 | C | G604 |
| G1826 | A1508  | G1423  | G1423  | C1315 | C1230 | C1123  | G     | G978  | C881 | A793 | C | U519 |
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| A1828 | U1518  | U1426  | U1426  | C1320 | G1236 | A1126  | G     | C986  | C884 | C797 | C | U610 |
| A1829 | G1519  | A1427  | A1427  | A1321 | A1237 | A1127  | G     | C987  | C885 | C797 | C | A526 |
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| G1846 | C1532  | G1450  | G1450  | U1341 | U1249 | C1140  | C     | G1011 | C895 | C812 | C | A536 |
| A1847 | U      | C1450A | C1450A | A1342 | C1251 | U1141  | C     | U1012 | C896 | C812 | C | G545 |
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| C1852 | C      | U1452  | U1452  | G1344 | A1263 | A1142A | C     | U1014 | C898 | C814 | C | A    |
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| A1854 | G1541  | U1455  | U1455  | U1352 | A1264 | C1153  | C     | U1019 | C902 | C816 | C | G849 |
| G1857 | A1542  | G1459  | G1459  | A1359 | G1266 | U1165  | C     | A1020 | C903 | A819 | C | U554 |
| C1858 | C1543  | A1460  | A1460  | A1360 | U1267 | C1166  | U     | A1021 | C904 | A820 | C | U555 |
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| A1876 | A1558  | G1470  | G1470  | U1372 | G1271 | U1175  | A     | A1028 | G928 | G830 | C | C564 |
| G1877 | A1562  | U1471  | U1471  | G1372 | G1271 | G1176  | G     | A1028 | G928 | G832 | C | C565 |
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| A1889 | A1567  | C1476  | C1476  | C1386 | G1285 | C1180  | A     | U1035 | U943 | U747 | C | G573 |
| A1890 | G1568  | U1477  | U1477  | A1387 | A1287 | G1187  | A     | G1036 | G944 | U747 | C | C574 |
| G1899 | A1570  | G1478  | G1478  | U1388 | U1288 | U1188  | U     | G1037 | A945 | A752 | C | A575 |
| C1899 | G1682  | U1571  | U1571  | U1393 | U1288 | U1189  | A     | C1038 | G946 | U847 | C | U576 |
|       |        |        |        | A1395 | U1292 | G1190  | C     | G1039 | G947 | A764 | C | G577 |
|       |        |        |        |       |       |        |       | C1040 | C948 | A849 | C | A578 |



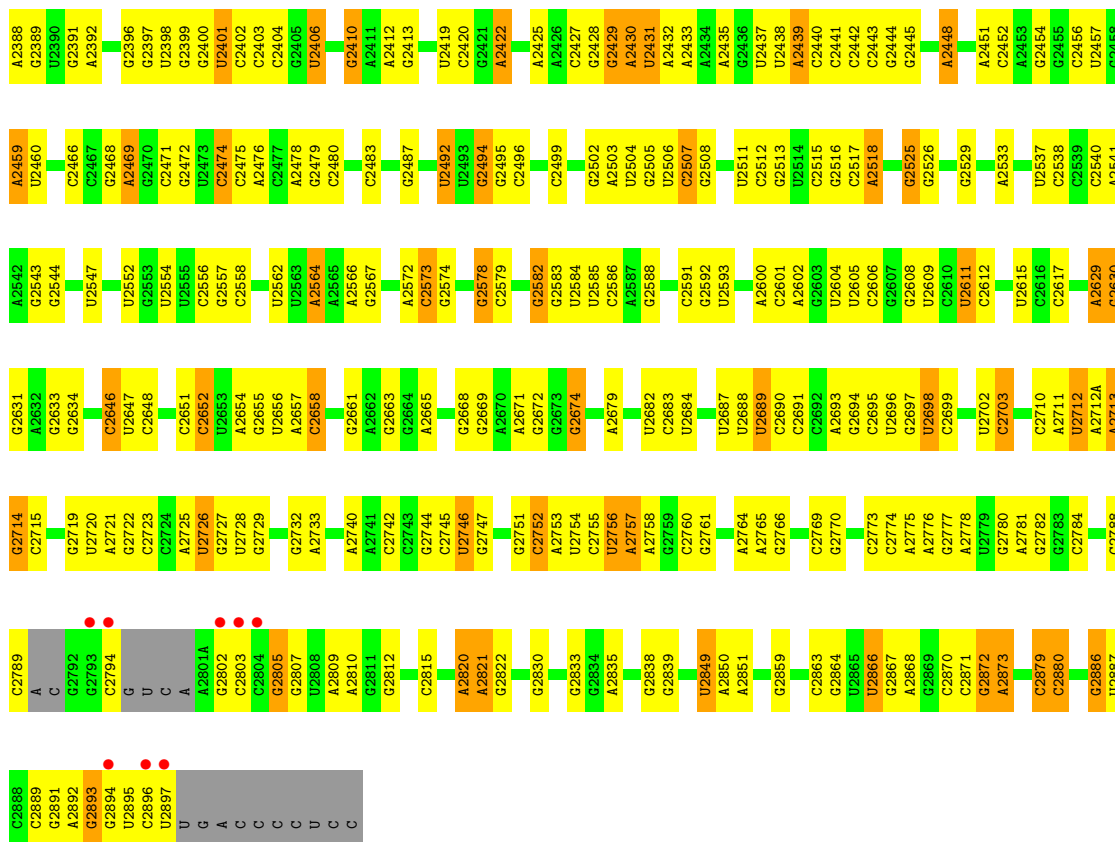
● Molecule 25: 23S Ribosomal RNA





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| A1143  | G1016 | G874 | C798 | G579  | A644  | A501 | G330  | U271N | C94   |
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| C1161  | A1029 | C889 | G817 | G598  | G     | G437 | A345  | G272D | U108  |
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| A      | G     | A909 | A752 | U614  | C     | C458 | C287  | C294  | G139A |
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| C      | A     | C911 | C758 | G614B | C     | A460 | C289  | U235  | A141  |
| C      | G     | A911 | G759 | A614C | C     | G463 | C290  | C236  | A141  |
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| A      | G     | G916 | G765 | C618  | C     | A466 | C293  | G240  | C144  |
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| U      | C     | A866 | A788 | C639  | C     | A487 | A311  | A322  | A190  |
| U      | C     | A866 | A788 | G639  | C     | A487 | A311  | A322  | A190  |
| U      | C     | A866 | A788 | C639  | C     | A487 | A311  | A322  | A190  |
| U      | C     | A866 | A788 | G639  | C     | A487 | A311  | A322  | A190  |
| U      | C     | A866 | A788 | C639  | C     | A487 | A311  | A322  | A190  |
|        |       |      |      |       |       |      |       |       |       |

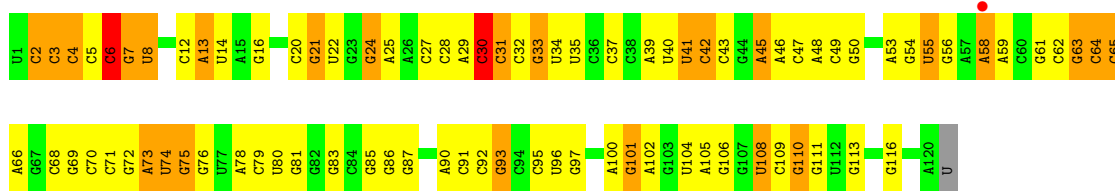




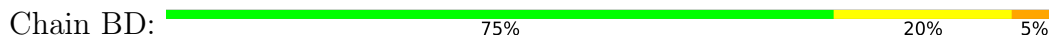
• Molecule 26: 5S Ribosomal RNA

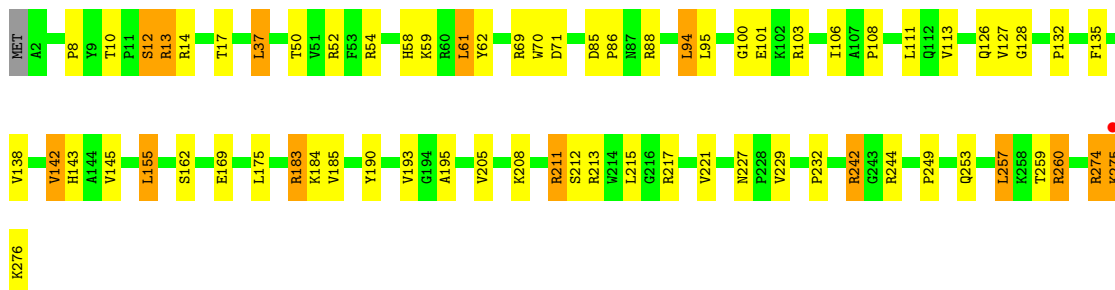


• Molecule 26: 5S Ribosomal RNA

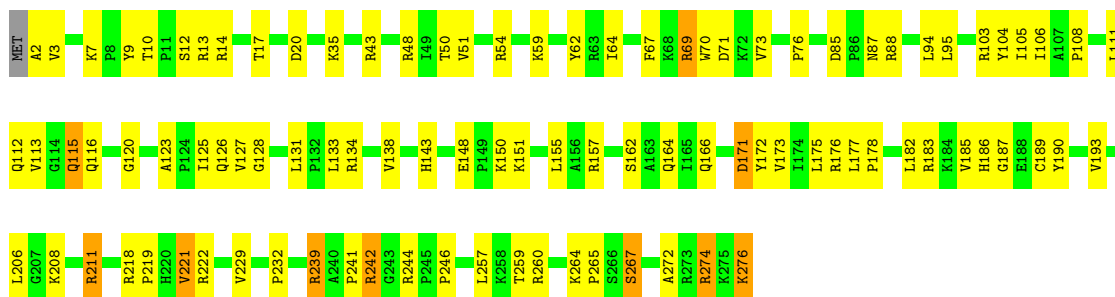


• Molecule 27: 50S ribosomal protein L2

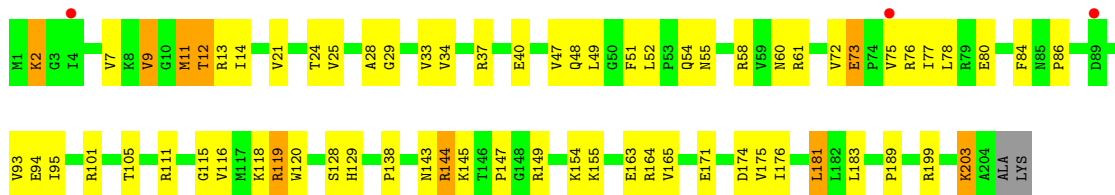




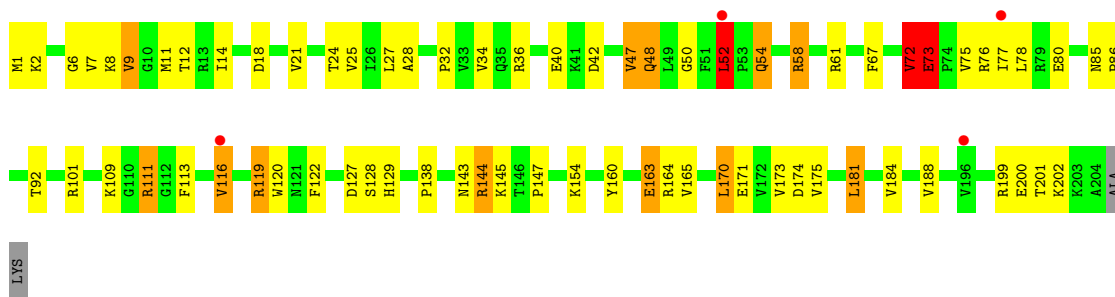
• Molecule 27: 50S ribosomal protein L2



• Molecule 28: 50S ribosomal protein L3



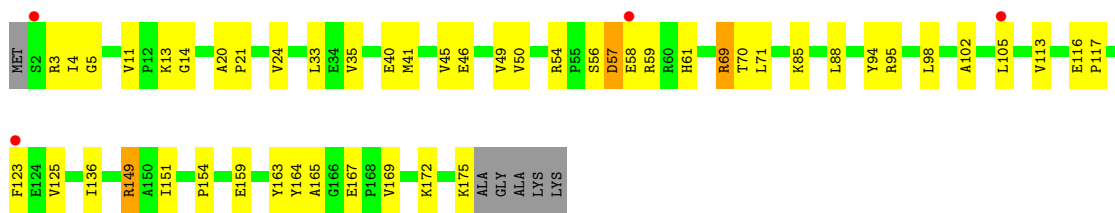
• Molecule 28: 50S ribosomal protein L3



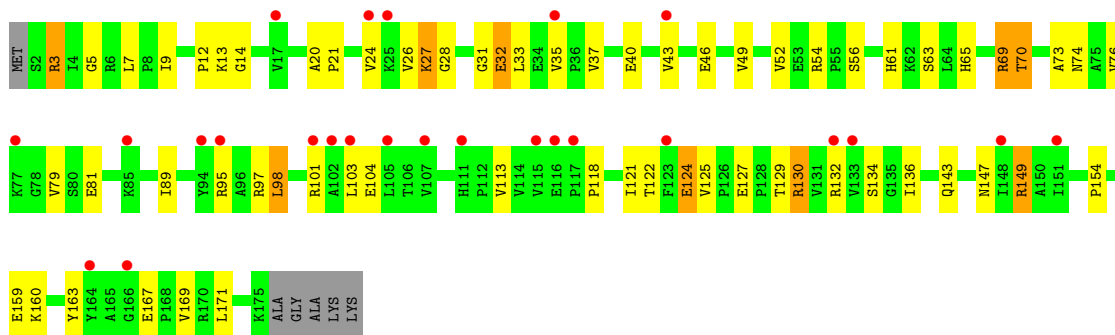
• Molecule 29: 50S ribosomal protein L4



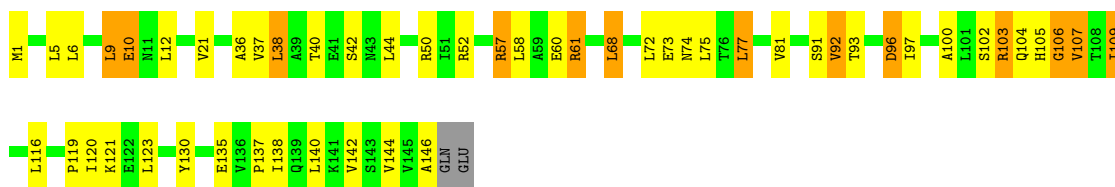




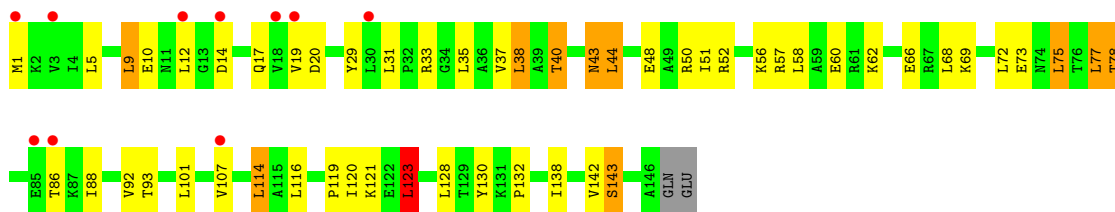
• Molecule 31: 50S ribosomal protein L6



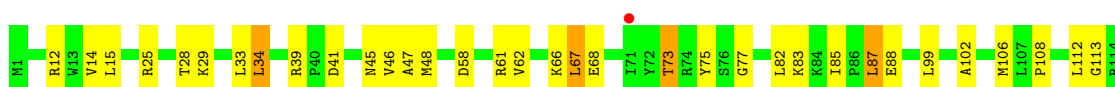
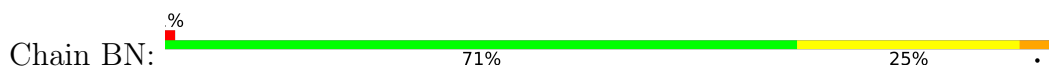
• Molecule 32: 50S ribosomal protein L9



• Molecule 32: 50S ribosomal protein L9



• Molecule 33: 50S ribosomal protein L13





- Molecule 33: 50S ribosomal protein L13



- Molecule 34: 50S ribosomal protein L14



- Molecule 34: 50S ribosomal protein L14

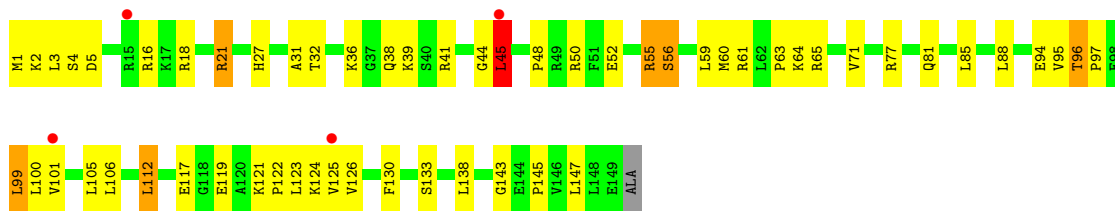


- Molecule 35: 50S ribosomal protein L15

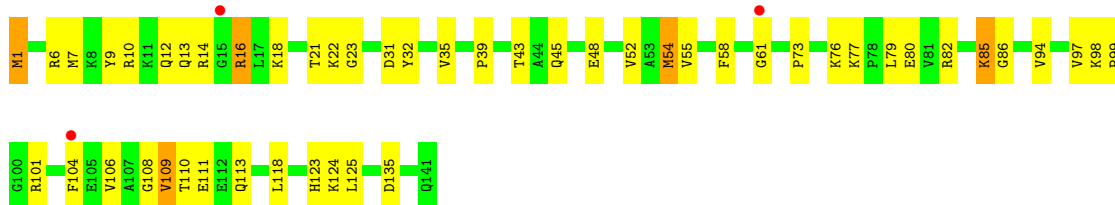


- Molecule 35: 50S ribosomal protein L15

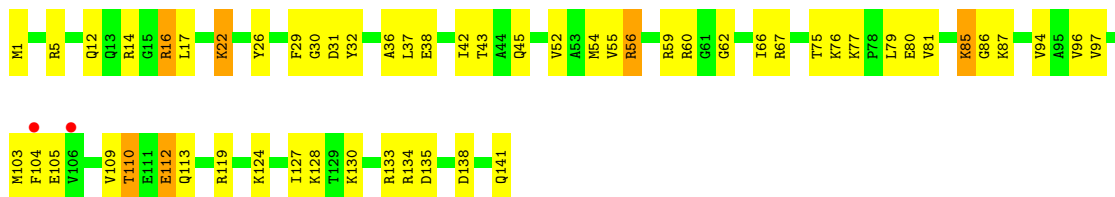




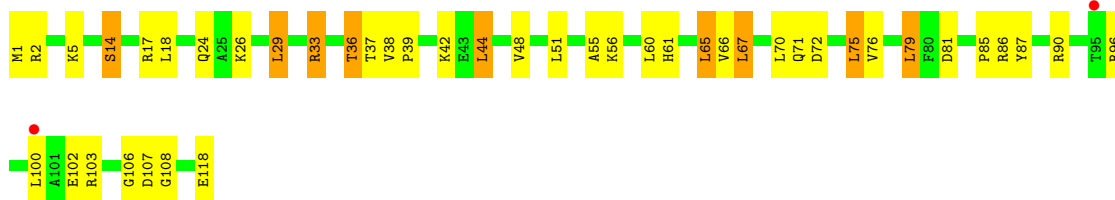
• Molecule 36: 50S ribosomal protein L16



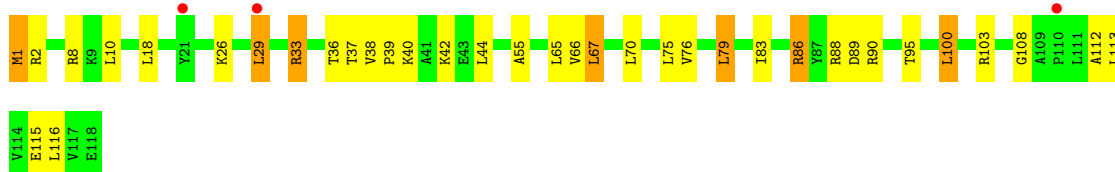
• Molecule 36: 50S ribosomal protein L16



• Molecule 37: 50S ribosomal protein L17



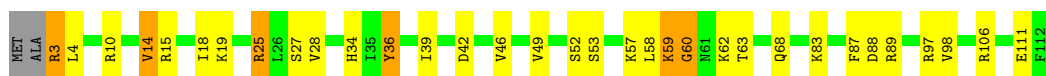
• Molecule 37: 50S ribosomal protein L17





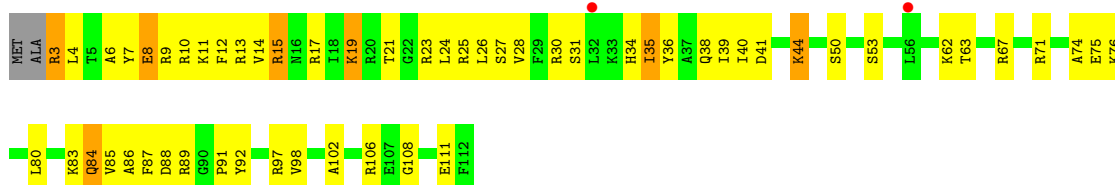
- Molecule 38: 50S ribosomal protein L18

Chain BS:  69% 24% 5% .



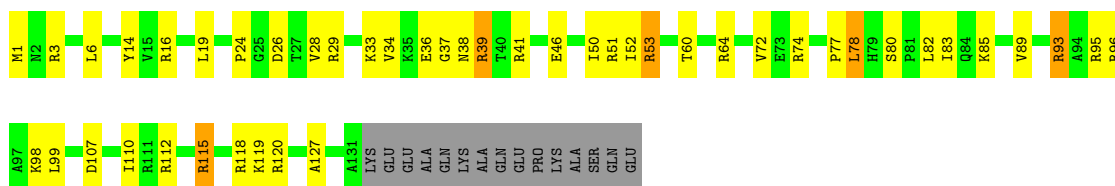
- Molecule 38: 50S ribosomal protein L18

Chain DS:  2% 48% 44% 6% .



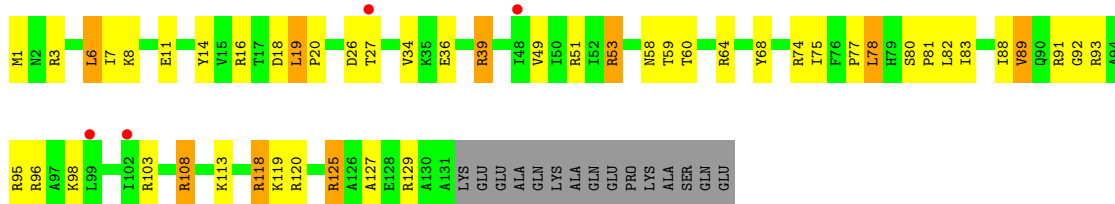
- Molecule 39: 50S ribosomal protein L19

Chain BT:  58% 28% . 10%




- Molecule 39: 50S ribosomal protein L19

Chain DT:  3% 56% 27% 6% 10%



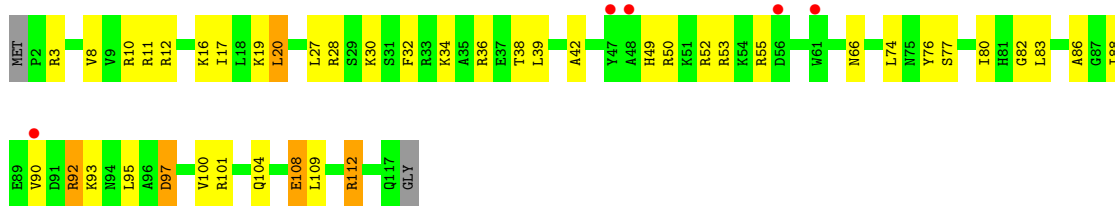
- Molecule 40: 50S ribosomal protein L20

Chain BU:  3% 78% 18% . .

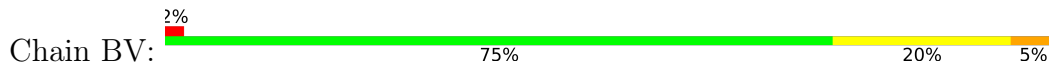


- Molecule 40: 50S ribosomal protein L20

Chain DU:  4% 62% 32% . .



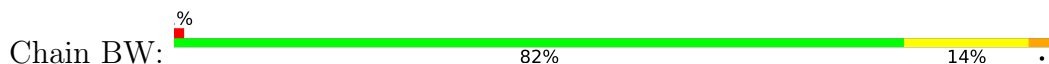
● Molecule 41: 50S ribosomal protein L21



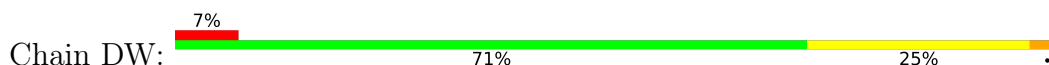
● Molecule 41: 50S ribosomal protein L21



● Molecule 42: 50S ribosomal protein L22



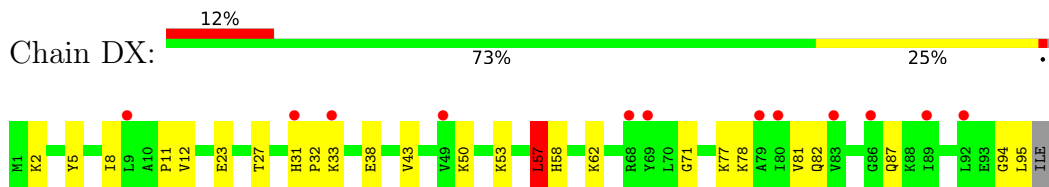
● Molecule 42: 50S ribosomal protein L22



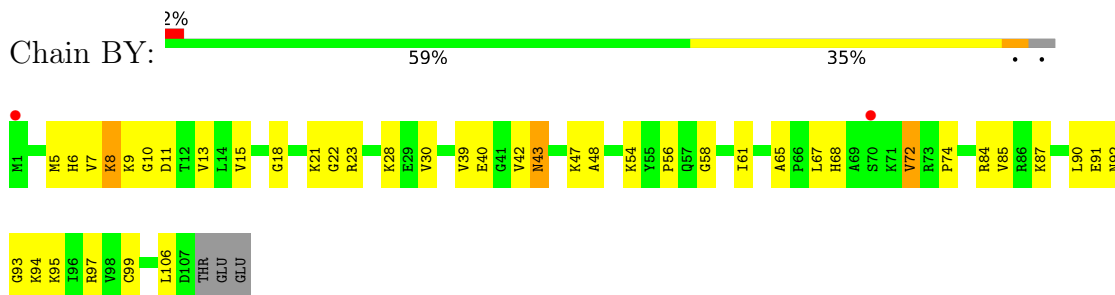
● Molecule 43: 50S ribosomal protein L23



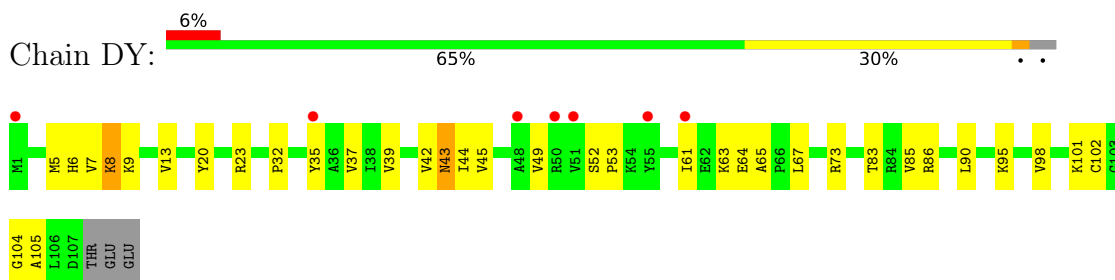
- Molecule 43: 50S ribosomal protein L23



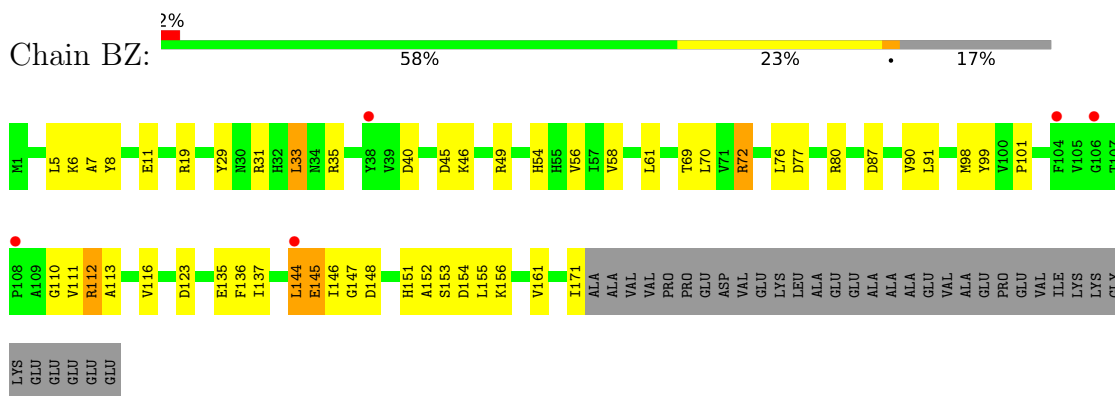
- Molecule 44: 50S ribosomal protein L24



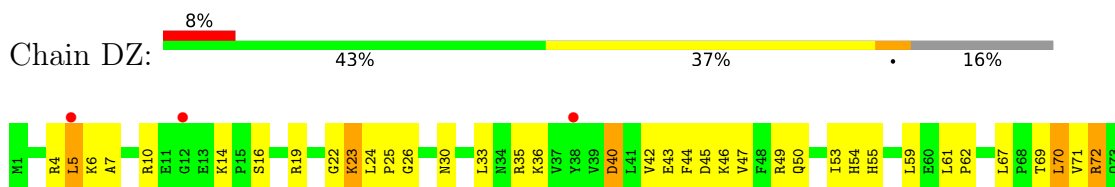
- Molecule 44: 50S ribosomal protein L24

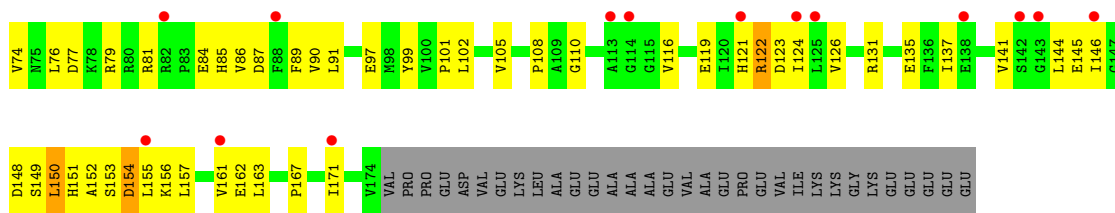


- Molecule 45: 50S ribosomal protein L25



- Molecule 45: 50S ribosomal protein L25

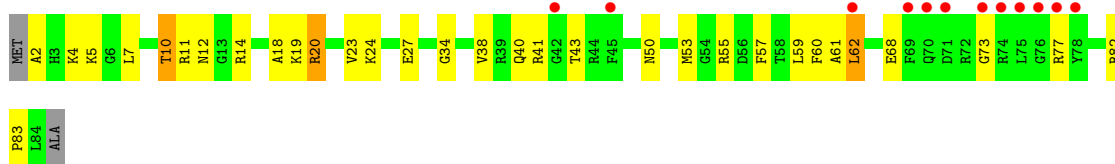




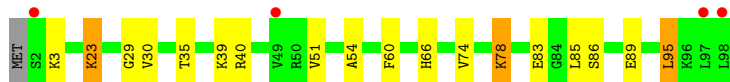
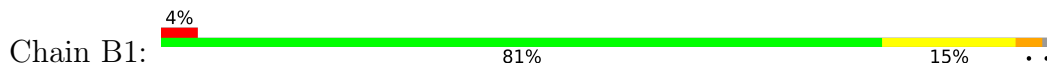
• Molecule 46: 50S ribosomal protein L27



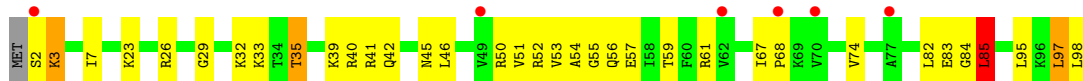
• Molecule 46: 50S ribosomal protein L27



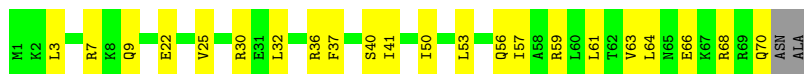
• Molecule 47: 50S ribosomal protein L28



• Molecule 47: 50S ribosomal protein L28



• Molecule 48: 50S ribosomal protein L29



• Molecule 48: 50S ribosomal protein L29

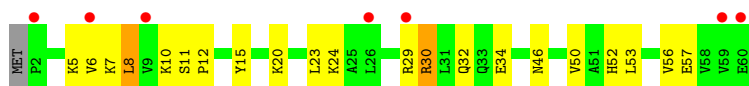




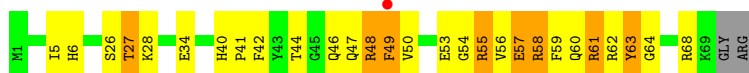
- Molecule 49: 50S ribosomal protein L30



- Molecule 49: 50S ribosomal protein L30



- Molecule 50: 50S ribosomal protein L31



- Molecule 50: 50S ribosomal protein L31



- Molecule 51: 50S ribosomal protein L32

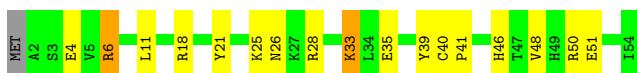


- Molecule 51: 50S ribosomal protein L32



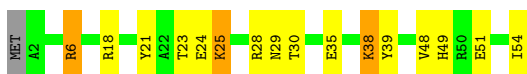
- Molecule 52: 50S ribosomal protein L33

Chain B6:  67% 28% ..




- Molecule 52: 50S ribosomal protein L33

Chain D6:  69% 24% 6% ..



- Molecule 53: 50S ribosomal protein L34

Chain B7:  6% 69% 24% ..



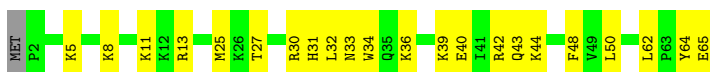
- Molecule 53: 50S ribosomal protein L34

Chain D7:  8% 63% 31% ..



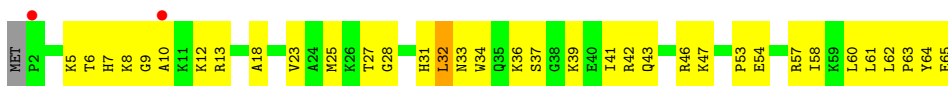
- Molecule 54: 50S ribosomal protein L35

Chain B8:  65% 34% ..




- Molecule 54: 50S ribosomal protein L35

Chain D8:  3% 45% 52% ..

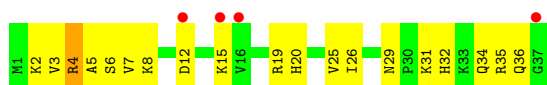


- Molecule 55: 50S ribosomal protein L36

Chain B9:  81% 16% ..



- Molecule 55: 50S ribosomal protein L36



## 4 Data and refinement statistics

| Property  | Value   | Source           |
|---|---|------------------|
| Space group   | P 21 21 21  | Depositor        |
| Cell constants<br>a, b, c, $\alpha$ , $\beta$ , $\gamma$                | 209.25Å 448.46Å 618.08Å<br>90.00° 90.00° 90.00°             | Depositor        |
| Resolution (Å)  | 362.98 – 2.90<br>362.98 – 2.90                              | Depositor<br>EDS |
| % Data completeness<br>(in resolution range)                            | 96.9 (362.98-2.90)<br>96.9 (362.98-2.90)                    | Depositor<br>EDS |
| $R_{merge}$   | 0.18  | Depositor        |
| $R_{sym}$   | (Not available)   | Depositor        |
| $\langle I/\sigma(I) \rangle$ <sup>1</sup>                              | 1.31 (at 2.91Å)   | Xtrriage         |
| Refinement program  | PHENIX 1.8.2_1309   | Depositor        |
| R, $R_{free}$   | 0.231 , 0.286<br>0.231 , 0.286                              | Depositor<br>DCC |
| $R_{free}$ test set   | 61606 reflections (5.01%)                                   | wwPDB-VP         |
| Wilson B-factor (Å <sup>2</sup> )                                       | 54.8  | Xtrriage         |
| Anisotropy  | 0.140   | Xtrriage         |
| Bulk solvent $k_{sol}$ (e/Å <sup>3</sup> ), $B_{sol}$ (Å <sup>2</sup> ) | 0.28 , 72.9   | EDS              |
| L-test for twinning <sup>2</sup>  | $\langle  L  \rangle = 0.37$ , $\langle L^2 \rangle = 0.19$ | Xtrriage         |
| Estimated twinning fraction   | No twinning to report.                                      | Xtrriage         |
| $F_o, F_c$ correlation  | 0.88  | EDS              |
| Total number of atoms   | 289646  | wwPDB-VP         |
| Average B, all atoms (Å <sup>2</sup> )                                  | 61.0  | wwPDB-VP         |

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 1.87% of the height of the origin peak. No significant pseudotranslation is detected.*

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

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



## 5 Model quality i

### 5.1 Standard geometry i

Bond lengths and bond angles in the following residue types are not validated in this section: 5MU, 31H, PPU, ZN, MG, K, 4SU, 5MC, PSU, SF4

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

| Mol | Chain | Bond lengths |                | Bond angles |                 |
|-----|-------|--------------|----------------|-------------|-----------------|
|     |       | RMSZ         | # Z  >5        | RMSZ        | # Z  >5         |
| 1   | AA    | 0.39         | 0/36049        | 0.94        | 50/56261 (0.1%) |
| 1   | CA    | 0.41         | 6/36170 (0.0%) | 1.02        | 84/56452 (0.1%) |
| 2   | AB    | 0.31         | 0/1881         | 0.63        | 0/2542          |
| 2   | CB    | 0.32         | 0/1860         | 0.65        | 3/2518 (0.1%)   |
| 3   | AC    | 0.30         | 0/1576         | 0.51        | 0/2130          |
| 3   | CC    | 0.31         | 0/1566         | 0.61        | 2/2119 (0.1%)   |
| 4   | AD    | 0.31         | 0/1689         | 0.59        | 1/2267 (0.0%)   |
| 4   | CD    | 0.30         | 0/1700         | 0.54        | 0/2280          |
| 5   | AE    | 0.29         | 0/1145         | 0.56        | 0/1543          |
| 5   | CE    | 0.32         | 0/1149         | 0.59        | 0/1548          |
| 6   | AF    | 0.30         | 0/819          | 0.51        | 0/1111          |
| 6   | CF    | 0.30         | 0/829          | 0.50        | 0/1123          |
| 7   | AG    | 0.28         | 0/1250         | 0.51        | 0/1679          |
| 7   | CG    | 0.30         | 0/1254         | 0.54        | 0/1683          |
| 8   | AH    | 0.29         | 0/1108         | 0.51        | 0/1494          |
| 8   | CH    | 0.28         | 0/1108         | 0.55        | 0/1494          |
| 9   | AI    | 0.31         | 0/1002         | 0.59        | 0/1346          |
| 9   | CI    | 0.32         | 0/997          | 0.56        | 0/1343          |
| 10  | AJ    | 0.28         | 0/722          | 0.57        | 0/982           |
| 10  | CJ    | 0.30         | 0/727          | 0.56        | 0/988           |
| 11  | AK    | 0.28         | 0/844          | 0.51        | 0/1145          |
| 11  | CK    | 0.29         | 0/848          | 0.51        | 0/1149          |
| 12  | AL    | 0.31         | 0/946          | 0.51        | 0/1274          |
| 12  | CL    | 0.31         | 0/946          | 0.57        | 0/1274          |
| 13  | AM    | 0.28         | 0/969          | 0.63        | 0/1302          |
| 13  | CM    | 0.32         | 0/961          | 0.61        | 0/1291          |
| 14  | AN    | 0.32         | 0/501          | 0.54        | 0/664           |
| 14  | CN    | 0.31         | 0/501          | 0.60        | 0/664           |
| 15  | AO    | 0.29         | 0/739          | 0.50        | 0/985           |
| 15  | CO    | 0.28         | 0/739          | 0.52        | 0/985           |
| 16  | AP    | 0.30         | 0/697          | 0.54        | 0/939           |
| 16  | CP    | 0.29         | 0/693          | 0.52        | 0/935           |

| Mol | Chain | Bond lengths |                | Bond angles |                  |
|-----|-------|--------------|----------------|-------------|------------------|
|     |       | RMSZ         | # Z  >5        | RMSZ        | # Z  >5          |
| 17  | AQ    | 0.30         | 0/836          | 0.54        | 0/1117           |
| 17  | CQ    | 0.29         | 0/836          | 0.52        | 0/1117           |
| 18  | AR    | 0.29         | 0/560          | 0.54        | 0/746            |
| 18  | CR    | 0.29         | 0/560          | 0.57        | 1/746 (0.1%)     |
| 19  | AS    | 0.28         | 0/667          | 0.53        | 0/900            |
| 19  | CS    | 0.32         | 0/661          | 0.67        | 0/893            |
| 20  | AT    | 0.31         | 0/730          | 0.60        | 0/965            |
| 20  | CT    | 0.29         | 0/729          | 0.63        | 1/965 (0.1%)     |
| 21  | AU    | 0.28         | 0/203          | 0.49        | 0/266            |
| 21  | CU    | 0.33         | 0/203          | 0.47        | 0/266            |
| 22  | AV    | 0.42         | 0/310          | 0.95        | 0/480            |
| 22  | CV    | 0.45         | 0/282          | 0.97        | 0/437            |
| 23  | AW    | 0.35         | 0/18           | 0.66        | 0/26             |
| 23  | CW    | 0.27         | 0/18           | 0.91        | 0/26             |
| 24  | AX    | 0.52         | 0/1700         | 1.21        | 18/2650 (0.7%)   |
| 24  | CX    | 0.55         | 3/1700 (0.2%)  | 1.24        | 16/2650 (0.6%)   |
| 25  | BA    | 0.48         | 1/68013 (0.0%) | 0.94        | 53/106165 (0.0%) |
| 25  | DA    | 0.42         | 0/67542        | 0.95        | 80/105428 (0.1%) |
| 26  | BB    | 0.42         | 0/2878         | 0.93        | 0/4490           |
| 26  | DB    | 0.45         | 0/2878         | 1.00        | 3/4490 (0.1%)    |
| 27  | BD    | 0.37         | 0/2186         | 0.57        | 0/2944           |
| 27  | DD    | 0.33         | 0/2186         | 0.56        | 0/2944           |
| 28  | BE    | 0.35         | 0/1592         | 0.55        | 0/2149           |
| 28  | DE    | 0.33         | 0/1592         | 0.58        | 1/2149 (0.0%)    |
| 29  | BF    | 0.34         | 0/1619         | 0.54        | 0/2193           |
| 29  | DF    | 0.32         | 0/1615         | 0.57        | 0/2188           |
| 30  | BG    | 0.30         | 0/1450         | 0.57        | 0/1959           |
| 30  | DG    | 0.35         | 0/1449         | 0.61        | 0/1958           |
| 31  | BH    | 0.32         | 0/1356         | 0.53        | 0/1834           |
| 31  | DH    | 0.29         | 0/1356         | 0.55        | 0/1834           |
| 32  | BI    | 0.29         | 0/1100         | 0.58        | 0/1501           |
| 32  | DI    | 0.30         | 0/1076         | 0.60        | 1/1471 (0.1%)    |
| 33  | BN    | 0.32         | 0/1144         | 0.52        | 0/1543           |
| 33  | DN    | 0.31         | 0/1144         | 0.54        | 0/1543           |
| 34  | BO    | 0.37         | 0/943          | 0.59        | 0/1269           |
| 34  | DO    | 0.33         | 0/943          | 0.55        | 0/1269           |
| 35  | BP    | 0.34         | 0/1152         | 0.58        | 1/1533 (0.1%)    |
| 35  | DP    | 0.32         | 0/1152         | 0.60        | 0/1533           |
| 36  | BQ    | 0.35         | 0/1143         | 0.53        | 0/1527           |
| 36  | DQ    | 0.33         | 0/1143         | 0.55        | 0/1527           |
| 37  | BR    | 0.34         | 0/982          | 0.55        | 0/1312           |
| 37  | DR    | 0.30         | 0/982          | 0.53        | 0/1312           |
| 38  | BS    | 0.33         | 0/887          | 0.56        | 0/1180           |

| Mol | Chain | Bond lengths |                  | Bond angles |                   |
|-----|-------|--------------|------------------|-------------|-------------------|
|     |       | RMSZ         | # Z  >5          | RMSZ        | # Z  >5           |
| 38  | DS    | 0.30         | 0/880            | 0.59        | 0/1172            |
| 39  | BT    | 0.33         | 0/1105           | 0.56        | 0/1477            |
| 39  | DT    | 0.30         | 0/1097           | 0.54        | 0/1468            |
| 40  | BU    | 0.36         | 0/977            | 0.53        | 0/1301            |
| 40  | DU    | 0.31         | 0/977            | 0.55        | 0/1301            |
| 41  | BV    | 0.36         | 0/782            | 0.54        | 0/1049            |
| 41  | DV    | 0.32         | 0/782            | 0.57        | 0/1049            |
| 42  | BW    | 0.35         | 0/897            | 0.54        | 0/1205            |
| 42  | DW    | 0.31         | 0/897            | 0.52        | 0/1205            |
| 43  | BX    | 0.38         | 0/764            | 0.58        | 1/1025 (0.1%)     |
| 43  | DX    | 0.32         | 0/764            | 0.56        | 1/1025 (0.1%)     |
| 44  | BY    | 0.35         | 0/819            | 0.56        | 0/1095            |
| 44  | DY    | 0.31         | 0/819            | 0.56        | 0/1095            |
| 45  | BZ    | 0.33         | 0/1379           | 0.61        | 0/1873            |
| 45  | DZ    | 0.30         | 0/1390           | 0.55        | 0/1890            |
| 46  | B0    | 0.35         | 0/662            | 0.59        | 0/881             |
| 46  | D0    | 0.31         | 0/662            | 0.50        | 0/881             |
| 47  | B1    | 0.34         | 0/762            | 0.56        | 0/1014            |
| 47  | D1    | 0.33         | 0/762            | 0.57        | 1/1014 (0.1%)     |
| 48  | B2    | 0.32         | 0/590            | 0.57        | 0/781             |
| 48  | D2    | 0.30         | 0/590            | 0.49        | 0/781             |
| 49  | B3    | 0.35         | 0/474            | 0.55        | 0/635             |
| 49  | D3    | 0.30         | 0/469            | 0.53        | 0/630             |
| 50  | B4    | 0.36         | 0/565            | 0.71        | 0/761             |
| 50  | D4    | 0.35         | 0/545            | 0.69        | 0/737             |
| 51  | B5    | 0.33         | 0/469            | 0.55        | 0/635             |
| 51  | D5    | 0.32         | 0/469            | 0.54        | 0/635             |
| 52  | B6    | 0.39         | 0/460            | 0.53        | 0/613             |
| 52  | D6    | 0.33         | 0/456            | 0.53        | 0/608             |
| 53  | B7    | 0.37         | 0/426            | 0.56        | 0/561             |
| 53  | D7    | 0.34         | 0/426            | 0.48        | 0/561             |
| 54  | B8    | 0.37         | 0/519            | 0.55        | 0/684             |
| 54  | D8    | 0.31         | 0/525            | 0.52        | 0/691             |
| 55  | B9    | 0.35         | 0/310            | 0.50        | 0/407             |
| 55  | D9    | 0.34         | 0/310            | 0.54        | 0/407             |
| All | All   | 0.40         | 10/310281 (0.0%) | 0.87        | 318/464152 (0.1%) |

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 |
|-----|-------|---------------------|---------------------|
| 2   | AB    | 0                   | 2                   |
| 7   | AG    | 0                   | 1                   |
| 20  | CT    | 0                   | 1                   |
| 27  | BD    | 0                   | 1                   |
| 38  | BS    | 0                   | 1                   |
| All | All   | 0                   | 6                   |

All (10) bond length outliers are listed below:

| Mol | Chain | Res     | Type | Atoms | Z      | Observed(Å) | Ideal(Å) |
|-----|-------|---------|------|-------|--------|-------------|----------|
| 1   | CA    | 1154    | G    | C6-N1 | -12.01 | 1.31        | 1.39     |
| 1   | CA    | 1154    | G    | N1-C2 | -11.43 | 1.28        | 1.37     |
| 1   | CA    | 1119    | C    | N3-C4 | -10.12 | 1.26        | 1.33     |
| 1   | CA    | 1154    | G    | N7-C5 | -6.67  | 1.35        | 1.39     |
| 24  | CX    | 14      | A    | N7-C5 | -5.86  | 1.35        | 1.39     |
| 1   | CA    | 1154    | G    | C5-C4 | 5.65   | 1.42        | 1.38     |
| 24  | CX    | 14      | A    | N9-C4 | 5.31   | 1.41        | 1.37     |
| 1   | CA    | 1119    | C    | C2-N3 | -5.26  | 1.31        | 1.35     |
| 25  | BA    | 1142(A) | A    | N9-C4 | -5.24  | 1.34        | 1.37     |
| 24  | CX    | 22      | G    | N7-C5 | 5.00   | 1.42        | 1.39     |

All (318) bond angle outliers are listed below:

| Mol | Chain | Res  | Type | Atoms      | Z      | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|--------|-------------|----------|
| 1   | CA    | 1119 | C    | N1-C2-O2   | 29.84  | 136.81      | 118.90   |
| 1   | CA    | 1154 | G    | C5-C6-O6   | 27.03  | 144.82      | 128.60   |
| 1   | CA    | 1154 | G    | N3-C2-N2   | 25.60  | 137.82      | 119.90   |
| 1   | CA    | 1154 | G    | N1-C2-N2   | -23.27 | 95.25       | 116.20   |
| 1   | CA    | 1119 | C    | C2-N3-C4   | 19.75  | 129.77      | 119.90   |
| 1   | CA    | 1119 | C    | N3-C2-O2   | -17.65 | 109.54      | 121.90   |
| 1   | CA    | 1154 | G    | C5-C6-N1   | -16.71 | 103.15      | 111.50   |
| 1   | CA    | 1154 | G    | C6-N1-C2   | 15.60  | 134.46      | 125.10   |
| 1   | CA    | 1119 | C    | C5-C4-N4   | 15.33  | 130.93      | 120.20   |
| 1   | CA    | 1154 | G    | N1-C6-O6   | -13.19 | 111.98      | 119.90   |
| 1   | CA    | 1119 | C    | C2-N1-C1'  | 13.11  | 133.22      | 118.80   |
| 25  | DA    | 2136 | C    | N1-C2-O2   | 12.82  | 126.59      | 118.90   |
| 1   | CA    | 1119 | C    | N3-C4-N4   | -12.64 | 109.15      | 118.00   |
| 25  | DA    | 2187 | G    | C5-C6-O6   | -11.87 | 121.48      | 128.60   |
| 25  | DA    | 2155 | G    | N3-C2-N2   | 11.53  | 127.97      | 119.90   |
| 1   | CA    | 1004 | A    | O4'-C1'-N9 | 11.16  | 117.13      | 108.20   |
| 1   | CA    | 1154 | G    | C2-N3-C4   | -10.97 | 106.41      | 111.90   |
| 24  | CX    | 14   | A    | C4-C5-C6   | 10.85  | 122.43      | 117.00   |
| 24  | CX    | 46   | G    | C6-N1-C2   | -10.36 | 118.89      | 125.10   |

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| Mol | Chain | Res     | Type | Atoms     | Z      | Observed(°) | Ideal(°) |
|-----|-------|---------|------|-----------|--------|-------------|----------|
| 1   | CA    | 1119    | C    | C6-N1-C1' | -10.09 | 108.70      | 120.80   |
| 1   | CA    | 1154    | G    | C4-N9-C1' | 9.82   | 139.26      | 126.50   |
| 24  | AX    | 46      | G    | C6-N1-C2  | -9.67  | 119.30      | 125.10   |
| 25  | DA    | 2187    | G    | C6-C5-N7  | -9.64  | 124.61      | 130.40   |
| 25  | DA    | 2187    | G    | N1-C6-O6  | 9.61   | 125.67      | 119.90   |
| 1   | CA    | 1150    | U    | C5-C4-O4  | 9.20   | 131.42      | 125.90   |
| 25  | DA    | 2155    | G    | N3-C4-N9  | 9.01   | 131.41      | 126.00   |
| 25  | DA    | 2152    | G    | C5-C6-O6  | -8.96  | 123.22      | 128.60   |
| 1   | CA    | 1119    | C    | N1-C2-N3  | -8.91  | 112.96      | 119.20   |
| 1   | CA    | 1119    | C    | C5-C6-N1  | 8.71   | 125.35      | 121.00   |
| 24  | AX    | 14      | A    | C4-C5-C6  | 8.68   | 121.34      | 117.00   |
| 25  | DA    | 2187    | G    | C4-C5-N7  | 8.67   | 114.27      | 110.80   |
| 25  | DA    | 2187    | G    | N3-C4-N9  | 8.53   | 131.12      | 126.00   |
| 24  | AX    | 14      | A    | C5-N7-C8  | 8.47   | 108.13      | 103.90   |
| 1   | AA    | 1030(B) | C    | N1-C2-O2  | 8.21   | 123.83      | 118.90   |
| 1   | CA    | 1154    | G    | C8-N9-C1' | -8.15  | 116.40      | 127.00   |
| 1   | CA    | 1119    | C    | C6-N1-C2  | -8.07  | 117.07      | 120.30   |
| 25  | BA    | 2140    | C    | C5-C4-N4  | 7.99   | 125.79      | 120.20   |
| 1   | AA    | 1030(B) | C    | C2-N1-C1' | 7.99   | 127.59      | 118.80   |
| 1   | AA    | 991     | U    | P-O3'-C3' | 7.77   | 129.02      | 119.70   |
| 25  | DA    | 2155    | G    | N1-C2-N2  | -7.76  | 109.22      | 116.20   |
| 25  | DA    | 2102    | U    | C2-N3-C4  | 7.66   | 131.60      | 127.00   |
| 1   | CA    | 1001(A) | G    | N3-C4-N9  | 7.61   | 130.56      | 126.00   |
| 25  | DA    | 2167    | U    | C2-N1-C1' | 7.60   | 126.81      | 117.70   |
| 25  | DA    | 1313    | U    | C2-N1-C1' | 7.56   | 126.77      | 117.70   |
| 1   | CA    | 1123    | A    | C5-C6-N6  | 7.49   | 129.69      | 123.70   |
| 1   | AA    | 1007    | C    | C2-N3-C4  | 7.48   | 123.64      | 119.90   |
| 24  | CX    | 14      | A    | C5-N7-C8  | 7.43   | 107.62      | 103.90   |
| 25  | DA    | 2167    | U    | N1-C2-O2  | 7.40   | 127.98      | 122.80   |
| 24  | CX    | 46      | G    | C5-C6-N1  | 7.37   | 115.18      | 111.50   |
| 25  | BA    | 330     | A    | C2-N3-C4  | -7.36  | 106.92      | 110.60   |
| 1   | CA    | 1225    | A    | C5-C6-N6  | 7.34   | 129.57      | 123.70   |
| 25  | DA    | 2152    | G    | N1-C6-O6  | 7.32   | 124.29      | 119.90   |
| 25  | BA    | 2791    | C    | C6-N1-C2  | -7.32  | 117.37      | 120.30   |
| 1   | CA    | 79      | G    | C5-C6-O6  | 7.28   | 132.97      | 128.60   |
| 25  | BA    | 2140    | C    | N3-C4-N4  | -7.27  | 112.91      | 118.00   |
| 24  | AX    | 22      | G    | N3-C4-N9  | -7.22  | 121.67      | 126.00   |
| 24  | CX    | 46      | G    | C5-C6-O6  | -7.22  | 124.27      | 128.60   |
| 25  | DA    | 2155    | G    | N9-C4-C5  | -7.22  | 102.51      | 105.40   |
| 1   | AA    | 1036    | G    | C4-N9-C1' | 7.21   | 135.87      | 126.50   |
| 1   | CA    | 1154    | G    | C4-C5-C6  | 7.19   | 123.11      | 118.80   |
| 25  | DA    | 2139    | C    | C2-N1-C1' | 7.10   | 126.61      | 118.80   |

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| Mol | Chain | Res     | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|---------|------|------------|-------|-------------|----------|
| 1   | CA    | 1150    | U    | C2-N3-C4   | 7.06  | 131.24      | 127.00   |
| 25  | DA    | 2136    | C    | N3-C2-O2   | -7.05 | 116.97      | 121.90   |
| 1   | CA    | 1023    | G    | N3-C4-N9   | 6.99  | 130.19      | 126.00   |
| 25  | DA    | 2139    | C    | N1-C2-O2   | 6.96  | 123.08      | 118.90   |
| 25  | DA    | 2121    | G    | N1-C6-O6   | 6.95  | 124.07      | 119.90   |
| 1   | AA    | 1397    | C    | C2-N1-C1'  | 6.92  | 126.41      | 118.80   |
| 3   | CC    | 43      | LEU  | CA-CB-CG   | 6.84  | 131.04      | 115.30   |
| 25  | DA    | 790     | C    | O5'-P-OP2  | -6.81 | 99.57       | 105.70   |
| 25  | DA    | 2167    | U    | N3-C2-O2   | -6.79 | 117.45      | 122.20   |
| 1   | AA    | 346     | G    | C4-N9-C1'  | 6.76  | 135.29      | 126.50   |
| 1   | CA    | 1225    | A    | N1-C6-N6   | -6.75 | 114.55      | 118.60   |
| 4   | AD    | 188     | LEU  | CA-CB-CG   | 6.75  | 130.82      | 115.30   |
| 24  | AX    | 22      | G    | C4-C5-C6   | -6.74 | 114.75      | 118.80   |
| 1   | AA    | 405     | U    | O5'-P-OP2  | -6.74 | 99.64       | 105.70   |
| 1   | AA    | 1502    | A    | N1-C2-N3   | 6.73  | 132.67      | 129.30   |
| 1   | CA    | 79      | G    | C6-N1-C2   | 6.73  | 129.14      | 125.10   |
| 25  | DA    | 2187    | G    | N9-C4-C5   | -6.70 | 102.72      | 105.40   |
| 25  | DA    | 2121    | G    | C5-C6-O6   | -6.70 | 124.58      | 128.60   |
| 2   | CB    | 187     | LEU  | CA-CB-CG   | 6.69  | 130.70      | 115.30   |
| 1   | CA    | 1119    | C    | C4-C5-C6   | -6.69 | 114.06      | 117.40   |
| 24  | CX    | 14      | A    | N1-C6-N6   | 6.67  | 122.60      | 118.60   |
| 25  | BA    | 2150    | U    | N1-C2-N3   | 6.67  | 118.90      | 114.90   |
| 24  | AX    | 22      | G    | N1-C6-O6   | -6.66 | 115.91      | 119.90   |
| 24  | AX    | 56      | C    | C2-N3-C4   | 6.63  | 123.22      | 119.90   |
| 25  | BA    | 1909    | C    | C5-C6-N1   | 6.62  | 124.31      | 121.00   |
| 1   | CA    | 1123    | A    | C6-N1-C2   | 6.62  | 122.57      | 118.60   |
| 25  | DA    | 2629    | A    | O4'-C1'-N9 | 6.62  | 113.49      | 108.20   |
| 25  | DA    | 2187    | G    | C4-N9-C1'  | 6.58  | 135.05      | 126.50   |
| 24  | AX    | 14      | A    | C5-C6-N1   | -6.55 | 114.42      | 117.70   |
| 25  | DA    | 2137    | C    | C6-N1-C1'  | 6.53  | 128.64      | 120.80   |
| 25  | BA    | 2125    | G    | N3-C4-N9   | -6.52 | 122.09      | 126.00   |
| 25  | BA    | 1614    | A    | O5'-P-OP1  | -6.51 | 99.84       | 105.70   |
| 1   | AA    | 73      | G    | O4'-C1'-N9 | 6.46  | 113.37      | 108.20   |
| 25  | BA    | 1142(A) | A    | C2-N3-C4   | -6.44 | 107.38      | 110.60   |
| 47  | D1    | 85      | LEU  | CA-CB-CG   | 6.44  | 130.11      | 115.30   |
| 25  | BA    | 2175    | C    | N1-C2-O2   | 6.42  | 122.75      | 118.90   |
| 24  | CX    | 22      | G    | C5-N7-C8   | -6.41 | 101.10      | 104.30   |
| 20  | CT    | 23      | ARG  | NE-CZ-NH1  | 6.40  | 123.50      | 120.30   |
| 1   | AA    | 97      | G    | N3-C4-N9   | 6.39  | 129.84      | 126.00   |
| 18  | CR    | 31      | LEU  | CA-CB-CG   | 6.39  | 130.00      | 115.30   |
| 1   | CA    | 997     | U    | C5-C4-O4   | 6.37  | 129.72      | 125.90   |
| 1   | CA    | 1323    | G    | N3-C4-N9   | 6.34  | 129.81      | 126.00   |

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| Mol | Chain | Res     | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|---------|------|------------|-------|-------------|----------|
| 25  | BA    | 2371    | G    | C5-C6-O6   | -6.32 | 124.81      | 128.60   |
| 1   | AA    | 346     | G    | O4'-C1'-N9 | 6.32  | 113.25      | 108.20   |
| 1   | AA    | 1276    | G    | C5-C6-O6   | -6.30 | 124.82      | 128.60   |
| 24  | AX    | 22      | G    | C5-N7-C8   | -6.28 | 101.16      | 104.30   |
| 1   | CA    | 754     | C    | C2-N1-C1'  | 6.27  | 125.69      | 118.80   |
| 1   | CA    | 992     | U    | P-O3'-C3'  | 6.26  | 127.22      | 119.70   |
| 1   | AA    | 1030(B) | C    | N3-C2-O2   | -6.25 | 117.53      | 121.90   |
| 25  | BA    | 1909    | C    | C6-N1-C2   | -6.24 | 117.80      | 120.30   |
| 25  | DA    | 2152    | G    | N3-C4-N9   | 6.23  | 129.74      | 126.00   |
| 25  | BA    | 2167    | U    | C2-N1-C1'  | 6.21  | 125.15      | 117.70   |
| 1   | AA    | 1397    | C    | O4'-C1'-N1 | 6.20  | 113.16      | 108.20   |
| 1   | CA    | 1064    | G    | P-O3'-C3'  | 6.20  | 127.14      | 119.70   |
| 43  | DX    | 57      | LEU  | CA-CB-CG   | 6.19  | 129.54      | 115.30   |
| 1   | AA    | 1285    | A    | P-O3'-C3'  | 6.18  | 127.12      | 119.70   |
| 1   | CA    | 955     | U    | C2-N3-C4   | 6.17  | 130.71      | 127.00   |
| 25  | BA    | 12      | U    | C2-N1-C1'  | 6.15  | 125.08      | 117.70   |
| 1   | CA    | 1030(B) | C    | C6-N1-C2   | -6.13 | 117.85      | 120.30   |
| 25  | DA    | 1531    | C    | C2-N1-C1'  | 6.12  | 125.53      | 118.80   |
| 25  | DA    | 2159    | G    | N3-C4-N9   | -6.07 | 122.36      | 126.00   |
| 1   | CA    | 1003    | G    | C4-N9-C1'  | 6.05  | 134.37      | 126.50   |
| 24  | AX    | 14      | A    | C8-N9-C1'  | -6.04 | 116.83      | 127.70   |
| 1   | CA    | 79      | G    | N3-C4-N9   | -6.04 | 122.38      | 126.00   |
| 24  | CX    | 14      | A    | C4-N9-C1'  | 6.04  | 137.16      | 126.30   |
| 1   | AA    | 1036    | G    | C8-N9-C1'  | -6.03 | 119.16      | 127.00   |
| 1   | AA    | 1037    | C    | N1-C2-O2   | 6.03  | 122.52      | 118.90   |
| 25  | BA    | 645     | C    | C2-N1-C1'  | 6.03  | 125.43      | 118.80   |
| 25  | DA    | 2137    | C    | O4'-C1'-N1 | 6.03  | 113.02      | 108.20   |
| 25  | BA    | 2474    | C    | N1-C2-O2   | 6.03  | 122.52      | 118.90   |
| 25  | BA    | 1639    | U    | O5'-P-OP2  | -6.02 | 100.28      | 105.70   |
| 24  | CX    | 14      | A    | N3-C4-N9   | 6.00  | 132.20      | 127.40   |
| 1   | AA    | 97      | G    | N3-C4-C5   | -5.99 | 125.61      | 128.60   |
| 25  | DA    | 2152    | G    | C4-C5-N7   | 5.99  | 113.19      | 110.80   |
| 24  | AX    | 14      | A    | C4-N9-C1'  | 5.97  | 137.06      | 126.30   |
| 25  | DA    | 2152    | G    | C6-C5-N7   | -5.97 | 126.82      | 130.40   |
| 1   | AA    | 347     | G    | O4'-C1'-N9 | 5.97  | 112.97      | 108.20   |
| 1   | AA    | 1037    | C    | C6-N1-C2   | -5.96 | 117.92      | 120.30   |
| 25  | BA    | 1021    | A    | C2-N3-C4   | -5.95 | 107.62      | 110.60   |
| 25  | DA    | 2137    | C    | C2-N1-C1'  | -5.93 | 112.28      | 118.80   |
| 25  | BA    | 1022    | G    | N3-C4-N9   | -5.90 | 122.46      | 126.00   |
| 1   | CA    | 1126    | U    | C2-N1-C1'  | 5.89  | 124.77      | 117.70   |
| 25  | DA    | 1531    | C    | C5-C6-N1   | 5.89  | 123.95      | 121.00   |
| 1   | CA    | 1039    | C    | C5-C4-N4   | -5.89 | 116.08      | 120.20   |

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| Mol | Chain | Res     | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|---------|------|------------|-------|-------------|----------|
| 25  | DA    | 2152    | G    | N9-C4-C5   | -5.87 | 103.05      | 105.40   |
| 24  | CX    | 22      | G    | C4-C5-C6   | -5.87 | 115.28      | 118.80   |
| 25  | DA    | 2142    | C    | C5-C6-N1   | 5.86  | 123.93      | 121.00   |
| 1   | AA    | 1131    | G    | C5-C6-O6   | -5.85 | 125.09      | 128.60   |
| 1   | CA    | 1183    | A    | P-O3'-C3'  | 5.82  | 126.68      | 119.70   |
| 1   | AA    | 687     | A    | P-O3'-C3'  | 5.81  | 126.67      | 119.70   |
| 24  | AX    | 46      | G    | C5-C6-N1   | 5.80  | 114.40      | 111.50   |
| 25  | DA    | 2161    | C    | C5-C4-N4   | 5.80  | 124.26      | 120.20   |
| 26  | DB    | 30      | C    | N3-C2-O2   | -5.80 | 117.84      | 121.90   |
| 25  | BA    | 512     | G    | O4'-C1'-N9 | 5.79  | 112.84      | 108.20   |
| 25  | DA    | 2187    | G    | C8-N9-C1'  | -5.78 | 119.49      | 127.00   |
| 24  | CX    | 14      | A    | C8-N9-C1'  | -5.78 | 117.30      | 127.70   |
| 25  | BA    | 887     | A    | O4'-C1'-N9 | 5.77  | 112.82      | 108.20   |
| 25  | BA    | 1176    | G    | OP1-P-O3'  | 5.76  | 117.88      | 105.20   |
| 1   | AA    | 1037    | C    | C2-N1-C1'  | 5.74  | 125.11      | 118.80   |
| 1   | CA    | 1067    | A    | P-O3'-C3'  | 5.74  | 126.58      | 119.70   |
| 25  | DA    | 2139    | C    | C6-N1-C1'  | -5.74 | 113.92      | 120.80   |
| 1   | CA    | 1158    | C    | N1-C2-O2   | 5.73  | 122.34      | 118.90   |
| 1   | CA    | 1256    | A    | O4'-C1'-N9 | -5.73 | 103.62      | 108.20   |
| 25  | BA    | 2151    | G    | C5-C6-N1   | -5.72 | 108.64      | 111.50   |
| 24  | CX    | 22      | G    | N1-C6-O6   | -5.72 | 116.47      | 119.90   |
| 25  | DA    | 2698    | U    | C5-C6-N1   | -5.71 | 119.85      | 122.70   |
| 1   | CA    | 1158    | C    | C2-N1-C1'  | 5.71  | 125.08      | 118.80   |
| 1   | AA    | 1030(B) | C    | C6-N1-C1'  | -5.70 | 113.96      | 120.80   |
| 3   | CC    | 101     | LEU  | CA-CB-CG   | 5.70  | 128.40      | 115.30   |
| 25  | DA    | 2206    | G    | C4-N9-C1'  | -5.68 | 119.12      | 126.50   |
| 24  | AX    | 22      | G    | C6-C5-N7   | 5.67  | 133.81      | 130.40   |
| 25  | DA    | 2866    | U    | C2-N1-C1'  | 5.67  | 124.50      | 117.70   |
| 25  | BA    | 1793    | C    | C6-N1-C2   | -5.66 | 118.04      | 120.30   |
| 24  | CX    | 14      | A    | C6-C5-N7   | -5.66 | 128.34      | 132.30   |
| 25  | BA    | 1992    | G    | P-O3'-C3'  | 5.66  | 126.49      | 119.70   |
| 24  | AX    | 22      | G    | C8-N9-C1'  | 5.65  | 134.35      | 127.00   |
| 1   | AA    | 346     | G    | C8-N9-C1'  | -5.64 | 119.67      | 127.00   |
| 1   | CA    | 1123    | A    | N1-C6-N6   | -5.64 | 115.22      | 118.60   |
| 1   | CA    | 1397    | C    | N1-C2-O2   | 5.64  | 122.28      | 118.90   |
| 1   | CA    | 1064    | G    | OP2-P-O3'  | 5.64  | 117.60      | 105.20   |
| 1   | AA    | 991     | U    | OP2-P-O3'  | 5.63  | 117.59      | 105.20   |
| 25  | BA    | 2125    | G    | C8-N9-C1'  | 5.62  | 134.31      | 127.00   |
| 25  | DA    | 2187    | G    | N7-C8-N9   | 5.62  | 115.91      | 113.10   |
| 1   | CA    | 927     | G    | C5-C6-O6   | 5.61  | 131.97      | 128.60   |
| 25  | DA    | 1992    | G    | C8-N9-C4   | -5.60 | 104.16      | 106.40   |
| 25  | DA    | 1505    | C    | N1-C2-O2   | 5.59  | 122.25      | 118.90   |

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| Mol | Chain | Res     | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|---------|------|------------|-------|-------------|----------|
| 25  | DA    | 2155    | G    | C8-N9-C1'  | -5.58 | 119.74      | 127.00   |
| 1   | AA    | 1131    | G    | N1-C6-O6   | 5.57  | 123.24      | 119.90   |
| 32  | DI    | 123     | LEU  | CA-CB-CG   | 5.57  | 128.12      | 115.30   |
| 24  | CX    | 14      | A    | N3-C4-C5   | -5.57 | 122.91      | 126.80   |
| 43  | BX    | 57      | LEU  | CA-CB-CG   | 5.56  | 128.09      | 115.30   |
| 25  | DA    | 2155    | G    | C4-N9-C1'  | 5.56  | 133.73      | 126.50   |
| 1   | CA    | 1154    | G    | N3-C4-C5   | -5.55 | 125.82      | 128.60   |
| 1   | CA    | 96      | U    | C2-N1-C1'  | -5.55 | 111.05      | 117.70   |
| 1   | CA    | 1154    | G    | N3-C4-N9   | 5.55  | 129.33      | 126.00   |
| 1   | CA    | 60      | A    | P-O3'-C3'  | 5.54  | 126.34      | 119.70   |
| 1   | CA    | 1001(A) | G    | C4-N9-C1'  | 5.53  | 133.69      | 126.50   |
| 25  | BA    | 2125    | G    | C4-N9-C1'  | -5.52 | 119.32      | 126.50   |
| 24  | CX    | 17      | C    | C6-N1-C2   | -5.52 | 118.09      | 120.30   |
| 25  | DA    | 2805    | G    | O4'-C1'-N9 | 5.52  | 112.61      | 108.20   |
| 1   | CA    | 1001(A) | G    | N3-C4-C5   | -5.51 | 125.84      | 128.60   |
| 25  | BA    | 2177    | C    | N1-C2-O2   | 5.51  | 122.20      | 118.90   |
| 24  | CX    | 67      | C    | N1-C2-O2   | 5.50  | 122.20      | 118.90   |
| 25  | DA    | 2159    | G    | N3-C2-N2   | -5.50 | 116.05      | 119.90   |
| 1   | CA    | 1125    | U    | O4'-C1'-N1 | 5.49  | 112.59      | 108.20   |
| 1   | CA    | 1003    | G    | N3-C4-C5   | -5.49 | 125.86      | 128.60   |
| 25  | DA    | 2137    | C    | N1-C2-O2   | -5.48 | 115.61      | 118.90   |
| 1   | AA    | 1022    | G    | N3-C2-N2   | 5.47  | 123.73      | 119.90   |
| 25  | DA    | 2150    | U    | N1-C2-O2   | 5.46  | 126.62      | 122.80   |
| 25  | BA    | 2474    | C    | C2-N1-C1'  | 5.46  | 124.80      | 118.80   |
| 1   | CA    | 754     | C    | N1-C2-O2   | 5.46  | 122.17      | 118.90   |
| 25  | DA    | 2159    | G    | C8-N9-C1'  | 5.46  | 134.09      | 127.00   |
| 1   | AA    | 1397    | C    | C6-N1-C1'  | -5.44 | 114.27      | 120.80   |
| 25  | DA    | 90      | U    | N3-C2-O2   | -5.44 | 118.39      | 122.20   |
| 1   | AA    | 1278    | U    | C5-C6-N1   | 5.44  | 125.42      | 122.70   |
| 1   | CA    | 1493    | A    | P-O3'-C3'  | 5.43  | 126.22      | 119.70   |
| 25  | DA    | 2155    | G    | C4-C5-N7   | 5.43  | 112.97      | 110.80   |
| 25  | BA    | 2198    | A    | OP1-P-O3'  | 5.42  | 117.14      | 105.20   |
| 28  | DE    | 72      | VAL  | C-N-CA     | 5.42  | 135.25      | 121.70   |
| 1   | CA    | 1003    | G    | N7-C8-N9   | 5.41  | 115.81      | 113.10   |
| 25  | DA    | 748     | G    | O4'-C1'-N9 | 5.41  | 112.53      | 108.20   |
| 25  | DA    | 1644    | C    | C2-N1-C1'  | 5.41  | 124.75      | 118.80   |
| 1   | CA    | 998     | G    | C5-C6-O6   | 5.40  | 131.84      | 128.60   |
| 1   | CA    | 1154    | G    | C8-N9-C4   | -5.40 | 104.24      | 106.40   |
| 1   | AA    | 1276    | G    | N3-C4-N9   | 5.39  | 129.24      | 126.00   |
| 1   | CA    | 78      | G    | N3-C4-N9   | 5.39  | 129.23      | 126.00   |
| 25  | BA    | 2151    | G    | C6-N1-C2   | 5.38  | 128.33      | 125.10   |
| 25  | DA    | 2150    | U    | C2-N3-C4   | 5.38  | 130.23      | 127.00   |

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| Mol | Chain | Res     | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|---------|------|------------|-------|-------------|----------|
| 25  | BA    | 2206    | G    | C4-N9-C1'  | -5.38 | 119.51      | 126.50   |
| 1   | CA    | 1125    | U    | C2-N1-C1'  | 5.37  | 124.14      | 117.70   |
| 1   | AA    | 1131    | G    | C6-C5-N7   | -5.36 | 127.18      | 130.40   |
| 26  | DB    | 6       | C    | C2-N1-C1'  | 5.36  | 124.70      | 118.80   |
| 1   | AA    | 1054    | C    | C2-N1-C1'  | 5.35  | 124.69      | 118.80   |
| 25  | DA    | 2174    | C    | C2-N1-C1'  | 5.35  | 124.68      | 118.80   |
| 25  | BA    | 2140    | C    | C6-N1-C1'  | 5.33  | 127.20      | 120.80   |
| 25  | DA    | 2155    | G    | C6-C5-N7   | -5.33 | 127.20      | 130.40   |
| 25  | DA    | 2159    | G    | C4-N9-C1'  | -5.33 | 119.57      | 126.50   |
| 1   | AA    | 1037    | C    | N3-C2-O2   | -5.33 | 118.17      | 121.90   |
| 25  | BA    | 265     | A    | O4'-C1'-N9 | 5.33  | 112.46      | 108.20   |
| 25  | BA    | 2139    | C    | N3-C4-C5   | 5.32  | 124.03      | 121.90   |
| 25  | BA    | 2848    | G    | O4'-C1'-N9 | 5.32  | 112.45      | 108.20   |
| 1   | CA    | 1026    | G    | N3-C4-C5   | -5.31 | 125.94      | 128.60   |
| 1   | CA    | 992     | U    | OP2-P-O3'  | 5.31  | 116.88      | 105.20   |
| 25  | DA    | 528     | A    | C2-N3-C4   | -5.31 | 107.95      | 110.60   |
| 25  | DA    | 2187    | G    | C5-N7-C8   | -5.31 | 101.65      | 104.30   |
| 2   | CB    | 122     | PHE  | N-CA-C     | -5.30 | 96.68       | 111.00   |
| 25  | BA    | 330     | A    | N1-C2-N3   | 5.30  | 131.95      | 129.30   |
| 1   | AA    | 1028    | C    | C5-C6-N1   | 5.30  | 123.65      | 121.00   |
| 25  | BA    | 881     | G    | C4-N9-C1'  | 5.30  | 133.38      | 126.50   |
| 25  | DA    | 1653    | G    | C4-N9-C1'  | 5.30  | 133.39      | 126.50   |
| 25  | DA    | 2218    | U    | N1-C2-O2   | 5.30  | 126.51      | 122.80   |
| 24  | AX    | 46      | G    | N1-C2-N3   | 5.29  | 127.07      | 123.90   |
| 1   | CA    | 90      | U    | N1-C2-N3   | 5.27  | 118.06      | 114.90   |
| 25  | BA    | 645     | C    | N1-C2-O2   | 5.27  | 122.06      | 118.90   |
| 24  | AX    | 22      | G    | N3-C4-C5   | 5.27  | 131.23      | 128.60   |
| 25  | DA    | 1313    | U    | N3-C2-O2   | -5.27 | 118.51      | 122.20   |
| 1   | CA    | 1001(A) | G    | C8-N9-C1'  | -5.26 | 120.16      | 127.00   |
| 26  | DB    | 30      | C    | C6-N1-C2   | -5.25 | 118.20      | 120.30   |
| 1   | AA    | 1030(B) | C    | C6-N1-C2   | -5.24 | 118.20      | 120.30   |
| 25  | BA    | 1963    | U    | C2-N1-C1'  | 5.23  | 123.97      | 117.70   |
| 1   | CA    | 1012    | U    | O4'-C1'-N1 | 5.22  | 112.38      | 108.20   |
| 1   | CA    | 1397    | C    | C2-N1-C1'  | 5.21  | 124.53      | 118.80   |
| 1   | CA    | 1123    | A    | C5-C6-N1   | -5.21 | 115.09      | 117.70   |
| 25  | BA    | 383     | U    | C2-N1-C1'  | -5.21 | 111.45      | 117.70   |
| 2   | CB    | 154     | LEU  | CA-CB-CG   | 5.18  | 127.22      | 115.30   |
| 25  | BA    | 279     | C    | C5-C6-N1   | 5.18  | 123.59      | 121.00   |
| 35  | BP    | 148     | LEU  | CA-CB-CG   | 5.18  | 127.20      | 115.30   |
| 25  | DA    | 2712    | U    | C2-N1-C1'  | -5.18 | 111.49      | 117.70   |
| 1   | AA    | 1276    | G    | N1-C6-O6   | 5.17  | 123.00      | 119.90   |
| 1   | CA    | 1140    | C    | C6-N1-C1'  | 5.16  | 127.00      | 120.80   |

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| Mol | Chain | Res     | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|---------|------|------------|-------|-------------|----------|
| 1   | AA    | 1131    | G    | C4-C5-N7   | 5.16  | 112.86      | 110.80   |
| 1   | CA    | 1397    | C    | N3-C2-O2   | -5.14 | 118.30      | 121.90   |
| 1   | AA    | 1276    | G    | C6-C5-N7   | -5.14 | 127.32      | 130.40   |
| 25  | BA    | 2121    | G    | N3-C4-N9   | 5.13  | 129.08      | 126.00   |
| 25  | BA    | 1416    | G    | O4'-C1'-N9 | 5.13  | 112.30      | 108.20   |
| 1   | AA    | 1259    | C    | C2-N1-C1'  | 5.13  | 124.44      | 118.80   |
| 1   | CA    | 1355    | G    | N3-C4-N9   | 5.12  | 129.07      | 126.00   |
| 24  | AX    | 56      | C    | C5-C6-N1   | 5.12  | 123.56      | 121.00   |
| 25  | BA    | 2167    | U    | O4'-C1'-N1 | 5.12  | 112.30      | 108.20   |
| 25  | DA    | 635     | C    | N3-C2-O2   | -5.12 | 118.31      | 121.90   |
| 25  | DA    | 2172    | U    | P-O3'-C3'  | 5.12  | 125.84      | 119.70   |
| 1   | AA    | 1136    | U    | C5-C6-N1   | 5.11  | 125.26      | 122.70   |
| 25  | BA    | 2893    | G    | P-O3'-C3'  | 5.11  | 125.83      | 119.70   |
| 1   | AA    | 1001(A) | G    | C4-N9-C1'  | 5.10  | 133.13      | 126.50   |
| 1   | CA    | 1154    | G    | C5-N7-C8   | 5.10  | 106.85      | 104.30   |
| 25  | DA    | 1204    | A    | O4'-C1'-N9 | 5.10  | 112.28      | 108.20   |
| 25  | BA    | 1176    | G    | P-O3'-C3'  | 5.09  | 125.81      | 119.70   |
| 25  | DA    | 2133    | G    | P-O3'-C3'  | 5.09  | 125.81      | 119.70   |
| 24  | AX    | 14      | A    | C4-C5-N7   | -5.09 | 108.16      | 110.70   |
| 25  | DA    | 1614    | A    | O5'-P-OP1  | -5.08 | 101.13      | 105.70   |
| 1   | CA    | 1019    | C    | C6-N1-C2   | -5.08 | 118.27      | 120.30   |
| 25  | BA    | 2139    | C    | N1-C2-O2   | 5.06  | 121.94      | 118.90   |
| 25  | DA    | 1313    | U    | N1-C2-O2   | 5.06  | 126.34      | 122.80   |
| 25  | BA    | 1022    | G    | C6-C5-N7   | 5.06  | 133.44      | 130.40   |
| 1   | CA    | 1158    | C    | C6-N1-C2   | -5.06 | 118.28      | 120.30   |
| 1   | AA    | 1531    | A    | O4'-C1'-N9 | -5.06 | 104.15      | 108.20   |
| 25  | DA    | 512     | G    | O4'-C1'-N9 | 5.06  | 112.25      | 108.20   |
| 25  | DA    | 2154    | G    | C8-N9-C4   | -5.05 | 104.38      | 106.40   |
| 1   | AA    | 839     | U    | P-O3'-C3'  | 5.05  | 125.76      | 119.70   |
| 1   | AA    | 1067    | A    | P-O3'-C3'  | 5.05  | 125.76      | 119.70   |
| 25  | BA    | 141     | A    | N7-C8-N9   | 5.05  | 116.33      | 113.80   |
| 25  | DA    | 1653    | G    | P-O3'-C3'  | 5.05  | 125.76      | 119.70   |
| 1   | CA    | 1065    | U    | P-O3'-C3'  | 5.04  | 125.75      | 119.70   |
| 25  | BA    | 1022    | G    | C4-N9-C1'  | -5.04 | 119.94      | 126.50   |
| 1   | AA    | 1065    | U    | P-O3'-C3'  | 5.04  | 125.75      | 119.70   |
| 25  | DA    | 2150    | U    | N1-C2-N3   | -5.04 | 111.88      | 114.90   |
| 25  | DA    | 2155    | G    | N3-C4-C5   | -5.04 | 126.08      | 128.60   |
| 1   | CA    | 1154    | G    | N1-C2-N3   | 5.03  | 126.92      | 123.90   |
| 25  | BA    | 2167    | U    | N1-C2-O2   | 5.03  | 126.32      | 122.80   |
| 1   | AA    | 1040    | U    | C5-C4-O4   | 5.02  | 128.91      | 125.90   |
| 1   | CA    | 1158    | C    | N3-C2-O2   | -5.02 | 118.39      | 121.90   |
| 25  | BA    | 1313    | U    | C2-N1-C1'  | 5.01  | 123.72      | 117.70   |

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| Mol | Chain | Res  | Type | Atoms     | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-----------|-------|-------------|----------|
| 1   | CA    | 1006 | C    | C5-C4-N4  | -5.01 | 116.69      | 120.20   |
| 1   | AA    | 1022 | G    | C6-N1-C2  | 5.01  | 128.11      | 125.10   |
| 1   | AA    | 1054 | C    | N1-C2-O2  | 5.01  | 121.91      | 118.90   |
| 25  | DA    | 2159 | G    | C6-C5-N7  | 5.00  | 133.40      | 130.40   |
| 25  | DA    | 2136 | C    | C2-N1-C1' | 5.00  | 124.30      | 118.80   |

There are no chirality outliers.

All (6) planarity outliers are listed below:

| Mol | Chain | Res | Type | Group   |
|-----|-------|-----|------|---------|
| 2   | AB    | 231 | GLU  | Peptide |
| 2   | AB    | 9   | GLU  | Peptide |
| 7   | AG    | 79  | ARG  | Peptide |
| 27  | BD    | 274 | ARG  | Peptide |
| 38  | BS    | 58  | LEU  | Peptide |
| 20  | CT    | 9   | ASN  | Peptide |

## 5.2 Too-close contacts [i](#)

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    | 32205 | 0        | 16254    | 640     | 0            |
| 1   | CA    | 32312 | 0        | 16307    | 729     | 0            |
| 2   | AB    | 1846  | 0        | 1867     | 85      | 0            |
| 2   | CB    | 1825  | 0        | 1828     | 97      | 0            |
| 3   | AC    | 1552  | 0        | 1546     | 67      | 0            |
| 3   | CC    | 1542  | 0        | 1517     | 73      | 0            |
| 4   | AD    | 1659  | 0        | 1676     | 65      | 0            |
| 4   | CD    | 1670  | 0        | 1703     | 68      | 0            |
| 5   | AE    | 1129  | 0        | 1185     | 30      | 0            |
| 5   | CE    | 1133  | 0        | 1191     | 53      | 0            |
| 6   | AF    | 806   | 0        | 793      | 28      | 0            |
| 6   | CF    | 816   | 0        | 808      | 22      | 0            |
| 7   | AG    | 1231  | 0        | 1238     | 28      | 0            |
| 7   | CG    | 1235  | 0        | 1249     | 30      | 0            |
| 8   | AH    | 1088  | 0        | 1126     | 25      | 0            |
| 8   | CH    | 1088  | 0        | 1126     | 38      | 0            |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 9   | AI    | 983   | 0        | 986      | 53      | 0            |
| 9   | CI    | 978   | 0        | 966      | 55      | 0            |
| 10  | AJ    | 709   | 0        | 650      | 34      | 0            |
| 10  | CJ    | 714   | 0        | 672      | 35      | 0            |
| 11  | AK    | 829   | 0        | 825      | 18      | 0            |
| 11  | CK    | 833   | 0        | 836      | 23      | 0            |
| 12  | AL    | 930   | 0        | 979      | 31      | 0            |
| 12  | CL    | 930   | 0        | 980      | 33      | 0            |
| 13  | AM    | 958   | 0        | 1002     | 39      | 0            |
| 13  | CM    | 950   | 0        | 988      | 56      | 0            |
| 14  | AN    | 492   | 0        | 529      | 25      | 0            |
| 14  | CN    | 492   | 0        | 529      | 36      | 0            |
| 15  | AO    | 728   | 0        | 760      | 22      | 0            |
| 15  | CO    | 728   | 0        | 760      | 30      | 0            |
| 16  | AP    | 681   | 0        | 697      | 31      | 0            |
| 16  | CP    | 677   | 0        | 686      | 26      | 0            |
| 17  | AQ    | 823   | 0        | 891      | 24      | 0            |
| 17  | CQ    | 823   | 0        | 891      | 21      | 0            |
| 18  | AR    | 555   | 0        | 618      | 13      | 0            |
| 18  | CR    | 555   | 0        | 618      | 21      | 0            |
| 19  | AS    | 652   | 0        | 662      | 28      | 0            |
| 19  | CS    | 646   | 0        | 644      | 52      | 0            |
| 20  | AT    | 728   | 0        | 798      | 26      | 0            |
| 20  | CT    | 727   | 0        | 796      | 28      | 0            |
| 21  | AU    | 199   | 0        | 208      | 8       | 0            |
| 21  | CU    | 199   | 0        | 208      | 12      | 0            |
| 22  | AV    | 277   | 0        | 140      | 6       | 0            |
| 22  | CV    | 252   | 0        | 130      | 8       | 0            |
| 23  | AW    | 54    | 0        | 40       | 5       | 0            |
| 23  | CW    | 54    | 0        | 40       | 7       | 0            |
| 24  | AX    | 1635  | 0        | 838      | 34      | 0            |
| 24  | CX    | 1635  | 0        | 838      | 40      | 0            |
| 25  | BA    | 60729 | 0        | 30621    | 812     | 0            |
| 25  | DA    | 60311 | 0        | 30408    | 1066    | 0            |
| 26  | BB    | 2573  | 0        | 1306     | 29      | 0            |
| 26  | DB    | 2573  | 0        | 1306     | 91      | 0            |
| 27  | BD    | 2136  | 0        | 2218     | 58      | 0            |
| 27  | DD    | 2136  | 0        | 2217     | 68      | 0            |
| 28  | BE    | 1559  | 0        | 1618     | 52      | 0            |
| 28  | DE    | 1559  | 0        | 1618     | 56      | 0            |
| 29  | BF    | 1584  | 0        | 1625     | 36      | 0            |
| 29  | DF    | 1580  | 0        | 1619     | 68      | 0            |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 30  | BG    | 1425  | 0        | 1443     | 45      | 0            |
| 30  | DG    | 1424  | 0        | 1434     | 77      | 0            |
| 31  | BH    | 1330  | 0        | 1407     | 29      | 0            |
| 31  | DH    | 1330  | 0        | 1407     | 42      | 0            |
| 32  | BI    | 1085  | 0        | 1114     | 39      | 0            |
| 32  | DI    | 1061  | 0        | 1080     | 34      | 0            |
| 33  | BN    | 1117  | 0        | 1184     | 24      | 0            |
| 33  | DN    | 1117  | 0        | 1184     | 33      | 0            |
| 34  | BO    | 933   | 0        | 996      | 26      | 0            |
| 34  | DO    | 933   | 0        | 996      | 34      | 0            |
| 35  | BP    | 1135  | 0        | 1212     | 34      | 0            |
| 35  | DP    | 1135  | 0        | 1211     | 50      | 0            |
| 36  | BQ    | 1122  | 0        | 1179     | 35      | 0            |
| 36  | DQ    | 1122  | 0        | 1179     | 43      | 0            |
| 37  | BR    | 968   | 0        | 1033     | 28      | 0            |
| 37  | DR    | 968   | 0        | 1033     | 27      | 0            |
| 38  | BS    | 877   | 0        | 938      | 22      | 0            |
| 38  | DS    | 870   | 0        | 923      | 53      | 0            |
| 39  | BT    | 1091  | 0        | 1151     | 30      | 0            |
| 39  | DT    | 1083  | 0        | 1136     | 37      | 0            |
| 40  | BU    | 959   | 0        | 1019     | 18      | 0            |
| 40  | DU    | 959   | 0        | 1019     | 33      | 0            |
| 41  | BV    | 771   | 0        | 830      | 14      | 0            |
| 41  | DV    | 771   | 0        | 830      | 26      | 0            |
| 42  | BW    | 886   | 0        | 940      | 9       | 0            |
| 42  | DW    | 886   | 0        | 940      | 18      | 0            |
| 43  | BX    | 750   | 0        | 814      | 13      | 0            |
| 43  | DX    | 750   | 0        | 814      | 17      | 0            |
| 44  | BY    | 806   | 0        | 881      | 31      | 0            |
| 44  | DY    | 806   | 0        | 881      | 26      | 0            |
| 45  | BZ    | 1349  | 0        | 1355     | 30      | 0            |
| 45  | DZ    | 1360  | 0        | 1363     | 64      | 0            |
| 46  | B0    | 653   | 0        | 674      | 26      | 0            |
| 46  | D0    | 653   | 0        | 674      | 25      | 0            |
| 47  | B1    | 755   | 0        | 826      | 12      | 0            |
| 47  | D1    | 755   | 0        | 826      | 26      | 0            |
| 48  | B2    | 588   | 0        | 643      | 12      | 0            |
| 48  | D2    | 588   | 0        | 643      | 17      | 0            |
| 49  | B3    | 469   | 0        | 518      | 9       | 0            |
| 49  | D3    | 464   | 0        | 514      | 17      | 0            |
| 50  | B4    | 552   | 0        | 533      | 25      | 0            |
| 50  | D4    | 532   | 0        | 503      | 30      | 0            |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 51  | B5    | 455   | 0        | 465      | 12      | 0            |
| 51  | D5    | 455   | 0        | 465      | 13      | 0            |
| 52  | B6    | 453   | 0        | 473      | 9       | 0            |
| 52  | D6    | 449   | 0        | 469      | 13      | 0            |
| 53  | B7    | 418   | 0        | 467      | 13      | 0            |
| 53  | D7    | 418   | 0        | 467      | 14      | 0            |
| 54  | B8    | 511   | 0        | 571      | 18      | 0            |
| 54  | D8    | 517   | 0        | 582      | 33      | 0            |
| 55  | B9    | 307   | 0        | 335      | 4       | 0            |
| 55  | D9    | 307   | 0        | 335      | 13      | 0            |
| 56  | AA    | 187   | 0        | 0        | 0       | 0            |
| 56  | AD    | 1     | 0        | 0        | 0       | 0            |
| 56  | AE    | 2     | 0        | 0        | 0       | 0            |
| 56  | AF    | 1     | 0        | 0        | 0       | 0            |
| 56  | AK    | 1     | 0        | 0        | 0       | 0            |
| 56  | AL    | 1     | 0        | 0        | 0       | 0            |
| 56  | AM    | 1     | 0        | 0        | 0       | 0            |
| 56  | AN    | 1     | 0        | 0        | 0       | 0            |
| 56  | AX    | 7     | 0        | 0        | 0       | 0            |
| 56  | B0    | 5     | 0        | 0        | 0       | 0            |
| 56  | B3    | 2     | 0        | 0        | 0       | 0            |
| 56  | B4    | 1     | 0        | 0        | 0       | 0            |
| 56  | B5    | 2     | 0        | 0        | 0       | 0            |
| 56  | B7    | 4     | 0        | 0        | 0       | 0            |
| 56  | B8    | 1     | 0        | 0        | 0       | 0            |
| 56  | B9    | 1     | 0        | 0        | 0       | 0            |
| 56  | BA    | 675   | 0        | 0        | 0       | 0            |
| 56  | BB    | 18    | 0        | 0        | 0       | 0            |
| 56  | BD    | 8     | 0        | 0        | 0       | 0            |
| 56  | BE    | 6     | 0        | 0        | 0       | 0            |
| 56  | BF    | 5     | 0        | 0        | 0       | 0            |
| 56  | BG    | 3     | 0        | 0        | 0       | 0            |
| 56  | BH    | 1     | 0        | 0        | 0       | 0            |
| 56  | BN    | 2     | 0        | 0        | 0       | 0            |
| 56  | BO    | 1     | 0        | 0        | 0       | 0            |
| 56  | BP    | 4     | 0        | 0        | 0       | 0            |
| 56  | BQ    | 3     | 0        | 0        | 0       | 0            |
| 56  | BR    | 3     | 0        | 0        | 0       | 0            |
| 56  | BU    | 5     | 0        | 0        | 0       | 0            |
| 56  | BV    | 3     | 0        | 0        | 0       | 0            |
| 56  | BW    | 4     | 0        | 0        | 0       | 0            |
| 56  | BX    | 3     | 0        | 0        | 0       | 0            |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 56  | BY    | 2     | 0        | 0        | 0       | 0            |
| 56  | BZ    | 1     | 0        | 0        | 0       | 0            |
| 56  | CA    | 154   | 0        | 0        | 0       | 0            |
| 56  | CE    | 2     | 0        | 0        | 0       | 0            |
| 56  | CF    | 1     | 0        | 0        | 0       | 0            |
| 56  | CJ    | 1     | 0        | 0        | 0       | 0            |
| 56  | CK    | 1     | 0        | 0        | 0       | 0            |
| 56  | CT    | 1     | 0        | 0        | 0       | 0            |
| 56  | CX    | 1     | 0        | 0        | 0       | 0            |
| 56  | D0    | 1     | 0        | 0        | 0       | 0            |
| 56  | D3    | 1     | 0        | 0        | 0       | 0            |
| 56  | D5    | 1     | 0        | 0        | 0       | 0            |
| 56  | D7    | 1     | 0        | 0        | 0       | 0            |
| 56  | D8    | 2     | 0        | 0        | 0       | 0            |
| 56  | DA    | 595   | 0        | 0        | 0       | 0            |
| 56  | DB    | 12    | 0        | 0        | 0       | 0            |
| 56  | DD    | 2     | 0        | 0        | 0       | 0            |
| 56  | DE    | 5     | 0        | 0        | 0       | 0            |
| 56  | DF    | 3     | 0        | 0        | 0       | 0            |
| 56  | DG    | 1     | 0        | 0        | 0       | 0            |
| 56  | DN    | 1     | 0        | 0        | 0       | 0            |
| 56  | DP    | 1     | 0        | 0        | 0       | 0            |
| 56  | DQ    | 3     | 0        | 0        | 0       | 0            |
| 56  | DR    | 2     | 0        | 0        | 0       | 0            |
| 56  | DT    | 1     | 0        | 0        | 0       | 0            |
| 56  | DU    | 1     | 0        | 0        | 0       | 0            |
| 56  | DV    | 2     | 0        | 0        | 0       | 0            |
| 56  | DW    | 2     | 0        | 0        | 0       | 0            |
| 56  | DY    | 1     | 0        | 0        | 0       | 0            |
| 57  | AD    | 8     | 0        | 0        | 0       | 0            |
| 57  | CD    | 8     | 0        | 0        | 0       | 0            |
| 58  | AN    | 1     | 0        | 0        | 0       | 0            |
| 58  | B4    | 1     | 0        | 0        | 0       | 0            |
| 58  | B5    | 1     | 0        | 0        | 0       | 0            |
| 58  | B6    | 1     | 0        | 0        | 0       | 0            |
| 58  | B9    | 1     | 0        | 0        | 0       | 0            |
| 58  | BY    | 1     | 0        | 0        | 0       | 0            |
| 58  | CN    | 1     | 0        | 0        | 0       | 0            |
| 58  | D4    | 1     | 0        | 0        | 0       | 0            |
| 58  | D5    | 1     | 0        | 0        | 0       | 0            |
| 58  | D6    | 1     | 0        | 0        | 0       | 0            |
| 58  | D9    | 1     | 0        | 0        | 0       | 0            |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 58  | DY    | 1     | 0        | 0        | 0       | 0            |
| 59  | AX    | 1     | 0        | 0        | 0       | 0            |
| 59  | DA    | 1     | 0        | 0        | 0       | 0            |
| 60  | AA    | 165   | 0        | 0        | 12      | 0            |
| 60  | AJ    | 1     | 0        | 0        | 0       | 0            |
| 60  | AL    | 3     | 0        | 0        | 2       | 0            |
| 60  | AP    | 1     | 0        | 0        | 0       | 0            |
| 60  | AU    | 1     | 0        | 0        | 0       | 0            |
| 60  | AV    | 2     | 0        | 0        | 0       | 0            |
| 60  | AW    | 3     | 0        | 0        | 0       | 0            |
| 60  | B0    | 4     | 0        | 0        | 0       | 0            |
| 60  | B1    | 2     | 0        | 0        | 0       | 0            |
| 60  | B2    | 1     | 0        | 0        | 0       | 0            |
| 60  | B3    | 1     | 0        | 0        | 0       | 0            |
| 60  | B5    | 2     | 0        | 0        | 0       | 0            |
| 60  | B7    | 2     | 0        | 0        | 1       | 0            |
| 60  | B8    | 8     | 0        | 0        | 2       | 0            |
| 60  | BA    | 924   | 0        | 0        | 62      | 0            |
| 60  | BB    | 27    | 0        | 0        | 0       | 0            |
| 60  | BD    | 6     | 0        | 0        | 2       | 0            |
| 60  | BE    | 8     | 0        | 0        | 0       | 0            |
| 60  | BF    | 6     | 0        | 0        | 1       | 0            |
| 60  | BG    | 1     | 0        | 0        | 0       | 0            |
| 60  | BH    | 1     | 0        | 0        | 1       | 0            |
| 60  | BN    | 3     | 0        | 0        | 0       | 0            |
| 60  | BO    | 1     | 0        | 0        | 0       | 0            |
| 60  | BP    | 14    | 0        | 0        | 2       | 0            |
| 60  | BQ    | 2     | 0        | 0        | 0       | 0            |
| 60  | BS    | 1     | 0        | 0        | 0       | 0            |
| 60  | BT    | 4     | 0        | 0        | 1       | 0            |
| 60  | BU    | 2     | 0        | 0        | 0       | 0            |
| 60  | BV    | 5     | 0        | 0        | 0       | 0            |
| 60  | BW    | 1     | 0        | 0        | 0       | 0            |
| 60  | BX    | 2     | 0        | 0        | 0       | 0            |
| 60  | BZ    | 1     | 0        | 0        | 0       | 0            |
| 60  | CA    | 113   | 0        | 0        | 5       | 0            |
| 60  | CE    | 2     | 0        | 0        | 0       | 0            |
| 60  | CJ    | 2     | 0        | 0        | 1       | 0            |
| 60  | CL    | 1     | 0        | 0        | 1       | 0            |
| 60  | CO    | 1     | 0        | 0        | 0       | 0            |
| 60  | CW    | 1     | 0        | 0        | 1       | 0            |
| 60  | CX    | 1     | 0        | 0        | 1       | 0            |

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| Mol | Chain | Non-H  | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|--------|----------|----------|---------|--------------|
| 60  | D0    | 5      | 0        | 0        | 0       | 0            |
| 60  | D1    | 1      | 0        | 0        | 0       | 0            |
| 60  | D3    | 1      | 0        | 0        | 3       | 0            |
| 60  | D8    | 3      | 0        | 0        | 0       | 0            |
| 60  | DA    | 689    | 0        | 0        | 58      | 0            |
| 60  | DB    | 9      | 0        | 0        | 0       | 0            |
| 60  | DD    | 11     | 0        | 0        | 2       | 0            |
| 60  | DE    | 5      | 0        | 0        | 1       | 0            |
| 60  | DF    | 6      | 0        | 0        | 0       | 0            |
| 60  | DO    | 1      | 0        | 0        | 0       | 0            |
| 60  | DP    | 6      | 0        | 0        | 0       | 0            |
| 60  | DU    | 3      | 0        | 0        | 0       | 0            |
| 60  | DV    | 1      | 0        | 0        | 0       | 0            |
| 60  | DW    | 1      | 0        | 0        | 0       | 0            |
| 60  | DX    | 3      | 0        | 0        | 0       | 0            |
| All | All   | 289646 | 0        | 193084   | 5717    | 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 13.

All (5717) 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) |
|--------------------|------------------|--------------------------|-------------------|
| 25:DA:2121:G:H1    | 25:DA:2177:C:N4  | 1.35                     | 1.23              |
| 19:CS:42:PRO:HG3   | 50:D4:61:ARG:HG2 | 1.39                     | 1.04              |
| 1:AA:1028:C:N4     | 1:AA:1033:G:H1   | 1.56                     | 1.01              |
| 25:DA:2128:C:H42   | 25:DA:2160:G:H1  | 1.08                     | 1.00              |
| 25:DA:2137:C:H42   | 25:DA:2154:G:H1  | 1.05                     | 0.99              |
| 1:CA:1164:G:H1     | 1:CA:1172:C:N4   | 1.58                     | 0.98              |
| 1:CA:76:C:H42      | 1:CA:93:G:H1     | 1.08                     | 0.98              |
| 1:AA:1028:C:H42    | 1:AA:1033:G:H1   | 0.99                     | 0.97              |
| 25:BA:2124:G:H1    | 25:BA:2174:C:N4  | 1.62                     | 0.97              |
| 1:CA:1114:C:H42    | 1:CA:1186:G:H1   | 0.99                     | 0.96              |
| 1:AA:1502:A:H2     | 1:AA:1505:G:H1   | 1.14                     | 0.95              |
| 25:DA:1169:G:H1    | 25:DA:1180:C:H42 | 1.11                     | 0.95              |
| 1:CA:70:G:H1       | 1:CA:99:U:H3     | 1.12                     | 0.94              |
| 16:AP:57:ARG:NH2   | 16:AP:79:VAL:O   | 2.00                     | 0.93              |
| 30:BG:138:GLN:HE21 | 30:BG:138:GLN:H  | 1.13                     | 0.93              |
| 1:AA:1246:C:H42    | 1:AA:1291:G:H1   | 1.15                     | 0.92              |
| 1:AA:997:U:H3      | 1:AA:1044:A:H61  | 1.12                     | 0.92              |
| 1:CA:1256:A:H61    | 1:CA:1278:U:H1'  | 1.35                     | 0.92              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 3:AC:118:GLN:HE21  | 3:AC:118:GLN:H     | 1.14                     | 0.91              |
| 45:DZ:126:VAL:HG11 | 45:DZ:161:VAL:HG22 | 1.53                     | 0.90              |
| 2:AB:185:ILE:HG22  | 2:AB:199:TYR:HB2   | 1.51                     | 0.89              |
| 1:CA:1114:C:N4     | 1:CA:1186:G:H1     | 1.68                     | 0.89              |
| 25:DA:2121:G:N2    | 25:DA:2177:C:N3    | 2.19                     | 0.89              |
| 1:AA:427:U:OP1     | 4:AD:13:ARG:NH2    | 2.06                     | 0.89              |
| 25:BA:2124:G:H1    | 25:BA:2174:C:H42   | 1.01                     | 0.89              |
| 1:CA:1030(A):G:N2  | 1:CA:1030(D):A:OP2 | 2.06                     | 0.89              |
| 1:AA:1008:C:H42    | 1:AA:1021:G:H1     | 1.12                     | 0.88              |
| 28:DE:54:GLN:HG2   | 28:DE:76:ARG:HG2   | 1.53                     | 0.87              |
| 2:AB:155:LEU:HD11  | 2:AB:159:PRO:HD3   | 1.55                     | 0.87              |
| 25:BA:2683:C:O2    | 34:BO:70:LYS:NZ    | 2.07                     | 0.87              |
| 43:BX:53:LYS:HB3   | 43:BX:82:GLN:HB3   | 1.57                     | 0.87              |
| 4:AD:166:LYS:HA    | 4:AD:178:VAL:HG21  | 1.57                     | 0.86              |
| 50:B4:57:GLU:HB3   | 50:B4:58:ARG:HA    | 1.57                     | 0.86              |
| 25:DA:1607:C:N4    | 25:DA:1622:G:OP2   | 2.08                     | 0.86              |
| 25:BA:250:G:OP2    | 54:B8:13:ARG:NH2   | 2.07                     | 0.86              |
| 1:AA:538:G:H5''    | 12:AL:114:LYS:HB2  | 1.57                     | 0.86              |
| 25:BA:847:U:O4     | 25:BA:933:A:N6     | 2.08                     | 0.86              |
| 43:DX:53:LYS:HB3   | 43:DX:82:GLN:HB3   | 1.57                     | 0.86              |
| 1:AA:991:U:O2'     | 1:AA:992:U:OP2     | 1.94                     | 0.86              |
| 25:BA:2124:G:N2    | 25:BA:2174:C:N3    | 2.24                     | 0.85              |
| 1:AA:1311:G:H1     | 1:AA:1326:C:H42    | 1.21                     | 0.85              |
| 41:DV:60:GLU:OE2   | 41:DV:97:LYS:NZ    | 2.10                     | 0.85              |
| 25:BA:2243:U:OP1   | 60:BA:3807:HOH:O   | 1.94                     | 0.84              |
| 25:DA:740:U:OP2    | 60:DA:4407:HOH:O   | 1.95                     | 0.84              |
| 25:DA:272(G):C:H42 | 25:DA:363(C):G:H1  | 1.22                     | 0.84              |
| 1:AA:201:C:H42     | 1:AA:216:G:H22     | 1.25                     | 0.84              |
| 25:BA:993:G:OP1    | 40:BU:50:ARG:NH2   | 2.08                     | 0.84              |
| 1:CA:400:C:H5''    | 4:CD:73:ARG:HH22   | 1.42                     | 0.84              |
| 25:BA:1332:G:OP1   | 60:BA:4290:HOH:O   | 1.95                     | 0.84              |
| 25:BA:1176:G:H1'   | 25:BA:1177:A:H5'   | 1.57                     | 0.84              |
| 1:AA:1320:C:H5'    | 19:AS:70:LYS:HG3   | 1.58                     | 0.84              |
| 3:AC:114:PRO:O     | 3:AC:118:GLN:NE2   | 2.11                     | 0.84              |
| 45:DZ:121:HIS:HB2  | 45:DZ:171:ILE:HG22 | 1.60                     | 0.84              |
| 25:DA:2807:G:N1    | 25:DA:2893:G:O6    | 2.11                     | 0.83              |
| 25:DA:994:C:OP1    | 40:DU:53:ARG:NH2   | 2.11                     | 0.83              |
| 1:AA:1028:C:N3     | 1:AA:1033:G:N2     | 2.27                     | 0.83              |
| 25:BA:2140:C:O2    | 25:BA:2151:G:N1    | 2.10                     | 0.83              |
| 2:CB:185:ILE:HG22  | 2:CB:199:TYR:HB2   | 1.60                     | 0.83              |
| 39:DT:19:LEU:HD23  | 39:DT:20:PRO:HD2   | 1.60                     | 0.83              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 3:AC:172:ARG:NH2  | 3:AC:206:GLU:OE1   | 2.12                     | 0.83              |
| 25:BA:279:C:H42   | 25:BA:361:G:H1     | 1.24                     | 0.83              |
| 1:CA:1149:C:O2'   | 1:CA:1280:A:N1     | 2.11                     | 0.83              |
| 29:DF:53:THR:HG23 | 29:DF:55:GLY:H     | 1.44                     | 0.83              |
| 25:BA:2140:C:N3   | 25:BA:2151:G:O6    | 2.12                     | 0.83              |
| 25:BA:880:G:N2    | 25:BA:898:C:O2     | 2.12                     | 0.83              |
| 25:BA:2139:C:N4   | 25:BA:2152:G:N1    | 2.27                     | 0.83              |
| 25:DA:2683:C:O2   | 34:DO:70:LYS:NZ    | 2.10                     | 0.82              |
| 50:B4:59:PHE:HD2  | 50:B4:62:ARG:HH22  | 1.26                     | 0.82              |
| 25:DA:2867:G:OP2  | 39:DT:119:LYS:NZ   | 2.11                     | 0.82              |
| 1:AA:975:A:H4'    | 1:AA:976:G:H5''    | 1.61                     | 0.82              |
| 25:DA:299:A:H5''  | 44:DY:86:ARG:HH21  | 1.44                     | 0.82              |
| 25:BA:2689:U:H4'  | 25:BA:2690:C:H5'   | 1.62                     | 0.82              |
| 2:CB:80:ILE:HD13  | 2:CB:211:ILE:HB    | 1.61                     | 0.82              |
| 3:AC:111:LEU:HD21 | 3:AC:144:SER:HB3   | 1.61                     | 0.82              |
| 1:CA:427:U:OP1    | 4:CD:13:ARG:NH2    | 2.13                     | 0.82              |
| 27:DD:85:ASP:OD2  | 27:DD:88:ARG:NH1   | 2.13                     | 0.82              |
| 1:AA:1008:C:N4    | 1:AA:1021:G:H1     | 1.77                     | 0.81              |
| 1:CA:656:C:O2'    | 15:CO:28:GLN:NE2   | 2.13                     | 0.81              |
| 2:CB:84:GLU:HB3   | 2:CB:219:VAL:HG21  | 1.61                     | 0.81              |
| 24:CX:21:A:H61    | 24:CX:46:G:H2'     | 1.44                     | 0.81              |
| 13:AM:84:ILE:HG13 | 13:AM:85:GLY:HA2   | 1.62                     | 0.81              |
| 25:DA:2166:G:H3'  | 25:DA:2167:U:H5''  | 1.60                     | 0.81              |
| 46:D0:11:ARG:O    | 46:D0:14:ARG:NH2   | 2.14                     | 0.81              |
| 35:DP:56:SER:HB2  | 35:DP:61:ARG:HD2   | 1.61                     | 0.81              |
| 19:AS:65:ASN:HA   | 50:B4:58:ARG:HG3   | 1.63                     | 0.81              |
| 25:BA:1689:A:H62  | 25:BA:1698:A:H2    | 1.24                     | 0.81              |
| 1:AA:1008:C:N3    | 1:AA:1021:G:N2     | 2.29                     | 0.81              |
| 1:AA:78:G:N2      | 1:AA:91:C:N3       | 2.28                     | 0.81              |
| 1:AA:1305:G:H22   | 1:AA:1331:G:H1'    | 1.43                     | 0.81              |
| 1:CA:1262:C:N3    | 1:CA:1273:G:N2     | 2.29                     | 0.81              |
| 25:BA:2142:C:N3   | 25:BA:2149:G:O6    | 2.14                     | 0.81              |
| 1:CA:995:C:O2     | 14:CN:4:LYS:NZ     | 2.15                     | 0.80              |
| 3:AC:82:GLU:HG2   | 3:AC:85:ARG:HH21   | 1.47                     | 0.80              |
| 1:CA:1262:C:N4    | 1:CA:1273:G:N1     | 2.29                     | 0.80              |
| 1:CA:1409:C:O2    | 1:CA:1491:G:N2     | 2.13                     | 0.80              |
| 8:CH:41:ARG:NH2   | 8:CH:123:GLU:OE2   | 2.15                     | 0.80              |
| 25:DA:1022:G:H22  | 25:DA:1142(A):A:H2 | 1.28                     | 0.80              |
| 34:DO:35:VAL:HG11 | 34:DO:103:ALA:HB3  | 1.61                     | 0.80              |
| 25:DA:245:G:O6    | 54:D8:8:LYS:NZ     | 2.15                     | 0.80              |
| 25:DA:1693:U:O2'  | 27:DD:14:ARG:NH2   | 2.14                     | 0.80              |

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| Atom-1             | Atom-2              | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|---------------------|--------------------------|-------------------|
| 25:BA:631:A:OP1    | 35:BP:65:ARG:NH1    | 2.15                     | 0.80              |
| 1:CA:76:C:N4       | 1:CA:93:G:H1        | 1.78                     | 0.80              |
| 25:DA:2127:G:O6    | 25:DA:2161:C:N3     | 2.14                     | 0.80              |
| 39:DT:16:ARG:NH2   | 39:DT:83:ILE:O      | 2.15                     | 0.80              |
| 1:AA:664:G:H22     | 1:AA:741:G:H1       | 1.30                     | 0.80              |
| 25:BA:2150:U:H2'   | 25:BA:2151:G:C8     | 2.17                     | 0.80              |
| 13:CM:107:ALA:HB3  | 13:CM:111:LYS:HD2   | 1.64                     | 0.80              |
| 25:DA:1039:G:O6    | 25:DA:1116:C:N4     | 2.15                     | 0.80              |
| 32:DI:77:LEU:HB3   | 32:DI:142:VAL:HG12  | 1.62                     | 0.80              |
| 3:CC:40:ARG:NH2    | 3:CC:55:VAL:O       | 2.15                     | 0.80              |
| 1:AA:407:G:H5''    | 4:AD:115:ARG:HG2    | 1.64                     | 0.80              |
| 23:CW:76:PPU:OP1   | 60:CW:101:HOH:O     | 1.99                     | 0.80              |
| 32:BI:130:TYR:HB3  | 32:BI:138:ILE:HB    | 1.64                     | 0.79              |
| 1:CA:1436:U:OP1    | 20:CT:23:ARG:NH2    | 2.14                     | 0.79              |
| 25:DA:1019:U:H3    | 25:DA:1142(A):A:H62 | 1.28                     | 0.79              |
| 15:CO:4:THR:OG1    | 15:CO:7:GLU:OE1     | 2.00                     | 0.79              |
| 1:AA:1030:C:N3     | 1:AA:1031:G:N2      | 2.30                     | 0.79              |
| 25:DA:2137:C:N4    | 25:DA:2154:G:H1     | 1.79                     | 0.79              |
| 45:DZ:72:ARG:NH2   | 45:DZ:97:GLU:O      | 2.15                     | 0.79              |
| 1:CA:201:C:H42     | 1:CA:216:G:H1       | 1.29                     | 0.79              |
| 1:CA:950:U:H3      | 1:CA:1231:G:H1      | 1.29                     | 0.79              |
| 1:AA:1025:U:O2     | 1:AA:1036:G:O6      | 2.01                     | 0.79              |
| 25:BA:100:G:O2'    | 48:B2:7:ARG:NH2     | 2.15                     | 0.79              |
| 54:B8:62:LEU:HB3   | 54:B8:65:GLU:HG3    | 1.64                     | 0.79              |
| 3:CC:58:GLU:HB3    | 10:CJ:92:THR:HG21   | 1.64                     | 0.79              |
| 1:AA:1228:C:OP1    | 13:AM:115:LYS:N     | 2.15                     | 0.79              |
| 25:BA:1310:G:OP2   | 53:B7:9:ARG:NH1     | 2.15                     | 0.79              |
| 25:BA:2287:A:H62   | 25:BA:2344:U:H3     | 1.29                     | 0.79              |
| 29:BF:18:ARG:NH2   | 29:BF:127:GLU:OE1   | 2.15                     | 0.79              |
| 46:B0:11:ARG:O     | 46:B0:14:ARG:NH2    | 2.16                     | 0.79              |
| 28:DE:72:VAL:HG22  | 28:DE:73:GLU:HG3    | 1.64                     | 0.79              |
| 1:CA:1015:A:N3     | 1:CA:1218:C:O2'     | 2.15                     | 0.79              |
| 1:AA:656:C:O2'     | 15:AO:28:GLN:NE2    | 2.15                     | 0.78              |
| 25:BA:400:G:N7     | 60:BA:4516:HOH:O    | 2.16                     | 0.78              |
| 35:BP:42:SER:O     | 60:BP:304:HOH:O     | 2.00                     | 0.78              |
| 1:CA:613:C:N4      | 1:CA:627:G:O6       | 2.16                     | 0.78              |
| 25:DA:2128:C:N4    | 25:DA:2160:G:H1     | 1.81                     | 0.78              |
| 25:BA:2533:A:OP2   | 60:BA:3962:HOH:O    | 2.00                     | 0.78              |
| 30:DG:114:ILE:HG23 | 30:DG:136:ARG:HH22  | 1.48                     | 0.78              |
| 43:DX:8:ILE:O      | 48:D2:36:ARG:NH2    | 2.15                     | 0.78              |
| 1:AA:78:G:N1       | 1:AA:91:C:N4        | 2.31                     | 0.78              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 25:BA:2646:C:OP2  | 25:BA:2732:G:O2'   | 1.99                     | 0.78              |
| 19:CS:50:ALA:HB1  | 19:CS:57:HIS:HB3   | 1.66                     | 0.78              |
| 1:CA:1164:G:N2    | 1:CA:1172:C:N3     | 2.31                     | 0.78              |
| 25:DA:2805:G:H2'  | 25:DA:2807:G:C8    | 2.18                     | 0.78              |
| 1:AA:1246:C:N4    | 1:AA:1291:G:H1     | 1.82                     | 0.78              |
| 35:BP:89:ALA:O    | 35:BP:121:LYS:NZ   | 2.15                     | 0.78              |
| 1:AA:642:A:N3     | 8:AH:113:SER:OG    | 2.16                     | 0.78              |
| 25:BA:1315:C:OP2  | 60:BA:4290:HOH:O   | 2.01                     | 0.78              |
| 25:DA:1309:G:H4'  | 53:D7:7:PRO:HB2    | 1.65                     | 0.78              |
| 1:CA:1075:C:OP1   | 2:CB:179:LYS:NZ    | 2.12                     | 0.77              |
| 4:CD:103:ASN:OD1  | 4:CD:114:ARG:NH2   | 2.16                     | 0.77              |
| 49:D3:5:LYS:NZ    | 49:D3:34:GLU:OE2   | 2.16                     | 0.77              |
| 2:AB:15:VAL:O     | 2:AB:16:HIS:ND1    | 2.13                     | 0.77              |
| 13:AM:58:GLU:O    | 13:AM:62:ASN:ND2   | 2.17                     | 0.77              |
| 1:CA:1204:A:OP1   | 14:CN:3:ARG:NH1    | 2.17                     | 0.77              |
| 27:BD:71:ASP:HB2  | 27:BD:103:ARG:HH22 | 1.48                     | 0.77              |
| 5:AE:92:LYS:HB3   | 5:AE:119:LEU:HB2   | 1.66                     | 0.77              |
| 1:CA:426:G:OP1    | 4:CD:38:TYR:OH     | 2.02                     | 0.77              |
| 5:CE:102:ALA:O    | 5:CE:107:ARG:NH1   | 2.17                     | 0.77              |
| 25:DA:11:G:N7     | 60:DA:4445:HOH:O   | 2.17                     | 0.77              |
| 27:DD:276:LYS:HD3 | 27:DD:276:LYS:H    | 1.49                     | 0.77              |
| 1:CA:158:G:N2     | 1:CA:163:C:O2      | 2.16                     | 0.77              |
| 25:DA:2357:U:OP1  | 46:D0:20:ARG:NH1   | 2.17                     | 0.77              |
| 25:BA:2711:A:OP1  | 60:BA:4079:HOH:O   | 2.03                     | 0.77              |
| 34:BO:35:VAL:HG11 | 34:BO:103:ALA:HB3  | 1.67                     | 0.77              |
| 28:DE:1:MET:HE3   | 28:DE:199:ARG:HB3  | 1.67                     | 0.77              |
| 1:AA:559:A:OP1    | 5:AE:126:ARG:NH2   | 2.18                     | 0.77              |
| 1:CA:542:G:OP1    | 4:CD:10:ARG:NH1    | 2.16                     | 0.77              |
| 3:CC:5:ILE:HD11   | 14:CN:58:LYS:HE3   | 1.66                     | 0.77              |
| 4:CD:13:ARG:NH1   | 4:CD:38:TYR:O      | 2.18                     | 0.77              |
| 22:CV:16:A:H61    | 24:CX:36:U:H3      | 1.33                     | 0.77              |
| 25:BA:2285:C:OP2  | 52:B6:6:ARG:NH1    | 2.17                     | 0.76              |
| 13:AM:39:ILE:HD12 | 13:AM:52:GLU:HG3   | 1.67                     | 0.76              |
| 1:CA:390:C:O3'    | 16:CP:28:ARG:NH2   | 2.18                     | 0.76              |
| 30:DG:176:LEU:HB2 | 30:DG:178:PHE:HE1  | 1.46                     | 0.76              |
| 25:DA:2127:G:N1   | 25:DA:2161:C:O2    | 2.18                     | 0.76              |
| 1:AA:997:U:H3     | 1:AA:1044:A:N6     | 1.83                     | 0.76              |
| 1:CA:1310:G:OP1   | 13:CM:77:ASN:ND2   | 2.18                     | 0.76              |
| 24:CX:19:G:H1     | 24:CX:56:C:H42     | 1.34                     | 0.76              |
| 30:DG:176:LEU:HB2 | 30:DG:178:PHE:CE1  | 2.19                     | 0.76              |
| 16:CP:51:VAL:HG12 | 16:CP:53:VAL:H     | 1.50                     | 0.76              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 25:BA:1470:G:N7   | 60:BA:3868:HOH:O   | 2.17                     | 0.76              |
| 1:CA:1392:G:H21   | 1:CA:1502:A:H8     | 1.31                     | 0.76              |
| 25:DA:2657:A:O3'  | 31:DH:160:LYS:NZ   | 2.18                     | 0.76              |
| 35:BP:26:GLY:O    | 60:BP:305:HOH:O    | 2.03                     | 0.76              |
| 1:CA:1360:A:OP2   | 14:CN:35:ARG:NH2   | 2.18                     | 0.76              |
| 5:CE:50:GLU:HB2   | 5:CE:53:LEU:HD12   | 1.67                     | 0.76              |
| 2:AB:178:ARG:HH21 | 8:AH:74:PRO:HB3    | 1.51                     | 0.76              |
| 12:AL:70:ILE:HG12 | 12:AL:100:ILE:HD12 | 1.67                     | 0.76              |
| 32:BI:77:LEU:HB3  | 32:BI:142:VAL:HG12 | 1.68                     | 0.76              |
| 26:DB:22:U:H3     | 26:DB:61:G:H1      | 1.32                     | 0.76              |
| 1:AA:1030:C:N4    | 1:AA:1031:G:N1     | 2.34                     | 0.76              |
| 26:DB:5:C:OP1     | 26:DB:61:G:O2'     | 2.03                     | 0.76              |
| 47:B1:23:LYS:HB3  | 47:B1:29:GLY:HA3   | 1.67                     | 0.75              |
| 1:CA:575:G:N2     | 1:CA:880:C:O2      | 2.17                     | 0.75              |
| 1:AA:1221:G:OP1   | 1:AA:1320:C:N4     | 2.18                     | 0.75              |
| 4:AD:173:TRP:HA   | 4:AD:187:ARG:CZ    | 2.16                     | 0.75              |
| 25:DA:785:G:OP2   | 60:DA:4120:HOH:O   | 2.02                     | 0.75              |
| 25:DA:1689:A:H62  | 25:DA:1698:A:H2    | 1.32                     | 0.75              |
| 38:DS:41:ASP:O    | 38:DS:44:LYS:NZ    | 2.20                     | 0.75              |
| 1:CA:975:A:H4'    | 1:CA:976:G:H5''    | 1.67                     | 0.75              |
| 14:CN:37:PHE:HZ   | 14:CN:56:VAL:HG21  | 1.49                     | 0.75              |
| 25:BA:2139:C:N4   | 25:BA:2152:G:C6    | 2.54                     | 0.75              |
| 25:BA:2721:A:N7   | 60:BA:3890:HOH:O   | 2.19                     | 0.75              |
| 27:BD:108:PRO:HB3 | 27:BD:143:HIS:CE1  | 2.21                     | 0.75              |
| 30:BG:143:GLU:O   | 50:B4:28:LYS:NZ    | 2.19                     | 0.75              |
| 27:DD:71:ASP:HB2  | 27:DD:103:ARG:HH22 | 1.50                     | 0.75              |
| 2:AB:16:HIS:CG    | 2:AB:17:PHE:H      | 2.04                     | 0.75              |
| 25:BA:2713:A:OP1  | 37:BR:14:SER:OG    | 2.05                     | 0.75              |
| 34:BO:86:ILE:HG22 | 34:BO:94:ARG:HG3   | 1.69                     | 0.75              |
| 19:CS:36:ARG:NH2  | 19:CS:75:ALA:O     | 2.19                     | 0.75              |
| 1:AA:1125:U:O2'   | 1:AA:1127:G:N7     | 2.16                     | 0.75              |
| 45:BZ:69:THR:HG22 | 45:BZ:90:VAL:HA    | 1.68                     | 0.75              |
| 10:CJ:62:HIS:HB3  | 14:CN:59:ALA:HB3   | 1.68                     | 0.75              |
| 25:DA:2121:G:H1   | 25:DA:2177:C:H42   | 0.76                     | 0.75              |
| 25:BA:1695:G:N7   | 27:BD:14:ARG:NH2   | 2.34                     | 0.75              |
| 41:DV:52:VAL:HG21 | 41:DV:55:ALA:HB3   | 1.68                     | 0.75              |
| 25:BA:956:G:O6    | 60:BA:3746:HOH:O   | 2.05                     | 0.75              |
| 25:BA:2867:G:OP2  | 39:BT:119:LYS:NZ   | 2.19                     | 0.75              |
| 5:CE:122:GLU:O    | 5:CE:126:ARG:NH1   | 2.20                     | 0.75              |
| 13:AM:3:ARG:HG2   | 13:AM:8:GLU:HG3    | 1.69                     | 0.74              |
| 49:B3:18:ASP:OD1  | 49:B3:18:ASP:N     | 2.20                     | 0.74              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:CA:1353:G:OP1   | 21:CU:10:ARG:NH1  | 2.19                     | 0.74              |
| 6:CF:11:ASN:HB3   | 6:CF:14:LEU:HG    | 1.67                     | 0.74              |
| 16:AP:53:VAL:HG13 | 16:AP:79:VAL:HG22 | 1.69                     | 0.74              |
| 1:CA:986:A:N3     | 19:CS:52:TYR:OH   | 2.20                     | 0.74              |
| 38:DS:34:HIS:ND1  | 38:DS:53:SER:OG   | 2.19                     | 0.74              |
| 13:AM:86:CYS:HB2  | 19:AS:73:GLU:HB3  | 1.68                     | 0.74              |
| 26:BB:87:G:N2     | 26:BB:90:A:OP2    | 2.18                     | 0.74              |
| 2:CB:16:HIS:HB2   | 2:CB:204:ASN:HB3  | 1.69                     | 0.74              |
| 25:DA:2137:C:N3   | 25:DA:2154:G:N2   | 2.35                     | 0.74              |
| 26:DB:87:G:N2     | 26:DB:90:A:OP2    | 2.21                     | 0.74              |
| 25:DA:330:A:H2    | 25:DA:1210:A:H2'  | 1.52                     | 0.74              |
| 25:DA:1828:G:OP1  | 60:DA:4417:HOH:O  | 2.06                     | 0.74              |
| 25:DA:2114:A:N6   | 25:DA:2119:A:N7   | 2.36                     | 0.74              |
| 25:BA:2114:A:N6   | 25:BA:2119:A:N7   | 2.35                     | 0.74              |
| 25:BA:2142:C:O2   | 25:BA:2149:G:N1   | 2.15                     | 0.74              |
| 25:DA:2122:U:O4   | 25:DA:2176:A:N1   | 2.21                     | 0.74              |
| 10:AJ:35:SER:HB3  | 10:AJ:73:ASP:HB2  | 1.69                     | 0.74              |
| 25:BA:671:C:N4    | 60:BA:4439:HOH:O  | 2.20                     | 0.74              |
| 1:CA:1029:C:N4    | 1:CA:1032:G:H1    | 1.84                     | 0.74              |
| 2:CB:102:LEU:HD23 | 2:CB:182:ILE:HD13 | 1.70                     | 0.74              |
| 13:CM:84:ILE:O    | 13:CM:86:CYS:N    | 2.16                     | 0.74              |
| 25:DA:1143:A:OP1  | 33:DN:25:ARG:NH2  | 2.21                     | 0.74              |
| 25:BA:2308:G:O6   | 25:BA:2311:A:N6   | 2.16                     | 0.73              |
| 48:B2:22:GLU:OE2  | 48:B2:68:ARG:NH2  | 2.21                     | 0.73              |
| 1:AA:153:C:H42    | 1:AA:168:G:H1     | 1.34                     | 0.73              |
| 25:BA:245:G:O6    | 54:B8:8:LYS:NZ    | 2.21                     | 0.73              |
| 25:BA:2141:G:O6   | 25:BA:2150:U:O2   | 2.06                     | 0.73              |
| 4:CD:108:LEU:HD21 | 4:CD:183:GLY:HA3  | 1.70                     | 0.73              |
| 25:DA:1890:A:OP2  | 60:DA:4558:HOH:O  | 2.06                     | 0.73              |
| 12:CL:24:VAL:HG13 | 12:CL:98:TYR:HE1  | 1.52                     | 0.73              |
| 25:DA:2518:A:OP2  | 60:DA:4240:HOH:O  | 2.06                     | 0.73              |
| 16:AP:34:GLU:OE2  | 16:AP:55:ARG:NH2  | 2.20                     | 0.73              |
| 1:CA:831:U:H3     | 1:CA:855:G:H1     | 1.35                     | 0.73              |
| 25:DA:2629:A:O2'  | 25:DA:2630:G:OP2  | 2.04                     | 0.73              |
| 1:CA:1128:C:H1'   | 1:CA:1147:C:H42   | 1.52                     | 0.73              |
| 4:AD:186:LEU:HB2  | 4:AD:187:ARG:HH21 | 1.54                     | 0.73              |
| 1:CA:455:C:H42    | 1:CA:476:G:H1     | 1.37                     | 0.73              |
| 1:CA:352:C:OP2    | 60:CA:4035:HOH:O  | 2.06                     | 0.73              |
| 1:CA:1120:G:C6    | 1:CA:1154:G:N2    | 2.57                     | 0.73              |
| 25:DA:782:A:OP2   | 60:DA:4013:HOH:O  | 2.07                     | 0.73              |
| 47:D1:52:ARG:HH21 | 47:D1:57:GLU:HB2  | 1.54                     | 0.73              |

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| Atom-1             | Atom-2              | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|---------------------|--------------------------|-------------------|
| 25:BA:2096:U:H3    | 25:BA:2193:G:H1     | 1.35                     | 0.73              |
| 25:DA:2119:A:H2    | 25:DA:2171:A:H5'    | 1.54                     | 0.73              |
| 25:DA:2171:A:N3    | 25:DA:2172:U:N3     | 2.36                     | 0.73              |
| 25:BA:2107:C:H42   | 25:BA:2182:G:H1     | 1.36                     | 0.73              |
| 35:BP:126:VAL:HG12 | 35:BP:148:LEU:HD23  | 1.70                     | 0.73              |
| 1:AA:662:G:H2'     | 1:AA:663:A:C8       | 2.24                     | 0.72              |
| 25:DA:2753:A:N3    | 55:D9:15:LYS:NZ     | 2.36                     | 0.72              |
| 10:AJ:31:GLY:HA3   | 10:AJ:81:THR:HG21   | 1.71                     | 0.72              |
| 24:AX:49:G:H1      | 24:AX:65:C:H42      | 1.37                     | 0.72              |
| 25:BA:2139:C:N3    | 25:BA:2152:G:N2     | 2.37                     | 0.72              |
| 1:CA:875:C:H1'     | 8:CH:15:ASN:HD21    | 1.53                     | 0.72              |
| 25:DA:918:A:O2'    | 26:DB:97:G:N2       | 2.20                     | 0.72              |
| 25:DA:2064:C:OP2   | 60:DA:4454:HOH:O    | 2.05                     | 0.72              |
| 25:BA:1693:U:O2'   | 27:BD:14:ARG:NH2    | 2.22                     | 0.72              |
| 25:DA:2805:G:H2'   | 25:DA:2807:G:H8     | 1.51                     | 0.72              |
| 1:AA:1183:A:H3'    | 1:AA:1184:G:H5''    | 1.72                     | 0.72              |
| 25:BA:1019:U:H3    | 25:BA:1142(A):A:H62 | 1.35                     | 0.72              |
| 4:CD:187:ARG:NH2   | 4:CD:193:ASP:OD2    | 2.22                     | 0.72              |
| 25:DA:82:G:N1      | 25:DA:103:A:OP2     | 2.19                     | 0.72              |
| 3:CC:111:LEU:HD22  | 3:CC:146:ALA:HB2    | 1.71                     | 0.72              |
| 25:BA:517:C:OP1    | 51:B5:16:ARG:NH2    | 2.20                     | 0.72              |
| 19:CS:15:LEU:HA    | 19:CS:18:LYS:HD2    | 1.70                     | 0.72              |
| 2:AB:16:HIS:CG     | 2:AB:17:PHE:N       | 2.56                     | 0.72              |
| 29:BF:61:GLY:O     | 60:BF:406:HOH:O     | 2.06                     | 0.72              |
| 30:BG:138:GLN:HE21 | 30:BG:138:GLN:N     | 1.87                     | 0.72              |
| 37:BR:103:ARG:NH1  | 37:BR:108:GLY:O     | 2.22                     | 0.72              |
| 15:CO:39:LEU:HD13  | 15:CO:56:LEU:HB2    | 1.70                     | 0.72              |
| 46:D0:27:GLU:HG3   | 46:D0:68:GLU:HA     | 1.72                     | 0.72              |
| 9:AI:17:VAL:HG11   | 9:AI:81:ILE:HA      | 1.70                     | 0.72              |
| 15:AO:39:LEU:HD12  | 15:AO:56:LEU:HB2    | 1.71                     | 0.72              |
| 25:BA:2005:A:OP1   | 60:BA:4104:HOH:O    | 2.06                     | 0.72              |
| 26:DB:50:G:OP1     | 38:DS:63:THR:N      | 2.22                     | 0.72              |
| 1:AA:339:C:OP2     | 34:BO:97:ARG:NH1    | 2.21                     | 0.72              |
| 1:AA:953:G:N7      | 13:AM:104:ARG:NH2   | 2.36                     | 0.72              |
| 1:AA:1036:G:H3'    | 1:AA:1037:C:H6      | 1.53                     | 0.72              |
| 24:AX:76:31H:OP1   | 25:BA:2439:A:N6     | 2.23                     | 0.72              |
| 25:BA:1670:C:OP1   | 60:BA:3797:HOH:O    | 2.07                     | 0.72              |
| 1:CA:1035:A:H2'    | 1:CA:1036:G:H8      | 1.53                     | 0.71              |
| 31:DH:3:ARG:HB3    | 31:DH:3:ARG:HH11    | 1.54                     | 0.71              |
| 1:AA:574:A:OP2     | 60:AA:4009:HOH:O    | 2.08                     | 0.71              |
| 1:AA:674:G:H2'     | 1:AA:675:A:H8       | 1.54                     | 0.71              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 25:BA:1199:U:OP1  | 60:BA:4387:HOH:O   | 2.08                     | 0.71              |
| 1:CA:1029:C:N3    | 1:CA:1032:G:N2     | 2.38                     | 0.71              |
| 1:CA:1244:C:H42   | 1:CA:1293:G:H1     | 1.36                     | 0.71              |
| 4:CD:98:GLU:HG2   | 4:CD:189:PRO:HG2   | 1.72                     | 0.71              |
| 25:DA:2183:C:H2'  | 25:DA:2184:G:H8    | 1.55                     | 0.71              |
| 37:DR:33:ARG:NH1  | 37:DR:115:GLU:OE2  | 2.23                     | 0.71              |
| 7:CG:79:ARG:HE    | 7:CG:80:VAL:HG23   | 1.54                     | 0.71              |
| 16:CP:57:ARG:NH2  | 16:CP:79:VAL:O     | 2.23                     | 0.71              |
| 25:BA:1798:U:H5'  | 27:BD:259:THR:HG22 | 1.72                     | 0.71              |
| 1:AA:936:C:O2     | 1:AA:1382:C:N4     | 2.21                     | 0.71              |
| 3:AC:70:VAL:HG22  | 3:AC:72:LYS:H      | 1.55                     | 0.71              |
| 3:CC:12:LEU:HD23  | 3:CC:16:ARG:HB3    | 1.70                     | 0.71              |
| 45:BZ:45:ASP:OD2  | 45:BZ:49:ARG:NH1   | 2.23                     | 0.71              |
| 1:CA:1006:C:OP1   | 1:CA:1037:C:O2'    | 2.08                     | 0.71              |
| 25:DA:2302:G:N2   | 30:DG:126:ASP:OD1  | 2.21                     | 0.71              |
| 2:AB:69:LEU:HB3   | 2:AB:162:ILE:HG22  | 1.71                     | 0.71              |
| 1:CA:559:A:OP1    | 5:CE:126:ARG:NH2   | 2.24                     | 0.71              |
| 25:DA:1449:A:HO2' | 25:DA:1529:G:H21   | 1.36                     | 0.71              |
| 25:BA:2500:U:O2'  | 25:BA:2504:U:OP1   | 2.09                     | 0.71              |
| 13:CM:58:GLU:O    | 13:CM:62:ASN:ND2   | 2.24                     | 0.71              |
| 25:DA:997:G:OP1   | 40:DU:92:ARG:NE    | 2.24                     | 0.71              |
| 25:DA:2238:G:N7   | 60:DA:4590:HOH:O   | 2.23                     | 0.71              |
| 35:DP:95:VAL:HA   | 35:DP:99:LEU:HD21  | 1.73                     | 0.71              |
| 30:BG:5:VAL:HG22  | 30:BG:8:LYS:H      | 1.56                     | 0.71              |
| 5:CE:43:LEU:HD22  | 5:CE:136:MET:HG3   | 1.72                     | 0.71              |
| 12:CL:71:PRO:O    | 12:CL:102:ARG:NH1  | 2.22                     | 0.71              |
| 36:DQ:43:THR:HA   | 36:DQ:94:VAL:HG12  | 1.73                     | 0.71              |
| 42:DW:14:PRO:HG2  | 42:DW:78:GLU:HG2   | 1.71                     | 0.71              |
| 49:D3:29:ARG:HB3  | 49:D3:30:ARG:HH11  | 1.56                     | 0.71              |
| 6:AF:18:GLN:N     | 6:AF:18:GLN:OE1    | 2.23                     | 0.71              |
| 25:BA:1342:A:O2'  | 25:BA:1344:G:OP2   | 2.07                     | 0.71              |
| 25:DA:568:U:O4    | 60:DA:4115:HOH:O   | 2.06                     | 0.71              |
| 4:AD:13:ARG:NH1   | 4:AD:38:TYR:O      | 2.24                     | 0.70              |
| 25:DA:2830:G:OP1  | 28:DE:76:ARG:NH2   | 2.24                     | 0.70              |
| 25:DA:500:G:N1    | 25:DA:503:A:OP2    | 2.22                     | 0.70              |
| 25:DA:2186:G:H2'  | 25:DA:2187:G:H5''  | 1.71                     | 0.70              |
| 20:AT:33:ILE:HD12 | 20:AT:62:LEU:HB3   | 1.73                     | 0.70              |
| 25:DA:1939:U:OP1  | 25:DA:2604:U:O2'   | 2.08                     | 0.70              |
| 25:BA:31:C:OP1    | 60:BA:4386:HOH:O   | 2.09                     | 0.70              |
| 25:BA:687:C:H5''  | 53:B7:2:LYS:HE2    | 1.73                     | 0.70              |
| 25:BA:816:C:OP2   | 60:BA:4006:HOH:O   | 2.09                     | 0.70              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 25:BA:1189:A:OP2  | 60:BA:4298:HOH:O   | 2.10                     | 0.70              |
| 2:CB:174:VAL:HG11 | 2:CB:196:LEU:HG    | 1.74                     | 0.70              |
| 13:CM:65:LYS:HA   | 50:D4:50:VAL:HG11  | 1.73                     | 0.70              |
| 45:DZ:119:GLU:HB2 | 45:DZ:122:ARG:HH11 | 1.56                     | 0.70              |
| 48:D2:38:GLN:HB3  | 48:D2:44:LEU:HB2   | 1.73                     | 0.70              |
| 1:AA:96:U:O2'     | 1:AA:97:G:H5'      | 1.92                     | 0.70              |
| 1:AA:1069:C:OP2   | 60:AA:4012:HOH:O   | 2.09                     | 0.70              |
| 1:AA:1305:G:N2    | 1:AA:1331:G:H1'    | 2.07                     | 0.70              |
| 25:BA:1828:G:OP1  | 60:BA:4340:HOH:O   | 2.09                     | 0.70              |
| 2:CB:18:GLY:HA2   | 2:CB:42:ILE:HG13   | 1.72                     | 0.70              |
| 3:CC:11:ARG:NH2   | 3:CC:177:THR:O     | 2.24                     | 0.70              |
| 5:CE:144:THR:H    | 5:CE:147:ASP:HB2   | 1.57                     | 0.70              |
| 1:AA:1492:A:O2'   | 1:AA:1493:A:O5'    | 2.09                     | 0.70              |
| 13:AM:34:LEU:HD13 | 13:AM:41:PRO:HA    | 1.73                     | 0.70              |
| 25:DA:601:C:OP1   | 29:DF:108:LYS:NZ   | 2.21                     | 0.70              |
| 25:DA:993:G:OP1   | 40:DU:50:ARG:NH2   | 2.25                     | 0.70              |
| 25:DA:1204:A:H2   | 25:DA:1241:A:H62   | 1.39                     | 0.70              |
| 25:DA:2552:U:OP2  | 60:DA:4610:HOH:O   | 2.10                     | 0.70              |
| 36:DQ:29:PHE:O    | 45:DZ:122:ARG:NH2  | 2.23                     | 0.70              |
| 8:AH:73:ASP:OD1   | 8:AH:75:ARG:NH1    | 2.25                     | 0.70              |
| 1:CA:1002:G:H1    | 1:CA:1038:C:N4     | 1.90                     | 0.70              |
| 25:DA:2674:G:H5'' | 34:DO:26:LYS:HE3   | 1.72                     | 0.70              |
| 42:DW:18:ARG:HG3  | 42:DW:76:VAL:HB    | 1.73                     | 0.70              |
| 45:DZ:23:LYS:HG3  | 45:DZ:40:ASP:HA    | 1.74                     | 0.70              |
| 1:AA:1356:G:H2'   | 1:AA:1357:A:C8     | 2.26                     | 0.70              |
| 1:CA:986:A:O2'    | 19:CS:55:LYS:O     | 2.08                     | 0.70              |
| 1:CA:1228:C:OP1   | 13:CM:115:LYS:N    | 2.25                     | 0.70              |
| 24:CX:23:C:H2'    | 24:CX:24:U:H6      | 1.57                     | 0.70              |
| 6:AF:14:LEU:HB3   | 6:AF:18:GLN:NE2    | 2.06                     | 0.70              |
| 24:AX:59:A:H2'    | 24:AX:60:U:H5'     | 1.74                     | 0.70              |
| 24:CX:8:4SU:O5'   | 24:CX:8:4SU:H6     | 1.92                     | 0.70              |
| 32:DI:37:VAL:HG12 | 32:DI:38:LEU:HD12  | 1.73                     | 0.70              |
| 29:BF:53:THR:HG23 | 29:BF:55:GLY:H     | 1.57                     | 0.70              |
| 25:DA:643:A:N1    | 25:DA:2369:A:O2'   | 2.24                     | 0.70              |
| 25:DA:2113:U:O2   | 25:DA:2169:A:N6    | 2.24                     | 0.70              |
| 27:DD:242:ARG:O   | 60:DD:407:HOH:O    | 2.10                     | 0.70              |
| 1:AA:545:C:OP2    | 4:AD:65:ARG:NH2    | 2.25                     | 0.69              |
| 1:AA:1279:A:O2'   | 1:AA:1282:C:N4     | 2.25                     | 0.69              |
| 1:CA:922:G:H4'    | 5:CE:20:GLN:HA     | 1.73                     | 0.69              |
| 1:CA:1164:G:N1    | 1:CA:1172:C:N4     | 2.38                     | 0.69              |
| 2:CB:163:PHE:HD1  | 2:CB:185:ILE:HG13  | 1.57                     | 0.69              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 2:CB:178:ARG:HH22  | 8:CH:68:ARG:HH22   | 1.38                     | 0.69              |
| 1:AA:1311:G:H1     | 1:AA:1326:C:N4     | 1.90                     | 0.69              |
| 1:CA:1262:C:N4     | 1:CA:1273:G:H1     | 1.90                     | 0.69              |
| 25:BA:18:C:O2'     | 25:BA:554:U:OP1    | 2.10                     | 0.69              |
| 34:BO:37:ASP:OD1   | 34:BO:109:LYS:NZ   | 2.25                     | 0.69              |
| 37:BR:56:LYS:NZ    | 37:BR:87:TYR:O     | 2.25                     | 0.69              |
| 25:DA:2646:C:OP2   | 25:DA:2732:G:O2'   | 2.08                     | 0.69              |
| 1:AA:1183:A:O2'    | 1:AA:1184:G:OP1    | 2.09                     | 0.69              |
| 1:AA:1259:C:H42    | 1:AA:1276:G:H1     | 1.36                     | 0.69              |
| 53:B7:33:ARG:NH2   | 60:B7:3102:HOH:O   | 2.25                     | 0.69              |
| 25:BA:1786:A:H1'   | 25:BA:1938:A:N6    | 2.06                     | 0.69              |
| 27:BD:37:LEU:HD12  | 27:BD:62:TYR:HB2   | 1.73                     | 0.69              |
| 25:DA:1783:A:H5'   | 25:DA:2608:G:H4'   | 1.75                     | 0.69              |
| 26:DB:75:G:N2      | 45:DZ:87:ASP:OD1   | 2.25                     | 0.69              |
| 30:DG:41:GLN:HE21  | 30:DG:155:MET:HB3  | 1.56                     | 0.69              |
| 1:CA:991:U:O2'     | 1:CA:992:U:O5'     | 2.11                     | 0.69              |
| 25:BA:1434:A:H61   | 25:BA:1558:A:H62   | 1.38                     | 0.69              |
| 47:B1:86:SER:OG    | 47:B1:89:GLU:OE1   | 2.10                     | 0.69              |
| 3:CC:82:GLU:HG2    | 3:CC:85:ARG:HH21   | 1.58                     | 0.69              |
| 27:DD:221:VAL:O    | 60:DD:411:HOH:O    | 2.09                     | 0.69              |
| 1:AA:13:U:OP1      | 60:AA:4118:HOH:O   | 2.10                     | 0.69              |
| 1:AA:1007:C:N3     | 1:AA:1022:G:O6     | 2.25                     | 0.69              |
| 27:BD:108:PRO:HB3  | 27:BD:143:HIS:HE1  | 1.58                     | 0.69              |
| 28:DE:128:SER:OG   | 28:DE:129:HIS:N    | 2.21                     | 0.69              |
| 30:DG:150:ASP:OD1  | 30:DG:153:ARG:NH1  | 2.22                     | 0.69              |
| 34:DO:115:VAL:HG13 | 34:DO:121:VAL:HG21 | 1.75                     | 0.69              |
| 25:BA:739:G:OP1    | 60:BA:4315:HOH:O   | 2.10                     | 0.69              |
| 25:BA:2144:U:H1'   | 25:BA:2148:G:H22   | 1.57                     | 0.69              |
| 25:BA:2811:G:H5'   | 28:BE:60:ASN:HD22  | 1.58                     | 0.69              |
| 33:DN:20:GLY:HA2   | 33:DN:61:ARG:HE    | 1.58                     | 0.69              |
| 1:AA:405:U:OP2     | 4:AD:3:ARG:NH2     | 2.25                     | 0.69              |
| 1:AA:418:C:H42     | 1:AA:425:G:H1      | 1.41                     | 0.69              |
| 10:AJ:13:HIS:HA    | 10:AJ:16:LEU:HB3   | 1.75                     | 0.69              |
| 25:BA:1648:C:OP1   | 60:BA:4313:HOH:O   | 2.11                     | 0.69              |
| 1:CA:446:G:H1      | 1:CA:488:C:H42     | 1.41                     | 0.69              |
| 1:AA:78:G:C2       | 1:AA:91:C:N3       | 2.61                     | 0.68              |
| 1:AA:328:C:H4'     | 1:AA:329:A:H5'     | 1.75                     | 0.68              |
| 1:AA:509:A:N1      | 60:AA:4114:HOH:O   | 2.24                     | 0.68              |
| 1:AA:903:G:OP1     | 60:AA:4036:HOH:O   | 2.10                     | 0.68              |
| 2:AB:18:GLY:HA3    | 2:AB:41:ILE:HD13   | 1.73                     | 0.68              |
| 44:BY:43:ASN:HB3   | 44:BY:65:ALA:HB3   | 1.76                     | 0.68              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:DA:1269:A:N7    | 60:DA:4606:HOH:O   | 2.25                     | 0.68              |
| 1:CA:976:G:H5'     | 1:CA:1358:U:O2'    | 1.93                     | 0.68              |
| 25:DA:2336:A:H61   | 46:D0:43:THR:HG22  | 1.57                     | 0.68              |
| 29:DF:155:LEU:HD11 | 29:DF:176:LEU:HD12 | 1.74                     | 0.68              |
| 1:AA:972:C:OP1     | 60:AA:4142:HOH:O   | 2.10                     | 0.68              |
| 1:CA:985:C:H42     | 1:CA:1220:G:H1     | 1.40                     | 0.68              |
| 25:DA:880:G:N2     | 25:DA:898:C:O2     | 2.26                     | 0.68              |
| 24:AX:21:A:H61     | 24:AX:46:G:H2'     | 1.58                     | 0.68              |
| 25:BA:801:G:O6     | 29:BF:53:THR:OG1   | 2.10                     | 0.68              |
| 7:CG:113:GLU:HG2   | 7:CG:119:ARG:HG2   | 1.75                     | 0.68              |
| 9:CI:116:LYS:HA    | 9:CI:123:PRO:HD3   | 1.73                     | 0.68              |
| 25:DA:2130:U:H4'   | 25:DA:2133:G:H4'   | 1.74                     | 0.68              |
| 30:DG:43:LEU:HD12  | 30:DG:45:GLU:HG3   | 1.75                     | 0.68              |
| 2:AB:17:PHE:HB2    | 2:AB:44:LEU:HD11   | 1.75                     | 0.68              |
| 25:BA:1970:A:OP2   | 60:BA:4046:HOH:O   | 2.12                     | 0.68              |
| 1:CA:1464:G:OP1    | 39:DT:108:ARG:NH1  | 2.27                     | 0.68              |
| 25:DA:2099:U:H3    | 25:DA:2190:G:H1    | 1.42                     | 0.68              |
| 27:DD:76:PRO:HB2   | 27:DD:116:GLN:HE21 | 1.58                     | 0.68              |
| 5:AE:50:GLU:HB2    | 5:AE:53:LEU:HD13   | 1.75                     | 0.68              |
| 25:BA:2372:G:O6    | 60:BA:4144:HOH:O   | 2.10                     | 0.68              |
| 1:CA:1182:G:H4'    | 1:CA:1183:A:H3'    | 1.75                     | 0.68              |
| 10:CJ:30:SER:OG    | 10:CJ:84:GLN:OE1   | 2.12                     | 0.68              |
| 25:DA:1902:C:OP1   | 60:DA:4018:HOH:O   | 2.11                     | 0.68              |
| 1:AA:1502:A:H2     | 1:AA:1505:G:N1     | 1.91                     | 0.68              |
| 2:CB:103:THR:HA    | 2:CB:180:LEU:HD11  | 1.76                     | 0.68              |
| 25:DA:1800:C:OP2   | 27:DD:183:ARG:NH2  | 2.26                     | 0.68              |
| 2:AB:63:MET:HB3    | 2:AB:225:ALA:HB1   | 1.75                     | 0.68              |
| 27:BD:85:ASP:OD2   | 27:BD:88:ARG:NH1   | 2.26                     | 0.68              |
| 1:CA:403:C:OP1     | 4:CD:137:SER:OG    | 2.12                     | 0.68              |
| 4:CD:122:ARG:NH1   | 4:CD:134:ASP:O     | 2.27                     | 0.68              |
| 1:AA:1316:G:H22    | 1:AA:1319:A:H5''   | 1.58                     | 0.68              |
| 2:AB:187:LEU:HD13  | 2:AB:205:ASP:HB3   | 1.75                     | 0.68              |
| 25:BA:1338:G:N7    | 43:BX:62:LYS:NZ    | 2.41                     | 0.68              |
| 1:CA:539:A:H2'     | 1:CA:540:G:C8      | 2.28                     | 0.68              |
| 5:CE:18:ARG:HG2    | 5:CE:25:ARG:HB2    | 1.76                     | 0.68              |
| 9:CI:4:TYR:HB2     | 9:CI:19:LEU:HB2    | 1.76                     | 0.68              |
| 25:DA:31:C:OP1     | 60:DA:4439:HOH:O   | 2.10                     | 0.68              |
| 41:DV:6:LYS:HB2    | 41:DV:38:LEU:HD21  | 1.76                     | 0.68              |
| 29:BF:101:LEU:O    | 29:BF:106:ARG:NH1  | 2.26                     | 0.68              |
| 1:CA:1029:C:N4     | 1:CA:1032:G:N1     | 2.42                     | 0.68              |
| 26:DB:76:G:N2      | 26:DB:101:G:O6     | 2.26                     | 0.68              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 30:DG:114:ILE:HG23 | 30:DG:136:ARG:NH2 | 2.09                     | 0.68              |
| 25:BA:1300:U:H4'   | 25:BA:1301:A:H5'' | 1.75                     | 0.67              |
| 25:DA:370:G:OP2    | 60:DA:4069:HOH:O  | 2.12                     | 0.67              |
| 25:DA:2128:C:N3    | 25:DA:2160:G:N2   | 2.43                     | 0.67              |
| 25:BA:1507:A:O2'   | 25:BA:1508:A:O4'  | 2.12                     | 0.67              |
| 25:BA:2748:A:H5'   | 31:BH:4:ILE:HD12  | 1.75                     | 0.67              |
| 1:CA:522:C:H41     | 12:CL:53:ARG:HH22 | 1.41                     | 0.67              |
| 25:DA:509:C:OP1    | 60:DA:4471:HOH:O  | 2.11                     | 0.67              |
| 1:AA:103:C:O2'     | 1:AA:172:A:N1     | 2.26                     | 0.67              |
| 1:AA:145:G:H1      | 1:AA:177:C:H42    | 1.42                     | 0.67              |
| 3:AC:121:ALA:HB1   | 3:AC:189:ALA:HB2  | 1.75                     | 0.67              |
| 16:AP:1:MET:SD     | 16:AP:1:MET:N     | 2.64                     | 0.67              |
| 25:BA:535:C:O3'    | 40:BU:53:ARG:NH1  | 2.26                     | 0.67              |
| 25:BA:1798:U:H5''  | 27:BD:260:ARG:HB3 | 1.76                     | 0.67              |
| 36:BQ:135:ASP:OD2  | 45:BZ:49:ARG:NH2  | 2.25                     | 0.67              |
| 39:BT:16:ARG:NH2   | 39:BT:83:ILE:O    | 2.27                     | 0.67              |
| 44:BY:54:LYS:HA    | 44:BY:56:PRO:HD3  | 1.74                     | 0.67              |
| 1:AA:976:G:H5'     | 1:AA:1358:U:O2'   | 1.94                     | 0.67              |
| 25:BA:2445:G:OP1   | 29:BF:74:ARG:NH2  | 2.26                     | 0.67              |
| 30:BG:138:GLN:HE22 | 30:BG:153:ARG:H   | 1.43                     | 0.67              |
| 26:DB:48:A:OP2     | 38:DS:30:ARG:NH2  | 2.27                     | 0.67              |
| 37:DR:79:LEU:HA    | 37:DR:83:ILE:HD12 | 1.77                     | 0.67              |
| 1:AA:1005:A:HO2'   | 1:AA:1037:C:HO2'  | 1.40                     | 0.67              |
| 35:BP:138:LEU:HD23 | 35:BP:145:PRO:HG3 | 1.76                     | 0.67              |
| 19:CS:9:VAL:HG21   | 50:D4:61:ARG:HH22 | 1.59                     | 0.67              |
| 25:DA:631:A:OP1    | 35:DP:65:ARG:NH1  | 2.24                     | 0.67              |
| 25:DA:827:U:OP1    | 60:DA:4458:HOH:O  | 2.12                     | 0.67              |
| 25:DA:2136:C:H41   | 25:DA:2156:G:H21  | 1.42                     | 0.67              |
| 45:DZ:99:TYR:HB3   | 45:DZ:123:ASP:HB2 | 1.76                     | 0.67              |
| 1:AA:911:U:OP2     | 12:AL:97:ARG:NH1  | 2.28                     | 0.67              |
| 42:BW:18:ARG:HG3   | 42:BW:76:VAL:HB   | 1.76                     | 0.67              |
| 1:CA:1162:C:H42    | 1:CA:1174:G:H1    | 1.43                     | 0.67              |
| 25:DA:2404:C:O3'   | 35:DP:77:ARG:NH2  | 2.27                     | 0.67              |
| 37:DR:33:ARG:NH2   | 51:D5:57:VAL:O    | 2.28                     | 0.67              |
| 25:BA:1636:C:H2'   | 25:BA:1637:A:C8   | 2.30                     | 0.67              |
| 25:DA:1986:A:OP1   | 60:DA:4251:HOH:O  | 2.12                     | 0.67              |
| 25:DA:807:U:OP2    | 35:DP:41:ARG:NH2  | 2.27                     | 0.67              |
| 39:DT:16:ARG:HD3   | 39:DT:19:LEU:HD12 | 1.77                     | 0.67              |
| 39:DT:125:ARG:O    | 39:DT:129:ARG:NH1 | 2.27                     | 0.67              |
| 44:DY:39:VAL:HB    | 44:DY:42:VAL:HB   | 1.75                     | 0.67              |
| 25:BA:1176:G:H1'   | 25:BA:1177:A:C5'  | 2.25                     | 0.67              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 6:CF:81:ILE:HD11   | 27:DD:125:ILE:HB   | 1.76                     | 0.67              |
| 8:CH:10:LEU:HD22   | 8:CH:83:ILE:HD11   | 1.77                     | 0.67              |
| 25:DA:458:G:O2'    | 25:DA:469:G:O6     | 2.11                     | 0.67              |
| 1:AA:1279:A:O2'    | 1:AA:1281:U:OP2    | 2.13                     | 0.67              |
| 25:BA:1299:G:OP1   | 60:BA:4327:HOH:O   | 2.11                     | 0.67              |
| 25:BA:1713:U:H2'   | 25:BA:1714:G:H8    | 1.60                     | 0.67              |
| 1:CA:402:G:H2'     | 1:CA:403:C:H5'     | 1.75                     | 0.67              |
| 26:DB:29:A:O2'     | 26:DB:58:A:N1      | 2.27                     | 0.67              |
| 34:DO:13:ASN:ND2   | 34:DO:96:THR:OG1   | 2.26                     | 0.67              |
| 25:BA:2408:U:OP2   | 60:BA:3989:HOH:O   | 2.13                     | 0.66              |
| 1:CA:1277:C:O2'    | 1:CA:1279:A:N7     | 2.28                     | 0.66              |
| 13:CM:37:THR:O     | 13:CM:55:ARG:NH1   | 2.24                     | 0.66              |
| 1:AA:630:G:H2'     | 1:AA:631:G:H8      | 1.60                     | 0.66              |
| 20:AT:75:ASN:OD1   | 20:AT:75:ASN:N     | 2.28                     | 0.66              |
| 25:BA:587:C:OP2    | 35:BP:21:ARG:NH2   | 2.29                     | 0.66              |
| 1:CA:8:A:C6        | 4:CD:209:ARG:HB2   | 2.30                     | 0.66              |
| 25:DA:1592:C:H2'   | 25:DA:1593:G:H8    | 1.60                     | 0.66              |
| 29:DF:18:ARG:NH2   | 29:DF:127:GLU:OE1  | 2.27                     | 0.66              |
| 30:DG:41:GLN:NE2   | 30:DG:154:GLY:O    | 2.28                     | 0.66              |
| 36:DQ:135:ASP:OD2  | 45:DZ:49:ARG:NH2   | 2.26                     | 0.66              |
| 45:DZ:119:GLU:O    | 45:DZ:122:ARG:NH1  | 2.29                     | 0.66              |
| 48:D2:22:GLU:OE2   | 48:D2:68:ARG:NH2   | 2.28                     | 0.66              |
| 1:AA:158:G:N2      | 1:AA:163:C:O2      | 2.28                     | 0.66              |
| 3:AC:30:ARG:NH1    | 14:AN:35:ARG:O     | 2.29                     | 0.66              |
| 5:AE:140:ARG:O     | 5:AE:143:ARG:NH2   | 2.26                     | 0.66              |
| 25:BA:957:A:N1     | 25:BA:2458:G:H4'   | 2.09                     | 0.66              |
| 1:CA:1210:C:H2'    | 1:CA:1211:U:H5''   | 1.78                     | 0.66              |
| 2:CB:81:VAL:O      | 2:CB:85:ALA:N      | 2.29                     | 0.66              |
| 25:DA:83:G:O2'     | 25:DA:102:G:N2     | 2.29                     | 0.66              |
| 36:DQ:141:GLN:HE22 | 45:DZ:74:VAL:HG13  | 1.60                     | 0.66              |
| 47:D1:3:LYS:HB2    | 47:D1:61:ARG:NH1   | 2.11                     | 0.66              |
| 49:D3:11:SER:O     | 60:D3:4001:HOH:O   | 2.14                     | 0.66              |
| 25:BA:1125:G:H5'   | 55:B9:37:GLY:HA2   | 1.78                     | 0.66              |
| 25:BA:2103:C:H42   | 25:BA:2186:G:H1    | 1.42                     | 0.66              |
| 25:BA:2125:G:H22   | 25:BA:2172:U:P     | 2.18                     | 0.66              |
| 27:BD:227:ASN:OD1  | 60:BD:405:HOH:O    | 2.13                     | 0.66              |
| 9:CI:9:ARG:HG2     | 9:CI:14:VAL:HG12   | 1.77                     | 0.66              |
| 2:AB:84:GLU:HB3    | 2:AB:219:VAL:HG21  | 1.76                     | 0.66              |
| 25:BA:1022:G:H22   | 25:BA:1142(A):A:H2 | 1.41                     | 0.66              |
| 1:CA:1305:G:O2'    | 1:CA:1331:G:N2     | 2.28                     | 0.66              |
| 20:CT:10:LEU:HB3   | 20:CT:12:ALA:H     | 1.59                     | 0.66              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 25:BA:2151:G:H2'  | 25:BA:2152:G:C8   | 2.31                     | 0.66              |
| 1:CA:1114:C:N3    | 1:CA:1186:G:N2    | 2.39                     | 0.66              |
| 1:CA:1457:G:OP1   | 20:CT:39:LYS:NZ   | 2.28                     | 0.66              |
| 48:D2:14:ARG:HA   | 48:D2:63:VAL:HG11 | 1.77                     | 0.66              |
| 1:AA:998:G:H1     | 1:AA:1043:C:H42   | 1.44                     | 0.66              |
| 2:AB:231:GLU:HB2  | 2:AB:232:PRO:HD3  | 1.77                     | 0.66              |
| 25:BA:1815:A:OP2  | 27:BD:54:ARG:NH2  | 2.29                     | 0.66              |
| 25:BA:2327:A:H2'  | 25:BA:2328:A:C8   | 2.31                     | 0.66              |
| 26:BB:7:G:H1      | 26:BB:114:C:H42   | 1.42                     | 0.66              |
| 1:CA:953:G:H5'    | 1:CA:965:A:N6     | 2.10                     | 0.66              |
| 25:DA:948:G:N2    | 25:DA:985:C:OP2   | 2.28                     | 0.66              |
| 25:DA:2079:U:O3'  | 47:D1:35:THR:OG1  | 2.14                     | 0.66              |
| 42:DW:4:LYS:HE2   | 42:DW:6:ILE:HD11  | 1.75                     | 0.66              |
| 1:AA:957:U:H5''   | 19:AS:81:ARG:HH12 | 1.61                     | 0.66              |
| 25:BA:1794:U:H2'  | 25:BA:1795:C:H6   | 1.61                     | 0.66              |
| 25:BA:2138:C:H42  | 25:BA:2153:G:H1   | 1.44                     | 0.66              |
| 38:BS:28:VAL:HG11 | 38:BS:98:VAL:HG13 | 1.78                     | 0.66              |
| 25:BA:2430:A:H2'  | 25:BA:2430:A:N3   | 2.10                     | 0.66              |
| 25:BA:2687:U:OP2  | 60:BA:4420:HOH:O  | 2.14                     | 0.66              |
| 24:CX:52:G:H1     | 24:CX:62:C:H42    | 1.44                     | 0.66              |
| 25:DA:135:G:N2    | 25:DA:144:C:N3    | 2.34                     | 0.66              |
| 7:AG:15:ASP:HB3   | 7:AG:24:THR:HG23  | 1.77                     | 0.65              |
| 25:DA:543:C:N4    | 25:DA:549:G:O6    | 2.18                     | 0.65              |
| 25:DA:2572:A:OP1  | 25:DA:2574:G:O2'  | 2.14                     | 0.65              |
| 33:DN:29:LYS:NZ   | 33:DN:140:VAL:O   | 2.28                     | 0.65              |
| 1:CA:1164:G:N2    | 1:CA:1172:C:C2    | 2.63                     | 0.65              |
| 1:AA:130:A:H5'    | 17:AQ:63:ARG:HE   | 1.62                     | 0.65              |
| 1:CA:560:U:OP2    | 60:CA:4097:HOH:O  | 2.12                     | 0.65              |
| 3:CC:18:TRP:O     | 3:CC:21:ARG:NH1   | 2.29                     | 0.65              |
| 25:DA:1645:G:H5'' | 25:DA:1646:C:H5'  | 1.79                     | 0.65              |
| 31:DH:12:PRO:HD2  | 31:DH:76:VAL:HG21 | 1.77                     | 0.65              |
| 1:AA:596:C:OP2    | 60:AA:4064:HOH:O  | 2.13                     | 0.65              |
| 1:AA:1273:G:H3'   | 1:AA:1274:G:H8    | 1.60                     | 0.65              |
| 2:AB:16:HIS:HB3   | 2:AB:210:SER:HB2  | 1.78                     | 0.65              |
| 25:DA:863:A:OP2   | 36:DQ:22:LYS:HD3  | 1.97                     | 0.65              |
| 25:DA:1269:A:OP2  | 60:DA:4607:HOH:O  | 2.13                     | 0.65              |
| 25:DA:2689:U:OP2  | 25:DA:2719:G:N2   | 2.23                     | 0.65              |
| 26:DB:55:U:H1'    | 30:DG:29:TRP:CD1  | 2.32                     | 0.65              |
| 35:DP:96:THR:HG23 | 35:DP:99:LEU:HD23 | 1.78                     | 0.65              |
| 44:BY:92:ASN:N    | 44:BY:93:GLY:HA2  | 2.11                     | 0.65              |
| 1:CA:1157:A:H5'   | 1:CA:1158:C:C6    | 2.31                     | 0.65              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:CA:1165:C:H42   | 1:CA:1171:G:H1    | 1.44                     | 0.65              |
| 2:CB:204:ASN:O    | 2:CB:210:SER:OG   | 2.09                     | 0.65              |
| 1:AA:1298:C:OP2   | 7:AG:114:ARG:NH2  | 2.30                     | 0.65              |
| 25:BA:2483:C:N3   | 36:BQ:124:LYS:NZ  | 2.44                     | 0.65              |
| 26:BB:33:G:H5'    | 30:BG:2:PRO:HD3   | 1.79                     | 0.65              |
| 1:CA:769:G:H4'    | 1:CA:1513:A:H4'   | 1.78                     | 0.65              |
| 1:CA:1153:C:H42   | 1:CA:1154:G:H21   | 1.44                     | 0.65              |
| 12:CL:117:ARG:HB3 | 12:CL:122:THR:HB  | 1.79                     | 0.65              |
| 25:DA:528:A:C2    | 25:DA:2042:A:H2'  | 2.32                     | 0.65              |
| 25:DA:1537:G:H2'  | 25:DA:1538:G:H8   | 1.62                     | 0.65              |
| 1:AA:1353:G:OP1   | 21:AU:10:ARG:NH1  | 2.25                     | 0.65              |
| 8:AH:116:LYS:HD2  | 8:AH:129:VAL:HG11 | 1.77                     | 0.65              |
| 9:AI:5:TYR:HE1    | 9:AI:16:ARG:HB2   | 1.62                     | 0.65              |
| 31:BH:46:GLU:HB2  | 31:BH:49:VAL:HG12 | 1.79                     | 0.65              |
| 3:CC:40:ARG:HA    | 3:CC:43:LEU:HD22  | 1.79                     | 0.65              |
| 24:CX:59:A:H2'    | 24:CX:60:U:H5'    | 1.79                     | 0.65              |
| 25:DA:1025:G:C4   | 25:DA:1135:C:H1'  | 2.31                     | 0.65              |
| 1:AA:1210:C:H2'   | 1:AA:1211:U:H5''  | 1.79                     | 0.65              |
| 25:BA:2014:A:N1   | 60:BA:3705:HOH:O  | 2.29                     | 0.65              |
| 1:CA:576:G:OP1    | 60:CA:4013:HOH:O  | 2.15                     | 0.65              |
| 25:DA:559:G:H22   | 40:DU:49:HIS:CE1  | 2.14                     | 0.65              |
| 25:DA:1171:G:H1   | 25:DA:1178:C:H42  | 1.44                     | 0.65              |
| 10:AJ:47:PHE:HB2  | 10:AJ:63:PHE:HB2  | 1.78                     | 0.65              |
| 25:BA:1048:A:OP2  | 25:BA:1109:C:N4   | 2.30                     | 0.65              |
| 25:BA:1654:A:OP2  | 60:BA:3948:HOH:O  | 2.14                     | 0.65              |
| 38:BS:27:SER:HA   | 38:BS:88:ASP:HB3  | 1.78                     | 0.65              |
| 44:BY:92:ASN:HB2  | 44:BY:94:LYS:HG2  | 1.79                     | 0.65              |
| 2:CB:111:ARG:HH21 | 2:CB:114:ARG:HB2  | 1.61                     | 0.65              |
| 2:AB:80:ILE:HD11  | 2:AB:212:GLN:HA   | 1.79                     | 0.65              |
| 15:AO:8:LYS:HG2   | 15:AO:12:ILE:HD11 | 1.79                     | 0.65              |
| 30:BG:41:GLN:HB3  | 30:BG:43:LEU:HD13 | 1.79                     | 0.65              |
| 50:B4:26:SER:OG   | 50:B4:27:THR:N    | 2.29                     | 0.65              |
| 1:CA:297:G:O2'    | 1:CA:299:G:N7     | 2.26                     | 0.65              |
| 1:CA:1035:A:H2'   | 1:CA:1036:G:C8    | 2.31                     | 0.65              |
| 25:DA:2104:G:H1   | 25:DA:2185:C:H42  | 1.43                     | 0.65              |
| 35:DP:48:PRO:O    | 54:D8:57:ARG:NH2  | 2.29                     | 0.65              |
| 46:D0:10:THR:HG22 | 46:D0:12:ASN:H    | 1.61                     | 0.65              |
| 1:AA:21:G:OP1     | 60:AA:4101:HOH:O  | 2.15                     | 0.64              |
| 1:AA:1086:U:H3    | 1:AA:1099:G:H22   | 1.45                     | 0.64              |
| 3:AC:52:LEU:HD21  | 3:AC:55:VAL:HG23  | 1.79                     | 0.64              |
| 23:AW:76:PPU:N    | 24:AX:76:31H:O2'  | 2.30                     | 0.64              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 25:BA:1274:A:N3   | 25:BA:1297:C:H1'   | 2.12                     | 0.64              |
| 1:CA:923:A:O2'    | 1:CA:1399:C:OP2    | 2.13                     | 0.64              |
| 2:CB:16:HIS:CG    | 2:CB:17:PHE:H      | 2.15                     | 0.64              |
| 3:CC:42:LEU:O     | 3:CC:45:LYS:NZ     | 2.23                     | 0.64              |
| 37:DR:67:LEU:HD13 | 37:DR:76:VAL:HG21  | 1.77                     | 0.64              |
| 1:AA:1443:G:N2    | 1:AA:1459:C:O2     | 2.29                     | 0.64              |
| 2:AB:76:GLN:HB2   | 2:AB:208:ILE:HG12  | 1.80                     | 0.64              |
| 9:CI:23:ASN:ND2   | 9:CI:60:ASP:OD1    | 2.31                     | 0.64              |
| 25:DA:182:A:N3    | 25:DA:433:C:O2'    | 2.24                     | 0.64              |
| 37:DR:103:ARG:NH1 | 37:DR:108:GLY:O    | 2.29                     | 0.64              |
| 12:AL:71:PRO:O    | 12:AL:102:ARG:NH1  | 2.30                     | 0.64              |
| 25:BA:789:A:N1    | 60:BA:4021:HOH:O   | 2.30                     | 0.64              |
| 25:BA:2503:A:OP1  | 60:BA:4285:HOH:O   | 2.15                     | 0.64              |
| 16:CP:59:TRP:HA   | 16:CP:62:VAL:HG12  | 1.79                     | 0.64              |
| 25:BA:1800:C:OP2  | 27:BD:183:ARG:NH2  | 2.31                     | 0.64              |
| 25:BA:2581:G:O6   | 60:BA:4149:HOH:O   | 2.08                     | 0.64              |
| 1:CA:1320:C:C2    | 19:CS:72:GLY:HA3   | 2.33                     | 0.64              |
| 25:DA:2376:A:N3   | 38:DS:106:ARG:NH2  | 2.46                     | 0.64              |
| 34:DO:48:PRO:HB2  | 34:DO:49:ARG:HD3   | 1.78                     | 0.64              |
| 1:AA:139:G:N2     | 1:AA:224:C:O2      | 2.30                     | 0.64              |
| 39:BT:107:ASP:HA  | 39:BT:110:ILE:HD12 | 1.79                     | 0.64              |
| 1:CA:405:U:OP2    | 4:CD:3:ARG:NH2     | 2.30                     | 0.64              |
| 1:CA:1318:A:H5''  | 19:CS:3:ARG:HH22   | 1.63                     | 0.64              |
| 25:DA:2744:G:N2   | 31:DH:143:GLN:OE1  | 2.30                     | 0.64              |
| 20:AT:33:ILE:O    | 20:AT:37:SER:OG    | 2.14                     | 0.64              |
| 25:BA:741:G:OP2   | 60:BA:4321:HOH:O   | 2.15                     | 0.64              |
| 1:CA:954:G:H21    | 1:CA:1227:A:H62    | 1.46                     | 0.64              |
| 24:CX:21:A:N6     | 24:CX:46:G:H2'     | 2.10                     | 0.64              |
| 24:CX:76:31H:OP1  | 25:DA:2439:A:N6    | 2.31                     | 0.64              |
| 25:DA:589:C:H2'   | 25:DA:590:A:C8     | 2.33                     | 0.64              |
| 25:DA:648:G:O2'   | 25:DA:2351:G:OP1   | 2.09                     | 0.64              |
| 25:DA:1840:G:OP2  | 60:DA:4543:HOH:O   | 2.15                     | 0.64              |
| 38:DS:27:SER:HA   | 38:DS:88:ASP:HB3   | 1.79                     | 0.64              |
| 1:AA:363:A:OP2    | 12:AL:34:ARG:NH1   | 2.31                     | 0.64              |
| 25:BA:1602:U:O4   | 60:BA:3971:HOH:O   | 2.09                     | 0.64              |
| 45:BZ:77:ASP:OD2  | 45:BZ:80:ARG:NH1   | 2.30                     | 0.64              |
| 1:CA:1086:U:H3    | 1:CA:1099:G:H22    | 1.46                     | 0.64              |
| 25:DA:2291:U:H5'' | 25:DA:2380:C:H1'   | 1.79                     | 0.64              |
| 25:DA:2815:C:H5'  | 51:D5:29:THR:HG21  | 1.79                     | 0.64              |
| 9:AI:128:ARG:NH2  | 24:AX:33:U:OP2     | 2.31                     | 0.64              |
| 38:BS:59:LYS:HE2  | 38:BS:60:GLY:H     | 1.61                     | 0.64              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 25:DA:1803:A:O2'  | 27:DD:259:THR:HG21 | 1.97                     | 0.64              |
| 25:DA:2356:C:OP1  | 46:D0:24:LYS:NZ    | 2.24                     | 0.64              |
| 25:BA:860:U:OP2   | 60:BA:4251:HOH:O   | 2.15                     | 0.64              |
| 1:CA:56:U:H2'     | 1:CA:57:G:C8       | 2.32                     | 0.64              |
| 1:CA:955:U:H3     | 1:CA:1225:A:H2     | 1.46                     | 0.64              |
| 2:CB:155:LEU:HD11 | 2:CB:159:PRO:HG3   | 1.80                     | 0.64              |
| 24:CX:67:C:H2'    | 24:CX:68:C:H5'     | 1.79                     | 0.64              |
| 25:DA:1220:A:OP2  | 40:DU:19:LYS:NZ    | 2.31                     | 0.64              |
| 1:AA:1030:C:H42   | 1:AA:1031:G:H1     | 1.43                     | 0.64              |
| 1:AA:1110:A:OP2   | 60:AA:4137:HOH:O   | 2.16                     | 0.64              |
| 1:AA:1125:U:H5'   | 10:AJ:5:ARG:HH22   | 1.62                     | 0.64              |
| 9:AI:50:LEU:HD13  | 9:AI:56:LEU:HA     | 1.78                     | 0.64              |
| 25:BA:831:G:O2'   | 35:BP:38:GLN:NE2   | 2.31                     | 0.64              |
| 25:BA:1384:A:N7   | 60:BA:3821:HOH:O   | 2.30                     | 0.64              |
| 25:BA:1449:A:O2'  | 25:BA:1529:G:N2    | 2.22                     | 0.64              |
| 25:DA:1192:G:N7   | 60:DA:4648:HOH:O   | 2.29                     | 0.64              |
| 29:DF:24:LEU:HD21 | 29:DF:114:VAL:HG12 | 1.79                     | 0.64              |
| 1:AA:1187:G:N3    | 14:AN:60:SER:OG    | 2.31                     | 0.63              |
| 1:AA:1327:C:OP2   | 21:AU:12:LYS:NZ    | 2.31                     | 0.63              |
| 25:BA:184:C:H2'   | 25:BA:185:U:C6     | 2.33                     | 0.63              |
| 25:BA:414:C:H2'   | 25:BA:415:A:C8     | 2.33                     | 0.63              |
| 38:BS:14:VAL:O    | 38:BS:18:ILE:HG12  | 1.98                     | 0.63              |
| 1:CA:1120:G:O6    | 1:CA:1154:G:N2     | 2.28                     | 0.63              |
| 25:DA:729:G:C6    | 27:DD:208:LYS:HB2  | 2.33                     | 0.63              |
| 25:DA:2345:G:OP2  | 52:D6:38:LYS:HD3   | 1.99                     | 0.63              |
| 25:DA:2682:U:OP2  | 60:DA:4106:HOH:O   | 2.15                     | 0.63              |
| 1:AA:1416:G:N7    | 60:AA:4089:HOH:O   | 2.31                     | 0.63              |
| 5:AE:144:THR:H    | 5:AE:147:ASP:HB2   | 1.62                     | 0.63              |
| 2:CB:88:ALA:HB2   | 2:CB:219:VAL:HG13  | 1.79                     | 0.63              |
| 25:DA:918:A:N3    | 26:DB:80:U:O2'     | 2.26                     | 0.63              |
| 25:DA:2000:G:N7   | 60:DA:4310:HOH:O   | 2.30                     | 0.63              |
| 25:DA:2445:G:OP1  | 29:DF:74:ARG:NH2   | 2.31                     | 0.63              |
| 1:AA:11:G:O2'     | 1:AA:506:G:N2      | 2.30                     | 0.63              |
| 1:AA:1457:G:OP1   | 20:AT:39:LYS:NZ    | 2.31                     | 0.63              |
| 25:BA:910:A:OP2   | 60:BA:4252:HOH:O   | 2.15                     | 0.63              |
| 25:BA:2105:C:H2'  | 25:BA:2106:G:C8    | 2.33                     | 0.63              |
| 38:BS:59:LYS:NZ   | 38:BS:68:GLN:OE1   | 2.30                     | 0.63              |
| 12:CL:28:LYS:HD2  | 12:CL:62:SER:HB2   | 1.79                     | 0.63              |
| 25:DA:442:G:H21   | 29:DF:48:THR:HB    | 1.63                     | 0.63              |
| 25:DA:1449:A:O2'  | 25:DA:1529:G:N2    | 2.23                     | 0.63              |
| 26:DB:20:C:H2'    | 26:DB:21:G:H5'     | 1.78                     | 0.63              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 28:DE:9:VAL:HG22  | 28:DE:25:VAL:HB    | 1.78                     | 0.63              |
| 38:DS:15:ARG:O    | 38:DS:19:LYS:NZ    | 2.31                     | 0.63              |
| 9:AI:46:ALA:HB2   | 9:AI:74:ILE:HG23   | 1.80                     | 0.63              |
| 25:BA:2773:C:OP1  | 28:BE:164:ARG:NE   | 2.22                     | 0.63              |
| 25:DA:2169:A:O2'  | 25:DA:2170:A:O5'   | 2.16                     | 0.63              |
| 26:DB:33:G:O6     | 26:DB:49:C:N4      | 2.29                     | 0.63              |
| 29:DF:11:VAL:HB   | 29:DF:18:ARG:HB3   | 1.81                     | 0.63              |
| 25:BA:1823:G:OP1  | 27:BD:54:ARG:NH1   | 2.29                     | 0.63              |
| 1:CA:127:G:HO2'   | 17:CQ:2:PRO:N      | 1.96                     | 0.63              |
| 25:DA:135:G:H1    | 25:DA:144:C:H42    | 1.43                     | 0.63              |
| 25:DA:637:A:OP1   | 35:DP:133:SER:OG   | 2.14                     | 0.63              |
| 45:DZ:5:LEU:HG    | 45:DZ:47:VAL:HG21  | 1.81                     | 0.63              |
| 1:AA:1118:C:OP1   | 9:AI:104:ARG:NH1   | 2.31                     | 0.63              |
| 3:AC:5:ILE:HG12   | 3:AC:6:HIS:H       | 1.64                     | 0.63              |
| 25:BA:279:C:N4    | 25:BA:361:G:H1     | 1.93                     | 0.63              |
| 1:CA:78:G:H2'     | 1:CA:79:G:H5''     | 1.80                     | 0.63              |
| 20:CT:10:LEU:HD23 | 20:CT:11:SER:H     | 1.63                     | 0.63              |
| 35:DP:39:LYS:HB2  | 35:DP:45:LEU:HD23  | 1.79                     | 0.63              |
| 1:AA:403:C:OP1    | 4:AD:137:SER:OG    | 2.16                     | 0.63              |
| 1:CA:1314:C:OP2   | 19:CS:4:SER:OG     | 2.11                     | 0.63              |
| 15:CO:87:ILE:HG22 | 15:CO:88:ARG:H     | 1.63                     | 0.63              |
| 19:CS:27:GLU:HG2  | 19:CS:47:HIS:NE2   | 2.14                     | 0.63              |
| 24:CX:52:G:H2'    | 24:CX:53:G:H8      | 1.64                     | 0.63              |
| 25:DA:2137:C:H2'  | 25:DA:2138:C:C6    | 2.34                     | 0.63              |
| 25:DA:2630:G:H2'  | 25:DA:2631:G:H8    | 1.64                     | 0.63              |
| 33:DN:58:ASP:OD1  | 33:DN:58:ASP:N     | 2.32                     | 0.63              |
| 29:BF:185:ASP:HA  | 29:BF:188:ARG:HD3  | 1.80                     | 0.63              |
| 35:BP:63:PRO:HD3  | 54:B8:27:THR:HG22  | 1.81                     | 0.63              |
| 48:B2:22:GLU:HG3  | 48:B2:64:LEU:HD11  | 1.81                     | 0.63              |
| 13:CM:29:ARG:HB3  | 13:CM:64:TRP:CZ3   | 2.34                     | 0.63              |
| 25:DA:857:C:H4'   | 46:D0:23:VAL:HG21  | 1.80                     | 0.63              |
| 30:DG:44:GLY:N    | 30:DG:88:ILE:O     | 2.31                     | 0.63              |
| 50:D4:59:PHE:O    | 50:D4:62:ARG:NH2   | 2.26                     | 0.63              |
| 1:AA:1097:C:O2'   | 1:AA:1169:A:N3     | 2.28                     | 0.63              |
| 6:AF:45:LEU:HD12  | 6:AF:59:TYR:HD2    | 1.62                     | 0.63              |
| 25:BA:1047:G:HO2' | 25:BA:1048:A:H8    | 1.47                     | 0.63              |
| 49:B3:6:VAL:HG13  | 49:B3:56:VAL:HG22  | 1.79                     | 0.63              |
| 5:CE:8:GLU:HG3    | 5:CE:34:VAL:HG23   | 1.81                     | 0.63              |
| 25:DA:1012:U:H5   | 33:DN:28:THR:HG21  | 1.63                     | 0.63              |
| 25:DA:2327:A:H2'  | 25:DA:2328:A:C8    | 2.34                     | 0.63              |
| 1:AA:1442:G:O2'   | 1:AA:1442(A):G:OP1 | 2.16                     | 0.62              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 3:AC:6:HIS:HD2     | 3:AC:8:ILE:H       | 1.45                     | 0.62              |
| 30:BG:15:VAL:HG21  | 30:BG:176:LEU:HD23 | 1.81                     | 0.62              |
| 30:BG:138:GLN:H    | 30:BG:138:GLN:NE2  | 1.93                     | 0.62              |
| 1:CA:110:C:O2'     | 16:CP:25:ARG:O     | 2.17                     | 0.62              |
| 5:CE:100:VAL:O     | 5:CE:107:ARG:NH2   | 2.31                     | 0.62              |
| 25:DA:2291:U:H2'   | 25:DA:2292:C:C6    | 2.34                     | 0.62              |
| 25:DA:2747:G:N2    | 25:DA:2756:U:OP1   | 2.32                     | 0.62              |
| 27:DD:171:ASP:OD1  | 27:DD:171:ASP:N    | 2.31                     | 0.62              |
| 32:DI:1:MET:N      | 32:DI:20:ASP:OD1   | 2.26                     | 0.62              |
| 47:D1:3:LYS:HB2    | 47:D1:61:ARG:HH12  | 1.64                     | 0.62              |
| 1:AA:97:G:O2'      | 1:AA:98:G:H5''     | 1.99                     | 0.62              |
| 1:AA:198:G:H2'     | 1:AA:199:G:H8      | 1.64                     | 0.62              |
| 25:BA:303:U:O4     | 60:BA:4299:HOH:O   | 2.13                     | 0.62              |
| 25:BA:1113:U:H2'   | 25:BA:1114:G:C8    | 2.33                     | 0.62              |
| 15:CO:44:LYS:O     | 15:CO:47:LYS:NZ    | 2.32                     | 0.62              |
| 17:CQ:66:SER:O     | 17:CQ:70:ARG:NH1   | 2.31                     | 0.62              |
| 31:DH:43:VAL:HG12  | 31:DH:52:VAL:HG22  | 1.81                     | 0.62              |
| 1:AA:402:G:H2'     | 1:AA:403:C:H5'     | 1.79                     | 0.62              |
| 1:AA:624:C:H2'     | 1:AA:625:G:H8      | 1.64                     | 0.62              |
| 19:AS:63:THR:OG1   | 19:AS:65:ASN:ND2   | 2.31                     | 0.62              |
| 25:BA:2130:U:H4'   | 25:BA:2133:G:H4'   | 1.80                     | 0.62              |
| 28:BE:105:THR:OG1  | 28:BE:199:ARG:NH2  | 2.32                     | 0.62              |
| 15:CO:2:PRO:O      | 15:CO:38:ARG:NH2   | 2.28                     | 0.62              |
| 25:DA:1864:U:OP1   | 25:DA:2410:G:O2'   | 2.11                     | 0.62              |
| 53:D7:5:TRP:NE1    | 53:D7:7:PRO:HG3    | 2.14                     | 0.62              |
| 1:AA:1503:A:N3     | 22:AV:13:A:N6      | 2.47                     | 0.62              |
| 3:AC:118:GLN:H     | 3:AC:118:GLN:NE2   | 1.93                     | 0.62              |
| 1:CA:642:A:N3      | 8:CH:113:SER:OG    | 2.32                     | 0.62              |
| 1:CA:1516:G:N2     | 1:CA:1519:A:OP2    | 2.32                     | 0.62              |
| 2:CB:69:LEU:HB2    | 2:CB:159:PRO:HG2   | 1.82                     | 0.62              |
| 45:DZ:102:LEU:HD23 | 45:DZ:137:ILE:HB   | 1.81                     | 0.62              |
| 1:AA:674:G:H2'     | 1:AA:675:A:C8      | 2.33                     | 0.62              |
| 8:AH:10:LEU:HD22   | 8:AH:83:ILE:HD11   | 1.81                     | 0.62              |
| 25:BA:1041:C:H42   | 25:BA:1114:G:H1    | 1.46                     | 0.62              |
| 25:BA:1567:A:H2'   | 27:BD:86:PRO:HG3   | 1.81                     | 0.62              |
| 25:BA:2316:C:O2'   | 30:BG:128:ARG:NH1  | 2.32                     | 0.62              |
| 30:BG:13:GLU:HG3   | 30:BG:14:GLU:HG3   | 1.80                     | 0.62              |
| 1:CA:1055:A:H2'    | 3:CC:156:ARG:HD2   | 1.82                     | 0.62              |
| 15:CO:64:ARG:NH2   | 25:DA:715:G:OP1    | 2.32                     | 0.62              |
| 25:DA:831:G:O2'    | 35:DP:38:GLN:NE2   | 2.32                     | 0.62              |
| 34:DO:88:ASN:ND2   | 34:DO:90:GLN:OE1   | 2.27                     | 0.62              |

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| Atom-1             | Atom-2              | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|---------------------|--------------------------|-------------------|
| 1:AA:262:A:H2'     | 1:AA:263:A:C8       | 2.34                     | 0.62              |
| 25:BA:69:C:O2      | 25:BA:73:A:O2'      | 2.17                     | 0.62              |
| 25:BA:652(E):G:H2' | 25:BA:652(F):G:H5'' | 1.82                     | 0.62              |
| 28:BE:9:VAL:HG22   | 28:BE:25:VAL:HB     | 1.82                     | 0.62              |
| 25:DA:320:A:O2'    | 25:DA:322:A:OP2     | 2.12                     | 0.62              |
| 25:DA:1530:C:O2'   | 25:DA:1531:C:O5'    | 2.12                     | 0.62              |
| 1:AA:1469:G:H2'    | 1:AA:1470:G:C8      | 2.35                     | 0.62              |
| 17:AQ:66:SER:O     | 17:AQ:70:ARG:NH1    | 2.32                     | 0.62              |
| 25:BA:1269:A:N7    | 60:BA:4105:HOH:O    | 2.31                     | 0.62              |
| 38:BS:25:ARG:NH1   | 38:BS:42:ASP:OD1    | 2.32                     | 0.62              |
| 1:CA:397:A:N7      | 1:CA:547:A:O2'      | 2.33                     | 0.62              |
| 3:CC:152:ILE:HG23  | 3:CC:199:LYS:HB2    | 1.80                     | 0.62              |
| 45:DZ:110:GLY:HA2  | 45:DZ:146:ILE:HG13  | 1.81                     | 0.62              |
| 6:AF:69:GLU:O      | 6:AF:72:VAL:HG12    | 2.00                     | 0.62              |
| 25:BA:323:G:C8     | 29:BF:171:PRO:HG3   | 2.35                     | 0.62              |
| 25:BA:729:G:C6     | 27:BD:208:LYS:HB2   | 2.34                     | 0.62              |
| 25:BA:2627:G:O2'   | 25:BA:2781:A:N1     | 2.30                     | 0.62              |
| 32:BI:68:LEU:HD11  | 32:BI:109:ILE:HD11  | 1.82                     | 0.62              |
| 25:DA:649:G:H4'    | 54:D8:46:ARG:HH22   | 1.65                     | 0.62              |
| 25:DA:2001:A:H2'   | 25:DA:2002:G:C8     | 2.35                     | 0.62              |
| 25:DA:2540:C:O2'   | 25:DA:2740:A:N3     | 2.32                     | 0.62              |
| 28:DE:174:ASP:OD1  | 28:DE:175:VAL:N     | 2.32                     | 0.62              |
| 32:DI:9:LEU:HD21   | 32:DI:35:LEU:HD22   | 1.80                     | 0.62              |
| 25:BA:271(R):G:H2' | 25:BA:271(S):G:H5'' | 1.81                     | 0.62              |
| 1:CA:1442:G:O2'    | 1:CA:1442(A):G:OP1  | 2.14                     | 0.62              |
| 25:DA:1692:U:H2'   | 25:DA:1694:C:C5     | 2.34                     | 0.62              |
| 28:DE:9:VAL:HB     | 39:DT:3:ARG:HG2     | 1.81                     | 0.62              |
| 1:AA:153:C:N4      | 1:AA:168:G:H1       | 1.98                     | 0.62              |
| 1:AA:1435:G:H2'    | 1:AA:1436:U:C6      | 2.34                     | 0.62              |
| 25:BA:271(L):U:H5' | 32:BI:50:ARG:HH12   | 1.63                     | 0.62              |
| 25:BA:2791:C:H5'   | 25:BA:2893:G:N2     | 2.15                     | 0.62              |
| 32:BI:106:GLY:HA2  | 32:BI:107:VAL:HB    | 1.82                     | 0.62              |
| 1:CA:137:C:H2'     | 1:CA:138:G:H8       | 1.63                     | 0.62              |
| 1:CA:392:G:H2'     | 1:CA:393:A:C8       | 2.34                     | 0.62              |
| 2:CB:91:PRO:HG2    | 2:CB:155:LEU:HD13   | 1.82                     | 0.62              |
| 25:DA:2784:C:O2'   | 28:DE:42:ASP:OD1    | 2.15                     | 0.62              |
| 1:AA:1504:G:OP1    | 1:AA:1507:A:H4'     | 2.00                     | 0.61              |
| 3:AC:118:GLN:HE21  | 3:AC:118:GLN:N      | 1.94                     | 0.61              |
| 39:BT:29:ARG:HG3   | 39:BT:46:GLU:HB2    | 1.80                     | 0.61              |
| 1:CA:392:G:H2'     | 1:CA:393:A:H8       | 1.64                     | 0.61              |
| 1:CA:948:C:H42     | 1:CA:1233:G:H1      | 1.48                     | 0.61              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 25:DA:1593:G:H2'  | 25:DA:1594:G:C8    | 2.35                     | 0.61              |
| 1:AA:67:C:O2'     | 1:AA:171:A:N3      | 2.31                     | 0.61              |
| 1:AA:584:G:H5'    | 17:AQ:91:ARG:HH22  | 1.65                     | 0.61              |
| 1:AA:1249:C:O2'   | 9:AI:73:GLN:NE2    | 2.33                     | 0.61              |
| 2:AB:115:LEU:O    | 2:AB:119:GLU:N     | 2.33                     | 0.61              |
| 3:AC:12:LEU:HD23  | 3:AC:16:ARG:HB3    | 1.82                     | 0.61              |
| 25:BA:2133:G:O2'  | 25:BA:2157:G:N2    | 2.29                     | 0.61              |
| 31:BH:24:VAL:HG22 | 31:BH:35:VAL:HB    | 1.81                     | 0.61              |
| 1:CA:662:G:H2'    | 1:CA:663:A:H8      | 1.65                     | 0.61              |
| 25:DA:2029:G:N1   | 25:DA:2033:A:OP2   | 2.24                     | 0.61              |
| 36:DQ:81:VAL:HG12 | 46:D0:5:LYS:HD3    | 1.80                     | 0.61              |
| 43:DX:32:PRO:O    | 43:DX:77:LYS:NZ    | 2.30                     | 0.61              |
| 45:DZ:154:ASP:OD2 | 45:DZ:154:ASP:N    | 2.33                     | 0.61              |
| 1:AA:26:A:N6      | 1:AA:558:G:O2'     | 2.32                     | 0.61              |
| 1:AA:742:G:OP2    | 15:AO:35:ARG:NH2   | 2.29                     | 0.61              |
| 25:BA:1019:U:HO2' | 25:BA:1021:A:H2    | 1.48                     | 0.61              |
| 1:CA:662:G:H2'    | 1:CA:663:A:C8      | 2.35                     | 0.61              |
| 2:CB:55:PHE:HA    | 2:CB:58:ILE:HB     | 1.82                     | 0.61              |
| 29:DF:40:GLN:HE22 | 29:DF:184:TYR:H    | 1.46                     | 0.61              |
| 30:DG:179:PRO:HB2 | 50:D4:42:PHE:HE1   | 1.64                     | 0.61              |
| 1:AA:601:C:H2'    | 1:AA:602:A:H8      | 1.65                     | 0.61              |
| 24:AX:64:G:O2'    | 36:BQ:10:ARG:NH2   | 2.30                     | 0.61              |
| 25:BA:2110:G:O2'  | 25:BA:2120:G:OP2   | 2.19                     | 0.61              |
| 2:CB:189:ASP:OD1  | 2:CB:189:ASP:N     | 2.31                     | 0.61              |
| 3:CC:20:SER:HB2   | 3:CC:40:ARG:HH12   | 1.65                     | 0.61              |
| 20:CT:57:ARG:HH12 | 20:CT:100:ILE:HD12 | 1.66                     | 0.61              |
| 25:DA:526:A:OP1   | 60:DA:4386:HOH:O   | 2.15                     | 0.61              |
| 30:DG:44:GLY:O    | 30:DG:47:LYS:HB2   | 2.00                     | 0.61              |
| 38:DS:24:LEU:O    | 38:DS:86:ALA:N     | 2.29                     | 0.61              |
| 3:AC:152:ILE:HB   | 3:AC:199:LYS:HB2   | 1.83                     | 0.61              |
| 25:BA:2328:A:H2'  | 25:BA:2329:G:C8    | 2.35                     | 0.61              |
| 27:BD:253:GLN:HB2 | 27:BD:257:LEU:HD12 | 1.82                     | 0.61              |
| 29:BF:155:LEU:HB3 | 29:BF:192:LEU:HD23 | 1.81                     | 0.61              |
| 29:BF:157:VAL:HB  | 29:BF:194:MET:HG2  | 1.82                     | 0.61              |
| 32:BI:92:VAL:HG13 | 32:BI:120:ILE:HB   | 1.82                     | 0.61              |
| 1:CA:1297:C:OP1   | 13:CM:44:ARG:NH2   | 2.34                     | 0.61              |
| 45:DZ:10:ARG:NH2  | 45:DZ:26:GLY:O     | 2.32                     | 0.61              |
| 1:AA:1259:C:O2'   | 1:AA:1283:G:N2     | 2.29                     | 0.61              |
| 25:BA:1448:G:O2'  | 25:BA:1528(A):A:N1 | 2.32                     | 0.61              |
| 25:BA:2125:G:O2'  | 25:BA:2173:A:N6    | 2.34                     | 0.61              |
| 25:BA:2139:C:N3   | 25:BA:2152:G:C2    | 2.69                     | 0.61              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:CA:853:G:H2'    | 1:CA:854:G:H8      | 1.65                     | 0.61              |
| 5:CE:144:THR:HB   | 5:CE:147:ASP:H     | 1.64                     | 0.61              |
| 38:DS:19:LYS:HZ3  | 38:DS:19:LYS:HB2   | 1.64                     | 0.61              |
| 32:BI:72:LEU:HD21 | 32:BI:107:VAL:HG11 | 1.82                     | 0.61              |
| 10:CJ:27:ALA:HA   | 10:CJ:81:THR:HG21  | 1.82                     | 0.61              |
| 25:DA:7:G:H1      | 25:DA:2896:C:H42   | 1.47                     | 0.61              |
| 25:DA:1300:U:H4'  | 25:DA:1301:A:H5''  | 1.81                     | 0.61              |
| 1:AA:953:G:H5'    | 1:AA:965:A:H61     | 1.66                     | 0.61              |
| 1:AA:1422:G:H5''  | 34:BO:48:PRO:HB3   | 1.83                     | 0.61              |
| 25:BA:2141:G:C5   | 25:BA:2142:C:H1'   | 2.35                     | 0.61              |
| 37:BR:33:ARG:NH2  | 51:B5:57:VAL:O     | 2.28                     | 0.61              |
| 26:DB:49:C:H2'    | 26:DB:50:G:C8      | 2.36                     | 0.61              |
| 31:DH:24:VAL:HG13 | 31:DH:37:VAL:HG21  | 1.81                     | 0.61              |
| 1:AA:1117:G:H5''  | 9:AI:104:ARG:NH2   | 2.14                     | 0.61              |
| 1:CA:974:A:OP2    | 14:CN:29:ARG:NH2   | 2.33                     | 0.61              |
| 1:CA:1062:U:O4    | 3:CC:2:GLY:N       | 2.33                     | 0.61              |
| 25:DA:1630:G:N2   | 25:DA:1636:C:O2    | 2.34                     | 0.61              |
| 29:DF:155:LEU:HB2 | 29:DF:189:THR:HG21 | 1.82                     | 0.61              |
| 9:AI:7:THR:O      | 9:AI:83:ARG:NH1    | 2.31                     | 0.61              |
| 9:AI:16:ARG:HG3   | 9:AI:64:THR:HB     | 1.82                     | 0.61              |
| 25:BA:2756:U:O2'  | 60:BA:3904:HOH:O   | 2.16                     | 0.61              |
| 1:CA:317:G:N2     | 1:CA:336:C:O2      | 2.34                     | 0.61              |
| 1:CA:580:U:H5''   | 15:CO:58:MET:HG2   | 1.81                     | 0.61              |
| 1:CA:977:A:H2'    | 1:CA:977:A:N3      | 2.15                     | 0.61              |
| 1:CA:1048:G:H1    | 1:CA:1209:C:H42    | 1.49                     | 0.61              |
| 3:CC:45:LYS:NZ    | 3:CC:46:GLU:HG2    | 2.15                     | 0.61              |
| 4:CD:57:ARG:NH2   | 4:CD:205:GLU:OE2   | 2.34                     | 0.61              |
| 9:CI:16:ARG:HB2   | 9:CI:64:THR:HB     | 1.82                     | 0.61              |
| 20:CT:23:ARG:HH11 | 20:CT:23:ARG:CG    | 2.14                     | 0.61              |
| 25:DA:1270:C:H5'' | 25:DA:1271:G:H5'   | 1.83                     | 0.61              |
| 1:AA:167:G:H2'    | 1:AA:168:G:H8      | 1.66                     | 0.60              |
| 1:AA:201:C:N4     | 1:AA:216:G:H22     | 1.96                     | 0.60              |
| 1:AA:691:G:H2'    | 1:AA:692:U:C6      | 2.36                     | 0.60              |
| 1:AA:972:C:O2'    | 10:AJ:55:LYS:O     | 2.18                     | 0.60              |
| 2:AB:16:HIS:HB2   | 2:AB:204:ASN:HB3   | 1.83                     | 0.60              |
| 3:AC:40:ARG:NH2   | 3:AC:55:VAL:O      | 2.34                     | 0.60              |
| 5:AE:77:PRO:HD2   | 5:AE:142:LEU:HD13  | 1.83                     | 0.60              |
| 25:BA:2139:C:C4   | 25:BA:2152:G:N1    | 2.69                     | 0.60              |
| 30:BG:16:ARG:HH21 | 30:BG:31:VAL:HG11  | 1.66                     | 0.60              |
| 39:BT:26:ASP:OD1  | 39:BT:120:ARG:NH2  | 2.32                     | 0.60              |
| 1:CA:97:G:O2'     | 1:CA:98:G:H5''     | 2.01                     | 0.60              |

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| Atom-1            | Atom-2              | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|---------------------|--------------------------|-------------------|
| 10:CJ:44:VAL:HG22 | 10:CJ:66:ARG:HG2    | 1.83                     | 0.60              |
| 25:DA:89:G:H3'    | 25:DA:90:U:H5''     | 1.81                     | 0.60              |
| 25:DA:1338:G:N7   | 43:DX:62:LYS:NZ     | 2.48                     | 0.60              |
| 25:DA:2291:U:OP1  | 25:DA:2380:C:O2'    | 2.19                     | 0.60              |
| 1:AA:673:G:H2'    | 1:AA:674:G:C8       | 2.36                     | 0.60              |
| 13:AM:91:ARG:HB2  | 13:AM:98:VAL:HG13   | 1.83                     | 0.60              |
| 25:BA:1292:U:H2'  | 25:BA:1293:C:C6     | 2.36                     | 0.60              |
| 1:CA:64:G:H4'     | 1:CA:65:U:H3'       | 1.83                     | 0.60              |
| 1:CA:1069:C:O2'   | 1:CA:1192:C:O2      | 2.18                     | 0.60              |
| 25:DA:565:C:OP1   | 41:DV:82:ARG:NH2    | 2.33                     | 0.60              |
| 30:DG:18:GLU:HG2  | 30:DG:175:LEU:HD21  | 1.83                     | 0.60              |
| 49:D3:15:TYR:O    | 49:D3:20:LYS:NZ     | 2.34                     | 0.60              |
| 2:AB:77:ALA:HB2   | 2:AB:211:ILE:HD13   | 1.83                     | 0.60              |
| 8:AH:112:LEU:HA   | 8:AH:134:ILE:HG12   | 1.83                     | 0.60              |
| 25:BA:196:A:H62   | 35:BP:38:GLN:HE22   | 1.49                     | 0.60              |
| 34:BO:98:VAL:HG11 | 34:BO:114:ILE:HG23  | 1.83                     | 0.60              |
| 1:CA:1058:G:H1    | 1:CA:1199:U:H3      | 1.49                     | 0.60              |
| 25:DA:500:G:N2    | 25:DA:502:A:H3'     | 2.17                     | 0.60              |
| 38:DS:67:ARG:O    | 38:DS:71:ARG:HG3    | 2.01                     | 0.60              |
| 25:BA:1300:U:H4'  | 25:BA:1301:A:C5'    | 2.32                     | 0.60              |
| 25:BA:1714:G:H1   | 25:BA:1745(A):C:H42 | 1.49                     | 0.60              |
| 1:CA:1002:G:H1    | 1:CA:1038:C:H42     | 1.47                     | 0.60              |
| 8:CH:34:GLU:OE1   | 8:CH:37:ARG:NH1     | 2.34                     | 0.60              |
| 25:DA:483:A:O2'   | 44:DY:49:VAL:O      | 2.13                     | 0.60              |
| 25:DA:956:G:H5''  | 36:DQ:77:LYS:HD2    | 1.82                     | 0.60              |
| 25:DA:1271:G:OP2  | 60:DA:4401:HOH:O    | 2.16                     | 0.60              |
| 25:DA:2121:G:N1   | 25:DA:2177:C:N4     | 2.16                     | 0.60              |
| 30:DG:15:VAL:HG21 | 30:DG:176:LEU:HD23  | 1.82                     | 0.60              |
| 1:AA:976:G:N2     | 1:AA:1363:C:OP2     | 2.35                     | 0.60              |
| 1:AA:1469:G:H2'   | 1:AA:1470:G:H8      | 1.66                     | 0.60              |
| 5:AE:12:LEU:HB3   | 5:AE:31:LEU:HB2     | 1.83                     | 0.60              |
| 8:AH:41:ARG:NH2   | 8:AH:123:GLU:OE2    | 2.35                     | 0.60              |
| 9:AI:31:GLN:HE21  | 9:AI:36:TYR:HD1     | 1.49                     | 0.60              |
| 10:AJ:37:PRO:HA   | 10:AJ:72:VAL:HG12   | 1.82                     | 0.60              |
| 25:BA:639:U:H2'   | 25:BA:640:C:C6      | 2.36                     | 0.60              |
| 6:CF:46:ARG:HH21  | 18:CR:37:VAL:HG11   | 1.66                     | 0.60              |
| 25:DA:2118:U:C4   | 25:DA:2149:G:H1'    | 2.36                     | 0.60              |
| 5:AE:100:VAL:HG22 | 5:AE:118:ILE:HG22   | 1.83                     | 0.60              |
| 7:AG:78:ARG:HE    | 7:AG:156:TRP:HB3    | 1.67                     | 0.60              |
| 15:AO:26:GLU:OE2  | 15:AO:77:ARG:NH2    | 2.23                     | 0.60              |
| 25:BA:1108:U:O2'  | 25:BA:1109:C:O4'    | 2.20                     | 0.60              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 25:BA:2165:G:H1   | 25:BA:2172:U:H5   | 1.50                     | 0.60              |
| 25:BA:2377:A:H2'  | 25:BA:2378:A:C8   | 2.37                     | 0.60              |
| 32:BI:100:ALA:HA  | 32:BI:103:ARG:HD2 | 1.82                     | 0.60              |
| 38:BS:34:HIS:ND1  | 38:BS:53:SER:OG   | 2.32                     | 0.60              |
| 5:CE:92:LYS:HB3   | 5:CE:119:LEU:HB2  | 1.83                     | 0.60              |
| 7:CG:78:ARG:HG2   | 7:CG:79:ARG:HB2   | 1.83                     | 0.60              |
| 25:DA:2492:U:OP1  | 60:DA:4358:HOH:O  | 2.16                     | 0.60              |
| 32:DI:92:VAL:HG13 | 32:DI:120:ILE:HB  | 1.84                     | 0.60              |
| 18:AR:31:LEU:HD23 | 18:AR:31:LEU:H    | 1.67                     | 0.60              |
| 25:BA:528:A:N1    | 25:BA:2042:A:H2'  | 2.16                     | 0.60              |
| 1:CA:222:U:H2'    | 1:CA:223:U:C6     | 2.37                     | 0.60              |
| 1:CA:738:C:OP1    | 6:CF:2:ARG:NH1    | 2.35                     | 0.60              |
| 1:CA:1047:G:H5''  | 14:CN:4:LYS:HE3   | 1.83                     | 0.60              |
| 9:CI:20:ARG:O     | 9:CI:60:ASP:N     | 2.34                     | 0.60              |
| 1:AA:67:C:H2'     | 1:AA:68:G:C8      | 2.36                     | 0.60              |
| 2:AB:69:LEU:HB2   | 2:AB:159:PRO:HG2  | 1.83                     | 0.60              |
| 25:BA:1174:A:H4'  | 25:BA:1175:U:OP1  | 2.01                     | 0.60              |
| 25:BA:1568:G:H5'' | 27:BD:61:LEU:HD13 | 1.84                     | 0.60              |
| 1:CA:975:A:N1     | 10:CJ:48:THR:HB   | 2.16                     | 0.60              |
| 2:CB:84:GLU:OE1   | 2:CB:87:ARG:NH2   | 2.34                     | 0.60              |
| 25:DA:1278:A:OP1  | 37:DR:36:THR:HG23 | 2.02                     | 0.60              |
| 26:DB:55:U:O3'    | 30:DG:27:ASN:ND2  | 2.34                     | 0.60              |
| 26:BB:45:A:OP2    | 30:BG:96:ARG:NH2  | 2.32                     | 0.60              |
| 1:CA:35:G:O2'     | 12:CL:118:SER:O   | 2.15                     | 0.60              |
| 1:CA:1004:A:H5''  | 1:CA:1025:U:C5    | 2.36                     | 0.60              |
| 1:CA:1327:C:OP2   | 21:CU:12:LYS:NZ   | 2.26                     | 0.60              |
| 2:CB:76:GLN:HE21  | 2:CB:208:ILE:HG12 | 1.66                     | 0.60              |
| 2:CB:179:LYS:HA   | 8:CH:72:PRO:HG3   | 1.84                     | 0.60              |
| 25:DA:1798:U:OP2  | 27:DD:274:ARG:NH2 | 2.35                     | 0.60              |
| 31:DH:40:GLU:OE1  | 31:DH:61:HIS:NE2  | 2.34                     | 0.60              |
| 49:D3:10:LYS:HB3  | 49:D3:53:LEU:HA   | 1.83                     | 0.60              |
| 37:BR:67:LEU:HD13 | 37:BR:76:VAL:HG21 | 1.84                     | 0.60              |
| 1:CA:58:C:O2'     | 1:CA:388:G:N7     | 2.32                     | 0.60              |
| 1:CA:953:G:H5'    | 1:CA:965:A:H61    | 1.66                     | 0.60              |
| 1:CA:1189:C:H5''  | 3:CC:5:ILE:HD12   | 1.83                     | 0.60              |
| 1:CA:1256:A:N6    | 1:CA:1278:U:H1'   | 2.12                     | 0.60              |
| 1:CA:1321:C:H5''  | 1:CA:1322:C:H2'   | 1.84                     | 0.60              |
| 4:CD:158:ILE:HG23 | 4:CD:162:LEU:HD12 | 1.83                     | 0.60              |
| 25:DA:833:U:H2'   | 25:DA:834:C:C6    | 2.37                     | 0.60              |
| 25:DA:2115:G:H4'  | 25:DA:2167:U:C4   | 2.37                     | 0.60              |
| 25:DA:2135:A:H61  | 25:DA:2157:G:H21  | 1.49                     | 0.60              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:DA:2537:U:H2'   | 25:DA:2538:C:C6    | 2.36                     | 0.60              |
| 1:AA:1189:C:P      | 10:AJ:51:ARG:HH22  | 2.24                     | 0.59              |
| 1:AA:1278:U:H5'    | 1:AA:1279:A:H5'    | 1.84                     | 0.59              |
| 2:AB:91:PRO:HG3    | 2:AB:154:LEU:HB3   | 1.83                     | 0.59              |
| 25:BA:2065:C:H2'   | 25:BA:2066:C:H6    | 1.66                     | 0.59              |
| 25:BA:2168:G:C6    | 25:BA:2171:A:H8    | 2.20                     | 0.59              |
| 49:B3:10:LYS:HB3   | 49:B3:53:LEU:HA    | 1.84                     | 0.59              |
| 10:CJ:32:ALA:HB1   | 10:CJ:33:GLN:HG2   | 1.83                     | 0.59              |
| 25:DA:2203:U:H2'   | 25:DA:2205:C:C6    | 2.37                     | 0.59              |
| 29:DF:21:ALA:HB3   | 29:DF:22:ALA:HA    | 1.83                     | 0.59              |
| 1:AA:193:C:H2'     | 1:AA:194:C:H6      | 1.67                     | 0.59              |
| 10:AJ:81:THR:HA    | 10:AJ:84:GLN:HB3   | 1.82                     | 0.59              |
| 23:AW:76:PPU:H103  | 25:BA:2584:U:H5'   | 1.84                     | 0.59              |
| 25:BA:1025:G:C4    | 25:BA:1135:C:H1'   | 2.37                     | 0.59              |
| 1:CA:437:U:H5'     | 4:CD:155:LEU:HD21  | 1.84                     | 0.59              |
| 25:DA:106:C:O2     | 25:DA:294:A:O2'    | 2.20                     | 0.59              |
| 25:DA:987:G:O2'    | 25:DA:1000:A:N3    | 2.27                     | 0.59              |
| 35:DP:52:GLU:HB3   | 35:DP:55:ARG:HH11  | 1.67                     | 0.59              |
| 42:DW:68:ARG:HB3   | 42:DW:109:GLU:HG2  | 1.84                     | 0.59              |
| 45:DZ:19:ARG:NH1   | 45:DZ:84:GLU:O     | 2.35                     | 0.59              |
| 45:DZ:45:ASP:OD2   | 45:DZ:49:ARG:NH1   | 2.35                     | 0.59              |
| 1:CA:328:C:H4'     | 1:CA:329:A:H5'     | 1.85                     | 0.59              |
| 1:CA:1028:C:N3     | 1:CA:1033:G:C6     | 2.71                     | 0.59              |
| 25:DA:2693:A:H2'   | 25:DA:2694:G:H8    | 1.66                     | 0.59              |
| 30:DG:64:THR:HB    | 30:DG:94:LEU:HD21  | 1.83                     | 0.59              |
| 1:AA:429:U:O2'     | 4:AD:22:LYS:NZ     | 2.34                     | 0.59              |
| 1:AA:1226:C:OP1    | 13:AM:91:ARG:NH1   | 2.34                     | 0.59              |
| 3:AC:36:ASP:O      | 3:AC:40:ARG:HG3    | 2.02                     | 0.59              |
| 25:BA:652(F):G:H22 | 25:BA:652(S):C:H2' | 1.68                     | 0.59              |
| 27:BD:69:ARG:NH2   | 27:BD:128:GLY:O    | 2.35                     | 0.59              |
| 27:BD:242:ARG:O    | 60:BD:403:HOH:O    | 2.17                     | 0.59              |
| 1:CA:309:G:O2'     | 1:CA:607:A:N1      | 2.36                     | 0.59              |
| 1:CA:1318:A:OP1    | 19:CS:3:ARG:NH1    | 2.36                     | 0.59              |
| 20:CT:43:LEU:O     | 20:CT:47:GLY:N     | 2.35                     | 0.59              |
| 25:DA:614(A):U:H4' | 25:DA:614(B):G:H5' | 1.84                     | 0.59              |
| 25:DA:632:A:H2'    | 25:DA:633:A:C8     | 2.37                     | 0.59              |
| 26:DB:95:C:H2'     | 26:DB:96:U:C6      | 2.36                     | 0.59              |
| 1:AA:376:G:H4'     | 16:AP:5:ARG:HE     | 1.67                     | 0.59              |
| 1:AA:1062:U:H2'    | 1:AA:1063:C:C6     | 2.37                     | 0.59              |
| 1:AA:1273:G:H3'    | 1:AA:1274:G:C8     | 2.36                     | 0.59              |
| 3:AC:179:ARG:NH1   | 3:AC:206:GLU:OE2   | 2.35                     | 0.59              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:CA:1004:A:H8    | 1:CA:1005:A:H4'    | 1.65                     | 0.59              |
| 1:CA:1286:A:H2'   | 1:CA:1287:A:H4'    | 1.84                     | 0.59              |
| 3:CC:164:ARG:HD2  | 3:CC:165:THR:H     | 1.66                     | 0.59              |
| 9:CI:7:THR:OG1    | 9:CI:83:ARG:NH1    | 2.36                     | 0.59              |
| 9:CI:50:LEU:HD21  | 9:CI:81:ILE:HD11   | 1.83                     | 0.59              |
| 28:DE:14:ILE:HD11 | 28:DE:173:VAL:HG11 | 1.84                     | 0.59              |
| 36:DQ:79:LEU:HB3  | 36:DQ:80:GLU:HG3   | 1.84                     | 0.59              |
| 1:AA:201:C:H42    | 1:AA:216:G:N2      | 2.00                     | 0.59              |
| 25:BA:1794:U:H2'  | 25:BA:1795:C:C6    | 2.37                     | 0.59              |
| 25:BA:2118:U:O4   | 25:BA:2149:G:H1'   | 2.03                     | 0.59              |
| 25:DA:694:U:OP1   | 27:DD:59:LYS:NZ    | 2.34                     | 0.59              |
| 1:AA:316:G:OP2    | 1:AA:351:G:O2'     | 2.20                     | 0.59              |
| 1:AA:413:G:N2     | 1:AA:428:G:H1'     | 2.18                     | 0.59              |
| 25:BA:197:A:N6    | 25:BA:2430:A:O2'   | 2.35                     | 0.59              |
| 25:BA:576:U:OP1   | 60:BA:4285:HOH:O   | 2.17                     | 0.59              |
| 25:BA:800:A:H8    | 25:BA:800:A:OP1    | 1.86                     | 0.59              |
| 26:BB:91:C:OP2    | 36:BQ:16:ARG:NH1   | 2.35                     | 0.59              |
| 25:DA:2879:C:OP2  | 60:DA:4350:HOH:O   | 2.17                     | 0.59              |
| 25:BA:1866:C:H2'  | 25:BA:1876:A:O4'   | 2.03                     | 0.59              |
| 25:DA:1590:U:H2'  | 25:DA:1591:G:H8    | 1.68                     | 0.59              |
| 29:DF:33:LEU:HD13 | 29:DF:112:MET:HE2  | 1.83                     | 0.59              |
| 42:DW:18:ARG:NH1  | 42:DW:76:VAL:O     | 2.36                     | 0.59              |
| 1:AA:235:C:H5'    | 17:AQ:70:ARG:HG2   | 1.85                     | 0.59              |
| 3:AC:3:ASN:OD1    | 3:AC:3:ASN:N       | 2.34                     | 0.59              |
| 25:BA:144:C:H5'   | 43:BX:2:LYS:HD2    | 1.84                     | 0.59              |
| 1:CA:1189:C:OP1   | 10:CJ:51:ARG:NH2   | 2.35                     | 0.59              |
| 4:CD:60:GLU:HG2   | 4:CD:202:LEU:HB2   | 1.85                     | 0.59              |
| 10:CJ:49:VAL:HG23 | 14:CN:41:ARG:HB2   | 1.85                     | 0.59              |
| 11:CK:33:THR:HA   | 11:CK:39:PRO:HA    | 1.83                     | 0.59              |
| 13:CM:6:GLY:O     | 30:DG:115:ARG:NH2  | 2.35                     | 0.59              |
| 25:DA:2206:G:H3'  | 25:DA:2207:G:C8    | 2.38                     | 0.59              |
| 25:DA:2276:G:H5'  | 36:DQ:86:GLY:HA2   | 1.83                     | 0.59              |
| 25:DA:2515:C:H2'  | 25:DA:2516:G:H8    | 1.68                     | 0.59              |
| 25:DA:2788:C:OP1  | 28:DE:61:ARG:NH2   | 2.36                     | 0.59              |
| 8:AH:29:SER:HB2   | 8:AH:32:LYS:HG3    | 1.85                     | 0.59              |
| 25:BA:568:U:H5'   | 25:BA:945:A:N1     | 2.18                     | 0.59              |
| 25:BA:1171:G:H3'  | 25:BA:1173:G:H5'   | 1.84                     | 0.59              |
| 34:BO:63:VAL:HG12 | 34:BO:106:LEU:HD11 | 1.85                     | 0.59              |
| 48:B2:25:VAL:HG13 | 48:B2:57:ILE:HG23  | 1.84                     | 0.59              |
| 52:B6:11:LEU:HB2  | 52:B6:21:TYR:HB2   | 1.85                     | 0.59              |
| 25:DA:2398:U:H2'  | 25:DA:2399:G:C8    | 2.37                     | 0.59              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 34:DO:60:ALA:HA    | 34:DO:87:ILE:HG12 | 1.85                     | 0.59              |
| 1:AA:974:A:OP2     | 14:AN:29:ARG:NH2  | 2.35                     | 0.58              |
| 1:AA:993:G:O6      | 1:AA:1045:C:N4    | 2.35                     | 0.58              |
| 1:AA:1289:A:OP1    | 21:AU:9:ARG:NH2   | 2.36                     | 0.58              |
| 25:BA:1403:C:H5''  | 25:BA:1471:A:H1'  | 1.84                     | 0.58              |
| 27:BD:132:PRO:HG2  | 27:BD:135:PHE:CD2 | 2.38                     | 0.58              |
| 32:BI:102:SER:O    | 32:BI:106:GLY:HA3 | 2.02                     | 0.58              |
| 44:BY:92:ASN:HB2   | 44:BY:94:LYS:H    | 1.66                     | 0.58              |
| 1:CA:1397:C:H4'    | 22:CV:23:A:C6     | 2.37                     | 0.58              |
| 4:CD:25:ARG:NH1    | 4:CD:30:LYS:O     | 2.36                     | 0.58              |
| 25:DA:1017:G:N7    | 60:DA:4475:HOH:O  | 2.31                     | 0.58              |
| 25:DA:1265:A:OP2   | 60:DA:4244:HOH:O  | 2.16                     | 0.58              |
| 25:DA:1721:G:H8    | 25:DA:1741:A:H62  | 1.49                     | 0.58              |
| 25:DA:2126:A:N6    | 25:DA:2162:G:O2'  | 2.36                     | 0.58              |
| 27:DD:206:LEU:HD22 | 27:DD:211:ARG:HG2 | 1.84                     | 0.58              |
| 38:DS:26:LEU:HA    | 38:DS:39:ILE:HG12 | 1.85                     | 0.58              |
| 1:AA:78:G:C6       | 1:AA:91:C:N4      | 2.69                     | 0.58              |
| 1:AA:376:G:H5''    | 16:AP:5:ARG:HB2   | 1.85                     | 0.58              |
| 1:AA:1286:A:C8     | 1:AA:1287:A:H4'   | 2.38                     | 0.58              |
| 25:BA:729:G:OP1    | 27:BD:10:THR:OG1  | 2.15                     | 0.58              |
| 25:BA:2188:C:H2'   | 25:BA:2189:U:O4'  | 2.04                     | 0.58              |
| 1:CA:572:A:OP1     | 60:CA:4030:HOH:O  | 2.17                     | 0.58              |
| 1:CA:1153:C:H42    | 1:CA:1154:G:N2    | 2.01                     | 0.58              |
| 7:CG:111:ARG:NH1   | 7:CG:113:GLU:OE2  | 2.33                     | 0.58              |
| 8:CH:37:ARG:NH2    | 8:CH:118:VAL:O    | 2.36                     | 0.58              |
| 9:CI:53:VAL:O      | 9:CI:55:ALA:N     | 2.33                     | 0.58              |
| 19:CS:80:TYR:CZ    | 19:CS:82:GLY:HA2  | 2.38                     | 0.58              |
| 25:DA:131:G:OP1    | 60:DA:4073:HOH:O  | 2.17                     | 0.58              |
| 25:DA:1665:A:H4'   | 34:DO:67:LYS:HB2  | 1.84                     | 0.58              |
| 25:DA:2125:G:H22   | 25:DA:2172:U:H5'  | 1.68                     | 0.58              |
| 34:DO:19:ILE:HG22  | 34:DO:43:VAL:HA   | 1.86                     | 0.58              |
| 1:AA:452:A:H4'     | 16:AP:72:ARG:NH1  | 2.18                     | 0.58              |
| 25:BA:858:U:O2     | 25:BA:2268:A:H2'  | 2.04                     | 0.58              |
| 25:BA:2572:A:N7    | 28:BE:144:ARG:HD2 | 2.17                     | 0.58              |
| 50:B4:63:TYR:N     | 50:B4:64:GLY:HA2  | 2.18                     | 0.58              |
| 1:CA:1348:U:H4'    | 9:CI:120:ARG:HD2  | 1.84                     | 0.58              |
| 10:CJ:5:ARG:N      | 10:CJ:99:LYS:O    | 2.37                     | 0.58              |
| 11:CK:22:HIS:HD2   | 11:CK:29:ILE:HD12 | 1.68                     | 0.58              |
| 25:DA:958:U:OP2    | 36:DQ:14:ARG:NH1  | 2.37                     | 0.58              |
| 1:AA:159:G:N2      | 1:AA:162:A:OP2    | 2.35                     | 0.58              |
| 27:BD:145:VAL:HB   | 27:BD:155:LEU:HB2 | 1.84                     | 0.58              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:CA:400:C:H5''    | 4:CD:73:ARG:NH2    | 2.15                     | 0.58              |
| 1:CA:1435:G:H2'    | 1:CA:1436:U:C6     | 2.38                     | 0.58              |
| 1:CA:1492:A:H2'    | 1:CA:1493:A:C5     | 2.38                     | 0.58              |
| 2:CB:54:THR:HG23   | 2:CB:199:TYR:HB3   | 1.84                     | 0.58              |
| 25:DA:1592:C:H2'   | 25:DA:1593:G:C8    | 2.38                     | 0.58              |
| 25:DA:2126:A:N3    | 25:DA:2127:G:H1'   | 2.19                     | 0.58              |
| 25:DA:2611:U:C4    | 51:D5:3:LYS:HG2    | 2.38                     | 0.58              |
| 28:DE:199:ARG:HH12 | 28:DE:202:LYS:HE2  | 1.68                     | 0.58              |
| 30:DG:33:ARG:HE    | 30:DG:162:THR:HG21 | 1.66                     | 0.58              |
| 41:DV:62:LEU:HD11  | 41:DV:95:LEU:HB2   | 1.86                     | 0.58              |
| 44:DY:37:VAL:N     | 44:DY:67:LEU:O     | 2.32                     | 0.58              |
| 1:AA:1241:G:H1     | 1:AA:1296:C:H42    | 1.49                     | 0.58              |
| 1:CA:1032:G:H2'    | 1:CA:1033:G:C8     | 2.38                     | 0.58              |
| 9:CI:9:ARG:H       | 9:CI:79:LEU:HD23   | 1.68                     | 0.58              |
| 36:DQ:26:TYR:O     | 36:DQ:67:ARG:NH1   | 2.37                     | 0.58              |
| 50:D4:40:HIS:HD2   | 50:D4:41:PRO:HD2   | 1.68                     | 0.58              |
| 1:AA:93:G:H2'      | 1:AA:96:U:O4'      | 2.03                     | 0.58              |
| 1:AA:401:C:H2'     | 1:AA:402:G:C8      | 2.37                     | 0.58              |
| 10:AJ:47:PHE:N     | 10:AJ:63:PHE:O     | 2.37                     | 0.58              |
| 1:CA:1123:A:H4'    | 10:CJ:36:GLY:HA3   | 1.86                     | 0.58              |
| 1:CA:1164:G:H1     | 1:CA:1172:C:H42    | 1.49                     | 0.58              |
| 18:CR:56:THR:HB    | 18:CR:58:LEU:HD23  | 1.85                     | 0.58              |
| 25:DA:616:G:H5'    | 29:DF:205:ARG:HD2  | 1.85                     | 0.58              |
| 27:DD:108:PRO:HG2  | 27:DD:111:LEU:HB2  | 1.85                     | 0.58              |
| 8:AH:21:LYS:O      | 8:AH:65:TYR:OH     | 2.17                     | 0.58              |
| 25:BA:668:G:H5'    | 25:BA:669:G:OP2    | 2.03                     | 0.58              |
| 25:BA:1153:C:OP1   | 40:BU:92:ARG:NH1   | 2.36                     | 0.58              |
| 1:CA:1378:C:H5''   | 7:CG:6:ARG:HH21    | 1.68                     | 0.58              |
| 25:DA:140:G:H22    | 25:DA:1596:A:H4'   | 1.69                     | 0.58              |
| 25:DA:644:A:H4'    | 25:DA:645:C:C5     | 2.39                     | 0.58              |
| 25:DA:996:A:OP2    | 40:DU:93:LYS:NZ    | 2.26                     | 0.58              |
| 25:DA:1674:G:N2    | 25:DA:1677:A:N1    | 2.51                     | 0.58              |
| 25:DA:2273:A:H2'   | 25:DA:2274:A:C8    | 2.38                     | 0.58              |
| 28:DE:18:ASP:HB3   | 39:DT:82:LEU:HD21  | 1.85                     | 0.58              |
| 35:DP:63:PRO:HD3   | 54:D8:27:THR:HG22  | 1.86                     | 0.58              |
| 35:DP:81:GLN:NE2   | 35:DP:105:LEU:O    | 2.37                     | 0.58              |
| 25:BA:2431:U:OP1   | 60:BA:3998:HOH:O   | 2.16                     | 0.58              |
| 28:BE:47:VAL:HG21  | 28:BE:86:PRO:HD2   | 1.84                     | 0.58              |
| 33:BN:12:ARG:HH21  | 33:BN:138:LEU:HD11 | 1.67                     | 0.58              |
| 47:B1:54:ALA:HB1   | 47:B1:83:GLU:HG3   | 1.86                     | 0.58              |
| 1:CA:977:A:H1'     | 1:CA:982:U:O4      | 2.04                     | 0.58              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:CA:1002:G:N2     | 1:CA:1038:C:N3     | 2.51                     | 0.58              |
| 25:DA:453:C:O2     | 25:DA:457:A:O2'    | 2.22                     | 0.58              |
| 25:DA:1410:G:H2'   | 25:DA:1411:C:C6    | 2.38                     | 0.58              |
| 1:AA:1008:C:N4     | 1:AA:1021:G:N1     | 2.33                     | 0.58              |
| 25:BA:271(L):U:H5' | 32:BI:50:ARG:NH1   | 2.18                     | 0.58              |
| 25:BA:299:A:N1     | 25:BA:322:A:O2'    | 2.32                     | 0.58              |
| 25:BA:1031:G:H5''  | 55:B9:8:LYS:HE3    | 1.86                     | 0.58              |
| 1:CA:664:G:OP1     | 18:CR:64:ARG:NH1   | 2.35                     | 0.58              |
| 1:CA:1002:G:N3     | 1:CA:1003:G:H8     | 2.01                     | 0.58              |
| 1:CA:1423:G:H5'    | 34:DO:49:ARG:HH12  | 1.68                     | 0.58              |
| 2:CB:33:TYR:HB2    | 2:CB:43:ASP:HA     | 1.84                     | 0.58              |
| 2:CB:122:PHE:HD1   | 2:CB:123:ALA:H     | 1.50                     | 0.58              |
| 13:CM:120:LYS:HA   | 13:CM:121:LYS:NZ   | 2.18                     | 0.58              |
| 25:DA:1266:G:O2'   | 25:DA:2012:G:O6    | 2.19                     | 0.58              |
| 1:AA:988:G:H1      | 1:AA:1217:C:H42    | 1.51                     | 0.58              |
| 4:AD:85:LYS:HG3    | 4:AD:86:LYS:H      | 1.67                     | 0.58              |
| 5:AE:68:GLU:HG3    | 5:AE:70:PRO:HD3    | 1.86                     | 0.58              |
| 25:BA:118:A:H5'    | 25:BA:119:A:H8     | 1.68                     | 0.58              |
| 31:BH:40:GLU:OE1   | 31:BH:61:HIS:NE2   | 2.37                     | 0.58              |
| 1:CA:427:U:O2'     | 1:CA:541:G:OP1     | 2.18                     | 0.58              |
| 1:CA:985:C:H2'     | 1:CA:986:A:C8      | 2.39                     | 0.58              |
| 3:CC:43:LEU:HD23   | 3:CC:44:GLU:N      | 2.19                     | 0.58              |
| 22:CV:16:A:N6      | 24:CX:36:U:H3      | 2.01                     | 0.58              |
| 25:DA:84:A:H5''    | 44:DY:8:LYS:HE3    | 1.86                     | 0.58              |
| 25:DA:375:C:H2'    | 25:DA:376:C:C6     | 2.39                     | 0.58              |
| 25:DA:1688:U:O2    | 25:DA:1700:A:H5'   | 2.03                     | 0.58              |
| 39:DT:60:THR:HG22  | 39:DT:77:PRO:HA    | 1.86                     | 0.58              |
| 25:BA:2065:C:H2'   | 25:BA:2066:C:C6    | 2.38                     | 0.57              |
| 44:BY:99:CYS:HB2   | 44:BY:106:LEU:HD21 | 1.86                     | 0.57              |
| 1:CA:401:C:OP2     | 4:CD:73:ARG:NH1    | 2.37                     | 0.57              |
| 1:CA:1309:G:H5'    | 13:CM:78:ILE:HD11  | 1.86                     | 0.57              |
| 25:DA:1827:C:OP2   | 27:DD:222:ARG:NH1  | 2.37                     | 0.57              |
| 25:DA:2143:C:H2'   | 25:DA:2144:U:O4'   | 2.04                     | 0.57              |
| 33:DN:15:LEU:HB2   | 33:DN:135:PRO:HB2  | 1.86                     | 0.57              |
| 1:AA:353:A:H8      | 1:AA:353:A:H5'     | 1.69                     | 0.57              |
| 28:BE:12:THR:HG22  | 28:BE:13:ARG:H     | 1.68                     | 0.57              |
| 30:BG:64:THR:HB    | 30:BG:94:LEU:HD21  | 1.84                     | 0.57              |
| 40:BU:66:ASN:O     | 40:BU:70:ARG:HG3   | 2.03                     | 0.57              |
| 1:CA:59:A:H5''     | 1:CA:60:A:H5''     | 1.84                     | 0.57              |
| 1:CA:1119:C:H2'    | 1:CA:1120:G:C8     | 2.40                     | 0.57              |
| 1:CA:1273:G:H3'    | 1:CA:1274:G:H8     | 1.68                     | 0.57              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 16:CP:19:ILE:HD11 | 16:CP:39:TYR:HB2  | 1.85                     | 0.57              |
| 26:DB:7:G:N3      | 38:DS:38:GLN:NE2  | 2.43                     | 0.57              |
| 26:DB:20:C:H42    | 26:DB:63:G:H1     | 1.50                     | 0.57              |
| 38:DS:28:VAL:HG13 | 38:DS:35:ILE:HD11 | 1.86                     | 0.57              |
| 38:DS:89:ARG:HG2  | 38:DS:92:TYR:O    | 2.04                     | 0.57              |
| 1:AA:158:G:H21    | 1:AA:162:A:H62    | 1.50                     | 0.57              |
| 1:AA:437:U:H5'    | 4:AD:155:LEU:HD21 | 1.86                     | 0.57              |
| 1:AA:881:G:P      | 12:AL:12:ARG:HH22 | 2.26                     | 0.57              |
| 3:AC:124:ILE:HD12 | 3:AC:196:LEU:HD12 | 1.86                     | 0.57              |
| 41:BV:14:VAL:HB   | 41:BV:96:ILE:HG13 | 1.85                     | 0.57              |
| 4:CD:153:ARG:O    | 4:CD:159:ARG:NH2  | 2.37                     | 0.57              |
| 25:DA:2291:U:O2'  | 25:DA:2374:C:O2   | 2.19                     | 0.57              |
| 39:DT:88:ILE:HG21 | 39:DT:91:ARG:HD3  | 1.86                     | 0.57              |
| 1:AA:539:A:OP2    | 12:AL:115:LYS:HD2 | 2.05                     | 0.57              |
| 1:AA:1259:C:N4    | 1:AA:1276:G:H1    | 2.02                     | 0.57              |
| 25:BA:1178:C:H2'  | 25:BA:1179:C:C6   | 2.40                     | 0.57              |
| 25:BA:2123:G:H1   | 25:BA:2175:C:H42  | 1.53                     | 0.57              |
| 2:CB:87:ARG:NE    | 2:CB:233:SER:HB3  | 2.19                     | 0.57              |
| 5:CE:19:MET:SD    | 5:CE:24:ARG:HG2   | 2.44                     | 0.57              |
| 17:CQ:57:VAL:HG12 | 17:CQ:76:LEU:HA   | 1.86                     | 0.57              |
| 20:CT:64:ASP:OD2  | 20:CT:81:LYS:NZ   | 2.36                     | 0.57              |
| 25:DA:833:U:O2    | 35:DP:55:ARG:NH2  | 2.37                     | 0.57              |
| 2:AB:163:PHE:HA   | 2:AB:185:ILE:HG12 | 1.84                     | 0.57              |
| 25:BA:956:G:OP2   | 36:BQ:14:ARG:NH2  | 2.38                     | 0.57              |
| 25:BA:1859:A:N6   | 25:BA:1883:G:O2'  | 2.36                     | 0.57              |
| 25:BA:2143:C:H2'  | 25:BA:2144:U:O4'  | 2.04                     | 0.57              |
| 1:CA:1326:C:H5''  | 21:CU:18:TYR:O    | 2.03                     | 0.57              |
| 1:CA:1349:A:H5''  | 9:CI:121:ARG:HB2  | 1.85                     | 0.57              |
| 2:CB:74:LYS:HG3   | 2:CB:77:ALA:HB3   | 1.86                     | 0.57              |
| 25:DA:668:G:H5'   | 25:DA:669:G:OP2   | 2.04                     | 0.57              |
| 25:DA:821:A:H2'   | 25:DA:946:G:H5''  | 1.84                     | 0.57              |
| 26:DB:66:A:H61    | 26:DB:108:U:H3'   | 1.70                     | 0.57              |
| 30:DG:178:PHE:N   | 30:DG:178:PHE:CD1 | 2.71                     | 0.57              |
| 1:AA:559:A:H4'    | 1:AA:560:U:H3'    | 1.86                     | 0.57              |
| 3:AC:19:GLU:HB3   | 3:AC:40:ARG:NH2   | 2.19                     | 0.57              |
| 10:AJ:7:LYS:HB3   | 10:AJ:97:GLU:HB2  | 1.86                     | 0.57              |
| 1:CA:190:U:H2'    | 1:CA:191:G:C8     | 2.40                     | 0.57              |
| 1:CA:1067:A:O2'   | 1:CA:1068:G:OP2   | 2.19                     | 0.57              |
| 2:CB:83:MET:HB3   | 2:CB:234:PRO:HB2  | 1.87                     | 0.57              |
| 19:CS:9:VAL:HG21  | 50:D4:61:ARG:NH2  | 2.20                     | 0.57              |
| 25:DA:1030:G:OP2  | 36:DQ:128:LYS:NZ  | 2.33                     | 0.57              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 25:DA:2150:U:H2'  | 25:DA:2151:G:C8    | 2.40                     | 0.57              |
| 27:DD:112:GLN:H   | 27:DD:115:GLN:NE2  | 2.02                     | 0.57              |
| 1:AA:624:C:H2'    | 1:AA:625:G:C8      | 2.39                     | 0.57              |
| 1:AA:1103:C:OP1   | 2:AB:96:ARG:NH2    | 2.37                     | 0.57              |
| 25:BA:1770:G:OP1  | 60:BA:4522:HOH:O   | 2.17                     | 0.57              |
| 1:CA:1134:G:H2'   | 1:CA:1134:G:N3     | 2.19                     | 0.57              |
| 14:CN:27:CYS:SG   | 14:CN:29:ARG:HB2   | 2.45                     | 0.57              |
| 25:DA:656:G:H2'   | 25:DA:657:U:O4'    | 2.04                     | 0.57              |
| 25:DA:1565:C:H42  | 25:DA:1568:G:H1    | 1.52                     | 0.57              |
| 25:DA:2454:G:O6   | 60:DA:4290:HOH:O   | 2.16                     | 0.57              |
| 1:AA:21:G:H2'     | 1:AA:22:G:C8       | 2.40                     | 0.57              |
| 1:AA:1314:C:OP2   | 19:AS:4:SER:OG     | 2.17                     | 0.57              |
| 3:AC:164:ARG:HG2  | 3:AC:165:THR:H     | 1.69                     | 0.57              |
| 6:AF:97:PHE:HB2   | 18:AR:32:ARG:HE    | 1.68                     | 0.57              |
| 25:BA:602:G:O2'   | 25:BA:655:A:N6     | 2.37                     | 0.57              |
| 25:BA:875:G:H1    | 25:BA:902:C:H42    | 1.51                     | 0.57              |
| 25:BA:1860:G:N2   | 25:BA:1883:G:H1'   | 2.20                     | 0.57              |
| 25:BA:1963:U:H4'  | 25:BA:1964:G:OP1   | 2.03                     | 0.57              |
| 25:BA:2577:A:H5'  | 51:B5:3:LYS:HD2    | 1.87                     | 0.57              |
| 25:BA:2810:A:N6   | 25:BA:2891:G:O2'   | 2.34                     | 0.57              |
| 2:CB:122:PHE:HA   | 2:CB:127:ILE:HD12  | 1.87                     | 0.57              |
| 5:CE:10:MET:SD    | 5:CE:10:MET:N      | 2.77                     | 0.57              |
| 17:CQ:12:SER:HB3  | 17:CQ:20:THR:HB    | 1.85                     | 0.57              |
| 25:DA:2104:G:H1   | 25:DA:2185:C:N4    | 2.02                     | 0.57              |
| 25:DA:2630:G:H2'  | 25:DA:2631:G:C8    | 2.40                     | 0.57              |
| 29:DF:184:TYR:CE2 | 29:DF:188:ARG:HD2  | 2.40                     | 0.57              |
| 1:AA:17:U:H2'     | 1:AA:18:C:C6       | 2.40                     | 0.57              |
| 1:AA:1194:U:H2'   | 1:AA:1195:C:C6     | 2.40                     | 0.57              |
| 1:AA:1288:A:N1    | 1:AA:1371:G:H1'    | 2.20                     | 0.57              |
| 5:AE:110:LEU:HD13 | 5:AE:118:ILE:HG21  | 1.87                     | 0.57              |
| 7:CG:116:ALA:O    | 7:CG:120:ILE:HG12  | 2.04                     | 0.57              |
| 12:CL:24:VAL:HG11 | 12:CL:27:LEU:HD22  | 1.85                     | 0.57              |
| 25:DA:689:A:N3    | 25:DA:779:U:O2'    | 2.36                     | 0.57              |
| 25:DA:1710:C:H2'  | 25:DA:1711:C:H6    | 1.70                     | 0.57              |
| 45:DZ:23:LYS:HE2  | 45:DZ:40:ASP:CG    | 2.25                     | 0.57              |
| 27:BD:17:THR:O    | 27:BD:211:ARG:NH2  | 2.38                     | 0.57              |
| 1:CA:1012:U:H2'   | 1:CA:1013:G:C8     | 2.40                     | 0.57              |
| 2:CB:187:LEU:HB2  | 2:CB:201:ILE:HB    | 1.87                     | 0.57              |
| 5:CE:102:ALA:HB1  | 5:CE:106:PRO:HG2   | 1.87                     | 0.57              |
| 25:DA:883:G:O6    | 25:DA:893:C:N4     | 2.29                     | 0.57              |
| 25:DA:2679:A:H4'  | 28:DE:165:VAL:HG11 | 1.87                     | 0.57              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:56:U:H2'     | 1:AA:57:G:C8      | 2.40                     | 0.56              |
| 1:AA:346:G:H2'    | 1:AA:347:G:H4'    | 1.87                     | 0.56              |
| 20:AT:43:LEU:O    | 20:AT:47:GLY:N    | 2.38                     | 0.56              |
| 25:BA:61:G:H5'    | 48:B2:50:ILE:HG21 | 1.86                     | 0.56              |
| 25:BA:996:A:OP2   | 40:BU:93:LYS:NZ   | 2.34                     | 0.56              |
| 25:BA:2012:G:OP1  | 42:BW:11:ARG:NH2  | 2.36                     | 0.56              |
| 25:BA:2564:A:C2   | 25:BA:2647:U:H4'  | 2.40                     | 0.56              |
| 32:BI:96:ASP:OD1  | 32:BI:96:ASP:N    | 2.38                     | 0.56              |
| 1:CA:36:C:OP1     | 12:CL:123:LYS:HE3 | 2.04                     | 0.56              |
| 1:CA:486:U:H2'    | 1:CA:487:A:H8     | 1.70                     | 0.56              |
| 1:CA:1137:C:H5''  | 1:CA:1138:G:OP1   | 2.04                     | 0.56              |
| 10:CJ:30:SER:O    | 10:CJ:81:THR:OG1  | 2.23                     | 0.56              |
| 11:CK:48:ILE:O    | 11:CK:50:TYR:N    | 2.38                     | 0.56              |
| 25:DA:1916:A:H2'  | 25:DA:1917:U:O4'  | 2.05                     | 0.56              |
| 25:DA:1971:A:OP2  | 27:DD:242:ARG:NH2 | 2.38                     | 0.56              |
| 26:DB:24:G:H21    | 26:DB:27:C:H42    | 1.53                     | 0.56              |
| 39:DT:53:ARG:HB3  | 39:DT:53:ARG:NH1  | 2.20                     | 0.56              |
| 44:DY:61:ILE:HD11 | 44:DY:63:LYS:HE3  | 1.85                     | 0.56              |
| 1:AA:198:G:H2'    | 1:AA:199:G:C8     | 2.40                     | 0.56              |
| 1:AA:1015:A:N3    | 1:AA:1218:C:O2'   | 2.35                     | 0.56              |
| 3:AC:26:LYS:HA    | 14:AN:36:PHE:HE1  | 1.70                     | 0.56              |
| 10:AJ:61:GLU:OE1  | 14:AN:58:LYS:NZ   | 2.37                     | 0.56              |
| 25:BA:2146:C:H4'  | 25:BA:2147:G:C4   | 2.40                     | 0.56              |
| 30:BG:138:GLN:NE2 | 30:BG:153:ARG:H   | 2.02                     | 0.56              |
| 48:B2:63:VAL:HA   | 48:B2:66:GLU:HB2  | 1.86                     | 0.56              |
| 1:CA:538:G:H5''   | 12:CL:114:LYS:HB2 | 1.87                     | 0.56              |
| 1:CA:921:U:O2     | 5:CE:19:MET:HB2   | 2.06                     | 0.56              |
| 25:DA:300:A:H1'   | 25:DA:319:C:H1'   | 1.87                     | 0.56              |
| 25:DA:1165:U:H2'  | 25:DA:1166:C:C6   | 2.41                     | 0.56              |
| 25:DA:2185:C:H2'  | 25:DA:2186:G:H8   | 1.71                     | 0.56              |
| 31:DH:70:THR:HA   | 31:DH:73:ALA:HB3  | 1.86                     | 0.56              |
| 50:D4:38:LYS:O    | 50:D4:40:HIS:N    | 2.27                     | 0.56              |
| 51:D5:16:ARG:NH1  | 51:D5:17:ASP:OD1  | 2.38                     | 0.56              |
| 25:BA:2127:G:H21  | 25:BA:2173:A:H1'  | 1.70                     | 0.56              |
| 25:BA:2243:U:H2'  | 25:BA:2244:U:C6   | 2.40                     | 0.56              |
| 49:B3:44:ARG:O    | 49:B3:48:GLU:HG3  | 2.05                     | 0.56              |
| 1:CA:1329:A:H5''  | 13:CM:26:GLY:N    | 2.20                     | 0.56              |
| 3:CC:45:LYS:HZ1   | 3:CC:46:GLU:HG2   | 1.70                     | 0.56              |
| 25:DA:751:A:H5'   | 42:DW:90:ARG:HA   | 1.87                     | 0.56              |
| 25:DA:989:G:H4'   | 25:DA:990:A:OP1   | 2.05                     | 0.56              |
| 25:DA:2249:U:N3   | 25:DA:2253:G:OP2  | 2.36                     | 0.56              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:DA:2507:C:H5''  | 25:DA:2573:C:N4    | 2.19                     | 0.56              |
| 25:DA:2562:U:H1'   | 34:DO:23:ARG:HH11  | 1.70                     | 0.56              |
| 28:DE:47:VAL:HG11  | 28:DE:86:PRO:HD2   | 1.87                     | 0.56              |
| 29:DF:64:ILE:HD11  | 29:DF:75:HIS:HB2   | 1.87                     | 0.56              |
| 30:DG:173:LEU:HD22 | 30:DG:178:PHE:CZ   | 2.40                     | 0.56              |
| 36:DQ:109:VAL:HG13 | 36:DQ:113:GLN:HB2  | 1.87                     | 0.56              |
| 37:DR:55:ALA:HB2   | 37:DR:79:LEU:HD13  | 1.86                     | 0.56              |
| 38:DS:10:ARG:HA    | 38:DS:13:ARG:HE    | 1.70                     | 0.56              |
| 1:AA:1028:C:C4     | 1:AA:1029:C:H1'    | 2.40                     | 0.56              |
| 1:AA:1330:U:O4     | 1:AA:1331:G:N1     | 2.39                     | 0.56              |
| 25:BA:1188:U:H4'   | 41:BV:79:VAL:HG22  | 1.86                     | 0.56              |
| 34:BO:2:ILE:HD12   | 34:BO:6:THR:HG21   | 1.85                     | 0.56              |
| 47:B1:51:VAL:HG11  | 47:B1:74:VAL:HG21  | 1.86                     | 0.56              |
| 1:CA:630:G:H2'     | 1:CA:631:G:H8      | 1.70                     | 0.56              |
| 1:CA:693:G:H2'     | 1:CA:694:A:C8      | 2.40                     | 0.56              |
| 7:CG:49:ILE:HA     | 7:CG:52:GLU:HG2    | 1.87                     | 0.56              |
| 33:DN:4:TYR:CE2    | 40:DU:100:VAL:HG11 | 2.40                     | 0.56              |
| 43:DX:50:LYS:HB3   | 43:DX:87:GLN:HE22  | 1.71                     | 0.56              |
| 45:DZ:145:GLU:HG3  | 45:DZ:146:ILE:H    | 1.70                     | 0.56              |
| 1:AA:1157:A:H4'    | 1:AA:1158:C:O5'    | 2.06                     | 0.56              |
| 25:BA:911:A:H2'    | 36:BQ:9:TYR:OH     | 2.05                     | 0.56              |
| 29:BF:183:VAL:O    | 29:BF:187:VAL:HG23 | 2.06                     | 0.56              |
| 31:BH:11:VAL:HG21  | 31:BH:50:VAL:HG23  | 1.88                     | 0.56              |
| 1:CA:958:A:N6      | 19:CS:77:THR:O     | 2.38                     | 0.56              |
| 1:CA:1121:U:O4     | 1:CA:1152:A:N1     | 2.38                     | 0.56              |
| 18:CR:47:THR:HG21  | 18:CR:49:LYS:HE2   | 1.88                     | 0.56              |
| 20:CT:59:ALA:O     | 20:CT:63:ILE:HG13  | 2.05                     | 0.56              |
| 25:DA:511:U:H4'    | 25:DA:1235:G:H4'   | 1.86                     | 0.56              |
| 25:DA:1792:G:N2    | 25:DA:1827:C:O2    | 2.36                     | 0.56              |
| 25:DA:1794:U:H2'   | 25:DA:1795:C:C6    | 2.40                     | 0.56              |
| 25:DA:2788:C:H5''  | 28:DE:61:ARG:HH21  | 1.69                     | 0.56              |
| 1:AA:711:G:OP1     | 6:AF:54:LYS:NZ     | 2.39                     | 0.56              |
| 31:BH:33:LEU:HD21  | 31:BH:136:ILE:HG13 | 1.87                     | 0.56              |
| 31:BH:56:SER:OG    | 31:BH:57:ASP:N     | 2.38                     | 0.56              |
| 33:BN:108:PRO:O    | 33:BN:113:GLY:HA3  | 2.05                     | 0.56              |
| 1:CA:1154:G:N7     | 1:CA:1155:G:C8     | 2.74                     | 0.56              |
| 1:CA:1513:A:H2'    | 1:CA:1514:C:C6     | 2.40                     | 0.56              |
| 3:CC:5:ILE:HG12    | 3:CC:6:HIS:H       | 1.71                     | 0.56              |
| 13:CM:120:LYS:HA   | 13:CM:121:LYS:HZ3  | 1.69                     | 0.56              |
| 46:D0:40:GLN:HE21  | 46:D0:57:PHE:HB3   | 1.71                     | 0.56              |
| 14:AN:23:ARG:NH1   | 14:AN:30:ALA:HB2   | 2.21                     | 0.56              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 35:BP:95:VAL:HG13  | 35:BP:125:VAL:HG12 | 1.88                     | 0.56              |
| 1:CA:1074:G:OP1    | 5:CE:64:ARG:NH2    | 2.38                     | 0.56              |
| 1:CA:1104:G:H4'    | 2:CB:111:ARG:HH11  | 1.71                     | 0.56              |
| 3:CC:36:ASP:OD1    | 3:CC:57:ILE:HG21   | 2.06                     | 0.56              |
| 9:CI:46:ALA:HB2    | 9:CI:74:ILE:HG23   | 1.88                     | 0.56              |
| 18:CR:25:THR:O     | 18:CR:25:THR:OG1   | 2.24                     | 0.56              |
| 27:DD:127:VAL:HA   | 27:DD:193:VAL:HG23 | 1.87                     | 0.56              |
| 27:DD:175:LEU:HD12 | 27:DD:185:VAL:HG21 | 1.87                     | 0.56              |
| 42:DW:12:ILE:O     | 42:DW:101:SER:OG   | 2.23                     | 0.56              |
| 1:AA:1309:G:OP2    | 13:AM:99:ARG:NH2   | 2.39                     | 0.56              |
| 2:AB:109:SER:O     | 2:AB:112:VAL:HG22  | 2.06                     | 0.56              |
| 4:AD:81:GLU:OE1    | 4:AD:139:ARG:NH2   | 2.38                     | 0.56              |
| 1:CA:977:A:O2'     | 1:CA:981:U:N3      | 2.32                     | 0.56              |
| 8:CH:30:ARG:O      | 8:CH:34:GLU:HG2    | 2.06                     | 0.56              |
| 13:CM:3:ARG:HA     | 50:D4:34:GLU:HG2   | 1.87                     | 0.56              |
| 25:DA:271(U):G:H2' | 25:DA:271(V):G:H8  | 1.70                     | 0.56              |
| 25:DA:652(B):A:N1  | 25:DA:655:A:H1'    | 2.20                     | 0.56              |
| 25:DA:1166:C:H2'   | 25:DA:1167:U:C6    | 2.40                     | 0.56              |
| 25:DA:2059:A:O2'   | 29:DF:69:HIS:HD2   | 1.89                     | 0.56              |
| 25:DA:2126:A:N6    | 25:DA:2162:G:HO2'  | 2.04                     | 0.56              |
| 25:DA:2183:C:H2'   | 25:DA:2184:G:C8    | 2.39                     | 0.56              |
| 25:DA:2331:G:O2'   | 25:DA:2336:A:N1    | 2.31                     | 0.56              |
| 28:DE:116:VAL:HG13 | 28:DE:122:PHE:HB2  | 1.87                     | 0.56              |
| 33:DN:43:THR:N     | 33:DN:48:MET:SD    | 2.77                     | 0.56              |
| 1:AA:185:A:H2'     | 1:AA:186:C:C6      | 2.41                     | 0.56              |
| 1:AA:1399:C:C2     | 1:AA:1502:A:N6     | 2.73                     | 0.56              |
| 24:AX:67:C:H2'     | 24:AX:68:C:H5'     | 1.87                     | 0.56              |
| 25:BA:686:G:OP1    | 53:B7:11:LYS:NZ    | 2.38                     | 0.56              |
| 25:BA:1634:A:OP2   | 60:BA:3951:HOH:O   | 2.18                     | 0.56              |
| 46:B0:27:GLU:HG3   | 46:B0:68:GLU:HA    | 1.88                     | 0.56              |
| 1:CA:1014:A:H4'    | 19:CS:14:HIS:CE1   | 2.41                     | 0.56              |
| 25:DA:1443:G:H1    | 25:DA:1548:C:H42   | 1.53                     | 0.56              |
| 25:DA:2379:G:H4'   | 38:DS:21:THR:HG21  | 1.88                     | 0.56              |
| 25:DA:2727:G:O2'   | 34:DO:70:LYS:NZ    | 2.39                     | 0.56              |
| 32:DI:31:LEU:HD21  | 32:DI:38:LEU:HG    | 1.88                     | 0.56              |
| 1:AA:1030:C:N4     | 1:AA:1031:G:H1     | 2.02                     | 0.56              |
| 1:AA:1182:G:H4'    | 1:AA:1183:A:H5'    | 1.86                     | 0.56              |
| 1:AA:1241:G:H2'    | 1:AA:1242:C:C6     | 2.41                     | 0.56              |
| 2:AB:114:ARG:NH2   | 2:AB:117:GLU:OE2   | 2.39                     | 0.56              |
| 25:BA:221:A:N1     | 25:BA:265:A:O2'    | 2.37                     | 0.56              |
| 1:CA:890:G:O2'     | 1:CA:906:G:O6      | 2.18                     | 0.56              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:CA:1438:G:H2'   | 1:CA:1439:C:C6     | 2.41                     | 0.56              |
| 7:CG:22:LEU:HG    | 7:CG:62:PHE:HE2    | 1.71                     | 0.56              |
| 9:CI:23:ASN:HD22  | 9:CI:24:GLY:N      | 2.03                     | 0.56              |
| 25:DA:1786:A:OP1  | 60:DA:4235:HOH:O   | 2.18                     | 0.56              |
| 30:DG:5:VAL:HG22  | 30:DG:8:LYS:H      | 1.70                     | 0.56              |
| 30:DG:41:GLN:HG3  | 30:DG:60:LEU:HD21  | 1.87                     | 0.56              |
| 50:D4:59:PHE:HA   | 50:D4:61:ARG:N     | 2.21                     | 0.56              |
| 1:AA:448:A:P      | 1:AA:485:G:H22     | 2.29                     | 0.55              |
| 1:AA:520:A:O2'    | 12:AL:73:GLU:OE1   | 2.24                     | 0.55              |
| 1:AA:742:G:H5'    | 15:AO:58:MET:HE3   | 1.89                     | 0.55              |
| 2:AB:54:THR:HG21  | 2:AB:201:ILE:HD11  | 1.88                     | 0.55              |
| 9:AI:3:GLN:OE1    | 9:AI:20:ARG:NH2    | 2.39                     | 0.55              |
| 16:AP:50:LYS:HA   | 16:AP:50:LYS:HZ3   | 1.72                     | 0.55              |
| 25:BA:1721:G:H8   | 25:BA:1741:A:H62   | 1.52                     | 0.55              |
| 25:BA:1796:U:H2'  | 25:BA:1797:C:C6    | 2.41                     | 0.55              |
| 25:BA:2789:C:H1'  | 25:BA:2894:G:H22   | 1.70                     | 0.55              |
| 1:CA:447:G:O6     | 1:CA:485:G:O2'     | 2.18                     | 0.55              |
| 1:CA:1009:G:N2    | 1:CA:1021:G:H1'    | 2.21                     | 0.55              |
| 1:CA:1162:C:N4    | 1:CA:1174:G:H1     | 2.04                     | 0.55              |
| 7:CG:148:ASN:HD22 | 7:CG:151:TYR:HD2   | 1.55                     | 0.55              |
| 20:CT:54:LYS:HB2  | 20:CT:100:ILE:HD11 | 1.87                     | 0.55              |
| 24:CX:75:C:OP1    | 60:CX:201:HOH:O    | 2.18                     | 0.55              |
| 25:DA:61:G:H1     | 25:DA:94:C:H42     | 1.54                     | 0.55              |
| 25:DA:1270:C:O2'  | 25:DA:1648:C:OP2   | 2.14                     | 0.55              |
| 25:DA:2364:C:H2'  | 25:DA:2365:G:O4'   | 2.07                     | 0.55              |
| 26:DB:55:U:O2'    | 30:DG:27:ASN:OD1   | 2.24                     | 0.55              |
| 27:DD:17:THR:O    | 27:DD:211:ARG:NH2  | 2.39                     | 0.55              |
| 36:DQ:62:GLY:HA2  | 45:DZ:116:VAL:HG21 | 1.88                     | 0.55              |
| 1:AA:1279:A:H4'   | 1:AA:1281:U:H5     | 1.71                     | 0.55              |
| 7:AG:47:CYS:HA    | 7:AG:50:ILE:HG12   | 1.89                     | 0.55              |
| 13:AM:3:ARG:HG3   | 13:AM:4:ILE:H      | 1.70                     | 0.55              |
| 25:BA:802:A:OP1   | 60:BA:4135:HOH:O   | 2.18                     | 0.55              |
| 25:BA:2099:U:H3   | 25:BA:2190:G:H1    | 1.54                     | 0.55              |
| 4:CD:173:TRP:CD1  | 4:CD:189:PRO:HG3   | 2.41                     | 0.55              |
| 6:CF:69:GLU:O     | 6:CF:72:VAL:HG12   | 2.06                     | 0.55              |
| 25:DA:186:G:H2'   | 25:DA:187:G:H8     | 1.71                     | 0.55              |
| 25:DA:492:A:H2'   | 25:DA:493:G:O4'    | 2.07                     | 0.55              |
| 25:DA:657:U:H2'   | 25:DA:658:C:C6     | 2.41                     | 0.55              |
| 25:DA:2019:A:H4'  | 40:DU:34:LYS:HD2   | 1.88                     | 0.55              |
| 45:DZ:152:ALA:HA  | 45:DZ:155:LEU:HD13 | 1.86                     | 0.55              |
| 1:AA:1189:C:H5''  | 3:AC:5:ILE:HD12    | 1.89                     | 0.55              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:AB:198:ASP:OD2  | 2:AB:198:ASP:N    | 2.39                     | 0.55              |
| 14:AN:3:ARG:O     | 14:AN:7:ILE:N     | 2.38                     | 0.55              |
| 25:BA:2731:G:H5'' | 28:BE:203:LYS:HE3 | 1.87                     | 0.55              |
| 5:CE:93:PRO:O     | 8:CH:105:ARG:NH2  | 2.40                     | 0.55              |
| 25:DA:527:C:OP1   | 60:DA:4386:HOH:O  | 2.18                     | 0.55              |
| 25:DA:2117:A:H61  | 25:DA:2171:A:H61  | 1.54                     | 0.55              |
| 25:DA:2163:C:H5'' | 25:DA:2172:U:H5'  | 1.87                     | 0.55              |
| 27:DD:12:SER:HB3  | 27:DD:208:LYS:HB3 | 1.88                     | 0.55              |
| 30:DG:63:ILE:HA   | 30:DG:143:GLU:HG3 | 1.88                     | 0.55              |
| 33:DN:33:LEU:HB3  | 33:DN:52:VAL:HG21 | 1.88                     | 0.55              |
| 52:D6:21:TYR:CE2  | 52:D6:38:LYS:HG3  | 2.41                     | 0.55              |
| 1:AA:300:A:O2'    | 1:AA:564:C:N3     | 2.33                     | 0.55              |
| 1:AA:1530:G:H2'   | 1:AA:1531:A:O4'   | 2.07                     | 0.55              |
| 25:BA:582:G:H2'   | 25:BA:583:G:C8    | 2.41                     | 0.55              |
| 35:BP:86:LYS:HB3  | 35:BP:118:GLY:HA3 | 1.87                     | 0.55              |
| 44:BY:13:VAL:HG12 | 44:BY:74:PRO:HA   | 1.88                     | 0.55              |
| 7:CG:16:LEU:HD13  | 9:CI:41:VAL:HG12  | 1.88                     | 0.55              |
| 25:DA:918:A:C5    | 25:DA:919:G:H1'   | 2.42                     | 0.55              |
| 25:DA:1149:G:H2'  | 25:DA:1150:C:C6   | 2.41                     | 0.55              |
| 28:DE:163:GLU:HG2 | 28:DE:164:ARG:N   | 2.20                     | 0.55              |
| 49:D3:6:VAL:HG22  | 49:D3:56:VAL:HG13 | 1.88                     | 0.55              |
| 1:AA:1003:G:C2    | 1:AA:1004:A:N3    | 2.74                     | 0.55              |
| 13:AM:49:THR:HB   | 13:AM:52:GLU:H    | 1.72                     | 0.55              |
| 25:BA:1023:U:OP2  | 60:BA:4468:HOH:O  | 2.18                     | 0.55              |
| 25:BA:1107:G:H2'  | 25:BA:1107:G:N3   | 2.22                     | 0.55              |
| 44:BY:92:ASN:CB   | 44:BY:94:LYS:HG2  | 2.37                     | 0.55              |
| 45:BZ:99:TYR:HB3  | 45:BZ:123:ASP:HB2 | 1.87                     | 0.55              |
| 50:B4:53:GLU:C    | 50:B4:55:ARG:H    | 2.10                     | 0.55              |
| 1:CA:1301:U:O2'   | 1:CA:1302:U:H5'   | 2.06                     | 0.55              |
| 2:CB:16:HIS:CG    | 2:CB:17:PHE:N     | 2.75                     | 0.55              |
| 9:CI:128:ARG:NH2  | 24:CX:33:U:OP2    | 2.40                     | 0.55              |
| 22:CV:22:U:H2'    | 22:CV:23:A:C8     | 2.41                     | 0.55              |
| 25:DA:587:C:OP1   | 35:DP:21:ARG:NH2  | 2.40                     | 0.55              |
| 25:DA:848:G:H2'   | 25:DA:849:A:C8    | 2.41                     | 0.55              |
| 25:DA:926:A:H2'   | 25:DA:927:G:H8    | 1.71                     | 0.55              |
| 25:DA:2074:U:H2'  | 25:DA:2075:U:C6   | 2.41                     | 0.55              |
| 32:DI:62:LYS:O    | 32:DI:66:GLU:HG2  | 2.06                     | 0.55              |
| 33:DN:38:HIS:CE1  | 33:DN:39:ARG:HG3  | 2.41                     | 0.55              |
| 45:DZ:55:HIS:HE1  | 45:DZ:135:GLU:HG3 | 1.71                     | 0.55              |
| 4:AD:111:ALA:HB2  | 4:AD:120:LEU:HD12 | 1.88                     | 0.55              |
| 6:AF:14:LEU:HB3   | 6:AF:18:GLN:HE22  | 1.71                     | 0.55              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 26:BB:75:G:H5''   | 26:BB:75:G:H8     | 1.71                     | 0.55              |
| 41:BV:65:GLY:HA3  | 41:BV:91:TYR:CZ   | 2.42                     | 0.55              |
| 43:BX:41:ASN:O    | 43:BX:45:THR:HG22 | 2.06                     | 0.55              |
| 8:CH:112:LEU:HA   | 8:CH:134:ILE:HG12 | 1.88                     | 0.55              |
| 16:CP:28:ARG:NH1  | 16:CP:29:ASP:OD2  | 2.40                     | 0.55              |
| 25:DA:83:G:OP2    | 44:DY:95:LYS:NZ   | 2.39                     | 0.55              |
| 25:DA:1532:C:N4   | 25:DA:1537:G:O6   | 2.38                     | 0.55              |
| 25:DA:2755:C:H3'  | 55:D9:19:ARG:HH21 | 1.72                     | 0.55              |
| 26:DB:8:U:H3      | 26:DB:113:G:H1    | 1.54                     | 0.55              |
| 45:DZ:145:GLU:H   | 45:DZ:148:ASP:HB2 | 1.72                     | 0.55              |
| 1:AA:428:G:OP2    | 4:AD:10:ARG:NH1   | 2.36                     | 0.55              |
| 1:AA:1095:U:OP1   | 1:AA:1108:G:N2    | 2.31                     | 0.55              |
| 37:BR:90:ARG:NH2  | 37:BR:118:GLU:OXT | 2.40                     | 0.55              |
| 1:CA:1305:G:H5'   | 21:CU:4:GLY:HA3   | 1.89                     | 0.55              |
| 17:CQ:18:THR:HG23 | 17:CQ:69:LYS:HD3  | 1.88                     | 0.55              |
| 25:DA:1019:U:OP1  | 25:DA:1035:U:O2'  | 2.18                     | 0.55              |
| 9:AI:23:ASN:HD22  | 9:AI:23:ASN:H     | 1.55                     | 0.55              |
| 25:BA:1174:A:H1'  | 25:BA:1175:U:H5'' | 1.89                     | 0.55              |
| 25:BA:2791:C:H2'  | 25:BA:2792:G:C8   | 2.42                     | 0.55              |
| 1:CA:297:G:N2     | 1:CA:300:A:OP2    | 2.39                     | 0.55              |
| 1:CA:1127:G:N2    | 1:CA:1147:C:H41   | 2.05                     | 0.55              |
| 4:CD:96:LEU:HD12  | 4:CD:139:ARG:HH21 | 1.71                     | 0.55              |
| 24:CX:19:G:H4'    | 24:CX:20:U:OP2    | 2.06                     | 0.55              |
| 24:CX:53:G:C5     | 24:CX:54:5MU:H72  | 2.41                     | 0.55              |
| 25:DA:2821:A:H2'  | 25:DA:2822:G:C8   | 2.42                     | 0.55              |
| 26:DB:13:A:C2     | 26:DB:16:G:H1'    | 2.42                     | 0.55              |
| 30:DG:112:PRO:HB3 | 50:D4:35:VAL:HG22 | 1.87                     | 0.55              |
| 1:AA:186:C:H2'    | 1:AA:187:C:C6     | 2.41                     | 0.55              |
| 1:AA:942:G:H21    | 9:AI:124:GLN:NE2  | 2.04                     | 0.55              |
| 4:AD:98:GLU:OE1   | 4:AD:107:ARG:NH1  | 2.40                     | 0.55              |
| 9:AI:24:GLY:HA2   | 9:AI:59:PHE:O     | 2.07                     | 0.55              |
| 10:AJ:16:LEU:HD22 | 10:AJ:68:HIS:HB2  | 1.89                     | 0.55              |
| 13:AM:3:ARG:HD2   | 13:AM:9:ILE:HG13  | 1.88                     | 0.55              |
| 15:AO:74:ASP:HB3  | 15:AO:77:ARG:HB2  | 1.87                     | 0.55              |
| 25:BA:607:U:OP1   | 29:BF:102:PRO:HA  | 2.06                     | 0.55              |
| 25:BA:657:U:H2'   | 25:BA:658:C:C6    | 2.42                     | 0.55              |
| 25:BA:1636:C:O2'  | 25:BA:1760:A:N3   | 2.37                     | 0.55              |
| 1:CA:1028:C:N3    | 1:CA:1033:G:O6    | 2.40                     | 0.55              |
| 25:DA:2135:A:H2'  | 25:DA:2136:C:C6   | 2.41                     | 0.55              |
| 25:DA:2406:U:OP1  | 60:DA:4156:HOH:O  | 2.18                     | 0.55              |
| 25:DA:2526:G:H5'  | 25:DA:2742:C:O2'  | 2.07                     | 0.55              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 26:DB:66:A:N6     | 26:DB:108:U:H3'    | 2.22                     | 0.55              |
| 55:D9:25:VAL:HB   | 55:D9:34:GLN:HB2   | 1.88                     | 0.55              |
| 1:AA:1189:C:OP1   | 10:AJ:51:ARG:NH2   | 2.36                     | 0.55              |
| 1:AA:1510:U:H2'   | 1:AA:1511:G:C8     | 2.42                     | 0.55              |
| 16:AP:22:THR:HA   | 16:AP:33:ILE:HG12  | 1.89                     | 0.55              |
| 25:BA:330:A:H2    | 25:BA:1210:A:HO2'  | 1.54                     | 0.55              |
| 25:BA:2849:U:OP2  | 39:BT:95:ARG:NH1   | 2.40                     | 0.55              |
| 26:BB:105:A:P     | 45:BZ:72:ARG:HH12  | 2.29                     | 0.55              |
| 27:BD:12:SER:HB3  | 27:BD:208:LYS:HB3  | 1.88                     | 0.55              |
| 52:B6:6:ARG:NH1   | 52:B6:26:ASN:HB2   | 2.22                     | 0.55              |
| 1:CA:1010:G:N2    | 1:CA:1020:U:H1'    | 2.22                     | 0.55              |
| 1:CA:1025:U:N3    | 1:CA:1036:G:N1     | 2.55                     | 0.55              |
| 1:CA:1155:G:H2'   | 1:CA:1156:G:O4'    | 2.07                     | 0.55              |
| 2:CB:162:ILE:HD11 | 2:CB:184:VAL:HG22  | 1.89                     | 0.55              |
| 3:CC:43:LEU:HD21  | 3:CC:55:VAL:HG21   | 1.87                     | 0.55              |
| 3:CC:156:ARG:H    | 3:CC:196:LEU:HD22  | 1.72                     | 0.55              |
| 25:DA:391:G:O2'   | 25:DA:410:G:OP1    | 2.16                     | 0.55              |
| 25:DA:979:G:H5''  | 25:DA:980:A:H5''   | 1.88                     | 0.55              |
| 25:DA:1227:G:H2'  | 25:DA:1228:G:O4'   | 2.07                     | 0.55              |
| 25:DA:1250:G:OP2  | 35:DP:21:ARG:NH1   | 2.40                     | 0.55              |
| 30:DG:83:ARG:N    | 30:DG:86:MET:SD    | 2.70                     | 0.55              |
| 32:DI:130:TYR:CE2 | 32:DI:132:PRO:HB3  | 2.42                     | 0.55              |
| 34:DO:63:VAL:HG11 | 34:DO:85:VAL:HG23  | 1.87                     | 0.55              |
| 45:DZ:6:LYS:HE3   | 45:DZ:43:GLU:OE1   | 2.07                     | 0.55              |
| 1:AA:954:G:H21    | 1:AA:1227:A:H62    | 1.55                     | 0.54              |
| 1:AA:1095:U:P     | 1:AA:1108:G:H1     | 2.30                     | 0.54              |
| 2:AB:21:ARG:HB3   | 2:AB:38:GLY:O      | 2.07                     | 0.54              |
| 2:AB:47:THR:HA    | 2:AB:202:PRO:HG2   | 1.88                     | 0.54              |
| 12:AL:34:ARG:NH2  | 60:AL:301:HOH:O    | 2.39                     | 0.54              |
| 24:AX:7:G:O2'     | 24:AX:49:G:H5'     | 2.07                     | 0.54              |
| 25:BA:1045:A:OP1  | 25:BA:1046:A:H3'   | 2.06                     | 0.54              |
| 25:BA:1107:G:N2   | 25:BA:1108:U:O4    | 2.40                     | 0.54              |
| 31:BH:159:GLU:HG2 | 31:BH:169:VAL:HG11 | 1.89                     | 0.54              |
| 16:CP:22:THR:HA   | 16:CP:33:ILE:HG13  | 1.88                     | 0.54              |
| 25:DA:286:C:H2'   | 25:DA:287:C:C6     | 2.41                     | 0.54              |
| 25:DA:1561:G:H2'  | 25:DA:1562:A:C8    | 2.41                     | 0.54              |
| 25:DA:2115:G:H1'  | 25:DA:2117:A:H62   | 1.71                     | 0.54              |
| 1:AA:270:A:H2'    | 1:AA:271:C:C6      | 2.41                     | 0.54              |
| 1:AA:1346:A:N1    | 1:AA:1374:A:H5''   | 2.22                     | 0.54              |
| 10:AJ:49:VAL:HG23 | 14:AN:41:ARG:HB2   | 1.90                     | 0.54              |
| 12:AL:24:VAL:HG11 | 12:AL:27:LEU:HD22  | 1.89                     | 0.54              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:CA:410:G:OP1    | 4:CD:30:LYS:NZ     | 2.27                     | 0.54              |
| 1:CA:1288:A:N3    | 1:CA:1352:C:O2'    | 2.39                     | 0.54              |
| 25:DA:1019:U:H3   | 25:DA:1142(A):A:N6 | 2.03                     | 0.54              |
| 25:DA:2150:U:H2'  | 25:DA:2151:G:H8    | 1.73                     | 0.54              |
| 26:DB:42:C:O2     | 30:DG:93:THR:N     | 2.34                     | 0.54              |
| 30:DG:68:PRO:HG2  | 30:DG:90:LEU:HD22  | 1.89                     | 0.54              |
| 35:DP:121:LYS:HG2 | 35:DP:122:PRO:HD2  | 1.89                     | 0.54              |
| 1:AA:1112:C:O2    | 3:AC:179:ARG:HG3   | 2.06                     | 0.54              |
| 24:AX:59:A:C2'    | 24:AX:60:U:H5'     | 2.38                     | 0.54              |
| 25:BA:10:G:N2     | 25:BA:2802:G:OP1   | 2.40                     | 0.54              |
| 25:BA:784:A:H5'   | 25:BA:785:G:OP1    | 2.08                     | 0.54              |
| 25:BA:1380:G:N2   | 25:BA:1570:A:N1    | 2.54                     | 0.54              |
| 36:BQ:18:LYS:O    | 36:BQ:98:LYS:NZ    | 2.21                     | 0.54              |
| 47:B1:85:LEU:HB3  | 47:B1:89:GLU:HG3   | 1.88                     | 0.54              |
| 1:CA:1305:G:N2    | 1:CA:1331:G:H1'    | 2.23                     | 0.54              |
| 1:CA:1442(A):G:C8 | 39:DT:118:ARG:HG2  | 2.42                     | 0.54              |
| 2:CB:127:ILE:O    | 2:CB:128:GLU:HB2   | 2.05                     | 0.54              |
| 4:CD:162:LEU:HD22 | 4:CD:178:VAL:HG13  | 1.87                     | 0.54              |
| 23:CW:76:PPU:H92  | 25:DA:2584:U:H4'   | 1.90                     | 0.54              |
| 25:DA:861:A:N3    | 26:DB:79:C:O2'     | 2.35                     | 0.54              |
| 1:AA:347:G:H2'    | 1:AA:348:G:C8      | 2.42                     | 0.54              |
| 1:AA:677:U:H3     | 1:AA:713:G:H22     | 1.56                     | 0.54              |
| 1:AA:1296:C:OP1   | 13:AM:44:ARG:NH2   | 2.40                     | 0.54              |
| 13:AM:9:ILE:HB    | 13:AM:18:ALA:HB1   | 1.89                     | 0.54              |
| 24:AX:19:G:H4'    | 24:AX:20:U:OP2     | 2.07                     | 0.54              |
| 25:BA:586:A:H5'   | 29:BF:89:VAL:HG21  | 1.87                     | 0.54              |
| 25:BA:880:G:H2'   | 25:BA:881:G:C8     | 2.42                     | 0.54              |
| 25:BA:2110:G:OP2  | 25:BA:2118:U:N3    | 2.41                     | 0.54              |
| 25:BA:2248:C:OP2  | 60:BA:4101:HOH:O   | 2.18                     | 0.54              |
| 1:CA:982:U:H4'    | 1:CA:983:A:O5'     | 2.08                     | 0.54              |
| 12:CL:60:LEU:HD21 | 12:CL:66:VAL:HG22  | 1.89                     | 0.54              |
| 25:DA:2136:C:O2'  | 25:DA:2137:C:O5'   | 2.21                     | 0.54              |
| 25:DA:2139:C:H42  | 25:DA:2152:G:H1    | 1.56                     | 0.54              |
| 26:DB:32:C:H42    | 26:DB:50:G:H1      | 1.55                     | 0.54              |
| 30:DG:111:LEU:HA  | 30:DG:114:ILE:HG13 | 1.88                     | 0.54              |
| 32:DI:40:THR:HG23 | 32:DI:43:ASN:ND2   | 2.22                     | 0.54              |
| 44:DY:37:VAL:O    | 44:DY:67:LEU:N     | 2.40                     | 0.54              |
| 50:D4:33:VAL:HG12 | 50:D4:35:VAL:H     | 1.71                     | 0.54              |
| 1:AA:518:C:O2'    | 1:AA:1492:A:N6     | 2.37                     | 0.54              |
| 1:AA:877:C:H5''   | 8:AH:88:LYS:HD3    | 1.89                     | 0.54              |
| 1:AA:1039:C:H2'   | 1:AA:1040:U:O4'    | 2.06                     | 0.54              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:AB:95:GLN:HG3   | 2:AB:147:LYS:HG2  | 1.88                     | 0.54              |
| 5:AE:92:LYS:HD3   | 5:AE:119:LEU:HD12 | 1.90                     | 0.54              |
| 25:BA:226:G:H21   | 25:BA:228:A:H62   | 1.54                     | 0.54              |
| 25:BA:456:C:H4'   | 60:BA:3733:HOH:O  | 2.08                     | 0.54              |
| 25:BA:2690:C:OP1  | 37:BR:17:ARG:NH1  | 2.27                     | 0.54              |
| 1:CA:981:U:O5'    | 1:CA:981:U:H6     | 1.90                     | 0.54              |
| 1:CA:1275:A:H2'   | 1:CA:1276:G:O4'   | 2.08                     | 0.54              |
| 1:CA:1330:U:H4'   | 13:CM:23:TYR:CZ   | 2.42                     | 0.54              |
| 3:CC:181:ASN:HD21 | 3:CC:204:LEU:HD12 | 1.72                     | 0.54              |
| 25:DA:218:A:C2    | 25:DA:235:U:H4'   | 2.43                     | 0.54              |
| 25:DA:463:G:N2    | 25:DA:466:A:OP2   | 2.29                     | 0.54              |
| 25:DA:1446:C:H42  | 25:DA:1465:G:H1   | 1.56                     | 0.54              |
| 25:DA:2314:C:H2'  | 25:DA:2315:G:C8   | 2.43                     | 0.54              |
| 36:DQ:32:TYR:CE1  | 36:DQ:133:ARG:HG3 | 2.42                     | 0.54              |
| 1:AA:1005:A:H1'   | 1:AA:1036:G:H22   | 1.72                     | 0.54              |
| 8:AH:83:ILE:HG13  | 8:AH:137:VAL:HG22 | 1.88                     | 0.54              |
| 29:BF:149:ASP:OD1 | 29:BF:149:ASP:N   | 2.38                     | 0.54              |
| 1:CA:1412:C:H2'   | 1:CA:1413:A:C8    | 2.42                     | 0.54              |
| 25:DA:134:C:H2'   | 25:DA:135:G:C8    | 2.42                     | 0.54              |
| 25:DA:352:G:N2    | 25:DA:429:A:H5''  | 2.23                     | 0.54              |
| 25:DA:1031:G:H5'' | 55:D9:8:LYS:HE3   | 1.89                     | 0.54              |
| 25:DA:2391:G:O2'  | 25:DA:2422:A:N7   | 2.41                     | 0.54              |
| 27:DD:10:THR:OG1  | 27:DD:13:ARG:HG2  | 2.07                     | 0.54              |
| 32:DI:38:LEU:HB2  | 32:DI:40:THR:HG22 | 1.90                     | 0.54              |
| 1:AA:159:G:H2'    | 1:AA:161:A:OP2    | 2.08                     | 0.54              |
| 25:BA:887:A:O2'   | 25:BA:888:C:OP2   | 2.24                     | 0.54              |
| 25:BA:1237:A:OP1  | 60:BA:4542:HOH:O  | 2.19                     | 0.54              |
| 25:BA:2312:U:H5'  | 30:BG:88:ILE:HD11 | 1.89                     | 0.54              |
| 38:BS:83:LYS:HG2  | 38:BS:111:GLU:HG3 | 1.88                     | 0.54              |
| 1:CA:1298:C:OP2   | 7:CG:114:ARG:NH2  | 2.41                     | 0.54              |
| 1:CA:1318:A:H5''  | 19:CS:3:ARG:NH2   | 2.22                     | 0.54              |
| 1:CA:1376:U:H2'   | 1:CA:1377:A:C8    | 2.43                     | 0.54              |
| 5:CE:57:LYS:HG2   | 5:CE:61:TYR:HE2   | 1.73                     | 0.54              |
| 25:DA:885:C:H3'   | 25:DA:886:C:H5''  | 1.90                     | 0.54              |
| 25:DA:1609:A:OP2  | 60:DA:4280:HOH:O  | 2.18                     | 0.54              |
| 28:DE:36:ARG:NH1  | 28:DE:85:ASN:OD1  | 2.41                     | 0.54              |
| 31:DH:28:GLY:N    | 31:DH:31:GLY:O    | 2.41                     | 0.54              |
| 37:DR:38:VAL:HG12 | 37:DR:42:LYS:HE3  | 1.89                     | 0.54              |
| 38:DS:67:ARG:HG3  | 38:DS:71:ARG:HD2  | 1.90                     | 0.54              |
| 41:DV:21:ARG:HG2  | 41:DV:91:TYR:CD2  | 2.43                     | 0.54              |
| 1:AA:147:G:H2'    | 1:AA:148:G:H8     | 1.71                     | 0.54              |

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| Atom-1              | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|--------------------|--------------------------|-------------------|
| 1:AA:1106:G:H5''    | 3:AC:172:ARG:HG2   | 1.90                     | 0.54              |
| 12:AL:54:LYS:N      | 12:AL:54:LYS:HD2   | 2.23                     | 0.54              |
| 18:AR:58:LEU:HB3    | 18:AR:62:GLU:HG3   | 1.90                     | 0.54              |
| 25:BA:1593:G:H2'    | 25:BA:1594:G:C8    | 2.43                     | 0.54              |
| 26:BB:12:C:H2'      | 46:B0:73:GLY:HA3   | 1.90                     | 0.54              |
| 1:CA:1367:C:H4'     | 10:CJ:48:THR:HG21  | 1.89                     | 0.54              |
| 1:CA:1392:G:N2      | 1:CA:1502:A:H8     | 2.04                     | 0.54              |
| 2:CB:217:ARG:HA     | 2:CB:220:ASP:HB2   | 1.90                     | 0.54              |
| 7:CG:51:GLN:HA      | 7:CG:55:GLY:HA2    | 1.90                     | 0.54              |
| 25:DA:459:U:H5''    | 53:D7:40:TRP:CD2   | 2.43                     | 0.54              |
| 28:DE:72:VAL:HG13   | 28:DE:73:GLU:O     | 2.08                     | 0.54              |
| 31:DH:69:ARG:HG3    | 31:DH:70:THR:N     | 2.23                     | 0.54              |
| 10:AJ:16:LEU:HD21   | 10:AJ:70:ARG:HG2   | 1.90                     | 0.54              |
| 13:AM:65:LYS:O      | 13:AM:70:LEU:HD12  | 2.08                     | 0.54              |
| 21:AU:12:LYS:HB3    | 21:AU:22:ARG:HD2   | 1.90                     | 0.54              |
| 25:BA:848:G:H2'     | 25:BA:849:A:C8     | 2.42                     | 0.54              |
| 25:BA:2168:G:C6     | 25:BA:2171:A:C8    | 2.95                     | 0.54              |
| 27:BD:71:ASP:CB     | 27:BD:103:ARG:HH22 | 2.19                     | 0.54              |
| 28:BE:174:ASP:OD1   | 28:BE:175:VAL:N    | 2.41                     | 0.54              |
| 1:CA:156:G:N2       | 1:CA:165:C:O2      | 2.40                     | 0.54              |
| 1:CA:1376:U:H3'     | 7:CG:94:ARG:HH21   | 1.72                     | 0.54              |
| 2:CB:91:PRO:HG3     | 2:CB:154:LEU:HB3   | 1.89                     | 0.54              |
| 25:DA:1023:U:OP2    | 60:DA:4482:HOH:O   | 2.18                     | 0.54              |
| 25:DA:2042:A:OP1    | 60:DA:4137:HOH:O   | 2.19                     | 0.54              |
| 25:DA:2173:A:H3'    | 25:DA:2173:A:OP2   | 2.08                     | 0.54              |
| 27:DD:182:LEU:HB2   | 27:DD:272:ALA:HB3  | 1.89                     | 0.54              |
| 25:BA:36:G:N3       | 25:BA:450:G:O2'    | 2.40                     | 0.54              |
| 25:BA:1421:G:O2'    | 25:BA:1494:A:N6    | 2.41                     | 0.54              |
| 25:BA:2031:A:C6     | 25:BA:2498:C:H1'   | 2.43                     | 0.54              |
| 26:BB:50:G:OP1      | 38:BS:63:THR:OG1   | 2.26                     | 0.54              |
| 34:BO:80:ASP:OD2    | 39:BT:64:ARG:NH2   | 2.41                     | 0.54              |
| 1:CA:598:U:H2'      | 1:CA:599:C:C6      | 2.43                     | 0.54              |
| 13:CM:65:LYS:NZ     | 50:D4:53:GLU:OE1   | 2.33                     | 0.54              |
| 25:DA:1169:G:H1     | 25:DA:1180:C:N4    | 1.92                     | 0.54              |
| 25:DA:1509(B):A:H2' | 25:DA:1510:G:C8    | 2.42                     | 0.54              |
| 25:DA:1894:C:H2'    | 25:DA:1895:C:H6    | 1.72                     | 0.54              |
| 25:DA:2086:U:H2'    | 25:DA:2087:G:C8    | 2.42                     | 0.54              |
| 1:AA:164:U:H2'      | 1:AA:165:C:C6      | 2.42                     | 0.53              |
| 1:AA:299:G:H2'      | 1:AA:300:A:C8      | 2.43                     | 0.53              |
| 1:AA:662:G:O2'      | 1:AA:836:G:OP1     | 2.26                     | 0.53              |
| 1:AA:1099:G:OP2     | 2:AB:144:ARG:NH2   | 2.40                     | 0.53              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 4:AD:119:GLN:HG2  | 4:AD:123:HIS:CD2   | 2.44                     | 0.53              |
| 28:BE:2:LYS:NZ    | 28:BE:95:ILE:O     | 2.40                     | 0.53              |
| 41:BV:98:GLU:OE1  | 41:BV:100:ARG:NH1  | 2.37                     | 0.53              |
| 45:BZ:7:ALA:HB3   | 45:BZ:61:LEU:HD12  | 1.90                     | 0.53              |
| 1:CA:1120:G:C6    | 1:CA:1121:U:C4     | 2.96                     | 0.53              |
| 1:CA:1245:A:H2'   | 1:CA:1246:C:O4'    | 2.07                     | 0.53              |
| 4:CD:88:VAL:HG22  | 5:CE:96:PRO:HB2    | 1.90                     | 0.53              |
| 15:CO:87:ILE:HG22 | 15:CO:88:ARG:N     | 2.23                     | 0.53              |
| 25:DA:871:U:OP1   | 36:DQ:5:ARG:HG2    | 2.08                     | 0.53              |
| 25:DA:1031:G:H21  | 55:D9:36:GLN:HE22  | 1.56                     | 0.53              |
| 25:DA:1114:G:H2'  | 25:DA:1115:G:C8    | 2.42                     | 0.53              |
| 25:DA:2588:G:OP1  | 60:DA:4367:HOH:O   | 2.18                     | 0.53              |
| 27:DD:69:ARG:NH2  | 27:DD:128:GLY:O    | 2.42                     | 0.53              |
| 30:DG:115:ARG:HG3 | 30:DG:136:ARG:HH21 | 1.73                     | 0.53              |
| 40:DU:83:LEU:HD12 | 40:DU:88:ILE:HB    | 1.90                     | 0.53              |
| 49:D3:6:VAL:HG13  | 49:D3:56:VAL:HG22  | 1.90                     | 0.53              |
| 10:AJ:61:GLU:OE2  | 14:AN:45:ARG:NE    | 2.33                     | 0.53              |
| 25:BA:528:A:C2    | 25:BA:2043:C:H4'   | 2.43                     | 0.53              |
| 25:BA:548:A:O2'   | 25:BA:549:G:OP1    | 2.23                     | 0.53              |
| 25:BA:647:G:H8    | 25:BA:647:G:O5'    | 1.91                     | 0.53              |
| 25:BA:1371:G:H2'  | 25:BA:1372:U:H5    | 1.73                     | 0.53              |
| 25:BA:2893:G:H4'  | 25:BA:2894:G:O5'   | 2.08                     | 0.53              |
| 33:BN:58:ASP:N    | 33:BN:58:ASP:OD1   | 2.41                     | 0.53              |
| 1:CA:977:A:N1     | 1:CA:1224:G:N7     | 2.55                     | 0.53              |
| 1:CA:1080:A:H5'   | 5:CE:14:ARG:HH21   | 1.73                     | 0.53              |
| 1:CA:1244:C:N4    | 1:CA:1293:G:H1     | 2.04                     | 0.53              |
| 1:CA:1323:G:H2'   | 1:CA:1324:A:C8     | 2.42                     | 0.53              |
| 10:CJ:43:ARG:HB2  | 10:CJ:67:THR:HG23  | 1.90                     | 0.53              |
| 12:CL:113:ARG:NH2 | 60:CL:201:HOH:O    | 2.41                     | 0.53              |
| 16:CP:21:VAL:HG22 | 16:CP:33:ILE:HB    | 1.89                     | 0.53              |
| 24:CX:19:G:H1     | 24:CX:56:C:N4      | 2.03                     | 0.53              |
| 25:DA:7:G:H2'     | 25:DA:8:A:H8       | 1.73                     | 0.53              |
| 25:DA:1427:A:H4'  | 25:DA:1428:C:O5'   | 2.08                     | 0.53              |
| 1:AA:184:G:H2'    | 1:AA:185:A:H8      | 1.72                     | 0.53              |
| 9:AI:20:ARG:O     | 9:AI:60:ASP:N      | 2.42                     | 0.53              |
| 25:BA:278:A:O2'   | 25:BA:279:C:OP1    | 2.24                     | 0.53              |
| 25:BA:1405:U:H2'  | 25:BA:1406:U:C6    | 2.44                     | 0.53              |
| 1:CA:412:A:O4'    | 4:CD:35:ARG:NH2    | 2.41                     | 0.53              |
| 1:CA:920:U:H2'    | 1:CA:921:U:C6      | 2.43                     | 0.53              |
| 1:CA:991:U:HO2'   | 1:CA:992:U:P       | 2.31                     | 0.53              |
| 2:CB:178:ARG:NH1  | 2:CB:196:LEU:O     | 2.41                     | 0.53              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 4:CD:175:SER:OG   | 4:CD:184:LYS:HB2  | 2.07                     | 0.53              |
| 9:CI:99:LEU:HB3   | 9:CI:101:PHE:HE1  | 1.73                     | 0.53              |
| 15:CO:54:ARG:HG2  | 15:CO:58:MET:HE2  | 1.89                     | 0.53              |
| 25:DA:7:G:H1      | 25:DA:2896:C:N4   | 2.06                     | 0.53              |
| 25:DA:797:C:H2'   | 25:DA:798:G:O4'   | 2.08                     | 0.53              |
| 25:DA:1653:G:H3'  | 37:DR:2:ARG:HD3   | 1.89                     | 0.53              |
| 25:DA:2156:G:H5'' | 25:DA:2157:G:OP2  | 2.08                     | 0.53              |
| 32:DI:56:LYS:O    | 32:DI:60:GLU:N    | 2.40                     | 0.53              |
| 48:D2:1:MET:HB2   | 48:D2:52:ASP:OD1  | 2.09                     | 0.53              |
| 1:AA:769:G:H4'    | 1:AA:1513:A:H4'   | 1.89                     | 0.53              |
| 1:AA:1253:G:H1    | 1:AA:1284:C:H42   | 1.55                     | 0.53              |
| 3:AC:15:THR:HG21  | 3:AC:181:ASN:HA   | 1.91                     | 0.53              |
| 9:AI:86:VAL:HG13  | 9:AI:96:LEU:HD12  | 1.91                     | 0.53              |
| 25:BA:910:A:H62   | 36:BQ:12:GLN:HA   | 1.73                     | 0.53              |
| 28:BE:47:VAL:HG12 | 28:BE:49:LEU:HD12 | 1.89                     | 0.53              |
| 1:CA:1013:G:N2    | 1:CA:1015:A:H3'   | 2.23                     | 0.53              |
| 2:CB:216:SER:O    | 2:CB:220:ASP:N    | 2.42                     | 0.53              |
| 10:CJ:35:SER:HB3  | 10:CJ:73:ASP:HB2  | 1.90                     | 0.53              |
| 13:CM:19:LEU:HD21 | 13:CM:56:LEU:HD21 | 1.90                     | 0.53              |
| 24:CX:16:C:H3'    | 24:CX:17:C:O2     | 2.08                     | 0.53              |
| 25:DA:212:G:H2'   | 25:DA:213:A:O4'   | 2.07                     | 0.53              |
| 25:DA:903:C:H2'   | 25:DA:904:C:C6    | 2.43                     | 0.53              |
| 25:DA:2698:U:H2'  | 25:DA:2699:C:C6   | 2.44                     | 0.53              |
| 26:DB:90:A:C5     | 26:DB:91:C:H1'    | 2.43                     | 0.53              |
| 41:DV:8:GLY:O     | 41:DV:10:LYS:NZ   | 2.41                     | 0.53              |
| 1:AA:167:G:H2'    | 1:AA:168:G:C8     | 2.43                     | 0.53              |
| 25:BA:2111:C:N3   | 25:BA:2145:C:O2'  | 2.38                     | 0.53              |
| 31:BH:117:PRO:HG3 | 31:BH:123:PHE:CD2 | 2.44                     | 0.53              |
| 43:BX:50:LYS:N    | 43:BX:87:GLN:OE1  | 2.41                     | 0.53              |
| 46:B0:40:GLN:HE21 | 46:B0:57:PHE:HB3  | 1.74                     | 0.53              |
| 1:CA:337:C:H2'    | 1:CA:338:A:C8     | 2.44                     | 0.53              |
| 1:CA:406:G:H2'    | 1:CA:407:G:H8     | 1.73                     | 0.53              |
| 1:CA:1000:U:H3    | 1:CA:1041:A:H61   | 1.55                     | 0.53              |
| 1:CA:1023:G:H3'   | 1:CA:1024:G:H8    | 1.73                     | 0.53              |
| 5:CE:33:VAL:HA    | 5:CE:43:LEU:HA    | 1.90                     | 0.53              |
| 25:DA:1120:G:H2'  | 25:DA:1121:C:O4'  | 2.09                     | 0.53              |
| 25:DA:2312:U:H5'  | 30:DG:88:ILE:HD11 | 1.91                     | 0.53              |
| 26:DB:24:G:H5'    | 26:DB:25:A:N7     | 2.24                     | 0.53              |
| 27:DD:242:ARG:N   | 27:DD:242:ARG:HD3 | 2.23                     | 0.53              |
| 42:DW:88:ARG:NH1  | 42:DW:94:ASP:OD2  | 2.38                     | 0.53              |
| 44:DY:23:ARG:HG2  | 44:DY:42:VAL:HG22 | 1.90                     | 0.53              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:940:C:OP1    | 7:AG:29:LYS:NZ    | 2.41                     | 0.53              |
| 24:AX:66:C:H2'    | 24:AX:67:C:O4'    | 2.07                     | 0.53              |
| 25:BA:578:A:OP2   | 60:BA:3879:HOH:O  | 2.19                     | 0.53              |
| 25:BA:2418:A:H2'  | 25:BA:2419:U:C6   | 2.43                     | 0.53              |
| 31:BH:102:ALA:HA  | 31:BH:117:PRO:HD3 | 1.91                     | 0.53              |
| 32:BI:93:THR:H    | 32:BI:96:ASP:CG   | 2.12                     | 0.53              |
| 34:BO:79:PHE:CD1  | 39:BT:72:VAL:HG22 | 2.44                     | 0.53              |
| 44:BY:7:VAL:HG21  | 44:BY:72:VAL:HG12 | 1.89                     | 0.53              |
| 54:B8:39:LYS:O    | 54:B8:43:GLN:HG3  | 2.09                     | 0.53              |
| 1:CA:67:C:H2'     | 1:CA:68:G:C8      | 2.44                     | 0.53              |
| 1:CA:1023:G:C4    | 1:CA:1024:G:C8    | 2.97                     | 0.53              |
| 6:CF:14:LEU:HD22  | 6:CF:18:GLN:HB2   | 1.91                     | 0.53              |
| 9:CI:99:LEU:HB3   | 9:CI:101:PHE:CE1  | 2.44                     | 0.53              |
| 11:CK:58:PRO:O    | 11:CK:62:GLN:N    | 2.41                     | 0.53              |
| 14:CN:48:ALA:HB2  | 14:CN:53:LEU:HD12 | 1.90                     | 0.53              |
| 25:DA:10:G:H2'    | 25:DA:11:G:C8     | 2.44                     | 0.53              |
| 25:DA:197:A:N6    | 25:DA:2430:A:O2'  | 2.41                     | 0.53              |
| 25:DA:1449:A:HO2' | 25:DA:1529:G:N2   | 2.01                     | 0.53              |
| 25:DA:2218:U:N3   | 47:D1:55:GLY:O    | 2.42                     | 0.53              |
| 29:DF:157:VAL:HB  | 29:DF:194:MET:HG2 | 1.90                     | 0.53              |
| 30:DG:136:ARG:HD2 | 30:DG:137:GLU:N   | 2.23                     | 0.53              |
| 1:AA:1027:C:N3    | 1:AA:1034:G:C6    | 2.76                     | 0.53              |
| 1:AA:1168:A:H2'   | 1:AA:1169:A:C8    | 2.43                     | 0.53              |
| 5:AE:95:ALA:HB1   | 5:AE:96:PRO:HD2   | 1.90                     | 0.53              |
| 6:AF:20:ALA:O     | 6:AF:24:GLU:N     | 2.39                     | 0.53              |
| 1:CA:975:A:N6     | 1:CA:1367:C:O4'   | 2.42                     | 0.53              |
| 21:CU:12:LYS:HB3  | 21:CU:22:ARG:HD2  | 1.91                     | 0.53              |
| 25:DA:806:C:O2    | 25:DA:2444:G:O2'  | 2.27                     | 0.53              |
| 25:DA:2136:C:O2'  | 25:DA:2137:C:H6   | 1.91                     | 0.53              |
| 25:DA:2302:G:H2'  | 25:DA:2303:G:H5'  | 1.90                     | 0.53              |
| 26:DB:70:C:H2'    | 26:DB:71:C:H6     | 1.73                     | 0.53              |
| 26:DB:95:C:H2'    | 26:DB:96:U:H6     | 1.73                     | 0.53              |
| 53:D7:12:ARG:HD3  | 53:D7:46:VAL:HB   | 1.91                     | 0.53              |
| 2:AB:88:ALA:HB2   | 2:AB:219:VAL:HG13 | 1.91                     | 0.53              |
| 2:AB:119:GLU:OE2  | 2:AB:153:ARG:NH2  | 2.38                     | 0.53              |
| 3:AC:148:GLY:HA3  | 3:AC:172:ARG:O    | 2.09                     | 0.53              |
| 25:BA:1713:U:H2'  | 25:BA:1714:G:C8   | 2.42                     | 0.53              |
| 40:BU:50:ARG:HG2  | 40:BU:53:ARG:NH2  | 2.23                     | 0.53              |
| 51:B5:16:ARG:HG3  | 51:B5:17:ASP:N    | 2.23                     | 0.53              |
| 1:CA:411:A:OP1    | 4:CD:30:LYS:NZ    | 2.26                     | 0.53              |
| 4:CD:199:ASN:HB3  | 4:CD:202:LEU:HG   | 1.91                     | 0.53              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 7:CG:138:LYS:HD3   | 7:CG:139:GLU:HG3  | 1.91                     | 0.53              |
| 25:DA:220:G:O2'    | 25:DA:233:A:N3    | 2.37                     | 0.53              |
| 25:DA:495:G:N3     | 42:DW:61:ASN:ND2  | 2.56                     | 0.53              |
| 25:DA:642:G:H21    | 25:DA:646:A:H2    | 1.56                     | 0.53              |
| 25:DA:2163:C:OP1   | 25:DA:2165:G:N2   | 2.42                     | 0.53              |
| 25:DA:2547:U:O2    | 34:DO:23:ARG:NH2  | 2.41                     | 0.53              |
| 26:DB:2:C:H2'      | 26:DB:3:C:C6      | 2.44                     | 0.53              |
| 28:DE:52:LEU:HD22  | 28:DE:77:ILE:HD11 | 1.90                     | 0.53              |
| 45:DZ:102:LEU:HD11 | 45:DZ:124:ILE:HB  | 1.91                     | 0.53              |
| 1:AA:826:C:H2'     | 1:AA:827:U:C6     | 2.44                     | 0.53              |
| 11:AK:62:GLN:O     | 11:AK:66:LEU:HG   | 2.09                     | 0.53              |
| 24:AX:4:G:H2'      | 24:AX:5:G:C8      | 2.44                     | 0.53              |
| 25:BA:873:G:H1     | 25:BA:904:C:H42   | 1.57                     | 0.53              |
| 25:BA:2271:G:C5'   | 46:B0:20:ARG:HE   | 2.22                     | 0.53              |
| 28:BE:9:VAL:HB     | 39:BT:3:ARG:HG2   | 1.91                     | 0.53              |
| 33:BN:34:LEU:HD21  | 33:BN:120:LEU:HB2 | 1.91                     | 0.53              |
| 36:BQ:109:VAL:HG22 | 36:BQ:113:GLN:OE1 | 2.09                     | 0.53              |
| 45:BZ:151:HIS:O    | 45:BZ:153:SER:N   | 2.42                     | 0.53              |
| 1:CA:600:C:H5''    | 8:CH:129:VAL:HA   | 1.89                     | 0.53              |
| 1:CA:1004:A:H5'    | 1:CA:1024:G:H22   | 1.73                     | 0.53              |
| 1:CA:1268:A:H2'    | 1:CA:1269:A:C8    | 2.44                     | 0.53              |
| 2:CB:208:ILE:O     | 2:CB:212:GLN:HB2  | 2.09                     | 0.53              |
| 5:CE:34:VAL:N      | 5:CE:42:GLY:O     | 2.27                     | 0.53              |
| 23:CW:76:PPU:O2'   | 25:DA:2585:U:O4   | 2.18                     | 0.53              |
| 25:DA:963:U:OP1    | 60:DA:4035:HOH:O  | 2.19                     | 0.53              |
| 25:DA:2103:C:C2'   | 25:DA:2104:G:H5'  | 2.39                     | 0.53              |
| 25:DA:2695:C:H2'   | 25:DA:2696:U:C6   | 2.44                     | 0.53              |
| 25:DA:2886:G:H2'   | 25:DA:2887:U:H6   | 1.74                     | 0.53              |
| 26:DB:68:C:H2'     | 26:DB:69:G:H8     | 1.73                     | 0.53              |
| 37:DR:29:LEU:HD23  | 37:DR:70:LEU:HD11 | 1.89                     | 0.53              |
| 1:AA:661:G:H1      | 1:AA:744:C:H42    | 1.55                     | 0.53              |
| 1:AA:714:G:H2'     | 1:AA:715:A:C8     | 2.44                     | 0.53              |
| 1:AA:1216:G:H5''   | 14:AN:5:ALA:HB2   | 1.90                     | 0.53              |
| 25:BA:242:G:O2'    | 25:BA:254:G:O6    | 2.25                     | 0.53              |
| 25:BA:2102:U:H3    | 25:BA:2187:G:H1   | 1.56                     | 0.53              |
| 25:BA:2788:C:OP1   | 28:BE:61:ARG:NH2  | 2.42                     | 0.53              |
| 30:BG:41:GLN:HG3   | 30:BG:60:LEU:HD21 | 1.91                     | 0.53              |
| 32:BI:104:GLN:C    | 32:BI:106:GLY:H   | 2.11                     | 0.53              |
| 36:BQ:82:ARG:CZ    | 46:B0:4:LYS:HE3   | 2.39                     | 0.53              |
| 45:BZ:29:TYR:HA    | 45:BZ:33:LEU:HD12 | 1.90                     | 0.53              |
| 1:CA:589:C:C2'     | 1:CA:590:C:H5'    | 2.39                     | 0.53              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:CA:985:C:H2'     | 1:CA:986:A:H8      | 1.73                     | 0.53              |
| 10:CJ:51:ARG:HD3   | 14:CN:45:ARG:NH2   | 2.23                     | 0.53              |
| 24:CX:10:G:O6      | 24:CX:25:C:N3      | 2.42                     | 0.53              |
| 25:DA:140:G:N2     | 25:DA:1596:A:H4'   | 2.24                     | 0.53              |
| 25:DA:253:C:OP2    | 54:D8:5:LYS:NZ     | 2.33                     | 0.53              |
| 25:DA:2032:G:H1'   | 28:DE:145:LYS:HD3  | 1.91                     | 0.53              |
| 25:DA:2116:G:N7    | 25:DA:2166:G:N2    | 2.44                     | 0.53              |
| 25:DA:2725:A:H1'   | 25:DA:2726:U:H2'   | 1.90                     | 0.53              |
| 1:AA:765:G:N1      | 1:AA:812:C:O2'     | 2.40                     | 0.52              |
| 12:AL:25:PRO:HG2   | 12:AL:97:ARG:HH21  | 1.74                     | 0.52              |
| 13:AM:88:ARG:HG3   | 13:AM:98:VAL:HG11  | 1.91                     | 0.52              |
| 25:BA:573:G:O2'    | 25:BA:574:C:H3'    | 2.09                     | 0.52              |
| 25:BA:2648:C:H2'   | 25:BA:2649:U:C6    | 2.44                     | 0.52              |
| 28:BE:28:ALA:HB3   | 28:BE:93:VAL:HG12  | 1.89                     | 0.52              |
| 43:BX:27:THR:HG23  | 43:BX:80:ILE:HG13  | 1.90                     | 0.52              |
| 54:B8:40:GLU:HG2   | 54:B8:44:LYS:HE2   | 1.90                     | 0.52              |
| 13:CM:50:GLU:HG2   | 13:CM:54:VAL:HG13  | 1.91                     | 0.52              |
| 13:CM:65:LYS:HB2   | 50:D4:50:VAL:HG21  | 1.91                     | 0.52              |
| 19:CS:28:LYS:HB2   | 19:CS:29:ARG:CB    | 2.39                     | 0.52              |
| 25:DA:538:G:H2'    | 25:DA:539:G:H8     | 1.73                     | 0.52              |
| 25:DA:2203:U:H2'   | 25:DA:2205:C:H6    | 1.73                     | 0.52              |
| 25:DA:2378:A:H4'   | 38:DS:23:ARG:HD2   | 1.90                     | 0.52              |
| 36:DQ:37:LEU:HD21  | 36:DQ:130:LYS:HE2  | 1.91                     | 0.52              |
| 41:DV:40:LEU:HB2   | 41:DV:46:VAL:HG13  | 1.90                     | 0.52              |
| 45:DZ:7:ALA:HB3    | 45:DZ:61:LEU:HD12  | 1.91                     | 0.52              |
| 1:AA:57:G:H2'      | 1:AA:58:C:C6       | 2.45                     | 0.52              |
| 1:AA:619:U:N3      | 4:AD:134:ASP:OD1   | 2.37                     | 0.52              |
| 1:AA:673:G:H1      | 1:AA:717:C:H42     | 1.56                     | 0.52              |
| 2:AB:7:VAL:HG11    | 2:AB:221:LEU:HD22  | 1.91                     | 0.52              |
| 10:AJ:65:LEU:HD13  | 14:AN:56:VAL:HG22  | 1.91                     | 0.52              |
| 25:BA:861:A:OP2    | 60:BA:4253:HOH:O   | 2.19                     | 0.52              |
| 25:BA:2074:U:OP1   | 60:BA:4051:HOH:O   | 2.18                     | 0.52              |
| 34:BO:115:VAL:HG13 | 34:BO:121:VAL:HG21 | 1.90                     | 0.52              |
| 1:CA:626:U:H2'     | 1:CA:627:G:H5''    | 1.92                     | 0.52              |
| 16:CP:52:ASP:O     | 16:CP:54:GLU:N     | 2.37                     | 0.52              |
| 25:DA:1359:A:H2'   | 25:DA:1360:A:H5'   | 1.91                     | 0.52              |
| 25:DA:1913:A:H4'   | 25:DA:1914:C:C5'   | 2.39                     | 0.52              |
| 26:DB:101:G:H2'    | 26:DB:102:A:O4'    | 2.09                     | 0.52              |
| 1:AA:562:C:H1'     | 12:AL:15:ARG:HB3   | 1.92                     | 0.52              |
| 1:AA:922:G:N3      | 1:AA:1398:A:H2     | 2.06                     | 0.52              |
| 8:AH:84:ARG:NH1    | 8:AH:136:GLU:OE2   | 2.42                     | 0.52              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 9:AI:85:LEU:HB3   | 9:AI:92:TYR:CD2    | 2.45                     | 0.52              |
| 25:BA:821:A:O2'   | 25:BA:946:G:OP2    | 2.13                     | 0.52              |
| 1:CA:955:U:O4     | 1:CA:1225:A:N1     | 2.42                     | 0.52              |
| 1:CA:1024:G:H2'   | 1:CA:1025:U:H5''   | 1.90                     | 0.52              |
| 1:CA:1053:G:N7    | 1:CA:1200:C:H5''   | 2.24                     | 0.52              |
| 1:CA:1328:C:O2'   | 13:CM:29:ARG:NH2   | 2.42                     | 0.52              |
| 1:CA:1342:C:H1'   | 9:CI:124:GLN:NE2   | 2.23                     | 0.52              |
| 4:CD:3:ARG:HD3    | 4:CD:118:ARG:HD3   | 1.91                     | 0.52              |
| 25:DA:1186:G:C2   | 25:DA:1187:G:H1'   | 2.44                     | 0.52              |
| 25:DA:2376:A:H3'  | 25:DA:2377:A:H8    | 1.74                     | 0.52              |
| 30:DG:122:PRO:HG3 | 30:DG:180:PHE:HB3  | 1.91                     | 0.52              |
| 2:AB:212:GLN:O    | 2:AB:216:SER:OG    | 2.17                     | 0.52              |
| 6:AF:33:TYR:CD2   | 6:AF:75:LEU:HD23   | 2.44                     | 0.52              |
| 8:AH:45:ILE:HG21  | 8:AH:61:VAL:HG13   | 1.91                     | 0.52              |
| 25:BA:2023:G:H5'  | 25:BA:2617:C:H4'   | 1.92                     | 0.52              |
| 25:BA:2142:C:H2'  | 25:BA:2143:C:C6    | 2.44                     | 0.52              |
| 1:CA:76:C:N3      | 1:CA:93:G:N2       | 2.47                     | 0.52              |
| 1:CA:258:G:H1     | 1:CA:268:C:H42     | 1.58                     | 0.52              |
| 1:CA:1002:G:C2    | 1:CA:1003:G:H8     | 2.27                     | 0.52              |
| 1:CA:1004:A:H62   | 1:CA:1037:C:H3'    | 1.75                     | 0.52              |
| 3:CC:8:ILE:HG23   | 3:CC:16:ARG:HG2    | 1.90                     | 0.52              |
| 9:CI:47:LEU:HB3   | 9:CI:50:LEU:HD12   | 1.91                     | 0.52              |
| 13:CM:23:TYR:HE1  | 13:CM:70:LEU:HD22  | 1.73                     | 0.52              |
| 24:CX:52:G:H2'    | 24:CX:53:G:C8      | 2.42                     | 0.52              |
| 25:DA:2172:U:O2'  | 25:DA:2173:A:O5'   | 2.26                     | 0.52              |
| 25:DA:2261:C:H1'  | 25:DA:2388:A:N3    | 2.23                     | 0.52              |
| 25:DA:2345:G:H5'  | 25:DA:2347:C:O4'   | 2.09                     | 0.52              |
| 26:DB:92:C:H5''   | 45:DZ:79:ARG:HH22  | 1.73                     | 0.52              |
| 27:DD:264:LYS:O   | 27:DD:267:SER:OG   | 2.27                     | 0.52              |
| 30:DG:32:PRO:HB2  | 30:DG:172:LEU:HD22 | 1.92                     | 0.52              |
| 1:AA:1260:C:O5'   | 1:AA:1284:C:H4'    | 2.10                     | 0.52              |
| 5:AE:74:GLY:HA3   | 5:AE:116:THR:HG22  | 1.91                     | 0.52              |
| 25:BA:1464:C:H2'  | 25:BA:1465:G:C8    | 2.45                     | 0.52              |
| 25:BA:2127:G:N2   | 25:BA:2173:A:H1'   | 2.25                     | 0.52              |
| 1:CA:187:C:O2'    | 20:CT:89:ARG:NH2   | 2.38                     | 0.52              |
| 1:CA:835:U:H3     | 1:CA:851:G:H1      | 1.56                     | 0.52              |
| 1:CA:1118:C:N3    | 1:CA:1156:G:N2     | 2.57                     | 0.52              |
| 1:CA:1286:A:H2    | 21:CU:18:TYR:HH    | 1.58                     | 0.52              |
| 1:CA:1387:G:H2'   | 1:CA:1388:C:C6     | 2.45                     | 0.52              |
| 5:CE:93:PRO:HG2   | 8:CH:105:ARG:NE    | 2.25                     | 0.52              |
| 13:CM:23:TYR:CE1  | 13:CM:70:LEU:HD22  | 2.43                     | 0.52              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 24:CX:23:C:H2'     | 24:CX:24:U:C6      | 2.40                     | 0.52              |
| 25:DA:2556:C:H2'   | 25:DA:2557:G:O4'   | 2.09                     | 0.52              |
| 35:DP:97:PRO:HD3   | 35:DP:126:VAL:O    | 2.10                     | 0.52              |
| 45:DZ:45:ASP:O     | 45:DZ:49:ARG:HG3   | 2.10                     | 0.52              |
| 1:AA:269:C:H2'     | 1:AA:270:A:C8      | 2.44                     | 0.52              |
| 1:AA:279:A:C5      | 17:AQ:98:LEU:HD23  | 2.44                     | 0.52              |
| 25:BA:2086:U:H2'   | 25:BA:2087:G:C8    | 2.45                     | 0.52              |
| 30:BG:108:ASN:OD1  | 30:BG:108:ASN:N    | 2.41                     | 0.52              |
| 1:CA:757:U:H2'     | 1:CA:758:G:O4'     | 2.09                     | 0.52              |
| 1:CA:922:G:N3      | 1:CA:1398:A:H2     | 2.08                     | 0.52              |
| 1:CA:985:C:N4      | 1:CA:1220:G:H1     | 2.06                     | 0.52              |
| 1:CA:1084:G:H5'    | 1:CA:1102:A:OP2    | 2.10                     | 0.52              |
| 1:CA:1226:C:OP2    | 13:CM:91:ARG:NH2   | 2.43                     | 0.52              |
| 4:CD:31:CYS:O      | 4:CD:35:ARG:HG3    | 2.10                     | 0.52              |
| 9:CI:23:ASN:ND2    | 9:CI:25:LYS:H      | 2.08                     | 0.52              |
| 14:CN:47:LEU:HD12  | 14:CN:53:LEU:HD21  | 1.92                     | 0.52              |
| 16:CP:51:VAL:HG12  | 16:CP:53:VAL:N     | 2.22                     | 0.52              |
| 24:CX:7:G:O2'      | 24:CX:49:G:H5'     | 2.09                     | 0.52              |
| 25:DA:224:G:N7     | 25:DA:420:C:H4'    | 2.24                     | 0.52              |
| 25:DA:236:C:H2'    | 25:DA:237:C:C6     | 2.45                     | 0.52              |
| 25:DA:514:A:N3     | 25:DA:581:C:O2'    | 2.40                     | 0.52              |
| 25:DA:857:C:OP2    | 46:D0:77:ARG:NH2   | 2.41                     | 0.52              |
| 29:DF:110:LEU:HD21 | 29:DF:181:LEU:HG   | 1.92                     | 0.52              |
| 31:DH:103:LEU:HD13 | 31:DH:125:VAL:HG21 | 1.92                     | 0.52              |
| 35:DP:1:MET:HG2    | 35:DP:5:ASP:HB2    | 1.91                     | 0.52              |
| 1:AA:630:G:H2'     | 1:AA:631:G:C8      | 2.43                     | 0.52              |
| 2:AB:118:LEU:HD21  | 2:AB:138:LEU:HD22  | 1.92                     | 0.52              |
| 4:AD:3:ARG:HD3     | 4:AD:118:ARG:HD2   | 1.92                     | 0.52              |
| 5:AE:145:LYS:O     | 5:AE:149:GLU:HG2   | 2.09                     | 0.52              |
| 9:AI:99:LEU:HB3    | 9:AI:101:PHE:CE1   | 2.45                     | 0.52              |
| 24:AX:49:G:H1      | 24:AX:65:C:N4      | 2.04                     | 0.52              |
| 25:BA:882:G:H1     | 25:BA:894:C:H42    | 1.55                     | 0.52              |
| 25:BA:952:G:OP1    | 36:BQ:16:ARG:NH2   | 2.43                     | 0.52              |
| 25:BA:2492:U:H2'   | 25:BA:2493:U:H6    | 1.74                     | 0.52              |
| 26:BB:12:C:O2'     | 46:B0:74:ARG:HG2   | 2.09                     | 0.52              |
| 32:BI:60:GLU:HG3   | 32:BI:61:ARG:HH12  | 1.75                     | 0.52              |
| 35:BP:97:PRO:HD3   | 35:BP:126:VAL:O    | 2.10                     | 0.52              |
| 46:B0:46:LYS:NZ    | 46:B0:75:LEU:O     | 2.42                     | 0.52              |
| 1:CA:593:G:H1      | 1:CA:646:U:H3      | 1.58                     | 0.52              |
| 1:CA:1063:C:OP2    | 1:CA:1064:G:O2'    | 2.25                     | 0.52              |
| 2:CB:207:ALA:O     | 2:CB:210:SER:HB3   | 2.09                     | 0.52              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 4:CD:63:LYS:O     | 4:CD:67:ILE:HG13   | 2.10                     | 0.52              |
| 25:DA:1639:U:OP1  | 60:DA:4253:HOH:O   | 2.19                     | 0.52              |
| 25:DA:2518:A:OP2  | 60:DA:4239:HOH:O   | 2.19                     | 0.52              |
| 27:DD:148:GLU:HB2 | 27:DD:151:LYS:HD2  | 1.92                     | 0.52              |
| 28:DE:67:PHE:HB3  | 28:DE:72:VAL:HG12  | 1.91                     | 0.52              |
| 29:DF:130:ALA:H   | 29:DF:142:TRP:HD1  | 1.57                     | 0.52              |
| 39:DT:53:ARG:HB3  | 39:DT:53:ARG:HH11  | 1.75                     | 0.52              |
| 1:AA:737:A:H5''   | 6:AF:92:LYS:HG3    | 1.91                     | 0.52              |
| 1:AA:1346:A:O2'   | 7:AG:10:ARG:NH2    | 2.43                     | 0.52              |
| 50:B4:44:THR:OG1  | 50:B4:47:GLN:OE1   | 2.28                     | 0.52              |
| 1:CA:946:A:O2'    | 1:CA:1333:A:N3     | 2.31                     | 0.52              |
| 1:CA:1218:C:H2'   | 1:CA:1219:U:C6     | 2.44                     | 0.52              |
| 1:CA:1329:A:H5'   | 13:CM:29:ARG:HG3   | 1.91                     | 0.52              |
| 25:DA:1264:G:H2'  | 25:DA:2014:A:N6    | 2.24                     | 0.52              |
| 25:DA:2142:C:H2'  | 25:DA:2143:C:O4'   | 2.09                     | 0.52              |
| 26:DB:37:C:N3     | 26:DB:48:A:O2'     | 2.42                     | 0.52              |
| 34:DO:76:ALA:HB3  | 39:DT:75:ILE:HB    | 1.92                     | 0.52              |
| 1:AA:158:G:H21    | 1:AA:162:A:N6      | 2.08                     | 0.52              |
| 1:AA:1016:A:H2'   | 1:AA:1017:G:O4'    | 2.10                     | 0.52              |
| 4:AD:188:LEU:H    | 4:AD:188:LEU:CD2   | 2.23                     | 0.52              |
| 25:BA:1309:G:P    | 53:B7:9:ARG:HD3    | 2.50                     | 0.52              |
| 25:BA:1935:G:H1'  | 25:BA:1964:G:N2    | 2.25                     | 0.52              |
| 27:BD:132:PRO:HD3 | 27:BD:190:TYR:CZ   | 2.45                     | 0.52              |
| 29:BF:155:LEU:HB2 | 29:BF:189:THR:HG21 | 1.92                     | 0.52              |
| 1:CA:409:G:H1     | 1:CA:433:C:H42     | 1.58                     | 0.52              |
| 1:CA:972:C:OP2    | 10:CJ:57:LYS:HE2   | 2.10                     | 0.52              |
| 1:CA:975:A:N6     | 10:CJ:60:ARG:HH12  | 2.08                     | 0.52              |
| 19:CS:27:GLU:HG2  | 19:CS:47:HIS:CE1   | 2.44                     | 0.52              |
| 21:CU:3:LYS:HD3   | 21:CU:14:TRP:CD1   | 2.45                     | 0.52              |
| 25:DA:479:A:H4'   | 25:DA:480:A:OP1    | 2.09                     | 0.52              |
| 25:DA:1742:G:H2'  | 25:DA:1743:C:C6    | 2.45                     | 0.52              |
| 25:DA:2166:G:H2'  | 25:DA:2167:U:C2    | 2.44                     | 0.52              |
| 25:DA:2400:G:O3'  | 52:D6:18:ARG:NH1   | 2.43                     | 0.52              |
| 25:DA:2752:C:H3'  | 25:DA:2753:A:H8    | 1.75                     | 0.52              |
| 30:DG:167:GLU:OE1 | 30:DG:167:GLU:N    | 2.39                     | 0.52              |
| 36:DQ:36:ALA:HB2  | 36:DQ:103:MET:SD   | 2.50                     | 0.52              |
| 38:DS:44:LYS:HZ2  | 38:DS:44:LYS:H     | 1.58                     | 0.52              |
| 39:DT:77:PRO:HB2  | 39:DT:80:SER:HB2   | 1.90                     | 0.52              |
| 1:AA:693:G:H2'    | 1:AA:694:A:C8      | 2.45                     | 0.52              |
| 1:AA:1445:C:H42   | 1:AA:1457:G:H1     | 1.56                     | 0.52              |
| 3:AC:36:ASP:OD1   | 3:AC:59:ARG:NH2    | 2.34                     | 0.52              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 17:AQ:59:ILE:HG22 | 17:AQ:73:VAL:HA    | 1.91                     | 0.52              |
| 25:BA:1250:G:N7   | 35:BP:18:ARG:NH2   | 2.58                     | 0.52              |
| 25:BA:2198:A:H4'  | 25:BA:2199:A:OP1   | 2.10                     | 0.52              |
| 1:CA:998:G:H1     | 1:CA:1043:C:H42    | 1.58                     | 0.52              |
| 3:CC:66:VAL:HG21  | 3:CC:91:LEU:HD21   | 1.92                     | 0.52              |
| 13:CM:10:PRO:HG2  | 13:CM:21:TYR:CD2   | 2.44                     | 0.52              |
| 25:DA:817:C:H2'   | 25:DA:818:G:O4'    | 2.10                     | 0.52              |
| 25:DA:1753:G:OP1  | 39:DT:95:ARG:HD3   | 2.09                     | 0.52              |
| 1:AA:631:G:H2'    | 1:AA:632:A:C8      | 2.45                     | 0.51              |
| 1:AA:730:G:H5''   | 1:AA:731:G:OP2     | 2.09                     | 0.51              |
| 1:AA:1277:C:HO2'  | 1:AA:1279:A:H8     | 1.57                     | 0.51              |
| 1:AA:1457:G:H2'   | 1:AA:1458:G:C8     | 2.45                     | 0.51              |
| 1:AA:1503:A:H1'   | 22:AV:13:A:H61     | 1.75                     | 0.51              |
| 25:BA:242:G:C8    | 54:B8:5:LYS:HG2    | 2.44                     | 0.51              |
| 25:BA:689:A:N3    | 25:BA:779:U:O2'    | 2.39                     | 0.51              |
| 25:BA:796:C:H2'   | 25:BA:797:C:C6     | 2.45                     | 0.51              |
| 25:BA:942:G:OP2   | 35:BP:39:LYS:NZ    | 2.31                     | 0.51              |
| 25:BA:2123:G:H1   | 25:BA:2175:C:N4    | 2.07                     | 0.51              |
| 25:BA:2569:G:O6   | 60:BA:4451:HOH:O   | 2.19                     | 0.51              |
| 25:BA:2830:G:OP1  | 28:BE:76:ARG:NH2   | 2.43                     | 0.51              |
| 43:BX:49:VAL:HG11 | 43:BX:89:ILE:HG12  | 1.92                     | 0.51              |
| 1:CA:838:G:H1     | 1:CA:848:C:N4      | 2.08                     | 0.51              |
| 1:CA:959:A:O2'    | 1:CA:984:C:O2'     | 2.20                     | 0.51              |
| 1:CA:1251:A:O2'   | 1:CA:1369:C:O2'    | 2.21                     | 0.51              |
| 1:CA:1316:G:H4'   | 14:CN:18:VAL:HG13  | 1.92                     | 0.51              |
| 1:CA:1346:A:N1    | 1:CA:1374:A:H5''   | 2.26                     | 0.51              |
| 25:DA:18:C:H2'    | 25:DA:19:C:C6      | 2.46                     | 0.51              |
| 25:DA:455:C:N3    | 25:DA:472:A:H2'    | 2.25                     | 0.51              |
| 25:DA:658:C:H2'   | 25:DA:659:C:C6     | 2.44                     | 0.51              |
| 25:DA:1024:G:C8   | 25:DA:1025:G:H2'   | 2.45                     | 0.51              |
| 25:DA:1248:G:C5   | 40:DU:3:ARG:HB2    | 2.45                     | 0.51              |
| 25:DA:1796:U:H2'  | 25:DA:1797:C:C6    | 2.45                     | 0.51              |
| 29:DF:150:GLY:HA2 | 29:DF:172:TRP:CD2  | 2.45                     | 0.51              |
| 31:DH:159:GLU:HG2 | 31:DH:169:VAL:HG11 | 1.92                     | 0.51              |
| 39:DT:59:THR:HG23 | 39:DT:78:LEU:HB3   | 1.92                     | 0.51              |
| 1:AA:193:C:H2'    | 1:AA:194:C:C6      | 2.45                     | 0.51              |
| 1:AA:689:C:OP1    | 11:AK:27:ASN:ND2   | 2.38                     | 0.51              |
| 24:AX:6:G:H1      | 24:AX:67:C:H42     | 1.58                     | 0.51              |
| 25:BA:1688:U:O2   | 25:BA:1700:A:H5'   | 2.10                     | 0.51              |
| 25:BA:1993:U:H4'  | 28:BE:128:SER:HB3  | 1.92                     | 0.51              |
| 25:BA:2567:G:H2'  | 25:BA:2568:C:C6    | 2.45                     | 0.51              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 25:BA:2735:G:H2'   | 25:BA:2736:G:C8   | 2.45                     | 0.51              |
| 28:BE:143:ASN:HD22 | 28:BE:147:PRO:HD2 | 1.75                     | 0.51              |
| 41:BV:76:LYS:HB2   | 41:BV:81:TYR:HB3  | 1.90                     | 0.51              |
| 50:B4:48:ARG:NH1   | 50:B4:48:ARG:HA   | 2.24                     | 0.51              |
| 1:CA:344:A:H4'     | 1:CA:345:C:OP2    | 2.10                     | 0.51              |
| 1:CA:540:G:H2'     | 1:CA:541:G:C8     | 2.45                     | 0.51              |
| 3:CC:50:ALA:HB1    | 3:CC:72:LYS:O     | 2.10                     | 0.51              |
| 14:CN:12:ARG:HG2   | 14:CN:13:THR:N    | 2.26                     | 0.51              |
| 25:DA:2206:G:H5''  | 25:DA:2207:G:N7   | 2.25                     | 0.51              |
| 27:DD:164:GLN:NE2  | 27:DD:166:GLN:OE1 | 2.41                     | 0.51              |
| 1:AA:324:G:OP1     | 20:AT:22:ARG:NE   | 2.38                     | 0.51              |
| 1:AA:1130:A:H5'    | 9:AI:18:PHE:CE2   | 2.46                     | 0.51              |
| 2:AB:142:LEU:O     | 2:AB:146:GLN:N    | 2.31                     | 0.51              |
| 8:AH:112:LEU:HB3   | 8:AH:133:LEU:HA   | 1.91                     | 0.51              |
| 12:AL:53:ARG:HG2   | 12:AL:69:TYR:CE1  | 2.45                     | 0.51              |
| 13:AM:6:GLY:O      | 30:BG:115:ARG:NH2 | 2.42                     | 0.51              |
| 20:AT:47:GLY:HA2   | 20:AT:48:LYS:HB2  | 1.91                     | 0.51              |
| 25:BA:29:U:H2'     | 25:BA:30:G:C8     | 2.46                     | 0.51              |
| 25:BA:139:G:N3     | 43:BX:41:ASN:ND2  | 2.53                     | 0.51              |
| 25:BA:251:A:C5     | 25:BA:252:G:H1'   | 2.45                     | 0.51              |
| 25:BA:1266:G:O5'   | 42:BW:15:ARG:NH2  | 2.43                     | 0.51              |
| 25:BA:2161:C:O2'   | 25:BA:2173:A:H4'  | 2.09                     | 0.51              |
| 25:BA:2272:U:H5''  | 25:BA:2273:A:OP1  | 2.10                     | 0.51              |
| 29:BF:31:HIS:NE2   | 29:BF:35:GLU:OE2  | 2.43                     | 0.51              |
| 32:BI:91:SER:HB3   | 32:BI:119:PRO:HB2 | 1.93                     | 0.51              |
| 1:CA:103:C:O2'     | 1:CA:172:A:N1     | 2.37                     | 0.51              |
| 1:CA:336:C:H2'     | 1:CA:337:C:C6     | 2.46                     | 0.51              |
| 1:CA:601:C:H2'     | 1:CA:602:A:H8     | 1.76                     | 0.51              |
| 1:CA:977:A:HO2'    | 1:CA:981:U:H3     | 1.57                     | 0.51              |
| 1:CA:1010:G:H2'    | 1:CA:1011:G:H8    | 1.74                     | 0.51              |
| 2:CB:211:ILE:O     | 2:CB:215:LEU:HB2  | 2.08                     | 0.51              |
| 12:CL:53:ARG:NH1   | 12:CL:92:ASP:OD2  | 2.37                     | 0.51              |
| 25:DA:262:A:H2'    | 25:DA:263:C:O4'   | 2.10                     | 0.51              |
| 25:DA:370:G:OP1    | 25:DA:403:U:N3    | 2.26                     | 0.51              |
| 25:DA:839:U:H2'    | 25:DA:840:C:C6    | 2.46                     | 0.51              |
| 25:DA:1226:A:H5''  | 40:DU:16:LYS:NZ   | 2.24                     | 0.51              |
| 25:DA:1710:C:H2'   | 25:DA:1711:C:C6   | 2.45                     | 0.51              |
| 25:DA:2430:A:N3    | 25:DA:2430:A:H2'  | 2.25                     | 0.51              |
| 25:DA:2722:G:H2'   | 25:DA:2723:C:C6   | 2.45                     | 0.51              |
| 30:DG:23:PHE:HB2   | 30:DG:25:TYR:CZ   | 2.45                     | 0.51              |
| 43:DX:11:PRO:HG3   | 48:D2:37:PHE:CD2  | 2.46                     | 0.51              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 51:D5:41:PRO:O     | 51:D5:44:THR:OG1  | 2.25                     | 0.51              |
| 1:AA:1030(C):G:H2' | 1:AA:1030(D):A:H8 | 1.75                     | 0.51              |
| 2:AB:121:LEU:HD13  | 2:AB:126:GLU:HG2  | 1.92                     | 0.51              |
| 25:BA:880:G:H2'    | 25:BA:881:G:H8    | 1.75                     | 0.51              |
| 25:BA:958:U:OP2    | 36:BQ:14:ARG:NH1  | 2.44                     | 0.51              |
| 25:BA:1359:A:H2'   | 25:BA:1360:A:H5'  | 1.92                     | 0.51              |
| 44:BY:11:ASP:OD1   | 44:BY:97:ARG:NH2  | 2.41                     | 0.51              |
| 46:B0:40:GLN:HE22  | 46:B0:43:THR:HA   | 1.75                     | 0.51              |
| 1:CA:686:U:HO2'    | 1:CA:687:A:H8     | 1.56                     | 0.51              |
| 1:CA:1122:U:O4     | 1:CA:1123:A:N6    | 2.43                     | 0.51              |
| 2:CB:212:GLN:O     | 2:CB:216:SER:OG   | 2.21                     | 0.51              |
| 10:CJ:38:ILE:HG12  | 10:CJ:71:LEU:O    | 2.11                     | 0.51              |
| 12:CL:102:ARG:HB3  | 12:CL:108:ALA:O   | 2.10                     | 0.51              |
| 21:CU:5:ASP:O      | 21:CU:11:GLY:HA3  | 2.10                     | 0.51              |
| 25:DA:651:G:H4'    | 54:D8:18:ALA:HB3  | 1.92                     | 0.51              |
| 25:DA:2742:C:OP1   | 55:D9:35:ARG:HD3  | 2.10                     | 0.51              |
| 29:DF:20:LEU:HD22  | 29:DF:21:ALA:H    | 1.76                     | 0.51              |
| 1:AA:166:G:H2'     | 1:AA:167:G:C8     | 2.45                     | 0.51              |
| 1:AA:342:C:H2'     | 1:AA:343:U:H5''   | 1.93                     | 0.51              |
| 1:AA:1427:U:H2'    | 1:AA:1428:A:C8    | 2.45                     | 0.51              |
| 1:AA:1525:G:OP2    | 11:AK:120:ARG:NH2 | 2.43                     | 0.51              |
| 4:AD:166:LYS:HB2   | 4:AD:168:ARG:NH1  | 2.25                     | 0.51              |
| 7:AG:113:GLU:HG2   | 7:AG:119:ARG:HG2  | 1.91                     | 0.51              |
| 17:AQ:52:LYS:HG2   | 17:AQ:53:LEU:N    | 2.25                     | 0.51              |
| 25:BA:1210:A:H5''  | 25:BA:1212:G:O4'  | 2.10                     | 0.51              |
| 25:BA:1527:G:H5''  | 25:BA:1528:A:OP1  | 2.10                     | 0.51              |
| 25:BA:2134:A:OP2   | 25:BA:2157:G:N2   | 2.43                     | 0.51              |
| 44:BY:87:LYS:HD2   | 44:BY:95:LYS:HD3  | 1.92                     | 0.51              |
| 1:CA:460:G:N2      | 1:CA:471:G:OP2    | 2.37                     | 0.51              |
| 1:CA:976:G:OP2     | 1:CA:1358:U:O2'   | 2.23                     | 0.51              |
| 1:CA:986:A:H1'     | 19:CS:54:GLY:O    | 2.11                     | 0.51              |
| 1:CA:1118:C:H1'    | 1:CA:1179:A:C5    | 2.46                     | 0.51              |
| 1:CA:1249:C:H5'    | 9:CI:70:LYS:HE2   | 1.92                     | 0.51              |
| 4:CD:150:GLU:HA    | 4:CD:153:ARG:HG3  | 1.93                     | 0.51              |
| 19:CS:40:ILE:HB    | 19:CS:67:VAL:O    | 2.11                     | 0.51              |
| 25:DA:2113:U:H3    | 25:DA:2170:A:H61  | 1.58                     | 0.51              |
| 25:DA:2151:G:H2'   | 25:DA:2152:G:H8   | 1.76                     | 0.51              |
| 25:DA:2347:C:H2'   | 25:DA:2348:U:C6   | 2.46                     | 0.51              |
| 1:AA:1149:C:O2'    | 1:AA:1280:A:N1    | 2.43                     | 0.51              |
| 14:AN:29:ARG:HH21  | 14:AN:31:ARG:HB2  | 1.75                     | 0.51              |
| 23:AW:76:PPU:HM2   | 25:BA:2452:C:N3   | 2.26                     | 0.51              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 25:BA:350:U:H2'   | 25:BA:351:G:O4'    | 2.10                     | 0.51              |
| 1:CA:542:G:P      | 4:CD:10:ARG:HH12   | 2.33                     | 0.51              |
| 2:CB:19:HIS:CD2   | 2:CB:20:GLU:H      | 2.29                     | 0.51              |
| 13:CM:92:HIS:CE1  | 13:CM:98:VAL:HG21  | 2.46                     | 0.51              |
| 23:CW:76:PPU:N    | 24:CX:76:31H:O2'   | 2.44                     | 0.51              |
| 25:DA:172:C:H2'   | 25:DA:173:G:C8     | 2.46                     | 0.51              |
| 25:DA:323:G:H5'   | 29:DF:169:ASN:HD21 | 1.76                     | 0.51              |
| 25:DA:370:G:N7    | 60:DA:4068:HOH:O   | 2.34                     | 0.51              |
| 25:DA:442:G:N2    | 29:DF:48:THR:HB    | 2.26                     | 0.51              |
| 25:DA:601:C:O2    | 25:DA:605:C:H4'    | 2.11                     | 0.51              |
| 25:DA:1364:G:OP2  | 47:D1:3:LYS:HG3    | 2.10                     | 0.51              |
| 25:DA:1593:G:H2'  | 25:DA:1594:G:H8    | 1.76                     | 0.51              |
| 25:DA:1791:A:H3'  | 25:DA:1792:G:C8    | 2.46                     | 0.51              |
| 26:DB:80:U:H2'    | 26:DB:81:G:C8      | 2.45                     | 0.51              |
| 30:DG:165:THR:HB  | 30:DG:167:GLU:OE1  | 2.10                     | 0.51              |
| 1:AA:240:C:H2'    | 1:AA:241:C:C6      | 2.45                     | 0.51              |
| 1:AA:1118:C:H1'   | 1:AA:1179:A:C5     | 2.46                     | 0.51              |
| 3:AC:22:TRP:CH2   | 3:AC:32:LEU:HB3    | 2.46                     | 0.51              |
| 6:AF:14:LEU:HD22  | 6:AF:18:GLN:HE21   | 1.76                     | 0.51              |
| 12:AL:84:LEU:HB2  | 12:AL:105:TYR:CE2  | 2.46                     | 0.51              |
| 25:BA:453:C:O2    | 25:BA:457:A:O2'    | 2.29                     | 0.51              |
| 25:BA:1518:U:H2'  | 25:BA:1519:G:O4'   | 2.10                     | 0.51              |
| 25:BA:2336:A:H61  | 46:B0:43:THR:CG2   | 2.23                     | 0.51              |
| 25:BA:2387:U:OP1  | 46:B0:55:ARG:NH2   | 2.43                     | 0.51              |
| 25:BA:2687:U:H2'  | 25:BA:2688:U:O4'   | 2.09                     | 0.51              |
| 32:BI:92:VAL:HG11 | 32:BI:144:VAL:HG11 | 1.93                     | 0.51              |
| 38:BS:39:ILE:HB   | 38:BS:49:VAL:HG12  | 1.93                     | 0.51              |
| 55:B9:16:VAL:HG22 | 55:B9:25:VAL:HG22  | 1.92                     | 0.51              |
| 1:CA:505:G:H2'    | 1:CA:506:G:C8      | 2.45                     | 0.51              |
| 1:CA:959:A:HO2'   | 1:CA:984:C:HO2'    | 1.51                     | 0.51              |
| 1:CA:1307:U:OP1   | 13:CM:101:GLN:NE2  | 2.43                     | 0.51              |
| 8:CH:4:ASP:O      | 8:CH:8:ASP:HB3     | 2.11                     | 0.51              |
| 25:DA:859:G:N2    | 25:DA:917:A:OP2    | 2.39                     | 0.51              |
| 26:DB:27:C:C4     | 26:DB:28:C:C4      | 2.99                     | 0.51              |
| 28:DE:36:ARG:HG2  | 28:DE:47:VAL:HG12  | 1.92                     | 0.51              |
| 28:DE:54:GLN:HE22 | 28:DE:58:ARG:HG2   | 1.75                     | 0.51              |
| 1:AA:1003:G:N2    | 1:AA:1038:C:N3     | 2.59                     | 0.51              |
| 1:AA:1302:U:OP1   | 13:AM:13:LYS:HE3   | 2.11                     | 0.51              |
| 1:AA:1531:A:H2'   | 1:AA:1532:U:C4     | 2.46                     | 0.51              |
| 3:AC:172:ARG:HB3  | 3:AC:174:PRO:HD3   | 1.92                     | 0.51              |
| 4:AD:61:LYS:NZ    | 4:AD:72:GLU:OE2    | 2.28                     | 0.51              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 8:AH:86:ILE:HG21   | 8:AH:133:LEU:HD13 | 1.91                     | 0.51              |
| 14:AN:24:CYS:HB2   | 14:AN:40:CYS:HB3  | 1.92                     | 0.51              |
| 19:AS:9:VAL:HG21   | 50:B4:61:ARG:HH12 | 1.74                     | 0.51              |
| 25:BA:1021:A:O2'   | 25:BA:1123:C:OP1  | 2.22                     | 0.51              |
| 25:BA:1881:C:H2'   | 25:BA:1882:C:C6   | 2.46                     | 0.51              |
| 25:BA:2139:C:C2    | 25:BA:2152:G:N2   | 2.79                     | 0.51              |
| 32:BI:68:LEU:HD22  | 32:BI:72:LEU:HG   | 1.92                     | 0.51              |
| 40:BU:17:ILE:HG13  | 40:BU:32:PHE:HE1  | 1.76                     | 0.51              |
| 2:CB:71:VAL:HB     | 2:CB:164:VAL:HA   | 1.92                     | 0.51              |
| 14:CN:37:PHE:HE2   | 14:CN:53:LEU:HD13 | 1.74                     | 0.51              |
| 25:DA:1379:A:H4'   | 25:DA:1380:G:OP2  | 2.11                     | 0.51              |
| 25:DA:2296:U:OP2   | 38:DS:9:ARG:NH2   | 2.43                     | 0.51              |
| 30:DG:64:THR:HG21  | 30:DG:92:VAL:HG11 | 1.91                     | 0.51              |
| 31:DH:122:THR:O    | 31:DH:134:SER:OG  | 2.29                     | 0.51              |
| 44:DY:44:ILE:HD13  | 44:DY:64:GLU:HG3  | 1.93                     | 0.51              |
| 1:AA:1179:A:H4'    | 9:AI:103:THR:HA   | 1.92                     | 0.51              |
| 7:AG:138:LYS:NZ    | 7:AG:142:GLU:OE2  | 2.43                     | 0.51              |
| 15:AO:82:ILE:O     | 15:AO:86:GLY:N    | 2.44                     | 0.51              |
| 19:AS:19:VAL:HG11  | 19:AS:44:MET:HA   | 1.92                     | 0.51              |
| 25:BA:957:A:H5'    | 36:BQ:76:LYS:HG3  | 1.92                     | 0.51              |
| 25:BA:1045:A:OP1   | 25:BA:1045:A:H4'  | 2.11                     | 0.51              |
| 26:BB:7:G:H1       | 26:BB:114:C:N4    | 2.08                     | 0.51              |
| 26:BB:66:A:H61     | 26:BB:108:U:H2'   | 1.76                     | 0.51              |
| 30:BG:47:LYS:HG3   | 30:BG:48:GLU:H    | 1.76                     | 0.51              |
| 53:B7:34:ARG:NH1   | 53:B7:41:ARG:O    | 2.44                     | 0.51              |
| 1:CA:505:G:H2'     | 1:CA:506:G:H8     | 1.75                     | 0.51              |
| 1:CA:522:C:H2'     | 1:CA:523:A:O4'    | 2.11                     | 0.51              |
| 1:CA:994:A:C5      | 1:CA:1216:G:H4'   | 2.46                     | 0.51              |
| 2:CB:177:ALA:HB1   | 2:CB:182:ILE:HB   | 1.92                     | 0.51              |
| 2:CB:220:ASP:O     | 2:CB:223:ILE:HG13 | 2.11                     | 0.51              |
| 3:CC:73:PRO:O      | 3:CC:77:ILE:HG12  | 2.11                     | 0.51              |
| 16:CP:17:TYR:HE1   | 16:CP:41:PRO:HG3  | 1.76                     | 0.51              |
| 25:DA:30:G:H2'     | 25:DA:31:C:C6     | 2.45                     | 0.51              |
| 25:DA:172:C:H2'    | 25:DA:173:G:H8    | 1.74                     | 0.51              |
| 25:DA:2172:U:H1'   | 25:DA:2173:A:OP1  | 2.11                     | 0.51              |
| 28:DE:111:ARG:HG3  | 28:DE:160:TYR:CD2 | 2.46                     | 0.51              |
| 35:DP:138:LEU:HD23 | 35:DP:145:PRO:HG3 | 1.93                     | 0.51              |
| 1:AA:1047:G:H5''   | 14:AN:4:LYS:HD2   | 1.93                     | 0.51              |
| 3:AC:58:GLU:HB3    | 10:AJ:92:THR:HG21 | 1.93                     | 0.51              |
| 9:AI:9:ARG:HG2     | 9:AI:14:VAL:HG12  | 1.93                     | 0.51              |
| 15:AO:62:GLN:HA    | 15:AO:65:ARG:NH1  | 2.25                     | 0.51              |

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| Atom-1           | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-------------------|--------------------------|-------------------|
| 25:BA:536:A:H5'  | 40:BU:53:ARG:HD3  | 1.92                     | 0.51              |
| 25:BA:1226:A:OP1 | 41:BV:84:LYS:HE2  | 2.10                     | 0.51              |
| 25:BA:2600:A:N6  | 60:BA:4071:HOH:O  | 2.37                     | 0.51              |
| 38:BS:3:ARG:HE   | 38:BS:4:LEU:H     | 1.59                     | 0.51              |
| 43:BX:65:ARG:NH1 | 43:BX:70:LEU:HD21 | 2.26                     | 0.51              |
| 1:CA:1097:C:H2'  | 1:CA:1098:C:H6    | 1.74                     | 0.51              |
| 1:CA:1198:G:H2'  | 1:CA:1199:U:C6    | 2.46                     | 0.51              |
| 3:CC:20:SER:HG   | 3:CC:22:TRP:HE1   | 1.56                     | 0.51              |
| 8:CH:51:VAL:HG21 | 8:CH:60:ARG:HB2   | 1.93                     | 0.51              |
| 25:DA:780:G:O2'  | 25:DA:783:A:N6    | 2.44                     | 0.51              |
| 25:DA:797:C:OP1  | 29:DF:60:SER:OG   | 2.18                     | 0.51              |
| 25:DA:1021:A:H62 | 25:DA:1141:U:H3   | 1.58                     | 0.51              |
| 25:DA:1239:G:H2' | 25:DA:1240:U:O4'  | 2.09                     | 0.51              |
| 25:DA:2591:C:OP1 | 27:DD:239:ARG:HD2 | 2.11                     | 0.51              |
| 46:D0:53:MET:HG3 | 46:D0:59:LEU:HD23 | 1.92                     | 0.51              |
| 52:D6:25:LYS:HE2 | 52:D6:30:THR:O    | 2.11                     | 0.51              |
| 2:AB:12:GLU:HA   | 2:AB:213:LEU:HD11 | 1.93                     | 0.50              |
| 16:AP:50:LYS:HZ2 | 16:AP:51:VAL:H    | 1.59                     | 0.50              |
| 24:AX:23:C:H2'   | 24:AX:24:U:H6     | 1.75                     | 0.50              |
| 25:BA:877:U:H3   | 25:BA:899:A:H2    | 1.59                     | 0.50              |
| 25:BA:2000:G:OP1 | 37:BR:5:LYS:NZ    | 2.44                     | 0.50              |
| 25:BA:2100:G:H1  | 25:BA:2189:U:H3   | 1.58                     | 0.50              |
| 25:BA:2439:A:H5' | 25:BA:2439:A:H8   | 1.76                     | 0.50              |
| 15:CO:5:LYS:H    | 15:CO:5:LYS:HD3   | 1.76                     | 0.50              |
| 24:CX:52:G:H1    | 24:CX:62:C:N4     | 2.08                     | 0.50              |
| 24:CX:55:PSU:N3  | 24:CX:58:A:OP2    | 2.31                     | 0.50              |
| 25:DA:362:U:O2'  | 25:DA:363:G:H5'   | 2.11                     | 0.50              |
| 25:DA:1819:A:H2  | 27:DD:274:ARG:HD3 | 1.77                     | 0.50              |
| 25:DA:2180:U:H2' | 25:DA:2181:G:O4'  | 2.11                     | 0.50              |
| 25:DA:2483:C:N3  | 36:DQ:124:LYS:NZ  | 2.53                     | 0.50              |
| 31:DH:104:GLU:HA | 31:DH:113:VAL:O   | 2.11                     | 0.50              |
| 45:DZ:22:GLY:O   | 45:DZ:23:LYS:HE3  | 2.10                     | 0.50              |
| 1:AA:376:G:H1    | 1:AA:387:U:H3     | 1.59                     | 0.50              |
| 1:AA:982:U:H4'   | 1:AA:983:A:O5'    | 2.11                     | 0.50              |
| 1:AA:1038:C:H2'  | 1:AA:1039:C:C6    | 2.47                     | 0.50              |
| 1:AA:1278:U:H5'  | 1:AA:1279:A:C5'   | 2.40                     | 0.50              |
| 1:AA:1513:A:H2'  | 1:AA:1514:C:C6    | 2.46                     | 0.50              |
| 6:AF:2:ARG:HB2   | 6:AF:4:TYR:CZ     | 2.45                     | 0.50              |
| 11:AK:32:ILE:O   | 11:AK:40:ILE:N    | 2.30                     | 0.50              |
| 25:BA:411:G:C5   | 35:BP:72:PRO:HB3  | 2.47                     | 0.50              |
| 25:BA:592:G:HO2' | 54:B8:64:TYR:HH   | 1.59                     | 0.50              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:BA:2022:U:O2'   | 25:BA:2617:C:H5'   | 2.11                     | 0.50              |
| 25:BA:2107:C:N4    | 25:BA:2182:G:H1    | 2.04                     | 0.50              |
| 50:B4:41:PRO:HG3   | 50:B4:49:PHE:CE1   | 2.46                     | 0.50              |
| 1:CA:901:A:H5''    | 1:CA:902:G:OP2     | 2.10                     | 0.50              |
| 25:DA:724:U:H2'    | 25:DA:725:G:O4'    | 2.10                     | 0.50              |
| 25:DA:2687:U:H2'   | 25:DA:2688:U:O4'   | 2.11                     | 0.50              |
| 30:DG:101:ILE:HD13 | 50:D4:25:TYR:HB2   | 1.92                     | 0.50              |
| 33:DN:30:ILE:O     | 33:DN:34:LEU:HD22  | 2.11                     | 0.50              |
| 41:DV:57:VAL:HG12  | 41:DV:99:ILE:HG23  | 1.93                     | 0.50              |
| 43:DX:5:TYR:CE1    | 48:D2:30:ARG:HB2   | 2.46                     | 0.50              |
| 1:AA:444:C:H2'     | 1:AA:445:G:C8      | 2.46                     | 0.50              |
| 1:AA:900:A:H2'     | 1:AA:901:A:C8      | 2.46                     | 0.50              |
| 1:AA:1064:G:H4'    | 1:AA:1065:U:OP1    | 2.11                     | 0.50              |
| 4:AD:155:LEU:HD22  | 4:AD:157:LEU:H     | 1.74                     | 0.50              |
| 25:BA:7:G:H2'      | 25:BA:8:A:O4'      | 2.10                     | 0.50              |
| 25:BA:1143:A:OP1   | 33:BN:25:ARG:NH2   | 2.44                     | 0.50              |
| 27:BD:132:PRO:HG2  | 27:BD:135:PHE:HD2  | 1.76                     | 0.50              |
| 28:BE:101:ARG:CZ   | 28:BE:171:GLU:HB2  | 2.42                     | 0.50              |
| 1:CA:1016:A:H2'    | 1:CA:1017:G:O4'    | 2.10                     | 0.50              |
| 1:CA:1034:G:H5''   | 1:CA:1035:A:OP2    | 2.11                     | 0.50              |
| 1:CA:1517:G:H1'    | 25:DA:1919:A:O3'   | 2.10                     | 0.50              |
| 11:CK:62:GLN:HG3   | 11:CK:97:ALA:HB2   | 1.94                     | 0.50              |
| 25:DA:1450(A):C:N4 | 25:DA:1451:C:H41   | 2.09                     | 0.50              |
| 25:DA:2747:G:H1    | 25:DA:2754:U:H2'   | 1.76                     | 0.50              |
| 30:DG:106:LEU:O    | 30:DG:111:LEU:HD22 | 2.10                     | 0.50              |
| 32:DI:14:ASP:N     | 32:DI:17:GLN:OE1   | 2.41                     | 0.50              |
| 37:DR:36:THR:HG22  | 37:DR:37:THR:H     | 1.76                     | 0.50              |
| 37:DR:83:ILE:O     | 37:DR:86:ARG:HG2   | 2.10                     | 0.50              |
| 45:DZ:105:VAL:O    | 45:DZ:141:VAL:HG22 | 2.12                     | 0.50              |
| 54:D8:6:THR:HG23   | 54:D8:64:TYR:HD2   | 1.77                     | 0.50              |
| 1:AA:1179:A:O3'    | 9:AI:103:THR:HB    | 2.12                     | 0.50              |
| 2:AB:78:GLN:NE2    | 2:AB:94:ASN:O      | 2.44                     | 0.50              |
| 3:AC:157:ILE:HD12  | 3:AC:164:ARG:HB3   | 1.91                     | 0.50              |
| 4:AD:107:ARG:NH2   | 4:AD:194:LEU:HD21  | 2.26                     | 0.50              |
| 10:AJ:44:VAL:HG22  | 10:AJ:66:ARG:HE    | 1.75                     | 0.50              |
| 12:AL:8:ASN:O      | 12:AL:12:ARG:HG3   | 2.12                     | 0.50              |
| 16:AP:48:TRP:HH2   | 16:AP:76:GLN:HE22  | 1.57                     | 0.50              |
| 25:BA:2553:G:H1'   | 25:BA:2582:G:H21   | 1.77                     | 0.50              |
| 27:BD:175:LEU:HD12 | 27:BD:185:VAL:HG21 | 1.93                     | 0.50              |
| 1:CA:448:A:P       | 1:CA:485:G:H22     | 2.34                     | 0.50              |
| 1:CA:693:G:H2'     | 1:CA:694:A:H8      | 1.75                     | 0.50              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:CA:768:A:H4'    | 1:CA:1523:G:N2     | 2.26                     | 0.50              |
| 1:CA:1010:G:H22   | 1:CA:1020:U:H1'    | 1.76                     | 0.50              |
| 2:CB:71:VAL:HA    | 2:CB:93:VAL:HG23   | 1.93                     | 0.50              |
| 4:CD:208:SER:OG   | 5:CE:101:ILE:HD12  | 2.11                     | 0.50              |
| 11:CK:34:ASP:HB3  | 11:CK:40:ILE:HD11  | 1.93                     | 0.50              |
| 25:DA:450:G:OP1   | 25:DA:1248:G:N2    | 2.43                     | 0.50              |
| 25:DA:1784:A:N7   | 60:DA:4017:HOH:O   | 2.35                     | 0.50              |
| 25:DA:2286:A:P    | 52:D6:29:ASN:HD22  | 2.34                     | 0.50              |
| 25:DA:2370:G:C6   | 25:DA:2371:G:C6    | 3.00                     | 0.50              |
| 26:DB:20:C:C2'    | 26:DB:21:G:H5'     | 2.42                     | 0.50              |
| 1:AA:1089:G:H1    | 1:AA:1096:C:H42    | 1.60                     | 0.50              |
| 2:AB:143:GLU:HA   | 2:AB:146:GLN:HB3   | 1.93                     | 0.50              |
| 16:AP:38:TYR:OH   | 16:AP:47:ASP:OD2   | 2.20                     | 0.50              |
| 25:BA:228:A:H8    | 25:BA:229:A:H5'    | 1.76                     | 0.50              |
| 25:BA:1426:G:O2'  | 25:BA:1572:A:N6    | 2.45                     | 0.50              |
| 25:BA:2712:U:OP1  | 25:BA:2714:G:H4'   | 2.11                     | 0.50              |
| 1:CA:343:U:H2'    | 1:CA:345:C:C5      | 2.46                     | 0.50              |
| 2:CB:120:ALA:C    | 2:CB:122:PHE:H     | 2.13                     | 0.50              |
| 24:CX:67:C:C2'    | 24:CX:68:C:H5'     | 2.41                     | 0.50              |
| 25:DA:536:A:H2'   | 25:DA:537:C:C6     | 2.47                     | 0.50              |
| 25:DA:686:G:OP1   | 53:D7:11:LYS:NZ    | 2.43                     | 0.50              |
| 25:DA:886:C:HO2'  | 25:DA:888:C:H5     | 1.58                     | 0.50              |
| 25:DA:2119:A:C2   | 25:DA:2171:A:H5'   | 2.42                     | 0.50              |
| 26:DB:33:G:C6     | 26:DB:34:U:N3      | 2.80                     | 0.50              |
| 26:DB:40:U:O2'    | 26:DB:42:C:H5'     | 2.11                     | 0.50              |
| 31:DH:118:PRO:HD2 | 31:DH:121:ILE:HG21 | 1.94                     | 0.50              |
| 39:DT:26:ASP:O    | 39:DT:49:VAL:HG12  | 2.11                     | 0.50              |
| 1:AA:601:C:H2'    | 1:AA:602:A:C8      | 2.46                     | 0.50              |
| 1:AA:1264:C:H42   | 1:AA:1271:G:H1     | 1.59                     | 0.50              |
| 2:AB:16:HIS:CD2   | 2:AB:17:PHE:H      | 2.29                     | 0.50              |
| 9:AI:4:TYR:CD1    | 9:AI:88:TYR:HA     | 2.47                     | 0.50              |
| 10:AJ:17:ASP:OD1  | 10:AJ:70:ARG:NH1   | 2.45                     | 0.50              |
| 25:BA:2670:A:H2'  | 25:BA:2671:A:O4'   | 2.11                     | 0.50              |
| 1:CA:1015:A:H1'   | 1:CA:1219:U:H5'    | 1.94                     | 0.50              |
| 1:CA:1065:U:H6    | 1:CA:1190:G:H21    | 1.57                     | 0.50              |
| 1:CA:1224:G:N1    | 1:CA:1322:C:O4'    | 2.45                     | 0.50              |
| 24:CX:59:A:C2'    | 24:CX:60:U:H5'     | 2.40                     | 0.50              |
| 25:DA:1011:G:OP2  | 40:DU:66:ASN:ND2   | 2.42                     | 0.50              |
| 25:DA:2815:C:C5'  | 51:D5:29:THR:HG21  | 2.41                     | 0.50              |
| 26:DB:5:C:H42     | 26:DB:116:G:H1     | 1.59                     | 0.50              |
| 31:DH:3:ARG:HB3   | 31:DH:3:ARG:NH1    | 2.24                     | 0.50              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 38:DS:15:ARG:HD3   | 38:DS:25:ARG:HH21  | 1.76                     | 0.50              |
| 1:AA:1218:C:H2'    | 1:AA:1219:U:C6     | 2.47                     | 0.50              |
| 25:BA:2206:G:H5'   | 25:BA:2207:G:N7    | 2.27                     | 0.50              |
| 26:BB:31:C:H4'     | 30:BG:29:TRP:CH2   | 2.47                     | 0.50              |
| 27:BD:142:VAL:HG22 | 27:BD:193:VAL:HA   | 1.94                     | 0.50              |
| 30:BG:67:LYS:HE2   | 50:B4:5:ILE:HD12   | 1.94                     | 0.50              |
| 2:CB:78:GLN:NE2    | 2:CB:95:GLN:HE22   | 2.09                     | 0.50              |
| 2:CB:144:ARG:HB3   | 2:CB:144:ARG:HH11  | 1.76                     | 0.50              |
| 4:CD:85:LYS:HG3    | 4:CD:86:LYS:H      | 1.75                     | 0.50              |
| 15:CO:82:ILE:O     | 15:CO:86:GLY:N     | 2.45                     | 0.50              |
| 25:DA:272(E):G:C2  | 25:DA:364:C:C2     | 3.00                     | 0.50              |
| 25:DA:459:U:H2'    | 25:DA:460:A:H8     | 1.77                     | 0.50              |
| 25:DA:1289:C:H2'   | 25:DA:1290:C:H6    | 1.77                     | 0.50              |
| 25:DA:1412:A:H2'   | 25:DA:1413:G:C8    | 2.46                     | 0.50              |
| 25:DA:1639:U:H2'   | 25:DA:1640:C:H5''  | 1.92                     | 0.50              |
| 25:DA:2646:C:H2'   | 25:DA:2647:U:O4'   | 2.11                     | 0.50              |
| 26:DB:16:G:H1      | 26:DB:68:C:H42     | 1.59                     | 0.50              |
| 28:DE:101:ARG:HB2  | 28:DE:201:THR:HG21 | 1.94                     | 0.50              |
| 30:DG:61:ALA:HA    | 30:DG:66:GLN:O     | 2.12                     | 0.50              |
| 31:DH:70:THR:O     | 31:DH:74:ASN:N     | 2.39                     | 0.50              |
| 32:DI:72:LEU:HD21  | 32:DI:107:VAL:HG11 | 1.93                     | 0.50              |
| 34:DO:68:GLU:HB3   | 34:DO:78:ARG:HB2   | 1.94                     | 0.50              |
| 1:AA:69:G:H2'      | 1:AA:70:G:C8       | 2.47                     | 0.50              |
| 1:AA:532:A:N6      | 3:AC:156:ARG:HH12  | 2.10                     | 0.50              |
| 1:AA:692:U:O2'     | 1:AA:694:A:N7      | 2.34                     | 0.50              |
| 1:AA:718:G:O6      | 18:AR:74:ARG:NH1   | 2.45                     | 0.50              |
| 1:AA:1323:G:H2'    | 1:AA:1324:A:C8     | 2.47                     | 0.50              |
| 2:AB:71:VAL:HG12   | 2:AB:170:GLU:HG3   | 1.94                     | 0.50              |
| 3:AC:13:GLY:HA3    | 14:AN:57:ARG:HH21  | 1.76                     | 0.50              |
| 24:AX:21:A:N6      | 24:AX:46:G:H2'     | 2.26                     | 0.50              |
| 25:BA:1173:G:N1    | 25:BA:1176:G:OP2   | 2.44                     | 0.50              |
| 25:BA:1187:G:H5''  | 41:BV:81:TYR:CE1   | 2.47                     | 0.50              |
| 25:BA:2036:C:N4    | 60:BA:4309:HOH:O   | 2.45                     | 0.50              |
| 25:BA:2038:G:H2'   | 25:BA:2039:C:O4'   | 2.12                     | 0.50              |
| 25:BA:2364:C:H2'   | 25:BA:2365:G:O4'   | 2.12                     | 0.50              |
| 30:BG:173:LEU:O    | 30:BG:178:PHE:HB2  | 2.11                     | 0.50              |
| 36:BQ:85:LYS:HG2   | 46:B0:7:LEU:HB3    | 1.92                     | 0.50              |
| 52:B6:33:LYS:HA    | 52:B6:33:LYS:HE3   | 1.92                     | 0.50              |
| 1:CA:571:U:O2      | 1:CA:918:A:H5'     | 2.12                     | 0.50              |
| 1:CA:973:G:OP1     | 10:CJ:57:LYS:HD3   | 2.12                     | 0.50              |
| 1:CA:1062:U:H2'    | 1:CA:1063:C:C6     | 2.47                     | 0.50              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:CA:1154:G:N7    | 1:CA:1155:G:C4     | 2.79                     | 0.50              |
| 1:CA:1397:C:OP2   | 22:CV:23:A:O2'     | 2.14                     | 0.50              |
| 1:CA:1492:A:O2'   | 1:CA:1493:A:O5'    | 2.26                     | 0.50              |
| 3:CC:15:THR:HG21  | 3:CC:181:ASN:HA    | 1.94                     | 0.50              |
| 11:CK:98:LEU:O    | 11:CK:101:SER:OG   | 2.20                     | 0.50              |
| 25:DA:235:U:H2'   | 25:DA:236:C:C6     | 2.47                     | 0.50              |
| 25:DA:1557:C:OP2  | 25:DA:1558:A:O2'   | 2.24                     | 0.50              |
| 25:DA:2136:C:N4   | 25:DA:2156:G:H21   | 2.10                     | 0.50              |
| 29:DF:102:PRO:HB2 | 29:DF:105:VAL:HG23 | 1.93                     | 0.50              |
| 38:DS:8:GLU:H     | 38:DS:8:GLU:CD     | 2.15                     | 0.50              |
| 42:DW:70:TYR:OH   | 42:DW:72:LYS:HG3   | 2.12                     | 0.50              |
| 1:AA:45:U:H2'     | 1:AA:46:G:C8       | 2.47                     | 0.50              |
| 1:AA:972:C:O3'    | 10:AJ:57:LYS:HD3   | 2.12                     | 0.50              |
| 1:AA:1067:A:O2'   | 1:AA:1068:G:OP2    | 2.25                     | 0.50              |
| 13:AM:96:LEU:HB3  | 13:AM:97:PRO:HD2   | 1.93                     | 0.50              |
| 20:AT:10:LEU:HB3  | 20:AT:12:ALA:H     | 1.76                     | 0.50              |
| 25:BA:1930:G:O2'  | 25:BA:1968:G:O6    | 2.22                     | 0.50              |
| 25:BA:1992:G:N7   | 60:BA:4121:HOH:O   | 2.34                     | 0.50              |
| 45:BZ:111:VAL:C   | 45:BZ:113:ALA:H    | 2.15                     | 0.50              |
| 47:B1:60:PHE:HE2  | 47:B1:95:LEU:HD11  | 1.76                     | 0.50              |
| 50:B4:61:ARG:HG3  | 50:B4:62:ARG:H     | 1.77                     | 0.50              |
| 1:CA:36:C:H5''    | 12:CL:123:LYS:HD3  | 1.94                     | 0.50              |
| 3:CC:6:HIS:CE1    | 14:CN:50:LYS:HG3   | 2.46                     | 0.50              |
| 14:CN:47:LEU:HB2  | 14:CN:53:LEU:HG    | 1.93                     | 0.50              |
| 19:CS:68:GLY:H    | 50:D4:58:ARG:NH1   | 2.08                     | 0.50              |
| 24:CX:36:U:H2'    | 24:CX:37:A:C8      | 2.46                     | 0.50              |
| 25:DA:195:A:H2'   | 25:DA:198:C:N4     | 2.27                     | 0.50              |
| 25:DA:249:C:O2    | 54:D8:12:LYS:NZ    | 2.43                     | 0.50              |
| 25:DA:459:U:H2'   | 25:DA:460:A:C8     | 2.47                     | 0.50              |
| 25:DA:1250:G:N7   | 35:DP:18:ARG:NH2   | 2.60                     | 0.50              |
| 25:DA:2299:G:N1   | 25:DA:2318:G:N7    | 2.59                     | 0.50              |
| 25:DA:2540:C:H2'  | 25:DA:2541:A:O4'   | 2.11                     | 0.50              |
| 27:DD:133:LEU:HB3 | 27:DD:173:VAL:HG11 | 1.94                     | 0.50              |
| 31:DH:20:ALA:HB1  | 31:DH:21:PRO:HD2   | 1.94                     | 0.50              |
| 35:DP:85:LEU:HA   | 35:DP:88:LEU:HD12  | 1.94                     | 0.50              |
| 1:AA:166:G:H2'    | 1:AA:167:G:H8      | 1.76                     | 0.49              |
| 1:AA:373:A:H2'    | 1:AA:374:A:H8      | 1.75                     | 0.49              |
| 1:AA:503:C:C2'    | 1:AA:504:C:H5'     | 2.42                     | 0.49              |
| 1:AA:584:G:H5'    | 17:AQ:91:ARG:NH2   | 2.27                     | 0.49              |
| 1:AA:584:G:H2'    | 1:AA:585:G:C8      | 2.47                     | 0.49              |
| 1:AA:1075:C:OP1   | 2:AB:179:LYS:NZ    | 2.26                     | 0.49              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:1125:U:H1'    | 1:AA:1126:U:H2'    | 1.94                     | 0.49              |
| 2:AB:115:LEU:HD13  | 2:AB:145:LEU:HG    | 1.94                     | 0.49              |
| 12:AL:53:ARG:HG2   | 12:AL:69:TYR:HE1   | 1.76                     | 0.49              |
| 25:BA:272(G):C:H42 | 25:BA:363(C):G:H1  | 1.60                     | 0.49              |
| 25:BA:1213:A:H1'   | 25:BA:1238:G:N3    | 2.28                     | 0.49              |
| 25:BA:1664:A:H1'   | 25:BA:2685:G:O2'   | 2.12                     | 0.49              |
| 25:BA:2382:G:H21   | 54:B8:42:ARG:NH2   | 2.10                     | 0.49              |
| 28:BE:7:VAL:HG23   | 28:BE:51:PHE:HE2   | 1.77                     | 0.49              |
| 1:CA:129(A):G:C6   | 1:CA:189(E):U:H4'  | 2.47                     | 0.49              |
| 1:CA:674:G:H2'     | 1:CA:675:A:H8      | 1.76                     | 0.49              |
| 1:CA:701:C:OP1     | 1:CA:702:A:O2'     | 2.15                     | 0.49              |
| 1:CA:1002:G:N2     | 1:CA:1039:C:C4     | 2.80                     | 0.49              |
| 1:CA:1002:G:C2     | 1:CA:1003:G:C8     | 3.00                     | 0.49              |
| 1:CA:1376:U:O5'    | 7:CG:94:ARG:NH2    | 2.45                     | 0.49              |
| 1:CA:1412:C:H42    | 1:CA:1488:G:H1     | 1.59                     | 0.49              |
| 1:CA:1458:G:C2'    | 1:CA:1459:C:H5'    | 2.42                     | 0.49              |
| 3:CC:39:ILE:HG22   | 3:CC:43:LEU:HD13   | 1.93                     | 0.49              |
| 9:CI:65:VAL:HG21   | 9:CI:73:GLN:HB3    | 1.92                     | 0.49              |
| 12:CL:110:VAL:HG23 | 12:CL:120:TYR:HB3  | 1.93                     | 0.49              |
| 25:DA:957:A:H5'    | 36:DQ:76:LYS:HG3   | 1.93                     | 0.49              |
| 29:DF:13:SER:OG    | 29:DF:16:GLY:O     | 2.22                     | 0.49              |
| 29:DF:184:TYR:O    | 29:DF:188:ARG:HG3  | 2.12                     | 0.49              |
| 1:AA:757:U:O2'     | 1:AA:879:C:O2      | 2.29                     | 0.49              |
| 1:AA:1036:G:H5'    | 1:AA:1037:C:OP2    | 2.12                     | 0.49              |
| 3:AC:22:TRP:HA     | 10:AJ:93:GLY:HA2   | 1.94                     | 0.49              |
| 25:BA:1113:U:H2'   | 25:BA:1114:G:H8    | 1.77                     | 0.49              |
| 25:BA:2369:A:H2'   | 25:BA:2370:G:H8    | 1.76                     | 0.49              |
| 29:BF:102:PRO:HB2  | 29:BF:105:VAL:HG23 | 1.94                     | 0.49              |
| 34:BO:64:ARG:NH1   | 34:BO:81:ASP:OD1   | 2.45                     | 0.49              |
| 39:BT:24:PRO:HD3   | 39:BT:52:ILE:HD12  | 1.94                     | 0.49              |
| 1:CA:826:C:H2'     | 1:CA:827:U:C6      | 2.46                     | 0.49              |
| 1:CA:1279:A:OP1    | 10:CJ:7:LYS:NZ     | 2.45                     | 0.49              |
| 1:CA:1318:A:H1'    | 19:CS:37:ARG:HD3   | 1.94                     | 0.49              |
| 2:CB:121:LEU:O     | 2:CB:127:ILE:HB    | 2.12                     | 0.49              |
| 3:CC:54:ARG:HG3    | 3:CC:69:HIS:HB2    | 1.94                     | 0.49              |
| 3:CC:83:ARG:O      | 3:CC:87:LEU:N      | 2.42                     | 0.49              |
| 6:CF:37:VAL:HA     | 6:CF:65:VAL:HG12   | 1.92                     | 0.49              |
| 12:CL:24:VAL:HG13  | 12:CL:98:TYR:CE1   | 2.39                     | 0.49              |
| 15:CO:64:ARG:O     | 15:CO:68:ARG:N     | 2.45                     | 0.49              |
| 18:CR:29:PHE:HE1   | 18:CR:31:LEU:HD13  | 1.77                     | 0.49              |
| 25:DA:479:A:N3     | 25:DA:481:G:H5''   | 2.27                     | 0.49              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:DA:652(A):A:N3  | 25:DA:652(A):A:H2' | 2.26                     | 0.49              |
| 25:DA:1016:G:H2'   | 25:DA:1017:G:O4'   | 2.12                     | 0.49              |
| 25:DA:2123:G:H2'   | 25:DA:2124:G:C8    | 2.46                     | 0.49              |
| 26:DB:6:C:C2       | 26:DB:116:G:N2     | 2.80                     | 0.49              |
| 31:DH:27:LYS:HA    | 31:DH:32:GLU:HA    | 1.94                     | 0.49              |
| 34:DO:119:PRO:HB2  | 39:DT:68:TYR:CE2   | 2.48                     | 0.49              |
| 38:DS:44:LYS:NZ    | 38:DS:44:LYS:H     | 2.10                     | 0.49              |
| 39:DT:51:ARG:HG3   | 39:DT:98:LYS:HD2   | 1.95                     | 0.49              |
| 40:DU:109:LEU:HA   | 40:DU:112:ARG:HG3  | 1.93                     | 0.49              |
| 1:AA:111:G:H5''    | 16:AP:27:LYS:HG2   | 1.94                     | 0.49              |
| 1:AA:510:A:N3      | 1:AA:543:C:H1'     | 2.27                     | 0.49              |
| 1:AA:1347:G:N2     | 1:AA:1373:G:H2'    | 2.27                     | 0.49              |
| 7:AG:27:ILE:HD12   | 7:AG:40:ALA:HA     | 1.94                     | 0.49              |
| 12:AL:28:LYS:HB2   | 12:AL:33:ARG:HH12  | 1.77                     | 0.49              |
| 25:BA:1342:A:OP2   | 60:BA:3971:HOH:O   | 2.20                     | 0.49              |
| 25:BA:2118:U:OP1   | 25:BA:2148:G:H4'   | 2.12                     | 0.49              |
| 25:BA:2138:C:N4    | 25:BA:2153:G:H1    | 2.09                     | 0.49              |
| 25:BA:2424:C:O2    | 25:BA:2429:G:O2'   | 2.18                     | 0.49              |
| 27:BD:127:VAL:HA   | 27:BD:193:VAL:HG23 | 1.94                     | 0.49              |
| 32:BI:104:GLN:O    | 32:BI:106:GLY:N    | 2.40                     | 0.49              |
| 33:BN:47:ALA:HB2   | 33:BN:112:LEU:HD11 | 1.94                     | 0.49              |
| 41:BV:55:ALA:HB2   | 41:BV:101:GLY:HA2  | 1.95                     | 0.49              |
| 1:CA:691:G:O6      | 11:CK:52:GLY:HA2   | 2.12                     | 0.49              |
| 1:CA:1190:G:H5'    | 3:CC:176:HIS:CE1   | 2.48                     | 0.49              |
| 1:CA:1227:A:C2     | 19:CS:83:HIS:HB3   | 2.48                     | 0.49              |
| 3:CC:181:ASN:ND2   | 3:CC:204:LEU:HD12  | 2.27                     | 0.49              |
| 25:DA:855:G:H2'    | 25:DA:856:C:C6     | 2.47                     | 0.49              |
| 25:DA:1023:U:O2'   | 25:DA:1122:G:H5'   | 2.11                     | 0.49              |
| 28:DE:34:VAL:HG22  | 28:DE:48:GLN:HB3   | 1.95                     | 0.49              |
| 38:DS:50:SER:O     | 38:DS:76:LYS:NZ    | 2.34                     | 0.49              |
| 45:DZ:157:LEU:HD11 | 45:DZ:163:LEU:HB2  | 1.94                     | 0.49              |
| 54:D8:33:ASN:HA    | 54:D8:36:LYS:HD2   | 1.93                     | 0.49              |
| 1:AA:560:U:H5'     | 1:AA:566:G:N2      | 2.27                     | 0.49              |
| 1:AA:1343:G:H2'    | 1:AA:1344:C:C6     | 2.47                     | 0.49              |
| 2:AB:155:LEU:HD21  | 2:AB:159:PRO:HG3   | 1.94                     | 0.49              |
| 3:AC:17:ASP:HB3    | 3:AC:21:ARG:HH21   | 1.77                     | 0.49              |
| 10:AJ:26:ALA:HB1   | 10:AJ:84:GLN:NE2   | 2.28                     | 0.49              |
| 25:BA:897:C:H2'    | 25:BA:898:C:C6     | 2.47                     | 0.49              |
| 25:BA:1204:A:N6    | 25:BA:1240:U:H2'   | 2.27                     | 0.49              |
| 25:BA:1688:U:H1'   | 25:BA:1701:A:C6    | 2.47                     | 0.49              |
| 25:BA:1881:C:H2'   | 25:BA:1882:C:H6    | 1.77                     | 0.49              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 25:BA:2097:C:H2'  | 25:BA:2098:U:O4'   | 2.13                     | 0.49              |
| 25:BA:2493:U:OP1  | 60:BA:4231:HOH:O   | 2.20                     | 0.49              |
| 32:BI:93:THR:HG22 | 32:BI:119:PRO:HB3  | 1.94                     | 0.49              |
| 35:BP:62:LEU:O    | 54:B8:13:ARG:HD3   | 2.12                     | 0.49              |
| 39:BT:60:THR:HG22 | 39:BT:77:PRO:HA    | 1.92                     | 0.49              |
| 44:BY:6:HIS:H     | 44:BY:6:HIS:CD2    | 2.31                     | 0.49              |
| 1:CA:353:A:H5'    | 1:CA:353:A:H8      | 1.77                     | 0.49              |
| 1:CA:418:C:H2'    | 1:CA:419:C:C6      | 2.46                     | 0.49              |
| 1:CA:495:A:H4'    | 1:CA:496:A:OP1     | 2.13                     | 0.49              |
| 1:CA:1273:G:H3'   | 1:CA:1274:G:C8     | 2.46                     | 0.49              |
| 2:CB:69:LEU:HB3   | 2:CB:162:ILE:HG22  | 1.94                     | 0.49              |
| 4:CD:65:ARG:HG2   | 4:CD:75:PHE:CD1    | 2.46                     | 0.49              |
| 25:DA:62:C:H42    | 25:DA:93:G:H1      | 1.60                     | 0.49              |
| 25:DA:275:G:H2'   | 25:DA:276:A:O4'    | 2.12                     | 0.49              |
| 25:DA:340:A:H2'   | 25:DA:341:G:O4'    | 2.12                     | 0.49              |
| 25:DA:579:G:H2'   | 25:DA:580:C:C6     | 2.48                     | 0.49              |
| 25:DA:896:A:N6    | 45:DZ:146:ILE:HD13 | 2.27                     | 0.49              |
| 25:DA:1022:G:N2   | 25:DA:1142(A):A:H2 | 2.05                     | 0.49              |
| 25:DA:1316:U:H2'  | 25:DA:1317:A:H8    | 1.77                     | 0.49              |
| 25:DA:2022:U:O2'  | 25:DA:2617:C:H5'   | 2.12                     | 0.49              |
| 25:DA:2471:C:H2'  | 25:DA:2472:G:O4'   | 2.12                     | 0.49              |
| 46:D0:38:VAL:HG12 | 46:D0:40:GLN:HG2   | 1.95                     | 0.49              |
| 48:D2:65:ASN:OD1  | 48:D2:69:ARG:NH1   | 2.46                     | 0.49              |
| 1:AA:524:G:H2'    | 1:AA:525:C:C6      | 2.48                     | 0.49              |
| 1:AA:1328:C:OP1   | 21:AU:21:TYR:OH    | 2.30                     | 0.49              |
| 2:AB:112:VAL:O    | 2:AB:116:GLU:N     | 2.31                     | 0.49              |
| 25:BA:309:G:H4'   | 44:BY:18:GLY:HA2   | 1.95                     | 0.49              |
| 25:BA:687:C:H2'   | 25:BA:688:U:O4'    | 2.12                     | 0.49              |
| 25:BA:1035:U:H2'  | 25:BA:1036:G:C8    | 2.47                     | 0.49              |
| 25:BA:1186:G:H2'  | 25:BA:1187:G:O4'   | 2.13                     | 0.49              |
| 25:BA:1651:G:H5'  | 37:BR:39:PRO:HG2   | 1.94                     | 0.49              |
| 25:BA:2207:G:O2'  | 25:BA:2208:A:OP1   | 2.27                     | 0.49              |
| 31:BH:56:SER:HB3  | 31:BH:61:HIS:ND1   | 2.28                     | 0.49              |
| 34:BO:97:ARG:NH2  | 34:BO:99:PHE:HE1   | 2.10                     | 0.49              |
| 37:BR:51:LEU:HD22 | 37:BR:66:VAL:HG13  | 1.94                     | 0.49              |
| 1:CA:364:A:H2'    | 1:CA:365:U:C6      | 2.48                     | 0.49              |
| 1:CA:511:C:HO2'   | 1:CA:512:U:H6      | 1.59                     | 0.49              |
| 1:CA:1106:G:H5''  | 3:CC:172:ARG:HG2   | 1.95                     | 0.49              |
| 4:CD:17:VAL:HG13  | 4:CD:19:LEU:HD22   | 1.94                     | 0.49              |
| 19:CS:40:ILE:HD11 | 19:CS:74:PHE:CE2   | 2.47                     | 0.49              |
| 25:DA:192:C:O2'   | 25:DA:802:A:N3     | 2.40                     | 0.49              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 25:DA:1462:C:H4'  | 25:DA:2703:C:H5'   | 1.95                     | 0.49              |
| 25:DA:1674:G:H21  | 25:DA:1677:A:H61   | 1.58                     | 0.49              |
| 25:DA:1813:G:H1'  | 27:DD:50:THR:OG1   | 2.12                     | 0.49              |
| 25:DA:2176:A:H2'  | 25:DA:2177:C:C5    | 2.48                     | 0.49              |
| 25:DA:2351:G:O5'  | 25:DA:2351:G:H8    | 1.95                     | 0.49              |
| 28:DE:54:GLN:HE22 | 28:DE:58:ARG:HB3   | 1.77                     | 0.49              |
| 30:DG:114:ILE:HA  | 30:DG:140:ILE:HD11 | 1.94                     | 0.49              |
| 1:AA:558:G:OP1    | 60:AA:4061:HOH:O   | 2.20                     | 0.49              |
| 1:AA:589:C:C2'    | 1:AA:590:C:H5'     | 2.43                     | 0.49              |
| 1:AA:749:C:H2'    | 1:AA:750:G:H8      | 1.77                     | 0.49              |
| 1:AA:1226:C:O2'   | 13:AM:111:LYS:NZ   | 2.45                     | 0.49              |
| 1:AA:1366:C:H2'   | 1:AA:1367:C:H6     | 1.78                     | 0.49              |
| 4:AD:188:LEU:H    | 4:AD:188:LEU:HD23  | 1.77                     | 0.49              |
| 10:AJ:69:ASN:O    | 10:AJ:70:ARG:HD3   | 2.12                     | 0.49              |
| 15:AO:16:ALA:HB1  | 15:AO:21:ASP:HB3   | 1.95                     | 0.49              |
| 25:BA:184:C:H2'   | 25:BA:185:U:H6     | 1.75                     | 0.49              |
| 25:BA:340:A:H2'   | 25:BA:341:G:O4'    | 2.13                     | 0.49              |
| 25:BA:459:U:H2'   | 25:BA:460:A:H8     | 1.77                     | 0.49              |
| 25:BA:845:G:HO2'  | 25:BA:846:C:H5     | 1.61                     | 0.49              |
| 25:BA:1266:G:O6   | 42:BW:13:SER:OG    | 2.23                     | 0.49              |
| 25:BA:2735:G:H2'  | 25:BA:2736:G:H8    | 1.78                     | 0.49              |
| 25:BA:2791:C:O2   | 25:BA:2807:G:N1    | 2.45                     | 0.49              |
| 25:BA:2863:C:OP1  | 39:BT:93:ARG:NH2   | 2.45                     | 0.49              |
| 54:B8:42:ARG:NH1  | 60:B8:5105:HOH:O   | 2.25                     | 0.49              |
| 1:CA:96:U:O2'     | 1:CA:97:G:H5'      | 2.12                     | 0.49              |
| 1:CA:406:G:H2'    | 1:CA:407:G:C8      | 2.48                     | 0.49              |
| 1:CA:690:G:O5'    | 1:CA:690:G:H8      | 1.96                     | 0.49              |
| 1:CA:1151:A:N3    | 10:CJ:39:PRO:HG3   | 2.28                     | 0.49              |
| 1:CA:1279:A:O2'   | 1:CA:1281:U:OP2    | 2.21                     | 0.49              |
| 1:CA:1390:U:H2'   | 1:CA:1391:U:C6     | 2.47                     | 0.49              |
| 2:CB:68:ILE:HG12  | 2:CB:161:ALA:HB3   | 1.94                     | 0.49              |
| 3:CC:142:MET:HG3  | 3:CC:170:GLN:HB3   | 1.93                     | 0.49              |
| 9:CI:85:LEU:HB3   | 9:CI:92:TYR:CD2    | 2.48                     | 0.49              |
| 25:DA:565:C:H5    | 41:DV:78:LYS:HZ1   | 1.61                     | 0.49              |
| 25:DA:614:U:H2'   | 25:DA:614(A):U:O4' | 2.12                     | 0.49              |
| 25:DA:895:U:H3    | 25:DA:897:C:N4     | 2.10                     | 0.49              |
| 25:DA:935:C:H2'   | 25:DA:936:C:C6     | 2.48                     | 0.49              |
| 25:DA:1005:C:H2'  | 25:DA:1006:C:H6    | 1.78                     | 0.49              |
| 25:DA:1204:A:H2   | 25:DA:1241:A:N6    | 2.09                     | 0.49              |
| 25:DA:1503:U:H2'  | 25:DA:1504:C:C6    | 2.48                     | 0.49              |
| 25:DA:1623:G:H2'  | 25:DA:1624:G:H8    | 1.77                     | 0.49              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 25:DA:2134:A:N3    | 25:DA:2159:G:O2'  | 2.40                     | 0.49              |
| 25:DA:2683:C:OP1   | 39:DT:53:ARG:NH2  | 2.46                     | 0.49              |
| 38:DS:10:ARG:O     | 38:DS:14:VAL:HG12 | 2.12                     | 0.49              |
| 1:AA:69:G:H2'      | 1:AA:70:G:H8      | 1.78                     | 0.49              |
| 1:AA:976:G:OP2     | 1:AA:1358:U:O2'   | 2.28                     | 0.49              |
| 1:AA:1131:G:H8     | 1:AA:1131:G:O5'   | 1.95                     | 0.49              |
| 1:AA:1239:A:O2'    | 7:AG:114:ARG:O    | 2.24                     | 0.49              |
| 1:AA:1295:G:C2'    | 1:AA:1296:C:H5'   | 2.42                     | 0.49              |
| 3:AC:56:ASP:HB2    | 3:AC:67:THR:HB    | 1.94                     | 0.49              |
| 3:AC:73:PRO:O      | 3:AC:77:ILE:HG12  | 2.12                     | 0.49              |
| 3:AC:193:TYR:HE2   | 3:AC:196:LEU:HD11 | 1.78                     | 0.49              |
| 20:AT:43:LEU:HD13  | 20:AT:51:GLU:HB3  | 1.94                     | 0.49              |
| 21:AU:3:LYS:HD3    | 21:AU:14:TRP:CD1  | 2.47                     | 0.49              |
| 25:BA:1021:A:H62   | 25:BA:1141:U:H3   | 1.59                     | 0.49              |
| 37:BR:36:THR:HG22  | 37:BR:37:THR:H    | 1.77                     | 0.49              |
| 55:B9:7:VAL:HG12   | 55:B9:34:GLN:HB3  | 1.95                     | 0.49              |
| 1:CA:967:C:H3'     | 1:CA:968:A:H2'    | 1.93                     | 0.49              |
| 1:CA:1014:A:O5'    | 1:CA:1014:A:H8    | 1.95                     | 0.49              |
| 1:CA:1226:C:H4'    | 19:CS:80:TYR:CZ   | 2.47                     | 0.49              |
| 1:CA:1226:C:H4'    | 19:CS:80:TYR:OH   | 2.12                     | 0.49              |
| 1:CA:1366:C:H2'    | 1:CA:1367:C:H6    | 1.78                     | 0.49              |
| 2:CB:7:VAL:HG12    | 2:CB:8:LYS:H      | 1.77                     | 0.49              |
| 11:CK:21:ILE:HB    | 11:CK:84:VAL:HG22 | 1.95                     | 0.49              |
| 25:DA:1359:A:N6    | 25:DA:1372:U:H3   | 2.11                     | 0.49              |
| 25:DA:2106:G:O6    | 25:DA:2183:C:N3   | 2.45                     | 0.49              |
| 25:DA:2657:A:H3'   | 25:DA:2658:C:H6   | 1.78                     | 0.49              |
| 29:DF:101:LEU:HD12 | 29:DF:102:PRO:HD2 | 1.95                     | 0.49              |
| 30:DG:15:VAL:HG22  | 30:DG:175:LEU:HB3 | 1.95                     | 0.49              |
| 34:DO:76:ALA:O     | 39:DT:74:ARG:HD2  | 2.13                     | 0.49              |
| 47:D1:54:ALA:HB1   | 47:D1:83:GLU:HG3  | 1.95                     | 0.49              |
| 1:AA:346:G:OP1     | 39:BT:41:ARG:NH1  | 2.46                     | 0.49              |
| 1:AA:1492:A:N3     | 22:AV:20:U:O2'    | 2.39                     | 0.49              |
| 5:AE:77:PRO:HG2    | 5:AE:142:LEU:HD22 | 1.95                     | 0.49              |
| 12:AL:69:TYR:CD1   | 12:AL:90:VAL:HG21 | 2.48                     | 0.49              |
| 25:BA:250:G:P      | 54:B8:13:ARG:HH22 | 2.34                     | 0.49              |
| 25:BA:301:G:OP2    | 44:BY:84:ARG:NH2  | 2.45                     | 0.49              |
| 25:BA:613:G:O2'    | 25:BA:614(C):A:N1 | 2.36                     | 0.49              |
| 25:BA:1268:A:H2'   | 25:BA:1269:A:O4'  | 2.11                     | 0.49              |
| 25:BA:1899:G:H2'   | 25:BA:1899:G:N3   | 2.27                     | 0.49              |
| 29:BF:33:LEU:HB3   | 35:BP:6:LEU:HD21  | 1.94                     | 0.49              |
| 4:CD:64:LEU:HB2    | 4:CD:198:VAL:HG21 | 1.95                     | 0.49              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 4:CD:76:ARG:NE     | 4:CD:80:GLU:OE1    | 2.41                     | 0.49              |
| 7:CG:153:HIS:CE1   | 11:CK:58:PRO:HD2   | 2.48                     | 0.49              |
| 14:CN:45:ARG:O     | 14:CN:49:HIS:HD2   | 1.96                     | 0.49              |
| 24:CX:29:G:C2'     | 24:CX:30:G:H5'     | 2.42                     | 0.49              |
| 24:CX:36:U:H2'     | 24:CX:37:A:H8      | 1.78                     | 0.49              |
| 25:DA:35:G:H1'     | 25:DA:454:A:C4     | 2.47                     | 0.49              |
| 25:DA:247:G:H4'    | 25:DA:386:G:C5     | 2.48                     | 0.49              |
| 25:DA:888:C:H2'    | 25:DA:889:C:C4     | 2.48                     | 0.49              |
| 25:DA:1028:A:N6    | 25:DA:1125:G:H2'   | 2.28                     | 0.49              |
| 25:DA:1336:A:H2'   | 25:DA:1337:G:C8    | 2.47                     | 0.49              |
| 25:DA:1514:U:H2'   | 25:DA:1515:G:C8    | 2.48                     | 0.49              |
| 25:DA:1721:G:H5'   | 25:DA:1722:A:H5''  | 1.95                     | 0.49              |
| 25:DA:1971:A:OP1   | 60:DA:4205:HOH:O   | 2.19                     | 0.49              |
| 26:DB:14:U:O3'     | 26:DB:108:U:O2'    | 2.30                     | 0.49              |
| 31:DH:97:ARG:HE    | 31:DH:104:GLU:CD   | 2.16                     | 0.49              |
| 35:DP:52:GLU:HB3   | 35:DP:55:ARG:NH1   | 2.27                     | 0.49              |
| 36:DQ:52:VAL:O     | 36:DQ:56:ARG:HB2   | 2.12                     | 0.49              |
| 45:DZ:30:ASN:ND2   | 45:DZ:90:VAL:O     | 2.38                     | 0.49              |
| 25:BA:831:G:N2     | 35:BP:53:GLY:O     | 2.46                     | 0.49              |
| 25:BA:1833:U:O2'   | 25:BA:1969:A:N1    | 2.36                     | 0.49              |
| 31:BH:113:VAL:HG11 | 31:BH:151:ILE:HD13 | 1.94                     | 0.49              |
| 39:BT:53:ARG:HB3   | 39:BT:53:ARG:CZ    | 2.42                     | 0.49              |
| 40:BU:76:TYR:OH    | 40:BU:92:ARG:NH1   | 2.39                     | 0.49              |
| 1:CA:20:U:H2'      | 1:CA:21:G:O4'      | 2.12                     | 0.49              |
| 1:CA:1127:G:H21    | 1:CA:1147:C:H41    | 1.61                     | 0.49              |
| 5:CE:80:ILE:HG22   | 5:CE:91:LEU:HB2    | 1.94                     | 0.49              |
| 25:DA:7:G:H2'      | 25:DA:8:A:C8       | 2.47                     | 0.49              |
| 37:DR:88:ARG:NH2   | 37:DR:89:ASP:OD2   | 2.46                     | 0.49              |
| 43:DX:12:VAL:HG21  | 43:DX:27:THR:HG22  | 1.95                     | 0.49              |
| 48:D2:10:LEU:O     | 48:D2:14:ARG:HB2   | 2.12                     | 0.49              |
| 1:AA:425:G:C2'     | 1:AA:426:G:H5'     | 2.43                     | 0.49              |
| 1:AA:998:G:H1      | 1:AA:1043:C:N4     | 2.10                     | 0.49              |
| 4:AD:138:TYR:HD1   | 4:AD:139:ARG:N     | 2.11                     | 0.49              |
| 20:AT:10:LEU:HD23  | 20:AT:11:SER:H     | 1.76                     | 0.49              |
| 20:AT:53:LEU:HD13  | 20:AT:100:ILE:O    | 2.13                     | 0.49              |
| 25:BA:470:A:OP1    | 29:BF:59:TYR:HE1   | 1.95                     | 0.49              |
| 31:BH:5:GLY:HA2    | 31:BH:69:ARG:HB3   | 1.95                     | 0.49              |
| 49:B3:8:LEU:O      | 49:B3:32:GLN:N     | 2.34                     | 0.49              |
| 51:B5:16:ARG:O     | 51:B5:20:ARG:HG3   | 2.13                     | 0.49              |
| 1:CA:390:C:H2'     | 1:CA:391:G:C8      | 2.48                     | 0.49              |
| 1:CA:1004:A:C8     | 1:CA:1005:A:H4'    | 2.45                     | 0.49              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 14:CN:24:CYS:O     | 14:CN:28:GLY:N     | 2.37                     | 0.49              |
| 19:CS:53:ASN:HB2   | 19:CS:77:THR:HA    | 1.94                     | 0.49              |
| 25:DA:86:C:H4'     | 25:DA:104:U:H1'    | 1.95                     | 0.49              |
| 25:DA:566:U:P      | 41:DV:80:GLN:HE21  | 2.34                     | 0.49              |
| 25:DA:570:G:H2'    | 25:DA:2030:A:C5    | 2.48                     | 0.49              |
| 25:DA:586:A:N1     | 25:DA:809:G:O2'    | 2.39                     | 0.49              |
| 25:DA:1495:A:H2'   | 25:DA:1496:A:C8    | 2.48                     | 0.49              |
| 25:DA:1675:C:O5'   | 25:DA:1675:C:H6    | 1.96                     | 0.49              |
| 25:DA:1798:U:H5'   | 27:DD:259:THR:HG22 | 1.95                     | 0.49              |
| 25:DA:2123:G:H2'   | 25:DA:2124:G:H8    | 1.78                     | 0.49              |
| 28:DE:127:ASP:OD2  | 60:DE:3105:HOH:O   | 2.19                     | 0.49              |
| 32:DI:123:LEU:HD23 | 32:DI:123:LEU:H    | 1.77                     | 0.49              |
| 33:DN:47:ALA:HB2   | 33:DN:112:LEU:HD11 | 1.95                     | 0.49              |
| 50:D4:26:SER:OG    | 50:D4:27:THR:N     | 2.46                     | 0.49              |
| 1:AA:376:G:OP2     | 16:AP:67:THR:HG21  | 2.13                     | 0.48              |
| 1:AA:593:G:H2'     | 1:AA:594:G:O4'     | 2.13                     | 0.48              |
| 1:AA:1149:C:OP2    | 9:AI:9:ARG:NH2     | 2.38                     | 0.48              |
| 2:AB:27:LYS:O      | 2:AB:30:ARG:NH1    | 2.46                     | 0.48              |
| 3:AC:8:ILE:HG23    | 3:AC:16:ARG:HG2    | 1.95                     | 0.48              |
| 9:AI:85:LEU:HB3    | 9:AI:92:TYR:HD2    | 1.76                     | 0.48              |
| 25:BA:330:A:H2     | 25:BA:1210:A:O2'   | 1.96                     | 0.48              |
| 25:BA:813:U:H2'    | 25:BA:814:C:C6     | 2.48                     | 0.48              |
| 25:BA:875:G:H1     | 25:BA:902:C:N4     | 2.11                     | 0.48              |
| 25:BA:987:G:O2'    | 25:BA:1000:A:N3    | 2.43                     | 0.48              |
| 25:BA:2356:C:H2'   | 25:BA:2357:U:O4'   | 2.13                     | 0.48              |
| 25:BA:2506:U:OP1   | 28:BE:144:ARG:NH2  | 2.46                     | 0.48              |
| 1:CA:399:G:H2'     | 1:CA:400:C:C6      | 2.48                     | 0.48              |
| 1:CA:405:U:P       | 4:CD:3:ARG:HH21    | 2.35                     | 0.48              |
| 1:CA:1114:C:H1'    | 14:CN:60:SER:HB3   | 1.94                     | 0.48              |
| 1:CA:1353:G:H2'    | 1:CA:1354:C:C6     | 2.48                     | 0.48              |
| 4:CD:129:ASN:HD21  | 4:CD:144:ASP:HA    | 1.77                     | 0.48              |
| 10:CJ:5:ARG:N      | 60:CJ:5101:HOH:O   | 2.46                     | 0.48              |
| 12:CL:27:LEU:O     | 12:CL:33:ARG:NE    | 2.32                     | 0.48              |
| 13:CM:107:ALA:O    | 13:CM:111:LYS:HB2  | 2.13                     | 0.48              |
| 23:CW:76:PPU:HD2   | 25:DA:2451:A:C4    | 2.48                     | 0.48              |
| 25:DA:1365:A:O4'   | 47:D1:41:ARG:NH2   | 2.46                     | 0.48              |
| 25:DA:2070:G:C2    | 25:DA:2442:C:C2    | 3.01                     | 0.48              |
| 25:DA:2345:G:OP1   | 52:D6:38:LYS:NZ    | 2.45                     | 0.48              |
| 26:DB:55:U:H1'     | 30:DG:29:TRP:HD1   | 1.78                     | 0.48              |
| 30:DG:108:ASN:O    | 50:D4:36:CYS:HA    | 2.13                     | 0.48              |
| 31:DH:28:GLY:HA3   | 31:DH:79:VAL:HB    | 1.94                     | 0.48              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 45:DZ:150:LEU:HA   | 45:DZ:150:LEU:HD13 | 1.65                     | 0.48              |
| 1:AA:946:A:H2'     | 1:AA:947:G:C8      | 2.49                     | 0.48              |
| 1:AA:1121:U:C2'    | 1:AA:1122:U:H5'    | 2.43                     | 0.48              |
| 5:AE:105:VAL:HB    | 5:AE:106:PRO:HD3   | 1.94                     | 0.48              |
| 6:AF:10:LEU:HB2    | 6:AF:59:TYR:HB3    | 1.95                     | 0.48              |
| 25:BA:458:G:C8     | 53:B7:37:LYS:HG2   | 2.49                     | 0.48              |
| 25:BA:587:C:C6     | 25:BA:671:C:H1'    | 2.49                     | 0.48              |
| 25:BA:1786:A:H1'   | 25:BA:1938:A:H61   | 1.78                     | 0.48              |
| 25:BA:2273:A:H2'   | 25:BA:2274:A:C8    | 2.48                     | 0.48              |
| 27:BD:8:PRO:HB3    | 27:BD:14:ARG:HG3   | 1.95                     | 0.48              |
| 31:BH:56:SER:OG    | 31:BH:58:GLU:HG2   | 2.13                     | 0.48              |
| 38:BS:10:ARG:O     | 38:BS:14:VAL:HG13  | 2.12                     | 0.48              |
| 1:CA:413:G:H21     | 1:CA:428:G:H1'     | 1.78                     | 0.48              |
| 1:CA:1157:A:H4'    | 1:CA:1158:C:O5'    | 2.13                     | 0.48              |
| 1:CA:1258:G:H2'    | 1:CA:1259:C:C6     | 2.48                     | 0.48              |
| 1:CA:1492:A:H2'    | 1:CA:1493:A:C8     | 2.48                     | 0.48              |
| 19:CS:38:SER:O     | 19:CS:71:LEU:HB2   | 2.13                     | 0.48              |
| 25:DA:1607:C:H4'   | 25:DA:1608:A:O5'   | 2.12                     | 0.48              |
| 25:DA:1899:G:N3    | 25:DA:1899:G:H2'   | 2.27                     | 0.48              |
| 25:DA:2128:C:N4    | 25:DA:2160:G:N1    | 2.43                     | 0.48              |
| 25:DA:2562:U:H1'   | 34:DO:23:ARG:NH1   | 2.28                     | 0.48              |
| 25:DA:2693:A:H2'   | 25:DA:2694:G:C8    | 2.46                     | 0.48              |
| 25:DA:2756:U:H3'   | 55:D9:20:HIS:CD2   | 2.48                     | 0.48              |
| 28:DE:72:VAL:HA    | 28:DE:73:GLU:CG    | 2.43                     | 0.48              |
| 34:DO:34:THR:OG1   | 34:DO:35:VAL:N     | 2.46                     | 0.48              |
| 35:DP:50:ARG:HG2   | 54:D8:61:LEU:HD11  | 1.96                     | 0.48              |
| 1:AA:922:G:H4'     | 5:AE:20:GLN:HA     | 1.93                     | 0.48              |
| 1:AA:1014:A:H2'    | 1:AA:1015:A:C8     | 2.48                     | 0.48              |
| 1:AA:1030(D):A:H2' | 1:AA:1031:G:O4'    | 2.13                     | 0.48              |
| 1:AA:1376:U:H2'    | 1:AA:1377:A:C8     | 2.48                     | 0.48              |
| 25:BA:1649:G:O2'   | 37:BR:107:ASP:OD2  | 2.25                     | 0.48              |
| 28:BE:128:SER:OG   | 28:BE:129:HIS:N    | 2.45                     | 0.48              |
| 48:B2:9:GLN:HE22   | 48:B2:56:GLN:HG2   | 1.78                     | 0.48              |
| 1:CA:139:G:N2      | 1:CA:224:C:O2      | 2.43                     | 0.48              |
| 1:CA:359:U:H2'     | 1:CA:360:A:C8      | 2.47                     | 0.48              |
| 1:CA:375:U:H5''    | 16:CP:6:LEU:HD23   | 1.96                     | 0.48              |
| 1:CA:719:C:O2'     | 18:CR:49:LYS:HB3   | 2.13                     | 0.48              |
| 10:CJ:45:ARG:O     | 10:CJ:65:LEU:N     | 2.42                     | 0.48              |
| 25:DA:921:G:H2'    | 25:DA:922:U:C6     | 2.48                     | 0.48              |
| 25:DA:1225:G:OP1   | 41:DV:69:LYS:NZ    | 2.36                     | 0.48              |
| 25:DA:2151:G:H2'   | 25:DA:2152:G:C8    | 2.48                     | 0.48              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 25:DA:2285:C:OP2  | 52:D6:6:ARG:NH1   | 2.45                     | 0.48              |
| 25:DA:2287:A:O2'  | 25:DA:2288:A:H5'' | 2.13                     | 0.48              |
| 26:DB:24:G:H21    | 26:DB:27:C:N4     | 2.11                     | 0.48              |
| 28:DE:34:VAL:HG21 | 28:DE:78:LEU:HD11 | 1.95                     | 0.48              |
| 30:DG:3:LEU:HD11  | 30:DG:5:VAL:HG12  | 1.95                     | 0.48              |
| 35:DP:64:LYS:HA   | 54:D8:13:ARG:HB3  | 1.94                     | 0.48              |
| 37:DR:66:VAL:HG11 | 37:DR:79:LEU:HD12 | 1.96                     | 0.48              |
| 1:AA:667:G:OP1    | 1:AA:732:C:O2'    | 2.20                     | 0.48              |
| 1:AA:1151:A:O2'   | 1:AA:1152:A:O5'   | 2.26                     | 0.48              |
| 2:AB:33:TYR:HB2   | 2:AB:43:ASP:HB2   | 1.93                     | 0.48              |
| 4:AD:186:LEU:HB2  | 4:AD:187:ARG:NH2  | 2.25                     | 0.48              |
| 8:AH:14:ARG:O     | 8:AH:18:ARG:HD3   | 2.12                     | 0.48              |
| 25:BA:1011:G:OP2  | 40:BU:70:ARG:NH2  | 2.45                     | 0.48              |
| 26:BB:8:U:O3'     | 38:BS:25:ARG:NH2  | 2.45                     | 0.48              |
| 1:CA:559:A:H4'    | 1:CA:560:U:H3'    | 1.93                     | 0.48              |
| 1:CA:1227:A:N3    | 19:CS:83:HIS:HB3  | 2.27                     | 0.48              |
| 1:CA:1422:G:H5''  | 34:DO:48:PRO:HB3  | 1.94                     | 0.48              |
| 2:CB:82:ARG:HG3   | 2:CB:92:TYR:OH    | 2.14                     | 0.48              |
| 9:CI:6:GLY:HA3    | 9:CI:80:GLY:O     | 2.13                     | 0.48              |
| 9:CI:77:ILE:O     | 9:CI:81:ILE:HG22  | 2.14                     | 0.48              |
| 25:DA:80:G:H1     | 25:DA:106:C:H42   | 1.60                     | 0.48              |
| 25:DA:117:G:OP2   | 25:DA:119:A:O2'   | 2.26                     | 0.48              |
| 25:DA:583:G:OP2   | 40:DU:10:ARG:NH1  | 2.47                     | 0.48              |
| 25:DA:615:G:OP1   | 29:DF:40:GLN:HG2  | 2.12                     | 0.48              |
| 25:DA:686:G:P     | 53:D7:11:LYS:HZ3  | 2.37                     | 0.48              |
| 25:DA:729:G:C5    | 27:DD:208:LYS:HB2 | 2.49                     | 0.48              |
| 25:DA:2849:U:H4'  | 25:DA:2868:A:C2   | 2.48                     | 0.48              |
| 45:DZ:7:ALA:O     | 45:DZ:62:PRO:HD3  | 2.13                     | 0.48              |
| 1:AA:165:C:H2'    | 1:AA:166:G:C8     | 2.49                     | 0.48              |
| 2:AB:51:LEU:HD23  | 2:AB:201:ILE:HD12 | 1.96                     | 0.48              |
| 3:AC:62:ASP:O     | 3:AC:97:LYS:HB3   | 2.14                     | 0.48              |
| 11:AK:77:MET:HA   | 11:AK:77:MET:HE3  | 1.94                     | 0.48              |
| 25:BA:875:G:O3'   | 45:BZ:151:HIS:HE1 | 1.96                     | 0.48              |
| 25:BA:1028:A:N6   | 25:BA:1125:G:H2'  | 2.29                     | 0.48              |
| 25:BA:1524:G:H2'  | 25:BA:1525:G:O4'  | 2.14                     | 0.48              |
| 25:BA:1826:G:H4'  | 27:BD:242:ARG:CZ  | 2.43                     | 0.48              |
| 25:BA:2809:A:H62  | 25:BA:2891:G:H2'  | 1.78                     | 0.48              |
| 32:BI:40:THR:O    | 32:BI:44:LEU:N    | 2.43                     | 0.48              |
| 37:BR:55:ALA:HB2  | 37:BR:79:LEU:HD13 | 1.94                     | 0.48              |
| 1:CA:674:G:H2'    | 1:CA:675:A:C8     | 2.49                     | 0.48              |
| 1:CA:1023:G:H3'   | 1:CA:1024:G:C8    | 2.48                     | 0.48              |

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| Atom-1             | Atom-2               | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|----------------------|--------------------------|-------------------|
| 1:CA:1120:G:C6     | 1:CA:1154:G:C2       | 3.01                     | 0.48              |
| 7:CG:26:PHE:CE1    | 7:CG:30:ILE:HD11     | 2.49                     | 0.48              |
| 10:CJ:45:ARG:HB3   | 10:CJ:65:LEU:HB3     | 1.94                     | 0.48              |
| 12:CL:82:VAL:O     | 12:CL:106:ASP:HB2    | 2.13                     | 0.48              |
| 13:CM:16:ASP:OD1   | 13:CM:16:ASP:N       | 2.46                     | 0.48              |
| 14:CN:29:ARG:HG2   | 14:CN:31:ARG:H       | 1.79                     | 0.48              |
| 25:DA:639:U:H2'    | 25:DA:640:C:C6       | 2.49                     | 0.48              |
| 25:DA:2392:A:O3'   | 54:D8:27:THR:HB      | 2.13                     | 0.48              |
| 26:DB:42:C:C4      | 26:DB:43:C:C4        | 3.02                     | 0.48              |
| 28:DE:72:VAL:HG13  | 28:DE:73:GLU:C       | 2.34                     | 0.48              |
| 29:DF:80:ALA:HB3   | 29:DF:83:PHE:HD1     | 1.78                     | 0.48              |
| 34:DO:12:ASP:OD1   | 34:DO:14:THR:OG1     | 2.31                     | 0.48              |
| 35:DP:21:ARG:HD3   | 35:DP:21:ARG:HA      | 1.51                     | 0.48              |
| 36:DQ:30:GLY:O     | 36:DQ:134:ARG:HD3    | 2.14                     | 0.48              |
| 45:DZ:69:THR:HG22  | 45:DZ:90:VAL:HG22    | 1.95                     | 0.48              |
| 1:AA:352:C:O2'     | 1:AA:354:G:OP1       | 2.24                     | 0.48              |
| 5:AE:137:GLU:HG2   | 5:AE:140:ARG:NH1     | 2.28                     | 0.48              |
| 7:AG:89:MET:SD     | 7:AG:155:ARG:HB2     | 2.53                     | 0.48              |
| 15:AO:18:PHE:HB2   | 15:AO:19:PRO:HD2     | 1.95                     | 0.48              |
| 25:BA:55:G:O2'     | 25:BA:127:A:N1       | 2.38                     | 0.48              |
| 25:BA:363(A):A:H2' | 25:BA:363(B):G:C8    | 2.49                     | 0.48              |
| 25:BA:1798:U:H5'   | 27:BD:259:THR:CG2    | 2.42                     | 0.48              |
| 25:BA:2080:G:OP1   | 47:B1:35:THR:HG21    | 2.13                     | 0.48              |
| 25:BA:2250:G:O2'   | 25:BA:2496:C:OP1     | 2.24                     | 0.48              |
| 1:CA:1295:G:C2'    | 1:CA:1296:C:H5'      | 2.42                     | 0.48              |
| 1:CA:1328:C:O3'    | 13:CM:29:ARG:HG3     | 2.13                     | 0.48              |
| 1:CA:1516:G:H2'    | 1:CA:1518:A:OP2      | 2.13                     | 0.48              |
| 2:CB:80:ILE:HD12   | 2:CB:208:ILE:HG23    | 1.95                     | 0.48              |
| 2:CB:142:LEU:HA    | 2:CB:145:LEU:HD22    | 1.96                     | 0.48              |
| 13:CM:65:LYS:O     | 13:CM:70:LEU:HD12    | 2.14                     | 0.48              |
| 19:CS:28:LYS:HB2   | 19:CS:29:ARG:CA      | 2.43                     | 0.48              |
| 25:DA:271(U):G:H2' | 25:DA:271(V):G:C8    | 2.48                     | 0.48              |
| 25:DA:272(B):G:H2' | 25:DA:272(C):G:H8    | 1.79                     | 0.48              |
| 25:DA:619:G:H3'    | 25:DA:620:G:H21      | 1.78                     | 0.48              |
| 25:DA:820:A:H2'    | 25:DA:821:A:O4'      | 2.14                     | 0.48              |
| 25:DA:1328:G:O2'   | 25:DA:1329:U:H2'     | 2.13                     | 0.48              |
| 25:DA:1467:C:C5    | 25:DA:1546:C:H2'     | 2.48                     | 0.48              |
| 25:DA:1486:A:O2'   | 25:DA:1487:G:H5'     | 2.14                     | 0.48              |
| 25:DA:1509(A):A:N3 | 25:DA:1509(A):A:H5'' | 2.29                     | 0.48              |
| 29:DF:111:ALA:HB2  | 29:DF:206:ILE:HG21   | 1.96                     | 0.48              |
| 39:DT:92:GLY:O     | 39:DT:120:ARG:NH2    | 2.46                     | 0.48              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 47:D1:50:ARG:HG2  | 47:D1:59:THR:HG22 | 1.95                     | 0.48              |
| 1:AA:448:A:O5'    | 1:AA:485:G:N2     | 2.42                     | 0.48              |
| 1:AA:1070:U:H2'   | 1:AA:1071:C:H6    | 1.78                     | 0.48              |
| 2:AB:32:ILE:HD13  | 2:AB:40:HIS:CD2   | 2.48                     | 0.48              |
| 22:AV:22:U:H2'    | 22:AV:23:A:C8     | 2.48                     | 0.48              |
| 25:BA:646:A:H2'   | 25:BA:647:G:O4'   | 2.14                     | 0.48              |
| 26:BB:14:U:OP2    | 26:BB:70:C:O2'    | 2.16                     | 0.48              |
| 32:BI:72:LEU:C    | 32:BI:74:ASN:H    | 2.17                     | 0.48              |
| 34:BO:34:THR:OG1  | 34:BO:35:VAL:N    | 2.45                     | 0.48              |
| 35:BP:65:ARG:HG3  | 54:B8:25:MET:HG3  | 1.96                     | 0.48              |
| 1:CA:407:G:H5''   | 4:CD:115:ARG:HB3  | 1.96                     | 0.48              |
| 8:CH:73:ASP:OD1   | 8:CH:75:ARG:NH1   | 2.46                     | 0.48              |
| 10:CJ:37:PRO:HA   | 10:CJ:72:VAL:HG12 | 1.96                     | 0.48              |
| 17:CQ:43:LEU:HD12 | 17:CQ:68:ARG:HB3  | 1.95                     | 0.48              |
| 19:CS:30:LEU:HD11 | 19:CS:32:LYS:HG3  | 1.95                     | 0.48              |
| 25:DA:475:U:H4'   | 25:DA:510:C:H5'   | 1.96                     | 0.48              |
| 25:DA:1139:G:O3'  | 33:DN:24:GLY:HA3  | 2.14                     | 0.48              |
| 25:DA:1155:A:H5'' | 40:DU:55:ARG:HD3  | 1.95                     | 0.48              |
| 28:DE:2:LYS:HG3   | 28:DE:200:GLU:HB2 | 1.94                     | 0.48              |
| 34:DO:120:GLU:HB2 | 39:DT:68:TYR:HE2  | 1.79                     | 0.48              |
| 46:D0:34:GLY:N    | 46:D0:61:ALA:O    | 2.37                     | 0.48              |
| 50:D4:58:ARG:HG2  | 50:D4:59:PHE:HD1  | 1.79                     | 0.48              |
| 53:D7:24:THR:O    | 53:D7:28:ARG:HG3  | 2.13                     | 0.48              |
| 1:AA:625:G:H4'    | 16:AP:16:HIS:CG   | 2.49                     | 0.48              |
| 1:AA:1229:A:O3'   | 24:AX:30:G:H5''   | 2.14                     | 0.48              |
| 25:BA:2291:U:OP1  | 25:BA:2380:C:O2'  | 2.31                     | 0.48              |
| 25:BA:2311:A:N1   | 30:BG:47:LYS:NZ   | 2.61                     | 0.48              |
| 1:CA:8:A:N6       | 4:CD:209:ARG:HB2  | 2.28                     | 0.48              |
| 1:CA:66:G:H8      | 1:CA:66:G:OP1     | 1.95                     | 0.48              |
| 1:CA:442:C:H42    | 1:CA:492:G:H1     | 1.61                     | 0.48              |
| 1:CA:696:A:H8     | 1:CA:696:A:O5'    | 1.97                     | 0.48              |
| 1:CA:1456:G:O6    | 20:CT:54:LYS:HE3  | 2.13                     | 0.48              |
| 2:CB:158:LEU:HD12 | 2:CB:158:LEU:H    | 1.78                     | 0.48              |
| 25:DA:1416:G:O2'  | 25:DA:1417:C:OP2  | 2.21                     | 0.48              |
| 25:DA:1665:A:OP2  | 60:DA:4604:HOH:O  | 2.20                     | 0.48              |
| 25:DA:1927:A:H2'  | 25:DA:1928:A:C8   | 2.49                     | 0.48              |
| 25:DA:2469:A:O2'  | 36:DQ:56:ARG:HD2  | 2.13                     | 0.48              |
| 25:DA:2515:C:H2'  | 25:DA:2516:G:C8   | 2.48                     | 0.48              |
| 26:DB:3:C:H2'     | 26:DB:4:C:C6      | 2.48                     | 0.48              |
| 26:DB:46:A:H2'    | 26:DB:47:C:C6     | 2.49                     | 0.48              |
| 31:DH:76:VAL:HA   | 31:DH:79:VAL:HG22 | 1.96                     | 0.48              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 38:DS:23:ARG:NH2   | 38:DS:84:GLN:HG2   | 2.29                     | 0.48              |
| 40:DU:20:LEU:HB3   | 40:DU:39:LEU:HD11  | 1.96                     | 0.48              |
| 1:AA:405:U:OP2     | 4:AD:3:ARG:CZ      | 2.61                     | 0.48              |
| 6:AF:18:GLN:N      | 6:AF:18:GLN:CD     | 2.66                     | 0.48              |
| 12:AL:27:LEU:HD23  | 12:AL:30:ALA:O     | 2.14                     | 0.48              |
| 16:AP:54:GLU:O     | 16:AP:57:ARG:HB3   | 2.13                     | 0.48              |
| 17:AQ:6:LEU:HG     | 17:AQ:23:VAL:HG11  | 1.93                     | 0.48              |
| 19:AS:50:ALA:HB1   | 19:AS:57:HIS:HB3   | 1.95                     | 0.48              |
| 25:BA:27:G:N2      | 25:BA:512:G:H1'    | 2.29                     | 0.48              |
| 25:BA:247:G:H4'    | 25:BA:386:G:C5     | 2.49                     | 0.48              |
| 25:BA:2632:A:O2'   | 25:BA:2811:G:O2'   | 2.20                     | 0.48              |
| 26:BB:75:G:N2      | 45:BZ:87:ASP:OD1   | 2.44                     | 0.48              |
| 44:BY:92:ASN:HD22  | 44:BY:92:ASN:H     | 1.61                     | 0.48              |
| 1:CA:1004:A:H5'    | 1:CA:1024:G:N2     | 2.29                     | 0.48              |
| 1:CA:1246:C:H2'    | 1:CA:1247:U:H6     | 1.79                     | 0.48              |
| 1:CA:1353:G:H2'    | 1:CA:1354:C:H6     | 1.79                     | 0.48              |
| 10:CJ:47:PHE:HB2   | 10:CJ:63:PHE:HB2   | 1.94                     | 0.48              |
| 25:DA:271(K):U:H4' | 25:DA:271(L):U:OP2 | 2.13                     | 0.48              |
| 25:DA:1260:G:C6    | 25:DA:1261:C:C4    | 3.01                     | 0.48              |
| 25:DA:1541:G:OP2   | 25:DA:1542:A:O2'   | 2.30                     | 0.48              |
| 25:DA:2348:U:O4    | 25:DA:2382:G:N1    | 2.46                     | 0.48              |
| 25:DA:2533:A:OP1   | 25:DA:2665:A:O2'   | 2.31                     | 0.48              |
| 30:DG:171:ALA:O    | 30:DG:175:LEU:N    | 2.45                     | 0.48              |
| 35:DP:63:PRO:HG2   | 54:D8:25:MET:HB2   | 1.96                     | 0.48              |
| 1:AA:551:U:H2'     | 1:AA:552:U:C6      | 2.49                     | 0.48              |
| 1:AA:1252:A:H61    | 1:AA:1285:A:H61    | 1.61                     | 0.48              |
| 1:AA:1320:C:N4     | 19:AS:36:ARG:HB2   | 2.29                     | 0.48              |
| 2:AB:187:LEU:HD23  | 2:AB:201:ILE:O     | 2.13                     | 0.48              |
| 25:BA:772:C:H2'    | 25:BA:773:U:H6     | 1.79                     | 0.48              |
| 25:BA:1639:U:H4'   | 25:BA:2699:C:H4'   | 1.95                     | 0.48              |
| 25:BA:2116:G:N2    | 25:BA:2162:G:OP1   | 2.34                     | 0.48              |
| 25:BA:2492:U:H2'   | 25:BA:2493:U:C6    | 2.48                     | 0.48              |
| 1:CA:6:G:O2'       | 1:CA:7:G:H5'       | 2.14                     | 0.48              |
| 1:CA:105:G:H2'     | 1:CA:106:C:C6      | 2.49                     | 0.48              |
| 1:CA:131:C:H2'     | 1:CA:132:C:C6      | 2.49                     | 0.48              |
| 1:CA:382:A:H2'     | 1:CA:383:A:H8      | 1.79                     | 0.48              |
| 1:CA:447:G:O6      | 60:CA:4099:HOH:O   | 2.17                     | 0.48              |
| 2:CB:213:LEU:HD13  | 2:CB:214:ILE:HD13  | 1.95                     | 0.48              |
| 8:CH:37:ARG:HH21   | 8:CH:38:ILE:HD11   | 1.78                     | 0.48              |
| 12:CL:11:VAL:HG11  | 17:CQ:36:ILE:HG21  | 1.96                     | 0.48              |
| 25:DA:574:C:N3     | 28:DE:145:LYS:NZ   | 2.52                     | 0.48              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 25:DA:595:C:H42   | 25:DA:662:G:H1     | 1.60                     | 0.48              |
| 25:DA:1791:A:H3'  | 25:DA:1792:G:H8    | 1.79                     | 0.48              |
| 25:DA:1803:A:H4'  | 27:DD:259:THR:HG23 | 1.96                     | 0.48              |
| 35:DP:44:GLY:CA   | 35:DP:45:LEU:HB2   | 2.43                     | 0.48              |
| 1:AA:662:G:H2'    | 1:AA:663:A:H8      | 1.75                     | 0.47              |
| 1:AA:1200:C:OP1   | 60:AA:4099:HOH:O   | 2.20                     | 0.47              |
| 3:AC:81:GLY:O     | 3:AC:85:ARG:HG3    | 2.14                     | 0.47              |
| 20:AT:86:ARG:O    | 20:AT:90:GLN:NE2   | 2.47                     | 0.47              |
| 20:AT:87:LYS:O    | 20:AT:91:LEU:HG    | 2.13                     | 0.47              |
| 25:BA:103:A:H8    | 25:BA:103:A:O5'    | 1.97                     | 0.47              |
| 25:BA:569:U:O2'   | 25:BA:983:A:N1     | 2.33                     | 0.47              |
| 25:BA:1045:A:H1'  | 25:BA:1047:G:N3    | 2.29                     | 0.47              |
| 25:BA:1796:U:H2'  | 25:BA:1797:C:H6    | 1.77                     | 0.47              |
| 25:BA:1817:G:OP1  | 27:BD:88:ARG:NH2   | 2.47                     | 0.47              |
| 25:BA:1825:A:OP1  | 27:BD:249:PRO:HD3  | 2.14                     | 0.47              |
| 25:BA:2103:C:C2   | 25:BA:2187:G:C2    | 3.02                     | 0.47              |
| 34:BO:36:GLY:HA2  | 34:BO:106:LEU:HD23 | 1.96                     | 0.47              |
| 36:BQ:32:TYR:OH   | 36:BQ:111:GLU:OE1  | 2.22                     | 0.47              |
| 1:CA:193:C:H2'    | 1:CA:194:C:H6      | 1.78                     | 0.47              |
| 1:CA:397:A:H3'    | 1:CA:397:A:N3      | 2.29                     | 0.47              |
| 1:CA:1323:G:H4'   | 1:CA:1363:C:C2     | 2.49                     | 0.47              |
| 5:CE:34:VAL:O     | 5:CE:42:GLY:N      | 2.45                     | 0.47              |
| 13:CM:10:PRO:HG2  | 13:CM:21:TYR:HD2   | 1.79                     | 0.47              |
| 15:CO:9:GLN:HA    | 15:CO:12:ILE:HD12  | 1.95                     | 0.47              |
| 25:DA:289:A:H2'   | 25:DA:290:G:O4'    | 2.14                     | 0.47              |
| 25:DA:317:G:H2'   | 25:DA:318:C:O4'    | 2.14                     | 0.47              |
| 25:DA:390:A:H4'   | 25:DA:391:G:H5'    | 1.96                     | 0.47              |
| 25:DA:686:G:N2    | 25:DA:788:A:H61    | 2.12                     | 0.47              |
| 25:DA:1012:U:C5   | 33:DN:28:THR:HG21  | 2.47                     | 0.47              |
| 25:DA:1638:C:H5'' | 25:DA:2710:C:O2'   | 2.14                     | 0.47              |
| 30:DG:179:PRO:HB2 | 50:D4:42:PHE:CE1   | 2.48                     | 0.47              |
| 36:DQ:138:ASP:OD2 | 45:DZ:81:ARG:NH1   | 2.47                     | 0.47              |
| 46:D0:19:LYS:HE2  | 46:D0:19:LYS:HB2   | 1.65                     | 0.47              |
| 1:AA:35:G:O2'     | 12:AL:118:SER:O    | 2.24                     | 0.47              |
| 1:AA:339:C:H2'    | 1:AA:340:U:C6      | 2.50                     | 0.47              |
| 1:AA:429:U:H3'    | 4:AD:9:CYS:SG      | 2.54                     | 0.47              |
| 1:AA:651:C:N4     | 1:AA:752:G:O2'     | 2.47                     | 0.47              |
| 1:AA:690:G:C6     | 1:AA:691:G:C6      | 3.02                     | 0.47              |
| 1:AA:1431:C:H2'   | 1:AA:1432:G:O4'    | 2.14                     | 0.47              |
| 1:AA:1456:G:O6    | 20:AT:54:LYS:NZ    | 2.46                     | 0.47              |
| 2:AB:207:ALA:O    | 2:AB:211:ILE:HG13  | 2.14                     | 0.47              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 11:AK:48:ILE:O    | 11:AK:50:TYR:N     | 2.47                     | 0.47              |
| 25:BA:1019:U:O2'  | 25:BA:1021:A:H2    | 1.96                     | 0.47              |
| 26:BB:43:C:OP1    | 50:B4:6:HIS:NE2    | 2.40                     | 0.47              |
| 1:CA:114:U:H2'    | 1:CA:115:G:C8      | 2.49                     | 0.47              |
| 1:CA:926:G:H22    | 22:CV:16:A:P       | 2.36                     | 0.47              |
| 1:CA:1304:G:C6    | 1:CA:1305:G:N1     | 2.82                     | 0.47              |
| 1:CA:1509:C:H2'   | 1:CA:1510:U:O4'    | 2.13                     | 0.47              |
| 14:CN:3:ARG:O     | 14:CN:7:ILE:HG23   | 2.14                     | 0.47              |
| 20:CT:50:GLU:HG3  | 20:CT:100:ILE:HG23 | 1.96                     | 0.47              |
| 25:DA:1188:U:C4'  | 41:DV:79:VAL:HG22  | 2.43                     | 0.47              |
| 25:DA:1481:U:H3   | 25:DA:1510:G:H1    | 1.61                     | 0.47              |
| 25:DA:1670:C:O2   | 28:DE:129:HIS:NE2  | 2.40                     | 0.47              |
| 25:DA:1959:G:OP2  | 60:DA:4575:HOH:O   | 2.20                     | 0.47              |
| 25:DA:2296:U:OP2  | 38:DS:6:ALA:HB2    | 2.14                     | 0.47              |
| 25:DA:2468:G:OP1  | 36:DQ:119:ARG:NH2  | 2.45                     | 0.47              |
| 25:DA:2572:A:N7   | 28:DE:144:ARG:HD2  | 2.28                     | 0.47              |
| 25:DA:2710:C:H2'  | 25:DA:2711:A:C8    | 2.50                     | 0.47              |
| 26:DB:24:G:N2     | 26:DB:27:C:H42     | 2.11                     | 0.47              |
| 29:DF:183:VAL:O   | 29:DF:187:VAL:HG23 | 2.14                     | 0.47              |
| 46:D0:82:ARG:HA   | 46:D0:83:PRO:HD3   | 1.71                     | 0.47              |
| 55:D9:4:ARG:HD3   | 55:D9:6:SER:O      | 2.14                     | 0.47              |
| 1:AA:1179:A:H2'   | 1:AA:1180:A:O4'    | 2.13                     | 0.47              |
| 4:AD:107:ARG:HH22 | 4:AD:194:LEU:HD21  | 1.80                     | 0.47              |
| 4:AD:173:TRP:HA   | 4:AD:187:ARG:NH2   | 2.28                     | 0.47              |
| 7:AG:16:LEU:HD11  | 9:AI:45:ALA:HB2    | 1.96                     | 0.47              |
| 25:BA:1047:G:H2'  | 25:BA:1110:G:H1    | 1.79                     | 0.47              |
| 25:BA:1400:G:H2'  | 25:BA:1401:G:C8    | 2.49                     | 0.47              |
| 34:BO:77:ILE:HD12 | 39:BT:74:ARG:HD3   | 1.97                     | 0.47              |
| 45:BZ:137:ILE:HA  | 45:BZ:156:LYS:NZ   | 2.28                     | 0.47              |
| 1:CA:643:C:H2'    | 1:CA:644:G:H8      | 1.78                     | 0.47              |
| 1:CA:1057:G:H2'   | 1:CA:1058:G:O4'    | 2.13                     | 0.47              |
| 1:CA:1427:U:H2'   | 1:CA:1428:A:C8     | 2.48                     | 0.47              |
| 6:CF:97:PHE:HD2   | 18:CR:31:LEU:HD23  | 1.79                     | 0.47              |
| 8:CH:28:ALA:HB3   | 8:CH:57:PRO:HB2    | 1.96                     | 0.47              |
| 25:DA:1224:C:O2'  | 41:DV:86:GLY:N     | 2.42                     | 0.47              |
| 25:DA:1292:U:H2'  | 25:DA:1293:C:C6    | 2.49                     | 0.47              |
| 25:DA:2137:C:C2   | 25:DA:2155:G:C6    | 3.02                     | 0.47              |
| 29:DF:24:LEU:HD23 | 29:DF:115:ALA:HA   | 1.95                     | 0.47              |
| 30:DG:12:TYR:HA   | 30:DG:16:ARG:HG3   | 1.96                     | 0.47              |
| 50:D4:57:GLU:HA   | 50:D4:58:ARG:HA    | 1.70                     | 0.47              |
| 1:AA:130:A:C8     | 17:AQ:63:ARG:HB2   | 2.49                     | 0.47              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:974:A:OP2    | 14:AN:41:ARG:NH1  | 2.46                     | 0.47              |
| 2:AB:184:VAL:HG12 | 2:AB:197:VAL:HG13 | 1.96                     | 0.47              |
| 2:AB:189:ASP:OD1  | 2:AB:189:ASP:N    | 2.31                     | 0.47              |
| 5:AE:113:ALA:HB3  | 5:AE:115:VAL:HG23 | 1.96                     | 0.47              |
| 6:AF:2:ARG:NE     | 6:AF:69:GLU:HG2   | 2.29                     | 0.47              |
| 6:AF:7:ASN:HD21   | 18:AR:34:TYR:HE1  | 1.62                     | 0.47              |
| 7:AG:20:ASP:OD2   | 7:AG:63:LYS:NZ    | 2.37                     | 0.47              |
| 19:AS:3:ARG:NH1   | 19:AS:8:GLY:O     | 2.47                     | 0.47              |
| 25:BA:278:A:H2'   | 25:BA:279:C:C5    | 2.49                     | 0.47              |
| 25:BA:971:C:H2'   | 25:BA:972:G:O4'   | 2.14                     | 0.47              |
| 25:BA:1178:C:H2'  | 25:BA:1179:C:H6   | 1.79                     | 0.47              |
| 25:BA:1403:C:C5'  | 25:BA:1471:A:H1'  | 2.44                     | 0.47              |
| 25:BA:2144:U:H2'  | 25:BA:2146:C:C5   | 2.49                     | 0.47              |
| 25:BA:2287:A:N6   | 25:BA:2344:U:H3   | 2.04                     | 0.47              |
| 33:BN:15:LEU:HD12 | 33:BN:137:LYS:HG2 | 1.97                     | 0.47              |
| 36:BQ:12:GLN:HG2  | 36:BQ:73:PRO:HD2  | 1.95                     | 0.47              |
| 1:CA:56:U:H2'     | 1:CA:57:G:H8      | 1.80                     | 0.47              |
| 1:CA:1004:A:C6    | 1:CA:1037:C:C2    | 3.02                     | 0.47              |
| 1:CA:1329:A:OP2   | 21:CU:7:ARG:NH2   | 2.47                     | 0.47              |
| 1:CA:1347:G:N2    | 1:CA:1373:G:H2'   | 2.29                     | 0.47              |
| 2:CB:172:ILE:HG22 | 2:CB:176:GLU:HG3  | 1.96                     | 0.47              |
| 6:CF:14:LEU:HD13  | 6:CF:19:LEU:HA    | 1.96                     | 0.47              |
| 9:CI:55:ALA:HA    | 9:CI:58:HIS:CD2   | 2.49                     | 0.47              |
| 25:DA:235:U:H2'   | 25:DA:236:C:H6    | 1.79                     | 0.47              |
| 25:DA:585:G:H2'   | 25:DA:1251:C:H42  | 1.79                     | 0.47              |
| 25:DA:1300:U:H4'  | 25:DA:1301:A:C5'  | 2.43                     | 0.47              |
| 25:DA:1613:G:C2   | 25:DA:1619:G:C5   | 3.02                     | 0.47              |
| 25:DA:2171:A:H1'  | 25:DA:2172:U:C2   | 2.49                     | 0.47              |
| 25:DA:2371:G:C2   | 25:DA:2372:G:C8   | 3.03                     | 0.47              |
| 29:DF:53:THR:HG22 | 29:DF:56:GLU:HG3  | 1.95                     | 0.47              |
| 33:DN:36:GLY:HA2  | 33:DN:38:HIS:CE1  | 2.49                     | 0.47              |
| 35:DP:121:LYS:HB3 | 35:DP:123:LEU:HG  | 1.96                     | 0.47              |
| 36:DQ:29:PHE:HB2  | 36:DQ:105:GLU:OE2 | 2.14                     | 0.47              |
| 38:DS:74:ALA:HB3  | 38:DS:108:GLY:HA3 | 1.95                     | 0.47              |
| 4:AD:201:GLN:HE22 | 4:AD:204:ILE:HD12 | 1.79                     | 0.47              |
| 15:AO:84:LYS:O    | 15:AO:84:LYS:HD3  | 2.14                     | 0.47              |
| 25:BA:189:G:OP2   | 47:B1:39:LYS:NZ   | 2.42                     | 0.47              |
| 25:BA:694:U:OP1   | 27:BD:59:LYS:NZ   | 2.42                     | 0.47              |
| 25:BA:747:U:O2    | 25:BA:2014:A:H1'  | 2.14                     | 0.47              |
| 25:BA:900:A:H2'   | 25:BA:901:A:O4'   | 2.14                     | 0.47              |
| 25:BA:1050:A:H2'  | 25:BA:1051:G:C8   | 2.49                     | 0.47              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:BA:1173:G:HO2'  | 25:BA:1174:A:C5'   | 2.27                     | 0.47              |
| 25:BA:1913:A:H4'   | 25:BA:1914:C:C5'   | 2.45                     | 0.47              |
| 25:BA:2324:C:H5''  | 25:BA:2325:G:H5'   | 1.96                     | 0.47              |
| 25:BA:2660:A:H2'   | 25:BA:2661:G:O4'   | 2.14                     | 0.47              |
| 25:BA:2815:C:H2'   | 25:BA:2816:C:C6    | 2.49                     | 0.47              |
| 26:BB:24:G:N7      | 26:BB:56:G:H2'     | 2.29                     | 0.47              |
| 30:BG:18:GLU:HG2   | 30:BG:175:LEU:HD21 | 1.96                     | 0.47              |
| 31:BH:98:LEU:HD13  | 31:BH:125:VAL:HG23 | 1.97                     | 0.47              |
| 36:BQ:31:ASP:N     | 36:BQ:106:VAL:O    | 2.40                     | 0.47              |
| 1:CA:143:A:H5''    | 1:CA:144:G:H5'     | 1.95                     | 0.47              |
| 1:CA:878:G:OP1     | 8:CH:88:LYS:HB3    | 2.14                     | 0.47              |
| 2:CB:73:THR:OG1    | 2:CB:95:GLN:O      | 2.12                     | 0.47              |
| 3:CC:20:SER:HB2    | 3:CC:40:ARG:NH1    | 2.28                     | 0.47              |
| 6:CF:97:PHE:CZ     | 18:CR:61:LYS:HE3   | 2.49                     | 0.47              |
| 13:CM:14:ARG:HG3   | 13:CM:44:ARG:NH1   | 2.29                     | 0.47              |
| 13:CM:81:LEU:HD21  | 13:CM:88:ARG:NH2   | 2.29                     | 0.47              |
| 14:CN:22:THR:HB    | 14:CN:33:VAL:HG21  | 1.96                     | 0.47              |
| 19:CS:40:ILE:HA    | 19:CS:44:MET:SD    | 2.54                     | 0.47              |
| 25:DA:58:G:O2'     | 25:DA:73:A:N1      | 2.45                     | 0.47              |
| 25:DA:208:C:H2'    | 25:DA:209:C:C6     | 2.49                     | 0.47              |
| 25:DA:311:A:C6     | 25:DA:328:U:C4     | 3.02                     | 0.47              |
| 25:DA:652(T):C:H2' | 25:DA:652(U):G:C8  | 2.50                     | 0.47              |
| 25:DA:1160:G:N2    | 41:DV:10:LYS:HZ2   | 2.13                     | 0.47              |
| 25:DA:2154:G:H2'   | 25:DA:2154:G:N3    | 2.29                     | 0.47              |
| 25:DA:2156:G:N7    | 25:DA:2157:G:N1    | 2.62                     | 0.47              |
| 26:DB:29:A:P       | 38:DS:31:SER:HB2   | 2.54                     | 0.47              |
| 28:DE:170:LEU:HB3  | 28:DE:184:VAL:CG2  | 2.45                     | 0.47              |
| 40:DU:82:GLY:O     | 40:DU:86:ALA:N     | 2.42                     | 0.47              |
| 45:DZ:24:LEU:HD12  | 45:DZ:25:PRO:HD2   | 1.96                     | 0.47              |
| 55:D9:3:VAL:HA     | 55:D9:35:ARG:O     | 2.15                     | 0.47              |
| 1:AA:189(D):C:O2   | 1:AA:189(H):G:N1   | 2.48                     | 0.47              |
| 1:AA:376:G:O2'     | 16:AP:5:ARG:NH2    | 2.47                     | 0.47              |
| 1:AA:1183:A:HO2'   | 1:AA:1184:G:P      | 2.35                     | 0.47              |
| 3:AC:123:GLN:HB3   | 3:AC:128:PHE:HD2   | 1.80                     | 0.47              |
| 7:AG:15:ASP:OD1    | 7:AG:20:ASP:N      | 2.46                     | 0.47              |
| 8:AH:87:SER:HA     | 8:AH:93:VAL:HG23   | 1.95                     | 0.47              |
| 25:BA:279:C:H2'    | 25:BA:280:C:H5'    | 1.97                     | 0.47              |
| 25:BA:652(C):G:N2  | 25:BA:653:A:H1'    | 2.29                     | 0.47              |
| 25:BA:2439:A:H5'   | 25:BA:2439:A:C8    | 2.49                     | 0.47              |
| 25:BA:2882:A:OP1   | 37:BR:96:ARG:NE    | 2.40                     | 0.47              |
| 27:BD:13:ARG:HD2   | 27:BD:13:ARG:HA    | 1.67                     | 0.47              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 27:BD:162:SER:HB3 | 27:BD:195:ALA:HB2  | 1.96                     | 0.47              |
| 41:BV:72:VAL:HG13 | 41:BV:85:LYS:HB3   | 1.97                     | 0.47              |
| 2:CB:158:LEU:HA   | 2:CB:159:PRO:HD3   | 1.80                     | 0.47              |
| 25:DA:582:G:H2'   | 25:DA:583:G:C8     | 2.50                     | 0.47              |
| 25:DA:971:C:OP1   | 25:DA:989:G:N1     | 2.33                     | 0.47              |
| 25:DA:2103:C:H2'  | 25:DA:2104:G:H5'   | 1.97                     | 0.47              |
| 25:DA:2615:U:C2   | 51:D5:7:PRO:HA     | 2.49                     | 0.47              |
| 29:DF:40:GLN:NE2  | 29:DF:184:TYR:H    | 2.12                     | 0.47              |
| 54:D8:54:GLU:O    | 54:D8:58:ILE:HG13  | 2.15                     | 0.47              |
| 1:AA:38:G:O2'     | 1:AA:39:G:H5''     | 2.15                     | 0.47              |
| 1:AA:78:G:N2      | 1:AA:91:C:C2       | 2.83                     | 0.47              |
| 1:AA:134:A:H61    | 16:AP:25:ARG:NH1   | 2.13                     | 0.47              |
| 1:AA:171:A:H2'    | 1:AA:172:A:C8      | 2.49                     | 0.47              |
| 1:AA:266:G:H5''   | 1:AA:268:C:H41     | 1.79                     | 0.47              |
| 1:AA:542:G:P      | 4:AD:10:ARG:HH22   | 2.38                     | 0.47              |
| 1:AA:975:A:N6     | 1:AA:1367:C:O4'    | 2.48                     | 0.47              |
| 1:AA:1103:C:H2'   | 1:AA:1104:G:O4'    | 2.14                     | 0.47              |
| 2:AB:100:GLY:N    | 2:AB:176:GLU:OE2   | 2.30                     | 0.47              |
| 2:AB:211:ILE:O    | 2:AB:215:LEU:HB2   | 2.14                     | 0.47              |
| 3:AC:47:LEU:HD13  | 3:AC:68:VAL:HG11   | 1.97                     | 0.47              |
| 4:AD:178:VAL:C    | 4:AD:180:GLY:H     | 2.18                     | 0.47              |
| 9:AI:49:PRO:HG2   | 9:AI:81:ILE:HG23   | 1.96                     | 0.47              |
| 9:AI:53:VAL:HG11  | 9:AI:92:TYR:CE1    | 2.50                     | 0.47              |
| 9:AI:118:LYS:HG3  | 9:AI:121:ARG:HB3   | 1.97                     | 0.47              |
| 25:BA:7:G:H5''    | 33:BN:121:LYS:NZ   | 2.28                     | 0.47              |
| 25:BA:444:C:H4'   | 29:BF:49:ALA:HB2   | 1.96                     | 0.47              |
| 25:BA:589:C:H2'   | 25:BA:590:A:C8     | 2.50                     | 0.47              |
| 25:BA:2066:C:C2'  | 25:BA:2067:G:H5'   | 2.45                     | 0.47              |
| 25:BA:2162:G:H5'' | 25:BA:2172:U:H2'   | 1.96                     | 0.47              |
| 25:BA:2531:A:N7   | 31:BH:175:LYS:HD2  | 2.30                     | 0.47              |
| 26:BB:1:U:O2'     | 26:BB:2:C:OP1      | 2.27                     | 0.47              |
| 28:BE:25:VAL:HG22 | 28:BE:183:LEU:HD11 | 1.96                     | 0.47              |
| 30:BG:145:THR:HB  | 30:BG:148:MET:HG3  | 1.97                     | 0.47              |
| 31:BH:3:ARG:HD3   | 31:BH:54:ARG:HH12  | 1.79                     | 0.47              |
| 32:BI:123:LEU:HA  | 32:BI:144:VAL:HG23 | 1.97                     | 0.47              |
| 36:BQ:21:THR:OG1  | 36:BQ:99:PRO:O     | 2.32                     | 0.47              |
| 44:BY:92:ASN:HB2  | 44:BY:94:LYS:N     | 2.28                     | 0.47              |
| 45:BZ:72:ARG:HG2  | 45:BZ:72:ARG:HH11  | 1.80                     | 0.47              |
| 1:CA:176:C:H2'    | 1:CA:177:C:H6      | 1.79                     | 0.47              |
| 1:CA:438:G:N1     | 1:CA:495:A:OP2     | 2.36                     | 0.47              |
| 1:CA:503:C:C2'    | 1:CA:504:C:H5'     | 2.44                     | 0.47              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:CA:1264:C:O2     | 1:CA:1272:G:N2    | 2.48                     | 0.47              |
| 1:CA:1367:C:HO2'   | 10:CJ:48:THR:HG1  | 1.58                     | 0.47              |
| 3:CC:32:LEU:O      | 3:CC:36:ASP:HB2   | 2.13                     | 0.47              |
| 3:CC:179:ARG:O     | 3:CC:206:GLU:HB3  | 2.15                     | 0.47              |
| 4:CD:19:LEU:HD13   | 4:CD:19:LEU:HA    | 1.72                     | 0.47              |
| 5:CE:82:VAL:HG21   | 5:CE:138:ALA:HA   | 1.96                     | 0.47              |
| 5:CE:139:LEU:HA    | 5:CE:142:LEU:HD12 | 1.97                     | 0.47              |
| 17:CQ:59:ILE:HG22  | 17:CQ:73:VAL:HA   | 1.96                     | 0.47              |
| 24:CX:10:G:N2      | 24:CX:26:G:H1'    | 2.30                     | 0.47              |
| 25:DA:442:G:H4'    | 29:DF:46:ARG:HG3  | 1.96                     | 0.47              |
| 25:DA:450:G:P      | 25:DA:1248:G:H22  | 2.38                     | 0.47              |
| 25:DA:1188:U:H4'   | 41:DV:79:VAL:HG22 | 1.96                     | 0.47              |
| 25:DA:1226:A:OP1   | 41:DV:84:LYS:NZ   | 2.21                     | 0.47              |
| 25:DA:1446:C:O2    | 25:DA:1545:A:O2'  | 2.32                     | 0.47              |
| 25:DA:1496:A:N3    | 25:DA:1577:C:O2'  | 2.41                     | 0.47              |
| 26:DB:2:C:O2'      | 26:DB:3:C:H5'     | 2.14                     | 0.47              |
| 26:DB:110:G:H2'    | 26:DB:111:G:H8    | 1.80                     | 0.47              |
| 27:DD:111:LEU:HD22 | 27:DD:115:GLN:NE2 | 2.30                     | 0.47              |
| 28:DE:143:ASN:HD22 | 28:DE:147:PRO:HD3 | 1.80                     | 0.47              |
| 28:DE:181:LEU:HD11 | 39:DT:6:LEU:HG    | 1.97                     | 0.47              |
| 29:DF:116:ASP:O    | 29:DF:120:GLU:HG2 | 2.15                     | 0.47              |
| 30:DG:138:GLN:HB3  | 30:DG:153:ARG:O   | 2.15                     | 0.47              |
| 32:DI:66:GLU:OE2   | 32:DI:69:LYS:HD3  | 2.13                     | 0.47              |
| 33:DN:67:LEU:O     | 33:DN:88:GLU:HG3  | 2.15                     | 0.47              |
| 36:DQ:85:LYS:HG2   | 46:D0:7:LEU:HB3   | 1.96                     | 0.47              |
| 54:D8:10:ALA:HB3   | 54:D8:62:LEU:HD21 | 1.97                     | 0.47              |
| 1:AA:96:U:H2'      | 1:AA:97:G:C8      | 2.50                     | 0.47              |
| 1:AA:431:A:H2'     | 1:AA:432:A:O4'    | 2.15                     | 0.47              |
| 2:AB:210:SER:O     | 2:AB:214:ILE:HG12 | 2.15                     | 0.47              |
| 4:AD:155:LEU:CD2   | 4:AD:157:LEU:H    | 2.28                     | 0.47              |
| 7:AG:26:PHE:O      | 7:AG:30:ILE:HG13  | 2.15                     | 0.47              |
| 14:AN:4:LYS:HA     | 14:AN:7:ILE:HG22  | 1.97                     | 0.47              |
| 25:BA:526:A:N3     | 25:BA:2044:C:H1'  | 2.30                     | 0.47              |
| 25:BA:657:U:H2'    | 25:BA:658:C:H6    | 1.80                     | 0.47              |
| 25:BA:1032:A:H2    | 25:BA:1122:G:H22  | 1.63                     | 0.47              |
| 25:BA:1475:G:H2'   | 25:BA:1476:C:C6   | 2.50                     | 0.47              |
| 25:BA:2729:G:H2'   | 25:BA:2730:C:O4'  | 2.14                     | 0.47              |
| 36:BQ:23:GLY:O     | 36:BQ:101:ARG:NH1 | 2.48                     | 0.47              |
| 50:B4:40:HIS:CE1   | 50:B4:42:PHE:HB3  | 2.50                     | 0.47              |
| 52:B6:40:CYS:HA    | 52:B6:41:PRO:HD3  | 1.72                     | 0.47              |
| 1:CA:444:C:H2'     | 1:CA:445:G:C8     | 2.50                     | 0.47              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:CA:728:A:OP1    | 15:CO:54:ARG:NH1  | 2.48                     | 0.47              |
| 1:CA:1028:C:O2    | 1:CA:1033:G:N1    | 2.48                     | 0.47              |
| 1:CA:1187:G:H4'   | 9:CI:111:ARG:HH11 | 1.80                     | 0.47              |
| 1:CA:1330:U:H2'   | 1:CA:1331:G:H5'   | 1.97                     | 0.47              |
| 15:CO:5:LYS:O     | 15:CO:9:GLN:HG2   | 2.15                     | 0.47              |
| 25:DA:1027:A:N6   | 25:DA:1126:A:C4   | 2.83                     | 0.47              |
| 25:DA:1608:A:H1'  | 25:DA:1610:A:OP2  | 2.14                     | 0.47              |
| 25:DA:1688:U:H2'  | 25:DA:1698:A:N6   | 2.30                     | 0.47              |
| 25:DA:2820:A:O2'  | 25:DA:2821:A:OP1  | 2.30                     | 0.47              |
| 32:DI:72:LEU:HA   | 32:DI:75:LEU:HD23 | 1.97                     | 0.47              |
| 47:D1:23:LYS:HB3  | 47:D1:29:GLY:HA3  | 1.97                     | 0.47              |
| 47:D1:83:GLU:HA   | 47:D1:84:GLY:HA2  | 1.65                     | 0.47              |
| 1:AA:539:A:H2'    | 1:AA:540:G:C8     | 2.50                     | 0.47              |
| 1:AA:636:U:H2'    | 1:AA:637:G:C8     | 2.50                     | 0.47              |
| 1:AA:1025:U:C2    | 1:AA:1036:G:O6    | 2.68                     | 0.47              |
| 25:BA:570:G:H2'   | 25:BA:2030:A:C5   | 2.50                     | 0.47              |
| 25:BA:576:U:O5'   | 25:BA:576:U:H6    | 1.98                     | 0.47              |
| 25:BA:829:A:N7    | 25:BA:2248:C:H5'  | 2.30                     | 0.47              |
| 25:BA:889:C:H2'   | 25:BA:889:C:OP2   | 2.15                     | 0.47              |
| 28:BE:34:VAL:HG21 | 28:BE:78:LEU:HD11 | 1.96                     | 0.47              |
| 44:BY:5:MET:HG2   | 44:BY:30:VAL:HG11 | 1.97                     | 0.47              |
| 1:CA:1252:A:H61   | 1:CA:1285:A:H61   | 1.61                     | 0.47              |
| 2:CB:19:HIS:CE1   | 2:CB:206:ASP:HB2  | 2.50                     | 0.47              |
| 11:CK:27:ASN:OD1  | 11:CK:28:THR:N    | 2.47                     | 0.47              |
| 25:DA:385:C:O2    | 35:DP:71:VAL:HG21 | 2.14                     | 0.47              |
| 25:DA:1512:U:H2'  | 25:DA:1513:C:C6   | 2.50                     | 0.47              |
| 25:DA:1537:G:H2'  | 25:DA:1538:G:C8   | 2.47                     | 0.47              |
| 25:DA:2057:A:H2'  | 25:DA:2058:A:C8   | 2.50                     | 0.47              |
| 25:DA:2156:G:H8   | 25:DA:2156:G:O5'  | 1.98                     | 0.47              |
| 32:DI:12:LEU:HD22 | 32:DI:19:VAL:HG21 | 1.97                     | 0.47              |
| 1:AA:580:U:H5''   | 15:AO:58:MET:HG2  | 1.96                     | 0.47              |
| 1:AA:868:C:H2'    | 1:AA:869:G:O4'    | 2.14                     | 0.47              |
| 1:AA:1005:A:N3    | 1:AA:1036:G:N2    | 2.62                     | 0.47              |
| 2:AB:231:GLU:HB2  | 2:AB:232:PRO:CD   | 2.38                     | 0.47              |
| 19:AS:19:VAL:HG21 | 19:AS:44:MET:HG2  | 1.96                     | 0.47              |
| 25:BA:218:A:C2    | 25:BA:235:U:H4'   | 2.50                     | 0.47              |
| 25:BA:1607:C:H5'' | 25:BA:1608:A:H5'  | 1.97                     | 0.47              |
| 25:BA:1643:G:H2'  | 25:BA:1644:C:O4'  | 2.14                     | 0.47              |
| 25:BA:2291:U:H2'  | 25:BA:2292:C:C6   | 2.50                     | 0.47              |
| 25:BA:2740:A:H2'  | 25:BA:2741:A:C8   | 2.50                     | 0.47              |
| 34:BO:4:PRO:O     | 34:BO:5:GLN:HB2   | 2.15                     | 0.47              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 49:B3:19:GLN:OE1   | 49:B3:52:HIS:NE2  | 2.39                     | 0.47              |
| 52:B6:39:TYR:HA    | 52:B6:46:HIS:HA   | 1.97                     | 0.47              |
| 3:CC:82:GLU:HG2    | 3:CC:85:ARG:NH2   | 2.28                     | 0.47              |
| 5:CE:94:ALA:HB2    | 5:CE:119:LEU:HG   | 1.98                     | 0.47              |
| 25:DA:335:C:H4'    | 44:DY:73:ARG:HD3  | 1.97                     | 0.47              |
| 25:DA:571:A:N6     | 25:DA:2499:C:O3'  | 2.48                     | 0.47              |
| 25:DA:1983:C:H2'   | 25:DA:1984:G:H5'' | 1.96                     | 0.47              |
| 25:DA:2138:C:H42   | 25:DA:2153:G:H1   | 1.62                     | 0.47              |
| 30:DG:82:LEU:HA    | 30:DG:86:MET:SD   | 2.55                     | 0.47              |
| 33:DN:91:LEU:HG    | 33:DN:98:VAL:HG21 | 1.97                     | 0.47              |
| 45:DZ:54:HIS:HB3   | 45:DZ:101:PRO:HD3 | 1.97                     | 0.47              |
| 1:AA:438:G:N1      | 1:AA:495:A:OP2    | 2.27                     | 0.46              |
| 1:AA:798:G:OP1     | 11:AK:122:LYS:NZ  | 2.46                     | 0.46              |
| 9:AI:49:PRO:HG3    | 9:AI:101:PHE:CD2  | 2.50                     | 0.46              |
| 13:AM:83:ASP:HA    | 25:BA:888:C:O2    | 2.15                     | 0.46              |
| 25:BA:271(L):U:OP1 | 32:BI:50:ARG:NH1  | 2.42                     | 0.46              |
| 25:BA:1429:G:H2'   | 25:BA:1430:C:C6   | 2.51                     | 0.46              |
| 25:BA:1641:A:H2'   | 25:BA:1642:G:O4'  | 2.16                     | 0.46              |
| 25:BA:2850:A:OP2   | 25:BA:2866:U:H5   | 1.98                     | 0.46              |
| 28:BE:144:ARG:HB3  | 28:BE:145:LYS:H   | 1.50                     | 0.46              |
| 31:BH:149:ARG:NH1  | 31:BH:167:GLU:OE2 | 2.42                     | 0.46              |
| 48:B2:36:ARG:O     | 48:B2:40:SER:N    | 2.40                     | 0.46              |
| 1:CA:472:A:H5''    | 16:CP:80:PHE:HB3  | 1.97                     | 0.46              |
| 1:CA:952:U:H2'     | 1:CA:953:G:C8     | 2.50                     | 0.46              |
| 1:CA:1028:C:C2     | 1:CA:1033:G:N1    | 2.83                     | 0.46              |
| 1:CA:1122:U:C4     | 1:CA:1123:A:N7    | 2.84                     | 0.46              |
| 1:CA:1144:G:N2     | 1:CA:1146:A:H62   | 2.13                     | 0.46              |
| 1:CA:1468:A:H2'    | 1:CA:1469:G:O4'   | 2.15                     | 0.46              |
| 2:CB:207:ALA:HB3   | 2:CB:210:SER:HB2  | 1.97                     | 0.46              |
| 4:CD:150:GLU:OE2   | 4:CD:151:LYS:N    | 2.49                     | 0.46              |
| 13:CM:16:ASP:HB3   | 13:CM:34:LEU:HD11 | 1.96                     | 0.46              |
| 13:CM:90:LEU:HA    | 13:CM:93:ARG:HG3  | 1.98                     | 0.46              |
| 21:CU:7:ARG:NH1    | 21:CU:21:TYR:OH   | 2.48                     | 0.46              |
| 25:DA:479:A:H1'    | 25:DA:481:G:H5''  | 1.96                     | 0.46              |
| 25:DA:706:A:OP1    | 27:DD:7:LYS:NZ    | 2.23                     | 0.46              |
| 25:DA:839:U:H2'    | 25:DA:840:C:H6    | 1.80                     | 0.46              |
| 25:DA:1493:C:C5    | 25:DA:2206:G:H2'  | 2.50                     | 0.46              |
| 25:DA:2206:G:H3'   | 25:DA:2207:G:H8   | 1.78                     | 0.46              |
| 25:DA:2302:G:C2'   | 25:DA:2303:G:H5'  | 2.44                     | 0.46              |
| 25:DA:2769:C:H2'   | 25:DA:2770:G:O4'  | 2.15                     | 0.46              |
| 25:DA:2838:G:C6    | 25:DA:2839:G:C5   | 3.03                     | 0.46              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 26:DB:50:G:OP2     | 38:DS:62:LYS:HB2   | 2.14                     | 0.46              |
| 29:DF:37:VAL:O     | 29:DF:41:LEU:HG    | 2.15                     | 0.46              |
| 32:DI:40:THR:HG23  | 32:DI:43:ASN:HD21  | 1.79                     | 0.46              |
| 45:DZ:121:HIS:HB3  | 45:DZ:123:ASP:O    | 2.15                     | 0.46              |
| 1:AA:643:C:H2'     | 1:AA:644:G:H8      | 1.79                     | 0.46              |
| 1:AA:737:A:OP2     | 6:AF:92:LYS:NZ     | 2.40                     | 0.46              |
| 1:AA:1097:C:O2     | 1:AA:1169:A:H2     | 1.98                     | 0.46              |
| 2:AB:101:MET:HA    | 2:AB:108:ILE:HD12  | 1.95                     | 0.46              |
| 4:AD:102:ASP:OD1   | 4:AD:103:ASN:N     | 2.48                     | 0.46              |
| 20:AT:64:ASP:OD2   | 20:AT:81:LYS:NZ    | 2.43                     | 0.46              |
| 25:BA:2179:C:H2'   | 25:BA:2180:U:C6    | 2.49                     | 0.46              |
| 25:BA:2335:A:O2'   | 25:BA:2336:A:OP2   | 2.26                     | 0.46              |
| 25:BA:2467:C:H4'   | 36:BQ:123:HIS:CD2  | 2.51                     | 0.46              |
| 31:BH:69:ARG:HG3   | 31:BH:70:THR:N     | 2.30                     | 0.46              |
| 39:BT:33:LYS:HB3   | 39:BT:82:LEU:HD23  | 1.96                     | 0.46              |
| 39:BT:53:ARG:NH1   | 39:BT:60:THR:OG1   | 2.48                     | 0.46              |
| 39:BT:112:ARG:HG3  | 39:BT:115:ARG:HH21 | 1.80                     | 0.46              |
| 45:BZ:145:GLU:O    | 45:BZ:148:ASP:N    | 2.48                     | 0.46              |
| 1:CA:598:U:H4'     | 8:CH:94:TYR:CD2    | 2.50                     | 0.46              |
| 1:CA:664:G:H22     | 1:CA:741:G:H1      | 1.62                     | 0.46              |
| 1:CA:877:C:O2      | 8:CH:3:THR:OG1     | 2.32                     | 0.46              |
| 1:CA:1344:C:H5'    | 9:CI:121:ARG:HA    | 1.98                     | 0.46              |
| 1:CA:1431:C:H42    | 1:CA:1469:G:H1     | 1.63                     | 0.46              |
| 5:CE:71:LEU:HD11   | 5:CE:115:VAL:HG22  | 1.96                     | 0.46              |
| 9:CI:17:VAL:HG11   | 9:CI:80:GLY:C      | 2.35                     | 0.46              |
| 11:CK:85:ARG:HG2   | 11:CK:112:THR:HA   | 1.97                     | 0.46              |
| 25:DA:817:C:O2'    | 25:DA:839:U:H5''   | 2.14                     | 0.46              |
| 25:DA:902:C:H2'    | 25:DA:903:C:C6     | 2.50                     | 0.46              |
| 27:DD:2:ALA:HB3    | 27:DD:20:ASP:HB3   | 1.97                     | 0.46              |
| 29:DF:192:LEU:HD13 | 29:DF:194:MET:HE2  | 1.97                     | 0.46              |
| 38:DS:7:TYR:CE2    | 38:DS:11:LYS:HE2   | 2.51                     | 0.46              |
| 44:DY:102:CYS:SG   | 44:DY:104:GLY:N    | 2.78                     | 0.46              |
| 45:DZ:108:PRO:HB3  | 45:DZ:144:LEU:HD12 | 1.97                     | 0.46              |
| 1:AA:107:G:H2'     | 1:AA:108:G:O4'     | 2.15                     | 0.46              |
| 1:AA:278:G:C2      | 17:AQ:95:TYR:HD2   | 2.33                     | 0.46              |
| 1:AA:429:U:H1'     | 1:AA:430:A:H5''    | 1.97                     | 0.46              |
| 1:AA:430:A:OP2     | 4:AD:8:VAL:HG12    | 2.15                     | 0.46              |
| 1:AA:1060:C:N4     | 3:AC:2:GLY:HA3     | 2.30                     | 0.46              |
| 3:AC:114:PRO:HD3   | 3:AC:183:ASP:OD1   | 2.16                     | 0.46              |
| 25:BA:969:U:H2'    | 25:BA:970:C:C6     | 2.50                     | 0.46              |
| 38:BS:15:ARG:O     | 38:BS:19:LYS:HG2   | 2.15                     | 0.46              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:CA:193:C:H2'    | 1:CA:194:C:C6     | 2.51                     | 0.46              |
| 1:CA:601:C:H2'    | 1:CA:602:A:C8     | 2.50                     | 0.46              |
| 1:CA:673:G:H2'    | 1:CA:674:G:C8     | 2.49                     | 0.46              |
| 1:CA:689:C:H42    | 1:CA:698:G:H1     | 1.62                     | 0.46              |
| 1:CA:1185:G:C2    | 1:CA:1186:G:H1'   | 2.50                     | 0.46              |
| 1:CA:1530:G:OP1   | 1:CA:1530:G:H4'   | 2.14                     | 0.46              |
| 2:CB:8:LYS:HE2    | 2:CB:51:LEU:HD13  | 1.96                     | 0.46              |
| 3:CC:45:LYS:H     | 3:CC:45:LYS:HE3   | 1.79                     | 0.46              |
| 9:CI:23:ASN:HD22  | 9:CI:25:LYS:H     | 1.61                     | 0.46              |
| 25:DA:415:A:H2'   | 25:DA:416:C:H6    | 1.80                     | 0.46              |
| 25:DA:467:G:OP1   | 53:D7:33:ARG:NH1  | 2.48                     | 0.46              |
| 25:DA:664:C:OP2   | 60:DA:4171:HOH:O  | 2.20                     | 0.46              |
| 26:DB:90:A:N7     | 26:DB:91:C:H1'    | 2.30                     | 0.46              |
| 38:DS:28:VAL:HG11 | 38:DS:98:VAL:HG13 | 1.98                     | 0.46              |
| 1:AA:222:U:H2'    | 1:AA:223:U:C6     | 2.50                     | 0.46              |
| 1:AA:384:G:H2'    | 1:AA:385:C:C6     | 2.50                     | 0.46              |
| 1:AA:958:A:C6     | 19:AS:55:LYS:HB2  | 2.51                     | 0.46              |
| 1:AA:1414:U:H3    | 1:AA:1486:G:H1    | 1.64                     | 0.46              |
| 20:AT:45:GLN:HE21 | 20:AT:45:GLN:HB3  | 1.54                     | 0.46              |
| 24:AX:53:G:H3'    | 24:AX:54:5MU:H71  | 1.96                     | 0.46              |
| 25:BA:459:U:H5''  | 53:B7:40:TRP:CD2  | 2.50                     | 0.46              |
| 25:BA:1675:C:N3   | 28:BE:128:SER:OG  | 2.49                     | 0.46              |
| 38:BS:62:LYS:HB3  | 38:BS:97:ARG:NE   | 2.31                     | 0.46              |
| 43:BX:65:ARG:HH11 | 43:BX:70:LEU:HD21 | 1.79                     | 0.46              |
| 1:CA:176:C:H2'    | 1:CA:177:C:C6     | 2.50                     | 0.46              |
| 1:CA:922:G:H2'    | 1:CA:923:A:C8     | 2.50                     | 0.46              |
| 1:CA:1469:G:H2'   | 1:CA:1470:G:C8    | 2.50                     | 0.46              |
| 1:CA:1502:A:H2    | 1:CA:1505:G:H1    | 1.63                     | 0.46              |
| 1:CA:1510:U:H2'   | 1:CA:1511:G:C8    | 2.51                     | 0.46              |
| 9:CI:37:PHE:HB3   | 9:CI:43:ALA:CB    | 2.45                     | 0.46              |
| 9:CI:70:LYS:O     | 9:CI:74:ILE:HG13  | 2.16                     | 0.46              |
| 25:DA:528:A:H2    | 25:DA:2042:A:H2'  | 1.79                     | 0.46              |
| 25:DA:1336:A:H2'  | 25:DA:1337:G:H8   | 1.81                     | 0.46              |
| 25:DA:2392:A:N3   | 35:DP:61:ARG:HG2  | 2.31                     | 0.46              |
| 25:DA:2630:G:H1   | 25:DA:2788:C:H42  | 1.63                     | 0.46              |
| 33:DN:123:TYR:CE2 | 33:DN:129:PRO:HD2 | 2.51                     | 0.46              |
| 34:DO:1:MET:HG3   | 34:DO:67:LYS:HG2  | 1.96                     | 0.46              |
| 36:DQ:22:LYS:N    | 36:DQ:22:LYS:HE2  | 2.31                     | 0.46              |
| 47:D1:53:VAL:HG22 | 47:D1:74:VAL:HG13 | 1.97                     | 0.46              |
| 2:AB:24:TRP:CZ3   | 2:AB:26:PRO:HA    | 2.50                     | 0.46              |
| 3:AC:64:VAL:HG22  | 3:AC:66:VAL:HG23  | 1.96                     | 0.46              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:BA:1204:A:H61   | 25:BA:1240:U:H2'   | 1.80                     | 0.46              |
| 25:BA:1448:G:H1'   | 25:BA:1528:A:N1    | 2.31                     | 0.46              |
| 25:BA:2438:U:O2'   | 25:BA:2440:C:OP1   | 2.29                     | 0.46              |
| 26:BB:13:A:N1      | 26:BB:69:G:O2'     | 2.45                     | 0.46              |
| 43:BX:54:VAL:HG22  | 43:BX:81:VAL:HG12  | 1.96                     | 0.46              |
| 54:B8:33:ASN:HA    | 54:B8:36:LYS:HD2   | 1.97                     | 0.46              |
| 1:CA:540:G:H2'     | 1:CA:541:G:H8      | 1.80                     | 0.46              |
| 1:CA:659:U:H2'     | 1:CA:660:G:O4'     | 2.16                     | 0.46              |
| 1:CA:1227:A:H8     | 1:CA:1227:A:H3'    | 1.80                     | 0.46              |
| 1:CA:1247:U:H1'    | 1:CA:1291:G:N2     | 2.30                     | 0.46              |
| 1:CA:1298:C:H4'    | 1:CA:1299:A:C4     | 2.50                     | 0.46              |
| 3:CC:116:VAL:HG22  | 3:CC:140:ARG:HH22  | 1.81                     | 0.46              |
| 11:CK:20:TYR:CZ    | 11:CK:83:ILE:HD12  | 2.51                     | 0.46              |
| 12:CL:109:GLY:HA3  | 12:CL:121:GLY:O    | 2.15                     | 0.46              |
| 19:CS:50:ALA:HA    | 19:CS:58:VAL:O     | 2.15                     | 0.46              |
| 25:DA:1230:C:H2'   | 25:DA:1231:G:H8    | 1.80                     | 0.46              |
| 25:DA:2809:A:H2'   | 25:DA:2810:A:C8    | 2.51                     | 0.46              |
| 27:DD:164:GLN:NE2  | 27:DD:176:ARG:HH12 | 2.14                     | 0.46              |
| 42:DW:86:LEU:HD22  | 42:DW:96:ILE:HD11  | 1.98                     | 0.46              |
| 45:DZ:69:THR:HG22  | 45:DZ:90:VAL:HA    | 1.98                     | 0.46              |
| 52:D6:35:GLU:HA    | 52:D6:49:HIS:O     | 2.16                     | 0.46              |
| 1:AA:98:G:H2'      | 1:AA:99:U:O4'      | 2.16                     | 0.46              |
| 1:AA:189(A):C:N4   | 1:AA:189(J):G:H1   | 2.14                     | 0.46              |
| 1:AA:858:G:O6      | 1:AA:869:G:H3'     | 2.16                     | 0.46              |
| 1:AA:1001(A):G:C6  | 1:AA:1002:G:C5     | 3.04                     | 0.46              |
| 1:AA:1030(C):G:H2' | 1:AA:1030(D):A:C8  | 2.50                     | 0.46              |
| 1:AA:1318:A:OP1    | 19:AS:7:LYS:NZ     | 2.29                     | 0.46              |
| 1:AA:1452:C:O2'    | 1:AA:1456:G:H5''   | 2.16                     | 0.46              |
| 6:AF:11:ASN:HB3    | 6:AF:14:LEU:HG     | 1.98                     | 0.46              |
| 15:AO:61:GLY:O     | 15:AO:65:ARG:HG3   | 2.16                     | 0.46              |
| 25:BA:143(A):C:H2' | 25:BA:144:C:H6     | 1.80                     | 0.46              |
| 25:BA:2633:G:H2'   | 25:BA:2634:G:O4'   | 2.16                     | 0.46              |
| 27:BD:275:LYS:HB3  | 27:BD:276:LYS:H    | 1.37                     | 0.46              |
| 28:BE:105:THR:HG21 | 28:BE:164:ARG:CZ   | 2.45                     | 0.46              |
| 44:BY:9:LYS:HA     | 44:BY:10:GLY:HA2   | 1.60                     | 0.46              |
| 45:BZ:161:VAL:HG13 | 45:BZ:161:VAL:O    | 2.16                     | 0.46              |
| 8:CH:29:SER:HB3    | 8:CH:32:LYS:HG3    | 1.96                     | 0.46              |
| 14:CN:26:ARG:HB3   | 14:CN:43:CYS:SG    | 2.55                     | 0.46              |
| 25:DA:1811:G:H2'   | 25:DA:1812:A:O4'   | 2.16                     | 0.46              |
| 25:DA:2312:U:H4'   | 30:DG:71:THR:HB    | 1.96                     | 0.46              |
| 25:DA:2382:G:H21   | 54:D8:42:ARG:NH2   | 2.13                     | 0.46              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 25:DA:2682:U:H5'   | 28:DE:11:MET:O    | 2.16                     | 0.46              |
| 25:DA:2712:U:H2'   | 25:DA:2714:G:H5'' | 1.97                     | 0.46              |
| 25:DA:2850:A:H2'   | 25:DA:2851:A:C8   | 2.50                     | 0.46              |
| 27:DD:133:LEU:HD12 | 27:DD:189:CYS:HB2 | 1.98                     | 0.46              |
| 50:D4:53:GLU:HG2   | 50:D4:54:GLY:N    | 2.31                     | 0.46              |
| 1:AA:255:G:C6      | 1:AA:256:U:C4     | 3.03                     | 0.46              |
| 5:AE:51:VAL:O      | 5:AE:55:VAL:HG23  | 2.16                     | 0.46              |
| 10:AJ:11:PHE:HE1   | 10:AJ:67:THR:HG22 | 1.80                     | 0.46              |
| 13:AM:19:LEU:HA    | 13:AM:22:ILE:HD12 | 1.98                     | 0.46              |
| 25:BA:84:A:P       | 44:BY:8:LYS:HD2   | 2.55                     | 0.46              |
| 25:BA:222:A:H5''   | 25:BA:421:U:OP1   | 2.16                     | 0.46              |
| 25:BA:848:G:O6     | 25:BA:928:G:H2'   | 2.16                     | 0.46              |
| 25:BA:2376:A:N3    | 38:BS:106:ARG:NH2 | 2.61                     | 0.46              |
| 32:BI:1:MET:N      | 32:BI:21:VAL:O    | 2.33                     | 0.46              |
| 1:CA:707:C:H2'     | 1:CA:708:C:C6     | 2.50                     | 0.46              |
| 1:CA:1003:G:H2'    | 1:CA:1004:A:H1'   | 1.97                     | 0.46              |
| 2:CB:16:HIS:O      | 2:CB:17:PHE:HD1   | 1.98                     | 0.46              |
| 2:CB:54:THR:O      | 2:CB:57:PHE:HB3   | 2.15                     | 0.46              |
| 4:CD:173:TRP:HB3   | 4:CD:187:ARG:HE   | 1.81                     | 0.46              |
| 8:CH:46:LYS:HG2    | 8:CH:64:LYS:HE2   | 1.97                     | 0.46              |
| 9:CI:78:LYS:HE2    | 9:CI:101:PHE:CD2  | 2.51                     | 0.46              |
| 9:CI:89:ASN:O      | 9:CI:92:TYR:HB2   | 2.16                     | 0.46              |
| 15:CO:69:TYR:CZ    | 15:CO:73:GLU:HG3  | 2.51                     | 0.46              |
| 18:CR:52:PRO:HB2   | 18:CR:54:ARG:HG2  | 1.97                     | 0.46              |
| 25:DA:952:G:P      | 36:DQ:16:ARG:HH22 | 2.38                     | 0.46              |
| 25:DA:991:C:H42    | 25:DA:1163:G:H1   | 1.63                     | 0.46              |
| 25:DA:1301:A:H2    | 25:DA:1626:G:N3   | 2.13                     | 0.46              |
| 25:DA:1472:A:H2'   | 25:DA:1473:G:O4'  | 2.16                     | 0.46              |
| 25:DA:1619:G:N7    | 60:DA:4281:HOH:O  | 2.36                     | 0.46              |
| 25:DA:2126:A:H4'   | 25:DA:2127:G:OP1  | 2.15                     | 0.46              |
| 25:DA:2126:A:H61   | 25:DA:2162:G:HO2' | 1.62                     | 0.46              |
| 30:DG:96:ARG:O     | 30:DG:99:MET:HB3  | 2.15                     | 0.46              |
| 49:D3:10:LYS:HG2   | 60:D3:4001:HOH:O  | 2.15                     | 0.46              |
| 1:AA:347:G:O2'     | 1:AA:348:G:OP1    | 2.33                     | 0.46              |
| 1:AA:518:C:HO2'    | 1:AA:1492:A:H61   | 1.63                     | 0.46              |
| 1:AA:1296:C:H5''   | 13:AM:14:ARG:HD2  | 1.96                     | 0.46              |
| 25:BA:648:G:O2'    | 25:BA:2351:G:OP1  | 2.27                     | 0.46              |
| 25:BA:1170:G:C2    | 25:BA:1171:G:H1'  | 2.50                     | 0.46              |
| 25:BA:1774:C:O5'   | 25:BA:1774:C:H6   | 1.99                     | 0.46              |
| 25:BA:2103:C:N4    | 25:BA:2186:G:H1   | 2.10                     | 0.46              |
| 1:CA:405:U:P       | 4:CD:3:ARG:NH2    | 2.89                     | 0.46              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:CA:720:C:H2'    | 1:CA:721:G:C8      | 2.51                     | 0.46              |
| 1:CA:1126:U:H4'   | 1:CA:1281:U:H1'    | 1.97                     | 0.46              |
| 1:CA:1366:C:H2'   | 1:CA:1367:C:C6     | 2.51                     | 0.46              |
| 1:CA:1496:C:H4'   | 25:DA:1920:C:O2'   | 2.16                     | 0.46              |
| 2:CB:125:PRO:HB2  | 2:CB:126:GLU:H     | 1.56                     | 0.46              |
| 8:CH:78:GLN:HG2   | 8:CH:80:ILE:O      | 2.16                     | 0.46              |
| 25:DA:78:A:H2'    | 25:DA:79:G:H8      | 1.80                     | 0.46              |
| 25:DA:431:U:H6    | 25:DA:431:U:O5'    | 1.98                     | 0.46              |
| 25:DA:875:G:O2'   | 45:DZ:151:HIS:HE1  | 1.99                     | 0.46              |
| 25:DA:1269:A:H2'  | 25:DA:1270:C:C6    | 2.51                     | 0.46              |
| 25:DA:1344:G:O2'  | 25:DA:1385:G:H2'   | 2.16                     | 0.46              |
| 26:DB:73:A:C4     | 26:DB:105:A:C2     | 3.04                     | 0.46              |
| 30:DG:80:PHE:C    | 30:DG:82:LEU:H     | 2.18                     | 0.46              |
| 31:DH:89:ILE:O    | 31:DH:129:THR:HG23 | 2.16                     | 0.46              |
| 37:DR:95:THR:HG22 | 37:DR:116:LEU:HD23 | 1.98                     | 0.46              |
| 45:DZ:119:GLU:HB2 | 45:DZ:122:ARG:NH1  | 2.29                     | 0.46              |
| 1:AA:358:U:H2'    | 1:AA:359:U:H6      | 1.81                     | 0.46              |
| 1:AA:626:U:H2'    | 1:AA:627:G:C8      | 2.51                     | 0.46              |
| 1:AA:924:C:H2'    | 1:AA:925:G:H8      | 1.81                     | 0.46              |
| 1:AA:946:A:O2'    | 1:AA:1333:A:N3     | 2.40                     | 0.46              |
| 1:AA:1006:C:H42   | 1:AA:1023:G:H1     | 1.64                     | 0.46              |
| 1:AA:1089:G:H1    | 1:AA:1096:C:N4     | 2.14                     | 0.46              |
| 3:AC:156:ARG:H    | 3:AC:196:LEU:HD22  | 1.81                     | 0.46              |
| 13:AM:16:ASP:N    | 13:AM:16:ASP:OD1   | 2.49                     | 0.46              |
| 25:BA:185:U:H4'   | 25:BA:218:A:H4'    | 1.97                     | 0.46              |
| 25:BA:1882:C:H2'  | 25:BA:1883:G:O4'   | 2.15                     | 0.46              |
| 25:BA:2055:C:O2   | 60:BA:4028:HOH:O   | 2.21                     | 0.46              |
| 37:BR:44:LEU:HD22 | 37:BR:48:VAL:HG23  | 1.98                     | 0.46              |
| 44:BY:43:ASN:HD22 | 44:BY:43:ASN:HA    | 1.55                     | 0.46              |
| 50:B4:49:PHE:HB3  | 50:B4:50:VAL:H     | 1.53                     | 0.46              |
| 54:B8:62:LEU:HB3  | 54:B8:65:GLU:CG    | 2.41                     | 0.46              |
| 1:CA:581:G:N2     | 1:CA:759:A:OP2     | 2.41                     | 0.46              |
| 1:CA:608:A:H4'    | 16:CP:32:TYR:OH    | 2.15                     | 0.46              |
| 1:CA:742:G:OP2    | 15:CO:35:ARG:NH2   | 2.49                     | 0.46              |
| 1:CA:1095:U:C4    | 1:CA:1096:C:C4     | 3.04                     | 0.46              |
| 1:CA:1119:C:N3    | 1:CA:1154:G:O6     | 2.48                     | 0.46              |
| 1:CA:1186:G:H4'   | 9:CI:110:GLU:CD    | 2.36                     | 0.46              |
| 1:CA:1237:C:H5''  | 1:CA:1238:A:O4'    | 2.16                     | 0.46              |
| 7:CG:153:HIS:HE1  | 11:CK:57:THR:HG22  | 1.81                     | 0.46              |
| 9:CI:15:ALA:HB2   | 9:CI:65:VAL:HG23   | 1.97                     | 0.46              |
| 10:CJ:16:LEU:HD13 | 10:CJ:70:ARG:HG2   | 1.97                     | 0.46              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 25:DA:796:C:H2'    | 25:DA:797:C:C6    | 2.51                     | 0.46              |
| 25:DA:924:C:H2'    | 25:DA:925:C:C6    | 2.51                     | 0.46              |
| 25:DA:2037:G:O2'   | 25:DA:2038:G:H5'  | 2.16                     | 0.46              |
| 25:DA:2165:G:H2'   | 25:DA:2166:G:C8   | 2.51                     | 0.46              |
| 25:DA:2330:G:H2'   | 25:DA:2331:G:O4'  | 2.16                     | 0.46              |
| 25:DA:2412:A:H2'   | 25:DA:2413:G:O4'  | 2.16                     | 0.46              |
| 25:DA:2747:G:H1'   | 25:DA:2757:A:H61  | 1.81                     | 0.46              |
| 25:DA:2773:C:H2'   | 25:DA:2774:C:H6   | 1.81                     | 0.46              |
| 25:DA:2889:C:H3'   | 25:DA:2891:G:C8   | 2.51                     | 0.46              |
| 32:DI:114:LEU:HD11 | 32:DI:128:LEU:HB3 | 1.98                     | 0.46              |
| 33:DN:10:GLU:HA    | 33:DN:11:PRO:HD2  | 1.70                     | 0.46              |
| 46:D0:24:LYS:HE2   | 46:D0:24:LYS:HA   | 1.97                     | 0.46              |
| 1:AA:126:G:H4'     | 1:AA:634:C:O2     | 2.16                     | 0.46              |
| 1:AA:266:G:O3'     | 17:AQ:67:LYS:HB2  | 2.16                     | 0.46              |
| 1:AA:826:C:H2'     | 1:AA:827:U:H6     | 1.81                     | 0.46              |
| 1:AA:999:C:H2'     | 1:AA:1000:U:O4'   | 2.15                     | 0.46              |
| 1:AA:1445:C:N4     | 1:AA:1457:G:H1    | 2.14                     | 0.46              |
| 1:AA:1515:C:H2'    | 1:AA:1516:G:C8    | 2.51                     | 0.46              |
| 25:BA:848:G:C4     | 25:BA:933:A:H8    | 2.34                     | 0.46              |
| 25:BA:1227:G:OP1   | 40:BU:13:LYS:HE3  | 2.16                     | 0.46              |
| 25:BA:1359:A:N3    | 25:BA:1359:A:H5'  | 2.31                     | 0.46              |
| 25:BA:1759:A:H1'   | 25:BA:2711:A:C2   | 2.51                     | 0.46              |
| 25:BA:2238:G:H2'   | 25:BA:2238:G:N3   | 2.31                     | 0.46              |
| 30:BG:179:PRO:HB2  | 50:B4:42:PHE:HE1  | 1.80                     | 0.46              |
| 37:BR:26:LYS:HE2   | 37:BR:70:LEU:O    | 2.16                     | 0.46              |
| 51:B5:11:THR:HG23  | 51:B5:15:ARG:HB3  | 1.96                     | 0.46              |
| 1:CA:145:G:H1      | 1:CA:177:C:H42    | 1.63                     | 0.46              |
| 1:CA:926:G:N2      | 22:CV:16:A:OP1    | 2.48                     | 0.46              |
| 1:CA:1203:C:H2'    | 1:CA:1204:A:O4'   | 2.15                     | 0.46              |
| 3:CC:38:ARG:O      | 3:CC:42:LEU:N     | 2.39                     | 0.46              |
| 5:CE:68:GLU:HG3    | 5:CE:70:PRO:HD3   | 1.98                     | 0.46              |
| 16:CP:4:ILE:HG13   | 16:CP:64:ALA:HB1  | 1.97                     | 0.46              |
| 19:CS:32:LYS:HE2   | 19:CS:57:HIS:CD2  | 2.51                     | 0.46              |
| 25:DA:251:A:C5     | 25:DA:252:G:H1'   | 2.51                     | 0.46              |
| 25:DA:1319:G:C6    | 25:DA:1320:C:N4   | 2.84                     | 0.46              |
| 25:DA:1587:A:H2'   | 25:DA:1588:C:C6   | 2.51                     | 0.46              |
| 25:DA:1630:G:H2'   | 25:DA:1631:C:C6   | 2.51                     | 0.46              |
| 25:DA:2349:G:OP1   | 60:DA:4065:HOH:O  | 2.21                     | 0.46              |
| 25:DA:2615:U:N1    | 51:D5:7:PRO:HA    | 2.31                     | 0.46              |
| 25:DA:2723:C:H5''  | 37:DR:1:MET:HE2   | 1.98                     | 0.46              |
| 26:DB:27:C:O3'     | 38:DS:36:TYR:OH   | 2.33                     | 0.46              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 28:DE:6:GLY:HA2    | 28:DE:28:ALA:HA    | 1.98                     | 0.46              |
| 31:DH:46:GLU:HB2   | 31:DH:49:VAL:HG12  | 1.97                     | 0.46              |
| 36:DQ:75:THR:HG21  | 36:DQ:87:LYS:NZ    | 2.31                     | 0.46              |
| 54:D8:32:LEU:O     | 54:D8:36:LYS:HE3   | 2.16                     | 0.46              |
| 1:AA:283:C:H2'     | 1:AA:284:G:O4'     | 2.17                     | 0.45              |
| 1:AA:757:U:H2'     | 1:AA:758:G:O4'     | 2.15                     | 0.45              |
| 1:AA:1030(B):C:H2' | 1:AA:1030(B):C:O2  | 2.16                     | 0.45              |
| 1:AA:1216:G:H5''   | 14:AN:5:ALA:CB     | 2.46                     | 0.45              |
| 4:AD:164:ALA:O     | 4:AD:168:ARG:NH1   | 2.46                     | 0.45              |
| 7:AG:26:PHE:CE2    | 7:AG:30:ILE:HD11   | 2.51                     | 0.45              |
| 16:AP:38:TYR:CZ    | 16:AP:50:LYS:HB2   | 2.52                     | 0.45              |
| 20:AT:16:HIS:O     | 20:AT:19:SER:OG    | 2.32                     | 0.45              |
| 24:AX:33:U:O2'     | 24:AX:35:A:N7      | 2.37                     | 0.45              |
| 25:BA:271(A):A:H61 | 25:BA:271(X):G:H1' | 1.81                     | 0.45              |
| 25:BA:1203:G:O2'   | 25:BA:1242:A:N6    | 2.44                     | 0.45              |
| 25:BA:1680:U:H2'   | 25:BA:1681:G:O4'   | 2.16                     | 0.45              |
| 25:BA:2275:C:O2    | 36:BQ:85:LYS:HG3   | 2.17                     | 0.45              |
| 28:BE:115:GLY:O    | 28:BE:119:ARG:HB2  | 2.17                     | 0.45              |
| 30:BG:27:ASN:HB3   | 30:BG:30:GLU:HB2   | 1.98                     | 0.45              |
| 36:BQ:43:THR:HG22  | 36:BQ:94:VAL:HG12  | 1.99                     | 0.45              |
| 39:BT:19:LEU:HD12  | 39:BT:78:LEU:HD13  | 1.97                     | 0.45              |
| 50:B4:59:PHE:HB2   | 50:B4:62:ARG:HH12  | 1.82                     | 0.45              |
| 1:CA:109:A:H2'     | 1:CA:326:G:N2      | 2.31                     | 0.45              |
| 1:CA:407:G:OP1     | 4:CD:115:ARG:NH2   | 2.49                     | 0.45              |
| 1:CA:1024:G:C2'    | 1:CA:1025:U:H5''   | 2.45                     | 0.45              |
| 1:CA:1100:C:H2'    | 1:CA:1102:A:O5'    | 2.16                     | 0.45              |
| 3:CC:47:LEU:CB     | 3:CC:52:LEU:HB2    | 2.46                     | 0.45              |
| 4:CD:61:LYS:NZ     | 4:CD:72:GLU:OE1    | 2.39                     | 0.45              |
| 25:DA:506:G:O3'    | 25:DA:507:A:H8     | 1.99                     | 0.45              |
| 25:DA:637:A:H2'    | 35:DP:117:GLU:OE2  | 2.16                     | 0.45              |
| 25:DA:2134:A:H3'   | 25:DA:2135:A:C8    | 2.51                     | 0.45              |
| 25:DA:2206:G:OP2   | 25:DA:2206:G:H4'   | 2.16                     | 0.45              |
| 25:DA:2774:C:H2'   | 25:DA:2775:A:O4'   | 2.16                     | 0.45              |
| 25:DA:2776:A:H4'   | 25:DA:2777:G:H5''  | 1.97                     | 0.45              |
| 25:DA:2849:U:P     | 39:DT:95:ARG:HH12  | 2.39                     | 0.45              |
| 25:DA:2886:G:H2'   | 25:DA:2887:U:C6    | 2.51                     | 0.45              |
| 34:DO:75:SER:OG    | 39:DT:74:ARG:NH1   | 2.49                     | 0.45              |
| 35:DP:52:GLU:HG2   | 54:D8:57:ARG:HH12  | 1.81                     | 0.45              |
| 45:DZ:99:TYR:HA    | 45:DZ:124:ILE:O    | 2.16                     | 0.45              |
| 54:D8:6:THR:HG22   | 54:D8:63:PRO:HD2   | 1.97                     | 0.45              |
| 1:AA:147:G:C4      | 1:AA:148:G:C8      | 3.04                     | 0.45              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:576:G:O6      | 1:AA:880:C:O2'     | 2.28                     | 0.45              |
| 1:AA:651:C:N4      | 1:AA:652:U:O4      | 2.49                     | 0.45              |
| 1:AA:920:U:H2'     | 1:AA:921:U:C6      | 2.50                     | 0.45              |
| 1:AA:1151:A:N3     | 10:AJ:39:PRO:HG3   | 2.31                     | 0.45              |
| 1:AA:1241:G:H1     | 1:AA:1296:C:N4     | 2.14                     | 0.45              |
| 1:AA:1295:G:H2'    | 1:AA:1296:C:H5'    | 1.98                     | 0.45              |
| 6:AF:100:ASN:HB2   | 18:AR:28:GLU:HA    | 1.98                     | 0.45              |
| 22:AV:19:U:H2'     | 22:AV:20:U:C6      | 2.51                     | 0.45              |
| 25:BA:278:A:H2'    | 25:BA:279:C:C6     | 2.51                     | 0.45              |
| 25:BA:848:G:N3     | 25:BA:933:A:H1'    | 2.31                     | 0.45              |
| 25:BA:2695:C:H2'   | 25:BA:2696:U:H6    | 1.81                     | 0.45              |
| 25:BA:2712:U:H2'   | 25:BA:2714:G:H5''  | 1.99                     | 0.45              |
| 25:BA:2771:C:H2'   | 25:BA:2772:C:C6    | 2.51                     | 0.45              |
| 35:BP:100:LEU:HD12 | 35:BP:112:LEU:HD11 | 1.98                     | 0.45              |
| 37:BR:38:VAL:HG12  | 37:BR:42:LYS:HE3   | 1.98                     | 0.45              |
| 39:BT:37:GLY:HA2   | 39:BT:38:ASN:HA    | 1.72                     | 0.45              |
| 46:B0:38:VAL:HG12  | 46:B0:40:GLN:HG2   | 1.99                     | 0.45              |
| 51:B5:9:LYS:HD3    | 51:B5:9:LYS:HA     | 1.70                     | 0.45              |
| 1:CA:144:G:H1      | 1:CA:178:C:H42     | 1.64                     | 0.45              |
| 1:CA:1154:G:N7     | 1:CA:1155:G:C5     | 2.84                     | 0.45              |
| 3:CC:110:ASN:O     | 3:CC:141:VAL:HG22  | 2.16                     | 0.45              |
| 14:CN:32:SER:O     | 14:CN:32:SER:OG    | 2.24                     | 0.45              |
| 25:DA:695:G:H2'    | 25:DA:696:G:O4'    | 2.17                     | 0.45              |
| 25:DA:1151:G:O2'   | 40:DU:77:SER:O     | 2.34                     | 0.45              |
| 25:DA:1263:U:H1'   | 51:D5:10:LYS:HG3   | 1.99                     | 0.45              |
| 25:DA:2017:U:O2    | 51:D5:10:LYS:HB2   | 2.15                     | 0.45              |
| 25:DA:2023:G:H1    | 25:DA:2040:C:H42   | 1.64                     | 0.45              |
| 25:DA:2137:C:N4    | 25:DA:2154:G:N1    | 2.47                     | 0.45              |
| 29:DF:18:ARG:HG2   | 29:DF:19:GLU:H     | 1.81                     | 0.45              |
| 30:DG:161:THR:HG22 | 30:DG:163:ALA:H    | 1.81                     | 0.45              |
| 35:DP:38:GLN:O     | 35:DP:39:LYS:HB3   | 2.16                     | 0.45              |
| 36:DQ:85:LYS:HD3   | 36:DQ:85:LYS:N     | 2.31                     | 0.45              |
| 45:DZ:59:LEU:HD12  | 45:DZ:69:THR:HG21  | 1.97                     | 0.45              |
| 53:D7:8:ASN:OD1    | 53:D7:11:LYS:N     | 2.26                     | 0.45              |
| 55:D9:29:ASN:HB3   | 55:D9:32:HIS:ND1   | 2.30                     | 0.45              |
| 1:AA:1024:G:H2'    | 1:AA:1025:U:H5'    | 1.98                     | 0.45              |
| 4:AD:128:VAL:HG11  | 4:AD:138:TYR:CE2   | 2.51                     | 0.45              |
| 13:AM:11:ARG:HA    | 13:AM:45:VAL:HB    | 1.98                     | 0.45              |
| 24:AX:76:31H:H5''  | 60:BA:3701:HOH:O   | 2.17                     | 0.45              |
| 25:BA:11:G:H2'     | 25:BA:12:U:H5'     | 1.97                     | 0.45              |
| 25:BA:336:C:H2'    | 25:BA:337:C:H6     | 1.81                     | 0.45              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:BA:910:A:N3     | 25:BA:2264:C:O2'   | 2.41                     | 0.45              |
| 25:BA:1341:U:OP2   | 25:BA:1394:U:O2'   | 2.27                     | 0.45              |
| 25:BA:1557:C:OP2   | 25:BA:1558:A:O2'   | 2.24                     | 0.45              |
| 25:BA:2053:G:OP1   | 28:BE:144:ARG:HG2  | 2.17                     | 0.45              |
| 25:BA:2626:C:H2'   | 25:BA:2627:G:O4'   | 2.16                     | 0.45              |
| 25:BA:2774:C:H2'   | 25:BA:2775:A:O4'   | 2.15                     | 0.45              |
| 1:CA:1030(C):G:H2' | 1:CA:1030(D):A:C8  | 2.51                     | 0.45              |
| 1:CA:1095:U:P      | 1:CA:1108:G:H1     | 2.38                     | 0.45              |
| 1:CA:1123:A:H4'    | 10:CJ:37:PRO:HD2   | 1.97                     | 0.45              |
| 1:CA:1394:A:N6     | 1:CA:1501:C:H5'    | 2.31                     | 0.45              |
| 4:CD:170:VAL:HG22  | 4:CD:171:GLY:H     | 1.82                     | 0.45              |
| 25:DA:589:C:H2'    | 25:DA:590:A:H8     | 1.79                     | 0.45              |
| 25:DA:607:U:OP1    | 29:DF:102:PRO:HA   | 2.16                     | 0.45              |
| 25:DA:1925:C:H2'   | 25:DA:1926:U:H5''  | 1.98                     | 0.45              |
| 25:DA:1978:A:H2'   | 25:DA:1979:C:H6    | 1.81                     | 0.45              |
| 25:DA:2166:G:H3'   | 25:DA:2167:U:C5'   | 2.40                     | 0.45              |
| 26:DB:30:C:H2'     | 26:DB:31:C:H5'     | 1.97                     | 0.45              |
| 26:DB:43:C:C4      | 26:DB:45:A:N6      | 2.84                     | 0.45              |
| 28:DE:144:ARG:HB3  | 28:DE:145:LYS:H    | 1.46                     | 0.45              |
| 32:DI:48:GLU:HG3   | 32:DI:52:ARG:NH1   | 2.32                     | 0.45              |
| 32:DI:77:LEU:HG    | 32:DI:101:LEU:HD12 | 1.99                     | 0.45              |
| 43:DX:43:VAL:HG21  | 43:DX:81:VAL:HG11  | 1.97                     | 0.45              |
| 45:DZ:77:ASP:HA    | 45:DZ:84:GLU:OE2   | 2.16                     | 0.45              |
| 1:AA:598:U:H4'     | 8:AH:94:TYR:CD2    | 2.52                     | 0.45              |
| 1:AA:988:G:H1      | 1:AA:1217:C:N4     | 2.13                     | 0.45              |
| 1:AA:1321:C:O2'    | 19:AS:78:ARG:NH1   | 2.49                     | 0.45              |
| 4:AD:201:GLN:NE2   | 4:AD:204:ILE:HD12  | 2.31                     | 0.45              |
| 25:BA:580:C:H2'    | 25:BA:581:C:C6     | 2.51                     | 0.45              |
| 25:BA:2347:C:H2'   | 25:BA:2348:U:C6    | 2.52                     | 0.45              |
| 25:BA:2747:G:O6    | 25:BA:2755:C:H5''  | 2.16                     | 0.45              |
| 27:BD:215:LEU:HB2  | 27:BD:217:ARG:HG3  | 1.98                     | 0.45              |
| 43:BX:94:GLY:N     | 43:BX:95:LEU:HA    | 2.31                     | 0.45              |
| 52:B6:35:GLU:HG2   | 52:B6:50:ARG:HD3   | 1.99                     | 0.45              |
| 1:CA:189(C):C:H2'  | 1:CA:189(D):C:O4'  | 2.16                     | 0.45              |
| 1:CA:523:A:H61     | 12:CL:92:ASP:HB2   | 1.82                     | 0.45              |
| 1:CA:827:U:H5''    | 1:CA:828:A:OP2     | 2.16                     | 0.45              |
| 1:CA:1011:G:C6     | 1:CA:1012:U:C2     | 3.05                     | 0.45              |
| 4:CD:61:LYS:HZ1    | 4:CD:72:GLU:CD     | 2.17                     | 0.45              |
| 6:CF:100:ASN:ND2   | 18:CR:23:LYS:HE2   | 2.31                     | 0.45              |
| 8:CH:119:LEU:HB3   | 8:CH:123:GLU:HB2   | 1.99                     | 0.45              |
| 18:CR:33:ASP:OD2   | 18:CR:36:ASN:HB2   | 2.16                     | 0.45              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 25:DA:774:A:N3    | 25:DA:774:A:H2'   | 2.31                     | 0.45              |
| 25:DA:855:G:C6    | 25:DA:856:C:N4    | 2.84                     | 0.45              |
| 25:DA:1405:U:H2'  | 25:DA:1406:U:C6   | 2.51                     | 0.45              |
| 25:DA:1877:A:H5'  | 25:DA:1878:G:OP2  | 2.17                     | 0.45              |
| 28:DE:48:GLN:HG3  | 28:DE:80:GLU:HG2  | 1.98                     | 0.45              |
| 29:DF:101:LEU:O   | 29:DF:106:ARG:NH1 | 2.45                     | 0.45              |
| 30:DG:106:LEU:HA  | 30:DG:110:ALA:HB3 | 1.99                     | 0.45              |
| 31:DH:124:GLU:OE1 | 31:DH:132:ARG:HB3 | 2.16                     | 0.45              |
| 45:DZ:10:ARG:HG3  | 45:DZ:36:LYS:HB3  | 1.97                     | 0.45              |
| 1:AA:347:G:O2'    | 1:AA:348:G:P      | 2.74                     | 0.45              |
| 1:AA:955:U:OP1    | 13:AM:120:LYS:HD2 | 2.17                     | 0.45              |
| 1:AA:1124:G:N7    | 1:AA:1145:C:O2'   | 2.47                     | 0.45              |
| 1:AA:1246:C:N3    | 1:AA:1291:G:N2    | 2.51                     | 0.45              |
| 4:AD:158:ILE:HG12 | 4:AD:159:ARG:N    | 2.31                     | 0.45              |
| 4:AD:173:TRP:HA   | 4:AD:187:ARG:NE   | 2.31                     | 0.45              |
| 5:AE:24:ARG:HE    | 5:AE:24:ARG:HB3   | 1.65                     | 0.45              |
| 7:AG:45:ASP:O     | 7:AG:49:ILE:HG13  | 2.15                     | 0.45              |
| 10:AJ:38:ILE:H    | 10:AJ:38:ILE:HG13 | 1.54                     | 0.45              |
| 25:BA:11:G:H2'    | 25:BA:12:U:C5'    | 2.46                     | 0.45              |
| 25:BA:1364:G:N7   | 47:B1:3:LYS:HE2   | 2.31                     | 0.45              |
| 25:BA:2140:C:N3   | 25:BA:2151:G:C6   | 2.84                     | 0.45              |
| 25:BA:2691:C:O3'  | 25:BA:2871:C:H4'  | 2.17                     | 0.45              |
| 25:BA:2791:C:H2'  | 25:BA:2792:G:H8   | 1.81                     | 0.45              |
| 30:BG:23:PHE:HB2  | 30:BG:25:TYR:CE1  | 2.51                     | 0.45              |
| 31:BH:116:GLU:HG3 | 31:BH:117:PRO:HD2 | 1.97                     | 0.45              |
| 44:BY:92:ASN:H    | 44:BY:92:ASN:ND2  | 2.14                     | 0.45              |
| 52:B6:25:LYS:NZ   | 52:B6:51:GLU:OE2  | 2.42                     | 0.45              |
| 1:CA:279:A:OP2    | 17:CQ:95:TYR:OH   | 2.32                     | 0.45              |
| 1:CA:444:C:O2     | 1:CA:490:G:N1     | 2.49                     | 0.45              |
| 3:CC:137:ALA:HA   | 3:CC:140:ARG:HH11 | 1.82                     | 0.45              |
| 3:CC:140:ARG:CZ   | 3:CC:140:ARG:HB2  | 2.46                     | 0.45              |
| 5:CE:43:LEU:HB3   | 5:CE:136:MET:SD   | 2.57                     | 0.45              |
| 5:CE:76:ILE:O     | 5:CE:93:PRO:HB3   | 2.17                     | 0.45              |
| 6:CF:61:LEU:HG    | 6:CF:63:TYR:CE1   | 2.51                     | 0.45              |
| 9:CI:51:ARG:NH1   | 9:CI:56:LEU:HD21  | 2.32                     | 0.45              |
| 15:CO:85:LEU:HB3  | 15:CO:87:ILE:HG13 | 1.97                     | 0.45              |
| 25:DA:572:A:N7    | 60:DA:4291:HOH:O  | 2.36                     | 0.45              |
| 25:DA:2051:A:H5'  | 25:DA:2578:G:O4'  | 2.16                     | 0.45              |
| 25:DA:2130:U:H3   | 25:DA:2159:G:N2   | 2.15                     | 0.45              |
| 27:DD:43:ARG:HA   | 27:DD:48:ARG:O    | 2.16                     | 0.45              |
| 1:AA:189(A):C:H42 | 1:AA:189(J):G:H1  | 1.64                     | 0.45              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:AA:193:C:H4'     | 20:AT:61:SER:HB2   | 1.99                     | 0.45              |
| 1:AA:258:G:H2'     | 1:AA:259:G:H8      | 1.81                     | 0.45              |
| 1:AA:461:A:O2'     | 1:AA:470:C:H5'     | 2.16                     | 0.45              |
| 1:AA:952:U:H2'     | 1:AA:953:G:C8      | 2.52                     | 0.45              |
| 1:AA:1030(A):G:H2' | 1:AA:1030(C):G:OP2 | 2.17                     | 0.45              |
| 2:AB:215:LEU:O     | 2:AB:219:VAL:HG23  | 2.17                     | 0.45              |
| 19:AS:63:THR:HG1   | 19:AS:66:MET:HG3   | 1.82                     | 0.45              |
| 25:BA:27:G:O2'     | 25:BA:28:A:OP2     | 2.31                     | 0.45              |
| 25:BA:45:C:OP2     | 25:BA:215:G:H5'    | 2.17                     | 0.45              |
| 25:BA:307:G:H21    | 25:BA:330:A:H62    | 1.65                     | 0.45              |
| 25:BA:784:A:C8     | 25:BA:792:G:C5     | 3.05                     | 0.45              |
| 25:BA:2369:A:H2'   | 25:BA:2370:G:C8    | 2.51                     | 0.45              |
| 33:BN:112:LEU:O    | 33:BN:116:LEU:HG   | 2.16                     | 0.45              |
| 44:BY:47:LYS:NZ    | 44:BY:48:ALA:O     | 2.48                     | 0.45              |
| 45:BZ:146:ILE:HA   | 45:BZ:147:GLY:HA2  | 1.75                     | 0.45              |
| 49:B3:22:ALA:HB2   | 49:B3:49:LYS:HD3   | 1.99                     | 0.45              |
| 1:CA:1133:G:H2'    | 1:CA:1134:G:C8     | 2.50                     | 0.45              |
| 7:CG:152:ALA:O     | 7:CG:155:ARG:HB3   | 2.16                     | 0.45              |
| 9:CI:71:SER:HA     | 9:CI:74:ILE:HD12   | 1.99                     | 0.45              |
| 11:CK:34:ASP:OD1   | 11:CK:38:ASN:N     | 2.46                     | 0.45              |
| 17:CQ:62:SER:OG    | 17:CQ:72:ARG:HD3   | 2.16                     | 0.45              |
| 17:CQ:92:ARG:NH1   | 17:CQ:95:TYR:OH    | 2.50                     | 0.45              |
| 25:DA:29:U:H2'     | 25:DA:30:G:C8      | 2.51                     | 0.45              |
| 25:DA:329:G:H8     | 25:DA:329:G:OP1    | 1.99                     | 0.45              |
| 25:DA:2173:A:C2    | 25:DA:2174:C:H1'   | 2.52                     | 0.45              |
| 25:DA:2443:C:OP1   | 29:DF:68:LYS:HD3   | 2.17                     | 0.45              |
| 27:DD:108:PRO:HB3  | 27:DD:143:HIS:CE1  | 2.52                     | 0.45              |
| 32:DI:48:GLU:HG3   | 32:DI:52:ARG:HH11  | 1.81                     | 0.45              |
| 40:DU:112:ARG:H    | 40:DU:112:ARG:HG2  | 1.52                     | 0.45              |
| 44:DY:43:ASN:OD1   | 44:DY:65:ALA:HB3   | 2.16                     | 0.45              |
| 1:AA:300:A:H2'     | 1:AA:301:G:O4'     | 2.17                     | 0.45              |
| 1:AA:840:C:H4'     | 1:AA:841:U:OP1     | 2.14                     | 0.45              |
| 1:AA:1003:G:N2     | 1:AA:1038:C:C4     | 2.85                     | 0.45              |
| 1:AA:1144:G:N2     | 1:AA:1146:A:H62    | 2.15                     | 0.45              |
| 1:AA:1149:C:OP1    | 9:AI:14:VAL:HG11   | 2.17                     | 0.45              |
| 2:AB:19:HIS:HA     | 2:AB:39:ILE:HG23   | 1.98                     | 0.45              |
| 6:AF:76:ALA:O      | 6:AF:80:ARG:HG3    | 2.16                     | 0.45              |
| 8:AH:31:PHE:O      | 8:AH:35:ILE:HG12   | 2.17                     | 0.45              |
| 11:AK:20:TYR:HB2   | 11:AK:31:THR:HG23  | 1.99                     | 0.45              |
| 13:AM:108:ARG:O    | 13:AM:112:GLY:N    | 2.44                     | 0.45              |
| 15:AO:8:LYS:O      | 15:AO:12:ILE:HG13  | 2.17                     | 0.45              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 25:BA:1022:G:N7   | 33:BN:66:LYS:HE2   | 2.32                     | 0.45              |
| 25:BA:1754:C:N3   | 25:BA:2716:U:O2'   | 2.45                     | 0.45              |
| 25:BA:2124:G:N1   | 25:BA:2174:C:N4    | 2.30                     | 0.45              |
| 28:BE:29:GLY:H    | 28:BE:93:VAL:HG13  | 1.80                     | 0.45              |
| 29:BF:20:LEU:HD22 | 29:BF:21:ALA:H     | 1.82                     | 0.45              |
| 32:BI:57:ARG:HD3  | 32:BI:58:LEU:N     | 2.31                     | 0.45              |
| 37:BR:67:LEU:O    | 37:BR:71:GLN:N     | 2.48                     | 0.45              |
| 1:CA:858:G:N1     | 1:CA:870:U:OP2     | 2.37                     | 0.45              |
| 1:CA:1154:G:O6    | 1:CA:1155:G:C6     | 2.70                     | 0.45              |
| 13:CM:57:ARG:NH1  | 50:D4:17:GLY:HA3   | 2.31                     | 0.45              |
| 19:CS:37:ARG:O    | 19:CS:70:LYS:NZ    | 2.44                     | 0.45              |
| 25:DA:531:C:H4'   | 25:DA:532:A:H5''   | 1.97                     | 0.45              |
| 25:DA:977:G:N3    | 25:DA:1001:A:H2    | 2.15                     | 0.45              |
| 25:DA:1288:U:C2   | 25:DA:1327:C:O2    | 2.70                     | 0.45              |
| 25:DA:1449:A:OP2  | 25:DA:1449:A:H8    | 1.99                     | 0.45              |
| 25:DA:2262:U:H4'  | 25:DA:2328:A:C2    | 2.51                     | 0.45              |
| 25:DA:2713:A:OP2  | 25:DA:2713:A:H4'   | 2.16                     | 0.45              |
| 31:DH:127:GLU:HB2 | 31:DH:130:ARG:HB2  | 1.98                     | 0.45              |
| 35:DP:97:PRO:O    | 35:DP:101:VAL:HG23 | 2.16                     | 0.45              |
| 38:DS:3:ARG:O     | 38:DS:4:LEU:HD23   | 2.17                     | 0.45              |
| 47:D1:67:ILE:N    | 47:D1:68:PRO:HD2   | 2.32                     | 0.45              |
| 48:D2:18:PRO:HB3  | 48:D2:68:ARG:NH1   | 2.32                     | 0.45              |
| 1:AA:227:G:H2'    | 1:AA:228:A:O4'     | 2.17                     | 0.45              |
| 1:AA:1028:C:C5    | 1:AA:1029:C:H1'    | 2.52                     | 0.45              |
| 1:AA:1216:G:H2'   | 1:AA:1217:C:H5''   | 1.98                     | 0.45              |
| 1:AA:1298:C:H4'   | 1:AA:1299:A:O4'    | 2.16                     | 0.45              |
| 3:AC:120:VAL:O    | 3:AC:124:ILE:HG23  | 2.16                     | 0.45              |
| 3:AC:134:ILE:HG23 | 3:AC:151:VAL:HB    | 1.99                     | 0.45              |
| 4:AD:188:LEU:HA   | 4:AD:189:PRO:HD3   | 1.78                     | 0.45              |
| 25:BA:2391:G:O2'  | 25:BA:2424:C:N4    | 2.38                     | 0.45              |
| 25:BA:2679:A:H4'  | 28:BE:165:VAL:HG11 | 1.99                     | 0.45              |
| 49:B3:31:LEU:HD23 | 49:B3:31:LEU:HA    | 1.77                     | 0.45              |
| 1:CA:69:G:H2'     | 1:CA:70:G:H8       | 1.82                     | 0.45              |
| 1:CA:322:C:O2'    | 20:CT:23:ARG:HD2   | 2.16                     | 0.45              |
| 1:CA:628:G:C2'    | 1:CA:629:G:H5'     | 2.46                     | 0.45              |
| 1:CA:1277:C:O2'   | 1:CA:1279:A:C8     | 2.69                     | 0.45              |
| 24:CX:65:C:H2'    | 24:CX:66:C:O4'     | 2.17                     | 0.45              |
| 25:DA:18:C:H2'    | 25:DA:19:C:H6      | 1.82                     | 0.45              |
| 25:DA:375:C:H2'   | 25:DA:376:C:H6     | 1.79                     | 0.45              |
| 25:DA:565:C:H2'   | 25:DA:566:U:O4'    | 2.17                     | 0.45              |
| 25:DA:589:C:P     | 35:DP:16:ARG:HH12  | 2.40                     | 0.45              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:DA:1013:C:H2'   | 25:DA:1014:U:C6    | 2.52                     | 0.45              |
| 25:DA:1878:G:H2'   | 25:DA:1879:C:C6    | 2.51                     | 0.45              |
| 32:DI:9:LEU:HD13   | 32:DI:9:LEU:HA     | 1.79                     | 0.45              |
| 40:DU:49:HIS:HA    | 40:DU:52:ARG:HB3   | 1.98                     | 0.45              |
| 1:AA:266:G:O2'     | 17:AQ:67:LYS:HD3   | 2.17                     | 0.45              |
| 1:AA:762:C:H2'     | 1:AA:763:G:C8      | 2.52                     | 0.45              |
| 1:AA:953:G:H5'     | 1:AA:965:A:N6      | 2.32                     | 0.45              |
| 2:AB:30:ARG:HH22   | 2:AB:194:PRO:HB2   | 1.81                     | 0.45              |
| 24:AX:10:G:N2      | 24:AX:26:G:H1'     | 2.32                     | 0.45              |
| 25:BA:511:U:O4     | 25:BA:512:G:N1     | 2.50                     | 0.45              |
| 25:BA:527:C:C5     | 25:BA:2779:U:H2'   | 2.52                     | 0.45              |
| 25:BA:1496:A:N3    | 25:BA:1577:C:O2'   | 2.35                     | 0.45              |
| 25:BA:2512:C:H2'   | 25:BA:2513:G:O4'   | 2.17                     | 0.45              |
| 29:BF:161:GLU:HG2  | 29:BF:164:ARG:NH2  | 2.32                     | 0.45              |
| 1:CA:1097:C:H2'    | 1:CA:1098:C:C6     | 2.52                     | 0.45              |
| 6:CF:68:PRO:HG2    | 6:CF:71:ARG:NH1    | 2.32                     | 0.45              |
| 25:DA:186:G:H2'    | 25:DA:187:G:C8     | 2.52                     | 0.45              |
| 25:DA:272(B):G:H2' | 25:DA:272(C):G:C8  | 2.51                     | 0.45              |
| 29:DF:157:VAL:HG12 | 29:DF:198:ALA:HB1  | 1.98                     | 0.45              |
| 36:DQ:38:GLU:HB2   | 36:DQ:127:ILE:HG22 | 1.99                     | 0.45              |
| 38:DS:84:GLN:HG3   | 38:DS:111:GLU:OE2  | 2.17                     | 0.45              |
| 39:DT:64:ARG:NH1   | 39:DT:103:ARG:HA   | 2.31                     | 0.45              |
| 1:AA:112:G:H4'     | 1:AA:389:A:H4'     | 1.98                     | 0.45              |
| 1:AA:675:A:H1'     | 11:AK:116:HIS:CD2  | 2.52                     | 0.45              |
| 6:AF:6:VAL:HG13    | 6:AF:90:VAL:HG22   | 1.99                     | 0.45              |
| 10:AJ:62:HIS:HB3   | 14:AN:59:ALA:HB3   | 1.99                     | 0.45              |
| 13:AM:88:ARG:HG3   | 13:AM:98:VAL:CG1   | 2.47                     | 0.45              |
| 25:BA:272(B):G:H2' | 25:BA:272(C):G:O4' | 2.16                     | 0.45              |
| 25:BA:330:A:HO2'   | 25:BA:331:A:H8     | 1.61                     | 0.45              |
| 25:BA:1296:G:OP1   | 25:BA:2709:G:O2'   | 2.30                     | 0.45              |
| 25:BA:1853:A:H2'   | 25:BA:1854:A:C8    | 2.52                     | 0.45              |
| 29:BF:53:THR:HG22  | 29:BF:56:GLU:HG3   | 1.98                     | 0.45              |
| 29:BF:155:LEU:HD11 | 29:BF:176:LEU:HD12 | 1.99                     | 0.45              |
| 34:BO:104:ARG:HE   | 39:BT:36:GLU:HG2   | 1.82                     | 0.45              |
| 37:BR:29:LEU:HD12  | 37:BR:29:LEU:HA    | 1.83                     | 0.45              |
| 1:CA:223:U:H2'     | 1:CA:224:C:H6      | 1.82                     | 0.45              |
| 1:CA:543:C:C2'     | 1:CA:544:G:H5'     | 2.47                     | 0.45              |
| 1:CA:838:G:N2      | 1:CA:848:C:N3      | 2.66                     | 0.45              |
| 1:CA:984:C:O5'     | 1:CA:984:C:H6      | 2.00                     | 0.45              |
| 2:CB:87:ARG:NH1    | 2:CB:230:VAL:HG11  | 2.33                     | 0.45              |
| 5:CE:57:LYS:HG2    | 5:CE:61:TYR:CE2    | 2.52                     | 0.45              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 13:CM:108:ARG:CZ  | 13:CM:114:ARG:HG2  | 2.47                     | 0.45              |
| 16:CP:53:VAL:HG13 | 16:CP:79:VAL:HG22  | 1.98                     | 0.45              |
| 25:DA:251:A:P     | 54:D8:7:HIS:HE2    | 2.39                     | 0.45              |
| 25:DA:277:C:O2'   | 25:DA:278:A:OP1    | 2.30                     | 0.45              |
| 25:DA:670:A:H4'   | 25:DA:671:C:O5'    | 2.17                     | 0.45              |
| 25:DA:863:A:H2'   | 25:DA:864:G:C8     | 2.52                     | 0.45              |
| 25:DA:983:A:OP1   | 60:DA:4292:HOH:O   | 2.21                     | 0.45              |
| 25:DA:1359:A:N1   | 25:DA:1372:U:O4    | 2.50                     | 0.45              |
| 25:DA:1474:C:H2'  | 25:DA:1475:G:H8    | 1.82                     | 0.45              |
| 25:DA:1637:A:H4'  | 25:DA:2711:A:O2'   | 2.17                     | 0.45              |
| 25:DA:1839:G:C8   | 25:DA:1927:A:H1'   | 2.52                     | 0.45              |
| 27:DD:62:TYR:HA   | 27:DD:87:ASN:OD1   | 2.17                     | 0.45              |
| 29:DF:41:LEU:O    | 29:DF:44:ARG:HG2   | 2.16                     | 0.45              |
| 30:DG:66:GLN:OE1  | 30:DG:98:ARG:NE    | 2.47                     | 0.45              |
| 40:DU:17:ILE:HG13 | 40:DU:32:PHE:CE1   | 2.52                     | 0.45              |
| 1:AA:92:C:H2'     | 1:AA:93:G:O4'      | 2.17                     | 0.44              |
| 1:AA:881:G:OP2    | 12:AL:12:ARG:NH2   | 2.50                     | 0.44              |
| 1:AA:1223:C:H5''  | 1:AA:1224:G:H5'    | 1.97                     | 0.44              |
| 2:AB:130:ARG:HH11 | 2:AB:130:ARG:HG3   | 1.82                     | 0.44              |
| 4:AD:128:VAL:HG12 | 4:AD:129:ASN:HD22  | 1.82                     | 0.44              |
| 17:AQ:67:LYS:HA   | 17:AQ:70:ARG:HH12  | 1.81                     | 0.44              |
| 18:AR:56:THR:HB   | 18:AR:58:LEU:HD23  | 1.99                     | 0.44              |
| 25:BA:878:A:C6    | 25:BA:900:A:C5     | 3.05                     | 0.44              |
| 25:BA:2690:C:H5'' | 25:BA:2872:G:H21   | 1.82                     | 0.44              |
| 27:BD:70:TRP:HB3  | 27:BD:190:TYR:CE1  | 2.52                     | 0.44              |
| 33:BN:75:TYR:CE2  | 33:BN:77:GLY:HA2   | 2.52                     | 0.44              |
| 36:BQ:108:GLY:HA3 | 45:BZ:116:VAL:HG13 | 1.99                     | 0.44              |
| 1:CA:486:U:H2'    | 1:CA:487:A:C8      | 2.51                     | 0.44              |
| 1:CA:868:C:H2'    | 1:CA:869:G:O4'     | 2.17                     | 0.44              |
| 1:CA:1022:G:H2'   | 1:CA:1023:G:H8     | 1.82                     | 0.44              |
| 1:CA:1063:C:H3'   | 1:CA:1064:G:H2'    | 1.99                     | 0.44              |
| 3:CC:186:PHE:HA   | 3:CC:198:VAL:O     | 2.17                     | 0.44              |
| 3:CC:190:ARG:O    | 3:CC:190:ARG:HG2   | 2.18                     | 0.44              |
| 5:CE:135:THR:O    | 5:CE:138:ALA:HB3   | 2.17                     | 0.44              |
| 9:CI:37:PHE:HB3   | 9:CI:43:ALA:HB1    | 1.98                     | 0.44              |
| 17:CQ:7:THR:O     | 17:CQ:23:VAL:HG13  | 2.17                     | 0.44              |
| 25:DA:272(D):G:H1 | 25:DA:364:C:H42    | 1.65                     | 0.44              |
| 25:DA:887:A:H4'   | 25:DA:888:C:H5     | 1.82                     | 0.44              |
| 25:DA:2134:A:H1'  | 25:DA:2159:G:H21   | 1.82                     | 0.44              |
| 25:DA:2292:C:OP1  | 38:DS:17:ARG:NH1   | 2.42                     | 0.44              |
| 25:DA:2365:G:H4'  | 46:D0:60:PHE:CZ    | 2.52                     | 0.44              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 40:DU:8:VAL:HG12  | 40:DU:11:ARG:NH2  | 2.32                     | 0.44              |
| 45:DZ:70:LEU:O    | 45:DZ:89:PHE:N    | 2.42                     | 0.44              |
| 49:D3:7:LYS:HE3   | 49:D3:32:GLN:HG3  | 1.99                     | 0.44              |
| 1:AA:1147:C:O2'   | 9:AI:16:ARG:HD3   | 2.17                     | 0.44              |
| 1:AA:1391:U:H2'   | 1:AA:1392:G:C8    | 2.52                     | 0.44              |
| 4:AD:106:TYR:HD1  | 4:AD:107:ARG:HD2  | 1.83                     | 0.44              |
| 25:BA:77:C:OP1    | 48:B2:59:ARG:HD3  | 2.17                     | 0.44              |
| 25:BA:150:C:H2'   | 25:BA:151:C:C6    | 2.52                     | 0.44              |
| 25:BA:220:G:O2'   | 25:BA:233:A:N3    | 2.41                     | 0.44              |
| 25:BA:978:G:C2    | 25:BA:986:C:C2    | 3.05                     | 0.44              |
| 27:BD:17:THR:OG1  | 27:BD:205:VAL:N   | 2.32                     | 0.44              |
| 31:BH:164:TYR:HB2 | 31:BH:167:GLU:HB2 | 1.99                     | 0.44              |
| 32:BI:81:VAL:O    | 32:BI:146:ALA:HA  | 2.18                     | 0.44              |
| 45:BZ:56:VAL:HA   | 45:BZ:70:LEU:HD23 | 2.00                     | 0.44              |
| 1:CA:10:A:OP2     | 5:CE:126:ARG:HD2  | 2.17                     | 0.44              |
| 1:CA:256:U:OP1    | 17:CQ:17:LYS:NZ   | 2.37                     | 0.44              |
| 1:CA:393:A:OP2    | 16:CP:12:LYS:HD2  | 2.17                     | 0.44              |
| 1:CA:429:U:H1'    | 1:CA:430:A:H5''   | 1.98                     | 0.44              |
| 1:CA:939:G:C6     | 1:CA:940:C:N4     | 2.85                     | 0.44              |
| 1:CA:1328:C:O2'   | 13:CM:29:ARG:NE   | 2.51                     | 0.44              |
| 2:CB:207:ALA:O    | 2:CB:211:ILE:HG13 | 2.17                     | 0.44              |
| 3:CC:144:SER:O    | 3:CC:144:SER:OG   | 2.36                     | 0.44              |
| 9:CI:23:ASN:HD22  | 9:CI:24:GLY:H     | 1.66                     | 0.44              |
| 16:CP:69:THR:O    | 16:CP:73:LEU:HG   | 2.17                     | 0.44              |
| 24:CX:12:G:H4'    | 25:DA:1908:C:O2   | 2.17                     | 0.44              |
| 25:DA:64:A:O3'    | 43:DX:71:GLY:HA3  | 2.17                     | 0.44              |
| 25:DA:606:U:H4'   | 25:DA:658:C:H4'   | 1.98                     | 0.44              |
| 25:DA:856:C:O2'   | 25:DA:857:C:OP1   | 2.31                     | 0.44              |
| 25:DA:1011:G:C2   | 25:DA:1151:G:C2   | 3.06                     | 0.44              |
| 25:DA:1264:G:OP1  | 51:D5:19:ARG:NH2  | 2.40                     | 0.44              |
| 25:DA:1359:A:N3   | 25:DA:1359:A:H5'  | 2.32                     | 0.44              |
| 25:DA:1847:A:H4'  | 25:DA:1848:A:OP2  | 2.16                     | 0.44              |
| 25:DA:1937:A:HO2' | 25:DA:1939:U:H6   | 1.63                     | 0.44              |
| 25:DA:2184:G:H2'  | 25:DA:2185:C:C6   | 2.52                     | 0.44              |
| 31:DH:13:LYS:HA   | 31:DH:14:GLY:HA2  | 1.60                     | 0.44              |
| 39:DT:16:ARG:HG2  | 39:DT:18:ASP:OD1  | 2.17                     | 0.44              |
| 50:D4:40:HIS:HB3  | 50:D4:43:TYR:HB2  | 1.97                     | 0.44              |
| 1:AA:134:A:H61    | 16:AP:25:ARG:HH12 | 1.63                     | 0.44              |
| 1:AA:346:G:C4     | 1:AA:347:G:H1'    | 2.52                     | 0.44              |
| 1:AA:530:G:O6     | 22:AV:21:C:H1'    | 2.17                     | 0.44              |
| 1:AA:1090:U:H2'   | 1:AA:1091:U:C6    | 2.52                     | 0.44              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:AA:1133:G:C6    | 1:AA:1142:G:C6     | 3.06                     | 0.44              |
| 1:AA:1241:G:H2'   | 1:AA:1242:C:H6     | 1.82                     | 0.44              |
| 2:AB:17:PHE:CD2   | 2:AB:44:LEU:HD21   | 2.53                     | 0.44              |
| 2:AB:91:PRO:HG2   | 2:AB:155:LEU:HD23  | 2.00                     | 0.44              |
| 3:AC:18:TRP:HE3   | 3:AC:18:TRP:H      | 1.66                     | 0.44              |
| 23:AW:76:PPU:H92  | 25:BA:2584:U:H4'   | 1.98                     | 0.44              |
| 25:BA:652(F):G:N2 | 25:BA:652(S):C:H2' | 2.31                     | 0.44              |
| 25:BA:792:G:O2'   | 25:BA:2440:C:N3    | 2.39                     | 0.44              |
| 25:BA:897:C:H2'   | 25:BA:898:C:H6     | 1.80                     | 0.44              |
| 25:BA:1453:U:O2'  | 25:BA:1455:G:N7    | 2.47                     | 0.44              |
| 25:BA:1783:A:H5'  | 25:BA:2608:G:H4'   | 1.99                     | 0.44              |
| 25:BA:2635:C:O2'  | 28:BE:80:GLU:OE1   | 2.23                     | 0.44              |
| 29:BF:117:ARG:NH2 | 35:BP:1:MET:O      | 2.51                     | 0.44              |
| 46:B0:10:THR:HB   | 46:B0:12:ASN:H     | 1.82                     | 0.44              |
| 1:CA:229:U:O2'    | 16:CP:23:ASP:OD2   | 2.31                     | 0.44              |
| 1:CA:255:G:OP1    | 17:CQ:69:LYS:NZ    | 2.38                     | 0.44              |
| 1:CA:522:C:H41    | 12:CL:53:ARG:NH2   | 2.11                     | 0.44              |
| 1:CA:826:C:H2'    | 1:CA:827:U:H6      | 1.83                     | 0.44              |
| 1:CA:978:A:O2'    | 1:CA:1321:C:N4     | 2.49                     | 0.44              |
| 1:CA:1156:G:H5'   | 1:CA:1157:A:OP2    | 2.18                     | 0.44              |
| 1:CA:1262:C:N4    | 1:CA:1273:G:C6     | 2.78                     | 0.44              |
| 3:CC:19:GLU:O     | 3:CC:56:ASP:HA     | 2.17                     | 0.44              |
| 17:CQ:92:ARG:O    | 17:CQ:95:TYR:HB2   | 2.18                     | 0.44              |
| 25:DA:95:G:H4'    | 48:D2:46:GLN:HA    | 1.98                     | 0.44              |
| 25:DA:336:C:HO2'  | 44:DY:35:TYR:HH    | 1.61                     | 0.44              |
| 25:DA:953:A:OP2   | 36:DQ:16:ARG:NH2   | 2.41                     | 0.44              |
| 25:DA:2113:U:C2   | 25:DA:2169:A:N6    | 2.85                     | 0.44              |
| 25:DA:2176:A:H2'  | 25:DA:2177:C:C6    | 2.53                     | 0.44              |
| 25:DA:2419:U:OP1  | 54:D8:41:ILE:HD12  | 2.18                     | 0.44              |
| 25:DA:2419:U:O2'  | 52:D6:54:ILE:HD11  | 2.17                     | 0.44              |
| 43:DX:31:HIS:CD2  | 43:DX:33:LYS:H     | 2.35                     | 0.44              |
| 52:D6:38:LYS:HE3  | 52:D6:39:TYR:H     | 1.83                     | 0.44              |
| 1:AA:112:G:H5'    | 1:AA:389:A:O2'     | 2.18                     | 0.44              |
| 1:AA:185:A:H2'    | 1:AA:186:C:H6      | 1.80                     | 0.44              |
| 1:AA:1007:C:N3    | 1:AA:1022:G:C6     | 2.85                     | 0.44              |
| 1:AA:1125:U:C5'   | 10:AJ:5:ARG:HH22   | 2.28                     | 0.44              |
| 25:BA:484:C:H2'   | 25:BA:485:C:C6     | 2.53                     | 0.44              |
| 25:BA:829:A:N7    | 25:BA:2247:A:O2'   | 2.46                     | 0.44              |
| 25:BA:1297:C:OP1  | 25:BA:2710:C:H4'   | 2.18                     | 0.44              |
| 25:BA:2153:G:H2'  | 25:BA:2154:G:H8    | 1.83                     | 0.44              |
| 26:BB:114:C:O2'   | 38:BS:46:VAL:HG13  | 2.17                     | 0.44              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 31:BH:85:LYS:NZ    | 60:BH:4001:HOH:O  | 2.51                     | 0.44              |
| 45:BZ:35:ARG:HD2   | 45:BZ:35:ARG:HA   | 1.69                     | 0.44              |
| 45:BZ:155:LEU:HD12 | 45:BZ:155:LEU:HA  | 1.76                     | 0.44              |
| 1:CA:375:U:H4'     | 16:CP:17:TYR:HE2  | 1.81                     | 0.44              |
| 1:CA:413:G:N2      | 1:CA:428:G:H1'    | 2.33                     | 0.44              |
| 1:CA:567:G:H2'     | 1:CA:568:G:O4'    | 2.18                     | 0.44              |
| 1:CA:922:G:C6      | 1:CA:923:A:C6     | 3.04                     | 0.44              |
| 1:CA:1042:G:C2     | 1:CA:1043:C:C2    | 3.05                     | 0.44              |
| 1:CA:1118:C:H2'    | 1:CA:1119:C:H6    | 1.82                     | 0.44              |
| 1:CA:1295:G:H2'    | 1:CA:1296:C:H5'   | 1.98                     | 0.44              |
| 5:CE:136:MET:O     | 5:CE:140:ARG:N    | 2.46                     | 0.44              |
| 14:CN:37:PHE:CE2   | 14:CN:44:LEU:HD13 | 2.52                     | 0.44              |
| 15:CO:87:ILE:CG2   | 15:CO:88:ARG:H    | 2.29                     | 0.44              |
| 25:DA:78:A:H2'     | 25:DA:79:G:C8     | 2.53                     | 0.44              |
| 25:DA:272(D):G:C2  | 25:DA:272(E):G:C8 | 3.05                     | 0.44              |
| 25:DA:272(G):C:N4  | 25:DA:363(C):G:H1 | 2.02                     | 0.44              |
| 25:DA:320:A:H4'    | 25:DA:322:A:C8    | 2.53                     | 0.44              |
| 25:DA:793:A:OP2    | 25:DA:2072:G:H5'  | 2.16                     | 0.44              |
| 25:DA:889:C:O2'    | 25:DA:890:A:O5'   | 2.33                     | 0.44              |
| 25:DA:1411:C:H2'   | 25:DA:1412:A:C8   | 2.53                     | 0.44              |
| 25:DA:1657:C:H2'   | 25:DA:1658:C:C6   | 2.53                     | 0.44              |
| 25:DA:2270:G:H2'   | 25:DA:2271:G:O4'  | 2.16                     | 0.44              |
| 25:DA:2788:C:O2'   | 25:DA:2809:A:N3   | 2.46                     | 0.44              |
| 26:DB:16:G:H1      | 26:DB:68:C:N4     | 2.16                     | 0.44              |
| 26:DB:42:C:O2'     | 30:DG:66:GLN:HG2  | 2.17                     | 0.44              |
| 38:DS:75:GLU:OE2   | 38:DS:75:GLU:N    | 2.29                     | 0.44              |
| 1:AA:405:U:OP2     | 4:AD:3:ARG:NH1    | 2.51                     | 0.44              |
| 1:AA:452:A:O2'     | 1:AA:453:A:H5''   | 2.18                     | 0.44              |
| 1:AA:599:C:C2'     | 1:AA:600:C:H5'    | 2.47                     | 0.44              |
| 3:AC:41:GLY:O      | 3:AC:45:LYS:HG2   | 2.18                     | 0.44              |
| 25:BA:1165:U:H2'   | 25:BA:1166:C:C6   | 2.53                     | 0.44              |
| 25:BA:1406:U:H2'   | 25:BA:1407:C:C6   | 2.53                     | 0.44              |
| 25:BA:1889:A:H2'   | 25:BA:1890:A:C8   | 2.53                     | 0.44              |
| 25:BA:2279:G:O6    | 46:B0:14:ARG:HD2  | 2.18                     | 0.44              |
| 25:BA:2722:G:H2'   | 25:BA:2723:C:C6   | 2.53                     | 0.44              |
| 31:BH:88:LEU:HD23  | 31:BH:165:ALA:HA  | 1.98                     | 0.44              |
| 32:BI:93:THR:O     | 32:BI:97:ILE:HG13 | 2.18                     | 0.44              |
| 50:B4:53:GLU:HG3   | 50:B4:54:GLY:N    | 2.32                     | 0.44              |
| 1:CA:90:U:C2'      | 1:CA:91:C:H5'     | 2.47                     | 0.44              |
| 1:CA:453:A:C6      | 1:CA:454:C:C4     | 3.06                     | 0.44              |
| 1:CA:688:G:C6      | 1:CA:700:G:C2     | 3.06                     | 0.44              |

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| Atom-1            | Atom-2           | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|------------------|--------------------------|-------------------|
| 1:CA:784:C:H4'    | 25:DA:1837:C:OP1 | 2.17                     | 0.44              |
| 1:CA:1005:A:H1'   | 1:CA:1025:U:C2   | 2.53                     | 0.44              |
| 1:CA:1072:G:H2'   | 1:CA:1073:U:C6   | 2.53                     | 0.44              |
| 13:CM:14:ARG:HA   | 13:CM:43:THR:O   | 2.18                     | 0.44              |
| 19:CS:19:VAL:O    | 19:CS:23:ASN:ND2 | 2.51                     | 0.44              |
| 20:CT:56:MET:HG3  | 20:CT:57:ARG:N   | 2.33                     | 0.44              |
| 25:DA:1028:A:OP2  | 25:DA:1126:A:N6  | 2.50                     | 0.44              |
| 25:DA:1654:A:OP1  | 37:DR:1:MET:HA   | 2.18                     | 0.44              |
| 25:DA:2318:G:H21  | 38:DS:3:ARG:CZ   | 2.30                     | 0.44              |
| 25:DA:2472:G:H2'  | 25:DA:2475:C:H42 | 1.82                     | 0.44              |
| 26:DB:41:U:C6     | 30:DG:69:ALA:HB1 | 2.53                     | 0.44              |
| 47:D1:40:ARG:NH2  | 47:D1:42:GLN:HG2 | 2.33                     | 0.44              |
| 1:AA:430:A:P      | 4:AD:8:VAL:H     | 2.41                     | 0.44              |
| 2:AB:114:ARG:O    | 2:AB:118:LEU:HB2 | 2.17                     | 0.44              |
| 3:AC:32:LEU:HD22  | 3:AC:59:ARG:HD3  | 1.99                     | 0.44              |
| 8:AH:75:ARG:HA    | 8:AH:76:PRO:HD2  | 1.91                     | 0.44              |
| 19:AS:3:ARG:NH1   | 19:AS:10:PHE:HB2 | 2.32                     | 0.44              |
| 25:BA:376:C:H2'   | 25:BA:377:C:C6   | 2.53                     | 0.44              |
| 25:BA:956:G:N2    | 25:BA:959:A:H3'  | 2.33                     | 0.44              |
| 25:BA:1179:C:H2'  | 25:BA:1180:C:H6  | 1.83                     | 0.44              |
| 25:BA:1421:G:C2   | 25:BA:1422:G:C8  | 3.06                     | 0.44              |
| 25:BA:2018:G:H21  | 40:BU:34:LYS:NZ  | 2.16                     | 0.44              |
| 33:BN:67:LEU:HD12 | 33:BN:67:LEU:HA  | 1.67                     | 0.44              |
| 42:BW:14:PRO:HG2  | 42:BW:78:GLU:HG2 | 1.99                     | 0.44              |
| 45:BZ:151:HIS:C   | 45:BZ:153:SER:H  | 2.21                     | 0.44              |
| 50:B4:63:TYR:N    | 50:B4:63:TYR:CD1 | 2.85                     | 0.44              |
| 53:B7:24:THR:HG22 | 53:B7:26:GLY:H   | 1.82                     | 0.44              |
| 1:CA:59:A:H3'     | 1:CA:331:G:H22   | 1.82                     | 0.44              |
| 1:CA:90:U:O2'     | 1:CA:91:C:H5'    | 2.18                     | 0.44              |
| 1:CA:167:G:H2'    | 1:CA:168:G:H8    | 1.82                     | 0.44              |
| 1:CA:377:G:H1     | 1:CA:386:C:H42   | 1.65                     | 0.44              |
| 1:CA:839:U:O2'    | 1:CA:840:C:OP1   | 2.33                     | 0.44              |
| 1:CA:1014:A:H5'   | 19:CS:18:LYS:NZ  | 2.32                     | 0.44              |
| 1:CA:1014:A:C2    | 1:CA:1219:U:H1'  | 2.52                     | 0.44              |
| 1:CA:1469:G:H2'   | 1:CA:1470:G:H8   | 1.82                     | 0.44              |
| 12:CL:24:VAL:HG12 | 12:CL:27:LEU:HB2 | 1.99                     | 0.44              |
| 24:CX:19:G:N2     | 24:CX:56:C:N3    | 2.53                     | 0.44              |
| 25:DA:379:G:O2'   | 25:DA:2232:U:OP1 | 2.35                     | 0.44              |
| 25:DA:783:A:N3    | 25:DA:783:A:H2'  | 2.31                     | 0.44              |
| 25:DA:1468:C:H42  | 25:DA:1524:G:H1  | 1.66                     | 0.44              |
| 25:DA:1674:G:H21  | 25:DA:1677:A:N6  | 2.16                     | 0.44              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:DA:1900:A:OP2   | 60:DA:4200:HOH:O   | 2.21                     | 0.44              |
| 25:DA:2315:G:H2'   | 25:DA:2316:C:C6    | 2.53                     | 0.44              |
| 25:DA:2552:U:O5'   | 25:DA:2552:U:H6    | 2.00                     | 0.44              |
| 25:DA:2872:G:C2    | 25:DA:2873:A:N6    | 2.86                     | 0.44              |
| 27:DD:123:ALA:O    | 27:DD:131:LEU:HD21 | 2.17                     | 0.44              |
| 32:DI:57:ARG:HG3   | 32:DI:58:LEU:N     | 2.33                     | 0.44              |
| 35:DP:94:GLU:HG3   | 35:DP:124:LYS:HD3  | 2.00                     | 0.44              |
| 1:AA:1030:C:N4     | 1:AA:1031:G:C6     | 2.79                     | 0.44              |
| 18:AR:65:ILE:O     | 18:AR:69:THR:HG23  | 2.18                     | 0.44              |
| 24:AX:23:C:H2'     | 24:AX:24:U:C6      | 2.52                     | 0.44              |
| 25:BA:141:A:H8     | 25:BA:1408:C:HO2'  | 1.54                     | 0.44              |
| 25:BA:572:A:H2'    | 25:BA:573:G:O4'    | 2.18                     | 0.44              |
| 25:BA:660:G:O3'    | 29:BF:38:ARG:NH2   | 2.50                     | 0.44              |
| 25:BA:1270:C:O2'   | 25:BA:1648:C:OP2   | 2.30                     | 0.44              |
| 25:BA:1434:A:N6    | 25:BA:1558:A:H62   | 2.10                     | 0.44              |
| 25:BA:2304:G:H22   | 25:BA:2312:U:H3    | 1.64                     | 0.44              |
| 32:BI:130:TYR:HD2  | 32:BI:138:ILE:HD12 | 1.83                     | 0.44              |
| 1:CA:260:G:C6      | 1:CA:261:U:C4      | 3.06                     | 0.44              |
| 1:CA:410:G:H5''    | 4:CD:30:LYS:NZ     | 2.33                     | 0.44              |
| 1:CA:730:G:H5''    | 1:CA:731:G:OP2     | 2.18                     | 0.44              |
| 1:CA:1079:G:H2'    | 1:CA:1080:A:C8     | 2.53                     | 0.44              |
| 2:CB:35:GLU:HB2    | 2:CB:40:HIS:HD2    | 1.83                     | 0.44              |
| 5:CE:41:VAL:O      | 5:CE:66:MET:HA     | 2.18                     | 0.44              |
| 15:CO:32:LEU:HD23  | 15:CO:32:LEU:HA    | 1.87                     | 0.44              |
| 25:DA:614(C):A:C4  | 29:DF:180:GLY:HA2  | 2.52                     | 0.44              |
| 25:DA:705:A:H1'    | 27:DD:9:TYR:CE2    | 2.52                     | 0.44              |
| 25:DA:1447:G:O2'   | 25:DA:1544:A:N3    | 2.37                     | 0.44              |
| 25:DA:2230:G:H1'   | 47:D1:45:ASN:CG    | 2.38                     | 0.44              |
| 28:DE:8:LYS:NZ     | 28:DE:188:VAL:O    | 2.48                     | 0.44              |
| 31:DH:143:GLN:HE21 | 31:DH:147:ASN:HD21 | 1.65                     | 0.44              |
| 44:DY:52:SER:HB2   | 44:DY:53:PRO:HD2   | 1.98                     | 0.44              |
| 48:D2:3:LEU:O      | 48:D2:7:ARG:HG3    | 2.18                     | 0.44              |
| 49:D3:12:PRO:HB2   | 49:D3:20:LYS:HG2   | 1.99                     | 0.44              |
| 1:AA:1060:C:C4     | 3:AC:2:GLY:HA3     | 2.52                     | 0.44              |
| 1:AA:1157:A:N7     | 1:AA:1180:A:N6     | 2.65                     | 0.44              |
| 1:AA:1499:A:H1'    | 1:AA:1520:G:H5'    | 2.00                     | 0.44              |
| 2:AB:20:GLU:HA     | 2:AB:21:ARG:NH2    | 2.32                     | 0.44              |
| 3:AC:21:ARG:HG3    | 3:AC:58:GLU:HG2    | 2.00                     | 0.44              |
| 17:AQ:38:ARG:HD3   | 17:AQ:38:ARG:HA    | 1.83                     | 0.44              |
| 25:BA:479:A:N3     | 25:BA:481:G:H5''   | 2.32                     | 0.44              |
| 25:BA:684:G:OP1    | 53:B7:16:HIS:ND1   | 2.50                     | 0.44              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:BA:1227:G:OP2   | 40:BU:16:LYS:NZ    | 2.34                     | 0.44              |
| 25:BA:1243:G:O2'   | 35:BP:4:SER:O      | 2.32                     | 0.44              |
| 25:BA:1674:G:H1'   | 25:BA:1676:A:N6    | 2.32                     | 0.44              |
| 25:BA:1991:U:H2'   | 25:BA:1992:G:H5''  | 2.00                     | 0.44              |
| 25:BA:2690:C:H5''  | 25:BA:2872:G:N2    | 2.33                     | 0.44              |
| 25:BA:2811:G:H5'   | 28:BE:60:ASN:ND2   | 2.29                     | 0.44              |
| 30:BG:43:LEU:C     | 30:BG:45:GLU:H     | 2.20                     | 0.44              |
| 34:BO:16:ALA:HB2   | 34:BO:52:VAL:HG21  | 1.98                     | 0.44              |
| 36:BQ:54:MET:SD    | 36:BQ:118:LEU:HD23 | 2.57                     | 0.44              |
| 39:BT:50:ILE:HA    | 39:BT:99:LEU:HD12  | 2.00                     | 0.44              |
| 48:B2:61:LEU:HD23  | 48:B2:61:LEU:HA    | 1.74                     | 0.44              |
| 1:CA:358:U:H2'     | 1:CA:359:U:C6      | 2.53                     | 0.44              |
| 1:CA:1064:G:H1'    | 1:CA:1065:U:OP2    | 2.18                     | 0.44              |
| 1:CA:1429:C:H2'    | 1:CA:1430:C:H6     | 1.83                     | 0.44              |
| 2:CB:87:ARG:HH11   | 2:CB:230:VAL:HG11  | 1.83                     | 0.44              |
| 4:CD:63:LYS:HD2    | 4:CD:197:PRO:O     | 2.17                     | 0.44              |
| 25:DA:271(N):U:O2' | 25:DA:271(O):C:H5' | 2.18                     | 0.44              |
| 25:DA:698:C:O2'    | 25:DA:734:A:N6     | 2.51                     | 0.44              |
| 25:DA:1226:A:H5''  | 40:DU:16:LYS:HZ2   | 1.82                     | 0.44              |
| 25:DA:1550:C:H2'   | 25:DA:1551:C:H6    | 1.82                     | 0.44              |
| 25:DA:1777:U:H2'   | 25:DA:1778:U:C6    | 2.53                     | 0.44              |
| 25:DA:2129:C:H2'   | 25:DA:2130:U:C4    | 2.52                     | 0.44              |
| 25:DA:2138:C:N4    | 25:DA:2153:G:H1    | 2.16                     | 0.44              |
| 25:DA:2474:C:H5''  | 25:DA:2475:C:OP2   | 2.17                     | 0.44              |
| 25:DA:2657:A:H3'   | 25:DA:2658:C:C6    | 2.53                     | 0.44              |
| 26:DB:50:G:OP2     | 38:DS:62:LYS:HD2   | 2.17                     | 0.44              |
| 29:DF:129:PHE:CE2  | 29:DF:163:VAL:HG11 | 2.53                     | 0.44              |
| 29:DF:187:VAL:HG12 | 35:DP:3:LEU:HD12   | 1.99                     | 0.44              |
| 30:DG:5:VAL:HG13   | 30:DG:8:LYS:HG3    | 2.00                     | 0.44              |
| 34:DO:4:PRO:O      | 34:DO:5:GLN:HB2    | 2.17                     | 0.44              |
| 40:DU:92:ARG:HA    | 40:DU:95:LEU:HB2   | 1.98                     | 0.44              |
| 41:DV:25:LEU:H     | 41:DV:92:THR:HG1   | 1.65                     | 0.44              |
| 41:DV:89:GLN:HA    | 41:DV:90:PRO:HD3   | 1.84                     | 0.44              |
| 42:DW:16:LYS:O     | 42:DW:19:LEU:HB2   | 2.18                     | 0.44              |
| 51:D5:9:LYS:HD3    | 51:D5:9:LYS:HA     | 1.77                     | 0.44              |
| 1:AA:77:G:C2'      | 1:AA:78:G:H5'      | 2.48                     | 0.44              |
| 1:AA:288:A:H2'     | 1:AA:289:G:H4'     | 2.00                     | 0.44              |
| 1:AA:502:G:OP1     | 12:AL:118:SER:HB3  | 2.18                     | 0.44              |
| 2:AB:30:ARG:NH2    | 2:AB:194:PRO:HB2   | 2.33                     | 0.44              |
| 2:AB:166:ASP:HA    | 2:AB:167:PRO:HD3   | 1.85                     | 0.44              |
| 4:AD:61:LYS:HA     | 4:AD:203:VAL:HG22  | 1.99                     | 0.44              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 25:BA:141:A:C8    | 25:BA:1408:C:O2'  | 2.68                     | 0.44              |
| 25:BA:1021:A:H8   | 25:BA:1021:A:H3'  | 1.83                     | 0.44              |
| 25:BA:1131:G:H21  | 33:BN:73:THR:HG21 | 1.83                     | 0.44              |
| 25:BA:2206:G:H3'  | 25:BA:2207:G:C8   | 2.53                     | 0.44              |
| 25:BA:2556:C:H2'  | 25:BA:2557:G:O4'  | 2.18                     | 0.44              |
| 28:BE:120:TRP:CE3 | 28:BE:155:LYS:HD3 | 2.53                     | 0.44              |
| 29:BF:74:ARG:H    | 29:BF:74:ARG:HG3  | 1.44                     | 0.44              |
| 32:BI:37:VAL:HG12 | 32:BI:38:LEU:HD12 | 1.99                     | 0.44              |
| 40:BU:28:ARG:HD3  | 40:BU:38:THR:OG1  | 2.18                     | 0.44              |
| 1:CA:4:U:C4       | 8:CH:105:ARG:HD3  | 2.53                     | 0.44              |
| 1:CA:401:C:H2'    | 1:CA:402:G:C8     | 2.53                     | 0.44              |
| 1:CA:685:G:C2     | 1:CA:686:U:C4     | 3.06                     | 0.44              |
| 1:CA:797:C:O2'    | 1:CA:798:G:H5'    | 2.18                     | 0.44              |
| 1:CA:828:A:OP1    | 1:CA:828:A:H4'    | 2.17                     | 0.44              |
| 1:CA:1202:G:C6    | 14:CN:42:ILE:HG21 | 2.52                     | 0.44              |
| 1:CA:1429:C:H2'   | 1:CA:1430:C:C6    | 2.53                     | 0.44              |
| 1:CA:1493:A:C8    | 25:DA:1913:A:N1   | 2.86                     | 0.44              |
| 2:CB:218:ALA:O    | 2:CB:222:ILE:HG23 | 2.18                     | 0.44              |
| 3:CC:29:TYR:OH    | 14:CN:54:PRO:O    | 2.27                     | 0.44              |
| 25:DA:380:U:H2'   | 25:DA:381:G:H8    | 1.83                     | 0.44              |
| 25:DA:649:G:H2'   | 25:DA:650:C:O4'   | 2.18                     | 0.44              |
| 25:DA:910:A:H62   | 36:DQ:12:GLN:HA   | 1.83                     | 0.44              |
| 25:DA:1826:G:H4'  | 27:DD:242:ARG:CZ  | 2.47                     | 0.44              |
| 25:DA:2135:A:H61  | 25:DA:2157:G:N2   | 2.15                     | 0.44              |
| 25:DA:2193:G:C4   | 25:DA:2194:G:C8   | 3.06                     | 0.44              |
| 25:DA:2651:C:O2'  | 25:DA:2652:C:H5'  | 2.17                     | 0.44              |
| 25:DA:2695:C:H2'  | 25:DA:2696:U:H6   | 1.83                     | 0.44              |
| 26:DB:54:G:H21    | 30:DG:29:TRP:HZ2  | 1.64                     | 0.44              |
| 28:DE:14:ILE:HB   | 39:DT:14:TYR:CE2  | 2.52                     | 0.44              |
| 28:DE:32:PRO:HD2  | 28:DE:50:GLY:O    | 2.18                     | 0.44              |
| 28:DE:72:VAL:HA   | 28:DE:73:GLU:HG3  | 2.00                     | 0.44              |
| 28:DE:101:ARG:CZ  | 28:DE:171:GLU:HB3 | 2.48                     | 0.44              |
| 29:DF:107:LYS:HG2 | 29:DF:206:ILE:HA  | 2.00                     | 0.44              |
| 30:DG:7:LEU:HD23  | 30:DG:100:TRP:HE3 | 1.81                     | 0.44              |
| 33:DN:128:HIS:HA  | 33:DN:129:PRO:HD3 | 1.84                     | 0.44              |
| 39:DT:36:GLU:O    | 39:DT:39:ARG:HG3  | 2.18                     | 0.44              |
| 44:DY:67:LEU:HD23 | 44:DY:67:LEU:HA   | 1.85                     | 0.44              |
| 45:DZ:19:ARG:HG3  | 45:DZ:25:PRO:HD3  | 1.99                     | 0.44              |
| 47:D1:51:VAL:HG12 | 47:D1:53:VAL:HG23 | 1.99                     | 0.44              |
| 47:D1:52:ARG:HA   | 47:D1:56:GLN:O    | 2.17                     | 0.44              |
| 52:D6:25:LYS:NZ   | 52:D6:51:GLU:OE2  | 2.39                     | 0.44              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:AA:293:G:C6      | 1:AA:294:U:C4     | 3.05                     | 0.43              |
| 1:AA:544:G:OP1     | 4:AD:59:ARG:NH2   | 2.33                     | 0.43              |
| 1:AA:738:C:H2'     | 1:AA:739:C:C6     | 2.53                     | 0.43              |
| 1:AA:1082:G:H2'    | 1:AA:1083:U:O4'   | 2.18                     | 0.43              |
| 1:AA:1369:C:H2'    | 1:AA:1370:G:C8    | 2.53                     | 0.43              |
| 25:BA:64:A:O3'     | 43:BX:71:GLY:HA3  | 2.18                     | 0.43              |
| 25:BA:833:U:O2     | 35:BP:55:ARG:NH2  | 2.51                     | 0.43              |
| 25:BA:947:G:H2'    | 25:BA:948:G:C8    | 2.53                     | 0.43              |
| 25:BA:1042:G:H2'   | 25:BA:1043:C:C6   | 2.53                     | 0.43              |
| 25:BA:1243:G:O3'   | 35:BP:7:ARG:NH2   | 2.50                     | 0.43              |
| 25:BA:2302:G:H1    | 25:BA:2314:C:H42  | 1.65                     | 0.43              |
| 33:BN:73:THR:HG23  | 33:BN:82:LEU:HD11 | 2.00                     | 0.43              |
| 1:CA:36:C:O2'      | 12:CL:117:ARG:NH2 | 2.50                     | 0.43              |
| 1:CA:410:G:P       | 4:CD:30:LYS:HZ3   | 2.38                     | 0.43              |
| 1:CA:589:C:H2'     | 1:CA:590:C:H5'    | 2.00                     | 0.43              |
| 1:CA:679:C:H2'     | 1:CA:680:C:C6     | 2.53                     | 0.43              |
| 1:CA:991:U:H3'     | 1:CA:1212:U:N3    | 2.33                     | 0.43              |
| 1:CA:1042:G:C6     | 1:CA:1043:C:C4    | 3.06                     | 0.43              |
| 1:CA:1066:C:H2'    | 1:CA:1067:A:C8    | 2.52                     | 0.43              |
| 4:CD:12:CYS:SG     | 4:CD:19:LEU:N     | 2.87                     | 0.43              |
| 9:CI:127:LYS:O     | 9:CI:128:ARG:HB3  | 2.18                     | 0.43              |
| 13:CM:65:LYS:O     | 13:CM:66:LEU:HD23 | 2.17                     | 0.43              |
| 19:CS:69:HIS:HB3   | 19:CS:73:GLU:HG3  | 2.00                     | 0.43              |
| 19:CS:77:THR:HG23  | 19:CS:78:ARG:HG2  | 2.00                     | 0.43              |
| 20:CT:9:ASN:ND2    | 20:CT:10:LEU:HA   | 2.33                     | 0.43              |
| 25:DA:18:C:O2'     | 25:DA:554:U:OP1   | 2.36                     | 0.43              |
| 25:DA:910:A:N3     | 25:DA:2264:C:O2'  | 2.39                     | 0.43              |
| 25:DA:1410:G:H2'   | 25:DA:1411:C:H6   | 1.81                     | 0.43              |
| 25:DA:1600:C:OP1   | 43:DX:58:HIS:NE2  | 2.29                     | 0.43              |
| 25:DA:2137:C:O2'   | 25:DA:2138:C:H5'  | 2.18                     | 0.43              |
| 25:DA:2781:A:H5''  | 25:DA:2782:G:H5'  | 2.00                     | 0.43              |
| 29:DF:40:GLN:NE2   | 29:DF:182:ASN:HB2 | 2.32                     | 0.43              |
| 29:DF:152:GLU:HA   | 29:DF:190:GLU:OE2 | 2.18                     | 0.43              |
| 34:DO:77:ILE:HD12  | 39:DT:74:ARG:HD3  | 2.01                     | 0.43              |
| 36:DQ:110:THR:HG23 | 36:DQ:113:GLN:OE1 | 2.18                     | 0.43              |
| 47:D1:82:LEU:O     | 47:D1:85:LEU:HD23 | 2.18                     | 0.43              |
| 54:D8:39:LYS:HA    | 54:D8:42:ARG:NH1  | 2.33                     | 0.43              |
| 1:AA:457:C:N4      | 1:AA:475:G:O6     | 2.51                     | 0.43              |
| 1:AA:942:G:C2      | 1:AA:1342:C:C2    | 3.06                     | 0.43              |
| 5:AE:116:THR:HG23  | 5:AE:117:ASP:OD2  | 2.19                     | 0.43              |
| 8:AH:6:ILE:HB      | 8:AH:85:ARG:NH1   | 2.33                     | 0.43              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 12:AL:33:ARG:HD2  | 12:AL:33:ARG:HA    | 1.80                     | 0.43              |
| 12:AL:58:VAL:O    | 12:AL:65:GLU:HA    | 2.18                     | 0.43              |
| 14:AN:50:LYS:HE2  | 14:AN:52:GLN:NE2   | 2.33                     | 0.43              |
| 25:BA:459:U:H2'   | 25:BA:460:A:C8     | 2.52                     | 0.43              |
| 25:BA:557:U:O2    | 33:BN:45:ASN:HB2   | 2.18                     | 0.43              |
| 25:BA:699:A:H2'   | 25:BA:700:G:O4'    | 2.18                     | 0.43              |
| 25:BA:1027:A:C6   | 25:BA:1126:A:C4    | 3.06                     | 0.43              |
| 25:BA:1951:U:H2'  | 25:BA:1953:A:OP2   | 2.17                     | 0.43              |
| 25:BA:2267:A:H5'' | 25:BA:2268:A:H5'   | 1.99                     | 0.43              |
| 25:BA:2789:C:O2   | 25:BA:2894:G:N1    | 2.50                     | 0.43              |
| 26:BB:29:A:H2'    | 26:BB:30:C:O4'     | 2.18                     | 0.43              |
| 28:BE:54:GLN:OE1  | 28:BE:55:ASN:N     | 2.42                     | 0.43              |
| 31:BH:154:PRO:HB3 | 31:BH:163:TYR:CZ   | 2.52                     | 0.43              |
| 34:BO:17:ARG:HD3  | 34:BO:17:ARG:HA    | 1.87                     | 0.43              |
| 1:CA:324:G:N1     | 1:CA:327:A:OP2     | 2.51                     | 0.43              |
| 1:CA:377:G:OP1    | 16:CP:3:LYS:HD2    | 2.18                     | 0.43              |
| 1:CA:948:C:N4     | 1:CA:1233:G:H1     | 2.14                     | 0.43              |
| 1:CA:958:A:H5''   | 1:CA:959:A:OP2     | 2.17                     | 0.43              |
| 1:CA:995:C:N3     | 1:CA:1046:A:O2'    | 2.46                     | 0.43              |
| 1:CA:1058:G:H2'   | 1:CA:1059:C:O4'    | 2.18                     | 0.43              |
| 1:CA:1251:A:H2'   | 1:CA:1252:A:C8     | 2.54                     | 0.43              |
| 4:CD:98:GLU:O     | 4:CD:103:ASN:ND2   | 2.51                     | 0.43              |
| 6:CF:23:LYS:HE2   | 6:CF:23:LYS:HB3    | 1.75                     | 0.43              |
| 9:CI:72:GLY:O     | 9:CI:76:ALA:N      | 2.47                     | 0.43              |
| 11:CK:33:THR:C    | 11:CK:40:ILE:HG12  | 2.38                     | 0.43              |
| 12:CL:113:ARG:HB3 | 12:CL:122:THR:HG21 | 2.00                     | 0.43              |
| 17:CQ:19:VAL:HG23 | 17:CQ:44:ALA:HB3   | 2.00                     | 0.43              |
| 19:CS:30:LEU:HD12 | 19:CS:31:ILE:N     | 2.33                     | 0.43              |
| 25:DA:78:A:N6     | 25:DA:109:G:O6     | 2.50                     | 0.43              |
| 25:DA:85:G:OP2    | 44:DY:9:LYS:HB3    | 2.18                     | 0.43              |
| 25:DA:144:C:H5'   | 43:DX:2:LYS:HG2    | 2.00                     | 0.43              |
| 25:DA:833:U:H2'   | 25:DA:834:C:H6     | 1.79                     | 0.43              |
| 25:DA:1230:C:H2'  | 25:DA:1231:G:C8    | 2.52                     | 0.43              |
| 25:DA:1443:G:H1   | 25:DA:1548:C:N4    | 2.15                     | 0.43              |
| 25:DA:1660:C:H2'  | 25:DA:1661:G:H8    | 1.82                     | 0.43              |
| 25:DA:2056:G:OP1  | 60:DA:4373:HOH:O   | 2.21                     | 0.43              |
| 25:DA:2342:C:O2'  | 25:DA:2374:C:H5''  | 2.18                     | 0.43              |
| 26:DB:48:A:P      | 38:DS:30:ARG:HH12  | 2.40                     | 0.43              |
| 29:DF:33:LEU:HD12 | 29:DF:33:LEU:HA    | 1.80                     | 0.43              |
| 29:DF:108:LYS:O   | 29:DF:112:MET:HG3  | 2.18                     | 0.43              |
| 29:DF:116:ASP:OD2 | 35:DP:1:MET:N      | 2.50                     | 0.43              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 34:DO:14:THR:HG21  | 34:DO:86:ILE:HB    | 2.00                     | 0.43              |
| 35:DP:100:LEU:HD12 | 35:DP:112:LEU:HD11 | 1.99                     | 0.43              |
| 38:DS:91:PRO:HD2   | 38:DS:92:TYR:CE2   | 2.53                     | 0.43              |
| 42:DW:28:SER:OG    | 42:DW:31:GLU:HG3   | 2.17                     | 0.43              |
| 46:D0:68:GLU:HB2   | 46:D0:82:ARG:NH1   | 2.32                     | 0.43              |
| 47:D1:51:VAL:HG11  | 47:D1:74:VAL:HG21  | 2.00                     | 0.43              |
| 1:AA:109:A:C6      | 1:AA:326:G:C6      | 3.06                     | 0.43              |
| 1:AA:262:A:C6      | 1:AA:263:A:C6      | 3.06                     | 0.43              |
| 1:AA:452:A:H4'     | 16:AP:72:ARG:HH12  | 1.83                     | 0.43              |
| 1:AA:1125:U:H4'    | 1:AA:1126:U:OP1    | 2.19                     | 0.43              |
| 25:BA:732:C:H2'    | 25:BA:733:G:O4'    | 2.19                     | 0.43              |
| 25:BA:864:G:OP2    | 36:BQ:22:LYS:HE2   | 2.19                     | 0.43              |
| 36:BQ:48:GLU:O     | 36:BQ:52:VAL:HG23  | 2.19                     | 0.43              |
| 37:BR:72:ASP:O     | 37:BR:76:VAL:HG23  | 2.18                     | 0.43              |
| 1:CA:461:A:O2'     | 1:CA:470:C:H5'     | 2.17                     | 0.43              |
| 1:CA:721:G:H4'     | 1:CA:722:A:O4'     | 2.17                     | 0.43              |
| 1:CA:999:C:H42     | 1:CA:1042:G:H1     | 1.66                     | 0.43              |
| 1:CA:1225:A:OP1    | 13:CM:103:THR:OG1  | 2.35                     | 0.43              |
| 1:CA:1493:A:H8     | 25:DA:1913:A:N1    | 2.16                     | 0.43              |
| 2:CB:184:VAL:HG12  | 2:CB:197:VAL:HG13  | 2.00                     | 0.43              |
| 3:CC:61:ALA:C      | 3:CC:63:ASN:H      | 2.22                     | 0.43              |
| 7:CG:103:TRP:HA    | 7:CG:106:GLN:HB2   | 2.00                     | 0.43              |
| 13:CM:44:ARG:HB2   | 13:CM:47:ASP:OD1   | 2.19                     | 0.43              |
| 17:CQ:6:LEU:O      | 17:CQ:58:GLU:HA    | 2.18                     | 0.43              |
| 25:DA:182:A:H2     | 25:DA:433:C:O2     | 2.01                     | 0.43              |
| 25:DA:1788:C:H2'   | 25:DA:1789:A:H8    | 1.83                     | 0.43              |
| 25:DA:1835:G:H5''  | 25:DA:1836:C:OP2   | 2.18                     | 0.43              |
| 25:DA:2723:C:P     | 28:DE:109:LYS:HZ3  | 2.41                     | 0.43              |
| 45:DZ:55:HIS:CE1   | 45:DZ:135:GLU:HG3  | 2.51                     | 0.43              |
| 1:AA:608:A:H4'     | 16:AP:32:TYR:OH    | 2.19                     | 0.43              |
| 1:AA:1027:C:O2     | 1:AA:1034:G:N1     | 2.52                     | 0.43              |
| 2:AB:185:ILE:HA    | 2:AB:199:TYR:O     | 2.18                     | 0.43              |
| 3:AC:23:TYR:CG     | 3:AC:24:ALA:N      | 2.86                     | 0.43              |
| 6:AF:44:GLY:HA2    | 6:AF:59:TYR:CE2    | 2.53                     | 0.43              |
| 8:AH:39:LEU:HD12   | 8:AH:44:PHE:HB2    | 2.01                     | 0.43              |
| 9:AI:37:PHE:HB3    | 9:AI:43:ALA:CB     | 2.48                     | 0.43              |
| 10:AJ:5:ARG:O      | 10:AJ:98:ILE:HA    | 2.19                     | 0.43              |
| 14:AN:48:ALA:HB2   | 14:AN:53:LEU:HD12  | 2.01                     | 0.43              |
| 16:AP:21:VAL:HG13  | 16:AP:33:ILE:HB    | 1.99                     | 0.43              |
| 25:BA:71:A:OP2     | 25:BA:71:A:H3'     | 2.19                     | 0.43              |
| 25:BA:84:A:H5''    | 44:BY:8:LYS:HG3    | 2.00                     | 0.43              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 25:BA:1047:G:H2'  | 25:BA:1110:G:N1    | 2.33                     | 0.43              |
| 28:BE:176:ILE:HB  | 28:BE:181:LEU:HB2  | 1.99                     | 0.43              |
| 47:B1:78:LYS:HE3  | 47:B1:78:LYS:HB2   | 1.68                     | 0.43              |
| 1:CA:335:C:O2'    | 1:CA:1433:A:N3     | 2.43                     | 0.43              |
| 1:CA:1112:C:H42   | 3:CC:177:THR:HA    | 1.81                     | 0.43              |
| 1:CA:1155:G:C6    | 1:CA:1156:G:C4     | 3.06                     | 0.43              |
| 2:CB:100:GLY:O    | 2:CB:104:ASN:N     | 2.50                     | 0.43              |
| 3:CC:47:LEU:HB3   | 3:CC:52:LEU:HB2    | 2.00                     | 0.43              |
| 3:CC:124:ILE:HD12 | 3:CC:191:THR:HG23  | 2.01                     | 0.43              |
| 5:CE:108:ALA:O    | 5:CE:112:LEU:HG    | 2.18                     | 0.43              |
| 18:CR:58:LEU:HB3  | 18:CR:62:GLU:HG3   | 2.01                     | 0.43              |
| 19:CS:14:HIS:CE1  | 19:CS:15:LEU:HD13  | 2.53                     | 0.43              |
| 25:DA:534:U:H5'   | 40:DU:42:ALA:HB1   | 2.00                     | 0.43              |
| 25:DA:590:A:OP1   | 29:DF:95:ARG:NH1   | 2.51                     | 0.43              |
| 25:DA:1266:G:O5'  | 42:DW:15:ARG:NH2   | 2.51                     | 0.43              |
| 25:DA:1581:G:H2'  | 25:DA:1582:C:O4'   | 2.17                     | 0.43              |
| 25:DA:1637:A:OP2  | 60:DA:4628:HOH:O   | 2.21                     | 0.43              |
| 25:DA:1788:C:H2'  | 25:DA:1789:A:C8    | 2.53                     | 0.43              |
| 25:DA:1894:C:H2'  | 25:DA:1895:C:C6    | 2.52                     | 0.43              |
| 25:DA:2037:G:H2'  | 25:DA:2038:G:C8    | 2.54                     | 0.43              |
| 25:DA:2148:G:H2'  | 25:DA:2149:G:C8    | 2.53                     | 0.43              |
| 25:DA:2466:C:H5'  | 55:D9:5:ALA:HB3    | 2.00                     | 0.43              |
| 29:DF:162:LEU:H   | 29:DF:162:LEU:HD22 | 1.83                     | 0.43              |
| 34:DO:120:GLU:HG2 | 34:DO:122:LEU:HG   | 2.00                     | 0.43              |
| 42:DW:13:SER:HA   | 42:DW:14:PRO:HD3   | 1.88                     | 0.43              |
| 1:AA:90:U:C2'     | 1:AA:91:C:H5'      | 2.49                     | 0.43              |
| 1:AA:345:C:H4'    | 1:AA:346:G:C4      | 2.53                     | 0.43              |
| 1:AA:540:G:H2'    | 1:AA:541:G:C8      | 2.54                     | 0.43              |
| 1:AA:600:C:H2'    | 1:AA:601:C:C6      | 2.54                     | 0.43              |
| 1:AA:1077:G:H5''  | 1:AA:1078:U:OP2    | 2.18                     | 0.43              |
| 4:AD:31:CYS:O     | 4:AD:35:ARG:HG3    | 2.17                     | 0.43              |
| 8:AH:17:THR:HB    | 8:AH:78:GLN:OE1    | 2.19                     | 0.43              |
| 9:AI:4:TYR:CE1    | 9:AI:88:TYR:HA     | 2.53                     | 0.43              |
| 14:AN:3:ARG:HB3   | 14:AN:3:ARG:HH21   | 1.83                     | 0.43              |
| 17:AQ:12:SER:HB3  | 17:AQ:20:THR:HB    | 2.01                     | 0.43              |
| 25:BA:2376:A:N6   | 38:BS:89:ARG:HD3   | 2.33                     | 0.43              |
| 25:BA:2663:G:C6   | 25:BA:2664:G:C4    | 3.06                     | 0.43              |
| 25:BA:2812:G:H2'  | 25:BA:2813:A:C8    | 2.53                     | 0.43              |
| 26:BB:7:G:H8      | 26:BB:7:G:H5''     | 1.84                     | 0.43              |
| 27:BD:132:PRO:HG2 | 27:BD:135:PHE:CE2  | 2.53                     | 0.43              |
| 32:BI:60:GLU:HG3  | 32:BI:61:ARG:NH1   | 2.33                     | 0.43              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 42:BW:4:LYS:HG2    | 42:BW:5:ALA:N      | 2.33                     | 0.43              |
| 50:B4:55:ARG:N     | 50:B4:56:VAL:HA    | 2.32                     | 0.43              |
| 1:CA:382:A:H2'     | 1:CA:383:A:C8      | 2.53                     | 0.43              |
| 1:CA:452:A:O2'     | 1:CA:453:A:H5''    | 2.19                     | 0.43              |
| 1:CA:750:G:N2      | 15:CO:23:GLY:O     | 2.43                     | 0.43              |
| 2:CB:130:ARG:HA    | 2:CB:131:PRO:HD3   | 1.88                     | 0.43              |
| 4:CD:158:ILE:HD13  | 4:CD:158:ILE:HA    | 1.91                     | 0.43              |
| 5:CE:116:THR:HG23  | 5:CE:117:ASP:OD2   | 2.19                     | 0.43              |
| 10:CJ:33:GLN:H     | 10:CJ:76:ASN:H     | 1.66                     | 0.43              |
| 12:CL:28:LYS:N     | 12:CL:29:GLY:HA2   | 2.33                     | 0.43              |
| 16:CP:6:LEU:HB3    | 16:CP:17:TYR:HD2   | 1.82                     | 0.43              |
| 25:DA:189:G:P      | 47:D1:39:LYS:HZ2   | 2.40                     | 0.43              |
| 25:DA:935:C:H2'    | 25:DA:936:C:H6     | 1.82                     | 0.43              |
| 25:DA:1721:G:N1    | 25:DA:1739:U:OP2   | 2.51                     | 0.43              |
| 27:DD:108:PRO:HB3  | 27:DD:143:HIS:HE1  | 1.84                     | 0.43              |
| 31:DH:9:ILE:HG12   | 31:DH:69:ARG:HD2   | 1.99                     | 0.43              |
| 31:DH:97:ARG:O     | 31:DH:103:LEU:HD12 | 2.19                     | 0.43              |
| 31:DH:149:ARG:NH1  | 31:DH:167:GLU:OE2  | 2.50                     | 0.43              |
| 32:DI:73:GLU:HG3   | 32:DI:138:ILE:HG23 | 1.99                     | 0.43              |
| 34:DO:106:LEU:HD23 | 34:DO:106:LEU:HA   | 1.87                     | 0.43              |
| 35:DP:121:LYS:O    | 35:DP:123:LEU:N    | 2.49                     | 0.43              |
| 41:DV:24:LYS:HA    | 41:DV:92:THR:OG1   | 2.19                     | 0.43              |
| 41:DV:52:VAL:CG2   | 41:DV:55:ALA:HB3   | 2.44                     | 0.43              |
| 45:DZ:156:LYS:HE2  | 45:DZ:156:LYS:HB3  | 1.79                     | 0.43              |
| 1:AA:589:C:H42     | 1:AA:650:G:H1      | 1.66                     | 0.43              |
| 1:AA:1118:C:O5'    | 1:AA:1118:C:H6     | 2.00                     | 0.43              |
| 4:AD:36:ARG:HB2    | 4:AD:38:TYR:CZ     | 2.53                     | 0.43              |
| 5:AE:69:VAL:HG22   | 5:AE:71:LEU:HD23   | 2.01                     | 0.43              |
| 24:AX:16:C:O2'     | 24:AX:17:C:H5'     | 2.18                     | 0.43              |
| 25:BA:458:G:O2'    | 25:BA:469:G:O6     | 2.28                     | 0.43              |
| 25:BA:1653:G:H3'   | 37:BR:2:ARG:HB2    | 2.00                     | 0.43              |
| 25:BA:1805:U:O2    | 27:BD:50:THR:HB    | 2.19                     | 0.43              |
| 25:BA:1814:G:H2'   | 25:BA:1815:A:C8    | 2.54                     | 0.43              |
| 25:BA:2712:U:O2'   | 25:BA:2713:A:H5'   | 2.18                     | 0.43              |
| 25:BA:2830:G:H5''  | 28:BE:58:ARG:CZ    | 2.49                     | 0.43              |
| 30:BG:43:LEU:HB3   | 30:BG:44:GLY:H     | 1.59                     | 0.43              |
| 1:CA:191:G:N2      | 20:CT:103:GLY:HA2  | 2.33                     | 0.43              |
| 1:CA:1165:C:N4     | 1:CA:1171:G:H1     | 2.13                     | 0.43              |
| 1:CA:1227:A:H3'    | 1:CA:1227:A:C8     | 2.53                     | 0.43              |
| 1:CA:1328:C:H2'    | 1:CA:1329:A:O4'    | 2.19                     | 0.43              |
| 3:CC:7:PRO:HG3     | 3:CC:175:LEU:HD23  | 2.00                     | 0.43              |

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| Atom-1             | Atom-2              | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|---------------------|--------------------------|-------------------|
| 3:CC:199:LYS:HB3   | 3:CC:201:TYR:HE1    | 1.83                     | 0.43              |
| 10:CJ:42:THR:HG21  | 10:CJ:66:ARG:HB3    | 2.00                     | 0.43              |
| 25:DA:898:C:H2'    | 25:DA:899:A:O4'     | 2.18                     | 0.43              |
| 25:DA:910:A:C6     | 25:DA:911:A:C6      | 3.07                     | 0.43              |
| 25:DA:1785:A:H2'   | 25:DA:1787:A:N7     | 2.34                     | 0.43              |
| 25:DA:2298:A:H2'   | 25:DA:2299:G:O4'    | 2.18                     | 0.43              |
| 26:DB:50:G:OP1     | 38:DS:63:THR:OG1    | 2.28                     | 0.43              |
| 26:DB:83:G:H4'     | 49:D3:52:HIS:CG     | 2.53                     | 0.43              |
| 26:DB:110:G:H2'    | 26:DB:111:G:C8      | 2.54                     | 0.43              |
| 42:DW:46:PHE:O     | 42:DW:50:VAL:HG23   | 2.19                     | 0.43              |
| 1:AA:404:U:H3'     | 4:AD:3:ARG:NH2      | 2.33                     | 0.43              |
| 1:AA:542:G:OP1     | 4:AD:10:ARG:NH2     | 2.47                     | 0.43              |
| 1:AA:1068:G:N2     | 1:AA:1191:A:N3      | 2.62                     | 0.43              |
| 1:AA:1164:G:H2'    | 1:AA:1165:C:C6      | 2.54                     | 0.43              |
| 1:AA:1347:G:C8     | 9:AI:107:ARG:HB2    | 2.54                     | 0.43              |
| 1:AA:1356:G:H2'    | 1:AA:1357:A:H8      | 1.78                     | 0.43              |
| 3:AC:35:GLU:CD     | 3:AC:59:ARG:HH12    | 2.20                     | 0.43              |
| 5:AE:72:GLN:O      | 5:AE:75:THR:HG22    | 2.19                     | 0.43              |
| 8:AH:96:GLY:N      | 8:AH:99:GLU:OE2     | 2.24                     | 0.43              |
| 16:AP:74:LEU:HG    | 16:AP:79:VAL:HG21   | 2.00                     | 0.43              |
| 25:BA:528:A:C2     | 25:BA:2042:A:H2'    | 2.53                     | 0.43              |
| 25:BA:1021:A:H61   | 25:BA:1142(A):A:H61 | 1.66                     | 0.43              |
| 25:BA:2141:G:C5    | 25:BA:2151:G:C2     | 3.07                     | 0.43              |
| 25:BA:2153:G:H2'   | 25:BA:2154:G:C8     | 2.54                     | 0.43              |
| 25:BA:2260:C:H2'   | 25:BA:2261:C:H6     | 1.84                     | 0.43              |
| 28:BE:181:LEU:HD11 | 39:BT:6:LEU:HD12    | 2.01                     | 0.43              |
| 33:BN:138:LEU:HA   | 33:BN:138:LEU:HD23  | 1.73                     | 0.43              |
| 37:BR:2:ARG:NH1    | 37:BR:5:LYS:O       | 2.51                     | 0.43              |
| 37:BR:36:THR:HG22  | 37:BR:37:THR:N      | 2.34                     | 0.43              |
| 38:BS:15:ARG:NE    | 38:BS:88:ASP:OD2    | 2.29                     | 0.43              |
| 39:BT:50:ILE:HB    | 39:BT:99:LEU:HB2    | 2.00                     | 0.43              |
| 1:CA:153:C:H2'     | 1:CA:154:C:C6       | 2.53                     | 0.43              |
| 1:CA:161:A:H2'     | 1:CA:162:A:C8       | 2.53                     | 0.43              |
| 1:CA:375:U:H4'     | 16:CP:17:TYR:CE2    | 2.54                     | 0.43              |
| 1:CA:599:C:C2'     | 1:CA:600:C:H5'      | 2.49                     | 0.43              |
| 1:CA:933:G:C6      | 1:CA:1385:G:C6      | 3.06                     | 0.43              |
| 1:CA:1057:G:H5'    | 3:CC:155:GLY:HA2    | 2.00                     | 0.43              |
| 1:CA:1138:G:C6     | 1:CA:1140:C:H1'     | 2.54                     | 0.43              |
| 1:CA:1159:U:O4'    | 1:CA:1182:G:N2      | 2.52                     | 0.43              |
| 1:CA:1328:C:OP2    | 21:CU:7:ARG:NH1     | 2.51                     | 0.43              |
| 1:CA:1347:G:H5''   | 9:CI:107:ARG:HB3    | 1.99                     | 0.43              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 1:CA:1369:C:H2'    | 1:CA:1370:G:O4'    | 2.19                     | 0.43              |
| 8:CH:50:ARG:HA     | 8:CH:59:LEU:HD23   | 2.00                     | 0.43              |
| 9:CI:9:ARG:HB2     | 9:CI:104:ARG:HD2   | 2.00                     | 0.43              |
| 15:CO:58:MET:O     | 15:CO:62:GLN:N     | 2.49                     | 0.43              |
| 25:DA:458:G:C8     | 53:D7:37:LYS:HG2   | 2.54                     | 0.43              |
| 25:DA:856:C:H2'    | 25:DA:857:C:C6     | 2.53                     | 0.43              |
| 25:DA:903:C:H2'    | 25:DA:904:C:H6     | 1.80                     | 0.43              |
| 25:DA:1003:G:N2    | 25:DA:1153:C:C2    | 2.86                     | 0.43              |
| 25:DA:1221:C:H2'   | 25:DA:1221(A):C:C6 | 2.53                     | 0.43              |
| 25:DA:1907:G:C6    | 25:DA:1908:C:C4    | 3.06                     | 0.43              |
| 25:DA:2397:G:N2    | 25:DA:2420:C:H1'   | 2.33                     | 0.43              |
| 26:DB:42:C:O2'     | 30:DG:67:LYS:O     | 2.19                     | 0.43              |
| 26:DB:42:C:H2'     | 30:DG:66:GLN:HE21  | 1.83                     | 0.43              |
| 26:DB:43:C:OP1     | 50:D4:6:HIS:NE2    | 2.50                     | 0.43              |
| 37:DR:26:LYS:HE2   | 37:DR:70:LEU:O     | 2.19                     | 0.43              |
| 37:DR:38:VAL:HB    | 37:DR:39:PRO:HD3   | 2.01                     | 0.43              |
| 45:DZ:14:LYS:HE2   | 45:DZ:16:SER:OG    | 2.18                     | 0.43              |
| 52:D6:23:THR:OG1   | 52:D6:24:GLU:N     | 2.45                     | 0.43              |
| 54:D8:39:LYS:O     | 54:D8:43:GLN:HG3   | 2.19                     | 0.43              |
| 1:AA:543:C:C2'     | 1:AA:544:G:H5'     | 2.49                     | 0.43              |
| 1:AA:575:G:O2'     | 1:AA:821:G:H5'     | 2.19                     | 0.43              |
| 11:AK:104:GLN:HE21 | 11:AK:104:GLN:HB3  | 1.62                     | 0.43              |
| 15:AO:56:LEU:O     | 15:AO:60:VAL:HG23  | 2.18                     | 0.43              |
| 19:AS:36:ARG:NH1   | 19:AS:53:ASN:HA    | 2.34                     | 0.43              |
| 24:AX:47:U:H5''    | 24:AX:48:C:OP1     | 2.19                     | 0.43              |
| 25:BA:1021:A:H3'   | 25:BA:1021:A:C8    | 2.53                     | 0.43              |
| 25:BA:1292:U:H2'   | 25:BA:1293:C:H6    | 1.84                     | 0.43              |
| 25:BA:2278:A:OP2   | 46:B0:12:ASN:ND2   | 2.48                     | 0.43              |
| 25:BA:2320:A:N3    | 25:BA:2320:A:H2'   | 2.34                     | 0.43              |
| 25:BA:2507:C:H4'   | 25:BA:2573:C:N4    | 2.33                     | 0.43              |
| 25:BA:2635:C:H4'   | 28:BE:48:GLN:HE21  | 1.84                     | 0.43              |
| 25:BA:2732:G:H3'   | 25:BA:2733:A:O4'   | 2.18                     | 0.43              |
| 29:BF:33:LEU:HD12  | 29:BF:33:LEU:HA    | 1.82                     | 0.43              |
| 33:BN:28:THR:HG22  | 33:BN:29:LYS:N     | 2.33                     | 0.43              |
| 35:BP:86:LYS:HE3   | 35:BP:117:GLU:HB3  | 2.01                     | 0.43              |
| 44:BY:28:LYS:HD2   | 44:BY:40:GLU:HG3   | 2.01                     | 0.43              |
| 1:CA:1312:G:H5'    | 19:CS:5:LEU:HD21   | 2.01                     | 0.43              |
| 4:CD:91:SER:HA     | 4:CD:94:LEU:HD12   | 2.01                     | 0.43              |
| 5:CE:93:PRO:HG2    | 8:CH:105:ARG:CZ    | 2.48                     | 0.43              |
| 8:CH:17:THR:HB     | 8:CH:78:GLN:OE1    | 2.18                     | 0.43              |
| 13:CM:93:ARG:NH1   | 25:DA:888:C:OP1    | 2.48                     | 0.43              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 15:CO:54:ARG:O     | 15:CO:58:MET:HG3  | 2.18                     | 0.43              |
| 25:DA:10:G:H2'     | 25:DA:11:G:H8     | 1.83                     | 0.43              |
| 25:DA:307:G:H2'    | 25:DA:309:G:OP2   | 2.19                     | 0.43              |
| 25:DA:459:U:OP2    | 25:DA:469:G:N1    | 2.34                     | 0.43              |
| 25:DA:1216:G:N2    | 25:DA:1234:U:H1'  | 2.33                     | 0.43              |
| 25:DA:1516:C:H2'   | 25:DA:1517:G:C8   | 2.54                     | 0.43              |
| 25:DA:1971:A:C4    | 27:DD:241:PRO:HD3 | 2.53                     | 0.43              |
| 25:DA:2207:G:H8    | 25:DA:2207:G:OP1  | 2.01                     | 0.43              |
| 28:DE:181:LEU:HD12 | 28:DE:181:LEU:HA  | 1.82                     | 0.43              |
| 32:DI:66:GLU:HA    | 32:DI:69:LYS:HB3  | 2.00                     | 0.43              |
| 45:DZ:35:ARG:HA    | 45:DZ:35:ARG:HD2  | 1.74                     | 0.43              |
| 1:AA:56:U:H2'      | 1:AA:57:G:H8      | 1.83                     | 0.43              |
| 1:AA:673:G:H1      | 1:AA:717:C:N4     | 2.17                     | 0.43              |
| 1:AA:814:A:N7      | 1:AA:816:A:C4     | 2.87                     | 0.43              |
| 1:AA:923:A:O2'     | 1:AA:1399:C:OP2   | 2.29                     | 0.43              |
| 1:AA:1128:C:H4'    | 1:AA:1148:U:O2    | 2.19                     | 0.43              |
| 1:AA:1134:G:H2'    | 1:AA:1134:G:N3    | 2.32                     | 0.43              |
| 1:AA:1285:A:H1'    | 1:AA:1286:A:OP2   | 2.19                     | 0.43              |
| 4:AD:108:LEU:HD12  | 4:AD:108:LEU:HA   | 1.91                     | 0.43              |
| 7:AG:76:ARG:N      | 7:AG:87:VAL:O     | 2.44                     | 0.43              |
| 14:AN:3:ARG:HA     | 14:AN:3:ARG:HD2   | 1.61                     | 0.43              |
| 15:AO:8:LYS:HE3    | 15:AO:31:LEU:HD22 | 2.01                     | 0.43              |
| 15:AO:12:ILE:HG23  | 15:AO:27:VAL:HG11 | 2.01                     | 0.43              |
| 16:AP:58:TYR:O     | 16:AP:62:VAL:HG23 | 2.18                     | 0.43              |
| 18:AR:21:LYS:HE2   | 18:AR:54:ARG:O    | 2.19                     | 0.43              |
| 25:BA:581:C:H2'    | 25:BA:582:G:H8    | 1.84                     | 0.43              |
| 25:BA:588:U:H2'    | 25:BA:589:C:C6    | 2.54                     | 0.43              |
| 25:BA:1285:G:C5    | 25:BA:1329:U:C4   | 3.07                     | 0.43              |
| 25:BA:1445:A:H8    | 25:BA:1460:A:C5   | 2.37                     | 0.43              |
| 25:BA:1798:U:OP2   | 27:BD:274:ARG:NH2 | 2.52                     | 0.43              |
| 27:BD:17:THR:HG1   | 27:BD:205:VAL:H   | 1.61                     | 0.43              |
| 30:BG:138:GLN:HE22 | 30:BG:153:ARG:N   | 2.11                     | 0.43              |
| 30:BG:144:ILE:HA   | 30:BG:148:MET:HE1 | 2.00                     | 0.43              |
| 35:BP:121:LYS:HB3  | 35:BP:123:LEU:HG  | 2.00                     | 0.43              |
| 1:CA:129(A):G:O2'  | 1:CA:189(F):U:OP1 | 2.25                     | 0.43              |
| 1:CA:241:C:H42     | 1:CA:285:G:H1     | 1.65                     | 0.43              |
| 1:CA:675:A:O2'     | 11:CK:114:VAL:O   | 2.35                     | 0.43              |
| 1:CA:944:G:C2      | 1:CA:1340:A:C6    | 3.06                     | 0.43              |
| 1:CA:1030(A):G:N3  | 1:CA:1030(C):G:C8 | 2.87                     | 0.43              |
| 1:CA:1286:A:C8     | 1:CA:1287:A:H4'   | 2.54                     | 0.43              |
| 1:CA:1386:G:C2     | 1:CA:1387:G:C8    | 3.06                     | 0.43              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 2:CB:27:LYS:O     | 2:CB:30:ARG:NH1   | 2.51                     | 0.43              |
| 2:CB:70:PHE:HB3   | 2:CB:81:VAL:HG11  | 2.00                     | 0.43              |
| 5:CE:36:ASP:C     | 5:CE:38:GLN:H     | 2.22                     | 0.43              |
| 8:CH:34:GLU:HB3   | 8:CH:118:VAL:HG21 | 1.99                     | 0.43              |
| 9:CI:16:ARG:O     | 9:CI:64:THR:N     | 2.50                     | 0.43              |
| 20:CT:40:ALA:HB2  | 20:CT:55:ILE:HG22 | 2.01                     | 0.43              |
| 25:DA:195:A:H2'   | 25:DA:198:C:H41   | 1.83                     | 0.43              |
| 25:DA:330:A:H2    | 25:DA:1210:A:C2'  | 2.27                     | 0.43              |
| 25:DA:602:G:H4'   | 25:DA:604:G:H4'   | 1.99                     | 0.43              |
| 25:DA:1028:A:H2'  | 25:DA:1029:A:C8   | 2.54                     | 0.43              |
| 25:DA:1366:A:H2'  | 25:DA:1367:A:O4'  | 2.19                     | 0.43              |
| 25:DA:1880:C:C2'  | 25:DA:1881:C:H5'  | 2.49                     | 0.43              |
| 25:DA:1938:A:N3   | 25:DA:2605:U:O2'  | 2.44                     | 0.43              |
| 25:DA:2369:A:H2'  | 25:DA:2370:G:H8   | 1.84                     | 0.43              |
| 25:DA:2633:G:H5'' | 25:DA:2812:G:H5'  | 2.00                     | 0.43              |
| 27:DD:218:ARG:HB3 | 27:DD:219:PRO:HD2 | 2.01                     | 0.43              |
| 33:DN:115:ARG:HA  | 33:DN:118:LYS:HE3 | 2.01                     | 0.43              |
| 38:DS:26:LEU:HD22 | 38:DS:87:PHE:CE1  | 2.53                     | 0.43              |
| 40:DU:76:TYR:CE1  | 40:DU:80:ILE:HG13 | 2.54                     | 0.43              |
| 1:AA:72:C:H2'     | 1:AA:73:G:O4'     | 2.19                     | 0.43              |
| 1:AA:520:A:N1     | 1:AA:536:C:H1'    | 2.34                     | 0.43              |
| 1:AA:616:G:C2     | 1:AA:617:G:C8     | 3.07                     | 0.43              |
| 1:AA:1030:C:N3    | 1:AA:1031:G:C2    | 2.87                     | 0.43              |
| 1:AA:1066:C:O2'   | 1:AA:1067:A:H5'   | 2.18                     | 0.43              |
| 1:AA:1237:C:H5''  | 1:AA:1238:A:O4'   | 2.18                     | 0.43              |
| 2:AB:19:HIS:CD2   | 2:AB:206:ASP:HB2  | 2.54                     | 0.43              |
| 2:AB:218:ALA:O    | 2:AB:222:ILE:HG13 | 2.19                     | 0.43              |
| 4:AD:172:PRO:O    | 4:AD:187:ARG:NH2  | 2.51                     | 0.43              |
| 12:AL:34:ARG:HH11 | 12:AL:61:THR:HG21 | 1.84                     | 0.43              |
| 21:AU:3:LYS:HA    | 21:AU:11:GLY:HA2  | 2.01                     | 0.43              |
| 24:AX:19:G:C4     | 24:AX:57:A:C2     | 3.06                     | 0.43              |
| 24:AX:36:U:H2'    | 24:AX:37:A:C8     | 2.54                     | 0.43              |
| 24:AX:55:PSU:O2'  | 24:AX:57:A:N7     | 2.34                     | 0.43              |
| 25:BA:1331:A:H2'  | 25:BA:1333:C:C5   | 2.54                     | 0.43              |
| 25:BA:1541:G:H3'  | 25:BA:1542:A:H2'  | 2.01                     | 0.43              |
| 25:BA:1562:A:H2'  | 25:BA:1563:G:C8   | 2.53                     | 0.43              |
| 34:BO:120:GLU:HG2 | 34:BO:122:LEU:HG  | 2.01                     | 0.43              |
| 44:BY:39:VAL:HB   | 44:BY:42:VAL:HB   | 2.01                     | 0.43              |
| 47:B1:86:SER:O    | 47:B1:89:GLU:HG2  | 2.19                     | 0.43              |
| 52:B6:35:GLU:CD   | 52:B6:50:ARG:HH11 | 2.22                     | 0.43              |
| 1:CA:80:G:N2      | 1:CA:90:U:H1'     | 2.34                     | 0.43              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:CA:375:U:C2     | 1:CA:376:G:C8      | 3.07                     | 0.43              |
| 1:CA:691:G:H2'    | 1:CA:692:U:C6      | 2.54                     | 0.43              |
| 1:CA:724:G:C2     | 1:CA:725:G:C8      | 3.06                     | 0.43              |
| 1:CA:827:U:O2'    | 8:CH:19:VAL:HG11   | 2.19                     | 0.43              |
| 1:CA:857:C:H2'    | 1:CA:858:G:O4'     | 2.19                     | 0.43              |
| 1:CA:1362:C:H2'   | 1:CA:1363:C:H5''   | 2.01                     | 0.43              |
| 2:CB:28:PHE:CE1   | 2:CB:31:TYR:HB2    | 2.54                     | 0.43              |
| 2:CB:160:ASP:N    | 2:CB:160:ASP:OD1   | 2.52                     | 0.43              |
| 7:CG:115:ARG:O    | 7:CG:119:ARG:HG3   | 2.19                     | 0.43              |
| 10:CJ:55:LYS:O    | 10:CJ:57:LYS:N     | 2.52                     | 0.43              |
| 11:CK:19:ALA:HB3  | 11:CK:82:VAL:HG22  | 1.99                     | 0.43              |
| 11:CK:120:ARG:HA  | 11:CK:121:PRO:HD3  | 1.85                     | 0.43              |
| 20:CT:43:LEU:HD13 | 20:CT:51:GLU:HB3   | 2.01                     | 0.43              |
| 25:DA:268:C:H2'   | 25:DA:269:U:O4'    | 2.18                     | 0.43              |
| 25:DA:493:G:H2'   | 25:DA:494:G:O4'    | 2.18                     | 0.43              |
| 25:DA:764:A:N1    | 25:DA:1789:A:O2'   | 2.43                     | 0.43              |
| 25:DA:1221:C:H2'  | 25:DA:1221(A):C:H6 | 1.83                     | 0.43              |
| 25:DA:1232:G:C6   | 25:DA:1233:C:C4    | 3.07                     | 0.43              |
| 25:DA:1265:A:H61  | 25:DA:2013:A:H5''  | 1.84                     | 0.43              |
| 25:DA:1652:A:OP1  | 37:DR:8:ARG:NH1    | 2.51                     | 0.43              |
| 25:DA:2380:C:H6   | 25:DA:2380:C:O5'   | 2.02                     | 0.43              |
| 27:DD:13:ARG:HA   | 27:DD:13:ARG:HD2   | 1.85                     | 0.43              |
| 29:DF:64:ILE:HG13 | 29:DF:65:TRP:N     | 2.34                     | 0.43              |
| 29:DF:64:ILE:HG21 | 29:DF:78:ILE:HG23  | 2.01                     | 0.43              |
| 33:DN:42:TRP:HA   | 33:DN:48:MET:HE1   | 2.01                     | 0.43              |
| 37:DR:10:LEU:HD23 | 37:DR:10:LEU:HA    | 1.85                     | 0.43              |
| 1:AA:426:G:H2'    | 1:AA:427:U:C6      | 2.54                     | 0.42              |
| 1:AA:1020:U:H2'   | 1:AA:1021:G:C8     | 2.53                     | 0.42              |
| 1:AA:1157:A:H61   | 1:AA:1178:G:H21    | 1.67                     | 0.42              |
| 4:AD:60:GLU:OE2   | 4:AD:63:LYS:NZ     | 2.51                     | 0.42              |
| 4:AD:94:LEU:O     | 4:AD:98:GLU:N      | 2.52                     | 0.42              |
| 4:AD:166:LYS:HB2  | 4:AD:168:ARG:HH12  | 1.84                     | 0.42              |
| 12:AL:116:SER:OG  | 60:AL:303:HOH:O    | 2.21                     | 0.42              |
| 15:AO:3:ILE:H     | 15:AO:3:ILE:HD13   | 1.84                     | 0.42              |
| 20:AT:48:LYS:HA   | 20:AT:48:LYS:HD3   | 1.90                     | 0.42              |
| 25:BA:1141:U:OP1  | 33:BN:25:ARG:NH1   | 2.52                     | 0.42              |
| 25:BA:1791:A:H8   | 25:BA:1791:A:OP2   | 2.02                     | 0.42              |
| 25:BA:2364:C:H4'  | 46:B0:56:ASP:OD1   | 2.19                     | 0.42              |
| 29:BF:24:LEU:HD21 | 29:BF:114:VAL:HG12 | 2.00                     | 0.42              |
| 36:BQ:1:MET:SD    | 36:BQ:1:MET:N      | 2.83                     | 0.42              |
| 42:BW:86:LEU:HD12 | 42:BW:87:PRO:HD2   | 2.01                     | 0.42              |

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| Atom-1              | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|---------------------|--------------------|--------------------------|-------------------|
| 45:BZ:110:GLY:CA    | 45:BZ:145:GLU:HA   | 2.49                     | 0.42              |
| 45:BZ:110:GLY:N     | 45:BZ:144:LEU:O    | 2.48                     | 0.42              |
| 1:CA:1008:C:C2      | 1:CA:1022:G:C2     | 3.07                     | 0.42              |
| 2:CB:145:LEU:O      | 2:CB:149:LEU:HB2   | 2.20                     | 0.42              |
| 3:CC:18:TRP:HE3     | 3:CC:18:TRP:H      | 1.67                     | 0.42              |
| 5:CE:51:VAL:O       | 5:CE:55:VAL:HG23   | 2.19                     | 0.42              |
| 6:CF:99:ALA:HB1     | 18:CR:23:LYS:HE3   | 2.01                     | 0.42              |
| 13:CM:40:ASN:HA     | 13:CM:41:PRO:HD3   | 1.92                     | 0.42              |
| 13:CM:80:ARG:HH21   | 19:CS:69:HIS:HE1   | 1.68                     | 0.42              |
| 13:CM:94:ARG:NH1    | 19:CS:80:TYR:HD2   | 2.17                     | 0.42              |
| 19:CS:56:GLN:HE21   | 19:CS:56:GLN:HB3   | 1.52                     | 0.42              |
| 20:CT:23:ARG:HH11   | 20:CT:23:ARG:HG3   | 1.84                     | 0.42              |
| 25:DA:271(R):G:H5'' | 47:D1:97:LEU:HD21  | 2.00                     | 0.42              |
| 25:DA:539:G:H2'     | 25:DA:540:C:C6     | 2.54                     | 0.42              |
| 25:DA:646:A:H2'     | 25:DA:647:G:O4'    | 2.19                     | 0.42              |
| 25:DA:909:A:N6      | 25:DA:912:C:O2     | 2.52                     | 0.42              |
| 25:DA:1462:C:H2'    | 25:DA:1463:C:O4'   | 2.20                     | 0.42              |
| 25:DA:1685:C:H2'    | 25:DA:1686:C:H6    | 1.83                     | 0.42              |
| 25:DA:1983:C:H4'    | 25:DA:2606:C:O3'   | 2.18                     | 0.42              |
| 25:DA:2305:A:H5''   | 30:DG:134:GLY:HA3  | 2.00                     | 0.42              |
| 25:DA:2507:C:H2'    | 25:DA:2508:G:O4'   | 2.19                     | 0.42              |
| 26:DB:53:A:H2'      | 26:DB:53:A:N3      | 2.34                     | 0.42              |
| 29:DF:168:ARG:HB2   | 29:DF:175:THR:HG21 | 2.01                     | 0.42              |
| 39:DT:80:SER:HA     | 39:DT:81:PRO:HD2   | 1.90                     | 0.42              |
| 44:DY:45:VAL:N      | 44:DY:63:LYS:O     | 2.37                     | 0.42              |
| 54:D8:62:LEU:HB3    | 54:D8:65:GLU:HG3   | 2.01                     | 0.42              |
| 1:AA:376:G:H2'      | 1:AA:377:G:H8      | 1.84                     | 0.42              |
| 1:AA:518:C:O2'      | 1:AA:530:G:N2      | 2.52                     | 0.42              |
| 1:AA:927:G:H1       | 1:AA:1390:U:H3     | 1.67                     | 0.42              |
| 1:AA:1038:C:H2'     | 1:AA:1039:C:H6     | 1.82                     | 0.42              |
| 1:AA:1220:G:N2      | 19:AS:54:GLY:O     | 2.48                     | 0.42              |
| 1:AA:1343:G:O2'     | 9:AI:121:ARG:HD3   | 2.19                     | 0.42              |
| 1:AA:1392:G:N2      | 1:AA:1502:A:H8     | 2.17                     | 0.42              |
| 1:AA:1393:U:O2'     | 1:AA:1394:A:H2'    | 2.20                     | 0.42              |
| 1:AA:1438:G:H2'     | 1:AA:1439:C:C6     | 2.54                     | 0.42              |
| 1:AA:1503:A:H5'     | 1:AA:1532:U:OP2    | 2.19                     | 0.42              |
| 2:AB:32:ILE:HD13    | 2:AB:40:HIS:HD2    | 1.84                     | 0.42              |
| 2:AB:180:LEU:C      | 2:AB:182:ILE:H     | 2.21                     | 0.42              |
| 5:AE:122:GLU:O      | 5:AE:126:ARG:NH1   | 2.52                     | 0.42              |
| 6:AF:99:ALA:HB1     | 18:AR:23:LYS:HE2   | 2.01                     | 0.42              |
| 7:AG:38:LEU:O       | 7:AG:42:ILE:HG13   | 2.19                     | 0.42              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 7:AG:152:ALA:O    | 7:AG:155:ARG:HB3  | 2.19                     | 0.42              |
| 25:BA:531:C:H4'   | 25:BA:532:A:H5''  | 1.99                     | 0.42              |
| 25:BA:961:C:N4    | 60:BA:3765:HOH:O  | 2.36                     | 0.42              |
| 25:BA:1451:C:H42  | 25:BA:1459:G:H1   | 1.68                     | 0.42              |
| 25:BA:1495:A:H2'  | 25:BA:1496:A:C8   | 2.53                     | 0.42              |
| 25:BA:1721:G:N1   | 25:BA:1739:U:OP2  | 2.52                     | 0.42              |
| 25:BA:2074:U:H2'  | 25:BA:2075:U:C6   | 2.53                     | 0.42              |
| 25:BA:2228:G:C5   | 25:BA:2229:C:C4   | 3.06                     | 0.42              |
| 25:BA:2530:A:N7   | 31:BH:172:LYS:NZ  | 2.62                     | 0.42              |
| 35:BP:2:LYS:HE3   | 35:BP:4:SER:OG    | 2.19                     | 0.42              |
| 51:B5:41:PRO:HA   | 51:B5:42:PRO:HD3  | 1.89                     | 0.42              |
| 1:CA:553:A:C6     | 1:CA:554:C:C4     | 3.07                     | 0.42              |
| 1:CA:938:A:C2     | 1:CA:1376:U:H1'   | 2.54                     | 0.42              |
| 1:CA:1144:G:H21   | 1:CA:1146:A:H62   | 1.66                     | 0.42              |
| 1:CA:1191:A:OP2   | 3:CC:3:ASN:ND2    | 2.52                     | 0.42              |
| 2:CB:28:PHE:CD1   | 2:CB:190:THR:HA   | 2.54                     | 0.42              |
| 2:CB:163:PHE:CD1  | 2:CB:185:ILE:HG13 | 2.46                     | 0.42              |
| 3:CC:6:HIS:HD2    | 3:CC:8:ILE:H      | 1.67                     | 0.42              |
| 5:CE:78:HIS:HB3   | 8:CH:107:LEU:HD12 | 2.00                     | 0.42              |
| 6:CF:24:GLU:HG3   | 6:CF:28:ARG:HD2   | 2.01                     | 0.42              |
| 9:CI:17:VAL:HG11  | 9:CI:81:ILE:N     | 2.34                     | 0.42              |
| 12:CL:124:LYS:HB2 | 12:CL:124:LYS:NZ  | 2.35                     | 0.42              |
| 25:DA:686:G:C4    | 53:D7:11:LYS:HG2  | 2.54                     | 0.42              |
| 25:DA:873:G:N2    | 25:DA:905:U:O2    | 2.51                     | 0.42              |
| 25:DA:1653:G:H4'  | 25:DA:1654:A:O5'  | 2.19                     | 0.42              |
| 25:DA:1816:G:O6   | 27:DD:35:LYS:NZ   | 2.49                     | 0.42              |
| 25:DA:1817:G:C6   | 25:DA:1818:U:C4   | 3.06                     | 0.42              |
| 25:DA:2400:G:H2'  | 25:DA:2401:U:H6   | 1.84                     | 0.42              |
| 25:DA:2564:A:C2   | 25:DA:2647:U:H4'  | 2.53                     | 0.42              |
| 26:DB:64:C:H2'    | 26:DB:65:C:C6     | 2.55                     | 0.42              |
| 26:DB:75:G:H21    | 45:DZ:85:HIS:CE1  | 2.37                     | 0.42              |
| 29:DF:20:LEU:HD23 | 29:DF:20:LEU:HA   | 1.80                     | 0.42              |
| 30:DG:14:GLU:C    | 30:DG:17:PRO:HD2  | 2.38                     | 0.42              |
| 35:DP:27:HIS:O    | 35:DP:31:ALA:HA   | 2.18                     | 0.42              |
| 37:DR:67:LEU:HD13 | 37:DR:67:LEU:HA   | 1.81                     | 0.42              |
| 39:DT:27:THR:HB   | 39:DT:89:VAL:HG23 | 2.00                     | 0.42              |
| 45:DZ:44:PHE:CZ   | 45:DZ:86:VAL:HG11 | 2.55                     | 0.42              |
| 49:D3:46:ASN:O    | 49:D3:50:VAL:HG22 | 2.20                     | 0.42              |
| 55:D9:2:LYS:HE2   | 55:D9:31:LYS:O    | 2.20                     | 0.42              |
| 1:AA:99:U:H2'     | 1:AA:100:C:C6     | 2.54                     | 0.42              |
| 1:AA:142:G:H2'    | 1:AA:143:A:H8     | 1.85                     | 0.42              |

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| Atom-1           | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|--------------------|--------------------------|-------------------|
| 1:AA:257:G:C6    | 1:AA:258:G:C5      | 3.07                     | 0.42              |
| 1:AA:620:C:H2'   | 1:AA:621:A:O4'     | 2.19                     | 0.42              |
| 1:AA:1346:A:OP1  | 9:AI:120:ARG:NH1   | 2.37                     | 0.42              |
| 2:AB:122:PHE:CE2 | 2:AB:139:LYS:HE2   | 2.54                     | 0.42              |
| 4:AD:15:GLU:HG2  | 4:AD:63:LYS:HB3    | 2.01                     | 0.42              |
| 5:AE:102:ALA:O   | 5:AE:107:ARG:NH1   | 2.52                     | 0.42              |
| 25:BA:519:U:H2'  | 25:BA:520:G:C8     | 2.54                     | 0.42              |
| 25:BA:807:U:OP2  | 35:BP:41:ARG:NH2   | 2.52                     | 0.42              |
| 25:BA:1173:G:O2' | 25:BA:1174:A:O5'   | 2.33                     | 0.42              |
| 25:BA:1420:U:O2' | 25:BA:1421:G:OP1   | 2.31                     | 0.42              |
| 25:BA:1427:A:H4' | 25:BA:1428:C:O4'   | 2.19                     | 0.42              |
| 25:BA:2191:G:H5' | 25:BA:2192:G:OP2   | 2.19                     | 0.42              |
| 25:BA:2633:G:H5' | 25:BA:2811:G:O2'   | 2.19                     | 0.42              |
| 33:BN:39:ARG:NH2 | 33:BN:41:ASP:OD2   | 2.52                     | 0.42              |
| 34:BO:78:ARG:HD2 | 60:BT:202:HOH:O    | 2.18                     | 0.42              |
| 41:BV:40:LEU:HB2 | 41:BV:46:VAL:HG13  | 2.01                     | 0.42              |
| 1:CA:93:G:C6     | 1:CA:96:U:C4       | 3.07                     | 0.42              |
| 1:CA:129(A):G:N3 | 1:CA:189(F):U:H5'' | 2.35                     | 0.42              |
| 1:CA:187:C:H2'   | 1:CA:188:C:H6      | 1.83                     | 0.42              |
| 1:CA:191:G:C2    | 20:CT:103:GLY:HA2  | 2.54                     | 0.42              |
| 1:CA:582:U:O4    | 1:CA:758:G:H2'     | 2.19                     | 0.42              |
| 1:CA:939:G:H2'   | 1:CA:940:C:C6      | 2.54                     | 0.42              |
| 1:CA:1080:A:H5'  | 5:CE:14:ARG:NH2    | 2.34                     | 0.42              |
| 1:CA:1118:C:C6   | 1:CA:1119:C:H5     | 2.37                     | 0.42              |
| 13:CM:92:HIS:HA  | 13:CM:110:ARG:HH12 | 1.84                     | 0.42              |
| 18:CR:59:SER:OG  | 18:CR:62:GLU:HG2   | 2.19                     | 0.42              |
| 25:DA:350:U:H2'  | 25:DA:351:G:O4'    | 2.19                     | 0.42              |
| 25:DA:577:G:H8   | 25:DA:577:G:O5'    | 2.03                     | 0.42              |
| 25:DA:623:G:H2'  | 25:DA:624:C:C6     | 2.54                     | 0.42              |
| 25:DA:660:G:H5'  | 29:DF:99:TYR:CE2   | 2.54                     | 0.42              |
| 25:DA:1246:A:OP1 | 29:DF:38:ARG:NH1   | 2.52                     | 0.42              |
| 25:DA:1385:G:H4' | 25:DA:1386:C:OP1   | 2.19                     | 0.42              |
| 25:DA:1970:A:OP2 | 60:DA:4202:HOH:O   | 2.22                     | 0.42              |
| 25:DA:2400:G:H2' | 25:DA:2401:U:C6    | 2.54                     | 0.42              |
| 25:DA:2745:C:C4  | 25:DA:2746:U:C4    | 3.07                     | 0.42              |
| 26:DB:62:C:H2'   | 26:DB:63:G:C8      | 2.54                     | 0.42              |
| 27:DD:171:ASP:O  | 27:DD:187:GLY:N    | 2.46                     | 0.42              |
| 31:DH:81:GLU:OE1 | 31:DH:81:GLU:N     | 2.46                     | 0.42              |
| 32:DI:88:ILE:O   | 32:DI:121:LYS:NZ   | 2.44                     | 0.42              |
| 33:DN:39:ARG:HA  | 33:DN:40:PRO:HD3   | 1.85                     | 0.42              |
| 36:DQ:85:LYS:NZ  | 46:D0:7:LEU:HG     | 2.34                     | 0.42              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 38:DS:38:GLN:HG3  | 38:DS:40:ILE:HD11 | 2.00                     | 0.42              |
| 54:D8:60:LEU:HD23 | 54:D8:60:LEU:HA   | 1.84                     | 0.42              |
| 1:AA:1053:G:N7    | 1:AA:1200:C:H5''  | 2.34                     | 0.42              |
| 1:AA:1316:G:O3'   | 14:AN:18:VAL:HG22 | 2.19                     | 0.42              |
| 7:AG:58:PRO:O     | 7:AG:61:VAL:HG12  | 2.19                     | 0.42              |
| 9:AI:99:LEU:HB3   | 9:AI:101:PHE:HE1  | 1.84                     | 0.42              |
| 17:AQ:37:LYS:O    | 17:AQ:38:ARG:HD3  | 2.20                     | 0.42              |
| 19:AS:15:LEU:HD13 | 19:AS:33:THR:HB   | 2.00                     | 0.42              |
| 25:BA:196:A:O2'   | 25:BA:805:G:O6    | 2.31                     | 0.42              |
| 25:BA:686:G:N2    | 25:BA:788:A:H61   | 2.17                     | 0.42              |
| 25:BA:1252:G:OP1  | 40:BU:36:ARG:NH2  | 2.52                     | 0.42              |
| 25:BA:1996:C:H4'  | 25:BA:1997:G:OP1  | 2.19                     | 0.42              |
| 25:BA:2135:A:N6   | 25:BA:2156:G:O2'  | 2.47                     | 0.42              |
| 25:BA:2166:G:N7   | 25:BA:2168:G:N2   | 2.61                     | 0.42              |
| 25:BA:2271:G:OP1  | 46:B0:18:ALA:HB1  | 2.20                     | 0.42              |
| 25:BA:2271:G:H5'' | 46:B0:20:ARG:HE   | 1.85                     | 0.42              |
| 25:BA:2336:A:H61  | 46:B0:43:THR:HG22 | 1.84                     | 0.42              |
| 25:BA:2511:U:O2'  | 28:BE:138:PRO:O   | 2.24                     | 0.42              |
| 25:BA:2791:C:H6   | 25:BA:2791:C:OP2  | 2.02                     | 0.42              |
| 26:BB:39:A:O2'    | 26:BB:46:A:N1     | 2.45                     | 0.42              |
| 27:BD:101:GLU:OE1 | 27:BD:103:ARG:HD3 | 2.19                     | 0.42              |
| 27:BD:169:GLU:OE1 | 27:BD:184:LYS:NZ  | 2.35                     | 0.42              |
| 29:BF:7:TYR:O     | 29:BF:21:ALA:HA   | 2.18                     | 0.42              |
| 29:BF:93:LYS:HD3  | 29:BF:93:LYS:HA   | 1.88                     | 0.42              |
| 30:BG:121:ASN:HA  | 30:BG:122:PRO:HD2 | 1.88                     | 0.42              |
| 41:BV:62:LEU:HD13 | 41:BV:95:LEU:HB2  | 2.01                     | 0.42              |
| 1:CA:97:G:C4      | 1:CA:98:G:C8      | 3.07                     | 0.42              |
| 1:CA:722:A:N6     | 1:CA:724:G:C2     | 2.88                     | 0.42              |
| 1:CA:784:C:H2'    | 1:CA:785:G:O4'    | 2.19                     | 0.42              |
| 1:CA:975:A:H8     | 1:CA:975:A:H5'    | 1.83                     | 0.42              |
| 1:CA:1014:A:H2'   | 1:CA:1015:A:C8    | 2.55                     | 0.42              |
| 1:CA:1142:G:C2    | 1:CA:1143:G:H1'   | 2.54                     | 0.42              |
| 6:CF:6:VAL:HG13   | 6:CF:90:VAL:HG22  | 2.02                     | 0.42              |
| 8:CH:75:ARG:HA    | 8:CH:76:PRO:HD2   | 1.83                     | 0.42              |
| 11:CK:48:ILE:H    | 11:CK:48:ILE:HG12 | 1.54                     | 0.42              |
| 25:DA:76:C:O3'    | 48:D2:59:ARG:HG3  | 2.20                     | 0.42              |
| 25:DA:380:U:H2'   | 25:DA:381:G:C8    | 2.54                     | 0.42              |
| 25:DA:588:U:H1'   | 29:DF:90:PHE:HB3  | 2.01                     | 0.42              |
| 25:DA:690:G:H5'   | 60:DA:4052:HOH:O  | 2.19                     | 0.42              |
| 25:DA:1005:C:H4'  | 25:DA:1012:U:C6   | 2.54                     | 0.42              |
| 25:DA:1337:G:H2'  | 25:DA:1338:G:O4'  | 2.19                     | 0.42              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 25:DA:1514:U:H2'   | 25:DA:1515:G:H8   | 1.84                     | 0.42              |
| 25:DA:1593:G:C2    | 25:DA:1594:G:C4   | 3.07                     | 0.42              |
| 25:DA:1692:U:O2'   | 25:DA:1693:U:H2'  | 2.19                     | 0.42              |
| 25:DA:2106:G:C6    | 25:DA:2184:G:C6   | 3.07                     | 0.42              |
| 25:DA:2110:G:O6    | 25:DA:2179:C:N3   | 2.51                     | 0.42              |
| 25:DA:2512:C:H2'   | 25:DA:2513:G:O4'  | 2.19                     | 0.42              |
| 25:DA:2880:C:O3'   | 37:DR:90:ARG:NH1  | 2.52                     | 0.42              |
| 27:DD:64:ILE:O     | 27:DD:104:TYR:HB2 | 2.19                     | 0.42              |
| 27:DD:70:TRP:HB3   | 27:DD:190:TYR:CE1 | 2.54                     | 0.42              |
| 32:DI:78:THR:HG23  | 32:DI:143:SER:OG  | 2.20                     | 0.42              |
| 1:AA:102:G:O2'     | 1:AA:151:A:N3     | 2.34                     | 0.42              |
| 1:AA:345:C:H5      | 39:BT:39:ARG:HH22 | 1.68                     | 0.42              |
| 1:AA:1194:U:H2'    | 1:AA:1195:C:H6    | 1.84                     | 0.42              |
| 5:AE:35:GLY:HA3    | 5:AE:112:LEU:HB3  | 2.01                     | 0.42              |
| 6:AF:8:ILE:HD13    | 6:AF:26:ILE:HD13  | 2.00                     | 0.42              |
| 9:AI:49:PRO:HB3    | 9:AI:82:ALA:HB2   | 2.01                     | 0.42              |
| 20:AT:38:LYS:O     | 20:AT:42:GLN:N    | 2.44                     | 0.42              |
| 25:BA:28:A:H1'     | 25:BA:513:A:C2    | 2.55                     | 0.42              |
| 25:BA:74:A:H5'     | 25:BA:75:G:O4'    | 2.20                     | 0.42              |
| 25:BA:383:U:H5''   | 25:BA:384:U:OP2   | 2.19                     | 0.42              |
| 25:BA:458:G:C5     | 53:B7:37:LYS:HE2  | 2.53                     | 0.42              |
| 25:BA:565:C:H4'    | 25:BA:1253:A:C6   | 2.55                     | 0.42              |
| 25:BA:1263:U:H1'   | 51:B5:10:LYS:HG3  | 2.01                     | 0.42              |
| 25:BA:1338:G:O2'   | 25:BA:1393:A:N1   | 2.37                     | 0.42              |
| 25:BA:1675:C:O2    | 28:BE:128:SER:OG  | 2.37                     | 0.42              |
| 25:BA:2394:C:OP1   | 54:B8:30:ARG:NH1  | 2.52                     | 0.42              |
| 25:BA:2732:G:OP1   | 28:BE:203:LYS:HE2 | 2.20                     | 0.42              |
| 36:BQ:86:GLY:HA3   | 46:B0:10:THR:HG23 | 2.01                     | 0.42              |
| 40:BU:112:ARG:H    | 40:BU:112:ARG:HG2 | 1.42                     | 0.42              |
| 46:B0:40:GLN:NE2   | 46:B0:43:THR:HA   | 2.35                     | 0.42              |
| 1:CA:170:U:O2'     | 1:CA:171:A:H5'    | 2.20                     | 0.42              |
| 1:CA:1048:G:OP2    | 14:CN:3:ARG:NH2   | 2.53                     | 0.42              |
| 1:CA:1224:G:C6     | 1:CA:1322:C:O4'   | 2.72                     | 0.42              |
| 1:CA:1306:A:C6     | 1:CA:1307:U:C4    | 3.06                     | 0.42              |
| 12:CL:34:ARG:O     | 12:CL:61:THR:HG23 | 2.19                     | 0.42              |
| 18:CR:73:ALA:HB3   | 18:CR:79:LEU:HD12 | 2.01                     | 0.42              |
| 20:CT:65:LYS:HA    | 20:CT:68:LYS:HD3  | 2.01                     | 0.42              |
| 25:DA:143(A):C:H4' | 43:DX:38:GLU:OE1  | 2.19                     | 0.42              |
| 25:DA:995:C:O2     | 33:DN:3:THR:OG1   | 2.24                     | 0.42              |
| 25:DA:1426:G:O2'   | 25:DA:1572:A:N6   | 2.46                     | 0.42              |
| 25:DA:2870:C:H2'   | 25:DA:2871:C:O4'  | 2.19                     | 0.42              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 27:DD:232:PRO:HB3  | 27:DD:244:ARG:CZ  | 2.50                     | 0.42              |
| 28:DE:119:ARG:HB3  | 28:DE:120:TRP:CD1 | 2.55                     | 0.42              |
| 30:DG:16:ARG:HB2   | 30:DG:17:PRO:HD3  | 2.01                     | 0.42              |
| 32:DI:116:LEU:HD21 | 32:DI:119:PRO:HA  | 2.01                     | 0.42              |
| 36:DQ:22:LYS:H     | 36:DQ:22:LYS:HG2  | 1.60                     | 0.42              |
| 44:DY:20:TYR:CE1   | 44:DY:43:ASN:HA   | 2.54                     | 0.42              |
| 1:AA:924:C:H2'     | 1:AA:925:G:C8     | 2.54                     | 0.42              |
| 3:AC:5:ILE:HG12    | 3:AC:6:HIS:N      | 2.32                     | 0.42              |
| 3:AC:123:GLN:HB3   | 3:AC:128:PHE:CD2  | 2.55                     | 0.42              |
| 13:AM:34:LEU:CD1   | 13:AM:41:PRO:HA   | 2.47                     | 0.42              |
| 16:AP:48:TRP:HH2   | 16:AP:76:GLN:NE2  | 2.16                     | 0.42              |
| 25:BA:328:U:H4'    | 44:BY:68:HIS:CG   | 2.54                     | 0.42              |
| 25:BA:576:U:H2'    | 25:BA:577:G:C8    | 2.54                     | 0.42              |
| 25:BA:956:G:H5''   | 36:BQ:77:LYS:HD2  | 2.02                     | 0.42              |
| 25:BA:1239:G:H2'   | 25:BA:1240:U:O4'  | 2.20                     | 0.42              |
| 25:BA:1756:G:O2'   | 25:BA:1758:G:H5'' | 2.20                     | 0.42              |
| 25:BA:1762:A:H2'   | 60:BA:4156:HOH:O  | 2.17                     | 0.42              |
| 25:BA:2791:C:OP2   | 25:BA:2791:C:C6   | 2.73                     | 0.42              |
| 26:BB:11:C:H3'     | 26:BB:12:C:C6     | 2.55                     | 0.42              |
| 26:BB:41:U:O4      | 30:BG:70:VAL:HB   | 2.18                     | 0.42              |
| 29:BF:196:LEU:HD23 | 29:BF:196:LEU:HA  | 1.86                     | 0.42              |
| 36:BQ:39:PRO:HA    | 36:BQ:97:VAL:O    | 2.19                     | 0.42              |
| 44:BY:15:VAL:O     | 44:BY:22:GLY:N    | 2.47                     | 0.42              |
| 1:CA:84:U:H4'      | 1:CA:89:C:N4      | 2.35                     | 0.42              |
| 1:CA:1022:G:H2'    | 1:CA:1023:G:C8    | 2.55                     | 0.42              |
| 1:CA:1137:C:O5'    | 1:CA:1137:C:H6    | 2.02                     | 0.42              |
| 2:CB:171:ALA:O     | 2:CB:175:ARG:HG3  | 2.20                     | 0.42              |
| 4:CD:156:GLU:O     | 4:CD:160:GLN:HG3  | 2.20                     | 0.42              |
| 6:CF:10:LEU:HB2    | 6:CF:59:TYR:HB3   | 2.01                     | 0.42              |
| 9:CI:128:ARG:OXT   | 9:CI:128:ARG:HG2  | 2.20                     | 0.42              |
| 20:CT:39:LYS:HB2   | 20:CT:39:LYS:HE3  | 1.84                     | 0.42              |
| 25:DA:31:C:H5''    | 25:DA:1239:G:OP1  | 2.20                     | 0.42              |
| 25:DA:747:U:O2     | 25:DA:2014:A:H1'  | 2.20                     | 0.42              |
| 25:DA:1642:G:H2'   | 25:DA:1643:G:C8   | 2.55                     | 0.42              |
| 25:DA:2018:G:H2'   | 25:DA:2019:A:O4'  | 2.18                     | 0.42              |
| 25:DA:2130:U:H3    | 25:DA:2159:G:H22  | 1.66                     | 0.42              |
| 25:DA:2332:U:O2'   | 25:DA:2335:A:N3   | 2.50                     | 0.42              |
| 25:DA:2697:G:H2'   | 25:DA:2698:U:O4'  | 2.20                     | 0.42              |
| 25:DA:2728:U:H2'   | 25:DA:2729:G:C8   | 2.54                     | 0.42              |
| 35:DP:31:ALA:O     | 35:DP:32:THR:OG1  | 2.30                     | 0.42              |
| 1:AA:178:C:H2'     | 1:AA:179:A:H8     | 1.84                     | 0.42              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 1:AA:901:A:H5''   | 1:AA:902:G:OP2    | 2.19                     | 0.42              |
| 1:AA:985:C:H2'    | 1:AA:986:A:C8     | 2.54                     | 0.42              |
| 1:AA:1132:C:H2'   | 1:AA:1133:G:H8    | 1.82                     | 0.42              |
| 1:AA:1280:A:H8    | 10:AJ:40:LEU:HD22 | 1.85                     | 0.42              |
| 2:AB:18:GLY:O     | 2:AB:19:HIS:HB3   | 2.19                     | 0.42              |
| 3:AC:35:GLU:O     | 3:AC:39:ILE:HG13  | 2.19                     | 0.42              |
| 3:AC:156:ARG:N    | 3:AC:196:LEU:HD22 | 2.35                     | 0.42              |
| 17:AQ:6:LEU:HD12  | 17:AQ:6:LEU:HA    | 1.83                     | 0.42              |
| 20:AT:45:GLN:HB2  | 20:AT:91:LEU:HD13 | 2.01                     | 0.42              |
| 25:BA:443:A:H1'   | 25:BA:1201:C:O4'  | 2.19                     | 0.42              |
| 25:BA:2011:U:H2'  | 25:BA:2012:G:O4'  | 2.18                     | 0.42              |
| 25:BA:2125:G:N2   | 25:BA:2172:U:OP1  | 2.45                     | 0.42              |
| 25:BA:2149:G:H3'  | 25:BA:2150:U:C6   | 2.54                     | 0.42              |
| 27:BD:94:LEU:HD22 | 27:BD:95:LEU:N    | 2.34                     | 0.42              |
| 30:BG:41:GLN:NE2  | 30:BG:154:GLY:O   | 2.52                     | 0.42              |
| 37:BR:72:ASP:OD2  | 37:BR:75:LEU:HB2  | 2.20                     | 0.42              |
| 44:BY:67:LEU:HD23 | 44:BY:67:LEU:HA   | 1.92                     | 0.42              |
| 48:B2:3:LEU:HD22  | 48:B2:7:ARG:HE    | 1.83                     | 0.42              |
| 50:B4:62:ARG:HA   | 50:B4:62:ARG:HD3  | 1.86                     | 0.42              |
| 1:CA:125:U:H2'    | 1:CA:126:G:C8     | 2.55                     | 0.42              |
| 1:CA:652:U:O2'    | 1:CA:653:A:OP2    | 2.33                     | 0.42              |
| 1:CA:789:U:H2'    | 1:CA:791:G:OP2    | 2.19                     | 0.42              |
| 1:CA:827:U:H2'    | 1:CA:859:A:H61    | 1.85                     | 0.42              |
| 1:CA:848:C:O2'    | 1:CA:849:C:H5'    | 2.20                     | 0.42              |
| 1:CA:1060:C:H2'   | 1:CA:1061:G:H8    | 1.85                     | 0.42              |
| 1:CA:1140:C:H2'   | 1:CA:1141:C:C6    | 2.54                     | 0.42              |
| 1:CA:1157:A:H5'   | 1:CA:1158:C:N1    | 2.34                     | 0.42              |
| 1:CA:1327:C:H5''  | 21:CU:20:LYS:HB3  | 2.02                     | 0.42              |
| 2:CB:120:ALA:C    | 2:CB:122:PHE:N    | 2.73                     | 0.42              |
| 2:CB:135:GLN:O    | 2:CB:139:LYS:HB2  | 2.20                     | 0.42              |
| 6:CF:21:LEU:O     | 6:CF:25:ILE:HG13  | 2.20                     | 0.42              |
| 15:CO:22:THR:OG1  | 15:CO:23:GLY:N    | 2.53                     | 0.42              |
| 17:CQ:81:ARG:HD2  | 17:CQ:81:ARG:HA   | 1.83                     | 0.42              |
| 20:CT:18:GLN:O    | 20:CT:22:ARG:HG3  | 2.20                     | 0.42              |
| 25:DA:78:A:C6     | 25:DA:109:G:C6    | 3.07                     | 0.42              |
| 25:DA:191:A:H2'   | 25:DA:192:C:C6    | 2.54                     | 0.42              |
| 25:DA:464:U:H4'   | 53:D7:5:TRP:CZ3   | 2.54                     | 0.42              |
| 25:DA:608:A:C6    | 25:DA:609:A:C6    | 3.07                     | 0.42              |
| 25:DA:2061:G:H5'' | 25:DA:2503:A:C2   | 2.54                     | 0.42              |
| 25:DA:2127:G:C6   | 25:DA:2161:C:N3   | 2.86                     | 0.42              |
| 25:DA:2282:G:H4'  | 25:DA:2389:G:O2'  | 2.18                     | 0.42              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 25:DA:2529:G:O6   | 55:D9:31:LYS:NZ    | 2.52                     | 0.42              |
| 27:DD:95:LEU:HD11 | 27:DD:105:ILE:HD13 | 2.00                     | 0.42              |
| 35:DP:143:GLY:O   | 35:DP:145:PRO:HD3  | 2.19                     | 0.42              |
| 36:DQ:112:GLU:HG2 | 36:DQ:113:GLN:N    | 2.32                     | 0.42              |
| 36:DQ:133:ARG:HG2 | 36:DQ:134:ARG:N    | 2.35                     | 0.42              |
| 38:DS:4:LEU:HD22  | 38:DS:8:GLU:OE1    | 2.20                     | 0.42              |
| 44:DY:6:HIS:H     | 44:DY:6:HIS:CD2    | 2.38                     | 0.42              |
| 45:DZ:67:LEU:HD23 | 45:DZ:67:LEU:HA    | 1.86                     | 0.42              |
| 50:D4:68:ARG:HB3  | 50:D4:69:LYS:H     | 1.60                     | 0.42              |
| 1:AA:1037:C:O2    | 1:AA:1037:C:H2'    | 2.18                     | 0.42              |
| 1:AA:1063:C:H3'   | 1:AA:1064:G:H2'    | 2.01                     | 0.42              |
| 1:AA:1311:G:N2    | 1:AA:1326:C:N3     | 2.56                     | 0.42              |
| 4:AD:59:ARG:NH2   | 4:AD:62:GLN:HG3    | 2.34                     | 0.42              |
| 9:AI:84:ALA:O     | 9:AI:88:TYR:N      | 2.47                     | 0.42              |
| 11:AK:54:ARG:O    | 11:AK:57:THR:OG1   | 2.37                     | 0.42              |
| 24:AX:17:C:OP2    | 24:AX:17(A):U:O2'  | 2.30                     | 0.42              |
| 25:BA:171:G:O2'   | 25:BA:172:C:H5'    | 2.19                     | 0.42              |
| 25:BA:563:G:H22   | 25:BA:578:A:H2     | 1.66                     | 0.42              |
| 25:BA:839:U:H2'   | 25:BA:840:C:C6     | 2.53                     | 0.42              |
| 25:BA:944:G:H5''  | 25:BA:945:A:O5'    | 2.20                     | 0.42              |
| 25:BA:1179:C:H2'  | 25:BA:1180:C:C6    | 2.54                     | 0.42              |
| 25:BA:2282:G:OP1  | 25:BA:2283:C:H1'   | 2.20                     | 0.42              |
| 32:BI:50:ARG:HD2  | 32:BI:50:ARG:HA    | 1.90                     | 0.42              |
| 36:BQ:79:LEU:HD23 | 36:BQ:79:LEU:HA    | 1.91                     | 0.42              |
| 45:BZ:137:ILE:HA  | 45:BZ:156:LYS:HZ1  | 1.85                     | 0.42              |
| 1:CA:190:U:H2'    | 1:CA:191:G:H8      | 1.80                     | 0.42              |
| 1:CA:320:C:O2'    | 1:CA:1435:G:H1'    | 2.20                     | 0.42              |
| 1:CA:995:C:H4'    | 14:CN:8:GLU:OE2    | 2.20                     | 0.42              |
| 1:CA:1220:G:H5'   | 19:CS:35:SER:HA    | 2.01                     | 0.42              |
| 1:CA:1303:C:C4    | 1:CA:1304:G:C5     | 3.08                     | 0.42              |
| 1:CA:1442:G:HO2'  | 1:CA:1442(A):G:P   | 2.38                     | 0.42              |
| 15:CO:21:ASP:OD2  | 15:CO:24:SER:HB3   | 2.19                     | 0.42              |
| 25:DA:79:G:H1     | 25:DA:107:C:H42    | 1.67                     | 0.42              |
| 25:DA:704:G:O2'   | 25:DA:726:G:N2     | 2.41                     | 0.42              |
| 25:DA:1022:G:N7   | 33:DN:66:LYS:HE2   | 2.35                     | 0.42              |
| 25:DA:1839:G:N7   | 25:DA:1927:A:H1'   | 2.35                     | 0.42              |
| 25:DA:2155:G:H2'  | 25:DA:2156:G:H5'   | 2.01                     | 0.42              |
| 25:DA:2186:G:C2'  | 25:DA:2187:G:H5''  | 2.44                     | 0.42              |
| 25:DA:2224:G:H4'  | 25:DA:2226:C:C2    | 2.55                     | 0.42              |
| 29:DF:178:PRO:HB3 | 29:DF:198:ALA:CB   | 2.50                     | 0.42              |
| 30:DG:21:ARG:HG3  | 30:DG:22:ARG:N     | 2.34                     | 0.42              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 30:DG:61:ALA:HB1   | 50:D4:7:PRO:HG2   | 2.01                     | 0.42              |
| 33:DN:120:LEU:HD23 | 33:DN:120:LEU:HA  | 1.92                     | 0.42              |
| 49:D3:8:LEU:O      | 49:D3:32:GLN:N    | 2.43                     | 0.42              |
| 1:AA:44:G:C2       | 1:AA:45:U:H1'     | 2.55                     | 0.42              |
| 1:AA:240:C:H2'     | 1:AA:241:C:H6     | 1.82                     | 0.42              |
| 1:AA:337:C:H2'     | 1:AA:338:A:C8     | 2.54                     | 0.42              |
| 1:AA:390:C:H2'     | 1:AA:391:G:C8     | 2.54                     | 0.42              |
| 1:AA:925:G:H1'     | 1:AA:1502:A:C4    | 2.55                     | 0.42              |
| 1:AA:1458:G:C2'    | 1:AA:1459:C:H5'   | 2.50                     | 0.42              |
| 6:AF:86:ARG:O      | 6:AF:87:ARG:HG2   | 2.20                     | 0.42              |
| 7:AG:48:LYS:O      | 7:AG:52:GLU:HG2   | 2.20                     | 0.42              |
| 10:AJ:50:ILE:HD11  | 10:AJ:57:LYS:HD2  | 2.01                     | 0.42              |
| 18:AR:59:SER:OG    | 18:AR:60:ALA:N    | 2.53                     | 0.42              |
| 25:BA:30:G:H2'     | 25:BA:31:C:C6     | 2.55                     | 0.42              |
| 25:BA:245:G:O5'    | 35:BP:73:GLY:HA2  | 2.20                     | 0.42              |
| 25:BA:392:C:H2'    | 25:BA:393:C:C6    | 2.54                     | 0.42              |
| 25:BA:1568:G:H1'   | 27:BD:58:HIS:HE1  | 1.85                     | 0.42              |
| 25:BA:1570:A:H2'   | 25:BA:1571:A:C8   | 2.55                     | 0.42              |
| 25:BA:2140:C:C2    | 25:BA:2151:G:N1   | 2.73                     | 0.42              |
| 25:BA:2593:U:O4    | 60:BA:4071:HOH:O  | 2.18                     | 0.42              |
| 25:BA:2784:C:H1'   | 28:BE:37:ARG:NH1  | 2.35                     | 0.42              |
| 30:BG:96:ARG:O     | 30:BG:99:MET:HB3  | 2.19                     | 0.42              |
| 33:BN:14:VAL:HG13  | 33:BN:138:LEU:HB2 | 2.02                     | 0.42              |
| 35:BP:82:GLY:HA2   | 35:BP:113:LYS:O   | 2.20                     | 0.42              |
| 37:BR:81:ASP:O     | 37:BR:85:PRO:HG2  | 2.20                     | 0.42              |
| 46:B0:40:GLN:NE2   | 46:B0:42:GLY:O    | 2.53                     | 0.42              |
| 1:CA:373:A:H1'     | 1:CA:481:G:N3     | 2.35                     | 0.42              |
| 1:CA:501:C:H2'     | 1:CA:502:G:H8     | 1.85                     | 0.42              |
| 1:CA:576:G:O6      | 1:CA:880:C:O2'    | 2.23                     | 0.42              |
| 1:CA:947:G:H2'     | 1:CA:948:C:O4'    | 2.20                     | 0.42              |
| 1:CA:1118:C:C2     | 1:CA:1119:C:C5    | 3.08                     | 0.42              |
| 7:CG:135:VAL:HA    | 7:CG:138:LYS:HB3  | 2.02                     | 0.42              |
| 19:CS:49:ILE:O     | 19:CS:60:VAL:N    | 2.48                     | 0.42              |
| 25:DA:19:C:H2'     | 25:DA:20:C:H6     | 1.83                     | 0.42              |
| 25:DA:729:G:H5'    | 25:DA:730:C:H5''  | 2.02                     | 0.42              |
| 25:DA:1341:U:H5'   | 43:DX:57:LEU:HB3  | 2.01                     | 0.42              |
| 25:DA:1902:C:H5'   | 27:DD:246:PRO:HD3 | 2.02                     | 0.42              |
| 25:DA:1978:A:H2'   | 25:DA:1979:C:C6   | 2.55                     | 0.42              |
| 25:DA:2035:G:P     | 25:DA:2036:C:H41  | 2.42                     | 0.42              |
| 25:DA:2169:A:H2'   | 25:DA:2170:A:C8   | 2.55                     | 0.42              |
| 25:DA:2170:A:H8    | 25:DA:2170:A:OP2  | 2.02                     | 0.42              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 25:DA:2378:A:H8   | 25:DA:2378:A:O5'   | 2.03                     | 0.42              |
| 25:DA:2600:A:H2'  | 25:DA:2601:C:C6    | 2.55                     | 0.42              |
| 27:DD:172:TYR:CD1 | 27:DD:186:HIS:HA   | 2.55                     | 0.42              |
| 30:DG:5:VAL:O     | 30:DG:8:LYS:HB2    | 2.20                     | 0.42              |
| 31:DH:3:ARG:HH12  | 31:DH:5:GLY:N      | 2.16                     | 0.42              |
| 33:DN:134:ARG:N   | 33:DN:135:PRO:HD3  | 2.35                     | 0.42              |
| 34:DO:98:VAL:HG13 | 34:DO:117:LEU:HB2  | 2.02                     | 0.42              |
| 35:DP:59:LEU:HD23 | 54:D8:58:ILE:HD13  | 2.01                     | 0.42              |
| 39:DT:7:ILE:O     | 39:DT:11:GLU:HG3   | 2.20                     | 0.42              |
| 42:DW:37:ARG:HD2  | 42:DW:38:TYR:CE2   | 2.55                     | 0.42              |
| 49:D3:5:LYS:HE3   | 49:D3:57:GLU:CD    | 2.39                     | 0.42              |
| 54:D8:23:VAL:HG22 | 54:D8:47:LYS:HB3   | 2.02                     | 0.42              |
| 1:AA:110:C:H2'    | 1:AA:111:G:O4'     | 2.20                     | 0.42              |
| 1:AA:418:C:N4     | 1:AA:425:G:H1      | 2.12                     | 0.42              |
| 1:AA:585:G:OP1    | 17:AQ:37:LYS:HD2   | 2.19                     | 0.42              |
| 1:AA:1136:U:H6    | 1:AA:1136:U:H3'    | 1.85                     | 0.42              |
| 1:AA:1320:C:C4    | 19:AS:36:ARG:HB2   | 2.55                     | 0.42              |
| 1:AA:1374:A:O2'   | 7:AG:28:ASN:HB3    | 2.20                     | 0.42              |
| 4:AD:162:LEU:HD13 | 4:AD:181:MET:HG2   | 2.02                     | 0.42              |
| 11:AK:99:GLN:HG3  | 11:AK:105:VAL:HG11 | 2.01                     | 0.42              |
| 13:AM:40:ASN:HB3  | 13:AM:43:THR:OG1   | 2.20                     | 0.42              |
| 13:AM:40:ASN:HA   | 13:AM:41:PRO:HD2   | 1.86                     | 0.42              |
| 19:AS:41:VAL:O    | 19:AS:44:MET:N     | 2.45                     | 0.42              |
| 25:BA:772:C:H2'   | 25:BA:773:U:C6     | 2.54                     | 0.42              |
| 25:BA:1188:U:C4'  | 41:BV:79:VAL:HG22  | 2.50                     | 0.42              |
| 25:BA:1287:A:N7   | 37:BR:106:GLY:HA3  | 2.35                     | 0.42              |
| 25:BA:1418:G:H8   | 25:BA:1418:G:O5'   | 2.02                     | 0.42              |
| 25:BA:1824:G:OP1  | 27:BD:52:ARG:HD3   | 2.20                     | 0.42              |
| 25:BA:1857:G:C6   | 25:BA:1858:G:C6    | 3.07                     | 0.42              |
| 25:BA:2134:A:OP2  | 25:BA:2134:A:H8    | 2.02                     | 0.42              |
| 25:BA:2135:A:H61  | 25:BA:2156:G:C2'   | 2.33                     | 0.42              |
| 25:BA:2469:A:C2   | 25:BA:2470:G:H1'   | 2.55                     | 0.42              |
| 25:BA:2872:G:O2'  | 25:BA:2873:A:H5'   | 2.19                     | 0.42              |
| 28:BE:51:PHE:HB3  | 28:BE:77:ILE:HD12  | 2.02                     | 0.42              |
| 40:BU:83:LEU:HD12 | 40:BU:113:ALA:HB2  | 2.02                     | 0.42              |
| 1:CA:33:A:N3      | 12:CL:32:PHE:HE2   | 2.18                     | 0.42              |
| 1:CA:586:C:O2'    | 1:CA:878:G:H4'     | 2.19                     | 0.42              |
| 1:CA:664:G:H22    | 1:CA:741:G:H22     | 1.68                     | 0.42              |
| 1:CA:675:A:H2'    | 1:CA:676:A:C8      | 2.55                     | 0.42              |
| 1:CA:707:C:H2'    | 1:CA:708:C:H6      | 1.84                     | 0.42              |
| 1:CA:834:C:H2'    | 1:CA:835:U:C6      | 2.55                     | 0.42              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:CA:900:A:H2'    | 1:CA:901:A:C8      | 2.55                     | 0.42              |
| 1:CA:1154:G:N7    | 1:CA:1155:G:N9     | 2.68                     | 0.42              |
| 1:CA:1223:C:H5''  | 1:CA:1224:G:H5'    | 2.01                     | 0.42              |
| 1:CA:1258:G:H2'   | 1:CA:1259:C:H6     | 1.84                     | 0.42              |
| 4:CD:155:LEU:HD22 | 4:CD:157:LEU:H     | 1.85                     | 0.42              |
| 7:CG:149:ARG:HG2  | 11:CK:59:TYR:CE1   | 2.55                     | 0.42              |
| 8:CH:68:ARG:NH1   | 8:CH:74:PRO:HB3    | 2.35                     | 0.42              |
| 15:CO:5:LYS:NZ    | 15:CO:5:LYS:HB2    | 2.35                     | 0.42              |
| 18:CR:69:THR:HA   | 18:CR:72:ARG:HD2   | 2.02                     | 0.42              |
| 25:DA:77:C:H2'    | 25:DA:78:A:H8      | 1.85                     | 0.42              |
| 25:DA:196:A:H2'   | 25:DA:196:A:N3     | 2.35                     | 0.42              |
| 25:DA:272:G:C2    | 25:DA:421:U:C4     | 3.07                     | 0.42              |
| 25:DA:947:G:N2    | 25:DA:971:C:C2     | 2.88                     | 0.42              |
| 25:DA:1536:C:O2'  | 25:DA:1537:G:OP2   | 2.33                     | 0.42              |
| 25:DA:1580:A:H3'  | 25:DA:1581:G:C8    | 2.55                     | 0.42              |
| 27:DD:67:PHE:CE1  | 27:DD:157:ARG:HD2  | 2.55                     | 0.42              |
| 29:DF:196:LEU:O   | 29:DF:199:TRP:HB3  | 2.20                     | 0.42              |
| 30:DG:3:LEU:CD1   | 30:DG:5:VAL:HG12   | 2.49                     | 0.42              |
| 33:DN:48:MET:HE3  | 33:DN:48:MET:HB2   | 1.73                     | 0.42              |
| 38:DS:39:ILE:HD13 | 38:DS:85:VAL:HG21  | 2.01                     | 0.42              |
| 1:AA:375:U:O3'    | 16:AP:6:LEU:HB2    | 2.20                     | 0.41              |
| 1:AA:405:U:H4'    | 1:AA:496:A:O2'     | 2.20                     | 0.41              |
| 1:AA:922:G:H2'    | 1:AA:923:A:C8      | 2.55                     | 0.41              |
| 1:AA:1032:G:H2'   | 1:AA:1033:G:C8     | 2.55                     | 0.41              |
| 1:AA:1308:U:OP2   | 13:AM:99:ARG:HD2   | 2.20                     | 0.41              |
| 1:AA:1530:G:OP1   | 1:AA:1530:G:H4'    | 2.19                     | 0.41              |
| 5:AE:20:GLN:NE2   | 5:AE:21:ALA:O      | 2.53                     | 0.41              |
| 9:AI:86:VAL:HA    | 9:AI:92:TYR:HB2    | 2.02                     | 0.41              |
| 11:AK:21:ILE:HB   | 11:AK:84:VAL:HG22  | 2.02                     | 0.41              |
| 13:AM:90:LEU:HA   | 13:AM:93:ARG:HG3   | 2.01                     | 0.41              |
| 25:BA:109:G:H2'   | 25:BA:110:G:O4'    | 2.20                     | 0.41              |
| 25:BA:185:U:H2'   | 25:BA:186:G:H8     | 1.85                     | 0.41              |
| 25:BA:212:G:H2'   | 25:BA:213:A:O4'    | 2.20                     | 0.41              |
| 25:BA:336:C:H2'   | 25:BA:337:C:C6     | 2.55                     | 0.41              |
| 25:BA:686:G:C4    | 53:B7:11:LYS:HG2   | 2.55                     | 0.41              |
| 25:BA:1006:C:C2   | 25:BA:1138:G:N2    | 2.88                     | 0.41              |
| 25:BA:1190:G:H5'' | 35:BP:32:THR:HA    | 2.01                     | 0.41              |
| 25:BA:1405:U:H2'  | 25:BA:1406:U:H6    | 1.85                     | 0.41              |
| 25:BA:1803:A:O2'  | 27:BD:259:THR:HG21 | 2.20                     | 0.41              |
| 25:BA:1828:G:H4'  | 25:BA:1829:A:OP1   | 2.19                     | 0.41              |
| 25:BA:1922:G:H2'  | 25:BA:1923:U:O4'   | 2.20                     | 0.41              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:BA:2163:C:OP1   | 25:BA:2165:G:N1    | 2.53                     | 0.41              |
| 28:BE:183:LEU:HD12 | 28:BE:183:LEU:HA   | 1.87                     | 0.41              |
| 35:BP:118:GLY:O    | 35:BP:137:LYS:NZ   | 2.50                     | 0.41              |
| 36:BQ:58:PHE:HB3   | 36:BQ:61:GLY:O     | 2.20                     | 0.41              |
| 1:CA:532:A:N6      | 3:CC:156:ARG:HH22  | 2.17                     | 0.41              |
| 1:CA:657:G:N2      | 1:CA:749:C:O2      | 2.44                     | 0.41              |
| 1:CA:918:A:H2'     | 1:CA:919:A:O4'     | 2.20                     | 0.41              |
| 1:CA:922:G:N3      | 1:CA:1398:A:C2     | 2.88                     | 0.41              |
| 1:CA:1006:C:H2'    | 1:CA:1007:C:O4'    | 2.20                     | 0.41              |
| 1:CA:1276:G:O2'    | 1:CA:1277:C:H5'    | 2.20                     | 0.41              |
| 1:CA:1292:U:H5'    | 9:CI:38:GLN:NE2    | 2.35                     | 0.41              |
| 1:CA:1399:C:C2     | 1:CA:1502:A:N6     | 2.88                     | 0.41              |
| 2:CB:16:HIS:HB3    | 2:CB:210:SER:CB    | 2.50                     | 0.41              |
| 2:CB:27:LYS:O      | 2:CB:194:PRO:HG2   | 2.20                     | 0.41              |
| 4:CD:100:ARG:NH1   | 4:CD:137:SER:HB3   | 2.35                     | 0.41              |
| 20:CT:54:LYS:HA    | 20:CT:57:ARG:NH1   | 2.35                     | 0.41              |
| 25:DA:37:C:H4'     | 25:DA:451:C:OP1    | 2.20                     | 0.41              |
| 25:DA:598:G:H2'    | 25:DA:599:G:O4'    | 2.20                     | 0.41              |
| 25:DA:1145:C:H2'   | 25:DA:1146:C:C6    | 2.55                     | 0.41              |
| 25:DA:1598:C:H2'   | 25:DA:1599:C:C6    | 2.55                     | 0.41              |
| 32:DI:44:LEU:HD13  | 32:DI:44:LEU:HA    | 1.86                     | 0.41              |
| 38:DS:84:GLN:H     | 38:DS:111:GLU:HB2  | 1.84                     | 0.41              |
| 40:DU:28:ARG:HD3   | 40:DU:38:THR:OG1   | 2.20                     | 0.41              |
| 46:D0:50:ASN:HA    | 46:D0:62:LEU:HD11  | 2.02                     | 0.41              |
| 50:D4:9:LEU:HD23   | 50:D4:9:LEU:HA     | 1.90                     | 0.41              |
| 1:AA:59:A:N6       | 1:AA:331:G:H1'     | 2.35                     | 0.41              |
| 1:AA:540:G:H2'     | 1:AA:541:G:O4'     | 2.21                     | 0.41              |
| 1:AA:971:G:N1      | 1:AA:1363(A):A:OP2 | 2.44                     | 0.41              |
| 1:AA:1117:G:H5''   | 9:AI:104:ARG:CZ    | 2.50                     | 0.41              |
| 1:AA:1319:A:OP2    | 19:AS:3:ARG:HG3    | 2.20                     | 0.41              |
| 9:AI:26:VAL:HG22   | 9:AI:61:ALA:HB3    | 2.02                     | 0.41              |
| 11:AK:85:ARG:HG2   | 11:AK:111:ASP:O    | 2.19                     | 0.41              |
| 12:AL:97:ARG:HG3   | 12:AL:98:TYR:CE1   | 2.55                     | 0.41              |
| 17:AQ:76:LEU:HD21  | 17:AQ:79:SER:OG    | 2.21                     | 0.41              |
| 25:BA:143(A):C:H2' | 25:BA:144:C:C6     | 2.55                     | 0.41              |
| 25:BA:185:U:H2'    | 25:BA:186:G:C8     | 2.55                     | 0.41              |
| 25:BA:392:C:H5''   | 25:BA:409:C:H5''   | 2.02                     | 0.41              |
| 25:BA:1130:U:O2    | 28:BE:149:ARG:NH2  | 2.45                     | 0.41              |
| 25:BA:2584:U:O2    | 25:BA:2585:U:C4    | 2.73                     | 0.41              |
| 29:BF:110:LEU:HD21 | 29:BF:181:LEU:HG   | 2.02                     | 0.41              |
| 32:BI:9:LEU:HD22   | 32:BI:9:LEU:HA     | 1.83                     | 0.41              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 46:B0:82:ARG:HA   | 46:B0:83:PRO:HD3  | 1.87                     | 0.41              |
| 1:CA:109:A:C6     | 1:CA:326:G:C6     | 3.08                     | 0.41              |
| 1:CA:255:G:C6     | 1:CA:256:U:C4     | 3.08                     | 0.41              |
| 1:CA:667:G:OP1    | 1:CA:732:C:O2'    | 2.22                     | 0.41              |
| 1:CA:1005:A:H5''  | 1:CA:1006:C:C5    | 2.55                     | 0.41              |
| 1:CA:1092:A:H5''  | 7:CG:4:ARG:CZ     | 2.50                     | 0.41              |
| 1:CA:1443:G:H2'   | 1:CA:1444:C:C6    | 2.55                     | 0.41              |
| 5:CE:32:VAL:O     | 5:CE:44:GLY:N     | 2.36                     | 0.41              |
| 8:CH:112:LEU:HB3  | 8:CH:133:LEU:HA   | 2.02                     | 0.41              |
| 9:CI:102:LEU:H    | 9:CI:102:LEU:HG   | 1.57                     | 0.41              |
| 24:CX:76:31H:H61  | 46:D0:2:ALA:HB3   | 1.85                     | 0.41              |
| 25:DA:84:A:H5'    | 44:DY:8:LYS:HB3   | 2.03                     | 0.41              |
| 25:DA:538:G:H2'   | 25:DA:539:G:C8    | 2.53                     | 0.41              |
| 25:DA:729:G:H2'   | 25:DA:1775:U:H1'  | 2.03                     | 0.41              |
| 25:DA:1124:C:H2'  | 25:DA:1125:G:O4'  | 2.20                     | 0.41              |
| 25:DA:1316:U:H2'  | 25:DA:1317:A:C8   | 2.55                     | 0.41              |
| 25:DA:1429:G:H2'  | 25:DA:1430:C:C6   | 2.55                     | 0.41              |
| 25:DA:1436:G:C2   | 25:DA:1437:C:C2   | 3.08                     | 0.41              |
| 25:DA:1497:U:H5'' | 25:DA:1498:C:C5   | 2.56                     | 0.41              |
| 25:DA:1652:A:N7   | 25:DA:1653:G:C6   | 2.88                     | 0.41              |
| 25:DA:1660:C:O2'  | 25:DA:1661:G:H5'  | 2.20                     | 0.41              |
| 25:DA:2432:A:C6   | 25:DA:2433:A:C6   | 3.09                     | 0.41              |
| 25:DA:2454:G:N7   | 60:DA:4288:HOH:O  | 2.37                     | 0.41              |
| 25:DA:2671:A:H2'  | 25:DA:2672:G:O4'  | 2.20                     | 0.41              |
| 30:DG:19:LEU:HD11 | 30:DG:172:LEU:HB2 | 2.02                     | 0.41              |
| 31:DH:26:VAL:O    | 31:DH:33:LEU:N    | 2.36                     | 0.41              |
| 31:DH:35:VAL:O    | 31:DH:37:VAL:HG23 | 2.19                     | 0.41              |
| 35:DP:45:LEU:HD22 | 35:DP:45:LEU:HA   | 1.79                     | 0.41              |
| 38:DS:15:ARG:HE   | 38:DS:88:ASP:CG   | 2.23                     | 0.41              |
| 41:DV:22:VAL:O    | 41:DV:92:THR:N    | 2.24                     | 0.41              |
| 1:AA:392:G:H2'    | 1:AA:393:A:H8     | 1.85                     | 0.41              |
| 1:AA:432:A:H3'    | 1:AA:433:C:H6     | 1.85                     | 0.41              |
| 1:AA:567:G:H2'    | 1:AA:568:G:O4'    | 2.20                     | 0.41              |
| 1:AA:1118:C:H2'   | 1:AA:1119:C:C6    | 2.55                     | 0.41              |
| 9:AI:48:GLU:HA    | 9:AI:51:ARG:HG3   | 2.03                     | 0.41              |
| 12:AL:39:VAL:HG12 | 12:AL:41:ARG:HG2  | 2.03                     | 0.41              |
| 13:AM:17:VAL:O    | 13:AM:20:THR:OG1  | 2.28                     | 0.41              |
| 16:AP:20:VAL:HG23 | 16:AP:35:LYS:HA   | 2.02                     | 0.41              |
| 25:BA:272(E):G:C2 | 25:BA:364:C:C2    | 3.08                     | 0.41              |
| 25:BA:2630:G:H2'  | 25:BA:2631:G:C8   | 2.56                     | 0.41              |
| 25:BA:2680:C:H5'  | 28:BE:189:PRO:HA  | 2.01                     | 0.41              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 33:BN:67:LEU:O     | 33:BN:88:GLU:HG3   | 2.20                     | 0.41              |
| 42:BW:86:LEU:HD22  | 42:BW:96:ILE:HD11  | 2.02                     | 0.41              |
| 1:CA:835:U:C2      | 1:CA:836:G:C8      | 3.08                     | 0.41              |
| 1:CA:1030(A):G:OP1 | 1:CA:1030(A):G:H4' | 2.21                     | 0.41              |
| 1:CA:1113:C:O2'    | 3:CC:14:ILE:HD11   | 2.20                     | 0.41              |
| 1:CA:1145:C:H4'    | 1:CA:1146:A:C5'    | 2.51                     | 0.41              |
| 5:CE:80:ILE:CG2    | 5:CE:91:LEU:HB2    | 2.50                     | 0.41              |
| 8:CH:20:TYR:HA     | 8:CH:65:TYR:CZ     | 2.56                     | 0.41              |
| 11:CK:52:GLY:H     | 11:CK:55:LYS:HE2   | 1.84                     | 0.41              |
| 25:DA:98:G:OP1     | 48:D2:2:LYS:HA     | 2.21                     | 0.41              |
| 25:DA:554:U:O4     | 60:DA:4015:HOH:O   | 2.19                     | 0.41              |
| 25:DA:581:C:H2'    | 25:DA:582:G:C8     | 2.54                     | 0.41              |
| 25:DA:1580:A:H3'   | 25:DA:1581:G:H8    | 1.85                     | 0.41              |
| 25:DA:2379:G:H4'   | 38:DS:21:THR:CG2   | 2.51                     | 0.41              |
| 1:AA:153:C:N3      | 1:AA:168:G:N2      | 2.48                     | 0.41              |
| 1:AA:174:C:H2'     | 1:AA:175:C:C6      | 2.55                     | 0.41              |
| 1:AA:1327:C:H2'    | 1:AA:1328:C:C6     | 2.55                     | 0.41              |
| 1:AA:1348:U:H4'    | 9:AI:120:ARG:HD2   | 2.02                     | 0.41              |
| 3:AC:32:LEU:HD23   | 3:AC:32:LEU:HA     | 1.81                     | 0.41              |
| 7:AG:100:ALA:O     | 7:AG:104:LEU:HB2   | 2.20                     | 0.41              |
| 16:AP:40:ASP:HB3   | 16:AP:48:TRP:HB2   | 2.02                     | 0.41              |
| 25:BA:84:A:H3'     | 44:BY:8:LYS:HG2    | 2.02                     | 0.41              |
| 25:BA:301:G:H1'    | 25:BA:302:C:C6     | 2.54                     | 0.41              |
| 25:BA:330:A:H2     | 25:BA:1210:A:C2'   | 2.32                     | 0.41              |
| 25:BA:1655:A:H3'   | 25:BA:1656:C:C6    | 2.55                     | 0.41              |
| 25:BA:2532:G:C6    | 25:BA:2533:A:C6    | 3.08                     | 0.41              |
| 25:BA:2611:U:C4    | 51:B5:3:LYS:HG2    | 2.55                     | 0.41              |
| 25:BA:2685:G:H5'   | 34:BO:68:GLU:OE1   | 2.19                     | 0.41              |
| 25:BA:2790:A:N3    | 25:BA:2790:A:H2'   | 2.35                     | 0.41              |
| 28:BE:14:ILE:HB    | 39:BT:14:TYR:CE2   | 2.55                     | 0.41              |
| 30:BG:136:ARG:HG3  | 30:BG:137:GLU:HG3  | 2.03                     | 0.41              |
| 31:BH:71:LEU:HD12  | 31:BH:71:LEU:HA    | 1.86                     | 0.41              |
| 36:BQ:79:LEU:HB3   | 36:BQ:80:GLU:HG3   | 2.00                     | 0.41              |
| 42:BW:79:GLY:HA3   | 42:BW:100:THR:HG22 | 2.02                     | 0.41              |
| 50:B4:57:GLU:N     | 50:B4:60:GLN:HG3   | 2.36                     | 0.41              |
| 54:B8:48:PHE:CE2   | 54:B8:50:LEU:HD23  | 2.56                     | 0.41              |
| 1:CA:664:G:OP1     | 18:CR:64:ARG:NH2   | 2.51                     | 0.41              |
| 1:CA:942:G:C2      | 1:CA:1342:C:C2     | 3.08                     | 0.41              |
| 1:CA:1048:G:H1     | 1:CA:1209:C:N4     | 2.15                     | 0.41              |
| 1:CA:1057:G:C5     | 1:CA:1204:A:C2     | 3.09                     | 0.41              |
| 1:CA:1129:C:H2'    | 1:CA:1139:G:N7     | 2.36                     | 0.41              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 1:CA:1492:A:H2'   | 1:CA:1493:A:C4     | 2.56                     | 0.41              |
| 3:CC:122:GLU:HA   | 3:CC:125:GLU:OE2   | 2.19                     | 0.41              |
| 7:CG:20:ASP:OD2   | 7:CG:23:VAL:HG23   | 2.20                     | 0.41              |
| 8:CH:4:ASP:OD1    | 8:CH:6:ILE:N       | 2.53                     | 0.41              |
| 11:CK:116:HIS:O   | 11:CK:117:ASN:HB2  | 2.20                     | 0.41              |
| 19:CS:36:ARG:NE   | 19:CS:72:GLY:HA2   | 2.34                     | 0.41              |
| 20:CT:23:ARG:CG   | 20:CT:23:ARG:NH1   | 2.82                     | 0.41              |
| 25:DA:76:C:O2'    | 48:D2:59:ARG:HA    | 2.20                     | 0.41              |
| 25:DA:80:G:H5'    | 25:DA:346:A:H1'    | 2.01                     | 0.41              |
| 25:DA:118:A:N3    | 25:DA:178:G:H1'    | 2.36                     | 0.41              |
| 25:DA:800:A:H8    | 25:DA:800:A:OP1    | 2.04                     | 0.41              |
| 25:DA:962:G:H4'   | 25:DA:2496:C:O2'   | 2.21                     | 0.41              |
| 25:DA:998:C:H2'   | 25:DA:999:U:O4'    | 2.20                     | 0.41              |
| 25:DA:1005:C:H2'  | 25:DA:1006:C:C6    | 2.55                     | 0.41              |
| 25:DA:1184:G:OP1  | 49:D3:30:ARG:HD2   | 2.21                     | 0.41              |
| 25:DA:1651:G:OP1  | 37:DR:40:LYS:HE3   | 2.20                     | 0.41              |
| 25:DA:1651:G:H2'  | 25:DA:1652:A:O4'   | 2.20                     | 0.41              |
| 25:DA:2578:G:H2'  | 25:DA:2579:C:C6    | 2.55                     | 0.41              |
| 25:DA:2655:G:HO2' | 25:DA:2656:U:P     | 2.44                     | 0.41              |
| 26:DB:29:A:C2     | 26:DB:30:C:C2      | 3.09                     | 0.41              |
| 32:DI:130:TYR:HD2 | 32:DI:138:ILE:HD12 | 1.85                     | 0.41              |
| 33:DN:33:LEU:HD13 | 33:DN:33:LEU:HA    | 1.94                     | 0.41              |
| 35:DP:60:MET:HA   | 54:D8:13:ARG:NH1   | 2.36                     | 0.41              |
| 36:DQ:42:ILE:HD13 | 36:DQ:97:VAL:HB    | 2.02                     | 0.41              |
| 41:DV:62:LEU:HD23 | 41:DV:93:GLU:HG2   | 2.01                     | 0.41              |
| 45:DZ:42:VAL:HG13 | 45:DZ:43:GLU:HG3   | 2.02                     | 0.41              |
| 1:AA:341:C:O2'    | 1:AA:342:C:H5'     | 2.21                     | 0.41              |
| 1:AA:1147:C:H6    | 1:AA:1147:C:O5'    | 2.03                     | 0.41              |
| 1:AA:1169:A:O5'   | 1:AA:1169:A:H8     | 2.03                     | 0.41              |
| 9:AI:65:VAL:HG21  | 9:AI:73:GLN:HB3    | 2.02                     | 0.41              |
| 11:AK:86:GLY:O    | 11:AK:91:ARG:HD3   | 2.21                     | 0.41              |
| 14:AN:26:ARG:HD3  | 14:AN:43:CYS:HB3   | 2.02                     | 0.41              |
| 19:AS:31:ILE:HB   | 19:AS:49:ILE:HG13  | 2.02                     | 0.41              |
| 25:BA:34:C:H5''   | 25:BA:35:G:OP2     | 2.21                     | 0.41              |
| 25:BA:530:G:C5    | 25:BA:2022:U:H5''  | 2.55                     | 0.41              |
| 25:BA:2086:U:H2'  | 25:BA:2087:G:H8    | 1.86                     | 0.41              |
| 25:BA:2242:G:O6   | 60:BA:3937:HOH:O   | 2.21                     | 0.41              |
| 32:BI:12:LEU:HD23 | 32:BI:12:LEU:HA    | 1.85                     | 0.41              |
| 45:BZ:110:GLY:N   | 45:BZ:145:GLU:HA   | 2.36                     | 0.41              |
| 54:B8:42:ARG:HD2  | 60:B8:5105:HOH:O   | 2.21                     | 0.41              |
| 1:CA:15:G:C4      | 1:CA:16:A:C8       | 3.09                     | 0.41              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 1:CA:514:C:H2'     | 1:CA:515:G:C8     | 2.55                     | 0.41              |
| 1:CA:692:U:O2'     | 1:CA:694:A:N7     | 2.44                     | 0.41              |
| 1:CA:781:A:C8      | 1:CA:782:A:C8     | 3.09                     | 0.41              |
| 1:CA:1121:U:C4     | 1:CA:1122:U:C4    | 3.08                     | 0.41              |
| 2:CB:72:GLY:O      | 2:CB:94:ASN:HA    | 2.21                     | 0.41              |
| 4:CD:50:ARG:HA     | 4:CD:51:PRO:HD3   | 1.94                     | 0.41              |
| 25:DA:928:G:H8     | 25:DA:928:G:O5'   | 2.03                     | 0.41              |
| 25:DA:1882:C:H5'   | 47:D1:26:ARG:HH22 | 1.86                     | 0.41              |
| 25:DA:1889:A:H1'   | 25:DA:2087:G:O4'  | 2.20                     | 0.41              |
| 25:DA:2125:G:H22   | 25:DA:2172:U:C5'  | 2.31                     | 0.41              |
| 25:DA:2287:A:C5    | 25:DA:2289:G:C5   | 3.09                     | 0.41              |
| 25:DA:2387:U:H1'   | 46:D0:41:ARG:HE   | 1.85                     | 0.41              |
| 25:DA:2437:U:H2'   | 25:DA:2438:U:C6   | 2.56                     | 0.41              |
| 25:DA:2525:G:H1    | 25:DA:2538:C:H42  | 1.69                     | 0.41              |
| 30:DG:39:ILE:O     | 30:DG:91:ARG:HA   | 2.20                     | 0.41              |
| 30:DG:144:ILE:HG23 | 30:DG:148:MET:HE1 | 2.03                     | 0.41              |
| 37:DR:36:THR:HG22  | 37:DR:37:THR:N    | 2.35                     | 0.41              |
| 45:DZ:153:SER:HB3  | 45:DZ:167:PRO:HB3 | 2.03                     | 0.41              |
| 1:AA:57:G:H2'      | 1:AA:58:C:H6      | 1.85                     | 0.41              |
| 1:AA:730:G:C5      | 1:AA:731:G:H1'    | 2.55                     | 0.41              |
| 1:AA:762:C:H2'     | 1:AA:763:G:H8     | 1.86                     | 0.41              |
| 1:AA:936:C:H2'     | 1:AA:937:A:O4'    | 2.21                     | 0.41              |
| 1:AA:1493:A:H2'    | 25:BA:1913:A:N1   | 2.35                     | 0.41              |
| 17:AQ:52:LYS:HG2   | 17:AQ:53:LEU:H    | 1.83                     | 0.41              |
| 19:AS:50:ALA:HA    | 19:AS:58:VAL:O    | 2.20                     | 0.41              |
| 25:BA:352:G:O2'    | 25:BA:353:G:H5'   | 2.20                     | 0.41              |
| 25:BA:840:C:H2'    | 25:BA:841:A:C8    | 2.55                     | 0.41              |
| 25:BA:1322:A:N1    | 25:BA:1333:C:O2'  | 2.38                     | 0.41              |
| 25:BA:1680:U:O2    | 25:BA:1763:G:H3'  | 2.21                     | 0.41              |
| 25:BA:2345:G:N3    | 25:BA:2381:C:H2'  | 2.36                     | 0.41              |
| 25:BA:2444:G:P     | 29:BF:68:LYS:HD2  | 2.60                     | 0.41              |
| 25:BA:2827:C:H2'   | 25:BA:2828:C:C6   | 2.56                     | 0.41              |
| 27:BD:162:SER:HB3  | 27:BD:195:ALA:CB  | 2.51                     | 0.41              |
| 29:BF:184:TYR:CE2  | 29:BF:188:ARG:HD2 | 2.55                     | 0.41              |
| 1:CA:250:A:H4'     | 1:CA:251:G:O5'    | 2.19                     | 0.41              |
| 1:CA:264:U:O2      | 17:CQ:64:PRO:HG2  | 2.20                     | 0.41              |
| 1:CA:853:G:H2'     | 1:CA:854:G:C8     | 2.51                     | 0.41              |
| 1:CA:1034:G:C6     | 1:CA:1035:A:C2    | 3.09                     | 0.41              |
| 1:CA:1097:C:O2     | 1:CA:1169:A:H2    | 2.03                     | 0.41              |
| 1:CA:1151:A:O2'    | 1:CA:1152:A:O5'   | 2.32                     | 0.41              |
| 2:CB:105:PHE:O     | 2:CB:109:SER:HB2  | 2.20                     | 0.41              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 2:CB:180:LEU:HB2   | 2:CB:182:ILE:HD12 | 2.01                     | 0.41              |
| 6:CF:20:ALA:O      | 6:CF:24:GLU:N     | 2.49                     | 0.41              |
| 6:CF:99:ALA:HB2    | 18:CR:31:LEU:HD21 | 2.02                     | 0.41              |
| 9:CI:5:TYR:H       | 9:CI:87:GLN:HE22  | 1.69                     | 0.41              |
| 9:CI:8:GLY:HA3     | 9:CI:76:ALA:O     | 2.21                     | 0.41              |
| 14:CN:47:LEU:HD12  | 14:CN:53:LEU:CD2  | 2.50                     | 0.41              |
| 16:CP:55:ARG:HA    | 16:CP:55:ARG:HD2  | 1.80                     | 0.41              |
| 18:CR:40:LEU:HD13  | 18:CR:79:LEU:HD11 | 2.03                     | 0.41              |
| 25:DA:272(F):C:H42 | 25:DA:363(D):G:H1 | 1.67                     | 0.41              |
| 25:DA:608:A:H2'    | 25:DA:609:A:C8    | 2.56                     | 0.41              |
| 25:DA:842:G:H2'    | 25:DA:843:G:O4'   | 2.20                     | 0.41              |
| 25:DA:994:C:H1'    | 41:DV:10:LYS:HE3  | 2.01                     | 0.41              |
| 25:DA:1206:G:H2'   | 25:DA:1207:C:C6   | 2.54                     | 0.41              |
| 25:DA:1423:G:C4'   | 25:DA:1492:G:H21  | 2.33                     | 0.41              |
| 25:DA:1474:C:H2'   | 25:DA:1475:G:C8   | 2.54                     | 0.41              |
| 25:DA:2078:C:H2'   | 25:DA:2079:U:C6   | 2.55                     | 0.41              |
| 25:DA:2494:G:C6    | 25:DA:2495:G:C5   | 3.07                     | 0.41              |
| 26:DB:2:C:H2'      | 26:DB:3:C:H6      | 1.86                     | 0.41              |
| 26:DB:5:C:O2'      | 26:DB:27:C:O2     | 2.38                     | 0.41              |
| 26:DB:83:G:H4'     | 49:D3:52:HIS:ND1  | 2.35                     | 0.41              |
| 27:DD:264:LYS:HA   | 27:DD:265:PRO:HD3 | 1.94                     | 0.41              |
| 31:DH:101:ARG:NH2  | 31:DH:122:THR:HA  | 2.35                     | 0.41              |
| 33:DN:76:SER:OG    | 33:DN:81:GLY:HA3  | 2.20                     | 0.41              |
| 38:DS:87:PHE:CZ    | 38:DS:102:ALA:HB2 | 2.56                     | 0.41              |
| 49:D3:10:LYS:NZ    | 60:D3:4001:HOH:O  | 2.43                     | 0.41              |
| 1:AA:16:A:O2'      | 5:AE:16:THR:HB    | 2.21                     | 0.41              |
| 1:AA:49:U:O4       | 1:AA:365:U:H5     | 2.04                     | 0.41              |
| 1:AA:264:U:H2'     | 1:AA:265:G:O4'    | 2.21                     | 0.41              |
| 1:AA:1025:U:O2     | 1:AA:1036:G:C6    | 2.73                     | 0.41              |
| 1:AA:1347:G:H5''   | 9:AI:107:ARG:HB3  | 2.01                     | 0.41              |
| 7:AG:20:ASP:HB3    | 7:AG:23:VAL:HG23  | 2.01                     | 0.41              |
| 10:AJ:7:LYS:N      | 10:AJ:97:GLU:O    | 2.38                     | 0.41              |
| 11:AK:116:HIS:O    | 11:AK:117:ASN:HB2 | 2.20                     | 0.41              |
| 13:AM:33:ALA:O     | 13:AM:37:THR:OG1  | 2.23                     | 0.41              |
| 20:AT:33:ILE:CD1   | 20:AT:62:LEU:HB3  | 2.47                     | 0.41              |
| 25:BA:86:C:H4'     | 25:BA:104:U:H1'   | 2.02                     | 0.41              |
| 25:BA:620:G:N3     | 25:BA:620:G:H5'   | 2.35                     | 0.41              |
| 25:BA:1287:A:C5    | 25:BA:1288:U:C4   | 3.08                     | 0.41              |
| 25:BA:1371:G:H2'   | 25:BA:1372:U:C5   | 2.54                     | 0.41              |
| 25:BA:1473:G:H2'   | 25:BA:1474:C:O4'  | 2.21                     | 0.41              |
| 25:BA:1932:A:H2'   | 25:BA:1933:G:O4'  | 2.19                     | 0.41              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 26:BB:110:G:H2'   | 26:BB:111:G:C8     | 2.56                     | 0.41              |
| 32:BI:72:LEU:O    | 32:BI:74:ASN:N     | 2.54                     | 0.41              |
| 34:BO:79:PHE:HD1  | 39:BT:72:VAL:HG22  | 1.85                     | 0.41              |
| 41:BV:51:VAL:HG23 | 41:BV:52:VAL:O     | 2.21                     | 0.41              |
| 48:B2:37:PHE:O    | 48:B2:41:ILE:HG12  | 2.20                     | 0.41              |
| 51:B5:48:GLU:O    | 51:B5:60:VAL:HG11  | 2.21                     | 0.41              |
| 1:CA:405:U:H5''   | 1:CA:406:G:O5'     | 2.21                     | 0.41              |
| 1:CA:976:G:N2     | 1:CA:1363:C:OP2    | 2.53                     | 0.41              |
| 1:CA:1502:A:H2    | 1:CA:1505:G:N1     | 2.18                     | 0.41              |
| 2:CB:221:LEU:HD23 | 2:CB:221:LEU:HA    | 1.87                     | 0.41              |
| 5:CE:139:LEU:HA   | 5:CE:142:LEU:CD1   | 2.51                     | 0.41              |
| 7:CG:73:MET:HG3   | 7:CG:90:GLU:HA     | 2.02                     | 0.41              |
| 9:CI:23:ASN:ND2   | 9:CI:23:ASN:H      | 2.19                     | 0.41              |
| 13:CM:91:ARG:HA   | 13:CM:91:ARG:HD2   | 1.81                     | 0.41              |
| 14:CN:23:ARG:NH1  | 14:CN:28:GLY:O     | 2.53                     | 0.41              |
| 23:CW:76:PPU:N    | 24:CX:76:31H:N3'   | 2.66                     | 0.41              |
| 24:CX:53:G:C4     | 24:CX:54:5MU:H72   | 2.56                     | 0.41              |
| 25:DA:565:C:H4'   | 25:DA:1253:A:C6    | 2.55                     | 0.41              |
| 25:DA:610:G:H2'   | 25:DA:611:C:C6     | 2.56                     | 0.41              |
| 25:DA:740:U:H2'   | 25:DA:741:G:C8     | 2.56                     | 0.41              |
| 25:DA:1364:G:OP1  | 47:D1:2:SER:HA     | 2.20                     | 0.41              |
| 25:DA:1777:U:H2'  | 25:DA:1778:U:H6    | 1.85                     | 0.41              |
| 25:DA:2242:G:H2'  | 25:DA:2243:U:O4'   | 2.20                     | 0.41              |
| 25:DA:2252:G:H2'  | 25:DA:2253:G:O4'   | 2.20                     | 0.41              |
| 25:DA:2459:A:H5'' | 25:DA:2460:U:OP2   | 2.20                     | 0.41              |
| 25:DA:2557:G:H2'  | 25:DA:2558:C:C6    | 2.55                     | 0.41              |
| 25:DA:2683:C:H2'  | 25:DA:2684:U:H6    | 1.85                     | 0.41              |
| 25:DA:2863:C:H2'  | 25:DA:2864:G:H8    | 1.86                     | 0.41              |
| 26:DB:33:G:C2     | 26:DB:50:G:C2      | 3.09                     | 0.41              |
| 31:DH:98:LEU:HD22 | 31:DH:125:VAL:HG23 | 2.02                     | 0.41              |
| 31:DH:154:PRO:HB3 | 31:DH:163:TYR:CZ   | 2.56                     | 0.41              |
| 33:DN:34:LEU:O    | 33:DN:49:GLY:HA3   | 2.20                     | 0.41              |
| 50:D4:60:GLN:O    | 50:D4:63:TYR:HE2   | 2.04                     | 0.41              |
| 1:AA:79:G:C2      | 1:AA:90:U:O2       | 2.74                     | 0.41              |
| 1:AA:163:C:H2'    | 1:AA:164:U:C6      | 2.56                     | 0.41              |
| 1:AA:623:C:H2'    | 1:AA:624:C:O4'     | 2.20                     | 0.41              |
| 1:AA:742:G:C5'    | 15:AO:58:MET:HE3   | 2.51                     | 0.41              |
| 1:AA:1435:G:N2    | 1:AA:1466:C:O2     | 2.44                     | 0.41              |
| 2:AB:114:ARG:HG2  | 2:AB:145:LEU:HD21  | 2.03                     | 0.41              |
| 2:AB:162:ILE:HD11 | 2:AB:184:VAL:HG22  | 2.02                     | 0.41              |
| 2:AB:166:ASP:HB3  | 2:AB:169:LYS:HB2   | 2.03                     | 0.41              |

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| Atom-1            | Atom-2              | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|---------------------|--------------------------|-------------------|
| 2:AB:215:LEU:HA   | 2:AB:215:LEU:HD23   | 1.85                     | 0.41              |
| 3:AC:181:ASN:C    | 3:AC:181:ASN:HD22   | 2.24                     | 0.41              |
| 4:AD:158:ILE:HD13 | 4:AD:158:ILE:H      | 1.86                     | 0.41              |
| 6:AF:45:LEU:O     | 6:AF:46:ARG:HG3     | 2.20                     | 0.41              |
| 7:AG:28:ASN:HD22  | 7:AG:31:MET:CE      | 2.34                     | 0.41              |
| 9:AI:16:ARG:CZ    | 9:AI:64:THR:HG21    | 2.51                     | 0.41              |
| 15:AO:62:GLN:O    | 15:AO:66:LEU:HD13   | 2.21                     | 0.41              |
| 16:AP:52:ASP:CG   | 16:AP:55:ARG:HB2    | 2.40                     | 0.41              |
| 25:BA:247:G:H4'   | 25:BA:386:G:C6      | 2.56                     | 0.41              |
| 25:BA:355:G:H2'   | 25:BA:356:G:O4'     | 2.20                     | 0.41              |
| 25:BA:1230:C:H2'  | 25:BA:1231:G:C8     | 2.55                     | 0.41              |
| 25:BA:1443:G:H2'  | 25:BA:1444:G:C8     | 2.56                     | 0.41              |
| 25:BA:1493:C:C5   | 25:BA:2206:G:H1'    | 2.55                     | 0.41              |
| 25:BA:1500:G:O2'  | 27:BD:100:GLY:O     | 2.38                     | 0.41              |
| 25:BA:1779:U:H2'  | 60:BA:4539:HOH:O    | 2.20                     | 0.41              |
| 25:BA:1844:C:H2'  | 25:BA:1845:G:H8     | 1.86                     | 0.41              |
| 25:BA:2130:U:O2'  | 25:BA:2131:G:N2     | 2.31                     | 0.41              |
| 25:BA:2282:G:H4'  | 25:BA:2389:G:O2'    | 2.21                     | 0.41              |
| 26:BB:5:C:O2'     | 26:BB:27:C:O2       | 2.38                     | 0.41              |
| 26:BB:57:A:N3     | 30:BG:29:TRP:HB3    | 2.36                     | 0.41              |
| 29:BF:184:TYR:O   | 29:BF:188:ARG:HG3   | 2.21                     | 0.41              |
| 31:BH:94:TYR:N    | 31:BH:94:TYR:CD1    | 2.89                     | 0.41              |
| 37:BR:24:GLN:HE21 | 37:BR:44:LEU:HG     | 1.85                     | 0.41              |
| 44:BY:56:PRO:C    | 44:BY:58:GLY:H      | 2.24                     | 0.41              |
| 45:BZ:54:HIS:ND1  | 45:BZ:101:PRO:HG3   | 2.36                     | 0.41              |
| 1:CA:91:C:H2'     | 1:CA:92:C:C6        | 2.55                     | 0.41              |
| 3:CC:66:VAL:O     | 3:CC:101:LEU:HA     | 2.20                     | 0.41              |
| 3:CC:186:PHE:HD1  | 3:CC:198:VAL:O      | 2.03                     | 0.41              |
| 4:CD:51:PRO:HB2   | 4:CD:56:VAL:HG23    | 2.03                     | 0.41              |
| 9:CI:53:VAL:HG21  | 9:CI:92:TYR:CE1     | 2.55                     | 0.41              |
| 12:CL:117:ARG:NH2 | 12:CL:124:LYS:HB3   | 2.35                     | 0.41              |
| 17:CQ:43:LEU:HG   | 17:CQ:68:ARG:HG2    | 2.03                     | 0.41              |
| 25:DA:324:A:N6    | 25:DA:338:G:O2'     | 2.54                     | 0.41              |
| 25:DA:598:G:C6    | 25:DA:599:G:C5      | 3.09                     | 0.41              |
| 25:DA:663:G:C6    | 25:DA:664:C:C4      | 3.09                     | 0.41              |
| 25:DA:827:U:O2'   | 25:DA:2068:U:C2     | 2.60                     | 0.41              |
| 25:DA:923:C:H2'   | 25:DA:924:C:C6      | 2.55                     | 0.41              |
| 25:DA:953:A:H2'   | 25:DA:954:G:H8      | 1.85                     | 0.41              |
| 25:DA:1014:U:H2'  | 25:DA:1015:G:H8     | 1.85                     | 0.41              |
| 25:DA:1142:U:H5'' | 25:DA:1142(A):A:H5' | 2.03                     | 0.41              |
| 25:DA:1429:G:H1'  | 25:DA:1568:G:H1'    | 2.03                     | 0.41              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 25:DA:1655:A:H1'   | 28:DE:113:PHE:CE1 | 2.56                     | 0.41              |
| 25:DA:1744:C:H2'   | 25:DA:1745:C:C6   | 2.55                     | 0.41              |
| 25:DA:2113:U:H3    | 25:DA:2170:A:N6   | 2.19                     | 0.41              |
| 25:DA:2456:C:C4    | 25:DA:2457:U:C4   | 3.09                     | 0.41              |
| 26:DB:12:C:H2'     | 46:D0:73:GLY:HA3  | 2.03                     | 0.41              |
| 31:DH:7:LEU:HD23   | 31:DH:69:ARG:CZ   | 2.50                     | 0.41              |
| 40:DU:49:HIS:O     | 40:DU:53:ARG:N    | 2.53                     | 0.41              |
| 47:D1:7:ILE:HG23   | 47:D1:98:LEU:HD11 | 2.03                     | 0.41              |
| 54:D8:9:GLY:O      | 54:D8:13:ARG:HG2  | 2.20                     | 0.41              |
| 1:AA:66:G:O4'      | 1:AA:173:U:C4     | 2.74                     | 0.41              |
| 1:AA:115:G:H4'     | 1:AA:116:A:O5'    | 2.20                     | 0.41              |
| 1:AA:250:A:H4'     | 1:AA:251:G:O5'    | 2.21                     | 0.41              |
| 1:AA:406:G:N3      | 4:AD:119:GLN:NE2  | 2.61                     | 0.41              |
| 1:AA:448:A:H2'     | 1:AA:449:C:C6     | 2.56                     | 0.41              |
| 1:AA:509:A:N3      | 1:AA:543:C:O2'    | 2.33                     | 0.41              |
| 1:AA:621:A:H2'     | 1:AA:622:A:C8     | 2.55                     | 0.41              |
| 1:AA:811:C:O2'     | 1:AA:901:A:N1     | 2.46                     | 0.41              |
| 1:AA:869:G:O5'     | 1:AA:869:G:H8     | 2.04                     | 0.41              |
| 1:AA:985:C:H2'     | 1:AA:986:A:H8     | 1.86                     | 0.41              |
| 1:AA:1027:C:O2'    | 1:AA:1028:C:O5'   | 2.39                     | 0.41              |
| 1:AA:1075:C:C2'    | 1:AA:1076:C:H5'   | 2.50                     | 0.41              |
| 1:AA:1305:G:OP1    | 21:AU:2:GLY:HA3   | 2.21                     | 0.41              |
| 1:AA:1350:A:H2'    | 1:AA:1351:U:O4'   | 2.21                     | 0.41              |
| 2:AB:130:ARG:HG3   | 2:AB:130:ARG:NH1  | 2.35                     | 0.41              |
| 4:AD:53:ASP:O      | 4:AD:57:ARG:HD2   | 2.21                     | 0.41              |
| 4:AD:120:LEU:HD23  | 4:AD:120:LEU:HA   | 1.84                     | 0.41              |
| 6:AF:15:ASP:O      | 6:AF:18:GLN:NE2   | 2.49                     | 0.41              |
| 8:AH:98:LYS:H      | 8:AH:98:LYS:HD2   | 1.85                     | 0.41              |
| 12:AL:24:VAL:HG12  | 12:AL:27:LEU:HB2  | 2.02                     | 0.41              |
| 12:AL:110:VAL:HG23 | 12:AL:120:TYR:HB3 | 2.02                     | 0.41              |
| 17:AQ:52:LYS:NZ    | 17:AQ:52:LYS:HB3  | 2.35                     | 0.41              |
| 19:AS:28:LYS:HE3   | 19:AS:28:LYS:HB3  | 1.87                     | 0.41              |
| 20:AT:29:LYS:O     | 20:AT:33:ILE:HG12 | 2.21                     | 0.41              |
| 20:AT:72:LEU:HD23  | 20:AT:72:LEU:HA   | 1.95                     | 0.41              |
| 23:AW:76:PPU:HD1   | 25:BA:2506:U:H1'  | 2.02                     | 0.41              |
| 24:AX:4:G:H2'      | 24:AX:5:G:H8      | 1.84                     | 0.41              |
| 24:AX:12:G:H4'     | 25:BA:1908:C:O2   | 2.21                     | 0.41              |
| 25:BA:231:C:H2'    | 25:BA:232:G:O4'   | 2.20                     | 0.41              |
| 25:BA:306:U:H2'    | 25:BA:307:G:O4'   | 2.20                     | 0.41              |
| 25:BA:372:G:H5'    | 47:B1:66:HIS:NE2  | 2.36                     | 0.41              |
| 25:BA:1014:U:H2'   | 25:BA:1015:G:C8   | 2.55                     | 0.41              |

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| Atom-1             | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|-------------------|--------------------------|-------------------|
| 25:BA:1424:G:H2'   | 25:BA:1425:G:O4'  | 2.21                     | 0.41              |
| 25:BA:1434:A:H61   | 25:BA:1558:A:N6   | 2.12                     | 0.41              |
| 25:BA:1566:A:OP1   | 27:BD:211:ARG:NH1 | 2.53                     | 0.41              |
| 25:BA:1689:A:N6    | 25:BA:1698:A:H2   | 2.05                     | 0.41              |
| 25:BA:1721:G:H5'   | 25:BA:1722:A:OP2  | 2.20                     | 0.41              |
| 25:BA:2019:A:H5''  | 40:BU:27:LEU:HD12 | 2.03                     | 0.41              |
| 25:BA:2103:C:H2'   | 25:BA:2104:G:C8   | 2.56                     | 0.41              |
| 25:BA:2505:G:O6    | 25:BA:2576:G:H2'  | 2.21                     | 0.41              |
| 28:BE:9:VAL:CG2    | 28:BE:25:VAL:HB   | 2.50                     | 0.41              |
| 30:BG:77:ILE:HG21  | 30:BG:80:PHE:CD2  | 2.56                     | 0.41              |
| 30:BG:77:ILE:HD13  | 30:BG:82:LEU:HD12 | 2.02                     | 0.41              |
| 30:BG:143:GLU:H    | 30:BG:143:GLU:HG2 | 1.46                     | 0.41              |
| 32:BI:6:LEU:HG     | 32:BI:36:ALA:HA   | 2.01                     | 0.41              |
| 33:BN:87:LEU:HD23  | 33:BN:87:LEU:HA   | 1.90                     | 0.41              |
| 38:BS:36:TYR:CD1   | 38:BS:36:TYR:N    | 2.88                     | 0.41              |
| 38:BS:87:PHE:HZ    | 38:BS:98:VAL:HG12 | 1.86                     | 0.41              |
| 39:BT:53:ARG:HB3   | 39:BT:53:ARG:NH1  | 2.36                     | 0.41              |
| 41:BV:35:LEU:HA    | 41:BV:36:PRO:HD3  | 1.92                     | 0.41              |
| 45:BZ:111:VAL:HG12 | 45:BZ:112:ARG:H   | 1.86                     | 0.41              |
| 1:CA:187:C:H5''    | 20:CT:86:ARG:HG3  | 2.02                     | 0.41              |
| 1:CA:235:C:H2'     | 1:CA:236:G:H8     | 1.85                     | 0.41              |
| 1:CA:685:G:N1      | 1:CA:686:U:O4     | 2.54                     | 0.41              |
| 1:CA:848:C:O5'     | 1:CA:848:C:H6     | 2.04                     | 0.41              |
| 1:CA:865:A:H8      | 1:CA:865:A:O5'    | 2.04                     | 0.41              |
| 1:CA:954:G:H5'     | 13:CM:120:LYS:HD3 | 2.03                     | 0.41              |
| 1:CA:1003:G:C6     | 1:CA:1004:A:C2    | 3.09                     | 0.41              |
| 1:CA:1041:A:N6     | 1:CA:1042:G:C6    | 2.89                     | 0.41              |
| 1:CA:1067:A:N3     | 1:CA:1068:G:H1'   | 2.36                     | 0.41              |
| 1:CA:1229:A:O3'    | 24:CX:30:G:H5''   | 2.20                     | 0.41              |
| 1:CA:1273:G:H5'    | 1:CA:1274:G:OP2   | 2.21                     | 0.41              |
| 1:CA:1302:U:OP2    | 13:CM:21:TYR:OH   | 2.33                     | 0.41              |
| 2:CB:186:ALA:O     | 2:CB:200:ILE:HA   | 2.21                     | 0.41              |
| 3:CC:12:LEU:HD23   | 3:CC:12:LEU:HA    | 1.94                     | 0.41              |
| 4:CD:15:GLU:HG2    | 4:CD:63:LYS:HG3   | 2.03                     | 0.41              |
| 12:CL:66:VAL:HG21  | 12:CL:98:TYR:CE2  | 2.56                     | 0.41              |
| 13:CM:86:CYS:HB2   | 19:CS:73:GLU:HB3  | 2.03                     | 0.41              |
| 14:CN:13:THR:HA    | 14:CN:14:PRO:HD3  | 1.85                     | 0.41              |
| 18:CR:74:ARG:HG3   | 18:CR:79:LEU:HB2  | 2.03                     | 0.41              |
| 25:DA:24:G:H2'     | 25:DA:25:U:O4'    | 2.21                     | 0.41              |
| 25:DA:271(R):G:C2  | 25:DA:271(S):G:C5 | 3.08                     | 0.41              |
| 25:DA:330:A:C2     | 25:DA:1210:A:H2'  | 2.42                     | 0.41              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 25:DA:437:G:H2'   | 25:DA:438:G:O4'    | 2.21                     | 0.41              |
| 25:DA:600:G:H5'   | 29:DF:32:LEU:HD12  | 2.02                     | 0.41              |
| 25:DA:826:U:H5''  | 25:DA:2429:G:P     | 2.61                     | 0.41              |
| 25:DA:910:A:N6    | 25:DA:2277:G:O2'   | 2.40                     | 0.41              |
| 25:DA:917:A:N3    | 25:DA:917:A:H2'    | 2.36                     | 0.41              |
| 25:DA:1007:C:C4   | 25:DA:1008:C:C4    | 3.09                     | 0.41              |
| 25:DA:1032:A:H2   | 25:DA:1122:G:H22   | 1.69                     | 0.41              |
| 25:DA:1372:U:O5'  | 25:DA:1372:U:H6    | 2.04                     | 0.41              |
| 25:DA:1479:G:C6   | 25:DA:1480:G:C5    | 3.09                     | 0.41              |
| 25:DA:1633:G:N2   | 25:DA:1635:G:H1'   | 2.35                     | 0.41              |
| 25:DA:2369:A:H2'  | 25:DA:2370:G:C8    | 2.56                     | 0.41              |
| 25:DA:2516:G:C6   | 25:DA:2517:C:C4    | 3.09                     | 0.41              |
| 25:DA:2537:U:H2'  | 25:DA:2538:C:H6    | 1.81                     | 0.41              |
| 26:DB:78:A:C2     | 26:DB:100:A:C4     | 3.09                     | 0.41              |
| 27:DD:70:TRP:CE2  | 27:DD:150:LYS:HD3  | 2.56                     | 0.41              |
| 31:DH:98:LEU:HD13 | 31:DH:98:LEU:HA    | 1.93                     | 0.41              |
| 32:DI:29:TYR:O    | 32:DI:33:ARG:HG3   | 2.21                     | 0.41              |
| 33:DN:34:LEU:HD21 | 33:DN:120:LEU:HG   | 2.03                     | 0.41              |
| 36:DQ:66:ILE:HG12 | 36:DQ:104:PHE:CE1  | 2.55                     | 0.41              |
| 36:DQ:75:THR:HG21 | 36:DQ:87:LYS:HZ3   | 1.86                     | 0.41              |
| 38:DS:74:ALA:CB   | 38:DS:108:GLY:HA3  | 2.51                     | 0.41              |
| 40:DU:97:ASP:OD2  | 40:DU:101:ARG:HD2  | 2.20                     | 0.41              |
| 44:DY:83:THR:HA   | 44:DY:101:LYS:HZ3  | 1.85                     | 0.41              |
| 1:AA:29:G:O2'     | 1:AA:295:C:H4'     | 2.21                     | 0.41              |
| 1:AA:271:C:H2'    | 1:AA:272:C:H6      | 1.85                     | 0.41              |
| 1:AA:438:G:O2'    | 1:AA:494:U:O4      | 2.38                     | 0.41              |
| 1:AA:1057:G:C4    | 1:AA:1204:A:C2     | 3.09                     | 0.41              |
| 1:AA:1233:G:O2'   | 1:AA:1365:G:OP1    | 2.38                     | 0.41              |
| 1:AA:1353:G:O2'   | 1:AA:1354:C:H5'    | 2.21                     | 0.41              |
| 1:AA:1371:G:O3'   | 9:AI:69:GLY:HA3    | 2.20                     | 0.41              |
| 7:AG:52:GLU:HG2   | 7:AG:52:GLU:H      | 1.59                     | 0.41              |
| 24:AX:56:C:O5'    | 24:AX:56:C:H6      | 2.04                     | 0.41              |
| 25:BA:1529:G:C6   | 25:BA:1530:C:N4    | 2.89                     | 0.41              |
| 25:BA:1564:C:H2'  | 25:BA:1565:C:C6    | 2.56                     | 0.41              |
| 25:BA:1843:C:H2'  | 25:BA:1844:C:C6    | 2.55                     | 0.41              |
| 25:BA:2125:G:N1   | 25:BA:2172:U:OP1   | 2.52                     | 0.41              |
| 25:BA:2547:U:H2'  | 25:BA:2548:G:C8    | 2.55                     | 0.41              |
| 32:BI:9:LEU:HD13  | 32:BI:10:GLU:HG3   | 2.02                     | 0.41              |
| 33:BN:102:ALA:O   | 33:BN:106:MET:HG3  | 2.21                     | 0.41              |
| 36:BQ:104:PHE:HE2 | 36:BQ:125:LEU:HD11 | 1.86                     | 0.41              |
| 37:BR:61:HIS:O    | 37:BR:65:LEU:HD22  | 2.21                     | 0.41              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 45:BZ:6:LYS:HD3    | 45:BZ:8:TYR:OH     | 2.21                     | 0.41              |
| 46:B0:53:MET:HG3   | 46:B0:59:LEU:HD23  | 2.03                     | 0.41              |
| 1:CA:163:C:H2'     | 1:CA:164:U:O4'     | 2.21                     | 0.41              |
| 1:CA:299:G:H2'     | 1:CA:300:A:C8      | 2.56                     | 0.41              |
| 1:CA:750:G:N3      | 15:CO:23:GLY:HA3   | 2.35                     | 0.41              |
| 1:CA:989:C:HO2'    | 1:CA:1016:A:H2     | 1.66                     | 0.41              |
| 1:CA:1014:A:H5'    | 19:CS:18:LYS:HZ2   | 1.86                     | 0.41              |
| 1:CA:1069:C:O2'    | 1:CA:1192:C:H1'    | 2.21                     | 0.41              |
| 1:CA:1226:C:OP1    | 13:CM:91:ARG:NH1   | 2.53                     | 0.41              |
| 3:CC:137:ALA:HA    | 3:CC:140:ARG:HD3   | 2.02                     | 0.41              |
| 4:CD:173:TRP:NE1   | 4:CD:189:PRO:HG3   | 2.35                     | 0.41              |
| 5:CE:95:ALA:HB1    | 5:CE:96:PRO:HD2    | 2.03                     | 0.41              |
| 12:CL:58:VAL:O     | 12:CL:65:GLU:HA    | 2.21                     | 0.41              |
| 24:CX:10:G:C2      | 24:CX:26:G:H1'     | 2.56                     | 0.41              |
| 25:DA:84:A:N1      | 25:DA:98:G:O2'     | 2.44                     | 0.41              |
| 25:DA:710:G:H2'    | 25:DA:711:G:C8     | 2.55                     | 0.41              |
| 25:DA:848:G:C2     | 25:DA:933:A:H1'    | 2.56                     | 0.41              |
| 25:DA:2160:G:H2'   | 25:DA:2161:C:O4'   | 2.21                     | 0.41              |
| 25:DA:2290:G:C6    | 25:DA:2291:U:C4    | 3.09                     | 0.41              |
| 26:DB:73:A:C6      | 26:DB:74:U:C2      | 3.09                     | 0.41              |
| 32:DI:114:LEU:HD22 | 32:DI:130:TYR:HA   | 2.03                     | 0.41              |
| 35:DP:138:LEU:HD12 | 35:DP:138:LEU:HA   | 1.93                     | 0.41              |
| 37:DR:100:LEU:HD11 | 37:DR:113:LEU:HD23 | 2.02                     | 0.41              |
| 43:DX:94:GLY:N     | 43:DX:95:LEU:HA    | 2.36                     | 0.41              |
| 44:DY:7:VAL:HG11   | 44:DY:13:VAL:HG11  | 2.02                     | 0.41              |
| 45:DZ:53:ILE:HG22  | 45:DZ:71:VAL:O     | 2.20                     | 0.41              |
| 53:D7:9:ARG:NH2    | 53:D7:47:ARG:HD2   | 2.36                     | 0.41              |
| 54:D8:28:GLY:O     | 54:D8:36:LYS:NZ    | 2.47                     | 0.41              |
| 1:AA:20:U:H2'      | 1:AA:21:G:O4'      | 2.21                     | 0.40              |
| 1:AA:136:C:H42     | 1:AA:227:G:H1      | 1.70                     | 0.40              |
| 1:AA:689:C:P       | 11:AK:46:GLY:HA3   | 2.61                     | 0.40              |
| 1:AA:716:A:N3      | 11:AK:118:GLY:HA2  | 2.36                     | 0.40              |
| 1:AA:719:C:H1'     | 18:AR:49:LYS:HB3   | 2.03                     | 0.40              |
| 1:AA:737:A:P       | 6:AF:92:LYS:HZ2    | 2.43                     | 0.40              |
| 1:AA:938:A:C6      | 1:AA:939:G:C5      | 3.09                     | 0.40              |
| 1:AA:1027:C:O2'    | 1:AA:1028:C:C6     | 2.69                     | 0.40              |
| 1:AA:1209:C:O2'    | 1:AA:1214:C:N4     | 2.52                     | 0.40              |
| 1:AA:1275:A:H2'    | 1:AA:1276:G:C8     | 2.55                     | 0.40              |
| 1:AA:1375:A:H4'    | 7:AG:29:LYS:HE2    | 2.03                     | 0.40              |
| 2:AB:105:PHE:HB2   | 2:AB:158:LEU:HD11  | 2.02                     | 0.40              |
| 3:AC:173:VAL:O     | 3:AC:175:LEU:HD12  | 2.21                     | 0.40              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 5:AE:39:GLY:HA2   | 5:AE:71:LEU:HD21  | 2.02                     | 0.40              |
| 13:AM:3:ARG:HD2   | 13:AM:9:ILE:CG1   | 2.50                     | 0.40              |
| 17:AQ:66:SER:OG   | 17:AQ:67:LYS:N    | 2.54                     | 0.40              |
| 25:BA:40:C:H42    | 25:BA:438:G:H1    | 1.69                     | 0.40              |
| 25:BA:219:G:H2'   | 25:BA:220:G:C8    | 2.56                     | 0.40              |
| 25:BA:365:C:H2'   | 25:BA:366:C:O4'   | 2.20                     | 0.40              |
| 25:BA:624:C:O2'   | 25:BA:657:U:OP1   | 2.31                     | 0.40              |
| 25:BA:738:G:C6    | 25:BA:739:G:C2    | 3.09                     | 0.40              |
| 25:BA:1047:G:H2'  | 25:BA:1110:G:H22  | 1.86                     | 0.40              |
| 25:BA:1655:A:H3'  | 25:BA:1656:C:H6   | 1.86                     | 0.40              |
| 25:BA:2141:G:C4   | 25:BA:2142:C:H1'  | 2.55                     | 0.40              |
| 25:BA:2161:C:N4   | 25:BA:2162:G:O6   | 2.54                     | 0.40              |
| 28:BE:72:VAL:HG12 | 28:BE:73:GLU:O    | 2.22                     | 0.40              |
| 30:BG:16:ARG:HB2  | 30:BG:17:PRO:HD3  | 2.03                     | 0.40              |
| 30:BG:44:GLY:N    | 30:BG:88:ILE:O    | 2.54                     | 0.40              |
| 31:BH:13:LYS:HA   | 31:BH:14:GLY:HA2  | 1.61                     | 0.40              |
| 31:BH:20:ALA:HB1  | 31:BH:21:PRO:HD2  | 2.03                     | 0.40              |
| 35:BP:21:ARG:HD3  | 35:BP:21:ARG:HA   | 1.90                     | 0.40              |
| 38:BS:3:ARG:HE    | 38:BS:4:LEU:N     | 2.18                     | 0.40              |
| 49:B3:15:TYR:O    | 49:B3:20:LYS:NZ   | 2.52                     | 0.40              |
| 50:B4:61:ARG:HG3  | 50:B4:62:ARG:N    | 2.36                     | 0.40              |
| 1:CA:600:C:H2'    | 1:CA:601:C:C6     | 2.57                     | 0.40              |
| 1:CA:717:C:H2'    | 1:CA:734:G:OP2    | 2.21                     | 0.40              |
| 1:CA:889:A:OP1    | 1:CA:891:U:H1'    | 2.21                     | 0.40              |
| 1:CA:967:C:H5''   | 1:CA:968:A:OP2    | 2.21                     | 0.40              |
| 1:CA:1120:G:N1    | 1:CA:1154:G:N3    | 2.69                     | 0.40              |
| 1:CA:1216:G:H2'   | 1:CA:1217:C:H5''  | 2.01                     | 0.40              |
| 1:CA:1493:A:C8    | 25:DA:1913:A:N6   | 2.86                     | 0.40              |
| 2:CB:87:ARG:HE    | 2:CB:233:SER:HB3  | 1.87                     | 0.40              |
| 3:CC:108:ASN:OD1  | 3:CC:110:ASN:HB2  | 2.21                     | 0.40              |
| 3:CC:199:LYS:HB3  | 3:CC:201:TYR:CE1  | 2.56                     | 0.40              |
| 7:CG:45:ASP:O     | 7:CG:49:ILE:HG12  | 2.21                     | 0.40              |
| 10:CJ:50:ILE:HB   | 14:CN:41:ARG:NE   | 2.35                     | 0.40              |
| 14:CN:53:LEU:HA   | 14:CN:54:PRO:HD2  | 1.89                     | 0.40              |
| 15:CO:67:LEU:HA   | 15:CO:67:LEU:HD23 | 1.88                     | 0.40              |
| 19:CS:36:ARG:CZ   | 19:CS:72:GLY:HA2  | 2.51                     | 0.40              |
| 25:DA:602:G:O2'   | 25:DA:655:A:N6    | 2.54                     | 0.40              |
| 25:DA:605:C:OP1   | 29:DF:104:LYS:NZ  | 2.54                     | 0.40              |
| 25:DA:856:C:HO2'  | 25:DA:857:C:P     | 2.44                     | 0.40              |
| 25:DA:1321:A:H2'  | 25:DA:1322:A:O4'  | 2.21                     | 0.40              |
| 25:DA:1407:C:H2'  | 25:DA:1408:C:C6   | 2.56                     | 0.40              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:DA:1482:G:C6    | 25:DA:1507:A:C6    | 3.09                     | 0.40              |
| 25:DA:1819:A:H2'   | 27:DD:178:PRO:HB2  | 2.03                     | 0.40              |
| 25:DA:2351:G:O6    | 54:D8:39:LYS:HG3   | 2.21                     | 0.40              |
| 25:DA:2511:U:O2'   | 28:DE:138:PRO:O    | 2.29                     | 0.40              |
| 26:DB:16:G:C6      | 26:DB:69:G:C2      | 3.09                     | 0.40              |
| 26:DB:92:C:H2'     | 26:DB:93:G:H8      | 1.87                     | 0.40              |
| 31:DH:56:SER:HB2   | 31:DH:61:HIS:ND1   | 2.36                     | 0.40              |
| 34:DO:47:ILE:HB    | 34:DO:48:PRO:HD2   | 2.03                     | 0.40              |
| 35:DP:125:VAL:HG23 | 35:DP:130:PHE:HZ   | 1.86                     | 0.40              |
| 36:DQ:17:LEU:HD21  | 36:DQ:96:VAL:HG13  | 2.03                     | 0.40              |
| 40:DU:8:VAL:O      | 40:DU:12:ARG:HG3   | 2.21                     | 0.40              |
| 45:DZ:161:VAL:O    | 45:DZ:161:VAL:HG13 | 2.20                     | 0.40              |
| 54:D8:8:LYS:O      | 54:D8:12:LYS:HG3   | 2.21                     | 0.40              |
| 1:AA:397:A:N3      | 1:AA:397:A:H3'     | 2.36                     | 0.40              |
| 1:AA:633:G:H2'     | 1:AA:634:C:C6      | 2.56                     | 0.40              |
| 1:AA:967:C:H5''    | 1:AA:968:A:OP2     | 2.21                     | 0.40              |
| 1:AA:1079:G:C6     | 1:AA:1080:A:N6     | 2.89                     | 0.40              |
| 1:AA:1157:A:H61    | 1:AA:1178:G:N2     | 2.19                     | 0.40              |
| 1:AA:1182:G:C4'    | 1:AA:1183:A:H5'    | 2.50                     | 0.40              |
| 9:AI:5:TYR:HH      | 9:AI:7:THR:HG1     | 1.67                     | 0.40              |
| 20:AT:67:ALA:HB2   | 20:AT:77:ALA:HB2   | 2.02                     | 0.40              |
| 24:AX:52:G:H2'     | 24:AX:53:G:H8      | 1.86                     | 0.40              |
| 25:BA:188:G:H1     | 25:BA:208:C:H42    | 1.67                     | 0.40              |
| 25:BA:775:G:O6     | 25:BA:787:U:H2'    | 2.21                     | 0.40              |
| 25:BA:910:A:C5     | 36:BQ:13:GLN:HG3   | 2.56                     | 0.40              |
| 25:BA:2163:C:H2'   | 25:BA:2164:C:O4'   | 2.21                     | 0.40              |
| 32:BI:135:GLU:C    | 32:BI:137:PRO:HD3  | 2.40                     | 0.40              |
| 34:BO:70:LYS:HE2   | 34:BO:70:LYS:HB3   | 1.82                     | 0.40              |
| 1:CA:575:G:C6      | 1:CA:821:G:N7      | 2.89                     | 0.40              |
| 1:CA:1003:G:C6     | 1:CA:1004:A:H2     | 2.39                     | 0.40              |
| 1:CA:1155:G:C6     | 1:CA:1156:G:C5     | 3.09                     | 0.40              |
| 1:CA:1353:G:O2'    | 1:CA:1354:C:H5'    | 2.21                     | 0.40              |
| 1:CA:1358:U:H2'    | 1:CA:1359:C:O4'    | 2.21                     | 0.40              |
| 1:CA:1423:G:OP1    | 34:DO:49:ARG:NH2   | 2.54                     | 0.40              |
| 5:CE:135:THR:O     | 5:CE:139:LEU:N     | 2.52                     | 0.40              |
| 7:CG:74:GLU:OE1    | 7:CG:95:ARG:NE     | 2.44                     | 0.40              |
| 7:CG:126:ASP:O     | 7:CG:130:GLY:N     | 2.54                     | 0.40              |
| 8:CH:41:ARG:HB3    | 8:CH:41:ARG:CZ     | 2.52                     | 0.40              |
| 15:CO:25:THR:HG21  | 15:CO:70:LEU:HB2   | 2.03                     | 0.40              |
| 16:CP:20:VAL:HG22  | 16:CP:34:GLU:O     | 2.22                     | 0.40              |
| 20:CT:29:LYS:O     | 20:CT:33:ILE:HG13  | 2.21                     | 0.40              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:DA:125:G:H1'    | 53:D7:48:LYS:HE2   | 2.03                     | 0.40              |
| 25:DA:880:G:C2     | 25:DA:898:C:O2     | 2.74                     | 0.40              |
| 25:DA:945:A:C4     | 25:DA:2448:A:C2    | 3.09                     | 0.40              |
| 25:DA:1412:A:N1    | 25:DA:1591:G:C6    | 2.89                     | 0.40              |
| 25:DA:1759:A:H4'   | 25:DA:2715:C:O4'   | 2.20                     | 0.40              |
| 25:DA:2153:G:H5''  | 25:DA:2154:G:OP2   | 2.21                     | 0.40              |
| 25:DA:2271:G:OP1   | 46:D0:18:ALA:HB1   | 2.20                     | 0.40              |
| 25:DA:2291:U:O2'   | 25:DA:2374:C:H1'   | 2.20                     | 0.40              |
| 25:DA:2582:G:N2    | 25:DA:2583:G:H1'   | 2.36                     | 0.40              |
| 30:DG:114:ILE:HG22 | 30:DG:117:PHE:HB2  | 2.03                     | 0.40              |
| 31:DH:54:ARG:HD3   | 31:DH:65:HIS:ND1   | 2.36                     | 0.40              |
| 33:DN:67:LEU:HD12  | 33:DN:67:LEU:HA    | 1.81                     | 0.40              |
| 43:DX:57:LEU:HD13  | 43:DX:78:LYS:HB3   | 2.02                     | 0.40              |
| 44:DY:5:MET:HE1    | 44:DY:32:PRO:HA    | 2.02                     | 0.40              |
| 44:DY:98:VAL:HA    | 44:DY:105:ALA:HA   | 2.03                     | 0.40              |
| 48:D2:35:LEU:HD23  | 48:D2:35:LEU:HA    | 1.86                     | 0.40              |
| 52:D6:38:LYS:CE    | 52:D6:39:TYR:H     | 2.34                     | 0.40              |
| 54:D8:53:PRO:O     | 54:D8:57:ARG:HG3   | 2.22                     | 0.40              |
| 1:AA:34:C:H2'      | 1:AA:35:G:C8       | 2.57                     | 0.40              |
| 1:AA:954:G:C6      | 1:AA:955:U:C4      | 3.09                     | 0.40              |
| 1:AA:961:U:OP2     | 1:AA:1223:C:O2'    | 2.22                     | 0.40              |
| 1:AA:1002:G:C2     | 1:AA:1003:G:H1'    | 2.56                     | 0.40              |
| 1:AA:1259:C:O2     | 1:AA:1283:G:H1'    | 2.21                     | 0.40              |
| 1:AA:1457:G:H2'    | 1:AA:1458:G:H8     | 1.82                     | 0.40              |
| 1:AA:1531:A:H3'    | 1:AA:1532:U:C6     | 2.56                     | 0.40              |
| 2:AB:30:ARG:HG3    | 2:AB:31:TYR:CD1    | 2.56                     | 0.40              |
| 3:AC:134:ILE:HG22  | 3:AC:168:ALA:HB3   | 2.02                     | 0.40              |
| 9:AI:128:ARG:NH1   | 24:AX:35:A:OP2     | 2.54                     | 0.40              |
| 19:AS:71:LEU:HD23  | 19:AS:71:LEU:HA    | 1.89                     | 0.40              |
| 25:BA:577:G:O2'    | 25:BA:1254:A:OP1   | 2.36                     | 0.40              |
| 25:BA:644:A:H4'    | 25:BA:645:C:C5     | 2.56                     | 0.40              |
| 25:BA:752:A:H3'    | 53:B7:1:MET:HE1    | 2.04                     | 0.40              |
| 25:BA:810:U:O5'    | 25:BA:810:U:H6     | 2.04                     | 0.40              |
| 25:BA:886:C:OP1    | 25:BA:886:C:H4'    | 2.19                     | 0.40              |
| 25:BA:1177:A:N3    | 25:BA:1177:A:H2'   | 2.35                     | 0.40              |
| 25:BA:1443:G:H2'   | 25:BA:1444:G:H8    | 1.86                     | 0.40              |
| 25:BA:2478:A:H2'   | 25:BA:2479:G:O4'   | 2.22                     | 0.40              |
| 25:BA:2584:U:O2    | 25:BA:2585:U:N3    | 2.54                     | 0.40              |
| 27:BD:108:PRO:HG2  | 27:BD:111:LEU:HB2  | 2.03                     | 0.40              |
| 28:BE:47:VAL:HG23  | 28:BE:84:PHE:O     | 2.21                     | 0.40              |
| 30:BG:114:ILE:HA   | 30:BG:140:ILE:HD11 | 2.04                     | 0.40              |

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| Atom-1            | Atom-2            | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|-------------------|--------------------------|-------------------|
| 45:BZ:33:LEU:H    | 45:BZ:33:LEU:HG   | 1.82                     | 0.40              |
| 51:B5:49:CYS:SG   | 51:B5:51:TYR:HB2  | 2.62                     | 0.40              |
| 1:CA:745:C:OP1    | 1:CA:851:G:O2'    | 2.19                     | 0.40              |
| 1:CA:1023:G:C5    | 1:CA:1024:G:C8    | 3.09                     | 0.40              |
| 1:CA:1122:U:C4    | 1:CA:1123:A:C5    | 3.10                     | 0.40              |
| 1:CA:1281:U:P     | 1:CA:1282:C:H41   | 2.44                     | 0.40              |
| 2:CB:50:GLU:OE1   | 2:CB:200:ILE:HG12 | 2.21                     | 0.40              |
| 4:CD:173:TRP:CD1  | 4:CD:174:LEU:HG   | 2.56                     | 0.40              |
| 10:CJ:19:SER:O    | 10:CJ:23:ILE:HG12 | 2.19                     | 0.40              |
| 12:CL:34:ARG:HE   | 12:CL:34:ARG:HB3  | 1.45                     | 0.40              |
| 25:DA:239:U:H2'   | 25:DA:240:G:O4'   | 2.21                     | 0.40              |
| 25:DA:323:G:C8    | 29:DF:171:PRO:HG3 | 2.56                     | 0.40              |
| 25:DA:619:G:H3'   | 25:DA:620:G:N2    | 2.35                     | 0.40              |
| 25:DA:661:C:H2'   | 25:DA:662:G:C8    | 2.56                     | 0.40              |
| 25:DA:862:G:H2'   | 25:DA:863:A:O4'   | 2.21                     | 0.40              |
| 25:DA:1034:G:C6   | 25:DA:1035:U:C4   | 3.09                     | 0.40              |
| 25:DA:1162:G:H2'  | 25:DA:1163:G:H8   | 1.85                     | 0.40              |
| 25:DA:1187:G:H5'  | 41:DV:81:TYR:CE1  | 2.57                     | 0.40              |
| 25:DA:1252:G:C2   | 25:DA:1253:A:C2   | 3.09                     | 0.40              |
| 25:DA:1346:G:C6   | 25:DA:1601:G:C6   | 3.09                     | 0.40              |
| 25:DA:1469:A:H2'  | 25:DA:1470:G:O4'  | 2.22                     | 0.40              |
| 25:DA:2591:C:H2'  | 25:DA:2592:G:C8   | 2.56                     | 0.40              |
| 25:DA:2647:U:H2'  | 25:DA:2648:C:C6   | 2.57                     | 0.40              |
| 26:DB:8:U:O2'     | 38:DS:40:ILE:HD13 | 2.21                     | 0.40              |
| 26:DB:40:U:HO2'   | 26:DB:42:C:H5'    | 1.85                     | 0.40              |
| 26:DB:104:U:O3'   | 45:DZ:72:ARG:HD2  | 2.21                     | 0.40              |
| 27:DD:177:LEU:HB3 | 27:DD:178:PRO:HD2 | 2.04                     | 0.40              |
| 38:DS:35:ILE:HB   | 38:DS:97:ARG:HH21 | 1.85                     | 0.40              |
| 40:DU:27:LEU:HA   | 40:DU:30:LYS:HB2  | 2.04                     | 0.40              |
| 45:DZ:53:ILE:HG22 | 45:DZ:71:VAL:HB   | 2.02                     | 0.40              |
| 1:AA:191:G:N3     | 20:AT:103:GLY:HA2 | 2.37                     | 0.40              |
| 1:AA:657:G:H4'    | 15:AO:28:GLN:HG2  | 2.04                     | 0.40              |
| 1:AA:664:G:N2     | 1:AA:741:G:H1     | 2.09                     | 0.40              |
| 1:AA:684:A:H2'    | 1:AA:685:G:O4'    | 2.21                     | 0.40              |
| 1:AA:939:G:N3     | 1:AA:1375:A:H2    | 2.19                     | 0.40              |
| 1:AA:1376:U:H2'   | 1:AA:1377:A:H8    | 1.86                     | 0.40              |
| 3:AC:131:ARG:NH2  | 3:AC:166:GLU:OE2  | 2.52                     | 0.40              |
| 13:AM:91:ARG:HA   | 13:AM:91:ARG:HD2  | 1.85                     | 0.40              |
| 16:AP:40:ASP:N    | 16:AP:48:TRP:O    | 2.45                     | 0.40              |
| 17:AQ:62:SER:OG   | 17:AQ:72:ARG:HG2  | 2.21                     | 0.40              |
| 19:AS:42:PRO:HD3  | 50:B4:61:ARG:HD3  | 2.03                     | 0.40              |

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| Atom-1            | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|-------------------|--------------------|--------------------------|-------------------|
| 25:BA:58:G:O2'    | 25:BA:73:A:N1      | 2.48                     | 0.40              |
| 25:BA:282:A:N3    | 25:BA:282:A:H2'    | 2.37                     | 0.40              |
| 25:BA:1046:A:HO2' | 25:BA:1047:G:P     | 2.44                     | 0.40              |
| 25:BA:1484:G:H1   | 25:BA:1505:C:N4    | 2.20                     | 0.40              |
| 25:BA:1930:G:N2   | 25:BA:1968:G:H2'   | 2.37                     | 0.40              |
| 25:BA:2277:G:P    | 46:B0:10:THR:HG21  | 2.61                     | 0.40              |
| 25:BA:2557:G:H2'  | 25:BA:2558:C:C6    | 2.56                     | 0.40              |
| 25:BA:2682:U:H5'  | 28:BE:11:MET:O     | 2.21                     | 0.40              |
| 27:BD:213:ARG:HD2 | 27:BD:217:ARG:O    | 2.22                     | 0.40              |
| 39:BT:51:ARG:HG3  | 39:BT:98:LYS:HD2   | 2.03                     | 0.40              |
| 1:CA:797:C:C2'    | 1:CA:798:G:H5'     | 2.51                     | 0.40              |
| 1:CA:949:A:C6     | 1:CA:950:U:C4      | 3.09                     | 0.40              |
| 1:CA:1168:A:H2'   | 1:CA:1169:A:C8     | 2.55                     | 0.40              |
| 1:CA:1194:U:H2'   | 1:CA:1195:C:C6     | 2.56                     | 0.40              |
| 1:CA:1226:C:P     | 13:CM:91:ARG:HH12  | 2.45                     | 0.40              |
| 6:CF:84:ASN:O     | 6:CF:86:ARG:HG3    | 2.22                     | 0.40              |
| 7:CG:87:VAL:HG11  | 7:CG:155:ARG:HA    | 2.03                     | 0.40              |
| 9:CI:16:ARG:O     | 9:CI:63:ILE:HA     | 2.21                     | 0.40              |
| 24:CX:4:G:H2'     | 24:CX:5:G:C8       | 2.57                     | 0.40              |
| 25:DA:626:U:O2    | 35:DP:105:LEU:HD22 | 2.22                     | 0.40              |
| 25:DA:882:G:N2    | 25:DA:894:C:N3     | 2.69                     | 0.40              |
| 25:DA:1364:G:P    | 47:D1:3:LYS:HG3    | 2.62                     | 0.40              |
| 25:DA:1411:C:H2'  | 25:DA:1412:A:H8    | 1.87                     | 0.40              |
| 25:DA:1431:U:H2'  | 25:DA:1432:C:C6    | 2.56                     | 0.40              |
| 25:DA:1814:G:H4'  | 27:DD:51:VAL:HG21  | 2.04                     | 0.40              |
| 25:DA:2027:G:H2'  | 25:DA:2028:U:O4'   | 2.22                     | 0.40              |
| 25:DA:2126:A:N1   | 25:DA:2173:A:C8    | 2.90                     | 0.40              |
| 25:DA:2187:G:H8   | 25:DA:2187:G:C5'   | 2.35                     | 0.40              |
| 25:DA:2503:A:H4'  | 25:DA:2504:U:OP1   | 2.22                     | 0.40              |
| 25:DA:2543:G:H2'  | 25:DA:2544:G:C8    | 2.56                     | 0.40              |
| 26:DB:24:G:H4'    | 26:DB:25:A:C8      | 2.56                     | 0.40              |
| 28:DE:12:THR:HG22 | 39:DT:58:ASN:OD1   | 2.21                     | 0.40              |
| 30:DG:173:LEU:O   | 30:DG:178:PHE:HB2  | 2.22                     | 0.40              |
| 32:DI:40:THR:O    | 32:DI:44:LEU:HB2   | 2.21                     | 0.40              |
| 51:D5:19:ARG:HH11 | 51:D5:19:ARG:HD2   | 1.73                     | 0.40              |
| 1:AA:885:G:H1     | 1:AA:912:C:H42     | 1.70                     | 0.40              |
| 1:AA:1277:C:HO2'  | 1:AA:1279:A:H1'    | 1.85                     | 0.40              |
| 1:AA:1396:A:O4'   | 1:AA:1398:A:H1'    | 2.22                     | 0.40              |
| 9:AI:8:GLY:HA3    | 9:AI:76:ALA:O      | 2.22                     | 0.40              |
| 18:AR:53:ARG:HG2  | 18:AR:58:LEU:O     | 2.21                     | 0.40              |
| 25:BA:6:A:H2      | 33:BN:133:GLN:HE22 | 1.68                     | 0.40              |

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| Atom-1             | Atom-2             | Interatomic distance (Å) | Clash overlap (Å) |
|--------------------|--------------------|--------------------------|-------------------|
| 25:BA:271(X):G:C2  | 25:BA:271(Y):U:O4  | 2.74                     | 0.40              |
| 25:BA:511:U:H4'    | 25:BA:1235:G:H4'   | 2.02                     | 0.40              |
| 25:BA:2079:U:H2'   | 25:BA:2080:G:O4'   | 2.20                     | 0.40              |
| 25:BA:2165:G:O6    | 25:BA:2171:A:O2'   | 2.36                     | 0.40              |
| 25:BA:2245:U:H5''  | 25:BA:2246:G:H5'   | 2.04                     | 0.40              |
| 25:BA:2636:U:H1'   | 25:BA:2783:G:N2    | 2.36                     | 0.40              |
| 27:BD:232:PRO:HB3  | 27:BD:244:ARG:NH2  | 2.36                     | 0.40              |
| 28:BE:164:ARG:HH11 | 28:BE:164:ARG:HD2  | 1.77                     | 0.40              |
| 32:BI:52:ARG:HB2   | 32:BI:52:ARG:NH2   | 2.37                     | 0.40              |
| 32:BI:57:ARG:HD3   | 32:BI:58:LEU:H     | 1.86                     | 0.40              |
| 39:BT:77:PRO:HB2   | 39:BT:80:SER:HB2   | 2.04                     | 0.40              |
| 44:BY:90:LEU:HD13  | 44:BY:90:LEU:HA    | 1.93                     | 0.40              |
| 1:CA:1003:G:H2'    | 1:CA:1004:A:C1'    | 2.51                     | 0.40              |
| 1:CA:1017:G:H2'    | 1:CA:1018:C:O4'    | 2.22                     | 0.40              |
| 1:CA:1089:G:C6     | 1:CA:1090:U:C4     | 3.10                     | 0.40              |
| 5:CE:24:ARG:NH1    | 22:CV:24:A:OP2     | 2.54                     | 0.40              |
| 5:CE:59:GLY:O      | 5:CE:62:ALA:HB3    | 2.21                     | 0.40              |
| 13:CM:65:LYS:N     | 50:D4:50:VAL:HG21  | 2.36                     | 0.40              |
| 17:CQ:91:ARG:HG2   | 17:CQ:95:TYR:HE1   | 1.85                     | 0.40              |
| 23:CW:76:PPU:HM2   | 25:DA:2452:C:N3    | 2.37                     | 0.40              |
| 25:DA:30:G:C5      | 25:DA:31:C:C4      | 3.10                     | 0.40              |
| 25:DA:61:G:H5'     | 48:D2:50:ILE:HG21  | 2.03                     | 0.40              |
| 25:DA:189:G:OP2    | 47:D1:39:LYS:NZ    | 2.54                     | 0.40              |
| 25:DA:335:C:H4'    | 44:DY:73:ARG:CD    | 2.51                     | 0.40              |
| 25:DA:534:U:H6     | 25:DA:534:U:O5'    | 2.04                     | 0.40              |
| 25:DA:987:G:H2'    | 25:DA:988:A:O4'    | 2.22                     | 0.40              |
| 25:DA:2080:G:H2'   | 25:DA:2081:C:H6    | 1.87                     | 0.40              |
| 25:DA:2153:G:H3'   | 25:DA:2154:G:H8    | 1.86                     | 0.40              |
| 25:DA:2431:U:O2'   | 25:DA:2433:A:N7    | 2.42                     | 0.40              |
| 25:DA:2516:G:C6    | 25:DA:2517:C:N4    | 2.89                     | 0.40              |
| 25:DA:2592:G:C6    | 25:DA:2593:U:C4    | 3.10                     | 0.40              |
| 25:DA:2773:C:H2'   | 25:DA:2774:C:C6    | 2.57                     | 0.40              |
| 26:DB:54:G:H8      | 26:DB:54:G:O5'     | 2.04                     | 0.40              |
| 27:DD:71:ASP:CB    | 27:DD:103:ARG:HH22 | 2.27                     | 0.40              |
| 27:DD:73:VAL:HG13  | 27:DD:120:GLY:HA3  | 2.02                     | 0.40              |
| 28:DE:7:VAL:CG1    | 28:DE:27:LEU:HB3   | 2.51                     | 0.40              |
| 37:DR:100:LEU:HD22 | 37:DR:112:ALA:HA   | 2.02                     | 0.40              |
| 39:DT:59:THR:HG23  | 39:DT:78:LEU:CB    | 2.52                     | 0.40              |
| 40:DU:90:VAL:HG13  | 41:DV:4:ILE:HG21   | 2.04                     | 0.40              |
| 40:DU:108:GLU:O    | 40:DU:112:ARG:HG2  | 2.22                     | 0.40              |
| 42:DW:36:LEU:HD12  | 42:DW:51:LEU:HD12  | 2.04                     | 0.40              |

There are no symmetry-related clashes.

## 5.3 Torsion angles [i](#)

### 5.3.1 Protein backbone [i](#)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

| Mol | Chain | Analysed      | Favoured  | Allowed | Outliers | Percentiles |     |
|-----|-------|---------------|-----------|---------|----------|-------------|-----|
| 2   | AB    | 229/256 (90%) | 208 (91%) | 18 (8%) | 3 (1%)   | 12          | 37  |
| 2   | CB    | 229/256 (90%) | 206 (90%) | 17 (7%) | 6 (3%)   | 5           | 20  |
| 3   | AC    | 204/239 (85%) | 193 (95%) | 10 (5%) | 1 (0%)   | 29          | 61  |
| 3   | CC    | 204/239 (85%) | 187 (92%) | 15 (7%) | 2 (1%)   | 15          | 45  |
| 4   | AD    | 206/209 (99%) | 195 (95%) | 9 (4%)  | 2 (1%)   | 15          | 45  |
| 4   | CD    | 206/209 (99%) | 194 (94%) | 11 (5%) | 1 (0%)   | 29          | 61  |
| 5   | AE    | 146/162 (90%) | 140 (96%) | 4 (3%)  | 2 (1%)   | 11          | 36  |
| 5   | CE    | 146/162 (90%) | 142 (97%) | 4 (3%)  | 0        | 100         | 100 |
| 6   | AF    | 98/101 (97%)  | 96 (98%)  | 2 (2%)  | 0        | 100         | 100 |
| 6   | CF    | 98/101 (97%)  | 96 (98%)  | 2 (2%)  | 0        | 100         | 100 |
| 7   | AG    | 153/156 (98%) | 148 (97%) | 2 (1%)  | 3 (2%)   | 7           | 27  |
| 7   | CG    | 153/156 (98%) | 151 (99%) | 1 (1%)  | 1 (1%)   | 22          | 54  |
| 8   | AH    | 135/138 (98%) | 133 (98%) | 2 (2%)  | 0        | 100         | 100 |
| 8   | CH    | 135/138 (98%) | 132 (98%) | 3 (2%)  | 0        | 100         | 100 |
| 9   | AI    | 125/128 (98%) | 118 (94%) | 7 (6%)  | 0        | 100         | 100 |
| 9   | CI    | 125/128 (98%) | 120 (96%) | 5 (4%)  | 0        | 100         | 100 |
| 10  | AJ    | 95/105 (90%)  | 87 (92%)  | 7 (7%)  | 1 (1%)   | 14          | 42  |
| 10  | CJ    | 94/105 (90%)  | 87 (93%)  | 5 (5%)  | 2 (2%)   | 7           | 26  |
| 11  | AK    | 112/129 (87%) | 104 (93%) | 5 (4%)  | 3 (3%)   | 5           | 19  |
| 11  | CK    | 112/129 (87%) | 103 (92%) | 7 (6%)  | 2 (2%)   | 8           | 29  |
| 12  | AL    | 120/132 (91%) | 115 (96%) | 5 (4%)  | 0        | 100         | 100 |
| 12  | CL    | 120/132 (91%) | 113 (94%) | 7 (6%)  | 0        | 100         | 100 |

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| Mol | Chain | Analysed      | Favoured  | Allowed | Outliers | Percentiles |     |
|-----|-------|---------------|-----------|---------|----------|-------------|-----|
| 13  | AM    | 121/126 (96%) | 113 (93%) | 8 (7%)  | 0        | 100         | 100 |
| 13  | CM    | 120/126 (95%) | 114 (95%) | 5 (4%)  | 1 (1%)   | 19          | 51  |
| 14  | AN    | 58/61 (95%)   | 55 (95%)  | 3 (5%)  | 0        | 100         | 100 |
| 14  | CN    | 58/61 (95%)   | 55 (95%)  | 3 (5%)  | 0        | 100         | 100 |
| 15  | AO    | 86/89 (97%)   | 83 (96%)  | 3 (4%)  | 0        | 100         | 100 |
| 15  | CO    | 86/89 (97%)   | 81 (94%)  | 5 (6%)  | 0        | 100         | 100 |
| 16  | AP    | 80/88 (91%)   | 77 (96%)  | 3 (4%)  | 0        | 100         | 100 |
| 16  | CP    | 80/88 (91%)   | 77 (96%)  | 2 (2%)  | 1 (1%)   | 12          | 37  |
| 17  | AQ    | 97/105 (92%)  | 92 (95%)  | 4 (4%)  | 1 (1%)   | 15          | 45  |
| 17  | CQ    | 97/105 (92%)  | 94 (97%)  | 3 (3%)  | 0        | 100         | 100 |
| 18  | AR    | 66/88 (75%)   | 65 (98%)  | 1 (2%)  | 0        | 100         | 100 |
| 18  | CR    | 66/88 (75%)   | 65 (98%)  | 1 (2%)  | 0        | 100         | 100 |
| 19  | AS    | 81/93 (87%)   | 76 (94%)  | 5 (6%)  | 0        | 100         | 100 |
| 19  | CS    | 81/93 (87%)   | 75 (93%)  | 6 (7%)  | 0        | 100         | 100 |
| 20  | AT    | 94/106 (89%)  | 87 (93%)  | 6 (6%)  | 1 (1%)   | 14          | 42  |
| 20  | CT    | 94/106 (89%)  | 86 (92%)  | 5 (5%)  | 3 (3%)   | 4           | 16  |
| 21  | AU    | 21/27 (78%)   | 21 (100%) | 0       | 0        | 100         | 100 |
| 21  | CU    | 21/27 (78%)   | 21 (100%) | 0       | 0        | 100         | 100 |
| 27  | BD    | 273/276 (99%) | 263 (96%) | 9 (3%)  | 1 (0%)   | 34          | 66  |
| 27  | DD    | 273/276 (99%) | 262 (96%) | 9 (3%)  | 2 (1%)   | 22          | 54  |
| 28  | BE    | 202/206 (98%) | 195 (96%) | 6 (3%)  | 1 (0%)   | 29          | 61  |
| 28  | DE    | 202/206 (98%) | 193 (96%) | 7 (4%)  | 2 (1%)   | 15          | 45  |
| 29  | BF    | 201/210 (96%) | 197 (98%) | 3 (2%)  | 1 (0%)   | 29          | 61  |
| 29  | DF    | 201/210 (96%) | 197 (98%) | 2 (1%)  | 2 (1%)   | 15          | 45  |
| 30  | BG    | 179/182 (98%) | 171 (96%) | 7 (4%)  | 1 (1%)   | 25          | 58  |
| 30  | DG    | 179/182 (98%) | 167 (93%) | 11 (6%) | 1 (1%)   | 25          | 58  |
| 31  | BH    | 172/180 (96%) | 169 (98%) | 3 (2%)  | 0        | 100         | 100 |
| 31  | DH    | 172/180 (96%) | 168 (98%) | 4 (2%)  | 0        | 100         | 100 |
| 32  | BI    | 144/148 (97%) | 130 (90%) | 10 (7%) | 4 (3%)   | 5           | 19  |
| 32  | DI    | 144/148 (97%) | 137 (95%) | 6 (4%)  | 1 (1%)   | 22          | 54  |
| 33  | BN    | 138/140 (99%) | 137 (99%) | 1 (1%)  | 0        | 100         | 100 |

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| Mol | Chain | Analysed      | Favoured   | Allowed  | Outliers | Percentiles |     |
|-----|-------|---------------|------------|----------|----------|-------------|-----|
| 33  | DN    | 138/140 (99%) | 135 (98%)  | 2 (1%)   | 1 (1%)   | 22          | 54  |
| 34  | BO    | 120/122 (98%) | 113 (94%)  | 7 (6%)   | 0        | 100         | 100 |
| 34  | DO    | 120/122 (98%) | 113 (94%)  | 7 (6%)   | 0        | 100         | 100 |
| 35  | BP    | 147/150 (98%) | 141 (96%)  | 6 (4%)   | 0        | 100         | 100 |
| 35  | DP    | 147/150 (98%) | 140 (95%)  | 5 (3%)   | 2 (1%)   | 11          | 36  |
| 36  | BQ    | 139/141 (99%) | 134 (96%)  | 5 (4%)   | 0        | 100         | 100 |
| 36  | DQ    | 139/141 (99%) | 133 (96%)  | 6 (4%)   | 0        | 100         | 100 |
| 37  | BR    | 116/118 (98%) | 112 (97%)  | 4 (3%)   | 0        | 100         | 100 |
| 37  | DR    | 116/118 (98%) | 111 (96%)  | 5 (4%)   | 0        | 100         | 100 |
| 38  | BS    | 108/112 (96%) | 103 (95%)  | 4 (4%)   | 1 (1%)   | 17          | 48  |
| 38  | DS    | 108/112 (96%) | 105 (97%)  | 2 (2%)   | 1 (1%)   | 17          | 48  |
| 39  | BT    | 129/146 (88%) | 123 (95%)  | 4 (3%)   | 2 (2%)   | 9           | 32  |
| 39  | DT    | 129/146 (88%) | 125 (97%)  | 3 (2%)   | 1 (1%)   | 19          | 51  |
| 40  | BU    | 114/118 (97%) | 114 (100%) | 0        | 0        | 100         | 100 |
| 40  | DU    | 114/118 (97%) | 114 (100%) | 0        | 0        | 100         | 100 |
| 41  | BV    | 99/101 (98%)  | 93 (94%)   | 6 (6%)   | 0        | 100         | 100 |
| 41  | DV    | 99/101 (98%)  | 95 (96%)   | 4 (4%)   | 0        | 100         | 100 |
| 42  | BW    | 110/113 (97%) | 110 (100%) | 0        | 0        | 100         | 100 |
| 42  | DW    | 110/113 (97%) | 110 (100%) | 0        | 0        | 100         | 100 |
| 43  | BX    | 93/96 (97%)   | 89 (96%)   | 4 (4%)   | 0        | 100         | 100 |
| 43  | DX    | 93/96 (97%)   | 90 (97%)   | 3 (3%)   | 0        | 100         | 100 |
| 44  | BY    | 105/110 (96%) | 99 (94%)   | 6 (6%)   | 0        | 100         | 100 |
| 44  | DY    | 105/110 (96%) | 102 (97%)  | 3 (3%)   | 0        | 100         | 100 |
| 45  | BZ    | 169/206 (82%) | 152 (90%)  | 16 (10%) | 1 (1%)   | 25          | 58  |
| 45  | DZ    | 172/206 (84%) | 158 (92%)  | 14 (8%)  | 0        | 100         | 100 |
| 46  | B0    | 81/85 (95%)   | 81 (100%)  | 0        | 0        | 100         | 100 |
| 46  | D0    | 81/85 (95%)   | 79 (98%)   | 1 (1%)   | 1 (1%)   | 13          | 40  |
| 47  | B1    | 95/98 (97%)   | 94 (99%)   | 1 (1%)   | 0        | 100         | 100 |
| 47  | D1    | 95/98 (97%)   | 93 (98%)   | 1 (1%)   | 1 (1%)   | 14          | 42  |
| 48  | B2    | 68/72 (94%)   | 67 (98%)   | 1 (2%)   | 0        | 100         | 100 |
| 48  | D2    | 68/72 (94%)   | 67 (98%)   | 1 (2%)   | 0        | 100         | 100 |

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| Mol | Chain | Analysed          | Favoured    | Allowed  | Outliers | Percentiles |     |
|-----|-------|-------------------|-------------|----------|----------|-------------|-----|
| 49  | B3    | 57/60 (95%)       | 57 (100%)   | 0        | 0        | 100         | 100 |
| 49  | D3    | 57/60 (95%)       | 56 (98%)    | 1 (2%)   | 0        | 100         | 100 |
| 50  | B4    | 67/71 (94%)       | 56 (84%)    | 9 (13%)  | 2 (3%)   | 4           | 17  |
| 50  | D4    | 67/71 (94%)       | 54 (81%)    | 8 (12%)  | 5 (8%)   | 1           | 2   |
| 51  | B5    | 57/60 (95%)       | 57 (100%)   | 0        | 0        | 100         | 100 |
| 51  | D5    | 57/60 (95%)       | 56 (98%)    | 1 (2%)   | 0        | 100         | 100 |
| 52  | B6    | 51/54 (94%)       | 50 (98%)    | 1 (2%)   | 0        | 100         | 100 |
| 52  | D6    | 51/54 (94%)       | 49 (96%)    | 2 (4%)   | 0        | 100         | 100 |
| 53  | B7    | 46/49 (94%)       | 46 (100%)   | 0        | 0        | 100         | 100 |
| 53  | D7    | 46/49 (94%)       | 45 (98%)    | 0        | 1 (2%)   | 6           | 24  |
| 54  | B8    | 62/65 (95%)       | 62 (100%)   | 0        | 0        | 100         | 100 |
| 54  | D8    | 62/65 (95%)       | 62 (100%)   | 0        | 0        | 100         | 100 |
| 55  | B9    | 35/37 (95%)       | 35 (100%)   | 0        | 0        | 100         | 100 |
| 55  | D9    | 35/37 (95%)       | 35 (100%)   | 0        | 0        | 100         | 100 |
| All | All   | 11409/12128 (94%) | 10906 (96%) | 432 (4%) | 71 (1%)  | 25          | 58  |

All (71) Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2   | AB    | 19  | HIS  |
| 2   | AB    | 231 | GLU  |
| 4   | AD    | 166 | LYS  |
| 7   | AG    | 80  | VAL  |
| 27  | BD    | 275 | LYS  |
| 29  | BF    | 130 | ALA  |
| 38  | BS    | 60  | GLY  |
| 39  | BT    | 39  | ARG  |
| 2   | CB    | 20  | GLU  |
| 2   | CB    | 78  | GLN  |
| 3   | CC    | 4   | LYS  |
| 10  | CJ    | 56  | HIS  |
| 20  | CT    | 99  | LEU  |
| 29  | DF    | 130 | ALA  |
| 30  | DG    | 47  | LYS  |
| 32  | DI    | 10  | GLU  |
| 47  | D1    | 3   | LYS  |
| 50  | D4    | 39  | CYS  |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 50         | D4           | 62         | ARG         |
| 50         | D4           | 68         | ARG         |
| 53         | D7           | 46         | VAL         |
| 5          | AE           | 85         | GLY         |
| 7          | AG           | 8          | GLU         |
| 11         | AK           | 49         | GLY         |
| 17         | AQ           | 68         | ARG         |
| 20         | AT           | 47         | GLY         |
| 32         | BI           | 106        | GLY         |
| 45         | BZ           | 152        | ALA         |
| 50         | B4           | 55         | ARG         |
| 2          | CB           | 21         | ARG         |
| 2          | CB           | 125        | PRO         |
| 11         | CK           | 49         | GLY         |
| 13         | CM           | 85         | GLY         |
| 20         | CT           | 47         | GLY         |
| 20         | CT           | 96         | GLY         |
| 27         | DD           | 239        | ARG         |
| 33         | DN           | 2          | LYS         |
| 35         | DP           | 45         | LEU         |
| 38         | DS           | 84         | GLN         |
| 10         | AJ           | 56         | HIS         |
| 11         | AK           | 117        | ASN         |
| 28         | BE           | 52         | LEU         |
| 30         | BG           | 47         | LYS         |
| 39         | BT           | 127        | ALA         |
| 50         | B4           | 57         | GLU         |
| 2          | CB           | 10         | LEU         |
| 10         | CJ           | 55         | LYS         |
| 7          | AG           | 81         | GLY         |
| 32         | BI           | 73         | GLU         |
| 32         | BI           | 105        | HIS         |
| 2          | CB           | 8          | LYS         |
| 3          | CC           | 62         | ASP         |
| 28         | DE           | 52         | LEU         |
| 29         | DF           | 21         | ALA         |
| 35         | DP           | 36         | LYS         |
| 46         | D0           | 4          | LYS         |
| 50         | D4           | 55         | ARG         |
| 4          | AD           | 5          | ILE         |
| 5          | AE           | 86         | ALA         |
| 7          | CG           | 7          | ALA         |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 27  | DD    | 3   | VAL  |
| 2   | AB    | 125 | PRO  |
| 32  | BI    | 107 | VAL  |
| 28  | DE    | 73  | GLU  |
| 39  | DT    | 127 | ALA  |
| 50  | D4    | 60  | GLN  |
| 11  | CK    | 105 | VAL  |
| 16  | CP    | 53  | VAL  |
| 11  | AK    | 105 | VAL  |
| 4   | CD    | 5   | ILE  |
| 3   | AC    | 66  | VAL  |

### 5.3.2 Protein sidechains [i](#)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

| Mol | Chain | Analysed      | Rotameric | Outliers | Percentiles |    |
|-----|-------|---------------|-----------|----------|-------------|----|
| 2   | AB    | 192/220 (87%) | 151 (79%) | 41 (21%) | 1           | 3  |
| 2   | CB    | 187/220 (85%) | 154 (82%) | 33 (18%) | 2           | 5  |
| 3   | AC    | 143/188 (76%) | 125 (87%) | 18 (13%) | 4           | 13 |
| 3   | CC    | 140/188 (74%) | 121 (86%) | 19 (14%) | 3           | 11 |
| 4   | AD    | 170/181 (94%) | 146 (86%) | 24 (14%) | 3           | 10 |
| 4   | CD    | 172/181 (95%) | 145 (84%) | 27 (16%) | 2           | 8  |
| 5   | AE    | 113/123 (92%) | 103 (91%) | 10 (9%)  | 10          | 30 |
| 5   | CE    | 114/123 (93%) | 98 (86%)  | 16 (14%) | 3           | 10 |
| 6   | AF    | 83/90 (92%)   | 78 (94%)  | 5 (6%)   | 19          | 49 |
| 6   | CF    | 85/90 (94%)   | 77 (91%)  | 8 (9%)   | 8           | 26 |
| 7   | AG    | 119/127 (94%) | 108 (91%) | 11 (9%)  | 9           | 27 |
| 7   | CG    | 120/127 (94%) | 109 (91%) | 11 (9%)  | 9           | 27 |
| 8   | AH    | 114/119 (96%) | 103 (90%) | 11 (10%) | 8           | 25 |
| 8   | CH    | 114/119 (96%) | 104 (91%) | 10 (9%)  | 10          | 30 |
| 9   | AI    | 90/99 (91%)   | 76 (84%)  | 14 (16%) | 2           | 8  |

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| Mol | Chain | Analysed      | Rotameric | Outliers | Percentiles |    |
|-----|-------|---------------|-----------|----------|-------------|----|
| 9   | CI    | 89/99 (90%)   | 70 (79%)  | 19 (21%) | 1           | 3  |
| 10  | AJ    | 66/92 (72%)   | 63 (96%)  | 3 (4%)   | 27          | 61 |
| 10  | CJ    | 69/92 (75%)   | 64 (93%)  | 5 (7%)   | 14          | 39 |
| 11  | AK    | 82/99 (83%)   | 75 (92%)  | 7 (8%)   | 10          | 31 |
| 11  | CK    | 83/99 (84%)   | 79 (95%)  | 4 (5%)   | 25          | 58 |
| 12  | AL    | 97/109 (89%)  | 89 (92%)  | 8 (8%)   | 11          | 32 |
| 12  | CL    | 97/109 (89%)  | 88 (91%)  | 9 (9%)   | 9           | 27 |
| 13  | AM    | 93/101 (92%)  | 79 (85%)  | 14 (15%) | 3           | 9  |
| 13  | CM    | 92/101 (91%)  | 77 (84%)  | 15 (16%) | 2           | 7  |
| 14  | AN    | 49/50 (98%)   | 42 (86%)  | 7 (14%)  | 3           | 10 |
| 14  | CN    | 49/50 (98%)   | 39 (80%)  | 10 (20%) | 1           | 3  |
| 15  | AO    | 78/80 (98%)   | 70 (90%)  | 8 (10%)  | 7           | 22 |
| 15  | CO    | 78/80 (98%)   | 71 (91%)  | 7 (9%)   | 9           | 29 |
| 16  | AP    | 69/74 (93%)   | 54 (78%)  | 15 (22%) | 1           | 3  |
| 16  | CP    | 68/74 (92%)   | 59 (87%)  | 9 (13%)  | 4           | 12 |
| 17  | AQ    | 94/97 (97%)   | 87 (93%)  | 7 (7%)   | 13          | 38 |
| 17  | CQ    | 94/97 (97%)   | 88 (94%)  | 6 (6%)   | 17          | 45 |
| 18  | AR    | 59/77 (77%)   | 52 (88%)  | 7 (12%)  | 5           | 15 |
| 18  | CR    | 59/77 (77%)   | 52 (88%)  | 7 (12%)  | 5           | 15 |
| 19  | AS    | 69/80 (86%)   | 63 (91%)  | 6 (9%)   | 10          | 30 |
| 19  | CS    | 67/80 (84%)   | 59 (88%)  | 8 (12%)  | 5           | 15 |
| 20  | AT    | 70/82 (85%)   | 61 (87%)  | 9 (13%)  | 4           | 13 |
| 20  | CT    | 70/82 (85%)   | 59 (84%)  | 11 (16%) | 2           | 8  |
| 21  | AU    | 18/22 (82%)   | 15 (83%)  | 3 (17%)  | 2           | 6  |
| 21  | CU    | 18/22 (82%)   | 15 (83%)  | 3 (17%)  | 2           | 6  |
| 27  | BD    | 215/218 (99%) | 196 (91%) | 19 (9%)  | 10          | 30 |
| 27  | DD    | 215/218 (99%) | 194 (90%) | 21 (10%) | 8           | 24 |
| 28  | BE    | 164/166 (99%) | 144 (88%) | 20 (12%) | 5           | 15 |
| 28  | DE    | 164/166 (99%) | 143 (87%) | 21 (13%) | 4           | 13 |
| 29  | BF    | 160/166 (96%) | 146 (91%) | 14 (9%)  | 10          | 30 |
| 29  | DF    | 159/166 (96%) | 144 (91%) | 15 (9%)  | 8           | 26 |

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| Mol | Chain | Analysed       | Rotameric | Outliers | Percentiles |    |
|-----|-------|----------------|-----------|----------|-------------|----|
| 30  | BG    | 143/156 (92%)  | 123 (86%) | 20 (14%) | 3           | 10 |
| 30  | DG    | 142/156 (91%)  | 118 (83%) | 24 (17%) | 2           | 6  |
| 31  | BH    | 144/148 (97%)  | 136 (94%) | 8 (6%)   | 21          | 52 |
| 31  | DH    | 144/148 (97%)  | 131 (91%) | 13 (9%)  | 9           | 29 |
| 32  | BI    | 110/124 (89%)  | 93 (84%)  | 17 (16%) | 2           | 8  |
| 32  | DI    | 104/124 (84%)  | 87 (84%)  | 17 (16%) | 2           | 7  |
| 33  | BN    | 118/119 (99%)  | 104 (88%) | 14 (12%) | 5           | 15 |
| 33  | DN    | 118/119 (99%)  | 104 (88%) | 14 (12%) | 5           | 15 |
| 34  | BO    | 100/100 (100%) | 92 (92%)  | 8 (8%)   | 12          | 33 |
| 34  | DO    | 100/100 (100%) | 90 (90%)  | 10 (10%) | 7           | 23 |
| 35  | BP    | 115/116 (99%)  | 102 (89%) | 13 (11%) | 6           | 18 |
| 35  | DP    | 115/116 (99%)  | 103 (90%) | 12 (10%) | 7           | 21 |
| 36  | BQ    | 111/111 (100%) | 100 (90%) | 11 (10%) | 8           | 24 |
| 36  | DQ    | 111/111 (100%) | 98 (88%)  | 13 (12%) | 5           | 16 |
| 37  | BR    | 101/101 (100%) | 86 (85%)  | 15 (15%) | 3           | 9  |
| 37  | DR    | 101/101 (100%) | 90 (89%)  | 11 (11%) | 6           | 19 |
| 38  | BS    | 87/88 (99%)    | 80 (92%)  | 7 (8%)   | 12          | 33 |
| 38  | DS    | 85/88 (97%)    | 76 (89%)  | 9 (11%)  | 6           | 20 |
| 39  | BT    | 115/127 (91%)  | 104 (90%) | 11 (10%) | 8           | 25 |
| 39  | DT    | 113/127 (89%)  | 98 (87%)  | 15 (13%) | 4           | 11 |
| 40  | BU    | 93/94 (99%)    | 85 (91%)  | 8 (9%)   | 10          | 30 |
| 40  | DU    | 93/94 (99%)    | 85 (91%)  | 8 (9%)   | 10          | 30 |
| 41  | BV    | 80/82 (98%)    | 72 (90%)  | 8 (10%)  | 7           | 23 |
| 41  | DV    | 80/82 (98%)    | 75 (94%)  | 5 (6%)   | 18          | 46 |
| 42  | BW    | 90/92 (98%)    | 82 (91%)  | 8 (9%)   | 9           | 29 |
| 42  | DW    | 90/92 (98%)    | 84 (93%)  | 6 (7%)   | 16          | 43 |
| 43  | BX    | 77/78 (99%)    | 73 (95%)  | 4 (5%)   | 23          | 55 |
| 43  | DX    | 77/78 (99%)    | 75 (97%)  | 2 (3%)   | 46          | 77 |
| 44  | BY    | 85/91 (93%)    | 77 (91%)  | 8 (9%)   | 8           | 26 |
| 44  | DY    | 85/91 (93%)    | 81 (95%)  | 4 (5%)   | 26          | 59 |
| 45  | BZ    | 145/179 (81%)  | 126 (87%) | 19 (13%) | 4           | 12 |

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| Mol | Chain | Analysed         | Rotameric  | Outliers   | Percentiles |    |
|-----|-------|------------------|------------|------------|-------------|----|
| 45  | DZ    | 145/179 (81%)    | 128 (88%)  | 17 (12%)   | 5           | 16 |
| 46  | B0    | 65/67 (97%)      | 61 (94%)   | 4 (6%)     | 18          | 47 |
| 46  | D0    | 65/67 (97%)      | 61 (94%)   | 4 (6%)     | 18          | 47 |
| 47  | B1    | 80/83 (96%)      | 75 (94%)   | 5 (6%)     | 18          | 46 |
| 47  | D1    | 80/83 (96%)      | 73 (91%)   | 7 (9%)     | 10          | 30 |
| 48  | B2    | 65/67 (97%)      | 61 (94%)   | 4 (6%)     | 18          | 47 |
| 48  | D2    | 65/67 (97%)      | 57 (88%)   | 8 (12%)    | 4           | 14 |
| 49  | B3    | 51/52 (98%)      | 45 (88%)   | 6 (12%)    | 5           | 16 |
| 49  | D3    | 50/52 (96%)      | 46 (92%)   | 4 (8%)     | 12          | 33 |
| 50  | B4    | 59/63 (94%)      | 50 (85%)   | 9 (15%)    | 2           | 8  |
| 50  | D4    | 53/63 (84%)      | 40 (76%)   | 13 (24%)   | 0           | 2  |
| 51  | B5    | 50/52 (96%)      | 44 (88%)   | 6 (12%)    | 5           | 15 |
| 51  | D5    | 50/52 (96%)      | 46 (92%)   | 4 (8%)     | 12          | 33 |
| 52  | B6    | 51/52 (98%)      | 45 (88%)   | 6 (12%)    | 5           | 16 |
| 52  | D6    | 50/52 (96%)      | 45 (90%)   | 5 (10%)    | 7           | 23 |
| 53  | B7    | 41/42 (98%)      | 37 (90%)   | 4 (10%)    | 8           | 24 |
| 53  | D7    | 41/42 (98%)      | 37 (90%)   | 4 (10%)    | 8           | 24 |
| 54  | B8    | 53/55 (96%)      | 49 (92%)   | 4 (8%)     | 13          | 37 |
| 54  | D8    | 54/55 (98%)      | 50 (93%)   | 4 (7%)     | 13          | 38 |
| 55  | B9    | 34/34 (100%)     | 32 (94%)   | 2 (6%)     | 19          | 49 |
| 55  | D9    | 34/34 (100%)     | 30 (88%)   | 4 (12%)    | 5           | 16 |
| All | All   | 9318/10066 (93%) | 8277 (89%) | 1041 (11%) | 6           | 18 |

All (1041) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 2   | AB    | 8   | LYS  |
| 2   | AB    | 15  | VAL  |
| 2   | AB    | 16  | HIS  |
| 2   | AB    | 17  | PHE  |
| 2   | AB    | 19  | HIS  |
| 2   | AB    | 20  | GLU  |
| 2   | AB    | 21  | ARG  |
| 2   | AB    | 24  | TRP  |
| 2   | AB    | 39  | ILE  |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 2          | AB           | 48         | MET         |
| 2          | AB           | 81         | VAL         |
| 2          | AB           | 82         | ARG         |
| 2          | AB           | 96         | ARG         |
| 2          | AB           | 114        | ARG         |
| 2          | AB           | 127        | ILE         |
| 2          | AB           | 130        | ARG         |
| 2          | AB           | 133        | LYS         |
| 2          | AB           | 137        | ARG         |
| 2          | AB           | 139        | LYS         |
| 2          | AB           | 145        | LEU         |
| 2          | AB           | 154        | LEU         |
| 2          | AB           | 155        | LEU         |
| 2          | AB           | 157        | ARG         |
| 2          | AB           | 160        | ASP         |
| 2          | AB           | 185        | ILE         |
| 2          | AB           | 187        | LEU         |
| 2          | AB           | 189        | ASP         |
| 2          | AB           | 190        | THR         |
| 2          | AB           | 192        | SER         |
| 2          | AB           | 198        | ASP         |
| 2          | AB           | 200        | ILE         |
| 2          | AB           | 205        | ASP         |
| 2          | AB           | 209        | ARG         |
| 2          | AB           | 213        | LEU         |
| 2          | AB           | 217        | ARG         |
| 2          | AB           | 221        | LEU         |
| 2          | AB           | 223        | ILE         |
| 2          | AB           | 226        | ARG         |
| 2          | AB           | 230        | VAL         |
| 2          | AB           | 231        | GLU         |
| 2          | AB           | 235        | SER         |
| 3          | AC           | 3          | ASN         |
| 3          | AC           | 17         | ASP         |
| 3          | AC           | 27         | LYS         |
| 3          | AC           | 28         | GLN         |
| 3          | AC           | 29         | TYR         |
| 3          | AC           | 72         | LYS         |
| 3          | AC           | 98         | ASN         |
| 3          | AC           | 101        | LEU         |
| 3          | AC           | 104        | GLN         |
| 3          | AC           | 112        | SER         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 3          | AC           | 118        | GLN         |
| 3          | AC           | 140        | ARG         |
| 3          | AC           | 144        | SER         |
| 3          | AC           | 154        | SER         |
| 3          | AC           | 181        | ASN         |
| 3          | AC           | 190        | ARG         |
| 3          | AC           | 192        | THR         |
| 3          | AC           | 196        | LEU         |
| 4          | AD           | 5          | ILE         |
| 4          | AD           | 19         | LEU         |
| 4          | AD           | 36         | ARG         |
| 4          | AD           | 46         | LYS         |
| 4          | AD           | 49         | ARG         |
| 4          | AD           | 58         | LEU         |
| 4          | AD           | 77         | ASN         |
| 4          | AD           | 122        | ARG         |
| 4          | AD           | 127        | THR         |
| 4          | AD           | 135        | LEU         |
| 4          | AD           | 138        | TYR         |
| 4          | AD           | 141        | ARG         |
| 4          | AD           | 150        | GLU         |
| 4          | AD           | 152        | SER         |
| 4          | AD           | 157        | LEU         |
| 4          | AD           | 158        | ILE         |
| 4          | AD           | 168        | ARG         |
| 4          | AD           | 182        | LYS         |
| 4          | AD           | 187        | ARG         |
| 4          | AD           | 188        | LEU         |
| 4          | AD           | 190        | ASP         |
| 4          | AD           | 194        | LEU         |
| 4          | AD           | 200        | GLU         |
| 4          | AD           | 208        | SER         |
| 5          | AE           | 10         | MET         |
| 5          | AE           | 12         | LEU         |
| 5          | AE           | 20         | GLN         |
| 5          | AE           | 38         | GLN         |
| 5          | AE           | 41         | VAL         |
| 5          | AE           | 47         | LYS         |
| 5          | AE           | 71         | LEU         |
| 5          | AE           | 120        | THR         |
| 5          | AE           | 137        | GLU         |
| 5          | AE           | 151        | LEU         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 6          | AF           | 18         | GLN         |
| 6          | AF           | 40         | VAL         |
| 6          | AF           | 55         | ASP         |
| 6          | AF           | 69         | GLU         |
| 6          | AF           | 82         | ARG         |
| 7          | AG           | 6          | ARG         |
| 7          | AG           | 8          | GLU         |
| 7          | AG           | 12         | LEU         |
| 7          | AG           | 13         | GLN         |
| 7          | AG           | 24         | THR         |
| 7          | AG           | 52         | GLU         |
| 7          | AG           | 61         | VAL         |
| 7          | AG           | 91         | VAL         |
| 7          | AG           | 104        | LEU         |
| 7          | AG           | 115        | ARG         |
| 7          | AG           | 155        | ARG         |
| 8          | AH           | 19         | VAL         |
| 8          | AH           | 21         | LYS         |
| 8          | AH           | 39         | LEU         |
| 8          | AH           | 45         | ILE         |
| 8          | AH           | 51         | VAL         |
| 8          | AH           | 52         | ASP         |
| 8          | AH           | 78         | GLN         |
| 8          | AH           | 86         | ILE         |
| 8          | AH           | 98         | LYS         |
| 8          | AH           | 112        | LEU         |
| 8          | AH           | 122        | ARG         |
| 9          | AI           | 17         | VAL         |
| 9          | AI           | 23         | ASN         |
| 9          | AI           | 29         | ASN         |
| 9          | AI           | 42         | ARG         |
| 9          | AI           | 53         | VAL         |
| 9          | AI           | 66         | ARG         |
| 9          | AI           | 78         | LYS         |
| 9          | AI           | 87         | GLN         |
| 9          | AI           | 92         | TYR         |
| 9          | AI           | 103        | THR         |
| 9          | AI           | 108        | VAL         |
| 9          | AI           | 121        | ARG         |
| 9          | AI           | 124        | GLN         |
| 9          | AI           | 128        | ARG         |
| 10         | AJ           | 38         | ILE         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 10         | AJ           | 46         | ARG         |
| 10         | AJ           | 84         | GLN         |
| 11         | AK           | 16         | SER         |
| 11         | AK           | 31         | THR         |
| 11         | AK           | 48         | ILE         |
| 11         | AK           | 77         | MET         |
| 11         | AK           | 81         | ASP         |
| 11         | AK           | 96         | ARG         |
| 11         | AK           | 104        | GLN         |
| 12         | AL           | 33         | ARG         |
| 12         | AL           | 52         | LEU         |
| 12         | AL           | 53         | ARG         |
| 12         | AL           | 59         | ARG         |
| 12         | AL           | 83         | VAL         |
| 12         | AL           | 97         | ARG         |
| 12         | AL           | 115        | LYS         |
| 12         | AL           | 118        | SER         |
| 13         | AM           | 3          | ARG         |
| 13         | AM           | 4          | ILE         |
| 13         | AM           | 8          | GLU         |
| 13         | AM           | 15         | VAL         |
| 13         | AM           | 19         | LEU         |
| 13         | AM           | 27         | LYS         |
| 13         | AM           | 43         | THR         |
| 13         | AM           | 55         | ARG         |
| 13         | AM           | 57         | ARG         |
| 13         | AM           | 84         | ILE         |
| 13         | AM           | 106        | ASN         |
| 13         | AM           | 109        | THR         |
| 13         | AM           | 110        | ARG         |
| 13         | AM           | 115        | LYS         |
| 14         | AN           | 3          | ARG         |
| 14         | AN           | 7          | ILE         |
| 14         | AN           | 18         | VAL         |
| 14         | AN           | 22         | THR         |
| 14         | AN           | 23         | ARG         |
| 14         | AN           | 33         | VAL         |
| 14         | AN           | 57         | ARG         |
| 15         | AO           | 3          | ILE         |
| 15         | AO           | 5          | LYS         |
| 15         | AO           | 7          | GLU         |
| 15         | AO           | 38         | ARG         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 15         | AO           | 41         | GLU         |
| 15         | AO           | 64         | ARG         |
| 15         | AO           | 76         | GLU         |
| 15         | AO           | 83         | GLU         |
| 16         | AP           | 1          | MET         |
| 16         | AP           | 2          | VAL         |
| 16         | AP           | 5          | ARG         |
| 16         | AP           | 8          | ARG         |
| 16         | AP           | 19         | ILE         |
| 16         | AP           | 20         | VAL         |
| 16         | AP           | 34         | GLU         |
| 16         | AP           | 45         | THR         |
| 16         | AP           | 50         | LYS         |
| 16         | AP           | 54         | GLU         |
| 16         | AP           | 55         | ARG         |
| 16         | AP           | 60         | LEU         |
| 16         | AP           | 62         | VAL         |
| 16         | AP           | 67         | THR         |
| 16         | AP           | 72         | ARG         |
| 17         | AQ           | 6          | LEU         |
| 17         | AQ           | 24         | GLU         |
| 17         | AQ           | 62         | SER         |
| 17         | AQ           | 63         | ARG         |
| 17         | AQ           | 72         | ARG         |
| 17         | AQ           | 74         | LEU         |
| 17         | AQ           | 100        | LYS         |
| 18         | AR           | 26         | LEU         |
| 18         | AR           | 31         | LEU         |
| 18         | AR           | 32         | ARG         |
| 18         | AR           | 37         | VAL         |
| 18         | AR           | 41         | LYS         |
| 18         | AR           | 76         | LEU         |
| 18         | AR           | 82         | THR         |
| 19         | AS           | 28         | LYS         |
| 19         | AS           | 30         | LEU         |
| 19         | AS           | 47         | HIS         |
| 19         | AS           | 49         | ILE         |
| 19         | AS           | 65         | ASN         |
| 19         | AS           | 78         | ARG         |
| 20         | AT           | 9          | ASN         |
| 20         | AT           | 10         | LEU         |
| 20         | AT           | 13         | LEU         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 20         | AT           | 24         | LEU         |
| 20         | AT           | 37         | SER         |
| 20         | AT           | 45         | GLN         |
| 20         | AT           | 54         | LYS         |
| 20         | AT           | 75         | ASN         |
| 20         | AT           | 84         | LEU         |
| 21         | AU           | 7          | ARG         |
| 21         | AU           | 10         | ARG         |
| 21         | AU           | 15         | ARG         |
| 27         | BD           | 12         | SER         |
| 27         | BD           | 13         | ARG         |
| 27         | BD           | 37         | LEU         |
| 27         | BD           | 61         | LEU         |
| 27         | BD           | 94         | LEU         |
| 27         | BD           | 106        | ILE         |
| 27         | BD           | 113        | VAL         |
| 27         | BD           | 126        | GLN         |
| 27         | BD           | 138        | VAL         |
| 27         | BD           | 142        | VAL         |
| 27         | BD           | 155        | LEU         |
| 27         | BD           | 183        | ARG         |
| 27         | BD           | 211        | ARG         |
| 27         | BD           | 212        | SER         |
| 27         | BD           | 221        | VAL         |
| 27         | BD           | 229        | VAL         |
| 27         | BD           | 242        | ARG         |
| 27         | BD           | 257        | LEU         |
| 27         | BD           | 260        | ARG         |
| 28         | BE           | 2          | LYS         |
| 28         | BE           | 9          | VAL         |
| 28         | BE           | 11         | MET         |
| 28         | BE           | 12         | THR         |
| 28         | BE           | 21         | VAL         |
| 28         | BE           | 24         | THR         |
| 28         | BE           | 33         | VAL         |
| 28         | BE           | 40         | GLU         |
| 28         | BE           | 73         | GLU         |
| 28         | BE           | 75         | VAL         |
| 28         | BE           | 94         | GLU         |
| 28         | BE           | 111        | ARG         |
| 28         | BE           | 116        | VAL         |
| 28         | BE           | 118        | LYS         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 28         | BE           | 119        | ARG         |
| 28         | BE           | 144        | ARG         |
| 28         | BE           | 154        | LYS         |
| 28         | BE           | 163        | GLU         |
| 28         | BE           | 181        | LEU         |
| 28         | BE           | 203        | LYS         |
| 29         | BF           | 20         | LEU         |
| 29         | BF           | 24         | LEU         |
| 29         | BF           | 43         | LYS         |
| 29         | BF           | 57         | VAL         |
| 29         | BF           | 70         | THR         |
| 29         | BF           | 72         | ARG         |
| 29         | BF           | 74         | ARG         |
| 29         | BF           | 95         | ARG         |
| 29         | BF           | 106        | ARG         |
| 29         | BF           | 110        | LEU         |
| 29         | BF           | 125        | LEU         |
| 29         | BF           | 132        | VAL         |
| 29         | BF           | 192        | LEU         |
| 29         | BF           | 197        | ASP         |
| 30         | BG           | 7          | LEU         |
| 30         | BG           | 21         | ARG         |
| 30         | BG           | 28         | VAL         |
| 30         | BG           | 43         | LEU         |
| 30         | BG           | 45         | GLU         |
| 30         | BG           | 60         | LEU         |
| 30         | BG           | 70         | VAL         |
| 30         | BG           | 82         | LEU         |
| 30         | BG           | 90         | LEU         |
| 30         | BG           | 91         | ARG         |
| 30         | BG           | 108        | ASN         |
| 30         | BG           | 115        | ARG         |
| 30         | BG           | 128        | ARG         |
| 30         | BG           | 135        | LEU         |
| 30         | BG           | 138        | GLN         |
| 30         | BG           | 140        | ILE         |
| 30         | BG           | 143        | GLU         |
| 30         | BG           | 145        | THR         |
| 30         | BG           | 148        | MET         |
| 30         | BG           | 165        | THR         |
| 31         | BH           | 41         | MET         |
| 31         | BH           | 45         | VAL         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 31         | BH           | 57         | ASP         |
| 31         | BH           | 59         | ARG         |
| 31         | BH           | 69         | ARG         |
| 31         | BH           | 95         | ARG         |
| 31         | BH           | 105        | LEU         |
| 31         | BH           | 149        | ARG         |
| 32         | BI           | 5          | LEU         |
| 32         | BI           | 9          | LEU         |
| 32         | BI           | 10         | GLU         |
| 32         | BI           | 38         | LEU         |
| 32         | BI           | 42         | SER         |
| 32         | BI           | 57         | ARG         |
| 32         | BI           | 61         | ARG         |
| 32         | BI           | 68         | LEU         |
| 32         | BI           | 75         | LEU         |
| 32         | BI           | 77         | LEU         |
| 32         | BI           | 92         | VAL         |
| 32         | BI           | 96         | ASP         |
| 32         | BI           | 103        | ARG         |
| 32         | BI           | 109        | ILE         |
| 32         | BI           | 116        | LEU         |
| 32         | BI           | 121        | LYS         |
| 32         | BI           | 140        | LEU         |
| 33         | BN           | 33         | LEU         |
| 33         | BN           | 34         | LEU         |
| 33         | BN           | 46         | VAL         |
| 33         | BN           | 48         | MET         |
| 33         | BN           | 61         | ARG         |
| 33         | BN           | 62         | VAL         |
| 33         | BN           | 67         | LEU         |
| 33         | BN           | 68         | GLU         |
| 33         | BN           | 73         | THR         |
| 33         | BN           | 83         | LYS         |
| 33         | BN           | 85         | ILE         |
| 33         | BN           | 87         | LEU         |
| 33         | BN           | 99         | LEU         |
| 33         | BN           | 120        | LEU         |
| 34         | BO           | 8          | LEU         |
| 34         | BO           | 9          | GLU         |
| 34         | BO           | 10         | VAL         |
| 34         | BO           | 24         | VAL         |
| 34         | BO           | 28         | SER         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 34         | BO           | 78         | ARG         |
| 34         | BO           | 89         | ASN         |
| 34         | BO           | 94         | ARG         |
| 35         | BP           | 1          | MET         |
| 35         | BP           | 21         | ARG         |
| 35         | BP           | 45         | LEU         |
| 35         | BP           | 55         | ARG         |
| 35         | BP           | 56         | SER         |
| 35         | BP           | 59         | LEU         |
| 35         | BP           | 65         | ARG         |
| 35         | BP           | 77         | ARG         |
| 35         | BP           | 106        | LEU         |
| 35         | BP           | 112        | LEU         |
| 35         | BP           | 119        | GLU         |
| 35         | BP           | 147        | LEU         |
| 35         | BP           | 148        | LEU         |
| 36         | BQ           | 1          | MET         |
| 36         | BQ           | 6          | ARG         |
| 36         | BQ           | 7          | MET         |
| 36         | BQ           | 16         | ARG         |
| 36         | BQ           | 35         | VAL         |
| 36         | BQ           | 45         | GLN         |
| 36         | BQ           | 54         | MET         |
| 36         | BQ           | 55         | VAL         |
| 36         | BQ           | 85         | LYS         |
| 36         | BQ           | 109        | VAL         |
| 36         | BQ           | 110        | THR         |
| 37         | BR           | 1          | MET         |
| 37         | BR           | 14         | SER         |
| 37         | BR           | 18         | LEU         |
| 37         | BR           | 29         | LEU         |
| 37         | BR           | 33         | ARG         |
| 37         | BR           | 36         | THR         |
| 37         | BR           | 44         | LEU         |
| 37         | BR           | 60         | LEU         |
| 37         | BR           | 65         | LEU         |
| 37         | BR           | 67         | LEU         |
| 37         | BR           | 75         | LEU         |
| 37         | BR           | 79         | LEU         |
| 37         | BR           | 86         | ARG         |
| 37         | BR           | 100        | LEU         |
| 37         | BR           | 102        | GLU         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 38         | BS           | 3          | ARG         |
| 38         | BS           | 14         | VAL         |
| 38         | BS           | 25         | ARG         |
| 38         | BS           | 36         | TYR         |
| 38         | BS           | 52         | SER         |
| 38         | BS           | 57         | LYS         |
| 38         | BS           | 59         | LYS         |
| 39         | BT           | 1          | MET         |
| 39         | BT           | 28         | VAL         |
| 39         | BT           | 34         | VAL         |
| 39         | BT           | 53         | ARG         |
| 39         | BT           | 78         | LEU         |
| 39         | BT           | 85         | LYS         |
| 39         | BT           | 89         | VAL         |
| 39         | BT           | 93         | ARG         |
| 39         | BT           | 96         | ARG         |
| 39         | BT           | 115        | ARG         |
| 39         | BT           | 118        | ARG         |
| 40         | BU           | 8          | VAL         |
| 40         | BU           | 20         | LEU         |
| 40         | BU           | 36         | ARG         |
| 40         | BU           | 74         | LEU         |
| 40         | BU           | 92         | ARG         |
| 40         | BU           | 104        | GLN         |
| 40         | BU           | 108        | GLU         |
| 40         | BU           | 112        | ARG         |
| 41         | BV           | 18         | LEU         |
| 41         | BV           | 43         | GLU         |
| 41         | BV           | 52         | VAL         |
| 41         | BV           | 72         | VAL         |
| 41         | BV           | 73         | SER         |
| 41         | BV           | 79         | VAL         |
| 41         | BV           | 95         | LEU         |
| 41         | BV           | 100        | ARG         |
| 42         | BW           | 4          | LYS         |
| 42         | BW           | 11         | ARG         |
| 42         | BW           | 15         | ARG         |
| 42         | BW           | 23         | LEU         |
| 42         | BW           | 51         | LEU         |
| 42         | BW           | 52         | GLU         |
| 42         | BW           | 67         | ASP         |
| 42         | BW           | 92         | ARG         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 43         | BX           | 35         | THR         |
| 43         | BX           | 52         | VAL         |
| 43         | BX           | 57         | LEU         |
| 43         | BX           | 65         | ARG         |
| 44         | BY           | 8          | LYS         |
| 44         | BY           | 21         | LYS         |
| 44         | BY           | 23         | ARG         |
| 44         | BY           | 43         | ASN         |
| 44         | BY           | 61         | ILE         |
| 44         | BY           | 72         | VAL         |
| 44         | BY           | 85         | VAL         |
| 44         | BY           | 91         | GLU         |
| 45         | BZ           | 5          | LEU         |
| 45         | BZ           | 11         | GLU         |
| 45         | BZ           | 19         | ARG         |
| 45         | BZ           | 31         | ARG         |
| 45         | BZ           | 33         | LEU         |
| 45         | BZ           | 40         | ASP         |
| 45         | BZ           | 46         | LYS         |
| 45         | BZ           | 58         | VAL         |
| 45         | BZ           | 72         | ARG         |
| 45         | BZ           | 76         | LEU         |
| 45         | BZ           | 91         | LEU         |
| 45         | BZ           | 98         | MET         |
| 45         | BZ           | 112        | ARG         |
| 45         | BZ           | 135        | GLU         |
| 45         | BZ           | 136        | PHE         |
| 45         | BZ           | 144        | LEU         |
| 45         | BZ           | 145        | GLU         |
| 45         | BZ           | 154        | ASP         |
| 45         | BZ           | 171        | ILE         |
| 46         | B0           | 14         | ARG         |
| 46         | B0           | 20         | ARG         |
| 46         | B0           | 55         | ARG         |
| 46         | B0           | 82         | ARG         |
| 47         | B1           | 23         | LYS         |
| 47         | B1           | 30         | VAL         |
| 47         | B1           | 40         | ARG         |
| 47         | B1           | 78         | LYS         |
| 47         | B1           | 95         | LEU         |
| 48         | B2           | 30         | ARG         |
| 48         | B2           | 32         | LEU         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 48         | B2           | 53         | LEU         |
| 48         | B2           | 70         | GLN         |
| 49         | B3           | 8          | LEU         |
| 49         | B3           | 18         | ASP         |
| 49         | B3           | 23         | LEU         |
| 49         | B3           | 54         | VAL         |
| 49         | B3           | 55         | ARG         |
| 49         | B3           | 58         | VAL         |
| 50         | B4           | 27         | THR         |
| 50         | B4           | 34         | GLU         |
| 50         | B4           | 46         | GLN         |
| 50         | B4           | 48         | ARG         |
| 50         | B4           | 49         | PHE         |
| 50         | B4           | 58         | ARG         |
| 50         | B4           | 61         | ARG         |
| 50         | B4           | 63         | TYR         |
| 50         | B4           | 68         | ARG         |
| 51         | B5           | 16         | ARG         |
| 51         | B5           | 29         | THR         |
| 51         | B5           | 40         | LYS         |
| 51         | B5           | 55         | ARG         |
| 51         | B5           | 58         | LEU         |
| 51         | B5           | 59         | GLU         |
| 52         | B6           | 4          | GLU         |
| 52         | B6           | 6          | ARG         |
| 52         | B6           | 18         | ARG         |
| 52         | B6           | 28         | ARG         |
| 52         | B6           | 33         | LYS         |
| 52         | B6           | 48         | VAL         |
| 53         | B7           | 1          | MET         |
| 53         | B7           | 10         | ARG         |
| 53         | B7           | 41         | ARG         |
| 53         | B7           | 43         | THR         |
| 54         | B8           | 11         | LYS         |
| 54         | B8           | 31         | HIS         |
| 54         | B8           | 32         | LEU         |
| 54         | B8           | 34         | TRP         |
| 55         | B9           | 4          | ARG         |
| 55         | B9           | 7          | VAL         |
| 2          | CB           | 8          | LYS         |
| 2          | CB           | 17         | PHE         |
| 2          | CB           | 23         | ARG         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 2          | CB           | 24         | TRP         |
| 2          | CB           | 48         | MET         |
| 2          | CB           | 56         | ARG         |
| 2          | CB           | 58         | ILE         |
| 2          | CB           | 60         | ASP         |
| 2          | CB           | 61         | LEU         |
| 2          | CB           | 67         | THR         |
| 2          | CB           | 98         | LEU         |
| 2          | CB           | 109        | SER         |
| 2          | CB           | 114        | ARG         |
| 2          | CB           | 115        | LEU         |
| 2          | CB           | 117        | GLU         |
| 2          | CB           | 126        | GLU         |
| 2          | CB           | 128        | GLU         |
| 2          | CB           | 138        | LEU         |
| 2          | CB           | 144        | ARG         |
| 2          | CB           | 145        | LEU         |
| 2          | CB           | 154        | LEU         |
| 2          | CB           | 155        | LEU         |
| 2          | CB           | 160        | ASP         |
| 2          | CB           | 169        | LYS         |
| 2          | CB           | 187        | LEU         |
| 2          | CB           | 189        | ASP         |
| 2          | CB           | 192        | SER         |
| 2          | CB           | 200        | ILE         |
| 2          | CB           | 209        | ARG         |
| 2          | CB           | 213        | LEU         |
| 2          | CB           | 217        | ARG         |
| 2          | CB           | 230        | VAL         |
| 2          | CB           | 233        | SER         |
| 3          | CC           | 21         | ARG         |
| 3          | CC           | 29         | TYR         |
| 3          | CC           | 32         | LEU         |
| 3          | CC           | 43         | LEU         |
| 3          | CC           | 44         | GLU         |
| 3          | CC           | 45         | LYS         |
| 3          | CC           | 52         | LEU         |
| 3          | CC           | 54         | ARG         |
| 3          | CC           | 59         | ARG         |
| 3          | CC           | 72         | LYS         |
| 3          | CC           | 82         | GLU         |
| 3          | CC           | 105        | GLU         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 3          | CC           | 118        | GLN         |
| 3          | CC           | 126        | ARG         |
| 3          | CC           | 152        | ILE         |
| 3          | CC           | 164        | ARG         |
| 3          | CC           | 179        | ARG         |
| 3          | CC           | 190        | ARG         |
| 3          | CC           | 196        | LEU         |
| 4          | CD           | 5          | ILE         |
| 4          | CD           | 12         | CYS         |
| 4          | CD           | 19         | LEU         |
| 4          | CD           | 33         | MET         |
| 4          | CD           | 34         | GLU         |
| 4          | CD           | 45         | GLN         |
| 4          | CD           | 46         | LYS         |
| 4          | CD           | 47         | ARG         |
| 4          | CD           | 58         | LEU         |
| 4          | CD           | 61         | LYS         |
| 4          | CD           | 77         | ASN         |
| 4          | CD           | 83         | SER         |
| 4          | CD           | 114        | ARG         |
| 4          | CD           | 122        | ARG         |
| 4          | CD           | 127        | THR         |
| 4          | CD           | 135        | LEU         |
| 4          | CD           | 137        | SER         |
| 4          | CD           | 150        | GLU         |
| 4          | CD           | 155        | LEU         |
| 4          | CD           | 158        | ILE         |
| 4          | CD           | 170        | VAL         |
| 4          | CD           | 181        | MET         |
| 4          | CD           | 187        | ARG         |
| 4          | CD           | 194        | LEU         |
| 4          | CD           | 200        | GLU         |
| 4          | CD           | 202        | LEU         |
| 4          | CD           | 203        | VAL         |
| 5          | CE           | 10         | MET         |
| 5          | CE           | 16         | THR         |
| 5          | CE           | 18         | ARG         |
| 5          | CE           | 20         | GLN         |
| 5          | CE           | 31         | LEU         |
| 5          | CE           | 38         | GLN         |
| 5          | CE           | 41         | VAL         |
| 5          | CE           | 43         | LEU         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 5          | CE           | 47         | LYS         |
| 5          | CE           | 60         | TYR         |
| 5          | CE           | 67         | VAL         |
| 5          | CE           | 71         | LEU         |
| 5          | CE           | 78         | HIS         |
| 5          | CE           | 137        | GLU         |
| 5          | CE           | 142        | LEU         |
| 5          | CE           | 150        | ARG         |
| 6          | CF           | 10         | LEU         |
| 6          | CF           | 40         | VAL         |
| 6          | CF           | 41         | GLU         |
| 6          | CF           | 45         | LEU         |
| 6          | CF           | 46         | ARG         |
| 6          | CF           | 61         | LEU         |
| 6          | CF           | 69         | GLU         |
| 6          | CF           | 92         | LYS         |
| 7          | CG           | 9          | VAL         |
| 7          | CG           | 32         | ARG         |
| 7          | CG           | 51         | GLN         |
| 7          | CG           | 61         | VAL         |
| 7          | CG           | 72         | ARG         |
| 7          | CG           | 76         | ARG         |
| 7          | CG           | 79         | ARG         |
| 7          | CG           | 97         | GLN         |
| 7          | CG           | 104        | LEU         |
| 7          | CG           | 113        | GLU         |
| 7          | CG           | 155        | ARG         |
| 8          | CH           | 8          | ASP         |
| 8          | CH           | 51         | VAL         |
| 8          | CH           | 52         | ASP         |
| 8          | CH           | 78         | GLN         |
| 8          | CH           | 84         | ARG         |
| 8          | CH           | 85         | ARG         |
| 8          | CH           | 86         | ILE         |
| 8          | CH           | 98         | LYS         |
| 8          | CH           | 112        | LEU         |
| 8          | CH           | 127        | LEU         |
| 9          | CI           | 23         | ASN         |
| 9          | CI           | 29         | ASN         |
| 9          | CI           | 47         | LEU         |
| 9          | CI           | 48         | GLU         |
| 9          | CI           | 64         | THR         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 9          | CI           | 75         | ASP         |
| 9          | CI           | 81         | ILE         |
| 9          | CI           | 86         | VAL         |
| 9          | CI           | 87         | GLN         |
| 9          | CI           | 89         | ASN         |
| 9          | CI           | 92         | TYR         |
| 9          | CI           | 93         | ARG         |
| 9          | CI           | 102        | LEU         |
| 9          | CI           | 105        | ASP         |
| 9          | CI           | 108        | VAL         |
| 9          | CI           | 111        | ARG         |
| 9          | CI           | 117        | HIS         |
| 9          | CI           | 121        | ARG         |
| 9          | CI           | 124        | GLN         |
| 10         | CJ           | 29         | ARG         |
| 10         | CJ           | 33         | GLN         |
| 10         | CJ           | 57         | LYS         |
| 10         | CJ           | 67         | THR         |
| 10         | CJ           | 74         | ILE         |
| 11         | CK           | 48         | ILE         |
| 11         | CK           | 77         | MET         |
| 11         | CK           | 96         | ARG         |
| 11         | CK           | 126        | ARG         |
| 12         | CL           | 6          | THR         |
| 12         | CL           | 34         | ARG         |
| 12         | CL           | 38         | THR         |
| 12         | CL           | 44         | THR         |
| 12         | CL           | 53         | ARG         |
| 12         | CL           | 59         | ARG         |
| 12         | CL           | 78         | GLN         |
| 12         | CL           | 83         | VAL         |
| 12         | CL           | 124        | LYS         |
| 13         | CM           | 15         | VAL         |
| 13         | CM           | 27         | LYS         |
| 13         | CM           | 34         | LEU         |
| 13         | CM           | 35         | GLU         |
| 13         | CM           | 44         | ARG         |
| 13         | CM           | 47         | ASP         |
| 13         | CM           | 49         | THR         |
| 13         | CM           | 60         | VAL         |
| 13         | CM           | 77         | ASN         |
| 13         | CM           | 102        | ARG         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 13         | CM           | 103        | THR         |
| 13         | CM           | 106        | ASN         |
| 13         | CM           | 115        | LYS         |
| 13         | CM           | 116        | THR         |
| 13         | CM           | 121        | LYS         |
| 14         | CN           | 3          | ARG         |
| 14         | CN           | 4          | LYS         |
| 14         | CN           | 8          | GLU         |
| 14         | CN           | 12         | ARG         |
| 14         | CN           | 18         | VAL         |
| 14         | CN           | 22         | THR         |
| 14         | CN           | 23         | ARG         |
| 14         | CN           | 32         | SER         |
| 14         | CN           | 33         | VAL         |
| 14         | CN           | 47         | LEU         |
| 15         | CO           | 3          | ILE         |
| 15         | CO           | 5          | LYS         |
| 15         | CO           | 38         | ARG         |
| 15         | CO           | 39         | LEU         |
| 15         | CO           | 48         | LYS         |
| 15         | CO           | 68         | ARG         |
| 15         | CO           | 83         | GLU         |
| 16         | CP           | 5          | ARG         |
| 16         | CP           | 8          | ARG         |
| 16         | CP           | 20         | VAL         |
| 16         | CP           | 21         | VAL         |
| 16         | CP           | 28         | ARG         |
| 16         | CP           | 61         | SER         |
| 16         | CP           | 62         | VAL         |
| 16         | CP           | 67         | THR         |
| 16         | CP           | 69         | THR         |
| 17         | CQ           | 6          | LEU         |
| 17         | CQ           | 24         | GLU         |
| 17         | CQ           | 63         | ARG         |
| 17         | CQ           | 74         | LEU         |
| 17         | CQ           | 79         | SER         |
| 17         | CQ           | 99         | SER         |
| 18         | CR           | 25         | THR         |
| 18         | CR           | 26         | LEU         |
| 18         | CR           | 31         | LEU         |
| 18         | CR           | 32         | ARG         |
| 18         | CR           | 35         | ARG         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 18         | CR           | 41         | LYS         |
| 18         | CR           | 76         | LEU         |
| 19         | CS           | 16         | LEU         |
| 19         | CS           | 17         | GLU         |
| 19         | CS           | 28         | LYS         |
| 19         | CS           | 33         | THR         |
| 19         | CS           | 36         | ARG         |
| 19         | CS           | 56         | GLN         |
| 19         | CS           | 65         | ASN         |
| 19         | CS           | 78         | ARG         |
| 20         | CT           | 9          | ASN         |
| 20         | CT           | 10         | LEU         |
| 20         | CT           | 23         | ARG         |
| 20         | CT           | 41         | ILE         |
| 20         | CT           | 46         | GLU         |
| 20         | CT           | 54         | LYS         |
| 20         | CT           | 56         | MET         |
| 20         | CT           | 62         | LEU         |
| 20         | CT           | 71         | THR         |
| 20         | CT           | 80         | ARG         |
| 20         | CT           | 90         | GLN         |
| 21         | CU           | 7          | ARG         |
| 21         | CU           | 10         | ARG         |
| 21         | CU           | 15         | ARG         |
| 27         | DD           | 54         | ARG         |
| 27         | DD           | 69         | ARG         |
| 27         | DD           | 94         | LEU         |
| 27         | DD           | 106        | ILE         |
| 27         | DD           | 113        | VAL         |
| 27         | DD           | 115        | GLN         |
| 27         | DD           | 126        | GLN         |
| 27         | DD           | 134        | ARG         |
| 27         | DD           | 138        | VAL         |
| 27         | DD           | 155        | LEU         |
| 27         | DD           | 162        | SER         |
| 27         | DD           | 171        | ASP         |
| 27         | DD           | 211        | ARG         |
| 27         | DD           | 221        | VAL         |
| 27         | DD           | 229        | VAL         |
| 27         | DD           | 242        | ARG         |
| 27         | DD           | 257        | LEU         |
| 27         | DD           | 260        | ARG         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 27         | DD           | 267        | SER         |
| 27         | DD           | 274        | ARG         |
| 27         | DD           | 276        | LYS         |
| 28         | DE           | 9          | VAL         |
| 28         | DE           | 21         | VAL         |
| 28         | DE           | 24         | THR         |
| 28         | DE           | 40         | GLU         |
| 28         | DE           | 47         | VAL         |
| 28         | DE           | 48         | GLN         |
| 28         | DE           | 52         | LEU         |
| 28         | DE           | 54         | GLN         |
| 28         | DE           | 58         | ARG         |
| 28         | DE           | 72         | VAL         |
| 28         | DE           | 73         | GLU         |
| 28         | DE           | 75         | VAL         |
| 28         | DE           | 92         | THR         |
| 28         | DE           | 111        | ARG         |
| 28         | DE           | 116        | VAL         |
| 28         | DE           | 119        | ARG         |
| 28         | DE           | 144        | ARG         |
| 28         | DE           | 154        | LYS         |
| 28         | DE           | 163        | GLU         |
| 28         | DE           | 170        | LEU         |
| 28         | DE           | 181        | LEU         |
| 29         | DF           | 20         | LEU         |
| 29         | DF           | 24         | LEU         |
| 29         | DF           | 27         | GLU         |
| 29         | DF           | 33         | LEU         |
| 29         | DF           | 57         | VAL         |
| 29         | DF           | 70         | THR         |
| 29         | DF           | 74         | ARG         |
| 29         | DF           | 106        | ARG         |
| 29         | DF           | 110        | LEU         |
| 29         | DF           | 132        | VAL         |
| 29         | DF           | 135        | LYS         |
| 29         | DF           | 192        | LEU         |
| 29         | DF           | 195        | ASP         |
| 29         | DF           | 196        | LEU         |
| 29         | DF           | 200        | GLU         |
| 30         | DG           | 16         | ARG         |
| 30         | DG           | 21         | ARG         |
| 30         | DG           | 28         | VAL         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 30         | DG           | 31         | VAL         |
| 30         | DG           | 33         | ARG         |
| 30         | DG           | 40         | ASN         |
| 30         | DG           | 43         | LEU         |
| 30         | DG           | 45         | GLU         |
| 30         | DG           | 60         | LEU         |
| 30         | DG           | 91         | ARG         |
| 30         | DG           | 111        | LEU         |
| 30         | DG           | 115        | ARG         |
| 30         | DG           | 133        | LEU         |
| 30         | DG           | 136        | ARG         |
| 30         | DG           | 138        | GLN         |
| 30         | DG           | 140        | ILE         |
| 30         | DG           | 143        | GLU         |
| 30         | DG           | 145        | THR         |
| 30         | DG           | 148        | MET         |
| 30         | DG           | 153        | ARG         |
| 30         | DG           | 165        | THR         |
| 30         | DG           | 167        | GLU         |
| 30         | DG           | 170        | ARG         |
| 30         | DG           | 178        | PHE         |
| 31         | DH           | 3          | ARG         |
| 31         | DH           | 27         | LYS         |
| 31         | DH           | 32         | GLU         |
| 31         | DH           | 63         | SER         |
| 31         | DH           | 69         | ARG         |
| 31         | DH           | 70         | THR         |
| 31         | DH           | 95         | ARG         |
| 31         | DH           | 98         | LEU         |
| 31         | DH           | 124        | GLU         |
| 31         | DH           | 130        | ARG         |
| 31         | DH           | 136        | ILE         |
| 31         | DH           | 149        | ARG         |
| 31         | DH           | 171        | LEU         |
| 32         | DI           | 5          | LEU         |
| 32         | DI           | 9          | LEU         |
| 32         | DI           | 38         | LEU         |
| 32         | DI           | 40         | THR         |
| 32         | DI           | 43         | ASN         |
| 32         | DI           | 44         | LEU         |
| 32         | DI           | 50         | ARG         |
| 32         | DI           | 51         | ILE         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 32         | DI           | 68         | LEU         |
| 32         | DI           | 75         | LEU         |
| 32         | DI           | 77         | LEU         |
| 32         | DI           | 78         | THR         |
| 32         | DI           | 86         | THR         |
| 32         | DI           | 93         | THR         |
| 32         | DI           | 114        | LEU         |
| 32         | DI           | 123        | LEU         |
| 32         | DI           | 143        | SER         |
| 33         | DN           | 9          | VAL         |
| 33         | DN           | 29         | LYS         |
| 33         | DN           | 33         | LEU         |
| 33         | DN           | 34         | LEU         |
| 33         | DN           | 38         | HIS         |
| 33         | DN           | 46         | VAL         |
| 33         | DN           | 48         | MET         |
| 33         | DN           | 61         | ARG         |
| 33         | DN           | 62         | VAL         |
| 33         | DN           | 67         | LEU         |
| 33         | DN           | 87         | LEU         |
| 33         | DN           | 99         | LEU         |
| 33         | DN           | 120        | LEU         |
| 33         | DN           | 131        | GLN         |
| 34         | DO           | 8          | LEU         |
| 34         | DO           | 9          | GLU         |
| 34         | DO           | 24         | VAL         |
| 34         | DO           | 28         | SER         |
| 34         | DO           | 49         | ARG         |
| 34         | DO           | 53         | LYS         |
| 34         | DO           | 69         | ILE         |
| 34         | DO           | 88         | ASN         |
| 34         | DO           | 94         | ARG         |
| 34         | DO           | 98         | VAL         |
| 35         | DP           | 2          | LYS         |
| 35         | DP           | 4          | SER         |
| 35         | DP           | 21         | ARG         |
| 35         | DP           | 45         | LEU         |
| 35         | DP           | 55         | ARG         |
| 35         | DP           | 56         | SER         |
| 35         | DP           | 96         | THR         |
| 35         | DP           | 99         | LEU         |
| 35         | DP           | 106        | LEU         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 35         | DP           | 112        | LEU         |
| 35         | DP           | 119        | GLU         |
| 35         | DP           | 147        | LEU         |
| 36         | DQ           | 1          | MET         |
| 36         | DQ           | 16         | ARG         |
| 36         | DQ           | 22         | LYS         |
| 36         | DQ           | 31         | ASP         |
| 36         | DQ           | 45         | GLN         |
| 36         | DQ           | 54         | MET         |
| 36         | DQ           | 55         | VAL         |
| 36         | DQ           | 56         | ARG         |
| 36         | DQ           | 59         | ARG         |
| 36         | DQ           | 60         | ARG         |
| 36         | DQ           | 85         | LYS         |
| 36         | DQ           | 110        | THR         |
| 36         | DQ           | 112        | GLU         |
| 37         | DR           | 1          | MET         |
| 37         | DR           | 18         | LEU         |
| 37         | DR           | 29         | LEU         |
| 37         | DR           | 33         | ARG         |
| 37         | DR           | 44         | LEU         |
| 37         | DR           | 65         | LEU         |
| 37         | DR           | 67         | LEU         |
| 37         | DR           | 75         | LEU         |
| 37         | DR           | 79         | LEU         |
| 37         | DR           | 86         | ARG         |
| 37         | DR           | 100        | LEU         |
| 38         | DS           | 3          | ARG         |
| 38         | DS           | 8          | GLU         |
| 38         | DS           | 12         | PHE         |
| 38         | DS           | 15         | ARG         |
| 38         | DS           | 19         | LYS         |
| 38         | DS           | 35         | ILE         |
| 38         | DS           | 44         | LYS         |
| 38         | DS           | 80         | LEU         |
| 38         | DS           | 83         | LYS         |
| 39         | DT           | 1          | MET         |
| 39         | DT           | 6          | LEU         |
| 39         | DT           | 8          | LYS         |
| 39         | DT           | 19         | LEU         |
| 39         | DT           | 34         | VAL         |
| 39         | DT           | 39         | ARG         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 39         | DT           | 53         | ARG         |
| 39         | DT           | 78         | LEU         |
| 39         | DT           | 89         | VAL         |
| 39         | DT           | 93         | ARG         |
| 39         | DT           | 96         | ARG         |
| 39         | DT           | 108        | ARG         |
| 39         | DT           | 113        | LYS         |
| 39         | DT           | 118        | ARG         |
| 39         | DT           | 125        | ARG         |
| 40         | DU           | 20         | LEU         |
| 40         | DU           | 36         | ARG         |
| 40         | DU           | 74         | LEU         |
| 40         | DU           | 92         | ARG         |
| 40         | DU           | 97         | ASP         |
| 40         | DU           | 104        | GLN         |
| 40         | DU           | 108        | GLU         |
| 40         | DU           | 112        | ARG         |
| 41         | DV           | 5          | VAL         |
| 41         | DV           | 62         | LEU         |
| 41         | DV           | 71         | LEU         |
| 41         | DV           | 79         | VAL         |
| 41         | DV           | 95         | LEU         |
| 42         | DW           | 4          | LYS         |
| 42         | DW           | 11         | ARG         |
| 42         | DW           | 15         | ARG         |
| 42         | DW           | 51         | LEU         |
| 42         | DW           | 78         | GLU         |
| 42         | DW           | 92         | ARG         |
| 43         | DX           | 23         | GLU         |
| 43         | DX           | 57         | LEU         |
| 44         | DY           | 8          | LYS         |
| 44         | DY           | 43         | ASN         |
| 44         | DY           | 85         | VAL         |
| 44         | DY           | 90         | LEU         |
| 45         | DZ           | 4          | ARG         |
| 45         | DZ           | 5          | LEU         |
| 45         | DZ           | 23         | LYS         |
| 45         | DZ           | 33         | LEU         |
| 45         | DZ           | 40         | ASP         |
| 45         | DZ           | 46         | LYS         |
| 45         | DZ           | 50         | GLN         |
| 45         | DZ           | 70         | LEU         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 45         | DZ           | 72         | ARG         |
| 45         | DZ           | 76         | LEU         |
| 45         | DZ           | 91         | LEU         |
| 45         | DZ           | 122        | ARG         |
| 45         | DZ           | 131        | ARG         |
| 45         | DZ           | 149        | SER         |
| 45         | DZ           | 150        | LEU         |
| 45         | DZ           | 154        | ASP         |
| 45         | DZ           | 162        | GLU         |
| 46         | D0           | 10         | THR         |
| 46         | D0           | 20         | ARG         |
| 46         | D0           | 55         | ARG         |
| 46         | D0           | 62         | LEU         |
| 47         | D1           | 32         | LYS         |
| 47         | D1           | 33         | LYS         |
| 47         | D1           | 35         | THR         |
| 47         | D1           | 46         | LEU         |
| 47         | D1           | 85         | LEU         |
| 47         | D1           | 95         | LEU         |
| 47         | D1           | 97         | LEU         |
| 48         | D2           | 1          | MET         |
| 48         | D2           | 14         | ARG         |
| 48         | D2           | 28         | LYS         |
| 48         | D2           | 30         | ARG         |
| 48         | D2           | 32         | LEU         |
| 48         | D2           | 45         | SER         |
| 48         | D2           | 53         | LEU         |
| 48         | D2           | 70         | GLN         |
| 49         | D3           | 8          | LEU         |
| 49         | D3           | 23         | LEU         |
| 49         | D3           | 24         | LYS         |
| 49         | D3           | 30         | ARG         |
| 50         | D4           | 8          | LYS         |
| 50         | D4           | 13         | ARG         |
| 50         | D4           | 21         | VAL         |
| 50         | D4           | 22         | ILE         |
| 50         | D4           | 24         | THR         |
| 50         | D4           | 34         | GLU         |
| 50         | D4           | 43         | TYR         |
| 50         | D4           | 44         | THR         |
| 50         | D4           | 58         | ARG         |
| 50         | D4           | 61         | ARG         |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 50  | D4    | 63  | TYR  |
| 50  | D4    | 68  | ARG  |
| 50  | D4    | 69  | LYS  |
| 51  | D5    | 6   | VAL  |
| 51  | D5    | 40  | LYS  |
| 51  | D5    | 55  | ARG  |
| 51  | D5    | 59  | GLU  |
| 52  | D6    | 6   | ARG  |
| 52  | D6    | 25  | LYS  |
| 52  | D6    | 28  | ARG  |
| 52  | D6    | 38  | LYS  |
| 52  | D6    | 48  | VAL  |
| 53  | D7    | 10  | ARG  |
| 53  | D7    | 41  | ARG  |
| 53  | D7    | 43  | THR  |
| 53  | D7    | 48  | LYS  |
| 54  | D8    | 31  | HIS  |
| 54  | D8    | 32  | LEU  |
| 54  | D8    | 34  | TRP  |
| 54  | D8    | 37  | SER  |
| 55  | D9    | 4   | ARG  |
| 55  | D9    | 7   | VAL  |
| 55  | D9    | 12  | ASP  |
| 55  | D9    | 26  | ILE  |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (128) such sidechains are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 3   | AC    | 6   | HIS  |
| 3   | AC    | 28  | GLN  |
| 3   | AC    | 37  | GLN  |
| 3   | AC    | 104 | GLN  |
| 3   | AC    | 118 | GLN  |
| 3   | AC    | 136 | GLN  |
| 3   | AC    | 162 | GLN  |
| 3   | AC    | 181 | ASN  |
| 4   | AD    | 42  | GLN  |
| 4   | AD    | 45  | GLN  |
| 4   | AD    | 77  | ASN  |
| 4   | AD    | 123 | HIS  |
| 4   | AD    | 129 | ASN  |
| 4   | AD    | 201 | GLN  |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 6          | AF           | 100        | ASN         |
| 7          | AG           | 28         | ASN         |
| 7          | AG           | 148        | ASN         |
| 9          | AI           | 31         | GLN         |
| 9          | AI           | 73         | GLN         |
| 9          | AI           | 89         | ASN         |
| 9          | AI           | 124        | GLN         |
| 10         | AJ           | 56         | HIS         |
| 11         | AK           | 93         | GLN         |
| 11         | AK           | 104        | GLN         |
| 11         | AK           | 116        | HIS         |
| 12         | AL           | 78         | GLN         |
| 15         | AO           | 28         | GLN         |
| 16         | AP           | 76         | GLN         |
| 19         | AS           | 65         | ASN         |
| 19         | AS           | 83         | HIS         |
| 20         | AT           | 9          | ASN         |
| 20         | AT           | 45         | GLN         |
| 20         | AT           | 90         | GLN         |
| 27         | BD           | 115        | GLN         |
| 27         | BD           | 253        | GLN         |
| 29         | BF           | 69         | HIS         |
| 29         | BF           | 75         | HIS         |
| 29         | BF           | 169        | ASN         |
| 29         | BF           | 203        | GLN         |
| 30         | BG           | 27         | ASN         |
| 30         | BG           | 40         | ASN         |
| 30         | BG           | 138        | GLN         |
| 32         | BI           | 43         | ASN         |
| 33         | BN           | 133        | GLN         |
| 35         | BP           | 38         | GLN         |
| 36         | BQ           | 12         | GLN         |
| 39         | BT           | 43         | GLN         |
| 39         | BT           | 123        | GLN         |
| 40         | BU           | 94         | ASN         |
| 43         | BX           | 31         | HIS         |
| 44         | BY           | 6          | HIS         |
| 44         | BY           | 43         | ASN         |
| 44         | BY           | 92         | ASN         |
| 45         | BZ           | 73         | GLN         |
| 45         | BZ           | 151        | HIS         |
| 48         | B2           | 9          | GLN         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 48         | B2           | 70         | GLN         |
| 49         | B3           | 32         | GLN         |
| 50         | B4           | 46         | GLN         |
| 52         | B6           | 20         | ASN         |
| 2          | CB           | 19         | HIS         |
| 2          | CB           | 40         | HIS         |
| 2          | CB           | 76         | GLN         |
| 2          | CB           | 78         | GLN         |
| 2          | CB           | 212        | GLN         |
| 2          | CB           | 224        | GLN         |
| 3          | CC           | 28         | GLN         |
| 3          | CC           | 102        | ASN         |
| 3          | CC           | 136        | GLN         |
| 3          | CC           | 162        | GLN         |
| 4          | CD           | 45         | GLN         |
| 4          | CD           | 77         | ASN         |
| 4          | CD           | 123        | HIS         |
| 4          | CD           | 125        | HIS         |
| 4          | CD           | 129        | ASN         |
| 4          | CD           | 161        | ASN         |
| 5          | CE           | 38         | GLN         |
| 5          | CE           | 141        | GLN         |
| 6          | CF           | 7          | ASN         |
| 7          | CG           | 28         | ASN         |
| 7          | CG           | 148        | ASN         |
| 7          | CG           | 153        | HIS         |
| 8          | CH           | 15         | ASN         |
| 9          | CI           | 23         | ASN         |
| 9          | CI           | 38         | GLN         |
| 9          | CI           | 58         | HIS         |
| 9          | CI           | 87         | GLN         |
| 9          | CI           | 89         | ASN         |
| 10         | CJ           | 62         | HIS         |
| 10         | CJ           | 69         | ASN         |
| 11         | CK           | 22         | HIS         |
| 12         | CL           | 78         | GLN         |
| 15         | CO           | 28         | GLN         |
| 15         | CO           | 62         | GLN         |
| 16         | CP           | 14         | ASN         |
| 19         | CS           | 23         | ASN         |
| 19         | CS           | 56         | GLN         |
| 19         | CS           | 57         | HIS         |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 19  | CS    | 69  | HIS  |
| 20  | CT    | 9   | ASN  |
| 27  | DD    | 96  | HIS  |
| 27  | DD    | 115 | GLN  |
| 27  | DD    | 116 | GLN  |
| 27  | DD    | 164 | GLN  |
| 27  | DD    | 166 | GLN  |
| 27  | DD    | 253 | GLN  |
| 29  | DF    | 69  | HIS  |
| 29  | DF    | 75  | HIS  |
| 29  | DF    | 169 | ASN  |
| 29  | DF    | 203 | GLN  |
| 30  | DG    | 41  | GLN  |
| 30  | DG    | 132 | ASN  |
| 30  | DG    | 138 | GLN  |
| 32  | DI    | 43  | ASN  |
| 34  | DO    | 89  | ASN  |
| 35  | DP    | 38  | GLN  |
| 36  | DQ    | 141 | GLN  |
| 38  | DS    | 68  | GLN  |
| 39  | DT    | 123 | GLN  |
| 41  | DV    | 64  | HIS  |
| 43  | DX    | 31  | HIS  |
| 44  | DY    | 43  | ASN  |
| 45  | DZ    | 50  | GLN  |
| 45  | DZ    | 55  | HIS  |
| 45  | DZ    | 151 | HIS  |
| 47  | D1    | 19  | GLN  |
| 55  | D9    | 20  | HIS  |
| 55  | D9    | 36  | GLN  |

### 5.3.3 RNA

| Mol | Chain | Analysed        | Backbone Outliers | Pucker Outliers |
|-----|-------|-----------------|-------------------|-----------------|
| 1   | AA    | 1495/1521 (98%) | 387 (25%)         | 22 (1%)         |
| 1   | CA    | 1501/1521 (98%) | 391 (26%)         | 24 (1%)         |
| 22  | AV    | 12/24 (50%)     | 4 (33%)           | 0               |
| 22  | CV    | 11/24 (45%)     | 4 (36%)           | 0               |
| 23  | AW    | 0/2             | -                 | -               |
| 23  | CW    | 0/2             | -                 | -               |
| 24  | AX    | 74/77 (96%)     | 25 (33%)          | 1 (1%)          |

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| Mol | Chain | Analysed        | Backbone Outliers | Pucker Outliers |
|-----|-------|-----------------|-------------------|-----------------|
| 24  | CX    | 74/77 (96%)     | 26 (35%)          | 1 (1%)          |
| 25  | BA    | 2811/2915 (96%) | 537 (19%)         | 24 (0%)         |
| 25  | DA    | 2791/2915 (95%) | 622 (22%)         | 29 (1%)         |
| 26  | BB    | 120/121 (99%)   | 19 (15%)          | 3 (2%)          |
| 26  | DB    | 119/121 (98%)   | 36 (30%)          | 0               |
| All | All   | 9008/9320 (96%) | 2051 (22%)        | 104 (1%)        |

All (2051) RNA backbone outliers are listed below:

| Mol | Chain | Res    | Type |
|-----|-------|--------|------|
| 1   | AA    | 5      | U    |
| 1   | AA    | 6      | G    |
| 1   | AA    | 7      | G    |
| 1   | AA    | 9      | G    |
| 1   | AA    | 22     | G    |
| 1   | AA    | 29     | G    |
| 1   | AA    | 32     | A    |
| 1   | AA    | 39     | G    |
| 1   | AA    | 41     | G    |
| 1   | AA    | 47     | C    |
| 1   | AA    | 48     | C    |
| 1   | AA    | 51     | A    |
| 1   | AA    | 59     | A    |
| 1   | AA    | 61     | G    |
| 1   | AA    | 72     | C    |
| 1   | AA    | 73     | G    |
| 1   | AA    | 78     | G    |
| 1   | AA    | 79     | G    |
| 1   | AA    | 91     | C    |
| 1   | AA    | 92     | C    |
| 1   | AA    | 96     | U    |
| 1   | AA    | 97     | G    |
| 1   | AA    | 98     | G    |
| 1   | AA    | 116    | A    |
| 1   | AA    | 120    | A    |
| 1   | AA    | 121    | C    |
| 1   | AA    | 129    | U    |
| 1   | AA    | 129(A) | G    |
| 1   | AA    | 131    | C    |
| 1   | AA    | 138    | G    |
| 1   | AA    | 143    | A    |
| 1   | AA    | 146    | G    |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | AA           | 152        | A           |
| 1          | AA           | 157        | G           |
| 1          | AA           | 163        | C           |
| 1          | AA           | 172        | A           |
| 1          | AA           | 173        | U           |
| 1          | AA           | 174        | C           |
| 1          | AA           | 180        | U           |
| 1          | AA           | 182        | U           |
| 1          | AA           | 189(A)     | C           |
| 1          | AA           | 189(D)     | C           |
| 1          | AA           | 189(F)     | U           |
| 1          | AA           | 189(G)     | G           |
| 1          | AA           | 189(H)     | G           |
| 1          | AA           | 189(I)     | G           |
| 1          | AA           | 189(K)     | U           |
| 1          | AA           | 189(L)     | G           |
| 1          | AA           | 195        | A           |
| 1          | AA           | 197        | A           |
| 1          | AA           | 203        | U           |
| 1          | AA           | 204        | U           |
| 1          | AA           | 216        | G           |
| 1          | AA           | 243        | A           |
| 1          | AA           | 247        | G           |
| 1          | AA           | 251        | G           |
| 1          | AA           | 264        | U           |
| 1          | AA           | 266        | G           |
| 1          | AA           | 267        | C           |
| 1          | AA           | 276        | G           |
| 1          | AA           | 289        | G           |
| 1          | AA           | 306        | G           |
| 1          | AA           | 321        | A           |
| 1          | AA           | 328        | C           |
| 1          | AA           | 332        | G           |
| 1          | AA           | 342        | C           |
| 1          | AA           | 346        | G           |
| 1          | AA           | 347        | G           |
| 1          | AA           | 348        | G           |
| 1          | AA           | 352        | C           |
| 1          | AA           | 353        | A           |
| 1          | AA           | 354        | G           |
| 1          | AA           | 355        | C           |
| 1          | AA           | 367        | U           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | AA           | 372        | C           |
| 1          | AA           | 373        | A           |
| 1          | AA           | 374        | A           |
| 1          | AA           | 382        | A           |
| 1          | AA           | 383        | A           |
| 1          | AA           | 384        | G           |
| 1          | AA           | 397        | A           |
| 1          | AA           | 398        | C           |
| 1          | AA           | 403        | C           |
| 1          | AA           | 405        | U           |
| 1          | AA           | 406        | G           |
| 1          | AA           | 409        | G           |
| 1          | AA           | 411        | A           |
| 1          | AA           | 412        | A           |
| 1          | AA           | 413        | G           |
| 1          | AA           | 414        | A           |
| 1          | AA           | 421        | U           |
| 1          | AA           | 424        | G           |
| 1          | AA           | 426        | G           |
| 1          | AA           | 429        | U           |
| 1          | AA           | 430        | A           |
| 1          | AA           | 434        | U           |
| 1          | AA           | 435        | C           |
| 1          | AA           | 436        | C           |
| 1          | AA           | 439        | A           |
| 1          | AA           | 441        | A           |
| 1          | AA           | 442        | C           |
| 1          | AA           | 443        | C           |
| 1          | AA           | 452        | A           |
| 1          | AA           | 453        | A           |
| 1          | AA           | 461        | A           |
| 1          | AA           | 470        | C           |
| 1          | AA           | 471        | G           |
| 1          | AA           | 483        | C           |
| 1          | AA           | 485        | G           |
| 1          | AA           | 491        | G           |
| 1          | AA           | 495        | A           |
| 1          | AA           | 496        | A           |
| 1          | AA           | 498        | U           |
| 1          | AA           | 504        | C           |
| 1          | AA           | 505        | G           |
| 1          | AA           | 510        | A           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | AA           | 511        | C           |
| 1          | AA           | 513        | C           |
| 1          | AA           | 518        | C           |
| 1          | AA           | 520        | A           |
| 1          | AA           | 521        | G           |
| 1          | AA           | 524        | G           |
| 1          | AA           | 527        | G           |
| 1          | AA           | 531        | U           |
| 1          | AA           | 532        | A           |
| 1          | AA           | 533        | A           |
| 1          | AA           | 544        | G           |
| 1          | AA           | 547        | A           |
| 1          | AA           | 559        | A           |
| 1          | AA           | 560        | U           |
| 1          | AA           | 561        | U           |
| 1          | AA           | 567        | G           |
| 1          | AA           | 571        | U           |
| 1          | AA           | 572        | A           |
| 1          | AA           | 573        | A           |
| 1          | AA           | 575        | G           |
| 1          | AA           | 576        | G           |
| 1          | AA           | 577        | G           |
| 1          | AA           | 581        | G           |
| 1          | AA           | 582        | U           |
| 1          | AA           | 587        | G           |
| 1          | AA           | 590        | C           |
| 1          | AA           | 596        | C           |
| 1          | AA           | 600        | C           |
| 1          | AA           | 623        | C           |
| 1          | AA           | 625        | G           |
| 1          | AA           | 627        | G           |
| 1          | AA           | 629        | G           |
| 1          | AA           | 630        | G           |
| 1          | AA           | 632        | A           |
| 1          | AA           | 633        | G           |
| 1          | AA           | 653        | A           |
| 1          | AA           | 661        | G           |
| 1          | AA           | 665        | A           |
| 1          | AA           | 671        | G           |
| 1          | AA           | 680        | C           |
| 1          | AA           | 687        | A           |
| 1          | AA           | 688        | G           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | AA           | 692        | U           |
| 1          | AA           | 693        | G           |
| 1          | AA           | 695        | A           |
| 1          | AA           | 712        | A           |
| 1          | AA           | 723        | U           |
| 1          | AA           | 724        | G           |
| 1          | AA           | 730        | G           |
| 1          | AA           | 731        | G           |
| 1          | AA           | 733        | A           |
| 1          | AA           | 748        | C           |
| 1          | AA           | 749        | C           |
| 1          | AA           | 751        | U           |
| 1          | AA           | 754        | C           |
| 1          | AA           | 755        | G           |
| 1          | AA           | 759        | A           |
| 1          | AA           | 760        | G           |
| 1          | AA           | 764        | C           |
| 1          | AA           | 766        | A           |
| 1          | AA           | 774        | G           |
| 1          | AA           | 777        | A           |
| 1          | AA           | 787        | A           |
| 1          | AA           | 792        | A           |
| 1          | AA           | 793        | U           |
| 1          | AA           | 794        | A           |
| 1          | AA           | 798        | G           |
| 1          | AA           | 815        | A           |
| 1          | AA           | 816        | A           |
| 1          | AA           | 817        | C           |
| 1          | AA           | 821        | G           |
| 1          | AA           | 827        | U           |
| 1          | AA           | 828        | A           |
| 1          | AA           | 836        | G           |
| 1          | AA           | 840        | C           |
| 1          | AA           | 841        | U           |
| 1          | AA           | 848        | C           |
| 1          | AA           | 851        | G           |
| 1          | AA           | 853        | G           |
| 1          | AA           | 859        | A           |
| 1          | AA           | 872        | A           |
| 1          | AA           | 884        | U           |
| 1          | AA           | 887        | G           |
| 1          | AA           | 902        | G           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | AA           | 914        | A           |
| 1          | AA           | 919        | A           |
| 1          | AA           | 920        | U           |
| 1          | AA           | 925        | G           |
| 1          | AA           | 926        | G           |
| 1          | AA           | 927        | G           |
| 1          | AA           | 932        | C           |
| 1          | AA           | 934        | C           |
| 1          | AA           | 936        | C           |
| 1          | AA           | 942        | G           |
| 1          | AA           | 954        | G           |
| 1          | AA           | 958        | A           |
| 1          | AA           | 960        | U           |
| 1          | AA           | 961        | U           |
| 1          | AA           | 966        | G           |
| 1          | AA           | 968        | A           |
| 1          | AA           | 969        | A           |
| 1          | AA           | 971        | G           |
| 1          | AA           | 974        | A           |
| 1          | AA           | 975        | A           |
| 1          | AA           | 976        | G           |
| 1          | AA           | 977        | A           |
| 1          | AA           | 983        | A           |
| 1          | AA           | 992        | U           |
| 1          | AA           | 993        | G           |
| 1          | AA           | 996        | A           |
| 1          | AA           | 1001       | A           |
| 1          | AA           | 1002       | G           |
| 1          | AA           | 1003       | G           |
| 1          | AA           | 1004       | A           |
| 1          | AA           | 1005       | A           |
| 1          | AA           | 1008       | C           |
| 1          | AA           | 1009       | G           |
| 1          | AA           | 1010       | G           |
| 1          | AA           | 1016       | A           |
| 1          | AA           | 1020       | U           |
| 1          | AA           | 1021       | G           |
| 1          | AA           | 1022       | G           |
| 1          | AA           | 1024       | G           |
| 1          | AA           | 1025       | U           |
| 1          | AA           | 1026       | G           |
| 1          | AA           | 1027       | C           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | AA           | 1028       | C           |
| 1          | AA           | 1029       | C           |
| 1          | AA           | 1030       | C           |
| 1          | AA           | 1030(A)    | G           |
| 1          | AA           | 1030(C)    | G           |
| 1          | AA           | 1030(D)    | A           |
| 1          | AA           | 1032       | G           |
| 1          | AA           | 1033       | G           |
| 1          | AA           | 1037       | C           |
| 1          | AA           | 1044       | A           |
| 1          | AA           | 1045       | C           |
| 1          | AA           | 1053       | G           |
| 1          | AA           | 1054       | C           |
| 1          | AA           | 1061       | G           |
| 1          | AA           | 1065       | U           |
| 1          | AA           | 1066       | C           |
| 1          | AA           | 1068       | G           |
| 1          | AA           | 1076       | C           |
| 1          | AA           | 1077       | G           |
| 1          | AA           | 1081       | G           |
| 1          | AA           | 1088       | G           |
| 1          | AA           | 1094       | G           |
| 1          | AA           | 1095       | U           |
| 1          | AA           | 1096       | C           |
| 1          | AA           | 1101       | A           |
| 1          | AA           | 1104       | G           |
| 1          | AA           | 1108       | G           |
| 1          | AA           | 1112       | C           |
| 1          | AA           | 1113       | C           |
| 1          | AA           | 1122       | U           |
| 1          | AA           | 1124       | G           |
| 1          | AA           | 1125       | U           |
| 1          | AA           | 1126       | U           |
| 1          | AA           | 1130       | A           |
| 1          | AA           | 1135       | U           |
| 1          | AA           | 1136       | U           |
| 1          | AA           | 1137       | C           |
| 1          | AA           | 1138       | G           |
| 1          | AA           | 1139       | G           |
| 1          | AA           | 1140       | C           |
| 1          | AA           | 1146       | A           |
| 1          | AA           | 1152       | A           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | AA           | 1157       | A           |
| 1          | AA           | 1159       | U           |
| 1          | AA           | 1163       | C           |
| 1          | AA           | 1166       | G           |
| 1          | AA           | 1168       | A           |
| 1          | AA           | 1169       | A           |
| 1          | AA           | 1179       | A           |
| 1          | AA           | 1180       | A           |
| 1          | AA           | 1181       | G           |
| 1          | AA           | 1183       | A           |
| 1          | AA           | 1184       | G           |
| 1          | AA           | 1191       | A           |
| 1          | AA           | 1194       | U           |
| 1          | AA           | 1196       | U           |
| 1          | AA           | 1197       | G           |
| 1          | AA           | 1199       | U           |
| 1          | AA           | 1200       | C           |
| 1          | AA           | 1202       | G           |
| 1          | AA           | 1206       | G           |
| 1          | AA           | 1212       | U           |
| 1          | AA           | 1213       | A           |
| 1          | AA           | 1214       | C           |
| 1          | AA           | 1217       | C           |
| 1          | AA           | 1224       | G           |
| 1          | AA           | 1225       | A           |
| 1          | AA           | 1227       | A           |
| 1          | AA           | 1228       | C           |
| 1          | AA           | 1238       | A           |
| 1          | AA           | 1255       | G           |
| 1          | AA           | 1256       | A           |
| 1          | AA           | 1257       | U           |
| 1          | AA           | 1258       | G           |
| 1          | AA           | 1260       | C           |
| 1          | AA           | 1262       | C           |
| 1          | AA           | 1268       | A           |
| 1          | AA           | 1270       | C           |
| 1          | AA           | 1273       | G           |
| 1          | AA           | 1278       | U           |
| 1          | AA           | 1279       | A           |
| 1          | AA           | 1280       | A           |
| 1          | AA           | 1282       | C           |
| 1          | AA           | 1284       | C           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | AA           | 1286       | A           |
| 1          | AA           | 1287       | A           |
| 1          | AA           | 1289       | A           |
| 1          | AA           | 1290       | G           |
| 1          | AA           | 1296       | C           |
| 1          | AA           | 1297       | C           |
| 1          | AA           | 1299       | A           |
| 1          | AA           | 1300       | G           |
| 1          | AA           | 1302       | U           |
| 1          | AA           | 1305       | G           |
| 1          | AA           | 1317       | C           |
| 1          | AA           | 1319       | A           |
| 1          | AA           | 1320       | C           |
| 1          | AA           | 1322       | C           |
| 1          | AA           | 1338       | G           |
| 1          | AA           | 1340       | A           |
| 1          | AA           | 1346       | A           |
| 1          | AA           | 1347       | G           |
| 1          | AA           | 1353       | G           |
| 1          | AA           | 1354       | C           |
| 1          | AA           | 1355       | G           |
| 1          | AA           | 1358       | U           |
| 1          | AA           | 1360       | A           |
| 1          | AA           | 1363       | C           |
| 1          | AA           | 1368       | G           |
| 1          | AA           | 1370       | G           |
| 1          | AA           | 1372       | U           |
| 1          | AA           | 1377       | A           |
| 1          | AA           | 1379       | G           |
| 1          | AA           | 1383       | C           |
| 1          | AA           | 1397       | C           |
| 1          | AA           | 1398       | A           |
| 1          | AA           | 1400       | C           |
| 1          | AA           | 1402       | C           |
| 1          | AA           | 1406       | U           |
| 1          | AA           | 1409       | C           |
| 1          | AA           | 1419       | G           |
| 1          | AA           | 1425       | U           |
| 1          | AA           | 1442       | G           |
| 1          | AA           | 1442(A)    | G           |
| 1          | AA           | 1442(B)    | A           |
| 1          | AA           | 1447       | A           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | AA           | 1452       | C           |
| 1          | AA           | 1457       | G           |
| 1          | AA           | 1459       | C           |
| 1          | AA           | 1487       | G           |
| 1          | AA           | 1489       | G           |
| 1          | AA           | 1490       | C           |
| 1          | AA           | 1492       | A           |
| 1          | AA           | 1493       | A           |
| 1          | AA           | 1494       | G           |
| 1          | AA           | 1497       | G           |
| 1          | AA           | 1503       | A           |
| 1          | AA           | 1504       | G           |
| 1          | AA           | 1506       | U           |
| 1          | AA           | 1517       | G           |
| 1          | AA           | 1520       | G           |
| 1          | AA           | 1529       | G           |
| 1          | AA           | 1530       | G           |
| 1          | AA           | 1531       | A           |
| 1          | AA           | 1532       | U           |
| 22         | AV           | 14         | A           |
| 22         | AV           | 15         | A           |
| 22         | AV           | 19         | U           |
| 22         | AV           | 24         | A           |
| 24         | AX           | 6          | G           |
| 24         | AX           | 7          | G           |
| 24         | AX           | 9          | G           |
| 24         | AX           | 16         | C           |
| 24         | AX           | 17         | C           |
| 24         | AX           | 19         | G           |
| 24         | AX           | 20         | U           |
| 24         | AX           | 21         | A           |
| 24         | AX           | 25         | C           |
| 24         | AX           | 30         | G           |
| 24         | AX           | 31         | G           |
| 24         | AX           | 34         | C           |
| 24         | AX           | 42         | G           |
| 24         | AX           | 47         | U           |
| 24         | AX           | 48         | C           |
| 24         | AX           | 52         | G           |
| 24         | AX           | 56         | C           |
| 24         | AX           | 58         | A           |
| 24         | AX           | 59         | A           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 24         | AX           | 60         | U           |
| 24         | AX           | 61         | C           |
| 24         | AX           | 64         | G           |
| 24         | AX           | 65         | C           |
| 24         | AX           | 67         | C           |
| 24         | AX           | 68         | C           |
| 25         | BA           | 10         | G           |
| 25         | BA           | 12         | U           |
| 25         | BA           | 27         | G           |
| 25         | BA           | 34         | C           |
| 25         | BA           | 37         | C           |
| 25         | BA           | 45         | C           |
| 25         | BA           | 50         | U           |
| 25         | BA           | 55         | G           |
| 25         | BA           | 61         | G           |
| 25         | BA           | 71         | A           |
| 25         | BA           | 72         | U           |
| 25         | BA           | 74         | A           |
| 25         | BA           | 75         | G           |
| 25         | BA           | 96         | G           |
| 25         | BA           | 100        | G           |
| 25         | BA           | 102        | G           |
| 25         | BA           | 118        | A           |
| 25         | BA           | 119        | A           |
| 25         | BA           | 120        | U           |
| 25         | BA           | 121        | G           |
| 25         | BA           | 125        | G           |
| 25         | BA           | 140        | G           |
| 25         | BA           | 154        | G           |
| 25         | BA           | 154(A)     | C           |
| 25         | BA           | 172        | C           |
| 25         | BA           | 175        | G           |
| 25         | BA           | 177        | G           |
| 25         | BA           | 182        | A           |
| 25         | BA           | 188        | G           |
| 25         | BA           | 196        | A           |
| 25         | BA           | 199        | A           |
| 25         | BA           | 205        | G           |
| 25         | BA           | 215        | G           |
| 25         | BA           | 216        | A           |
| 25         | BA           | 221        | A           |
| 25         | BA           | 222        | A           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 25         | BA           | 223        | A           |
| 25         | BA           | 225        | A           |
| 25         | BA           | 226        | G           |
| 25         | BA           | 229        | A           |
| 25         | BA           | 233        | A           |
| 25         | BA           | 248        | G           |
| 25         | BA           | 271(E)     | U           |
| 25         | BA           | 271(I)     | G           |
| 25         | BA           | 271(K)     | U           |
| 25         | BA           | 271(L)     | U           |
| 25         | BA           | 271(M)     | G           |
| 25         | BA           | 271(N)     | U           |
| 25         | BA           | 271(O)     | C           |
| 25         | BA           | 271(S)     | G           |
| 25         | BA           | 272(A)     | U           |
| 25         | BA           | 272(B)     | G           |
| 25         | BA           | 272(G)     | C           |
| 25         | BA           | 272(I)     | U           |
| 25         | BA           | 279        | C           |
| 25         | BA           | 282        | A           |
| 25         | BA           | 311        | A           |
| 25         | BA           | 324        | A           |
| 25         | BA           | 329        | G           |
| 25         | BA           | 330        | A           |
| 25         | BA           | 333        | G           |
| 25         | BA           | 336        | C           |
| 25         | BA           | 352        | G           |
| 25         | BA           | 353        | G           |
| 25         | BA           | 357        | A           |
| 25         | BA           | 360        | G           |
| 25         | BA           | 363        | G           |
| 25         | BA           | 363(B)     | G           |
| 25         | BA           | 363(F)     | A           |
| 25         | BA           | 372        | G           |
| 25         | BA           | 383        | U           |
| 25         | BA           | 386        | G           |
| 25         | BA           | 391        | G           |
| 25         | BA           | 396        | G           |
| 25         | BA           | 399        | G           |
| 25         | BA           | 407        | G           |
| 25         | BA           | 411        | G           |
| 25         | BA           | 412        | A           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 25         | BA           | 415        | A           |
| 25         | BA           | 428        | A           |
| 25         | BA           | 443        | A           |
| 25         | BA           | 444        | C           |
| 25         | BA           | 448        | U           |
| 25         | BA           | 449        | A           |
| 25         | BA           | 451        | C           |
| 25         | BA           | 457        | A           |
| 25         | BA           | 470        | A           |
| 25         | BA           | 481        | G           |
| 25         | BA           | 494        | G           |
| 25         | BA           | 504        | U           |
| 25         | BA           | 505        | A           |
| 25         | BA           | 508        | G           |
| 25         | BA           | 509        | C           |
| 25         | BA           | 528        | A           |
| 25         | BA           | 530        | G           |
| 25         | BA           | 531        | C           |
| 25         | BA           | 532        | A           |
| 25         | BA           | 533        | G           |
| 25         | BA           | 545        | G           |
| 25         | BA           | 549        | G           |
| 25         | BA           | 555        | U           |
| 25         | BA           | 563        | G           |
| 25         | BA           | 573        | G           |
| 25         | BA           | 574        | C           |
| 25         | BA           | 575        | A           |
| 25         | BA           | 593        | G           |
| 25         | BA           | 602        | G           |
| 25         | BA           | 603        | A           |
| 25         | BA           | 604        | G           |
| 25         | BA           | 607        | U           |
| 25         | BA           | 610        | G           |
| 25         | BA           | 614(A)     | U           |
| 25         | BA           | 614(B)     | G           |
| 25         | BA           | 615        | G           |
| 25         | BA           | 616        | G           |
| 25         | BA           | 627        | A           |
| 25         | BA           | 637        | A           |
| 25         | BA           | 645        | C           |
| 25         | BA           | 646        | A           |
| 25         | BA           | 652(E)     | G           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 25         | BA           | 652(F)     | G           |
| 25         | BA           | 652(T)     | C           |
| 25         | BA           | 652(U)     | G           |
| 25         | BA           | 668        | G           |
| 25         | BA           | 669        | G           |
| 25         | BA           | 686        | G           |
| 25         | BA           | 717        | G           |
| 25         | BA           | 722        | A           |
| 25         | BA           | 730        | C           |
| 25         | BA           | 740        | U           |
| 25         | BA           | 764        | A           |
| 25         | BA           | 775        | G           |
| 25         | BA           | 776        | G           |
| 25         | BA           | 782        | A           |
| 25         | BA           | 783        | A           |
| 25         | BA           | 784        | A           |
| 25         | BA           | 785        | G           |
| 25         | BA           | 789        | A           |
| 25         | BA           | 792        | G           |
| 25         | BA           | 793        | A           |
| 25         | BA           | 805        | G           |
| 25         | BA           | 812        | C           |
| 25         | BA           | 819        | A           |
| 25         | BA           | 827        | U           |
| 25         | BA           | 830        | G           |
| 25         | BA           | 866        | A           |
| 25         | BA           | 877        | U           |
| 25         | BA           | 879        | G           |
| 25         | BA           | 880        | G           |
| 25         | BA           | 881        | G           |
| 25         | BA           | 882        | G           |
| 25         | BA           | 884        | C           |
| 25         | BA           | 885        | C           |
| 25         | BA           | 886        | C           |
| 25         | BA           | 887        | A           |
| 25         | BA           | 888        | C           |
| 25         | BA           | 889        | C           |
| 25         | BA           | 890        | A           |
| 25         | BA           | 892        | G           |
| 25         | BA           | 896        | A           |
| 25         | BA           | 897        | C           |
| 25         | BA           | 907        | U           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 25         | BA           | 910        | A           |
| 25         | BA           | 932        | G           |
| 25         | BA           | 941        | A           |
| 25         | BA           | 945        | A           |
| 25         | BA           | 946        | G           |
| 25         | BA           | 958        | U           |
| 25         | BA           | 959        | A           |
| 25         | BA           | 961        | C           |
| 25         | BA           | 974        | G           |
| 25         | BA           | 975        | C           |
| 25         | BA           | 983        | A           |
| 25         | BA           | 996        | A           |
| 25         | BA           | 1012       | U           |
| 25         | BA           | 1013       | C           |
| 25         | BA           | 1020       | A           |
| 25         | BA           | 1022       | G           |
| 25         | BA           | 1025       | G           |
| 25         | BA           | 1026       | U           |
| 25         | BA           | 1033       | U           |
| 25         | BA           | 1038       | C           |
| 25         | BA           | 1039       | G           |
| 25         | BA           | 1041       | C           |
| 25         | BA           | 1044       | G           |
| 25         | BA           | 1045       | A           |
| 25         | BA           | 1046       | A           |
| 25         | BA           | 1047       | G           |
| 25         | BA           | 1048       | A           |
| 25         | BA           | 1051       | G           |
| 25         | BA           | 1107       | G           |
| 25         | BA           | 1108       | U           |
| 25         | BA           | 1109       | C           |
| 25         | BA           | 1110       | G           |
| 25         | BA           | 1112       | G           |
| 25         | BA           | 1119       | C           |
| 25         | BA           | 1129       | A           |
| 25         | BA           | 1130       | U           |
| 25         | BA           | 1132       | A           |
| 25         | BA           | 1135       | C           |
| 25         | BA           | 1136       | G           |
| 25         | BA           | 1138       | G           |
| 25         | BA           | 1139       | G           |
| 25         | BA           | 1170       | G           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 25         | BA           | 1171       | G           |
| 25         | BA           | 1173       | G           |
| 25         | BA           | 1174       | A           |
| 25         | BA           | 1175       | U           |
| 25         | BA           | 1176       | G           |
| 25         | BA           | 1177       | A           |
| 25         | BA           | 1210       | A           |
| 25         | BA           | 1211       | U           |
| 25         | BA           | 1218       | C           |
| 25         | BA           | 1236       | G           |
| 25         | BA           | 1244       | G           |
| 25         | BA           | 1248       | G           |
| 25         | BA           | 1250       | G           |
| 25         | BA           | 1253       | A           |
| 25         | BA           | 1256       | G           |
| 25         | BA           | 1271       | G           |
| 25         | BA           | 1272       | A           |
| 25         | BA           | 1273       | U           |
| 25         | BA           | 1300       | U           |
| 25         | BA           | 1301       | A           |
| 25         | BA           | 1305       | C           |
| 25         | BA           | 1308       | A           |
| 25         | BA           | 1311       | G           |
| 25         | BA           | 1314       | C           |
| 25         | BA           | 1319       | G           |
| 25         | BA           | 1320       | C           |
| 25         | BA           | 1334       | G           |
| 25         | BA           | 1342       | A           |
| 25         | BA           | 1345       | C           |
| 25         | BA           | 1352       | U           |
| 25         | BA           | 1359       | A           |
| 25         | BA           | 1360       | A           |
| 25         | BA           | 1365       | A           |
| 25         | BA           | 1384       | A           |
| 25         | BA           | 1385       | G           |
| 25         | BA           | 1386       | C           |
| 25         | BA           | 1395       | A           |
| 25         | BA           | 1416       | G           |
| 25         | BA           | 1417       | C           |
| 25         | BA           | 1420       | U           |
| 25         | BA           | 1421       | G           |
| 25         | BA           | 1422       | G           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 25         | BA           | 1428       | C           |
| 25         | BA           | 1429       | G           |
| 25         | BA           | 1445       | A           |
| 25         | BA           | 1449       | A           |
| 25         | BA           | 1450       | G           |
| 25         | BA           | 1455       | G           |
| 25         | BA           | 1459       | G           |
| 25         | BA           | 1467       | C           |
| 25         | BA           | 1471       | A           |
| 25         | BA           | 1478       | G           |
| 25         | BA           | 1482       | G           |
| 25         | BA           | 1486       | A           |
| 25         | BA           | 1490       | A           |
| 25         | BA           | 1493       | C           |
| 25         | BA           | 1504       | C           |
| 25         | BA           | 1507       | A           |
| 25         | BA           | 1508       | A           |
| 25         | BA           | 1509       | C           |
| 25         | BA           | 1509(A)    | A           |
| 25         | BA           | 1525       | G           |
| 25         | BA           | 1527       | G           |
| 25         | BA           | 1531       | C           |
| 25         | BA           | 1532       | C           |
| 25         | BA           | 1542       | A           |
| 25         | BA           | 1543       | C           |
| 25         | BA           | 1546       | C           |
| 25         | BA           | 1558       | A           |
| 25         | BA           | 1566       | A           |
| 25         | BA           | 1569       | A           |
| 25         | BA           | 1578       | U           |
| 25         | BA           | 1580       | A           |
| 25         | BA           | 1581       | G           |
| 25         | BA           | 1584       | C           |
| 25         | BA           | 1586       | A           |
| 25         | BA           | 1592       | C           |
| 25         | BA           | 1607       | C           |
| 25         | BA           | 1608       | A           |
| 25         | BA           | 1609       | A           |
| 25         | BA           | 1634       | A           |
| 25         | BA           | 1635       | G           |
| 25         | BA           | 1646       | C           |
| 25         | BA           | 1647       | G           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 25         | BA           | 1648       | C           |
| 25         | BA           | 1651       | G           |
| 25         | BA           | 1654       | A           |
| 25         | BA           | 1664       | A           |
| 25         | BA           | 1667       | G           |
| 25         | BA           | 1674       | G           |
| 25         | BA           | 1683       | C           |
| 25         | BA           | 1688       | U           |
| 25         | BA           | 1696       | G           |
| 25         | BA           | 1700       | A           |
| 25         | BA           | 1701       | A           |
| 25         | BA           | 1703       | G           |
| 25         | BA           | 1721       | G           |
| 25         | BA           | 1722       | A           |
| 25         | BA           | 1739       | U           |
| 25         | BA           | 1740       | G           |
| 25         | BA           | 1746       | G           |
| 25         | BA           | 1756       | G           |
| 25         | BA           | 1762       | A           |
| 25         | BA           | 1763       | G           |
| 25         | BA           | 1764       | G           |
| 25         | BA           | 1772       | G           |
| 25         | BA           | 1773       | A           |
| 25         | BA           | 1780       | A           |
| 25         | BA           | 1782       | C           |
| 25         | BA           | 1786       | A           |
| 25         | BA           | 1791       | A           |
| 25         | BA           | 1800       | C           |
| 25         | BA           | 1801       | G           |
| 25         | BA           | 1816       | G           |
| 25         | BA           | 1836       | C           |
| 25         | BA           | 1837       | C           |
| 25         | BA           | 1839       | G           |
| 25         | BA           | 1847       | A           |
| 25         | BA           | 1851       | U           |
| 25         | BA           | 1878       | G           |
| 25         | BA           | 1889       | A           |
| 25         | BA           | 1900       | A           |
| 25         | BA           | 1906       | G           |
| 25         | BA           | 1909       | C           |
| 25         | BA           | 1910       | G           |
| 25         | BA           | 1912       | A           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 25         | BA           | 1913       | A           |
| 25         | BA           | 1914       | C           |
| 25         | BA           | 1915       | U           |
| 25         | BA           | 1919       | A           |
| 25         | BA           | 1929       | G           |
| 25         | BA           | 1930       | G           |
| 25         | BA           | 1937       | A           |
| 25         | BA           | 1938       | A           |
| 25         | BA           | 1940       | U           |
| 25         | BA           | 1952       | A           |
| 25         | BA           | 1955       | U           |
| 25         | BA           | 1963       | U           |
| 25         | BA           | 1965       | C           |
| 25         | BA           | 1967       | C           |
| 25         | BA           | 1970       | A           |
| 25         | BA           | 1971       | A           |
| 25         | BA           | 1972       | A           |
| 25         | BA           | 1992       | G           |
| 25         | BA           | 1993       | U           |
| 25         | BA           | 1997       | G           |
| 25         | BA           | 2001       | A           |
| 25         | BA           | 2021       | C           |
| 25         | BA           | 2023       | G           |
| 25         | BA           | 2031       | A           |
| 25         | BA           | 2032       | G           |
| 25         | BA           | 2033       | A           |
| 25         | BA           | 2035       | G           |
| 25         | BA           | 2036       | C           |
| 25         | BA           | 2039       | C           |
| 25         | BA           | 2043       | C           |
| 25         | BA           | 2049       | G           |
| 25         | BA           | 2055       | C           |
| 25         | BA           | 2056       | G           |
| 25         | BA           | 2060       | A           |
| 25         | BA           | 2061       | G           |
| 25         | BA           | 2062       | A           |
| 25         | BA           | 2063       | C           |
| 25         | BA           | 2067       | G           |
| 25         | BA           | 2069       | G           |
| 25         | BA           | 2093       | G           |
| 25         | BA           | 2097       | C           |
| 25         | BA           | 2099       | U           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 25         | BA           | 2100       | G           |
| 25         | BA           | 2109       | U           |
| 25         | BA           | 2111       | C           |
| 25         | BA           | 2113       | U           |
| 25         | BA           | 2118       | U           |
| 25         | BA           | 2119       | A           |
| 25         | BA           | 2120       | G           |
| 25         | BA           | 2121       | G           |
| 25         | BA           | 2127       | G           |
| 25         | BA           | 2130       | U           |
| 25         | BA           | 2132       | U           |
| 25         | BA           | 2133       | G           |
| 25         | BA           | 2134       | A           |
| 25         | BA           | 2135       | A           |
| 25         | BA           | 2136       | C           |
| 25         | BA           | 2137       | C           |
| 25         | BA           | 2138       | C           |
| 25         | BA           | 2140       | C           |
| 25         | BA           | 2141       | G           |
| 25         | BA           | 2142       | C           |
| 25         | BA           | 2143       | C           |
| 25         | BA           | 2145       | C           |
| 25         | BA           | 2147       | G           |
| 25         | BA           | 2148       | G           |
| 25         | BA           | 2151       | G           |
| 25         | BA           | 2156       | G           |
| 25         | BA           | 2157       | G           |
| 25         | BA           | 2158       | A           |
| 25         | BA           | 2159       | G           |
| 25         | BA           | 2160       | G           |
| 25         | BA           | 2165       | G           |
| 25         | BA           | 2169       | A           |
| 25         | BA           | 2171       | A           |
| 25         | BA           | 2172       | U           |
| 25         | BA           | 2173       | A           |
| 25         | BA           | 2174       | C           |
| 25         | BA           | 2175       | C           |
| 25         | BA           | 2176       | A           |
| 25         | BA           | 2178       | C           |
| 25         | BA           | 2181       | G           |
| 25         | BA           | 2182       | G           |
| 25         | BA           | 2184       | G           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 25         | BA           | 2188       | C           |
| 25         | BA           | 2189       | U           |
| 25         | BA           | 2192       | G           |
| 25         | BA           | 2193       | G           |
| 25         | BA           | 2198       | A           |
| 25         | BA           | 2199       | A           |
| 25         | BA           | 2206       | G           |
| 25         | BA           | 2207       | G           |
| 25         | BA           | 2208       | A           |
| 25         | BA           | 2218       | U           |
| 25         | BA           | 2225       | A           |
| 25         | BA           | 2226       | C           |
| 25         | BA           | 2238       | G           |
| 25         | BA           | 2239       | G           |
| 25         | BA           | 2268       | A           |
| 25         | BA           | 2269       | A           |
| 25         | BA           | 2273       | A           |
| 25         | BA           | 2275       | C           |
| 25         | BA           | 2278       | A           |
| 25         | BA           | 2283       | C           |
| 25         | BA           | 2287       | A           |
| 25         | BA           | 2289       | G           |
| 25         | BA           | 2305       | A           |
| 25         | BA           | 2307       | G           |
| 25         | BA           | 2308       | G           |
| 25         | BA           | 2312       | U           |
| 25         | BA           | 2320       | A           |
| 25         | BA           | 2325       | G           |
| 25         | BA           | 2327       | A           |
| 25         | BA           | 2334       | G           |
| 25         | BA           | 2335       | A           |
| 25         | BA           | 2336       | A           |
| 25         | BA           | 2343       | C           |
| 25         | BA           | 2347       | C           |
| 25         | BA           | 2350       | C           |
| 25         | BA           | 2361       | A           |
| 25         | BA           | 2383       | G           |
| 25         | BA           | 2384       | G           |
| 25         | BA           | 2385       | C           |
| 25         | BA           | 2405       | G           |
| 25         | BA           | 2406       | U           |
| 25         | BA           | 2410       | G           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 25         | BA           | 2414       | G           |
| 25         | BA           | 2424       | C           |
| 25         | BA           | 2425       | A           |
| 25         | BA           | 2428       | G           |
| 25         | BA           | 2429       | G           |
| 25         | BA           | 2430       | A           |
| 25         | BA           | 2435       | A           |
| 25         | BA           | 2438       | U           |
| 25         | BA           | 2439       | A           |
| 25         | BA           | 2441       | C           |
| 25         | BA           | 2448       | A           |
| 25         | BA           | 2468       | G           |
| 25         | BA           | 2469       | A           |
| 25         | BA           | 2471       | C           |
| 25         | BA           | 2476       | A           |
| 25         | BA           | 2478       | A           |
| 25         | BA           | 2483       | C           |
| 25         | BA           | 2487       | G           |
| 25         | BA           | 2490       | G           |
| 25         | BA           | 2502       | G           |
| 25         | BA           | 2504       | U           |
| 25         | BA           | 2505       | G           |
| 25         | BA           | 2518       | A           |
| 25         | BA           | 2525       | G           |
| 25         | BA           | 2529       | G           |
| 25         | BA           | 2554       | U           |
| 25         | BA           | 2555       | U           |
| 25         | BA           | 2564       | A           |
| 25         | BA           | 2566       | A           |
| 25         | BA           | 2567       | G           |
| 25         | BA           | 2573       | C           |
| 25         | BA           | 2582       | G           |
| 25         | BA           | 2585       | U           |
| 25         | BA           | 2602       | A           |
| 25         | BA           | 2609       | U           |
| 25         | BA           | 2611       | U           |
| 25         | BA           | 2612       | C           |
| 25         | BA           | 2623       | G           |
| 25         | BA           | 2628       | C           |
| 25         | BA           | 2629       | A           |
| 25         | BA           | 2630       | G           |
| 25         | BA           | 2654       | A           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 25         | BA           | 2673       | G           |
| 25         | BA           | 2689       | U           |
| 25         | BA           | 2690       | C           |
| 25         | BA           | 2691       | C           |
| 25         | BA           | 2702       | U           |
| 25         | BA           | 2703       | C           |
| 25         | BA           | 2712(A)    | A           |
| 25         | BA           | 2713       | A           |
| 25         | BA           | 2714       | G           |
| 25         | BA           | 2726       | U           |
| 25         | BA           | 2733       | A           |
| 25         | BA           | 2739       | U           |
| 25         | BA           | 2751       | G           |
| 25         | BA           | 2758       | A           |
| 25         | BA           | 2764       | A           |
| 25         | BA           | 2765       | A           |
| 25         | BA           | 2766       | G           |
| 25         | BA           | 2769       | C           |
| 25         | BA           | 2778       | A           |
| 25         | BA           | 2790       | A           |
| 25         | BA           | 2791       | C           |
| 25         | BA           | 2792       | G           |
| 25         | BA           | 2793       | G           |
| 25         | BA           | 2794       | C           |
| 25         | BA           | 2802       | G           |
| 25         | BA           | 2808       | U           |
| 25         | BA           | 2818       | G           |
| 25         | BA           | 2820       | A           |
| 25         | BA           | 2821       | A           |
| 25         | BA           | 2835       | A           |
| 25         | BA           | 2846       | G           |
| 25         | BA           | 2872       | G           |
| 25         | BA           | 2873       | A           |
| 25         | BA           | 2880       | C           |
| 25         | BA           | 2886       | G           |
| 25         | BA           | 2889       | C           |
| 25         | BA           | 2892       | A           |
| 25         | BA           | 2893       | G           |
| 25         | BA           | 2894       | G           |
| 26         | BB           | 2          | C           |
| 26         | BB           | 7          | G           |
| 26         | BB           | 9          | G           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 26         | BB           | 24         | G           |
| 26         | BB           | 32         | C           |
| 26         | BB           | 47         | C           |
| 26         | BB           | 51         | G           |
| 26         | BB           | 52         | A           |
| 26         | BB           | 53         | A           |
| 26         | BB           | 56         | G           |
| 26         | BB           | 57         | A           |
| 26         | BB           | 72         | G           |
| 26         | BB           | 73         | A           |
| 26         | BB           | 75         | G           |
| 26         | BB           | 85         | G           |
| 26         | BB           | 86         | G           |
| 26         | BB           | 89         | G           |
| 26         | BB           | 106        | G           |
| 26         | BB           | 110        | G           |
| 1          | CA           | 5          | U           |
| 1          | CA           | 6          | G           |
| 1          | CA           | 7          | G           |
| 1          | CA           | 9          | G           |
| 1          | CA           | 22         | G           |
| 1          | CA           | 29         | G           |
| 1          | CA           | 32         | A           |
| 1          | CA           | 39         | G           |
| 1          | CA           | 47         | C           |
| 1          | CA           | 48         | C           |
| 1          | CA           | 51         | A           |
| 1          | CA           | 59         | A           |
| 1          | CA           | 61         | G           |
| 1          | CA           | 66         | G           |
| 1          | CA           | 72         | C           |
| 1          | CA           | 73         | G           |
| 1          | CA           | 79         | G           |
| 1          | CA           | 80         | G           |
| 1          | CA           | 88         | A           |
| 1          | CA           | 89         | C           |
| 1          | CA           | 91         | C           |
| 1          | CA           | 96         | U           |
| 1          | CA           | 97         | G           |
| 1          | CA           | 98         | G           |
| 1          | CA           | 116        | A           |
| 1          | CA           | 120        | A           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | CA           | 121        | C           |
| 1          | CA           | 129        | U           |
| 1          | CA           | 129(A)     | G           |
| 1          | CA           | 131        | C           |
| 1          | CA           | 146        | G           |
| 1          | CA           | 157        | G           |
| 1          | CA           | 163        | C           |
| 1          | CA           | 172        | A           |
| 1          | CA           | 173        | U           |
| 1          | CA           | 174        | C           |
| 1          | CA           | 180        | U           |
| 1          | CA           | 182        | U           |
| 1          | CA           | 189(D)     | C           |
| 1          | CA           | 189(F)     | U           |
| 1          | CA           | 189(G)     | G           |
| 1          | CA           | 189(H)     | G           |
| 1          | CA           | 189(I)     | G           |
| 1          | CA           | 189(J)     | G           |
| 1          | CA           | 189(K)     | U           |
| 1          | CA           | 189(L)     | G           |
| 1          | CA           | 195        | A           |
| 1          | CA           | 197        | A           |
| 1          | CA           | 201        | C           |
| 1          | CA           | 203        | U           |
| 1          | CA           | 204        | U           |
| 1          | CA           | 216        | G           |
| 1          | CA           | 243        | A           |
| 1          | CA           | 247        | G           |
| 1          | CA           | 251        | G           |
| 1          | CA           | 264        | U           |
| 1          | CA           | 266        | G           |
| 1          | CA           | 267        | C           |
| 1          | CA           | 276        | G           |
| 1          | CA           | 289        | G           |
| 1          | CA           | 306        | G           |
| 1          | CA           | 321        | A           |
| 1          | CA           | 328        | C           |
| 1          | CA           | 332        | G           |
| 1          | CA           | 342        | C           |
| 1          | CA           | 344        | A           |
| 1          | CA           | 346        | G           |
| 1          | CA           | 350        | G           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | CA           | 352        | C           |
| 1          | CA           | 353        | A           |
| 1          | CA           | 354        | G           |
| 1          | CA           | 367        | U           |
| 1          | CA           | 372        | C           |
| 1          | CA           | 373        | A           |
| 1          | CA           | 374        | A           |
| 1          | CA           | 382        | A           |
| 1          | CA           | 384        | G           |
| 1          | CA           | 397        | A           |
| 1          | CA           | 398        | C           |
| 1          | CA           | 403        | C           |
| 1          | CA           | 405        | U           |
| 1          | CA           | 406        | G           |
| 1          | CA           | 409        | G           |
| 1          | CA           | 411        | A           |
| 1          | CA           | 412        | A           |
| 1          | CA           | 413        | G           |
| 1          | CA           | 414        | A           |
| 1          | CA           | 421        | U           |
| 1          | CA           | 422        | C           |
| 1          | CA           | 424        | G           |
| 1          | CA           | 426        | G           |
| 1          | CA           | 429        | U           |
| 1          | CA           | 430        | A           |
| 1          | CA           | 434        | U           |
| 1          | CA           | 435        | C           |
| 1          | CA           | 436        | C           |
| 1          | CA           | 439        | A           |
| 1          | CA           | 441        | A           |
| 1          | CA           | 442        | C           |
| 1          | CA           | 443        | C           |
| 1          | CA           | 452        | A           |
| 1          | CA           | 453        | A           |
| 1          | CA           | 461        | A           |
| 1          | CA           | 470        | C           |
| 1          | CA           | 471        | G           |
| 1          | CA           | 483        | C           |
| 1          | CA           | 485        | G           |
| 1          | CA           | 491        | G           |
| 1          | CA           | 495        | A           |
| 1          | CA           | 496        | A           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | CA           | 498        | U           |
| 1          | CA           | 504        | C           |
| 1          | CA           | 505        | G           |
| 1          | CA           | 510        | A           |
| 1          | CA           | 511        | C           |
| 1          | CA           | 513        | C           |
| 1          | CA           | 518        | C           |
| 1          | CA           | 520        | A           |
| 1          | CA           | 521        | G           |
| 1          | CA           | 527        | G           |
| 1          | CA           | 531        | U           |
| 1          | CA           | 532        | A           |
| 1          | CA           | 533        | A           |
| 1          | CA           | 536        | C           |
| 1          | CA           | 544        | G           |
| 1          | CA           | 547        | A           |
| 1          | CA           | 559        | A           |
| 1          | CA           | 560        | U           |
| 1          | CA           | 561        | U           |
| 1          | CA           | 567        | G           |
| 1          | CA           | 571        | U           |
| 1          | CA           | 572        | A           |
| 1          | CA           | 573        | A           |
| 1          | CA           | 575        | G           |
| 1          | CA           | 576        | G           |
| 1          | CA           | 577        | G           |
| 1          | CA           | 581        | G           |
| 1          | CA           | 582        | U           |
| 1          | CA           | 587        | G           |
| 1          | CA           | 590        | C           |
| 1          | CA           | 591        | U           |
| 1          | CA           | 596        | C           |
| 1          | CA           | 600        | C           |
| 1          | CA           | 623        | C           |
| 1          | CA           | 625        | G           |
| 1          | CA           | 627        | G           |
| 1          | CA           | 629        | G           |
| 1          | CA           | 630        | G           |
| 1          | CA           | 632        | A           |
| 1          | CA           | 633        | G           |
| 1          | CA           | 650        | G           |
| 1          | CA           | 653        | A           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | CA           | 661        | G           |
| 1          | CA           | 665        | A           |
| 1          | CA           | 671        | G           |
| 1          | CA           | 680        | C           |
| 1          | CA           | 692        | U           |
| 1          | CA           | 693        | G           |
| 1          | CA           | 695        | A           |
| 1          | CA           | 712        | A           |
| 1          | CA           | 723        | U           |
| 1          | CA           | 724        | G           |
| 1          | CA           | 730        | G           |
| 1          | CA           | 731        | G           |
| 1          | CA           | 733        | A           |
| 1          | CA           | 748        | C           |
| 1          | CA           | 749        | C           |
| 1          | CA           | 751        | U           |
| 1          | CA           | 754        | C           |
| 1          | CA           | 755        | G           |
| 1          | CA           | 759        | A           |
| 1          | CA           | 760        | G           |
| 1          | CA           | 764        | C           |
| 1          | CA           | 766        | A           |
| 1          | CA           | 774        | G           |
| 1          | CA           | 777        | A           |
| 1          | CA           | 787        | A           |
| 1          | CA           | 792        | A           |
| 1          | CA           | 793        | U           |
| 1          | CA           | 794        | A           |
| 1          | CA           | 798        | G           |
| 1          | CA           | 802        | A           |
| 1          | CA           | 815        | A           |
| 1          | CA           | 816        | A           |
| 1          | CA           | 817        | C           |
| 1          | CA           | 821        | G           |
| 1          | CA           | 827        | U           |
| 1          | CA           | 828        | A           |
| 1          | CA           | 836        | G           |
| 1          | CA           | 840        | C           |
| 1          | CA           | 841        | U           |
| 1          | CA           | 848        | C           |
| 1          | CA           | 851        | G           |
| 1          | CA           | 853        | G           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | CA           | 859        | A           |
| 1          | CA           | 868        | C           |
| 1          | CA           | 884        | U           |
| 1          | CA           | 902        | G           |
| 1          | CA           | 914        | A           |
| 1          | CA           | 919        | A           |
| 1          | CA           | 920        | U           |
| 1          | CA           | 925        | G           |
| 1          | CA           | 926        | G           |
| 1          | CA           | 927        | G           |
| 1          | CA           | 932        | C           |
| 1          | CA           | 934        | C           |
| 1          | CA           | 936        | C           |
| 1          | CA           | 942        | G           |
| 1          | CA           | 948        | C           |
| 1          | CA           | 954        | G           |
| 1          | CA           | 958        | A           |
| 1          | CA           | 960        | U           |
| 1          | CA           | 961        | U           |
| 1          | CA           | 966        | G           |
| 1          | CA           | 968        | A           |
| 1          | CA           | 969        | A           |
| 1          | CA           | 971        | G           |
| 1          | CA           | 974        | A           |
| 1          | CA           | 975        | A           |
| 1          | CA           | 976        | G           |
| 1          | CA           | 977        | A           |
| 1          | CA           | 983        | A           |
| 1          | CA           | 991        | U           |
| 1          | CA           | 992        | U           |
| 1          | CA           | 993        | G           |
| 1          | CA           | 996        | A           |
| 1          | CA           | 1001       | A           |
| 1          | CA           | 1001(A)    | G           |
| 1          | CA           | 1002       | G           |
| 1          | CA           | 1004       | A           |
| 1          | CA           | 1005       | A           |
| 1          | CA           | 1006       | C           |
| 1          | CA           | 1010       | G           |
| 1          | CA           | 1016       | A           |
| 1          | CA           | 1020       | U           |
| 1          | CA           | 1022       | G           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | CA           | 1024       | G           |
| 1          | CA           | 1025       | U           |
| 1          | CA           | 1026       | G           |
| 1          | CA           | 1027       | C           |
| 1          | CA           | 1028       | C           |
| 1          | CA           | 1029       | C           |
| 1          | CA           | 1030(A)    | G           |
| 1          | CA           | 1030(C)    | G           |
| 1          | CA           | 1030(D)    | A           |
| 1          | CA           | 1032       | G           |
| 1          | CA           | 1033       | G           |
| 1          | CA           | 1037       | C           |
| 1          | CA           | 1038       | C           |
| 1          | CA           | 1041       | A           |
| 1          | CA           | 1044       | A           |
| 1          | CA           | 1045       | C           |
| 1          | CA           | 1053       | G           |
| 1          | CA           | 1054       | C           |
| 1          | CA           | 1061       | G           |
| 1          | CA           | 1065       | U           |
| 1          | CA           | 1066       | C           |
| 1          | CA           | 1068       | G           |
| 1          | CA           | 1076       | C           |
| 1          | CA           | 1077       | G           |
| 1          | CA           | 1081       | G           |
| 1          | CA           | 1088       | G           |
| 1          | CA           | 1094       | G           |
| 1          | CA           | 1095       | U           |
| 1          | CA           | 1096       | C           |
| 1          | CA           | 1101       | A           |
| 1          | CA           | 1104       | G           |
| 1          | CA           | 1108       | G           |
| 1          | CA           | 1112       | C           |
| 1          | CA           | 1113       | C           |
| 1          | CA           | 1117       | G           |
| 1          | CA           | 1122       | U           |
| 1          | CA           | 1124       | G           |
| 1          | CA           | 1125       | U           |
| 1          | CA           | 1126       | U           |
| 1          | CA           | 1129       | C           |
| 1          | CA           | 1130       | A           |
| 1          | CA           | 1135       | U           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | CA           | 1136       | U           |
| 1          | CA           | 1137       | C           |
| 1          | CA           | 1138       | G           |
| 1          | CA           | 1139       | G           |
| 1          | CA           | 1140       | C           |
| 1          | CA           | 1146       | A           |
| 1          | CA           | 1147       | C           |
| 1          | CA           | 1152       | A           |
| 1          | CA           | 1154       | G           |
| 1          | CA           | 1156       | G           |
| 1          | CA           | 1157       | A           |
| 1          | CA           | 1159       | U           |
| 1          | CA           | 1163       | C           |
| 1          | CA           | 1168       | A           |
| 1          | CA           | 1169       | A           |
| 1          | CA           | 1179       | A           |
| 1          | CA           | 1180       | A           |
| 1          | CA           | 1181       | G           |
| 1          | CA           | 1183       | A           |
| 1          | CA           | 1184       | G           |
| 1          | CA           | 1194       | U           |
| 1          | CA           | 1196       | U           |
| 1          | CA           | 1197       | G           |
| 1          | CA           | 1199       | U           |
| 1          | CA           | 1200       | C           |
| 1          | CA           | 1202       | G           |
| 1          | CA           | 1206       | G           |
| 1          | CA           | 1212       | U           |
| 1          | CA           | 1213       | A           |
| 1          | CA           | 1214       | C           |
| 1          | CA           | 1217       | C           |
| 1          | CA           | 1224       | G           |
| 1          | CA           | 1225       | A           |
| 1          | CA           | 1227       | A           |
| 1          | CA           | 1228       | C           |
| 1          | CA           | 1236       | A           |
| 1          | CA           | 1238       | A           |
| 1          | CA           | 1255       | G           |
| 1          | CA           | 1256       | A           |
| 1          | CA           | 1257       | U           |
| 1          | CA           | 1258       | G           |
| 1          | CA           | 1260       | C           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | CA           | 1262       | C           |
| 1          | CA           | 1267       | C           |
| 1          | CA           | 1268       | A           |
| 1          | CA           | 1270       | C           |
| 1          | CA           | 1273       | G           |
| 1          | CA           | 1278       | U           |
| 1          | CA           | 1279       | A           |
| 1          | CA           | 1280       | A           |
| 1          | CA           | 1281       | U           |
| 1          | CA           | 1282       | C           |
| 1          | CA           | 1284       | C           |
| 1          | CA           | 1285       | A           |
| 1          | CA           | 1286       | A           |
| 1          | CA           | 1287       | A           |
| 1          | CA           | 1289       | A           |
| 1          | CA           | 1290       | G           |
| 1          | CA           | 1296       | C           |
| 1          | CA           | 1297       | C           |
| 1          | CA           | 1300       | G           |
| 1          | CA           | 1305       | G           |
| 1          | CA           | 1310       | G           |
| 1          | CA           | 1317       | C           |
| 1          | CA           | 1319       | A           |
| 1          | CA           | 1322       | C           |
| 1          | CA           | 1338       | G           |
| 1          | CA           | 1340       | A           |
| 1          | CA           | 1346       | A           |
| 1          | CA           | 1347       | G           |
| 1          | CA           | 1353       | G           |
| 1          | CA           | 1354       | C           |
| 1          | CA           | 1355       | G           |
| 1          | CA           | 1358       | U           |
| 1          | CA           | 1360       | A           |
| 1          | CA           | 1363       | C           |
| 1          | CA           | 1363(A)    | A           |
| 1          | CA           | 1370       | G           |
| 1          | CA           | 1372       | U           |
| 1          | CA           | 1377       | A           |
| 1          | CA           | 1379       | G           |
| 1          | CA           | 1381       | U           |
| 1          | CA           | 1383       | C           |
| 1          | CA           | 1397       | C           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | CA           | 1398       | A           |
| 1          | CA           | 1400       | C           |
| 1          | CA           | 1402       | C           |
| 1          | CA           | 1406       | U           |
| 1          | CA           | 1409       | C           |
| 1          | CA           | 1419       | G           |
| 1          | CA           | 1425       | U           |
| 1          | CA           | 1442       | G           |
| 1          | CA           | 1442(A)    | G           |
| 1          | CA           | 1442(B)    | A           |
| 1          | CA           | 1447       | A           |
| 1          | CA           | 1452       | C           |
| 1          | CA           | 1457       | G           |
| 1          | CA           | 1459       | C           |
| 1          | CA           | 1487       | G           |
| 1          | CA           | 1489       | G           |
| 1          | CA           | 1490       | C           |
| 1          | CA           | 1492       | A           |
| 1          | CA           | 1493       | A           |
| 1          | CA           | 1494       | G           |
| 1          | CA           | 1497       | G           |
| 1          | CA           | 1503       | A           |
| 1          | CA           | 1504       | G           |
| 1          | CA           | 1506       | U           |
| 1          | CA           | 1517       | G           |
| 1          | CA           | 1520       | G           |
| 1          | CA           | 1529       | G           |
| 1          | CA           | 1530       | G           |
| 1          | CA           | 1532       | U           |
| 22         | CV           | 15         | A           |
| 22         | CV           | 19         | U           |
| 22         | CV           | 20         | U           |
| 22         | CV           | 24         | A           |
| 24         | CX           | 6          | G           |
| 24         | CX           | 7          | G           |
| 24         | CX           | 9          | G           |
| 24         | CX           | 16         | C           |
| 24         | CX           | 17         | C           |
| 24         | CX           | 19         | G           |
| 24         | CX           | 20         | U           |
| 24         | CX           | 21         | A           |
| 24         | CX           | 25         | C           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 24         | CX           | 30         | G           |
| 24         | CX           | 31         | G           |
| 24         | CX           | 34         | C           |
| 24         | CX           | 42         | G           |
| 24         | CX           | 47         | U           |
| 24         | CX           | 48         | C           |
| 24         | CX           | 52         | G           |
| 24         | CX           | 56         | C           |
| 24         | CX           | 58         | A           |
| 24         | CX           | 59         | A           |
| 24         | CX           | 60         | U           |
| 24         | CX           | 61         | C           |
| 24         | CX           | 64         | G           |
| 24         | CX           | 65         | C           |
| 24         | CX           | 67         | C           |
| 24         | CX           | 68         | C           |
| 24         | CX           | 70         | G           |
| 25         | DA           | 7          | G           |
| 25         | DA           | 9          | U           |
| 25         | DA           | 10         | G           |
| 25         | DA           | 12         | U           |
| 25         | DA           | 13         | A           |
| 25         | DA           | 15         | G           |
| 25         | DA           | 34         | C           |
| 25         | DA           | 35         | G           |
| 25         | DA           | 45         | C           |
| 25         | DA           | 51         | G           |
| 25         | DA           | 63         | U           |
| 25         | DA           | 71         | A           |
| 25         | DA           | 74         | A           |
| 25         | DA           | 75         | G           |
| 25         | DA           | 78         | A           |
| 25         | DA           | 83         | G           |
| 25         | DA           | 84         | A           |
| 25         | DA           | 90         | U           |
| 25         | DA           | 94(A)      | G           |
| 25         | DA           | 96         | G           |
| 25         | DA           | 118        | A           |
| 25         | DA           | 120        | U           |
| 25         | DA           | 139        | G           |
| 25         | DA           | 139(A)     | G           |
| 25         | DA           | 141        | A           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 25         | DA           | 154(A)     | C           |
| 25         | DA           | 157        | U           |
| 25         | DA           | 173        | G           |
| 25         | DA           | 181        | A           |
| 25         | DA           | 182        | A           |
| 25         | DA           | 188        | G           |
| 25         | DA           | 196        | A           |
| 25         | DA           | 205        | G           |
| 25         | DA           | 206        | U           |
| 25         | DA           | 214        | G           |
| 25         | DA           | 216        | A           |
| 25         | DA           | 221        | A           |
| 25         | DA           | 222        | A           |
| 25         | DA           | 225        | A           |
| 25         | DA           | 228        | A           |
| 25         | DA           | 229        | A           |
| 25         | DA           | 230        | U           |
| 25         | DA           | 233        | A           |
| 25         | DA           | 248        | G           |
| 25         | DA           | 271(D)     | G           |
| 25         | DA           | 271(I)     | G           |
| 25         | DA           | 271(K)     | U           |
| 25         | DA           | 271(L)     | U           |
| 25         | DA           | 271(M)     | G           |
| 25         | DA           | 271(N)     | U           |
| 25         | DA           | 271(O)     | C           |
| 25         | DA           | 272        | G           |
| 25         | DA           | 272(A)     | U           |
| 25         | DA           | 272(B)     | G           |
| 25         | DA           | 272(J)     | C           |
| 25         | DA           | 276        | A           |
| 25         | DA           | 277        | C           |
| 25         | DA           | 278        | A           |
| 25         | DA           | 282        | A           |
| 25         | DA           | 283        | A           |
| 25         | DA           | 290        | G           |
| 25         | DA           | 292        | C           |
| 25         | DA           | 295        | G           |
| 25         | DA           | 308        | G           |
| 25         | DA           | 311        | A           |
| 25         | DA           | 316        | C           |
| 25         | DA           | 317        | G           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 25         | DA           | 319        | C           |
| 25         | DA           | 322        | A           |
| 25         | DA           | 327        | G           |
| 25         | DA           | 329        | G           |
| 25         | DA           | 330        | A           |
| 25         | DA           | 333        | G           |
| 25         | DA           | 342        | G           |
| 25         | DA           | 345        | A           |
| 25         | DA           | 352        | G           |
| 25         | DA           | 354        | G           |
| 25         | DA           | 363        | G           |
| 25         | DA           | 363(B)     | G           |
| 25         | DA           | 385        | C           |
| 25         | DA           | 386        | G           |
| 25         | DA           | 396        | G           |
| 25         | DA           | 403        | U           |
| 25         | DA           | 405        | U           |
| 25         | DA           | 406        | G           |
| 25         | DA           | 407        | G           |
| 25         | DA           | 411        | G           |
| 25         | DA           | 412        | A           |
| 25         | DA           | 415        | A           |
| 25         | DA           | 426        | C           |
| 25         | DA           | 428        | A           |
| 25         | DA           | 444        | C           |
| 25         | DA           | 454        | A           |
| 25         | DA           | 455        | C           |
| 25         | DA           | 456        | C           |
| 25         | DA           | 457        | A           |
| 25         | DA           | 470        | A           |
| 25         | DA           | 471        | A           |
| 25         | DA           | 479        | A           |
| 25         | DA           | 480        | A           |
| 25         | DA           | 481        | G           |
| 25         | DA           | 484        | C           |
| 25         | DA           | 487        | C           |
| 25         | DA           | 504        | U           |
| 25         | DA           | 505        | A           |
| 25         | DA           | 508        | G           |
| 25         | DA           | 509        | C           |
| 25         | DA           | 527        | C           |
| 25         | DA           | 529        | A           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 25         | DA           | 530        | G           |
| 25         | DA           | 531        | C           |
| 25         | DA           | 532        | A           |
| 25         | DA           | 533        | G           |
| 25         | DA           | 536        | A           |
| 25         | DA           | 545        | G           |
| 25         | DA           | 562        | U           |
| 25         | DA           | 563        | G           |
| 25         | DA           | 566        | U           |
| 25         | DA           | 568        | U           |
| 25         | DA           | 573        | G           |
| 25         | DA           | 574        | C           |
| 25         | DA           | 575        | A           |
| 25         | DA           | 587        | C           |
| 25         | DA           | 588        | U           |
| 25         | DA           | 595        | C           |
| 25         | DA           | 603        | A           |
| 25         | DA           | 604        | G           |
| 25         | DA           | 607        | U           |
| 25         | DA           | 609        | A           |
| 25         | DA           | 610        | G           |
| 25         | DA           | 614(B)     | G           |
| 25         | DA           | 614(C)     | A           |
| 25         | DA           | 615        | G           |
| 25         | DA           | 616        | G           |
| 25         | DA           | 627        | A           |
| 25         | DA           | 637        | A           |
| 25         | DA           | 644        | A           |
| 25         | DA           | 645        | C           |
| 25         | DA           | 646        | A           |
| 25         | DA           | 647        | G           |
| 25         | DA           | 651        | G           |
| 25         | DA           | 652(B)     | A           |
| 25         | DA           | 652(C)     | G           |
| 25         | DA           | 652(U)     | G           |
| 25         | DA           | 652(V)     | C           |
| 25         | DA           | 669        | G           |
| 25         | DA           | 686        | G           |
| 25         | DA           | 701        | G           |
| 25         | DA           | 708        | C           |
| 25         | DA           | 715        | G           |
| 25         | DA           | 717        | G           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 25         | DA           | 726        | G           |
| 25         | DA           | 730        | C           |
| 25         | DA           | 751        | A           |
| 25         | DA           | 753        | C           |
| 25         | DA           | 758        | C           |
| 25         | DA           | 759        | G           |
| 25         | DA           | 765        | G           |
| 25         | DA           | 771        | G           |
| 25         | DA           | 775        | G           |
| 25         | DA           | 776        | G           |
| 25         | DA           | 781        | A           |
| 25         | DA           | 782        | A           |
| 25         | DA           | 784        | A           |
| 25         | DA           | 785        | G           |
| 25         | DA           | 792        | G           |
| 25         | DA           | 801        | G           |
| 25         | DA           | 805        | G           |
| 25         | DA           | 812        | C           |
| 25         | DA           | 819        | A           |
| 25         | DA           | 827        | U           |
| 25         | DA           | 830        | G           |
| 25         | DA           | 843        | G           |
| 25         | DA           | 845        | G           |
| 25         | DA           | 847        | U           |
| 25         | DA           | 857        | C           |
| 25         | DA           | 859        | G           |
| 25         | DA           | 866        | A           |
| 25         | DA           | 869        | G           |
| 25         | DA           | 879        | G           |
| 25         | DA           | 880        | G           |
| 25         | DA           | 882        | G           |
| 25         | DA           | 884        | C           |
| 25         | DA           | 886        | C           |
| 25         | DA           | 887        | A           |
| 25         | DA           | 888        | C           |
| 25         | DA           | 889        | C           |
| 25         | DA           | 890        | A           |
| 25         | DA           | 893        | C           |
| 25         | DA           | 896        | A           |
| 25         | DA           | 898        | C           |
| 25         | DA           | 900        | A           |
| 25         | DA           | 901        | A           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 25         | DA           | 910        | A           |
| 25         | DA           | 912        | C           |
| 25         | DA           | 915        | C           |
| 25         | DA           | 917        | A           |
| 25         | DA           | 932        | G           |
| 25         | DA           | 933        | A           |
| 25         | DA           | 936        | C           |
| 25         | DA           | 938        | G           |
| 25         | DA           | 941        | A           |
| 25         | DA           | 945        | A           |
| 25         | DA           | 946        | G           |
| 25         | DA           | 959        | A           |
| 25         | DA           | 961        | C           |
| 25         | DA           | 974        | G           |
| 25         | DA           | 975        | C           |
| 25         | DA           | 979        | G           |
| 25         | DA           | 980        | A           |
| 25         | DA           | 983        | A           |
| 25         | DA           | 989        | G           |
| 25         | DA           | 996        | A           |
| 25         | DA           | 1005       | C           |
| 25         | DA           | 1012       | U           |
| 25         | DA           | 1013       | C           |
| 25         | DA           | 1017       | G           |
| 25         | DA           | 1020       | A           |
| 25         | DA           | 1022       | G           |
| 25         | DA           | 1025       | G           |
| 25         | DA           | 1026       | U           |
| 25         | DA           | 1027       | A           |
| 25         | DA           | 1033       | U           |
| 25         | DA           | 1034       | G           |
| 25         | DA           | 1038       | C           |
| 25         | DA           | 1039       | G           |
| 25         | DA           | 1043       | C           |
| 25         | DA           | 1114       | G           |
| 25         | DA           | 1117       | G           |
| 25         | DA           | 1121       | C           |
| 25         | DA           | 1122       | G           |
| 25         | DA           | 1126       | A           |
| 25         | DA           | 1128       | A           |
| 25         | DA           | 1130       | U           |
| 25         | DA           | 1135       | C           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 25         | DA           | 1136       | G           |
| 25         | DA           | 1139       | G           |
| 25         | DA           | 1142(A)    | A           |
| 25         | DA           | 1166       | C           |
| 25         | DA           | 1170       | G           |
| 25         | DA           | 1171       | G           |
| 25         | DA           | 1180       | C           |
| 25         | DA           | 1194       | A           |
| 25         | DA           | 1195       | G           |
| 25         | DA           | 1206       | G           |
| 25         | DA           | 1210       | A           |
| 25         | DA           | 1211       | U           |
| 25         | DA           | 1219       | G           |
| 25         | DA           | 1220       | A           |
| 25         | DA           | 1227       | G           |
| 25         | DA           | 1229       | G           |
| 25         | DA           | 1242       | A           |
| 25         | DA           | 1244       | G           |
| 25         | DA           | 1253       | A           |
| 25         | DA           | 1255       | U           |
| 25         | DA           | 1256       | G           |
| 25         | DA           | 1271       | G           |
| 25         | DA           | 1272       | A           |
| 25         | DA           | 1273       | U           |
| 25         | DA           | 1275       | A           |
| 25         | DA           | 1276       | A           |
| 25         | DA           | 1298       | C           |
| 25         | DA           | 1300       | U           |
| 25         | DA           | 1301       | A           |
| 25         | DA           | 1305       | C           |
| 25         | DA           | 1306       | C           |
| 25         | DA           | 1309       | G           |
| 25         | DA           | 1314       | C           |
| 25         | DA           | 1318       | C           |
| 25         | DA           | 1321       | A           |
| 25         | DA           | 1341       | U           |
| 25         | DA           | 1342       | A           |
| 25         | DA           | 1352       | U           |
| 25         | DA           | 1359       | A           |
| 25         | DA           | 1360       | A           |
| 25         | DA           | 1365       | A           |
| 25         | DA           | 1368       | G           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 25         | DA           | 1370       | C           |
| 25         | DA           | 1373       | A           |
| 25         | DA           | 1380       | G           |
| 25         | DA           | 1384       | A           |
| 25         | DA           | 1385       | G           |
| 25         | DA           | 1386       | C           |
| 25         | DA           | 1391       | U           |
| 25         | DA           | 1395       | A           |
| 25         | DA           | 1412       | A           |
| 25         | DA           | 1416       | G           |
| 25         | DA           | 1417       | C           |
| 25         | DA           | 1420       | U           |
| 25         | DA           | 1421       | G           |
| 25         | DA           | 1427       | A           |
| 25         | DA           | 1428       | C           |
| 25         | DA           | 1437       | C           |
| 25         | DA           | 1445       | A           |
| 25         | DA           | 1446       | C           |
| 25         | DA           | 1449       | A           |
| 25         | DA           | 1450       | G           |
| 25         | DA           | 1459       | G           |
| 25         | DA           | 1467       | C           |
| 25         | DA           | 1471       | A           |
| 25         | DA           | 1472       | A           |
| 25         | DA           | 1473       | G           |
| 25         | DA           | 1482       | G           |
| 25         | DA           | 1490       | A           |
| 25         | DA           | 1493       | C           |
| 25         | DA           | 1497       | U           |
| 25         | DA           | 1508       | A           |
| 25         | DA           | 1509       | C           |
| 25         | DA           | 1509(A)    | A           |
| 25         | DA           | 1509(B)    | A           |
| 25         | DA           | 1531       | C           |
| 25         | DA           | 1533       | G           |
| 25         | DA           | 1537       | G           |
| 25         | DA           | 1539       | G           |
| 25         | DA           | 1543       | C           |
| 25         | DA           | 1544       | A           |
| 25         | DA           | 1547       | C           |
| 25         | DA           | 1554       | A           |
| 25         | DA           | 1558       | A           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 25         | DA           | 1559       | G           |
| 25         | DA           | 1566       | A           |
| 25         | DA           | 1569       | A           |
| 25         | DA           | 1578       | U           |
| 25         | DA           | 1580       | A           |
| 25         | DA           | 1582       | C           |
| 25         | DA           | 1583       | A           |
| 25         | DA           | 1584       | C           |
| 25         | DA           | 1586       | A           |
| 25         | DA           | 1598       | C           |
| 25         | DA           | 1607       | C           |
| 25         | DA           | 1608       | A           |
| 25         | DA           | 1609       | A           |
| 25         | DA           | 1610       | A           |
| 25         | DA           | 1612       | C           |
| 25         | DA           | 1616       | A           |
| 25         | DA           | 1618       | A           |
| 25         | DA           | 1640       | C           |
| 25         | DA           | 1648       | C           |
| 25         | DA           | 1654       | A           |
| 25         | DA           | 1661       | G           |
| 25         | DA           | 1664       | A           |
| 25         | DA           | 1674       | G           |
| 25         | DA           | 1675       | C           |
| 25         | DA           | 1682       | G           |
| 25         | DA           | 1695       | G           |
| 25         | DA           | 1700       | A           |
| 25         | DA           | 1703       | G           |
| 25         | DA           | 1721       | G           |
| 25         | DA           | 1722       | A           |
| 25         | DA           | 1740       | G           |
| 25         | DA           | 1743       | C           |
| 25         | DA           | 1746       | G           |
| 25         | DA           | 1756       | G           |
| 25         | DA           | 1758       | G           |
| 25         | DA           | 1762       | A           |
| 25         | DA           | 1763       | G           |
| 25         | DA           | 1764       | G           |
| 25         | DA           | 1773       | A           |
| 25         | DA           | 1780       | A           |
| 25         | DA           | 1782       | C           |
| 25         | DA           | 1791       | A           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 25         | DA           | 1800       | C           |
| 25         | DA           | 1801       | G           |
| 25         | DA           | 1806       | C           |
| 25         | DA           | 1812       | A           |
| 25         | DA           | 1816       | G           |
| 25         | DA           | 1823       | G           |
| 25         | DA           | 1833       | U           |
| 25         | DA           | 1835       | G           |
| 25         | DA           | 1847       | A           |
| 25         | DA           | 1848       | A           |
| 25         | DA           | 1866       | C           |
| 25         | DA           | 1877       | A           |
| 25         | DA           | 1878       | G           |
| 25         | DA           | 1881       | C           |
| 25         | DA           | 1889       | A           |
| 25         | DA           | 1900       | A           |
| 25         | DA           | 1906       | G           |
| 25         | DA           | 1913       | A           |
| 25         | DA           | 1914       | C           |
| 25         | DA           | 1926       | U           |
| 25         | DA           | 1927       | A           |
| 25         | DA           | 1929       | G           |
| 25         | DA           | 1930       | G           |
| 25         | DA           | 1936       | A           |
| 25         | DA           | 1937       | A           |
| 25         | DA           | 1938       | A           |
| 25         | DA           | 1955       | U           |
| 25         | DA           | 1963       | U           |
| 25         | DA           | 1965       | C           |
| 25         | DA           | 1967       | C           |
| 25         | DA           | 1970       | A           |
| 25         | DA           | 1971       | A           |
| 25         | DA           | 1972       | A           |
| 25         | DA           | 1981       | A           |
| 25         | DA           | 1984       | G           |
| 25         | DA           | 1993       | U           |
| 25         | DA           | 1997       | G           |
| 25         | DA           | 2020       | A           |
| 25         | DA           | 2023       | G           |
| 25         | DA           | 2031       | A           |
| 25         | DA           | 2032       | G           |
| 25         | DA           | 2033       | A           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 25         | DA           | 2036       | C           |
| 25         | DA           | 2043       | C           |
| 25         | DA           | 2049       | G           |
| 25         | DA           | 2055       | C           |
| 25         | DA           | 2056       | G           |
| 25         | DA           | 2060       | A           |
| 25         | DA           | 2061       | G           |
| 25         | DA           | 2062       | A           |
| 25         | DA           | 2063       | C           |
| 25         | DA           | 2067       | G           |
| 25         | DA           | 2069       | G           |
| 25         | DA           | 2092       | U           |
| 25         | DA           | 2093       | G           |
| 25         | DA           | 2096       | U           |
| 25         | DA           | 2102       | U           |
| 25         | DA           | 2104       | G           |
| 25         | DA           | 2106       | G           |
| 25         | DA           | 2108       | C           |
| 25         | DA           | 2109       | U           |
| 25         | DA           | 2111       | C           |
| 25         | DA           | 2112       | G           |
| 25         | DA           | 2113       | U           |
| 25         | DA           | 2116       | G           |
| 25         | DA           | 2119       | A           |
| 25         | DA           | 2121       | G           |
| 25         | DA           | 2122       | U           |
| 25         | DA           | 2126       | A           |
| 25         | DA           | 2127       | G           |
| 25         | DA           | 2128       | C           |
| 25         | DA           | 2130       | U           |
| 25         | DA           | 2131       | G           |
| 25         | DA           | 2132       | U           |
| 25         | DA           | 2133       | G           |
| 25         | DA           | 2134       | A           |
| 25         | DA           | 2135       | A           |
| 25         | DA           | 2136       | C           |
| 25         | DA           | 2137       | C           |
| 25         | DA           | 2138       | C           |
| 25         | DA           | 2139       | C           |
| 25         | DA           | 2140       | C           |
| 25         | DA           | 2142       | C           |
| 25         | DA           | 2143       | C           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 25         | DA           | 2144       | U           |
| 25         | DA           | 2146       | C           |
| 25         | DA           | 2148       | G           |
| 25         | DA           | 2149       | G           |
| 25         | DA           | 2150       | U           |
| 25         | DA           | 2152       | G           |
| 25         | DA           | 2153       | G           |
| 25         | DA           | 2154       | G           |
| 25         | DA           | 2155       | G           |
| 25         | DA           | 2156       | G           |
| 25         | DA           | 2157       | G           |
| 25         | DA           | 2158       | A           |
| 25         | DA           | 2162       | G           |
| 25         | DA           | 2163       | C           |
| 25         | DA           | 2164       | C           |
| 25         | DA           | 2165       | G           |
| 25         | DA           | 2166       | G           |
| 25         | DA           | 2167       | U           |
| 25         | DA           | 2168       | G           |
| 25         | DA           | 2169       | A           |
| 25         | DA           | 2170       | A           |
| 25         | DA           | 2172       | U           |
| 25         | DA           | 2173       | A           |
| 25         | DA           | 2177       | C           |
| 25         | DA           | 2178       | C           |
| 25         | DA           | 2181       | G           |
| 25         | DA           | 2185       | C           |
| 25         | DA           | 2187       | G           |
| 25         | DA           | 2188       | C           |
| 25         | DA           | 2189       | U           |
| 25         | DA           | 2192       | G           |
| 25         | DA           | 2193       | G           |
| 25         | DA           | 2196       | C           |
| 25         | DA           | 2198       | A           |
| 25         | DA           | 2199       | A           |
| 25         | DA           | 2205       | C           |
| 25         | DA           | 2206       | G           |
| 25         | DA           | 2207       | G           |
| 25         | DA           | 2208       | A           |
| 25         | DA           | 2218       | U           |
| 25         | DA           | 2225       | A           |
| 25         | DA           | 2235       | G           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 25         | DA           | 2238       | G           |
| 25         | DA           | 2239       | G           |
| 25         | DA           | 2254       | C           |
| 25         | DA           | 2273       | A           |
| 25         | DA           | 2275       | C           |
| 25         | DA           | 2278       | A           |
| 25         | DA           | 2280       | G           |
| 25         | DA           | 2283       | C           |
| 25         | DA           | 2287       | A           |
| 25         | DA           | 2288       | A           |
| 25         | DA           | 2294       | C           |
| 25         | DA           | 2299       | G           |
| 25         | DA           | 2302       | G           |
| 25         | DA           | 2303       | G           |
| 25         | DA           | 2305       | A           |
| 25         | DA           | 2308       | G           |
| 25         | DA           | 2318       | G           |
| 25         | DA           | 2320       | A           |
| 25         | DA           | 2325       | G           |
| 25         | DA           | 2334       | G           |
| 25         | DA           | 2336       | A           |
| 25         | DA           | 2343       | C           |
| 25         | DA           | 2345       | G           |
| 25         | DA           | 2347       | C           |
| 25         | DA           | 2350       | C           |
| 25         | DA           | 2354       | G           |
| 25         | DA           | 2357       | U           |
| 25         | DA           | 2358       | G           |
| 25         | DA           | 2366       | A           |
| 25         | DA           | 2367       | G           |
| 25         | DA           | 2376       | A           |
| 25         | DA           | 2383       | G           |
| 25         | DA           | 2385       | C           |
| 25         | DA           | 2396       | G           |
| 25         | DA           | 2401       | U           |
| 25         | DA           | 2402       | C           |
| 25         | DA           | 2403       | C           |
| 25         | DA           | 2406       | U           |
| 25         | DA           | 2410       | G           |
| 25         | DA           | 2422       | A           |
| 25         | DA           | 2425       | A           |
| 25         | DA           | 2427       | C           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 25         | DA           | 2428       | G           |
| 25         | DA           | 2429       | G           |
| 25         | DA           | 2430       | A           |
| 25         | DA           | 2431       | U           |
| 25         | DA           | 2435       | A           |
| 25         | DA           | 2439       | A           |
| 25         | DA           | 2440       | C           |
| 25         | DA           | 2441       | C           |
| 25         | DA           | 2448       | A           |
| 25         | DA           | 2459       | A           |
| 25         | DA           | 2469       | A           |
| 25         | DA           | 2474       | C           |
| 25         | DA           | 2476       | A           |
| 25         | DA           | 2478       | A           |
| 25         | DA           | 2479       | G           |
| 25         | DA           | 2480       | C           |
| 25         | DA           | 2487       | G           |
| 25         | DA           | 2492       | U           |
| 25         | DA           | 2494       | G           |
| 25         | DA           | 2502       | G           |
| 25         | DA           | 2505       | G           |
| 25         | DA           | 2506       | U           |
| 25         | DA           | 2507       | C           |
| 25         | DA           | 2518       | A           |
| 25         | DA           | 2525       | G           |
| 25         | DA           | 2554       | U           |
| 25         | DA           | 2564       | A           |
| 25         | DA           | 2566       | A           |
| 25         | DA           | 2567       | G           |
| 25         | DA           | 2573       | C           |
| 25         | DA           | 2578       | G           |
| 25         | DA           | 2582       | G           |
| 25         | DA           | 2586       | C           |
| 25         | DA           | 2602       | A           |
| 25         | DA           | 2609       | U           |
| 25         | DA           | 2611       | U           |
| 25         | DA           | 2612       | C           |
| 25         | DA           | 2630       | G           |
| 25         | DA           | 2634       | G           |
| 25         | DA           | 2646       | C           |
| 25         | DA           | 2652       | C           |
| 25         | DA           | 2654       | A           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 25         | DA           | 2658       | C           |
| 25         | DA           | 2661       | G           |
| 25         | DA           | 2663       | G           |
| 25         | DA           | 2668       | G           |
| 25         | DA           | 2669       | G           |
| 25         | DA           | 2674       | G           |
| 25         | DA           | 2689       | U           |
| 25         | DA           | 2690       | C           |
| 25         | DA           | 2691       | C           |
| 25         | DA           | 2702       | U           |
| 25         | DA           | 2703       | C           |
| 25         | DA           | 2712(A)    | A           |
| 25         | DA           | 2713       | A           |
| 25         | DA           | 2714       | G           |
| 25         | DA           | 2720       | U           |
| 25         | DA           | 2721       | A           |
| 25         | DA           | 2726       | U           |
| 25         | DA           | 2733       | A           |
| 25         | DA           | 2746       | U           |
| 25         | DA           | 2751       | G           |
| 25         | DA           | 2752       | C           |
| 25         | DA           | 2757       | A           |
| 25         | DA           | 2758       | A           |
| 25         | DA           | 2760       | C           |
| 25         | DA           | 2761       | G           |
| 25         | DA           | 2764       | A           |
| 25         | DA           | 2765       | A           |
| 25         | DA           | 2766       | G           |
| 25         | DA           | 2778       | A           |
| 25         | DA           | 2780       | G           |
| 25         | DA           | 2789       | C           |
| 25         | DA           | 2794       | C           |
| 25         | DA           | 2802       | G           |
| 25         | DA           | 2803       | C           |
| 25         | DA           | 2820       | A           |
| 25         | DA           | 2821       | A           |
| 25         | DA           | 2833       | G           |
| 25         | DA           | 2835       | A           |
| 25         | DA           | 2849       | U           |
| 25         | DA           | 2859       | G           |
| 25         | DA           | 2866       | U           |
| 25         | DA           | 2872       | G           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 25         | DA           | 2873       | A           |
| 25         | DA           | 2879       | C           |
| 25         | DA           | 2880       | C           |
| 25         | DA           | 2886       | G           |
| 25         | DA           | 2892       | A           |
| 25         | DA           | 2893       | G           |
| 25         | DA           | 2894       | G           |
| 25         | DA           | 2895       | U           |
| 25         | DA           | 2897       | U           |
| 26         | DB           | 2          | C           |
| 26         | DB           | 3          | C           |
| 26         | DB           | 4          | C           |
| 26         | DB           | 6          | C           |
| 26         | DB           | 7          | G           |
| 26         | DB           | 8          | U           |
| 26         | DB           | 13         | A           |
| 26         | DB           | 21         | G           |
| 26         | DB           | 24         | G           |
| 26         | DB           | 30         | C           |
| 26         | DB           | 31         | C           |
| 26         | DB           | 33         | G           |
| 26         | DB           | 35         | U           |
| 26         | DB           | 39         | A           |
| 26         | DB           | 41         | U           |
| 26         | DB           | 42         | C           |
| 26         | DB           | 45         | A           |
| 26         | DB           | 55         | U           |
| 26         | DB           | 56         | G           |
| 26         | DB           | 58         | A           |
| 26         | DB           | 59         | A           |
| 26         | DB           | 63         | G           |
| 26         | DB           | 64         | C           |
| 26         | DB           | 65         | C           |
| 26         | DB           | 72         | G           |
| 26         | DB           | 73         | A           |
| 26         | DB           | 74         | U           |
| 26         | DB           | 75         | G           |
| 26         | DB           | 85         | G           |
| 26         | DB           | 86         | G           |
| 26         | DB           | 93         | G           |
| 26         | DB           | 101        | G           |
| 26         | DB           | 106        | G           |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 26  | DB    | 108 | U    |
| 26  | DB    | 109 | C    |
| 26  | DB    | 110 | G    |

All (104) RNA pucker outliers are listed below:

| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 1   | AA    | 115  | G    |
| 1   | AA    | 266  | G    |
| 1   | AA    | 347  | G    |
| 1   | AA    | 429  | U    |
| 1   | AA    | 509  | A    |
| 1   | AA    | 532  | A    |
| 1   | AA    | 560  | U    |
| 1   | AA    | 687  | A    |
| 1   | AA    | 839  | U    |
| 1   | AA    | 913  | A    |
| 1   | AA    | 991  | U    |
| 1   | AA    | 1064 | G    |
| 1   | AA    | 1065 | U    |
| 1   | AA    | 1067 | A    |
| 1   | AA    | 1165 | C    |
| 1   | AA    | 1190 | G    |
| 1   | AA    | 1201 | A    |
| 1   | AA    | 1256 | A    |
| 1   | AA    | 1285 | A    |
| 1   | AA    | 1299 | A    |
| 1   | AA    | 1442 | G    |
| 1   | AA    | 1492 | A    |
| 24  | AX    | 16   | C    |
| 25  | BA    | 71   | A    |
| 25  | BA    | 195  | A    |
| 25  | BA    | 278  | A    |
| 25  | BA    | 746  | A    |
| 25  | BA    | 764  | A    |
| 25  | BA    | 827  | U    |
| 25  | BA    | 1046 | A    |
| 25  | BA    | 1047 | G    |
| 25  | BA    | 1174 | A    |
| 25  | BA    | 1175 | U    |
| 25  | BA    | 1176 | G    |
| 25  | BA    | 1210 | A    |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 25         | BA           | 1300       | U           |
| 25         | BA           | 1420       | U           |
| 25         | BA           | 1530       | C           |
| 25         | BA           | 1992       | G           |
| 25         | BA           | 2126       | A           |
| 25         | BA           | 2181       | G           |
| 25         | BA           | 2183       | C           |
| 25         | BA           | 2198       | A           |
| 25         | BA           | 2238       | G           |
| 25         | BA           | 2406       | U           |
| 25         | BA           | 2689       | U           |
| 25         | BA           | 2893       | G           |
| 26         | BB           | 1          | U           |
| 26         | BB           | 52         | A           |
| 26         | BB           | 56         | G           |
| 1          | CA           | 5          | U           |
| 1          | CA           | 60         | A           |
| 1          | CA           | 65         | U           |
| 1          | CA           | 115        | G           |
| 1          | CA           | 266        | G           |
| 1          | CA           | 429        | U           |
| 1          | CA           | 509        | A           |
| 1          | CA           | 532        | A           |
| 1          | CA           | 560        | U           |
| 1          | CA           | 748        | C           |
| 1          | CA           | 913        | A           |
| 1          | CA           | 991        | U           |
| 1          | CA           | 992        | U           |
| 1          | CA           | 1064       | G           |
| 1          | CA           | 1065       | U           |
| 1          | CA           | 1067       | A           |
| 1          | CA           | 1128       | C           |
| 1          | CA           | 1183       | A           |
| 1          | CA           | 1201       | A           |
| 1          | CA           | 1212       | U           |
| 1          | CA           | 1256       | A           |
| 1          | CA           | 1279       | A           |
| 1          | CA           | 1442       | G           |
| 1          | CA           | 1492       | A           |
| 24         | CX           | 16         | C           |
| 25         | DA           | 34         | C           |
| 25         | DA           | 195        | A           |

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| Mol | Chain | Res    | Type |
|-----|-------|--------|------|
| 25  | DA    | 271(K) | U    |
| 25  | DA    | 271(M) | G    |
| 25  | DA    | 277    | C    |
| 25  | DA    | 587    | C    |
| 25  | DA    | 752    | A    |
| 25  | DA    | 800    | A    |
| 25  | DA    | 856    | C    |
| 25  | DA    | 960    | A    |
| 25  | DA    | 1210   | A    |
| 25  | DA    | 1275   | A    |
| 25  | DA    | 1379   | A    |
| 25  | DA    | 1420   | U    |
| 25  | DA    | 1543   | C    |
| 25  | DA    | 1558   | A    |
| 25  | DA    | 1653   | G    |
| 25  | DA    | 1913   | A    |
| 25  | DA    | 1992   | G    |
| 25  | DA    | 2110   | G    |
| 25  | DA    | 2133   | G    |
| 25  | DA    | 2169   | A    |
| 25  | DA    | 2172   | U    |
| 25  | DA    | 2282   | G    |
| 25  | DA    | 2406   | U    |
| 25  | DA    | 2422   | A    |
| 25  | DA    | 2430   | A    |
| 25  | DA    | 2689   | U    |
| 25  | DA    | 2756   | U    |

## 5.4 Non-standard residues in protein, DNA, RNA chains [i](#)

12 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 |
| 23  | PPU  | AW    | 76  | 23,25 | 32,40,41     | 1.00 | 2 (6%)   | 33,57,60    | 1.77 | 9 (27%)  |

| Mol | Type | Chain | Res | Link  | Bond lengths |      |          | Bond angles |      |          |
|-----|------|-------|-----|-------|--------------|------|----------|-------------|------|----------|
|     |      |       |     |       | Counts       | RMSZ | # Z  > 2 | Counts      | RMSZ | # Z  > 2 |
| 24  | 5MU  | CX    | 54  | 24    | 19,22,23     | 1.29 | 4 (21%)  | 28,32,35    | 2.14 | 6 (21%)  |
| 24  | 5MU  | AX    | 54  | 24,56 | 19,22,23     | 1.38 | 5 (26%)  | 28,32,35    | 2.05 | 6 (21%)  |
| 24  | PSU  | AX    | 55  | 24    | 18,21,22     | 1.36 | 3 (16%)  | 22,30,33    | 1.90 | 3 (13%)  |
| 24  | 31H  | CX    | 76  | 24    | 28,34,35     | 1.16 | 3 (10%)  | 23,47,50    | 1.62 | 4 (17%)  |
| 24  | 4SU  | AX    | 8   | 24    | 18,21,22     | 2.17 | 5 (27%)  | 26,30,33    | 1.64 | 5 (19%)  |
| 24  | 5MC  | AX    | 32  | 24    | 18,22,23     | 0.98 | 2 (11%)  | 26,32,35    | 1.32 | 3 (11%)  |
| 24  | PSU  | CX    | 55  | 24    | 18,21,22     | 1.33 | 2 (11%)  | 22,30,33    | 1.84 | 4 (18%)  |
| 24  | 4SU  | CX    | 8   | 24    | 18,21,22     | 2.02 | 6 (33%)  | 26,30,33    | 1.54 | 5 (19%)  |
| 23  | PPU  | CW    | 76  | 23    | 32,40,41     | 0.90 | 1 (3%)   | 33,57,60    | 1.67 | 7 (21%)  |
| 24  | 5MC  | CX    | 32  | 24    | 18,22,23     | 0.93 | 2 (11%)  | 26,32,35    | 1.12 | 2 (7%)   |
| 24  | 31H  | AX    | 76  | 24,56 | 28,34,35     | 1.13 | 3 (10%)  | 23,47,50    | 1.70 | 4 (17%)  |

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   |
|-----|------|-------|-----|-------|---------|-------------|---------|
| 23  | PPU  | AW    | 76  | 23,25 | -       | 5/21/43/44  | 0/4/4/4 |
| 24  | 5MU  | CX    | 54  | 24    | -       | 0/7/25/26   | 0/2/2/2 |
| 24  | 5MU  | AX    | 54  | 24,56 | -       | 0/7/25/26   | 0/2/2/2 |
| 24  | PSU  | AX    | 55  | 24    | -       | 1/7/25/26   | 0/2/2/2 |
| 24  | 31H  | CX    | 76  | 24    | -       | 10/18/40/41 | 0/3/3/3 |
| 24  | 4SU  | AX    | 8   | 24    | -       | 0/7/25/26   | 0/2/2/2 |
| 24  | 5MC  | AX    | 32  | 24    | -       | 0/7/25/26   | 0/2/2/2 |
| 24  | PSU  | CX    | 55  | 24    | -       | 0/7/25/26   | 0/2/2/2 |
| 24  | 4SU  | CX    | 8   | 24    | -       | 0/7/25/26   | 0/2/2/2 |
| 23  | PPU  | CW    | 76  | 23    | -       | 5/21/43/44  | 0/4/4/4 |
| 24  | 5MC  | CX    | 32  | 24    | -       | 0/7/25/26   | 0/2/2/2 |
| 24  | 31H  | AX    | 76  | 24,56 | -       | 5/18/40/41  | 0/3/3/3 |

All (38) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|-------|-------|-------------|----------|
| 24  | AX    | 8   | 4SU  | C4-N3 | -5.13 | 1.32        | 1.37     |
| 24  | CX    | 8   | 4SU  | C4-N3 | -4.50 | 1.32        | 1.37     |
| 24  | AX    | 8   | 4SU  | C4-S4 | -4.37 | 1.60        | 1.68     |
| 24  | CX    | 8   | 4SU  | C4-S4 | -4.17 | 1.60        | 1.68     |
| 24  | AX    | 8   | 4SU  | C2-N3 | -4.01 | 1.30        | 1.38     |

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| Mol | Chain | Res | Type | Atoms   | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|---------|-------|-------------|----------|
| 24  | CX    | 55  | PSU  | C6-C5   | 3.38  | 1.39        | 1.35     |
| 24  | CX    | 8   | 4SU  | C5-C4   | -3.29 | 1.38        | 1.42     |
| 24  | AX    | 76  | 31H  | C5-C4   | -3.19 | 1.32        | 1.40     |
| 24  | AX    | 55  | PSU  | C6-C5   | 3.17  | 1.39        | 1.35     |
| 24  | AX    | 8   | 4SU  | C5-C4   | -3.08 | 1.38        | 1.42     |
| 24  | CX    | 8   | 4SU  | O2-C2   | 2.87  | 1.28        | 1.23     |
| 24  | AX    | 54  | 5MU  | C4-N3   | -2.87 | 1.33        | 1.38     |
| 24  | CX    | 76  | 31H  | C6-C5   | -2.79 | 1.32        | 1.43     |
| 24  | AX    | 32  | 5MC  | C6-C5   | 2.77  | 1.39        | 1.34     |
| 24  | AX    | 54  | 5MU  | C6-C5   | 2.76  | 1.39        | 1.34     |
| 24  | CX    | 32  | 5MC  | C6-C5   | 2.74  | 1.39        | 1.34     |
| 23  | CW    | 76  | PPU  | C5-C4   | 2.70  | 1.48        | 1.40     |
| 23  | AW    | 76  | PPU  | C5-C4   | 2.66  | 1.48        | 1.40     |
| 24  | CX    | 54  | 5MU  | C6-C5   | 2.55  | 1.38        | 1.34     |
| 24  | CX    | 54  | 5MU  | C4-N3   | -2.51 | 1.34        | 1.38     |
| 24  | AX    | 32  | 5MC  | C6-N1   | -2.47 | 1.33        | 1.38     |
| 24  | AX    | 76  | 31H  | C6-C5   | -2.43 | 1.34        | 1.43     |
| 24  | AX    | 55  | PSU  | C4-N3   | -2.43 | 1.34        | 1.38     |
| 24  | CX    | 8   | 4SU  | C2-N1   | 2.35  | 1.42        | 1.38     |
| 24  | CX    | 55  | PSU  | C4-N3   | -2.33 | 1.34        | 1.38     |
| 24  | CX    | 76  | 31H  | C5-N7   | -2.28 | 1.31        | 1.39     |
| 24  | AX    | 54  | 5MU  | C4-C5   | 2.21  | 1.48        | 1.44     |
| 24  | CX    | 76  | 31H  | C5-C4   | -2.18 | 1.35        | 1.40     |
| 24  | CX    | 8   | 4SU  | C2-N3   | -2.18 | 1.34        | 1.38     |
| 24  | AX    | 54  | 5MU  | C6-N1   | -2.16 | 1.34        | 1.38     |
| 24  | CX    | 54  | 5MU  | C6-N1   | -2.11 | 1.34        | 1.38     |
| 24  | CX    | 32  | 5MC  | C6-N1   | -2.11 | 1.34        | 1.38     |
| 24  | CX    | 54  | 5MU  | C4-C5   | 2.06  | 1.48        | 1.44     |
| 24  | AX    | 8   | 4SU  | O2-C2   | 2.03  | 1.26        | 1.23     |
| 23  | AW    | 76  | PPU  | C6-N1   | 2.03  | 1.36        | 1.33     |
| 24  | AX    | 54  | 5MU  | C2-N3   | -2.03 | 1.34        | 1.38     |
| 24  | AX    | 76  | 31H  | C5-N7   | -2.02 | 1.32        | 1.39     |
| 24  | AX    | 55  | PSU  | O4'-C1' | -2.00 | 1.41        | 1.43     |

All (58) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms    | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|----------|-------|-------------|----------|
| 24  | AX    | 55  | PSU  | N1-C2-N3 | 5.90  | 121.81      | 115.13   |
| 24  | CX    | 55  | PSU  | N1-C2-N3 | 5.82  | 121.73      | 115.13   |
| 24  | AX    | 76  | 31H  | N3-C2-N1 | -5.81 | 119.59      | 128.68   |
| 24  | CX    | 76  | 31H  | N3-C2-N1 | -5.51 | 120.06      | 128.68   |
| 24  | AX    | 54  | 5MU  | N3-C2-N1 | 5.44  | 122.12      | 114.89   |

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| Mol | Chain | Res | Type | Atoms       | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-------------|-------|-------------|----------|
| 23  | AW    | 76  | PPU  | C3'-N3'-C   | -5.30 | 115.22      | 123.21   |
| 24  | CX    | 54  | 5MU  | C4-N3-C2    | -5.21 | 120.61      | 127.35   |
| 24  | AX    | 54  | 5MU  | C4-N3-C2    | -5.10 | 120.75      | 127.35   |
| 24  | CX    | 54  | 5MU  | N3-C2-N1    | 4.99  | 121.51      | 114.89   |
| 24  | AX    | 32  | 5MC  | C5-C6-N1    | -4.79 | 118.41      | 123.34   |
| 24  | CX    | 54  | 5MU  | O4-C4-C5    | -4.64 | 119.52      | 124.90   |
| 24  | CX    | 54  | 5MU  | C5-C4-N3    | 4.34  | 119.02      | 115.31   |
| 23  | CW    | 76  | PPU  | C3'-N3'-C   | -4.33 | 116.69      | 123.21   |
| 24  | AX    | 8   | 4SU  | C5-C4-N3    | 4.14  | 118.53      | 114.69   |
| 24  | AX    | 54  | 5MU  | C5-C4-N3    | 3.92  | 118.65      | 115.31   |
| 24  | CX    | 8   | 4SU  | C6-C5-C4    | -3.86 | 116.61      | 119.95   |
| 24  | CX    | 55  | PSU  | C4-N3-C2    | -3.79 | 120.87      | 126.34   |
| 24  | CX    | 54  | 5MU  | O2-C2-N1    | -3.77 | 117.77      | 122.79   |
| 24  | AX    | 55  | PSU  | C4-N3-C2    | -3.75 | 120.93      | 126.34   |
| 23  | AW    | 76  | PPU  | N1-C6-N6    | 3.74  | 121.00      | 117.06   |
| 23  | CW    | 76  | PPU  | N1-C6-N6    | 3.71  | 120.96      | 117.06   |
| 24  | CX    | 32  | 5MC  | C5-C6-N1    | -3.70 | 119.53      | 123.34   |
| 24  | AX    | 55  | PSU  | O2-C2-N1    | -3.67 | 118.75      | 122.79   |
| 24  | CX    | 54  | 5MU  | C5-C6-N1    | -3.63 | 119.60      | 123.34   |
| 24  | CX    | 8   | 4SU  | C1'-N1-C2   | 3.63  | 124.14      | 117.57   |
| 24  | AX    | 54  | 5MU  | O4-C4-C5    | -3.58 | 120.75      | 124.90   |
| 24  | AX    | 8   | 4SU  | C6-C5-C4    | -3.58 | 116.85      | 119.95   |
| 24  | AX    | 8   | 4SU  | O2-C2-N1    | 3.50  | 127.44      | 122.79   |
| 24  | AX    | 54  | 5MU  | C5-C6-N1    | -3.48 | 119.76      | 123.34   |
| 23  | AW    | 76  | PPU  | C4-C5-N7    | -3.32 | 105.94      | 109.40   |
| 23  | CW    | 76  | PPU  | C10-N6-C6   | -3.25 | 109.69      | 119.51   |
| 24  | AX    | 76  | 31H  | O4'-C1'-C2' | -3.24 | 102.20      | 106.93   |
| 24  | CX    | 8   | 4SU  | C5-C4-N3    | 3.22  | 117.67      | 114.69   |
| 24  | AX    | 8   | 4SU  | S4-C4-N3    | -3.20 | 117.05      | 120.21   |
| 24  | CX    | 55  | PSU  | O2-C2-N1    | -3.12 | 119.36      | 122.79   |
| 23  | CW    | 76  | PPU  | N3-C2-N1    | -3.12 | 123.81      | 128.68   |
| 23  | AW    | 76  | PPU  | N3-C2-N1    | -3.08 | 123.86      | 128.68   |
| 24  | AX    | 76  | 31H  | O2'-C2'-C3' | 3.01  | 118.54      | 111.16   |
| 23  | CW    | 76  | PPU  | C4-C5-N7    | -2.92 | 106.36      | 109.40   |
| 24  | AX    | 54  | 5MU  | O2-C2-N1    | -2.89 | 118.94      | 122.79   |
| 23  | AW    | 76  | PPU  | C10-N6-C6   | -2.83 | 110.95      | 119.51   |
| 23  | CW    | 76  | PPU  | CA-C-N3'    | 2.73  | 119.94      | 116.15   |
| 24  | CX    | 76  | 31H  | O4'-C1'-C2' | -2.63 | 103.08      | 106.93   |
| 24  | CX    | 76  | 31H  | O2'-C2'-C3' | 2.41  | 117.08      | 111.16   |
| 24  | CX    | 8   | 4SU  | O2-C2-N1    | 2.39  | 125.96      | 122.79   |
| 24  | CX    | 32  | 5MC  | C5-C4-N3    | -2.39 | 119.10      | 121.67   |
| 23  | CW    | 76  | PPU  | C10-N6-C9   | -2.37 | 108.49      | 116.12   |

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| Mol | Chain | Res | Type | Atoms     | Z     | Observed(°) | Ideal(°) |
|-----|-------|-----|------|-----------|-------|-------------|----------|
| 24  | AX    | 8   | 4SU  | O2-C2-N3  | -2.36 | 117.10      | 121.50   |
| 23  | AW    | 76  | PPU  | C10-N6-C9 | -2.34 | 108.58      | 116.12   |
| 23  | AW    | 76  | PPU  | C9-N6-C6  | -2.32 | 112.48      | 119.51   |
| 24  | AX    | 32  | 5MC  | O2-C2-N3  | -2.31 | 118.58      | 122.33   |
| 24  | CX    | 76  | 31H  | CA-N-CN   | -2.30 | 119.29      | 122.82   |
| 24  | CX    | 8   | 4SU  | C6-N1-C2  | -2.27 | 118.09      | 120.99   |
| 23  | AW    | 76  | PPU  | CA-C-N3'  | 2.24  | 119.27      | 116.15   |
| 24  | AX    | 32  | 5MC  | C5-C4-N3  | -2.20 | 119.30      | 121.67   |
| 24  | AX    | 76  | 31H  | OCN-CN-N  | -2.12 | 119.68      | 125.27   |
| 24  | CX    | 55  | PSU  | C5-C6-N1  | -2.12 | 118.94      | 122.11   |
| 23  | AW    | 76  | PPU  | CM-OC-CZ  | 2.08  | 122.02      | 117.51   |

There are no chirality outliers.

All (26) torsion outliers are listed below:

| Mol | Chain | Res | Type | Atoms           |
|-----|-------|-----|------|-----------------|
| 23  | AW    | 76  | PPU  | O4'-C4'-C5'-O5' |
| 23  | AW    | 76  | PPU  | C3'-C4'-C5'-O5' |
| 24  | AX    | 76  | 31H  | C3'-C4'-C5'-O5' |
| 24  | AX    | 76  | 31H  | OCN-CN-N-CA     |
| 23  | CW    | 76  | PPU  | C3'-C4'-C5'-O5' |
| 24  | CX    | 76  | 31H  | C3'-C4'-C5'-O5' |
| 24  | CX    | 76  | 31H  | C-CA-CB-CG      |
| 24  | CX    | 76  | 31H  | OCN-CN-N-CA     |
| 24  | CX    | 76  | 31H  | CA-CB-CG-SD     |
| 24  | AX    | 76  | 31H  | O4'-C4'-C5'-O5' |
| 23  | CW    | 76  | PPU  | O4'-C4'-C5'-O5' |
| 24  | CX    | 76  | 31H  | O4'-C4'-C5'-O5' |
| 24  | CX    | 76  | 31H  | CB-CG-SD-CE     |
| 23  | AW    | 76  | PPU  | N-CA-CB-CG      |
| 23  | AW    | 76  | PPU  | C5-C6-N6-C9     |
| 24  | CX    | 76  | 31H  | C4'-C5'-O5'-P   |
| 24  | CX    | 76  | 31H  | N3'-C-CA-N      |
| 23  | CW    | 76  | PPU  | C-CA-CB-CG      |
| 24  | CX    | 76  | 31H  | O-C-CA-N        |
| 24  | AX    | 76  | 31H  | C4'-C5'-O5'-P   |
| 23  | CW    | 76  | PPU  | N-CA-CB-CG      |
| 23  | CW    | 76  | PPU  | C5-C6-N6-C9     |
| 23  | AW    | 76  | PPU  | C-CA-CB-CG      |
| 24  | AX    | 55  | PSU  | O4'-C4'-C5'-O5' |
| 24  | AX    | 76  | 31H  | O-C-CA-N        |
| 24  | CX    | 76  | 31H  | O-C-CA-CB       |

There are no ring outliers.

9 monomers are involved in 22 short contacts:

| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|-----|-------|-----|------|---------|--------------|
| 23  | AW    | 76  | PPU  | 5       | 0            |
| 24  | CX    | 54  | 5MU  | 2       | 0            |
| 24  | AX    | 54  | 5MU  | 1       | 0            |
| 24  | AX    | 55  | PSU  | 1       | 0            |
| 24  | CX    | 76  | 31H  | 4       | 0            |
| 24  | CX    | 55  | PSU  | 1       | 0            |
| 24  | CX    | 8   | 4SU  | 1       | 0            |
| 23  | CW    | 76  | PPU  | 7       | 0            |
| 24  | AX    | 76  | 31H  | 3       | 0            |

## 5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

## 5.6 Ligand geometry [i](#)

Of 1780 ligands modelled in this entry, 1778 are monoatomic - leaving 2 for Mogul analysis.

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 | $\# Z  > 2$ |
| 57  | SF4  | AD    | 501 | 4    | 0,12,12      | -    | -           | -           |      |             |
| 57  | SF4  | CD    | 501 | 4    | 0,12,12      | -    | -           | -           |      |             |

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   |
|-----|------|-------|-----|------|---------|----------|---------|
| 57  | SF4  | AD    | 501 | 4    | -       | -        | 0/6/5/5 |
| 57  | SF4  | CD    | 501 | 4    | -       | -        | 0/6/5/5 |

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

## 5.7 Other polymers [i](#)

There are no such residues in this entry.

## 5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

## 6 Fit of model and data i

### 6.1 Protein, DNA and RNA chains i

In the following table, the column labelled '#RSRZ > 2' contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95<sup>th</sup> percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled 'Q < 0.9' lists the number of (and percentage) of residues with an average occupancy less than 0.9.

| Mol | Chain | Analysed        | <RSRZ> | #RSRZ>2       | OWAB(Å <sup>2</sup> ) | Q<0.9 |
|-----|-------|-----------------|--------|---------------|-----------------------|-------|
| 1   | AA    | 1498/1521 (98%) | 0.06   | 3 (0%) 95 95  | 39, 74, 94, 105       | 0     |
| 1   | CA    | 1503/1521 (98%) | 0.01   | 8 (0%) 91 91  | 41, 75, 94, 105       | 0     |
| 2   | AB    | 231/256 (90%)   | 0.28   | 5 (2%) 62 59  | 65, 82, 90, 96        | 0     |
| 2   | CB    | 231/256 (90%)   | 0.84   | 32 (13%) 2 2  | 67, 83, 92, 96        | 0     |
| 3   | AC    | 206/239 (86%)   | 0.54   | 15 (7%) 15 11 | 67, 78, 86, 94        | 0     |
| 3   | CC    | 206/239 (86%)   | 0.76   | 28 (13%) 3 2  | 69, 80, 87, 92        | 0     |
| 4   | AD    | 208/209 (99%)   | 0.56   | 15 (7%) 15 11 | 57, 72, 82, 86        | 0     |
| 4   | CD    | 208/209 (99%)   | 0.45   | 8 (3%) 40 36  | 57, 73, 82, 87        | 0     |
| 5   | AE    | 148/162 (91%)   | 0.45   | 5 (3%) 45 40  | 55, 71, 81, 86        | 0     |
| 5   | CE    | 148/162 (91%)   | 0.68   | 13 (8%) 10 7  | 58, 73, 82, 89        | 0     |
| 6   | AF    | 100/101 (99%)   | 0.21   | 1 (1%) 82 82  | 55, 71, 80, 82        | 0     |
| 6   | CF    | 100/101 (99%)   | 0.05   | 0 100 100     | 58, 73, 80, 82        | 0     |
| 7   | AG    | 155/156 (99%)   | 0.39   | 12 (7%) 13 10 | 67, 76, 85, 94        | 0     |
| 7   | CG    | 155/156 (99%)   | 0.55   | 15 (9%) 7 6   | 68, 78, 86, 96        | 0     |
| 8   | AH    | 137/138 (99%)   | 0.20   | 1 (0%) 87 87  | 62, 72, 78, 86        | 0     |
| 8   | CH    | 137/138 (99%)   | 0.43   | 4 (2%) 51 47  | 62, 73, 80, 88        | 0     |
| 9   | AI    | 127/128 (99%)   | 0.26   | 4 (3%) 49 44  | 64, 82, 87, 90        | 0     |
| 9   | CI    | 127/128 (99%)   | 1.55   | 42 (33%) 0 0  | 67, 83, 89, 91        | 0     |
| 10  | AJ    | 97/105 (92%)    | 0.19   | 5 (5%) 27 23  | 63, 80, 89, 95        | 0     |
| 10  | CJ    | 96/105 (91%)    | 1.10   | 22 (22%) 0 0  | 70, 86, 93, 100       | 0     |
| 11  | AK    | 114/129 (88%)   | 0.47   | 5 (4%) 34 30  | 54, 72, 81, 83        | 0     |
| 11  | CK    | 114/129 (88%)   | 0.37   | 4 (3%) 44 38  | 56, 72, 80, 83        | 0     |
| 12  | AL    | 122/132 (92%)   | 0.29   | 1 (0%) 86 86  | 55, 65, 75, 78        | 0     |
| 12  | CL    | 122/132 (92%)   | 0.31   | 2 (1%) 72 71  | 57, 67, 75, 80        | 0     |

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| Mol | Chain | Analysed        | <RSRZ> | #RSRZ>2       | OWAB(Å <sup>2</sup> ) | Q<0.9 |
|-----|-------|-----------------|--------|---------------|-----------------------|-------|
| 13  | AM    | 123/126 (97%)   | 0.53   | 10 (8%) 12 9  | 64, 78, 86, 91        | 0     |
| 13  | CM    | 122/126 (96%)   | 0.80   | 17 (13%) 2 2  | 68, 80, 88, 93        | 0     |
| 14  | AN    | 60/61 (98%)     | 0.85   | 7 (11%) 4 3   | 65, 76, 83, 86        | 0     |
| 14  | CN    | 60/61 (98%)     | 1.78   | 22 (36%) 0 0  | 69, 79, 84, 88        | 0     |
| 15  | AO    | 88/89 (98%)     | 0.13   | 1 (1%) 80 80  | 56, 69, 80, 90        | 0     |
| 15  | CO    | 88/89 (98%)     | 0.26   | 0 100 100     | 56, 70, 80, 90        | 0     |
| 16  | AP    | 82/88 (93%)     | 0.35   | 1 (1%) 79 79  | 58, 73, 83, 85        | 0     |
| 16  | CP    | 82/88 (93%)     | 0.46   | 2 (2%) 59 56  | 58, 72, 82, 85        | 0     |
| 17  | AQ    | 99/105 (94%)    | 0.26   | 0 100 100     | 60, 70, 81, 85        | 0     |
| 17  | CQ    | 99/105 (94%)    | 0.26   | 0 100 100     | 57, 70, 80, 84        | 0     |
| 18  | AR    | 68/88 (77%)     | 0.38   | 2 (2%) 51 47  | 60, 70, 81, 85        | 0     |
| 18  | CR    | 68/88 (77%)     | 0.32   | 1 (1%) 73 73  | 61, 72, 82, 86        | 0     |
| 19  | AS    | 83/93 (89%)     | 0.27   | 0 100 100     | 67, 81, 88, 96        | 0     |
| 19  | CS    | 83/93 (89%)     | 0.97   | 13 (15%) 2 1  | 71, 83, 91, 97        | 0     |
| 20  | AT    | 96/106 (90%)    | 0.59   | 8 (8%) 11 8   | 58, 72, 82, 89        | 0     |
| 20  | CT    | 96/106 (90%)    | 0.31   | 3 (3%) 49 44  | 59, 72, 82, 88        | 0     |
| 21  | AU    | 23/27 (85%)     | 0.65   | 0 100 100     | 65, 75, 80, 86        | 0     |
| 21  | CU    | 23/27 (85%)     | 1.43   | 7 (30%) 0 0   | 66, 76, 83, 87        | 0     |
| 22  | AV    | 13/24 (54%)     | 1.49   | 3 (23%) 0 0   | 60, 92, 100, 100      | 0     |
| 22  | CV    | 12/24 (50%)     | 2.00   | 5 (41%) 0 0   | 63, 93, 99, 99        | 0     |
| 23  | AW    | 1/2 (50%)       | 0.70   | 0 100 100     | 42, 42, 42, 42        | 0     |
| 23  | CW    | 1/2 (50%)       | 1.07   | 0 100 100     | 59, 59, 59, 59        | 0     |
| 24  | AX    | 71/77 (92%)     | 0.09   | 0 100 100     | 37, 72, 84, 92        | 0     |
| 24  | CX    | 71/77 (92%)     | 0.01   | 0 100 100     | 39, 73, 86, 92        | 0     |
| 25  | BA    | 2819/2915 (96%) | 0.32   | 32 (1%) 80 80 | 23, 46, 89, 107       | 0     |
| 25  | DA    | 2800/2915 (96%) | 0.02   | 23 (0%) 86 86 | 26, 50, 90, 107       | 0     |
| 26  | BB    | 120/121 (99%)   | 0.23   | 0 100 100     | 40, 65, 76, 91        | 0     |
| 26  | DB    | 120/121 (99%)   | 0.05   | 1 (0%) 86 86  | 44, 70, 81, 93        | 0     |
| 27  | BD    | 275/276 (99%)   | 0.26   | 1 (0%) 92 93  | 24, 45, 61, 77        | 0     |
| 27  | DD    | 275/276 (99%)   | 0.27   | 0 100 100     | 27, 47, 63, 78        | 0     |
| 28  | BE    | 204/206 (99%)   | 0.39   | 3 (1%) 73 73  | 18, 44, 66, 80        | 0     |

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| Mol | Chain | Analysed       | <RSRZ> | #RSRZ>2       | OWAB(Å <sup>2</sup> ) | Q<0.9 |
|-----|-------|----------------|--------|---------------|-----------------------|-------|
| 28  | DE    | 204/206 (99%)  | 0.30   | 4 (1%) 65 63  | 32, 57, 72, 86        | 0     |
| 29  | BF    | 203/210 (96%)  | 0.41   | 1 (0%) 91 91  | 26, 55, 74, 84        | 0     |
| 29  | DF    | 203/210 (96%)  | 0.11   | 2 (0%) 82 82  | 26, 58, 75, 85        | 0     |
| 30  | BG    | 181/182 (99%)  | 0.38   | 5 (2%) 53 49  | 56, 70, 82, 91        | 0     |
| 30  | DG    | 181/182 (99%)  | 0.88   | 34 (18%) 1 0  | 61, 73, 85, 91        | 0     |
| 31  | BH    | 174/180 (96%)  | 0.38   | 4 (2%) 60 58  | 51, 66, 76, 82        | 0     |
| 31  | DH    | 174/180 (96%)  | 0.85   | 25 (14%) 2 2  | 55, 69, 80, 85        | 0     |
| 32  | BI    | 146/148 (98%)  | 0.16   | 0 100 100     | 46, 74, 85, 87        | 0     |
| 32  | DI    | 146/148 (98%)  | 0.28   | 10 (6%) 17 13 | 50, 75, 84, 87        | 0     |
| 33  | BN    | 140/140 (100%) | 0.41   | 2 (1%) 75 75  | 33, 53, 72, 80        | 0     |
| 33  | DN    | 140/140 (100%) | 0.59   | 7 (5%) 28 25  | 36, 56, 72, 81        | 0     |
| 34  | BO    | 122/122 (100%) | 0.15   | 0 100 100     | 25, 43, 60, 76        | 0     |
| 34  | DO    | 122/122 (100%) | 0.18   | 1 (0%) 86 86  | 42, 59, 73, 77        | 0     |
| 35  | BP    | 149/150 (99%)  | 0.45   | 5 (3%) 45 40  | 27, 57, 73, 87        | 0     |
| 35  | DP    | 149/150 (99%)  | 0.41   | 4 (2%) 54 50  | 29, 59, 76, 86        | 0     |
| 36  | BQ    | 141/141 (100%) | 0.44   | 3 (2%) 63 61  | 35, 53, 64, 71        | 0     |
| 36  | DQ    | 141/141 (100%) | 0.47   | 2 (1%) 75 75  | 38, 56, 68, 76        | 0     |
| 37  | BR    | 118/118 (100%) | 0.32   | 2 (1%) 70 69  | 25, 37, 56, 66        | 0     |
| 37  | DR    | 118/118 (100%) | 0.44   | 3 (2%) 57 55  | 40, 54, 66, 76        | 0     |
| 38  | BS    | 110/112 (98%)  | 0.16   | 0 100 100     | 40, 52, 63, 68        | 0     |
| 38  | DS    | 110/112 (98%)  | 0.39   | 2 (1%) 68 67  | 57, 76, 86, 92        | 0     |
| 39  | BT    | 131/146 (89%)  | 0.03   | 0 100 100     | 32, 50, 74, 86        | 0     |
| 39  | DT    | 131/146 (89%)  | 0.33   | 4 (3%) 49 44  | 44, 60, 75, 85        | 0     |
| 40  | BU    | 116/118 (98%)  | 0.42   | 3 (2%) 56 52  | 23, 35, 55, 76        | 0     |
| 40  | DU    | 116/118 (98%)  | 0.75   | 5 (4%) 35 31  | 41, 61, 77, 87        | 0     |
| 41  | BV    | 101/101 (100%) | 0.25   | 2 (1%) 65 63  | 19, 43, 64, 76        | 0     |
| 41  | DV    | 101/101 (100%) | 0.57   | 8 (7%) 12 10  | 44, 71, 80, 88        | 0     |
| 42  | BW    | 112/113 (99%)  | 0.41   | 1 (0%) 84 84  | 21, 38, 53, 75        | 0     |
| 42  | DW    | 112/113 (99%)  | 0.72   | 8 (7%) 16 12  | 31, 51, 69, 85        | 0     |
| 43  | BX    | 95/96 (98%)    | 0.36   | 0 100 100     | 25, 43, 64, 82        | 0     |
| 43  | DX    | 95/96 (98%)    | 0.85   | 12 (12%) 3 3  | 43, 62, 78, 91        | 0     |

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| Mol | Chain | Analysed          | <RSRZ> | #RSRZ>2        | OWAB(Å <sup>2</sup> ) | Q<0.9 |
|-----|-------|-------------------|--------|----------------|-----------------------|-------|
| 44  | BY    | 107/110 (97%)     | 0.38   | 2 (1%) 66 65   | 36, 51, 69, 80        | 0     |
| 44  | DY    | 107/110 (97%)     | 0.63   | 7 (6%) 18 14   | 55, 72, 81, 89        | 0     |
| 45  | BZ    | 171/206 (83%)     | 0.35   | 5 (2%) 51 47   | 42, 63, 77, 92        | 0     |
| 45  | DZ    | 174/206 (84%)     | 0.75   | 17 (9%) 7 5    | 61, 80, 90, 100       | 0     |
| 46  | B0    | 83/85 (97%)       | 0.26   | 1 (1%) 79 79   | 16, 43, 56, 66        | 0     |
| 46  | D0    | 83/85 (97%)       | 0.85   | 12 (14%) 2 1   | 44, 65, 74, 80        | 0     |
| 47  | B1    | 97/98 (98%)       | 0.24   | 4 (4%) 37 32   | 27, 49, 70, 77        | 0     |
| 47  | D1    | 97/98 (98%)       | 0.43   | 6 (6%) 20 16   | 38, 59, 75, 78        | 0     |
| 48  | B2    | 70/72 (97%)       | 0.27   | 0 100 100      | 37, 50, 66, 72        | 0     |
| 48  | D2    | 70/72 (97%)       | 0.38   | 1 (1%) 75 75   | 58, 70, 79, 85        | 0     |
| 49  | B3    | 59/60 (98%)       | 0.25   | 0 100 100      | 26, 41, 61, 72        | 0     |
| 49  | D3    | 59/60 (98%)       | 0.93   | 7 (11%) 4 3    | 44, 64, 77, 80        | 0     |
| 50  | B4    | 69/71 (97%)       | 0.14   | 1 (1%) 75 75   | 57, 76, 91, 94        | 0     |
| 50  | D4    | 69/71 (97%)       | 0.94   | 14 (20%) 1 0   | 77, 87, 97, 104       | 0     |
| 51  | B5    | 59/60 (98%)       | 0.38   | 2 (3%) 45 40   | 19, 38, 57, 78        | 0     |
| 51  | D5    | 59/60 (98%)       | 0.35   | 0 100 100      | 31, 52, 69, 76        | 0     |
| 52  | B6    | 53/54 (98%)       | 0.04   | 0 100 100      | 29, 43, 60, 71        | 0     |
| 52  | D6    | 53/54 (98%)       | 0.12   | 0 100 100      | 50, 63, 75, 83        | 0     |
| 53  | B7    | 48/49 (97%)       | 0.47   | 3 (6%) 20 16   | 20, 30, 53, 72        | 0     |
| 53  | D7    | 48/49 (97%)       | 0.54   | 4 (8%) 11 8    | 35, 46, 71, 76        | 0     |
| 54  | B8    | 64/65 (98%)       | 0.39   | 0 100 100      | 27, 36, 47, 55        | 0     |
| 54  | D8    | 64/65 (98%)       | 0.60   | 2 (3%) 49 44   | 44, 58, 67, 75        | 0     |
| 55  | B9    | 37/37 (100%)      | 0.58   | 0 100 100      | 31, 52, 64, 69        | 0     |
| 55  | D9    | 37/37 (100%)      | 0.68   | 4 (10%) 5 4    | 44, 58, 67, 73        | 0     |
| All | All   | 20634/21448 (96%) | 0.31   | 663 (3%) 47 43 | 16, 64, 87, 107       | 0     |

All (663) RSRZ outliers are listed below:

| Mol | Chain | Res | Type | RSRZ |
|-----|-------|-----|------|------|
| 13  | CM    | 124 | PRO  | 11.0 |
| 14  | CN    | 25  | VAL  | 7.0  |
| 13  | CM    | 123 | ALA  | 6.4  |
| 22  | AV    | 24  | A    | 6.3  |
| 31  | DH    | 115 | VAL  | 6.1  |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> | <b>RSRZ</b> |
|------------|--------------|------------|-------------|-------------|
| 9          | CI           | 26         | VAL         | 6.1         |
| 5          | CE           | 94         | ALA         | 5.8         |
| 13         | AM           | 124        | PRO         | 5.6         |
| 14         | CN           | 34         | TYR         | 5.6         |
| 40         | BU           | 117        | GLN         | 5.4         |
| 9          | CI           | 123        | PRO         | 5.3         |
| 7          | CG           | 154        | TYR         | 5.2         |
| 10         | CJ           | 71         | LEU         | 5.1         |
| 50         | D4           | 52         | THR         | 5.1         |
| 44         | DY           | 55         | TYR         | 5.1         |
| 43         | DX           | 92         | LEU         | 5.1         |
| 7          | AG           | 82         | GLY         | 5.1         |
| 2          | CB           | 70         | PHE         | 5.1         |
| 51         | B5           | 60         | VAL         | 5.0         |
| 42         | DW           | 112        | GLY         | 4.8         |
| 7          | AG           | 156        | TRP         | 4.8         |
| 9          | CI           | 125        | TYR         | 4.8         |
| 14         | CN           | 2          | ALA         | 4.7         |
| 2          | CB           | 187        | LEU         | 4.7         |
| 3          | CC           | 57         | ILE         | 4.7         |
| 3          | CC           | 167        | TRP         | 4.7         |
| 21         | CU           | 13         | ILE         | 4.6         |
| 13         | AM           | 56         | LEU         | 4.6         |
| 13         | CM           | 7          | VAL         | 4.5         |
| 30         | DG           | 92         | VAL         | 4.5         |
| 10         | CJ           | 6          | ILE         | 4.5         |
| 2          | CB           | 92         | TYR         | 4.5         |
| 2          | CB           | 214        | ILE         | 4.5         |
| 9          | CI           | 64         | THR         | 4.5         |
| 19         | CS           | 14         | HIS         | 4.4         |
| 9          | CI           | 46         | ALA         | 4.4         |
| 1          | CA           | 1030(B)    | C           | 4.4         |
| 5          | CE           | 13         | ILE         | 4.4         |
| 36         | DQ           | 104        | PHE         | 4.4         |
| 9          | CI           | 7          | THR         | 4.3         |
| 38         | DS           | 32         | LEU         | 4.3         |
| 22         | CV           | 21         | C           | 4.3         |
| 50         | D4           | 41         | PRO         | 4.3         |
| 1          | CA           | 1532       | U           | 4.3         |
| 25         | BA           | 2805       | G           | 4.3         |
| 7          | AG           | 85         | TYR         | 4.3         |
| 45         | DZ           | 146        | ILE         | 4.3         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> | <b>RSRZ</b> |
|------------|--------------|------------|-------------|-------------|
| 3          | AC           | 87         | LEU         | 4.3         |
| 2          | CB           | 165        | VAL         | 4.3         |
| 14         | CN           | 55         | GLY         | 4.2         |
| 31         | DH           | 107        | VAL         | 4.2         |
| 22         | CV           | 23         | A           | 4.2         |
| 13         | CM           | 6          | GLY         | 4.2         |
| 3          | CC           | 184        | TYR         | 4.2         |
| 50         | D4           | 40         | HIS         | 4.2         |
| 14         | CN           | 59         | ALA         | 4.1         |
| 9          | CI           | 33         | PHE         | 4.1         |
| 2          | CB           | 115        | LEU         | 4.1         |
| 46         | D0           | 69         | PHE         | 4.1         |
| 13         | CM           | 119        | GLY         | 4.1         |
| 9          | CI           | 63         | ILE         | 4.1         |
| 40         | DU           | 48         | ALA         | 4.1         |
| 10         | CJ           | 62         | HIS         | 4.0         |
| 2          | CB           | 101        | MET         | 4.0         |
| 10         | CJ           | 65         | LEU         | 4.0         |
| 33         | DN           | 140        | VAL         | 4.0         |
| 2          | CB           | 232        | PRO         | 4.0         |
| 16         | AP           | 1          | MET         | 4.0         |
| 10         | CJ           | 31         | GLY         | 4.0         |
| 13         | CM           | 122        | LYS         | 4.0         |
| 19         | CS           | 32         | LYS         | 4.0         |
| 25         | DA           | 2897       | U           | 4.0         |
| 14         | CN           | 61         | TRP         | 3.9         |
| 13         | AM           | 123        | ALA         | 3.9         |
| 9          | CI           | 9          | ARG         | 3.9         |
| 4          | AD           | 2          | GLY         | 3.9         |
| 30         | DG           | 139        | LEU         | 3.9         |
| 9          | CI           | 65         | VAL         | 3.9         |
| 5          | CE           | 90         | VAL         | 3.9         |
| 30         | DG           | 173        | LEU         | 3.9         |
| 7          | AG           | 83         | ALA         | 3.9         |
| 53         | D7           | 48         | LYS         | 3.8         |
| 45         | DZ           | 114        | GLY         | 3.8         |
| 21         | CU           | 6          | ARG         | 3.8         |
| 7          | CG           | 80         | VAL         | 3.8         |
| 13         | CM           | 121        | LYS         | 3.7         |
| 13         | AM           | 105        | THR         | 3.7         |
| 50         | D4           | 55         | ARG         | 3.7         |
| 10         | CJ           | 54         | PHE         | 3.7         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> | <b>RSRZ</b> |
|------------|--------------|------------|-------------|-------------|
| 9          | CI           | 126        | SER         | 3.7         |
| 10         | CJ           | 48         | THR         | 3.7         |
| 32         | DI           | 18         | VAL         | 3.7         |
| 46         | D0           | 75         | LEU         | 3.7         |
| 22         | AV           | 23         | A           | 3.7         |
| 7          | AG           | 78         | ARG         | 3.7         |
| 8          | CH           | 2          | LEU         | 3.7         |
| 11         | CK           | 32         | ILE         | 3.7         |
| 25         | BA           | 2804       | C           | 3.6         |
| 31         | BH           | 2          | SER         | 3.6         |
| 7          | AG           | 79         | ARG         | 3.6         |
| 53         | B7           | 48         | LYS         | 3.6         |
| 45         | DZ           | 113        | ALA         | 3.6         |
| 5          | CE           | 33         | VAL         | 3.6         |
| 25         | BA           | 2142       | C           | 3.6         |
| 30         | DG           | 41         | GLN         | 3.6         |
| 9          | CI           | 109        | VAL         | 3.6         |
| 31         | DH           | 94         | TYR         | 3.6         |
| 7          | CG           | 81         | GLY         | 3.6         |
| 47         | B1           | 98         | LEU         | 3.6         |
| 14         | CN           | 17         | LYS         | 3.5         |
| 25         | BA           | 2129       | C           | 3.5         |
| 2          | CB           | 197        | VAL         | 3.5         |
| 50         | D4           | 51         | ASP         | 3.5         |
| 30         | DG           | 19         | LEU         | 3.5         |
| 49         | D3           | 26         | LEU         | 3.5         |
| 50         | D4           | 57         | GLU         | 3.5         |
| 9          | CI           | 79         | LEU         | 3.5         |
| 25         | BA           | 2145       | C           | 3.5         |
| 22         | CV           | 24         | A           | 3.5         |
| 19         | CS           | 50         | ALA         | 3.4         |
| 22         | CV           | 22         | U           | 3.4         |
| 3          | CC           | 155        | GLY         | 3.4         |
| 3          | AC           | 189        | ALA         | 3.4         |
| 4          | AD           | 21         | LEU         | 3.4         |
| 7          | AG           | 84         | ASN         | 3.4         |
| 14         | CN           | 56         | VAL         | 3.4         |
| 8          | AH           | 3          | THR         | 3.4         |
| 30         | BG           | 146        | TYR         | 3.4         |
| 25         | BA           | 2132       | U           | 3.4         |
| 5          | CE           | 11         | ILE         | 3.4         |
| 2          | CB           | 93         | VAL         | 3.4         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> | <b>RSRZ</b> |
|------------|--------------|------------|-------------|-------------|
| 46         | D0           | 76         | GLY         | 3.4         |
| 2          | CB           | 97         | TRP         | 3.4         |
| 9          | CI           | 127        | LYS         | 3.3         |
| 30         | DG           | 39         | ILE         | 3.3         |
| 50         | D4           | 45         | GLY         | 3.3         |
| 45         | DZ           | 125        | LEU         | 3.3         |
| 4          | AD           | 3          | ARG         | 3.3         |
| 30         | DG           | 28         | VAL         | 3.3         |
| 25         | DA           | 2896       | C           | 3.3         |
| 30         | DG           | 137        | GLU         | 3.3         |
| 25         | DA           | 2147       | G           | 3.3         |
| 7          | CG           | 78         | ARG         | 3.3         |
| 25         | BA           | 2121       | G           | 3.3         |
| 53         | B7           | 46         | VAL         | 3.3         |
| 7          | CG           | 156        | TRP         | 3.3         |
| 2          | CB           | 41         | ILE         | 3.3         |
| 43         | DX           | 68         | ARG         | 3.3         |
| 50         | D4           | 44         | THR         | 3.3         |
| 30         | DG           | 49         | ASP         | 3.3         |
| 9          | AI           | 106        | ALA         | 3.2         |
| 13         | CM           | 78         | ILE         | 3.2         |
| 3          | CC           | 2          | GLY         | 3.2         |
| 9          | CI           | 83         | ARG         | 3.2         |
| 31         | DH           | 116        | GLU         | 3.2         |
| 28         | DE           | 52         | LEU         | 3.2         |
| 31         | DH           | 101        | ARG         | 3.2         |
| 19         | CS           | 69         | HIS         | 3.2         |
| 30         | DG           | 29         | TRP         | 3.2         |
| 7          | AG           | 81         | GLY         | 3.2         |
| 5          | AE           | 95         | ALA         | 3.2         |
| 14         | CN           | 29         | ARG         | 3.2         |
| 14         | CN           | 41         | ARG         | 3.2         |
| 5          | CE           | 10         | MET         | 3.2         |
| 31         | DH           | 105        | LEU         | 3.2         |
| 33         | DN           | 44         | PRO         | 3.2         |
| 25         | DA           | 2143       | C           | 3.2         |
| 13         | AM           | 87         | TYR         | 3.2         |
| 10         | CJ           | 50         | ILE         | 3.1         |
| 19         | CS           | 52         | TYR         | 3.1         |
| 5          | CE           | 109        | ILE         | 3.1         |
| 14         | AN           | 15         | LYS         | 3.1         |
| 25         | BA           | 2146       | C           | 3.1         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> | <b>RSRZ</b> |
|------------|--------------|------------|-------------|-------------|
| 9          | CI           | 36         | TYR         | 3.1         |
| 10         | AJ           | 63         | PHE         | 3.1         |
| 43         | DX           | 33         | LYS         | 3.1         |
| 4          | CD           | 161        | ASN         | 3.1         |
| 10         | CJ           | 46         | ARG         | 3.1         |
| 21         | CU           | 14         | TRP         | 3.1         |
| 25         | BA           | 2141       | G           | 3.1         |
| 25         | DA           | 2141       | G           | 3.1         |
| 10         | CJ           | 55         | LYS         | 3.1         |
| 30         | DG           | 136        | ARG         | 3.1         |
| 32         | DI           | 3          | VAL         | 3.1         |
| 25         | BA           | 2120       | G           | 3.1         |
| 25         | DA           | 2123       | G           | 3.1         |
| 3          | CC           | 178        | LEU         | 3.1         |
| 47         | D1           | 68         | PRO         | 3.1         |
| 20         | CT           | 24         | LEU         | 3.1         |
| 14         | CN           | 37         | PHE         | 3.1         |
| 39         | DT           | 99         | LEU         | 3.1         |
| 9          | CI           | 66         | ARG         | 3.1         |
| 31         | DH           | 111        | HIS         | 3.1         |
| 7          | CG           | 152        | ALA         | 3.0         |
| 49         | D3           | 60         | GLU         | 3.0         |
| 31         | DH           | 148        | ILE         | 3.0         |
| 50         | D4           | 42         | PHE         | 3.0         |
| 35         | DP           | 15         | ARG         | 3.0         |
| 30         | DG           | 160        | VAL         | 3.0         |
| 3          | AC           | 78         | GLY         | 3.0         |
| 9          | AI           | 114        | TYR         | 3.0         |
| 25         | BA           | 2803       | C           | 3.0         |
| 9          | CI           | 19         | LEU         | 3.0         |
| 10         | CJ           | 49         | VAL         | 3.0         |
| 25         | BA           | 2133       | G           | 3.0         |
| 14         | CN           | 36         | PHE         | 2.9         |
| 14         | CN           | 15         | LYS         | 2.9         |
| 43         | DX           | 69         | TYR         | 2.9         |
| 46         | D0           | 73         | GLY         | 2.9         |
| 3          | CC           | 147        | LYS         | 2.9         |
| 45         | DZ           | 142        | SER         | 2.9         |
| 3          | CC           | 65         | ALA         | 2.9         |
| 10         | CJ           | 63         | PHE         | 2.9         |
| 2          | AB           | 133        | LYS         | 2.9         |
| 2          | AB           | 165        | VAL         | 2.9         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> | <b>RSRZ</b> |
|------------|--------------|------------|-------------|-------------|
| 2          | CB           | 69         | LEU         | 2.9         |
| 45         | DZ           | 155        | LEU         | 2.9         |
| 32         | DI           | 85         | GLU         | 2.9         |
| 45         | DZ           | 5          | LEU         | 2.9         |
| 14         | AN           | 2          | ALA         | 2.9         |
| 30         | DG           | 115        | ARG         | 2.9         |
| 9          | CI           | 115        | GLY         | 2.9         |
| 50         | D4           | 35         | VAL         | 2.9         |
| 31         | DH           | 103        | LEU         | 2.9         |
| 3          | AC           | 201        | TYR         | 2.9         |
| 9          | CI           | 88         | TYR         | 2.9         |
| 9          | CI           | 114        | TYR         | 2.9         |
| 31         | DH           | 95         | ARG         | 2.9         |
| 2          | CB           | 90         | MET         | 2.8         |
| 3          | CC           | 142        | MET         | 2.8         |
| 25         | DA           | 2793       | G           | 2.8         |
| 42         | DW           | 111        | HIS         | 2.8         |
| 45         | DZ           | 138        | GLU         | 2.8         |
| 10         | CJ           | 43         | ARG         | 2.8         |
| 1          | CA           | 1257       | U           | 2.8         |
| 10         | CJ           | 47         | PHE         | 2.8         |
| 13         | CM           | 66         | LEU         | 2.8         |
| 14         | CN           | 44         | LEU         | 2.8         |
| 33         | DN           | 23         | LEU         | 2.8         |
| 25         | BA           | 2109       | U           | 2.8         |
| 25         | DA           | 2803       | C           | 2.8         |
| 14         | AN           | 21         | TYR         | 2.8         |
| 30         | DG           | 34         | LEU         | 2.8         |
| 33         | DN           | 116        | LEU         | 2.8         |
| 49         | D3           | 59         | VAL         | 2.8         |
| 5          | CE           | 65         | ASN         | 2.8         |
| 2          | CB           | 152        | PHE         | 2.8         |
| 40         | DU           | 56         | ASP         | 2.8         |
| 25         | BA           | 888        | C           | 2.8         |
| 10         | CJ           | 27         | ALA         | 2.8         |
| 46         | D0           | 45         | PHE         | 2.8         |
| 2          | CB           | 215        | LEU         | 2.8         |
| 19         | CS           | 20         | LEU         | 2.8         |
| 44         | DY           | 50         | ARG         | 2.8         |
| 31         | DH           | 123        | PHE         | 2.8         |
| 45         | DZ           | 124        | ILE         | 2.8         |
| 2          | CB           | 81         | VAL         | 2.8         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> | <b>RSRZ</b> |
|------------|--------------|------------|-------------|-------------|
| 4          | CD           | 120        | LEU         | 2.8         |
| 42         | DW           | 82         | LEU         | 2.8         |
| 14         | CN           | 57         | ARG         | 2.7         |
| 20         | AT           | 58         | LYS         | 2.7         |
| 30         | DG           | 102        | PHE         | 2.7         |
| 50         | D4           | 50         | VAL         | 2.7         |
| 25         | DA           | 2133       | G           | 2.7         |
| 21         | CU           | 8          | THR         | 2.7         |
| 25         | DA           | 1509       | C           | 2.7         |
| 45         | DZ           | 12         | GLY         | 2.7         |
| 2          | CB           | 163        | PHE         | 2.7         |
| 21         | CU           | 10         | ARG         | 2.7         |
| 30         | DG           | 93         | THR         | 2.7         |
| 25         | DA           | 2146       | C           | 2.7         |
| 4          | AD           | 170        | VAL         | 2.7         |
| 50         | D4           | 56         | VAL         | 2.7         |
| 44         | DY           | 48         | ALA         | 2.7         |
| 3          | AC           | 193        | TYR         | 2.7         |
| 11         | CK           | 25         | TYR         | 2.7         |
| 25         | DA           | 2804       | C           | 2.7         |
| 43         | DX           | 89         | ILE         | 2.7         |
| 3          | AC           | 55         | VAL         | 2.7         |
| 9          | CI           | 124        | GLN         | 2.7         |
| 19         | CS           | 13         | ASP         | 2.7         |
| 21         | CU           | 17         | THR         | 2.7         |
| 9          | CI           | 10         | ARG         | 2.7         |
| 35         | DP           | 101        | VAL         | 2.7         |
| 40         | DU           | 90         | VAL         | 2.7         |
| 49         | D3           | 6          | VAL         | 2.7         |
| 3          | CC           | 201        | TYR         | 2.7         |
| 3          | CC           | 172        | ARG         | 2.7         |
| 9          | CI           | 42         | ARG         | 2.7         |
| 13         | CM           | 69         | GLU         | 2.7         |
| 1          | CA           | 1202       | G           | 2.7         |
| 7          | CG           | 82         | GLY         | 2.7         |
| 9          | AI           | 126        | SER         | 2.7         |
| 28         | DE           | 116        | VAL         | 2.7         |
| 38         | DS           | 56         | LEU         | 2.7         |
| 13         | AM           | 2          | ALA         | 2.7         |
| 25         | DA           | 229        | A           | 2.6         |
| 44         | BY           | 1          | MET         | 2.6         |
| 7          | CG           | 36         | LYS         | 2.6         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> | <b>RSRZ</b> |
|------------|--------------|------------|-------------|-------------|
| 28         | BE           | 89         | ASP         | 2.6         |
| 49         | D3           | 2          | PRO         | 2.6         |
| 3          | CC           | 180        | ALA         | 2.6         |
| 7          | CG           | 83         | ALA         | 2.6         |
| 4          | AD           | 110        | PHE         | 2.6         |
| 30         | BG           | 178        | PHE         | 2.6         |
| 25         | DA           | 2144       | U           | 2.6         |
| 25         | BA           | 2119       | A           | 2.6         |
| 2          | CB           | 37         | ASN         | 2.6         |
| 30         | DG           | 5          | VAL         | 2.6         |
| 41         | DV           | 72         | VAL         | 2.6         |
| 4          | CD           | 69         | GLY         | 2.6         |
| 50         | D4           | 49         | PHE         | 2.6         |
| 10         | CJ           | 61         | GLU         | 2.6         |
| 3          | CC           | 8          | ILE         | 2.6         |
| 25         | DA           | 2112       | G           | 2.6         |
| 2          | CB           | 100        | GLY         | 2.6         |
| 43         | DX           | 49         | VAL         | 2.6         |
| 3          | AC           | 15         | THR         | 2.6         |
| 9          | CI           | 116        | LYS         | 2.6         |
| 25         | DA           | 2794       | C           | 2.6         |
| 30         | DG           | 140        | ILE         | 2.6         |
| 43         | DX           | 80         | ILE         | 2.6         |
| 20         | AT           | 18         | GLN         | 2.6         |
| 4          | AD           | 20         | TYR         | 2.6         |
| 3          | CC           | 13         | GLY         | 2.6         |
| 4          | AD           | 167        | GLY         | 2.6         |
| 10         | CJ           | 10         | GLY         | 2.6         |
| 4          | AD           | 179        | GLU         | 2.6         |
| 45         | BZ           | 104        | PHE         | 2.6         |
| 11         | CK           | 108        | ILE         | 2.6         |
| 33         | DN           | 8          | GLN         | 2.6         |
| 9          | CI           | 75         | ASP         | 2.6         |
| 30         | BG           | 49         | ASP         | 2.6         |
| 20         | CT           | 72         | LEU         | 2.6         |
| 32         | DI           | 30         | LEU         | 2.6         |
| 14         | CN           | 22         | THR         | 2.6         |
| 33         | DN           | 43         | THR         | 2.6         |
| 13         | CM           | 120        | LYS         | 2.6         |
| 2          | AB           | 101        | MET         | 2.6         |
| 25         | BA           | 2144       | U           | 2.6         |
| 9          | CI           | 71         | SER         | 2.6         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> | <b>RSRZ</b> |
|------------|--------------|------------|-------------|-------------|
| 40         | DU           | 47         | TYR         | 2.6         |
| 41         | DV           | 92         | THR         | 2.6         |
| 6          | AF           | 63         | TYR         | 2.6         |
| 44         | DY           | 35         | TYR         | 2.6         |
| 4          | CD           | 164        | ALA         | 2.6         |
| 46         | B0           | 54         | GLY         | 2.5         |
| 2          | CB           | 113        | HIS         | 2.5         |
| 19         | CS           | 12         | ASP         | 2.5         |
| 8          | CH           | 83         | ILE         | 2.5         |
| 46         | D0           | 62         | LEU         | 2.5         |
| 25         | BA           | 2897       | U           | 2.5         |
| 32         | DI           | 1          | MET         | 2.5         |
| 34         | DO           | 1          | MET         | 2.5         |
| 4          | AD           | 112        | VAL         | 2.5         |
| 7          | AG           | 153        | HIS         | 2.5         |
| 9          | CI           | 14         | VAL         | 2.5         |
| 3          | CC           | 10         | PHE         | 2.5         |
| 3          | CC           | 14         | ILE         | 2.5         |
| 9          | CI           | 102        | LEU         | 2.5         |
| 43         | DX           | 9          | LEU         | 2.5         |
| 44         | DY           | 51         | VAL         | 2.5         |
| 25         | DA           | 2145       | C           | 2.5         |
| 5          | CE           | 47         | LYS         | 2.5         |
| 46         | D0           | 74         | ARG         | 2.5         |
| 40         | DU           | 61         | TRP         | 2.5         |
| 10         | AJ           | 72         | VAL         | 2.5         |
| 22         | CV           | 20         | U           | 2.5         |
| 42         | BW           | 111        | HIS         | 2.5         |
| 25         | BA           | 2794       | C           | 2.5         |
| 1          | CA           | 1531       | A           | 2.5         |
| 19         | CS           | 49         | ILE         | 2.5         |
| 19         | CS           | 16         | LEU         | 2.5         |
| 3          | AC           | 153        | VAL         | 2.5         |
| 9          | CI           | 120        | ARG         | 2.5         |
| 14         | AN           | 60         | SER         | 2.5         |
| 41         | BV           | 101        | GLY         | 2.5         |
| 18         | AR           | 52         | PRO         | 2.5         |
| 8          | CH           | 93         | VAL         | 2.5         |
| 9          | CI           | 119        | ALA         | 2.5         |
| 9          | CI           | 5          | TYR         | 2.5         |
| 41         | DV           | 42         | GLY         | 2.5         |
| 32         | DI           | 12         | LEU         | 2.5         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> | <b>RSRZ</b> |
|------------|--------------|------------|-------------|-------------|
| 31         | DH           | 17         | VAL         | 2.5         |
| 3          | CC           | 6          | HIS         | 2.5         |
| 25         | BA           | 2178       | C           | 2.5         |
| 31         | BH           | 105        | LEU         | 2.5         |
| 44         | DY           | 61         | ILE         | 2.5         |
| 45         | BZ           | 144        | LEU         | 2.5         |
| 55         | D9           | 16         | VAL         | 2.5         |
| 3          | AC           | 39         | ILE         | 2.5         |
| 25         | BA           | 2140       | C           | 2.4         |
| 30         | DG           | 48         | GLU         | 2.4         |
| 47         | B1           | 2          | SER         | 2.4         |
| 2          | CB           | 67         | THR         | 2.4         |
| 9          | AI           | 63         | ILE         | 2.4         |
| 30         | DG           | 165        | THR         | 2.4         |
| 2          | AB           | 232        | PRO         | 2.4         |
| 10         | AJ           | 59         | SER         | 2.4         |
| 13         | CM           | 40         | ASN         | 2.4         |
| 3          | AC           | 169        | ALA         | 2.4         |
| 31         | DH           | 102        | ALA         | 2.4         |
| 9          | CI           | 27         | THR         | 2.4         |
| 39         | DT           | 27         | THR         | 2.4         |
| 9          | CI           | 110        | GLU         | 2.4         |
| 29         | DF           | 78         | ILE         | 2.4         |
| 14         | CN           | 32         | SER         | 2.4         |
| 20         | AT           | 101        | GLY         | 2.4         |
| 10         | CJ           | 64         | GLU         | 2.4         |
| 26         | DB           | 58         | A           | 2.4         |
| 37         | BR           | 95         | THR         | 2.4         |
| 2          | CB           | 230        | VAL         | 2.4         |
| 3          | CC           | 159        | GLY         | 2.4         |
| 7          | CG           | 79         | ARG         | 2.4         |
| 25         | DA           | 1026       | U           | 2.4         |
| 46         | D0           | 77         | ARG         | 2.4         |
| 49         | D3           | 29         | ARG         | 2.4         |
| 25         | BA           | 2108       | C           | 2.4         |
| 31         | DH           | 24         | VAL         | 2.4         |
| 42         | DW           | 38         | TYR         | 2.4         |
| 50         | B4           | 49         | PHE         | 2.4         |
| 11         | CK           | 118        | GLY         | 2.4         |
| 4          | AD           | 80         | GLU         | 2.4         |
| 35         | BP           | 12         | ALA         | 2.4         |
| 43         | DX           | 79         | ALA         | 2.4         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> | <b>RSRZ</b> |
|------------|--------------|------------|-------------|-------------|
| 2          | CB           | 68         | ILE         | 2.4         |
| 4          | AD           | 120        | LEU         | 2.4         |
| 25         | DA           | 2894       | G           | 2.4         |
| 22         | AV           | 13         | A           | 2.4         |
| 32         | DI           | 14         | ASP         | 2.4         |
| 3          | CC           | 39         | ILE         | 2.4         |
| 31         | DH           | 132        | ARG         | 2.4         |
| 30         | DG           | 149        | VAL         | 2.4         |
| 40         | BU           | 116        | ALA         | 2.4         |
| 30         | DG           | 128        | ARG         | 2.4         |
| 2          | CB           | 116        | GLU         | 2.3         |
| 47         | D1           | 62         | VAL         | 2.3         |
| 4          | CD           | 134        | ASP         | 2.3         |
| 46         | D0           | 71         | ASP         | 2.3         |
| 13         | CM           | 92         | HIS         | 2.3         |
| 30         | DG           | 159        | VAL         | 2.3         |
| 31         | DH           | 43         | VAL         | 2.3         |
| 45         | DZ           | 82         | ARG         | 2.3         |
| 25         | DA           | 2110       | G           | 2.3         |
| 25         | DA           | 2802       | G           | 2.3         |
| 47         | D1           | 2          | SER         | 2.3         |
| 8          | CH           | 95         | VAL         | 2.3         |
| 20         | AT           | 24         | LEU         | 2.3         |
| 30         | DG           | 38         | VAL         | 2.3         |
| 7          | CG           | 39         | ALA         | 2.3         |
| 35         | BP           | 149        | GLU         | 2.3         |
| 20         | AT           | 21         | LYS         | 2.3         |
| 31         | DH           | 133        | VAL         | 2.3         |
| 7          | AG           | 151        | TYR         | 2.3         |
| 3          | CC           | 204        | LEU         | 2.3         |
| 4          | AD           | 157        | LEU         | 2.3         |
| 5          | AE           | 89         | ILE         | 2.3         |
| 13         | AM           | 102        | ARG         | 2.3         |
| 30         | BG           | 136        | ARG         | 2.3         |
| 45         | BZ           | 106        | GLY         | 2.3         |
| 10         | CJ           | 12         | ASP         | 2.3         |
| 30         | BG           | 137        | GLU         | 2.3         |
| 41         | DV           | 74         | LYS         | 2.3         |
| 55         | D9           | 15         | LYS         | 2.3         |
| 7          | AG           | 42         | ILE         | 2.3         |
| 46         | D0           | 42         | GLY         | 2.3         |
| 7          | CG           | 84         | ASN         | 2.3         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> | <b>RSRZ</b> |
|------------|--------------|------------|-------------|-------------|
| 29         | DF           | 15         | SER         | 2.3         |
| 32         | DI           | 19         | VAL         | 2.3         |
| 45         | DZ           | 161        | VAL         | 2.3         |
| 21         | CU           | 23         | PRO         | 2.3         |
| 2          | CB           | 188        | ALA         | 2.3         |
| 3          | AC           | 80         | GLY         | 2.3         |
| 39         | DT           | 102        | ILE         | 2.3         |
| 2          | CB           | 164        | VAL         | 2.3         |
| 19         | CS           | 57         | HIS         | 2.3         |
| 35         | DP           | 45         | LEU         | 2.3         |
| 25         | BA           | 2179       | C           | 2.3         |
| 25         | BA           | 2896       | C           | 2.3         |
| 50         | D4           | 43         | TYR         | 2.3         |
| 1          | AA           | 1447       | A           | 2.3         |
| 5          | AE           | 88         | LYS         | 2.3         |
| 5          | CE           | 88         | LYS         | 2.3         |
| 12         | CL           | 32         | PHE         | 2.3         |
| 41         | DV           | 43         | GLU         | 2.3         |
| 14         | AN           | 33         | VAL         | 2.2         |
| 14         | CN           | 33         | VAL         | 2.2         |
| 3          | CC           | 61         | ALA         | 2.2         |
| 9          | CI           | 69         | GLY         | 2.2         |
| 30         | DG           | 110        | ALA         | 2.2         |
| 3          | CC           | 23         | TYR         | 2.2         |
| 10         | CJ           | 44         | VAL         | 2.2         |
| 13         | CM           | 88         | ARG         | 2.2         |
| 20         | AT           | 23         | ARG         | 2.2         |
| 35         | BP           | 13         | ASN         | 2.2         |
| 2          | CB           | 233        | SER         | 2.2         |
| 31         | DH           | 77         | LYS         | 2.2         |
| 3          | AC           | 91         | LEU         | 2.2         |
| 20         | AT           | 59         | ALA         | 2.2         |
| 45         | DZ           | 143        | GLY         | 2.2         |
| 3          | CC           | 182        | ILE         | 2.2         |
| 4          | CD           | 146        | ILE         | 2.2         |
| 9          | CI           | 28         | VAL         | 2.2         |
| 25         | BA           | 2792       | G           | 2.2         |
| 15         | AO           | 87         | ILE         | 2.2         |
| 40         | BU           | 4          | ALA         | 2.2         |
| 37         | DR           | 21         | TYR         | 2.2         |
| 25         | BA           | 2143       | C           | 2.2         |
| 1          | AA           | 1446       | U           | 2.2         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> | <b>RSRZ</b> |
|------------|--------------|------------|-------------|-------------|
| 4          | AD           | 97         | LEU         | 2.2         |
| 5          | CE           | 12         | LEU         | 2.2         |
| 10         | CJ           | 8          | LEU         | 2.2         |
| 11         | AK           | 17         | GLY         | 2.2         |
| 25         | BA           | 1026       | U           | 2.2         |
| 37         | BR           | 100        | LEU         | 2.2         |
| 45         | DZ           | 121        | HIS         | 2.2         |
| 9          | CI           | 4          | TYR         | 2.2         |
| 29         | BF           | 154        | VAL         | 2.2         |
| 51         | B5           | 58         | LEU         | 2.2         |
| 14         | AN           | 49         | HIS         | 2.2         |
| 46         | D0           | 70         | GLN         | 2.2         |
| 25         | BA           | 2160       | G           | 2.2         |
| 32         | DI           | 107        | VAL         | 2.2         |
| 47         | D1           | 70         | VAL         | 2.2         |
| 4          | CD           | 18         | LYS         | 2.2         |
| 19         | CS           | 35         | SER         | 2.2         |
| 2          | CB           | 83         | MET         | 2.2         |
| 30         | DG           | 109        | VAL         | 2.2         |
| 36         | DQ           | 106        | VAL         | 2.2         |
| 1          | CA           | 1036       | G           | 2.2         |
| 25         | BA           | 2112       | G           | 2.2         |
| 33         | BN           | 115        | ARG         | 2.2         |
| 35         | BP           | 15         | ARG         | 2.2         |
| 36         | BQ           | 61         | GLY         | 2.2         |
| 41         | DV           | 101        | GLY         | 2.2         |
| 11         | AK           | 81         | ASP         | 2.2         |
| 19         | CS           | 71         | LEU         | 2.2         |
| 20         | AT           | 41         | ILE         | 2.2         |
| 53         | D7           | 18         | PHE         | 2.2         |
| 44         | DY           | 1          | MET         | 2.2         |
| 28         | BE           | 75         | VAL         | 2.2         |
| 35         | BP           | 83         | VAL         | 2.2         |
| 49         | D3           | 9          | VAL         | 2.2         |
| 9          | CI           | 18         | PHE         | 2.2         |
| 31         | BH           | 123        | PHE         | 2.2         |
| 42         | DW           | 36         | LEU         | 2.2         |
| 14         | CN           | 10         | ALA         | 2.2         |
| 3          | CC           | 37         | GLN         | 2.2         |
| 37         | DR           | 110        | PRO         | 2.2         |
| 3          | CC           | 131        | ARG         | 2.2         |
| 7          | AG           | 154        | TYR         | 2.2         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> | <b>RSRZ</b> |
|------------|--------------|------------|-------------|-------------|
| 25         | BA           | 2117       | A           | 2.2         |
| 31         | DH           | 25         | LYS         | 2.1         |
| 7          | CG           | 153        | HIS         | 2.1         |
| 18         | CR           | 87         | ARG         | 2.1         |
| 31         | BH           | 58         | GLU         | 2.1         |
| 43         | DX           | 31         | HIS         | 2.1         |
| 31         | DH           | 35         | VAL         | 2.1         |
| 35         | DP           | 125        | VAL         | 2.1         |
| 4          | AD           | 138        | TYR         | 2.1         |
| 4          | CD           | 4          | TYR         | 2.1         |
| 30         | DG           | 94         | LEU         | 2.1         |
| 3          | AC           | 160        | ALA         | 2.1         |
| 13         | CM           | 65         | LYS         | 2.1         |
| 39         | DT           | 48         | ILE         | 2.1         |
| 2          | CB           | 144        | ARG         | 2.1         |
| 14         | CN           | 54         | PRO         | 2.1         |
| 48         | D2           | 1          | MET         | 2.1         |
| 30         | DG           | 85         | GLY         | 2.1         |
| 45         | BZ           | 38         | TYR         | 2.1         |
| 45         | DZ           | 38         | TYR         | 2.1         |
| 41         | DV           | 94         | LEU         | 2.1         |
| 45         | DZ           | 88         | PHE         | 2.1         |
| 2          | CB           | 218        | ALA         | 2.1         |
| 13         | AM           | 4          | ILE         | 2.1         |
| 28         | BE           | 4          | ILE         | 2.1         |
| 10         | AJ           | 35         | SER         | 2.1         |
| 16         | CP           | 79         | VAL         | 2.1         |
| 28         | DE           | 196        | VAL         | 2.1         |
| 25         | BA           | 2793       | G           | 2.1         |
| 12         | CL           | 69         | TYR         | 2.1         |
| 30         | DG           | 25         | TYR         | 2.1         |
| 31         | DH           | 164        | TYR         | 2.1         |
| 42         | DW           | 29         | LEU         | 2.1         |
| 53         | D7           | 47         | ARG         | 2.1         |
| 9          | CI           | 61         | ALA         | 2.1         |
| 30         | DG           | 73         | ALA         | 2.1         |
| 2          | CB           | 228        | GLY         | 2.1         |
| 3          | CC           | 173        | VAL         | 2.1         |
| 5          | AE           | 100        | VAL         | 2.1         |
| 10         | AJ           | 49         | VAL         | 2.1         |
| 13         | AM           | 122        | LYS         | 2.1         |
| 42         | DW           | 13         | SER         | 2.1         |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> | <b>RSRZ</b> |
|------------|--------------|------------|-------------|-------------|
| 14         | CN           | 39         | LEU         | 2.1         |
| 30         | DG           | 152        | LEU         | 2.1         |
| 41         | BV           | 38         | LEU         | 2.1         |
| 42         | DW           | 68         | ARG         | 2.1         |
| 46         | D0           | 78         | TYR         | 2.1         |
| 25         | BA           | 2181       | G           | 2.1         |
| 31         | DH           | 151        | ILE         | 2.1         |
| 5          | AE           | 29         | GLY         | 2.1         |
| 25         | BA           | 2177       | C           | 2.1         |
| 3          | AC           | 14         | ILE         | 2.1         |
| 3          | AC           | 124        | ILE         | 2.1         |
| 11         | AK           | 19         | ALA         | 2.1         |
| 13         | AM           | 22         | ILE         | 2.1         |
| 25         | DA           | 2122       | U           | 2.1         |
| 43         | DX           | 86         | GLY         | 2.1         |
| 14         | CN           | 18         | VAL         | 2.1         |
| 54         | D8           | 2          | PRO         | 2.1         |
| 14         | AN           | 37         | PHE         | 2.1         |
| 37         | DR           | 29         | LEU         | 2.1         |
| 45         | DZ           | 171        | ILE         | 2.1         |
| 55         | D9           | 12         | ASP         | 2.1         |
| 43         | DX           | 83         | VAL         | 2.1         |
| 47         | B1           | 49         | VAL         | 2.1         |
| 3          | CC           | 4          | LYS         | 2.1         |
| 44         | BY           | 70         | SER         | 2.1         |
| 30         | DG           | 89         | GLY         | 2.1         |
| 20         | CT           | 9          | ASN         | 2.1         |
| 33         | DN           | 1          | MET         | 2.1         |
| 10         | CJ           | 67         | THR         | 2.0         |
| 47         | D1           | 77         | ALA         | 2.0         |
| 53         | B7           | 45         | ALA         | 2.0         |
| 54         | D8           | 10         | ALA         | 2.0         |
| 31         | DH           | 85         | LYS         | 2.0         |
| 31         | DH           | 117        | PRO         | 2.0         |
| 4          | AD           | 11         | LEU         | 2.0         |
| 30         | DG           | 90         | LEU         | 2.0         |
| 11         | AK           | 43         | SER         | 2.0         |
| 7          | CG           | 2          | ALA         | 2.0         |
| 18         | AR           | 73         | ALA         | 2.0         |
| 41         | DV           | 70         | ILE         | 2.0         |
| 31         | DH           | 166        | GLY         | 2.0         |
| 55         | D9           | 37         | GLY         | 2.0         |

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| Mol | Chain | Res     | Type | RSRZ |
|-----|-------|---------|------|------|
| 30  | DG    | 161     | THR  | 2.0  |
| 32  | DI    | 86      | THR  | 2.0  |
| 5   | CE    | 31      | LEU  | 2.0  |
| 11  | AK    | 117     | ASN  | 2.0  |
| 36  | BQ    | 104     | PHE  | 2.0  |
| 47  | B1    | 97      | LEU  | 2.0  |
| 12  | AL    | 89      | ARG  | 2.0  |
| 13  | CM    | 102     | ARG  | 2.0  |
| 9   | CI    | 74      | ILE  | 2.0  |
| 36  | BQ    | 15      | GLY  | 2.0  |
| 1   | AA    | 1036    | G    | 2.0  |
| 1   | CA    | 1492    | A    | 2.0  |
| 25  | DA    | 6       | A    | 2.0  |
| 5   | CE    | 69      | VAL  | 2.0  |
| 9   | CI    | 108     | VAL  | 2.0  |
| 9   | CI    | 90      | PRO  | 2.0  |
| 45  | BZ    | 108     | PRO  | 2.0  |
| 2   | AB    | 222     | ILE  | 2.0  |
| 13  | CM    | 4       | ILE  | 2.0  |
| 28  | DE    | 77      | ILE  | 2.0  |
| 33  | BN    | 71      | ILE  | 2.0  |
| 1   | CA    | 1001(A) | G    | 2.0  |
| 3   | CC    | 153     | VAL  | 2.0  |
| 7   | CG    | 4       | ARG  | 2.0  |
| 16  | CP    | 51      | VAL  | 2.0  |
| 47  | D1    | 49      | VAL  | 2.0  |
| 27  | BD    | 275     | LYS  | 2.0  |
| 53  | D7    | 2       | LYS  | 2.0  |

## 6.2 Non-standard residues in protein, DNA, RNA chains [i](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95<sup>th</sup> percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

| Mol | Type | Chain | Res | Atoms | RSCC | RSR  | B-factors(Å <sup>2</sup> ) | Q<0.9 |
|-----|------|-------|-----|-------|------|------|----------------------------|-------|
| 24  | 4SU  | CX    | 8   | 20/21 | 0.92 | 0.15 | 65,84,90,94                | 0     |
| 24  | PSU  | CX    | 55  | 20/21 | 0.92 | 0.14 | 59,68,84,85                | 0     |
| 24  | 5MU  | CX    | 54  | 21/22 | 0.93 | 0.20 | 66,78,87,98                | 0     |
| 24  | 31H  | CX    | 76  | 32/33 | 0.94 | 0.30 | 33,54,78,89                | 0     |
| 24  | 4SU  | AX    | 8   | 20/21 | 0.95 | 0.17 | 50,63,78,79                | 0     |

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| Mol | Type | Chain | Res | Atoms | RSCC | RSR  | B-factors(Å <sup>2</sup> ) | Q<0.9 |
|-----|------|-------|-----|-------|------|------|----------------------------|-------|
| 24  | PSU  | AX    | 55  | 20/21 | 0.95 | 0.14 | 57,66,78,79                | 0     |
| 23  | PPU  | CW    | 76  | 37/38 | 0.96 | 0.27 | 31,50,63,70                | 0     |
| 24  | 5MU  | AX    | 54  | 21/22 | 0.96 | 0.15 | 55,69,75,82                | 0     |
| 24  | 5MC  | CX    | 32  | 21/22 | 0.96 | 0.15 | 52,69,78,83                | 0     |
| 23  | PPU  | AW    | 76  | 37/38 | 0.97 | 0.23 | 25,33,43,45                | 0     |
| 24  | 5MC  | AX    | 32  | 21/22 | 0.97 | 0.17 | 46,61,70,75                | 0     |
| 24  | 31H  | AX    | 76  | 32/33 | 0.97 | 0.27 | 27,44,76,98                | 0     |

### 6.3 Carbohydrates [i](#)

There are no monosaccharides in this entry.

### 6.4 Ligands [i](#)

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95<sup>th</sup> percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors(Å <sup>2</sup> ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|----------------------------|-------|
| 56  | MG   | DG    | 3001 | 1/1   | 0.35 | 0.26 | 81,81,81,81                | 0     |
| 56  | MG   | CA    | 3016 | 1/1   | 0.67 | 0.14 | 68,68,68,68                | 0     |
| 56  | MG   | DA    | 3251 | 1/1   | 0.69 | 0.18 | 62,62,62,62                | 0     |
| 56  | MG   | AA    | 3181 | 1/1   | 0.69 | 0.18 | 53,53,53,53                | 0     |
| 56  | MG   | BA    | 3649 | 1/1   | 0.70 | 0.14 | 50,50,50,50                | 0     |
| 56  | MG   | DA    | 3275 | 1/1   | 0.71 | 0.10 | 45,45,45,45                | 0     |
| 56  | MG   | DA    | 3506 | 1/1   | 0.73 | 0.14 | 65,65,65,65                | 0     |
| 56  | MG   | BB    | 3010 | 1/1   | 0.74 | 0.14 | 77,77,77,77                | 0     |
| 56  | MG   | BA    | 3619 | 1/1   | 0.75 | 0.16 | 30,30,30,30                | 0     |
| 56  | MG   | AA    | 3023 | 1/1   | 0.75 | 0.20 | 71,71,71,71                | 0     |
| 56  | MG   | DA    | 3479 | 1/1   | 0.75 | 0.12 | 63,63,63,63                | 0     |
| 56  | MG   | CA    | 3086 | 1/1   | 0.75 | 0.09 | 68,68,68,68                | 0     |
| 56  | MG   | DA    | 3121 | 1/1   | 0.75 | 0.43 | 50,50,50,50                | 0     |
| 56  | MG   | CA    | 3011 | 1/1   | 0.76 | 0.17 | 66,66,66,66                | 0     |
| 56  | MG   | DA    | 3561 | 1/1   | 0.76 | 0.18 | 63,63,63,63                | 0     |
| 56  | MG   | CA    | 3154 | 1/1   | 0.76 | 0.14 | 62,62,62,62                | 0     |
| 56  | MG   | AA    | 3184 | 1/1   | 0.77 | 0.17 | 74,74,74,74                | 0     |
| 56  | MG   | DA    | 3485 | 1/1   | 0.77 | 0.12 | 60,60,60,60                | 0     |
| 56  | MG   | BA    | 3278 | 1/1   | 0.77 | 0.12 | 50,50,50,50                | 0     |
| 56  | MG   | AA    | 3147 | 1/1   | 0.77 | 0.08 | 67,67,67,67                | 0     |
| 56  | MG   | DB    | 3005 | 1/1   | 0.77 | 0.21 | 56,56,56,56                | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 56  | MG   | AA    | 3062 | 1/1   | 0.77 | 0.18 | 58,58,58,58                 | 0     |
| 56  | MG   | BA    | 3639 | 1/1   | 0.78 | 0.19 | 64,64,64,64                 | 0     |
| 56  | MG   | DA    | 3187 | 1/1   | 0.78 | 0.13 | 46,46,46,46                 | 0     |
| 56  | MG   | BZ    | 3001 | 1/1   | 0.78 | 0.25 | 58,58,58,58                 | 0     |
| 56  | MG   | CA    | 3126 | 1/1   | 0.78 | 0.23 | 73,73,73,73                 | 0     |
| 56  | MG   | BA    | 3090 | 1/1   | 0.78 | 0.20 | 44,44,44,44                 | 0     |
| 56  | MG   | CA    | 3083 | 1/1   | 0.79 | 0.20 | 66,66,66,66                 | 0     |
| 56  | MG   | BA    | 3350 | 1/1   | 0.79 | 0.17 | 59,59,59,59                 | 0     |
| 56  | MG   | CA    | 3121 | 1/1   | 0.79 | 0.13 | 61,61,61,61                 | 0     |
| 56  | MG   | BA    | 3373 | 1/1   | 0.79 | 0.17 | 41,41,41,41                 | 0     |
| 56  | MG   | BA    | 3127 | 1/1   | 0.79 | 0.25 | 45,45,45,45                 | 0     |
| 56  | MG   | BA    | 3028 | 1/1   | 0.80 | 0.16 | 41,41,41,41                 | 0     |
| 56  | MG   | DA    | 3354 | 1/1   | 0.80 | 0.19 | 51,51,51,51                 | 0     |
| 56  | MG   | CA    | 3136 | 1/1   | 0.80 | 0.12 | 53,53,53,53                 | 0     |
| 56  | MG   | CA    | 3036 | 1/1   | 0.80 | 0.11 | 56,56,56,56                 | 0     |
| 56  | MG   | BA    | 3569 | 1/1   | 0.80 | 0.18 | 55,55,55,55                 | 0     |
| 56  | MG   | BA    | 3056 | 1/1   | 0.80 | 0.13 | 46,46,46,46                 | 0     |
| 56  | MG   | AA    | 3024 | 1/1   | 0.80 | 0.18 | 60,60,60,60                 | 0     |
| 56  | MG   | DA    | 3264 | 1/1   | 0.80 | 0.17 | 47,47,47,47                 | 0     |
| 56  | MG   | BA    | 3125 | 1/1   | 0.81 | 0.19 | 51,51,51,51                 | 0     |
| 56  | MG   | AA    | 3010 | 1/1   | 0.81 | 0.15 | 60,60,60,60                 | 0     |
| 56  | MG   | AA    | 3088 | 1/1   | 0.81 | 0.16 | 62,62,62,62                 | 0     |
| 56  | MG   | BB    | 3003 | 1/1   | 0.81 | 0.09 | 61,61,61,61                 | 0     |
| 56  | MG   | DA    | 3150 | 1/1   | 0.81 | 0.70 | 55,55,55,55                 | 0     |
| 56  | MG   | DB    | 3007 | 1/1   | 0.81 | 0.14 | 38,38,38,38                 | 0     |
| 56  | MG   | DA    | 3398 | 1/1   | 0.81 | 0.13 | 51,51,51,51                 | 0     |
| 56  | MG   | CA    | 3071 | 1/1   | 0.82 | 0.18 | 51,51,51,51                 | 0     |
| 56  | MG   | DA    | 3474 | 1/1   | 0.82 | 0.11 | 62,62,62,62                 | 0     |
| 56  | MG   | CA    | 3004 | 1/1   | 0.82 | 0.13 | 51,51,51,51                 | 0     |
| 56  | MG   | AA    | 3027 | 1/1   | 0.83 | 0.16 | 71,71,71,71                 | 0     |
| 56  | MG   | BA    | 3576 | 1/1   | 0.83 | 0.17 | 48,48,48,48                 | 0     |
| 56  | MG   | CA    | 3131 | 1/1   | 0.83 | 0.08 | 65,65,65,65                 | 0     |
| 56  | MG   | BA    | 3580 | 1/1   | 0.83 | 0.14 | 62,62,62,62                 | 0     |
| 56  | MG   | BA    | 3585 | 1/1   | 0.83 | 0.16 | 50,50,50,50                 | 0     |
| 56  | MG   | DA    | 3022 | 1/1   | 0.83 | 0.13 | 39,39,39,39                 | 0     |
| 56  | MG   | BA    | 3601 | 1/1   | 0.83 | 0.14 | 50,50,50,50                 | 0     |
| 56  | MG   | AA    | 3183 | 1/1   | 0.83 | 0.19 | 55,55,55,55                 | 0     |
| 56  | MG   | BA    | 3075 | 1/1   | 0.83 | 0.28 | 58,58,58,58                 | 0     |
| 56  | MG   | BA    | 3082 | 1/1   | 0.83 | 0.21 | 47,47,47,47                 | 0     |
| 56  | MG   | AA    | 3180 | 1/1   | 0.83 | 0.11 | 56,56,56,56                 | 0     |
| 56  | MG   | BB    | 3009 | 1/1   | 0.84 | 0.12 | 67,67,67,67                 | 0     |
| 56  | MG   | BA    | 3446 | 1/1   | 0.84 | 0.20 | 61,61,61,61                 | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 56  | MG   | DA    | 3021 | 1/1   | 0.84 | 0.15 | 55,55,55,55                 | 0     |
| 56  | MG   | BE    | 303  | 1/1   | 0.84 | 0.19 | 41,41,41,41                 | 0     |
| 56  | MG   | BP    | 203  | 1/1   | 0.84 | 0.14 | 47,47,47,47                 | 0     |
| 56  | MG   | BA    | 3550 | 1/1   | 0.84 | 0.17 | 44,44,44,44                 | 0     |
| 56  | MG   | B8    | 5001 | 1/1   | 0.84 | 0.15 | 36,36,36,36                 | 0     |
| 56  | MG   | AA    | 3071 | 1/1   | 0.84 | 0.12 | 36,36,36,36                 | 0     |
| 56  | MG   | DA    | 3256 | 1/1   | 0.84 | 0.15 | 45,45,45,45                 | 0     |
| 56  | MG   | AF    | 3001 | 1/1   | 0.84 | 0.15 | 52,52,52,52                 | 0     |
| 56  | MG   | BA    | 3136 | 1/1   | 0.84 | 0.18 | 44,44,44,44                 | 0     |
| 56  | MG   | CA    | 3035 | 1/1   | 0.84 | 0.14 | 66,66,66,66                 | 0     |
| 56  | MG   | BA    | 3235 | 1/1   | 0.84 | 0.22 | 51,51,51,51                 | 0     |
| 56  | MG   | CA    | 3050 | 1/1   | 0.84 | 0.13 | 67,67,67,67                 | 0     |
| 56  | MG   | BA    | 3237 | 1/1   | 0.84 | 0.19 | 57,57,57,57                 | 0     |
| 56  | MG   | CA    | 3081 | 1/1   | 0.84 | 0.16 | 56,56,56,56                 | 0     |
| 56  | MG   | BA    | 3616 | 1/1   | 0.84 | 0.13 | 34,34,34,34                 | 0     |
| 56  | MG   | BA    | 3012 | 1/1   | 0.84 | 0.14 | 39,39,39,39                 | 0     |
| 56  | MG   | DA    | 3568 | 1/1   | 0.84 | 0.13 | 60,60,60,60                 | 0     |
| 56  | MG   | AA    | 3019 | 1/1   | 0.84 | 0.22 | 62,62,62,62                 | 0     |
| 56  | MG   | BA    | 3371 | 1/1   | 0.84 | 0.18 | 25,25,25,25                 | 0     |
| 56  | MG   | BA    | 3093 | 1/1   | 0.84 | 0.21 | 40,40,40,40                 | 0     |
| 56  | MG   | DW    | 3002 | 1/1   | 0.84 | 0.19 | 60,60,60,60                 | 0     |
| 56  | MG   | BA    | 3521 | 1/1   | 0.85 | 0.11 | 54,54,54,54                 | 0     |
| 56  | MG   | BA    | 3309 | 1/1   | 0.85 | 0.14 | 32,32,32,32                 | 0     |
| 56  | MG   | BA    | 3347 | 1/1   | 0.85 | 0.11 | 53,53,53,53                 | 0     |
| 56  | MG   | DA    | 3359 | 1/1   | 0.85 | 0.13 | 43,43,43,43                 | 0     |
| 56  | MG   | CA    | 3152 | 1/1   | 0.85 | 0.16 | 75,75,75,75                 | 0     |
| 56  | MG   | BA    | 3112 | 1/1   | 0.85 | 0.26 | 40,40,40,40                 | 0     |
| 56  | MG   | AA    | 3160 | 1/1   | 0.85 | 0.09 | 71,71,71,71                 | 0     |
| 56  | MG   | BA    | 3244 | 1/1   | 0.85 | 0.56 | 46,46,46,46                 | 0     |
| 56  | MG   | DA    | 3054 | 1/1   | 0.85 | 0.23 | 45,45,45,45                 | 0     |
| 56  | MG   | DA    | 3544 | 1/1   | 0.85 | 0.18 | 51,51,51,51                 | 0     |
| 56  | MG   | DA    | 3090 | 1/1   | 0.85 | 0.10 | 54,54,54,54                 | 0     |
| 56  | MG   | CA    | 3084 | 1/1   | 0.85 | 0.10 | 72,72,72,72                 | 0     |
| 56  | MG   | BA    | 3169 | 1/1   | 0.85 | 0.13 | 39,39,39,39                 | 0     |
| 56  | MG   | CA    | 3104 | 1/1   | 0.85 | 0.17 | 74,74,74,74                 | 0     |
| 56  | MG   | CA    | 3118 | 1/1   | 0.85 | 0.10 | 78,78,78,78                 | 0     |
| 56  | MG   | CA    | 3019 | 1/1   | 0.85 | 0.20 | 71,71,71,71                 | 0     |
| 56  | MG   | CA    | 3049 | 1/1   | 0.86 | 0.17 | 51,51,51,51                 | 0     |
| 56  | MG   | DA    | 3091 | 1/1   | 0.86 | 0.15 | 45,45,45,45                 | 0     |
| 56  | MG   | DA    | 3478 | 1/1   | 0.86 | 0.14 | 53,53,53,53                 | 0     |
| 56  | MG   | BA    | 3634 | 1/1   | 0.86 | 0.30 | 41,41,41,41                 | 0     |
| 56  | MG   | BA    | 3579 | 1/1   | 0.86 | 0.18 | 46,46,46,46                 | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 56  | MG   | DA    | 3487 | 1/1   | 0.86 | 0.18 | 50,50,50,50                 | 0     |
| 56  | MG   | DA    | 3504 | 1/1   | 0.86 | 0.12 | 49,49,49,49                 | 0     |
| 56  | MG   | BA    | 3129 | 1/1   | 0.86 | 0.17 | 42,42,42,42                 | 0     |
| 56  | MG   | BA    | 3546 | 1/1   | 0.86 | 0.10 | 57,57,57,57                 | 0     |
| 56  | MG   | AA    | 3109 | 1/1   | 0.86 | 0.18 | 44,44,44,44                 | 0     |
| 56  | MG   | BA    | 3331 | 1/1   | 0.86 | 0.15 | 59,59,59,59                 | 0     |
| 56  | MG   | DA    | 3582 | 1/1   | 0.86 | 0.17 | 38,38,38,38                 | 0     |
| 56  | MG   | BA    | 3081 | 1/1   | 0.86 | 0.19 | 42,42,42,42                 | 0     |
| 56  | MG   | DA    | 3347 | 1/1   | 0.86 | 0.14 | 41,41,41,41                 | 0     |
| 56  | MG   | BA    | 3624 | 1/1   | 0.86 | 0.29 | 49,49,49,49                 | 0     |
| 56  | MG   | DA    | 3069 | 1/1   | 0.86 | 0.12 | 35,35,35,35                 | 0     |
| 56  | MG   | AA    | 3061 | 1/1   | 0.87 | 0.13 | 62,62,62,62                 | 0     |
| 56  | MG   | DA    | 3430 | 1/1   | 0.87 | 0.19 | 30,30,30,30                 | 0     |
| 56  | MG   | DA    | 3443 | 1/1   | 0.87 | 0.08 | 49,49,49,49                 | 0     |
| 56  | MG   | DA    | 3446 | 1/1   | 0.87 | 0.09 | 46,46,46,46                 | 0     |
| 56  | MG   | BA    | 3253 | 1/1   | 0.87 | 0.38 | 47,47,47,47                 | 0     |
| 56  | MG   | DA    | 3477 | 1/1   | 0.87 | 0.13 | 42,42,42,42                 | 0     |
| 56  | MG   | DA    | 3135 | 1/1   | 0.87 | 0.16 | 47,47,47,47                 | 0     |
| 56  | MG   | CA    | 3138 | 1/1   | 0.87 | 0.15 | 58,58,58,58                 | 0     |
| 56  | MG   | DA    | 3151 | 1/1   | 0.87 | 0.14 | 34,34,34,34                 | 0     |
| 56  | MG   | DA    | 3172 | 1/1   | 0.87 | 0.11 | 35,35,35,35                 | 0     |
| 56  | MG   | BA    | 3171 | 1/1   | 0.87 | 0.14 | 44,44,44,44                 | 0     |
| 56  | MG   | BA    | 3441 | 1/1   | 0.87 | 0.12 | 44,44,44,44                 | 0     |
| 56  | MG   | DA    | 3516 | 1/1   | 0.87 | 0.08 | 61,61,61,61                 | 0     |
| 56  | MG   | DA    | 3531 | 1/1   | 0.87 | 0.12 | 69,69,69,69                 | 0     |
| 56  | MG   | BW    | 3002 | 1/1   | 0.87 | 0.19 | 57,57,57,57                 | 0     |
| 56  | MG   | BA    | 3230 | 1/1   | 0.87 | 0.21 | 40,40,40,40                 | 0     |
| 56  | MG   | AA    | 3081 | 1/1   | 0.87 | 0.11 | 44,44,44,44                 | 0     |
| 56  | MG   | DA    | 3574 | 1/1   | 0.87 | 0.13 | 56,56,56,56                 | 0     |
| 56  | MG   | AA    | 3058 | 1/1   | 0.87 | 0.13 | 62,62,62,62                 | 0     |
| 56  | MG   | DA    | 3073 | 1/1   | 0.87 | 0.14 | 51,51,51,51                 | 0     |
| 56  | MG   | DA    | 3357 | 1/1   | 0.87 | 0.11 | 33,33,33,33                 | 0     |
| 56  | MG   | CA    | 3129 | 1/1   | 0.87 | 0.14 | 55,55,55,55                 | 0     |
| 56  | MG   | DA    | 3373 | 1/1   | 0.87 | 0.13 | 42,42,42,42                 | 0     |
| 56  | MG   | AA    | 3106 | 1/1   | 0.88 | 0.17 | 50,50,50,50                 | 0     |
| 56  | MG   | AA    | 3087 | 1/1   | 0.88 | 0.21 | 62,62,62,62                 | 0     |
| 56  | MG   | CA    | 3090 | 1/1   | 0.88 | 0.16 | 66,66,66,66                 | 0     |
| 56  | MG   | BA    | 3395 | 1/1   | 0.88 | 0.23 | 54,54,54,54                 | 0     |
| 56  | MG   | DA    | 3301 | 1/1   | 0.88 | 0.13 | 56,56,56,56                 | 0     |
| 56  | MG   | BA    | 3206 | 1/1   | 0.88 | 0.20 | 41,41,41,41                 | 0     |
| 56  | MG   | AA    | 3092 | 1/1   | 0.88 | 0.17 | 61,61,61,61                 | 0     |
| 56  | MG   | BD    | 304  | 1/1   | 0.88 | 0.20 | 28,28,28,28                 | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 56  | MG   | AA    | 3148 | 1/1   | 0.88 | 0.06 | 56,56,56,56                 | 0     |
| 56  | MG   | BA    | 3531 | 1/1   | 0.88 | 0.09 | 41,41,41,41                 | 0     |
| 56  | MG   | AA    | 3149 | 1/1   | 0.88 | 0.12 | 68,68,68,68                 | 0     |
| 56  | MG   | BW    | 3004 | 1/1   | 0.88 | 0.23 | 30,30,30,30                 | 0     |
| 56  | MG   | BA    | 3094 | 1/1   | 0.88 | 0.20 | 45,45,45,45                 | 0     |
| 56  | MG   | AX    | 3006 | 1/1   | 0.88 | 0.09 | 54,54,54,54                 | 0     |
| 56  | MG   | CT    | 3001 | 1/1   | 0.88 | 0.09 | 50,50,50,50                 | 0     |
| 56  | MG   | BA    | 3260 | 1/1   | 0.88 | 0.22 | 49,49,49,49                 | 0     |
| 56  | MG   | BA    | 3267 | 1/1   | 0.88 | 0.17 | 40,40,40,40                 | 0     |
| 56  | MG   | DA    | 3028 | 1/1   | 0.88 | 0.35 | 47,47,47,47                 | 0     |
| 56  | MG   | CA    | 3013 | 1/1   | 0.88 | 0.16 | 53,53,53,53                 | 0     |
| 56  | MG   | DA    | 3056 | 1/1   | 0.88 | 0.09 | 36,36,36,36                 | 0     |
| 56  | MG   | AA    | 3153 | 1/1   | 0.88 | 0.16 | 50,50,50,50                 | 0     |
| 56  | MG   | BA    | 3126 | 1/1   | 0.88 | 0.12 | 45,45,45,45                 | 0     |
| 56  | MG   | DA    | 3076 | 1/1   | 0.88 | 0.11 | 43,43,43,43                 | 0     |
| 56  | MG   | AA    | 3093 | 1/1   | 0.88 | 0.18 | 45,45,45,45                 | 0     |
| 56  | MG   | DA    | 3538 | 1/1   | 0.88 | 0.10 | 39,39,39,39                 | 0     |
| 56  | MG   | BA    | 3605 | 1/1   | 0.88 | 0.17 | 46,46,46,46                 | 0     |
| 56  | MG   | DA    | 3108 | 1/1   | 0.88 | 0.10 | 46,46,46,46                 | 0     |
| 56  | MG   | BA    | 3334 | 1/1   | 0.88 | 0.10 | 32,32,32,32                 | 0     |
| 56  | MG   | BA    | 3340 | 1/1   | 0.88 | 0.13 | 42,42,42,42                 | 0     |
| 56  | MG   | CA    | 3055 | 1/1   | 0.88 | 0.14 | 62,62,62,62                 | 0     |
| 56  | MG   | BA    | 3048 | 1/1   | 0.88 | 0.15 | 47,47,47,47                 | 0     |
| 56  | MG   | BA    | 3631 | 1/1   | 0.88 | 0.12 | 41,41,41,41                 | 0     |
| 56  | MG   | AA    | 3164 | 1/1   | 0.88 | 0.14 | 61,61,61,61                 | 0     |
| 56  | MG   | DA    | 3212 | 1/1   | 0.88 | 0.17 | 39,39,39,39                 | 0     |
| 56  | MG   | AA    | 3089 | 1/1   | 0.89 | 0.14 | 36,36,36,36                 | 0     |
| 56  | MG   | DA    | 3162 | 1/1   | 0.89 | 0.11 | 57,57,57,57                 | 0     |
| 56  | MG   | AA    | 3167 | 1/1   | 0.89 | 0.14 | 73,73,73,73                 | 0     |
| 56  | MG   | CA    | 3085 | 1/1   | 0.89 | 0.12 | 52,52,52,52                 | 0     |
| 56  | MG   | DA    | 3209 | 1/1   | 0.89 | 0.11 | 38,38,38,38                 | 0     |
| 56  | MG   | BA    | 3567 | 1/1   | 0.89 | 0.18 | 53,53,53,53                 | 0     |
| 56  | MG   | DA    | 3220 | 1/1   | 0.89 | 0.13 | 43,43,43,43                 | 0     |
| 56  | MG   | DA    | 3239 | 1/1   | 0.89 | 0.20 | 56,56,56,56                 | 0     |
| 56  | MG   | DA    | 3243 | 1/1   | 0.89 | 0.09 | 50,50,50,50                 | 0     |
| 56  | MG   | DA    | 3247 | 1/1   | 0.89 | 0.13 | 49,49,49,49                 | 0     |
| 56  | MG   | BA    | 3177 | 1/1   | 0.89 | 0.13 | 44,44,44,44                 | 0     |
| 56  | MG   | BE    | 305  | 1/1   | 0.89 | 0.26 | 51,51,51,51                 | 0     |
| 56  | MG   | BH    | 3001 | 1/1   | 0.89 | 0.20 | 56,56,56,56                 | 0     |
| 56  | MG   | BA    | 3185 | 1/1   | 0.89 | 0.13 | 43,43,43,43                 | 0     |
| 56  | MG   | AX    | 3007 | 1/1   | 0.89 | 0.11 | 60,60,60,60                 | 0     |
| 56  | MG   | DA    | 3307 | 1/1   | 0.89 | 0.21 | 53,53,53,53                 | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors(Å <sup>2</sup> ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|----------------------------|-------|
| 56  | MG   | AA    | 3172 | 1/1   | 0.89 | 0.09 | 69,69,69,69                | 0     |
| 56  | MG   | BY    | 503  | 1/1   | 0.89 | 0.12 | 42,42,42,42                | 0     |
| 56  | MG   | BA    | 3013 | 1/1   | 0.89 | 0.16 | 35,35,35,35                | 0     |
| 56  | MG   | B0    | 104  | 1/1   | 0.89 | 0.36 | 48,48,48,48                | 0     |
| 56  | MG   | B4    | 502  | 1/1   | 0.89 | 0.16 | 61,61,61,61                | 0     |
| 56  | MG   | AA    | 3035 | 1/1   | 0.89 | 0.19 | 65,65,65,65                | 0     |
| 56  | MG   | DA    | 3412 | 1/1   | 0.89 | 0.20 | 53,53,53,53                | 0     |
| 56  | MG   | DA    | 3425 | 1/1   | 0.89 | 0.14 | 37,37,37,37                | 0     |
| 56  | MG   | CJ    | 5001 | 1/1   | 0.89 | 0.09 | 60,60,60,60                | 0     |
| 56  | MG   | AA    | 3049 | 1/1   | 0.89 | 0.22 | 47,47,47,47                | 0     |
| 56  | MG   | AA    | 3056 | 1/1   | 0.89 | 0.15 | 69,69,69,69                | 0     |
| 56  | MG   | BA    | 3617 | 1/1   | 0.89 | 0.26 | 66,66,66,66                | 0     |
| 56  | MG   | DA    | 3475 | 1/1   | 0.89 | 0.20 | 41,41,41,41                | 0     |
| 56  | MG   | BA    | 3058 | 1/1   | 0.89 | 0.15 | 43,43,43,43                | 0     |
| 56  | MG   | DA    | 3037 | 1/1   | 0.89 | 0.10 | 40,40,40,40                | 0     |
| 56  | MG   | DA    | 3052 | 1/1   | 0.89 | 0.15 | 49,49,49,49                | 0     |
| 56  | MG   | BA    | 3466 | 1/1   | 0.89 | 0.22 | 49,49,49,49                | 0     |
| 56  | MG   | DA    | 3486 | 1/1   | 0.89 | 0.17 | 37,37,37,37                | 0     |
| 56  | MG   | CA    | 3028 | 1/1   | 0.89 | 0.12 | 52,52,52,52                | 0     |
| 56  | MG   | DA    | 3065 | 1/1   | 0.89 | 0.15 | 49,49,49,49                | 0     |
| 56  | MG   | AA    | 3068 | 1/1   | 0.89 | 0.20 | 31,31,31,31                | 0     |
| 56  | MG   | BA    | 3633 | 1/1   | 0.89 | 0.14 | 57,57,57,57                | 0     |
| 56  | MG   | DA    | 3518 | 1/1   | 0.89 | 0.19 | 53,53,53,53                | 0     |
| 56  | MG   | DA    | 3530 | 1/1   | 0.89 | 0.10 | 60,60,60,60                | 0     |
| 56  | MG   | CA    | 3041 | 1/1   | 0.89 | 0.13 | 67,67,67,67                | 0     |
| 56  | MG   | BA    | 3523 | 1/1   | 0.89 | 0.10 | 50,50,50,50                | 0     |
| 56  | MG   | BA    | 3527 | 1/1   | 0.89 | 0.12 | 40,40,40,40                | 0     |
| 56  | MG   | BA    | 3078 | 1/1   | 0.89 | 0.13 | 53,53,53,53                | 0     |
| 56  | MG   | DA    | 3119 | 1/1   | 0.89 | 0.20 | 37,37,37,37                | 0     |
| 56  | MG   | CA    | 3068 | 1/1   | 0.89 | 0.09 | 74,74,74,74                | 0     |
| 56  | MG   | DA    | 3131 | 1/1   | 0.89 | 0.12 | 46,46,46,46                | 0     |
| 56  | MG   | BA    | 3672 | 1/1   | 0.89 | 0.10 | 46,46,46,46                | 0     |
| 56  | MG   | DA    | 3141 | 1/1   | 0.89 | 0.07 | 42,42,42,42                | 0     |
| 56  | MG   | DA    | 3145 | 1/1   | 0.89 | 0.14 | 31,31,31,31                | 0     |
| 56  | MG   | DQ    | 3003 | 1/1   | 0.89 | 0.18 | 50,50,50,50                | 0     |
| 56  | MG   | BA    | 3533 | 1/1   | 0.89 | 0.11 | 45,45,45,45                | 0     |
| 56  | MG   | BA    | 3401 | 1/1   | 0.90 | 0.14 | 32,32,32,32                | 0     |
| 56  | MG   | BA    | 3416 | 1/1   | 0.90 | 0.17 | 64,64,64,64                | 0     |
| 56  | MG   | BA    | 3623 | 1/1   | 0.90 | 0.10 | 48,48,48,48                | 0     |
| 56  | MG   | BA    | 3243 | 1/1   | 0.90 | 0.17 | 45,45,45,45                | 0     |
| 56  | MG   | BA    | 3002 | 1/1   | 0.90 | 0.14 | 39,39,39,39                | 0     |
| 56  | MG   | DA    | 3253 | 1/1   | 0.90 | 0.12 | 26,26,26,26                | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors(Å <sup>2</sup> ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|----------------------------|-------|
| 56  | MG   | CA    | 3025 | 1/1   | 0.90 | 0.09 | 48,48,48,48                | 0     |
| 56  | MG   | BA    | 3246 | 1/1   | 0.90 | 0.18 | 56,56,56,56                | 0     |
| 56  | MG   | DA    | 3271 | 1/1   | 0.90 | 0.09 | 55,55,55,55                | 0     |
| 56  | MG   | DA    | 3274 | 1/1   | 0.90 | 0.10 | 56,56,56,56                | 0     |
| 56  | MG   | CA    | 3032 | 1/1   | 0.90 | 0.16 | 68,68,68,68                | 0     |
| 56  | MG   | DA    | 3281 | 1/1   | 0.90 | 0.14 | 56,56,56,56                | 0     |
| 56  | MG   | AA    | 3038 | 1/1   | 0.90 | 0.14 | 53,53,53,53                | 0     |
| 56  | MG   | DA    | 3302 | 1/1   | 0.90 | 0.10 | 43,43,43,43                | 0     |
| 56  | MG   | DA    | 3030 | 1/1   | 0.90 | 0.14 | 30,30,30,30                | 0     |
| 56  | MG   | DA    | 3325 | 1/1   | 0.90 | 0.13 | 54,54,54,54                | 0     |
| 56  | MG   | DA    | 3326 | 1/1   | 0.90 | 0.12 | 41,41,41,41                | 0     |
| 56  | MG   | DA    | 3329 | 1/1   | 0.90 | 0.07 | 48,48,48,48                | 0     |
| 56  | MG   | AA    | 3124 | 1/1   | 0.90 | 0.19 | 30,30,30,30                | 0     |
| 56  | MG   | BA    | 3263 | 1/1   | 0.90 | 0.21 | 64,64,64,64                | 0     |
| 56  | MG   | BA    | 3653 | 1/1   | 0.90 | 0.14 | 33,33,33,33                | 0     |
| 56  | MG   | AA    | 3185 | 1/1   | 0.90 | 0.05 | 64,64,64,64                | 0     |
| 56  | MG   | BA    | 3268 | 1/1   | 0.90 | 0.26 | 39,39,39,39                | 0     |
| 56  | MG   | DA    | 3381 | 1/1   | 0.90 | 0.24 | 56,56,56,56                | 0     |
| 56  | MG   | DA    | 3067 | 1/1   | 0.90 | 0.17 | 53,53,53,53                | 0     |
| 56  | MG   | BA    | 3164 | 1/1   | 0.90 | 0.11 | 37,37,37,37                | 0     |
| 56  | MG   | BA    | 3087 | 1/1   | 0.90 | 0.18 | 36,36,36,36                | 0     |
| 56  | MG   | CA    | 3078 | 1/1   | 0.90 | 0.07 | 66,66,66,66                | 0     |
| 56  | MG   | DA    | 3087 | 1/1   | 0.90 | 0.29 | 35,35,35,35                | 0     |
| 56  | MG   | DA    | 3088 | 1/1   | 0.90 | 0.12 | 39,39,39,39                | 0     |
| 56  | MG   | DA    | 3469 | 1/1   | 0.90 | 0.18 | 33,33,33,33                | 0     |
| 56  | MG   | BA    | 3559 | 1/1   | 0.90 | 0.13 | 52,52,52,52                | 0     |
| 56  | MG   | BA    | 3562 | 1/1   | 0.90 | 0.09 | 46,46,46,46                | 0     |
| 56  | MG   | DA    | 3094 | 1/1   | 0.90 | 0.23 | 35,35,35,35                | 0     |
| 56  | MG   | BA    | 3036 | 1/1   | 0.90 | 0.11 | 56,56,56,56                | 0     |
| 56  | MG   | DA    | 3109 | 1/1   | 0.90 | 0.13 | 50,50,50,50                | 0     |
| 56  | MG   | BA    | 3092 | 1/1   | 0.90 | 0.22 | 44,44,44,44                | 0     |
| 56  | MG   | AA    | 3176 | 1/1   | 0.90 | 0.12 | 60,60,60,60                | 0     |
| 56  | MG   | DA    | 3122 | 1/1   | 0.90 | 0.17 | 45,45,45,45                | 0     |
| 56  | MG   | DA    | 3491 | 1/1   | 0.90 | 0.13 | 40,40,40,40                | 0     |
| 56  | MG   | DA    | 3492 | 1/1   | 0.90 | 0.09 | 44,44,44,44                | 0     |
| 56  | MG   | DA    | 3496 | 1/1   | 0.90 | 0.05 | 46,46,46,46                | 0     |
| 56  | MG   | DA    | 3125 | 1/1   | 0.90 | 0.35 | 47,47,47,47                | 0     |
| 56  | MG   | BA    | 3345 | 1/1   | 0.90 | 0.18 | 41,41,41,41                | 0     |
| 56  | MG   | BA    | 3187 | 1/1   | 0.90 | 0.13 | 37,37,37,37                | 0     |
| 56  | MG   | CA    | 3105 | 1/1   | 0.90 | 0.08 | 84,84,84,84                | 0     |
| 56  | MG   | CA    | 3110 | 1/1   | 0.90 | 0.17 | 64,64,64,64                | 0     |
| 56  | MG   | DA    | 3148 | 1/1   | 0.90 | 0.10 | 47,47,47,47                | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 56  | MG   | DA    | 3534 | 1/1   | 0.90 | 0.14 | 54,54,54,54                 | 0     |
| 56  | MG   | AA    | 3073 | 1/1   | 0.90 | 0.19 | 50,50,50,50                 | 0     |
| 56  | MG   | CA    | 3119 | 1/1   | 0.90 | 0.09 | 48,48,48,48                 | 0     |
| 56  | MG   | DA    | 3554 | 1/1   | 0.90 | 0.09 | 68,68,68,68                 | 0     |
| 56  | MG   | DA    | 3557 | 1/1   | 0.90 | 0.16 | 62,62,62,62                 | 0     |
| 56  | MG   | DA    | 3152 | 1/1   | 0.90 | 0.17 | 34,34,34,34                 | 0     |
| 56  | MG   | DA    | 3564 | 1/1   | 0.90 | 0.07 | 36,36,36,36                 | 0     |
| 56  | MG   | DA    | 3566 | 1/1   | 0.90 | 0.14 | 61,61,61,61                 | 0     |
| 56  | MG   | BA    | 3596 | 1/1   | 0.90 | 0.14 | 56,56,56,56                 | 0     |
| 56  | MG   | CA    | 3123 | 1/1   | 0.90 | 0.19 | 66,66,66,66                 | 0     |
| 56  | MG   | DA    | 3173 | 1/1   | 0.90 | 0.12 | 54,54,54,54                 | 0     |
| 56  | MG   | DB    | 3002 | 1/1   | 0.90 | 0.13 | 50,50,50,50                 | 0     |
| 56  | MG   | DA    | 3186 | 1/1   | 0.90 | 0.14 | 41,41,41,41                 | 0     |
| 56  | MG   | AA    | 3044 | 1/1   | 0.90 | 0.19 | 50,50,50,50                 | 0     |
| 56  | MG   | DD    | 302  | 1/1   | 0.90 | 0.25 | 39,39,39,39                 | 0     |
| 56  | MG   | DE    | 3001 | 1/1   | 0.90 | 0.20 | 43,43,43,43                 | 0     |
| 56  | MG   | DA    | 3192 | 1/1   | 0.90 | 0.09 | 51,51,51,51                 | 0     |
| 56  | MG   | DN    | 5001 | 1/1   | 0.90 | 0.14 | 65,65,65,65                 | 0     |
| 56  | MG   | BA    | 3119 | 1/1   | 0.90 | 0.09 | 29,29,29,29                 | 0     |
| 56  | MG   | BA    | 3061 | 1/1   | 0.90 | 0.21 | 44,44,44,44                 | 0     |
| 56  | MG   | DA    | 3222 | 1/1   | 0.91 | 0.12 | 36,36,36,36                 | 0     |
| 56  | MG   | BA    | 3054 | 1/1   | 0.91 | 0.14 | 42,42,42,42                 | 0     |
| 56  | MG   | AA    | 3112 | 1/1   | 0.91 | 0.18 | 94,94,94,94                 | 0     |
| 56  | MG   | CF    | 3001 | 1/1   | 0.91 | 0.13 | 45,45,45,45                 | 0     |
| 56  | MG   | AA    | 3120 | 1/1   | 0.91 | 0.12 | 47,47,47,47                 | 0     |
| 56  | MG   | CA    | 3005 | 1/1   | 0.91 | 0.10 | 42,42,42,42                 | 0     |
| 56  | MG   | DA    | 3009 | 1/1   | 0.91 | 0.19 | 42,42,42,42                 | 0     |
| 56  | MG   | DA    | 3017 | 1/1   | 0.91 | 0.20 | 46,46,46,46                 | 0     |
| 56  | MG   | DA    | 3265 | 1/1   | 0.91 | 0.28 | 51,51,51,51                 | 0     |
| 56  | MG   | BA    | 3060 | 1/1   | 0.91 | 0.14 | 42,42,42,42                 | 0     |
| 56  | MG   | BA    | 3165 | 1/1   | 0.91 | 0.25 | 43,43,43,43                 | 0     |
| 56  | MG   | BA    | 3339 | 1/1   | 0.91 | 0.11 | 34,34,34,34                 | 0     |
| 56  | MG   | DA    | 3278 | 1/1   | 0.91 | 0.14 | 50,50,50,50                 | 0     |
| 56  | MG   | BA    | 3599 | 1/1   | 0.91 | 0.15 | 46,46,46,46                 | 0     |
| 56  | MG   | CA    | 3021 | 1/1   | 0.91 | 0.21 | 52,52,52,52                 | 0     |
| 56  | MG   | DA    | 3047 | 1/1   | 0.91 | 0.13 | 41,41,41,41                 | 0     |
| 56  | MG   | AA    | 3122 | 1/1   | 0.91 | 0.11 | 58,58,58,58                 | 0     |
| 56  | MG   | AA    | 3034 | 1/1   | 0.91 | 0.20 | 54,54,54,54                 | 0     |
| 56  | MG   | AA    | 3020 | 1/1   | 0.91 | 0.18 | 49,49,49,49                 | 0     |
| 56  | MG   | DA    | 3060 | 1/1   | 0.91 | 0.10 | 45,45,45,45                 | 0     |
| 56  | MG   | DA    | 3340 | 1/1   | 0.91 | 0.10 | 47,47,47,47                 | 0     |
| 56  | MG   | DA    | 3063 | 1/1   | 0.91 | 0.11 | 31,31,31,31                 | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 56  | MG   | CA    | 3033 | 1/1   | 0.91 | 0.13 | 52,52,52,52                 | 0     |
| 56  | MG   | BA    | 3180 | 1/1   | 0.91 | 0.32 | 33,33,33,33                 | 0     |
| 56  | MG   | DA    | 3068 | 1/1   | 0.91 | 0.14 | 35,35,35,35                 | 0     |
| 56  | MG   | DA    | 3366 | 1/1   | 0.91 | 0.17 | 43,43,43,43                 | 0     |
| 56  | MG   | BA    | 3362 | 1/1   | 0.91 | 0.15 | 30,30,30,30                 | 0     |
| 56  | MG   | AA    | 3001 | 1/1   | 0.91 | 0.18 | 57,57,57,57                 | 0     |
| 56  | MG   | DA    | 3389 | 1/1   | 0.91 | 0.08 | 42,42,42,42                 | 0     |
| 56  | MG   | CA    | 3047 | 1/1   | 0.91 | 0.17 | 51,51,51,51                 | 0     |
| 56  | MG   | AA    | 3042 | 1/1   | 0.91 | 0.13 | 54,54,54,54                 | 0     |
| 56  | MG   | DA    | 3416 | 1/1   | 0.91 | 0.16 | 44,44,44,44                 | 0     |
| 56  | MG   | BA    | 3626 | 1/1   | 0.91 | 0.17 | 50,50,50,50                 | 0     |
| 56  | MG   | DA    | 3428 | 1/1   | 0.91 | 0.18 | 33,33,33,33                 | 0     |
| 56  | MG   | DA    | 3429 | 1/1   | 0.91 | 0.12 | 35,35,35,35                 | 0     |
| 56  | MG   | BA    | 3188 | 1/1   | 0.91 | 0.17 | 39,39,39,39                 | 0     |
| 56  | MG   | CA    | 3058 | 1/1   | 0.91 | 0.11 | 56,56,56,56                 | 0     |
| 56  | MG   | CA    | 3065 | 1/1   | 0.91 | 0.07 | 55,55,55,55                 | 0     |
| 56  | MG   | DA    | 3096 | 1/1   | 0.91 | 0.12 | 29,29,29,29                 | 0     |
| 56  | MG   | DA    | 3472 | 1/1   | 0.91 | 0.16 | 53,53,53,53                 | 0     |
| 56  | MG   | DA    | 3097 | 1/1   | 0.91 | 0.14 | 46,46,46,46                 | 0     |
| 56  | MG   | DA    | 3099 | 1/1   | 0.91 | 0.14 | 37,37,37,37                 | 0     |
| 56  | MG   | DA    | 3102 | 1/1   | 0.91 | 0.17 | 51,51,51,51                 | 0     |
| 56  | MG   | DA    | 3105 | 1/1   | 0.91 | 0.09 | 36,36,36,36                 | 0     |
| 56  | MG   | BA    | 3189 | 1/1   | 0.91 | 0.22 | 26,26,26,26                 | 0     |
| 56  | MG   | BA    | 3086 | 1/1   | 0.91 | 0.18 | 39,39,39,39                 | 0     |
| 56  | MG   | DA    | 3113 | 1/1   | 0.91 | 0.12 | 41,41,41,41                 | 0     |
| 56  | MG   | DA    | 3115 | 1/1   | 0.91 | 0.14 | 36,36,36,36                 | 0     |
| 56  | MG   | DA    | 3117 | 1/1   | 0.91 | 0.19 | 43,43,43,43                 | 0     |
| 56  | MG   | CA    | 3072 | 1/1   | 0.91 | 0.14 | 57,57,57,57                 | 0     |
| 56  | MG   | BA    | 3222 | 1/1   | 0.91 | 0.20 | 45,45,45,45                 | 0     |
| 56  | MG   | BA    | 3224 | 1/1   | 0.91 | 0.17 | 45,45,45,45                 | 0     |
| 56  | MG   | AA    | 3064 | 1/1   | 0.91 | 0.15 | 45,45,45,45                 | 0     |
| 56  | MG   | DA    | 3515 | 1/1   | 0.91 | 0.09 | 64,64,64,64                 | 0     |
| 56  | MG   | BA    | 3495 | 1/1   | 0.91 | 0.33 | 48,48,48,48                 | 0     |
| 56  | MG   | BA    | 3513 | 1/1   | 0.91 | 0.14 | 60,60,60,60                 | 0     |
| 56  | MG   | BB    | 3004 | 1/1   | 0.91 | 0.11 | 49,49,49,49                 | 0     |
| 56  | MG   | BB    | 3005 | 1/1   | 0.91 | 0.20 | 30,30,30,30                 | 0     |
| 56  | MG   | DA    | 3533 | 1/1   | 0.91 | 0.08 | 60,60,60,60                 | 0     |
| 56  | MG   | BA    | 3515 | 1/1   | 0.91 | 0.16 | 25,25,25,25                 | 0     |
| 56  | MG   | AA    | 3012 | 1/1   | 0.91 | 0.10 | 64,64,64,64                 | 0     |
| 56  | MG   | BA    | 3010 | 1/1   | 0.91 | 0.14 | 33,33,33,33                 | 0     |
| 56  | MG   | DA    | 3549 | 1/1   | 0.91 | 0.09 | 41,41,41,41                 | 0     |
| 56  | MG   | BA    | 3240 | 1/1   | 0.91 | 0.21 | 43,43,43,43                 | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors(Å <sup>2</sup> ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|----------------------------|-------|
| 56  | MG   | DA    | 3156 | 1/1   | 0.91 | 0.08 | 38,38,38,38                | 0     |
| 56  | MG   | DA    | 3158 | 1/1   | 0.91 | 0.16 | 36,36,36,36                | 0     |
| 56  | MG   | DA    | 3161 | 1/1   | 0.91 | 0.16 | 24,24,24,24                | 0     |
| 56  | MG   | AA    | 3097 | 1/1   | 0.91 | 0.11 | 49,49,49,49                | 0     |
| 56  | MG   | AA    | 3098 | 1/1   | 0.91 | 0.18 | 48,48,48,48                | 0     |
| 56  | MG   | AA    | 3045 | 1/1   | 0.91 | 0.13 | 60,60,60,60                | 0     |
| 56  | MG   | DA    | 3578 | 1/1   | 0.91 | 0.18 | 47,47,47,47                | 0     |
| 56  | MG   | BA    | 3118 | 1/1   | 0.91 | 0.31 | 45,45,45,45                | 0     |
| 56  | MG   | AA    | 3002 | 1/1   | 0.91 | 0.17 | 43,43,43,43                | 0     |
| 56  | MG   | DA    | 3191 | 1/1   | 0.91 | 0.14 | 53,53,53,53                | 0     |
| 56  | MG   | AA    | 3179 | 1/1   | 0.91 | 0.18 | 63,63,63,63                | 0     |
| 56  | MG   | DA    | 3194 | 1/1   | 0.91 | 0.09 | 47,47,47,47                | 0     |
| 56  | MG   | DA    | 3206 | 1/1   | 0.91 | 0.15 | 50,50,50,50                | 0     |
| 56  | MG   | DE    | 3002 | 1/1   | 0.91 | 0.23 | 35,35,35,35                | 0     |
| 56  | MG   | DE    | 3004 | 1/1   | 0.91 | 0.12 | 48,48,48,48                | 0     |
| 56  | MG   | CA    | 3132 | 1/1   | 0.91 | 0.18 | 73,73,73,73                | 0     |
| 56  | MG   | BA    | 3566 | 1/1   | 0.91 | 0.17 | 46,46,46,46                | 0     |
| 56  | MG   | DA    | 3218 | 1/1   | 0.91 | 0.12 | 33,33,33,33                | 0     |
| 56  | MG   | BA    | 3049 | 1/1   | 0.91 | 0.14 | 43,43,43,43                | 0     |
| 56  | MG   | D8    | 5002 | 1/1   | 0.91 | 0.23 | 64,64,64,64                | 0     |
| 56  | MG   | BA    | 3505 | 1/1   | 0.92 | 0.18 | 46,46,46,46                | 0     |
| 56  | MG   | BA    | 3158 | 1/1   | 0.92 | 0.13 | 33,33,33,33                | 0     |
| 56  | MG   | DA    | 3261 | 1/1   | 0.92 | 0.15 | 49,49,49,49                | 0     |
| 56  | MG   | DA    | 3020 | 1/1   | 0.92 | 0.44 | 50,50,50,50                | 0     |
| 56  | MG   | AA    | 3066 | 1/1   | 0.92 | 0.18 | 46,46,46,46                | 0     |
| 56  | MG   | BA    | 3518 | 1/1   | 0.92 | 0.19 | 41,41,41,41                | 0     |
| 56  | MG   | AA    | 3054 | 1/1   | 0.92 | 0.18 | 65,65,65,65                | 0     |
| 56  | MG   | BA    | 3254 | 1/1   | 0.92 | 0.17 | 45,45,45,45                | 0     |
| 56  | MG   | DA    | 3033 | 1/1   | 0.92 | 0.17 | 37,37,37,37                | 0     |
| 56  | MG   | AA    | 3094 | 1/1   | 0.92 | 0.20 | 49,49,49,49                | 0     |
| 56  | MG   | DA    | 3290 | 1/1   | 0.92 | 0.09 | 36,36,36,36                | 0     |
| 56  | MG   | AA    | 3069 | 1/1   | 0.92 | 0.12 | 50,50,50,50                | 0     |
| 56  | MG   | AA    | 3166 | 1/1   | 0.92 | 0.14 | 53,53,53,53                | 0     |
| 56  | MG   | BA    | 3096 | 1/1   | 0.92 | 0.10 | 44,44,44,44                | 0     |
| 56  | MG   | DA    | 3309 | 1/1   | 0.92 | 0.13 | 60,60,60,60                | 0     |
| 56  | MG   | DA    | 3318 | 1/1   | 0.92 | 0.12 | 43,43,43,43                | 0     |
| 56  | MG   | DA    | 3323 | 1/1   | 0.92 | 0.12 | 35,35,35,35                | 0     |
| 56  | MG   | CA    | 3009 | 1/1   | 0.92 | 0.13 | 55,55,55,55                | 0     |
| 56  | MG   | BA    | 3183 | 1/1   | 0.92 | 0.21 | 35,35,35,35                | 0     |
| 56  | MG   | BA    | 3306 | 1/1   | 0.92 | 0.13 | 54,54,54,54                | 0     |
| 56  | MG   | DA    | 3331 | 1/1   | 0.92 | 0.07 | 41,41,41,41                | 0     |
| 56  | MG   | DA    | 3338 | 1/1   | 0.92 | 0.13 | 36,36,36,36                | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 56  | MG   | BA    | 3307 | 1/1   | 0.92 | 0.07 | 63,63,63,63                 | 0     |
| 56  | MG   | DA    | 3346 | 1/1   | 0.92 | 0.11 | 33,33,33,33                 | 0     |
| 56  | MG   | BA    | 3108 | 1/1   | 0.92 | 0.12 | 38,38,38,38                 | 0     |
| 56  | MG   | DA    | 3351 | 1/1   | 0.92 | 0.15 | 46,46,46,46                 | 0     |
| 56  | MG   | BA    | 3316 | 1/1   | 0.92 | 0.09 | 61,61,61,61                 | 0     |
| 56  | MG   | BA    | 3317 | 1/1   | 0.92 | 0.15 | 35,35,35,35                 | 0     |
| 56  | MG   | BA    | 3329 | 1/1   | 0.92 | 0.11 | 30,30,30,30                 | 0     |
| 56  | MG   | DA    | 3361 | 1/1   | 0.92 | 0.13 | 38,38,38,38                 | 0     |
| 56  | MG   | CA    | 3029 | 1/1   | 0.92 | 0.14 | 48,48,48,48                 | 0     |
| 56  | MG   | DA    | 3368 | 1/1   | 0.92 | 0.07 | 25,25,25,25                 | 0     |
| 56  | MG   | DA    | 3078 | 1/1   | 0.92 | 0.09 | 46,46,46,46                 | 0     |
| 56  | MG   | DA    | 3375 | 1/1   | 0.92 | 0.14 | 49,49,49,49                 | 0     |
| 56  | MG   | DA    | 3081 | 1/1   | 0.92 | 0.10 | 44,44,44,44                 | 0     |
| 56  | MG   | BA    | 3066 | 1/1   | 0.92 | 0.18 | 48,48,48,48                 | 0     |
| 56  | MG   | BA    | 3115 | 1/1   | 0.92 | 0.13 | 34,34,34,34                 | 0     |
| 56  | MG   | DA    | 3399 | 1/1   | 0.92 | 0.17 | 40,40,40,40                 | 0     |
| 56  | MG   | BA    | 3584 | 1/1   | 0.92 | 0.19 | 44,44,44,44                 | 0     |
| 56  | MG   | BA    | 3023 | 1/1   | 0.92 | 0.17 | 40,40,40,40                 | 0     |
| 56  | MG   | DA    | 3424 | 1/1   | 0.92 | 0.18 | 30,30,30,30                 | 0     |
| 56  | MG   | DA    | 3093 | 1/1   | 0.92 | 0.22 | 46,46,46,46                 | 0     |
| 56  | MG   | BA    | 3592 | 1/1   | 0.92 | 0.20 | 52,52,52,52                 | 0     |
| 56  | MG   | CA    | 3045 | 1/1   | 0.92 | 0.16 | 52,52,52,52                 | 0     |
| 56  | MG   | BA    | 3594 | 1/1   | 0.92 | 0.13 | 37,37,37,37                 | 0     |
| 56  | MG   | DA    | 3098 | 1/1   | 0.92 | 0.10 | 46,46,46,46                 | 0     |
| 56  | MG   | BA    | 3595 | 1/1   | 0.92 | 0.12 | 47,47,47,47                 | 0     |
| 56  | MG   | BA    | 3193 | 1/1   | 0.92 | 0.20 | 48,48,48,48                 | 0     |
| 56  | MG   | BA    | 3341 | 1/1   | 0.92 | 0.11 | 32,32,32,32                 | 0     |
| 56  | MG   | AA    | 3008 | 1/1   | 0.92 | 0.62 | 55,55,55,55                 | 0     |
| 56  | MG   | CA    | 3062 | 1/1   | 0.92 | 0.08 | 57,57,57,57                 | 0     |
| 56  | MG   | DA    | 3111 | 1/1   | 0.92 | 0.21 | 39,39,39,39                 | 0     |
| 56  | MG   | CA    | 3063 | 1/1   | 0.92 | 0.23 | 53,53,53,53                 | 0     |
| 56  | MG   | CA    | 3064 | 1/1   | 0.92 | 0.08 | 60,60,60,60                 | 0     |
| 56  | MG   | BA    | 3220 | 1/1   | 0.92 | 0.14 | 31,31,31,31                 | 0     |
| 56  | MG   | BA    | 3079 | 1/1   | 0.92 | 0.12 | 46,46,46,46                 | 0     |
| 56  | MG   | BA    | 3359 | 1/1   | 0.92 | 0.13 | 54,54,54,54                 | 0     |
| 56  | MG   | AA    | 3102 | 1/1   | 0.92 | 0.13 | 60,60,60,60                 | 0     |
| 56  | MG   | DA    | 3123 | 1/1   | 0.92 | 0.13 | 51,51,51,51                 | 0     |
| 56  | MG   | BA    | 3228 | 1/1   | 0.92 | 0.14 | 40,40,40,40                 | 0     |
| 56  | MG   | BA    | 3229 | 1/1   | 0.92 | 0.21 | 54,54,54,54                 | 0     |
| 56  | MG   | BA    | 3387 | 1/1   | 0.92 | 0.23 | 49,49,49,49                 | 0     |
| 56  | MG   | DA    | 3508 | 1/1   | 0.92 | 0.11 | 38,38,38,38                 | 0     |
| 56  | MG   | BA    | 3394 | 1/1   | 0.92 | 0.18 | 35,35,35,35                 | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 56  | MG   | DA    | 3142 | 1/1   | 0.92 | 0.16 | 37,37,37,37                 | 0     |
| 56  | MG   | AX    | 3003 | 1/1   | 0.92 | 0.23 | 50,50,50,50                 | 0     |
| 56  | MG   | BA    | 3232 | 1/1   | 0.92 | 0.18 | 41,41,41,41                 | 0     |
| 56  | MG   | BA    | 3234 | 1/1   | 0.92 | 0.15 | 57,57,57,57                 | 0     |
| 56  | MG   | CA    | 3103 | 1/1   | 0.92 | 0.11 | 52,52,52,52                 | 0     |
| 56  | MG   | BA    | 3428 | 1/1   | 0.92 | 0.08 | 58,58,58,58                 | 0     |
| 56  | MG   | BA    | 3433 | 1/1   | 0.92 | 0.09 | 33,33,33,33                 | 0     |
| 56  | MG   | BA    | 3655 | 1/1   | 0.92 | 0.13 | 18,18,18,18                 | 0     |
| 56  | MG   | BA    | 3083 | 1/1   | 0.92 | 0.17 | 34,34,34,34                 | 0     |
| 56  | MG   | AA    | 3072 | 1/1   | 0.92 | 0.10 | 39,39,39,39                 | 0     |
| 56  | MG   | BA    | 3141 | 1/1   | 0.92 | 0.10 | 45,45,45,45                 | 0     |
| 56  | MG   | BA    | 3469 | 1/1   | 0.92 | 0.17 | 28,28,28,28                 | 0     |
| 56  | MG   | DA    | 3563 | 1/1   | 0.92 | 0.17 | 60,60,60,60                 | 0     |
| 56  | MG   | DA    | 3179 | 1/1   | 0.92 | 0.14 | 20,20,20,20                 | 0     |
| 56  | MG   | DA    | 3565 | 1/1   | 0.92 | 0.16 | 51,51,51,51                 | 0     |
| 56  | MG   | BA    | 3483 | 1/1   | 0.92 | 0.13 | 47,47,47,47                 | 0     |
| 56  | MG   | BA    | 3487 | 1/1   | 0.92 | 0.15 | 17,17,17,17                 | 0     |
| 56  | MG   | DA    | 3572 | 1/1   | 0.92 | 0.08 | 51,51,51,51                 | 0     |
| 56  | MG   | BB    | 3015 | 1/1   | 0.92 | 0.14 | 48,48,48,48                 | 0     |
| 56  | MG   | BD    | 302  | 1/1   | 0.92 | 0.32 | 45,45,45,45                 | 0     |
| 56  | MG   | BA    | 3488 | 1/1   | 0.92 | 0.27 | 36,36,36,36                 | 0     |
| 56  | MG   | DA    | 3595 | 1/1   | 0.92 | 0.10 | 43,43,43,43                 | 0     |
| 56  | MG   | DA    | 3199 | 1/1   | 0.92 | 0.09 | 52,52,52,52                 | 0     |
| 56  | MG   | DB    | 3004 | 1/1   | 0.92 | 0.13 | 36,36,36,36                 | 0     |
| 56  | MG   | BA    | 3153 | 1/1   | 0.92 | 0.29 | 39,39,39,39                 | 0     |
| 56  | MG   | CA    | 3145 | 1/1   | 0.92 | 0.09 | 59,59,59,59                 | 0     |
| 56  | MG   | DB    | 3010 | 1/1   | 0.92 | 0.20 | 60,60,60,60                 | 0     |
| 56  | MG   | DB    | 3012 | 1/1   | 0.92 | 0.14 | 53,53,53,53                 | 0     |
| 56  | MG   | CA    | 3149 | 1/1   | 0.92 | 0.23 | 66,66,66,66                 | 0     |
| 56  | MG   | BA    | 3496 | 1/1   | 0.92 | 0.19 | 31,31,31,31                 | 0     |
| 56  | MG   | BF    | 301  | 1/1   | 0.92 | 0.14 | 56,56,56,56                 | 0     |
| 56  | MG   | CE    | 201  | 1/1   | 0.92 | 0.14 | 52,52,52,52                 | 0     |
| 56  | MG   | DF    | 303  | 1/1   | 0.92 | 0.13 | 57,57,57,57                 | 0     |
| 56  | MG   | DA    | 3229 | 1/1   | 0.92 | 0.18 | 38,38,38,38                 | 0     |
| 56  | MG   | BF    | 305  | 1/1   | 0.92 | 0.39 | 61,61,61,61                 | 0     |
| 56  | MG   | DP    | 3001 | 1/1   | 0.92 | 0.30 | 44,44,44,44                 | 0     |
| 56  | MG   | DQ    | 3002 | 1/1   | 0.92 | 0.21 | 38,38,38,38                 | 0     |
| 56  | MG   | BG    | 3002 | 1/1   | 0.92 | 0.10 | 27,27,27,27                 | 0     |
| 56  | MG   | DV    | 3002 | 1/1   | 0.92 | 0.16 | 43,43,43,43                 | 0     |
| 56  | MG   | BA    | 3497 | 1/1   | 0.92 | 0.14 | 34,34,34,34                 | 0     |
| 56  | MG   | DA    | 3004 | 1/1   | 0.92 | 0.15 | 51,51,51,51                 | 0     |
| 56  | MG   | DA    | 3032 | 1/1   | 0.93 | 0.13 | 42,42,42,42                 | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 56  | MG   | BA    | 3163 | 1/1   | 0.93 | 0.12 | 31,31,31,31                 | 0     |
| 56  | MG   | BA    | 3396 | 1/1   | 0.93 | 0.22 | 38,38,38,38                 | 0     |
| 56  | MG   | DA    | 3300 | 1/1   | 0.93 | 0.18 | 58,58,58,58                 | 0     |
| 56  | MG   | DA    | 3046 | 1/1   | 0.93 | 0.23 | 34,34,34,34                 | 0     |
| 56  | MG   | BA    | 3400 | 1/1   | 0.93 | 0.28 | 45,45,45,45                 | 0     |
| 56  | MG   | DA    | 3304 | 1/1   | 0.93 | 0.17 | 32,32,32,32                 | 0     |
| 56  | MG   | AA    | 3170 | 1/1   | 0.93 | 0.14 | 54,54,54,54                 | 0     |
| 56  | MG   | BA    | 3593 | 1/1   | 0.93 | 0.23 | 39,39,39,39                 | 0     |
| 56  | MG   | BA    | 3403 | 1/1   | 0.93 | 0.14 | 18,18,18,18                 | 0     |
| 56  | MG   | DA    | 3057 | 1/1   | 0.93 | 0.12 | 30,30,30,30                 | 0     |
| 56  | MG   | DA    | 3058 | 1/1   | 0.93 | 0.22 | 45,45,45,45                 | 0     |
| 56  | MG   | DA    | 3059 | 1/1   | 0.93 | 0.11 | 33,33,33,33                 | 0     |
| 56  | MG   | CA    | 3030 | 1/1   | 0.93 | 0.10 | 41,41,41,41                 | 0     |
| 56  | MG   | BA    | 3405 | 1/1   | 0.93 | 0.14 | 26,26,26,26                 | 0     |
| 56  | MG   | DA    | 3332 | 1/1   | 0.93 | 0.07 | 43,43,43,43                 | 0     |
| 56  | MG   | DA    | 3064 | 1/1   | 0.93 | 0.13 | 48,48,48,48                 | 0     |
| 56  | MG   | BA    | 3247 | 1/1   | 0.93 | 0.19 | 48,48,48,48                 | 0     |
| 56  | MG   | BA    | 3425 | 1/1   | 0.93 | 0.23 | 53,53,53,53                 | 0     |
| 56  | MG   | BA    | 3427 | 1/1   | 0.93 | 0.21 | 49,49,49,49                 | 0     |
| 56  | MG   | BA    | 3602 | 1/1   | 0.93 | 0.16 | 31,31,31,31                 | 0     |
| 56  | MG   | AA    | 3110 | 1/1   | 0.93 | 0.10 | 60,60,60,60                 | 0     |
| 56  | MG   | DA    | 3355 | 1/1   | 0.93 | 0.07 | 36,36,36,36                 | 0     |
| 56  | MG   | AA    | 3085 | 1/1   | 0.93 | 0.11 | 63,63,63,63                 | 0     |
| 56  | MG   | AA    | 3119 | 1/1   | 0.93 | 0.11 | 57,57,57,57                 | 0     |
| 56  | MG   | AA    | 3043 | 1/1   | 0.93 | 0.08 | 53,53,53,53                 | 0     |
| 56  | MG   | DA    | 3365 | 1/1   | 0.93 | 0.10 | 29,29,29,29                 | 0     |
| 56  | MG   | BA    | 3451 | 1/1   | 0.93 | 0.08 | 48,48,48,48                 | 0     |
| 56  | MG   | DA    | 3367 | 1/1   | 0.93 | 0.12 | 47,47,47,47                 | 0     |
| 56  | MG   | CA    | 3056 | 1/1   | 0.93 | 0.21 | 40,40,40,40                 | 0     |
| 56  | MG   | DA    | 3371 | 1/1   | 0.93 | 0.11 | 46,46,46,46                 | 0     |
| 56  | MG   | BA    | 3458 | 1/1   | 0.93 | 0.07 | 60,60,60,60                 | 0     |
| 56  | MG   | BA    | 3459 | 1/1   | 0.93 | 0.15 | 42,42,42,42                 | 0     |
| 56  | MG   | BA    | 3629 | 1/1   | 0.93 | 0.08 | 60,60,60,60                 | 0     |
| 56  | MG   | DA    | 3385 | 1/1   | 0.93 | 0.08 | 45,45,45,45                 | 0     |
| 56  | MG   | BA    | 3463 | 1/1   | 0.93 | 0.12 | 43,43,43,43                 | 0     |
| 56  | MG   | DA    | 3392 | 1/1   | 0.93 | 0.14 | 54,54,54,54                 | 0     |
| 56  | MG   | DA    | 3393 | 1/1   | 0.93 | 0.09 | 48,48,48,48                 | 0     |
| 56  | MG   | DA    | 3397 | 1/1   | 0.93 | 0.14 | 18,18,18,18                 | 0     |
| 56  | MG   | AA    | 3029 | 1/1   | 0.93 | 0.11 | 52,52,52,52                 | 0     |
| 56  | MG   | CA    | 3066 | 1/1   | 0.93 | 0.20 | 43,43,43,43                 | 0     |
| 56  | MG   | DA    | 3401 | 1/1   | 0.93 | 0.12 | 55,55,55,55                 | 0     |
| 56  | MG   | DA    | 3402 | 1/1   | 0.93 | 0.13 | 63,63,63,63                 | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 56  | MG   | AA    | 3030 | 1/1   | 0.93 | 0.10 | 47,47,47,47                 | 0     |
| 56  | MG   | CA    | 3069 | 1/1   | 0.93 | 0.12 | 34,34,34,34                 | 0     |
| 56  | MG   | DA    | 3419 | 1/1   | 0.93 | 0.22 | 59,59,59,59                 | 0     |
| 56  | MG   | AA    | 3033 | 1/1   | 0.93 | 0.29 | 48,48,48,48                 | 0     |
| 56  | MG   | BA    | 3642 | 1/1   | 0.93 | 0.19 | 47,47,47,47                 | 0     |
| 56  | MG   | DA    | 3106 | 1/1   | 0.93 | 0.06 | 43,43,43,43                 | 0     |
| 56  | MG   | CA    | 3073 | 1/1   | 0.93 | 0.13 | 57,57,57,57                 | 0     |
| 56  | MG   | BA    | 3484 | 1/1   | 0.93 | 0.12 | 46,46,46,46                 | 0     |
| 56  | MG   | CA    | 3080 | 1/1   | 0.93 | 0.13 | 41,41,41,41                 | 0     |
| 56  | MG   | BA    | 3186 | 1/1   | 0.93 | 0.15 | 39,39,39,39                 | 0     |
| 56  | MG   | AA    | 3016 | 1/1   | 0.93 | 0.19 | 49,49,49,49                 | 0     |
| 56  | MG   | DA    | 3470 | 1/1   | 0.93 | 0.19 | 52,52,52,52                 | 0     |
| 56  | MG   | DA    | 3471 | 1/1   | 0.93 | 0.16 | 50,50,50,50                 | 0     |
| 56  | MG   | BA    | 3113 | 1/1   | 0.93 | 0.15 | 41,41,41,41                 | 0     |
| 56  | MG   | BA    | 3675 | 1/1   | 0.93 | 0.39 | 33,33,33,33                 | 0     |
| 56  | MG   | BB    | 3002 | 1/1   | 0.93 | 0.20 | 41,41,41,41                 | 0     |
| 56  | MG   | AA    | 3006 | 1/1   | 0.93 | 0.28 | 67,67,67,67                 | 0     |
| 56  | MG   | CA    | 3093 | 1/1   | 0.93 | 0.11 | 72,72,72,72                 | 0     |
| 56  | MG   | CA    | 3095 | 1/1   | 0.93 | 0.16 | 56,56,56,56                 | 0     |
| 56  | MG   | DA    | 3126 | 1/1   | 0.93 | 0.18 | 42,42,42,42                 | 0     |
| 56  | MG   | CA    | 3096 | 1/1   | 0.93 | 0.13 | 61,61,61,61                 | 0     |
| 56  | MG   | BA    | 3191 | 1/1   | 0.93 | 0.16 | 33,33,33,33                 | 0     |
| 56  | MG   | DA    | 3488 | 1/1   | 0.93 | 0.12 | 41,41,41,41                 | 0     |
| 56  | MG   | DA    | 3136 | 1/1   | 0.93 | 0.16 | 36,36,36,36                 | 0     |
| 56  | MG   | BA    | 3324 | 1/1   | 0.93 | 0.12 | 53,53,53,53                 | 0     |
| 56  | MG   | AK    | 3001 | 1/1   | 0.93 | 0.17 | 43,43,43,43                 | 0     |
| 56  | MG   | CA    | 3107 | 1/1   | 0.93 | 0.15 | 56,56,56,56                 | 0     |
| 56  | MG   | AA    | 3014 | 1/1   | 0.93 | 0.15 | 49,49,49,49                 | 0     |
| 56  | MG   | BA    | 3124 | 1/1   | 0.93 | 0.17 | 58,58,58,58                 | 0     |
| 56  | MG   | BA    | 3338 | 1/1   | 0.93 | 0.11 | 48,48,48,48                 | 0     |
| 56  | MG   | BA    | 3069 | 1/1   | 0.93 | 0.10 | 47,47,47,47                 | 0     |
| 56  | MG   | BA    | 3525 | 1/1   | 0.93 | 0.09 | 46,46,46,46                 | 0     |
| 56  | MG   | DA    | 3527 | 1/1   | 0.93 | 0.13 | 43,43,43,43                 | 0     |
| 56  | MG   | CA    | 3124 | 1/1   | 0.93 | 0.12 | 52,52,52,52                 | 0     |
| 56  | MG   | BA    | 3074 | 1/1   | 0.93 | 0.14 | 45,45,45,45                 | 0     |
| 56  | MG   | AA    | 3159 | 1/1   | 0.93 | 0.08 | 56,56,56,56                 | 0     |
| 56  | MG   | DA    | 3167 | 1/1   | 0.93 | 0.09 | 51,51,51,51                 | 0     |
| 56  | MG   | DA    | 3535 | 1/1   | 0.93 | 0.15 | 22,22,22,22                 | 0     |
| 56  | MG   | BA    | 3128 | 1/1   | 0.93 | 0.18 | 29,29,29,29                 | 0     |
| 56  | MG   | BA    | 3536 | 1/1   | 0.93 | 0.15 | 53,53,53,53                 | 0     |
| 56  | MG   | DA    | 3545 | 1/1   | 0.93 | 0.07 | 58,58,58,58                 | 0     |
| 56  | MG   | DA    | 3547 | 1/1   | 0.93 | 0.17 | 41,41,41,41                 | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 56  | MG   | BA    | 3543 | 1/1   | 0.93 | 0.10 | 47,47,47,47                 | 0     |
| 56  | MG   | DA    | 3183 | 1/1   | 0.93 | 0.09 | 37,37,37,37                 | 0     |
| 56  | MG   | BO    | 5001 | 1/1   | 0.93 | 0.12 | 62,62,62,62                 | 0     |
| 56  | MG   | CA    | 3139 | 1/1   | 0.93 | 0.10 | 67,67,67,67                 | 0     |
| 56  | MG   | CA    | 3141 | 1/1   | 0.93 | 0.17 | 54,54,54,54                 | 0     |
| 56  | MG   | BP    | 201  | 1/1   | 0.93 | 0.49 | 36,36,36,36                 | 0     |
| 56  | MG   | BA    | 3545 | 1/1   | 0.93 | 0.08 | 54,54,54,54                 | 0     |
| 56  | MG   | DA    | 3196 | 1/1   | 0.93 | 0.14 | 33,33,33,33                 | 0     |
| 56  | MG   | BV    | 202  | 1/1   | 0.93 | 0.23 | 36,36,36,36                 | 0     |
| 56  | MG   | AA    | 3060 | 1/1   | 0.93 | 0.14 | 55,55,55,55                 | 0     |
| 56  | MG   | BA    | 3001 | 1/1   | 0.93 | 0.14 | 35,35,35,35                 | 0     |
| 56  | MG   | DA    | 3576 | 1/1   | 0.93 | 0.15 | 36,36,36,36                 | 0     |
| 56  | MG   | BA    | 3554 | 1/1   | 0.93 | 0.07 | 47,47,47,47                 | 0     |
| 56  | MG   | AA    | 3028 | 1/1   | 0.93 | 0.18 | 39,39,39,39                 | 0     |
| 56  | MG   | DA    | 3583 | 1/1   | 0.93 | 0.10 | 43,43,43,43                 | 0     |
| 56  | MG   | DA    | 3587 | 1/1   | 0.93 | 0.11 | 53,53,53,53                 | 0     |
| 56  | MG   | CK    | 3001 | 1/1   | 0.93 | 0.14 | 50,50,50,50                 | 0     |
| 56  | MG   | AA    | 3083 | 1/1   | 0.93 | 0.07 | 59,59,59,59                 | 0     |
| 56  | MG   | DA    | 3225 | 1/1   | 0.93 | 0.14 | 33,33,33,33                 | 0     |
| 56  | MG   | CX    | 101  | 1/1   | 0.93 | 0.19 | 48,48,48,48                 | 0     |
| 56  | MG   | DA    | 3232 | 1/1   | 0.93 | 0.13 | 38,38,38,38                 | 0     |
| 56  | MG   | DB    | 3008 | 1/1   | 0.93 | 0.13 | 35,35,35,35                 | 0     |
| 56  | MG   | DA    | 3236 | 1/1   | 0.93 | 0.14 | 47,47,47,47                 | 0     |
| 56  | MG   | DA    | 3003 | 1/1   | 0.93 | 0.20 | 47,47,47,47                 | 0     |
| 56  | MG   | BA    | 3565 | 1/1   | 0.93 | 0.12 | 51,51,51,51                 | 0     |
| 56  | MG   | DA    | 3244 | 1/1   | 0.93 | 0.14 | 48,48,48,48                 | 0     |
| 56  | MG   | DA    | 3245 | 1/1   | 0.93 | 0.13 | 46,46,46,46                 | 0     |
| 56  | MG   | DE    | 3003 | 1/1   | 0.93 | 0.11 | 40,40,40,40                 | 0     |
| 56  | MG   | DA    | 3008 | 1/1   | 0.93 | 0.14 | 38,38,38,38                 | 0     |
| 56  | MG   | DF    | 301  | 1/1   | 0.93 | 0.31 | 44,44,44,44                 | 0     |
| 56  | MG   | BA    | 3236 | 1/1   | 0.93 | 0.19 | 42,42,42,42                 | 0     |
| 56  | MG   | DA    | 3010 | 1/1   | 0.93 | 0.16 | 36,36,36,36                 | 0     |
| 56  | MG   | CA    | 3003 | 1/1   | 0.93 | 0.10 | 65,65,65,65                 | 0     |
| 56  | MG   | BA    | 3154 | 1/1   | 0.93 | 0.30 | 40,40,40,40                 | 0     |
| 56  | MG   | BA    | 3380 | 1/1   | 0.93 | 0.16 | 17,17,17,17                 | 0     |
| 56  | MG   | BA    | 3575 | 1/1   | 0.93 | 0.15 | 55,55,55,55                 | 0     |
| 56  | MG   | DV    | 3001 | 1/1   | 0.93 | 0.34 | 45,45,45,45                 | 0     |
| 56  | MG   | DA    | 3024 | 1/1   | 0.93 | 0.16 | 36,36,36,36                 | 0     |
| 56  | MG   | BA    | 3157 | 1/1   | 0.93 | 0.19 | 34,34,34,34                 | 0     |
| 56  | MG   | D7    | 101  | 1/1   | 0.93 | 0.75 | 51,51,51,51                 | 0     |
| 56  | MG   | AA    | 3084 | 1/1   | 0.93 | 0.10 | 43,43,43,43                 | 0     |
| 58  | ZN   | B4    | 501  | 1/1   | 0.93 | 0.07 | 106,106,106,106             | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 56  | MG   | BA    | 3376 | 1/1   | 0.94 | 0.12 | 39,39,39,39                 | 0     |
| 56  | MG   | BA    | 3604 | 1/1   | 0.94 | 0.10 | 28,28,28,28                 | 0     |
| 56  | MG   | DA    | 3190 | 1/1   | 0.94 | 0.14 | 34,34,34,34                 | 0     |
| 56  | MG   | BA    | 3198 | 1/1   | 0.94 | 0.10 | 34,34,34,34                 | 0     |
| 56  | MG   | BA    | 3607 | 1/1   | 0.94 | 0.14 | 51,51,51,51                 | 0     |
| 56  | MG   | CA    | 3088 | 1/1   | 0.94 | 0.09 | 41,41,41,41                 | 0     |
| 56  | MG   | CA    | 3089 | 1/1   | 0.94 | 0.12 | 40,40,40,40                 | 0     |
| 56  | MG   | DA    | 3197 | 1/1   | 0.94 | 0.13 | 38,38,38,38                 | 0     |
| 56  | MG   | BA    | 3611 | 1/1   | 0.94 | 0.40 | 59,59,59,59                 | 0     |
| 56  | MG   | BA    | 3381 | 1/1   | 0.94 | 0.19 | 31,31,31,31                 | 0     |
| 56  | MG   | BA    | 3201 | 1/1   | 0.94 | 0.11 | 41,41,41,41                 | 0     |
| 56  | MG   | BA    | 3618 | 1/1   | 0.94 | 0.19 | 54,54,54,54                 | 0     |
| 56  | MG   | DA    | 3216 | 1/1   | 0.94 | 0.12 | 37,37,37,37                 | 0     |
| 56  | MG   | CA    | 3098 | 1/1   | 0.94 | 0.17 | 42,42,42,42                 | 0     |
| 56  | MG   | BA    | 3393 | 1/1   | 0.94 | 0.12 | 49,49,49,49                 | 0     |
| 56  | MG   | BA    | 3205 | 1/1   | 0.94 | 0.16 | 40,40,40,40                 | 0     |
| 56  | MG   | BA    | 3095 | 1/1   | 0.94 | 0.09 | 33,33,33,33                 | 0     |
| 56  | MG   | DA    | 3226 | 1/1   | 0.94 | 0.10 | 27,27,27,27                 | 0     |
| 56  | MG   | BA    | 3218 | 1/1   | 0.94 | 0.18 | 38,38,38,38                 | 0     |
| 56  | MG   | DA    | 3231 | 1/1   | 0.94 | 0.12 | 37,37,37,37                 | 0     |
| 56  | MG   | BA    | 3399 | 1/1   | 0.94 | 0.12 | 42,42,42,42                 | 0     |
| 56  | MG   | DA    | 3234 | 1/1   | 0.94 | 0.14 | 45,45,45,45                 | 0     |
| 56  | MG   | CA    | 3112 | 1/1   | 0.94 | 0.14 | 55,55,55,55                 | 0     |
| 56  | MG   | DA    | 3238 | 1/1   | 0.94 | 0.15 | 42,42,42,42                 | 0     |
| 56  | MG   | CA    | 3116 | 1/1   | 0.94 | 0.08 | 59,59,59,59                 | 0     |
| 56  | MG   | CA    | 3117 | 1/1   | 0.94 | 0.22 | 42,42,42,42                 | 0     |
| 56  | MG   | BA    | 3018 | 1/1   | 0.94 | 0.21 | 47,47,47,47                 | 0     |
| 56  | MG   | BA    | 3104 | 1/1   | 0.94 | 0.20 | 42,42,42,42                 | 0     |
| 56  | MG   | AA    | 3117 | 1/1   | 0.94 | 0.09 | 47,47,47,47                 | 0     |
| 56  | MG   | CA    | 3122 | 1/1   | 0.94 | 0.21 | 54,54,54,54                 | 0     |
| 56  | MG   | BA    | 3225 | 1/1   | 0.94 | 0.11 | 31,31,31,31                 | 0     |
| 56  | MG   | BA    | 3407 | 1/1   | 0.94 | 0.12 | 43,43,43,43                 | 0     |
| 56  | MG   | DA    | 3257 | 1/1   | 0.94 | 0.17 | 55,55,55,55                 | 0     |
| 56  | MG   | CA    | 3125 | 1/1   | 0.94 | 0.21 | 71,71,71,71                 | 0     |
| 56  | MG   | BA    | 3643 | 1/1   | 0.94 | 0.12 | 42,42,42,42                 | 0     |
| 56  | MG   | BA    | 3226 | 1/1   | 0.94 | 0.45 | 32,32,32,32                 | 0     |
| 56  | MG   | BA    | 3422 | 1/1   | 0.94 | 0.11 | 46,46,46,46                 | 0     |
| 56  | MG   | BA    | 3423 | 1/1   | 0.94 | 0.14 | 47,47,47,47                 | 0     |
| 56  | MG   | CA    | 3135 | 1/1   | 0.94 | 0.09 | 62,62,62,62                 | 0     |
| 56  | MG   | BA    | 3657 | 1/1   | 0.94 | 0.13 | 24,24,24,24                 | 0     |
| 56  | MG   | BA    | 3661 | 1/1   | 0.94 | 0.22 | 38,38,38,38                 | 0     |
| 56  | MG   | BA    | 3227 | 1/1   | 0.94 | 0.17 | 32,32,32,32                 | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 56  | MG   | DA    | 3296 | 1/1   | 0.94 | 0.09 | 28,28,28,28                 | 0     |
| 56  | MG   | DA    | 3298 | 1/1   | 0.94 | 0.09 | 32,32,32,32                 | 0     |
| 56  | MG   | CA    | 3140 | 1/1   | 0.94 | 0.19 | 61,61,61,61                 | 0     |
| 56  | MG   | BA    | 3426 | 1/1   | 0.94 | 0.12 | 43,43,43,43                 | 0     |
| 56  | MG   | BA    | 3110 | 1/1   | 0.94 | 0.18 | 31,31,31,31                 | 0     |
| 56  | MG   | CA    | 3146 | 1/1   | 0.94 | 0.05 | 42,42,42,42                 | 0     |
| 56  | MG   | AA    | 3059 | 1/1   | 0.94 | 0.12 | 54,54,54,54                 | 0     |
| 56  | MG   | AA    | 3047 | 1/1   | 0.94 | 0.13 | 45,45,45,45                 | 0     |
| 56  | MG   | DA    | 3311 | 1/1   | 0.94 | 0.13 | 43,43,43,43                 | 0     |
| 56  | MG   | BA    | 3040 | 1/1   | 0.94 | 0.12 | 43,43,43,43                 | 0     |
| 56  | MG   | BB    | 3006 | 1/1   | 0.94 | 0.18 | 49,49,49,49                 | 0     |
| 56  | MG   | CE    | 202  | 1/1   | 0.94 | 0.12 | 68,68,68,68                 | 0     |
| 56  | MG   | BA    | 3233 | 1/1   | 0.94 | 0.12 | 41,41,41,41                 | 0     |
| 56  | MG   | DA    | 3328 | 1/1   | 0.94 | 0.14 | 48,48,48,48                 | 0     |
| 56  | MG   | BA    | 3041 | 1/1   | 0.94 | 0.12 | 42,42,42,42                 | 0     |
| 56  | MG   | AA    | 3013 | 1/1   | 0.94 | 0.09 | 58,58,58,58                 | 0     |
| 56  | MG   | BB    | 3016 | 1/1   | 0.94 | 0.11 | 24,24,24,24                 | 0     |
| 56  | MG   | BB    | 3017 | 1/1   | 0.94 | 0.11 | 40,40,40,40                 | 0     |
| 56  | MG   | BA    | 3122 | 1/1   | 0.94 | 0.41 | 39,39,39,39                 | 0     |
| 56  | MG   | AA    | 3177 | 1/1   | 0.94 | 0.15 | 32,32,32,32                 | 0     |
| 56  | MG   | DA    | 3005 | 1/1   | 0.94 | 0.11 | 26,26,26,26                 | 0     |
| 56  | MG   | DA    | 3348 | 1/1   | 0.94 | 0.13 | 25,25,25,25                 | 0     |
| 56  | MG   | BA    | 3239 | 1/1   | 0.94 | 0.14 | 52,52,52,52                 | 0     |
| 56  | MG   | DA    | 3353 | 1/1   | 0.94 | 0.13 | 32,32,32,32                 | 0     |
| 56  | MG   | BA    | 3468 | 1/1   | 0.94 | 0.15 | 32,32,32,32                 | 0     |
| 56  | MG   | BA    | 3051 | 1/1   | 0.94 | 0.19 | 41,41,41,41                 | 0     |
| 56  | MG   | DA    | 3013 | 1/1   | 0.94 | 0.20 | 37,37,37,37                 | 0     |
| 56  | MG   | BA    | 3470 | 1/1   | 0.94 | 0.15 | 48,48,48,48                 | 0     |
| 56  | MG   | BA    | 3471 | 1/1   | 0.94 | 0.18 | 35,35,35,35                 | 0     |
| 56  | MG   | BG    | 3003 | 1/1   | 0.94 | 0.10 | 41,41,41,41                 | 0     |
| 56  | MG   | AA    | 3178 | 1/1   | 0.94 | 0.22 | 62,62,62,62                 | 0     |
| 56  | MG   | BN    | 3002 | 1/1   | 0.94 | 0.13 | 27,27,27,27                 | 0     |
| 56  | MG   | AA    | 3052 | 1/1   | 0.94 | 0.19 | 60,60,60,60                 | 0     |
| 56  | MG   | DA    | 3029 | 1/1   | 0.94 | 0.11 | 40,40,40,40                 | 0     |
| 56  | MG   | AA    | 3129 | 1/1   | 0.94 | 0.10 | 35,35,35,35                 | 0     |
| 56  | MG   | AA    | 3134 | 1/1   | 0.94 | 0.24 | 52,52,52,52                 | 0     |
| 56  | MG   | BQ    | 201  | 1/1   | 0.94 | 0.09 | 52,52,52,52                 | 0     |
| 56  | MG   | DA    | 3034 | 1/1   | 0.94 | 0.18 | 46,46,46,46                 | 0     |
| 56  | MG   | BA    | 3252 | 1/1   | 0.94 | 0.37 | 51,51,51,51                 | 0     |
| 56  | MG   | DA    | 3039 | 1/1   | 0.94 | 0.27 | 51,51,51,51                 | 0     |
| 56  | MG   | DA    | 3044 | 1/1   | 0.94 | 0.07 | 47,47,47,47                 | 0     |
| 56  | MG   | DA    | 3045 | 1/1   | 0.94 | 0.12 | 48,48,48,48                 | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 56  | MG   | AA    | 3136 | 1/1   | 0.94 | 0.17 | 56,56,56,56                 | 0     |
| 56  | MG   | BA    | 3062 | 1/1   | 0.94 | 0.16 | 46,46,46,46                 | 0     |
| 56  | MG   | BA    | 3498 | 1/1   | 0.94 | 0.19 | 37,37,37,37                 | 0     |
| 56  | MG   | BA    | 3142 | 1/1   | 0.94 | 0.11 | 40,40,40,40                 | 0     |
| 56  | MG   | DA    | 3405 | 1/1   | 0.94 | 0.12 | 45,45,45,45                 | 0     |
| 56  | MG   | DA    | 3406 | 1/1   | 0.94 | 0.10 | 50,50,50,50                 | 0     |
| 56  | MG   | B0    | 101  | 1/1   | 0.94 | 0.14 | 71,71,71,71                 | 0     |
| 56  | MG   | B0    | 102  | 1/1   | 0.94 | 0.23 | 42,42,42,42                 | 0     |
| 56  | MG   | BA    | 3261 | 1/1   | 0.94 | 0.10 | 53,53,53,53                 | 0     |
| 56  | MG   | DA    | 3420 | 1/1   | 0.94 | 0.16 | 46,46,46,46                 | 0     |
| 56  | MG   | B3    | 101  | 1/1   | 0.94 | 0.27 | 35,35,35,35                 | 0     |
| 56  | MG   | BA    | 3145 | 1/1   | 0.94 | 0.22 | 30,30,30,30                 | 0     |
| 56  | MG   | DA    | 3062 | 1/1   | 0.94 | 0.22 | 42,42,42,42                 | 0     |
| 56  | MG   | B7    | 3004 | 1/1   | 0.94 | 0.09 | 34,34,34,34                 | 0     |
| 56  | MG   | AA    | 3137 | 1/1   | 0.94 | 0.07 | 79,79,79,79                 | 0     |
| 56  | MG   | DA    | 3431 | 1/1   | 0.94 | 0.11 | 61,61,61,61                 | 0     |
| 56  | MG   | DA    | 3435 | 1/1   | 0.94 | 0.20 | 33,33,33,33                 | 0     |
| 56  | MG   | DA    | 3438 | 1/1   | 0.94 | 0.10 | 38,38,38,38                 | 0     |
| 56  | MG   | B9    | 502  | 1/1   | 0.94 | 0.21 | 41,41,41,41                 | 0     |
| 56  | MG   | BA    | 3067 | 1/1   | 0.94 | 0.16 | 34,34,34,34                 | 0     |
| 56  | MG   | DA    | 3461 | 1/1   | 0.94 | 0.16 | 33,33,33,33                 | 0     |
| 56  | MG   | BA    | 3271 | 1/1   | 0.94 | 0.10 | 49,49,49,49                 | 0     |
| 56  | MG   | BA    | 3156 | 1/1   | 0.94 | 0.18 | 48,48,48,48                 | 0     |
| 56  | MG   | DA    | 3071 | 1/1   | 0.94 | 0.18 | 36,36,36,36                 | 0     |
| 56  | MG   | CA    | 3007 | 1/1   | 0.94 | 0.09 | 50,50,50,50                 | 0     |
| 56  | MG   | DA    | 3074 | 1/1   | 0.94 | 0.14 | 29,29,29,29                 | 0     |
| 56  | MG   | BA    | 3295 | 1/1   | 0.94 | 0.29 | 61,61,61,61                 | 0     |
| 56  | MG   | BA    | 3297 | 1/1   | 0.94 | 0.12 | 39,39,39,39                 | 0     |
| 56  | MG   | CA    | 3012 | 1/1   | 0.94 | 0.11 | 52,52,52,52                 | 0     |
| 56  | MG   | DA    | 3082 | 1/1   | 0.94 | 0.13 | 58,58,58,58                 | 0     |
| 56  | MG   | DA    | 3484 | 1/1   | 0.94 | 0.14 | 34,34,34,34                 | 0     |
| 56  | MG   | DA    | 3083 | 1/1   | 0.94 | 0.08 | 48,48,48,48                 | 0     |
| 56  | MG   | DA    | 3085 | 1/1   | 0.94 | 0.12 | 40,40,40,40                 | 0     |
| 56  | MG   | BA    | 3301 | 1/1   | 0.94 | 0.13 | 46,46,46,46                 | 0     |
| 56  | MG   | CA    | 3014 | 1/1   | 0.94 | 0.10 | 39,39,39,39                 | 0     |
| 56  | MG   | DA    | 3089 | 1/1   | 0.94 | 0.34 | 33,33,33,33                 | 0     |
| 56  | MG   | AA    | 3142 | 1/1   | 0.94 | 0.15 | 60,60,60,60                 | 0     |
| 56  | MG   | CA    | 3017 | 1/1   | 0.94 | 0.10 | 41,41,41,41                 | 0     |
| 56  | MG   | DA    | 3500 | 1/1   | 0.94 | 0.17 | 46,46,46,46                 | 0     |
| 56  | MG   | DA    | 3092 | 1/1   | 0.94 | 0.18 | 45,45,45,45                 | 0     |
| 56  | MG   | BA    | 3538 | 1/1   | 0.94 | 0.14 | 55,55,55,55                 | 0     |
| 56  | MG   | DA    | 3507 | 1/1   | 0.94 | 0.08 | 54,54,54,54                 | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 56  | MG   | BA    | 3539 | 1/1   | 0.94 | 0.16 | 58,58,58,58                 | 0     |
| 56  | MG   | BA    | 3070 | 1/1   | 0.94 | 0.11 | 30,30,30,30                 | 0     |
| 56  | MG   | CA    | 3027 | 1/1   | 0.94 | 0.15 | 64,64,64,64                 | 0     |
| 56  | MG   | BA    | 3308 | 1/1   | 0.94 | 0.17 | 52,52,52,52                 | 0     |
| 56  | MG   | AD    | 502  | 1/1   | 0.94 | 0.20 | 55,55,55,55                 | 0     |
| 56  | MG   | DA    | 3529 | 1/1   | 0.94 | 0.16 | 41,41,41,41                 | 0     |
| 56  | MG   | DA    | 3100 | 1/1   | 0.94 | 0.11 | 34,34,34,34                 | 0     |
| 56  | MG   | DA    | 3101 | 1/1   | 0.94 | 0.10 | 46,46,46,46                 | 0     |
| 56  | MG   | AA    | 3145 | 1/1   | 0.94 | 0.12 | 35,35,35,35                 | 0     |
| 56  | MG   | BA    | 3076 | 1/1   | 0.94 | 0.08 | 29,29,29,29                 | 0     |
| 56  | MG   | BA    | 3557 | 1/1   | 0.94 | 0.14 | 42,42,42,42                 | 0     |
| 56  | MG   | DA    | 3107 | 1/1   | 0.94 | 0.17 | 46,46,46,46                 | 0     |
| 56  | MG   | DA    | 3539 | 1/1   | 0.94 | 0.12 | 52,52,52,52                 | 0     |
| 56  | MG   | DA    | 3543 | 1/1   | 0.94 | 0.08 | 63,63,63,63                 | 0     |
| 56  | MG   | BA    | 3318 | 1/1   | 0.94 | 0.16 | 44,44,44,44                 | 0     |
| 56  | MG   | BA    | 3561 | 1/1   | 0.94 | 0.10 | 55,55,55,55                 | 0     |
| 56  | MG   | BA    | 3077 | 1/1   | 0.94 | 0.17 | 37,37,37,37                 | 0     |
| 56  | MG   | CA    | 3044 | 1/1   | 0.94 | 0.09 | 56,56,56,56                 | 0     |
| 56  | MG   | DA    | 3550 | 1/1   | 0.94 | 0.14 | 46,46,46,46                 | 0     |
| 56  | MG   | DA    | 3552 | 1/1   | 0.94 | 0.17 | 49,49,49,49                 | 0     |
| 56  | MG   | AA    | 3053 | 1/1   | 0.94 | 0.07 | 50,50,50,50                 | 0     |
| 56  | MG   | DA    | 3116 | 1/1   | 0.94 | 0.14 | 29,29,29,29                 | 0     |
| 56  | MG   | DA    | 3560 | 1/1   | 0.94 | 0.12 | 51,51,51,51                 | 0     |
| 56  | MG   | BA    | 3330 | 1/1   | 0.94 | 0.23 | 44,44,44,44                 | 0     |
| 56  | MG   | DA    | 3118 | 1/1   | 0.94 | 0.19 | 49,49,49,49                 | 0     |
| 56  | MG   | CA    | 3048 | 1/1   | 0.94 | 0.30 | 52,52,52,52                 | 0     |
| 56  | MG   | BA    | 3174 | 1/1   | 0.94 | 0.08 | 29,29,29,29                 | 0     |
| 56  | MG   | AA    | 3100 | 1/1   | 0.94 | 0.11 | 35,35,35,35                 | 0     |
| 56  | MG   | CA    | 3052 | 1/1   | 0.94 | 0.10 | 39,39,39,39                 | 0     |
| 56  | MG   | DA    | 3571 | 1/1   | 0.94 | 0.16 | 48,48,48,48                 | 0     |
| 56  | MG   | BA    | 3573 | 1/1   | 0.94 | 0.18 | 44,44,44,44                 | 0     |
| 56  | MG   | BA    | 3335 | 1/1   | 0.94 | 0.11 | 40,40,40,40                 | 0     |
| 56  | MG   | DA    | 3575 | 1/1   | 0.94 | 0.11 | 49,49,49,49                 | 0     |
| 56  | MG   | DA    | 3129 | 1/1   | 0.94 | 0.14 | 54,54,54,54                 | 0     |
| 56  | MG   | AA    | 3065 | 1/1   | 0.94 | 0.13 | 48,48,48,48                 | 0     |
| 56  | MG   | DA    | 3580 | 1/1   | 0.94 | 0.13 | 58,58,58,58                 | 0     |
| 56  | MG   | DA    | 3581 | 1/1   | 0.94 | 0.19 | 53,53,53,53                 | 0     |
| 56  | MG   | DA    | 3132 | 1/1   | 0.94 | 0.10 | 35,35,35,35                 | 0     |
| 56  | MG   | DA    | 3134 | 1/1   | 0.94 | 0.23 | 33,33,33,33                 | 0     |
| 56  | MG   | CA    | 3059 | 1/1   | 0.94 | 0.15 | 58,58,58,58                 | 0     |
| 56  | MG   | DA    | 3588 | 1/1   | 0.94 | 0.16 | 21,21,21,21                 | 0     |
| 56  | MG   | DA    | 3592 | 1/1   | 0.94 | 0.63 | 52,52,52,52                 | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 56  | MG   | DA    | 3593 | 1/1   | 0.94 | 0.32 | 51,51,51,51                 | 0     |
| 56  | MG   | BA    | 3578 | 1/1   | 0.94 | 0.14 | 59,59,59,59                 | 0     |
| 56  | MG   | DA    | 3139 | 1/1   | 0.94 | 0.22 | 39,39,39,39                 | 0     |
| 56  | MG   | AA    | 3151 | 1/1   | 0.94 | 0.18 | 45,45,45,45                 | 0     |
| 56  | MG   | AA    | 3017 | 1/1   | 0.94 | 0.13 | 63,63,63,63                 | 0     |
| 56  | MG   | DA    | 3144 | 1/1   | 0.94 | 0.14 | 38,38,38,38                 | 0     |
| 56  | MG   | BA    | 3583 | 1/1   | 0.94 | 0.10 | 37,37,37,37                 | 0     |
| 56  | MG   | DA    | 3146 | 1/1   | 0.94 | 0.12 | 34,34,34,34                 | 0     |
| 56  | MG   | AA    | 3108 | 1/1   | 0.94 | 0.14 | 54,54,54,54                 | 0     |
| 56  | MG   | DD    | 301  | 1/1   | 0.94 | 0.15 | 43,43,43,43                 | 0     |
| 56  | MG   | CA    | 3067 | 1/1   | 0.94 | 0.07 | 63,63,63,63                 | 0     |
| 56  | MG   | BA    | 3344 | 1/1   | 0.94 | 0.14 | 35,35,35,35                 | 0     |
| 56  | MG   | BA    | 3009 | 1/1   | 0.94 | 0.14 | 34,34,34,34                 | 0     |
| 56  | MG   | AA    | 3067 | 1/1   | 0.94 | 0.13 | 42,42,42,42                 | 0     |
| 56  | MG   | AA    | 3003 | 1/1   | 0.94 | 0.15 | 57,57,57,57                 | 0     |
| 56  | MG   | BA    | 3190 | 1/1   | 0.94 | 0.26 | 31,31,31,31                 | 0     |
| 56  | MG   | CA    | 3074 | 1/1   | 0.94 | 0.19 | 48,48,48,48                 | 0     |
| 56  | MG   | DA    | 3163 | 1/1   | 0.94 | 0.26 | 31,31,31,31                 | 0     |
| 56  | MG   | DA    | 3164 | 1/1   | 0.94 | 0.15 | 36,36,36,36                 | 0     |
| 56  | MG   | DA    | 3165 | 1/1   | 0.94 | 0.12 | 34,34,34,34                 | 0     |
| 56  | MG   | AA    | 3026 | 1/1   | 0.94 | 0.14 | 40,40,40,40                 | 0     |
| 56  | MG   | DA    | 3171 | 1/1   | 0.94 | 0.24 | 51,51,51,51                 | 0     |
| 56  | MG   | DU    | 201  | 1/1   | 0.94 | 0.29 | 41,41,41,41                 | 0     |
| 56  | MG   | CA    | 3079 | 1/1   | 0.94 | 0.17 | 55,55,55,55                 | 0     |
| 56  | MG   | BA    | 3192 | 1/1   | 0.94 | 0.13 | 58,58,58,58                 | 0     |
| 56  | MG   | DA    | 3176 | 1/1   | 0.94 | 0.11 | 29,29,29,29                 | 0     |
| 56  | MG   | DY    | 502  | 1/1   | 0.94 | 0.15 | 51,51,51,51                 | 0     |
| 56  | MG   | BA    | 3017 | 1/1   | 0.94 | 0.15 | 40,40,40,40                 | 0     |
| 56  | MG   | DA    | 3182 | 1/1   | 0.94 | 0.09 | 38,38,38,38                 | 0     |
| 56  | MG   | CA    | 3082 | 1/1   | 0.94 | 0.17 | 62,62,62,62                 | 0     |
| 59  | K    | AX    | 3001 | 1/1   | 0.94 | 0.07 | 48,48,48,48                 | 0     |
| 59  | K    | DA    | 3001 | 1/1   | 0.94 | 0.10 | 48,48,48,48                 | 0     |
| 56  | MG   | CA    | 3023 | 1/1   | 0.95 | 0.09 | 38,38,38,38                 | 0     |
| 56  | MG   | BA    | 3356 | 1/1   | 0.95 | 0.10 | 46,46,46,46                 | 0     |
| 56  | MG   | BA    | 3223 | 1/1   | 0.95 | 0.16 | 51,51,51,51                 | 0     |
| 56  | MG   | BA    | 3572 | 1/1   | 0.95 | 0.11 | 59,59,59,59                 | 0     |
| 56  | MG   | AA    | 3169 | 1/1   | 0.95 | 0.12 | 71,71,71,71                 | 0     |
| 56  | MG   | BA    | 3365 | 1/1   | 0.95 | 0.11 | 41,41,41,41                 | 0     |
| 56  | MG   | AA    | 3039 | 1/1   | 0.95 | 0.12 | 45,45,45,45                 | 0     |
| 56  | MG   | AA    | 3171 | 1/1   | 0.95 | 0.10 | 62,62,62,62                 | 0     |
| 56  | MG   | DA    | 3330 | 1/1   | 0.95 | 0.12 | 42,42,42,42                 | 0     |
| 56  | MG   | DA    | 3070 | 1/1   | 0.95 | 0.20 | 49,49,49,49                 | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 56  | MG   | CA    | 3034 | 1/1   | 0.95 | 0.12 | 67,67,67,67                 | 0     |
| 56  | MG   | DA    | 3333 | 1/1   | 0.95 | 0.18 | 38,38,38,38                 | 0     |
| 56  | MG   | BA    | 3374 | 1/1   | 0.95 | 0.11 | 29,29,29,29                 | 0     |
| 56  | MG   | DA    | 3339 | 1/1   | 0.95 | 0.14 | 32,32,32,32                 | 0     |
| 56  | MG   | AA    | 3091 | 1/1   | 0.95 | 0.11 | 36,36,36,36                 | 0     |
| 56  | MG   | DA    | 3341 | 1/1   | 0.95 | 0.13 | 25,25,25,25                 | 0     |
| 56  | MG   | DA    | 3343 | 1/1   | 0.95 | 0.17 | 56,56,56,56                 | 0     |
| 56  | MG   | DA    | 3344 | 1/1   | 0.95 | 0.16 | 31,31,31,31                 | 0     |
| 56  | MG   | DA    | 3075 | 1/1   | 0.95 | 0.18 | 41,41,41,41                 | 0     |
| 56  | MG   | AA    | 3173 | 1/1   | 0.95 | 0.15 | 32,32,32,32                 | 0     |
| 56  | MG   | DA    | 3077 | 1/1   | 0.95 | 0.14 | 34,34,34,34                 | 0     |
| 56  | MG   | CA    | 3043 | 1/1   | 0.95 | 0.14 | 60,60,60,60                 | 0     |
| 56  | MG   | DA    | 3352 | 1/1   | 0.95 | 0.12 | 45,45,45,45                 | 0     |
| 56  | MG   | BA    | 3130 | 1/1   | 0.95 | 0.28 | 40,40,40,40                 | 0     |
| 56  | MG   | BA    | 3131 | 1/1   | 0.95 | 0.22 | 36,36,36,36                 | 0     |
| 56  | MG   | BA    | 3590 | 1/1   | 0.95 | 0.13 | 55,55,55,55                 | 0     |
| 56  | MG   | DA    | 3356 | 1/1   | 0.95 | 0.09 | 31,31,31,31                 | 0     |
| 56  | MG   | BA    | 3390 | 1/1   | 0.95 | 0.09 | 47,47,47,47                 | 0     |
| 56  | MG   | BA    | 3392 | 1/1   | 0.95 | 0.17 | 41,41,41,41                 | 0     |
| 56  | MG   | DA    | 3360 | 1/1   | 0.95 | 0.09 | 39,39,39,39                 | 0     |
| 56  | MG   | BA    | 3135 | 1/1   | 0.95 | 0.21 | 36,36,36,36                 | 0     |
| 56  | MG   | BA    | 3073 | 1/1   | 0.95 | 0.18 | 14,14,14,14                 | 0     |
| 56  | MG   | BA    | 3137 | 1/1   | 0.95 | 0.22 | 30,30,30,30                 | 0     |
| 56  | MG   | BA    | 3597 | 1/1   | 0.95 | 0.15 | 43,43,43,43                 | 0     |
| 56  | MG   | BA    | 3140 | 1/1   | 0.95 | 0.16 | 33,33,33,33                 | 0     |
| 56  | MG   | DA    | 3369 | 1/1   | 0.95 | 0.11 | 45,45,45,45                 | 0     |
| 56  | MG   | AA    | 3139 | 1/1   | 0.95 | 0.09 | 36,36,36,36                 | 0     |
| 56  | MG   | AA    | 3046 | 1/1   | 0.95 | 0.11 | 42,42,42,42                 | 0     |
| 56  | MG   | DA    | 3374 | 1/1   | 0.95 | 0.13 | 35,35,35,35                 | 0     |
| 56  | MG   | BA    | 3238 | 1/1   | 0.95 | 0.21 | 47,47,47,47                 | 0     |
| 56  | MG   | AA    | 3111 | 1/1   | 0.95 | 0.21 | 45,45,45,45                 | 0     |
| 56  | MG   | DA    | 3383 | 1/1   | 0.95 | 0.08 | 47,47,47,47                 | 0     |
| 56  | MG   | BA    | 3149 | 1/1   | 0.95 | 0.11 | 50,50,50,50                 | 0     |
| 56  | MG   | DA    | 3386 | 1/1   | 0.95 | 0.13 | 48,48,48,48                 | 0     |
| 56  | MG   | BA    | 3609 | 1/1   | 0.95 | 0.11 | 44,44,44,44                 | 0     |
| 56  | MG   | DA    | 3391 | 1/1   | 0.95 | 0.06 | 42,42,42,42                 | 0     |
| 56  | MG   | BA    | 3019 | 1/1   | 0.95 | 0.22 | 49,49,49,49                 | 0     |
| 56  | MG   | BA    | 3415 | 1/1   | 0.95 | 0.21 | 54,54,54,54                 | 0     |
| 56  | MG   | DA    | 3394 | 1/1   | 0.95 | 0.09 | 41,41,41,41                 | 0     |
| 56  | MG   | DA    | 3396 | 1/1   | 0.95 | 0.10 | 45,45,45,45                 | 0     |
| 56  | MG   | BA    | 3020 | 1/1   | 0.95 | 0.15 | 33,33,33,33                 | 0     |
| 56  | MG   | BA    | 3417 | 1/1   | 0.95 | 0.17 | 24,24,24,24                 | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 56  | MG   | AA    | 3063 | 1/1   | 0.95 | 0.26 | 39,39,39,39                 | 0     |
| 56  | MG   | BA    | 3621 | 1/1   | 0.95 | 0.15 | 30,30,30,30                 | 0     |
| 56  | MG   | BA    | 3080 | 1/1   | 0.95 | 0.14 | 29,29,29,29                 | 0     |
| 56  | MG   | BA    | 3248 | 1/1   | 0.95 | 0.21 | 21,21,21,21                 | 0     |
| 56  | MG   | BA    | 3025 | 1/1   | 0.95 | 0.14 | 37,37,37,37                 | 0     |
| 56  | MG   | DA    | 3408 | 1/1   | 0.95 | 0.16 | 28,28,28,28                 | 0     |
| 56  | MG   | DA    | 3411 | 1/1   | 0.95 | 0.08 | 36,36,36,36                 | 0     |
| 56  | MG   | BA    | 3161 | 1/1   | 0.95 | 0.10 | 39,39,39,39                 | 0     |
| 56  | MG   | BA    | 3630 | 1/1   | 0.95 | 0.12 | 47,47,47,47                 | 0     |
| 56  | MG   | DA    | 3418 | 1/1   | 0.95 | 0.13 | 29,29,29,29                 | 0     |
| 56  | MG   | AA    | 3055 | 1/1   | 0.95 | 0.14 | 72,72,72,72                 | 0     |
| 56  | MG   | BA    | 3430 | 1/1   | 0.95 | 0.12 | 29,29,29,29                 | 0     |
| 56  | MG   | DA    | 3422 | 1/1   | 0.95 | 0.07 | 63,63,63,63                 | 0     |
| 56  | MG   | BA    | 3256 | 1/1   | 0.95 | 0.22 | 41,41,41,41                 | 0     |
| 56  | MG   | BA    | 3636 | 1/1   | 0.95 | 0.11 | 32,32,32,32                 | 0     |
| 56  | MG   | DA    | 3426 | 1/1   | 0.95 | 0.22 | 35,35,35,35                 | 0     |
| 56  | MG   | DA    | 3120 | 1/1   | 0.95 | 0.22 | 33,33,33,33                 | 0     |
| 56  | MG   | BA    | 3638 | 1/1   | 0.95 | 0.10 | 32,32,32,32                 | 0     |
| 56  | MG   | CA    | 3087 | 1/1   | 0.95 | 0.12 | 33,33,33,33                 | 0     |
| 56  | MG   | BA    | 3030 | 1/1   | 0.95 | 0.62 | 43,43,43,43                 | 0     |
| 56  | MG   | DA    | 3434 | 1/1   | 0.95 | 0.13 | 41,41,41,41                 | 0     |
| 56  | MG   | BA    | 3443 | 1/1   | 0.95 | 0.11 | 44,44,44,44                 | 0     |
| 56  | MG   | BA    | 3033 | 1/1   | 0.95 | 0.18 | 33,33,33,33                 | 0     |
| 56  | MG   | BA    | 3644 | 1/1   | 0.95 | 0.08 | 41,41,41,41                 | 0     |
| 56  | MG   | DA    | 3445 | 1/1   | 0.95 | 0.13 | 48,48,48,48                 | 0     |
| 56  | MG   | BA    | 3447 | 1/1   | 0.95 | 0.12 | 55,55,55,55                 | 0     |
| 56  | MG   | DA    | 3450 | 1/1   | 0.95 | 0.07 | 37,37,37,37                 | 0     |
| 56  | MG   | BA    | 3449 | 1/1   | 0.95 | 0.08 | 47,47,47,47                 | 0     |
| 56  | MG   | DA    | 3465 | 1/1   | 0.95 | 0.13 | 38,38,38,38                 | 0     |
| 56  | MG   | DA    | 3467 | 1/1   | 0.95 | 0.12 | 47,47,47,47                 | 0     |
| 56  | MG   | DA    | 3468 | 1/1   | 0.95 | 0.24 | 55,55,55,55                 | 0     |
| 56  | MG   | AA    | 3009 | 1/1   | 0.95 | 0.11 | 54,54,54,54                 | 0     |
| 56  | MG   | BA    | 3266 | 1/1   | 0.95 | 0.21 | 29,29,29,29                 | 0     |
| 56  | MG   | BA    | 3660 | 1/1   | 0.95 | 0.08 | 49,49,49,49                 | 0     |
| 56  | MG   | DA    | 3137 | 1/1   | 0.95 | 0.10 | 37,37,37,37                 | 0     |
| 56  | MG   | DA    | 3473 | 1/1   | 0.95 | 0.06 | 50,50,50,50                 | 0     |
| 56  | MG   | BA    | 3088 | 1/1   | 0.95 | 0.11 | 42,42,42,42                 | 0     |
| 56  | MG   | BA    | 3666 | 1/1   | 0.95 | 0.29 | 35,35,35,35                 | 0     |
| 56  | MG   | CA    | 3108 | 1/1   | 0.95 | 0.12 | 59,59,59,59                 | 0     |
| 56  | MG   | CA    | 3109 | 1/1   | 0.95 | 0.17 | 50,50,50,50                 | 0     |
| 56  | MG   | BA    | 3668 | 1/1   | 0.95 | 0.17 | 26,26,26,26                 | 0     |
| 56  | MG   | DA    | 3480 | 1/1   | 0.95 | 0.08 | 32,32,32,32                 | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 56  | MG   | DA    | 3482 | 1/1   | 0.95 | 0.10 | 46,46,46,46                 | 0     |
| 56  | MG   | DA    | 3483 | 1/1   | 0.95 | 0.13 | 54,54,54,54                 | 0     |
| 56  | MG   | BA    | 3460 | 1/1   | 0.95 | 0.14 | 57,57,57,57                 | 0     |
| 56  | MG   | DA    | 3147 | 1/1   | 0.95 | 0.19 | 47,47,47,47                 | 0     |
| 56  | MG   | AA    | 3057 | 1/1   | 0.95 | 0.23 | 67,67,67,67                 | 0     |
| 56  | MG   | BB    | 3001 | 1/1   | 0.95 | 0.15 | 36,36,36,36                 | 0     |
| 56  | MG   | BA    | 3464 | 1/1   | 0.95 | 0.08 | 41,41,41,41                 | 0     |
| 56  | MG   | BA    | 3269 | 1/1   | 0.95 | 0.08 | 34,34,34,34                 | 0     |
| 56  | MG   | AA    | 3099 | 1/1   | 0.95 | 0.26 | 33,33,33,33                 | 0     |
| 56  | MG   | BA    | 3274 | 1/1   | 0.95 | 0.28 | 47,47,47,47                 | 0     |
| 56  | MG   | BA    | 3277 | 1/1   | 0.95 | 0.22 | 32,32,32,32                 | 0     |
| 56  | MG   | DA    | 3501 | 1/1   | 0.95 | 0.09 | 55,55,55,55                 | 0     |
| 56  | MG   | DA    | 3503 | 1/1   | 0.95 | 0.07 | 38,38,38,38                 | 0     |
| 56  | MG   | BA    | 3042 | 1/1   | 0.95 | 0.17 | 33,33,33,33                 | 0     |
| 56  | MG   | BA    | 3476 | 1/1   | 0.95 | 0.07 | 51,51,51,51                 | 0     |
| 56  | MG   | BA    | 3478 | 1/1   | 0.95 | 0.13 | 47,47,47,47                 | 0     |
| 56  | MG   | BA    | 3480 | 1/1   | 0.95 | 0.21 | 43,43,43,43                 | 0     |
| 56  | MG   | DA    | 3514 | 1/1   | 0.95 | 0.07 | 40,40,40,40                 | 0     |
| 56  | MG   | CA    | 3130 | 1/1   | 0.95 | 0.12 | 57,57,57,57                 | 0     |
| 56  | MG   | BA    | 3280 | 1/1   | 0.95 | 0.10 | 48,48,48,48                 | 0     |
| 56  | MG   | BA    | 3182 | 1/1   | 0.95 | 0.18 | 30,30,30,30                 | 0     |
| 56  | MG   | DA    | 3519 | 1/1   | 0.95 | 0.08 | 42,42,42,42                 | 0     |
| 56  | MG   | DA    | 3525 | 1/1   | 0.95 | 0.08 | 44,44,44,44                 | 0     |
| 56  | MG   | BA    | 3485 | 1/1   | 0.95 | 0.14 | 64,64,64,64                 | 0     |
| 56  | MG   | DA    | 3528 | 1/1   | 0.95 | 0.06 | 37,37,37,37                 | 0     |
| 56  | MG   | BD    | 306  | 1/1   | 0.95 | 0.18 | 36,36,36,36                 | 0     |
| 56  | MG   | BA    | 3486 | 1/1   | 0.95 | 0.17 | 21,21,21,21                 | 0     |
| 56  | MG   | BA    | 3043 | 1/1   | 0.95 | 0.17 | 36,36,36,36                 | 0     |
| 56  | MG   | BA    | 3298 | 1/1   | 0.95 | 0.11 | 28,28,28,28                 | 0     |
| 56  | MG   | DA    | 3184 | 1/1   | 0.95 | 0.19 | 30,30,30,30                 | 0     |
| 56  | MG   | BF    | 303  | 1/1   | 0.95 | 0.28 | 20,20,20,20                 | 0     |
| 56  | MG   | BA    | 3492 | 1/1   | 0.95 | 0.15 | 42,42,42,42                 | 0     |
| 56  | MG   | BA    | 3044 | 1/1   | 0.95 | 0.15 | 30,30,30,30                 | 0     |
| 56  | MG   | CA    | 3148 | 1/1   | 0.95 | 0.10 | 57,57,57,57                 | 0     |
| 56  | MG   | BA    | 3302 | 1/1   | 0.95 | 0.12 | 55,55,55,55                 | 0     |
| 56  | MG   | CA    | 3151 | 1/1   | 0.95 | 0.13 | 50,50,50,50                 | 0     |
| 56  | MG   | BA    | 3305 | 1/1   | 0.95 | 0.15 | 28,28,28,28                 | 0     |
| 56  | MG   | BA    | 3046 | 1/1   | 0.95 | 0.21 | 29,29,29,29                 | 0     |
| 56  | MG   | BA    | 3499 | 1/1   | 0.95 | 0.16 | 35,35,35,35                 | 0     |
| 56  | MG   | DA    | 3551 | 1/1   | 0.95 | 0.17 | 52,52,52,52                 | 0     |
| 56  | MG   | DA    | 3200 | 1/1   | 0.95 | 0.12 | 28,28,28,28                 | 0     |
| 56  | MG   | DA    | 3205 | 1/1   | 0.95 | 0.16 | 32,32,32,32                 | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 56  | MG   | DA    | 3555 | 1/1   | 0.95 | 0.13 | 51,51,51,51                 | 0     |
| 56  | MG   | BA    | 3097 | 1/1   | 0.95 | 0.12 | 53,53,53,53                 | 0     |
| 56  | MG   | BA    | 3507 | 1/1   | 0.95 | 0.12 | 53,53,53,53                 | 0     |
| 56  | MG   | BA    | 3510 | 1/1   | 0.95 | 0.22 | 25,25,25,25                 | 0     |
| 56  | MG   | BU    | 202  | 1/1   | 0.95 | 0.09 | 40,40,40,40                 | 0     |
| 56  | MG   | DA    | 3217 | 1/1   | 0.95 | 0.12 | 39,39,39,39                 | 0     |
| 56  | MG   | BU    | 205  | 1/1   | 0.95 | 0.24 | 53,53,53,53                 | 0     |
| 56  | MG   | BA    | 3512 | 1/1   | 0.95 | 0.14 | 45,45,45,45                 | 0     |
| 56  | MG   | BA    | 3103 | 1/1   | 0.95 | 0.13 | 42,42,42,42                 | 0     |
| 56  | MG   | DA    | 3569 | 1/1   | 0.95 | 0.25 | 55,55,55,55                 | 0     |
| 56  | MG   | BA    | 3047 | 1/1   | 0.95 | 0.22 | 41,41,41,41                 | 0     |
| 56  | MG   | BA    | 3516 | 1/1   | 0.95 | 0.14 | 43,43,43,43                 | 0     |
| 56  | MG   | DA    | 3573 | 1/1   | 0.95 | 0.14 | 45,45,45,45                 | 0     |
| 56  | MG   | DA    | 3007 | 1/1   | 0.95 | 0.08 | 39,39,39,39                 | 0     |
| 56  | MG   | DA    | 3230 | 1/1   | 0.95 | 0.12 | 41,41,41,41                 | 0     |
| 56  | MG   | BA    | 3107 | 1/1   | 0.95 | 0.16 | 21,21,21,21                 | 0     |
| 56  | MG   | AA    | 3158 | 1/1   | 0.95 | 0.09 | 54,54,54,54                 | 0     |
| 56  | MG   | AA    | 3037 | 1/1   | 0.95 | 0.14 | 51,51,51,51                 | 0     |
| 56  | MG   | B0    | 103  | 1/1   | 0.95 | 0.12 | 33,33,33,33                 | 0     |
| 56  | MG   | BA    | 3319 | 1/1   | 0.95 | 0.21 | 39,39,39,39                 | 0     |
| 56  | MG   | AA    | 3126 | 1/1   | 0.95 | 0.12 | 54,54,54,54                 | 0     |
| 56  | MG   | DA    | 3240 | 1/1   | 0.95 | 0.09 | 54,54,54,54                 | 0     |
| 56  | MG   | BA    | 3328 | 1/1   | 0.95 | 0.13 | 39,39,39,39                 | 0     |
| 56  | MG   | DA    | 3591 | 1/1   | 0.95 | 0.07 | 42,42,42,42                 | 0     |
| 56  | MG   | BA    | 3195 | 1/1   | 0.95 | 0.13 | 47,47,47,47                 | 0     |
| 56  | MG   | BA    | 3053 | 1/1   | 0.95 | 0.18 | 31,31,31,31                 | 0     |
| 56  | MG   | DA    | 3594 | 1/1   | 0.95 | 0.12 | 48,48,48,48                 | 0     |
| 56  | MG   | DA    | 3027 | 1/1   | 0.95 | 0.12 | 30,30,30,30                 | 0     |
| 56  | MG   | DA    | 3249 | 1/1   | 0.95 | 0.09 | 34,34,34,34                 | 0     |
| 56  | MG   | BA    | 3200 | 1/1   | 0.95 | 0.18 | 25,25,25,25                 | 0     |
| 56  | MG   | DA    | 3252 | 1/1   | 0.95 | 0.15 | 53,53,53,53                 | 0     |
| 56  | MG   | CA    | 3001 | 1/1   | 0.95 | 0.07 | 72,72,72,72                 | 0     |
| 56  | MG   | AA    | 3051 | 1/1   | 0.95 | 0.14 | 49,49,49,49                 | 0     |
| 56  | MG   | DB    | 3009 | 1/1   | 0.95 | 0.14 | 60,60,60,60                 | 0     |
| 56  | MG   | BA    | 3202 | 1/1   | 0.95 | 0.13 | 30,30,30,30                 | 0     |
| 56  | MG   | AX    | 3002 | 1/1   | 0.95 | 0.08 | 56,56,56,56                 | 0     |
| 56  | MG   | DA    | 3263 | 1/1   | 0.95 | 0.11 | 39,39,39,39                 | 0     |
| 56  | MG   | AA    | 3165 | 1/1   | 0.95 | 0.07 | 43,43,43,43                 | 0     |
| 56  | MG   | DA    | 3036 | 1/1   | 0.95 | 0.09 | 38,38,38,38                 | 0     |
| 56  | MG   | DA    | 3266 | 1/1   | 0.95 | 0.10 | 46,46,46,46                 | 0     |
| 56  | MG   | DA    | 3268 | 1/1   | 0.95 | 0.13 | 38,38,38,38                 | 0     |
| 56  | MG   | CA    | 3008 | 1/1   | 0.95 | 0.30 | 31,31,31,31                 | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 56  | MG   | DA    | 3272 | 1/1   | 0.95 | 0.08 | 57,57,57,57                 | 0     |
| 56  | MG   | DA    | 3273 | 1/1   | 0.95 | 0.19 | 31,31,31,31                 | 0     |
| 56  | MG   | BA    | 3210 | 1/1   | 0.95 | 0.23 | 24,24,24,24                 | 0     |
| 56  | MG   | DA    | 3043 | 1/1   | 0.95 | 0.10 | 30,30,30,30                 | 0     |
| 56  | MG   | CA    | 3010 | 1/1   | 0.95 | 0.14 | 53,53,53,53                 | 0     |
| 56  | MG   | DA    | 3280 | 1/1   | 0.95 | 0.12 | 50,50,50,50                 | 0     |
| 56  | MG   | BA    | 3553 | 1/1   | 0.95 | 0.67 | 48,48,48,48                 | 0     |
| 56  | MG   | BA    | 3211 | 1/1   | 0.95 | 0.27 | 29,29,29,29                 | 0     |
| 56  | MG   | BA    | 3213 | 1/1   | 0.95 | 0.23 | 21,21,21,21                 | 0     |
| 56  | MG   | BA    | 3120 | 1/1   | 0.95 | 0.18 | 44,44,44,44                 | 0     |
| 56  | MG   | DA    | 3299 | 1/1   | 0.95 | 0.12 | 50,50,50,50                 | 0     |
| 56  | MG   | CA    | 3015 | 1/1   | 0.95 | 0.15 | 43,43,43,43                 | 0     |
| 56  | MG   | D3    | 3001 | 1/1   | 0.95 | 0.69 | 70,70,70,70                 | 0     |
| 56  | MG   | AA    | 3131 | 1/1   | 0.95 | 0.12 | 55,55,55,55                 | 0     |
| 56  | MG   | BA    | 3349 | 1/1   | 0.95 | 0.08 | 46,46,46,46                 | 0     |
| 56  | MG   | AA    | 3032 | 1/1   | 0.95 | 0.15 | 42,42,42,42                 | 0     |
| 56  | MG   | DA    | 3306 | 1/1   | 0.95 | 0.11 | 38,38,38,38                 | 0     |
| 56  | MG   | BA    | 3353 | 1/1   | 0.95 | 0.13 | 39,39,39,39                 | 0     |
| 56  | MG   | AA    | 3163 | 1/1   | 0.96 | 0.06 | 49,49,49,49                 | 0     |
| 56  | MG   | BV    | 203  | 1/1   | 0.96 | 0.09 | 24,24,24,24                 | 0     |
| 56  | MG   | BW    | 3001 | 1/1   | 0.96 | 0.14 | 25,25,25,25                 | 0     |
| 56  | MG   | AA    | 3125 | 1/1   | 0.96 | 0.19 | 41,41,41,41                 | 0     |
| 56  | MG   | BA    | 3217 | 1/1   | 0.96 | 0.28 | 29,29,29,29                 | 0     |
| 56  | MG   | DA    | 3308 | 1/1   | 0.96 | 0.13 | 29,29,29,29                 | 0     |
| 56  | MG   | BX    | 102  | 1/1   | 0.96 | 0.28 | 38,38,38,38                 | 0     |
| 56  | MG   | DA    | 3310 | 1/1   | 0.96 | 0.09 | 41,41,41,41                 | 0     |
| 56  | MG   | BX    | 103  | 1/1   | 0.96 | 0.21 | 25,25,25,25                 | 0     |
| 56  | MG   | DA    | 3314 | 1/1   | 0.96 | 0.14 | 54,54,54,54                 | 0     |
| 56  | MG   | DA    | 3316 | 1/1   | 0.96 | 0.15 | 57,57,57,57                 | 0     |
| 56  | MG   | BY    | 502  | 1/1   | 0.96 | 0.17 | 35,35,35,35                 | 0     |
| 56  | MG   | DA    | 3321 | 1/1   | 0.96 | 0.10 | 45,45,45,45                 | 0     |
| 56  | MG   | BA    | 3063 | 1/1   | 0.96 | 0.09 | 47,47,47,47                 | 0     |
| 56  | MG   | BA    | 3219 | 1/1   | 0.96 | 0.10 | 20,20,20,20                 | 0     |
| 56  | MG   | BA    | 3005 | 1/1   | 0.96 | 0.16 | 29,29,29,29                 | 0     |
| 56  | MG   | DA    | 3327 | 1/1   | 0.96 | 0.18 | 34,34,34,34                 | 0     |
| 56  | MG   | BA    | 3006 | 1/1   | 0.96 | 0.40 | 36,36,36,36                 | 0     |
| 56  | MG   | BA    | 3528 | 1/1   | 0.96 | 0.19 | 38,38,38,38                 | 0     |
| 56  | MG   | BA    | 3529 | 1/1   | 0.96 | 0.17 | 33,33,33,33                 | 0     |
| 56  | MG   | DA    | 3048 | 1/1   | 0.96 | 0.15 | 41,41,41,41                 | 0     |
| 56  | MG   | DA    | 3050 | 1/1   | 0.96 | 0.09 | 41,41,41,41                 | 0     |
| 56  | MG   | DA    | 3051 | 1/1   | 0.96 | 0.11 | 50,50,50,50                 | 0     |
| 56  | MG   | DA    | 3337 | 1/1   | 0.96 | 0.09 | 42,42,42,42                 | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 56  | MG   | B0    | 105  | 1/1   | 0.96 | 0.10 | 43,43,43,43                 | 0     |
| 56  | MG   | BA    | 3007 | 1/1   | 0.96 | 0.12 | 32,32,32,32                 | 0     |
| 56  | MG   | BA    | 3342 | 1/1   | 0.96 | 0.15 | 35,35,35,35                 | 0     |
| 56  | MG   | B7    | 3001 | 1/1   | 0.96 | 0.25 | 45,45,45,45                 | 0     |
| 56  | MG   | BA    | 3133 | 1/1   | 0.96 | 0.11 | 33,33,33,33                 | 0     |
| 56  | MG   | BA    | 3537 | 1/1   | 0.96 | 0.10 | 58,58,58,58                 | 0     |
| 56  | MG   | DA    | 3345 | 1/1   | 0.96 | 0.16 | 33,33,33,33                 | 0     |
| 56  | MG   | BA    | 3134 | 1/1   | 0.96 | 0.28 | 40,40,40,40                 | 0     |
| 56  | MG   | BA    | 3008 | 1/1   | 0.96 | 0.09 | 27,27,27,27                 | 0     |
| 56  | MG   | CA    | 3002 | 1/1   | 0.96 | 0.09 | 43,43,43,43                 | 0     |
| 56  | MG   | BA    | 3540 | 1/1   | 0.96 | 0.16 | 46,46,46,46                 | 0     |
| 56  | MG   | BA    | 3348 | 1/1   | 0.96 | 0.13 | 31,31,31,31                 | 0     |
| 56  | MG   | BA    | 3071 | 1/1   | 0.96 | 0.13 | 32,32,32,32                 | 0     |
| 56  | MG   | AA    | 3022 | 1/1   | 0.96 | 0.10 | 39,39,39,39                 | 0     |
| 56  | MG   | BA    | 3138 | 1/1   | 0.96 | 0.19 | 35,35,35,35                 | 0     |
| 56  | MG   | BA    | 3551 | 1/1   | 0.96 | 0.09 | 48,48,48,48                 | 0     |
| 56  | MG   | BA    | 3552 | 1/1   | 0.96 | 0.08 | 31,31,31,31                 | 0     |
| 56  | MG   | AA    | 3127 | 1/1   | 0.96 | 0.04 | 68,68,68,68                 | 0     |
| 56  | MG   | BA    | 3357 | 1/1   | 0.96 | 0.13 | 30,30,30,30                 | 0     |
| 56  | MG   | BA    | 3555 | 1/1   | 0.96 | 0.20 | 42,42,42,42                 | 0     |
| 56  | MG   | BA    | 3231 | 1/1   | 0.96 | 0.21 | 41,41,41,41                 | 0     |
| 56  | MG   | BA    | 3558 | 1/1   | 0.96 | 0.12 | 59,59,59,59                 | 0     |
| 56  | MG   | AA    | 3128 | 1/1   | 0.96 | 0.10 | 57,57,57,57                 | 0     |
| 56  | MG   | BA    | 3363 | 1/1   | 0.96 | 0.20 | 29,29,29,29                 | 0     |
| 56  | MG   | CA    | 3018 | 1/1   | 0.96 | 0.14 | 43,43,43,43                 | 0     |
| 56  | MG   | AA    | 3104 | 1/1   | 0.96 | 0.07 | 56,56,56,56                 | 0     |
| 56  | MG   | CA    | 3020 | 1/1   | 0.96 | 0.27 | 46,46,46,46                 | 0     |
| 56  | MG   | DA    | 3086 | 1/1   | 0.96 | 0.08 | 41,41,41,41                 | 0     |
| 56  | MG   | BA    | 3563 | 1/1   | 0.96 | 0.17 | 47,47,47,47                 | 0     |
| 56  | MG   | DA    | 3376 | 1/1   | 0.96 | 0.05 | 38,38,38,38                 | 0     |
| 56  | MG   | DA    | 3378 | 1/1   | 0.96 | 0.15 | 31,31,31,31                 | 0     |
| 56  | MG   | DA    | 3379 | 1/1   | 0.96 | 0.08 | 26,26,26,26                 | 0     |
| 56  | MG   | BA    | 3367 | 1/1   | 0.96 | 0.17 | 49,49,49,49                 | 0     |
| 56  | MG   | DA    | 3382 | 1/1   | 0.96 | 0.12 | 50,50,50,50                 | 0     |
| 56  | MG   | BA    | 3015 | 1/1   | 0.96 | 0.13 | 27,27,27,27                 | 0     |
| 56  | MG   | BA    | 3147 | 1/1   | 0.96 | 0.24 | 35,35,35,35                 | 0     |
| 56  | MG   | BA    | 3148 | 1/1   | 0.96 | 0.19 | 25,25,25,25                 | 0     |
| 56  | MG   | BA    | 3571 | 1/1   | 0.96 | 0.14 | 50,50,50,50                 | 0     |
| 56  | MG   | DA    | 3390 | 1/1   | 0.96 | 0.07 | 41,41,41,41                 | 0     |
| 56  | MG   | BA    | 3375 | 1/1   | 0.96 | 0.20 | 51,51,51,51                 | 0     |
| 56  | MG   | BA    | 3016 | 1/1   | 0.96 | 0.15 | 50,50,50,50                 | 0     |
| 56  | MG   | BA    | 3150 | 1/1   | 0.96 | 0.13 | 32,32,32,32                 | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 56  | MG   | AA    | 3105 | 1/1   | 0.96 | 0.15 | 44,44,44,44                 | 0     |
| 56  | MG   | AA    | 3018 | 1/1   | 0.96 | 0.13 | 50,50,50,50                 | 0     |
| 56  | MG   | BA    | 3388 | 1/1   | 0.96 | 0.06 | 54,54,54,54                 | 0     |
| 56  | MG   | CA    | 3040 | 1/1   | 0.96 | 0.25 | 52,52,52,52                 | 0     |
| 56  | MG   | BA    | 3242 | 1/1   | 0.96 | 0.26 | 46,46,46,46                 | 0     |
| 56  | MG   | CA    | 3042 | 1/1   | 0.96 | 0.11 | 56,56,56,56                 | 0     |
| 56  | MG   | DA    | 3103 | 1/1   | 0.96 | 0.07 | 56,56,56,56                 | 0     |
| 56  | MG   | DA    | 3403 | 1/1   | 0.96 | 0.08 | 39,39,39,39                 | 0     |
| 56  | MG   | BA    | 3581 | 1/1   | 0.96 | 0.10 | 34,34,34,34                 | 0     |
| 56  | MG   | BA    | 3582 | 1/1   | 0.96 | 0.11 | 31,31,31,31                 | 0     |
| 56  | MG   | BA    | 3391 | 1/1   | 0.96 | 0.10 | 37,37,37,37                 | 0     |
| 56  | MG   | CA    | 3046 | 1/1   | 0.96 | 0.09 | 41,41,41,41                 | 0     |
| 56  | MG   | AA    | 3090 | 1/1   | 0.96 | 0.18 | 28,28,28,28                 | 0     |
| 56  | MG   | DA    | 3415 | 1/1   | 0.96 | 0.17 | 40,40,40,40                 | 0     |
| 56  | MG   | DA    | 3110 | 1/1   | 0.96 | 0.14 | 42,42,42,42                 | 0     |
| 56  | MG   | AA    | 3074 | 1/1   | 0.96 | 0.15 | 38,38,38,38                 | 0     |
| 56  | MG   | DA    | 3112 | 1/1   | 0.96 | 0.14 | 24,24,24,24                 | 0     |
| 56  | MG   | BA    | 3586 | 1/1   | 0.96 | 0.17 | 45,45,45,45                 | 0     |
| 56  | MG   | BA    | 3021 | 1/1   | 0.96 | 0.10 | 37,37,37,37                 | 0     |
| 56  | MG   | DA    | 3423 | 1/1   | 0.96 | 0.15 | 40,40,40,40                 | 0     |
| 56  | MG   | BA    | 3160 | 1/1   | 0.96 | 0.15 | 29,29,29,29                 | 0     |
| 56  | MG   | AA    | 3175 | 1/1   | 0.96 | 0.12 | 53,53,53,53                 | 0     |
| 56  | MG   | BA    | 3397 | 1/1   | 0.96 | 0.11 | 30,30,30,30                 | 0     |
| 56  | MG   | BA    | 3398 | 1/1   | 0.96 | 0.15 | 41,41,41,41                 | 0     |
| 56  | MG   | BA    | 3249 | 1/1   | 0.96 | 0.15 | 48,48,48,48                 | 0     |
| 56  | MG   | CA    | 3060 | 1/1   | 0.96 | 0.19 | 50,50,50,50                 | 0     |
| 56  | MG   | BA    | 3250 | 1/1   | 0.96 | 0.18 | 33,33,33,33                 | 0     |
| 56  | MG   | BA    | 3251 | 1/1   | 0.96 | 0.28 | 37,37,37,37                 | 0     |
| 56  | MG   | BA    | 3162 | 1/1   | 0.96 | 0.18 | 39,39,39,39                 | 0     |
| 56  | MG   | DA    | 3437 | 1/1   | 0.96 | 0.26 | 48,48,48,48                 | 0     |
| 56  | MG   | AA    | 3075 | 1/1   | 0.96 | 0.16 | 39,39,39,39                 | 0     |
| 56  | MG   | DA    | 3440 | 1/1   | 0.96 | 0.16 | 52,52,52,52                 | 0     |
| 56  | MG   | DA    | 3442 | 1/1   | 0.96 | 0.19 | 42,42,42,42                 | 0     |
| 56  | MG   | DA    | 3128 | 1/1   | 0.96 | 0.21 | 42,42,42,42                 | 0     |
| 56  | MG   | AA    | 3140 | 1/1   | 0.96 | 0.12 | 31,31,31,31                 | 0     |
| 56  | MG   | BA    | 3410 | 1/1   | 0.96 | 0.14 | 43,43,43,43                 | 0     |
| 56  | MG   | DA    | 3447 | 1/1   | 0.96 | 0.08 | 33,33,33,33                 | 0     |
| 56  | MG   | DA    | 3449 | 1/1   | 0.96 | 0.15 | 29,29,29,29                 | 0     |
| 56  | MG   | BA    | 3412 | 1/1   | 0.96 | 0.17 | 48,48,48,48                 | 0     |
| 56  | MG   | DA    | 3452 | 1/1   | 0.96 | 0.14 | 56,56,56,56                 | 0     |
| 56  | MG   | DA    | 3454 | 1/1   | 0.96 | 0.08 | 64,64,64,64                 | 0     |
| 56  | MG   | DA    | 3456 | 1/1   | 0.96 | 0.13 | 34,34,34,34                 | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 56  | MG   | DA    | 3457 | 1/1   | 0.96 | 0.12 | 38,38,38,38                 | 0     |
| 56  | MG   | DA    | 3460 | 1/1   | 0.96 | 0.18 | 50,50,50,50                 | 0     |
| 56  | MG   | BA    | 3255 | 1/1   | 0.96 | 0.21 | 32,32,32,32                 | 0     |
| 56  | MG   | BA    | 3610 | 1/1   | 0.96 | 0.17 | 47,47,47,47                 | 0     |
| 56  | MG   | AA    | 3036 | 1/1   | 0.96 | 0.07 | 41,41,41,41                 | 0     |
| 56  | MG   | BA    | 3612 | 1/1   | 0.96 | 0.19 | 51,51,51,51                 | 0     |
| 56  | MG   | BA    | 3615 | 1/1   | 0.96 | 0.12 | 42,42,42,42                 | 0     |
| 56  | MG   | DA    | 3140 | 1/1   | 0.96 | 0.10 | 37,37,37,37                 | 0     |
| 56  | MG   | BA    | 3258 | 1/1   | 0.96 | 0.23 | 30,30,30,30                 | 0     |
| 56  | MG   | BA    | 3418 | 1/1   | 0.96 | 0.12 | 46,46,46,46                 | 0     |
| 56  | MG   | BA    | 3420 | 1/1   | 0.96 | 0.10 | 24,24,24,24                 | 0     |
| 56  | MG   | BA    | 3167 | 1/1   | 0.96 | 0.12 | 46,46,46,46                 | 0     |
| 56  | MG   | AA    | 3005 | 1/1   | 0.96 | 0.18 | 37,37,37,37                 | 0     |
| 56  | MG   | AA    | 3146 | 1/1   | 0.96 | 0.15 | 41,41,41,41                 | 0     |
| 56  | MG   | BA    | 3265 | 1/1   | 0.96 | 0.29 | 47,47,47,47                 | 0     |
| 56  | MG   | AA    | 3114 | 1/1   | 0.96 | 0.14 | 56,56,56,56                 | 0     |
| 56  | MG   | BA    | 3175 | 1/1   | 0.96 | 0.14 | 33,33,33,33                 | 0     |
| 56  | MG   | BA    | 3429 | 1/1   | 0.96 | 0.18 | 41,41,41,41                 | 0     |
| 56  | MG   | AA    | 3182 | 1/1   | 0.96 | 0.14 | 57,57,57,57                 | 0     |
| 56  | MG   | BA    | 3431 | 1/1   | 0.96 | 0.10 | 44,44,44,44                 | 0     |
| 56  | MG   | AA    | 3116 | 1/1   | 0.96 | 0.12 | 51,51,51,51                 | 0     |
| 56  | MG   | CA    | 3092 | 1/1   | 0.96 | 0.12 | 54,54,54,54                 | 0     |
| 56  | MG   | BA    | 3635 | 1/1   | 0.96 | 0.19 | 63,63,63,63                 | 0     |
| 56  | MG   | CA    | 3094 | 1/1   | 0.96 | 0.10 | 67,67,67,67                 | 0     |
| 56  | MG   | DA    | 3489 | 1/1   | 0.96 | 0.16 | 49,49,49,49                 | 0     |
| 56  | MG   | AA    | 3015 | 1/1   | 0.96 | 0.13 | 56,56,56,56                 | 0     |
| 56  | MG   | BA    | 3273 | 1/1   | 0.96 | 0.09 | 29,29,29,29                 | 0     |
| 56  | MG   | DA    | 3494 | 1/1   | 0.96 | 0.17 | 49,49,49,49                 | 0     |
| 56  | MG   | CA    | 3097 | 1/1   | 0.96 | 0.19 | 67,67,67,67                 | 0     |
| 56  | MG   | BA    | 3101 | 1/1   | 0.96 | 0.14 | 30,30,30,30                 | 0     |
| 56  | MG   | CA    | 3100 | 1/1   | 0.96 | 0.14 | 56,56,56,56                 | 0     |
| 56  | MG   | DA    | 3174 | 1/1   | 0.96 | 0.10 | 44,44,44,44                 | 0     |
| 56  | MG   | BA    | 3641 | 1/1   | 0.96 | 0.21 | 33,33,33,33                 | 0     |
| 56  | MG   | BA    | 3102 | 1/1   | 0.96 | 0.06 | 49,49,49,49                 | 0     |
| 56  | MG   | DA    | 3180 | 1/1   | 0.96 | 0.11 | 30,30,30,30                 | 0     |
| 56  | MG   | DA    | 3181 | 1/1   | 0.96 | 0.10 | 40,40,40,40                 | 0     |
| 56  | MG   | DA    | 3511 | 1/1   | 0.96 | 0.08 | 53,53,53,53                 | 0     |
| 56  | MG   | AA    | 3021 | 1/1   | 0.96 | 0.09 | 41,41,41,41                 | 0     |
| 56  | MG   | BA    | 3450 | 1/1   | 0.96 | 0.15 | 45,45,45,45                 | 0     |
| 56  | MG   | BA    | 3645 | 1/1   | 0.96 | 0.10 | 66,66,66,66                 | 0     |
| 56  | MG   | BA    | 3646 | 1/1   | 0.96 | 0.15 | 23,23,23,23                 | 0     |
| 56  | MG   | AA    | 3187 | 1/1   | 0.96 | 0.14 | 33,33,33,33                 | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 56  | MG   | DA    | 3524 | 1/1   | 0.96 | 0.08 | 51,51,51,51                 | 0     |
| 56  | MG   | DA    | 3188 | 1/1   | 0.96 | 0.14 | 25,25,25,25                 | 0     |
| 56  | MG   | BA    | 3651 | 1/1   | 0.96 | 0.14 | 42,42,42,42                 | 0     |
| 56  | MG   | CA    | 3115 | 1/1   | 0.96 | 0.09 | 62,62,62,62                 | 0     |
| 56  | MG   | BA    | 3454 | 1/1   | 0.96 | 0.17 | 21,21,21,21                 | 0     |
| 56  | MG   | DA    | 3193 | 1/1   | 0.96 | 0.23 | 49,49,49,49                 | 0     |
| 56  | MG   | BA    | 3284 | 1/1   | 0.96 | 0.10 | 41,41,41,41                 | 0     |
| 56  | MG   | DA    | 3195 | 1/1   | 0.96 | 0.14 | 38,38,38,38                 | 0     |
| 56  | MG   | BA    | 3286 | 1/1   | 0.96 | 0.12 | 32,32,32,32                 | 0     |
| 56  | MG   | BA    | 3288 | 1/1   | 0.96 | 0.32 | 48,48,48,48                 | 0     |
| 56  | MG   | CA    | 3120 | 1/1   | 0.96 | 0.13 | 51,51,51,51                 | 0     |
| 56  | MG   | BA    | 3292 | 1/1   | 0.96 | 0.12 | 43,43,43,43                 | 0     |
| 56  | MG   | DA    | 3203 | 1/1   | 0.96 | 0.16 | 21,21,21,21                 | 0     |
| 56  | MG   | BA    | 3662 | 1/1   | 0.96 | 0.24 | 36,36,36,36                 | 0     |
| 56  | MG   | BA    | 3665 | 1/1   | 0.96 | 0.11 | 30,30,30,30                 | 0     |
| 56  | MG   | DA    | 3546 | 1/1   | 0.96 | 0.07 | 40,40,40,40                 | 0     |
| 56  | MG   | DA    | 3207 | 1/1   | 0.96 | 0.13 | 39,39,39,39                 | 0     |
| 56  | MG   | DA    | 3208 | 1/1   | 0.96 | 0.10 | 43,43,43,43                 | 0     |
| 56  | MG   | BA    | 3293 | 1/1   | 0.96 | 0.13 | 17,17,17,17                 | 0     |
| 56  | MG   | BA    | 3667 | 1/1   | 0.96 | 0.50 | 38,38,38,38                 | 0     |
| 56  | MG   | DA    | 3215 | 1/1   | 0.96 | 0.13 | 31,31,31,31                 | 0     |
| 56  | MG   | BA    | 3465 | 1/1   | 0.96 | 0.10 | 37,37,37,37                 | 0     |
| 56  | MG   | CA    | 3128 | 1/1   | 0.96 | 0.09 | 39,39,39,39                 | 0     |
| 56  | MG   | BA    | 3105 | 1/1   | 0.96 | 0.13 | 32,32,32,32                 | 0     |
| 56  | MG   | DA    | 3558 | 1/1   | 0.96 | 0.09 | 39,39,39,39                 | 0     |
| 56  | MG   | BA    | 3674 | 1/1   | 0.96 | 0.22 | 54,54,54,54                 | 0     |
| 56  | MG   | DA    | 3221 | 1/1   | 0.96 | 0.10 | 33,33,33,33                 | 0     |
| 56  | MG   | BA    | 3296 | 1/1   | 0.96 | 0.08 | 25,25,25,25                 | 0     |
| 56  | MG   | AA    | 3086 | 1/1   | 0.96 | 0.25 | 61,61,61,61                 | 0     |
| 56  | MG   | CA    | 3133 | 1/1   | 0.96 | 0.11 | 68,68,68,68                 | 0     |
| 56  | MG   | DA    | 3227 | 1/1   | 0.96 | 0.15 | 49,49,49,49                 | 0     |
| 56  | MG   | DA    | 3567 | 1/1   | 0.96 | 0.10 | 41,41,41,41                 | 0     |
| 56  | MG   | DA    | 3228 | 1/1   | 0.96 | 0.07 | 51,51,51,51                 | 0     |
| 56  | MG   | AA    | 3156 | 1/1   | 0.96 | 0.15 | 61,61,61,61                 | 0     |
| 56  | MG   | DA    | 3570 | 1/1   | 0.96 | 0.14 | 52,52,52,52                 | 0     |
| 56  | MG   | BA    | 3299 | 1/1   | 0.96 | 0.13 | 36,36,36,36                 | 0     |
| 56  | MG   | BA    | 3474 | 1/1   | 0.96 | 0.18 | 53,53,53,53                 | 0     |
| 56  | MG   | BA    | 3300 | 1/1   | 0.96 | 0.15 | 39,39,39,39                 | 0     |
| 56  | MG   | BA    | 3477 | 1/1   | 0.96 | 0.10 | 50,50,50,50                 | 0     |
| 56  | MG   | BB    | 3007 | 1/1   | 0.96 | 0.14 | 35,35,35,35                 | 0     |
| 56  | MG   | DA    | 3237 | 1/1   | 0.96 | 0.29 | 39,39,39,39                 | 0     |
| 56  | MG   | DA    | 3577 | 1/1   | 0.96 | 0.17 | 35,35,35,35                 | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 56  | MG   | CA    | 3142 | 1/1   | 0.96 | 0.12 | 42,42,42,42                 | 0     |
| 56  | MG   | DA    | 3579 | 1/1   | 0.96 | 0.08 | 54,54,54,54                 | 0     |
| 56  | MG   | CA    | 3143 | 1/1   | 0.96 | 0.15 | 42,42,42,42                 | 0     |
| 56  | MG   | AA    | 3157 | 1/1   | 0.96 | 0.09 | 55,55,55,55                 | 0     |
| 56  | MG   | DA    | 3241 | 1/1   | 0.96 | 0.15 | 36,36,36,36                 | 0     |
| 56  | MG   | DA    | 3242 | 1/1   | 0.96 | 0.14 | 60,60,60,60                 | 0     |
| 56  | MG   | DA    | 3584 | 1/1   | 0.96 | 0.17 | 61,61,61,61                 | 0     |
| 56  | MG   | BA    | 3050 | 1/1   | 0.96 | 0.17 | 44,44,44,44                 | 0     |
| 56  | MG   | BA    | 3303 | 1/1   | 0.96 | 0.13 | 31,31,31,31                 | 0     |
| 56  | MG   | DA    | 3589 | 1/1   | 0.96 | 0.17 | 33,33,33,33                 | 0     |
| 56  | MG   | BA    | 3304 | 1/1   | 0.96 | 0.08 | 43,43,43,43                 | 0     |
| 56  | MG   | AA    | 3048 | 1/1   | 0.96 | 0.21 | 42,42,42,42                 | 0     |
| 56  | MG   | DA    | 3248 | 1/1   | 0.96 | 0.28 | 52,52,52,52                 | 0     |
| 56  | MG   | BA    | 3052 | 1/1   | 0.96 | 0.14 | 27,27,27,27                 | 0     |
| 56  | MG   | DA    | 3250 | 1/1   | 0.96 | 0.17 | 37,37,37,37                 | 0     |
| 56  | MG   | BA    | 3197 | 1/1   | 0.96 | 0.16 | 19,19,19,19                 | 0     |
| 56  | MG   | BA    | 3116 | 1/1   | 0.96 | 0.19 | 50,50,50,50                 | 0     |
| 56  | MG   | BA    | 3490 | 1/1   | 0.96 | 0.11 | 38,38,38,38                 | 0     |
| 56  | MG   | DB    | 3006 | 1/1   | 0.96 | 0.15 | 55,55,55,55                 | 0     |
| 56  | MG   | DA    | 3254 | 1/1   | 0.96 | 0.07 | 46,46,46,46                 | 0     |
| 56  | MG   | BE    | 304  | 1/1   | 0.96 | 0.15 | 13,13,13,13                 | 0     |
| 56  | MG   | AA    | 3123 | 1/1   | 0.96 | 0.16 | 38,38,38,38                 | 0     |
| 56  | MG   | DA    | 3258 | 1/1   | 0.96 | 0.18 | 49,49,49,49                 | 0     |
| 56  | MG   | DA    | 3259 | 1/1   | 0.96 | 0.19 | 42,42,42,42                 | 0     |
| 56  | MG   | BA    | 3493 | 1/1   | 0.96 | 0.14 | 40,40,40,40                 | 0     |
| 56  | MG   | BA    | 3494 | 1/1   | 0.96 | 0.17 | 34,34,34,34                 | 0     |
| 56  | MG   | BA    | 3311 | 1/1   | 0.96 | 0.11 | 39,39,39,39                 | 0     |
| 56  | MG   | DA    | 3002 | 1/1   | 0.96 | 0.13 | 33,33,33,33                 | 0     |
| 56  | MG   | AX    | 3004 | 1/1   | 0.96 | 0.17 | 39,39,39,39                 | 0     |
| 56  | MG   | BA    | 3055 | 1/1   | 0.96 | 0.16 | 13,13,13,13                 | 0     |
| 56  | MG   | DA    | 3269 | 1/1   | 0.96 | 0.21 | 43,43,43,43                 | 0     |
| 56  | MG   | BA    | 3203 | 1/1   | 0.96 | 0.14 | 35,35,35,35                 | 0     |
| 56  | MG   | BA    | 3204 | 1/1   | 0.96 | 0.16 | 35,35,35,35                 | 0     |
| 56  | MG   | BA    | 3323 | 1/1   | 0.96 | 0.07 | 61,61,61,61                 | 0     |
| 56  | MG   | AX    | 3005 | 1/1   | 0.96 | 0.26 | 42,42,42,42                 | 0     |
| 56  | MG   | BP    | 202  | 1/1   | 0.96 | 0.47 | 31,31,31,31                 | 0     |
| 56  | MG   | BA    | 3327 | 1/1   | 0.96 | 0.14 | 44,44,44,44                 | 0     |
| 56  | MG   | BA    | 3511 | 1/1   | 0.96 | 0.14 | 38,38,38,38                 | 0     |
| 56  | MG   | DA    | 3019 | 1/1   | 0.96 | 0.13 | 40,40,40,40                 | 0     |
| 56  | MG   | DA    | 3286 | 1/1   | 0.96 | 0.07 | 35,35,35,35                 | 0     |
| 56  | MG   | DA    | 3287 | 1/1   | 0.96 | 0.11 | 38,38,38,38                 | 0     |
| 56  | MG   | BR    | 3001 | 1/1   | 0.96 | 0.12 | 31,31,31,31                 | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 56  | MG   | DA    | 3291 | 1/1   | 0.96 | 0.07 | 38,38,38,38                 | 0     |
| 56  | MG   | DA    | 3293 | 1/1   | 0.96 | 0.13 | 34,34,34,34                 | 0     |
| 56  | MG   | BR    | 3002 | 1/1   | 0.96 | 0.13 | 23,23,23,23                 | 0     |
| 56  | MG   | AA    | 3101 | 1/1   | 0.96 | 0.13 | 53,53,53,53                 | 0     |
| 58  | ZN   | D4    | 501  | 1/1   | 0.96 | 0.05 | 141,141,141,141             | 0     |
| 56  | MG   | AA    | 3161 | 1/1   | 0.96 | 0.10 | 66,66,66,66                 | 0     |
| 56  | MG   | BV    | 201  | 1/1   | 0.96 | 0.44 | 36,36,36,36                 | 0     |
| 56  | MG   | CA    | 3070 | 1/1   | 0.97 | 0.08 | 39,39,39,39                 | 0     |
| 56  | MG   | AA    | 3070 | 1/1   | 0.97 | 0.17 | 33,33,33,33                 | 0     |
| 56  | MG   | BA    | 3285 | 1/1   | 0.97 | 0.10 | 48,48,48,48                 | 0     |
| 56  | MG   | BA    | 3215 | 1/1   | 0.97 | 0.14 | 32,32,32,32                 | 0     |
| 56  | MG   | BA    | 3664 | 1/1   | 0.97 | 0.16 | 30,30,30,30                 | 0     |
| 56  | MG   | CA    | 3076 | 1/1   | 0.97 | 0.23 | 48,48,48,48                 | 0     |
| 56  | MG   | BA    | 3014 | 1/1   | 0.97 | 0.29 | 35,35,35,35                 | 0     |
| 56  | MG   | BA    | 3517 | 1/1   | 0.97 | 0.12 | 40,40,40,40                 | 0     |
| 56  | MG   | DA    | 3114 | 1/1   | 0.97 | 0.10 | 37,37,37,37                 | 0     |
| 56  | MG   | BA    | 3291 | 1/1   | 0.97 | 0.14 | 14,14,14,14                 | 0     |
| 56  | MG   | AA    | 3095 | 1/1   | 0.97 | 0.16 | 55,55,55,55                 | 0     |
| 56  | MG   | BA    | 3669 | 1/1   | 0.97 | 0.17 | 29,29,29,29                 | 0     |
| 56  | MG   | DA    | 3363 | 1/1   | 0.97 | 0.09 | 36,36,36,36                 | 0     |
| 56  | MG   | BA    | 3671 | 1/1   | 0.97 | 0.27 | 48,48,48,48                 | 0     |
| 56  | MG   | AA    | 3007 | 1/1   | 0.97 | 0.14 | 30,30,30,30                 | 0     |
| 56  | MG   | BA    | 3673 | 1/1   | 0.97 | 0.10 | 37,37,37,37                 | 0     |
| 56  | MG   | BA    | 3294 | 1/1   | 0.97 | 0.10 | 32,32,32,32                 | 0     |
| 56  | MG   | BA    | 3151 | 1/1   | 0.97 | 0.12 | 34,34,34,34                 | 0     |
| 56  | MG   | DA    | 3370 | 1/1   | 0.97 | 0.11 | 44,44,44,44                 | 0     |
| 56  | MG   | BA    | 3152 | 1/1   | 0.97 | 0.20 | 39,39,39,39                 | 0     |
| 56  | MG   | DA    | 3372 | 1/1   | 0.97 | 0.10 | 21,21,21,21                 | 0     |
| 56  | MG   | AA    | 3050 | 1/1   | 0.97 | 0.12 | 24,24,24,24                 | 0     |
| 56  | MG   | BA    | 3530 | 1/1   | 0.97 | 0.14 | 36,36,36,36                 | 0     |
| 56  | MG   | DA    | 3127 | 1/1   | 0.97 | 0.13 | 41,41,41,41                 | 0     |
| 56  | MG   | CA    | 3091 | 1/1   | 0.97 | 0.15 | 66,66,66,66                 | 0     |
| 56  | MG   | BA    | 3057 | 1/1   | 0.97 | 0.16 | 38,38,38,38                 | 0     |
| 56  | MG   | DA    | 3130 | 1/1   | 0.97 | 0.26 | 47,47,47,47                 | 0     |
| 56  | MG   | DA    | 3380 | 1/1   | 0.97 | 0.10 | 33,33,33,33                 | 0     |
| 56  | MG   | BA    | 3155 | 1/1   | 0.97 | 0.29 | 27,27,27,27                 | 0     |
| 56  | MG   | AL    | 201  | 1/1   | 0.97 | 0.08 | 63,63,63,63                 | 0     |
| 56  | MG   | DA    | 3133 | 1/1   | 0.97 | 0.11 | 53,53,53,53                 | 0     |
| 56  | MG   | DA    | 3384 | 1/1   | 0.97 | 0.17 | 52,52,52,52                 | 0     |
| 56  | MG   | BA    | 3402 | 1/1   | 0.97 | 0.23 | 28,28,28,28                 | 0     |
| 56  | MG   | BB    | 3008 | 1/1   | 0.97 | 0.15 | 21,21,21,21                 | 0     |
| 56  | MG   | DA    | 3388 | 1/1   | 0.97 | 0.05 | 35,35,35,35                 | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors(Å <sup>2</sup> ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|----------------------------|-------|
| 56  | MG   | AM    | 3001 | 1/1   | 0.97 | 0.13 | 54,54,54,54                | 0     |
| 56  | MG   | AA    | 3025 | 1/1   | 0.97 | 0.16 | 37,37,37,37                | 0     |
| 56  | MG   | DA    | 3138 | 1/1   | 0.97 | 0.12 | 33,33,33,33                | 0     |
| 56  | MG   | CA    | 3099 | 1/1   | 0.97 | 0.14 | 57,57,57,57                | 0     |
| 56  | MG   | BB    | 3011 | 1/1   | 0.97 | 0.08 | 45,45,45,45                | 0     |
| 56  | MG   | CA    | 3101 | 1/1   | 0.97 | 0.13 | 53,53,53,53                | 0     |
| 56  | MG   | DA    | 3395 | 1/1   | 0.97 | 0.10 | 41,41,41,41                | 0     |
| 56  | MG   | BB    | 3012 | 1/1   | 0.97 | 0.14 | 44,44,44,44                | 0     |
| 56  | MG   | DA    | 3143 | 1/1   | 0.97 | 0.21 | 27,27,27,27                | 0     |
| 56  | MG   | BB    | 3014 | 1/1   | 0.97 | 0.17 | 35,35,35,35                | 0     |
| 56  | MG   | AA    | 3150 | 1/1   | 0.97 | 0.19 | 51,51,51,51                | 0     |
| 56  | MG   | DA    | 3400 | 1/1   | 0.97 | 0.17 | 38,38,38,38                | 0     |
| 56  | MG   | BA    | 3541 | 1/1   | 0.97 | 0.11 | 26,26,26,26                | 0     |
| 56  | MG   | BA    | 3408 | 1/1   | 0.97 | 0.13 | 56,56,56,56                | 0     |
| 56  | MG   | AA    | 3004 | 1/1   | 0.97 | 0.15 | 67,67,67,67                | 0     |
| 56  | MG   | BA    | 3411 | 1/1   | 0.97 | 0.16 | 25,25,25,25                | 0     |
| 56  | MG   | CA    | 3111 | 1/1   | 0.97 | 0.12 | 43,43,43,43                | 0     |
| 56  | MG   | BD    | 305  | 1/1   | 0.97 | 0.15 | 38,38,38,38                | 0     |
| 56  | MG   | DA    | 3409 | 1/1   | 0.97 | 0.17 | 53,53,53,53                | 0     |
| 56  | MG   | DA    | 3153 | 1/1   | 0.97 | 0.14 | 42,42,42,42                | 0     |
| 56  | MG   | DA    | 3155 | 1/1   | 0.97 | 0.24 | 45,45,45,45                | 0     |
| 56  | MG   | CA    | 3114 | 1/1   | 0.97 | 0.09 | 80,80,80,80                | 0     |
| 56  | MG   | BA    | 3547 | 1/1   | 0.97 | 0.06 | 60,60,60,60                | 0     |
| 56  | MG   | DA    | 3159 | 1/1   | 0.97 | 0.17 | 31,31,31,31                | 0     |
| 56  | MG   | DA    | 3160 | 1/1   | 0.97 | 0.15 | 44,44,44,44                | 0     |
| 56  | MG   | BD    | 307  | 1/1   | 0.97 | 0.20 | 27,27,27,27                | 0     |
| 56  | MG   | BD    | 308  | 1/1   | 0.97 | 0.17 | 35,35,35,35                | 0     |
| 56  | MG   | BA    | 3548 | 1/1   | 0.97 | 0.11 | 30,30,30,30                | 0     |
| 56  | MG   | BA    | 3549 | 1/1   | 0.97 | 0.12 | 57,57,57,57                | 0     |
| 56  | MG   | BA    | 3065 | 1/1   | 0.97 | 0.15 | 29,29,29,29                | 0     |
| 56  | MG   | DA    | 3166 | 1/1   | 0.97 | 0.15 | 35,35,35,35                | 0     |
| 56  | MG   | DA    | 3427 | 1/1   | 0.97 | 0.15 | 25,25,25,25                | 0     |
| 56  | MG   | BE    | 306  | 1/1   | 0.97 | 0.08 | 32,32,32,32                | 0     |
| 56  | MG   | DA    | 3170 | 1/1   | 0.97 | 0.14 | 38,38,38,38                | 0     |
| 56  | MG   | BA    | 3414 | 1/1   | 0.97 | 0.15 | 31,31,31,31                | 0     |
| 56  | MG   | BA    | 3111 | 1/1   | 0.97 | 0.14 | 27,27,27,27                | 0     |
| 56  | MG   | DA    | 3432 | 1/1   | 0.97 | 0.18 | 33,33,33,33                | 0     |
| 56  | MG   | BF    | 304  | 1/1   | 0.97 | 0.25 | 37,37,37,37                | 0     |
| 56  | MG   | BA    | 3024 | 1/1   | 0.97 | 0.31 | 32,32,32,32                | 0     |
| 56  | MG   | DA    | 3175 | 1/1   | 0.97 | 0.13 | 47,47,47,47                | 0     |
| 56  | MG   | AA    | 3174 | 1/1   | 0.97 | 0.09 | 55,55,55,55                | 0     |
| 56  | MG   | DA    | 3178 | 1/1   | 0.97 | 0.24 | 46,46,46,46                | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 56  | MG   | CA    | 3127 | 1/1   | 0.97 | 0.08 | 49,49,49,49                 | 0     |
| 56  | MG   | BA    | 3166 | 1/1   | 0.97 | 0.12 | 35,35,35,35                 | 0     |
| 56  | MG   | BA    | 3556 | 1/1   | 0.97 | 0.07 | 41,41,41,41                 | 0     |
| 56  | MG   | BN    | 3001 | 1/1   | 0.97 | 0.12 | 57,57,57,57                 | 0     |
| 56  | MG   | BA    | 3419 | 1/1   | 0.97 | 0.13 | 20,20,20,20                 | 0     |
| 56  | MG   | DA    | 3448 | 1/1   | 0.97 | 0.21 | 29,29,29,29                 | 0     |
| 56  | MG   | BA    | 3068 | 1/1   | 0.97 | 0.09 | 39,39,39,39                 | 0     |
| 56  | MG   | DA    | 3185 | 1/1   | 0.97 | 0.22 | 32,32,32,32                 | 0     |
| 56  | MG   | BA    | 3312 | 1/1   | 0.97 | 0.13 | 18,18,18,18                 | 0     |
| 56  | MG   | BA    | 3560 | 1/1   | 0.97 | 0.18 | 55,55,55,55                 | 0     |
| 56  | MG   | BA    | 3314 | 1/1   | 0.97 | 0.18 | 36,36,36,36                 | 0     |
| 56  | MG   | DA    | 3189 | 1/1   | 0.97 | 0.27 | 31,31,31,31                 | 0     |
| 56  | MG   | DA    | 3459 | 1/1   | 0.97 | 0.24 | 38,38,38,38                 | 0     |
| 56  | MG   | BA    | 3027 | 1/1   | 0.97 | 0.21 | 28,28,28,28                 | 0     |
| 56  | MG   | BQ    | 202  | 1/1   | 0.97 | 0.08 | 14,14,14,14                 | 0     |
| 56  | MG   | DA    | 3462 | 1/1   | 0.97 | 0.12 | 35,35,35,35                 | 0     |
| 56  | MG   | DA    | 3464 | 1/1   | 0.97 | 0.11 | 46,46,46,46                 | 0     |
| 56  | MG   | BA    | 3117 | 1/1   | 0.97 | 0.38 | 40,40,40,40                 | 0     |
| 56  | MG   | DA    | 3466 | 1/1   | 0.97 | 0.12 | 38,38,38,38                 | 0     |
| 56  | MG   | BA    | 3172 | 1/1   | 0.97 | 0.15 | 54,54,54,54                 | 0     |
| 56  | MG   | BR    | 3003 | 1/1   | 0.97 | 0.15 | 39,39,39,39                 | 0     |
| 56  | MG   | AA    | 3130 | 1/1   | 0.97 | 0.11 | 50,50,50,50                 | 0     |
| 56  | MG   | CA    | 3144 | 1/1   | 0.97 | 0.12 | 56,56,56,56                 | 0     |
| 56  | MG   | BU    | 203  | 1/1   | 0.97 | 0.38 | 32,32,32,32                 | 0     |
| 56  | MG   | DA    | 3198 | 1/1   | 0.97 | 0.16 | 54,54,54,54                 | 0     |
| 56  | MG   | BA    | 3029 | 1/1   | 0.97 | 0.15 | 12,12,12,12                 | 0     |
| 56  | MG   | CA    | 3147 | 1/1   | 0.97 | 0.17 | 52,52,52,52                 | 0     |
| 56  | MG   | BA    | 3568 | 1/1   | 0.97 | 0.12 | 42,42,42,42                 | 0     |
| 56  | MG   | DA    | 3204 | 1/1   | 0.97 | 0.07 | 37,37,37,37                 | 0     |
| 56  | MG   | BA    | 3072 | 1/1   | 0.97 | 0.16 | 24,24,24,24                 | 0     |
| 56  | MG   | CA    | 3150 | 1/1   | 0.97 | 0.15 | 62,62,62,62                 | 0     |
| 56  | MG   | BA    | 3570 | 1/1   | 0.97 | 0.07 | 36,36,36,36                 | 0     |
| 56  | MG   | DA    | 3481 | 1/1   | 0.97 | 0.09 | 41,41,41,41                 | 0     |
| 56  | MG   | BA    | 3325 | 1/1   | 0.97 | 0.16 | 42,42,42,42                 | 0     |
| 56  | MG   | BA    | 3121 | 1/1   | 0.97 | 0.48 | 43,43,43,43                 | 0     |
| 56  | MG   | DA    | 3210 | 1/1   | 0.97 | 0.10 | 37,37,37,37                 | 0     |
| 56  | MG   | DA    | 3211 | 1/1   | 0.97 | 0.15 | 35,35,35,35                 | 0     |
| 56  | MG   | BA    | 3434 | 1/1   | 0.97 | 0.12 | 43,43,43,43                 | 0     |
| 56  | MG   | DA    | 3213 | 1/1   | 0.97 | 0.11 | 34,34,34,34                 | 0     |
| 56  | MG   | BA    | 3574 | 1/1   | 0.97 | 0.12 | 55,55,55,55                 | 0     |
| 56  | MG   | BA    | 3435 | 1/1   | 0.97 | 0.17 | 36,36,36,36                 | 0     |
| 56  | MG   | BA    | 3436 | 1/1   | 0.97 | 0.10 | 35,35,35,35                 | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors(Å <sup>2</sup> ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|----------------------------|-------|
| 56  | MG   | BA    | 3577 | 1/1   | 0.97 | 0.08 | 57,57,57,57                | 0     |
| 56  | MG   | BA    | 3437 | 1/1   | 0.97 | 0.13 | 58,58,58,58                | 0     |
| 56  | MG   | DA    | 3495 | 1/1   | 0.97 | 0.28 | 45,45,45,45                | 0     |
| 56  | MG   | BA    | 3439 | 1/1   | 0.97 | 0.20 | 30,30,30,30                | 0     |
| 56  | MG   | DA    | 3498 | 1/1   | 0.97 | 0.13 | 48,48,48,48                | 0     |
| 56  | MG   | DA    | 3499 | 1/1   | 0.97 | 0.13 | 45,45,45,45                | 0     |
| 56  | MG   | AA    | 3154 | 1/1   | 0.97 | 0.18 | 51,51,51,51                | 0     |
| 56  | MG   | DA    | 3224 | 1/1   | 0.97 | 0.15 | 22,22,22,22                | 0     |
| 56  | MG   | BA    | 3123 | 1/1   | 0.97 | 0.21 | 36,36,36,36                | 0     |
| 56  | MG   | BA    | 3444 | 1/1   | 0.97 | 0.11 | 34,34,34,34                | 0     |
| 56  | MG   | BA    | 3184 | 1/1   | 0.97 | 0.10 | 37,37,37,37                | 0     |
| 56  | MG   | BA    | 3032 | 1/1   | 0.97 | 0.24 | 40,40,40,40                | 0     |
| 56  | MG   | BA    | 3448 | 1/1   | 0.97 | 0.12 | 42,42,42,42                | 0     |
| 56  | MG   | DA    | 3509 | 1/1   | 0.97 | 0.08 | 36,36,36,36                | 0     |
| 56  | MG   | BA    | 3332 | 1/1   | 0.97 | 0.07 | 61,61,61,61                | 0     |
| 56  | MG   | B7    | 3002 | 1/1   | 0.97 | 0.23 | 35,35,35,35                | 0     |
| 56  | MG   | DA    | 3011 | 1/1   | 0.97 | 0.15 | 38,38,38,38                | 0     |
| 56  | MG   | B7    | 3003 | 1/1   | 0.97 | 0.21 | 28,28,28,28                | 0     |
| 56  | MG   | DA    | 3016 | 1/1   | 0.97 | 0.18 | 31,31,31,31                | 0     |
| 56  | MG   | BA    | 3587 | 1/1   | 0.97 | 0.14 | 42,42,42,42                | 0     |
| 56  | MG   | DA    | 3521 | 1/1   | 0.97 | 0.19 | 51,51,51,51                | 0     |
| 56  | MG   | DA    | 3522 | 1/1   | 0.97 | 0.10 | 44,44,44,44                | 0     |
| 56  | MG   | DA    | 3523 | 1/1   | 0.97 | 0.14 | 40,40,40,40                | 0     |
| 56  | MG   | DA    | 3018 | 1/1   | 0.97 | 0.12 | 39,39,39,39                | 0     |
| 56  | MG   | BA    | 3588 | 1/1   | 0.97 | 0.10 | 51,51,51,51                | 0     |
| 56  | MG   | BA    | 3589 | 1/1   | 0.97 | 0.12 | 27,27,27,27                | 0     |
| 56  | MG   | AX    | 3008 | 1/1   | 0.97 | 0.15 | 23,23,23,23                | 0     |
| 56  | MG   | BA    | 3035 | 1/1   | 0.97 | 0.20 | 21,21,21,21                | 0     |
| 56  | MG   | BA    | 3452 | 1/1   | 0.97 | 0.17 | 38,38,38,38                | 0     |
| 56  | MG   | BA    | 3336 | 1/1   | 0.97 | 0.09 | 43,43,43,43                | 0     |
| 56  | MG   | AA    | 3040 | 1/1   | 0.97 | 0.16 | 27,27,27,27                | 0     |
| 56  | MG   | CA    | 3006 | 1/1   | 0.97 | 0.28 | 37,37,37,37                | 0     |
| 56  | MG   | AA    | 3079 | 1/1   | 0.97 | 0.33 | 49,49,49,49                | 0     |
| 56  | MG   | DA    | 3537 | 1/1   | 0.97 | 0.12 | 47,47,47,47                | 0     |
| 56  | MG   | BA    | 3003 | 1/1   | 0.97 | 0.10 | 49,49,49,49                | 0     |
| 56  | MG   | BA    | 3598 | 1/1   | 0.97 | 0.16 | 48,48,48,48                | 0     |
| 56  | MG   | DA    | 3540 | 1/1   | 0.97 | 0.11 | 46,46,46,46                | 0     |
| 56  | MG   | DA    | 3541 | 1/1   | 0.97 | 0.15 | 57,57,57,57                | 0     |
| 56  | MG   | BA    | 3461 | 1/1   | 0.97 | 0.24 | 52,52,52,52                | 0     |
| 56  | MG   | DA    | 3035 | 1/1   | 0.97 | 0.14 | 46,46,46,46                | 0     |
| 56  | MG   | BA    | 3600 | 1/1   | 0.97 | 0.13 | 68,68,68,68                | 0     |
| 56  | MG   | BA    | 3004 | 1/1   | 0.97 | 0.13 | 23,23,23,23                | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 56  | MG   | DA    | 3255 | 1/1   | 0.97 | 0.20 | 32,32,32,32                 | 0     |
| 56  | MG   | DA    | 3548 | 1/1   | 0.97 | 0.20 | 40,40,40,40                 | 0     |
| 56  | MG   | AA    | 3103 | 1/1   | 0.97 | 0.13 | 51,51,51,51                 | 0     |
| 56  | MG   | DA    | 3040 | 1/1   | 0.97 | 0.23 | 34,34,34,34                 | 0     |
| 56  | MG   | DA    | 3041 | 1/1   | 0.97 | 0.08 | 35,35,35,35                 | 0     |
| 56  | MG   | BA    | 3343 | 1/1   | 0.97 | 0.16 | 27,27,27,27                 | 0     |
| 56  | MG   | DA    | 3553 | 1/1   | 0.97 | 0.12 | 46,46,46,46                 | 0     |
| 56  | MG   | DA    | 3260 | 1/1   | 0.97 | 0.20 | 36,36,36,36                 | 0     |
| 56  | MG   | BA    | 3257 | 1/1   | 0.97 | 0.08 | 29,29,29,29                 | 0     |
| 56  | MG   | BA    | 3606 | 1/1   | 0.97 | 0.15 | 32,32,32,32                 | 0     |
| 56  | MG   | AA    | 3041 | 1/1   | 0.97 | 0.20 | 52,52,52,52                 | 0     |
| 56  | MG   | BA    | 3608 | 1/1   | 0.97 | 0.13 | 45,45,45,45                 | 0     |
| 56  | MG   | BA    | 3346 | 1/1   | 0.97 | 0.08 | 43,43,43,43                 | 0     |
| 56  | MG   | DA    | 3562 | 1/1   | 0.97 | 0.13 | 42,42,42,42                 | 0     |
| 56  | MG   | DA    | 3049 | 1/1   | 0.97 | 0.06 | 40,40,40,40                 | 0     |
| 56  | MG   | BA    | 3259 | 1/1   | 0.97 | 0.17 | 35,35,35,35                 | 0     |
| 56  | MG   | DA    | 3270 | 1/1   | 0.97 | 0.08 | 37,37,37,37                 | 0     |
| 56  | MG   | BA    | 3045 | 1/1   | 0.97 | 0.13 | 34,34,34,34                 | 0     |
| 56  | MG   | CA    | 3022 | 1/1   | 0.97 | 0.14 | 34,34,34,34                 | 0     |
| 56  | MG   | BA    | 3085 | 1/1   | 0.97 | 0.16 | 27,27,27,27                 | 0     |
| 56  | MG   | DA    | 3055 | 1/1   | 0.97 | 0.09 | 34,34,34,34                 | 0     |
| 56  | MG   | CA    | 3024 | 1/1   | 0.97 | 0.07 | 64,64,64,64                 | 0     |
| 56  | MG   | DA    | 3277 | 1/1   | 0.97 | 0.10 | 48,48,48,48                 | 0     |
| 56  | MG   | AA    | 3138 | 1/1   | 0.97 | 0.15 | 50,50,50,50                 | 0     |
| 56  | MG   | DA    | 3279 | 1/1   | 0.97 | 0.12 | 27,27,27,27                 | 0     |
| 56  | MG   | CA    | 3026 | 1/1   | 0.97 | 0.22 | 44,44,44,44                 | 0     |
| 56  | MG   | BA    | 3351 | 1/1   | 0.97 | 0.06 | 33,33,33,33                 | 0     |
| 56  | MG   | DA    | 3282 | 1/1   | 0.97 | 0.12 | 30,30,30,30                 | 0     |
| 56  | MG   | DA    | 3283 | 1/1   | 0.97 | 0.11 | 38,38,38,38                 | 0     |
| 56  | MG   | DA    | 3285 | 1/1   | 0.97 | 0.13 | 52,52,52,52                 | 0     |
| 56  | MG   | BA    | 3199 | 1/1   | 0.97 | 0.17 | 32,32,32,32                 | 0     |
| 56  | MG   | DA    | 3061 | 1/1   | 0.97 | 0.08 | 35,35,35,35                 | 0     |
| 56  | MG   | AA    | 3121 | 1/1   | 0.97 | 0.09 | 40,40,40,40                 | 0     |
| 56  | MG   | BA    | 3481 | 1/1   | 0.97 | 0.14 | 31,31,31,31                 | 0     |
| 56  | MG   | DA    | 3292 | 1/1   | 0.97 | 0.17 | 45,45,45,45                 | 0     |
| 56  | MG   | CA    | 3031 | 1/1   | 0.97 | 0.13 | 52,52,52,52                 | 0     |
| 56  | MG   | DA    | 3585 | 1/1   | 0.97 | 0.08 | 37,37,37,37                 | 0     |
| 56  | MG   | DA    | 3586 | 1/1   | 0.97 | 0.09 | 47,47,47,47                 | 0     |
| 56  | MG   | DA    | 3294 | 1/1   | 0.97 | 0.13 | 37,37,37,37                 | 0     |
| 56  | MG   | DA    | 3295 | 1/1   | 0.97 | 0.25 | 61,61,61,61                 | 0     |
| 56  | MG   | AA    | 3082 | 1/1   | 0.97 | 0.10 | 57,57,57,57                 | 0     |
| 56  | MG   | DA    | 3590 | 1/1   | 0.97 | 0.35 | 38,38,38,38                 | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 56  | MG   | DA    | 3066 | 1/1   | 0.97 | 0.23 | 49,49,49,49                 | 0     |
| 56  | MG   | BA    | 3622 | 1/1   | 0.97 | 0.13 | 45,45,45,45                 | 0     |
| 56  | MG   | BA    | 3139 | 1/1   | 0.97 | 0.19 | 31,31,31,31                 | 0     |
| 56  | MG   | BA    | 3089 | 1/1   | 0.97 | 0.14 | 37,37,37,37                 | 0     |
| 56  | MG   | BA    | 3270 | 1/1   | 0.97 | 0.16 | 21,21,21,21                 | 0     |
| 56  | MG   | CA    | 3038 | 1/1   | 0.97 | 0.12 | 44,44,44,44                 | 0     |
| 56  | MG   | DB    | 3003 | 1/1   | 0.97 | 0.11 | 29,29,29,29                 | 0     |
| 56  | MG   | DA    | 3305 | 1/1   | 0.97 | 0.16 | 30,30,30,30                 | 0     |
| 56  | MG   | DA    | 3072 | 1/1   | 0.97 | 0.10 | 33,33,33,33                 | 0     |
| 56  | MG   | BA    | 3628 | 1/1   | 0.97 | 0.12 | 38,38,38,38                 | 0     |
| 56  | MG   | AA    | 3141 | 1/1   | 0.97 | 0.07 | 47,47,47,47                 | 0     |
| 56  | MG   | BA    | 3366 | 1/1   | 0.97 | 0.07 | 34,34,34,34                 | 0     |
| 56  | MG   | BA    | 3011 | 1/1   | 0.97 | 0.10 | 30,30,30,30                 | 0     |
| 56  | MG   | BA    | 3632 | 1/1   | 0.97 | 0.14 | 54,54,54,54                 | 0     |
| 56  | MG   | BA    | 3491 | 1/1   | 0.97 | 0.11 | 39,39,39,39                 | 0     |
| 56  | MG   | DA    | 3315 | 1/1   | 0.97 | 0.16 | 43,43,43,43                 | 0     |
| 56  | MG   | BA    | 3369 | 1/1   | 0.97 | 0.16 | 33,33,33,33                 | 0     |
| 56  | MG   | BA    | 3370 | 1/1   | 0.97 | 0.15 | 29,29,29,29                 | 0     |
| 56  | MG   | BA    | 3143 | 1/1   | 0.97 | 0.33 | 36,36,36,36                 | 0     |
| 56  | MG   | BA    | 3207 | 1/1   | 0.97 | 0.16 | 36,36,36,36                 | 0     |
| 56  | MG   | BA    | 3144 | 1/1   | 0.97 | 0.33 | 44,44,44,44                 | 0     |
| 56  | MG   | BA    | 3640 | 1/1   | 0.97 | 0.25 | 33,33,33,33                 | 0     |
| 56  | MG   | DF    | 302  | 1/1   | 0.97 | 0.18 | 41,41,41,41                 | 0     |
| 56  | MG   | CA    | 3053 | 1/1   | 0.97 | 0.15 | 44,44,44,44                 | 0     |
| 56  | MG   | CA    | 3054 | 1/1   | 0.97 | 0.09 | 44,44,44,44                 | 0     |
| 56  | MG   | BA    | 3279 | 1/1   | 0.97 | 0.10 | 38,38,38,38                 | 0     |
| 56  | MG   | AA    | 3011 | 1/1   | 0.97 | 0.08 | 24,24,24,24                 | 0     |
| 56  | MG   | DQ    | 3001 | 1/1   | 0.97 | 0.13 | 48,48,48,48                 | 0     |
| 56  | MG   | CA    | 3057 | 1/1   | 0.97 | 0.14 | 41,41,41,41                 | 0     |
| 56  | MG   | BA    | 3378 | 1/1   | 0.97 | 0.16 | 16,16,16,16                 | 0     |
| 56  | MG   | DR    | 201  | 1/1   | 0.97 | 0.24 | 36,36,36,36                 | 0     |
| 56  | MG   | DR    | 202  | 1/1   | 0.97 | 0.14 | 32,32,32,32                 | 0     |
| 56  | MG   | DT    | 5001 | 1/1   | 0.97 | 0.07 | 42,42,42,42                 | 0     |
| 56  | MG   | BA    | 3500 | 1/1   | 0.97 | 0.11 | 35,35,35,35                 | 0     |
| 56  | MG   | DA    | 3335 | 1/1   | 0.97 | 0.15 | 36,36,36,36                 | 0     |
| 56  | MG   | DA    | 3336 | 1/1   | 0.97 | 0.18 | 22,22,22,22                 | 0     |
| 56  | MG   | DW    | 3001 | 1/1   | 0.97 | 0.31 | 38,38,38,38                 | 0     |
| 56  | MG   | BA    | 3503 | 1/1   | 0.97 | 0.13 | 30,30,30,30                 | 0     |
| 56  | MG   | BA    | 3504 | 1/1   | 0.97 | 0.18 | 39,39,39,39                 | 0     |
| 56  | MG   | BA    | 3282 | 1/1   | 0.97 | 0.23 | 31,31,31,31                 | 0     |
| 56  | MG   | BA    | 3283 | 1/1   | 0.97 | 0.11 | 57,57,57,57                 | 0     |
| 56  | MG   | D8    | 5001 | 1/1   | 0.97 | 0.13 | 50,50,50,50                 | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 56  | MG   | BA    | 3652 | 1/1   | 0.97 | 0.14 | 49,49,49,49                 | 0     |
| 56  | MG   | BA    | 3509 | 1/1   | 0.97 | 0.16 | 23,23,23,23                 | 0     |
| 58  | ZN   | CN    | 501  | 1/1   | 0.97 | 0.11 | 82,82,82,82                 | 0     |
| 58  | ZN   | DY    | 501  | 1/1   | 0.97 | 0.12 | 92,92,92,92                 | 0     |
| 56  | MG   | BA    | 3383 | 1/1   | 0.97 | 0.11 | 33,33,33,33                 | 0     |
| 58  | ZN   | D6    | 501  | 1/1   | 0.97 | 0.19 | 68,68,68,68                 | 0     |
| 58  | ZN   | D9    | 501  | 1/1   | 0.97 | 0.10 | 54,54,54,54                 | 0     |
| 56  | MG   | BA    | 3386 | 1/1   | 0.97 | 0.22 | 32,32,32,32                 | 0     |
| 56  | MG   | BA    | 3658 | 1/1   | 0.97 | 0.13 | 27,27,27,27                 | 0     |
| 56  | MG   | BA    | 3361 | 1/1   | 0.98 | 0.10 | 45,45,45,45                 | 0     |
| 56  | MG   | BA    | 3534 | 1/1   | 0.98 | 0.14 | 20,20,20,20                 | 0     |
| 56  | MG   | DA    | 3262 | 1/1   | 0.98 | 0.12 | 39,39,39,39                 | 0     |
| 56  | MG   | BA    | 3637 | 1/1   | 0.98 | 0.21 | 24,24,24,24                 | 0     |
| 56  | MG   | BA    | 3159 | 1/1   | 0.98 | 0.17 | 27,27,27,27                 | 0     |
| 56  | MG   | BA    | 3438 | 1/1   | 0.98 | 0.12 | 33,33,33,33                 | 0     |
| 56  | MG   | AA    | 3135 | 1/1   | 0.98 | 0.09 | 46,46,46,46                 | 0     |
| 56  | MG   | DA    | 3453 | 1/1   | 0.98 | 0.13 | 31,31,31,31                 | 0     |
| 56  | MG   | DA    | 3267 | 1/1   | 0.98 | 0.07 | 47,47,47,47                 | 0     |
| 56  | MG   | DA    | 3455 | 1/1   | 0.98 | 0.16 | 45,45,45,45                 | 0     |
| 56  | MG   | BA    | 3440 | 1/1   | 0.98 | 0.06 | 38,38,38,38                 | 0     |
| 56  | MG   | BA    | 3364 | 1/1   | 0.98 | 0.18 | 29,29,29,29                 | 0     |
| 56  | MG   | DA    | 3458 | 1/1   | 0.98 | 0.13 | 34,34,34,34                 | 0     |
| 56  | MG   | BA    | 3442 | 1/1   | 0.98 | 0.15 | 20,20,20,20                 | 0     |
| 56  | MG   | BA    | 3542 | 1/1   | 0.98 | 0.05 | 51,51,51,51                 | 0     |
| 56  | MG   | CA    | 3134 | 1/1   | 0.98 | 0.12 | 53,53,53,53                 | 0     |
| 56  | MG   | AA    | 3077 | 1/1   | 0.98 | 0.14 | 39,39,39,39                 | 0     |
| 56  | MG   | DA    | 3463 | 1/1   | 0.98 | 0.13 | 28,28,28,28                 | 0     |
| 56  | MG   | BA    | 3544 | 1/1   | 0.98 | 0.18 | 25,25,25,25                 | 0     |
| 56  | MG   | CA    | 3137 | 1/1   | 0.98 | 0.13 | 66,66,66,66                 | 0     |
| 56  | MG   | DA    | 3276 | 1/1   | 0.98 | 0.17 | 50,50,50,50                 | 0     |
| 56  | MG   | BA    | 3647 | 1/1   | 0.98 | 0.10 | 30,30,30,30                 | 0     |
| 56  | MG   | BA    | 3648 | 1/1   | 0.98 | 0.11 | 28,28,28,28                 | 0     |
| 56  | MG   | BA    | 3031 | 1/1   | 0.98 | 0.47 | 46,46,46,46                 | 0     |
| 56  | MG   | BA    | 3445 | 1/1   | 0.98 | 0.09 | 22,22,22,22                 | 0     |
| 56  | MG   | BA    | 3132 | 1/1   | 0.98 | 0.15 | 25,25,25,25                 | 0     |
| 56  | MG   | BA    | 3368 | 1/1   | 0.98 | 0.09 | 42,42,42,42                 | 0     |
| 56  | MG   | BA    | 3654 | 1/1   | 0.98 | 0.10 | 64,64,64,64                 | 0     |
| 56  | MG   | DA    | 3284 | 1/1   | 0.98 | 0.10 | 23,23,23,23                 | 0     |
| 56  | MG   | AN    | 502  | 1/1   | 0.98 | 0.20 | 53,53,53,53                 | 0     |
| 56  | MG   | DA    | 3476 | 1/1   | 0.98 | 0.06 | 32,32,32,32                 | 0     |
| 56  | MG   | BA    | 3656 | 1/1   | 0.98 | 0.09 | 12,12,12,12                 | 0     |
| 56  | MG   | AA    | 3162 | 1/1   | 0.98 | 0.12 | 40,40,40,40                 | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 56  | MG   | DA    | 3288 | 1/1   | 0.98 | 0.11 | 64,64,64,64                 | 0     |
| 56  | MG   | BA    | 3106 | 1/1   | 0.98 | 0.14 | 40,40,40,40                 | 0     |
| 56  | MG   | BA    | 3659 | 1/1   | 0.98 | 0.14 | 28,28,28,28                 | 0     |
| 56  | MG   | BA    | 3372 | 1/1   | 0.98 | 0.19 | 29,29,29,29                 | 0     |
| 56  | MG   | AA    | 3107 | 1/1   | 0.98 | 0.24 | 36,36,36,36                 | 0     |
| 56  | MG   | BA    | 3208 | 1/1   | 0.98 | 0.24 | 25,25,25,25                 | 0     |
| 56  | MG   | CA    | 3153 | 1/1   | 0.98 | 0.13 | 37,37,37,37                 | 0     |
| 56  | MG   | BA    | 3663 | 1/1   | 0.98 | 0.08 | 20,20,20,20                 | 0     |
| 56  | MG   | BA    | 3456 | 1/1   | 0.98 | 0.13 | 33,33,33,33                 | 0     |
| 56  | MG   | BA    | 3457 | 1/1   | 0.98 | 0.14 | 29,29,29,29                 | 0     |
| 56  | MG   | BA    | 3168 | 1/1   | 0.98 | 0.16 | 47,47,47,47                 | 0     |
| 56  | MG   | DA    | 3490 | 1/1   | 0.98 | 0.15 | 34,34,34,34                 | 0     |
| 56  | MG   | AA    | 3113 | 1/1   | 0.98 | 0.18 | 53,53,53,53                 | 0     |
| 56  | MG   | BA    | 3212 | 1/1   | 0.98 | 0.16 | 28,28,28,28                 | 0     |
| 56  | MG   | BA    | 3379 | 1/1   | 0.98 | 0.14 | 31,31,31,31                 | 0     |
| 56  | MG   | BA    | 3462 | 1/1   | 0.98 | 0.08 | 44,44,44,44                 | 0     |
| 56  | MG   | BA    | 3170 | 1/1   | 0.98 | 0.12 | 34,34,34,34                 | 0     |
| 56  | MG   | DA    | 3497 | 1/1   | 0.98 | 0.08 | 45,45,45,45                 | 0     |
| 56  | MG   | BA    | 3214 | 1/1   | 0.98 | 0.22 | 28,28,28,28                 | 0     |
| 56  | MG   | DA    | 3149 | 1/1   | 0.98 | 0.23 | 41,41,41,41                 | 0     |
| 56  | MG   | BA    | 3564 | 1/1   | 0.98 | 0.16 | 29,29,29,29                 | 0     |
| 56  | MG   | BA    | 3382 | 1/1   | 0.98 | 0.14 | 27,27,27,27                 | 0     |
| 56  | MG   | DA    | 3006 | 1/1   | 0.98 | 0.14 | 33,33,33,33                 | 0     |
| 56  | MG   | DA    | 3313 | 1/1   | 0.98 | 0.09 | 40,40,40,40                 | 0     |
| 56  | MG   | DA    | 3505 | 1/1   | 0.98 | 0.10 | 44,44,44,44                 | 0     |
| 56  | MG   | BA    | 3109 | 1/1   | 0.98 | 0.09 | 36,36,36,36                 | 0     |
| 56  | MG   | CA    | 3037 | 1/1   | 0.98 | 0.09 | 45,45,45,45                 | 0     |
| 56  | MG   | BA    | 3467 | 1/1   | 0.98 | 0.17 | 20,20,20,20                 | 0     |
| 56  | MG   | DA    | 3317 | 1/1   | 0.98 | 0.09 | 53,53,53,53                 | 0     |
| 56  | MG   | DA    | 3510 | 1/1   | 0.98 | 0.09 | 53,53,53,53                 | 0     |
| 56  | MG   | DA    | 3157 | 1/1   | 0.98 | 0.10 | 40,40,40,40                 | 0     |
| 56  | MG   | DA    | 3512 | 1/1   | 0.98 | 0.11 | 36,36,36,36                 | 0     |
| 56  | MG   | DA    | 3319 | 1/1   | 0.98 | 0.20 | 38,38,38,38                 | 0     |
| 56  | MG   | DA    | 3320 | 1/1   | 0.98 | 0.08 | 46,46,46,46                 | 0     |
| 56  | MG   | CA    | 3039 | 1/1   | 0.98 | 0.18 | 50,50,50,50                 | 0     |
| 56  | MG   | DA    | 3322 | 1/1   | 0.98 | 0.17 | 23,23,23,23                 | 0     |
| 56  | MG   | BA    | 3384 | 1/1   | 0.98 | 0.11 | 28,28,28,28                 | 0     |
| 56  | MG   | DA    | 3520 | 1/1   | 0.98 | 0.09 | 34,34,34,34                 | 0     |
| 56  | MG   | DA    | 3324 | 1/1   | 0.98 | 0.12 | 52,52,52,52                 | 0     |
| 56  | MG   | BA    | 3262 | 1/1   | 0.98 | 0.17 | 24,24,24,24                 | 0     |
| 56  | MG   | DA    | 3014 | 1/1   | 0.98 | 0.10 | 33,33,33,33                 | 0     |
| 56  | MG   | AA    | 3031 | 1/1   | 0.98 | 0.12 | 60,60,60,60                 | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 56  | MG   | BA    | 3264 | 1/1   | 0.98 | 0.19 | 35,35,35,35                 | 0     |
| 56  | MG   | DA    | 3526 | 1/1   | 0.98 | 0.07 | 64,64,64,64                 | 0     |
| 56  | MG   | BA    | 3472 | 1/1   | 0.98 | 0.10 | 34,34,34,34                 | 0     |
| 56  | MG   | BA    | 3473 | 1/1   | 0.98 | 0.10 | 37,37,37,37                 | 0     |
| 56  | MG   | BA    | 3320 | 1/1   | 0.98 | 0.13 | 44,44,44,44                 | 0     |
| 56  | MG   | BA    | 3321 | 1/1   | 0.98 | 0.07 | 53,53,53,53                 | 0     |
| 56  | MG   | DA    | 3168 | 1/1   | 0.98 | 0.14 | 39,39,39,39                 | 0     |
| 56  | MG   | DA    | 3169 | 1/1   | 0.98 | 0.10 | 38,38,38,38                 | 0     |
| 56  | MG   | BA    | 3173 | 1/1   | 0.98 | 0.19 | 45,45,45,45                 | 0     |
| 56  | MG   | DA    | 3023 | 1/1   | 0.98 | 0.14 | 37,37,37,37                 | 0     |
| 56  | MG   | DA    | 3536 | 1/1   | 0.98 | 0.11 | 56,56,56,56                 | 0     |
| 56  | MG   | AA    | 3152 | 1/1   | 0.98 | 0.11 | 57,57,57,57                 | 0     |
| 56  | MG   | DA    | 3026 | 1/1   | 0.98 | 0.11 | 34,34,34,34                 | 0     |
| 56  | MG   | BB    | 3013 | 1/1   | 0.98 | 0.16 | 57,57,57,57                 | 0     |
| 56  | MG   | CA    | 3051 | 1/1   | 0.98 | 0.13 | 66,66,66,66                 | 0     |
| 56  | MG   | DA    | 3342 | 1/1   | 0.98 | 0.21 | 37,37,37,37                 | 0     |
| 56  | MG   | DA    | 3542 | 1/1   | 0.98 | 0.12 | 30,30,30,30                 | 0     |
| 56  | MG   | BA    | 3479 | 1/1   | 0.98 | 0.15 | 45,45,45,45                 | 0     |
| 56  | MG   | BA    | 3084 | 1/1   | 0.98 | 0.23 | 34,34,34,34                 | 0     |
| 56  | MG   | DA    | 3031 | 1/1   | 0.98 | 0.13 | 21,21,21,21                 | 0     |
| 56  | MG   | BA    | 3326 | 1/1   | 0.98 | 0.20 | 28,28,28,28                 | 0     |
| 56  | MG   | BA    | 3482 | 1/1   | 0.98 | 0.12 | 23,23,23,23                 | 0     |
| 56  | MG   | BB    | 3018 | 1/1   | 0.98 | 0.16 | 30,30,30,30                 | 0     |
| 56  | MG   | DA    | 3350 | 1/1   | 0.98 | 0.12 | 36,36,36,36                 | 0     |
| 56  | MG   | BA    | 3176 | 1/1   | 0.98 | 0.10 | 47,47,47,47                 | 0     |
| 56  | MG   | BD    | 303  | 1/1   | 0.98 | 0.42 | 37,37,37,37                 | 0     |
| 56  | MG   | AA    | 3096 | 1/1   | 0.98 | 0.18 | 53,53,53,53                 | 0     |
| 56  | MG   | DA    | 3038 | 1/1   | 0.98 | 0.11 | 30,30,30,30                 | 0     |
| 56  | MG   | BA    | 3178 | 1/1   | 0.98 | 0.24 | 26,26,26,26                 | 0     |
| 56  | MG   | CA    | 3061 | 1/1   | 0.98 | 0.13 | 45,45,45,45                 | 0     |
| 56  | MG   | DA    | 3556 | 1/1   | 0.98 | 0.15 | 36,36,36,36                 | 0     |
| 56  | MG   | BA    | 3114 | 1/1   | 0.98 | 0.21 | 34,34,34,34                 | 0     |
| 56  | MG   | DA    | 3358 | 1/1   | 0.98 | 0.23 | 45,45,45,45                 | 0     |
| 56  | MG   | DA    | 3559 | 1/1   | 0.98 | 0.09 | 55,55,55,55                 | 0     |
| 56  | MG   | BA    | 3272 | 1/1   | 0.98 | 0.10 | 37,37,37,37                 | 0     |
| 56  | MG   | BA    | 3181 | 1/1   | 0.98 | 0.16 | 37,37,37,37                 | 0     |
| 56  | MG   | BE    | 302  | 1/1   | 0.98 | 0.77 | 36,36,36,36                 | 0     |
| 56  | MG   | DA    | 3362 | 1/1   | 0.98 | 0.08 | 43,43,43,43                 | 0     |
| 56  | MG   | BA    | 3333 | 1/1   | 0.98 | 0.19 | 35,35,35,35                 | 0     |
| 56  | MG   | DA    | 3364 | 1/1   | 0.98 | 0.06 | 37,37,37,37                 | 0     |
| 56  | MG   | BA    | 3064 | 1/1   | 0.98 | 0.19 | 30,30,30,30                 | 0     |
| 56  | MG   | BA    | 3404 | 1/1   | 0.98 | 0.17 | 38,38,38,38                 | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 56  | MG   | BA    | 3591 | 1/1   | 0.98 | 0.08 | 36,36,36,36                 | 0     |
| 56  | MG   | BA    | 3276 | 1/1   | 0.98 | 0.12 | 42,42,42,42                 | 0     |
| 56  | MG   | BF    | 302  | 1/1   | 0.98 | 0.08 | 45,45,45,45                 | 0     |
| 56  | MG   | BA    | 3406 | 1/1   | 0.98 | 0.22 | 39,39,39,39                 | 0     |
| 56  | MG   | AA    | 3168 | 1/1   | 0.98 | 0.10 | 56,56,56,56                 | 0     |
| 56  | MG   | DA    | 3201 | 1/1   | 0.98 | 0.11 | 51,51,51,51                 | 0     |
| 56  | MG   | DA    | 3202 | 1/1   | 0.98 | 0.17 | 24,24,24,24                 | 0     |
| 56  | MG   | BA    | 3337 | 1/1   | 0.98 | 0.12 | 37,37,37,37                 | 0     |
| 56  | MG   | CA    | 3075 | 1/1   | 0.98 | 0.15 | 53,53,53,53                 | 0     |
| 56  | MG   | BG    | 3001 | 1/1   | 0.98 | 0.12 | 71,71,71,71                 | 0     |
| 56  | MG   | DA    | 3377 | 1/1   | 0.98 | 0.14 | 37,37,37,37                 | 0     |
| 56  | MG   | CA    | 3077 | 1/1   | 0.98 | 0.14 | 44,44,44,44                 | 0     |
| 56  | MG   | BA    | 3146 | 1/1   | 0.98 | 0.18 | 31,31,31,31                 | 0     |
| 56  | MG   | AA    | 3076 | 1/1   | 0.98 | 0.10 | 52,52,52,52                 | 0     |
| 56  | MG   | AA    | 3155 | 1/1   | 0.98 | 0.09 | 61,61,61,61                 | 0     |
| 56  | MG   | BA    | 3413 | 1/1   | 0.98 | 0.16 | 26,26,26,26                 | 0     |
| 56  | MG   | BA    | 3501 | 1/1   | 0.98 | 0.13 | 44,44,44,44                 | 0     |
| 56  | MG   | BA    | 3502 | 1/1   | 0.98 | 0.16 | 33,33,33,33                 | 0     |
| 56  | MG   | BA    | 3281 | 1/1   | 0.98 | 0.22 | 51,51,51,51                 | 0     |
| 56  | MG   | DA    | 3214 | 1/1   | 0.98 | 0.21 | 30,30,30,30                 | 0     |
| 56  | MG   | DA    | 3387 | 1/1   | 0.98 | 0.07 | 53,53,53,53                 | 0     |
| 56  | MG   | BA    | 3603 | 1/1   | 0.98 | 0.05 | 49,49,49,49                 | 0     |
| 56  | MG   | AA    | 3186 | 1/1   | 0.98 | 0.13 | 55,55,55,55                 | 0     |
| 56  | MG   | BP    | 204  | 1/1   | 0.98 | 0.16 | 31,31,31,31                 | 0     |
| 56  | MG   | BA    | 3022 | 1/1   | 0.98 | 0.14 | 26,26,26,26                 | 0     |
| 56  | MG   | DA    | 3219 | 1/1   | 0.98 | 0.12 | 33,33,33,33                 | 0     |
| 56  | MG   | BA    | 3506 | 1/1   | 0.98 | 0.09 | 39,39,39,39                 | 0     |
| 56  | MG   | BQ    | 203  | 1/1   | 0.98 | 0.34 | 33,33,33,33                 | 0     |
| 56  | MG   | DA    | 3596 | 1/1   | 0.98 | 0.28 | 54,54,54,54                 | 0     |
| 56  | MG   | DB    | 3001 | 1/1   | 0.98 | 0.17 | 40,40,40,40                 | 0     |
| 56  | MG   | AA    | 3132 | 1/1   | 0.98 | 0.25 | 50,50,50,50                 | 0     |
| 56  | MG   | DA    | 3223 | 1/1   | 0.98 | 0.09 | 47,47,47,47                 | 0     |
| 56  | MG   | BA    | 3508 | 1/1   | 0.98 | 0.13 | 25,25,25,25                 | 0     |
| 56  | MG   | AA    | 3144 | 1/1   | 0.98 | 0.19 | 42,42,42,42                 | 0     |
| 56  | MG   | BU    | 201  | 1/1   | 0.98 | 0.31 | 32,32,32,32                 | 0     |
| 56  | MG   | AE    | 3001 | 1/1   | 0.98 | 0.09 | 71,71,71,71                 | 0     |
| 56  | MG   | BA    | 3287 | 1/1   | 0.98 | 0.13 | 46,46,46,46                 | 0     |
| 56  | MG   | BA    | 3421 | 1/1   | 0.98 | 0.18 | 36,36,36,36                 | 0     |
| 56  | MG   | DA    | 3080 | 1/1   | 0.98 | 0.21 | 29,29,29,29                 | 0     |
| 56  | MG   | DB    | 3011 | 1/1   | 0.98 | 0.08 | 29,29,29,29                 | 0     |
| 56  | MG   | DA    | 3404 | 1/1   | 0.98 | 0.10 | 46,46,46,46                 | 0     |
| 56  | MG   | BA    | 3613 | 1/1   | 0.98 | 0.15 | 45,45,45,45                 | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 56  | MG   | BA    | 3614 | 1/1   | 0.98 | 0.05 | 55,55,55,55                 | 0     |
| 56  | MG   | DA    | 3233 | 1/1   | 0.98 | 0.41 | 36,36,36,36                 | 0     |
| 56  | MG   | AA    | 3133 | 1/1   | 0.98 | 0.08 | 38,38,38,38                 | 0     |
| 56  | MG   | DA    | 3410 | 1/1   | 0.98 | 0.14 | 64,64,64,64                 | 0     |
| 56  | MG   | DA    | 3235 | 1/1   | 0.98 | 0.18 | 42,42,42,42                 | 0     |
| 56  | MG   | DE    | 3005 | 1/1   | 0.98 | 0.12 | 20,20,20,20                 | 0     |
| 56  | MG   | AA    | 3118 | 1/1   | 0.98 | 0.15 | 36,36,36,36                 | 0     |
| 56  | MG   | DA    | 3414 | 1/1   | 0.98 | 0.05 | 42,42,42,42                 | 0     |
| 56  | MG   | CA    | 3102 | 1/1   | 0.98 | 0.19 | 30,30,30,30                 | 0     |
| 56  | MG   | BA    | 3194 | 1/1   | 0.98 | 0.15 | 23,23,23,23                 | 0     |
| 56  | MG   | DA    | 3417 | 1/1   | 0.98 | 0.15 | 40,40,40,40                 | 0     |
| 56  | MG   | BA    | 3098 | 1/1   | 0.98 | 0.12 | 56,56,56,56                 | 0     |
| 56  | MG   | BX    | 101  | 1/1   | 0.98 | 0.22 | 46,46,46,46                 | 0     |
| 56  | MG   | BA    | 3352 | 1/1   | 0.98 | 0.14 | 32,32,32,32                 | 0     |
| 56  | MG   | DA    | 3421 | 1/1   | 0.98 | 0.15 | 52,52,52,52                 | 0     |
| 56  | MG   | BA    | 3519 | 1/1   | 0.98 | 0.25 | 53,53,53,53                 | 0     |
| 56  | MG   | BA    | 3520 | 1/1   | 0.98 | 0.14 | 24,24,24,24                 | 0     |
| 56  | MG   | BA    | 3196 | 1/1   | 0.98 | 0.18 | 17,17,17,17                 | 0     |
| 56  | MG   | BA    | 3522 | 1/1   | 0.98 | 0.10 | 52,52,52,52                 | 0     |
| 56  | MG   | DA    | 3246 | 1/1   | 0.98 | 0.36 | 38,38,38,38                 | 0     |
| 56  | MG   | DA    | 3095 | 1/1   | 0.98 | 0.33 | 47,47,47,47                 | 0     |
| 56  | MG   | BA    | 3354 | 1/1   | 0.98 | 0.11 | 42,42,42,42                 | 0     |
| 56  | MG   | BA    | 3627 | 1/1   | 0.98 | 0.10 | 54,54,54,54                 | 0     |
| 56  | MG   | BA    | 3524 | 1/1   | 0.98 | 0.07 | 57,57,57,57                 | 0     |
| 56  | MG   | D0    | 5001 | 1/1   | 0.98 | 0.06 | 39,39,39,39                 | 0     |
| 56  | MG   | BA    | 3099 | 1/1   | 0.98 | 0.20 | 32,32,32,32                 | 0     |
| 56  | MG   | BA    | 3100 | 1/1   | 0.98 | 0.11 | 29,29,29,29                 | 0     |
| 56  | MG   | DA    | 3433 | 1/1   | 0.98 | 0.16 | 33,33,33,33                 | 0     |
| 56  | MG   | BA    | 3432 | 1/1   | 0.98 | 0.11 | 37,37,37,37                 | 0     |
| 58  | ZN   | BY    | 501  | 1/1   | 0.98 | 0.15 | 51,51,51,51                 | 0     |
| 56  | MG   | BA    | 3358 | 1/1   | 0.98 | 0.17 | 39,39,39,39                 | 0     |
| 56  | MG   | DA    | 3436 | 1/1   | 0.98 | 0.10 | 27,27,27,27                 | 0     |
| 56  | MG   | B5    | 502  | 1/1   | 0.98 | 0.32 | 34,34,34,34                 | 0     |
| 56  | MG   | DA    | 3104 | 1/1   | 0.98 | 0.11 | 35,35,35,35                 | 0     |
| 56  | MG   | B5    | 503  | 1/1   | 0.98 | 0.21 | 47,47,47,47                 | 0     |
| 56  | MG   | DA    | 3441 | 1/1   | 0.98 | 0.12 | 45,45,45,45                 | 0     |
| 56  | MG   | BA    | 3245 | 1/1   | 0.98 | 0.17 | 27,27,27,27                 | 0     |
| 56  | MG   | BA    | 3360 | 1/1   | 0.98 | 0.15 | 21,21,21,21                 | 0     |
| 56  | MG   | DA    | 3502 | 1/1   | 0.99 | 0.12 | 39,39,39,39                 | 0     |
| 56  | MG   | BA    | 3290 | 1/1   | 0.99 | 0.15 | 36,36,36,36                 | 0     |
| 56  | MG   | DA    | 3025 | 1/1   | 0.99 | 0.09 | 41,41,41,41                 | 0     |
| 56  | MG   | BA    | 3026 | 1/1   | 0.99 | 0.22 | 46,46,46,46                 | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 56  | MG   | DA    | 3079 | 1/1   | 0.99 | 0.12 | 54,54,54,54                 | 0     |
| 56  | MG   | BA    | 3526 | 1/1   | 0.99 | 0.23 | 25,25,25,25                 | 0     |
| 56  | MG   | BA    | 3377 | 1/1   | 0.99 | 0.17 | 31,31,31,31                 | 0     |
| 56  | MG   | DA    | 3439 | 1/1   | 0.99 | 0.13 | 28,28,28,28                 | 0     |
| 56  | MG   | BA    | 3310 | 1/1   | 0.99 | 0.18 | 35,35,35,35                 | 0     |
| 56  | MG   | DA    | 3312 | 1/1   | 0.99 | 0.04 | 47,47,47,47                 | 0     |
| 56  | MG   | BA    | 3355 | 1/1   | 0.99 | 0.09 | 31,31,31,31                 | 0     |
| 56  | MG   | DA    | 3513 | 1/1   | 0.99 | 0.12 | 32,32,32,32                 | 0     |
| 56  | MG   | DA    | 3084 | 1/1   | 0.99 | 0.30 | 39,39,39,39                 | 0     |
| 56  | MG   | DA    | 3444 | 1/1   | 0.99 | 0.19 | 53,53,53,53                 | 0     |
| 56  | MG   | BA    | 3059 | 1/1   | 0.99 | 0.11 | 27,27,27,27                 | 0     |
| 56  | MG   | DA    | 3517 | 1/1   | 0.99 | 0.15 | 47,47,47,47                 | 0     |
| 56  | MG   | BA    | 3275 | 1/1   | 0.99 | 0.18 | 39,39,39,39                 | 0     |
| 56  | MG   | BA    | 3532 | 1/1   | 0.99 | 0.04 | 53,53,53,53                 | 0     |
| 56  | MG   | BA    | 3313 | 1/1   | 0.99 | 0.12 | 17,17,17,17                 | 0     |
| 56  | MG   | BA    | 3409 | 1/1   | 0.99 | 0.16 | 28,28,28,28                 | 0     |
| 56  | MG   | BA    | 3535 | 1/1   | 0.99 | 0.10 | 47,47,47,47                 | 0     |
| 56  | MG   | DA    | 3451 | 1/1   | 0.99 | 0.11 | 30,30,30,30                 | 0     |
| 56  | MG   | AA    | 3143 | 1/1   | 0.99 | 0.10 | 32,32,32,32                 | 0     |
| 56  | MG   | BA    | 3315 | 1/1   | 0.99 | 0.17 | 31,31,31,31                 | 0     |
| 56  | MG   | BA    | 3385 | 1/1   | 0.99 | 0.09 | 20,20,20,20                 | 0     |
| 56  | MG   | BA    | 3216 | 1/1   | 0.99 | 0.24 | 33,33,33,33                 | 0     |
| 56  | MG   | BA    | 3650 | 1/1   | 0.99 | 0.08 | 31,31,31,31                 | 0     |
| 56  | MG   | DA    | 3042 | 1/1   | 0.99 | 0.10 | 32,32,32,32                 | 0     |
| 56  | MG   | BU    | 204  | 1/1   | 0.99 | 0.16 | 29,29,29,29                 | 0     |
| 56  | MG   | CA    | 3106 | 1/1   | 0.99 | 0.15 | 40,40,40,40                 | 0     |
| 56  | MG   | DA    | 3532 | 1/1   | 0.99 | 0.06 | 51,51,51,51                 | 0     |
| 56  | MG   | DA    | 3154 | 1/1   | 0.99 | 0.13 | 24,24,24,24                 | 0     |
| 56  | MG   | BA    | 3179 | 1/1   | 0.99 | 0.20 | 27,27,27,27                 | 0     |
| 56  | MG   | BA    | 3091 | 1/1   | 0.99 | 0.14 | 19,19,19,19                 | 0     |
| 56  | MG   | BA    | 3389 | 1/1   | 0.99 | 0.19 | 35,35,35,35                 | 0     |
| 56  | MG   | BD    | 301  | 1/1   | 0.99 | 0.16 | 30,30,30,30                 | 0     |
| 56  | MG   | DA    | 3334 | 1/1   | 0.99 | 0.11 | 24,24,24,24                 | 0     |
| 56  | MG   | BA    | 3475 | 1/1   | 0.99 | 0.10 | 45,45,45,45                 | 0     |
| 56  | MG   | AA    | 3080 | 1/1   | 0.99 | 0.24 | 39,39,39,39                 | 0     |
| 56  | MG   | CA    | 3113 | 1/1   | 0.99 | 0.11 | 57,57,57,57                 | 0     |
| 56  | MG   | BW    | 3003 | 1/1   | 0.99 | 0.15 | 27,27,27,27                 | 0     |
| 56  | MG   | DA    | 3053 | 1/1   | 0.99 | 0.13 | 41,41,41,41                 | 0     |
| 56  | MG   | BA    | 3034 | 1/1   | 0.99 | 0.18 | 24,24,24,24                 | 0     |
| 56  | MG   | AE    | 3002 | 1/1   | 0.99 | 0.13 | 38,38,38,38                 | 0     |
| 56  | MG   | BA    | 3322 | 1/1   | 0.99 | 0.13 | 40,40,40,40                 | 0     |
| 56  | MG   | BA    | 3620 | 1/1   | 0.99 | 0.16 | 41,41,41,41                 | 0     |

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| Mol | Type | Chain | Res  | Atoms | RSCC | RSR  | B-factors( $\text{\AA}^2$ ) | Q<0.9 |
|-----|------|-------|------|-------|------|------|-----------------------------|-------|
| 56  | MG   | DA    | 3407 | 1/1   | 0.99 | 0.05 | 40,40,40,40                 | 0     |
| 56  | MG   | AA    | 3078 | 1/1   | 0.99 | 0.12 | 34,34,34,34                 | 0     |
| 56  | MG   | BE    | 301  | 1/1   | 0.99 | 0.08 | 45,45,45,45                 | 0     |
| 56  | MG   | BA    | 3209 | 1/1   | 0.99 | 0.19 | 26,26,26,26                 | 0     |
| 56  | MG   | BA    | 3514 | 1/1   | 0.99 | 0.08 | 32,32,32,32                 | 0     |
| 56  | MG   | BA    | 3037 | 1/1   | 0.99 | 0.13 | 24,24,24,24                 | 0     |
| 56  | MG   | DA    | 3413 | 1/1   | 0.99 | 0.17 | 24,24,24,24                 | 0     |
| 56  | MG   | DA    | 3349 | 1/1   | 0.99 | 0.15 | 46,46,46,46                 | 0     |
| 56  | MG   | BA    | 3625 | 1/1   | 0.99 | 0.12 | 25,25,25,25                 | 0     |
| 56  | MG   | DA    | 3012 | 1/1   | 0.99 | 0.12 | 30,30,30,30                 | 0     |
| 56  | MG   | DA    | 3289 | 1/1   | 0.99 | 0.16 | 26,26,26,26                 | 0     |
| 56  | MG   | BA    | 3424 | 1/1   | 0.99 | 0.20 | 38,38,38,38                 | 0     |
| 56  | MG   | BA    | 3453 | 1/1   | 0.99 | 0.09 | 27,27,27,27                 | 0     |
| 56  | MG   | DA    | 3177 | 1/1   | 0.99 | 0.11 | 52,52,52,52                 | 0     |
| 56  | MG   | DA    | 3015 | 1/1   | 0.99 | 0.26 | 41,41,41,41                 | 0     |
| 56  | MG   | D5    | 502  | 1/1   | 0.99 | 0.34 | 36,36,36,36                 | 0     |
| 56  | MG   | BA    | 3038 | 1/1   | 0.99 | 0.14 | 30,30,30,30                 | 0     |
| 56  | MG   | B3    | 102  | 1/1   | 0.99 | 0.23 | 22,22,22,22                 | 0     |
| 56  | MG   | DA    | 3124 | 1/1   | 0.99 | 0.15 | 29,29,29,29                 | 0     |
| 57  | SF4  | AD    | 501  | 8/8   | 0.99 | 0.16 | 50,63,78,83                 | 0     |
| 57  | SF4  | CD    | 501  | 8/8   | 0.99 | 0.14 | 58,71,82,82                 | 0     |
| 58  | ZN   | AN    | 501  | 1/1   | 0.99 | 0.14 | 67,67,67,67                 | 0     |
| 56  | MG   | DA    | 3493 | 1/1   | 0.99 | 0.06 | 45,45,45,45                 | 0     |
| 56  | MG   | DA    | 3297 | 1/1   | 0.99 | 0.15 | 38,38,38,38                 | 0     |
| 58  | ZN   | B5    | 501  | 1/1   | 0.99 | 0.16 | 42,42,42,42                 | 0     |
| 58  | ZN   | B6    | 501  | 1/1   | 0.99 | 0.16 | 45,45,45,45                 | 0     |
| 58  | ZN   | B9    | 501  | 1/1   | 0.99 | 0.17 | 45,45,45,45                 | 0     |
| 56  | MG   | BA    | 3455 | 1/1   | 0.99 | 0.11 | 21,21,21,21                 | 0     |
| 56  | MG   | BA    | 3241 | 1/1   | 0.99 | 0.29 | 26,26,26,26                 | 0     |
| 56  | MG   | BA    | 3670 | 1/1   | 0.99 | 0.32 | 34,34,34,34                 | 0     |
| 58  | ZN   | D5    | 501  | 1/1   | 0.99 | 0.16 | 67,67,67,67                 | 0     |
| 56  | MG   | BA    | 3039 | 1/1   | 0.99 | 0.08 | 31,31,31,31                 | 0     |
| 56  | MG   | BA    | 3489 | 1/1   | 0.99 | 0.25 | 41,41,41,41                 | 0     |
| 56  | MG   | DA    | 3303 | 1/1   | 0.99 | 0.07 | 43,43,43,43                 | 0     |
| 56  | MG   | BA    | 3289 | 1/1   | 0.99 | 0.15 | 28,28,28,28                 | 0     |
| 56  | MG   | BA    | 3221 | 1/1   | 1.00 | 0.24 | 41,41,41,41                 | 0     |
| 56  | MG   | AA    | 3115 | 1/1   | 1.00 | 0.07 | 35,35,35,35                 | 0     |

## 6.5 Other polymers i

There are no such residues in this entry.