# Full wwPDB EM Validation Report

Mar 9, 2026 – 01:12 AM UTC

| | | |
|---|---|---|
| PDB ID | : | 6Z6M / pdb_00006z6m |
| EMDB ID | : | EMD-11099 |
| Title | : | Cryo-EM structure of human 80S ribosomes bound to EBP1, eEF2 and SERBP1 |
| Authors | : | Wells, J.N.; Buschauer, R.; Mackens-Kiani, T.; Best, K.; Kratzat, H.; Berninghausen, O.; Becker, T.; Cheng, J.; Beckmann, R. |
| Deposited on | : | 2020-05-28 |
| Resolution | : | 3.10 Å(reported) |
| Based on initial model | : | 6EK0 |

This is a Full wwPDB EM Validation Report for a publicly released PDB entry.

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/EMValidationReportHelp
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:

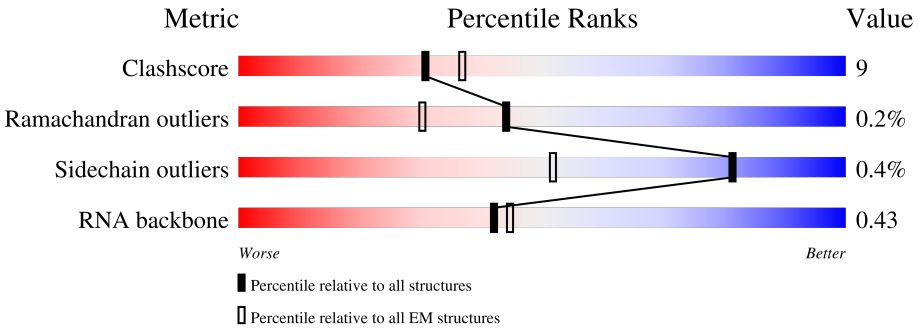
| | | |
|---|---|---|
| EMDB validation analysis | : | 0.0.1.dev132 |
| MolProbity | : | 4-5-2 with Phenix2.0 |
| Percentile statistics | : | 20250101.v01 (using entries in the PDB archive January 1st 2025) |
| EM percentile statistics | : | 202505.v01 (Using data in the EMDB archive up until May 2025) |
| MapQ | : | 1.9.13 |
| Ideal geometry (proteins) | : | Engh & Huber (2001) |
| Ideal geometry (DNA, RNA) | : | Parkinson et al. (1996) |
| Validation Pipeline (wwPDB-VP) | : | 2.49 |

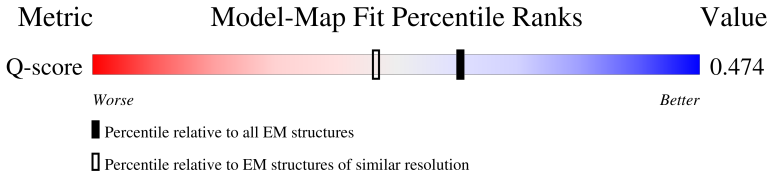
# 1 Overall quality at a glance

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

The reported resolution of this entry is 3.10 Å.

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




| Metric | Whole archive (#Entries) | EM structures (#Entries) | Similar EM resolution (#Entries, resolution range(Å)) |
|---|---|---|---|
| Clashscore | 229148 | 23984 | - |
| Ramachandran outliers | 224038 | 23583 | - |
| Sidechain outliers | 223484 | 23102 | - |
| RNA backbone | 8273 | 3508 | - |
| Q-score | - | 25397 | 14724 ( 2.60 - 3.60 ) |

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for >=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 <=5% The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion < 40%). The numeric value is given above the bar.

| Mol | Chain | Length | Quality of chain |
|---|---|---|---|
| 1 | L5 | 5070 | 42% 26% 7% 26% |
| 2 | L7 | 121 | 66% 28% 5% • |
| 3 | L8 | 157 | 62% 30% 7% • |

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| Mol | Chain | Length | Quality of chain |
|---|---|---|---|
| 4 | LA | 257 | 83% 14% |
| 5 | LB | 403 | 80% 19% |
| 6 | LC | 427 | 74% 12% 14% |
| 7 | LD | 297 | 81% 18% |
| 8 | LE | 288 | 61% 21% 18% |
| 9 | LF | 248 | 73% 18% 9% |
| 10 | LG | 266 | 76% 15% 9% |
| 11 | LH | 192 | 77% 21% |
| 12 | LI | 214 | 70% 24% 6% |
| 13 | LJ | 178 | 74% 25% |
| 14 | LL | 211 | 82% 18% |
| 15 | LM | 215 | 48% 15% 35% |
| 16 | LN | 204 | 84% 15% |
| 17 | LO | 203 | 84% 15% |
| 18 | LP | 184 | 71% 12% 17% |
| 19 | LQ | 188 | 84% 15% |
| 20 | LR | 196 | 79% 16% 5% |
| 21 | LS | 176 | 88% 11% |
| 22 | LT | 160 | 82% 17% |
| 23 | LU | 128 | 58% 21% 21% |
| 24 | LV | 140 | 75% 18% 6% |
| 25 | LW | 157 | 59% 17% 25% |
| 26 | LX | 156 | 61% 16% 23% |
| 27 | LY | 145 | 72% 20% 8% |
| 28 | LZ | 136 | 74% 26% |

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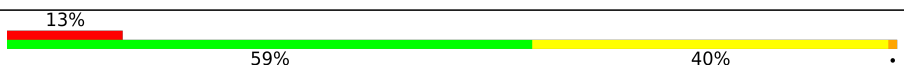
| Mol | Chain | Length | Quality of chain |
|---|---|---|---|
| 29 | La | 148 | |
| 30 | Lb | 159 | |
| 31 | Lc | 115 | |
| 32 | Ld | 125 | |
| 33 | Le | 135 | |
| 34 | Lf | 110 | |
| 35 | Lg | 117 | |
| 36 | Lh | 123 | |
| 37 | Li | 105 | |
| 38 | Lj | 97 | |
| 39 | Lk | 70 | |
| 40 | Ll | 51 | |
| 41 | Lm | 128 | |
| 42 | Ln | 25 | |
| 43 | Lo | 106 | |
| 44 | Lp | 92 | |
| 45 | Lr | 137 | |
| 46 | Lz | 217 |   |
| 47 | S2 | 1869 | |
| 48 | SA | 295 | |
| 49 | SB | 264 | |
| 50 | SD | 243 | |
| 51 | SE | 263 | |
| 52 | SF | 204 | |
| 53 | SH | 194 | |

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| Mol | Chain | Length | Quality of chain |
|---|---|---|---|
| 54 | SI | 208 | 80% 18% |
| 55 | SK | 165 | 38% 21% 41% |
| 56 | SL | 158 | 73% 23% |
| 57 | SP | 145 | 59% 23% 17% |
| 58 | SQ | 146 | 64% 34% |
| 59 | SR | 135 | 76% 24% |
| 60 | SS | 152 | 59% 36% 5% |
| 61 | ST | 145 | 70% 29% |
| 62 | SU | 119 | 65% 23% 13% |
| 63 | SV | 83 | 82% 17% |
| 64 | SX | 143 | 80% 18% |
| 65 | Sa | 115 | 66% 22% 11% |
| 66 | Sc | 69 | 46% 46% 7% |
| 67 | Sd | 56 | 62% 34% |
| 68 | Sg | 317 | 65% 33% |
| 69 | SC | 293 | 59% 17% 24% |
| 70 | SG | 249 | 66% 29% 5% |
| 71 | SJ | 194 | 69% 27% 5% |
| 72 | SM | 132 | 56% 36% 8% |
| 73 | SN | 151 | 77% 23% |
| 74 | SO | 151 | 75% 18% 7% |
| 75 | SW | 130 | 77% 22% |
| 76 | SY | 133 | 71% 28% |
| 77 | SZ | 125 | 41% 19% 40% |
| 78 | Sb | 84 | 80% 19% |

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| Mol | Chain | Length | Quality of chain |
|---|---|---|---|
| 79 | Se | 59 | |
| 80 | Sf | 156 | |
| 81 | CA | 394 | |
| 82 | CB | 858 | |
| 83 | CC | 85 | |
| 84 | CD | 408 | |

# 2 Entry composition

There are 86 unique types of molecules in this entry. The entry contains 228884 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a RNA chain called 28S rRNA.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| | | | Total | C | N | O | P | | |
| 1 | L5 | 3772 | 80116 | 35645 | 14585 | 26115 | 3771 | 0 | 0 |

There is a discrepancy between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment | Reference |
|---|---|---|---|---|---|
| L5 | 2113 | C | G | conflict | GB 86475748 |

- Molecule 2 is a RNA chain called 5S rRNA.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| | | | Total | C | N | O | P | | |
| 2 | L7 | 120 | 2561 | 1141 | 456 | 844 | 120 | 0 | 0 |

- Molecule 3 is a RNA chain called 5.8S rRNA.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| | | | Total | C | N | O | P | | |
| 3 | L8 | 156 | 3314 | 1480 | 585 | 1094 | 155 | 0 | 0 |

- Molecule 4 is a protein called 60S ribosomal protein L8.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| | | | Total | C | N | O | S | | |
| 4 | LA | 248 | 1898 | 1189 | 389 | 314 | 6 | 0 | 0 |

- Molecule 5 is a protein called 60S ribosomal protein L3.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| | | | Total | C | N | O | S | | |
| 5 | LB | 402 | 3238 | 2060 | 608 | 556 | 14 | 0 | 0 |

- Molecule 6 is a protein called 60S ribosomal protein L4.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 6 | LC | 368 | Total | C | N | O | S | 0 | 0 |
| | | | 2927 | 1840 | 583 | 489 | 15 | | |

- Molecule 7 is a protein called 60S ribosomal protein L5.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 7 | LD | 293 | Total | C | N | O | S | 0 | 0 |
| | | | 2382 | 1507 | 434 | 427 | 14 | | |

- Molecule 8 is a protein called 60S ribosomal protein L6.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 8 | LE | 236 | Total | C | N | O | S | 0 | 0 |
| | | | 1904 | 1222 | 361 | 317 | 4 | | |

- Molecule 9 is a protein called 60S ribosomal protein L7.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 9 | LF | 225 | Total | C | N | O | S | 0 | 0 |
| | | | 1870 | 1202 | 358 | 301 | 9 | | |

- Molecule 10 is a protein called 60S ribosomal protein L7a.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 10 | LG | 241 | Total | C | N | O | S | 0 | 0 |
| | | | 1927 | 1228 | 371 | 324 | 4 | | |

- Molecule 11 is a protein called 60S ribosomal protein L9.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 11 | LH | 190 | Total | C | N | O | S | 0 | 0 |
| | | | 1518 | 956 | 284 | 272 | 6 | | |

- Molecule 12 is a protein called 60S ribosomal protein L10-like.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 12 | LI | 202 | Total | C | N | O | S | 0 | 0 |
| | | | 1634 | 1037 | 314 | 269 | 14 | | |

- Molecule 13 is a protein called 60S ribosomal protein L11.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 13 | LJ | 176 | Total | C | N | O | S | 0 | 0 |
| | | | 1410 | 888 | 263 | 253 | 6 | | |

- Molecule 14 is a protein called 60S ribosomal protein L13.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 14 | LL | 210 | Total | C | N | O | S | 0 | 0 |
| | | | 1701 | 1064 | 352 | 281 | 4 | | |

- Molecule 15 is a protein called 60S ribosomal protein L14.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 15 | LM | 139 | Total | C | N | O | S | 0 | 0 |
| | | | 1138 | 730 | 218 | 183 | 7 | | |

- Molecule 16 is a protein called 60S ribosomal protein L15.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 16 | LN | 203 | Total | C | N | O | S | 0 | 0 |
| | | | 1701 | 1072 | 359 | 266 | 4 | | |

- Molecule 17 is a protein called 60S ribosomal protein L13a.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 17 | LO | 201 | Total | C | N | O | S | 0 | 0 |
| | | | 1650 | 1063 | 321 | 261 | 5 | | |

- Molecule 18 is a protein called 60S ribosomal protein L17.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 18 | LP | 153 | Total | C | N | O | S | 0 | 0 |
| | | | 1242 | 776 | 241 | 216 | 9 | | |

- Molecule 19 is a protein called 60S ribosomal protein L18.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 19 | LQ | 187 | Total | C | N | O | S | 0 | 0 |
| | | | 1513 | 944 | 314 | 250 | 5 | | |

- Molecule 20 is a protein called 60S ribosomal protein L19.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 20 | LR | 187 | Total | C | N | O | S | 0 | 0 |
| | | | 1566 | 971 | 336 | 250 | 9 | | |

- Molecule 21 is a protein called 60S ribosomal protein L18a.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 21 | LS | 175 | Total | C | N | O | S | 0 | 0 |
| | | | 1453 | 925 | 283 | 235 | 10 | | |

- Molecule 22 is a protein called 60S ribosomal protein L21.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 22 | LT | 159 | Total | C | N | O | S | 0 | 0 |
| | | | 1298 | 823 | 252 | 217 | 6 | | |

- Molecule 23 is a protein called 60S ribosomal protein L22.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 23 | LU | 101 | Total | C | N | O | S | 0 | 0 |
| | | | 825 | 529 | 144 | 150 | 2 | | |

- Molecule 24 is a protein called 60S ribosomal protein L23.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 24 | LV | 131 | Total | C | N | O | S | 0 | 0 |
| | | | 979 | 618 | 184 | 172 | 5 | | |

- Molecule 25 is a protein called 60S ribosomal protein L24.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 25 | LW | 118 | Total | C | N | O | S | 0 | 0 |
| | | | 965 | 604 | 199 | 158 | 4 | | |

- Molecule 26 is a protein called 60S ribosomal protein L23a.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 26 | LX | 120 | Total | C | N | O | S | 0 | 0 |
| | | | 985 | 630 | 185 | 169 | 1 | | |

- Molecule 27 is a protein called 60S ribosomal protein L26.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 27 | LY | 134 | Total | C | N | O | S | 0 | 0 |
| | | | 1115 | 700 | 226 | 186 | 3 | | |

- Molecule 28 is a protein called 60S ribosomal protein L27.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 28 | LZ | 135 | Total | C | N | O | S | 0 | 0 |
| | | | 1107 | 714 | 208 | 182 | 3 | | |

- Molecule 29 is a protein called 60S ribosomal protein L27a.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 29 | La | 147 | Total | C | N | O | S | 0 | 0 |
| | | | 1162 | 736 | 237 | 186 | 3 | | |

- Molecule 30 is a protein called 60S ribosomal protein L29.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 30 | Lb | 109 | Total | C | N | O | S | 0 | 0 |
| | | | 876 | 546 | 189 | 137 | 4 | | |

- Molecule 31 is a protein called 60S ribosomal protein L30.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 31 | Lc | 98 | Total | C | N | O | S | 0 | 0 |
| | | | 764 | 485 | 135 | 138 | 6 | | |

- Molecule 32 is a protein called 60S ribosomal protein L31.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 32 | Ld | 107 | Total | C | N | O | S | 0 | 0 |
| | | | 888 | 560 | 171 | 155 | 2 | | |

- Molecule 33 is a protein called 60S ribosomal protein L32.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 33 | Le | 128 | Total | C | N | O | S | 0 | 0 |
| | | | 1053 | 667 | 216 | 165 | 5 | | |

- Molecule 34 is a protein called 60S ribosomal protein L35a.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 34 | Lf | 109 | Total | C | N | O | S | 0 | 0 |
| | | | 876 | 555 | 174 | 144 | 3 | | |

- Molecule 35 is a protein called 60S ribosomal protein L34.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 35 | Lg | 114 | Total | C | N | O | S | 0 | 0 |
| | | | 906 | 566 | 187 | 147 | 6 | | |

- Molecule 36 is a protein called 60S ribosomal protein L35.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 36 | Lh | 122 | Total | C | N | O | S | 0 | 0 |
| | | | 1015 | 641 | 205 | 168 | 1 | | |

- Molecule 37 is a protein called 60S ribosomal protein L36.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 37 | Li | 102 | Total | C | N | O | S | 0 | 0 |
| | | | 832 | 521 | 177 | 129 | 5 | | |

- Molecule 38 is a protein called 60S ribosomal protein L37.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 38 | Lj | 86 | Total | C | N | O | S | 0 | 0 |
| | | | 705 | 434 | 155 | 111 | 5 | | |

- Molecule 39 is a protein called 60S ribosomal protein L38.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 39 | Lk | 69 | Total | C | N | O | S | 0 | 0 |
| | | | 569 | 366 | 103 | 99 | 1 | | |

- Molecule 40 is a protein called 60S ribosomal protein L39.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 40 | Ll | 50 | Total | C | N | O | S | 0 | 0 |
| | | | 444 | 281 | 98 | 64 | 1 | | |

- Molecule 41 is a protein called Ubiquitin-60S ribosomal protein L40.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 41 | Lm | 52 | Total | C | N | O | S | 0 | 0 |
| | | | 429 | 266 | 90 | 67 | 6 | | |

- Molecule 42 is a protein called 60S ribosomal protein L41.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 42 | Ln | 24 | Total | C | N | O | S | 0 | 0 |
| | | | 230 | 139 | 62 | 26 | 3 | | |

- Molecule 43 is a protein called 60S ribosomal protein L36a.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 43 | Lo | 105 | Total | C | N | O | S | 0 | 0 |
| | | | 862 | 542 | 175 | 139 | 6 | | |

- Molecule 44 is a protein called 60S ribosomal protein L37a.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 44 | Lp | 91 | Total | C | N | O | S | 0 | 0 |
| | | | 708 | 445 | 136 | 120 | 7 | | |

- Molecule 45 is a protein called 60S ribosomal protein L28.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 45 | Lr | 125 | Total | C | N | O | S | 0 | 0 |
| | | | 1002 | 622 | 207 | 168 | 5 | | |

- Molecule 46 is a protein called 60S ribosomal protein L10a.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 46 | Lz | 217 | Total | C | N | O | S | 0 | 0 |
| | | | 1741 | 1113 | 312 | 307 | 9 | | |

- Molecule 47 is a RNA chain called 18S rRNA.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 47 | S2 | 1740 | Total | C | N | O | P | 0 | 0 |
| | | | 36898 | 16459 | 6599 | 12101 | 1739 | | |

- Molecule 48 is a protein called 40S ribosomal protein SA.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 48 | SA | 221 | Total | C | N | O | S | 0 | 0 |
| | | | 1741 | 1106 | 305 | 322 | 8 | | |

- Molecule 49 is a protein called 40S ribosomal protein S3a.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 49 | SB | 214 | Total | C | N | O | S | 0 | 0 |
| | | | 1738 | 1103 | 310 | 311 | 14 | | |

- Molecule 50 is a protein called 40S ribosomal protein S3.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 50 | SD | 227 | Total | C | N | O | S | 0 | 0 |
| | | | 1765 | 1125 | 317 | 315 | 8 | | |

- Molecule 51 is a protein called 40S ribosomal protein S4, X isoform.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 51 | SE | 262 | Total | C | N | O | S | 0 | 0 |
| | | | 2076 | 1324 | 386 | 358 | 8 | | |

- Molecule 52 is a protein called 40S ribosomal protein S5.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 52 | SF | 189 | Total | C | N | O | S | 0 | 0 |
| | | | 1495 | 934 | 284 | 270 | 7 | | |

- Molecule 53 is a protein called 40S ribosomal protein S7.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 53 | SH | 186 | Total | C | N | O | S | 0 | 0 |
| | | | 1497 | 956 | 274 | 266 | 1 | | |

- Molecule 54 is a protein called 40S ribosomal protein S8.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 54 | SI | 206 | Total | C | N | O | S | 0 | 0 |
| | | | 1686 | 1058 | 332 | 291 | 5 | | |

- Molecule 55 is a protein called 40S ribosomal protein S10.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 55 | SK | 98 | Total | C | N | O | S | 0 | 0 |
| | | | 827 | 539 | 148 | 134 | 6 | | |

- Molecule 56 is a protein called 40S ribosomal protein S11.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 56 | SL | 153 | Total | C | N | O | S | 0 | 0 |
| | | | 1247 | 793 | 234 | 214 | 6 | | |

- Molecule 57 is a protein called 40S ribosomal protein S15.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 57 | SP | 121 | Total | C | N | O | S | 0 | 0 |
| | | | 985 | 623 | 185 | 170 | 7 | | |

- Molecule 58 is a protein called 40S ribosomal protein S16.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 58 | SQ | 144 | Total | C | N | O | S | 0 | 0 |
| | | | 1142 | 726 | 216 | 197 | 3 | | |

- Molecule 59 is a protein called 40S ribosomal protein S17.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 59 | SR | 135 | Total | C | N | O | S | 0 | 0 |
| | | | 1090 | 685 | 202 | 198 | 5 | | |

- Molecule 60 is a protein called 40S ribosomal protein S18.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 60 | SS | 145 | Total | C | N | O | S | 0 | 0 |
| | | | 1198 | 751 | 242 | 203 | 2 | | |

- Molecule 61 is a protein called 40S ribosomal protein S19.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 61 | ST | 143 | Total | C | N | O | S | 0 | 0 |
| | | | 1112 | 697 | 214 | 198 | 3 | | |

- Molecule 62 is a protein called 40S ribosomal protein S20.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 62 | SU | 104 | Total | C | N | O | S | 0 | 0 |
| | | | 821 | 514 | 155 | 148 | 4 | | |

- Molecule 63 is a protein called 40S ribosomal protein S21.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 63 | SV | 83 | Total | C | N | O | S | 0 | 0 |
| | | | 636 | 393 | 117 | 121 | 5 | | |

- Molecule 64 is a protein called 40S ribosomal protein S23.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 64 | SX | 141 | Total | C | N | O | S | 0 | 0 |
| | | | 1098 | 693 | 219 | 183 | 3 | | |

- Molecule 65 is a protein called 40S ribosomal protein S26.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 65 | Sa | 102 | Total | C | N | O | S | 0 | 0 |
| | | | 821 | 512 | 171 | 133 | 5 | | |

- Molecule 66 is a protein called 40S ribosomal protein S28.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 66 | Sc | 64 | Total | C | N | O | S | 0 | 0 |
| | | | 506 | 308 | 102 | 94 | 2 | | |

- Molecule 67 is a protein called 40S ribosomal protein S29.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 67 | Sd | 55 | Total | C | N | O | S | 0 | 0 |
| | | | 459 | 286 | 94 | 74 | 5 | | |

- Molecule 68 is a protein called Receptor of activated protein C kinase 1.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 68 | Sg | 313 | Total | C | N | O | S | 0 | 0 |
| | | | 2436 | 1535 | 424 | 465 | 12 | | |

- Molecule 69 is a protein called 40S ribosomal protein S2.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 69 | SC | 222 | Total | C | N | O | S | 0 | 0 |
| | | | 1725 | 1115 | 298 | 302 | 10 | | |

- Molecule 70 is a protein called 40S ribosomal protein S6.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 70 | SG | 237 | Total | C | N | O | S | 0 | 0 |
| | | | 1923 | 1200 | 387 | 329 | 7 | | |

- Molecule 71 is a protein called 40S ribosomal protein S9.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 71 | SJ | 185 | Total | C | N | O | S | 0 | 0 |
| | | | 1525 | 969 | 306 | 248 | 2 | | |

- Molecule 72 is a protein called 40S ribosomal protein S12.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 72 | SM | 122 | Total | C | N | O | S | 0 | 0 |
| | | | 940 | 590 | 164 | 177 | 9 | | |

- Molecule 73 is a protein called 40S ribosomal protein S13.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 73 | SN | 150 | Total | C | N | O | S | 0 | 0 |
| | | | 1208 | 773 | 229 | 205 | 1 | | |

- Molecule 74 is a protein called 40S ribosomal protein S14.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 74 | SO | 140 | Total | C | N | O | S | 0 | 0 |
| | | | 1049 | 642 | 204 | 197 | 6 | | |

- Molecule 75 is a protein called 40S ribosomal protein S15a.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 75 | SW | 129 | Total | C | N | O | S | 0 | 0 |
| | | | 1034 | 659 | 193 | 176 | 6 | | |

- Molecule 76 is a protein called 40S ribosomal protein S24.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 76 | SY | 131 | Total | C | N | O | S | 0 | 0 |
| | | | 1065 | 673 | 209 | 178 | 5 | | |

- Molecule 77 is a protein called 40S ribosomal protein S25.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 77 | SZ | 75 | Total | C | N | O | S | 0 | 0 |
| | | | 598 | 382 | 111 | 104 | 1 | | |

- Molecule 78 is a protein called 40S ribosomal protein S27.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 78 | Sb | 83 | Total | C | N | O | S | 0 | 0 |
| | | | 651 | 408 | 121 | 115 | 7 | | |

- Molecule 79 is a protein called 40S ribosomal protein S30.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 79 | Se | 58 | Total | C | N | O | S | 0 | 0 |
| | | | 459 | 284 | 100 | 74 | 1 | | |

- Molecule 80 is a protein called Ubiquitin-40S ribosomal protein S27a.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 80 | Sf | 67 | Total | C | N | O | S | 0 | 0 |
| | | | 548 | 346 | 102 | 93 | 7 | | |

- Molecule 81 is a protein called Proliferation-associated protein 2G4.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 81 | CA | 354 | Total | C | N | O | S | 4 | 0 |
| | | | 2764 | 1744 | 475 | 528 | 17 | | |

- Molecule 82 is a protein called Elongation factor 2.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 82 | CB | 846 | Total | C | N | O | S | 0 | 0 |
| | | | 6605 | 4193 | 1136 | 1232 | 44 | | |

- Molecule 83 is a RNA chain called tRNA.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 83 | CC | 85 | Total 1813 | C 808 | N 322 | O 598 | P 85 | 0 | 0 |

- Molecule 84 is a protein called Plasminogen activator inhibitor 1 RNA-binding protein.

| Mol | Chain | Residues | Atoms | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|
| 84 | CD | 55 | Total 440 | C 263 | N 87 | O 90 | 0 | 0 |

- Molecule 85 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

| Mol | Chain | Residues | Atoms | | AltConf |
|---|---|---|---|---|---|
| 85 | L5 | 211 | Total 211 | Mg 211 | 0 |
| 85 | L7 | 3 | Total 3 | Mg 3 | 0 |
| 85 | L8 | 5 | Total 5 | Mg 5 | 0 |
| 85 | LA | 1 | Total 1 | Mg 1 | 0 |
| 85 | LI | 1 | Total 1 | Mg 1 | 0 |
| 85 | LP | 1 | Total 1 | Mg 1 | 0 |
| 85 | LT | 1 | Total 1 | Mg 1 | 0 |
| 85 | LV | 1 | Total 1 | Mg 1 | 0 |
| 85 | Le | 1 | Total 1 | Mg 1 | 0 |
| 85 | Lg | 1 | Total 1 | Mg 1 | 0 |
| 85 | S2 | 29 | Total 29 | Mg 29 | 0 |
| 85 | CC | 1 | Total 1 | Mg 1 | 0 |

- Molecule 86 is ZINC ION (CCD ID: ZN) (formula: Zn).

| Mol | Chain | Residues | Atoms | | AltConf |
|---|---|---|---|---|---|
| 86 | Lg | 1 | Total 1 | Zn 1 | 0 |

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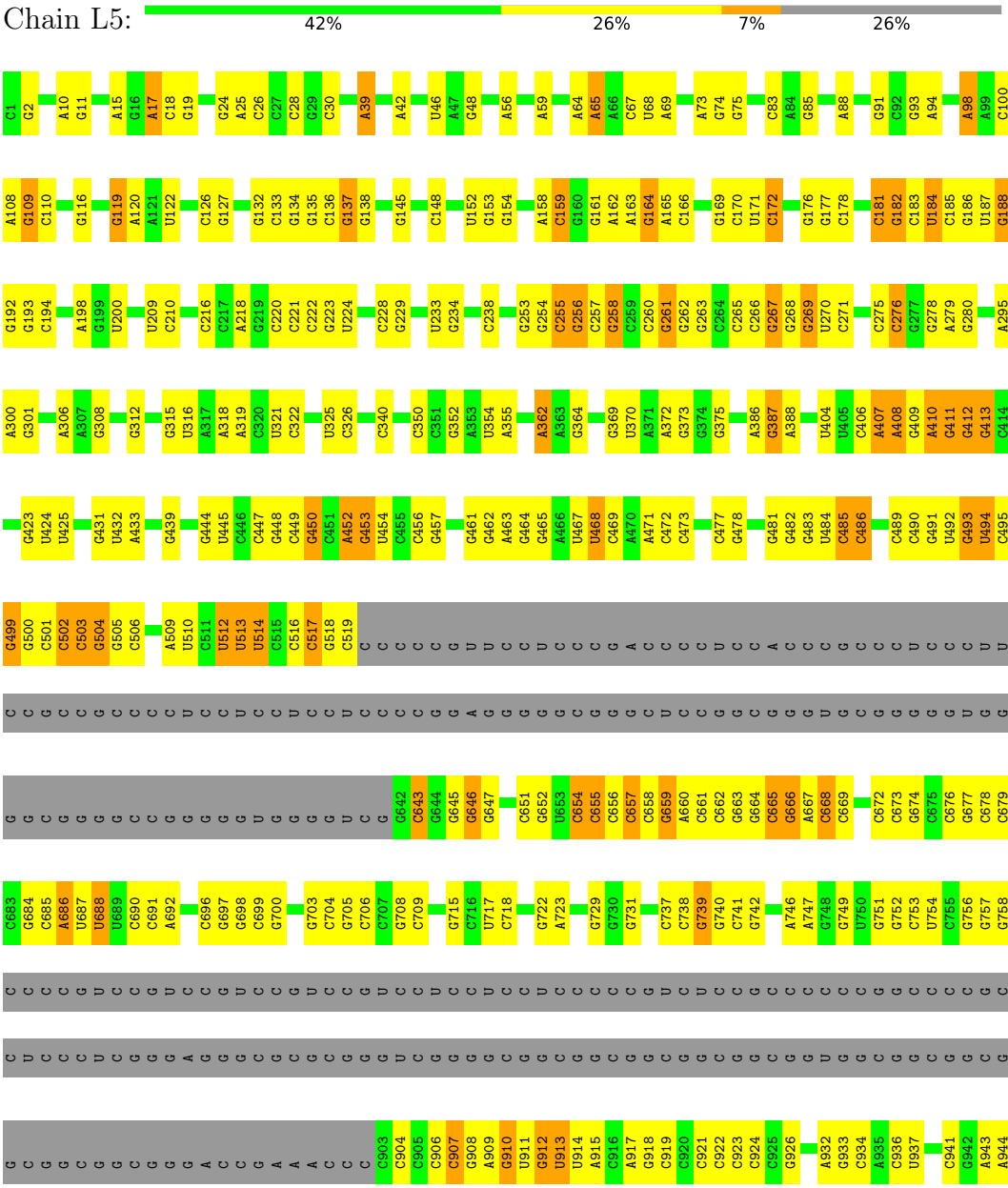
| Mol | Chain | Residues | Atoms | AltConf |
|---|---|---|---|---|
| 86 | Lj | 1 | Total Zn<br>1 1 | 0 |
| 86 | Lm | 1 | Total Zn<br>1 1 | 0 |
| 86 | Lo | 1 | Total Zn<br>1 1 | 0 |
| 86 | Lp | 1 | Total Zn<br>1 1 | 0 |
| 86 | Sa | 1 | Total Zn<br>1 1 | 0 |
| 86 | Sd | 1 | Total Zn<br>1 1 | 0 |
| 86 | SM | 1 | Total Zn<br>1 1 | 0 |

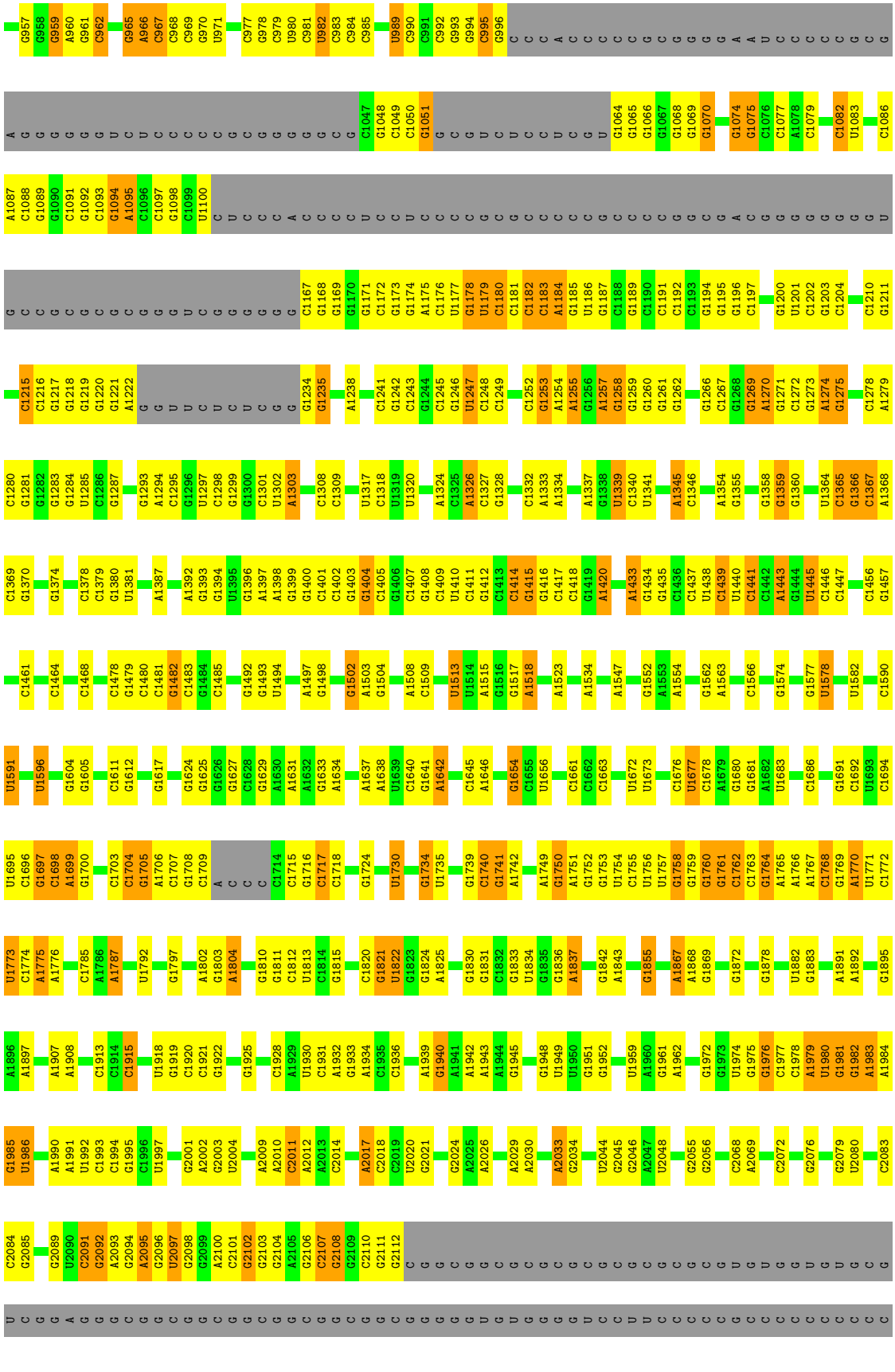
# 3 Residue-property plots (i)

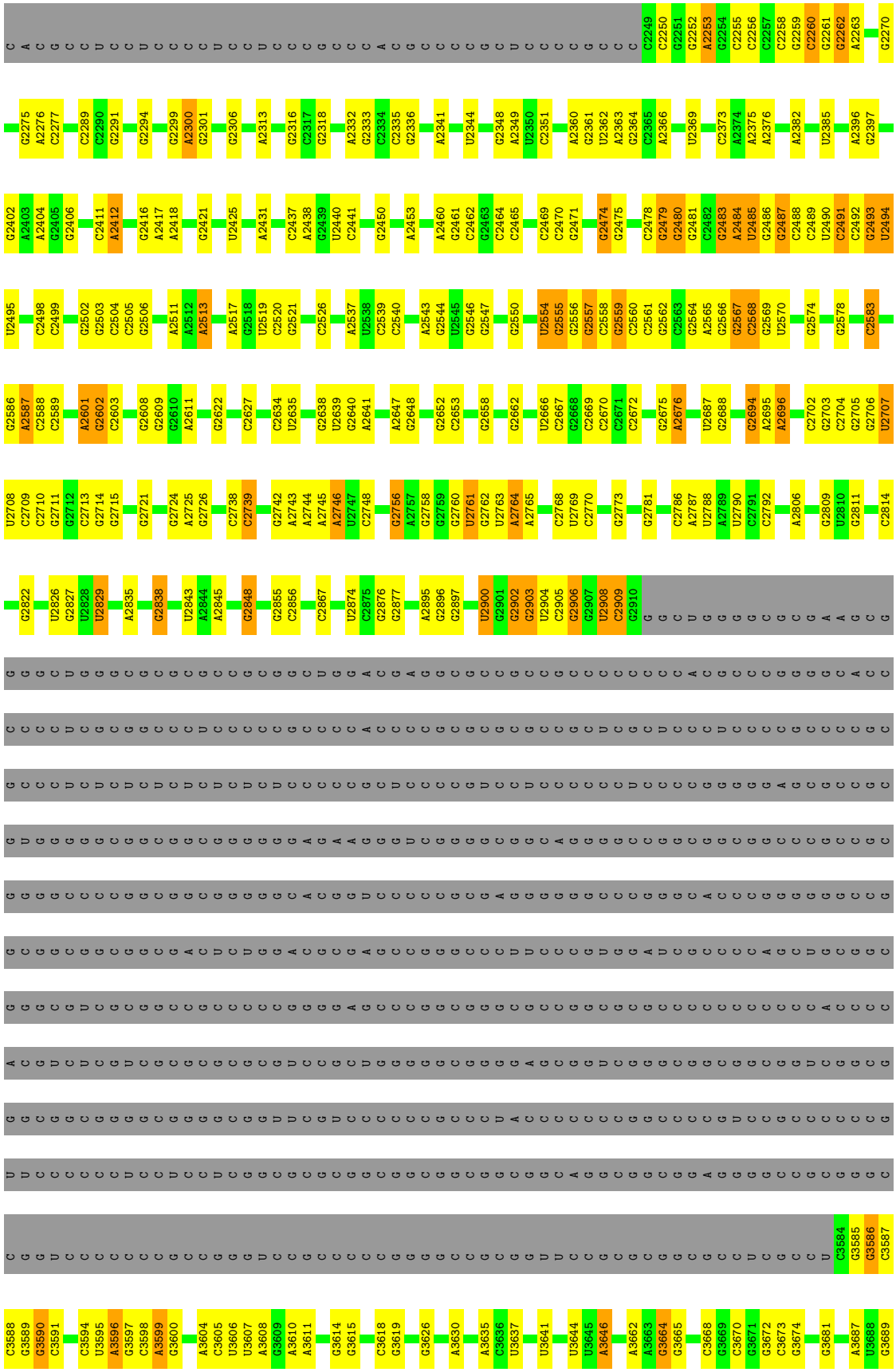
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map 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 diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). 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.

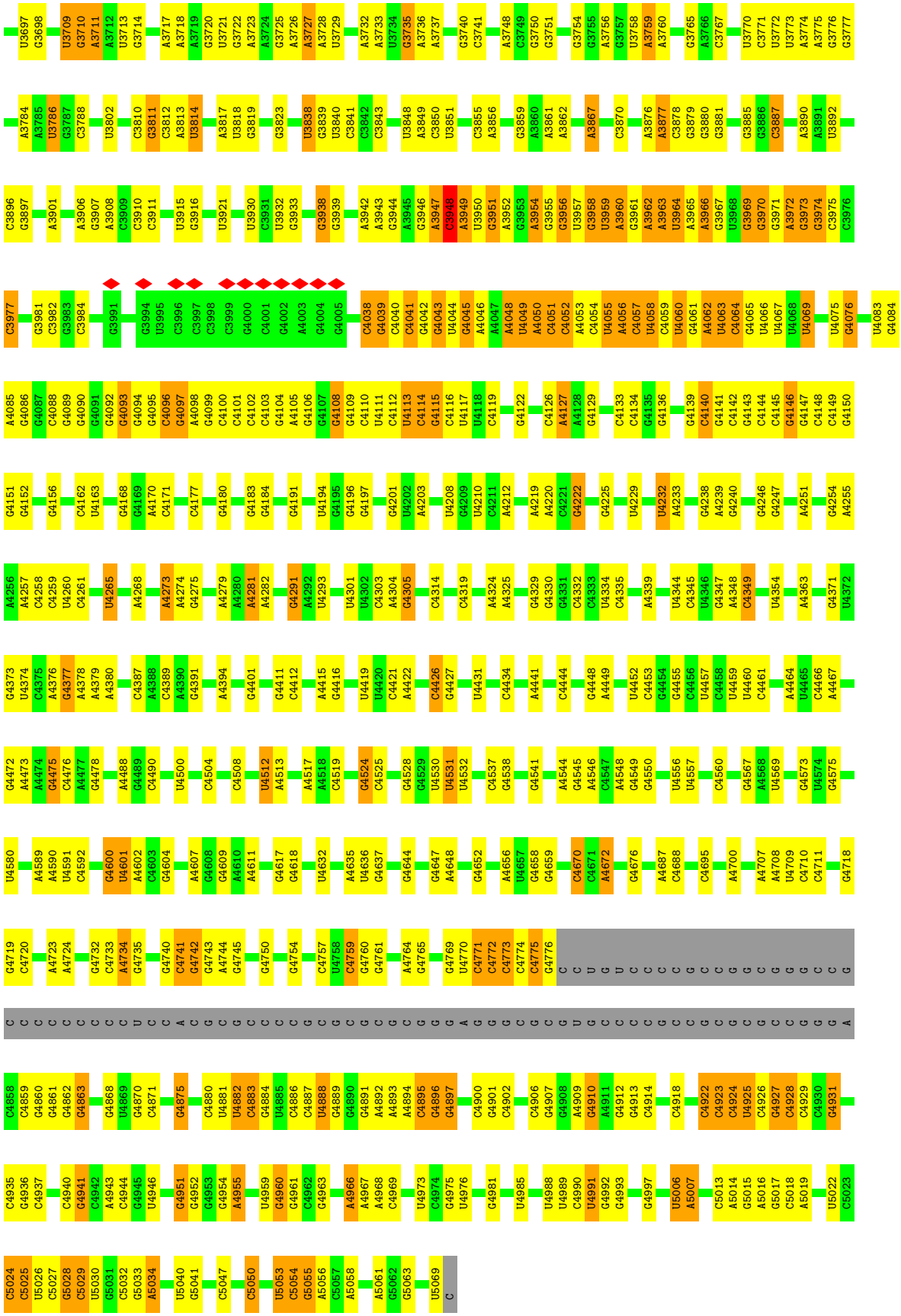
- Molecule 1: 28S rRNA

Chain L5:



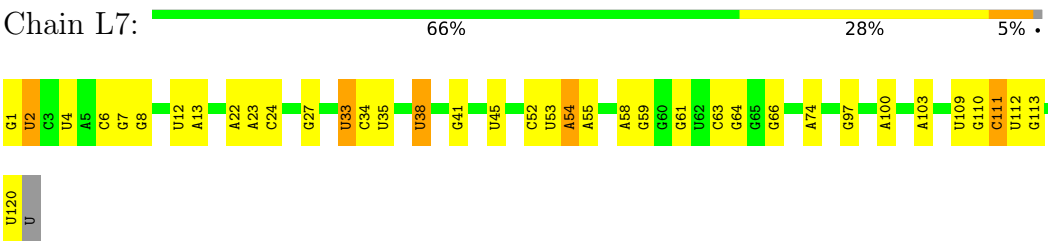






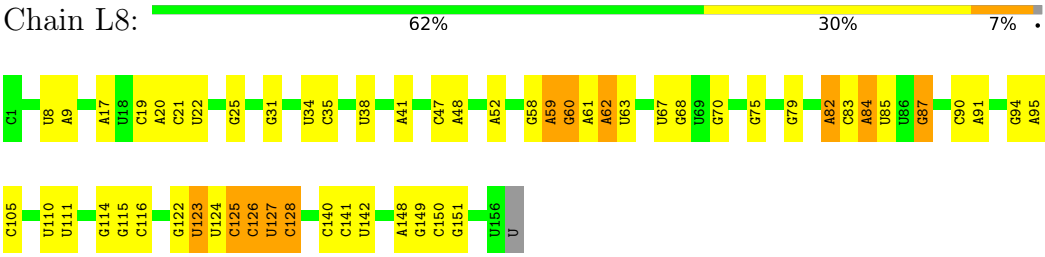
- Molecule 2: 5S rRNA

Chain L7:



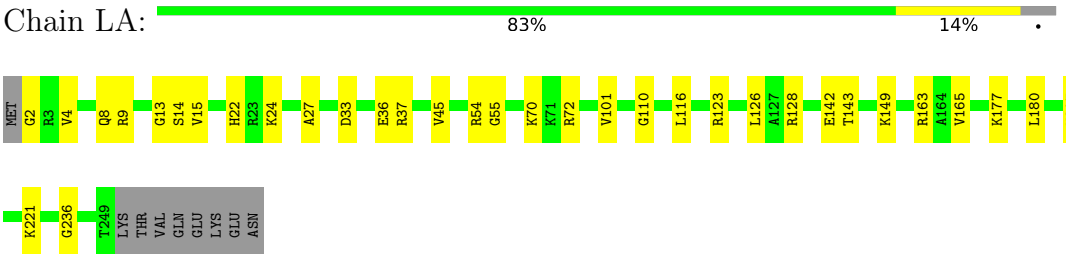

• Molecule 3: 5.8S rRNA

Chain L8:



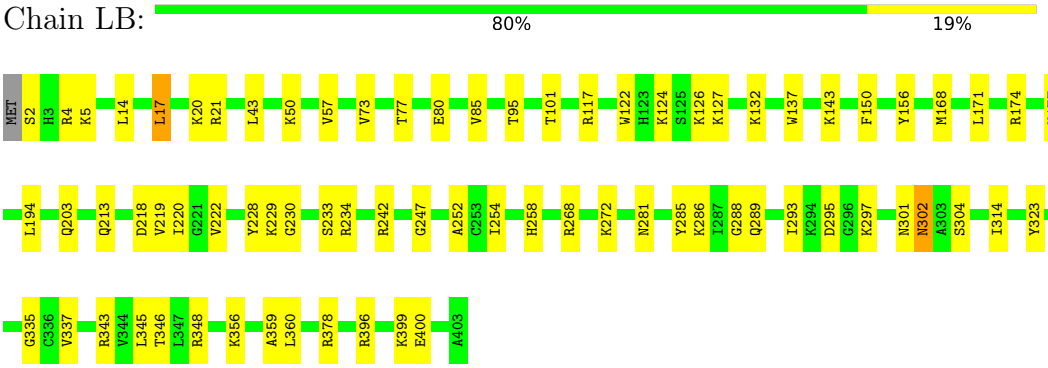

• Molecule 4: 60S ribosomal protein L8

Chain LA:



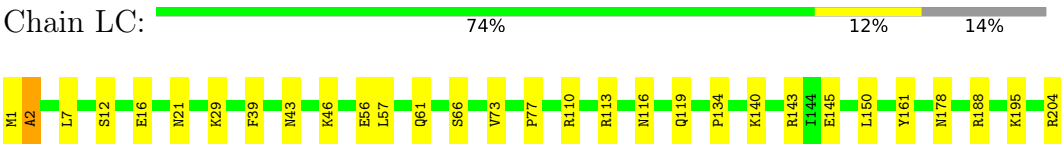

• Molecule 5: 60S ribosomal protein L3

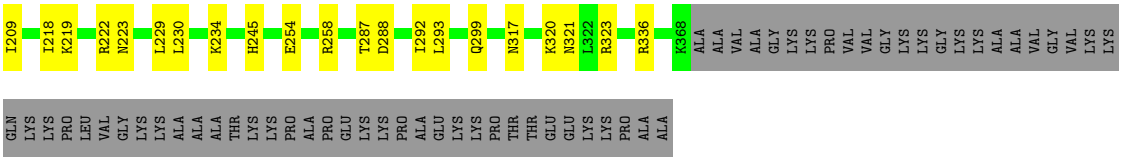
Chain LB:




• Molecule 6: 60S ribosomal protein L4

Chain LC:

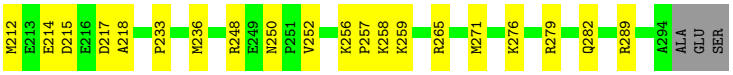






• Molecule 7: 60S ribosomal protein L5

Chain LD:

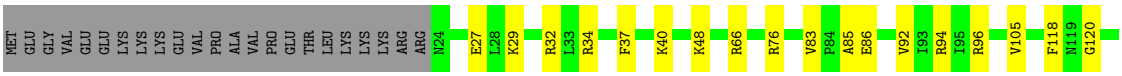


• Molecule 8: 60S ribosomal protein L6

Chain LE:

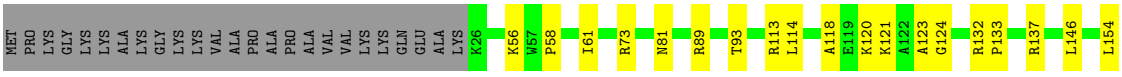
• Molecule 9: 60S ribosomal protein L7

Chain LF:



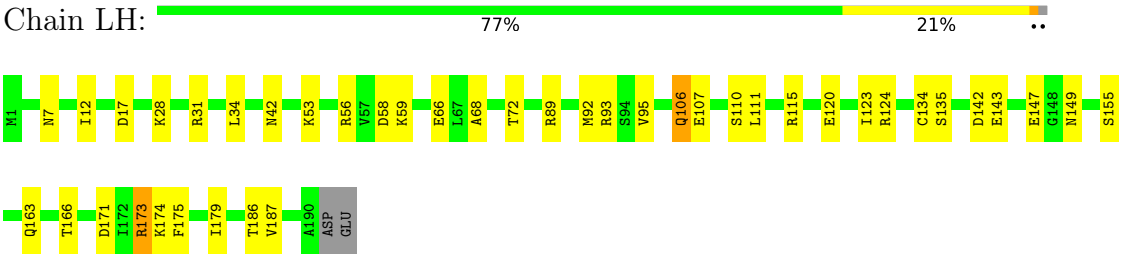
• Molecule 10: 60S ribosomal protein L7a

Chain LG:



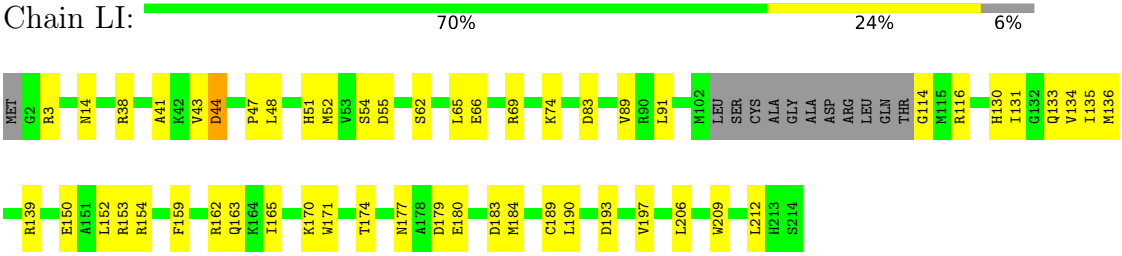
• Molecule 11: 60S ribosomal protein L9

Chain LH:



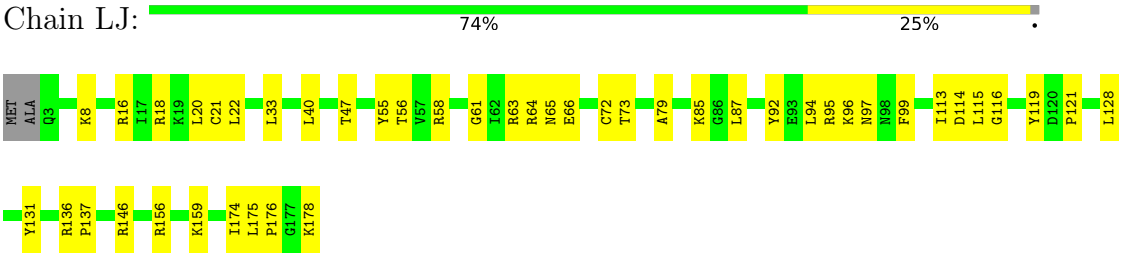

• Molecule 12: 60S ribosomal protein L10-like

Chain LI:



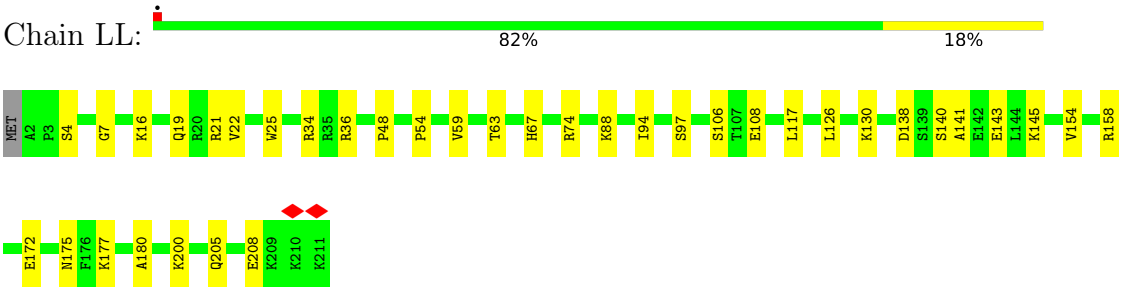

• Molecule 13: 60S ribosomal protein L11

Chain LJ:



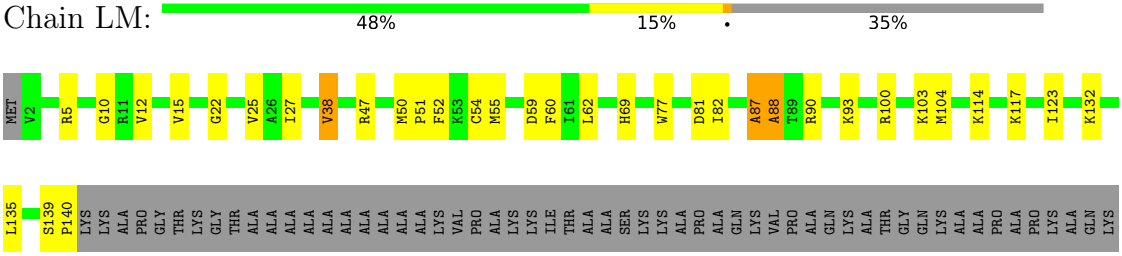

• Molecule 14: 60S ribosomal protein L13

Chain LL:



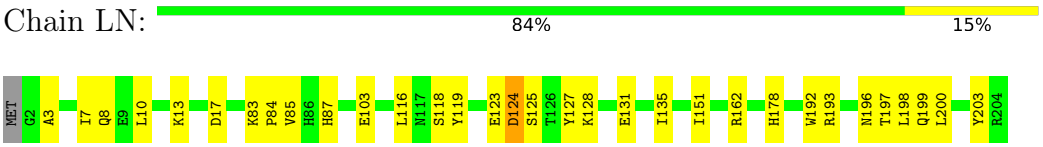

• Molecule 15: 60S ribosomal protein L14

Chain LM:



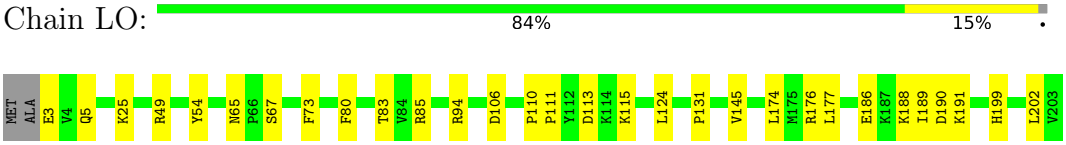
• Molecule 16: 60S ribosomal protein L15

Chain LN:



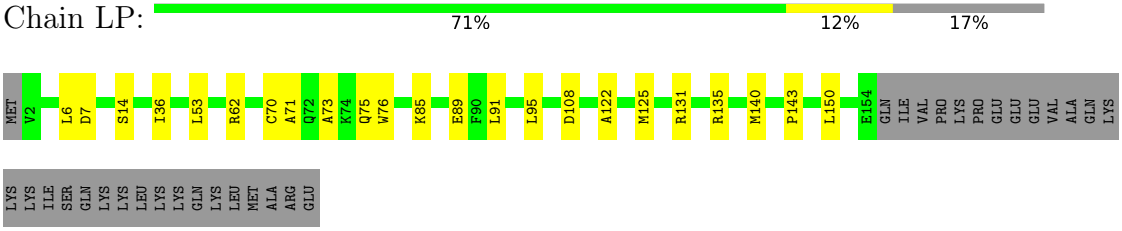

• Molecule 17: 60S ribosomal protein L13a

Chain LO:



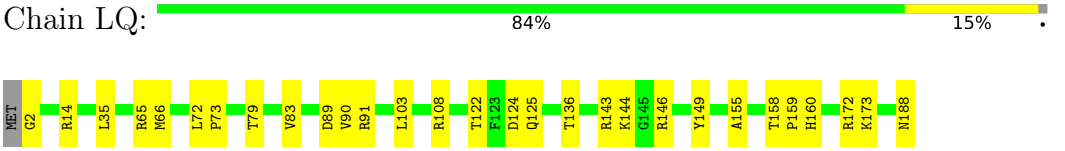

• Molecule 18: 60S ribosomal protein L17

Chain LP:



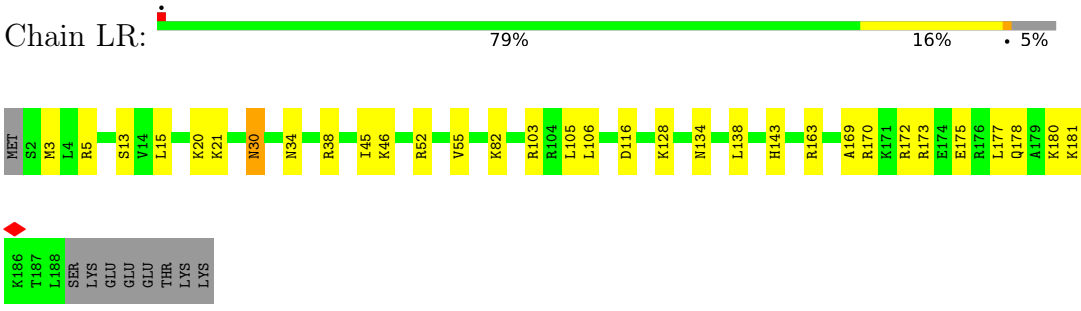

• Molecule 19: 60S ribosomal protein L18

Chain LQ:



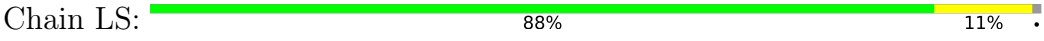

• Molecule 20: 60S ribosomal protein L19

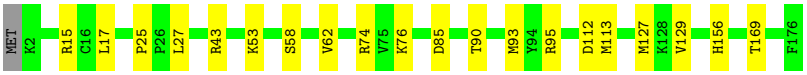
Chain LR:




• Molecule 21: 60S ribosomal protein L18a

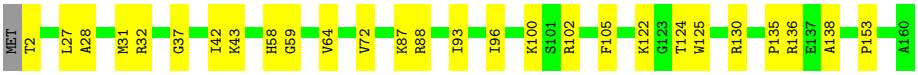
Chain LS:





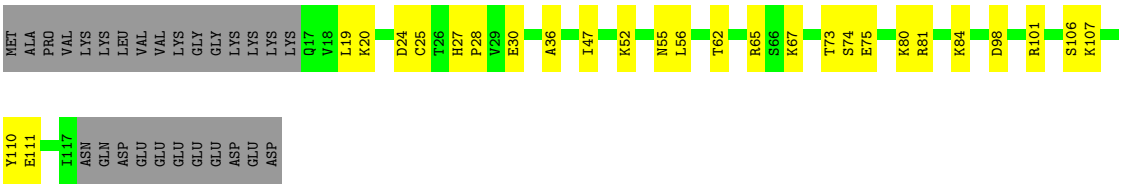

• Molecule 22: 60S ribosomal protein L21

Chain LT:



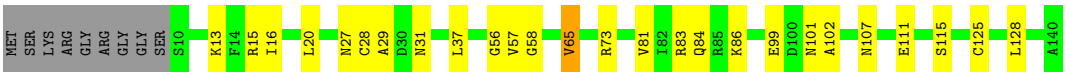

• Molecule 23: 60S ribosomal protein L22

Chain LU:



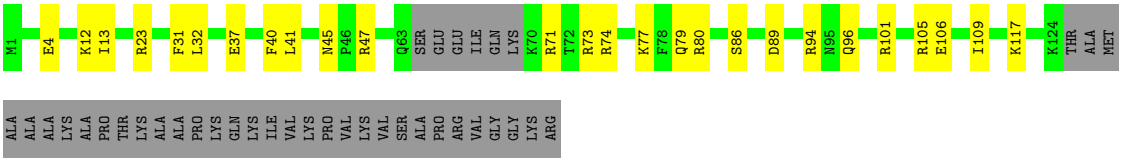

• Molecule 24: 60S ribosomal protein L23

Chain LV:



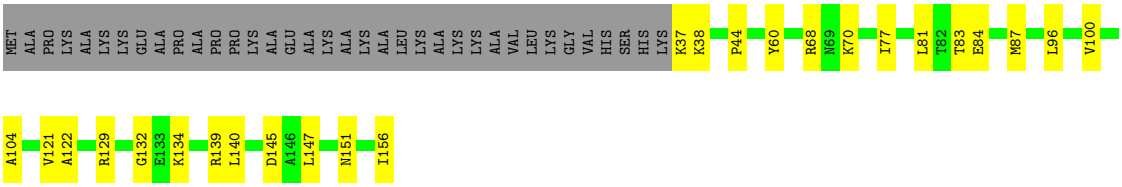

• Molecule 25: 60S ribosomal protein L24

Chain LW:




• Molecule 26: 60S ribosomal protein L23a

Chain LX:

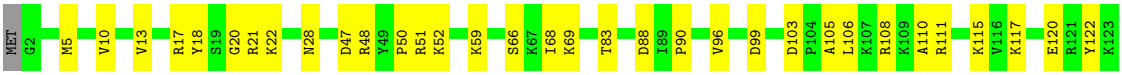



• Molecule 27: 60S ribosomal protein L26

Chain LY:

• Molecule 28: 60S ribosomal protein L27

Chain LZ:

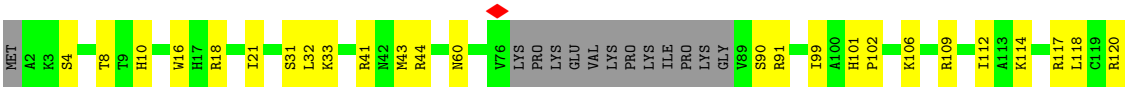


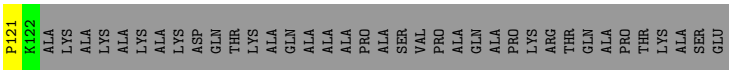
• Molecule 29: 60S ribosomal protein L27a

Chain La:

• Molecule 30: 60S ribosomal protein L29

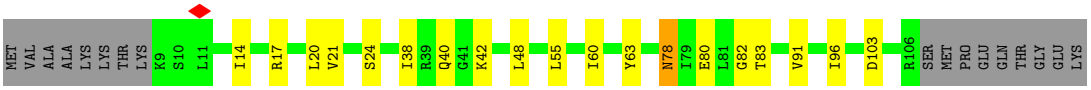
Chain Lb:





• Molecule 31: 60S ribosomal protein L30

Chain Lc:

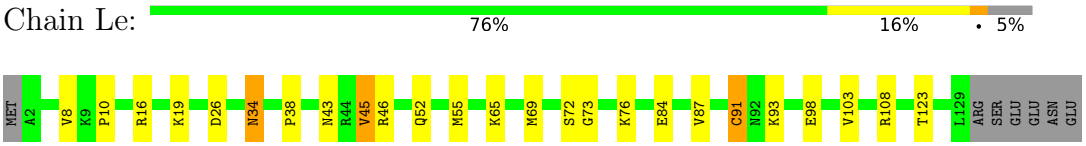


• Molecule 32: 60S ribosomal protein L31

Chain Ld:

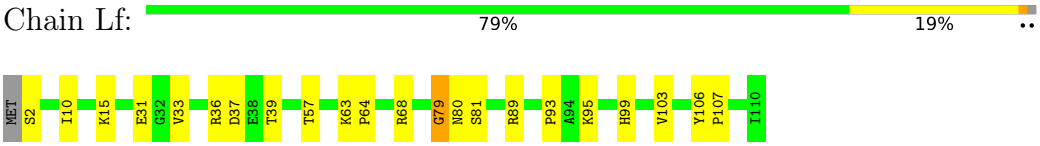
• Molecule 33: 60S ribosomal protein L32

Chain Le:



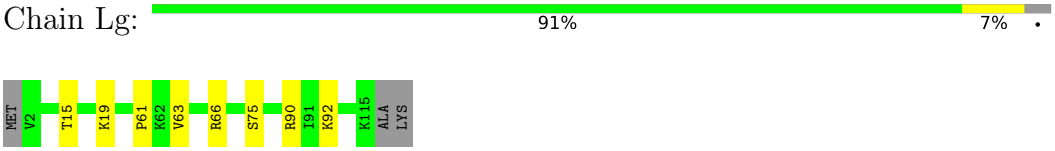

• Molecule 34: 60S ribosomal protein L35a

Chain Lf:



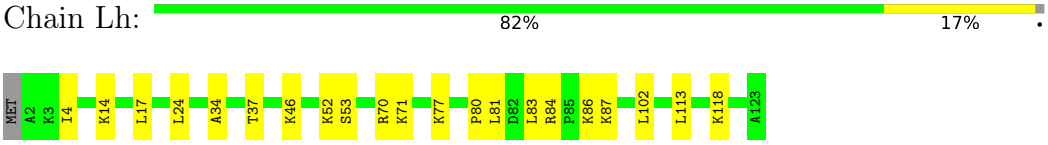

• Molecule 35: 60S ribosomal protein L34

Chain Lg:



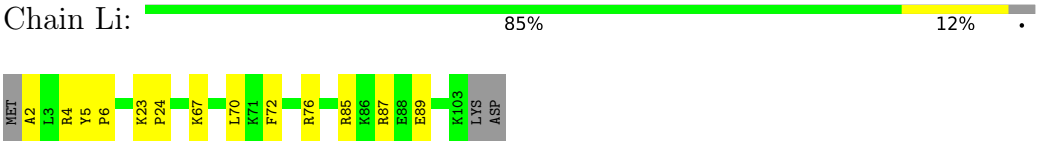

• Molecule 36: 60S ribosomal protein L35

Chain Lh:



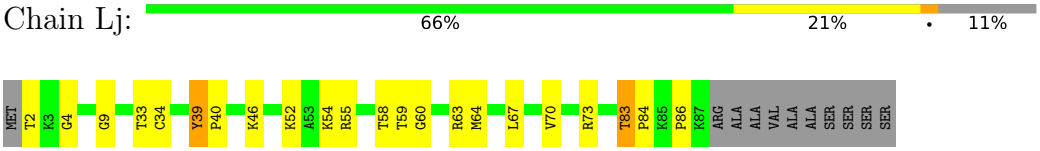

• Molecule 37: 60S ribosomal protein L36

Chain Li:



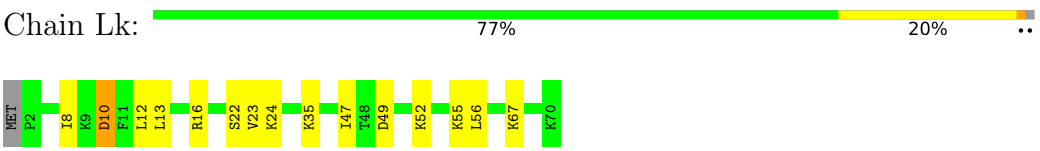

• Molecule 38: 60S ribosomal protein L37

Chain Lj:



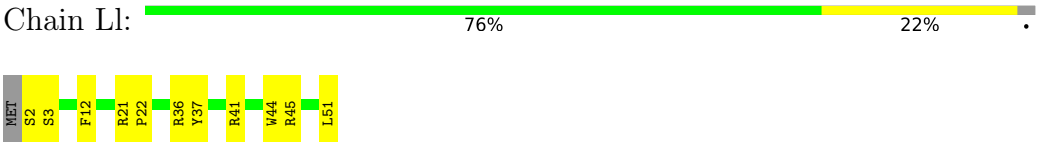

• Molecule 39: 60S ribosomal protein L38

Chain Lk:



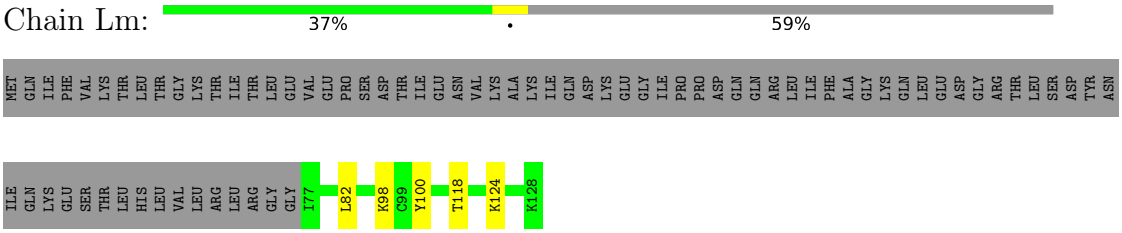

• Molecule 40: 60S ribosomal protein L39

Chain Ll:



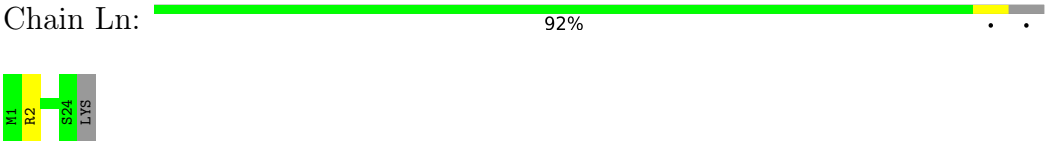

• Molecule 41: Ubiquitin-60S ribosomal protein L40

Chain Lm:



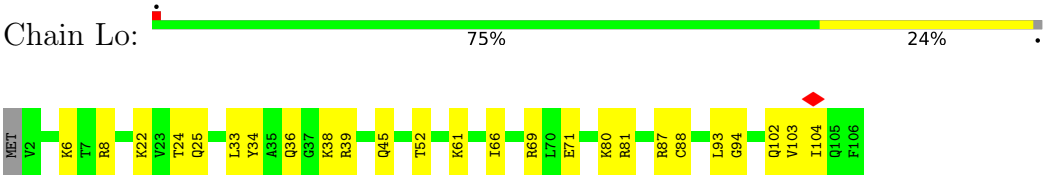

• Molecule 42: 60S ribosomal protein L41

Chain Ln:



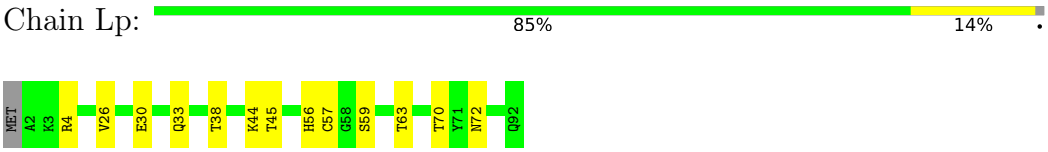

• Molecule 43: 60S ribosomal protein L36a

Chain Lo:



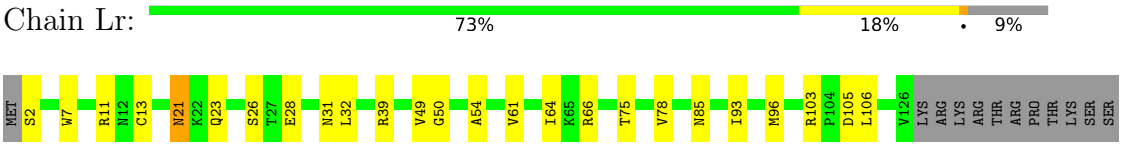

• Molecule 44: 60S ribosomal protein L37a

Chain Lp:



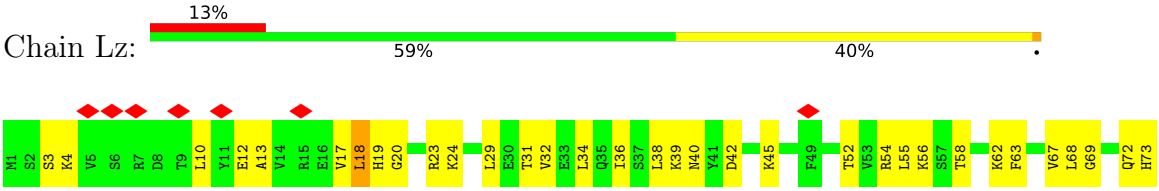

• Molecule 45: 60S ribosomal protein L28

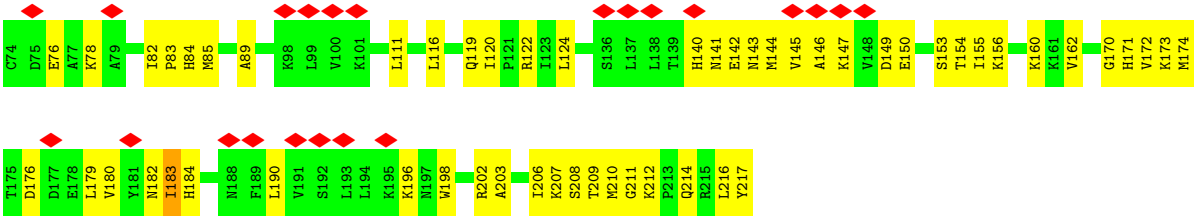
Chain Lr:




• Molecule 46: 60S ribosomal protein L10a

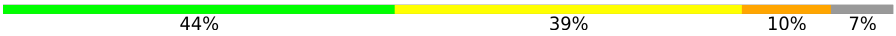
Chain Lz:

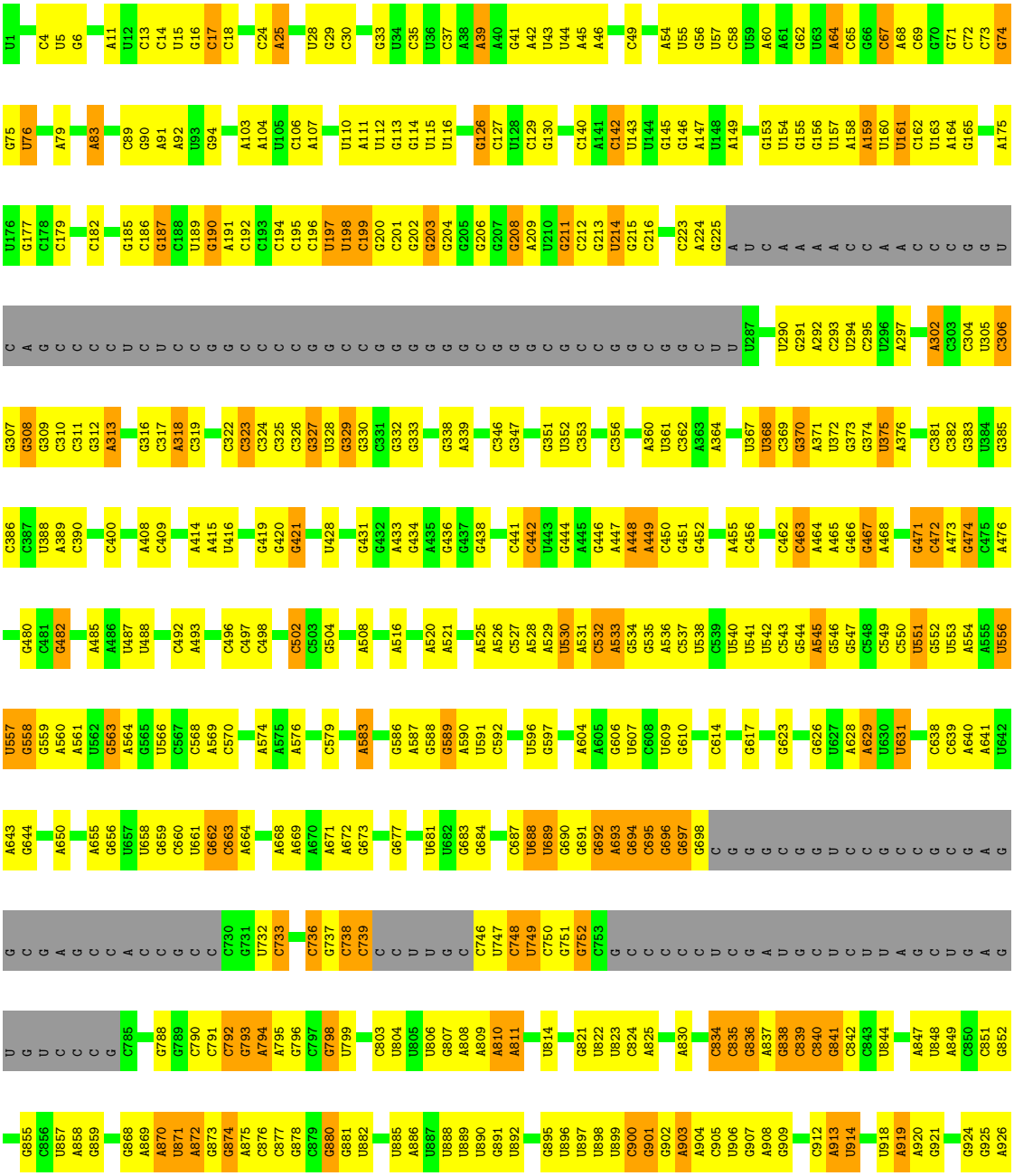





• Molecule 47: 18S rRNA

Chain S2:





U1 C4 U5 G6 A11 U12 C13 C14 U15 G16 C17 C18 C24 A25 U28 G29 C30 G33 U34 C35 U36 C37 A38 A39 A40 G41 A42 U43 U44 A45 A46 C49 A54 U55 G56 U57 C58 U59 A60 A61 G62 U63 A64 C65 G66 C67 A68 C69 G70 G71 C72 C73 G74
G75 U76 A79 A83 C89 G90 A91 A92 U93 G94 A103 A104 U105 C106 A107 U110 A111 U112 G113 G114 U115 U116 G126 C127 U128 C129 G130 C140 A141 C142 U143 U144 G145 G146 A147 U148 A149 G153 U154 G155 G156 U157 A158 A159 U160 U161 C162 U163 A164 G165 A175
U176 G177 C178 C179 C182 G185 C186 G187 C188 U189 G190 A191 C192 C193 C194 C195 C196 U197 U198 C199 G200 C201 G202 G203 G204 G205 G206 G207 G208 A209 U210 G211 C212 C213 U214 G215 C216 C223 A224 G225 A U C A A A C C C C C G U
C A G C C C C U C U C C G G C C C C G G C C C G G G G G G C G G G C G C C C G G G C G C U U U287 U290 G291 A292 C293 U294 C295 U296 A297 A302 C303 C304 U305 C306
G307 G308 G309 C310 C311 G312 A313 G316 C317 A318 C319 C322 G323 C324 C325 C326 G327 U328 G329 G330 C331 G332 G333 G338 A339 C346 G347 G351 U352 C353 C356 A360 U361 C362 A363 A364 U367 U368 C369 G370 A371 U372 G373 G374 U375 A376 C381 C382 G383 U384 G385
C386 C387 U388 A389 C390 C400 A408 C409 A414 A415 U416 G419 G420 G421 U428 G431 G432 A433 G434 A435 G436 G437 G438 C441 C442 U443 G444 A445 G446 A447 A448 A449 C450 G451 G452 A455 C456 C462 C463 A464 A465 G466 G467 A468 G471 C472 A473 G474 C475 A476
G480 C481 G482 A485 A486 U487 U488 C492 A493 C496 C497 C498 C502 C503 G504 A508 A516 A520 A521 A525 A526 C527 A528 A529 U530 A531 C532 A533 G534 G535 A536 C537 U538 C539 U540 U541 U542 C543 G544 A545 G546 G547 C548 C549 C550 U551 G552 U553 A554 A555 U556
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A643 G644 A650 A655 G656 U657 U658 G659 C660 U661 G662 C663 A664 A668 A669 A670 A671 A672 G673 G677 U681 U682 G683 G684 C687 U688 U689 G690 G691 G692 A693 G694 C695 G696 G697 G698 C G G G C G G U C C C G A G
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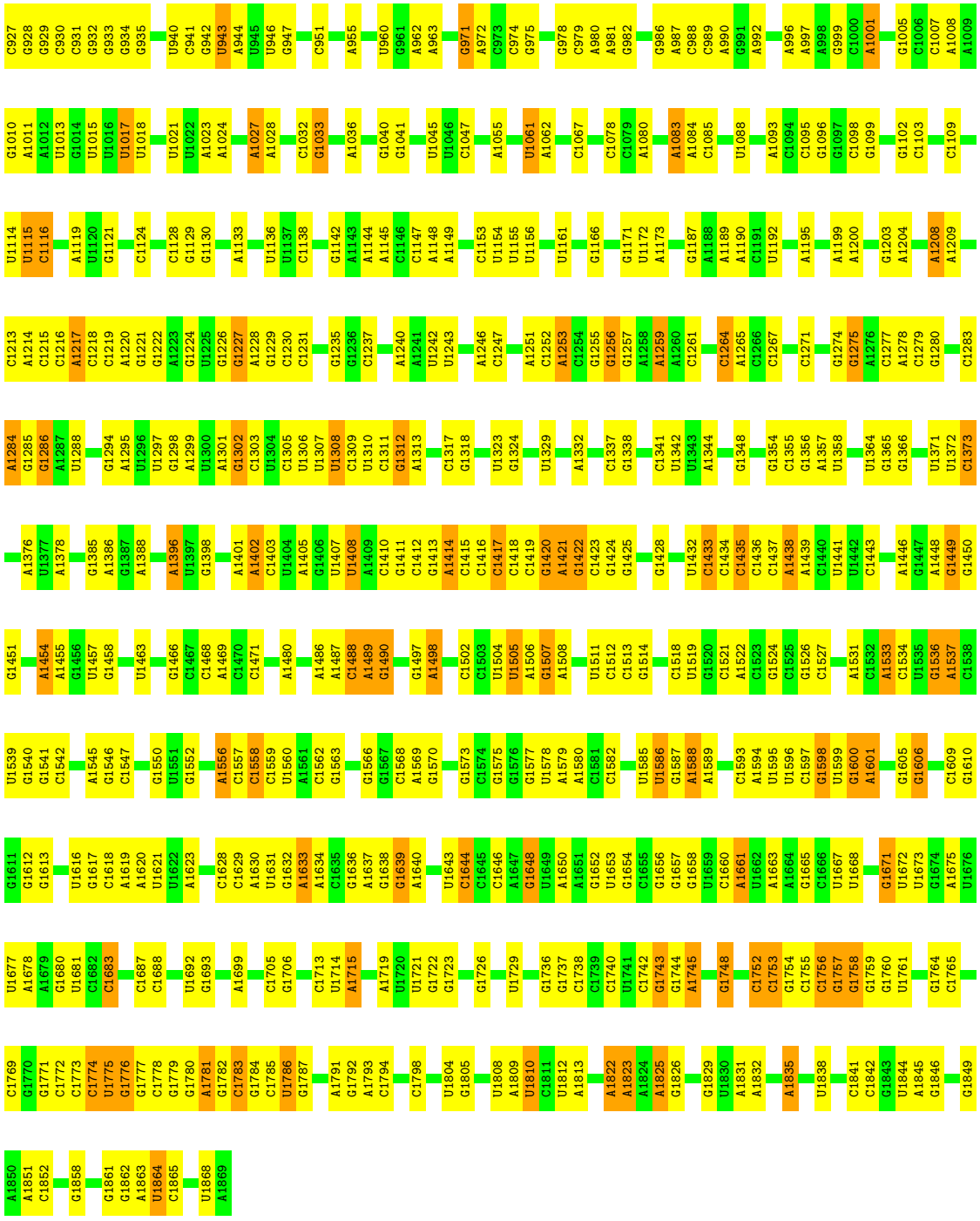
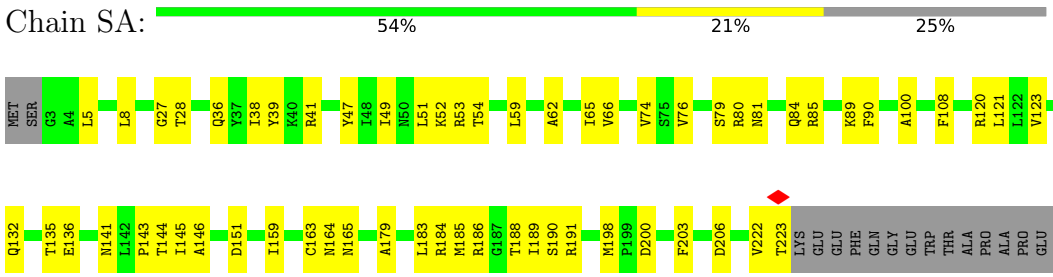
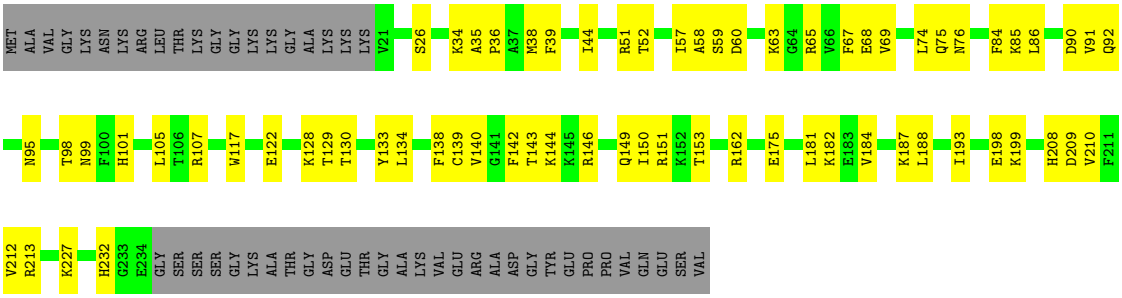


• Molecule 48: 40S ribosomal protein SA



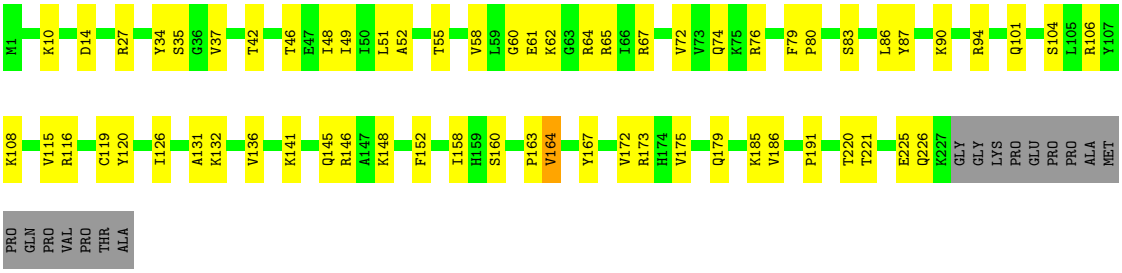
• Molecule 49: 40S ribosomal protein S3a

Chain SB:



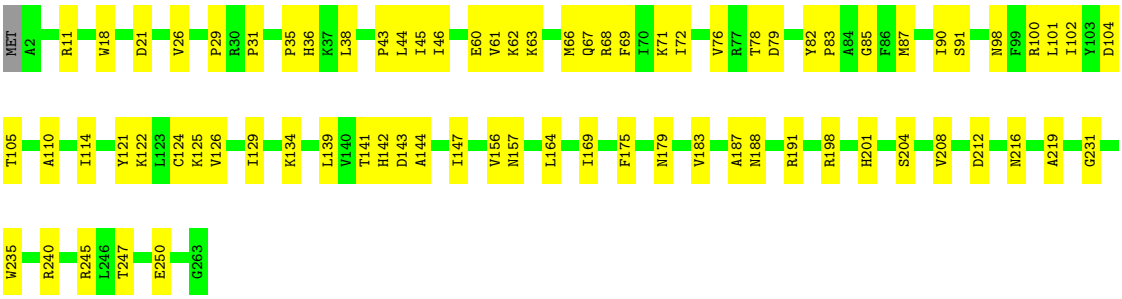
• Molecule 50: 40S ribosomal protein S3

Chain SD:



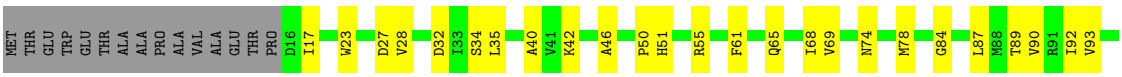
• Molecule 51: 40S ribosomal protein S4, X isoform

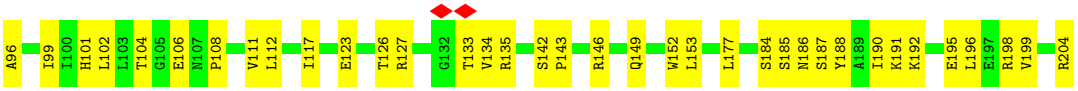
Chain SE:



• Molecule 52: 40S ribosomal protein S5

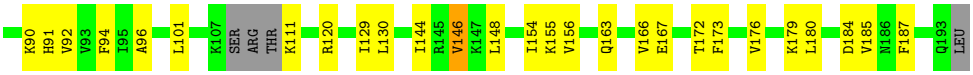
Chain SF:





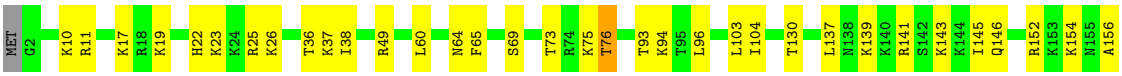

• Molecule 53: 40S ribosomal protein S7

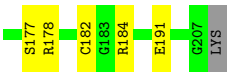
Chain SH:




• Molecule 54: 40S ribosomal protein S8

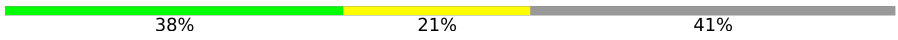
Chain SI:

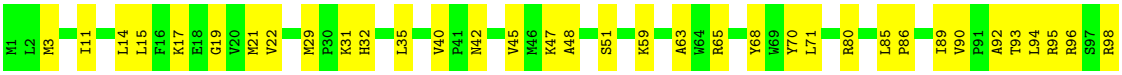


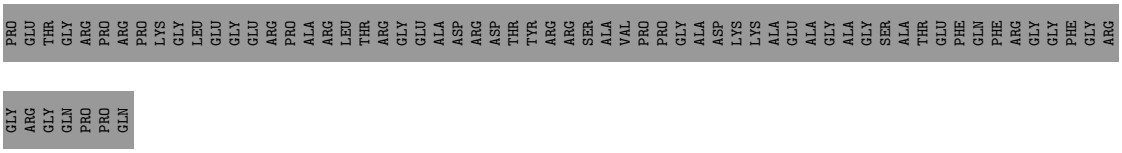




• Molecule 55: 40S ribosomal protein S10

Chain SK:

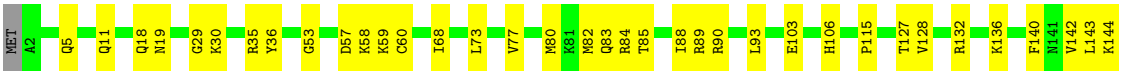


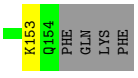




• Molecule 56: 40S ribosomal protein S11

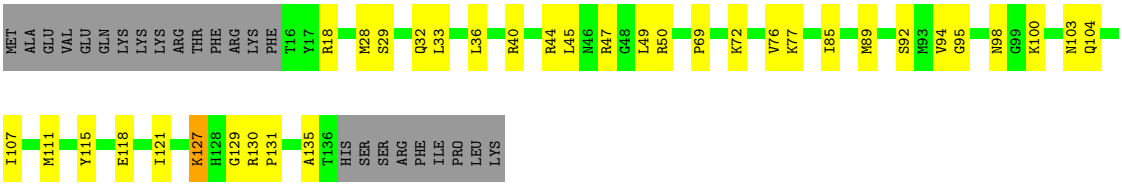
Chain SL:



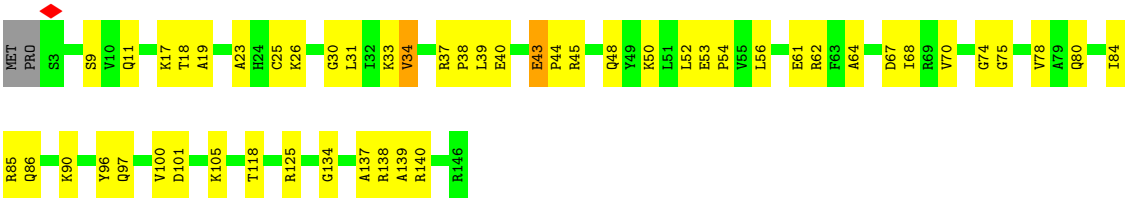

• Molecule 57: 40S ribosomal protein S15

Chain SP:



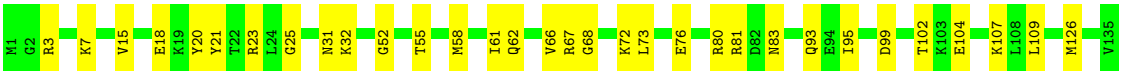
• Molecule 58: 40S ribosomal protein S16

Chain SQ:



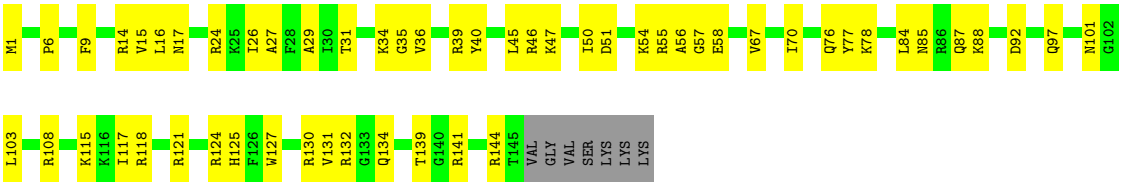
• Molecule 59: 40S ribosomal protein S17

Chain SR:



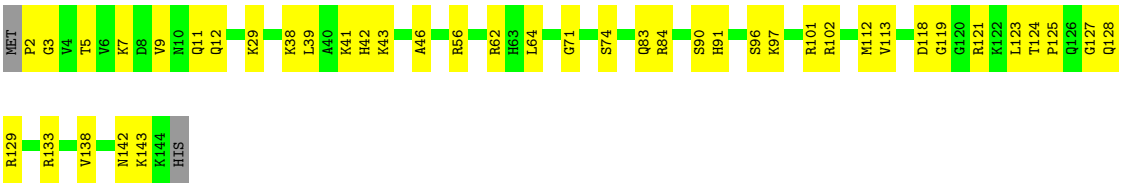
• Molecule 60: 40S ribosomal protein S18

Chain SS:



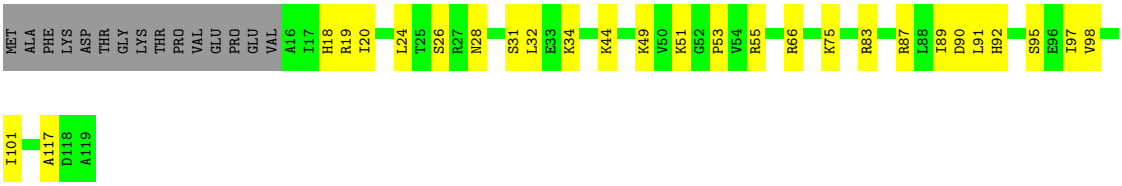
• Molecule 61: 40S ribosomal protein S19

Chain ST:



• Molecule 62: 40S ribosomal protein S20

Chain SU:




• Molecule 63: 40S ribosomal protein S21

Chain SV:

• Molecule 64: 40S ribosomal protein S23

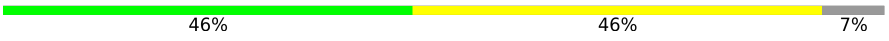
Chain SX:

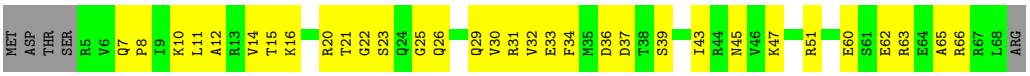
• Molecule 65: 40S ribosomal protein S26

Chain Sa:

• Molecule 66: 40S ribosomal protein S28

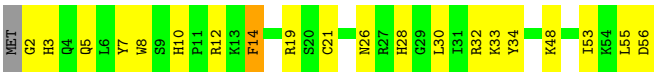
Chain Sc:



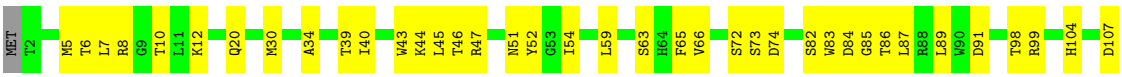

• Molecule 67: 40S ribosomal protein S29

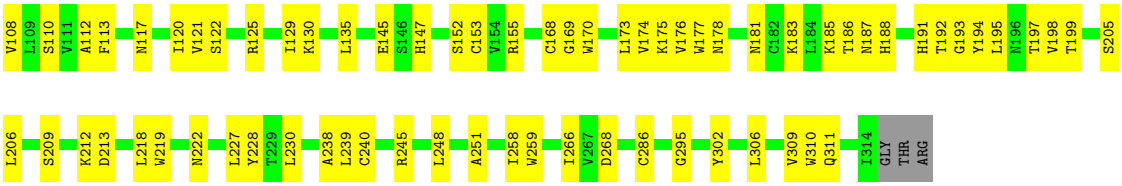
Chain Sd:




• Molecule 68: Receptor of activated protein C kinase 1

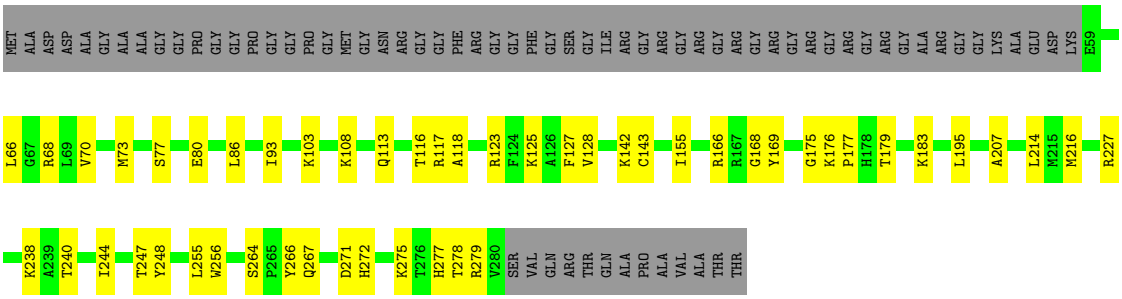
Chain Sg:





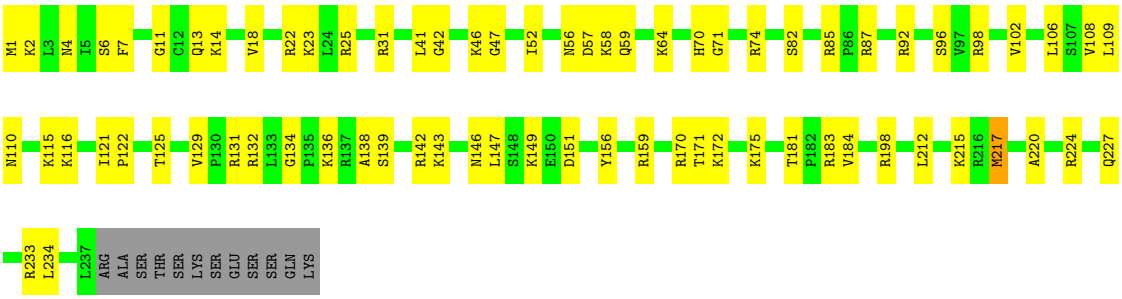
• Molecule 69: 40S ribosomal protein S2

Chain SC:



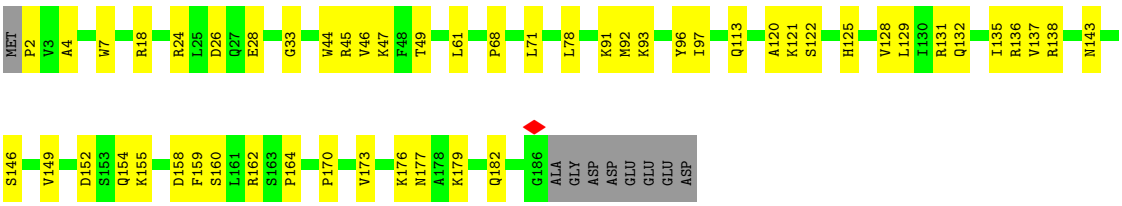
• Molecule 70: 40S ribosomal protein S6

Chain SG:



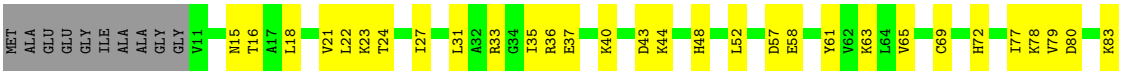
• Molecule 71: 40S ribosomal protein S9

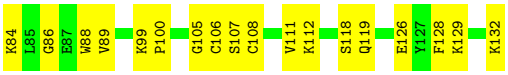
Chain SJ:



• Molecule 72: 40S ribosomal protein S12

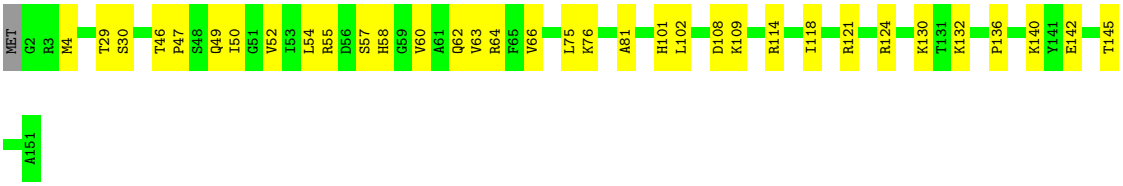
Chain SM:





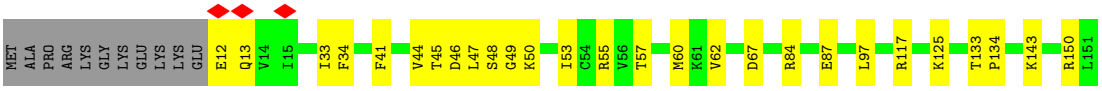

• Molecule 73: 40S ribosomal protein S13

Chain SN:



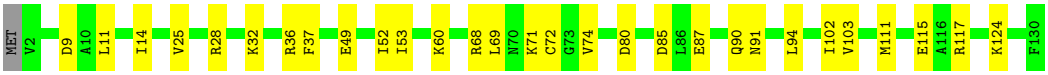

• Molecule 74: 40S ribosomal protein S14

Chain SO:




• Molecule 75: 40S ribosomal protein S15a

Chain SW:

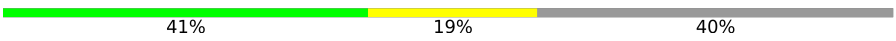


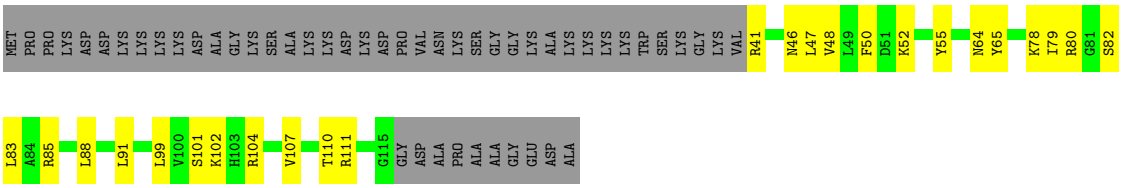

• Molecule 76: 40S ribosomal protein S24

Chain SY:

• Molecule 77: 40S ribosomal protein S25

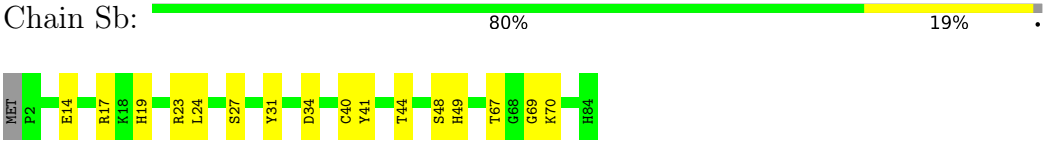
Chain SZ:



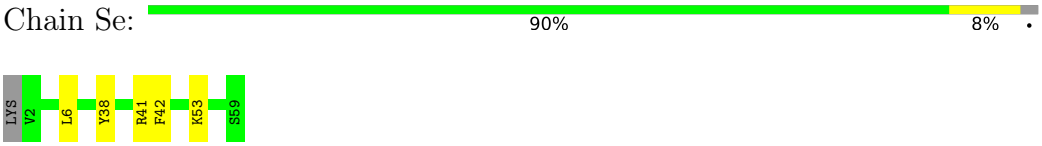

• Molecule 78: 40S ribosomal protein S27

Chain Sb:



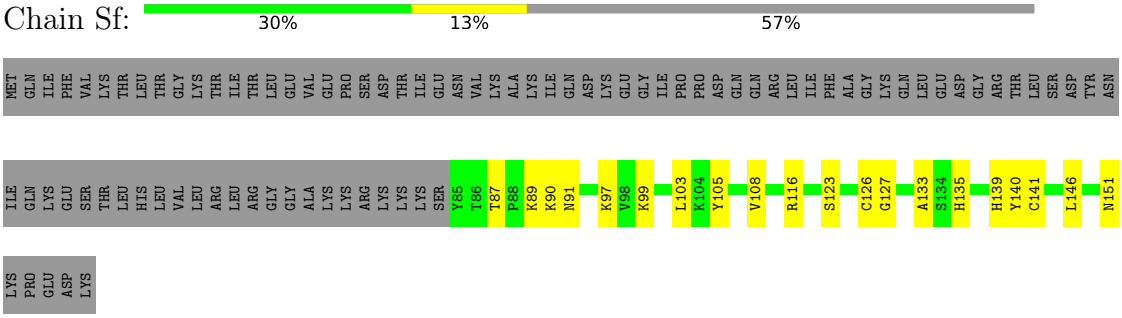

• Molecule 79: 40S ribosomal protein S30

Chain Se:



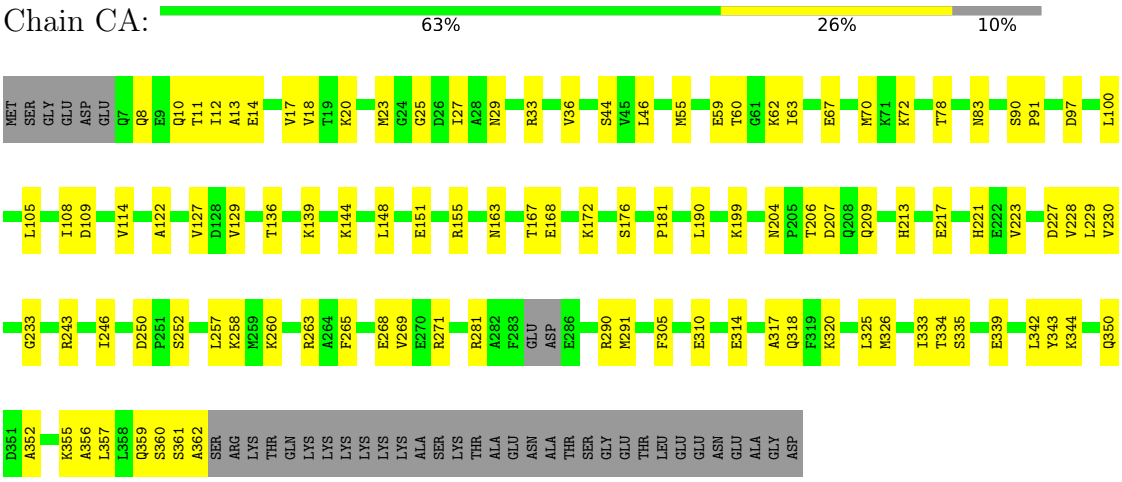

• Molecule 80: Ubiquitin-40S ribosomal protein S27a

Chain Sf:



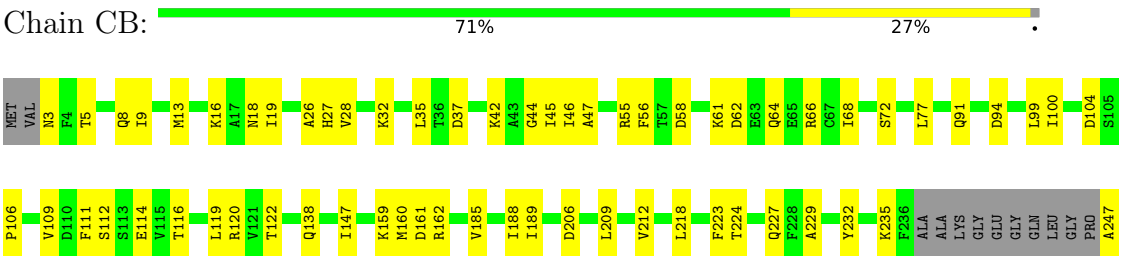

• Molecule 81: Proliferation-associated protein 2G4

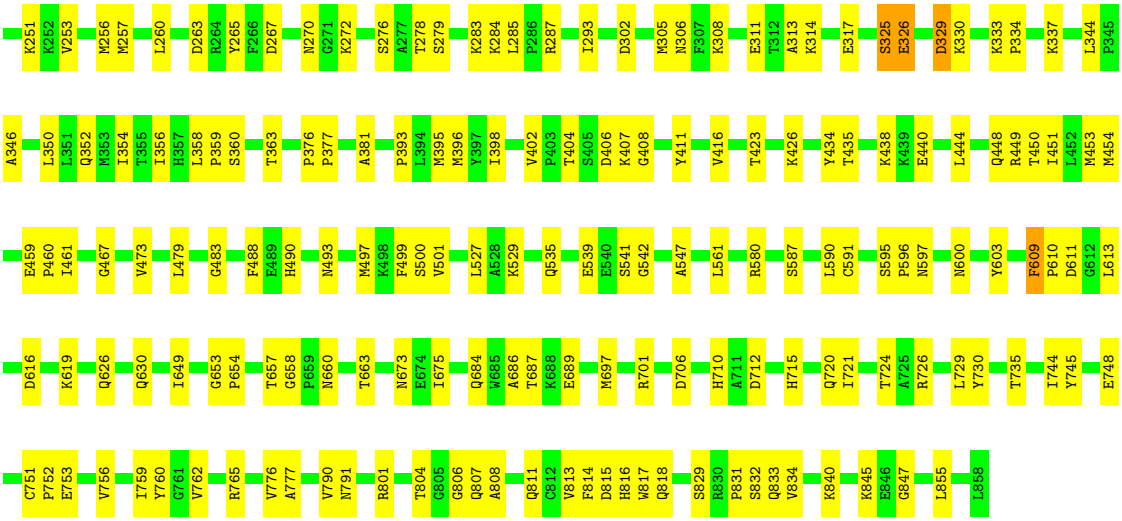
Chain CA:




• Molecule 82: Elongation factor 2

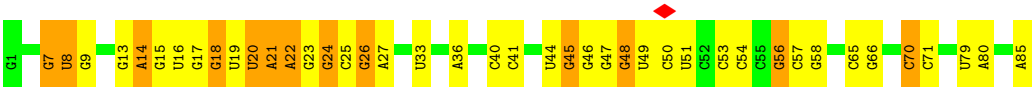
Chain CB:





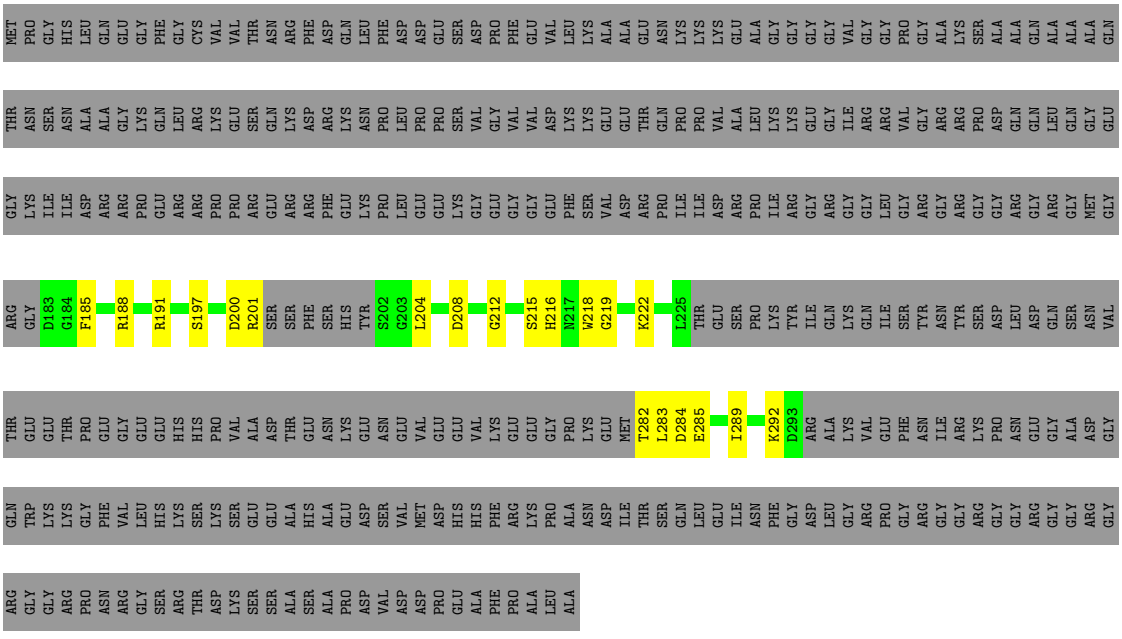

• Molecule 83: tRNA

Chain CC:




• Molecule 84: Plasminogen activator inhibitor 1 RNA-binding protein

Chain CD:



# 4 Experimental information (i)

| Property | Value | Source |
|---|---|---|
| EM reconstruction method | SINGLE PARTICLE | Depositor |
| Imposed symmetry | POINT, C1 | Depositor |
| Number of particles used | 72367 | Depositor |
| Resolution determination method | FSC 0.143 CUT-OFF | Depositor |
| CTF correction method | PHASE FLIPPING AND AMPLITUDE CORRECTION | Depositor |
| Microscope | FEI TITAN KRIOS | Depositor |
| Voltage (kV) | 300 | Depositor |
| Electron dose ($e^-/Å^2$) | 28 | Depositor |
| Minimum defocus (nm) | Not provided | |
| Maximum defocus (nm) | Not provided | |
| Magnification | Not provided | |
| Image detector | FEI FALCON III (4k x 4k) | Depositor |
| Maximum map value | 0.229 | Depositor |
| Minimum map value | -0.083 | Depositor |
| Average map value | 0.001 | Depositor |
| Map value standard deviation | 0.011 | Depositor |
| Recommended contour level | 0.005 | Depositor |
| Map size (Å) | 424.4, 424.4, 424.4 | wwPDB |
| Map dimensions | 400, 400, 400 | wwPDB |
| Map angles (°) | 90.0, 90.0, 90.0 | wwPDB |
| Pixel spacing (Å) | 1.061, 1.061, 1.061 | Depositor |

# 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: MG, ZN

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 | L5 | 0.53 | 0/89570 | 0.43 | 2/139647 (0.0%) |
| 2 | L7 | 0.51 | 0/2861 | 0.36 | 0/4459 |
| 3 | L8 | 0.53 | 0/3701 | 0.38 | 0/5766 |
| 4 | LA | 0.52 | 0/1936 | 0.69 | 2/2596 (0.1%) |
| 5 | LB | 0.47 | 0/3306 | 0.60 | 0/4424 |
| 6 | LC | 0.49 | 0/2981 | 0.60 | 2/4002 (0.0%) |
| 7 | LD | 0.38 | 0/2428 | 0.53 | 1/3252 (0.0%) |
| 8 | LE | 0.36 | 0/1942 | 0.58 | 0/2606 |
| 9 | LF | 0.51 | 0/1905 | 0.60 | 0/2539 |
| 10 | LG | 0.38 | 0/1960 | 0.57 | 0/2637 |
| 11 | LH | 0.44 | 0/1537 | 0.59 | 0/2066 |
| 12 | LI | 0.45 | 0/1673 | 0.59 | 0/2233 |
| 13 | LJ | 0.34 | 0/1433 | 0.63 | 0/1915 |
| 14 | LL | 0.41 | 0/1732 | 0.58 | 0/2315 |
| 15 | LM | 0.42 | 0/1161 | 0.60 | 2/1554 (0.1%) |
| 16 | LN | 0.53 | 0/1746 | 0.64 | 0/2338 |
| 17 | LO | 0.48 | 0/1682 | 0.52 | 0/2250 |
| 18 | LP | 0.48 | 0/1268 | 0.56 | 0/1701 |
| 19 | LQ | 0.49 | 0/1537 | 0.59 | 0/2052 |
| 20 | LR | 0.42 | 0/1582 | 0.56 | 0/2091 |
| 21 | LS | 0.49 | 0/1493 | 0.52 | 0/2003 |
| 22 | LT | 0.46 | 0/1326 | 0.64 | 0/1770 |
| 23 | LU | 0.35 | 0/839 | 0.65 | 0/1126 |
| 24 | LV | 0.49 | 0/993 | 0.61 | 0/1332 |
| 25 | LW | 0.37 | 0/979 | 0.53 | 0/1295 |
| 26 | LX | 0.43 | 0/1002 | 0.52 | 0/1345 |
| 27 | LY | 0.43 | 0/1132 | 0.54 | 0/1504 |
| 28 | LZ | 0.40 | 0/1130 | 0.56 | 0/1507 |
| 29 | La | 0.49 | 0/1191 | 0.56 | 0/1591 |
| 30 | Lb | 0.37 | 0/889 | 0.61 | 0/1175 |
| 31 | Lc | 0.41 | 0/774 | 0.54 | 0/1038 |
| 32 | Ld | 0.46 | 0/903 | 0.56 | 0/1216 |

| Mol | Chain | Bond lengths | | Bond angles | |
|---|---|---|---|---|---|
| | | RMSZ | #\|Z\| >5 | RMSZ | #\|Z\| >5 |
| 33 | Le | 0.51 | 0/1071 | 0.59 | 0/1429 |
| 34 | Lf | 0.51 | 0/895 | 0.61 | 0/1198 |
| 35 | Lg | 0.45 | 0/916 | 0.56 | 0/1220 |
| 36 | Lh | 0.38 | 0/1023 | 0.51 | 0/1351 |
| 37 | Li | 0.36 | 0/843 | 0.49 | 0/1115 |
| 38 | Lj | 0.53 | 0/720 | 0.66 | 0/952 |
| 39 | Lk | 0.35 | 0/575 | 0.53 | 0/761 |
| 40 | Ll | 0.49 | 0/454 | 0.59 | 0/599 |
| 41 | Lm | 0.45 | 0/435 | 0.53 | 0/575 |
| 42 | Ln | 0.39 | 0/231 | 0.55 | 0/294 |
| 43 | Lo | 0.45 | 0/876 | 0.52 | 0/1156 |
| 44 | Lp | 0.46 | 0/718 | 0.54 | 0/953 |
| 45 | Lr | 0.47 | 0/1017 | 0.55 | 0/1364 |
| 46 | Lz | 0.24 | 0/1769 | 0.63 | 0/2371 |
| 47 | S2 | 0.37 | 0/41244 | 0.40 | 2/64263 (0.0%) |
| 48 | SA | 0.34 | 0/1778 | 0.57 | 0/2416 |
| 49 | SB | 0.31 | 0/1765 | 0.58 | 0/2362 |
| 50 | SD | 0.31 | 0/1793 | 0.60 | 0/2414 |
| 51 | SE | 0.30 | 0/2118 | 0.55 | 0/2849 |
| 52 | SF | 0.24 | 0/1516 | 0.57 | 0/2037 |
| 53 | SH | 0.28 | 0/1519 | 0.62 | 0/2033 |
| 54 | SI | 0.30 | 0/1715 | 0.57 | 0/2287 |
| 55 | SK | 0.28 | 0/851 | 0.52 | 0/1147 |
| 56 | SL | 0.33 | 0/1268 | 0.49 | 0/1696 |
| 57 | SP | 0.30 | 0/1003 | 0.65 | 2/1342 (0.1%) |
| 58 | SQ | 0.27 | 0/1160 | 0.65 | 1/1553 (0.1%) |
| 59 | SR | 0.27 | 0/1105 | 0.59 | 0/1484 |
| 60 | SS | 0.25 | 0/1216 | 0.50 | 0/1628 |
| 61 | ST | 0.23 | 0/1131 | 0.52 | 0/1515 |
| 62 | SU | 0.26 | 0/831 | 0.56 | 0/1115 |
| 63 | SV | 0.34 | 0/643 | 0.60 | 0/860 |
| 64 | SX | 0.42 | 0/1116 | 0.62 | 2/1490 (0.1%) |
| 65 | Sa | 0.36 | 0/836 | 0.61 | 0/1121 |
| 66 | Sc | 0.26 | 0/508 | 0.68 | 0/680 |
| 67 | Sd | 0.34 | 0/470 | 0.58 | 0/623 |
| 68 | Sg | 0.25 | 0/2493 | 0.57 | 0/3394 |
| 69 | SC | 0.38 | 0/1762 | 0.65 | 0/2381 |
| 70 | SG | 0.24 | 0/1946 | 0.54 | 0/2590 |
| 71 | SJ | 0.34 | 0/1550 | 0.61 | 0/2069 |
| 72 | SM | 0.22 | 0/950 | 0.66 | 0/1275 |
| 73 | SN | 0.32 | 0/1232 | 0.50 | 0/1656 |
| 74 | SO | 0.30 | 0/1062 | 0.62 | 0/1425 |
| 75 | SW | 0.36 | 0/1051 | 0.50 | 0/1406 |

| Mol | Chain | Bond lengths | | Bond angles | |
|---|---|---|---|---|---|
| | | RMSZ | #\|Z\| >5 | RMSZ | #\|Z\| >5 |
| 76 | SY | 0.27 | 0/1083 | 0.56 | 0/1438 |
| 77 | SZ | 0.23 | 0/604 | 0.63 | 0/810 |
| 78 | Sb | 0.29 | 0/665 | 0.57 | 0/891 |
| 79 | Se | 0.28 | 0/465 | 0.56 | 0/612 |
| 80 | Sf | 0.21 | 0/560 | 0.63 | 0/745 |
| 81 | CA | 0.24 | 0/2810 | 0.63 | 0/3780 |
| 82 | CB | 0.31 | 0/6734 | 0.60 | 0/9094 |
| 83 | CC | 0.26 | 0/2025 | 0.41 | 0/3155 |
| 84 | CD | 0.28 | 0/447 | 0.52 | 0/592 |
| All | All | 0.44 | 0/245160 | 0.49 | 16/358911 (0.0%) |

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

| Mol | Chain | #Chirality outliers | #Planarity outliers |
|---|---|---|---|
| 1 | L5 | 0 | 1 |
| 4 | LA | 0 | 3 |
| 5 | LB | 0 | 2 |
| 11 | LH | 0 | 2 |
| 12 | LI | 0 | 1 |
| 13 | LJ | 0 | 1 |
| 14 | LL | 0 | 1 |
| 15 | LM | 0 | 2 |
| 17 | LO | 0 | 1 |
| 18 | LP | 0 | 1 |
| 22 | LT | 0 | 1 |
| 28 | LZ | 0 | 1 |
| 33 | Le | 0 | 1 |
| 34 | Lf | 0 | 3 |
| 36 | Lh | 0 | 1 |
| 38 | Lj | 0 | 1 |
| 46 | Lz | 0 | 1 |
| 50 | SD | 0 | 1 |
| 52 | SF | 0 | 2 |
| 53 | SH | 0 | 1 |
| 57 | SP | 0 | 1 |
| 58 | SQ | 0 | 2 |
| 61 | ST | 0 | 1 |
| 63 | SV | 0 | 1 |
| 64 | SX | 0 | 3 |

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| Mol | Chain | #Chirality outliers | #Planarity outliers |
|---|---|---|---|
| 70 | SG | 0 | 1 |
| 77 | SZ | 0 | 1 |
| 82 | CB | 0 | 2 |
| All | All | 0 | 40 |

There are no bond length outliers.

All (16) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 6 | LC | 2 | ALA | CA-C-N | 6.42 | 133.26 | 121.70 |
| 6 | LC | 2 | ALA | C-N-CA | 6.42 | 133.26 | 121.70 |
| 15 | LM | 87 | ALA | CA-C-N | 6.04 | 133.07 | 121.54 |
| 15 | LM | 87 | ALA | C-N-CA | 6.04 | 133.07 | 121.54 |
| 58 | SQ | 18 | THR | N-CA-C | -5.86 | 107.37 | 114.75 |
| 57 | SP | 127 | LYS | CA-C-N | 5.58 | 132.19 | 121.54 |
| 57 | SP | 127 | LYS | C-N-CA | 5.58 | 132.19 | 121.54 |
| 47 | S2 | 1417 | C | N3-C4-N4 | -5.47 | 101.59 | 118.00 |
| 7 | LD | 43 | LYS | N-CA-C | -5.22 | 106.23 | 113.18 |
| 1 | L5 | 1082 | C | O4'-C1'-N1 | 5.14 | 115.90 | 108.20 |
| 64 | SX | 38 | ALA | CA-C-N | -5.11 | 106.45 | 120.97 |
| 64 | SX | 38 | ALA | C-N-CA | -5.11 | 106.45 | 120.97 |
| 1 | L5 | 1082 | C | P-O3'-C3' | 5.11 | 127.86 | 120.20 |
| 4 | LA | 149 | LYS | CA-C-N | 5.11 | 135.75 | 120.69 |
| 4 | LA | 149 | LYS | C-N-CA | 5.11 | 135.75 | 120.69 |
| 47 | S2 | 688 | U | P-O3'-C3' | 5.03 | 127.75 | 120.20 |

There are no chirality outliers.

All (40) planarity outliers are listed below:

| Mol | Chain | Res | Type | Group |
|---|---|---|---|---|
| 82 | CB | 609 | PHE | Peptide |
| 82 | CB | 807 | GLN | Peptide |
| 1 | L5 | 3948 | C | Sidechain |
| 4 | LA | 110 | GLY | Peptide |
| 4 | LA | 13 | GLY | Peptide |
| 4 | LA | 54 | ARG | Peptide |
| 5 | LB | 17 | LEU | Peptide |
| 5 | LB | 258 | HIS | Peptide |
| 11 | LH | 106 | GLN | Peptide |
| 11 | LH | 173 | ARG | Peptide |
| 12 | LI | 14 | ASN | Peptide |

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| Mol | Chain | Res | Type | Group |
|---|---|---|---|---|
| 13 | LJ | 94 | LEU | Peptide |
| 14 | LL | 154 | VAL | Peptide |
| 15 | LM | 87 | ALA | Peptide |
| 15 | LM | 88 | ALA | Peptide |
| 17 | LO | 110 | PRO | Peptide |
| 18 | LP | 131 | ARG | Peptide |
| 22 | LT | 136 | ARG | Peptide |
| 28 | LZ | 124 | THR | Peptide |
| 33 | Le | 91 | CYS | Peptide |
| 34 | Lf | 103 | VAL | Peptide |
| 34 | Lf | 106 | TYR | Peptide |
| 34 | Lf | 79 | GLY | Peptide |
| 36 | Lh | 86 | LYS | Peptide |
| 38 | Lj | 39 | TYR | Peptide |
| 46 | Lz | 183 | ILE | Peptide |
| 50 | SD | 164 | VAL | Peptide |
| 52 | SF | 126 | THR | Peptide |
| 52 | SF | 78 | MET | Peptide |
| 70 | SG | 138 | ALA | Peptide |
| 53 | SH | 15 | LYS | Peptide |
| 57 | SP | 127 | LYS | Peptide |
| 58 | SQ | 17 | LYS | Peptide |
| 58 | SQ | 43 | GLU | Peptide |
| 61 | ST | 46 | ALA | Peptide |
| 63 | SV | 78 | ILE | Peptide |
| 64 | SX | 125 | VAL | Peptide |
| 64 | SX | 126 | ALA | Peptide |
| 64 | SX | 86 | PRO | Peptide |
| 77 | SZ | 46 | 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 | L5 | 80116 | 0 | 40364 | 992 | 0 |
| 2 | L7 | 2561 | 0 | 1295 | 23 | 0 |
| 3 | L8 | 3314 | 0 | 1683 | 33 | 0 |
| 4 | LA | 1898 | 0 | 1993 | 22 | 0 |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|---|---|---|---|---|---|---|
| 5 | LB | 3238 | 0 | 3376 | 55 | 0 |
| 6 | LC | 2927 | 0 | 3104 | 37 | 0 |
| 7 | LD | 2382 | 0 | 2410 | 36 | 0 |
| 8 | LE | 1904 | 0 | 2055 | 45 | 0 |
| 9 | LF | 1870 | 0 | 1996 | 29 | 0 |
| 10 | LG | 1927 | 0 | 2074 | 25 | 0 |
| 11 | LH | 1518 | 0 | 1601 | 29 | 0 |
| 12 | LI | 1634 | 0 | 1670 | 36 | 0 |
| 13 | LJ | 1410 | 0 | 1441 | 29 | 0 |
| 14 | LL | 1701 | 0 | 1818 | 29 | 0 |
| 15 | LM | 1138 | 0 | 1204 | 20 | 0 |
| 16 | LN | 1701 | 0 | 1749 | 23 | 0 |
| 17 | LO | 1650 | 0 | 1794 | 26 | 0 |
| 18 | LP | 1242 | 0 | 1269 | 16 | 0 |
| 19 | LQ | 1513 | 0 | 1628 | 22 | 0 |
| 20 | LR | 1566 | 0 | 1729 | 28 | 0 |
| 21 | LS | 1453 | 0 | 1490 | 16 | 0 |
| 22 | LT | 1298 | 0 | 1366 | 21 | 0 |
| 23 | LU | 825 | 0 | 850 | 18 | 0 |
| 24 | LV | 979 | 0 | 1039 | 17 | 0 |
| 25 | LW | 965 | 0 | 1029 | 22 | 0 |
| 26 | LX | 985 | 0 | 1066 | 18 | 0 |
| 27 | LY | 1115 | 0 | 1205 | 23 | 0 |
| 28 | LZ | 1107 | 0 | 1182 | 22 | 0 |
| 29 | La | 1162 | 0 | 1213 | 23 | 0 |
| 30 | Lb | 876 | 0 | 948 | 19 | 0 |
| 31 | Lc | 764 | 0 | 804 | 12 | 0 |
| 32 | Ld | 888 | 0 | 930 | 16 | 0 |
| 33 | Le | 1053 | 0 | 1147 | 17 | 0 |
| 34 | Lf | 876 | 0 | 912 | 11 | 0 |
| 35 | Lg | 906 | 0 | 999 | 7 | 0 |
| 36 | Lh | 1015 | 0 | 1148 | 15 | 0 |
| 37 | Li | 832 | 0 | 917 | 9 | 0 |
| 38 | Lj | 705 | 0 | 737 | 17 | 0 |
| 39 | Lk | 569 | 0 | 637 | 13 | 0 |
| 40 | Ll | 444 | 0 | 483 | 8 | 0 |
| 41 | Lm | 429 | 0 | 465 | 4 | 0 |
| 42 | Ln | 230 | 0 | 276 | 1 | 0 |
| 43 | Lo | 862 | 0 | 930 | 20 | 0 |
| 44 | Lp | 708 | 0 | 756 | 10 | 0 |
| 45 | Lr | 1002 | 0 | 1068 | 17 | 0 |
| 46 | Lz | 1741 | 0 | 1854 | 68 | 0 |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|---|---|---|---|---|---|---|
| 47 | S2 | 36898 | 0 | 18601 | 626 | 0 |
| 48 | SA | 1741 | 0 | 1746 | 43 | 0 |
| 49 | SB | 1738 | 0 | 1809 | 51 | 0 |
| 50 | SD | 1765 | 0 | 1865 | 45 | 0 |
| 51 | SE | 2076 | 0 | 2177 | 53 | 0 |
| 52 | SF | 1495 | 0 | 1549 | 41 | 0 |
| 53 | SH | 1497 | 0 | 1590 | 47 | 0 |
| 54 | SI | 1686 | 0 | 1772 | 29 | 0 |
| 55 | SK | 827 | 0 | 854 | 25 | 0 |
| 56 | SL | 1247 | 0 | 1323 | 25 | 0 |
| 57 | SP | 985 | 0 | 1031 | 26 | 0 |
| 58 | SQ | 1142 | 0 | 1213 | 33 | 0 |
| 59 | SR | 1090 | 0 | 1149 | 22 | 0 |
| 60 | SS | 1198 | 0 | 1261 | 40 | 0 |
| 61 | ST | 1112 | 0 | 1146 | 33 | 0 |
| 62 | SU | 821 | 0 | 883 | 18 | 0 |
| 63 | SV | 636 | 0 | 637 | 12 | 0 |
| 64 | SX | 1098 | 0 | 1167 | 18 | 0 |
| 65 | Sa | 821 | 0 | 870 | 20 | 0 |
| 66 | Sc | 506 | 0 | 536 | 28 | 0 |
| 67 | Sd | 459 | 0 | 452 | 18 | 0 |
| 68 | Sg | 2436 | 0 | 2393 | 82 | 0 |
| 69 | SC | 1725 | 0 | 1813 | 34 | 0 |
| 70 | SG | 1923 | 0 | 2089 | 54 | 0 |
| 71 | SJ | 1525 | 0 | 1640 | 35 | 0 |
| 72 | SM | 940 | 0 | 965 | 35 | 0 |
| 73 | SN | 1208 | 0 | 1294 | 26 | 0 |
| 74 | SO | 1049 | 0 | 1073 | 21 | 0 |
| 75 | SW | 1034 | 0 | 1080 | 24 | 0 |
| 76 | SY | 1065 | 0 | 1142 | 25 | 0 |
| 77 | SZ | 598 | 0 | 656 | 22 | 0 |
| 78 | Sb | 651 | 0 | 672 | 12 | 0 |
| 79 | Se | 459 | 0 | 503 | 5 | 0 |
| 80 | Sf | 548 | 0 | 555 | 15 | 0 |
| 81 | CA | 2764 | 0 | 2779 | 65 | 0 |
| 82 | CB | 6605 | 0 | 6681 | 154 | 0 |
| 83 | CC | 1813 | 0 | 917 | 33 | 0 |
| 84 | CD | 440 | 0 | 402 | 18 | 0 |
| 85 | CC | 1 | 0 | 0 | 0 | 0 |
| 85 | L5 | 211 | 0 | 0 | 0 | 0 |
| 85 | L7 | 3 | 0 | 0 | 0 | 0 |
| 85 | L8 | 5 | 0 | 0 | 0 | 0 |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|---|---|---|---|---|---|---|
| 85 | LA | 1 | 0 | 0 | 0 | 0 |
| 85 | LI | 1 | 0 | 0 | 0 | 0 |
| 85 | LP | 1 | 0 | 0 | 0 | 0 |
| 85 | LT | 1 | 0 | 0 | 0 | 0 |
| 85 | LV | 1 | 0 | 0 | 0 | 0 |
| 85 | Le | 1 | 0 | 0 | 0 | 0 |
| 85 | Lg | 1 | 0 | 0 | 0 | 0 |
| 85 | S2 | 29 | 0 | 0 | 0 | 0 |
| 86 | Lg | 1 | 0 | 0 | 0 | 0 |
| 86 | Lj | 1 | 0 | 0 | 0 | 0 |
| 86 | Lm | 1 | 0 | 0 | 0 | 0 |
| 86 | Lo | 1 | 0 | 0 | 0 | 0 |
| 86 | Lp | 1 | 0 | 0 | 0 | 0 |
| 86 | SM | 1 | 0 | 0 | 0 | 0 |
| 86 | Sa | 1 | 0 | 0 | 0 | 0 |
| 86 | Sd | 1 | 0 | 0 | 0 | 0 |
| All | All | 228884 | 0 | 171989 | 3402 | 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 9.

All (3402) 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) |
|---|---|---|---|
| 47:S2:834:C:N4 | 47:S2:839:C:H42 | 1.06 | 1.47 |
| 47:S2:834:C:H42 | 47:S2:839:C:N4 | 1.22 | 1.35 |
| 1:L5:1762:C:N4 | 1:L5:1770:A:C2 | 1.96 | 1.34 |
| 1:L5:1443:A:C2 | 1:L5:2103:G:N1 | 2.03 | 1.26 |
| 1:L5:1762:C:N3 | 1:L5:1770:A:N1 | 1.84 | 1.24 |
| 1:L5:1443:A:N6 | 1:L5:2104:G:H21 | 1.38 | 1.18 |
| 1:L5:1443:A:H61 | 1:L5:2104:G:N2 | 1.41 | 1.14 |
| 47:S2:24:C:H42 | 47:S2:650:A:N6 | 1.47 | 1.13 |
| 47:S2:24:C:N4 | 47:S2:650:A:H61 | 1.47 | 1.13 |
| 1:L5:1762:C:N4 | 1:L5:1770:A:H2 | 1.35 | 1.12 |
| 1:L5:471:A:N6 | 1:L5:684:G:C2 | 2.18 | 1.11 |
| 1:L5:1176:C:H42 | 1:L5:1184:A:N6 | 1.48 | 1.10 |
| 1:L5:1176:C:N4 | 1:L5:1184:A:H61 | 1.47 | 1.09 |
| 47:S2:1455:A:H61 | 47:S2:1471:C:N4 | 1.50 | 1.08 |
| 47:S2:834:C:N3 | 47:S2:839:C:N3 | 2.02 | 1.05 |
| 1:L5:493:G:N1 | 1:L5:660:A:C2 | 2.25 | 1.05 |
| 25:LW:4:GLU:O | 25:LW:12:LYS:HA | 1.56 | 1.05 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:L5:3951:G:C2 | 1:L5:4062:A:N6 | 2.25 | 1.04 |
| 47:S2:694:G:O6 | 47:S2:737:G:C2 | 2.08 | 1.04 |
| 47:S2:140:C:H42 | 47:S2:313:A:N6 | 1.56 | 1.03 |
| 47:S2:1455:A:N6 | 47:S2:1471:C:H42 | 1.55 | 1.03 |
| 47:S2:140:C:N4 | 47:S2:313:A:H61 | 1.56 | 1.02 |
| 1:L5:1445:U:C2 | 1:L5:2102:G:O6 | 2.13 | 1.02 |
| 65:Sa:88:SER:O | 65:Sa:92:ARG:HB2 | 1.59 | 1.02 |
| 13:LJ:21:CYS:HB2 | 13:LJ:131:TYR:O | 1.60 | 1.01 |
| 47:S2:1656:G:H1 | 47:S2:1668:U:H3 | 1.08 | 1.00 |
| 1:L5:1095:A:C2 | 1:L5:1200:G:N1 | 2.29 | 1.00 |
| 47:S2:834:C:N4 | 47:S2:839:C:N4 | 1.89 | 0.99 |
| 1:L5:4946:U:HO2' | 34:Lf:2:SER:N | 1.60 | 0.99 |
| 47:S2:886:A:N6 | 47:S2:901:G:C4 | 2.29 | 0.99 |
| 1:L5:1443:A:H2 | 1:L5:2103:G:N1 | 1.56 | 0.98 |
| 83:CC:8:U:N3 | 83:CC:14:A:C8 | 2.33 | 0.96 |
| 1:L5:1174:G:H1 | 1:L5:1186:U:H3 | 1.04 | 0.96 |
| 1:L5:493:G:N1 | 1:L5:660:A:H2 | 1.60 | 0.95 |
| 82:CB:450:THR:HB | 82:CB:461:ILE:O | 1.67 | 0.95 |
| 83:CC:20:U:H5 | 83:CC:57:C:H42 | 0.97 | 0.95 |
| 47:S2:1652:G:H1 | 47:S2:1672:U:H3 | 1.02 | 0.95 |
| 53:SH:72:PHE:O | 53:SH:76:GLN:HB2 | 1.66 | 0.94 |
| 1:L5:1094:G:H1 | 1:L5:1201:U:H3 | 1.16 | 0.94 |
| 1:L5:1755:C:N4 | 1:L5:1775:A:H61 | 1.66 | 0.93 |
| 1:L5:1762:C:C4 | 1:L5:1770:A:C2 | 2.55 | 0.93 |
| 1:L5:3951:G:N2 | 1:L5:4062:A:C6 | 2.36 | 0.93 |
| 1:L5:1095:A:H2 | 1:L5:1200:G:N1 | 1.67 | 0.92 |
| 47:S2:1748:G:H1 | 47:S2:1786:U:H3 | 0.99 | 0.92 |
| 1:L5:3951:G:C2 | 1:L5:4062:A:C6 | 2.57 | 0.92 |
| 1:L5:2484:A:N6 | 1:L5:2494:U:C2 | 2.37 | 0.92 |
| 1:L5:1709:C:H42 | 1:L5:1716:G:H22 | 1.14 | 0.91 |
| 1:L5:1755:C:N4 | 1:L5:1775:A:N6 | 2.19 | 0.90 |
| 83:CC:20:U:H5 | 83:CC:57:C:N4 | 1.68 | 0.90 |
| 1:L5:1445:U:O2 | 1:L5:2102:G:C6 | 2.24 | 0.90 |
| 15:LM:77:TRP:O | 15:LM:81:ASP:HA | 1.72 | 0.90 |
| 1:L5:4467:A:H61 | 1:L5:4490:C:H42 | 1.15 | 0.89 |
| 53:SH:53:VAL:O | 53:SH:57:ARG:HB2 | 1.71 | 0.89 |
| 47:S2:528:A:C6 | 47:S2:558:G:C6 | 2.60 | 0.89 |
| 1:L5:184:U:O2 | 1:L5:254:G:C6 | 2.26 | 0.89 |
| 1:L5:1709:C:H42 | 1:L5:1716:G:N2 | 1.70 | 0.89 |
| 1:L5:493:G:H1 | 1:L5:660:A:H2 | 0.90 | 0.89 |
| 47:S2:191:A:N7 | 47:S2:208:G:N2 | 2.20 | 0.89 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 47:S2:912:C:C4 | 47:S2:914:U:C2 | 2.60 | 0.89 |
| 47:S2:1752:C:C4 | 47:S2:1779:G:N2 | 2.42 | 0.88 |
| 53:SH:163:GLN:O | 53:SH:167:GLU:HB3 | 1.72 | 0.88 |
| 1:L5:3949:A:H62 | 1:L5:4064:C:H42 | 1.17 | 0.88 |
| 1:L5:1095:A:H2 | 1:L5:1200:G:H1 | 0.94 | 0.87 |
| 47:S2:533:A:H61 | 47:S2:550:C:N4 | 1.72 | 0.87 |
| 1:L5:3955:G:N2 | 1:L5:3966:A:C5 | 2.42 | 0.87 |
| 1:L5:2484:A:N6 | 1:L5:2494:U:O2 | 2.07 | 0.87 |
| 1:L5:2520:C:O2 | 1:L5:2640:G:N2 | 2.08 | 0.87 |
| 1:L5:1761:G:N2 | 1:L5:1768:C:C2 | 2.44 | 0.86 |
| 1:L5:2484:A:N6 | 1:L5:2494:U:N3 | 2.23 | 0.86 |
| 47:S2:528:A:N1 | 47:S2:558:G:C6 | 2.42 | 0.86 |
| 1:L5:1709:C:N4 | 1:L5:1716:G:H22 | 1.73 | 0.86 |
| 1:L5:3944:G:H1 | 1:L5:4069:U:H3 | 1.19 | 0.86 |
| 47:S2:928:G:H1 | 47:S2:1013:U:H3 | 1.19 | 0.86 |
| 1:L5:4093:G:N1 | 1:L5:4114:C:C2 | 2.44 | 0.85 |
| 1:L5:1986:U:H6 | 1:L5:1986:U:H5” | 1.42 | 0.85 |
| 83:CC:20:U:O4 | 83:CC:57:C:N3 | 2.10 | 0.85 |
| 1:L5:1445:U:C2 | 1:L5:2102:G:C6 | 2.65 | 0.85 |
| 47:S2:1756:C:O2 | 47:S2:1776:G:C6 | 2.29 | 0.85 |
| 1:L5:1269:G:N2 | 1:L5:1441:C:C2 | 2.44 | 0.84 |
| 1:L5:3951:G:N3 | 1:L5:4062:A:N1 | 2.26 | 0.84 |
| 6:LC:218:ILE:O | 6:LC:222:ARG:HB2 | 1.77 | 0.84 |
| 47:S2:1657:G:H1 | 47:S2:1667:U:H3 | 1.20 | 0.84 |
| 1:L5:4888:U:O2 | 1:L5:4931:G:N1 | 2.10 | 0.83 |
| 47:S2:1033:G:H1 | 47:S2:1080:A:HO2’ | 1.27 | 0.83 |
| 1:L5:184:U:O2 | 1:L5:254:G:N1 | 2.10 | 0.83 |
| 68:Sg:46:THR:O | 68:Sg:52:TYR:HA | 1.79 | 0.83 |
| 70:SG:1:MET:HB3 | 70:SG:18:VAL:O | 1.76 | 0.83 |
| 1:L5:5016:A:H2 | 1:L5:5033:G:H21 | 1.19 | 0.83 |
| 31:Lc:20:LEU:O | 31:Lc:24:SER:HB2 | 1.77 | 0.83 |
| 1:L5:1401:C:O2 | 1:L5:1416:G:N2 | 2.13 | 0.82 |
| 47:S2:886:A:N6 | 47:S2:901:G:C5 | 2.47 | 0.82 |
| 1:L5:1404:G:N7 | 1:L5:1408:G:C2 | 2.47 | 0.82 |
| 1:L5:1402:C:O2 | 1:L5:1415:G:N2 | 2.12 | 0.82 |
| 47:S2:39:A:H5’ | 71:SJ:7:TRP:HE1 | 1.42 | 0.81 |
| 58:SQ:26:LYS:O | 58:SQ:67:ASP:HB2 | 1.81 | 0.81 |
| 1:L5:2484:A:N6 | 1:L5:2494:U:H3 | 1.77 | 0.81 |
| 47:S2:834:C:O2 | 47:S2:839:C:O2 | 1.98 | 0.81 |
| 1:L5:1979:A:H5” | 1:L5:1979:A:H8 | 1.46 | 0.81 |
| 1:L5:1755:C:N4 | 1:L5:1776:A:N6 | 2.28 | 0.80 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:L5:1986:U:H6 | 1:L5:1986:U:C5' | 1.94 | 0.80 |
| 47:S2:225:G:N2 | 47:S2:297:A:C6 | 2.50 | 0.80 |
| 1:L5:2557:G:H1 | 1:L5:2570:U:H3 | 0.84 | 0.80 |
| 1:L5:4517:A:N7 | 5:LB:2:SER:N | 2.30 | 0.79 |
| 47:S2:1609:C:N4 | 47:S2:1630:A:H61 | 1.80 | 0.79 |
| 1:L5:5016:A:C2 | 1:L5:5033:G:N2 | 2.50 | 0.79 |
| 1:L5:1755:C:H42 | 1:L5:1775:A:N6 | 1.80 | 0.79 |
| 47:S2:225:G:N2 | 47:S2:297:A:N6 | 2.30 | 0.79 |
| 2:L7:27:G:H21 | 2:L7:55:A:N6 | 1.81 | 0.78 |
| 47:S2:528:A:N6 | 47:S2:558:G:O6 | 2.17 | 0.78 |
| 1:L5:752:G:C6 | 1:L5:912:G:N2 | 2.51 | 0.78 |
| 83:CC:8:U:C2 | 83:CC:14:A:N7 | 2.52 | 0.78 |
| 1:L5:4093:G:N7 | 1:L5:4095:G:C2 | 2.51 | 0.78 |
| 1:L5:749:G:C6 | 1:L5:913:U:N3 | 2.52 | 0.78 |
| 47:S2:696:G:H21 | 47:S2:737:G:H1 | 1.30 | 0.78 |
| 83:CC:20:U:C5 | 83:CC:57:C:N4 | 2.47 | 0.77 |
| 81:CA:29:ASN:HD21 | 81:CA:335:SER:H | 1.32 | 0.77 |
| 1:L5:3949:A:N7 | 1:L5:4064:C:N3 | 2.33 | 0.77 |
| 1:L5:3960:A:N7 | 1:L5:4043:G:C6 | 2.52 | 0.77 |
| 47:S2:880:G:O6 | 47:S2:906:U:N3 | 2.18 | 0.77 |
| 47:S2:925:G:H1 | 47:S2:1017:U:H3 | 0.84 | 0.77 |
| 47:S2:1324:G:H1 | 47:S2:1504:U:H3 | 1.33 | 0.77 |
| 49:SB:184:VAL:HA | 49:SB:187:LYS:HE3 | 1.67 | 0.76 |
| 30:Lb:8:THR:HG22 | 30:Lb:10:HIS:H | 1.50 | 0.76 |
| 1:L5:1079:C:C2 | 1:L5:1221:G:N2 | 2.54 | 0.76 |
| 47:S2:140:C:N3 | 47:S2:313:A:N1 | 2.34 | 0.76 |
| 47:S2:912:C:N4 | 47:S2:914:U:N3 | 2.33 | 0.76 |
| 81:CA:190:LEU:O | 81:CA:223:VAL:HB | 1.85 | 0.76 |
| 1:L5:450:G:H1 | 1:L5:1297:U:H3 | 1.31 | 0.75 |
| 1:L5:1762:C:C4 | 1:L5:1770:A:N1 | 2.53 | 0.75 |
| 1:L5:493:G:O6 | 1:L5:660:A:N1 | 2.20 | 0.75 |
| 47:S2:532:C:C2 | 47:S2:552:G:N2 | 2.55 | 0.75 |
| 83:CC:15:G:N2 | 83:CC:20:U:C4 | 2.54 | 0.75 |
| 47:S2:532:C:C2 | 47:S2:552:G:C2 | 2.74 | 0.75 |
| 73:SN:57:SER:HG | 73:SN:58:HIS:HD1 | 1.34 | 0.75 |
| 1:L5:1176:C:N3 | 1:L5:1184:A:N1 | 2.35 | 0.74 |
| 1:L5:2009:A:O4' | 82:CB:760:TYR:HE2 | 1.68 | 0.74 |
| 47:S2:694:G:N7 | 47:S2:696:G:C2 | 2.55 | 0.74 |
| 81:CA:209:GLN:O | 81:CA:213:HIS:HB2 | 1.87 | 0.74 |
| 1:L5:471:A:N6 | 1:L5:684:G:N2 | 2.36 | 0.74 |
| 50:SD:101:GLN:HG3 | 50:SD:126:ILE:HD11 | 1.67 | 0.74 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:L5:2578:G:N7 | 28:LZ:17:ARG:NH1 | 2.35 | 0.74 |
| 47:S2:804:U:H3 | 47:S2:859:G:H1 | 1.35 | 0.74 |
| 49:SB:67:PHE:O | 49:SB:86:LEU:HB2 | 1.87 | 0.74 |
| 1:L5:512:U:H3 | 1:L5:647:G:H1 | 1.33 | 0.74 |
| 1:L5:3951:G:N1 | 1:L5:4060:U:N3 | 2.36 | 0.74 |
| 1:L5:4040:C:N4 | 1:L5:4050:A:C2 | 2.56 | 0.74 |
| 47:S2:1752:C:C4 | 47:S2:1779:G:C2 | 2.75 | 0.74 |
| 1:L5:3946:G:N2 | 1:L5:4067:U:O2 | 2.20 | 0.73 |
| 20:LR:170:ARG:HH21 | 20:LR:173:ARG:HD3 | 1.52 | 0.73 |
| 1:L5:4139:G:H21 | 1:L5:4140:C:H41 | 1.33 | 0.73 |
| 47:S2:191:A:C8 | 47:S2:208:G:N2 | 2.53 | 0.73 |
| 47:S2:164:A:H3' | 47:S2:165:G:H21 | 1.54 | 0.73 |
| 1:L5:2486:G:N7 | 1:L5:2493:G:N1 | 2.35 | 0.73 |
| 1:L5:471:A:C6 | 1:L5:684:G:C2 | 2.77 | 0.73 |
| 1:L5:1762:C:N3 | 1:L5:1770:A:C2 | 2.55 | 0.72 |
| 1:L5:1762:C:H5" | 1:L5:1764:G:H1 | 1.54 | 0.72 |
| 1:L5:2484:A:C5 | 1:L5:2495:U:O2 | 2.43 | 0.72 |
| 53:SH:36:LEU:HD11 | 53:SH:78:ARG:HH11 | 1.55 | 0.72 |
| 47:S2:1609:C:H42 | 47:S2:1630:A:N6 | 1.88 | 0.72 |
| 1:L5:3955:G:C2 | 1:L5:3966:A:C5 | 2.77 | 0.72 |
| 5:LB:356:LYS:O | 5:LB:359:ALA:C | 2.33 | 0.72 |
| 47:S2:694:G:O6 | 47:S2:737:G:N2 | 2.22 | 0.72 |
| 1:L5:1755:C:N3 | 1:L5:1776:A:N1 | 2.38 | 0.72 |
| 47:S2:694:G:C6 | 47:S2:737:G:N2 | 2.57 | 0.72 |
| 1:L5:752:G:O6 | 1:L5:912:G:N2 | 2.22 | 0.72 |
| 1:L5:1656:U:OP2 | 29:La:26:ARG:NH2 | 2.23 | 0.72 |
| 53:SH:30:LEU:HD13 | 53:SH:86:LYS:HZ1 | 1.55 | 0.72 |
| 47:S2:533:A:N6 | 47:S2:550:C:N4 | 2.38 | 0.71 |
| 1:L5:1404:G:N7 | 1:L5:1408:G:N2 | 2.37 | 0.71 |
| 1:L5:3955:G:N2 | 1:L5:3966:A:C4 | 2.58 | 0.71 |
| 1:L5:1100:U:C2 | 1:L5:1195:G:N1 | 2.58 | 0.71 |
| 47:S2:225:G:C2 | 47:S2:297:A:N6 | 2.58 | 0.71 |
| 47:S2:1095:C:N3 | 47:S2:1149:A:N1 | 2.39 | 0.71 |
| 47:S2:1752:C:N3 | 47:S2:1779:G:N1 | 2.38 | 0.71 |
| 52:SF:104:THR:HG23 | 52:SF:106:GLU:H | 1.55 | 0.71 |
| 1:L5:3948:C:N3 | 1:L5:4066:U:O4 | 2.23 | 0.71 |
| 76:SY:82:ALA:O | 76:SY:86:GLU:HB3 | 1.90 | 0.71 |
| 19:LQ:122:THR:H | 19:LQ:125:GLN:HE21 | 1.37 | 0.71 |
| 47:S2:885:U:H3 | 47:S2:901:G:H1 | 1.29 | 0.71 |
| 47:S2:1752:C:N3 | 47:S2:1779:G:C2 | 2.59 | 0.71 |
| 78:Sb:40:CYS:SG | 78:Sb:41:TYR:N | 2.63 | 0.71 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 47:S2:1271:C:H42 | 47:S2:1511:U:H3 | 1.38 | 0.71 |
| 1:L5:1095:A:N1 | 1:L5:1200:G:O6 | 2.24 | 0.71 |
| 1:L5:3959:U:O2' | 1:L5:3961:G:N7 | 2.24 | 0.71 |
| 47:S2:563:G:H1 | 47:S2:592:C:H5 | 1.37 | 0.71 |
| 1:L5:468:U:C4 | 1:L5:686:A:N1 | 2.58 | 0.70 |
| 1:L5:749:G:N1 | 1:L5:913:U:C2 | 2.59 | 0.70 |
| 1:L5:1269:G:N2 | 1:L5:1441:C:O2 | 2.24 | 0.70 |
| 47:S2:1609:C:H42 | 47:S2:1630:A:H61 | 1.36 | 0.70 |
| 53:SH:31:GLU:HG3 | 53:SH:37:LYS:HD2 | 1.73 | 0.70 |
| 33:Le:43:ASN:HD21 | 33:Le:45:VAL:HG22 | 1.57 | 0.70 |
| 47:S2:153:G:N3 | 70:SG:13:GLN:NE2 | 2.40 | 0.70 |
| 47:S2:748:C:H42 | 47:S2:795:A:N6 | 1.88 | 0.70 |
| 47:S2:748:C:N4 | 47:S2:795:A:N6 | 2.40 | 0.70 |
| 52:SF:61:PHE:HB3 | 66:Sc:51:ARG:HH21 | 1.56 | 0.70 |
| 83:CC:8:U:O2 | 83:CC:14:A:N7 | 2.24 | 0.70 |
| 1:L5:1983:A:H4' | 1:L5:1983:A:OP1 | 1.91 | 0.70 |
| 45:Lr:39:ARG:O | 45:Lr:103:ARG:NH2 | 2.24 | 0.70 |
| 1:L5:4052:C:H1' | 46:Lz:209:THR:HA | 1.74 | 0.70 |
| 47:S2:912:C:N3 | 47:S2:914:U:O2 | 2.24 | 0.70 |
| 1:L5:1761:G:C2 | 1:L5:1768:C:C2 | 2.80 | 0.69 |
| 43:Lo:45:GLN:HE22 | 43:Lo:52:THR:H | 1.38 | 0.69 |
| 47:S2:1752:C:C2 | 47:S2:1779:G:N1 | 2.60 | 0.69 |
| 1:L5:4093:G:N7 | 1:L5:4095:G:N2 | 2.39 | 0.69 |
| 1:L5:493:G:C6 | 1:L5:660:A:N1 | 2.60 | 0.69 |
| 1:L5:1761:G:N1 | 1:L5:1768:C:N3 | 2.41 | 0.69 |
| 25:LW:77:LYS:HB3 | 25:LW:79:GLN:HE22 | 1.57 | 0.69 |
| 47:S2:1398:G:H1 | 47:S2:1448:A:H2 | 1.35 | 0.69 |
| 47:S2:1723:G:O6 | 47:S2:1810:U:O4 | 2.10 | 0.69 |
| 1:L5:4884:G:N7 | 8:LE:272:ARG:NH2 | 2.40 | 0.69 |
| 83:CC:26:G:O6 | 83:CC:44:U:O2 | 2.11 | 0.69 |
| 1:L5:468:U:C2 | 1:L5:686:A:N6 | 2.61 | 0.69 |
| 47:S2:874:G:H2' | 47:S2:875:A:H8 | 1.58 | 0.69 |
| 5:LB:289:GLN:HB3 | 5:LB:301:ASN:HD22 | 1.57 | 0.69 |
| 1:L5:494:U:H3 | 1:L5:659:G:H1 | 1.40 | 0.68 |
| 1:L5:1979:A:H5" | 1:L5:1979:A:C8 | 2.27 | 0.68 |
| 47:S2:323:C:H2' | 47:S2:327:G:H22 | 1.57 | 0.68 |
| 47:S2:1756:C:N3 | 47:S2:1776:G:N1 | 2.41 | 0.68 |
| 1:L5:3946:G:N3 | 1:L5:3947:A:N6 | 2.42 | 0.68 |
| 1:L5:3967:G:N1 | 1:L5:4055:U:N3 | 2.41 | 0.68 |
| 1:L5:1269:G:N2 | 1:L5:1440:U:O2 | 2.26 | 0.68 |
| 16:LN:124:ASP:HB3 | 16:LN:127:TYR:H | 1.58 | 0.68 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 47:S2:1609:C:N3 | 47:S2:1630:A:N1 | 2.41 | 0.68 |
| 82:CB:756:VAL:HG12 | 82:CB:760:TYR:CE2 | 2.29 | 0.67 |
| 1:L5:1981:G:N2 | 82:CB:760:TYR:OH | 2.27 | 0.67 |
| 46:Lz:23:ARG:NH2 | 46:Lz:174:MET:O | 2.27 | 0.67 |
| 47:S2:1192:U:OP2 | 64:SX:119:ARG:NH2 | 2.27 | 0.67 |
| 82:CB:539:GLU:O | 82:CB:542:GLY:N | 2.26 | 0.67 |
| 22:LT:37:GLY:N | 22:LT:64:VAL:O | 2.27 | 0.67 |
| 25:LW:94:ARG:HE | 70:SG:146:ASN:HB2 | 1.57 | 0.67 |
| 70:SG:70:HIS:HA | 70:SG:98:ARG:HH12 | 1.58 | 0.67 |
| 1:L5:2554:U:O2 | 1:L5:2764:A:N7 | 2.27 | 0.67 |
| 47:S2:177:G:H22 | 47:S2:313:A:H5' | 1.60 | 0.67 |
| 1:L5:1100:U:H3 | 1:L5:1194:G:H1 | 1.41 | 0.67 |
| 1:L5:2486:G:O6 | 1:L5:2494:U:N3 | 2.27 | 0.67 |
| 1:L5:2902:G:N7 | 1:L5:2903:G:N2 | 2.42 | 0.67 |
| 1:L5:3960:A:H62 | 1:L5:4048:A:N6 | 1.92 | 0.67 |
| 1:L5:3961:G:N1 | 1:L5:4048:A:C6 | 2.62 | 0.67 |
| 1:L5:2555:G:O6 | 1:L5:2761:U:O2 | 2.12 | 0.67 |
| 1:L5:3589:G:N2 | 1:L5:3590:G:N7 | 2.42 | 0.67 |
| 13:LJ:115:LEU:HD12 | 13:LJ:116:GLY:HA2 | 1.77 | 0.67 |
| 23:LU:24:ASP:HB3 | 23:LU:111:GLU:HG3 | 1.77 | 0.67 |
| 52:SF:127:ARG:H | 52:SF:135:ARG:HD2 | 1.60 | 0.67 |
| 3:L8:60:G:N2 | 3:L8:96:C:O2 | 2.25 | 0.67 |
| 44:Lp:38:THR:HA | 44:Lp:45:THR:HA | 1.77 | 0.67 |
| 3:L8:123:U:O2' | 3:L8:126:C:N4 | 2.28 | 0.67 |
| 49:SB:60:ASP:HA | 49:SB:63:LYS:HG2 | 1.76 | 0.67 |
| 83:CC:15:G:N2 | 83:CC:20:U:O4 | 2.27 | 0.67 |
| 83:CC:21:A:C6 | 83:CC:56:G:N2 | 2.63 | 0.67 |
| 18:LP:73:ALA:O | 18:LP:76:TRP:O | 2.13 | 0.66 |
| 1:L5:1981:G:N2 | 82:CB:760:TYR:CZ | 2.63 | 0.66 |
| 1:L5:194:C:O2 | 27:LY:121:ARG:NH2 | 2.29 | 0.66 |
| 1:L5:1364:U:OP2 | 14:LL:36:ARG:NH1 | 2.28 | 0.66 |
| 63:SV:74:LYS:HD3 | 63:SV:83:PHE:HE1 | 1.61 | 0.66 |
| 1:L5:260:C:H2' | 1:L5:261:G:H8 | 1.60 | 0.66 |
| 1:L5:499:G:H2' | 1:L5:504:G:H1 | 1.60 | 0.66 |
| 1:L5:4093:G:N1 | 1:L5:4114:C:N3 | 2.41 | 0.66 |
| 27:LY:39:ARG:O | 27:LY:42:TYR:O | 2.14 | 0.66 |
| 45:Lr:7:TRP:O | 45:Lr:11:ARG:HB2 | 1.95 | 0.66 |
| 47:S2:1550:G:H3' | 47:S2:1579:A:H61 | 1.60 | 0.66 |
| 1:L5:666:G:N7 | 1:L5:668:C:N4 | 2.43 | 0.66 |
| 1:L5:1095:A:N1 | 1:L5:1200:G:C6 | 2.64 | 0.66 |
| 1:L5:2009:A:H62 | 82:CB:753:GLU:CD | 2.04 | 0.66 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 68:Sg:145:GLU:O | 68:Sg:175:LYS:NZ | 2.29 | 0.66 |
| 82:CB:527:LEU:HD13 | 82:CB:561:LEU:HD12 | 1.78 | 0.66 |
| 1:L5:907:C:H2' | 1:L5:908:G:H8 | 1.58 | 0.66 |
| 1:L5:1443:A:C2 | 1:L5:2103:G:C6 | 2.84 | 0.66 |
| 28:LZ:105:ALA:HA | 28:LZ:108:ARG:HE | 1.59 | 0.66 |
| 53:SH:8:ILE:HG12 | 53:SH:28:LEU:HD11 | 1.77 | 0.66 |
| 1:L5:2318:G:O6 | 33:Le:19:LYS:NZ | 2.28 | 0.66 |
| 47:S2:570:C:H4' | 76:SY:36:PRO:HG3 | 1.78 | 0.66 |
| 82:CB:745:TYR:HB2 | 82:CB:814:PHE:HA | 1.78 | 0.66 |
| 1:L5:977:C:OP2 | 8:LE:59:ARG:NH2 | 2.29 | 0.66 |
| 1:L5:3946:G:H1 | 1:L5:4067:U:H3 | 0.82 | 0.66 |
| 1:L5:4220:A:OP2 | 22:LT:2:THR:OG1 | 2.14 | 0.66 |
| 8:LE:254:ASP:HA | 8:LE:257:ILE:HG22 | 1.78 | 0.66 |
| 47:S2:528:A:C6 | 47:S2:558:G:O6 | 2.48 | 0.66 |
| 7:LD:191:ASN:HD22 | 7:LD:194:VAL:HG12 | 1.61 | 0.65 |
| 32:Ld:19:GLU:HA | 32:Ld:90:ARG:HH11 | 1.62 | 0.65 |
| 68:Sg:152:SER:H | 68:Sg:169:GLY:HA2 | 1.61 | 0.65 |
| 1:L5:2484:A:C6 | 1:L5:2495:U:C2 | 2.84 | 0.65 |
| 1:L5:749:G:C2 | 1:L5:913:U:O2 | 2.49 | 0.65 |
| 1:L5:1761:G:N2 | 1:L5:1768:C:O2 | 2.29 | 0.65 |
| 1:L5:2706:G:O6 | 20:LR:46:LYS:NZ | 2.29 | 0.65 |
| 1:L5:749:G:N1 | 1:L5:913:U:N3 | 2.45 | 0.65 |
| 1:L5:2484:A:H62 | 1:L5:2494:U:H3 | 1.35 | 0.65 |
| 47:S2:878:G:H1 | 47:S2:908:A:H2 | 1.36 | 0.65 |
| 52:SF:17:ILE:HG21 | 52:SF:46:ALA:HB1 | 1.78 | 0.65 |
| 1:L5:1976:G:H5" | 1:L5:1976:G:C8 | 2.31 | 0.65 |
| 1:L5:1986:U:H5" | 1:L5:1986:U:C6 | 2.29 | 0.65 |
| 46:Lz:58:THR:O | 46:Lz:173:LYS:NZ | 2.29 | 0.65 |
| 47:S2:528:A:C6 | 47:S2:558:G:N1 | 2.65 | 0.65 |
| 47:S2:1755:C:N4 | 47:S2:1775:U:O4 | 2.30 | 0.65 |
| 1:L5:2906:G:N2 | 1:L5:3585:G:N7 | 2.45 | 0.65 |
| 1:L5:4997:G:H1 | 1:L5:5053:U:H3 | 1.43 | 0.65 |
| 47:S2:532:C:O2 | 47:S2:552:G:C2 | 2.49 | 0.65 |
| 48:SA:81:ASN:HA | 48:SA:84:GLN:HB2 | 1.78 | 0.65 |
| 1:L5:198:A:OP1 | 27:LY:126:ARG:NH2 | 2.28 | 0.65 |
| 1:L5:4467:A:N6 | 1:L5:4490:C:H42 | 1.92 | 0.65 |
| 9:LF:105:VAL:HG13 | 9:LF:136:VAL:HG12 | 1.79 | 0.65 |
| 47:S2:989:C:N4 | 47:S2:1001:A:C2 | 2.65 | 0.65 |
| 5:LB:218:ASP:OD2 | 5:LB:348:ARG:NH1 | 2.29 | 0.65 |
| 31:Lc:17:ARG:HD3 | 31:Lc:103:ASP:HB2 | 1.79 | 0.65 |
| 47:S2:1536:G:H2' | 47:S2:1537:A:H8 | 1.61 | 0.65 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 48:SA:190:SER:HA | 63:SV:45:ARG:HH22 | 1.62 | 0.65 |
| 51:SE:67:GLN:HE22 | 76:SY:85:ASN:HD22 | 1.45 | 0.65 |
| 58:SQ:53:GLU:OE2 | 58:SQ:85:ARG:NH1 | 2.30 | 0.65 |
| 1:L5:181:C:H3' | 1:L5:182:G:H8 | 1.62 | 0.65 |
| 13:LJ:16:ARG:HE | 13:LJ:137:PRO:HD3 | 1.62 | 0.65 |
| 14:LL:16:LYS:O | 14:LL:21:ARG:NH1 | 2.30 | 0.65 |
| 20:LR:30:ASN:N | 20:LR:30:ASN:OD1 | 2.30 | 0.65 |
| 47:S2:921:G:H3' | 75:SW:28:ARG:HH21 | 1.62 | 0.65 |
| 1:L5:1100:U:O3' | 1:L5:1167:C:N4 | 2.30 | 0.64 |
| 1:L5:184:U:O2 | 1:L5:254:G:O6 | 2.15 | 0.64 |
| 1:L5:3961:G:N1 | 1:L5:4048:A:N1 | 2.45 | 0.64 |
| 1:L5:4076:G:OP1 | 10:LG:73:ARG:NH1 | 2.29 | 0.64 |
| 1:L5:5016:A:H2 | 1:L5:5033:G:N2 | 1.88 | 0.64 |
| 2:L7:27:G:N2 | 2:L7:55:A:N6 | 2.44 | 0.64 |
| 1:L5:1492:G:O2' | 30:Lb:41:ARG:NH1 | 2.30 | 0.64 |
| 8:LE:264:ILE:HD11 | 8:LE:267:LEU:HD22 | 1.78 | 0.64 |
| 1:L5:3958:G:H5' | 83:CC:18:G:H2' | 1.80 | 0.64 |
| 24:LV:13:LYS:HD3 | 24:LV:128:LEU:HD11 | 1.78 | 0.64 |
| 47:S2:878:G:N1 | 47:S2:908:A:C2 | 2.60 | 0.64 |
| 47:S2:1228:A:H2' | 47:S2:1229:G:C8 | 2.33 | 0.64 |
| 51:SE:122:LYS:NZ | 51:SE:124:CYS:SG | 2.71 | 0.64 |
| 1:L5:2484:A:N6 | 1:L5:2495:U:C2 | 2.66 | 0.64 |
| 2:L7:54:A:OP1 | 13:LJ:8:LYS:NZ | 2.30 | 0.64 |
| 47:S2:694:G:O6 | 47:S2:737:G:N3 | 2.30 | 0.64 |
| 47:S2:1228:A:H2' | 47:S2:1229:G:H8 | 1.63 | 0.64 |
| 81:CA:310:GLU:HG3 | 81:CA:314:GLU:HB3 | 1.80 | 0.64 |
| 49:SB:65:ARG:NH2 | 74:SO:46:ASP:OD2 | 2.29 | 0.64 |
| 52:SF:143:PRO:HA | 52:SF:146:ARG:HG2 | 1.80 | 0.64 |
| 1:L5:1730:U:H4' | 22:LT:100:LYS:HB2 | 1.80 | 0.64 |
| 1:L5:4773:C:N3 | 1:L5:4861:G:N1 | 2.37 | 0.64 |
| 73:SN:49:GLN:HA | 73:SN:52:VAL:HG12 | 1.80 | 0.64 |
| 73:SN:63:VAL:HA | 73:SN:66:VAL:HG22 | 1.79 | 0.64 |
| 1:L5:5024:C:H41 | 1:L5:5028:G:H21 | 1.46 | 0.64 |
| 47:S2:1403:C:OP2 | 47:S2:1405:A:N6 | 2.31 | 0.64 |
| 61:ST:9:VAL:O | 61:ST:11:GLN:NE2 | 2.31 | 0.64 |
| 46:Lz:32:VAL:HG11 | 46:Lz:172:VAL:HG13 | 1.79 | 0.64 |
| 47:S2:878:G:O6 | 47:S2:908:A:N1 | 2.31 | 0.64 |
| 58:SQ:9:SER:HB2 | 58:SQ:26:LYS:HD2 | 1.78 | 0.64 |
| 1:L5:186:G:N2 | 1:L5:1365:C:O2' | 2.31 | 0.63 |
| 47:S2:1261:C:O2 | 67:Sd:10:HIS:NE2 | 2.26 | 0.63 |
| 49:SB:68:GLU:HA | 49:SB:84:PHE:O | 1.97 | 0.63 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 55:SK:29:MET:SD | 55:SK:42:ASN:ND2 | 2.71 | 0.63 |
| 1:L5:1100:U:N3 | 1:L5:1195:G:C6 | 2.67 | 0.63 |
| 6:LC:140:LYS:O | 6:LC:204:ARG:NH1 | 2.31 | 0.63 |
| 47:S2:1536:G:H2' | 47:S2:1537:A:C8 | 2.33 | 0.63 |
| 48:SA:36:GLN:O | 48:SA:53:ARG:NH1 | 2.31 | 0.63 |
| 53:SH:80:VAL:HG23 | 53:SH:92:VAL:HB | 1.80 | 0.63 |
| 65:Sa:45:VAL:HG11 | 65:Sa:64:LEU:HD23 | 1.81 | 0.63 |
| 36:Lh:87:LYS:HA | 38:Lj:73:ARG:HH22 | 1.64 | 0.63 |
| 44:Lp:56:HIS:HD2 | 44:Lp:63:THR:HG22 | 1.64 | 0.63 |
| 66:Sc:29:GLN:HB3 | 66:Sc:43:ILE:HD11 | 1.80 | 0.63 |
| 1:L5:1396:G:N7 | 29:La:110:LYS:NZ | 2.45 | 0.63 |
| 1:L5:2001:G:N1 | 1:L5:2017:A:C6 | 2.66 | 0.63 |
| 1:L5:3689:G:O2' | 1:L5:3818:U:OP2 | 2.17 | 0.63 |
| 12:LI:52:MET:HB2 | 12:LI:152:LEU:HD22 | 1.80 | 0.63 |
| 82:CB:26:ALA:HB3 | 82:CB:32:LYS:HD3 | 1.80 | 0.63 |
| 82:CB:845:LYS:HD3 | 82:CB:847:GLY:H | 1.64 | 0.63 |
| 1:L5:182:G:O6 | 1:L5:184:U:C4 | 2.52 | 0.63 |
| 1:L5:1985:G:OP1 | 1:L5:1985:G:H3' | 1.98 | 0.63 |
| 77:SZ:47:LEU:HD23 | 77:SZ:79:ILE:HG23 | 1.80 | 0.63 |
| 1:L5:3955:G:C2 | 1:L5:3966:A:N7 | 2.66 | 0.63 |
| 47:S2:126:G:OP1 | 70:SG:198:ARG:NH1 | 2.32 | 0.63 |
| 47:S2:318:A:C6 | 47:S2:333:G:C6 | 2.87 | 0.63 |
| 50:SD:146:ARG:NH1 | 84:CD:204:LEU:O | 2.31 | 0.63 |
| 46:Lz:55:LEU:HD11 | 46:Lz:183:ILE:HG12 | 1.81 | 0.63 |
| 47:S2:1227:G:H1 | 47:S2:1531:A:H61 | 1.46 | 0.63 |
| 68:Sg:168:CYS:HB2 | 68:Sg:195:LEU:HD22 | 1.79 | 0.63 |
| 14:LL:126:LEU:N | 14:LL:138:ASP:OD2 | 2.30 | 0.63 |
| 46:Lz:56:LYS:O | 46:Lz:182:ASN:ND2 | 2.32 | 0.63 |
| 47:S2:1502:C:H4' | 82:CB:673:ASN:HD21 | 1.64 | 0.63 |
| 49:SB:85:LYS:HB3 | 49:SB:101:HIS:HB3 | 1.80 | 0.63 |
| 47:S2:1298:G:H5' | 57:SP:77:LYS:HB2 | 1.80 | 0.62 |
| 51:SE:35:PRO:HD2 | 51:SE:83:PRO:HG2 | 1.80 | 0.62 |
| 73:SN:46:THR:H | 73:SN:49:GLN:HE21 | 1.45 | 0.62 |
| 53:SH:53:VAL:HG11 | 53:SH:172:THR:HA | 1.80 | 0.62 |
| 58:SQ:11:GLN:HA | 58:SQ:23:ALA:O | 1.99 | 0.62 |
| 81:CA:181:PRO:HB2 | 81:CA:204:ASN:HB2 | 1.81 | 0.62 |
| 47:S2:752:G:OP1 | 47:S2:792:C:O2' | 2.16 | 0.62 |
| 58:SQ:31:LEU:HD11 | 58:SQ:33:LYS:HE3 | 1.81 | 0.62 |
| 59:SR:76:GLU:OE2 | 59:SR:80:ARG:NH1 | 2.33 | 0.62 |
| 69:SC:103:LYS:HB2 | 69:SC:216:MET:HE1 | 1.80 | 0.62 |
| 1:L5:1402:C:N3 | 1:L5:1415:G:N1 | 2.38 | 0.62 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 47:S2:533:A:N6 | 47:S2:550:C:H42 | 1.97 | 0.62 |
| 55:SK:31:LYS:HZ1 | 55:SK:35:LEU:HB2 | 1.64 | 0.62 |
| 1:L5:3967:G:O6 | 1:L5:4055:U:O4 | 2.17 | 0.62 |
| 7:LD:256:LYS:NZ | 7:LD:257:PRO:O | 2.33 | 0.62 |
| 11:LH:59:LYS:HE3 | 11:LH:66:GLU:HG3 | 1.80 | 0.62 |
| 47:S2:1124:C:H5" | 49:SB:150:ILE:HG12 | 1.82 | 0.62 |
| 1:L5:2601:A:N6 | 1:L5:2744:A:OP2 | 2.30 | 0.62 |
| 1:L5:4049:U:O2 | 1:L5:4051:C:N4 | 2.33 | 0.62 |
| 1:L5:4467:A:N1 | 1:L5:4490:C:N3 | 2.48 | 0.62 |
| 4:LA:101:VAL:HG22 | 4:LA:165:VAL:HG22 | 1.81 | 0.62 |
| 50:SD:106:ARG:HG3 | 50:SD:175:VAL:HG22 | 1.82 | 0.62 |
| 34:Lf:10:ILE:HA | 34:Lf:99:HIS:O | 1.99 | 0.62 |
| 1:L5:2856:C:O2 | 5:LB:242:ARG:NH2 | 2.32 | 0.62 |
| 1:L5:3961:G:C6 | 1:L5:4048:A:N6 | 2.67 | 0.62 |
| 9:LF:149:SER:OG | 9:LF:245:ARG:NH2 | 2.31 | 0.62 |
| 47:S2:924:G:H1 | 47:S2:1018:U:H3 | 1.47 | 0.62 |
| 47:S2:1264:C:N4 | 47:S2:1518:C:N3 | 2.40 | 0.62 |
| 53:SH:30:LEU:O | 53:SH:33:ASN:ND2 | 2.32 | 0.62 |
| 46:Lz:141:ASN:ND2 | 46:Lz:149:ASP:O | 2.30 | 0.62 |
| 65:Sa:87:ARG:HD3 | 65:Sa:92:ARG:HA | 1.80 | 0.62 |
| 72:SM:48:HIS:H | 72:SM:112:LYS:HA | 1.65 | 0.62 |
| 82:CB:223:PHE:HB3 | 82:CB:344:LEU:HD13 | 1.82 | 0.62 |
| 1:L5:413:G:OP2 | 40:Ll:36:ARG:NH1 | 2.33 | 0.62 |
| 21:LS:85:ASP:N | 21:LS:85:ASP:OD1 | 2.32 | 0.62 |
| 47:S2:919:A:OP2 | 73:SN:64:ARG:NH1 | 2.32 | 0.62 |
| 50:SD:94:ARG:O | 50:SD:101:GLN:NE2 | 2.33 | 0.62 |
| 1:L5:4431:U:OP2 | 12:LI:3:ARG:NH2 | 2.33 | 0.61 |
| 47:S2:1396:A:N7 | 47:S2:1449:G:O6 | 2.33 | 0.61 |
| 82:CB:423:THR:HG22 | 82:CB:449:ARG:HA | 1.80 | 0.61 |
| 47:S2:197:U:OP2 | 47:S2:203:G:N2 | 2.30 | 0.61 |
| 47:S2:872:A:C6 | 47:S2:874:G:C6 | 2.88 | 0.61 |
| 48:SA:85:ARG:NH1 | 48:SA:203:PHE:O | 2.33 | 0.61 |
| 68:Sg:259:TRP:HD1 | 68:Sg:266:ILE:HA | 1.65 | 0.61 |
| 1:L5:2658:G:N2 | 1:L5:2676:A:OP2 | 2.27 | 0.61 |
| 47:S2:1630:A:O2' | 60:SS:85:ASN:ND2 | 2.34 | 0.61 |
| 50:SD:225:GLU:HG3 | 68:Sg:187:ASN:HB3 | 1.81 | 0.61 |
| 82:CB:120:ARG:HG2 | 82:CB:497:MET:HE1 | 1.82 | 0.61 |
| 82:CB:416:VAL:O | 82:CB:467:GLY:HA2 | 2.01 | 0.61 |
| 54:SI:177:SER:HG | 54:SI:182:CYS:HG | 1.48 | 0.61 |
| 83:CC:21:A:C5 | 83:CC:56:G:N2 | 2.68 | 0.61 |
| 1:L5:1259:G:H2' | 1:L5:1260:G:H8 | 1.65 | 0.61 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:L5:4426:C:N4 | 1:L5:4427:G:C6 | 2.68 | 0.61 |
| 1:L5:4993:G:H1 | 1:L5:5058:A:H2 | 1.45 | 0.61 |
| 5:LB:356:LYS:O | 5:LB:359:ALA:O | 2.18 | 0.61 |
| 6:LC:56:GLU:HG2 | 6:LC:57:LEU:HD12 | 1.82 | 0.61 |
| 47:S2:695:C:N4 | 47:S2:736:C:O2' | 2.33 | 0.61 |
| 47:S2:996:A:OP1 | 73:SN:114:ARG:NH1 | 2.34 | 0.61 |
| 53:SH:144:ILE:HG23 | 75:SW:52:ILE:HB | 1.82 | 0.61 |
| 55:SK:65:ARG:NH2 | 67:Sd:21:CYS:O | 2.33 | 0.61 |
| 1:L5:1755:C:H42 | 1:L5:1776:A:N6 | 1.97 | 0.61 |
| 1:L5:1761:G:C2 | 1:L5:1768:C:O2 | 2.53 | 0.61 |
| 1:L5:3896:C:O2' | 5:LB:268:ARG:NH1 | 2.31 | 0.61 |
| 12:LI:44:ASP:OD1 | 12:LI:44:ASP:N | 2.30 | 0.61 |
| 47:S2:557:U:H5' | 47:S2:558:G:H8 | 1.65 | 0.61 |
| 50:SD:67:ARG:NH1 | 55:SK:93:THR:O | 2.34 | 0.61 |
| 82:CB:435:THR:H | 82:CB:438:LYS:HE3 | 1.65 | 0.61 |
| 47:S2:692:G:N7 | 47:S2:693:A:N6 | 2.48 | 0.61 |
| 47:S2:1610:G:OP1 | 60:SS:121:ARG:NH2 | 2.34 | 0.61 |
| 58:SQ:39:LEU:HD21 | 58:SQ:52:LEU:HB3 | 1.82 | 0.61 |
| 61:ST:124:THR:HG23 | 61:ST:127:GLY:H | 1.65 | 0.61 |
| 1:L5:468:U:N3 | 1:L5:686:A:N6 | 2.48 | 0.61 |
| 1:L5:1404:G:N7 | 1:L5:1408:G:N1 | 2.48 | 0.61 |
| 1:L5:3951:G:N2 | 1:L5:4062:A:N6 | 2.47 | 0.61 |
| 13:LJ:99:PHE:O | 13:LJ:159:LYS:NZ | 2.33 | 0.61 |
| 47:S2:11:A:H5' | 69:SC:113:GLN:HE21 | 1.66 | 0.61 |
| 47:S2:161:U:H5' | 76:SY:116:LYS:HD2 | 1.82 | 0.61 |
| 55:SK:15:LEU:O | 55:SK:19:GLY:HA2 | 2.01 | 0.61 |
| 70:SG:115:LYS:NZ | 70:SG:116:LYS:O | 2.34 | 0.61 |
| 76:SY:120:THR:O | 76:SY:124:ASN:HB2 | 2.01 | 0.61 |
| 1:L5:188:G:N2 | 1:L5:190:G:O6 | 2.33 | 0.61 |
| 1:L5:1518:A:OP1 | 29:La:27:LYS:NZ | 2.29 | 0.61 |
| 1:L5:2520:C:H2' | 1:L5:2521:G:H8 | 1.65 | 0.61 |
| 46:Lz:55:LEU:H | 46:Lz:154:THR:HG21 | 1.66 | 0.61 |
| 47:S2:1729:U:O2 | 47:S2:1805:G:N2 | 2.29 | 0.61 |
| 69:SC:68:ARG:HG2 | 69:SC:277:HIS:HB2 | 1.82 | 0.61 |
| 1:L5:2845:A:H61 | 1:L5:3843:C:H42 | 1.47 | 0.61 |
| 46:Lz:160:LYS:HB2 | 46:Lz:162:VAL:HG22 | 1.83 | 0.61 |
| 1:L5:966:A:OP1 | 1:L5:967:C:N4 | 2.34 | 0.60 |
| 1:L5:2611:A:H5' | 1:L5:2688:G:H4' | 1.83 | 0.60 |
| 26:LX:129:ARG:O | 26:LX:132:GLY:N | 2.33 | 0.60 |
| 49:SB:26:SER:O | 49:SB:51:ARG:NH1 | 2.34 | 0.60 |
| 1:L5:1979:A:H2' | 1:L5:1980:U:H5' | 1.82 | 0.60 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:L5:3960:A:N7 | 1:L5:4043:G:O6 | 2.34 | 0.60 |
| 1:L5:4043:G:OP1 | 1:L5:4045:G:N2 | 2.34 | 0.60 |
| 1:L5:4732:G:N2 | 1:L5:4734:A:N7 | 2.49 | 0.60 |
| 1:L5:4985:U:O2 | 5:LB:174:ARG:NH1 | 2.33 | 0.60 |
| 47:S2:1601:A:OP2 | 47:S2:1636:G:N2 | 2.33 | 0.60 |
| 1:L5:4473:A:OP1 | 41:Lm:124:LYS:NZ | 2.34 | 0.60 |
| 5:LB:137:TRP:O | 5:LB:143:LYS:NZ | 2.30 | 0.60 |
| 7:LD:211:LEU:HA | 7:LD:214:GLU:HB2 | 1.84 | 0.60 |
| 22:LT:43:LYS:O | 22:LT:58:HIS:ND1 | 2.33 | 0.60 |
| 25:LW:71:ARG:NH2 | 47:S2:1783:C:N3 | 2.49 | 0.60 |
| 47:S2:329:G:H2' | 47:S2:330:G:C8 | 2.36 | 0.60 |
| 82:CB:649:ILE:HA | 82:CB:663:THR:HG22 | 1.81 | 0.60 |
| 1:L5:512:U:O4 | 1:L5:647:G:O6 | 2.20 | 0.60 |
| 1:L5:4472:G:O2' | 41:Lm:100:TYR:O | 2.19 | 0.60 |
| 6:LC:317:ASN:HD22 | 6:LC:320:LYS:HD3 | 1.67 | 0.60 |
| 47:S2:1396:A:C5 | 47:S2:1449:G:O6 | 2.55 | 0.60 |
| 47:S2:1498:A:OP2 | 50:SD:27:ARG:NH2 | 2.33 | 0.60 |
| 72:SM:58:GLU:HG2 | 72:SM:61:TYR:H | 1.67 | 0.60 |
| 1:L5:1709:C:N3 | 1:L5:1716:G:N1 | 2.50 | 0.60 |
| 11:LH:31:ARG:NH1 | 11:LH:149:ASN:OD1 | 2.32 | 0.60 |
| 29:La:76:ASP:N | 29:La:76:ASP:OD1 | 2.34 | 0.60 |
| 47:S2:346:C:H5" | 51:SE:38:LEU:HD23 | 1.82 | 0.60 |
| 47:S2:926:A:H61 | 47:S2:1015:U:H3 | 1.50 | 0.60 |
| 47:S2:1147:C:OP1 | 65:Sa:6:ARG:NH1 | 2.33 | 0.60 |
| 20:LR:13:SER:OG | 20:LR:38:ARG:NH1 | 2.34 | 0.60 |
| 47:S2:880:G:O6 | 47:S2:906:U:C4 | 2.54 | 0.60 |
| 47:S2:1161:U:OP1 | 64:SX:12:LYS:NZ | 2.35 | 0.60 |
| 82:CB:3:ASN:N | 82:CB:44:GLY:O | 2.35 | 0.60 |
| 1:L5:1255:A:N6 | 1:L5:1257:A:O2' | 2.35 | 0.60 |
| 1:L5:1762:C:C4 | 1:L5:1770:A:H2 | 2.07 | 0.60 |
| 47:S2:447:A:OP1 | 54:SI:49:ARG:NH2 | 2.32 | 0.60 |
| 49:SB:38:MET:HB3 | 49:SB:182:LYS:HZ1 | 1.67 | 0.60 |
| 50:SD:226:GLN:HG3 | 68:Sg:186:THR:HG23 | 1.83 | 0.60 |
| 61:ST:90:SER:OG | 61:ST:91:HIS:N | 2.34 | 0.60 |
| 1:L5:1068:G:H2' | 1:L5:1069:G:C8 | 2.37 | 0.60 |
| 1:L5:2299:G:O6 | 6:LC:188:ARG:NH2 | 2.35 | 0.60 |
| 1:L5:2382:A:N1 | 1:L5:2829:U:O2' | 2.35 | 0.60 |
| 35:Lg:15:THR:O | 35:Lg:19:LYS:NZ | 2.34 | 0.60 |
| 47:S2:681:U:H4' | 64:SX:9:THR:HG22 | 1.84 | 0.60 |
| 47:S2:693:A:N6 | 47:S2:737:G:C6 | 2.70 | 0.60 |
| 47:S2:878:G:C6 | 47:S2:908:A:N1 | 2.69 | 0.60 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 55:SK:31:LYS:HE2 | 55:SK:40:VAL:H | 1.66 | 0.60 |
| 68:Sg:122:SER:O | 68:Sg:129:ILE:HA | 2.01 | 0.60 |
| 70:SG:42:GLY:O | 70:SG:46:LYS:NZ | 2.34 | 0.60 |
| 74:SO:62:VAL:HG21 | 74:SO:67:ASP:HB2 | 1.83 | 0.60 |
| 76:SY:113:ARG:NH1 | 76:SY:131:PRO:O | 2.34 | 0.60 |
| 1:L5:3717:A:H2' | 1:L5:3718:A:C8 | 2.36 | 0.60 |
| 32:Ld:54:MET:O | 32:Ld:57:MET:O | 2.20 | 0.60 |
| 46:Lz:13:ALA:HA | 46:Lz:217:TYR:HB3 | 1.84 | 0.60 |
| 47:S2:76:U:O2' | 70:SG:159:ARG:NH1 | 2.35 | 0.60 |
| 72:SM:61:TYR:HH | 72:SM:108:CYS:HG | 1.48 | 0.60 |
| 82:CB:77:LEU:HB3 | 82:CB:100:ILE:HB | 1.84 | 0.60 |
| 83:CC:45:G:C5 | 83:CC:56:G:C2 | 2.89 | 0.60 |
| 1:L5:1070:G:N7 | 8:LE:46:ARG:NH1 | 2.49 | 0.59 |
| 1:L5:3951:G:O6 | 1:L5:4060:U:O4 | 2.20 | 0.59 |
| 46:Lz:111:LEU:HD11 | 46:Lz:143:ASN:HD22 | 1.65 | 0.59 |
| 47:S2:748:C:N4 | 47:S2:795:A:H61 | 2.00 | 0.59 |
| 1:L5:1100:U:O4 | 1:L5:1194:G:O6 | 2.20 | 0.59 |
| 1:L5:2009:A:O4' | 82:CB:760:TYR:CE2 | 2.54 | 0.59 |
| 10:LG:161:VAL:HG11 | 10:LG:200:THR:HG23 | 1.84 | 0.59 |
| 47:S2:156:G:N3 | 70:SG:56:ASN:ND2 | 2.50 | 0.59 |
| 70:SG:85:ARG:O | 70:SG:87:ARG:NH1 | 2.35 | 0.59 |
| 1:L5:387:G:HO2' | 1:L5:412:G:H1 | 1.48 | 0.59 |
| 5:LB:233:SER:O | 5:LB:272:LYS:NZ | 2.33 | 0.59 |
| 47:S2:1488:C:O2' | 47:S2:1490:G:OP2 | 2.17 | 0.59 |
| 47:S2:1542:C:OP1 | 61:ST:62:ARG:NH1 | 2.34 | 0.59 |
| 47:S2:1658:G:OP2 | 47:S2:1660:C:N4 | 2.35 | 0.59 |
| 1:L5:502:C:H3' | 1:L5:503:C:H3' | 1.83 | 0.59 |
| 1:L5:4774:C:O2' | 1:L5:4775:C:O2 | 2.19 | 0.59 |
| 46:Lz:143:ASN:ND2 | 46:Lz:150:GLU:OE1 | 2.36 | 0.59 |
| 1:L5:1401:C:N3 | 1:L5:1416:G:N1 | 2.38 | 0.59 |
| 1:L5:2822:G:OP2 | 20:LR:21:LYS:NZ | 2.34 | 0.59 |
| 47:S2:588:G:H4' | 47:S2:589:G:H5' | 1.84 | 0.59 |
| 47:S2:1563:G:OP1 | 61:ST:121:ARG:NH2 | 2.35 | 0.59 |
| 54:SI:177:SER:OG | 54:SI:182:CYS:SG | 2.60 | 0.59 |
| 58:SQ:40:GLU:HA | 58:SQ:48:GLN:HE22 | 1.67 | 0.59 |
| 75:SW:90:GLN:HE22 | 75:SW:117:ARG:HH21 | 1.51 | 0.59 |
| 1:L5:1976:G:H2' | 1:L5:1976:G:N3 | 2.17 | 0.59 |
| 1:L5:2557:G:N2 | 1:L5:2570:U:O2 | 2.26 | 0.59 |
| 1:L5:4083:U:OP1 | 4:LA:123:ARG:NH2 | 2.35 | 0.59 |
| 12:LI:152:LEU:HB3 | 12:LI:165:ILE:HD12 | 1.84 | 0.59 |
| 47:S2:1313:A:H2' | 72:SM:33:ARG:HH22 | 1.68 | 0.59 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 48:SA:38:ILE:HD11 | 48:SA:47:TYR:HB3 | 1.84 | 0.59 |
| 48:SA:163:CYS:SG | 48:SA:164:ASN:N | 2.76 | 0.59 |
| 68:Sg:99:ARG:NH1 | 68:Sg:135:LEU:O | 2.35 | 0.59 |
| 68:Sg:107:ASP:N | 68:Sg:107:ASP:OD1 | 2.35 | 0.59 |
| 1:L5:2300:A:H61 | 6:LC:178:ASN:HD22 | 1.49 | 0.59 |
| 1:L5:3709:U:H3 | 1:L5:3711:A:N6 | 2.01 | 0.59 |
| 1:L5:3972:A:H1' | 1:L5:4050:A:H61 | 1.68 | 0.59 |
| 1:L5:4140:C:N3 | 1:L5:4145:C:O2' | 2.31 | 0.59 |
| 27:LY:31:SER:HA | 27:LY:48:PRO:HA | 1.83 | 0.59 |
| 47:S2:64:A:N6 | 47:S2:83:A:OP2 | 2.36 | 0.59 |
| 47:S2:885:U:N3 | 47:S2:902:G:C6 | 2.71 | 0.59 |
| 47:S2:1864:U:H3' | 65:Sa:5:ARG:HH21 | 1.68 | 0.59 |
| 83:CC:8:U:C2 | 83:CC:13:G:C6 | 2.90 | 0.59 |
| 8:LE:239:LYS:NZ | 8:LE:240:TYR:O | 2.34 | 0.59 |
| 46:Lz:142:GLU:HG3 | 46:Lz:144:MET:HG2 | 1.85 | 0.59 |
| 50:SD:172:VAL:HG12 | 50:SD:185:LYS:HG3 | 1.85 | 0.59 |
| 68:Sg:181:ASN:O | 68:Sg:183:LYS:NZ | 2.35 | 0.59 |
| 5:LB:213:GLN:HE22 | 5:LB:286:LYS:HA | 1.68 | 0.59 |
| 33:Le:8:VAL:HG13 | 33:Le:10:PRO:HD3 | 1.84 | 0.59 |
| 46:Lz:141:ASN:OD1 | 46:Lz:143:ASN:ND2 | 2.35 | 0.59 |
| 47:S2:885:U:C2 | 47:S2:902:G:N1 | 2.71 | 0.59 |
| 49:SB:65:ARG:HH21 | 74:SO:48:SER:HB3 | 1.68 | 0.59 |
| 70:SG:14:LYS:NZ | 70:SG:122:PRO:O | 2.36 | 0.59 |
| 1:L5:468:U:N3 | 1:L5:686:A:C6 | 2.71 | 0.59 |
| 1:L5:1100:U:O2 | 1:L5:1195:G:C2 | 2.56 | 0.59 |
| 37:Li:2:ALA:N | 37:Li:5:TYR:HH | 2.00 | 0.59 |
| 46:Lz:31:THR:OG1 | 46:Lz:208:SER:OG | 2.21 | 0.59 |
| 47:S2:944:A:H5" | 74:SO:134:PRO:HB3 | 1.85 | 0.59 |
| 51:SE:126:VAL:O | 51:SE:157:ASN:HA | 2.03 | 0.59 |
| 52:SF:123:GLU:OE2 | 52:SF:204:ARG:NH2 | 2.36 | 0.59 |
| 60:SS:1:MET:HE1 | 60:SS:54:LYS:HA | 1.85 | 0.59 |
| 1:L5:3948:C:H5' | 1:L5:3949:A:H2 | 1.67 | 0.58 |
| 1:L5:3961:G:H1 | 1:L5:3964:U:HO2' | 1.50 | 0.58 |
| 48:SA:189:ILE:HG22 | 48:SA:191:ARG:H | 1.67 | 0.58 |
| 1:L5:461:G:H2' | 1:L5:462:G:H8 | 1.68 | 0.58 |
| 1:L5:2009:A:N7 | 82:CB:753:GLU:OE1 | 2.36 | 0.58 |
| 1:L5:2811:G:N1 | 1:L5:2814:C:OP2 | 2.27 | 0.58 |
| 1:L5:2822:G:N7 | 20:LR:20:LYS:NZ | 2.42 | 0.58 |
| 14:LL:48:PRO:HG3 | 36:Lh:118:LYS:HE3 | 1.85 | 0.58 |
| 46:Lz:78:LYS:NZ | 46:Lz:82:ILE:O | 2.35 | 0.58 |
| 47:S2:1095:C:O2 | 47:S2:1149:A:N6 | 2.32 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 47:S2:1096:G:H1 | 47:S2:1136:U:H3 | 1.51 | 0.58 |
| 49:SB:122:GLU:HG3 | 49:SB:140:VAL:HG23 | 1.85 | 0.58 |
| 53:SH:46:THR:HG23 | 53:SH:65:PRO:HD3 | 1.85 | 0.58 |
| 1:L5:1100:U:N3 | 1:L5:1195:G:N1 | 2.50 | 0.58 |
| 1:L5:4600:G:O2' | 1:L5:4609:G:N1 | 2.35 | 0.58 |
| 8:LE:224:LYS:NZ | 8:LE:234:ASP:OD2 | 2.37 | 0.58 |
| 39:Lk:10:ASP:OD1 | 39:Lk:10:ASP:N | 2.27 | 0.58 |
| 47:S2:880:G:O6 | 47:S2:906:U:O4 | 2.20 | 0.58 |
| 51:SE:105:THR:O | 51:SE:245:ARG:NH2 | 2.33 | 0.58 |
| 9:LF:148:LYS:HD3 | 9:LF:245:ARG:HH11 | 1.68 | 0.58 |
| 47:S2:1013:U:OP1 | 47:S2:1129:G:O2' | 2.22 | 0.58 |
| 47:S2:1414:A:O2' | 61:ST:128:GLN:NE2 | 2.36 | 0.58 |
| 51:SE:100:ARG:HB2 | 51:SE:114:ILE:HD13 | 1.84 | 0.58 |
| 1:L5:2033:A:OP1 | 12:LI:162:ARG:NH1 | 2.36 | 0.58 |
| 10:LG:199:CYS:SG | 10:LG:200:THR:N | 2.77 | 0.58 |
| 28:LZ:21:ARG:NH1 | 28:LZ:47:ASP:OD1 | 2.37 | 0.58 |
| 47:S2:190:G:N2 | 47:S2:209:A:OP2 | 2.37 | 0.58 |
| 47:S2:1311:C:OP1 | 72:SM:40:LYS:NZ | 2.36 | 0.58 |
| 49:SB:92:GLN:HB2 | 49:SB:95:ASN:HB3 | 1.85 | 0.58 |
| 50:SD:131:ALA:HA | 50:SD:191:PRO:HD3 | 1.85 | 0.58 |
| 60:SS:92:ASP:N | 60:SS:92:ASP:OD1 | 2.37 | 0.58 |
| 61:ST:138:VAL:O | 61:ST:142:ASN:ND2 | 2.37 | 0.58 |
| 75:SW:60:LYS:NZ | 78:Sb:23:ARG:O | 2.36 | 0.58 |
| 1:L5:1180:C:OP2 | 1:L5:1182:C:N4 | 2.36 | 0.58 |
| 1:L5:1414:C:H2' | 1:L5:1415:G:H8 | 1.67 | 0.58 |
| 1:L5:2469:C:H5 | 1:L5:2471:G:H1 | 1.50 | 0.58 |
| 1:L5:3973:G:N2 | 1:L5:3974:G:O6 | 2.37 | 0.58 |
| 3:L8:96:C:OP1 | 36:Lh:70:ARG:NH1 | 2.36 | 0.58 |
| 9:LF:86:GLU:HG3 | 22:LT:135:PRO:HB3 | 1.86 | 0.58 |
| 9:LF:214:SER:OG | 9:LF:215:SER:N | 2.36 | 0.58 |
| 11:LH:115:ARG:HH11 | 11:LH:123:ILE:HD13 | 1.68 | 0.58 |
| 16:LN:135:ILE:HD12 | 16:LN:151:ILE:HD13 | 1.85 | 0.58 |
| 51:SE:66:MET:SD | 51:SE:78:THR:OG1 | 2.62 | 0.58 |
| 68:Sg:72:SER:OG | 68:Sg:74:ASP:OD1 | 2.21 | 0.58 |
| 1:L5:1563:A:N6 | 47:S2:1028:A:N1 | 2.52 | 0.58 |
| 1:L5:2431:A:OP1 | 40:Ll:41:ARG:NH1 | 2.35 | 0.58 |
| 1:L5:2474:G:N2 | 1:L5:2502:G:O2' | 2.36 | 0.58 |
| 10:LG:58:PRO:HD2 | 10:LG:61:ILE:HD12 | 1.85 | 0.58 |
| 26:LX:151:ASN:OD1 | 81:CA:290:ARG:NH1 | 2.35 | 0.58 |
| 51:SE:201:HIS:O | 51:SE:204:SER:C | 2.47 | 0.58 |
| 55:SK:31:LYS:NZ | 55:SK:32:HIS:O | 2.35 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:L8:47:C:H1' | 3:L8:61:A:H2' | 1.86 | 0.58 |
| 31:Lc:20:LEU:O | 31:Lc:24:SER:CB | 2.49 | 0.58 |
| 47:S2:24:C:N3 | 47:S2:650:A:N1 | 2.50 | 0.58 |
| 47:S2:71:G:O6 | 70:SG:170:ARG:NH1 | 2.37 | 0.58 |
| 47:S2:532:C:N3 | 47:S2:552:G:N1 | 2.52 | 0.58 |
| 47:S2:868:G:OP2 | 47:S2:868:G:N2 | 2.32 | 0.58 |
| 66:Sc:21:THR:OG1 | 66:Sc:66:ARG:NH2 | 2.36 | 0.58 |
| 6:LC:134:PRO:HA | 6:LC:150:LEU:HD23 | 1.86 | 0.58 |
| 26:LX:104:ALA:O | 26:LX:134:LYS:NZ | 2.33 | 0.58 |
| 43:Lo:45:GLN:NE2 | 43:Lo:52:THR:OG1 | 2.37 | 0.58 |
| 45:Lr:26:SER:OG | 45:Lr:28:GLU:OE1 | 2.22 | 0.58 |
| 47:S2:658:U:O2 | 64:SX:17:ARG:NH2 | 2.37 | 0.58 |
| 47:S2:1441:U:O2 | 47:S2:1443:C:N4 | 2.36 | 0.58 |
| 49:SB:35:ALA:HB2 | 49:SB:44:ILE:HD11 | 1.85 | 0.58 |
| 80:Sf:103:LEU:HD12 | 80:Sf:105:TYR:H | 1.69 | 0.58 |
| 1:L5:452:A:H62 | 1:L5:1293:G:H3' | 1.68 | 0.58 |
| 1:L5:2756:G:O6 | 28:LZ:51:ARG:NH2 | 2.29 | 0.58 |
| 39:Lk:49:ASP:HB3 | 39:Lk:52:LYS:HB2 | 1.86 | 0.58 |
| 47:S2:534:G:H2' | 47:S2:535:G:H8 | 1.68 | 0.58 |
| 48:SA:8:LEU:HD12 | 48:SA:59:LEU:HD13 | 1.85 | 0.58 |
| 51:SE:100:ARG:HH12 | 51:SE:122:LYS:HA | 1.69 | 0.58 |
| 60:SS:141:ARG:O | 60:SS:144:ARG:C | 2.46 | 0.58 |
| 74:SO:44:VAL:HG13 | 74:SO:53:ILE:HB | 1.84 | 0.58 |
| 1:L5:2009:A:C1' | 82:CB:760:TYR:HE2 | 2.17 | 0.57 |
| 68:Sg:45:LEU:O | 68:Sg:47:ARG:NH1 | 2.36 | 0.57 |
| 69:SC:128:VAL:HG11 | 69:SC:155:ILE:HG22 | 1.86 | 0.57 |
| 82:CB:590:LEU:HD21 | 82:CB:603:TYR:HB3 | 1.86 | 0.57 |
| 1:L5:4093:G:C5 | 1:L5:4095:G:N1 | 2.72 | 0.57 |
| 2:L7:74:A:N3 | 21:LS:53:LYS:NZ | 2.52 | 0.57 |
| 26:LX:77:ILE:HA | 26:LX:100:VAL:HG12 | 1.86 | 0.57 |
| 47:S2:127:C:O2 | 51:SE:134:LYS:NZ | 2.37 | 0.57 |
| 64:SX:93:PHE:HA | 64:SX:140:ARG:HH21 | 1.69 | 0.57 |
| 75:SW:69:LEU:HD11 | 75:SW:72:CYS:HB3 | 1.85 | 0.57 |
| 82:CB:448:GLN:HB3 | 82:CB:473:VAL:HG23 | 1.86 | 0.57 |
| 82:CB:596:PRO:HD2 | 82:CB:720:GLN:HB2 | 1.84 | 0.57 |
| 1:L5:1374:G:H1' | 6:LC:234:LYS:HG2 | 1.86 | 0.57 |
| 1:L5:1837:A:OP2 | 22:LT:130:ARG:NH2 | 2.38 | 0.57 |
| 1:L5:4893:A:OP1 | 17:LO:188:LYS:NZ | 2.35 | 0.57 |
| 47:S2:468:A:OP1 | 70:SG:74:ARG:NH1 | 2.37 | 0.57 |
| 47:S2:925:G:N2 | 47:S2:1017:U:O2 | 2.28 | 0.57 |
| 47:S2:1310:U:OP1 | 72:SM:36:ARG:NH2 | 2.36 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 81:CA:233:GLY:N | 81:CA:314:GLU:OE2 | 2.37 | 0.57 |
| 82:CB:438:LYS:HZ2 | 82:CB:440:GLU:HB2 | 1.69 | 0.57 |
| 1:L5:453:G:OP1 | 8:LE:228:GLN:NE2 | 2.37 | 0.57 |
| 1:L5:3971:G:N1 | 1:L5:4050:A:C5 | 2.73 | 0.57 |
| 1:L5:4075:U:OP1 | 10:LG:249:ARG:NH2 | 2.35 | 0.57 |
| 46:Lz:17:VAL:HG21 | 46:Lz:180:VAL:HA | 1.87 | 0.57 |
| 47:S2:1752:C:C5 | 47:S2:1779:G:N2 | 2.72 | 0.57 |
| 48:SA:184:ARG:O | 48:SA:191:ARG:NH1 | 2.36 | 0.57 |
| 69:SC:264:SER:H | 69:SC:267:GLN:HE21 | 1.52 | 0.57 |
| 70:SG:142:ARG:HB2 | 70:SG:147:LEU:HB2 | 1.86 | 0.57 |
| 82:CB:626:GLN:HG2 | 82:CB:630:GLN:HE22 | 1.69 | 0.57 |
| 1:L5:471:A:C6 | 1:L5:684:G:N2 | 2.73 | 0.57 |
| 1:L5:2672:C:OP1 | 44:Lp:44:LYS:NZ | 2.34 | 0.57 |
| 20:LR:172:ARG:NH2 | 47:S2:909:G:OP2 | 2.37 | 0.57 |
| 47:S2:570:C:O2' | 76:SY:34:THR:O | 2.23 | 0.57 |
| 47:S2:747:U:O2 | 53:SH:111:LYS:NZ | 2.37 | 0.57 |
| 47:S2:885:U:N3 | 47:S2:902:G:N1 | 2.51 | 0.57 |
| 61:ST:71:GLY:O | 61:ST:74:SER:OG | 2.21 | 0.57 |
| 65:Sa:52:ASP:OD1 | 65:Sa:52:ASP:N | 2.34 | 0.57 |
| 68:Sg:206:LEU:HD11 | 68:Sg:218:LEU:HD13 | 1.87 | 0.57 |
| 1:L5:513:U:N3 | 1:L5:516:C:OP2 | 2.38 | 0.57 |
| 2:L7:8:G:O6 | 7:LD:21:ARG:NH2 | 2.36 | 0.57 |
| 14:LL:177:LYS:HB3 | 14:LL:180:ALA:HB3 | 1.87 | 0.57 |
| 48:SA:120:ARG:HD2 | 69:SC:266:TYR:HB3 | 1.87 | 0.57 |
| 68:Sg:85:GLY:HA2 | 68:Sg:108:VAL:HG13 | 1.86 | 0.57 |
| 70:SG:52:ILE:HD11 | 70:SG:109:LEU:HD12 | 1.85 | 0.57 |
| 72:SM:52:LEU:HD21 | 72:SM:65:VAL:HG21 | 1.86 | 0.57 |
| 1:L5:2483:G:O6 | 1:L5:2495:U:O4 | 2.23 | 0.57 |
| 1:L5:2906:G:H1' | 1:L5:2908:U:H1' | 1.86 | 0.57 |
| 1:L5:4293:U:O2' | 43:Lo:81:ARG:NH2 | 2.38 | 0.57 |
| 23:LU:62:THR:OG1 | 23:LU:73:THR:OG1 | 2.22 | 0.57 |
| 46:Lz:31:THR:HG22 | 46:Lz:171:HIS:HE2 | 1.70 | 0.57 |
| 46:Lz:54:ARG:HH22 | 46:Lz:156:LYS:HE3 | 1.68 | 0.57 |
| 47:S2:374:G:H1' | 56:SL:83:GLN:HE21 | 1.69 | 0.57 |
| 53:SH:82:GLU:HA | 53:SH:85:LYS:HG2 | 1.86 | 0.57 |
| 66:Sc:43:ILE:HG23 | 66:Sc:65:ALA:HB3 | 1.86 | 0.57 |
| 69:SC:183:LYS:HA | 69:SC:195:LEU:O | 2.04 | 0.57 |
| 82:CB:329:ASP:OD2 | 82:CB:329:ASP:N | 2.35 | 0.57 |
| 1:L5:1443:A:H2 | 1:L5:2103:G:C2 | 2.20 | 0.57 |
| 12:LI:179:ASP:OD1 | 12:LI:179:ASP:N | 2.35 | 0.57 |
| 15:LM:10:GLY:N | 15:LM:27:ILE:O | 2.38 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 47:S2:955:A:N6 | 47:S2:971:G:O2' | 2.35 | 0.57 |
| 53:SH:184:ASP:OD1 | 53:SH:184:ASP:N | 2.37 | 0.57 |
| 83:CC:21:A:C6 | 83:CC:56:G:C2 | 2.92 | 0.57 |
| 1:L5:267:G:H2' | 1:L5:268:G:H8 | 1.70 | 0.57 |
| 1:L5:749:G:O6 | 1:L5:913:U:C4 | 2.58 | 0.57 |
| 1:L5:947:C:OP1 | 6:LC:336:ARG:NH1 | 2.38 | 0.57 |
| 1:L5:4455:G:OP1 | 5:LB:5:LYS:NZ | 2.33 | 0.57 |
| 12:LI:54:SER:HB2 | 12:LI:135:ILE:HD11 | 1.86 | 0.57 |
| 34:Lf:63:LYS:HD2 | 34:Lf:64:PRO:HD2 | 1.87 | 0.57 |
| 47:S2:692:G:H2' | 47:S2:739:C:H1' | 1.87 | 0.57 |
| 82:CB:77:LEU:HD22 | 82:CB:100:ILE:HD13 | 1.85 | 0.57 |
| 1:L5:1930:U:OP2 | 17:LO:49:ARG:NH2 | 2.35 | 0.57 |
| 1:L5:4098:A:N6 | 1:L5:4100:C:N4 | 2.53 | 0.57 |
| 4:LA:22:HIS:O | 4:LA:24:LYS:NZ | 2.34 | 0.57 |
| 12:LI:48:LEU:O | 12:LI:139:ARG:HA | 2.05 | 0.57 |
| 47:S2:656:G:O2' | 69:SC:227:ARG:NH2 | 2.38 | 0.57 |
| 49:SB:107:ARG:NH2 | 74:SO:133:THR:O | 2.38 | 0.57 |
| 51:SE:212:ASP:OD1 | 51:SE:216:ASN:N | 2.37 | 0.57 |
| 60:SS:51:ASP:O | 60:SS:54:LYS:NZ | 2.37 | 0.57 |
| 71:SJ:24:ARG:NH1 | 71:SJ:28:GLU:OE2 | 2.38 | 0.57 |
| 82:CB:393:PRO:HG2 | 82:CB:395:MET:HE2 | 1.87 | 0.57 |
| 1:L5:4088:C:OP1 | 4:LA:37:ARG:NH1 | 2.38 | 0.56 |
| 15:LM:123:ILE:HD11 | 17:LO:189:ILE:HD13 | 1.87 | 0.56 |
| 28:LZ:88:ASP:N | 28:LZ:88:ASP:OD1 | 2.37 | 0.56 |
| 47:S2:1055:A:N6 | 47:S2:1061:U:OP2 | 2.37 | 0.56 |
| 81:CA:46:LEU:HD21 | 81:CA:91:PRO:HG2 | 1.87 | 0.56 |
| 1:L5:494:U:C4 | 1:L5:495:C:N4 | 2.73 | 0.56 |
| 1:L5:1683:U:OP1 | 29:La:44:ASN:ND2 | 2.36 | 0.56 |
| 25:LW:101:ARG:NH1 | 70:SG:156:TYR:OH | 2.39 | 0.56 |
| 47:S2:928:G:H2' | 47:S2:929:G:C8 | 2.40 | 0.56 |
| 1:L5:517:C:N4 | 1:L5:646:G:O2' | 2.37 | 0.56 |
| 11:LH:12:ILE:HB | 11:LH:53:LYS:O | 2.05 | 0.56 |
| 14:LL:205:GLN:NE2 | 14:LL:208:GLU:OE2 | 2.38 | 0.56 |
| 24:LV:84:GLN:NE2 | 24:LV:86:LYS:O | 2.34 | 0.56 |
| 47:S2:372:U:O2' | 56:SL:82:MET:SD | 2.62 | 0.56 |
| 48:SA:128:ARG:NH2 | 48:SA:151:ASP:O | 2.38 | 0.56 |
| 49:SB:129:THR:OG1 | 49:SB:130:THR:N | 2.39 | 0.56 |
| 82:CB:748:GLU:HB2 | 82:CB:811:GLN:HG2 | 1.88 | 0.56 |
| 84:CD:215:SER:HG | 84:CD:216:HIS:HD1 | 1.53 | 0.56 |
| 1:L5:295:A:OP2 | 43:Lo:39:ARG:NH1 | 2.37 | 0.56 |
| 1:L5:664:G:N2 | 1:L5:666:G:O6 | 2.39 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:L5:1175:A:H2 | 1:L5:1185:G:H1 | 1.52 | 0.56 |
| 47:S2:906:U:H2' | 47:S2:907:G:H8 | 1.70 | 0.56 |
| 1:L5:3951:G:N3 | 1:L5:4062:A:C6 | 2.72 | 0.56 |
| 1:L5:4882:U:OP1 | 15:LM:117:LYS:NZ | 2.39 | 0.56 |
| 11:LH:17:ASP:O | 11:LH:28:LYS:HB3 | 2.04 | 0.56 |
| 70:SG:2:LYS:O | 70:SG:108:VAL:HA | 2.06 | 0.56 |
| 84:CD:289:ILE:HA | 84:CD:292:LYS:HE2 | 1.87 | 0.56 |
| 1:L5:257:C:OP1 | 14:LL:130:LYS:NZ | 2.38 | 0.56 |
| 1:L5:2020:U:H2' | 1:L5:2021:G:H8 | 1.70 | 0.56 |
| 1:L5:4092:G:N7 | 1:L5:4114:C:N4 | 2.53 | 0.56 |
| 48:SA:183:LEU:O | 48:SA:186:ARG:C | 2.49 | 0.56 |
| 68:Sg:5:MET:HB3 | 68:Sg:310:TRP:HB3 | 1.86 | 0.56 |
| 82:CB:116:THR:HG21 | 82:CB:499:PHE:HB3 | 1.87 | 0.56 |
| 1:L5:1980:U:H2' | 1:L5:1980:U:OP2 | 2.06 | 0.56 |
| 1:L5:2406:G:N7 | 40:Ll:2:SER:N | 2.54 | 0.56 |
| 47:S2:482:G:N1 | 47:S2:485:A:OP2 | 2.38 | 0.56 |
| 47:S2:1124:C:O2' | 59:SR:126:MET:O | 2.23 | 0.56 |
| 47:S2:1308:U:H2' | 47:S2:1309:C:H6 | 1.71 | 0.56 |
| 57:SP:98:ASN:ND2 | 57:SP:121:ILE:O | 2.36 | 0.56 |
| 80:Sf:141:CYS:HB3 | 80:Sf:146:LEU:HG | 1.88 | 0.56 |
| 1:L5:749:G:N2 | 1:L5:913:U:O2 | 2.39 | 0.56 |
| 1:L5:1734:G:N2 | 1:L5:1735:U:O4 | 2.31 | 0.56 |
| 1:L5:3960:A:H62 | 1:L5:4048:A:H62 | 1.53 | 0.56 |
| 1:L5:3969:G:H5" | 1:L5:3970:G:C2 | 2.41 | 0.56 |
| 12:LI:209:TRP:O | 12:LI:212:LEU:C | 2.49 | 0.56 |
| 18:LP:122:ALA:HB3 | 18:LP:143:PRO:HG2 | 1.87 | 0.56 |
| 39:Lk:12:LEU:HB3 | 39:Lk:16:ARG:HH21 | 1.70 | 0.56 |
| 50:SD:80:PRO:O | 50:SD:83:SER:OG | 2.24 | 0.56 |
| 61:ST:129:ARG:HG2 | 61:ST:133:ARG:HH12 | 1.69 | 0.56 |
| 1:L5:257:C:H2' | 1:L5:258:G:C8 | 2.41 | 0.56 |
| 5:LB:396:ARG:NH1 | 5:LB:400:GLU:OE1 | 2.39 | 0.56 |
| 7:LD:217:ASP:N | 7:LD:217:ASP:OD1 | 2.39 | 0.56 |
| 21:LS:85:ASP:HB3 | 21:LS:90:THR:HG22 | 1.87 | 0.56 |
| 36:Lh:4:ILE:HD11 | 36:Lh:53:SER:HB3 | 1.88 | 0.56 |
| 47:S2:1130:G:OP2 | 47:S2:1130:G:N2 | 2.35 | 0.56 |
| 47:S2:1756:C:C2 | 47:S2:1776:G:C6 | 2.94 | 0.56 |
| 49:SB:144:LYS:HB2 | 49:SB:208:HIS:HB3 | 1.88 | 0.56 |
| 50:SD:74:GLN:NE2 | 50:SD:79:PHE:O | 2.39 | 0.56 |
| 81:CA:83:ASN:HD21 | 81:CA:105:LEU:HB3 | 1.71 | 0.56 |
| 82:CB:13:MET:O | 82:CB:16:LYS:NZ | 2.37 | 0.56 |
| 82:CB:45:ILE:HG13 | 82:CB:46:ILE:HD12 | 1.87 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 82:CB:479:LEU:O | 82:CB:529:LYS:NZ | 2.35 | 0.56 |
| 82:CB:804:THR:HG21 | 82:CB:808:ALA:HB2 | 1.88 | 0.56 |
| 1:L5:679:C:H2' | 1:L5:680:G:H8 | 1.71 | 0.56 |
| 1:L5:1480:C:O2' | 1:L5:1482:G:OP2 | 2.23 | 0.56 |
| 1:L5:1759:G:H1 | 1:L5:1773:U:H3 | 1.54 | 0.56 |
| 1:L5:4194:U:O2' | 12:LI:116:ARG:NH1 | 2.38 | 0.56 |
| 14:LL:63:THR:HG21 | 29:La:66:ASN:HB3 | 1.87 | 0.56 |
| 27:LY:91:ASN:HB2 | 27:LY:93:THR:HG22 | 1.87 | 0.56 |
| 57:SP:94:VAL:O | 57:SP:104:GLN:NE2 | 2.39 | 0.56 |
| 68:Sg:10:THR:HG21 | 68:Sg:306:LEU:HD23 | 1.88 | 0.56 |
| 75:SW:87:GLU:O | 75:SW:91:ASN:ND2 | 2.39 | 0.56 |
| 77:SZ:64:ASN:O | 77:SZ:111:ARG:NH2 | 2.39 | 0.56 |
| 82:CB:434:TYR:O | 82:CB:493:ASN:ND2 | 2.39 | 0.56 |
| 84:CD:282:THR:N | 84:CD:285:GLU:OE2 | 2.39 | 0.56 |
| 1:L5:3697:U:H5" | 1:L5:3698:G:H5' | 1.87 | 0.55 |
| 2:L7:13:A:O2' | 7:LD:24:ARG:NH1 | 2.39 | 0.55 |
| 12:LI:180:GLU:O | 12:LI:184:MET:HB2 | 2.06 | 0.55 |
| 20:LR:3:MET:HE3 | 20:LR:5:ARG:HE | 1.71 | 0.55 |
| 20:LR:175:GLU:HA | 20:LR:178:GLN:HG3 | 1.87 | 0.55 |
| 29:La:131:ARG:NH2 | 29:La:135:GLU:OE1 | 2.39 | 0.55 |
| 50:SD:104:SER:O | 50:SD:108:LYS:NZ | 2.39 | 0.55 |
| 52:SF:28:VAL:O | 52:SF:42:LYS:NZ | 2.39 | 0.55 |
| 68:Sg:8:ARG:NH2 | 68:Sg:311:GLN:OE1 | 2.39 | 0.55 |
| 1:L5:85:G:N2 | 1:L5:98:A:OP2 | 2.37 | 0.55 |
| 9:LF:147:LEU:O | 9:LF:151:ASN:ND2 | 2.36 | 0.55 |
| 23:LU:65:ARG:O | 23:LU:67:LYS:NZ | 2.39 | 0.55 |
| 53:SH:91:HIS:HD2 | 53:SH:172:THR:HG21 | 1.71 | 0.55 |
| 68:Sg:258:ILE:HB | 68:Sg:268:ASP:HB2 | 1.88 | 0.55 |
| 1:L5:1764:G:C4 | 1:L5:1770:A:C6 | 2.94 | 0.55 |
| 1:L5:2554:U:C2 | 1:L5:2764:A:N7 | 2.75 | 0.55 |
| 1:L5:4742:G:H2' | 1:L5:4743:G:H8 | 1.72 | 0.55 |
| 8:LE:155:GLY:O | 8:LE:158:ARG:NH1 | 2.39 | 0.55 |
| 23:LU:20:LYS:H | 23:LU:73:THR:HG22 | 1.72 | 0.55 |
| 32:Ld:18:ASN:O | 32:Ld:90:ARG:NH1 | 2.40 | 0.55 |
| 47:S2:1230:C:OP1 | 60:SS:130:ARG:NH2 | 2.39 | 0.55 |
| 50:SD:115:VAL:HG22 | 84:CD:218:TRP:HA | 1.88 | 0.55 |
| 1:L5:148:C:OP2 | 10:LG:197:LYS:NZ | 2.38 | 0.55 |
| 1:L5:469:C:N3 | 8:LE:105:ARG:NH2 | 2.48 | 0.55 |
| 1:L5:989:U:O2 | 1:L5:1064:G:O6 | 2.25 | 0.55 |
| 1:L5:1443:A:N1 | 1:L5:2103:G:O6 | 2.39 | 0.55 |
| 1:L5:2011:C:H3' | 1:L5:2012:A:H8 | 1.70 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 8:LE:149:ILE:HD13 | 8:LE:271:LEU:HD21 | 1.88 | 0.55 |
| 14:LL:172:GLU:O | 14:LL:175:ASN:C | 2.50 | 0.55 |
| 47:S2:1618:C:H4' | 57:SP:50:ARG:HH22 | 1.70 | 0.55 |
| 54:SI:152:ARG:O | 54:SI:156:ALA:HB2 | 2.06 | 0.55 |
| 82:CB:18:ASN:ND2 | 82:CB:94:ASP:O | 2.38 | 0.55 |
| 1:L5:163:A:H2' | 1:L5:164:G:H8 | 1.72 | 0.55 |
| 1:L5:3641:U:H5 | 1:L5:3646:A:N7 | 2.05 | 0.55 |
| 7:LD:193:GLU:OE2 | 7:LD:197:LYS:NZ | 2.39 | 0.55 |
| 8:LE:190:HIS:HD2 | 8:LE:192:LYS:HB2 | 1.72 | 0.55 |
| 19:LQ:172:ARG:NH1 | 29:La:56:VAL:O | 2.40 | 0.55 |
| 37:Li:23:LYS:HD2 | 37:Li:24:PRO:HD2 | 1.89 | 0.55 |
| 40:Ll:21:ARG:NH1 | 40:Ll:22:PRO:O | 2.40 | 0.55 |
| 46:Lz:20:GLY:O | 46:Lz:23:ARG:NH1 | 2.39 | 0.55 |
| 46:Lz:203:ALA:HA | 46:Lz:217:TYR:HA | 1.88 | 0.55 |
| 47:S2:1235:G:H21 | 57:SP:135:ALA:HB2 | 1.71 | 0.55 |
| 47:S2:1589:A:N3 | 47:S2:1653:U:O2' | 2.39 | 0.55 |
| 68:Sg:107:ASP:OD2 | 68:Sg:125:ARG:NH1 | 2.40 | 0.55 |
| 81:CA:70:MET:N | 81:CA:70:MET:SD | 2.77 | 0.55 |
| 82:CB:595:SER:HA | 82:CB:724:THR:HG21 | 1.89 | 0.55 |
| 1:L5:4888:U:O2 | 1:L5:4931:G:C2 | 2.58 | 0.55 |
| 8:LE:207:LYS:O | 8:LE:256:GLN:NE2 | 2.39 | 0.55 |
| 12:LI:43:VAL:O | 12:LI:171:TRP:NE1 | 2.32 | 0.55 |
| 21:LS:127:MET:HA | 22:LT:153:PRO:HG2 | 1.89 | 0.55 |
| 28:LZ:90:PRO:O | 28:LZ:117:LYS:NZ | 2.39 | 0.55 |
| 32:Ld:92:ARG:NH1 | 32:Ld:94:GLU:OE1 | 2.37 | 0.55 |
| 47:S2:1302:G:N2 | 47:S2:1307:U:O4 | 2.39 | 0.55 |
| 47:S2:1356:G:O3' | 69:SC:125:LYS:NZ | 2.39 | 0.55 |
| 47:S2:1402:A:N6 | 47:S2:1441:U:O2' | 2.37 | 0.55 |
| 47:S2:1416:C:C4 | 47:S2:1417:C:N4 | 2.75 | 0.55 |
| 64:SX:24:ASP:OD1 | 64:SX:24:ASP:N | 2.39 | 0.55 |
| 78:Sb:49:HIS:ND1 | 78:Sb:69:GLY:O | 2.40 | 0.55 |
| 1:L5:268:G:H2' | 1:L5:269:G:H8 | 1.72 | 0.55 |
| 1:L5:3811:G:O2' | 1:L5:3814:U:OP2 | 2.25 | 0.55 |
| 1:L5:4467:A:H61 | 1:L5:4490:C:N4 | 1.96 | 0.55 |
| 5:LB:50:LYS:HB2 | 5:LB:345:LEU:HD11 | 1.88 | 0.55 |
| 12:LI:41:ALA:O | 12:LI:139:ARG:NH2 | 2.38 | 0.55 |
| 47:S2:1677:U:H2' | 47:S2:1678:A:H8 | 1.71 | 0.55 |
| 72:SM:128:PHE:O | 72:SM:132:LYS:HB2 | 2.06 | 0.55 |
| 1:L5:1332:C:H2' | 1:L5:1333:A:H8 | 1.71 | 0.55 |
| 1:L5:3961:G:N2 | 1:L5:3965:A:N7 | 2.53 | 0.55 |
| 10:LG:81:ASN:ND2 | 10:LG:237:TRP:O | 2.39 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 43:Lo:61:LYS:HD2 | 43:Lo:87:ARG:HH12 | 1.72 | 0.55 |
| 47:S2:885:U:O2 | 47:S2:901:G:N2 | 2.37 | 0.55 |
| 47:S2:974:C:O2 | 74:SO:55:ARG:NH1 | 2.39 | 0.55 |
| 47:S2:1512:C:H5" | 67:Sd:8:TRP:HZ3 | 1.72 | 0.55 |
| 47:S2:1743:G:H21 | 47:S2:1791:A:H62 | 1.53 | 0.55 |
| 47:S2:1757:G:O2' | 47:S2:1776:G:O6 | 2.25 | 0.55 |
| 53:SH:72:PHE:O | 53:SH:76:GLN:CB | 2.50 | 0.55 |
| 69:SC:176:LYS:HE2 | 69:SC:177:PRO:HD2 | 1.89 | 0.55 |
| 72:SM:43:ASP:OD1 | 80:Sf:116:ARG:NH2 | 2.38 | 0.55 |
| 81:CA:67:GLU:HB3 | 81:CA:70:MET:HE1 | 1.88 | 0.55 |
| 1:L5:88:A:N7 | 19:LQ:173:LYS:NZ | 2.55 | 0.55 |
| 1:L5:444:G:H1 | 1:L5:1303:A:H2 | 1.51 | 0.55 |
| 1:L5:919:C:OP1 | 15:LM:69:HIS:ND1 | 2.34 | 0.55 |
| 1:L5:4122:G:O3' | 35:Lg:90:ARG:NH1 | 2.40 | 0.55 |
| 1:L5:4273:A:N6 | 1:L5:4335:C:C4 | 2.75 | 0.55 |
| 31:Lc:78:ASN:OD1 | 31:Lc:78:ASN:N | 2.39 | 0.55 |
| 47:S2:1566:G:N7 | 61:ST:101:ARG:NH2 | 2.55 | 0.55 |
| 47:S2:1748:G:O6 | 47:S2:1786:U:O4 | 2.24 | 0.55 |
| 67:Sd:48:LYS:HZ3 | 67:Sd:53:ILE:HA | 1.71 | 0.55 |
| 70:SG:181:THR:HB | 70:SG:184:VAL:HG23 | 1.89 | 0.55 |
| 1:L5:662:C:H2' | 1:L5:663:G:H8 | 1.72 | 0.55 |
| 1:L5:2045:G:O6 | 1:L5:3870:C:O2' | 2.25 | 0.55 |
| 1:L5:2260:C:O2 | 1:L5:2261:G:N1 | 2.40 | 0.55 |
| 1:L5:2484:A:C5 | 1:L5:2495:U:C2 | 2.95 | 0.55 |
| 1:L5:3960:A:N6 | 1:L5:4048:A:N6 | 2.54 | 0.55 |
| 1:L5:4305:G:N7 | 22:LT:87:LYS:NZ | 2.55 | 0.55 |
| 3:L8:31:G:OP1 | 14:LL:34:ARG:NH1 | 2.40 | 0.55 |
| 11:LH:89:ARG:HB2 | 11:LH:147:GLU:HG2 | 1.89 | 0.55 |
| 47:S2:1547:C:N4 | 47:S2:1586:U:O4 | 2.40 | 0.55 |
| 47:S2:1729:U:H3 | 47:S2:1805:G:H1 | 1.54 | 0.55 |
| 1:L5:662:C:H2' | 1:L5:663:G:C8 | 2.42 | 0.54 |
| 1:L5:2411:C:H2' | 1:L5:2412:A:H8 | 1.71 | 0.54 |
| 4:LA:142:GLU:HG3 | 4:LA:143:THR:HG23 | 1.88 | 0.54 |
| 11:LH:7:ASN:HD22 | 11:LH:56:ARG:HH11 | 1.55 | 0.54 |
| 27:LY:10:ASP:HB3 | 27:LY:13:LYS:HB2 | 1.88 | 0.54 |
| 28:LZ:17:ARG:NH2 | 28:LZ:18:TYR:OH | 2.40 | 0.54 |
| 34:Lf:37:ASP:N | 34:Lf:37:ASP:OD1 | 2.38 | 0.54 |
| 47:S2:986:G:OP2 | 47:S2:988:C:N4 | 2.39 | 0.54 |
| 50:SD:61:GLU:OE2 | 50:SD:62:LYS:NZ | 2.39 | 0.54 |
| 54:SI:141:ARG:HE | 54:SI:145:ILE:HD13 | 1.72 | 0.54 |
| 82:CB:256:MET:O | 82:CB:260:LEU:HB2 | 2.07 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 83:CC:46:G:H2' | 83:CC:47:G:C8 | 2.43 | 0.54 |
| 1:L5:83:C:O2' | 1:L5:100:C:N4 | 2.40 | 0.54 |
| 1:L5:4966:A:OP2 | 5:LB:126:LYS:NZ | 2.41 | 0.54 |
| 33:Le:34:ASN:N | 33:Le:34:ASN:OD1 | 2.40 | 0.54 |
| 56:SL:5:GLN:NE2 | 56:SL:11:GLN:O | 2.36 | 0.54 |
| 71:SJ:179:LYS:HA | 71:SJ:182:GLN:HG2 | 1.90 | 0.54 |
| 82:CB:654:PRO:HD2 | 82:CB:658:GLY:HA3 | 1.89 | 0.54 |
| 1:L5:2484:A:C6 | 1:L5:2495:U:O2 | 2.60 | 0.54 |
| 1:L5:3971:G:H21 | 1:L5:3973:G:H1' | 1.73 | 0.54 |
| 20:LR:172:ARG:HA | 20:LR:175:GLU:HG3 | 1.88 | 0.54 |
| 47:S2:640:A:H2' | 47:S2:641:A:C8 | 2.43 | 0.54 |
| 52:SF:112:LEU:HA | 52:SF:177:LEU:HD21 | 1.88 | 0.54 |
| 64:SX:60:LYS:H | 64:SX:114:ASP:HB2 | 1.70 | 0.54 |
| 66:Sc:14:VAL:HG23 | 66:Sc:30:VAL:HB | 1.89 | 0.54 |
| 78:Sb:34:ASP:HA | 78:Sb:44:THR:O | 2.07 | 0.54 |
| 81:CA:181:PRO:HA | 81:CA:230:VAL:HA | 1.89 | 0.54 |
| 1:L5:4232:U:O4 | 43:Lo:8:ARG:NH2 | 2.40 | 0.54 |
| 1:L5:4415:A:OP1 | 12:LI:154:ARG:NH2 | 2.40 | 0.54 |
| 5:LB:50:LYS:NZ | 5:LB:337:VAL:O | 2.40 | 0.54 |
| 25:LW:105:ARG:NH1 | 70:SG:151:ASP:OD1 | 2.40 | 0.54 |
| 33:Le:76:LYS:O | 45:Lr:23:GLN:NE2 | 2.38 | 0.54 |
| 60:SS:76:GLN:O | 60:SS:78:LYS:NZ | 2.40 | 0.54 |
| 73:SN:140:LYS:HE3 | 73:SN:142:GLU:HB2 | 1.89 | 0.54 |
| 1:L5:224:U:O2 | 6:LC:219:LYS:NZ | 2.40 | 0.54 |
| 1:L5:493:G:C2 | 1:L5:660:A:H2 | 2.25 | 0.54 |
| 2:L7:52:C:O2' | 2:L7:54:A:N7 | 2.41 | 0.54 |
| 6:LC:254:GLU:OE2 | 6:LC:258:ARG:NE | 2.39 | 0.54 |
| 11:LH:120:GLU:OE2 | 11:LH:124:ARG:NH2 | 2.29 | 0.54 |
| 15:LM:104:MET:HE2 | 17:LO:199:HIS:HB3 | 1.90 | 0.54 |
| 33:Le:43:ASN:HD22 | 33:Le:46:ARG:H | 1.55 | 0.54 |
| 49:SB:146:ARG:HB2 | 49:SB:149:GLN:HB2 | 1.88 | 0.54 |
| 50:SD:158:ILE:HG23 | 50:SD:164:VAL:HG13 | 1.89 | 0.54 |
| 66:Sc:22:GLY:O | 66:Sc:26:GLN:NE2 | 2.41 | 0.54 |
| 68:Sg:147:HIS:NE2 | 68:Sg:173:LEU:O | 2.39 | 0.54 |
| 78:Sb:23:ARG:NH1 | 78:Sb:27:SER:O | 2.41 | 0.54 |
| 81:CA:221:HIS:N | 81:CA:325:LEU:O | 2.40 | 0.54 |
| 82:CB:106:PRO:HG2 | 82:CB:114:GLU:HG3 | 1.88 | 0.54 |
| 1:L5:709:C:OP1 | 34:Lf:89:ARG:NH1 | 2.41 | 0.54 |
| 1:L5:1179:U:OP2 | 7:LD:289:ARG:NH1 | 2.41 | 0.54 |
| 1:L5:2483:G:N1 | 1:L5:2495:U:N3 | 2.55 | 0.54 |
| 5:LB:57:VAL:HG22 | 5:LB:73:VAL:HG22 | 1.90 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 22:LT:28:ALA:HA | 22:LT:31:MET:HG2 | 1.89 | 0.54 |
| 45:Lr:105:ASP:OD1 | 45:Lr:105:ASP:N | 2.39 | 0.54 |
| 47:S2:556:U:H3' | 47:S2:557:U:H4' | 1.89 | 0.54 |
| 47:S2:604:A:N3 | 47:S2:639:C:O2' | 2.36 | 0.54 |
| 48:SA:222:VAL:HG13 | 48:SA:223:THR:HG23 | 1.88 | 0.54 |
| 53:SH:58:LYS:HB3 | 53:SH:90:LYS:HD3 | 1.90 | 0.54 |
| 81:CA:59:GLU:HA | 81:CA:62:LYS:HG2 | 1.89 | 0.54 |
| 1:L5:1367:C:O2' | 1:L5:1369:C:OP2 | 2.21 | 0.54 |
| 1:L5:2758:G:O2' | 1:L5:2765:A:N3 | 2.36 | 0.54 |
| 30:Lb:31:SER:OG | 30:Lb:32:LEU:N | 2.41 | 0.54 |
| 47:S2:43:U:OP2 | 47:S2:485:A:N6 | 2.35 | 0.54 |
| 47:S2:388:U:H2' | 47:S2:389:A:H8 | 1.73 | 0.54 |
| 47:S2:444:G:O6 | 54:SI:26:LYS:NZ | 2.40 | 0.54 |
| 47:S2:804:U:O2 | 47:S2:859:G:N2 | 2.36 | 0.54 |
| 47:S2:1455:A:H61 | 47:S2:1471:C:H42 | 0.73 | 0.54 |
| 52:SF:96:ALA:HA | 52:SF:99:ILE:HD12 | 1.89 | 0.54 |
| 59:SR:58:MET:HA | 59:SR:61:ILE:HG12 | 1.90 | 0.54 |
| 64:SX:77:ASN:O | 64:SX:79:LYS:NZ | 2.40 | 0.54 |
| 82:CB:302:ASP:O | 82:CB:306:ASN:ND2 | 2.39 | 0.54 |
| 4:LA:70:LYS:HD2 | 4:LA:72:ARG:HE | 1.73 | 0.54 |
| 5:LB:14:LEU:HD23 | 5:LB:17:LEU:HD21 | 1.88 | 0.54 |
| 5:LB:396:ARG:HA | 5:LB:399:LYS:HD2 | 1.89 | 0.54 |
| 7:LD:271:MET:HB3 | 7:LD:276:LYS:HE2 | 1.89 | 0.54 |
| 50:SD:49:ILE:HG13 | 50:SD:87:TYR:HB2 | 1.88 | 0.54 |
| 50:SD:141:LYS:HZ1 | 50:SD:179:GLN:HB2 | 1.72 | 0.54 |
| 68:Sg:46:THR:O | 68:Sg:51:ASN:O | 2.25 | 0.54 |
| 72:SM:31:LEU:HD12 | 72:SM:111:VAL:HA | 1.89 | 0.54 |
| 1:L5:665:C:H4' | 1:L5:666:G:H5' | 1.90 | 0.54 |
| 1:L5:4279:A:H5' | 1:L5:4281:A:H1' | 1.89 | 0.54 |
| 12:LI:89:VAL:HG12 | 12:LI:136:MET:HG3 | 1.90 | 0.54 |
| 47:S2:747:U:N3 | 47:S2:796:G:N1 | 2.55 | 0.54 |
| 50:SD:60:GLY:HA3 | 50:SD:65:ARG:H | 1.72 | 0.54 |
| 67:Sd:56:ASP:N | 67:Sd:56:ASP:OD1 | 2.41 | 0.54 |
| 73:SN:75:LEU:HB3 | 73:SN:81:ALA:HB2 | 1.89 | 0.54 |
| 1:L5:68:U:OP1 | 16:LN:178:HIS:ND1 | 2.35 | 0.54 |
| 1:L5:1269:G:H1 | 1:L5:2106:G:H1' | 1.72 | 0.54 |
| 1:L5:1755:C:N4 | 1:L5:1776:A:H61 | 2.02 | 0.54 |
| 9:LF:213:LEU:HB3 | 9:LF:247:MET:HG2 | 1.90 | 0.54 |
| 13:LJ:95:ARG:HH11 | 13:LJ:96:LYS:H | 1.56 | 0.54 |
| 45:Lr:66:ARG:NH2 | 45:Lr:75:THR:OG1 | 2.40 | 0.54 |
| 47:S2:885:U:O4 | 47:S2:901:G:O6 | 2.25 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 47:S2:1756:C:N4 | 47:S2:1775:U:H3 | 2.06 | 0.54 |
| 48:SA:184:ARG:HD3 | 48:SA:191:ARG:HG3 | 1.90 | 0.54 |
| 49:SB:128:LYS:NZ | 49:SB:129:THR:O | 2.39 | 0.54 |
| 66:Sc:10:LYS:NZ | 66:Sc:11:LEU:O | 2.41 | 0.54 |
| 81:CA:20:LYS:HA | 81:CA:23:MET:HG3 | 1.89 | 0.54 |
| 81:CA:136:THR:OG1 | 81:CA:344:LYS:NZ | 2.31 | 0.54 |
| 1:L5:369:G:N2 | 1:L5:372:A:OP2 | 2.36 | 0.53 |
| 1:L5:1980:U:O2 | 1:L5:1980:U:O2' | 2.24 | 0.53 |
| 1:L5:2848:G:O2' | 1:L5:3838:U:O4 | 2.20 | 0.53 |
| 1:L5:4260:U:H2' | 1:L5:4261:C:C6 | 2.43 | 0.53 |
| 4:LA:36:GLU:OE2 | 4:LA:163:ARG:NH1 | 2.39 | 0.53 |
| 8:LE:223:ARG:NH1 | 8:LE:234:ASP:O | 2.40 | 0.53 |
| 11:LH:142:ASP:OD1 | 11:LH:142:ASP:N | 2.38 | 0.53 |
| 47:S2:5:U:H2' | 47:S2:6:G:H8 | 1.73 | 0.53 |
| 47:S2:317:C:OP2 | 70:SG:183:ARG:NH2 | 2.35 | 0.53 |
| 53:SH:148:LEU:HB2 | 75:SW:49:GLU:HG2 | 1.90 | 0.53 |
| 73:SN:62:GLN:OE1 | 73:SN:64:ARG:NH2 | 2.41 | 0.53 |
| 1:L5:1982:G:H8 | 1:L5:1982:G:O5' | 1.91 | 0.53 |
| 1:L5:3949:A:H62 | 1:L5:4064:C:N4 | 1.98 | 0.53 |
| 21:LS:15:ARG:HB3 | 21:LS:27:LEU:HD23 | 1.90 | 0.53 |
| 47:S2:94:G:HO2' | 47:S2:508:A:HO2' | 1.56 | 0.53 |
| 47:S2:690:G:N2 | 47:S2:690:G:OP2 | 2.40 | 0.53 |
| 47:S2:1007:C:O2' | 73:SN:101:HIS:ND1 | 2.41 | 0.53 |
| 47:S2:1355:C:O3' | 69:SC:238:LYS:NZ | 2.41 | 0.53 |
| 74:SO:57:THR:HB | 74:SO:60:MET:HG3 | 1.90 | 0.53 |
| 80:Sf:133:ALA:O | 80:Sf:139:HIS:ND1 | 2.42 | 0.53 |
| 82:CB:404:THR:OG1 | 82:CB:406:ASP:OD1 | 2.26 | 0.53 |
| 1:L5:3969:G:O6 | 1:L5:4051:C:N4 | 2.41 | 0.53 |
| 1:L5:4097:G:C6 | 1:L5:4113:U:O2 | 2.62 | 0.53 |
| 1:L5:4113:U:O2' | 1:L5:4115:G:OP2 | 2.25 | 0.53 |
| 32:Ld:46:LEU:HD22 | 32:Ld:64:ILE:HD13 | 1.89 | 0.53 |
| 45:Lr:21:ASN:N | 45:Lr:21:ASN:OD1 | 2.42 | 0.53 |
| 46:Lz:36:ILE:HB | 46:Lz:190:LEU:HD11 | 1.89 | 0.53 |
| 47:S2:304:C:H5" | 47:S2:305:U:H5' | 1.88 | 0.53 |
| 51:SE:126:VAL:HA | 51:SE:141:THR:HA | 1.89 | 0.53 |
| 63:SV:73:ALA:HB1 | 63:SV:78:ILE:HB | 1.89 | 0.53 |
| 70:SG:212:LEU:HA | 70:SG:215:LYS:HD2 | 1.90 | 0.53 |
| 1:L5:2092:G:O2' | 1:L5:2262:G:N2 | 2.41 | 0.53 |
| 1:L5:3887:C:OP2 | 17:LO:85:ARG:NH2 | 2.37 | 0.53 |
| 1:L5:4688:C:O2' | 11:LH:155:SER:OG | 2.26 | 0.53 |
| 2:L7:2:U:H3 | 2:L7:117:G:H1 | 1.56 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 4:LA:14:SER:OG | 4:LA:15:VAL:N | 2.41 | 0.53 |
| 5:LB:220:ILE:HB | 5:LB:346:THR:HB | 1.91 | 0.53 |
| 11:LH:171:ASP:O | 11:LH:174:LYS:O | 2.26 | 0.53 |
| 12:LI:66:GLU:OE1 | 12:LI:69:ARG:NH1 | 2.42 | 0.53 |
| 12:LI:170:LYS:HA | 12:LI:177:ASN:HA | 1.91 | 0.53 |
| 20:LR:30:ASN:O | 20:LR:34:ASN:ND2 | 2.41 | 0.53 |
| 47:S2:912:C:N3 | 47:S2:914:U:C2 | 2.75 | 0.53 |
| 60:SS:17:ASN:ND2 | 60:SS:101:ASN:OD1 | 2.38 | 0.53 |
| 72:SM:126:GLU:HA | 72:SM:129:LYS:HG2 | 1.91 | 0.53 |
| 80:Sf:89:LYS:HD2 | 80:Sf:91:ASN:H | 1.73 | 0.53 |
| 83:CC:33:U:N3 | 83:CC:36:A:OP2 | 2.37 | 0.53 |
| 1:L5:137:G:H2' | 1:L5:138:G:H8 | 1.74 | 0.53 |
| 1:L5:1270:A:H1' | 1:L5:1440:U:H1' | 1.90 | 0.53 |
| 7:LD:107:ARG:HH12 | 7:LD:120:GLU:HA | 1.73 | 0.53 |
| 10:LG:225:ASN:O | 10:LG:229:ARG:NE | 2.41 | 0.53 |
| 43:Lo:33:LEU:HA | 43:Lo:38:LYS:HG2 | 1.89 | 0.53 |
| 47:S2:302:A:N3 | 54:SI:64:ASN:ND2 | 2.56 | 0.53 |
| 47:S2:810:A:H5" | 47:S2:811:A:H5' | 1.91 | 0.53 |
| 47:S2:906:U:H2' | 47:S2:907:G:C8 | 2.43 | 0.53 |
| 47:S2:1358:U:OP2 | 69:SC:123:ARG:NH1 | 2.40 | 0.53 |
| 50:SD:55:THR:HA | 50:SD:58:VAL:HG12 | 1.91 | 0.53 |
| 70:SG:22:ARG:HD2 | 70:SG:25:ARG:HH21 | 1.74 | 0.53 |
| 73:SN:130:LYS:NZ | 73:SN:136:PRO:O | 2.41 | 0.53 |
| 1:L5:229:G:OP1 | 27:LY:11:ARG:NH1 | 2.38 | 0.53 |
| 1:L5:1279:A:O2' | 6:LC:323:ARG:NH2 | 2.42 | 0.53 |
| 1:L5:3948:C:C4 | 1:L5:4066:U:O4 | 2.61 | 0.53 |
| 1:L5:4910:G:N2 | 17:LO:106:ASP:O | 2.42 | 0.53 |
| 47:S2:886:A:C6 | 47:S2:901:G:C4 | 2.96 | 0.53 |
| 47:S2:1756:C:N4 | 47:S2:1775:U:N3 | 2.57 | 0.53 |
| 60:SS:115:LYS:O | 60:SS:118:ARG:NH1 | 2.42 | 0.53 |
| 1:L5:210:C:OP1 | 27:LY:59:ARG:NH2 | 2.37 | 0.53 |
| 1:L5:752:G:O6 | 1:L5:911:U:O2 | 2.26 | 0.53 |
| 1:L5:957:G:OP1 | 33:Le:65:LYS:NZ | 2.36 | 0.53 |
| 3:L8:41:A:HO2' | 38:Lj:59:THR:HG1 | 1.52 | 0.53 |
| 5:LB:222:VAL:O | 5:LB:343:ARG:NH1 | 2.41 | 0.53 |
| 8:LE:223:ARG:NH1 | 8:LE:238:GLU:OE1 | 2.41 | 0.53 |
| 46:Lz:42:ASP:HB3 | 46:Lz:45:LYS:HG2 | 1.91 | 0.53 |
| 47:S2:1609:C:N3 | 47:S2:1631:U:O2 | 2.41 | 0.53 |
| 55:SK:80:ARG:HG2 | 55:SK:85:LEU:HD23 | 1.91 | 0.53 |
| 70:SG:224:ARG:NH1 | 70:SG:227:GLN:OE1 | 2.42 | 0.53 |
| 81:CA:181:PRO:O | 81:CA:204:ASN:ND2 | 2.42 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:L5:1355:G:OP1 | 19:LQ:108:ARG:NH1 | 2.41 | 0.53 |
| 1:L5:4238:G:H2' | 1:L5:4239:A:H8 | 1.74 | 0.53 |
| 1:L5:5016:A:N6 | 1:L5:5033:G:O2' | 2.41 | 0.53 |
| 28:LZ:99:ASP:N | 28:LZ:99:ASP:OD1 | 2.36 | 0.53 |
| 47:S2:201:C:H3' | 47:S2:202:G:H21 | 1.72 | 0.53 |
| 47:S2:925:G:O6 | 47:S2:1017:U:O4 | 2.27 | 0.53 |
| 47:S2:1673:U:H5" | 58:SQ:78:VAL:HG22 | 1.91 | 0.53 |
| 48:SA:84:GLN:HG2 | 48:SA:100:ALA:HB1 | 1.91 | 0.53 |
| 53:SH:154:ILE:HB | 53:SH:185:VAL:HG12 | 1.91 | 0.53 |
| 58:SQ:43:GLU:O | 58:SQ:45:ARG:N | 2.42 | 0.53 |
| 65:Sa:60:ASP:OD1 | 65:Sa:60:ASP:N | 2.39 | 0.53 |
| 70:SG:64:LYS:HZ3 | 70:SG:82:SER:HB3 | 1.73 | 0.53 |
| 71:SJ:122:SER:O | 71:SJ:125:HIS:N | 2.41 | 0.53 |
| 1:L5:1069:G:O6 | 8:LE:43:HIS:NE2 | 2.39 | 0.53 |
| 1:L5:1485:C:O4' | 1:L5:4349:C:N4 | 2.42 | 0.53 |
| 1:L5:1508:A:OP1 | 6:LC:110:ARG:NH1 | 2.42 | 0.53 |
| 1:L5:2072:C:OP1 | 19:LQ:2:GLY:N | 2.42 | 0.53 |
| 1:L5:3725:G:N7 | 37:Li:67:LYS:NZ | 2.49 | 0.53 |
| 11:LH:93:ARG:HE | 11:LH:143:GLU:HB3 | 1.73 | 0.53 |
| 47:S2:4:C:H1' | 71:SJ:18:ARG:HH22 | 1.74 | 0.53 |
| 47:S2:550:C:H2' | 47:S2:551:U:C6 | 2.44 | 0.53 |
| 47:S2:1653:U:H3 | 47:S2:1671:G:H1 | 1.55 | 0.53 |
| 47:S2:1740:C:H42 | 47:S2:1794:C:H42 | 1.57 | 0.53 |
| 48:SA:74:VAL:HG12 | 48:SA:121:LEU:HB3 | 1.91 | 0.53 |
| 48:SA:132:GLN:O | 48:SA:135:THR:OG1 | 2.26 | 0.53 |
| 69:SC:66:LEU:HD11 | 69:SC:86:LEU:HD13 | 1.91 | 0.53 |
| 69:SC:116:THR:OG1 | 69:SC:117:ARG:N | 2.42 | 0.53 |
| 81:CA:339:GLU:HG3 | 81:CA:342:LEU:H | 1.74 | 0.53 |
| 1:L5:182:G:N2 | 1:L5:255:C:O2 | 2.42 | 0.53 |
| 1:L5:4108:G:N7 | 1:L5:4110:C:N4 | 2.57 | 0.53 |
| 15:LM:62:LEU:HD21 | 15:LM:82:ILE:HD11 | 1.91 | 0.53 |
| 18:LP:73:ALA:O | 18:LP:76:TRP:C | 2.51 | 0.53 |
| 20:LR:169:ALA:O | 20:LR:172:ARG:NH1 | 2.41 | 0.53 |
| 26:LX:151:ASN:HA | 26:LX:156:ILE:HB | 1.91 | 0.53 |
| 28:LZ:13:VAL:O | 28:LZ:20:GLY:N | 2.42 | 0.53 |
| 47:S2:520:A:O2' | 47:S2:825:A:N3 | 2.38 | 0.53 |
| 47:S2:1307:U:O2' | 80:Sf:135:HIS:ND1 | 2.35 | 0.53 |
| 51:SE:31:PRO:HG2 | 51:SE:38:LEU:HB2 | 1.91 | 0.53 |
| 52:SF:40:ALA:H | 52:SF:68:ILE:HD11 | 1.74 | 0.53 |
| 72:SM:22:LEU:HD21 | 72:SM:89:VAL:HA | 1.90 | 0.53 |
| 1:L5:2622:G:O6 | 23:LU:81:ARG:NH2 | 2.42 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:L5:3877:A:N3 | 1:L5:4401:G:O2' | 2.37 | 0.52 |
| 1:L5:4700:A:N1 | 11:LH:72:THR:HG21 | 2.24 | 0.52 |
| 1:L5:4969:C:O2' | 18:LP:75:GLN:NE2 | 2.39 | 0.52 |
| 16:LN:123:GLU:HB3 | 16:LN:128:LYS:HG3 | 1.92 | 0.52 |
| 28:LZ:66:SER:HB2 | 28:LZ:122:TYR:HE2 | 1.73 | 0.52 |
| 47:S2:189:U:C2 | 47:S2:211:G:N1 | 2.77 | 0.52 |
| 47:S2:629:A:O2' | 47:S2:631:U:OP1 | 2.26 | 0.52 |
| 47:S2:1421:A:H5" | 47:S2:1422:G:H2' | 1.90 | 0.52 |
| 47:S2:1568:C:H2' | 47:S2:1569:A:C8 | 2.43 | 0.52 |
| 50:SD:116:ARG:HG3 | 84:CD:219:GLY:H | 1.74 | 0.52 |
| 53:SH:53:VAL:HG22 | 53:SH:179:LYS:HE2 | 1.91 | 0.52 |
| 56:SL:35:ARG:NH1 | 56:SL:53:GLY:O | 2.42 | 0.52 |
| 1:L5:407:A:O2' | 1:L5:410:A:OP1 | 2.27 | 0.52 |
| 1:L5:907:C:H2' | 1:L5:908:G:C8 | 2.43 | 0.52 |
| 1:L5:4093:G:N2 | 1:L5:4114:C:N3 | 2.57 | 0.52 |
| 1:L5:4419:U:O2 | 82:CB:765:ARG:NH1 | 2.41 | 0.52 |
| 17:LO:111:PRO:O | 17:LO:115:LYS:NZ | 2.40 | 0.52 |
| 46:Lz:206:ILE:HD11 | 46:Lz:214:GLN:HB2 | 1.92 | 0.52 |
| 47:S2:1142:G:N2 | 47:S2:1145:A:OP2 | 2.36 | 0.52 |
| 76:SY:62:THR:HA | 76:SY:69:THR:HA | 1.92 | 0.52 |
| 81:CA:27:ILE:HD11 | 81:CA:59:GLU:HG3 | 1.90 | 0.52 |
| 1:L5:471:A:C6 | 1:L5:684:G:N3 | 2.76 | 0.52 |
| 1:L5:3710:G:N2 | 1:L5:3711:A:H62 | 2.08 | 0.52 |
| 11:LH:163:GLN:HA | 11:LH:166:THR:HG23 | 1.91 | 0.52 |
| 13:LJ:63:ARG:NH2 | 13:LJ:66:GLU:OE1 | 2.43 | 0.52 |
| 15:LM:38:VAL:HG21 | 15:LM:50:MET:HB2 | 1.90 | 0.52 |
| 31:Lc:21:VAL:HG11 | 31:Lc:96:ILE:HD12 | 1.91 | 0.52 |
| 47:S2:4:C:H4' | 69:SC:207:ALA:HB2 | 1.91 | 0.52 |
| 47:S2:1277:C:H2' | 47:S2:1278:A:H8 | 1.74 | 0.52 |
| 51:SE:60:GLU:HA | 51:SE:63:LYS:HG2 | 1.91 | 0.52 |
| 53:SH:15:LYS:HD3 | 53:SH:16:PRO:HA | 1.90 | 0.52 |
| 57:SP:85:ILE:HD12 | 57:SP:89:MET:HE2 | 1.92 | 0.52 |
| 83:CC:26:G:H1 | 83:CC:44:U:H3 | 1.56 | 0.52 |
| 1:L5:4274:A:H2' | 1:L5:4275:G:C8 | 2.43 | 0.52 |
| 1:L5:4415:A:H4' | 12:LI:74:LYS:HE2 | 1.90 | 0.52 |
| 1:L5:4546:A:N7 | 4:LA:215:ASN:ND2 | 2.57 | 0.52 |
| 6:LC:209:ILE:HB | 6:LC:229:LEU:HD13 | 1.92 | 0.52 |
| 16:LN:116:LEU:HD22 | 16:LN:135:ILE:HD11 | 1.90 | 0.52 |
| 26:LX:122:ALA:N | 26:LX:139:ARG:O | 2.41 | 0.52 |
| 32:Ld:112:THR:OG1 | 32:Ld:113:THR:N | 2.39 | 0.52 |
| 43:Lo:24:THR:HG23 | 43:Lo:69:ARG:HB3 | 1.89 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 45:Lr:49:VAL:HG12 | 45:Lr:64:ILE:HG22 | 1.91 | 0.52 |
| 47:S2:189:U:OP1 | 54:SI:152:ARG:NH2 | 2.39 | 0.52 |
| 47:S2:981:A:H2' | 47:S2:982:G:C8 | 2.45 | 0.52 |
| 47:S2:1714:U:H2' | 47:S2:1715:A:C8 | 2.44 | 0.52 |
| 81:CA:361:SER:OG | 81:CA:362:ALA:N | 2.42 | 0.52 |
| 1:L5:3971:G:O6 | 1:L5:4050:A:N7 | 2.41 | 0.52 |
| 1:L5:4743:G:H2' | 1:L5:4744:A:C8 | 2.45 | 0.52 |
| 25:LW:86:SER:OG | 25:LW:89:ASP:OD1 | 2.26 | 0.52 |
| 46:Lz:120:ILE:HG23 | 46:Lz:124:LEU:HD12 | 1.92 | 0.52 |
| 47:S2:158:A:C2 | 47:S2:463:C:O2 | 2.62 | 0.52 |
| 47:S2:436:G:N7 | 47:S2:471:G:C2 | 2.78 | 0.52 |
| 47:S2:1171:G:O2' | 47:S2:1187:G:O6 | 2.25 | 0.52 |
| 50:SD:119:CYS:SG | 50:SD:120:TYR:N | 2.82 | 0.52 |
| 63:SV:12:TYR:O | 69:SC:248:TYR:OH | 2.28 | 0.52 |
| 77:SZ:65:TYR:HA | 77:SZ:111:ARG:HH21 | 1.75 | 0.52 |
| 1:L5:1339:U:H2' | 1:L5:1340:C:C6 | 2.44 | 0.52 |
| 1:L5:2411:C:H2' | 1:L5:2412:A:C8 | 2.45 | 0.52 |
| 1:L5:2550:G:O2' | 1:L5:2587:A:N1 | 2.40 | 0.52 |
| 1:L5:3951:G:H3' | 1:L5:3952:A:H8 | 1.75 | 0.52 |
| 47:S2:1217:A:H2' | 47:S2:1218:C:H6 | 1.75 | 0.52 |
| 47:S2:1593:C:O2 | 61:ST:12:GLN:NE2 | 2.42 | 0.52 |
| 48:SA:52:LYS:HB3 | 59:SR:109:LEU:HD11 | 1.91 | 0.52 |
| 51:SE:87:MET:N | 51:SE:101:LEU:O | 2.43 | 0.52 |
| 69:SC:168:GLY:N | 69:SC:179:THR:O | 2.32 | 0.52 |
| 72:SM:69:CYS:O | 72:SM:72:HIS:C | 2.53 | 0.52 |
| 1:L5:308:G:OP2 | 1:L5:308:G:N2 | 2.33 | 0.52 |
| 1:L5:1100:U:C2 | 1:L5:1195:G:C2 | 2.98 | 0.52 |
| 1:L5:1443:A:N1 | 1:L5:2103:G:C6 | 2.77 | 0.52 |
| 1:L5:3717:A:OP2 | 1:L5:3735:G:N2 | 2.42 | 0.52 |
| 1:L5:3751:G:H21 | 1:L5:3775:A:H8 | 1.57 | 0.52 |
| 1:L5:4063:U:H2' | 1:L5:4064:C:C2 | 2.45 | 0.52 |
| 1:L5:4922:C:N4 | 1:L5:4923:C:N4 | 2.57 | 0.52 |
| 3:L8:126:C:N4 | 3:L8:128:C:H42 | 2.08 | 0.52 |
| 13:LJ:178:LYS:NZ | 57:SP:69:PRO:O | 2.43 | 0.52 |
| 44:Lp:30:GLU:OE1 | 44:Lp:33:GLN:NE2 | 2.33 | 0.52 |
| 47:S2:553:U:N3 | 47:S2:554:A:N7 | 2.58 | 0.52 |
| 1:L5:163:A:H2' | 1:L5:164:G:C8 | 2.45 | 0.52 |
| 12:LI:52:MET:HE3 | 12:LI:163:GLN:HG2 | 1.91 | 0.52 |
| 46:Lz:23:ARG:HA | 46:Lz:212:LYS:HD3 | 1.91 | 0.52 |
| 47:S2:414:A:H2' | 47:S2:415:A:H8 | 1.75 | 0.52 |
| 47:S2:521:A:OP1 | 71:SJ:45:ARG:NH1 | 2.37 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 47:S2:870:A:H5' | 47:S2:872:A:H1' | 1.92 | 0.52 |
| 47:S2:1288:U:OP2 | 80:Sf:99:LYS:NZ | 2.39 | 0.52 |
| 68:Sg:238:ALA:HB3 | 68:Sg:251:ALA:HB3 | 1.91 | 0.52 |
| 76:SY:12:PHE:HZ | 76:SY:21:LYS:HD2 | 1.75 | 0.52 |
| 76:SY:55:ILE:HG23 | 76:SY:75:ILE:HG12 | 1.92 | 0.52 |
| 1:L5:909:A:H2' | 1:L5:910:G:H8 | 1.74 | 0.52 |
| 1:L5:1095:A:H2 | 1:L5:1200:G:C2 | 2.27 | 0.52 |
| 1:L5:1187:G:OP2 | 1:L5:1187:G:N2 | 2.39 | 0.52 |
| 1:L5:1404:G:C8 | 1:L5:1408:G:N1 | 2.78 | 0.52 |
| 1:L5:4981:G:O6 | 5:LB:21:ARG:NH2 | 2.43 | 0.52 |
| 19:LQ:79:THR:HB | 19:LQ:136:THR:HG22 | 1.92 | 0.52 |
| 26:LX:121:VAL:HA | 26:LX:140:LEU:HA | 1.92 | 0.52 |
| 31:Lc:40:GLN:HG3 | 31:Lc:42:LYS:HD3 | 1.92 | 0.52 |
| 46:Lz:62:LYS:HZ2 | 46:Lz:154:THR:HA | 1.75 | 0.52 |
| 47:S2:388:U:H2' | 47:S2:389:A:C8 | 2.45 | 0.52 |
| 47:S2:563:G:N7 | 47:S2:586:G:N2 | 2.58 | 0.52 |
| 47:S2:1435:C:H41 | 62:SU:92:HIS:CE1 | 2.27 | 0.52 |
| 47:S2:1566:G:OP2 | 61:ST:102:ARG:NH1 | 2.43 | 0.52 |
| 47:S2:1652:G:O6 | 47:S2:1672:U:O4 | 2.28 | 0.52 |
| 51:SE:143:ASP:OD1 | 51:SE:144:ALA:N | 2.39 | 0.52 |
| 52:SF:123:GLU:OE1 | 66:Sc:63:ARG:NH2 | 2.43 | 0.52 |
| 65:Sa:94:ASP:OD1 | 65:Sa:94:ASP:N | 2.42 | 0.52 |
| 81:CA:72:LYS:HG2 | 81:CA:114:VAL:HG23 | 1.92 | 0.52 |
| 82:CB:229:ALA:HB1 | 82:CB:256:MET:HB3 | 1.91 | 0.52 |
| 1:L5:67:C:OP2 | 1:L5:312:G:N2 | 2.43 | 0.52 |
| 1:L5:1692:C:O2' | 19:LQ:143:ARG:NH2 | 2.43 | 0.52 |
| 1:L5:5025:C:H2' | 1:L5:5028:G:H1' | 1.90 | 0.52 |
| 2:L7:13:A:OP2 | 2:L7:66:G:N2 | 2.41 | 0.52 |
| 5:LB:219:VAL:HG11 | 5:LB:337:VAL:HG13 | 1.91 | 0.52 |
| 7:LD:182:GLY:HA2 | 7:LD:194:VAL:HG13 | 1.90 | 0.52 |
| 13:LJ:20:LEU:O | 13:LJ:131:TYR:O | 2.27 | 0.52 |
| 47:S2:694:G:H2' | 47:S2:695:C:O4' | 2.09 | 0.52 |
| 60:SS:45:LEU:HD22 | 60:SS:50:ILE:HD11 | 1.91 | 0.52 |
| 70:SG:233:ARG:HG2 | 70:SG:234:LEU:HD12 | 1.92 | 0.52 |
| 82:CB:653:GLY:O | 82:CB:684:GLN:NE2 | 2.42 | 0.52 |
| 1:L5:2068:C:OP1 | 34:Lf:15:LYS:NZ | 2.43 | 0.51 |
| 1:L5:2739:C:N4 | 4:LA:177:LYS:O | 2.35 | 0.51 |
| 1:L5:3955:G:N3 | 1:L5:3966:A:N7 | 2.57 | 0.51 |
| 1:L5:4239:A:H2' | 1:L5:4240:G:C8 | 2.45 | 0.51 |
| 2:L7:38:U:N3 | 2:L7:41:G:OP2 | 2.30 | 0.51 |
| 23:LU:74:SER:OG | 23:LU:75:GLU:N | 2.43 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 31:Lc:55:LEU:HD11 | 35:Lg:92:LYS:HG3 | 1.91 | 0.51 |
| 36:Lh:80:PRO:HD2 | 36:Lh:83:LEU:HD12 | 1.92 | 0.51 |
| 44:Lp:56:HIS:CD2 | 44:Lp:63:THR:HG22 | 2.44 | 0.51 |
| 46:Lz:24:LYS:HD2 | 46:Lz:29:LEU:HD12 | 1.91 | 0.51 |
| 47:S2:541:U:O2 | 47:S2:543:C:N4 | 2.38 | 0.51 |
| 50:SD:163:PRO:O | 50:SD:167:TYR:HB2 | 2.10 | 0.51 |
| 51:SE:121:TYR:OH | 51:SE:235:TRP:O | 2.24 | 0.51 |
| 55:SK:17:LYS:HB3 | 84:CD:283:LEU:HD23 | 1.92 | 0.51 |
| 71:SJ:68:PRO:HA | 71:SJ:71:LEU:HD12 | 1.92 | 0.51 |
| 81:CA:105:LEU:HD13 | 81:CA:139:LYS:HB3 | 1.92 | 0.51 |
| 1:L5:158:A:N1 | 1:L5:276:C:O2' | 2.42 | 0.51 |
| 1:L5:423:G:OP1 | 18:LP:62:ARG:NH2 | 2.40 | 0.51 |
| 1:L5:746:A:H2' | 1:L5:747:A:C8 | 2.46 | 0.51 |
| 1:L5:2335:C:H2' | 1:L5:2336:G:H8 | 1.76 | 0.51 |
| 1:L5:3955:G:C2 | 1:L5:3966:A:C8 | 2.98 | 0.51 |
| 1:L5:4377:G:O6 | 29:La:42:ARG:NH2 | 2.43 | 0.51 |
| 25:LW:4:GLU:HB2 | 25:LW:13:ILE:HB | 1.92 | 0.51 |
| 32:Ld:95:ASP:OD1 | 32:Ld:95:ASP:N | 2.43 | 0.51 |
| 47:S2:661:U:OP1 | 64:SX:5:ARG:NH2 | 2.44 | 0.51 |
| 47:S2:857:U:H2' | 47:S2:858:A:C8 | 2.45 | 0.51 |
| 47:S2:1545:A:H4' | 58:SQ:74:GLY:HA2 | 1.91 | 0.51 |
| 47:S2:1606:G:O2' | 47:S2:1632:G:N2 | 2.42 | 0.51 |
| 52:SF:65:GLN:HE21 | 66:Sc:51:ARG:HH22 | 1.58 | 0.51 |
| 60:SS:124:ARG:O | 60:SS:127:TRP:C | 2.53 | 0.51 |
| 76:SY:82:ALA:O | 76:SY:86:GLU:CB | 2.58 | 0.51 |
| 81:CA:250:ASP:OD1 | 81:CA:252:SER:OG | 2.25 | 0.51 |
| 1:L5:1308:C:H2' | 1:L5:1309:C:C6 | 2.46 | 0.51 |
| 1:L5:1328:G:O2' | 1:L5:2349:A:OP1 | 2.27 | 0.51 |
| 1:L5:2003:G:N2 | 1:L5:2004:U:O4 | 2.40 | 0.51 |
| 1:L5:3668:C:OP1 | 4:LA:8:GLN:NE2 | 2.43 | 0.51 |
| 1:L5:4238:G:H2' | 1:L5:4239:A:C8 | 2.46 | 0.51 |
| 1:L5:4773:C:O2 | 1:L5:4861:G:N2 | 2.19 | 0.51 |
| 2:L7:112:U:H2' | 2:L7:113:G:H8 | 1.75 | 0.51 |
| 14:LL:19:GLN:HA | 14:LL:22:VAL:HG23 | 1.92 | 0.51 |
| 20:LR:116:ASP:OD1 | 20:LR:116:ASP:N | 2.43 | 0.51 |
| 47:S2:1705:C:H2' | 47:S2:1706:G:C8 | 2.46 | 0.51 |
| 48:SA:79:SER:O | 48:SA:84:GLN:NE2 | 2.43 | 0.51 |
| 1:L5:260:C:H2' | 1:L5:261:G:C8 | 2.43 | 0.51 |
| 1:L5:2781:G:O2' | 40:Ll:3:SER:O | 2.29 | 0.51 |
| 3:L8:60:G:OP1 | 26:LX:68:ARG:NH2 | 2.39 | 0.51 |
| 47:S2:1416:C:N4 | 47:S2:1417:C:N4 | 2.58 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 47:S2:1656:G:O6 | 47:S2:1668:U:O4 | 2.28 | 0.51 |
| 50:SD:35:SER:OG | 50:SD:51:LEU:O | 2.21 | 0.51 |
| 51:SE:18:TRP:HH2 | 51:SE:31:PRO:HD3 | 1.75 | 0.51 |
| 62:SU:20:ILE:HD11 | 62:SU:91:LEU:HD12 | 1.93 | 0.51 |
| 71:SJ:113:GLN:OE1 | 71:SJ:154:GLN:NE2 | 2.38 | 0.51 |
| 82:CB:279:SER:HG | 82:CB:283:LYS:H | 1.59 | 0.51 |
| 1:L5:238:C:OP2 | 27:LY:45:ARG:NH2 | 2.43 | 0.51 |
| 1:L5:989:U:O2 | 1:L5:1065:G:C6 | 2.64 | 0.51 |
| 1:L5:1179:U:H3' | 1:L5:1180:C:H5" | 1.92 | 0.51 |
| 1:L5:1686:C:O2' | 30:Lb:18:ARG:NH2 | 2.43 | 0.51 |
| 1:L5:1952:G:H4' | 21:LS:93:MET:HG3 | 1.93 | 0.51 |
| 1:L5:2667:C:OP2 | 20:LR:103:ARG:NH1 | 2.44 | 0.51 |
| 1:L5:4769:G:OP1 | 17:LO:176:ARG:NH1 | 2.44 | 0.51 |
| 1:L5:4909:A:OP2 | 5:LB:156:TYR:OH | 2.28 | 0.51 |
| 17:LO:3:GLU:HG2 | 17:LO:5:GLN:HE22 | 1.74 | 0.51 |
| 18:LP:70:CYS:SG | 18:LP:71:ALA:N | 2.84 | 0.51 |
| 46:Lz:153:SER:OG | 46:Lz:156:LYS:NZ | 2.44 | 0.51 |
| 46:Lz:202:ARG:HG2 | 46:Lz:203:ALA:H | 1.76 | 0.51 |
| 47:S2:1468:C:H2' | 47:S2:1469:A:C8 | 2.46 | 0.51 |
| 68:Sg:5:MET:HA | 68:Sg:311:GLN:O | 2.10 | 0.51 |
| 68:Sg:46:THR:O | 68:Sg:52:TYR:CA | 2.56 | 0.51 |
| 75:SW:53:ILE:HD13 | 78:Sb:24:LEU:HD11 | 1.93 | 0.51 |
| 82:CB:161:ASP:N | 82:CB:161:ASP:OD1 | 2.43 | 0.51 |
| 82:CB:232:TYR:HA | 82:CB:235:LYS:HG2 | 1.93 | 0.51 |
| 1:L5:2373:C:H5' | 32:Ld:46:LEU:HD13 | 1.92 | 0.51 |
| 1:L5:2843:U:O2' | 1:L5:4632:U:OP1 | 2.25 | 0.51 |
| 1:L5:4084:G:O6 | 4:LA:72:ARG:NH2 | 2.44 | 0.51 |
| 7:LD:150:LEU:HD12 | 13:LJ:146:ARG:HG3 | 1.93 | 0.51 |
| 47:S2:1417:C:N3 | 47:S2:1422:G:O6 | 2.44 | 0.51 |
| 64:SX:107:ARG:HG3 | 64:SX:110:HIS:HB3 | 1.92 | 0.51 |
| 82:CB:61:LYS:HD3 | 82:CB:62:ASP:H | 1.76 | 0.51 |
| 1:L5:375:G:OP2 | 38:Lj:52:LYS:NZ | 2.34 | 0.51 |
| 1:L5:962:C:C4 | 1:L5:2095:A:N1 | 2.78 | 0.51 |
| 1:L5:3962:A:N6 | 1:L5:4038:C:OP1 | 2.44 | 0.51 |
| 43:Lo:6:LYS:NZ | 43:Lo:93:LEU:O | 2.42 | 0.51 |
| 47:S2:989:C:C4 | 47:S2:1001:A:C2 | 2.99 | 0.51 |
| 49:SB:98:THR:O | 49:SB:232:HIS:NE2 | 2.34 | 0.51 |
| 52:SF:50:PRO:HB3 | 52:SF:69:VAL:HG23 | 1.91 | 0.51 |
| 58:SQ:53:GLU:HA | 58:SQ:56:LEU:HD12 | 1.93 | 0.51 |
| 72:SM:44:LYS:NZ | 80:Sf:127:GLY:O | 2.37 | 0.51 |
| 76:SY:60:PHE:HA | 76:SY:70:THR:O | 2.11 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 81:CA:168:GLU:O | 81:CA:172:LYS:HG2 | 2.10 | 0.51 |
| 1:L5:1238:A:O3' | 9:LF:48:LYS:NZ | 2.44 | 0.51 |
| 1:L5:1764:G:N3 | 1:L5:1770:A:C6 | 2.79 | 0.51 |
| 1:L5:4098:A:C6 | 1:L5:4100:C:C4 | 2.99 | 0.51 |
| 1:L5:4537:C:H2' | 1:L5:4538:G:C8 | 2.45 | 0.51 |
| 3:L8:75:G:OP2 | 27:LY:74:TYR:OH | 2.25 | 0.51 |
| 20:LR:177:LEU:HA | 20:LR:180:LYS:HD2 | 1.91 | 0.51 |
| 47:S2:951:C:O2' | 74:SO:50:LYS:NZ | 2.44 | 0.51 |
| 66:Sc:20:ARG:NH1 | 66:Sc:25:GLY:O | 2.43 | 0.51 |
| 68:Sg:197:THR:HG21 | 68:Sg:238:ALA:HA | 1.93 | 0.51 |
| 70:SG:7:PHE:O | 70:SG:11:GLY:N | 2.43 | 0.51 |
| 71:SJ:26:ASP:HB2 | 79:Se:42:PHE:HZ | 1.75 | 0.51 |
| 81:CA:11:THR:HG23 | 81:CA:13:ALA:H | 1.75 | 0.51 |
| 82:CB:283:LYS:NZ | 82:CB:284:LYS:O | 2.43 | 0.51 |
| 1:L5:697:G:H2' | 1:L5:698:G:C8 | 2.46 | 0.51 |
| 1:L5:1821:G:N3 | 1:L5:1822:U:H5' | 2.26 | 0.51 |
| 1:L5:2291:G:N2 | 1:L5:2344:U:O2 | 2.44 | 0.51 |
| 9:LF:94:ARG:O | 9:LF:118:PHE:N | 2.44 | 0.51 |
| 20:LR:105:LEU:HD23 | 20:LR:138:LEU:HD23 | 1.92 | 0.51 |
| 47:S2:448:A:H5" | 54:SI:25:ARG:HA | 1.93 | 0.51 |
| 47:S2:1024:A:OP2 | 73:SN:124:ARG:NH2 | 2.43 | 0.51 |
| 83:CC:8:U:N3 | 83:CC:14:A:H8 | 1.99 | 0.51 |
| 1:L5:24:G:N7 | 38:Lj:46:LYS:NZ | 2.58 | 0.51 |
| 1:L5:46:U:H5" | 14:LL:16:LYS:HG2 | 1.91 | 0.51 |
| 1:L5:3619:G:O2' | 20:LR:82:LYS:NZ | 2.43 | 0.51 |
| 38:Lj:54:LYS:O | 38:Lj:58:THR:HB | 2.11 | 0.51 |
| 47:S2:1102:G:OP2 | 49:SB:151:ARG:NH1 | 2.44 | 0.51 |
| 47:S2:1617:G:N1 | 47:S2:1620:A:OP2 | 2.44 | 0.51 |
| 50:SD:145:GLN:OE1 | 84:CD:201:ARG:NE | 2.44 | 0.51 |
| 66:Sc:31:ARG:HA | 66:Sc:43:ILE:HA | 1.92 | 0.51 |
| 82:CB:609:PHE:HE1 | 82:CB:701:ARG:HB2 | 1.75 | 0.51 |
| 1:L5:162:A:H2' | 1:L5:163:A:C8 | 2.46 | 0.50 |
| 1:L5:1913:C:H5" | 17:LO:25:LYS:HD3 | 1.93 | 0.50 |
| 1:L5:2557:G:O6 | 1:L5:2570:U:O4 | 2.28 | 0.50 |
| 1:L5:3965:A:O2' | 1:L5:4050:A:OP2 | 2.27 | 0.50 |
| 1:L5:4883:C:N4 | 8:LE:181:LEU:O | 2.36 | 0.50 |
| 7:LD:136:ASP:OD1 | 7:LD:136:ASP:N | 2.42 | 0.50 |
| 14:LL:25:TRP:NE1 | 16:LN:199:GLN:OE1 | 2.41 | 0.50 |
| 25:LW:45:ASN:OD1 | 25:LW:47:ARG:NH1 | 2.44 | 0.50 |
| 47:S2:1661:A:OP1 | 67:Sd:19:ARG:NH1 | 2.39 | 0.50 |
| 55:SK:63:ALA:HB2 | 55:SK:68:TYR:HE1 | 1.75 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 75:SW:14:ILE:HG22 | 75:SW:25:VAL:HG11 | 1.93 | 0.50 |
| 81:CA:44:SER:OG | 81:CA:97:ASP:OD2 | 2.29 | 0.50 |
| 1:L5:1443:A:N1 | 1:L5:2104:G:N3 | 2.60 | 0.50 |
| 1:L5:2764:A:H2' | 1:L5:2765:A:C8 | 2.46 | 0.50 |
| 1:L5:3736:A:H2' | 1:L5:3737:A:C8 | 2.45 | 0.50 |
| 1:L5:4896:G:H2' | 1:L5:4897:G:C8 | 2.46 | 0.50 |
| 13:LJ:136:ARG:NH1 | 13:LJ:156:ARG:O | 2.45 | 0.50 |
| 14:LL:106:SER:OG | 14:LL:108:GLU:OE1 | 2.29 | 0.50 |
| 47:S2:191:A:H5" | 54:SI:141:ARG:CZ | 2.41 | 0.50 |
| 60:SS:40:TYR:CZ | 60:SS:97:GLN:HG2 | 2.46 | 0.50 |
| 68:Sg:206:LEU:HD21 | 68:Sg:218:LEU:HB2 | 1.93 | 0.50 |
| 82:CB:147:ILE:HG21 | 82:CB:189:ILE:HG13 | 1.94 | 0.50 |
| 1:L5:1552:G:O2' | 1:L5:1574:G:N2 | 2.31 | 0.50 |
| 1:L5:4038:C:N4 | 1:L5:4051:C:OP2 | 2.45 | 0.50 |
| 1:L5:4085:A:H5" | 10:LG:56:LYS:HB2 | 1.92 | 0.50 |
| 7:LD:41:LYS:NZ | 22:LT:32:ARG:O | 2.41 | 0.50 |
| 47:S2:104:A:H62 | 47:S2:356:C:H5 | 1.60 | 0.50 |
| 47:S2:529:A:H2' | 47:S2:530:U:C6 | 2.47 | 0.50 |
| 47:S2:693:A:N1 | 47:S2:738:C:O2' | 2.44 | 0.50 |
| 47:S2:912:C:N4 | 47:S2:914:U:C2 | 2.77 | 0.50 |
| 47:S2:1451:G:OP1 | 59:SR:32:LYS:NZ | 2.43 | 0.50 |
| 47:S2:1598:G:O2' | 77:SZ:80:ARG:O | 2.25 | 0.50 |
| 52:SF:90:VAL:HA | 52:SF:93:VAL:HG12 | 1.93 | 0.50 |
| 52:SF:195:GLU:OE2 | 52:SF:198:ARG:NH2 | 2.44 | 0.50 |
| 1:L5:1094:G:O6 | 1:L5:1201:U:O4 | 2.28 | 0.50 |
| 1:L5:2480:G:H2' | 1:L5:2481:G:C8 | 2.46 | 0.50 |
| 1:L5:3664:G:H2' | 1:L5:3665:G:H8 | 1.77 | 0.50 |
| 4:LA:116:LEU:HB2 | 4:LA:126:LEU:HB2 | 1.92 | 0.50 |
| 6:LC:218:ILE:O | 6:LC:222:ARG:CB | 2.55 | 0.50 |
| 9:LF:37:PHE:HD1 | 9:LF:40:LYS:HZ3 | 1.58 | 0.50 |
| 30:Lb:109:ARG:HA | 30:Lb:112:ILE:HG12 | 1.93 | 0.50 |
| 47:S2:583:A:OP1 | 71:SJ:162:ARG:NH2 | 2.40 | 0.50 |
| 64:SX:77:ASN:O | 64:SX:79:LYS:N | 2.43 | 0.50 |
| 69:SC:169:TYR:OH | 69:SC:175:GLY:O | 2.25 | 0.50 |
| 70:SG:4:ASN:HB3 | 70:SG:110:ASN:HD22 | 1.76 | 0.50 |
| 1:L5:4054:C:H1' | 46:Lz:207:LYS:HB2 | 1.94 | 0.50 |
| 47:S2:1275:G:N2 | 47:S2:1506:A:OP2 | 2.44 | 0.50 |
| 47:S2:1388:A:N6 | 50:SD:160:SER:O | 2.38 | 0.50 |
| 48:SA:5:LEU:HD21 | 63:SV:41:LYS:HA | 1.93 | 0.50 |
| 51:SE:11:ARG:NH2 | 51:SE:21:ASP:OD1 | 2.45 | 0.50 |
| 51:SE:68:ARG:HH12 | 51:SE:76:VAL:HG11 | 1.76 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 60:SS:139:THR:O | 60:SS:144:ARG:NH2 | 2.45 | 0.50 |
| 70:SG:136:LYS:NZ | 70:SG:175:LYS:O | 2.33 | 0.50 |
| 76:SY:102:THR:O | 76:SY:107:ARG:NH1 | 2.45 | 0.50 |
| 1:L5:1332:C:H2' | 1:L5:1333:A:C8 | 2.47 | 0.50 |
| 1:L5:4301:U:OP2 | 1:L5:4303:C:N4 | 2.45 | 0.50 |
| 1:L5:4922:C:N3 | 1:L5:4923:C:C4 | 2.80 | 0.50 |
| 46:Lz:12:GLU:HG2 | 46:Lz:216:LEU:HA | 1.93 | 0.50 |
| 77:SZ:52:LYS:O | 77:SZ:52:LYS:NZ | 2.44 | 0.50 |
| 82:CB:354:ILE:O | 82:CB:358:LEU:HB2 | 2.11 | 0.50 |
| 1:L5:189:G:H2' | 1:L5:190:G:H8 | 1.77 | 0.50 |
| 1:L5:1074:G:H3' | 1:L5:1075:G:H8 | 1.76 | 0.50 |
| 1:L5:1741:G:O6 | 2:L7:103:A:O2' | 2.25 | 0.50 |
| 1:L5:1811:G:H4' | 30:Lb:60:ASN:HD22 | 1.77 | 0.50 |
| 41:Lm:98:LYS:HD2 | 41:Lm:118:THR:HG21 | 1.93 | 0.50 |
| 47:S2:1396:A:N7 | 47:S2:1449:G:C6 | 2.79 | 0.50 |
| 53:SH:69:LEU:HD13 | 53:SH:96:ALA:HB2 | 1.93 | 0.50 |
| 82:CB:270:ASN:HD22 | 82:CB:272:LYS:HB2 | 1.75 | 0.50 |
| 1:L5:364:G:O6 | 38:Lj:55:ARG:NH1 | 2.42 | 0.50 |
| 1:L5:1942:A:H2' | 1:L5:1943:A:C8 | 2.47 | 0.50 |
| 1:L5:2555:G:H2' | 1:L5:2556:G:H8 | 1.77 | 0.50 |
| 5:LB:293:ILE:HG12 | 5:LB:297:LYS:HB3 | 1.94 | 0.50 |
| 35:Lg:63:VAL:HA | 35:Lg:66:ARG:HG2 | 1.93 | 0.50 |
| 46:Lz:34:LEU:HD13 | 46:Lz:183:ILE:HD13 | 1.94 | 0.50 |
| 47:S2:67:C:OP2 | 70:SG:172:LYS:NZ | 2.44 | 0.50 |
| 47:S2:793:G:H2' | 47:S2:794:A:C8 | 2.46 | 0.50 |
| 47:S2:803:C:O2' | 75:SW:124:LYS:NZ | 2.45 | 0.50 |
| 47:S2:1386:A:OP2 | 50:SD:160:SER:OG | 2.30 | 0.50 |
| 50:SD:72:VAL:HG11 | 55:SK:70:TYR:HE1 | 1.77 | 0.50 |
| 54:SI:65:PHE:O | 54:SI:73:THR:HA | 2.12 | 0.50 |
| 82:CB:305:MET:HE1 | 82:CB:333:LYS:HA | 1.93 | 0.50 |
| 1:L5:159:C:O2 | 14:LL:88:LYS:NZ | 2.38 | 0.50 |
| 1:L5:1079:C:O2 | 1:L5:1221:G:C2 | 2.64 | 0.50 |
| 1:L5:1174:G:N2 | 1:L5:1187:G:N7 | 2.60 | 0.50 |
| 1:L5:4604:G:N2 | 1:L5:4607:A:OP2 | 2.45 | 0.50 |
| 1:L5:4941:G:OP2 | 8:LE:188:ARG:NH1 | 2.37 | 0.50 |
| 43:Lo:24:THR:OG1 | 43:Lo:25:GLN:N | 2.45 | 0.50 |
| 47:S2:502:C:O3' | 51:SE:62:LYS:NZ | 2.42 | 0.50 |
| 47:S2:1093:A:O2' | 75:SW:9:ASP:OD1 | 2.24 | 0.50 |
| 47:S2:1115:U:H1' | 47:S2:1116:C:H3' | 1.94 | 0.50 |
| 47:S2:1286:G:N2 | 47:S2:1312:G:O2' | 2.35 | 0.50 |
| 47:S2:1556:A:O2' | 47:S2:1557:C:O4' | 2.30 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 55:SK:92:ALA:HA | 55:SK:96:ARG:HE | 1.76 | 0.50 |
| 68:Sg:46:THR:OG1 | 68:Sg:51:ASN:O | 2.20 | 0.50 |
| 81:CA:199:LYS:NZ | 81:CA:217:GLU:O | 2.43 | 0.50 |
| 1:L5:1176:C:O2' | 7:LD:282:GLN:NE2 | 2.45 | 0.49 |
| 1:L5:1380:G:N2 | 1:L5:1381:U:O4 | 2.41 | 0.49 |
| 1:L5:1708:G:H2' | 1:L5:1709:C:H3' | 1.93 | 0.49 |
| 1:L5:2526:C:OP1 | 81:CA:258:LYS:NZ | 2.36 | 0.49 |
| 3:L8:79:G:O2' | 36:Lh:46:LYS:NZ | 2.42 | 0.49 |
| 8:LE:95:PRO:HA | 8:LE:104:THR:HG22 | 1.93 | 0.49 |
| 46:Lz:176:ASP:HB3 | 46:Lz:179:LEU:HB2 | 1.94 | 0.49 |
| 47:S2:806:U:H2' | 47:S2:807:G:H8 | 1.75 | 0.49 |
| 49:SB:138:PHE:O | 49:SB:213:ARG:N | 2.45 | 0.49 |
| 73:SN:54:LEU:HB3 | 73:SN:60:VAL:HB | 1.93 | 0.49 |
| 82:CB:381:ALA:HA | 82:CB:395:MET:HE1 | 1.93 | 0.49 |
| 1:L5:654:C:C4 | 1:L5:655:C:N4 | 2.80 | 0.49 |
| 1:L5:1994:C:H2' | 1:L5:1995:G:C8 | 2.47 | 0.49 |
| 26:LX:84:GLU:HA | 26:LX:87:MET:HE2 | 1.94 | 0.49 |
| 44:Lp:70:THR:OG1 | 44:Lp:72:ASN:O | 2.28 | 0.49 |
| 47:S2:689:U:H2' | 47:S2:690:G:C2 | 2.47 | 0.49 |
| 49:SB:128:LYS:HA | 49:SB:134:LEU:HA | 1.94 | 0.49 |
| 60:SS:50:ILE:HB | 60:SS:54:LYS:HZ1 | 1.77 | 0.49 |
| 68:Sg:205:SER:HA | 68:Sg:222:ASN:HD21 | 1.77 | 0.49 |
| 1:L5:268:G:H2' | 1:L5:269:G:C8 | 2.47 | 0.49 |
| 1:L5:452:A:H4' | 1:L5:453:G:H5' | 1.93 | 0.49 |
| 1:L5:1983:A:H8 | 1:L5:1983:A:H5" | 1.76 | 0.49 |
| 1:L5:2486:G:H3' | 1:L5:2487:G:H8 | 1.77 | 0.49 |
| 1:L5:4580:U:O2' | 5:LB:182:GLU:OE2 | 2.28 | 0.49 |
| 12:LI:209:TRP:O | 12:LI:212:LEU:O | 2.30 | 0.49 |
| 39:Lk:52:LYS:HG2 | 39:Lk:55:LYS:HE3 | 1.93 | 0.49 |
| 46:Lz:17:VAL:H | 46:Lz:18:LEU:HD12 | 1.76 | 0.49 |
| 46:Lz:29:LEU:HD21 | 46:Lz:173:LYS:HE3 | 1.92 | 0.49 |
| 47:S2:941:C:H2' | 47:S2:942:G:C8 | 2.48 | 0.49 |
| 47:S2:1286:G:N1 | 72:SM:37:GLU:OE2 | 2.44 | 0.49 |
| 48:SA:141:ASN:HD22 | 63:SV:29:HIS:HA | 1.77 | 0.49 |
| 52:SF:32:ASP:OD1 | 52:SF:34:SER:OG | 2.30 | 0.49 |
| 54:SI:69:SER:OG | 54:SI:191:GLU:OE2 | 2.25 | 0.49 |
| 68:Sg:65:PHE:O | 68:Sg:83:TRP:N | 2.46 | 0.49 |
| 70:SG:217:MET:HA | 70:SG:220:ALA:HB3 | 1.93 | 0.49 |
| 82:CB:756:VAL:HG12 | 82:CB:760:TYR:CZ | 2.47 | 0.49 |
| 1:L5:3930:U:H3 | 1:L5:4180:G:H1 | 1.60 | 0.49 |
| 1:L5:4601:U:H2' | 1:L5:4602:A:H8 | 1.77 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 47:S2:65:C:H4' | 70:SG:172:LYS:HE2 | 1.94 | 0.49 |
| 47:S2:935:G:O2' | 73:SN:108:ASP:OD1 | 2.24 | 0.49 |
| 52:SF:184:SER:OG | 52:SF:186:ASN:OD1 | 2.19 | 0.49 |
| 54:SI:22:HIS:ND1 | 54:SI:23:LYS:O | 2.45 | 0.49 |
| 68:Sg:188:HIS:HB3 | 68:Sg:219:TRP:HZ3 | 1.76 | 0.49 |
| 70:SG:23:LYS:HZ3 | 70:SG:41:LEU:HB2 | 1.77 | 0.49 |
| 77:SZ:47:LEU:HD11 | 77:SZ:50:PHE:HA | 1.94 | 0.49 |
| 82:CB:66:ARG:HB3 | 82:CB:68:ILE:HG12 | 1.95 | 0.49 |
| 1:L5:1051:G:N2 | 1:L5:1064:G:OP1 | 2.45 | 0.49 |
| 1:L5:1523:A:N3 | 1:L5:4389:C:O2' | 2.45 | 0.49 |
| 1:L5:1756:U:O2' | 1:L5:1758:G:OP2 | 2.24 | 0.49 |
| 1:L5:4040:C:C4 | 1:L5:4050:A:C2 | 3.00 | 0.49 |
| 1:L5:4670:C:O2' | 1:L5:4672:A:OP2 | 2.27 | 0.49 |
| 5:LB:77:THR:OG1 | 5:LB:335:GLY:O | 2.30 | 0.49 |
| 29:La:148:ALA:HB2 | 37:Li:6:PRO:HB2 | 1.95 | 0.49 |
| 46:Lz:147:LYS:NZ | 46:Lz:150:GLU:H | 2.10 | 0.49 |
| 46:Lz:179:LEU:HD22 | 46:Lz:183:ILE:HG13 | 1.94 | 0.49 |
| 47:S2:1264:C:OP1 | 67:Sd:28:HIS:NE2 | 2.37 | 0.49 |
| 47:S2:1756:C:C2 | 47:S2:1776:G:N1 | 2.80 | 0.49 |
| 48:SA:206:ASP:OD1 | 48:SA:206:ASP:N | 2.39 | 0.49 |
| 49:SB:117:TRP:HB3 | 49:SB:153:THR:HA | 1.93 | 0.49 |
| 50:SD:62:LYS:O | 50:SD:67:ARG:NH2 | 2.45 | 0.49 |
| 51:SE:125:LYS:O | 51:SE:142:HIS:N | 2.45 | 0.49 |
| 54:SI:37:LYS:NZ | 54:SI:93:THR:O | 2.46 | 0.49 |
| 55:SK:90:VAL:HG23 | 55:SK:94:LEU:HD12 | 1.94 | 0.49 |
| 60:SS:6:PRO:HG2 | 60:SS:58:GLU:HG2 | 1.95 | 0.49 |
| 67:Sd:2:GLY:HA2 | 67:Sd:7:TYR:HB2 | 1.94 | 0.49 |
| 75:SW:37:PHE:CE1 | 75:SW:103:VAL:HG11 | 2.47 | 0.49 |
| 82:CB:260:LEU:HD21 | 82:CB:293:ILE:HD11 | 1.93 | 0.49 |
| 1:L5:1399:G:H2' | 1:L5:1400:G:H8 | 1.78 | 0.49 |
| 1:L5:1830:G:H2' | 1:L5:1831:G:C8 | 2.48 | 0.49 |
| 1:L5:3961:G:C6 | 1:L5:3964:U:H4' | 2.47 | 0.49 |
| 1:L5:3967:G:OP1 | 1:L5:3969:G:N1 | 2.45 | 0.49 |
| 1:L5:4475:G:OP2 | 11:LH:173:ARG:NH1 | 2.43 | 0.49 |
| 3:L8:125:C:H1' | 3:L8:126:C:H2' | 1.95 | 0.49 |
| 7:LD:208:MET:HB3 | 7:LD:233:PRO:HG3 | 1.94 | 0.49 |
| 16:LN:17:ASP:N | 16:LN:17:ASP:OD1 | 2.45 | 0.49 |
| 28:LZ:96:VAL:HG12 | 28:LZ:110:ALA:HB1 | 1.94 | 0.49 |
| 47:S2:57:U:OP1 | 47:S2:504:G:O2' | 2.29 | 0.49 |
| 47:S2:65:C:N4 | 70:SG:134:GLY:O | 2.45 | 0.49 |
| 47:S2:690:G:H2' | 47:S2:691:G:N3 | 2.26 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 52:SF:187:SER:HB3 | 52:SF:190:ILE:HG12 | 1.93 | 0.49 |
| 53:SH:20:GLU:O | 53:SH:24:SER:OG | 2.27 | 0.49 |
| 55:SK:95:ARG:HH21 | 55:SK:98:ARG:HA | 1.78 | 0.49 |
| 62:SU:18:HIS:HB3 | 62:SU:117:ALA:HB2 | 1.94 | 0.49 |
| 71:SJ:136:ARG:HD3 | 71:SJ:160:SER:HA | 1.95 | 0.49 |
| 74:SO:84:ARG:NH1 | 74:SO:87:GLU:OE1 | 2.46 | 0.49 |
| 78:Sb:67:THR:OG1 | 78:Sb:70:LYS:O | 2.25 | 0.49 |
| 82:CB:616:ASP:HA | 82:CB:619:LYS:HG2 | 1.94 | 0.49 |
| 1:L5:28:C:O2' | 16:LN:162:ARG:O | 2.30 | 0.49 |
| 1:L5:253:G:H2' | 1:L5:254:G:C8 | 2.47 | 0.49 |
| 1:L5:756:G:H2' | 1:L5:757:G:C8 | 2.47 | 0.49 |
| 1:L5:2001:G:N1 | 1:L5:2017:A:N6 | 2.60 | 0.49 |
| 1:L5:3954:A:O2' | 1:L5:4058:U:O4 | 2.30 | 0.49 |
| 1:L5:4459:U:H2' | 1:L5:4460:U:C6 | 2.48 | 0.49 |
| 20:LR:15:LEU:HD13 | 20:LR:45:ILE:HD13 | 1.94 | 0.49 |
| 25:LW:40:PHE:HD2 | 25:LW:41:LEU:HD22 | 1.76 | 0.49 |
| 46:Lz:179:LEU:HA | 46:Lz:182:ASN:HB3 | 1.94 | 0.49 |
| 64:SX:91:LEU:HD21 | 79:Se:6:LEU:HD12 | 1.94 | 0.49 |
| 1:L5:1366:G:O2' | 1:L5:1367:C:O2 | 2.26 | 0.49 |
| 1:L5:2103:G:O6 | 1:L5:2104:G:N3 | 2.46 | 0.49 |
| 1:L5:4618:G:H5" | 24:LV:15:ARG:HB2 | 1.93 | 0.49 |
| 1:L5:4894:A:H3' | 1:L5:4895:C:H5' | 1.94 | 0.49 |
| 1:L5:4910:G:H4' | 5:LB:95:THR:HG22 | 1.95 | 0.49 |
| 3:L8:122:G:C6 | 3:L8:123:U:H1' | 2.47 | 0.49 |
| 6:LC:66:SER:HA | 6:LC:77:PRO:HA | 1.94 | 0.49 |
| 9:LF:157:ARG:HE | 9:LF:248:ASN:HB2 | 1.77 | 0.49 |
| 47:S2:851:C:H5" | 47:S2:852:G:H5' | 1.95 | 0.49 |
| 47:S2:1256:G:N2 | 67:Sd:30:LEU:O | 2.40 | 0.49 |
| 54:SI:17:LYS:HZ2 | 54:SI:19:LYS:HE2 | 1.78 | 0.49 |
| 60:SS:39:ARG:HH11 | 61:ST:38:LYS:HB2 | 1.76 | 0.49 |
| 76:SY:126:GLY:HA2 | 76:SY:129:LYS:HG2 | 1.95 | 0.49 |
| 84:CD:284:ASP:OD2 | 84:CD:284:ASP:N | 2.43 | 0.49 |
| 1:L5:1070:G:OP2 | 8:LE:65:ARG:NH1 | 2.46 | 0.49 |
| 1:L5:1359:G:H4' | 16:LN:203:TYR:HB2 | 1.94 | 0.49 |
| 1:L5:1578:U:OP1 | 1:L5:3637:U:O2' | 2.24 | 0.49 |
| 1:L5:2714:G:H2' | 1:L5:2715:G:H8 | 1.76 | 0.49 |
| 1:L5:3981:G:H5" | 1:L5:3982:C:H5' | 1.94 | 0.49 |
| 1:L5:4041:C:OP1 | 1:L5:4045:G:N1 | 2.45 | 0.49 |
| 10:LG:154:LEU:HB3 | 10:LG:204:PHE:HB2 | 1.95 | 0.49 |
| 28:LZ:103:ASP:OD1 | 28:LZ:106:LEU:N | 2.39 | 0.49 |
| 47:S2:1398:G:N1 | 47:S2:1448:A:H2 | 2.09 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 56:SL:29:GLY:HA3 | 56:SL:30:LYS:HA | 1.57 | 0.49 |
| 58:SQ:53:GLU:HG2 | 58:SQ:54:PRO:HD3 | 1.95 | 0.49 |
| 60:SS:14:ARG:HH22 | 60:SS:16:LEU:C | 2.21 | 0.49 |
| 68:Sg:178:ASN:OD1 | 68:Sg:183:LYS:N | 2.46 | 0.49 |
| 69:SC:108:LYS:HB3 | 69:SC:127:PHE:HD1 | 1.78 | 0.49 |
| 82:CB:5:THR:O | 82:CB:8:GLN:NE2 | 2.40 | 0.49 |
| 1:L5:74:G:H5' | 14:LL:59:VAL:HG13 | 1.94 | 0.49 |
| 1:L5:279:A:OP2 | 16:LN:8:GLN:NE2 | 2.45 | 0.49 |
| 1:L5:655:C:H2' | 1:L5:656:C:C6 | 2.47 | 0.49 |
| 1:L5:1503:A:H4' | 1:L5:1504:G:H5' | 1.94 | 0.49 |
| 1:L5:3951:G:C2 | 1:L5:4062:A:N1 | 2.76 | 0.49 |
| 27:LY:82:ILE:HG22 | 27:LY:83:GLU:H | 1.77 | 0.49 |
| 28:LZ:68:ILE:O | 28:LZ:115:LYS:NZ | 2.34 | 0.49 |
| 47:S2:198:U:O2 | 47:S2:203:G:C6 | 2.65 | 0.49 |
| 47:S2:885:U:C2 | 47:S2:902:G:C2 | 3.01 | 0.49 |
| 47:S2:1231:C:H42 | 47:S2:1527:C:H42 | 1.60 | 0.49 |
| 48:SA:183:LEU:O | 48:SA:186:ARG:O | 2.31 | 0.49 |
| 68:Sg:82:SER:OG | 68:Sg:86:THR:OG1 | 2.30 | 0.49 |
| 77:SZ:99:LEU:HD21 | 77:SZ:102:LYS:HB2 | 1.94 | 0.49 |
| 81:CA:55:MET:O | 81:CA:59:GLU:HG2 | 2.13 | 0.49 |
| 81:CA:228:VAL:O | 81:CA:318:GLN:HA | 2.13 | 0.49 |
| 82:CB:279:SER:N | 82:CB:283:LYS:O | 2.41 | 0.49 |
| 1:L5:1258:G:H2' | 1:L5:1259:G:C8 | 2.47 | 0.48 |
| 12:LI:62:SER:HA | 12:LI:65:LEU:HD12 | 1.94 | 0.48 |
| 17:LO:186:GLU:O | 17:LO:190:ASP:HB3 | 2.13 | 0.48 |
| 24:LV:58:GLY:N | 24:LV:81:VAL:O | 2.44 | 0.48 |
| 47:S2:557:U:H3' | 47:S2:558:G:H2' | 1.95 | 0.48 |
| 47:S2:1758:G:O2' | 47:S2:1774:C:N4 | 2.43 | 0.48 |
| 56:SL:84:ARG:HH12 | 56:SL:115:PRO:HG3 | 1.77 | 0.48 |
| 71:SJ:44:TRP:HA | 71:SJ:47:LYS:HG2 | 1.95 | 0.48 |
| 75:SW:94:LEU:HD21 | 75:SW:102:ILE:HG13 | 1.95 | 0.48 |
| 82:CB:247:ALA:O | 82:CB:251:LYS:NZ | 2.46 | 0.48 |
| 1:L5:176:G:H2' | 1:L5:177:G:C8 | 2.47 | 0.48 |
| 1:L5:1270:A:H8 | 1:L5:2106:G:H21 | 1.59 | 0.48 |
| 1:L5:2520:C:H2' | 1:L5:2521:G:C8 | 2.45 | 0.48 |
| 1:L5:4105:A:N3 | 1:L5:4106:G:N2 | 2.61 | 0.48 |
| 1:L5:4148:C:O3' | 28:LZ:59:LYS:NZ | 2.47 | 0.48 |
| 1:L5:5022:U:O2' | 1:L5:5024:C:OP2 | 2.29 | 0.48 |
| 9:LF:222:LYS:HB3 | 9:LF:231:GLY:HA2 | 1.95 | 0.48 |
| 10:LG:113:ARG:HE | 10:LG:114:LEU:HD22 | 1.77 | 0.48 |
| 43:Lo:6:LYS:HZ3 | 43:Lo:94:GLY:HA3 | 1.78 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 49:SB:105:LEU:HD13 | 49:SB:213:ARG:HA | 1.94 | 0.48 |
| 53:SH:176:VAL:HG22 | 53:SH:180:LEU:HD23 | 1.95 | 0.48 |
| 82:CB:813:VAL:HG23 | 82:CB:814:PHE:H | 1.78 | 0.48 |
| 1:L5:513:U:H1' | 1:L5:516:C:H41 | 1.78 | 0.48 |
| 1:L5:4126:C:H5" | 1:L5:4127:A:H5" | 1.94 | 0.48 |
| 47:S2:561:A:N3 | 71:SJ:132:GLN:NE2 | 2.62 | 0.48 |
| 47:S2:880:G:H3' | 47:S2:881:G:H8 | 1.78 | 0.48 |
| 47:S2:1144:A:H5' | 47:S2:1355:C:H41 | 1.78 | 0.48 |
| 47:S2:1454:A:O4' | 59:SR:3:ARG:NH2 | 2.46 | 0.48 |
| 82:CB:479:LEU:HD21 | 82:CB:483:GLY:HA3 | 1.94 | 0.48 |
| 82:CB:832:SER:OG | 82:CB:833:GLN:NE2 | 2.46 | 0.48 |
| 1:L5:267:G:H2' | 1:L5:268:G:C8 | 2.46 | 0.48 |
| 1:L5:1443:A:N6 | 1:L5:2104:G:N2 | 2.23 | 0.48 |
| 1:L5:2562:G:N2 | 1:L5:2564:G:H3' | 2.29 | 0.48 |
| 1:L5:4039:G:O2' | 1:L5:4050:A:OP1 | 2.24 | 0.48 |
| 1:L5:4112:C:N4 | 1:L5:4113:U:C4 | 2.80 | 0.48 |
| 13:LJ:58:ARG:HA | 13:LJ:61:GLY:HA2 | 1.95 | 0.48 |
| 13:LJ:174:ILE:HG22 | 13:LJ:175:LEU:HG | 1.96 | 0.48 |
| 24:LV:107:ASN:OD1 | 24:LV:111:GLU:N | 2.45 | 0.48 |
| 44:Lp:57:CYS:SG | 44:Lp:59:SER:OG | 2.66 | 0.48 |
| 47:S2:318:A:C5 | 47:S2:333:G:N1 | 2.81 | 0.48 |
| 47:S2:414:A:H2' | 47:S2:415:A:C8 | 2.47 | 0.48 |
| 47:S2:1736:G:H2' | 47:S2:1737:G:H8 | 1.77 | 0.48 |
| 48:SA:80:ARG:NH1 | 48:SA:165:ASN:O | 2.46 | 0.48 |
| 52:SF:142:SER:OG | 66:Sc:47:LYS:O | 2.29 | 0.48 |
| 53:SH:61:ILE:HG21 | 53:SH:176:VAL:HG21 | 1.95 | 0.48 |
| 56:SL:103:GLU:OE1 | 64:SX:11:ARG:NH2 | 2.47 | 0.48 |
| 58:SQ:138:ARG:O | 58:SQ:140:ARG:NH2 | 2.47 | 0.48 |
| 68:Sg:82:SER:HG | 68:Sg:86:THR:HG1 | 1.62 | 0.48 |
| 75:SW:11:LEU:HD12 | 75:SW:74:VAL:HB | 1.96 | 0.48 |
| 81:CA:333:ILE:HG13 | 81:CA:334:THR:HG23 | 1.96 | 0.48 |
| 82:CB:595:SER:HB3 | 82:CB:600:ASN:HB2 | 1.95 | 0.48 |
| 82:CB:660:ASN:OD1 | 82:CB:687:THR:OG1 | 2.29 | 0.48 |
| 1:L5:1895:G:OP1 | 9:LF:96:ARG:NH2 | 2.46 | 0.48 |
| 1:L5:2838:G:H5' | 5:LB:247:GLY:HA2 | 1.96 | 0.48 |
| 1:L5:4273:A:N6 | 1:L5:4335:C:C5 | 2.81 | 0.48 |
| 3:L8:62:A:OP1 | 36:Lh:52:LYS:NZ | 2.44 | 0.48 |
| 8:LE:93:THR:HA | 8:LE:106:VAL:HA | 1.95 | 0.48 |
| 12:LI:55:ASP:HA | 12:LI:131:ILE:O | 2.14 | 0.48 |
| 12:LI:171:TRP:O | 12:LI:174:THR:OG1 | 2.24 | 0.48 |
| 47:S2:318:A:N6 | 47:S2:333:G:C6 | 2.81 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 47:S2:749:U:O4 | 47:S2:793:G:N2 | 2.46 | 0.48 |
| 47:S2:839:C:C4 | 47:S2:841:G:C6 | 3.01 | 0.48 |
| 47:S2:1616:U:O4 | 57:SP:40:ARG:NH1 | 2.45 | 0.48 |
| 51:SE:91:SER:OG | 51:SE:98:ASN:ND2 | 2.46 | 0.48 |
| 60:SS:55:ARG:HD2 | 77:SZ:48:VAL:HG13 | 1.94 | 0.48 |
| 62:SU:26:SER:OG | 62:SU:28:ASN:OD1 | 2.32 | 0.48 |
| 81:CA:148:LEU:HA | 81:CA:151:GLU:HG3 | 1.95 | 0.48 |
| 82:CB:42:LYS:HZ1 | 82:CB:346:ALA:HB3 | 1.77 | 0.48 |
| 1:L5:109:G:OP2 | 14:LL:74:ARG:NH2 | 2.43 | 0.48 |
| 1:L5:513:U:H3' | 1:L5:514:U:H4' | 1.96 | 0.48 |
| 1:L5:1443:A:C2 | 1:L5:2103:G:C2 | 2.93 | 0.48 |
| 1:L5:1481:C:H41 | 37:Li:4:ARG:HG2 | 1.78 | 0.48 |
| 1:L5:3720:G:H22 | 1:L5:3733:A:H2 | 1.60 | 0.48 |
| 12:LI:190:LEU:HD13 | 12:LI:197:VAL:HG21 | 1.96 | 0.48 |
| 47:S2:1255:G:OP1 | 47:S2:1256:G:O2' | 2.23 | 0.48 |
| 47:S2:1650:A:OP1 | 58:SQ:137:ALA:N | 2.47 | 0.48 |
| 56:SL:89:ARG:HE | 56:SL:106:HIS:CD2 | 2.31 | 0.48 |
| 58:SQ:25:CYS:HB2 | 58:SQ:68:ILE:HG22 | 1.96 | 0.48 |
| 58:SQ:96:TYR:HA | 58:SQ:100:VAL:HG22 | 1.96 | 0.48 |
| 59:SR:52:GLY:O | 59:SR:55:THR:OG1 | 2.29 | 0.48 |
| 69:SC:166:ARG:HB2 | 69:SC:248:TYR:CD1 | 2.49 | 0.48 |
| 71:SJ:78:LEU:HB3 | 71:SJ:92:MET:HE3 | 1.94 | 0.48 |
| 77:SZ:102:LYS:HA | 77:SZ:107:VAL:HG12 | 1.96 | 0.48 |
| 82:CB:416:VAL:O | 82:CB:467:GLY:CA | 2.61 | 0.48 |
| 1:L5:495:C:H2' | 1:L5:496:G:C8 | 2.49 | 0.48 |
| 1:L5:1764:G:N3 | 1:L5:1770:A:N1 | 2.62 | 0.48 |
| 1:L5:2438:A:O2' | 1:L5:2440:U:OP2 | 2.28 | 0.48 |
| 1:L5:3664:G:H2' | 1:L5:3665:G:C8 | 2.49 | 0.48 |
| 1:L5:4093:G:C2 | 1:L5:4114:C:N3 | 2.81 | 0.48 |
| 1:L5:4967:A:H2' | 1:L5:4968:A:C8 | 2.49 | 0.48 |
| 7:LD:258:LYS:H | 7:LD:259:LYS:HZ2 | 1.62 | 0.48 |
| 28:LZ:5:MET:O | 28:LZ:28:ASN:ND2 | 2.47 | 0.48 |
| 47:S2:304:C:OP1 | 54:SI:75:LYS:NZ | 2.47 | 0.48 |
| 47:S2:543:C:H3' | 47:S2:544:G:H8 | 1.78 | 0.48 |
| 47:S2:1792:G:H2' | 47:S2:1793:A:H8 | 1.78 | 0.48 |
| 62:SU:95:SER:HA | 62:SU:98:VAL:HG22 | 1.96 | 0.48 |
| 81:CA:129:VAL:HG11 | 81:CA:342:LEU:HD11 | 1.96 | 0.48 |
| 1:L5:679:C:H2' | 1:L5:680:G:C8 | 2.47 | 0.48 |
| 1:L5:729:G:H5" | 9:LF:76:ARG:HD2 | 1.96 | 0.48 |
| 1:L5:1414:C:H2' | 1:L5:1415:G:C8 | 2.47 | 0.48 |
| 1:L5:4740:G:H1' | 1:L5:4742:G:H5" | 1.96 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:L5:5047:C:O2' | 1:L5:5050:C:OP2 | 2.25 | 0.48 |
| 8:LE:178:PRO:O | 8:LE:181:LEU:N | 2.38 | 0.48 |
| 9:LF:213:LEU:HD12 | 9:LF:248:ASN:HB3 | 1.96 | 0.48 |
| 17:LO:3:GLU:N | 34:Lf:31:GLU:OE1 | 2.47 | 0.48 |
| 47:S2:146:G:OP1 | 70:SG:143:LYS:NZ | 2.47 | 0.48 |
| 47:S2:1240:A:N3 | 47:S2:1267:C:O2' | 2.38 | 0.48 |
| 47:S2:1524:G:OP2 | 60:SS:141:ARG:NH2 | 2.41 | 0.48 |
| 66:Sc:10:LYS:NZ | 66:Sc:34:PHE:O | 2.40 | 0.48 |
| 1:L5:3759:A:OP2 | 1:L5:3765:G:N1 | 2.30 | 0.48 |
| 1:L5:4260:U:H2' | 1:L5:4261:C:H6 | 1.79 | 0.48 |
| 5:LB:378:ARG:HG2 | 25:LW:32:LEU:HD21 | 1.96 | 0.48 |
| 39:Lk:52:LYS:HA | 39:Lk:55:LYS:HG2 | 1.96 | 0.48 |
| 43:Lo:71:GLU:HB2 | 43:Lo:80:LYS:HG3 | 1.96 | 0.48 |
| 47:S2:885:U:O2 | 47:S2:902:G:C2 | 2.66 | 0.48 |
| 47:S2:1308:U:H2' | 47:S2:1309:C:C6 | 2.49 | 0.48 |
| 47:S2:1681:U:O2' | 66:Sc:23:SER:O | 2.31 | 0.48 |
| 51:SE:179:ASN:OD1 | 51:SE:231:GLY:N | 2.39 | 0.48 |
| 59:SR:80:ARG:HA | 59:SR:83:ASN:HD21 | 1.79 | 0.48 |
| 76:SY:88:LYS:HA | 76:SY:91:LEU:HB2 | 1.95 | 0.48 |
| 1:L5:1704:C:O2 | 1:L5:2097:U:N3 | 2.44 | 0.48 |
| 1:L5:1933:G:H2' | 1:L5:1934:A:C8 | 2.49 | 0.48 |
| 1:L5:1940:G:H22 | 1:L5:4434:C:H5" | 1.79 | 0.48 |
| 1:L5:2704:C:H2' | 1:L5:2705:G:C8 | 2.49 | 0.48 |
| 1:L5:3977:C:N4 | 1:L5:3984:C:OP1 | 2.47 | 0.48 |
| 1:L5:4740:G:O6 | 1:L5:4959:U:O2 | 2.31 | 0.48 |
| 1:L5:4769:G:H5" | 17:LO:176:ARG:HD3 | 1.95 | 0.48 |
| 5:LB:80:GLU:OE1 | 5:LB:323:TYR:OH | 2.28 | 0.48 |
| 7:LD:208:MET:O | 7:LD:212:MET:HB2 | 2.13 | 0.48 |
| 13:LJ:55:TYR:HA | 13:LJ:64:ARG:HB3 | 1.95 | 0.48 |
| 19:LQ:146:ARG:HB2 | 19:LQ:149:TYR:HD2 | 1.79 | 0.48 |
| 26:LX:145:ASP:N | 26:LX:145:ASP:OD1 | 2.46 | 0.48 |
| 46:Lz:85:MET:HB2 | 46:Lz:89:ALA:HB3 | 1.96 | 0.48 |
| 47:S2:1756:C:N4 | 47:S2:1775:U:C4 | 2.82 | 0.48 |
| 47:S2:1781:A:H3' | 47:S2:1783:C:C4 | 2.49 | 0.48 |
| 55:SK:42:ASN:HA | 55:SK:45:VAL:HG22 | 1.96 | 0.48 |
| 71:SJ:164:PRO:HB3 | 71:SJ:170:PRO:HA | 1.96 | 0.48 |
| 72:SM:61:TYR:OH | 72:SM:108:CYS:SG | 2.68 | 0.48 |
| 82:CB:160:MET:HE2 | 82:CB:160:MET:HB3 | 1.79 | 0.48 |
| 1:L5:1981:G:H8 | 1:L5:1981:G:O5' | 1.97 | 0.47 |
| 1:L5:2640:G:H2' | 1:L5:2641:A:C8 | 2.49 | 0.47 |
| 1:L5:2809:G:O2' | 1:L5:4644:G:OP1 | 2.30 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:L5:4935:C:H2' | 1:L5:4936:G:C8 | 2.49 | 0.47 |
| 4:LA:180:LEU:HD11 | 44:Lp:26:VAL:HG21 | 1.96 | 0.47 |
| 16:LN:3:ALA:O | 16:LN:7:ILE:HG12 | 2.14 | 0.47 |
| 24:LV:29:ALA:HB2 | 24:LV:102:ALA:HB1 | 1.94 | 0.47 |
| 33:Le:16:ARG:NH2 | 33:Le:19:LYS:O | 2.44 | 0.47 |
| 33:Le:103:VAL:O | 33:Le:108:ARG:NH2 | 2.43 | 0.47 |
| 47:S2:433:A:H2' | 47:S2:434:G:C8 | 2.49 | 0.47 |
| 47:S2:1435:C:O2' | 47:S2:1437:C:N4 | 2.47 | 0.47 |
| 58:SQ:61:GLU:HG2 | 58:SQ:62:ARG:HD2 | 1.95 | 0.47 |
| 66:Sc:15:THR:OG1 | 66:Sc:33:GLU:OE2 | 2.32 | 0.47 |
| 68:Sg:30:MET:HA | 68:Sg:43:TRP:O | 2.13 | 0.47 |
| 70:SG:6:SER:HB3 | 70:SG:13:GLN:HB3 | 1.96 | 0.47 |
| 72:SM:86:GLY:HA2 | 72:SM:89:VAL:HG12 | 1.96 | 0.47 |
| 1:L5:261:G:H2' | 1:L5:262:G:C8 | 2.49 | 0.47 |
| 1:L5:1178:G:OP1 | 1:L5:1178:G:N2 | 2.39 | 0.47 |
| 1:L5:1604:G:H2' | 1:L5:1605:G:C8 | 2.49 | 0.47 |
| 1:L5:2702:C:OP1 | 23:LU:101:ARG:NH2 | 2.46 | 0.47 |
| 8:LE:176:THR:OG1 | 8:LE:177:GLY:O | 2.32 | 0.47 |
| 8:LE:177:GLY:HA3 | 8:LE:184:VAL:HB | 1.96 | 0.47 |
| 13:LJ:65:ASN:HB2 | 43:Lo:103:VAL:HA | 1.96 | 0.47 |
| 18:LP:7:ASP:N | 18:LP:7:ASP:OD1 | 2.47 | 0.47 |
| 18:LP:108:ASP:OD1 | 18:LP:108:ASP:N | 2.40 | 0.47 |
| 21:LS:43:ARG:HA | 21:LS:43:ARG:HD2 | 1.71 | 0.47 |
| 47:S2:54:A:H3' | 47:S2:451:G:H22 | 1.79 | 0.47 |
| 47:S2:692:G:O6 | 47:S2:693:A:N6 | 2.47 | 0.47 |
| 47:S2:857:U:H2' | 47:S2:858:A:H8 | 1.79 | 0.47 |
| 47:S2:1221:G:H2' | 47:S2:1222:G:H8 | 1.79 | 0.47 |
| 47:S2:1365:G:H2' | 47:S2:1366:G:H8 | 1.79 | 0.47 |
| 47:S2:1568:C:OP1 | 61:ST:96:SER:OG | 2.28 | 0.47 |
| 47:S2:1660:C:O2 | 67:Sd:32:ARG:NH2 | 2.43 | 0.47 |
| 49:SB:76:ASN:OD1 | 49:SB:76:ASN:N | 2.44 | 0.47 |
| 51:SE:36:HIS:CE1 | 51:SE:85:GLY:HA3 | 2.50 | 0.47 |
| 54:SI:143:LYS:HA | 54:SI:146:GLN:HB2 | 1.96 | 0.47 |
| 57:SP:18:ARG:NH1 | 57:SP:36:LEU:O | 2.43 | 0.47 |
| 81:CA:8:GLN:O | 81:CA:10:GLN:NE2 | 2.47 | 0.47 |
| 82:CB:801:ARG:HA | 82:CB:804:THR:HG22 | 1.96 | 0.47 |
| 1:L5:1642:A:N6 | 4:LA:2:GLY:O | 2.33 | 0.47 |
| 1:L5:2696:A:H62 | 39:Lk:35:LYS:HE2 | 1.79 | 0.47 |
| 1:L5:4051:C:O2 | 1:L5:4052:C:N4 | 2.47 | 0.47 |
| 25:LW:74:ARG:NH2 | 47:S2:1779:G:N7 | 2.63 | 0.47 |
| 39:Lk:24:LYS:HA | 39:Lk:67:LYS:O | 2.14 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 46:Lz:32:VAL:N | 46:Lz:170:GLY:O | 2.48 | 0.47 |
| 47:S2:67:C:O2' | 47:S2:69:C:OP2 | 2.30 | 0.47 |
| 47:S2:191:A:OP2 | 47:S2:192:C:N4 | 2.47 | 0.47 |
| 47:S2:534:G:H2' | 47:S2:535:G:C8 | 2.48 | 0.47 |
| 47:S2:1373:C:OP1 | 59:SR:7:LYS:N | 2.46 | 0.47 |
| 58:SQ:97:GLN:HB3 | 58:SQ:105:LYS:HG3 | 1.96 | 0.47 |
| 1:L5:706:C:HO2' | 1:L5:1298:C:HO2' | 1.62 | 0.47 |
| 1:L5:1174:G:O6 | 1:L5:1186:U:O4 | 2.33 | 0.47 |
| 1:L5:1478:C:H2' | 1:L5:1479:G:H8 | 1.80 | 0.47 |
| 1:L5:1759:G:N2 | 1:L5:1773:U:O2 | 2.46 | 0.47 |
| 1:L5:1787:A:N3 | 1:L5:4210:U:O2' | 2.47 | 0.47 |
| 1:L5:2001:G:C2 | 1:L5:2017:A:C6 | 3.02 | 0.47 |
| 1:L5:2480:G:H2' | 1:L5:2481:G:H8 | 1.78 | 0.47 |
| 1:L5:3598:C:H2' | 1:L5:3599:A:H8 | 1.80 | 0.47 |
| 1:L5:3948:C:H5' | 1:L5:3949:A:C2 | 2.48 | 0.47 |
| 1:L5:4922:C:C4 | 1:L5:4923:C:N4 | 2.82 | 0.47 |
| 2:L7:23:A:N3 | 2:L7:118:C:O2' | 2.44 | 0.47 |
| 15:LM:51:PRO:HG2 | 15:LM:54:CYS:HB2 | 1.96 | 0.47 |
| 47:S2:145:G:H2' | 47:S2:146:G:C8 | 2.49 | 0.47 |
| 47:S2:1259:A:H1' | 47:S2:1264:C:H41 | 1.79 | 0.47 |
| 47:S2:1489:A:H62 | 84:CD:197:SER:HB2 | 1.79 | 0.47 |
| 49:SB:143:THR:OG1 | 49:SB:144:LYS:N | 2.47 | 0.47 |
| 54:SI:11:ARG:O | 56:SL:136:LYS:NZ | 2.47 | 0.47 |
| 57:SP:44:ARG:O | 57:SP:47:ARG:C | 2.57 | 0.47 |
| 59:SR:104:GLU:HA | 59:SR:107:LYS:HD2 | 1.97 | 0.47 |
| 60:SS:35:GLY:O | 60:SS:97:GLN:NE2 | 2.46 | 0.47 |
| 1:L5:256:G:H2' | 1:L5:257:C:C6 | 2.50 | 0.47 |
| 1:L5:408:A:O2' | 1:L5:411:G:OP2 | 2.23 | 0.47 |
| 1:L5:691:C:H2' | 1:L5:692:A:C8 | 2.50 | 0.47 |
| 1:L5:3855:C:H2' | 1:L5:3856:A:H8 | 1.79 | 0.47 |
| 3:L8:8:U:H2' | 3:L8:9:A:C8 | 2.50 | 0.47 |
| 5:LB:302:ASN:O | 5:LB:304:SER:N | 2.47 | 0.47 |
| 8:LE:190:HIS:HB3 | 8:LE:193:PHE:HD2 | 1.80 | 0.47 |
| 12:LI:130:HIS:N | 12:LI:133:GLN:OE1 | 2.44 | 0.47 |
| 60:SS:26:ILE:HA | 60:SS:56:ALA:HB2 | 1.97 | 0.47 |
| 60:SS:132:ARG:HB2 | 60:SS:134:GLN:HE22 | 1.79 | 0.47 |
| 66:Sc:12:ALA:HB1 | 66:Sc:32:VAL:HB | 1.96 | 0.47 |
| 68:Sg:6:THR:HG23 | 68:Sg:8:ARG:HE | 1.79 | 0.47 |
| 72:SM:83:LYS:HZ2 | 72:SM:105:GLY:H | 1.63 | 0.47 |
| 1:L5:496:G:O6 | 1:L5:497:G:N2 | 2.48 | 0.47 |
| 1:L5:1439:C:H4' | 9:LF:34:ARG:HH12 | 1.79 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:L5:1695:U:H2' | 1:L5:1696:C:C6 | 2.50 | 0.47 |
| 1:L5:3813:A:N3 | 1:L5:4538:G:O2' | 2.46 | 0.47 |
| 1:L5:4742:G:H2' | 1:L5:4743:G:C8 | 2.49 | 0.47 |
| 3:L8:21:C:OP1 | 6:LC:195:LYS:NZ | 2.45 | 0.47 |
| 13:LJ:22:LEU:HD22 | 13:LJ:128:LEU:HD12 | 1.97 | 0.47 |
| 17:LO:113:ASP:OD1 | 17:LO:113:ASP:N | 2.47 | 0.47 |
| 22:LT:37:GLY:CA | 22:LT:64:VAL:O | 2.62 | 0.47 |
| 33:Le:91:CYS:O | 33:Le:93:LYS:N | 2.48 | 0.47 |
| 45:Lr:93:ILE:HA | 45:Lr:96:MET:HE3 | 1.96 | 0.47 |
| 47:S2:75:G:H22 | 70:SG:171:THR:HG21 | 1.80 | 0.47 |
| 47:S2:1032:C:H5" | 73:SN:109:LYS:HD3 | 1.95 | 0.47 |
| 47:S2:1513:C:H2' | 47:S2:1514:G:H8 | 1.79 | 0.47 |
| 47:S2:1588:A:H2' | 47:S2:1589:A:C8 | 2.50 | 0.47 |
| 52:SF:188:TYR:CZ | 52:SF:192:LYS:HD3 | 2.48 | 0.47 |
| 59:SR:25:GLY:H | 59:SR:31:ASN:HD21 | 1.61 | 0.47 |
| 60:SS:141:ARG:O | 60:SS:144:ARG:O | 2.33 | 0.47 |
| 65:Sa:2:THR:OG1 | 65:Sa:3:LYS:N | 2.47 | 0.47 |
| 82:CB:687:THR:HA | 82:CB:697:MET:HE2 | 1.96 | 0.47 |
| 82:CB:840:LYS:HB2 | 82:CB:840:LYS:HE2 | 1.72 | 0.47 |
| 1:L5:1915:C:OP2 | 17:LO:94:ARG:NH2 | 2.47 | 0.47 |
| 1:L5:2029:A:H2' | 1:L5:2030:A:C8 | 2.50 | 0.47 |
| 1:L5:2385:U:OP1 | 20:LR:5:ARG:NH1 | 2.47 | 0.47 |
| 1:L5:2483:G:O6 | 1:L5:2495:U:C4 | 2.67 | 0.47 |
| 1:L5:4476:C:O2' | 1:L5:4478:G:OP2 | 2.32 | 0.47 |
| 5:LB:168:MET:HA | 5:LB:171:LEU:HD12 | 1.96 | 0.47 |
| 10:LG:180:PRO:HG3 | 10:LG:219:VAL:HG23 | 1.96 | 0.47 |
| 22:LT:93:ILE:HA | 22:LT:96:ILE:HG12 | 1.97 | 0.47 |
| 30:Lb:106:LYS:HE3 | 30:Lb:106:LYS:HB3 | 1.81 | 0.47 |
| 38:Lj:34:CYS:HB3 | 38:Lj:39:TYR:H | 1.80 | 0.47 |
| 43:Lo:102:GLN:HB2 | 43:Lo:104:ILE:HD11 | 1.97 | 0.47 |
| 47:S2:306:C:C2 | 47:S2:308:G:C2 | 3.02 | 0.47 |
| 47:S2:809:A:OP1 | 51:SE:187:ALA:N | 2.47 | 0.47 |
| 47:S2:1337:C:H2' | 47:S2:1338:G:H8 | 1.80 | 0.47 |
| 47:S2:1748:G:N2 | 47:S2:1786:U:O2 | 2.35 | 0.47 |
| 51:SE:104:ASP:HB3 | 51:SE:110:ALA:HB2 | 1.96 | 0.47 |
| 56:SL:73:LEU:HD22 | 56:SL:90:ARG:HH12 | 1.78 | 0.47 |
| 57:SP:92:SER:HB2 | 57:SP:107:ILE:HD13 | 1.96 | 0.47 |
| 61:ST:125:PRO:HA | 61:ST:128:GLN:HG2 | 1.95 | 0.47 |
| 65:Sa:23:CYS:O | 65:Sa:27:ALA:N | 2.47 | 0.47 |
| 73:SN:142:GLU:HB3 | 73:SN:145:THR:HG22 | 1.96 | 0.47 |
| 74:SO:12:GLU:HA | 74:SO:13:GLN:HA | 1.68 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 82:CB:9:ILE:HG22 | 82:CB:13:MET:HE3 | 1.97 | 0.47 |
| 82:CB:759:ILE:HA | 82:CB:762:VAL:HG12 | 1.97 | 0.47 |
| 82:CB:829:SER:O | 82:CB:832:SER:OG | 2.28 | 0.47 |
| 83:CC:26:G:H3' | 83:CC:27:A:H8 | 1.79 | 0.47 |
| 1:L5:1191:C:H2' | 1:L5:1192:C:H6 | 1.80 | 0.47 |
| 1:L5:2707:U:O2 | 81:CA:260:LYS:NZ | 2.39 | 0.47 |
| 1:L5:3970:G:O2' | 1:L5:4051:C:O2 | 2.33 | 0.47 |
| 1:L5:4281:A:H2' | 1:L5:4282:A:H2' | 1.97 | 0.47 |
| 1:L5:4347:G:H2' | 1:L5:4348:A:C8 | 2.50 | 0.47 |
| 7:LD:203:ASN:OD1 | 7:LD:203:ASN:N | 2.47 | 0.47 |
| 26:LX:96:LEU:HG | 26:LX:140:LEU:HD11 | 1.97 | 0.47 |
| 39:Lk:8:ILE:HG23 | 39:Lk:56:LEU:HD12 | 1.96 | 0.47 |
| 45:Lr:54:ALA:HA | 45:Lr:61:VAL:HG23 | 1.97 | 0.47 |
| 47:S2:158:A:H2' | 47:S2:159:A:O4' | 2.14 | 0.47 |
| 47:S2:1221:G:H2' | 47:S2:1222:G:C8 | 2.50 | 0.47 |
| 47:S2:1227:G:H1 | 47:S2:1531:A:N6 | 2.12 | 0.47 |
| 47:S2:1633:A:H2' | 47:S2:1634:A:C8 | 2.50 | 0.47 |
| 47:S2:1736:G:H2' | 47:S2:1737:G:C8 | 2.50 | 0.47 |
| 47:S2:1738:C:OP1 | 70:SG:92:ARG:NH1 | 2.41 | 0.47 |
| 47:S2:1868:U:O2' | 65:Sa:100:ARG:NH1 | 2.43 | 0.47 |
| 54:SI:36:THR:O | 54:SI:96:LEU:N | 2.36 | 0.47 |
| 70:SG:58:LYS:NZ | 70:SG:106:LEU:O | 2.41 | 0.47 |
| 81:CA:108:ILE:O | 81:CA:122:ALA:HA | 2.15 | 0.47 |
| 82:CB:611:ASP:N | 82:CB:611:ASP:OD1 | 2.46 | 0.47 |
| 83:CC:18:G:N2 | 83:CC:66:G:O4' | 2.48 | 0.47 |
| 1:L5:321:U:H2' | 1:L5:322:C:C6 | 2.50 | 0.47 |
| 1:L5:3961:G:C2 | 1:L5:4048:A:C6 | 3.02 | 0.47 |
| 1:L5:4093:G:H8 | 1:L5:4094:G:N7 | 2.12 | 0.47 |
| 3:L8:141:C:H2' | 3:L8:142:U:C6 | 2.50 | 0.47 |
| 7:LD:236:MET:HE3 | 7:LD:236:MET:HB2 | 1.77 | 0.47 |
| 47:S2:526:A:H2' | 47:S2:527:C:C6 | 2.50 | 0.47 |
| 47:S2:528:A:N1 | 47:S2:557:U:C4 | 2.83 | 0.47 |
| 47:S2:872:A:N6 | 47:S2:874:G:N1 | 2.63 | 0.47 |
| 47:S2:940:U:H2' | 47:S2:941:C:C6 | 2.50 | 0.47 |
| 47:S2:987:A:OP1 | 65:Sa:32:LYS:NZ | 2.46 | 0.47 |
| 49:SB:142:PHE:HD2 | 49:SB:209:ASP:HB2 | 1.80 | 0.47 |
| 53:SH:173:PHE:HB3 | 53:SH:187:PHE:HE2 | 1.80 | 0.47 |
| 55:SK:59:LYS:HE3 | 55:SK:70:TYR:HD2 | 1.79 | 0.47 |
| 56:SL:77:VAL:HA | 56:SL:88:ILE:HA | 1.97 | 0.47 |
| 68:Sg:66:VAL:HA | 68:Sg:82:SER:HA | 1.97 | 0.47 |
| 68:Sg:199:THR:HG21 | 68:Sg:240:CYS:HA | 1.97 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 68:Sg:286:CYS:HA | 68:Sg:302:TYR:HA | 1.96 | 0.47 |
| 82:CB:263:ASP:OD1 | 82:CB:287:ARG:NH1 | 2.47 | 0.47 |
| 82:CB:276:SER:OG | 82:CB:278:THR:O | 2.33 | 0.47 |
| 1:L5:65:A:N6 | 1:L5:74:G:N2 | 2.63 | 0.47 |
| 1:L5:270:U:H2' | 1:L5:271:C:C6 | 2.50 | 0.47 |
| 1:L5:4676:G:OP1 | 5:LB:281:ASN:ND2 | 2.44 | 0.47 |
| 11:LH:42:ASN:HD21 | 17:LO:131:PRO:HB2 | 1.80 | 0.47 |
| 15:LM:5:ARG:NE | 15:LM:59:ASP:OD1 | 2.48 | 0.47 |
| 23:LU:47:ILE:HG21 | 23:LU:56:LEU:HD13 | 1.97 | 0.47 |
| 47:S2:106:C:H2' | 47:S2:107:A:H8 | 1.80 | 0.47 |
| 47:S2:318:A:C8 | 47:S2:333:G:C2 | 3.03 | 0.47 |
| 47:S2:329:G:H2' | 47:S2:330:G:H8 | 1.80 | 0.47 |
| 47:S2:929:G:H2' | 47:S2:930:C:O4' | 2.14 | 0.47 |
| 47:S2:1047:C:H5' | 74:SO:143:LYS:HB2 | 1.96 | 0.47 |
| 47:S2:1438:A:H2' | 47:S2:1439:A:C8 | 2.50 | 0.47 |
| 63:SV:78:ILE:HG22 | 63:SV:79:VAL:H | 1.80 | 0.47 |
| 68:Sg:110:SER:HB2 | 68:Sg:153:CYS:HA | 1.97 | 0.47 |
| 81:CA:246:ILE:HB | 81:CA:305:PHE:HB2 | 1.97 | 0.47 |
| 82:CB:587:SER:OG | 82:CB:735:THR:OG1 | 2.33 | 0.47 |
| 1:L5:418:A:C2 | 3:L8:17:A:H1' | 2.49 | 0.46 |
| 1:L5:498:C:C2 | 1:L5:499:G:H1' | 2.49 | 0.46 |
| 1:L5:754:U:N3 | 1:L5:910:G:N1 | 2.63 | 0.46 |
| 1:L5:1802:A:H5" | 1:L5:1803:G:H5' | 1.96 | 0.46 |
| 1:L5:3765:G:O2' | 1:L5:3767:C:N4 | 2.48 | 0.46 |
| 1:L5:3960:A:C5 | 1:L5:4043:G:O6 | 2.67 | 0.46 |
| 1:L5:4936:G:OP2 | 8:LE:183:ARG:NH1 | 2.44 | 0.46 |
| 9:LF:182:TYR:HB3 | 9:LF:200:ARG:HG3 | 1.97 | 0.46 |
| 16:LN:124:ASP:OD1 | 16:LN:125:SER:N | 2.48 | 0.46 |
| 24:LV:57:VAL:HG13 | 24:LV:84:GLN:HG2 | 1.98 | 0.46 |
| 31:Lc:14:ILE:HD12 | 31:Lc:17:ARG:HD2 | 1.97 | 0.46 |
| 46:Lz:12:GLU:O | 46:Lz:217:TYR:N | 2.36 | 0.46 |
| 46:Lz:72:GLN:HG3 | 46:Lz:144:MET:HE1 | 1.96 | 0.46 |
| 47:S2:1822:A:H3' | 47:S2:1823:A:H8 | 1.79 | 0.46 |
| 48:SA:145:ILE:HG13 | 48:SA:159:ILE:HB | 1.96 | 0.46 |
| 67:Sd:3:HIS:CE1 | 67:Sd:5:GLN:HB2 | 2.50 | 0.46 |
| 78:Sb:19:HIS:O | 78:Sb:23:ARG:NE | 2.48 | 0.46 |
| 81:CA:144:LYS:NZ | 81:CA:343:TYR:O | 2.38 | 0.46 |
| 81:CA:163:ASN:O | 81:CA:167:THR:HG23 | 2.15 | 0.46 |
| 1:L5:651:C:H2' | 1:L5:652:G:C8 | 2.50 | 0.46 |
| 1:L5:1177:U:O4 | 1:L5:1183:C:N3 | 2.49 | 0.46 |
| 1:L5:1317:U:H2' | 1:L5:1318:C:C6 | 2.51 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:L5:1365:C:H2' | 1:L5:1366:G:H3' | 1.97 | 0.46 |
| 1:L5:2361:G:O2' | 1:L5:3859:G:O6 | 2.34 | 0.46 |
| 1:L5:4741:C:H4' | 1:L5:4742:G:H5' | 1.97 | 0.46 |
| 10:LG:231:ASP:N | 10:LG:231:ASP:OD1 | 2.46 | 0.46 |
| 11:LH:171:ASP:O | 11:LH:175:PHE:HB2 | 2.15 | 0.46 |
| 28:LZ:22:LYS:NZ | 28:LZ:132:GLN:O | 2.36 | 0.46 |
| 29:La:75:LEU:HD12 | 29:La:117:LEU:HD21 | 1.98 | 0.46 |
| 38:Lj:67:LEU:HA | 38:Lj:70:VAL:HG12 | 1.96 | 0.46 |
| 47:S2:497:C:H2' | 47:S2:498:C:C6 | 2.49 | 0.46 |
| 47:S2:1612:G:H2' | 47:S2:1613:G:H8 | 1.80 | 0.46 |
| 48:SA:62:ALA:HA | 48:SA:65:ILE:HG22 | 1.97 | 0.46 |
| 50:SD:220:THR:OG1 | 50:SD:221:THR:N | 2.47 | 0.46 |
| 53:SH:82:GLU:HG3 | 53:SH:85:LYS:HZ3 | 1.80 | 0.46 |
| 72:SM:80:ASP:N | 72:SM:80:ASP:OD1 | 2.48 | 0.46 |
| 78:Sb:31:TYR:O | 78:Sb:48:SER:HB3 | 2.16 | 0.46 |
| 1:L5:3599:A:H2' | 1:L5:3600:G:C8 | 2.51 | 0.46 |
| 6:LC:245:HIS:ND1 | 45:Lr:13:CYS:SG | 2.88 | 0.46 |
| 9:LF:131:ASN:OD1 | 9:LF:134:ARG:NH2 | 2.41 | 0.46 |
| 15:LM:52:PHE:HA | 15:LM:55:MET:HG2 | 1.98 | 0.46 |
| 24:LV:83:ARG:O | 24:LV:101:ASN:HA | 2.15 | 0.46 |
| 34:Lf:36:ARG:O | 34:Lf:39:THR:OG1 | 2.32 | 0.46 |
| 46:Lz:116:LEU:O | 46:Lz:120:ILE:HG12 | 2.15 | 0.46 |
| 47:S2:5:U:H2' | 47:S2:6:G:C8 | 2.51 | 0.46 |
| 47:S2:462:C:N4 | 47:S2:468:A:N6 | 2.64 | 0.46 |
| 47:S2:836:G:N2 | 47:S2:839:C:OP1 | 2.47 | 0.46 |
| 48:SA:39:TYR:OH | 59:SR:104:GLU:OE1 | 2.34 | 0.46 |
| 53:SH:44:ASN:N | 53:SH:68:GLN:OE1 | 2.46 | 0.46 |
| 71:SJ:93:LYS:H | 71:SJ:96:TYR:HD2 | 1.62 | 0.46 |
| 82:CB:360:SER:O | 82:CB:363:THR:OG1 | 2.32 | 0.46 |
| 82:CB:539:GLU:OE2 | 82:CB:541:SER:OG | 2.32 | 0.46 |
| 1:L5:746:A:H2' | 1:L5:747:A:H8 | 1.80 | 0.46 |
| 1:L5:2253:A:H61 | 9:LF:27:GLU:HG2 | 1.80 | 0.46 |
| 1:L5:2622:G:OP2 | 23:LU:84:LYS:NZ | 2.45 | 0.46 |
| 1:L5:4258:C:H2' | 1:L5:4259:C:H6 | 1.81 | 0.46 |
| 7:LD:250:ASN:HD21 | 7:LD:252:VAL:HG12 | 1.79 | 0.46 |
| 9:LF:150:VAL:O | 9:LF:154:ILE:HG12 | 2.16 | 0.46 |
| 11:LH:107:GLU:O | 11:LH:110:SER:OG | 2.29 | 0.46 |
| 46:Lz:73:HIS:ND1 | 46:Lz:76:GLU:OE2 | 2.49 | 0.46 |
| 47:S2:383:G:H4' | 56:SL:132:ARG:HH11 | 1.80 | 0.46 |
| 47:S2:1010:G:H2' | 47:S2:1011:A:C8 | 2.51 | 0.46 |
| 47:S2:1613:G:OP1 | 60:SS:88:LYS:NZ | 2.35 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 49:SB:98:THR:OG1 | 49:SB:99:ASN:N | 2.48 | 0.46 |
| 82:CB:91:GLN:HE22 | 82:CB:359:PRO:HA | 1.80 | 0.46 |
| 82:CB:406:ASP:OD2 | 82:CB:408:GLY:N | 2.48 | 0.46 |
| 1:L5:1715:C:H3' | 1:L5:1716:G:H8 | 1.81 | 0.46 |
| 1:L5:4602:A:P | 82:CB:162:ARG:HH22 | 2.38 | 0.46 |
| 7:LD:120:GLU:O | 7:LD:248:ARG:NH1 | 2.48 | 0.46 |
| 8:LE:88:VAL:HA | 8:LE:89:LEU:HA | 1.64 | 0.46 |
| 27:LY:39:ARG:O | 27:LY:42:TYR:C | 2.57 | 0.46 |
| 47:S2:527:C:H2' | 47:S2:528:A:C8 | 2.51 | 0.46 |
| 47:S2:975:G:O2' | 74:SO:49:GLY:O | 2.31 | 0.46 |
| 47:S2:1252:C:OP1 | 62:SU:75:LYS:NZ | 2.39 | 0.46 |
| 47:S2:1605:G:OP1 | 61:ST:84:ARG:NH2 | 2.43 | 0.46 |
| 51:SE:129:ILE:HG22 | 51:SE:139:LEU:HB3 | 1.98 | 0.46 |
| 52:SF:108:PRO:HA | 52:SF:111:VAL:HG12 | 1.97 | 0.46 |
| 68:Sg:7:LEU:HA | 68:Sg:309:VAL:O | 2.16 | 0.46 |
| 70:SG:47:GLY:O | 70:SG:115:LYS:NZ | 2.41 | 0.46 |
| 1:L5:471:A:H62 | 1:L5:684:G:N2 | 2.11 | 0.46 |
| 1:L5:490:C:H2' | 1:L5:491:G:C8 | 2.50 | 0.46 |
| 1:L5:1091:C:H2' | 1:L5:1092:G:C8 | 2.50 | 0.46 |
| 1:L5:1333:A:H2' | 1:L5:1334:A:C8 | 2.51 | 0.46 |
| 1:L5:3607:U:H2' | 1:L5:3608:A:C8 | 2.51 | 0.46 |
| 1:L5:4537:C:H2' | 1:L5:4538:G:H8 | 1.79 | 0.46 |
| 1:L5:4861:G:H2' | 1:L5:4862:G:H8 | 1.79 | 0.46 |
| 2:L7:12:U:O3' | 2:L7:109:U:O2' | 2.30 | 0.46 |
| 5:LB:302:ASN:HD22 | 5:LB:314:ILE:H | 1.64 | 0.46 |
| 11:LH:106:GLN:HB2 | 11:LH:111:LEU:HB3 | 1.98 | 0.46 |
| 11:LH:107:GLU:N | 11:LH:107:GLU:OE2 | 2.49 | 0.46 |
| 46:Lz:38:LEU:HD13 | 46:Lz:198:TRP:HE3 | 1.81 | 0.46 |
| 52:SF:196:LEU:HA | 52:SF:199:VAL:HG12 | 1.97 | 0.46 |
| 53:SH:146:VAL:HG22 | 53:SH:148:LEU:H | 1.81 | 0.46 |
| 66:Sc:45:ASN:N | 66:Sc:45:ASN:OD1 | 2.48 | 0.46 |
| 81:CA:229:LEU:HG | 81:CA:318:GLN:HG2 | 1.97 | 0.46 |
| 1:L5:2909:C:O5' | 1:L5:3586:G:N2 | 2.41 | 0.46 |
| 1:L5:3598:C:H2' | 1:L5:3599:A:C8 | 2.50 | 0.46 |
| 1:L5:3606:U:H2' | 1:L5:3607:U:C6 | 2.50 | 0.46 |
| 1:L5:4093:G:C8 | 1:L5:4095:G:C2 | 3.04 | 0.46 |
| 1:L5:4723:A:H2' | 1:L5:4724:A:C8 | 2.51 | 0.46 |
| 13:LJ:87:LEU:HB3 | 13:LJ:92:TYR:HD1 | 1.80 | 0.46 |
| 31:Lc:38:ILE:HG21 | 31:Lc:63:TYR:HB3 | 1.97 | 0.46 |
| 32:Ld:46:LEU:HD23 | 32:Ld:46:LEU:HA | 1.69 | 0.46 |
| 47:S2:639:C:OP1 | 79:Se:41:ARG:NH2 | 2.48 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 47:S2:1102:G:H2' | 47:S2:1103:C:C6 | 2.51 | 0.46 |
| 47:S2:1271:C:N4 | 47:S2:1511:U:H3 | 2.08 | 0.46 |
| 47:S2:1661:A:H8 | 67:Sd:14:PHE:HB2 | 1.80 | 0.46 |
| 48:SA:76:VAL:HG12 | 48:SA:123:VAL:HB | 1.98 | 0.46 |
| 53:SH:65:PRO:HG2 | 53:SH:68:GLN:HE21 | 1.80 | 0.46 |
| 53:SH:129:ILE:HG21 | 53:SH:180:LEU:HD11 | 1.97 | 0.46 |
| 54:SI:154:LYS:HA | 54:SI:154:LYS:HD2 | 1.80 | 0.46 |
| 69:SC:77:SER:O | 69:SC:80:GLU:N | 2.43 | 0.46 |
| 82:CB:224:THR:HG23 | 82:CB:227:GLN:H | 1.81 | 0.46 |
| 1:L5:3959:U:H1' | 1:L5:3960:A:N1 | 2.31 | 0.46 |
| 1:L5:5063:G:O6 | 5:LB:124:LYS:NZ | 2.38 | 0.46 |
| 13:LJ:85:LYS:HD2 | 13:LJ:115:LEU:HD11 | 1.98 | 0.46 |
| 46:Lz:63:PHE:HE1 | 46:Lz:155:ILE:HG23 | 1.80 | 0.46 |
| 47:S2:197:U:N3 | 47:S2:202:G:N7 | 2.64 | 0.46 |
| 47:S2:1541:G:OP1 | 61:ST:56:ARG:NE | 2.48 | 0.46 |
| 51:SE:43:PRO:HG2 | 51:SE:46:ILE:HG12 | 1.97 | 0.46 |
| 55:SK:86:PRO:HG2 | 55:SK:89:ILE:HG12 | 1.98 | 0.46 |
| 56:SL:58:LYS:HG3 | 56:SL:59:LYS:HG3 | 1.97 | 0.46 |
| 71:SJ:33:GLY:HA3 | 79:Se:38:TYR:CG | 2.51 | 0.46 |
| 71:SJ:137:VAL:HG12 | 71:SJ:138:ARG:H | 1.81 | 0.46 |
| 73:SN:57:SER:HG | 73:SN:58:HIS:CE1 | 2.30 | 0.46 |
| 84:CD:185:PHE:HB3 | 84:CD:191:ARG:HA | 1.97 | 0.46 |
| 1:L5:10:A:H2' | 1:L5:11:G:C8 | 2.51 | 0.46 |
| 1:L5:1283:G:N1 | 1:L5:2076:G:OP1 | 2.37 | 0.46 |
| 1:L5:1811:G:H2' | 1:L5:1812:C:C6 | 2.51 | 0.46 |
| 1:L5:2588:C:OP1 | 1:L5:2768:C:O2' | 2.33 | 0.46 |
| 1:L5:3732:A:H2' | 1:L5:3733:A:C8 | 2.51 | 0.46 |
| 1:L5:4926:C:H5" | 1:L5:4927:G:H21 | 1.81 | 0.46 |
| 2:L7:27:G:N2 | 2:L7:55:A:H61 | 2.12 | 0.46 |
| 14:LL:54:PRO:HB2 | 14:LL:97:SER:HB3 | 1.97 | 0.46 |
| 46:Lz:67:VAL:HA | 46:Lz:68:LEU:HA | 1.55 | 0.46 |
| 47:S2:844:U:OP1 | 51:SE:240:ARG:NH1 | 2.47 | 0.46 |
| 47:S2:1128:C:O2' | 78:Sb:19:HIS:ND1 | 2.44 | 0.46 |
| 47:S2:1144:A:H2' | 47:S2:1145:A:C8 | 2.51 | 0.46 |
| 49:SB:90:ASP:OD2 | 49:SB:92:GLN:NE2 | 2.40 | 0.46 |
| 56:SL:128:VAL:HG12 | 56:SL:140:PHE:HD2 | 1.80 | 0.46 |
| 65:Sa:13:LYS:HD3 | 65:Sa:13:LYS:HA | 1.76 | 0.46 |
| 81:CA:155:ARG:NE | 81:CA:360:SER:OG | 2.49 | 0.46 |
| 82:CB:185:VAL:HA | 82:CB:188:ILE:HG22 | 1.98 | 0.46 |
| 1:L5:1079:C:C2 | 1:L5:1221:G:C2 | 3.04 | 0.46 |
| 1:L5:1456:C:O2' | 19:LQ:73:PRO:O | 2.30 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:L5:1468:C:OP1 | 29:La:132:ARG:NH2 | 2.44 | 0.46 |
| 1:L5:1617:G:H1' | 1:L5:2513:A:N6 | 2.31 | 0.46 |
| 1:L5:4098:A:N6 | 1:L5:4100:C:C4 | 2.84 | 0.46 |
| 3:L8:60:G:O6 | 3:L8:96:C:O2' | 2.28 | 0.46 |
| 6:LC:110:ARG:O | 6:LC:113:ARG:NH1 | 2.48 | 0.46 |
| 20:LR:15:LEU:O | 20:LR:52:ARG:NH2 | 2.48 | 0.46 |
| 44:Lp:30:GLU:HA | 44:Lp:33:GLN:HG2 | 1.98 | 0.46 |
| 46:Lz:82:ILE:HD12 | 46:Lz:83:PRO:HD2 | 1.98 | 0.46 |
| 47:S2:871:U:OP2 | 73:SN:76:LYS:NZ | 2.42 | 0.46 |
| 47:S2:1259:A:N6 | 47:S2:1519:U:OP1 | 2.43 | 0.46 |
| 47:S2:1288:U:O4 | 47:S2:1311:C:N3 | 2.49 | 0.46 |
| 49:SB:69:VAL:HG21 | 49:SB:74:LEU:HD13 | 1.98 | 0.46 |
| 49:SB:175:GLU:HG2 | 49:SB:193:ILE:HD13 | 1.97 | 0.46 |
| 51:SE:87:MET:HA | 51:SE:102:ILE:HD13 | 1.98 | 0.46 |
| 56:SL:128:VAL:HG22 | 56:SL:142:VAL:HA | 1.97 | 0.46 |
| 68:Sg:191:HIS:CD2 | 68:Sg:192:THR:H | 2.34 | 0.46 |
| 1:L5:2558:C:H2' | 1:L5:2559:G:C8 | 2.50 | 0.45 |
| 1:L5:2640:G:H2' | 1:L5:2641:A:H8 | 1.81 | 0.45 |
| 1:L5:3721:U:H2' | 1:L5:3722:G:H8 | 1.81 | 0.45 |
| 1:L5:4112:C:N4 | 1:L5:4113:U:N3 | 2.65 | 0.45 |
| 1:L5:4129:G:O6 | 1:L5:4156:G:N2 | 2.50 | 0.45 |
| 3:L8:19:C:H2' | 3:L8:20:A:C8 | 2.51 | 0.45 |
| 8:LE:190:HIS:CD2 | 8:LE:192:LYS:HB2 | 2.50 | 0.45 |
| 27:LY:33:PRO:HA | 27:LY:46:SER:HA | 1.98 | 0.45 |
| 38:Lj:60:GLY:HA2 | 38:Lj:64:MET:SD | 2.56 | 0.45 |
| 47:S2:198:U:C2 | 47:S2:203:G:O6 | 2.69 | 0.45 |
| 47:S2:988:C:OP2 | 65:Sa:70:LYS:NZ | 2.49 | 0.45 |
| 47:S2:1594:A:OP2 | 77:SZ:104:ARG:N | 2.46 | 0.45 |
| 50:SD:10:LYS:NZ | 50:SD:14:ASP:OD2 | 2.49 | 0.45 |
| 51:SE:247:THR:HG23 | 51:SE:250:GLU:H | 1.81 | 0.45 |
| 52:SF:51:HIS:O | 58:SQ:50:LYS:NZ | 2.39 | 0.45 |
| 55:SK:31:LYS:HA | 55:SK:31:LYS:HD2 | 1.79 | 0.45 |
| 56:SL:127:THR:HB | 56:SL:144:LYS:HB2 | 1.98 | 0.45 |
| 57:SP:45:LEU:HD23 | 57:SP:49:LEU:HD21 | 1.99 | 0.45 |
| 58:SQ:134:GLY:HA3 | 58:SQ:140:ARG:HA | 1.98 | 0.45 |
| 59:SR:67:ARG:HA | 59:SR:68:GLY:HA3 | 1.59 | 0.45 |
| 60:SS:27:ALA:O | 60:SS:31:THR:OG1 | 2.32 | 0.45 |
| 68:Sg:30:MET:HE3 | 68:Sg:30:MET:HB3 | 1.83 | 0.45 |
| 68:Sg:91:ASP:HB2 | 68:Sg:98:THR:HG23 | 1.98 | 0.45 |
| 68:Sg:175:LYS:HB3 | 68:Sg:177:TRP:HE1 | 1.81 | 0.45 |
| 1:L5:4093:G:C6 | 1:L5:4114:C:C2 | 3.05 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 7:LD:118:ILE:HD12 | 7:LD:118:ILE:HA | 1.84 | 0.45 |
| 9:LF:92:VAL:O | 9:LF:120:GLY:HA2 | 2.15 | 0.45 |
| 15:LM:38:VAL:O | 15:LM:47:ARG:HA | 2.16 | 0.45 |
| 15:LM:93:LYS:HE2 | 15:LM:93:LYS:HB3 | 1.63 | 0.45 |
| 30:Lb:114:LYS:O | 30:Lb:118:LEU:HB2 | 2.15 | 0.45 |
| 34:Lf:79:GLY:O | 34:Lf:81:SER:N | 2.46 | 0.45 |
| 47:S2:747:U:O4 | 47:S2:796:G:O6 | 2.33 | 0.45 |
| 47:S2:1166:G:N7 | 64:SX:25:LYS:NZ | 2.61 | 0.45 |
| 47:S2:1566:G:H1 | 61:ST:97:LYS:HD2 | 1.81 | 0.45 |
| 47:S2:1595:U:H2' | 47:S2:1596:U:C6 | 2.52 | 0.45 |
| 62:SU:24:LEU:HB3 | 62:SU:32:LEU:HD11 | 1.97 | 0.45 |
| 68:Sg:176:VAL:HB | 68:Sg:186:THR:HB | 1.97 | 0.45 |
| 69:SC:70:VAL:HG11 | 69:SC:93:ILE:HG12 | 1.97 | 0.45 |
| 1:L5:461:G:H2' | 1:L5:462:G:C8 | 2.49 | 0.45 |
| 1:L5:688:U:OP1 | 8:LE:94:LYS:NZ | 2.49 | 0.45 |
| 1:L5:1399:G:H2' | 1:L5:1400:G:C8 | 2.51 | 0.45 |
| 1:L5:1433:A:H3' | 1:L5:1434:G:H8 | 1.81 | 0.45 |
| 1:L5:3921:U:OP1 | 4:LA:221:LYS:NZ | 2.48 | 0.45 |
| 1:L5:4054:C:H1' | 46:Lz:207:LYS:HD3 | 1.98 | 0.45 |
| 6:LC:7:LEU:HG | 6:LC:21:ASN:HB3 | 1.98 | 0.45 |
| 8:LE:74:SER:O | 30:Lb:117:ARG:NH1 | 2.38 | 0.45 |
| 16:LN:123:GLU:H | 16:LN:123:GLU:HG2 | 1.62 | 0.45 |
| 26:LX:122:ALA:HB3 | 26:LX:139:ARG:HG2 | 1.99 | 0.45 |
| 47:S2:60:A:N3 | 47:S2:316:G:O2' | 2.44 | 0.45 |
| 47:S2:89:C:H2' | 47:S2:90:G:C8 | 2.52 | 0.45 |
| 47:S2:549:C:H2' | 47:S2:550:C:C6 | 2.51 | 0.45 |
| 47:S2:1226:G:N1 | 47:S2:1639:G:OP2 | 2.48 | 0.45 |
| 56:SL:57:ASP:OD1 | 56:SL:60:CYS:N | 2.48 | 0.45 |
| 63:SV:40:ASP:OD1 | 63:SV:45:ARG:N | 2.47 | 0.45 |
| 65:Sa:58:VAL:HG12 | 74:SO:125:LYS:HB3 | 1.97 | 0.45 |
| 72:SM:24:THR:HA | 72:SM:27:ILE:HG12 | 1.98 | 0.45 |
| 76:SY:76:TYR:OH | 76:SY:85:ASN:O | 2.32 | 0.45 |
| 82:CB:434:TYR:HA | 82:CB:438:LYS:HZ1 | 1.80 | 0.45 |
| 82:CB:675:ILE:HG23 | 82:CB:721:ILE:HG21 | 1.98 | 0.45 |
| 1:L5:477:C:H2' | 1:L5:478:G:H8 | 1.82 | 0.45 |
| 1:L5:1077:C:OP1 | 1:L5:1215:C:O2' | 2.33 | 0.45 |
| 8:LE:151:ILE:HA | 8:LE:160:LYS:O | 2.15 | 0.45 |
| 10:LG:232:GLU:HA | 10:LG:235:ARG:HG2 | 1.99 | 0.45 |
| 10:LG:247:VAL:HA | 10:LG:250:ILE:HG12 | 1.98 | 0.45 |
| 11:LH:59:LYS:HA | 11:LH:59:LYS:HD2 | 1.76 | 0.45 |
| 19:LQ:122:THR:OG1 | 19:LQ:124:ASP:OD1 | 2.30 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 19:LQ:159:PRO:HA | 19:LQ:160:HIS:HA | 1.66 | 0.45 |
| 21:LS:74:ARG:O | 21:LS:76:LYS:NZ | 2.47 | 0.45 |
| 27:LY:69:LYS:HE3 | 27:LY:69:LYS:HB2 | 1.83 | 0.45 |
| 28:LZ:10:VAL:O | 28:LZ:83:THR:OG1 | 2.27 | 0.45 |
| 32:Ld:61:ASP:OD2 | 32:Ld:63:ARG:NH1 | 2.50 | 0.45 |
| 37:Li:70:LEU:HB2 | 37:Li:87:ARG:HD3 | 1.98 | 0.45 |
| 46:Lz:3:SER:OG | 46:Lz:211:GLY:O | 2.25 | 0.45 |
| 47:S2:142:C:H41 | 47:S2:329:G:H5" | 1.80 | 0.45 |
| 47:S2:913:A:OP1 | 53:SH:120:ARG:NH2 | 2.50 | 0.45 |
| 47:S2:1407:U:H2' | 47:S2:1408:U:C6 | 2.50 | 0.45 |
| 47:S2:1597:C:OP2 | 77:SZ:85:ARG:NH2 | 2.47 | 0.45 |
| 50:SD:76:ARG:HB2 | 55:SK:22:VAL:HG11 | 1.99 | 0.45 |
| 62:SU:97:ILE:O | 62:SU:101:ILE:HG12 | 2.16 | 0.45 |
| 1:L5:962:C:N4 | 1:L5:2095:A:C2 | 2.84 | 0.45 |
| 1:L5:4530:U:H2' | 1:L5:4531:U:H2' | 1.97 | 0.45 |
| 3:L8:67:U:H5" | 38:Lj:86:PRO:HA | 1.97 | 0.45 |
| 22:LT:124:THR:OG1 | 22:LT:125:TRP:N | 2.47 | 0.45 |
| 25:LW:71:ARG:HD2 | 25:LW:73:ARG:HH22 | 1.79 | 0.45 |
| 32:Ld:22:THR:HG22 | 32:Ld:89:SER:HB2 | 1.98 | 0.45 |
| 46:Lz:180:VAL:O | 46:Lz:184:HIS:NE2 | 2.49 | 0.45 |
| 47:S2:693:A:H2' | 47:S2:694:G:C8 | 2.52 | 0.45 |
| 47:S2:1539:U:H2' | 47:S2:1540:G:C8 | 2.52 | 0.45 |
| 48:SA:51:LEU:HA | 48:SA:54:THR:HG22 | 1.99 | 0.45 |
| 51:SE:90:ILE:O | 51:SE:98:ASN:HA | 2.16 | 0.45 |
| 53:SH:27:LEU:HA | 53:SH:30:LEU:HB2 | 1.97 | 0.45 |
| 61:ST:42:HIS:HB2 | 61:ST:83:GLN:HB2 | 1.99 | 0.45 |
| 81:CA:60:THR:HA | 81:CA:63:ILE:HG12 | 1.99 | 0.45 |
| 82:CB:330:LYS:HZ3 | 82:CB:334:PRO:HB2 | 1.81 | 0.45 |
| 82:CB:398:ILE:HD13 | 82:CB:398:ILE:HA | 1.87 | 0.45 |
| 1:L5:715:G:OP1 | 6:LC:321:ASN:ND2 | 2.50 | 0.45 |
| 1:L5:962:C:N3 | 1:L5:2095:A:C6 | 2.85 | 0.45 |
| 1:L5:3955:G:O2' | 1:L5:3956:G:O5' | 2.35 | 0.45 |
| 1:L5:4718:G:OP1 | 5:LB:20:LYS:NZ | 2.50 | 0.45 |
| 1:L5:4993:G:O6 | 1:L5:5058:A:N1 | 2.50 | 0.45 |
| 7:LD:215:ASP:OD1 | 7:LD:218:ALA:N | 2.50 | 0.45 |
| 13:LJ:20:LEU:HD22 | 13:LJ:79:ALA:HA | 1.98 | 0.45 |
| 13:LJ:40:LEU:HA | 13:LJ:40:LEU:HD23 | 1.86 | 0.45 |
| 15:LM:132:LYS:HA | 15:LM:135:LEU:HD23 | 1.99 | 0.45 |
| 26:LX:81:LEU:HG | 26:LX:83:THR:HG23 | 1.98 | 0.45 |
| 45:Lr:103:ARG:HE | 45:Lr:106:LEU:HD11 | 1.81 | 0.45 |
| 47:S2:1220:A:H2' | 47:S2:1221:G:O4' | 2.16 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 47:S2:1562:C:H2' | 47:S2:1563:G:H8 | 1.82 | 0.45 |
| 72:SM:15:ASN:OD1 | 72:SM:16:THR:N | 2.50 | 0.45 |
| 76:SY:78:SER:OG | 76:SY:80:ASP:OD1 | 2.25 | 0.45 |
| 81:CA:291:MET:HE3 | 81:CA:291:MET:HB3 | 1.91 | 0.45 |
| 83:CC:53:C:H2' | 83:CC:54:C:C6 | 2.52 | 0.45 |
| 1:L5:908:G:H2' | 1:L5:909:A:H8 | 1.82 | 0.45 |
| 1:L5:1398:A:N7 | 1:L5:1420:A:C6 | 2.85 | 0.45 |
| 1:L5:4239:A:H2' | 1:L5:4240:G:H8 | 1.80 | 0.45 |
| 4:LA:33:ASP:N | 4:LA:33:ASP:OD1 | 2.46 | 0.45 |
| 6:LC:143:ARG:NH1 | 6:LC:145:GLU:OE2 | 2.50 | 0.45 |
| 8:LE:92:VAL:HG13 | 8:LE:109:LEU:HD11 | 1.98 | 0.45 |
| 12:LI:150:GLU:OE2 | 12:LI:153:ARG:NH1 | 2.35 | 0.45 |
| 19:LQ:89:ASP:OD2 | 19:LQ:91:ARG:NH1 | 2.45 | 0.45 |
| 22:LT:88:ARG:NH1 | 30:Lb:33:LYS:O | 2.49 | 0.45 |
| 23:LU:25:CYS:HB2 | 23:LU:28:PRO:HG2 | 1.98 | 0.45 |
| 30:Lb:44:ARG:HE | 30:Lb:44:ARG:HB3 | 1.63 | 0.45 |
| 32:Ld:54:MET:O | 32:Ld:57:MET:C | 2.59 | 0.45 |
| 36:Lh:81:LEU:HD23 | 36:Lh:84:ARG:HD2 | 1.98 | 0.45 |
| 45:Lr:28:GLU:OE2 | 45:Lr:31:ASN:ND2 | 2.46 | 0.45 |
| 47:S2:441:C:H2' | 47:S2:442:C:C6 | 2.51 | 0.45 |
| 47:S2:750:C:H41 | 47:S2:793:G:H21 | 1.65 | 0.45 |
| 47:S2:1804:U:H2' | 47:S2:1805:G:C8 | 2.52 | 0.45 |
| 68:Sg:54:ILE:HD13 | 68:Sg:54:ILE:HA | 1.87 | 0.45 |
| 72:SM:106:CYS:SG | 72:SM:107:SER:N | 2.90 | 0.45 |
| 72:SM:118:SER:OG | 72:SM:119:GLN:N | 2.50 | 0.45 |
| 76:SY:5:VAL:O | 76:SY:43:LYS:NZ | 2.47 | 0.45 |
| 81:CA:100:LEU:HD21 | 81:CA:127:VAL:HG11 | 1.99 | 0.45 |
| 81:CA:206:THR:HG22 | 81:CA:207:ASP:H | 1.82 | 0.45 |
| 82:CB:112:SER:HB3 | 82:CB:114:GLU:HG2 | 1.99 | 0.45 |
| 1:L5:162:A:H2' | 1:L5:163:A:H8 | 1.81 | 0.45 |
| 1:L5:325:U:H2' | 1:L5:326:C:C6 | 2.51 | 0.45 |
| 1:L5:678:C:H2' | 1:L5:679:C:C6 | 2.52 | 0.45 |
| 1:L5:749:G:C2 | 1:L5:913:U:C2 | 3.05 | 0.45 |
| 1:L5:966:A:OP2 | 1:L5:2092:G:N2 | 2.37 | 0.45 |
| 1:L5:3722:G:H2' | 1:L5:3723:A:H8 | 1.81 | 0.45 |
| 7:LD:104:LEU:HD11 | 7:LD:108:ARG:HH11 | 1.81 | 0.45 |
| 12:LI:206:LEU:HD12 | 12:LI:206:LEU:HA | 1.83 | 0.45 |
| 20:LR:163:ARG:CZ | 47:S2:871:U:H3 | 2.29 | 0.45 |
| 25:LW:71:ARG:NH1 | 47:S2:1783:C:O2 | 2.49 | 0.45 |
| 25:LW:96:GLN:OE1 | 25:LW:101:ARG:NH1 | 2.49 | 0.45 |
| 34:Lf:93:PRO:HB2 | 34:Lf:95:LYS:HG2 | 1.99 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 47:S2:15:U:H2' | 47:S2:16:G:O4' | 2.17 | 0.45 |
| 47:S2:198:U:O2 | 47:S2:203:G:O6 | 2.35 | 0.45 |
| 47:S2:1253:A:OP2 | 47:S2:1526:G:N2 | 2.41 | 0.45 |
| 47:S2:1396:A:C6 | 47:S2:1449:G:O6 | 2.69 | 0.45 |
| 47:S2:1598:G:OP2 | 77:SZ:82:SER:OG | 2.25 | 0.45 |
| 47:S2:1845:A:H2' | 47:S2:1846:G:C8 | 2.52 | 0.45 |
| 53:SH:81:ARG:HG2 | 53:SH:85:LYS:HZ1 | 1.81 | 0.45 |
| 53:SH:130:LEU:HD21 | 53:SH:156:VAL:HG21 | 1.99 | 0.45 |
| 63:SV:35:ASN:HD21 | 69:SC:267:GLN:HE22 | 1.63 | 0.45 |
| 67:Sd:21:CYS:HB3 | 67:Sd:26:ASN:H | 1.82 | 0.45 |
| 68:Sg:170:TRP:HA | 68:Sg:194:TYR:HB2 | 1.99 | 0.45 |
| 82:CB:715:HIS:O | 82:CB:720:GLN:NE2 | 2.50 | 0.45 |
| 1:L5:177:G:H2' | 1:L5:178:C:H6 | 1.82 | 0.45 |
| 1:L5:684:G:H5" | 8:LE:100:LYS:HE2 | 1.98 | 0.45 |
| 1:L5:1345:A:H2' | 1:L5:1346:C:C6 | 2.52 | 0.45 |
| 1:L5:1981:G:O5' | 1:L5:1981:G:C8 | 2.70 | 0.45 |
| 1:L5:4959:U:H2' | 1:L5:4960:G:C8 | 2.52 | 0.45 |
| 9:LF:85:ALA:N | 22:LT:138:ALA:HB2 | 2.32 | 0.45 |
| 46:Lz:210:MET:SD | 46:Lz:212:LYS:NZ | 2.86 | 0.45 |
| 47:S2:532:C:H2' | 47:S2:533:A:C8 | 2.51 | 0.45 |
| 47:S2:1083:A:N7 | 47:S2:1841:C:O2' | 2.41 | 0.45 |
| 50:SD:136:VAL:HG22 | 50:SD:152:PHE:HB2 | 1.99 | 0.45 |
| 58:SQ:19:ALA:HB2 | 58:SQ:75:GLY:HA3 | 1.99 | 0.45 |
| 68:Sg:45:LEU:HA | 68:Sg:52:TYR:O | 2.17 | 0.45 |
| 71:SJ:125:HIS:HA | 71:SJ:128:VAL:HG12 | 1.99 | 0.45 |
| 71:SJ:176:LYS:HG3 | 71:SJ:179:LYS:HE3 | 1.99 | 0.45 |
| 73:SN:4:MET:HE3 | 73:SN:4:MET:HB2 | 1.78 | 0.45 |
| 82:CB:267:ASP:HB3 | 82:CB:285:LEU:HG | 1.99 | 0.45 |
| 1:L5:499:G:N3 | 1:L5:504:G:N1 | 2.65 | 0.45 |
| 1:L5:656:C:H2' | 1:L5:657:C:C6 | 2.52 | 0.45 |
| 1:L5:911:U:H2' | 1:L5:912:G:C4 | 2.52 | 0.45 |
| 1:L5:1070:G:O6 | 8:LE:46:ARG:NH2 | 2.49 | 0.45 |
| 1:L5:1629:G:N7 | 4:LA:9:ARG:NH2 | 2.65 | 0.45 |
| 1:L5:1697:G:H2' | 1:L5:1698:C:C2 | 2.52 | 0.45 |
| 1:L5:1982:G:C8 | 1:L5:1982:G:OP2 | 2.70 | 0.45 |
| 1:L5:2745:A:H2' | 1:L5:2746:A:C8 | 2.53 | 0.45 |
| 1:L5:3754:G:H1 | 1:L5:3770:U:H3 | 1.65 | 0.45 |
| 1:L5:3770:U:H2' | 1:L5:3771:C:C6 | 2.52 | 0.45 |
| 1:L5:4954:G:H2' | 1:L5:4955:A:C8 | 2.51 | 0.45 |
| 21:LS:95:ARG:NH2 | 21:LS:112:ASP:OD2 | 2.50 | 0.45 |
| 24:LV:65:VAL:HG13 | 24:LV:73:ARG:HA | 1.99 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 29:La:110:LYS:HG3 | 29:La:128:PHE:HB2 | 1.99 | 0.45 |
| 47:S2:912:C:N4 | 47:S2:914:U:C4 | 2.85 | 0.45 |
| 68:Sg:40:ILE:HB | 68:Sg:59:LEU:HB2 | 1.99 | 0.45 |
| 70:SG:57:ASP:OD2 | 70:SG:58:LYS:N | 2.41 | 0.45 |
| 82:CB:580:ARG:HG2 | 82:CB:817:TRP:CZ3 | 2.52 | 0.45 |
| 1:L5:676:C:H2' | 1:L5:677:G:C8 | 2.52 | 0.44 |
| 1:L5:749:G:C6 | 1:L5:913:U:C4 | 3.05 | 0.44 |
| 1:L5:1068:G:H2' | 1:L5:1069:G:H8 | 1.81 | 0.44 |
| 1:L5:1298:C:H2' | 1:L5:1299:G:C8 | 2.52 | 0.44 |
| 1:L5:4441:A:H5" | 12:LI:114:GLY:HA2 | 1.98 | 0.44 |
| 17:LO:186:GLU:HA | 17:LO:189:ILE:HG12 | 1.98 | 0.44 |
| 47:S2:389:A:H2' | 47:S2:390:C:C6 | 2.52 | 0.44 |
| 47:S2:1203:G:H2' | 47:S2:1204:A:C8 | 2.51 | 0.44 |
| 47:S2:1825:A:N6 | 82:CB:720:GLN:HE22 | 2.15 | 0.44 |
| 59:SR:21:TYR:CE2 | 59:SR:72:LYS:HE2 | 2.52 | 0.44 |
| 60:SS:24:ARG:HB2 | 60:SS:29:ALA:HB2 | 1.98 | 0.44 |
| 66:Sc:26:GLN:H | 66:Sc:26:GLN:HG2 | 1.62 | 0.44 |
| 82:CB:265:TYR:HB3 | 82:CB:285:LEU:HB3 | 1.99 | 0.44 |
| 82:CB:804:THR:HG23 | 82:CB:806:GLY:H | 1.82 | 0.44 |
| 84:CD:200:ASP:OD1 | 84:CD:200:ASP:N | 2.50 | 0.44 |
| 1:L5:959:G:C8 | 8:LE:123:ARG:HG2 | 2.52 | 0.44 |
| 1:L5:1086:C:H2' | 1:L5:1087:A:H8 | 1.82 | 0.44 |
| 1:L5:1509:C:H5" | 29:La:2:PRO:HD2 | 2.00 | 0.44 |
| 1:L5:3585:G:H2' | 1:L5:3586:G:H8 | 1.82 | 0.44 |
| 1:L5:4457:U:H1' | 5:LB:252:ALA:HB3 | 1.97 | 0.44 |
| 7:LD:129:GLU:OE2 | 7:LD:131:ASN:ND2 | 2.50 | 0.44 |
| 21:LS:95:ARG:NH1 | 21:LS:113:MET:SD | 2.90 | 0.44 |
| 27:LY:101:PRO:HA | 27:LY:104:VAL:HG22 | 2.00 | 0.44 |
| 32:Ld:89:SER:O | 32:Ld:89:SER:OG | 2.33 | 0.44 |
| 38:Lj:33:THR:HA | 38:Lj:40:PRO:HD3 | 1.99 | 0.44 |
| 43:Lo:66:ILE:HD11 | 43:Lo:88:CYS:HB3 | 2.00 | 0.44 |
| 46:Lz:207:LYS:HA | 46:Lz:211:GLY:HA3 | 1.99 | 0.44 |
| 47:S2:639:C:H2' | 47:S2:640:A:C8 | 2.51 | 0.44 |
| 50:SD:136:VAL:HG12 | 50:SD:186:VAL:HG23 | 1.99 | 0.44 |
| 51:SE:79:ASP:HB3 | 51:SE:82:TYR:HB2 | 1.97 | 0.44 |
| 53:SH:78:ARG:HG2 | 53:SH:81:ARG:HH11 | 1.82 | 0.44 |
| 55:SK:47:LYS:HD3 | 55:SK:47:LYS:HA | 1.78 | 0.44 |
| 56:SL:80:MET:HE3 | 56:SL:80:MET:HB3 | 1.85 | 0.44 |
| 60:SS:46:ARG:HA | 60:SS:46:ARG:HD3 | 1.73 | 0.44 |
| 61:ST:29:LYS:HE2 | 61:ST:29:LYS:HB3 | 1.85 | 0.44 |
| 74:SO:150:ARG:H | 74:SO:150:ARG:HG2 | 1.49 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:L5:483:G:O6 | 1:L5:485:C:O2' | 2.30 | 0.44 |
| 1:L5:651:C:H2' | 1:L5:652:G:H8 | 1.82 | 0.44 |
| 1:L5:1749:A:H2' | 1:L5:1750:G:C8 | 2.52 | 0.44 |
| 1:L5:1986:U:C5' | 1:L5:1986:U:C6 | 2.85 | 0.44 |
| 1:L5:2479:G:H2' | 1:L5:2480:G:C8 | 2.53 | 0.44 |
| 2:L7:61:G:O3' | 7:LD:279:ARG:NH1 | 2.50 | 0.44 |
| 47:S2:28:U:H2' | 47:S2:29:G:C8 | 2.52 | 0.44 |
| 47:S2:444:G:N1 | 47:S2:447:A:OP2 | 2.50 | 0.44 |
| 47:S2:1297:U:O2' | 47:S2:1299:A:N7 | 2.47 | 0.44 |
| 48:SA:198:MET:HG2 | 48:SA:200:ASP:H | 1.81 | 0.44 |
| 58:SQ:34:VAL:N | 58:SQ:37:ARG:O | 2.50 | 0.44 |
| 68:Sg:219:TRP:HA | 68:Sg:227:LEU:HB2 | 1.99 | 0.44 |
| 76:SY:29:HIS:NE2 | 76:SY:69:THR:OG1 | 2.38 | 0.44 |
| 81:CA:12:ILE:HG21 | 81:CA:326:MET:HE1 | 2.00 | 0.44 |
| 82:CB:352:GLN:O | 82:CB:356:ILE:HB | 2.17 | 0.44 |
| 82:CB:710:HIS:CD2 | 82:CB:712:ASP:H | 2.36 | 0.44 |
| 82:CB:751:CYS:HA | 82:CB:752:PRO:HD3 | 1.80 | 0.44 |
| 83:CC:47:G:H2' | 83:CC:48:G:C8 | 2.53 | 0.44 |
| 1:L5:2896:G:H5' | 20:LR:134:ASN:HD22 | 1.82 | 0.44 |
| 1:L5:4220:A:H2' | 1:L5:4222:G:H5" | 2.00 | 0.44 |
| 1:L5:4265:U:OP1 | 7:LD:12:TYR:OH | 2.23 | 0.44 |
| 4:LA:72:ARG:HD3 | 4:LA:72:ARG:HA | 1.77 | 0.44 |
| 10:LG:118:ALA:HA | 10:LG:121:LYS:HG2 | 1.98 | 0.44 |
| 14:LL:140:SER:HA | 14:LL:143:GLU:HB2 | 1.99 | 0.44 |
| 16:LN:103:GLU:OE1 | 16:LN:118:SER:OG | 2.31 | 0.44 |
| 23:LU:36:ALA:HB3 | 23:LU:65:ARG:HH21 | 1.81 | 0.44 |
| 25:LW:80:ARG:NH2 | 70:SG:129:VAL:O | 2.51 | 0.44 |
| 31:Lc:48:LEU:HD21 | 31:Lc:60:ILE:HG21 | 2.00 | 0.44 |
| 46:Lz:54:ARG:HH22 | 46:Lz:156:LYS:HG3 | 1.83 | 0.44 |
| 47:S2:1017:U:H5' | 73:SN:55:ARG:HH11 | 1.82 | 0.44 |
| 47:S2:1279:C:H2' | 47:S2:1280:G:C8 | 2.52 | 0.44 |
| 47:S2:1403:C:N4 | 47:S2:1433:C:OP1 | 2.40 | 0.44 |
| 57:SP:130:ARG:HE | 57:SP:131:PRO:HD2 | 1.83 | 0.44 |
| 66:Sc:37:ASP:OD2 | 66:Sc:39:SER:OG | 2.36 | 0.44 |
| 66:Sc:60:GLU:O | 66:Sc:63:ARG:NH1 | 2.50 | 0.44 |
| 1:L5:966:A:H3' | 1:L5:967:C:C6 | 2.53 | 0.44 |
| 1:L5:2744:A:H2' | 1:L5:2745:A:C8 | 2.53 | 0.44 |
| 1:L5:3960:A:C8 | 1:L5:4043:G:C5 | 3.06 | 0.44 |
| 1:L5:4991:U:H2' | 1:L5:4992:G:H8 | 1.83 | 0.44 |
| 3:L8:58:G:N7 | 38:Lj:63:ARG:NH2 | 2.44 | 0.44 |
| 3:L8:59:A:OP2 | 26:LX:70:LYS:NZ | 2.50 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:L8:126:C:O2' | 3:L8:127:U:O4' | 2.34 | 0.44 |
| 5:LB:356:LYS:O | 5:LB:360:LEU:HG | 2.18 | 0.44 |
| 6:LC:29:LYS:HD3 | 6:LC:29:LYS:HA | 1.78 | 0.44 |
| 6:LC:287:THR:O | 45:Lr:2:SER:OG | 2.28 | 0.44 |
| 28:LZ:50:PRO:HD3 | 28:LZ:68:ILE:HG12 | 2.00 | 0.44 |
| 32:Ld:100:ASN:OD1 | 32:Ld:100:ASN:N | 2.49 | 0.44 |
| 47:S2:30:C:OP1 | 64:SX:138:LYS:NZ | 2.37 | 0.44 |
| 47:S2:574:A:H4' | 76:SY:89:HIS:HB2 | 1.99 | 0.44 |
| 47:S2:1398:G:H1' | 68:Sg:63:SER:HB3 | 2.00 | 0.44 |
| 49:SB:67:PHE:O | 49:SB:85:LYS:O | 2.34 | 0.44 |
| 51:SE:45:ILE:HG13 | 51:SE:61:VAL:HG21 | 1.99 | 0.44 |
| 52:SF:191:LYS:O | 52:SF:195:GLU:HB2 | 2.18 | 0.44 |
| 61:ST:118:ASP:OD1 | 61:ST:118:ASP:N | 2.39 | 0.44 |
| 68:Sg:73:SER:HB2 | 68:Sg:117:ASN:HD21 | 1.82 | 0.44 |
| 82:CB:791:ASN:N | 82:CB:791:ASN:OD1 | 2.46 | 0.44 |
| 1:L5:182:G:N2 | 1:L5:184:U:O4' | 2.51 | 0.44 |
| 1:L5:1438:U:O4 | 1:L5:2100:A:N7 | 2.51 | 0.44 |
| 1:L5:1478:C:H2' | 1:L5:1479:G:C8 | 2.52 | 0.44 |
| 1:L5:1907:A:H4' | 9:LF:223:LYS:HE3 | 1.98 | 0.44 |
| 1:L5:2102:G:H1' | 1:L5:2103:G:C8 | 2.52 | 0.44 |
| 1:L5:3596:A:H4' | 20:LR:143:HIS:HB3 | 1.99 | 0.44 |
| 1:L5:3967:G:H1 | 1:L5:4056:A:H1' | 1.82 | 0.44 |
| 11:LH:95:VAL:HG22 | 41:Lm:82:LEU:HB3 | 2.00 | 0.44 |
| 13:LJ:22:LEU:HA | 13:LJ:22:LEU:HD23 | 1.78 | 0.44 |
| 14:LL:117:LEU:HD23 | 14:LL:117:LEU:HA | 1.81 | 0.44 |
| 20:LR:21:LYS:HE2 | 20:LR:55:VAL:HA | 2.00 | 0.44 |
| 22:LT:122:LYS:HB2 | 22:LT:124:THR:HG22 | 2.00 | 0.44 |
| 47:S2:35:C:H5" | 47:S2:579:C:H5" | 1.99 | 0.44 |
| 47:S2:106:C:OP1 | 47:S2:431:G:O2' | 2.28 | 0.44 |
| 47:S2:158:A:N1 | 47:S2:463:C:O2 | 2.50 | 0.44 |
| 47:S2:890:U:H3 | 47:S2:895:G:H22 | 1.65 | 0.44 |
| 47:S2:921:G:O5' | 75:SW:28:ARG:NH2 | 2.50 | 0.44 |
| 47:S2:1673:U:O2' | 52:SF:84:GLY:O | 2.24 | 0.44 |
| 52:SF:55:ARG:HH11 | 58:SQ:125:ARG:HD3 | 1.82 | 0.44 |
| 52:SF:89:THR:HA | 52:SF:92:ILE:HD12 | 2.00 | 0.44 |
| 66:Sc:10:LYS:HD2 | 66:Sc:10:LYS:HA | 1.70 | 0.44 |
| 68:Sg:104:HIS:CE1 | 68:Sg:130:LYS:HG3 | 2.52 | 0.44 |
| 69:SC:271:ASP:OD1 | 69:SC:271:ASP:N | 2.51 | 0.44 |
| 81:CA:33:ARG:HA | 81:CA:36:VAL:HG22 | 1.99 | 0.44 |
| 1:L5:1088:C:H2' | 1:L5:1089:G:C8 | 2.53 | 0.44 |
| 1:L5:2709:C:C4 | 81:CA:263:ARG:HD3 | 2.52 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:L5:5024:C:N4 | 1:L5:5028:G:H21 | 2.15 | 0.44 |
| 9:LF:29:LYS:HA | 9:LF:32:ARG:HG2 | 1.98 | 0.44 |
| 46:Lz:10:LEU:HG | 46:Lz:12:GLU:HB2 | 2.00 | 0.44 |
| 47:S2:145:G:H2' | 47:S2:146:G:H8 | 1.82 | 0.44 |
| 47:S2:876:C:H2' | 47:S2:877:C:C6 | 2.53 | 0.44 |
| 47:S2:1566:G:O6 | 61:ST:101:ARG:NH1 | 2.41 | 0.44 |
| 47:S2:1633:A:H2' | 47:S2:1634:A:H8 | 1.83 | 0.44 |
| 68:Sg:245:ARG:NH1 | 68:Sg:295:GLY:O | 2.42 | 0.44 |
| 69:SC:272:HIS:HA | 69:SC:275:LYS:HG2 | 1.98 | 0.44 |
| 80:Sf:133:ALA:N | 80:Sf:140:TYR:O | 2.43 | 0.44 |
| 81:CA:268:GLU:OE1 | 81:CA:271:ARG:NH2 | 2.39 | 0.44 |
| 1:L5:318:A:H2' | 1:L5:319:A:C8 | 2.53 | 0.44 |
| 1:L5:404:U:O3' | 27:LY:87:ARG:NH1 | 2.50 | 0.44 |
| 1:L5:676:C:H2' | 1:L5:677:G:H8 | 1.83 | 0.44 |
| 1:L5:3726:A:H2' | 1:L5:3727:A:C8 | 2.52 | 0.44 |
| 1:L5:3910:C:H2' | 1:L5:3911:C:C6 | 2.53 | 0.44 |
| 1:L5:3960:A:N7 | 1:L5:4043:G:C5 | 2.86 | 0.44 |
| 1:L5:4924:C:O2' | 1:L5:4926:C:O2 | 2.36 | 0.44 |
| 1:L5:5055:G:H2' | 1:L5:5056:A:C8 | 2.53 | 0.44 |
| 22:LT:102:ARG:HE | 22:LT:105:PHE:HD2 | 1.66 | 0.44 |
| 24:LV:28:CYS:HB2 | 24:LV:37:LEU:HG | 1.99 | 0.44 |
| 36:Lh:34:ALA:HA | 36:Lh:37:THR:HG22 | 2.00 | 0.44 |
| 47:S2:186:C:H2' | 47:S2:187:G:C8 | 2.53 | 0.44 |
| 47:S2:886:A:C6 | 47:S2:901:G:N3 | 2.86 | 0.44 |
| 47:S2:1398:G:N1 | 47:S2:1448:A:C2 | 2.65 | 0.44 |
| 47:S2:1410:C:H2' | 47:S2:1411:G:C8 | 2.52 | 0.44 |
| 47:S2:1753:C:H5' | 47:S2:1780:G:H22 | 1.82 | 0.44 |
| 66:Sc:15:THR:HG22 | 66:Sc:16:LYS:H | 1.83 | 0.44 |
| 68:Sg:188:HIS:HB3 | 68:Sg:219:TRP:CZ3 | 2.52 | 0.44 |
| 69:SC:244:ILE:O | 69:SC:247:THR:HG22 | 2.18 | 0.44 |
| 76:SY:3:ASP:OD2 | 76:SY:3:ASP:N | 2.50 | 0.44 |
| 77:SZ:101:SER:OG | 77:SZ:102:LYS:N | 2.50 | 0.44 |
| 1:L5:93:G:H2' | 1:L5:94:A:C8 | 2.52 | 0.44 |
| 1:L5:444:G:H2' | 1:L5:445:U:C6 | 2.53 | 0.44 |
| 1:L5:994:G:H2' | 1:L5:995:C:H4' | 2.00 | 0.44 |
| 1:L5:1577:G:H5' | 1:L5:1578:U:H5" | 2.00 | 0.44 |
| 1:L5:1705:G:H2' | 1:L5:1706:A:O4' | 2.18 | 0.44 |
| 1:L5:2083:C:OP2 | 19:LQ:14:ARG:NH2 | 2.43 | 0.44 |
| 1:L5:2366:A:N3 | 1:L5:3850:C:O2' | 2.48 | 0.44 |
| 1:L5:4291:G:H5' | 1:L5:4293:U:C6 | 2.53 | 0.44 |
| 2:L7:58:A:H2' | 2:L7:59:G:H8 | 1.83 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 11:LH:134:CYS:SG | 11:LH:135:SER:N | 2.91 | 0.44 |
| 13:LJ:33:LEU:HD12 | 13:LJ:33:LEU:HA | 1.76 | 0.44 |
| 19:LQ:159:PRO:HD3 | 19:LQ:188:ASN:HD22 | 1.82 | 0.44 |
| 39:Lk:10:ASP:HA | 39:Lk:13:LEU:HG | 2.00 | 0.44 |
| 47:S2:215:G:H2' | 47:S2:216:C:H6 | 1.83 | 0.44 |
| 47:S2:1036:A:N3 | 47:S2:1844:U:O2' | 2.51 | 0.44 |
| 47:S2:1208:A:H2' | 47:S2:1209:A:C8 | 2.53 | 0.44 |
| 47:S2:1365:G:H2' | 47:S2:1366:G:C8 | 2.53 | 0.44 |
| 47:S2:1487:A:H5' | 69:SC:118:ALA:HB1 | 1.99 | 0.44 |
| 47:S2:1562:C:H2' | 47:S2:1563:G:C8 | 2.53 | 0.44 |
| 47:S2:1562:C:H4' | 61:ST:119:GLY:HA3 | 2.00 | 0.44 |
| 49:SB:67:PHE:CZ | 74:SO:48:SER:HB2 | 2.53 | 0.44 |
| 52:SF:35:LEU:HG | 52:SF:117:ILE:HG22 | 1.98 | 0.44 |
| 69:SC:256:TRP:CD2 | 75:SW:68:ARG:HD3 | 2.53 | 0.44 |
| 72:SM:57:ASP:OD1 | 72:SM:57:ASP:N | 2.40 | 0.44 |
| 1:L5:433:A:C2 | 1:L5:3867:A:H4' | 2.53 | 0.43 |
| 1:L5:512:U:C4 | 1:L5:647:G:O6 | 2.71 | 0.43 |
| 1:L5:1445:U:O2 | 1:L5:2102:G:O6 | 2.21 | 0.43 |
| 1:L5:1645:C:H2' | 1:L5:1646:A:C8 | 2.53 | 0.43 |
| 1:L5:2107:C:N4 | 1:L5:2108:G:O6 | 2.50 | 0.43 |
| 1:L5:3861:A:H2' | 1:L5:3862:A:C8 | 2.53 | 0.43 |
| 1:L5:4363:A:H5" | 43:Lo:36:GLN:HG2 | 2.00 | 0.43 |
| 3:L8:115:G:H2' | 3:L8:116:C:H6 | 1.83 | 0.43 |
| 5:LB:229:LYS:HA | 5:LB:229:LYS:HD2 | 1.80 | 0.43 |
| 5:LB:295:ASP:OD1 | 5:LB:295:ASP:N | 2.51 | 0.43 |
| 16:LN:192:TRP:O | 16:LN:196:ASN:HB2 | 2.18 | 0.43 |
| 28:LZ:48:ARG:HB2 | 28:LZ:69:LYS:HB3 | 1.99 | 0.43 |
| 47:S2:609:U:H2' | 47:S2:610:G:H8 | 1.82 | 0.43 |
| 47:S2:659:G:H21 | 64:SX:17:ARG:HH12 | 1.66 | 0.43 |
| 47:S2:806:U:H2' | 47:S2:807:G:C8 | 2.52 | 0.43 |
| 47:S2:844:U:P | 51:SE:240:ARG:HH12 | 2.41 | 0.43 |
| 47:S2:912:C:C2 | 47:S2:914:U:O2 | 2.71 | 0.43 |
| 47:S2:1237:C:O2' | 57:SP:129:GLY:N | 2.49 | 0.43 |
| 47:S2:1644:C:H4' | 58:SQ:140:ARG:HB2 | 2.00 | 0.43 |
| 47:S2:1745:A:O3' | 70:SG:31:ARG:NH1 | 2.51 | 0.43 |
| 68:Sg:178:ASN:HB3 | 68:Sg:185:LYS:HZ1 | 1.82 | 0.43 |
| 68:Sg:239:LEU:HD11 | 68:Sg:248:LEU:HD21 | 2.00 | 0.43 |
| 70:SG:139:SER:HA | 70:SG:142:ARG:HG2 | 2.00 | 0.43 |
| 80:Sf:151:ASN:OD1 | 80:Sf:151:ASN:N | 2.51 | 0.43 |
| 1:L5:39:A:O2' | 1:L5:1654:G:O6 | 2.31 | 0.43 |
| 1:L5:1502:G:OP2 | 19:LQ:65:ARG:NH1 | 2.50 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:L5:1754:U:H2' | 1:L5:1755:C:H6 | 1.82 | 0.43 |
| 1:L5:2543:A:H2 | 1:L5:2773:G:H22 | 1.64 | 0.43 |
| 1:L5:2554:U:O2' | 1:L5:2574:G:N2 | 2.51 | 0.43 |
| 1:L5:2568:C:H2' | 1:L5:2569:G:C8 | 2.53 | 0.43 |
| 1:L5:3611:A:H2 | 1:L5:5016:A:H8 | 1.65 | 0.43 |
| 1:L5:5053:U:H3' | 1:L5:5054:C:C6 | 2.53 | 0.43 |
| 9:LF:83:VAL:HG12 | 21:LS:62:VAL:HA | 2.00 | 0.43 |
| 9:LF:220:MET:HE1 | 9:LF:223:LYS:HG3 | 2.00 | 0.43 |
| 11:LH:68:ALA:O | 11:LH:72:THR:HG23 | 2.19 | 0.43 |
| 12:LI:193:ASP:OD1 | 12:LI:193:ASP:N | 2.51 | 0.43 |
| 14:LL:141:ALA:O | 14:LL:145:LYS:HG2 | 2.18 | 0.43 |
| 38:Lj:54:LYS:HB3 | 38:Lj:54:LYS:HE2 | 1.84 | 0.43 |
| 46:Lz:119:GLN:HA | 46:Lz:122:ARG:HH21 | 1.83 | 0.43 |
| 46:Lz:147:LYS:HZ1 | 46:Lz:150:GLU:H | 1.65 | 0.43 |
| 47:S2:996:A:H2' | 47:S2:997:A:C8 | 2.52 | 0.43 |
| 47:S2:1279:C:H2' | 47:S2:1280:G:H8 | 1.83 | 0.43 |
| 47:S2:1332:A:O2' | 50:SD:145:GLN:O | 2.33 | 0.43 |
| 60:SS:67:VAL:HA | 60:SS:70:ILE:HG12 | 1.99 | 0.43 |
| 62:SU:44:LYS:HD2 | 62:SU:44:LYS:HA | 1.70 | 0.43 |
| 65:Sa:22:ARG:NH1 | 65:Sa:27:ALA:O | 2.51 | 0.43 |
| 68:Sg:193:GLY:N | 68:Sg:213:ASP:OD2 | 2.51 | 0.43 |
| 71:SJ:152:ASP:O | 71:SJ:155:LYS:NZ | 2.47 | 0.43 |
| 1:L5:1804:A:O2' | 1:L5:1833:G:O6 | 2.29 | 0.43 |
| 1:L5:2608:G:H2' | 1:L5:2609:G:H8 | 1.84 | 0.43 |
| 1:L5:3722:G:H2' | 1:L5:3723:A:C8 | 2.53 | 0.43 |
| 1:L5:4151:G:H2' | 1:L5:4152:G:H8 | 1.83 | 0.43 |
| 6:LC:12:SER:OG | 6:LC:16:GLU:O | 2.33 | 0.43 |
| 21:LS:85:ASP:HA | 21:LS:90:THR:HA | 1.99 | 0.43 |
| 32:Ld:59:THR:OG1 | 32:Ld:104:THR:OG1 | 2.28 | 0.43 |
| 47:S2:185:G:O6 | 47:S2:214:U:C4 | 2.71 | 0.43 |
| 47:S2:468:A:OP1 | 70:SG:96:SER:OG | 2.29 | 0.43 |
| 47:S2:697:G:OP2 | 47:S2:733:C:N4 | 2.33 | 0.43 |
| 47:S2:1329:U:O2' | 47:S2:1332:A:OP2 | 2.31 | 0.43 |
| 47:S2:1416:C:N4 | 47:S2:1417:C:H41 | 2.17 | 0.43 |
| 48:SA:127:PRO:HG3 | 48:SA:146:ALA:HB1 | 2.00 | 0.43 |
| 53:SH:76:GLN:HE21 | 53:SH:94:PHE:HD2 | 1.65 | 0.43 |
| 55:SK:11:ILE:HD11 | 55:SK:21:MET:HE3 | 1.99 | 0.43 |
| 56:SL:77:VAL:HG12 | 56:SL:88:ILE:HG22 | 2.00 | 0.43 |
| 60:SS:39:ARG:HE | 61:ST:38:LYS:HG3 | 1.83 | 0.43 |
| 62:SU:31:SER:HA | 62:SU:34:LYS:HG2 | 2.00 | 0.43 |
| 82:CB:591:CYS:HB3 | 82:CB:855:LEU:HD21 | 1.99 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 82:CB:776:VAL:HG23 | 82:CB:777:ALA:H | 1.83 | 0.43 |
| 1:L5:690:C:H2' | 1:L5:691:C:H6 | 1.83 | 0.43 |
| 1:L5:1234:G:H2' | 1:L5:1235:G:C8 | 2.53 | 0.43 |
| 1:L5:1327:C:H2' | 1:L5:1328:G:C8 | 2.53 | 0.43 |
| 1:L5:2874:U:O2' | 1:L5:2876:G:N7 | 2.49 | 0.43 |
| 1:L5:3951:G:H2' | 1:L5:3952:A:O4' | 2.18 | 0.43 |
| 12:LI:91:LEU:HD12 | 12:LI:91:LEU:HA | 1.90 | 0.43 |
| 25:LW:71:ARG:HD2 | 25:LW:71:ARG:HA | 1.85 | 0.43 |
| 47:S2:455:A:H2' | 47:S2:456:C:C6 | 2.54 | 0.43 |
| 51:SE:26:VAL:HG22 | 71:SJ:4:ALA:HB2 | 2.01 | 0.43 |
| 57:SP:111:MET:HE2 | 60:SS:117:ILE:HG23 | 2.00 | 0.43 |
| 60:SS:47:LYS:HD3 | 60:SS:47:LYS:HA | 1.85 | 0.43 |
| 1:L5:136:C:H42 | 36:Lh:77:LYS:HA | 1.82 | 0.43 |
| 1:L5:387:G:O2' | 1:L5:412:G:N1 | 2.44 | 0.43 |
| 1:L5:978:G:H2' | 1:L5:979:C:C6 | 2.53 | 0.43 |
| 1:L5:1739:G:H2' | 1:L5:1740:C:C6 | 2.54 | 0.43 |
| 1:L5:2001:G:C6 | 1:L5:2017:A:N6 | 2.87 | 0.43 |
| 1:L5:4089:G:H2' | 1:L5:4090:G:C8 | 2.53 | 0.43 |
| 1:L5:4274:A:H2' | 1:L5:4275:G:H8 | 1.82 | 0.43 |
| 3:L8:115:G:H2' | 3:L8:116:C:C6 | 2.53 | 0.43 |
| 5:LB:117:ARG:HA | 5:LB:177:LYS:HD2 | 2.00 | 0.43 |
| 7:LD:164:LYS:HA | 7:LD:167:VAL:HG12 | 2.00 | 0.43 |
| 11:LH:92:MET:HE2 | 11:LH:179:ILE:HG22 | 1.99 | 0.43 |
| 29:La:36:GLY:HA3 | 29:La:40:HIS:CE1 | 2.53 | 0.43 |
| 29:La:102:ASP:HB3 | 29:La:105:ARG:HB3 | 2.01 | 0.43 |
| 32:Ld:117:LEU:HD23 | 32:Ld:117:LEU:HA | 1.81 | 0.43 |
| 37:Li:23:LYS:HD2 | 37:Li:23:LYS:HA | 1.85 | 0.43 |
| 39:Lk:22:SER:OG | 39:Lk:23:VAL:N | 2.52 | 0.43 |
| 46:Lz:39:LYS:HG3 | 46:Lz:40:ASN:H | 1.83 | 0.43 |
| 46:Lz:52:THR:HB | 46:Lz:140:HIS:HE1 | 1.82 | 0.43 |
| 47:S2:17:C:H2' | 47:S2:18:C:C6 | 2.54 | 0.43 |
| 47:S2:980:A:H2' | 47:S2:981:A:C8 | 2.53 | 0.43 |
| 47:S2:1413:G:H2' | 47:S2:1414:A:C8 | 2.52 | 0.43 |
| 47:S2:1425:G:O3' | 58:SQ:33:LYS:NZ | 2.50 | 0.43 |
| 47:S2:1600:G:OP1 | 77:SZ:41:ARG:NH2 | 2.51 | 0.43 |
| 47:S2:1780:G:H3' | 47:S2:1781:A:H8 | 1.83 | 0.43 |
| 49:SB:91:VAL:O | 49:SB:92:GLN:NE2 | 2.51 | 0.43 |
| 49:SB:133:TYR:CG | 49:SB:181:LEU:HD22 | 2.53 | 0.43 |
| 49:SB:198:GLU:HB3 | 49:SB:210:VAL:HG21 | 1.99 | 0.43 |
| 52:SF:152:TRP:HE3 | 52:SF:153:LEU:HD23 | 1.84 | 0.43 |
| 52:SF:185:SER:H | 52:SF:190:ILE:HD11 | 1.83 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 72:SM:78:LYS:HD2 | 72:SM:78:LYS:HA | 1.94 | 0.43 |
| 72:SM:79:VAL:HG22 | 72:SM:80:ASP:H | 1.84 | 0.43 |
| 83:CC:22:A:H3' | 83:CC:23:G:H8 | 1.83 | 0.43 |
| 1:L5:228:C:O2' | 27:LY:14:ASN:ND2 | 2.50 | 0.43 |
| 1:L5:463:A:H2 | 1:L5:692:A:N1 | 2.17 | 0.43 |
| 1:L5:513:U:C2 | 1:L5:516:C:H5 | 2.36 | 0.43 |
| 1:L5:962:C:C2 | 1:L5:2095:A:C6 | 3.07 | 0.43 |
| 1:L5:1895:G:O2' | 1:L5:1907:A:N3 | 2.46 | 0.43 |
| 1:L5:1994:C:H2' | 1:L5:1995:G:H8 | 1.83 | 0.43 |
| 1:L5:4875:G:H2' | 21:LS:169:THR:HG22 | 2.00 | 0.43 |
| 5:LB:230:GLY:O | 5:LB:234:ARG:HB2 | 2.18 | 0.43 |
| 6:LC:293:LEU:O | 6:LC:299:GLN:NE2 | 2.40 | 0.43 |
| 13:LJ:96:LYS:HG2 | 13:LJ:176:PRO:HD2 | 1.99 | 0.43 |
| 13:LJ:121:PRO:O | 60:SS:108:ARG:NH2 | 2.51 | 0.43 |
| 17:LO:177:LEU:HD23 | 17:LO:177:LEU:HA | 1.83 | 0.43 |
| 47:S2:1098:C:H2' | 47:S2:1099:G:C8 | 2.53 | 0.43 |
| 47:S2:1778:C:H2' | 47:S2:1779:G:O4' | 2.18 | 0.43 |
| 51:SE:87:MET:CA | 51:SE:101:LEU:O | 2.67 | 0.43 |
| 51:SE:208:VAL:O | 51:SE:219:ALA:HA | 2.18 | 0.43 |
| 57:SP:76:VAL:HG13 | 57:SP:94:VAL:HG12 | 2.00 | 0.43 |
| 57:SP:115:TYR:N | 57:SP:118:GLU:OE2 | 2.51 | 0.43 |
| 58:SQ:101:ASP:OD1 | 58:SQ:101:ASP:N | 2.52 | 0.43 |
| 60:SS:125:HIS:CE1 | 60:SS:131:VAL:HG21 | 2.53 | 0.43 |
| 68:Sg:228:TYR:HE2 | 68:Sg:230:LEU:HD23 | 1.83 | 0.43 |
| 70:SG:41:LEU:HD12 | 70:SG:41:LEU:HA | 1.92 | 0.43 |
| 75:SW:111:MET:HB3 | 75:SW:115:GLU:HB3 | 2.00 | 0.43 |
| 81:CA:265:PHE:O | 81:CA:269:VAL:HG23 | 2.19 | 0.43 |
| 1:L5:424:U:H2' | 1:L5:425:U:C6 | 2.53 | 0.43 |
| 3:L8:67:U:H2' | 3:L8:68:G:H8 | 1.84 | 0.43 |
| 23:LU:52:LYS:NZ | 23:LU:55:ASN:OD1 | 2.51 | 0.43 |
| 23:LU:80:LYS:HE2 | 23:LU:110:TYR:CZ | 2.53 | 0.43 |
| 25:LW:117:LYS:HD3 | 25:LW:117:LYS:HA | 1.85 | 0.43 |
| 29:La:7:LYS:HE2 | 29:La:7:LYS:HB3 | 1.87 | 0.43 |
| 33:Le:45:VAL:HG12 | 33:Le:52:GLN:HB3 | 2.01 | 0.43 |
| 47:S2:186:C:H42 | 47:S2:214:U:H3 | 1.66 | 0.43 |
| 47:S2:370:G:O2' | 54:SI:10:LYS:NZ | 2.51 | 0.43 |
| 47:S2:382:C:H2' | 47:S2:383:G:H8 | 1.83 | 0.43 |
| 47:S2:496:C:H5' | 51:SE:29:PRO:HA | 1.99 | 0.43 |
| 47:S2:677:G:N1 | 47:S2:1027:A:OP2 | 2.29 | 0.43 |
| 47:S2:1208:A:OP2 | 47:S2:1835:A:O2' | 2.32 | 0.43 |
| 51:SE:175:PHE:HE2 | 51:SE:198:ARG:HD2 | 1.84 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 68:Sg:89:LEU:O | 68:Sg:98:THR:OG1 | 2.31 | 0.43 |
| 71:SJ:162:ARG:HD2 | 71:SJ:162:ARG:HA | 1.82 | 0.43 |
| 72:SM:18:LEU:HA | 72:SM:21:VAL:HG22 | 1.99 | 0.43 |
| 82:CB:44:GLY:HA2 | 82:CB:47:ALA:HB3 | 2.01 | 0.43 |
| 82:CB:587:SER:HG | 82:CB:735:THR:HG1 | 1.65 | 0.43 |
| 1:L5:171:U:OP2 | 1:L5:172:C:N4 | 2.51 | 0.43 |
| 1:L5:192:G:H2' | 1:L5:193:G:H8 | 1.83 | 0.43 |
| 1:L5:2341:A:OP1 | 6:LC:46:LYS:NZ | 2.46 | 0.43 |
| 1:L5:2835:A:O2' | 5:LB:228:TYR:O | 2.29 | 0.43 |
| 1:L5:5015:G:O2' | 1:L5:5034:A:N6 | 2.46 | 0.43 |
| 7:LD:11:ALA:HA | 7:LD:14:LYS:HB2 | 2.00 | 0.43 |
| 8:LE:112:MET:HE2 | 8:LE:112:MET:HB2 | 1.85 | 0.43 |
| 12:LI:47:PRO:HB3 | 12:LI:171:TRP:CZ2 | 2.53 | 0.43 |
| 13:LJ:72:CYS:SG | 13:LJ:73:THR:N | 2.92 | 0.43 |
| 14:LL:97:SER:O | 14:LL:97:SER:OG | 2.35 | 0.43 |
| 16:LN:200:LEU:HD23 | 16:LN:200:LEU:HA | 1.81 | 0.43 |
| 19:LQ:72:LEU:HD23 | 19:LQ:72:LEU:HA | 1.88 | 0.43 |
| 30:Lb:90:SER:OG | 30:Lb:91:ARG:N | 2.51 | 0.43 |
| 47:S2:557:U:H5' | 47:S2:558:G:C8 | 2.48 | 0.43 |
| 47:S2:808:A:H2 | 47:S2:855:G:H22 | 1.67 | 0.43 |
| 47:S2:1005:G:OP2 | 49:SB:162:ARG:NH1 | 2.52 | 0.43 |
| 47:S2:1213:C:H2' | 47:S2:1214:A:C8 | 2.54 | 0.43 |
| 47:S2:1284:A:H4' | 47:S2:1285:G:H3' | 1.99 | 0.43 |
| 47:S2:1759:G:H5' | 47:S2:1774:C:C2 | 2.54 | 0.43 |
| 48:SA:41:ARG:HD2 | 48:SA:47:TYR:CZ | 2.54 | 0.43 |
| 56:SL:93:LEU:HD13 | 64:SX:8:ARG:HH11 | 1.83 | 0.43 |
| 57:SP:28:MET:HB2 | 57:SP:32:GLN:HG3 | 2.01 | 0.43 |
| 78:Sb:14:GLU:HA | 78:Sb:17:ARG:HB3 | 2.01 | 0.43 |
| 82:CB:19:ILE:HG22 | 82:CB:99:LEU:HB3 | 2.01 | 0.43 |
| 83:CC:14:A:H1' | 83:CC:22:A:C6 | 2.54 | 0.43 |
| 1:L5:352:G:O2' | 3:L8:22:U:O4 | 2.29 | 0.43 |
| 1:L5:485:C:H5' | 1:L5:486:C:H6 | 1.84 | 0.43 |
| 1:L5:681:G:H2' | 1:L5:682:G:H8 | 1.82 | 0.43 |
| 1:L5:921:C:H2' | 1:L5:922:C:C6 | 2.54 | 0.43 |
| 1:L5:1298:C:H2' | 1:L5:1299:G:H8 | 1.84 | 0.43 |
| 1:L5:1320:U:O2' | 1:L5:1891:A:N1 | 2.39 | 0.43 |
| 1:L5:1513:U:H4' | 14:LL:4:SER:HB2 | 2.01 | 0.43 |
| 1:L5:4108:G:H2' | 1:L5:4109:G:C8 | 2.54 | 0.43 |
| 2:L7:33:U:H2' | 2:L7:34:C:H6 | 1.83 | 0.43 |
| 12:LI:38:ARG:HD3 | 12:LI:83:ASP:HB2 | 2.00 | 0.43 |
| 15:LM:15:VAL:O | 15:LM:22:GLY:N | 2.52 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 24:LV:31:ASN:HD21 | 24:LV:115:SER:HG | 1.64 | 0.43 |
| 26:LX:37:LYS:HA | 26:LX:38:LYS:HA | 1.65 | 0.43 |
| 30:Lb:99:ILE:O | 30:Lb:109:ARG:NH1 | 2.51 | 0.43 |
| 40:Ll:12:PHE:CD2 | 40:Ll:51:LEU:HD13 | 2.54 | 0.43 |
| 47:S2:900:C:H5' | 47:S2:901:G:N7 | 2.33 | 0.43 |
| 47:S2:1218:C:H2' | 47:S2:1219:C:H6 | 1.84 | 0.43 |
| 47:S2:1285:G:H5' | 72:SM:35:ILE:HG23 | 2.00 | 0.43 |
| 49:SB:59:SER:HA | 49:SB:91:VAL:HG21 | 2.01 | 0.43 |
| 58:SQ:33:LYS:HA | 58:SQ:38:PRO:HA | 2.01 | 0.43 |
| 58:SQ:86:GLN:HG2 | 58:SQ:90:LYS:HE2 | 2.01 | 0.43 |
| 62:SU:53:PRO:HA | 62:SU:89:ILE:HG13 | 2.00 | 0.43 |
| 62:SU:83:ARG:HH21 | 67:Sd:55:LEU:HD23 | 1.84 | 0.43 |
| 70:SG:116:LYS:HE3 | 70:SG:116:LYS:HB3 | 1.84 | 0.43 |
| 71:SJ:131:ARG:HD2 | 71:SJ:131:ARG:HA | 1.87 | 0.43 |
| 73:SN:47:PRO:HA | 73:SN:50:ILE:HB | 2.00 | 0.43 |
| 81:CA:155:ARG:HD2 | 81:CA:357:LEU:HG | 2.00 | 0.43 |
| 82:CB:396:MET:HB3 | 82:CB:416:VAL:HG12 | 1.99 | 0.43 |
| 83:CC:14:A:H3' | 83:CC:15:G:H8 | 1.84 | 0.43 |
| 1:L5:119:G:C6 | 10:LG:132:ARG:HG3 | 2.53 | 0.43 |
| 1:L5:717:U:H2' | 1:L5:718:C:C6 | 2.54 | 0.43 |
| 1:L5:1824:G:H2' | 1:L5:1825:A:C8 | 2.54 | 0.43 |
| 1:L5:1942:A:H2' | 1:L5:1943:A:H8 | 1.82 | 0.43 |
| 1:L5:3955:G:H3' | 1:L5:3956:G:C8 | 2.54 | 0.43 |
| 1:L5:4344:U:H2' | 1:L5:4345:C:C6 | 2.54 | 0.43 |
| 1:L5:4924:C:H2' | 1:L5:4925:U:C6 | 2.54 | 0.43 |
| 6:LC:1:MET:HB3 | 6:LC:2:ALA:H | 1.69 | 0.43 |
| 16:LN:84:PRO:HA | 16:LN:87:HIS:CG | 2.54 | 0.43 |
| 18:LP:85:LYS:O | 18:LP:89:GLU:HG2 | 2.19 | 0.43 |
| 26:LX:156:ILE:HG22 | 81:CA:243:ARG:HH22 | 1.84 | 0.43 |
| 47:S2:29:G:H2' | 47:S2:30:C:C6 | 2.54 | 0.43 |
| 47:S2:1217:A:H2' | 47:S2:1218:C:C6 | 2.54 | 0.43 |
| 47:S2:1337:C:H2' | 47:S2:1338:G:C8 | 2.53 | 0.43 |
| 47:S2:1533:A:H2 | 47:S2:1536:G:N3 | 2.17 | 0.43 |
| 48:SA:108:PHE:HD2 | 48:SA:136:GLU:HB3 | 1.84 | 0.43 |
| 49:SB:67:PHE:O | 49:SB:85:LYS:C | 2.62 | 0.43 |
| 50:SD:146:ARG:HD2 | 50:SD:146:ARG:HA | 1.82 | 0.43 |
| 59:SR:20:TYR:HD2 | 59:SR:23:ARG:HD3 | 1.84 | 0.43 |
| 59:SR:58:MET:O | 59:SR:62:GLN:HG2 | 2.19 | 0.43 |
| 62:SU:49:LYS:HB3 | 62:SU:92:HIS:HB3 | 2.01 | 0.43 |
| 68:Sg:173:LEU:HD11 | 68:Sg:175:LYS:HE3 | 2.01 | 0.43 |
| 69:SC:214:LEU:HD23 | 69:SC:244:ILE:HD11 | 2.00 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 75:SW:11:LEU:HD21 | 75:SW:37:PHE:CE2 | 2.53 | 0.43 |
| 82:CB:72:SER:HA | 82:CB:104:ASP:O | 2.19 | 0.43 |
| 82:CB:535:GLN:HB2 | 82:CB:547:ALA:HB3 | 2.00 | 0.43 |
| 1:L5:184:U:O2' | 1:L5:189:G:O4' | 2.36 | 0.42 |
| 1:L5:1464:C:H5" | 30:Lb:32:LEU:HD12 | 2.01 | 0.42 |
| 1:L5:1872:G:O2' | 1:L5:4219:A:N3 | 2.35 | 0.42 |
| 1:L5:1982:G:H8 | 1:L5:1982:G:OP2 | 2.02 | 0.42 |
| 1:L5:2091:C:O2 | 1:L5:2094:G:O2' | 2.30 | 0.42 |
| 1:L5:3709:U:N3 | 1:L5:3711:A:N6 | 2.66 | 0.42 |
| 1:L5:4088:C:H2' | 1:L5:4089:G:C8 | 2.53 | 0.42 |
| 1:L5:4324:A:H2' | 1:L5:4325:A:C8 | 2.54 | 0.42 |
| 1:L5:4411:G:H2' | 1:L5:4412:C:H6 | 1.84 | 0.42 |
| 6:LC:205:ARG:HA | 6:LC:205:ARG:HD3 | 1.77 | 0.42 |
| 14:LL:172:GLU:O | 14:LL:175:ASN:O | 2.36 | 0.42 |
| 14:LL:200:LYS:HD3 | 14:LL:200:LYS:HA | 1.85 | 0.42 |
| 18:LP:14:SER:OG | 18:LP:150:LEU:O | 2.31 | 0.42 |
| 23:LU:19:LEU:HA | 23:LU:74:SER:H | 1.84 | 0.42 |
| 31:Lc:80:GLU:HA | 31:Lc:83:THR:HG22 | 2.00 | 0.42 |
| 33:Le:98:GLU:OE1 | 33:Le:123:THR:OG1 | 2.30 | 0.42 |
| 46:Lz:4:LYS:H | 46:Lz:4:LYS:HG2 | 1.63 | 0.42 |
| 46:Lz:17:VAL:HB | 46:Lz:180:VAL:HG12 | 2.00 | 0.42 |
| 47:S2:28:U:H2' | 47:S2:29:G:H8 | 1.83 | 0.42 |
| 47:S2:199:C:O2' | 47:S2:201:C:OP2 | 2.36 | 0.42 |
| 47:S2:656:G:N2 | 47:S2:663:C:H5" | 2.34 | 0.42 |
| 47:S2:1577:G:O2' | 47:S2:1579:A:N3 | 2.48 | 0.42 |
| 48:SA:27:GLY:HA2 | 48:SA:28:THR:HA | 1.83 | 0.42 |
| 50:SD:42:THR:H | 50:SD:46:THR:HG22 | 1.84 | 0.42 |
| 52:SF:127:ARG:HH22 | 66:Sc:66:ARG:HH22 | 1.67 | 0.42 |
| 54:SI:137:LEU:O | 54:SI:139:LYS:NZ | 2.52 | 0.42 |
| 66:Sc:12:ALA:HA | 66:Sc:33:GLU:O | 2.19 | 0.42 |
| 67:Sd:33:LYS:HE2 | 67:Sd:34:TYR:CZ | 2.54 | 0.42 |
| 68:Sg:155:ARG:HA | 68:Sg:155:ARG:HD3 | 1.91 | 0.42 |
| 70:SG:71:GLY:H | 70:SG:98:ARG:NH1 | 2.17 | 0.42 |
| 71:SJ:46:VAL:O | 71:SJ:49:THR:OG1 | 2.33 | 0.42 |
| 81:CA:229:LEU:HA | 81:CA:317:ALA:O | 2.19 | 0.42 |
| 82:CB:306:ASN:HB2 | 82:CB:308:LYS:NZ | 2.34 | 0.42 |
| 82:CB:313:ALA:O | 82:CB:317:GLU:HG2 | 2.19 | 0.42 |
| 84:CD:222:LYS:HA | 84:CD:222:LYS:HD2 | 1.77 | 0.42 |
| 1:L5:749:G:O2' | 1:L5:912:G:O6 | 2.35 | 0.42 |
| 1:L5:1461:C:OP1 | 19:LQ:144:LYS:NZ | 2.44 | 0.42 |
| 1:L5:1751:A:H2' | 1:L5:1752:G:C8 | 2.54 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:L5:1760:G:N2 | 1:L5:1761:G:O6 | 2.48 | 0.42 |
| 1:L5:2517:A:N3 | 1:L5:2539:C:O2' | 2.51 | 0.42 |
| 1:L5:3955:G:N2 | 1:L5:4057:C:O2 | 2.51 | 0.42 |
| 3:L8:148:A:H2' | 3:L8:149:G:C8 | 2.54 | 0.42 |
| 6:LC:208:CYS:HB3 | 6:LC:230:LEU:HD12 | 2.01 | 0.42 |
| 11:LH:56:ARG:NH1 | 11:LH:58:ASP:OD1 | 2.52 | 0.42 |
| 33:Le:26:ASP:OD1 | 33:Le:26:ASP:N | 2.51 | 0.42 |
| 33:Le:84:GLU:O | 33:Le:87:VAL:HG12 | 2.19 | 0.42 |
| 37:Li:85:ARG:O | 37:Li:89:GLU:HG2 | 2.19 | 0.42 |
| 47:S2:960:U:O2' | 47:S2:962:A:N7 | 2.38 | 0.42 |
| 47:S2:1779:G:H2' | 47:S2:1780:G:C8 | 2.55 | 0.42 |
| 51:SE:147:ILE:HG21 | 51:SE:169:ILE:HD11 | 2.00 | 0.42 |
| 57:SP:50:ARG:HD3 | 57:SP:50:ARG:HA | 1.80 | 0.42 |
| 71:SJ:158:ASP:OD1 | 71:SJ:159:PHE:N | 2.50 | 0.42 |
| 82:CB:610:PRO:HD2 | 82:CB:613:LEU:HD13 | 2.01 | 0.42 |
| 82:CB:686:ALA:HB3 | 82:CB:729:LEU:HD12 | 2.01 | 0.42 |
| 1:L5:169:G:O6 | 1:L5:170:C:N4 | 2.52 | 0.42 |
| 1:L5:447:C:H2' | 1:L5:448:G:C8 | 2.54 | 0.42 |
| 1:L5:752:G:O6 | 1:L5:912:G:C2 | 2.72 | 0.42 |
| 1:L5:1855:G:OP1 | 30:Lb:4:SER:HB2 | 2.20 | 0.42 |
| 1:L5:2539:C:H2' | 1:L5:2540:C:C6 | 2.53 | 0.42 |
| 1:L5:4992:G:H2' | 1:L5:4993:G:C8 | 2.54 | 0.42 |
| 5:LB:285:TYR:HB2 | 5:LB:332:MET:HG2 | 2.01 | 0.42 |
| 6:LC:288:ASP:O | 6:LC:292:ILE:HG13 | 2.19 | 0.42 |
| 10:LG:123:ALA:HA | 10:LG:124:GLY:HA2 | 1.76 | 0.42 |
| 11:LH:171:ASP:O | 11:LH:174:LYS:C | 2.62 | 0.42 |
| 13:LJ:113:ILE:HG21 | 13:LJ:119:TYR:HB2 | 1.99 | 0.42 |
| 13:LJ:114:ASP:OD1 | 13:LJ:115:LEU:N | 2.50 | 0.42 |
| 15:LM:90:ARG:HA | 15:LM:93:LYS:HG2 | 2.01 | 0.42 |
| 16:LN:119:TYR:OH | 16:LN:131:GLU:OE1 | 2.27 | 0.42 |
| 23:LU:98:ASP:OD1 | 23:LU:98:ASP:N | 2.46 | 0.42 |
| 29:La:23:GLY:HA3 | 29:La:24:LYS:HA | 1.65 | 0.42 |
| 46:Lz:145:VAL:HG23 | 46:Lz:146:ALA:H | 1.84 | 0.42 |
| 47:S2:419:G:N2 | 47:S2:661:U:O2 | 2.52 | 0.42 |
| 47:S2:1189:A:H2' | 47:S2:1190:A:C8 | 2.54 | 0.42 |
| 47:S2:1420:G:O2' | 47:S2:1421:A:O4' | 2.29 | 0.42 |
| 52:SF:23:TRP:HE1 | 52:SF:101:HIS:CG | 2.37 | 0.42 |
| 53:SH:156:VAL:HB | 53:SH:187:PHE:CD1 | 2.54 | 0.42 |
| 55:SK:14:LEU:HA | 55:SK:17:LYS:HG2 | 2.01 | 0.42 |
| 56:SL:18:GLN:NE2 | 56:SL:19:ASN:OD1 | 2.40 | 0.42 |
| 81:CA:352:ALA:HA | 81:CA:355:LYS:HG2 | 2.01 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 82:CB:66:ARG:HD2 | 82:CB:66:ARG:HA | 1.82 | 0.42 |
| 1:L5:189:G:H2' | 1:L5:190:G:C8 | 2.54 | 0.42 |
| 1:L5:909:A:H2' | 1:L5:910:G:C8 | 2.53 | 0.42 |
| 1:L5:1378:C:H5 | 14:LL:158:ARG:HB3 | 1.85 | 0.42 |
| 1:L5:1716:G:H2' | 1:L5:1717:C:C6 | 2.55 | 0.42 |
| 1:L5:2079:G:H2' | 1:L5:2080:U:C6 | 2.54 | 0.42 |
| 1:L5:3786:U:OP1 | 1:L5:4550:G:O2' | 2.32 | 0.42 |
| 1:L5:4770:U:H2' | 1:L5:4771:C:C5 | 2.55 | 0.42 |
| 1:L5:4886:C:H2' | 1:L5:4887:C:H6 | 1.83 | 0.42 |
| 11:LH:186:THR:OG1 | 11:LH:187:VAL:N | 2.53 | 0.42 |
| 34:Lf:57:THR:HG21 | 34:Lf:68:ARG:HG2 | 2.02 | 0.42 |
| 47:S2:24:C:O2' | 47:S2:25:A:O5' | 2.37 | 0.42 |
| 47:S2:902:G:O2' | 47:S2:903:A:O4' | 2.37 | 0.42 |
| 47:S2:1240:A:C6 | 57:SP:100:LYS:HB2 | 2.54 | 0.42 |
| 47:S2:1628:C:H2' | 47:S2:1629:C:C6 | 2.55 | 0.42 |
| 47:S2:1780:G:H3' | 47:S2:1781:A:C8 | 2.54 | 0.42 |
| 48:SA:128:ARG:NH2 | 48:SA:151:ASP:OD2 | 2.50 | 0.42 |
| 54:SI:139:LYS:HE2 | 54:SI:139:LYS:HB2 | 1.90 | 0.42 |
| 55:SK:48:ALA:O | 55:SK:51:SER:OG | 2.31 | 0.42 |
| 58:SQ:80:GLN:O | 58:SQ:84:ILE:HG12 | 2.20 | 0.42 |
| 64:SX:109:GLY:O | 64:SX:119:ARG:NE | 2.52 | 0.42 |
| 68:Sg:178:ASN:ND2 | 68:Sg:181:ASN:OD1 | 2.37 | 0.42 |
| 71:SJ:129:LEU:HD23 | 71:SJ:135:ILE:HD11 | 2.01 | 0.42 |
| 1:L5:221:C:H2' | 1:L5:222:C:H6 | 1.84 | 0.42 |
| 1:L5:690:C:H4' | 45:Lr:85:ASN:ND2 | 2.35 | 0.42 |
| 1:L5:1097:C:H2' | 1:L5:1098:G:C8 | 2.55 | 0.42 |
| 1:L5:1758:G:H2' | 1:L5:1759:G:C8 | 2.54 | 0.42 |
| 1:L5:1812:C:H2' | 1:L5:1813:U:C6 | 2.54 | 0.42 |
| 1:L5:1982:G:O5' | 1:L5:1982:G:C8 | 2.70 | 0.42 |
| 1:L5:4095:G:H2' | 1:L5:4096:C:C4 | 2.55 | 0.42 |
| 8:LE:170:SER:OG | 8:LE:214:ASP:OD2 | 2.29 | 0.42 |
| 10:LG:220:GLU:HA | 10:LG:223:ARG:HG2 | 2.01 | 0.42 |
| 19:LQ:66:MET:HE3 | 19:LQ:66:MET:HB2 | 1.86 | 0.42 |
| 33:Le:72:SER:O | 33:Le:72:SER:OG | 2.28 | 0.42 |
| 36:Lh:102:LEU:HD23 | 36:Lh:102:LEU:HA | 1.92 | 0.42 |
| 39:Lk:47:ILE:HD12 | 39:Lk:47:ILE:HA | 1.85 | 0.42 |
| 46:Lz:69:GLY:O | 46:Lz:84:HIS:NE2 | 2.49 | 0.42 |
| 47:S2:91:A:P | 47:S2:446:G:H22 | 2.42 | 0.42 |
| 47:S2:416:U:O2 | 47:S2:421:G:O6 | 2.38 | 0.42 |
| 47:S2:1558:C:H2' | 47:S2:1559:C:C6 | 2.55 | 0.42 |
| 47:S2:1740:C:H42 | 47:S2:1794:C:N4 | 2.17 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 48:SA:81:ASN:OD1 | 48:SA:81:ASN:N | 2.52 | 0.42 |
| 50:SD:52:ALA:O | 50:SD:90:LYS:HA | 2.18 | 0.42 |
| 50:SD:108:LYS:HA | 50:SD:108:LYS:HD3 | 1.82 | 0.42 |
| 52:SF:127:ARG:HD2 | 52:SF:127:ARG:HA | 1.86 | 0.42 |
| 61:ST:39:LEU:HD12 | 61:ST:39:LEU:HA | 1.83 | 0.42 |
| 61:ST:43:LYS:HE2 | 61:ST:43:LYS:HB3 | 1.83 | 0.42 |
| 66:Sc:36:ASP:OD2 | 66:Sc:36:ASP:N | 2.53 | 0.42 |
| 72:SM:23:LYS:HA | 72:SM:23:LYS:HD3 | 1.71 | 0.42 |
| 72:SM:84:LYS:HD3 | 72:SM:88:TRP:CE2 | 2.55 | 0.42 |
| 73:SN:29:THR:OG1 | 73:SN:30:SER:N | 2.51 | 0.42 |
| 77:SZ:52:LYS:HZ3 | 77:SZ:55:TYR:HB3 | 1.83 | 0.42 |
| 81:CA:176:SER:OG | 81:CA:350:GLN:OE1 | 2.32 | 0.42 |
| 82:CB:358:LEU:HD23 | 82:CB:358:LEU:HA | 1.91 | 0.42 |
| 84:CD:204:LEU:HA | 84:CD:204:LEU:HD23 | 1.86 | 0.42 |
| 1:L5:300:A:H2' | 1:L5:301:G:H8 | 1.85 | 0.42 |
| 1:L5:2009:A:N6 | 82:CB:753:GLU:OE2 | 2.37 | 0.42 |
| 1:L5:2498:C:H2' | 1:L5:2499:C:H6 | 1.85 | 0.42 |
| 1:L5:3963:A:C8 | 1:L5:3964:U:H3' | 2.55 | 0.42 |
| 1:L5:3971:G:C6 | 1:L5:4050:A:N7 | 2.88 | 0.42 |
| 1:L5:4093:G:N7 | 1:L5:4095:G:N1 | 2.67 | 0.42 |
| 16:LN:198:LEU:HD12 | 16:LN:198:LEU:HA | 1.91 | 0.42 |
| 20:LR:178:GLN:HA | 20:LR:181:LYS:HG2 | 2.01 | 0.42 |
| 25:LW:31:PHE:CD2 | 25:LW:37:GLU:HB3 | 2.55 | 0.42 |
| 25:LW:80:ARG:HD3 | 70:SG:131:ARG:HE | 1.83 | 0.42 |
| 47:S2:223:C:H2' | 47:S2:224:A:C8 | 2.55 | 0.42 |
| 47:S2:448:A:H4' | 47:S2:449:A:H5" | 2.01 | 0.42 |
| 47:S2:942:G:H2' | 47:S2:943:U:C6 | 2.54 | 0.42 |
| 47:S2:1323:U:H2' | 47:S2:1324:G:C8 | 2.54 | 0.42 |
| 47:S2:1432:U:H5" | 47:S2:1433:C:H5" | 2.01 | 0.42 |
| 47:S2:1769:C:OP2 | 47:S2:1771:G:N1 | 2.51 | 0.42 |
| 51:SE:71:LYS:HE3 | 51:SE:71:LYS:HB3 | 1.88 | 0.42 |
| 51:SE:201:HIS:O | 51:SE:204:SER:O | 2.37 | 0.42 |
| 52:SF:87:LEU:HA | 52:SF:90:VAL:HG22 | 2.02 | 0.42 |
| 57:SP:72:LYS:HD2 | 57:SP:72:LYS:HA | 1.84 | 0.42 |
| 68:Sg:218:LEU:HD11 | 68:Sg:228:TYR:HB3 | 2.01 | 0.42 |
| 84:CD:215:SER:OG | 84:CD:216:HIS:ND1 | 2.48 | 0.42 |
| 1:L5:1088:C:H2' | 1:L5:1089:G:H8 | 1.84 | 0.42 |
| 1:L5:1986:U:C6 | 1:L5:1986:U:C4' | 3.03 | 0.42 |
| 1:L5:3607:U:H2' | 1:L5:3608:A:H8 | 1.85 | 0.42 |
| 1:L5:4415:A:H2' | 1:L5:4416:G:O4' | 2.19 | 0.42 |
| 1:L5:4710:C:H2' | 1:L5:4711:C:C6 | 2.54 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:L5:4928:C:H2' | 1:L5:4929:C:C6 | 2.54 | 0.42 |
| 2:L7:6:C:O2' | 7:LD:50:ARG:NH2 | 2.48 | 0.42 |
| 5:LB:122:TRP:CH2 | 5:LB:127:LYS:HG2 | 2.54 | 0.42 |
| 6:LC:116:ASN:HB2 | 6:LC:119:GLN:HG3 | 2.00 | 0.42 |
| 8:LE:268:GLN:H | 8:LE:268:GLN:HG2 | 1.62 | 0.42 |
| 10:LG:250:ILE:O | 10:LG:254:GLU:HG2 | 2.20 | 0.42 |
| 16:LN:10:LEU:O | 16:LN:13:LYS:N | 2.52 | 0.42 |
| 38:Lj:67:LEU:HA | 38:Lj:67:LEU:HD23 | 1.75 | 0.42 |
| 47:S2:918:U:H2' | 47:S2:919:A:C4 | 2.55 | 0.42 |
| 47:S2:1455:A:N1 | 47:S2:1471:C:N3 | 2.67 | 0.42 |
| 52:SF:188:TYR:HA | 52:SF:191:LYS:HD2 | 2.01 | 0.42 |
| 59:SR:73:LEU:HD23 | 59:SR:73:LEU:HA | 1.91 | 0.42 |
| 65:Sa:45:VAL:HB | 65:Sa:50:VAL:HG12 | 2.02 | 0.42 |
| 66:Sc:62:GLU:OE2 | 66:Sc:62:GLU:N | 2.53 | 0.42 |
| 72:SM:99:LYS:HD2 | 72:SM:100:PRO:HD2 | 2.02 | 0.42 |
| 79:Se:53:LYS:HA | 79:Se:53:LYS:HD2 | 1.88 | 0.42 |
| 1:L5:10:A:H2' | 1:L5:11:G:H8 | 1.84 | 0.42 |
| 1:L5:1755:C:N4 | 1:L5:1776:A:C6 | 2.87 | 0.42 |
| 1:L5:2491:C:H2' | 1:L5:2492:C:C6 | 2.54 | 0.42 |
| 1:L5:2709:C:N4 | 81:CA:257:LEU:O | 2.52 | 0.42 |
| 1:L5:4935:C:H2' | 1:L5:4936:G:H8 | 1.84 | 0.42 |
| 5:LB:132:LYS:H | 5:LB:132:LYS:HG2 | 1.61 | 0.42 |
| 17:LO:174:LEU:HD23 | 17:LO:174:LEU:HA | 1.87 | 0.42 |
| 22:LT:42:ILE:O | 22:LT:59:GLY:N | 2.53 | 0.42 |
| 23:LU:84:LYS:HB2 | 23:LU:110:TYR:CE2 | 2.55 | 0.42 |
| 47:S2:1218:C:H1' | 47:S2:1683:C:H42 | 1.85 | 0.42 |
| 47:S2:1505:U:H4' | 47:S2:1508:A:H1' | 2.01 | 0.42 |
| 47:S2:1595:U:OP1 | 77:SZ:102:LYS:NZ | 2.53 | 0.42 |
| 47:S2:1612:G:OP1 | 57:SP:18:ARG:NH2 | 2.52 | 0.42 |
| 47:S2:1648:G:H5" | 58:SQ:125:ARG:HB2 | 2.01 | 0.42 |
| 47:S2:1667:U:H2' | 47:S2:1668:U:C6 | 2.55 | 0.42 |
| 48:SA:66:VAL:HG21 | 48:SA:185:MET:HG2 | 2.02 | 0.42 |
| 49:SB:39:PHE:HA | 49:SB:75:GLN:HE22 | 1.83 | 0.42 |
| 50:SD:132:LYS:HE3 | 50:SD:191:PRO:HA | 2.01 | 0.42 |
| 51:SE:44:LEU:HD12 | 51:SE:72:ILE:HD11 | 2.02 | 0.42 |
| 51:SE:87:MET:SD | 51:SE:100:ARG:NH2 | 2.93 | 0.42 |
| 59:SR:61:ILE:HG22 | 59:SR:66:VAL:HB | 2.01 | 0.42 |
| 69:SC:278:THR:HA | 69:SC:279:ARG:HA | 1.68 | 0.42 |
| 73:SN:114:ARG:O | 73:SN:118:ILE:HG12 | 2.20 | 0.42 |
| 82:CB:94:ASP:OD1 | 82:CB:94:ASP:N | 2.53 | 0.42 |
| 82:CB:356:ILE:HD12 | 82:CB:356:ILE:HA | 1.94 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 82:CB:603:TYR:HB2 | 82:CB:706:ASP:HB3 | 2.02 | 0.42 |
| 1:L5:18:C:H2' | 1:L5:19:G:H8 | 1.83 | 0.42 |
| 1:L5:481:G:H2' | 1:L5:482:G:C8 | 2.55 | 0.42 |
| 1:L5:965:G:N2 | 1:L5:2092:G:H1' | 2.34 | 0.42 |
| 1:L5:1596:U:O2' | 18:LP:135:ARG:NH2 | 2.40 | 0.42 |
| 1:L5:1976:G:C8 | 1:L5:1976:G:C5' | 3.01 | 0.42 |
| 1:L5:2792:C:O2 | 38:Lj:9:GLY:HA2 | 2.20 | 0.42 |
| 1:L5:3758:U:O2 | 1:L5:3767:C:N3 | 2.52 | 0.42 |
| 1:L5:3932:U:H2' | 1:L5:3933:G:C8 | 2.54 | 0.42 |
| 1:L5:4246:G:H2' | 1:L5:4247:G:C8 | 2.55 | 0.42 |
| 1:L5:4524:G:C2 | 5:LB:252:ALA:HB1 | 2.55 | 0.42 |
| 1:L5:4892:A:H2' | 1:L5:4893:A:O4' | 2.20 | 0.42 |
| 2:L7:35:U:O2 | 2:L7:45:U:O2' | 2.37 | 0.42 |
| 36:Lh:14:LYS:HA | 36:Lh:17:LEU:HB2 | 2.02 | 0.42 |
| 47:S2:90:G:H2' | 47:S2:91:A:O4' | 2.20 | 0.42 |
| 47:S2:159:A:N6 | 47:S2:467:G:O2' | 2.35 | 0.42 |
| 47:S2:1021:U:OP1 | 73:SN:132:LYS:NZ | 2.52 | 0.42 |
| 47:S2:1084:A:OP1 | 47:S2:1858:G:O2' | 2.32 | 0.42 |
| 47:S2:1156:U:OP1 | 75:SW:71:LYS:NZ | 2.44 | 0.42 |
| 47:S2:1650:A:H5" | 58:SQ:139:ALA:HB2 | 2.02 | 0.42 |
| 51:SE:87:MET:O | 51:SE:100:ARG:NH2 | 2.53 | 0.42 |
| 55:SK:3:MET:HE2 | 55:SK:3:MET:HB3 | 1.82 | 0.42 |
| 56:SL:68:ILE:HG21 | 56:SL:143:LEU:HD21 | 2.01 | 0.42 |
| 59:SR:15:VAL:HA | 59:SR:18:GLU:HG3 | 2.01 | 0.42 |
| 59:SR:99:ASP:O | 59:SR:102:THR:OG1 | 2.38 | 0.42 |
| 75:SW:32:LYS:HB2 | 75:SW:36:ARG:HH21 | 1.84 | 0.42 |
| 75:SW:85:ASP:OD1 | 75:SW:85:ASP:N | 2.45 | 0.42 |
| 82:CB:744:ILE:HG13 | 82:CB:818:GLN:HB3 | 2.01 | 0.42 |
| 1:L5:749:G:N1 | 1:L5:912:G:O2' | 2.41 | 0.42 |
| 1:L5:751:G:H2' | 1:L5:752:G:O4' | 2.19 | 0.42 |
| 1:L5:1252:C:N4 | 1:L5:1253:G:N3 | 2.68 | 0.42 |
| 1:L5:1762:C:C2 | 1:L5:1764:G:N2 | 2.88 | 0.42 |
| 1:L5:3687:A:O2' | 4:LA:236:GLY:N | 2.52 | 0.42 |
| 1:L5:4601:U:O3' | 82:CB:162:ARG:NH2 | 2.53 | 0.42 |
| 1:L5:5018:C:H2' | 1:L5:5019:A:C8 | 2.55 | 0.42 |
| 2:L7:58:A:H2' | 2:L7:59:G:C8 | 2.55 | 0.42 |
| 3:L8:140:C:H2' | 3:L8:141:C:C6 | 2.55 | 0.42 |
| 12:LI:184:MET:HG3 | 12:LI:189:CYS:HB3 | 2.02 | 0.42 |
| 27:LY:83:GLU:O | 27:LY:86:GLN:NE2 | 2.47 | 0.42 |
| 46:Lz:173:LYS:HE3 | 46:Lz:173:LYS:HB3 | 1.88 | 0.42 |
| 47:S2:194:C:H2' | 47:S2:195:C:H6 | 1.84 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 47:S2:375:U:H2' | 47:S2:376:A:C8 | 2.55 | 0.42 |
| 47:S2:979:C:H2' | 47:S2:980:A:C8 | 2.55 | 0.42 |
| 49:SB:184:VAL:O | 49:SB:188:LEU:HB2 | 2.19 | 0.42 |
| 51:SE:156:VAL:HG13 | 51:SE:157:ASN:ND2 | 2.34 | 0.42 |
| 51:SE:183:VAL:HG11 | 51:SE:188:ASN:HB2 | 2.01 | 0.42 |
| 51:SE:188:ASN:HB3 | 51:SE:191:ARG:HD3 | 2.02 | 0.42 |
| 68:Sg:113:PHE:HA | 68:Sg:120:ILE:HD13 | 2.02 | 0.42 |
| 70:SG:1:MET:CB | 70:SG:18:VAL:O | 2.60 | 0.42 |
| 70:SG:149:LYS:HA | 70:SG:149:LYS:HD2 | 1.82 | 0.42 |
| 75:SW:80:ASP:HA | 75:SW:124:LYS:HA | 2.01 | 0.42 |
| 76:SY:47:MET:HE2 | 76:SY:47:MET:HB3 | 1.81 | 0.42 |
| 81:CA:144:LYS:O | 81:CA:148:LEU:HG | 2.19 | 0.42 |
| 83:CC:79:U:H2' | 83:CC:80:A:C8 | 2.55 | 0.42 |
| 1:L5:126:C:H2' | 1:L5:127:G:C8 | 2.56 | 0.41 |
| 1:L5:661:C:H2' | 1:L5:662:C:C6 | 2.55 | 0.41 |
| 1:L5:2900:U:N3 | 1:L5:3600:G:N1 | 2.68 | 0.41 |
| 1:L5:3967:G:N2 | 1:L5:4055:U:O2 | 2.53 | 0.41 |
| 9:LF:66:ARG:HA | 9:LF:66:ARG:HD2 | 1.86 | 0.41 |
| 11:LH:34:LEU:HD23 | 11:LH:34:LEU:HA | 1.82 | 0.41 |
| 18:LP:6:LEU:HD23 | 18:LP:6:LEU:HA | 1.87 | 0.41 |
| 25:LW:106:GLU:HA | 25:LW:109:ILE:HG22 | 2.02 | 0.41 |
| 37:Li:72:PHE:O | 37:Li:76:ARG:HG2 | 2.20 | 0.41 |
| 40:Ll:44:TRP:CZ3 | 40:Ll:45:ARG:HD3 | 2.55 | 0.41 |
| 47:S2:106:C:H2' | 47:S2:107:A:C8 | 2.55 | 0.41 |
| 47:S2:414:A:OP1 | 47:S2:814:U:O2' | 2.37 | 0.41 |
| 47:S2:1825:A:H61 | 82:CB:597:ASN:ND2 | 2.17 | 0.41 |
| 48:SA:90:PHE:HD1 | 48:SA:179:ALA:HB2 | 1.84 | 0.41 |
| 50:SD:34:TYR:OH | 50:SD:37:VAL:HB | 2.20 | 0.41 |
| 51:SE:164:LEU:HD13 | 51:SE:164:LEU:HA | 1.89 | 0.41 |
| 57:SP:29:SER:O | 57:SP:33:LEU:HG | 2.20 | 0.41 |
| 66:Sc:14:VAL:HG22 | 66:Sc:15:THR:O | 2.20 | 0.41 |
| 68:Sg:12:LYS:HA | 68:Sg:12:LYS:HD2 | 1.85 | 0.41 |
| 69:SC:73:MET:HE2 | 69:SC:73:MET:HB3 | 1.93 | 0.41 |
| 75:SW:11:LEU:HA | 75:SW:11:LEU:HD23 | 1.74 | 0.41 |
| 77:SZ:48:VAL:HA | 77:SZ:83:LEU:HD11 | 2.02 | 0.41 |
| 82:CB:27:HIS:CD2 | 82:CB:138:GLN:HB2 | 2.54 | 0.41 |
| 82:CB:815:ASP:OD1 | 82:CB:816:HIS:N | 2.51 | 0.41 |
| 82:CB:831:PRO:HA | 82:CB:834:VAL:HG22 | 2.02 | 0.41 |
| 84:CD:208:ASP:OD1 | 84:CD:212:GLY:N | 2.52 | 0.41 |
| 1:L5:161:G:H2' | 1:L5:162:A:H8 | 1.84 | 0.41 |
| 1:L5:519:C:H1' | 1:L5:643:C:N3 | 2.35 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:L5:1976:G:N3 | 1:L5:1976:G:C2' | 2.83 | 0.41 |
| 1:L5:2566:G:H2' | 1:L5:2567:G:H8 | 1.84 | 0.41 |
| 1:L5:2578:G:P | 28:LZ:111:ARG:HH22 | 2.42 | 0.41 |
| 1:L5:3951:G:H3' | 1:L5:3952:A:C8 | 2.55 | 0.41 |
| 1:L5:4208:U:OP1 | 1:L5:4334:U:O2' | 2.34 | 0.41 |
| 1:L5:4929:C:OP1 | 15:LM:114:LYS:NZ | 2.40 | 0.41 |
| 2:L7:110:G:H2' | 2:L7:111:C:C6 | 2.55 | 0.41 |
| 3:L8:90:C:H2' | 3:L8:91:A:C8 | 2.55 | 0.41 |
| 6:LC:39:PHE:O | 6:LC:43:ASN:ND2 | 2.44 | 0.41 |
| 16:LN:13:LYS:HD3 | 16:LN:13:LYS:HA | 1.85 | 0.41 |
| 30:Lb:16:TRP:CD1 | 30:Lb:21:ILE:HD11 | 2.56 | 0.41 |
| 35:Lg:19:LYS:HD3 | 35:Lg:19:LYS:HA | 1.72 | 0.41 |
| 39:Lk:13:LEU:HA | 39:Lk:16:ARG:HG2 | 2.02 | 0.41 |
| 43:Lo:69:ARG:HH11 | 43:Lo:80:LYS:HG2 | 1.85 | 0.41 |
| 47:S2:304:C:O2' | 54:SI:184:ARG:NH2 | 2.53 | 0.41 |
| 47:S2:352:U:H2' | 47:S2:353:C:C6 | 2.56 | 0.41 |
| 47:S2:428:U:H4' | 71:SJ:2:PRO:HD2 | 2.01 | 0.41 |
| 47:S2:1675:A:O3' | 52:SF:74:ASN:ND2 | 2.53 | 0.41 |
| 49:SB:57:ILE:HG12 | 49:SB:59:SER:H | 1.84 | 0.41 |
| 49:SB:139:CYS:HA | 49:SB:212:VAL:HA | 2.01 | 0.41 |
| 54:SI:60:LEU:HB2 | 54:SI:96:LEU:HD12 | 2.01 | 0.41 |
| 63:SV:14:PRO:HD2 | 69:SC:255:LEU:HD11 | 2.02 | 0.41 |
| 71:SJ:113:GLN:HG3 | 71:SJ:149:VAL:HG21 | 2.02 | 0.41 |
| 78:Sb:24:LEU:HA | 78:Sb:24:LEU:HD12 | 1.83 | 0.41 |
| 80:Sf:123:SER:OG | 80:Sf:126:CYS:SG | 2.67 | 0.41 |
| 81:CA:227:ASP:HB2 | 81:CA:318:GLN:NE2 | 2.35 | 0.41 |
| 82:CB:253:VAL:O | 82:CB:257:MET:HG2 | 2.20 | 0.41 |
| 82:CB:311:GLU:HA | 82:CB:314:LYS:HZ3 | 1.85 | 0.41 |
| 1:L5:492:U:H2' | 1:L5:493:G:C8 | 2.55 | 0.41 |
| 1:L5:677:G:H2' | 1:L5:678:C:C6 | 2.55 | 0.41 |
| 1:L5:4085:A:H3' | 26:LX:44:PRO:HB2 | 2.03 | 0.41 |
| 5:LB:254:ILE:HD13 | 5:LB:268:ARG:HH22 | 1.85 | 0.41 |
| 43:Lo:80:LYS:HE2 | 43:Lo:80:LYS:HB2 | 1.80 | 0.41 |
| 47:S2:74:G:H5" | 47:S2:76:U:C4 | 2.55 | 0.41 |
| 47:S2:693:A:N6 | 47:S2:737:G:O6 | 2.52 | 0.41 |
| 47:S2:838:G:O2' | 47:S2:840:C:OP2 | 2.38 | 0.41 |
| 47:S2:1507:G:C6 | 80:Sf:90:LYS:HA | 2.55 | 0.41 |
| 47:S2:1643:U:H2' | 47:S2:1644:C:C6 | 2.55 | 0.41 |
| 49:SB:199:LYS:HE2 | 49:SB:199:LYS:HB3 | 1.84 | 0.41 |
| 49:SB:227:LYS:HA | 49:SB:227:LYS:HD3 | 1.83 | 0.41 |
| 50:SD:173:ARG:HD3 | 50:SD:173:ARG:HA | 1.94 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 52:SF:133:THR:HG23 | 52:SF:134:VAL:H | 1.85 | 0.41 |
| 56:SL:153:LYS:HA | 56:SL:153:LYS:HD3 | 1.82 | 0.41 |
| 58:SQ:30:GLY:N | 58:SQ:64:ALA:O | 2.52 | 0.41 |
| 71:SJ:120:ALA:HB1 | 71:SJ:125:HIS:CD2 | 2.54 | 0.41 |
| 72:SM:63:LYS:HE3 | 80:Sf:108:VAL:HB | 2.02 | 0.41 |
| 74:SO:45:THR:OG1 | 74:SO:46:ASP:N | 2.53 | 0.41 |
| 77:SZ:88:LEU:HD13 | 77:SZ:88:LEU:HA | 1.83 | 0.41 |
| 82:CB:119:LEU:HA | 82:CB:122:THR:HG22 | 2.02 | 0.41 |
| 82:CB:337:LYS:HE2 | 82:CB:337:LYS:HB3 | 1.84 | 0.41 |
| 82:CB:426:LYS:NZ | 82:CB:444:LEU:O | 2.40 | 0.41 |
| 82:CB:451:ILE:HD12 | 82:CB:451:ILE:HA | 1.87 | 0.41 |
| 82:CB:459:GLU:HA | 82:CB:460:PRO:HD3 | 1.93 | 0.41 |
| 1:L5:989:U:O2 | 1:L5:1064:G:C6 | 2.73 | 0.41 |
| 1:L5:1091:C:H2' | 1:L5:1092:G:H8 | 1.86 | 0.41 |
| 1:L5:1196:G:H2' | 1:L5:1197:C:C6 | 2.55 | 0.41 |
| 1:L5:1392:A:H2' | 1:L5:1393:G:C8 | 2.56 | 0.41 |
| 1:L5:1982:G:H8 | 1:L5:1982:G:P | 2.43 | 0.41 |
| 1:L5:3965:A:N6 | 1:L5:4043:G:H22 | 2.19 | 0.41 |
| 2:L7:1:G:H4' | 7:LD:265:ARG:HD2 | 2.02 | 0.41 |
| 10:LG:137:ARG:HD3 | 10:LG:146:LEU:HD11 | 2.02 | 0.41 |
| 17:LO:54:TYR:CD1 | 17:LO:145:VAL:HG21 | 2.55 | 0.41 |
| 17:LO:65:ASN:OD1 | 17:LO:67:SER:OG | 2.31 | 0.41 |
| 21:LS:15:ARG:HD2 | 21:LS:25:PRO:HG2 | 2.03 | 0.41 |
| 33:Le:38:PRO:HD2 | 33:Le:55:MET:HE3 | 2.03 | 0.41 |
| 47:S2:373:G:H2' | 47:S2:374:G:H8 | 1.86 | 0.41 |
| 47:S2:568:C:H2' | 47:S2:569:A:O4' | 2.20 | 0.41 |
| 47:S2:746:C:HO2' | 47:S2:798:G:H1 | 1.66 | 0.41 |
| 47:S2:848:U:H2' | 47:S2:849:A:H8 | 1.86 | 0.41 |
| 47:S2:1512:C:O2' | 67:Sd:7:TYR:O | 2.33 | 0.41 |
| 47:S2:1597:C:H3' | 47:S2:1598:G:C8 | 2.55 | 0.41 |
| 49:SB:85:LYS:HD3 | 49:SB:85:LYS:HA | 1.85 | 0.41 |
| 55:SK:19:GLY:HA3 | 55:SK:71:LEU:HD22 | 2.02 | 0.41 |
| 61:ST:2:PRO:HA | 61:ST:3:GLY:HA3 | 1.70 | 0.41 |
| 65:Sa:46:GLU:O | 65:Sa:48:ALA:N | 2.53 | 0.41 |
| 66:Sc:7:GLN:HA | 66:Sc:8:PRO:HD3 | 1.94 | 0.41 |
| 69:SC:142:LYS:NZ | 69:SC:143:CYS:O | 2.54 | 0.41 |
| 83:CC:23:G:H2' | 83:CC:24:G:H8 | 1.86 | 0.41 |
| 1:L5:153:G:H2' | 1:L5:154:G:H8 | 1.86 | 0.41 |
| 1:L5:1774:C:H2' | 1:L5:1775:A:O4' | 2.20 | 0.41 |
| 1:L5:2748:C:O2' | 35:Lg:61:PRO:O | 2.37 | 0.41 |
| 1:L5:4764:A:OP1 | 21:LS:156:HIS:ND1 | 2.38 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 5:LB:285:TYR:N | 5:LB:332:MET:O | 2.49 | 0.41 |
| 7:LD:38:ILE:HD11 | 22:LT:27:LEU:HD22 | 2.02 | 0.41 |
| 8:LE:182:ASN:N | 8:LE:182:ASN:OD1 | 2.51 | 0.41 |
| 14:LL:7:GLY:O | 29:La:49:HIS:NE2 | 2.43 | 0.41 |
| 18:LP:91:LEU:HD23 | 18:LP:91:LEU:HA | 1.84 | 0.41 |
| 22:LT:64:VAL:HG13 | 22:LT:72:VAL:HG13 | 2.01 | 0.41 |
| 27:LY:110:LYS:HD2 | 27:LY:110:LYS:HA | 1.84 | 0.41 |
| 28:LZ:117:LYS:O | 28:LZ:120:GLU:HG3 | 2.21 | 0.41 |
| 29:La:71:PRO:HG2 | 29:La:108:TYR:HA | 2.02 | 0.41 |
| 30:Lb:43:MET:HE2 | 30:Lb:43:MET:HB3 | 1.70 | 0.41 |
| 45:Lr:32:LEU:HD21 | 45:Lr:50:GLY:HA2 | 2.02 | 0.41 |
| 47:S2:544:G:H2' | 47:S2:545:A:C8 | 2.55 | 0.41 |
| 47:S2:907:G:H2' | 47:S2:908:A:H8 | 1.85 | 0.41 |
| 47:S2:1256:G:C8 | 62:SU:66:ARG:HB2 | 2.56 | 0.41 |
| 52:SF:27:ASP:OD1 | 52:SF:27:ASP:N | 2.52 | 0.41 |
| 53:SH:7:LYS:NZ | 53:SH:24:SER:OG | 2.52 | 0.41 |
| 53:SH:64:VAL:HG21 | 53:SH:72:PHE:CD2 | 2.55 | 0.41 |
| 53:SH:101:LEU:HD23 | 53:SH:101:LEU:HA | 1.89 | 0.41 |
| 60:SS:84:LEU:HB2 | 60:SS:87:GLN:HG2 | 2.02 | 0.41 |
| 61:ST:143:LYS:HB3 | 61:ST:143:LYS:HE3 | 1.88 | 0.41 |
| 68:Sg:39:THR:OG1 | 68:Sg:40:ILE:N | 2.54 | 0.41 |
| 68:Sg:173:LEU:HG | 68:Sg:175:LYS:HG2 | 2.02 | 0.41 |
| 68:Sg:183:LYS:HA | 68:Sg:183:LYS:HD3 | 1.71 | 0.41 |
| 70:SG:121:ILE:N | 70:SG:125:THR:OG1 | 2.53 | 0.41 |
| 82:CB:111:PHE:HB3 | 82:CB:501:VAL:HG21 | 2.02 | 0.41 |
| 82:CB:500:SER:O | 82:CB:500:SER:OG | 2.29 | 0.41 |
| 1:L5:262:G:H2' | 1:L5:263:G:C8 | 2.55 | 0.41 |
| 1:L5:362:A:N6 | 40:Ll:37:TYR:O | 2.51 | 0.41 |
| 1:L5:680:G:H2' | 1:L5:681:G:H8 | 1.86 | 0.41 |
| 1:L5:699:C:N4 | 1:L5:700:G:O6 | 2.53 | 0.41 |
| 1:L5:989:U:C2 | 1:L5:1065:G:C6 | 3.09 | 0.41 |
| 1:L5:1590:C:H3' | 1:L5:1591:U:H4' | 2.02 | 0.41 |
| 1:L5:2275:G:H2' | 1:L5:2276:A:C8 | 2.55 | 0.41 |
| 1:L5:2583:C:N4 | 35:Lg:75:SER:OG | 2.54 | 0.41 |
| 1:L5:3721:U:H2' | 1:L5:3722:G:C8 | 2.55 | 0.41 |
| 1:L5:3848:U:H2' | 1:L5:3849:A:H8 | 1.86 | 0.41 |
| 1:L5:4740:G:C6 | 1:L5:4959:U:O2 | 2.74 | 0.41 |
| 6:LC:61:GLN:H | 6:LC:61:GLN:HG2 | 1.61 | 0.41 |
| 10:LG:132:ARG:HA | 10:LG:133:PRO:HD3 | 1.85 | 0.41 |
| 18:LP:95:LEU:HD23 | 18:LP:95:LEU:HA | 1.88 | 0.41 |
| 19:LQ:103:LEU:HD12 | 19:LQ:103:LEU:HA | 1.91 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 38:Lj:2:THR:HG22 | 38:Lj:4:GLY:H | 1.85 | 0.41 |
| 47:S2:557:U:H2' | 47:S2:558:G:C8 | 2.56 | 0.41 |
| 47:S2:835:C:N3 | 47:S2:839:C:N4 | 2.69 | 0.41 |
| 47:S2:885:U:N3 | 47:S2:901:G:N1 | 2.43 | 0.41 |
| 47:S2:1015:U:O2' | 73:SN:55:ARG:NH1 | 2.54 | 0.41 |
| 47:S2:1246:A:H3' | 84:CD:188:ARG:HH12 | 1.86 | 0.41 |
| 47:S2:1455:A:N6 | 47:S2:1471:C:N4 | 2.35 | 0.41 |
| 47:S2:1457:U:H2' | 47:S2:1458:G:H8 | 1.86 | 0.41 |
| 47:S2:1692:U:H2' | 47:S2:1693:G:C8 | 2.54 | 0.41 |
| 47:S2:1713:C:H2' | 47:S2:1714:U:C6 | 2.56 | 0.41 |
| 47:S2:1792:G:H2' | 47:S2:1793:A:C8 | 2.56 | 0.41 |
| 49:SB:34:LYS:O | 49:SB:98:THR:HG22 | 2.20 | 0.41 |
| 53:SH:83:LEU:HB3 | 53:SH:92:VAL:HG21 | 2.02 | 0.41 |
| 57:SP:115:TYR:O | 57:SP:118:GLU:HG2 | 2.21 | 0.41 |
| 61:ST:102:ARG:HD3 | 61:ST:102:ARG:HA | 1.88 | 0.41 |
| 67:Sd:10:HIS:HB3 | 67:Sd:12:ARG:HH12 | 1.85 | 0.41 |
| 71:SJ:173:VAL:O | 71:SJ:177:ASN:ND2 | 2.39 | 0.41 |
| 74:SO:34:PHE:HB3 | 74:SO:41:PHE:HB2 | 2.01 | 0.41 |
| 1:L5:1092:G:H2' | 1:L5:1093:C:C6 | 2.56 | 0.41 |
| 1:L5:1326:A:H2' | 1:L5:1327:C:C6 | 2.56 | 0.41 |
| 1:L5:2461:G:H2' | 1:L5:2462:C:C6 | 2.56 | 0.41 |
| 1:L5:2483:G:C6 | 1:L5:2495:U:N3 | 2.85 | 0.41 |
| 1:L5:2498:C:H2' | 1:L5:2499:C:C6 | 2.56 | 0.41 |
| 1:L5:2845:A:H61 | 1:L5:3843:C:N4 | 2.15 | 0.41 |
| 1:L5:3938:G:N2 | 1:L5:4171:C:OP2 | 2.50 | 0.41 |
| 1:L5:4460:U:H2' | 1:L5:4461:C:C6 | 2.56 | 0.41 |
| 1:L5:4993:G:C6 | 1:L5:5058:A:N1 | 2.89 | 0.41 |
| 8:LE:98:GLY:HA3 | 8:LE:99:ASP:HA | 1.79 | 0.41 |
| 8:LE:152:ILE:O | 8:LE:159:GLY:N | 2.54 | 0.41 |
| 8:LE:209:PRO:HB2 | 8:LE:212:LEU:HD23 | 2.02 | 0.41 |
| 12:LI:183:ASP:N | 12:LI:183:ASP:OD1 | 2.52 | 0.41 |
| 13:LJ:95:ARG:HH12 | 13:LJ:97:ASN:CG | 2.29 | 0.41 |
| 15:LM:100:ARG:HA | 15:LM:103:LYS:HG2 | 2.03 | 0.41 |
| 17:LO:124:LEU:HA | 17:LO:124:LEU:HD23 | 1.88 | 0.41 |
| 28:LZ:52:LYS:HE3 | 28:LZ:52:LYS:HB2 | 1.83 | 0.41 |
| 30:Lb:101:HIS:HA | 30:Lb:102:PRO:HD3 | 1.95 | 0.41 |
| 47:S2:528:A:C2 | 47:S2:558:G:C2 | 3.08 | 0.41 |
| 47:S2:1230:C:H2' | 47:S2:1231:C:H6 | 1.86 | 0.41 |
| 47:S2:1619:A:OP1 | 57:SP:47:ARG:NE | 2.39 | 0.41 |
| 47:S2:1764:G:H5' | 47:S2:1765:C:H5" | 2.03 | 0.41 |
| 48:SA:89:LYS:HG2 | 59:SR:81:ARG:HH12 | 1.86 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 48:SA:144:THR:OG1 | 48:SA:145:ILE:N | 2.54 | 0.41 |
| 53:SH:50:GLU:HG2 | 53:SH:60:ILE:HD13 | 2.02 | 0.41 |
| 65:Sa:67:LEU:HD12 | 65:Sa:67:LEU:HA | 1.84 | 0.41 |
| 68:Sg:198:VAL:HG12 | 68:Sg:209:SER:HB2 | 2.02 | 0.41 |
| 77:SZ:47:LEU:HD13 | 77:SZ:78:LYS:HE3 | 2.02 | 0.41 |
| 81:CA:25:GLY:HA2 | 81:CA:334:THR:HG22 | 2.03 | 0.41 |
| 1:L5:17:A:OP2 | 26:LX:60:TYR:OH | 2.28 | 0.41 |
| 1:L5:980:U:H2' | 1:L5:981:C:C6 | 2.56 | 0.41 |
| 1:L5:1278:C:H2' | 1:L5:1279:A:O4' | 2.21 | 0.41 |
| 1:L5:1677:U:H4' | 1:L5:1680:G:C2 | 2.55 | 0.41 |
| 1:L5:4139:G:H1' | 1:L5:4146:G:N1 | 2.35 | 0.41 |
| 1:L5:4147:G:H2' | 1:L5:4148:C:C6 | 2.55 | 0.41 |
| 1:L5:4541:G:N2 | 1:L5:4544:A:OP2 | 2.38 | 0.41 |
| 1:L5:4591:U:H2' | 1:L5:4592:C:C6 | 2.55 | 0.41 |
| 1:L5:5006:U:H4' | 1:L5:5007:A:H5' | 2.03 | 0.41 |
| 1:L5:5018:C:H2' | 1:L5:5019:A:H8 | 1.85 | 0.41 |
| 9:LF:162:ILE:HD12 | 9:LF:167:ILE:HB | 2.02 | 0.41 |
| 27:LY:130:LYS:HA | 27:LY:130:LYS:HD3 | 1.79 | 0.41 |
| 43:Lo:22:LYS:HE2 | 43:Lo:22:LYS:HB3 | 1.80 | 0.41 |
| 47:S2:110:U:H2' | 47:S2:111:A:H8 | 1.86 | 0.41 |
| 47:S2:527:C:H4' | 71:SJ:121:LYS:HE2 | 2.02 | 0.41 |
| 47:S2:1468:C:H2' | 47:S2:1469:A:H8 | 1.84 | 0.41 |
| 49:SB:52:THR:HG1 | 49:SB:58:ALA:H | 1.68 | 0.41 |
| 49:SB:67:PHE:HD2 | 74:SO:47:LEU:HG | 1.85 | 0.41 |
| 50:SD:48:ILE:HB | 50:SD:86:LEU:HD23 | 2.02 | 0.41 |
| 58:SQ:34:VAL:HA | 58:SQ:70:VAL:HG22 | 2.01 | 0.41 |
| 82:CB:35:LEU:HD12 | 82:CB:350:LEU:HD11 | 2.02 | 0.41 |
| 82:CB:159:LYS:HE2 | 82:CB:218:LEU:HD11 | 2.02 | 0.41 |
| 1:L5:386:A:OP2 | 27:LY:89:LYS:NZ | 2.37 | 0.41 |
| 1:L5:499:G:N2 | 1:L5:656:C:C2 | 2.89 | 0.41 |
| 1:L5:1340:C:H2' | 1:L5:1341:U:H6 | 1.86 | 0.41 |
| 1:L5:1443:A:C2 | 1:L5:2104:G:H1' | 2.55 | 0.41 |
| 1:L5:1672:U:H2' | 1:L5:1673:U:C6 | 2.56 | 0.41 |
| 1:L5:1867:A:H2' | 1:L5:1868:A:C8 | 2.55 | 0.41 |
| 1:L5:1907:A:H2' | 1:L5:1908:A:C8 | 2.56 | 0.41 |
| 1:L5:2602:G:H2' | 1:L5:2603:C:C6 | 2.56 | 0.41 |
| 1:L5:2634:C:H2' | 1:L5:2635:U:C6 | 2.56 | 0.41 |
| 1:L5:3848:U:H2' | 1:L5:3849:A:C8 | 2.56 | 0.41 |
| 1:L5:3880:G:H2' | 1:L5:3881:G:C8 | 2.56 | 0.41 |
| 1:L5:3958:G:C6 | 83:CC:65:C:N4 | 2.89 | 0.41 |
| 1:L5:3961:G:N2 | 1:L5:3965:A:C5 | 2.74 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:L5:4089:G:H2' | 1:L5:4090:G:H8 | 1.86 | 0.41 |
| 1:L5:4508:C:N3 | 1:L5:4512:U:H5 | 2.18 | 0.41 |
| 1:L5:4759:C:H2' | 1:L5:4760:G:C8 | 2.56 | 0.41 |
| 3:L8:82:A:N7 | 3:L8:84:A:H3' | 2.36 | 0.41 |
| 5:LB:43:LEU:HD23 | 5:LB:183:ILE:HG21 | 2.02 | 0.41 |
| 5:LB:85:VAL:HA | 5:LB:203:GLN:O | 2.21 | 0.41 |
| 6:LC:66:SER:O | 6:LC:66:SER:OG | 2.33 | 0.41 |
| 7:LD:33:ARG:O | 7:LD:37:VAL:HB | 2.21 | 0.41 |
| 7:LD:181:PRO:HD2 | 7:LD:195:HIS:CD2 | 2.56 | 0.41 |
| 10:LG:184:ILE:HD12 | 10:LG:184:ILE:HA | 1.99 | 0.41 |
| 12:LI:52:MET:HE1 | 12:LI:159:PHE:CE2 | 2.56 | 0.41 |
| 13:LJ:56:THR:HA | 13:LJ:63:ARG:HA | 2.03 | 0.41 |
| 16:LN:83:LYS:HB3 | 16:LN:85:VAL:HG12 | 2.03 | 0.41 |
| 18:LP:125:MET:O | 18:LP:140:MET:HA | 2.21 | 0.41 |
| 19:LQ:155:ALA:O | 19:LQ:158:THR:OG1 | 2.37 | 0.41 |
| 24:LV:20:LEU:HA | 24:LV:20:LEU:HD12 | 1.81 | 0.41 |
| 27:LY:53:ASP:OD1 | 27:LY:53:ASP:N | 2.37 | 0.41 |
| 29:La:89:ASN:O | 29:La:93:ASN:HB2 | 2.21 | 0.41 |
| 33:Le:69:MET:HE3 | 33:Le:69:MET:HB2 | 1.93 | 0.41 |
| 36:Lh:24:LEU:HD23 | 36:Lh:24:LEU:HA | 1.94 | 0.41 |
| 39:Lk:12:LEU:HD23 | 39:Lk:12:LEU:HA | 1.87 | 0.41 |
| 45:Lr:64:ILE:HG13 | 45:Lr:78:VAL:HG23 | 2.03 | 0.41 |
| 46:Lz:196:LYS:HA | 46:Lz:196:LYS:HD2 | 1.93 | 0.41 |
| 47:S2:157:U:H4' | 70:SG:59:GLN:HA | 2.02 | 0.41 |
| 47:S2:294:U:OP1 | 56:SL:36:TYR:OH | 2.32 | 0.41 |
| 47:S2:656:G:H5' | 47:S2:662:G:N2 | 2.36 | 0.41 |
| 47:S2:750:C:H5 | 47:S2:793:G:H21 | 1.68 | 0.41 |
| 47:S2:1256:G:H8 | 62:SU:66:ARG:HB2 | 1.85 | 0.41 |
| 47:S2:1317:C:H2' | 47:S2:1318:G:C8 | 2.55 | 0.41 |
| 47:S2:1354:G:N2 | 47:S2:1357:A:OP2 | 2.25 | 0.41 |
| 47:S2:1594:A:N7 | 77:SZ:104:ARG:HD3 | 2.36 | 0.41 |
| 49:SB:142:PHE:HB2 | 49:SB:208:HIS:CE1 | 2.56 | 0.41 |
| 51:SE:141:THR:OG1 | 51:SE:142:HIS:N | 2.53 | 0.41 |
| 53:SH:60:ILE:HG23 | 53:SH:92:VAL:HA | 2.01 | 0.41 |
| 54:SI:76:THR:HB | 54:SI:104:ILE:HD11 | 2.03 | 0.41 |
| 59:SR:93:GLN:C | 59:SR:95:ILE:H | 2.29 | 0.41 |
| 61:ST:5:THR:HG23 | 61:ST:7:LYS:H | 1.86 | 0.41 |
| 62:SU:55:ARG:HE | 62:SU:87:ARG:HH11 | 1.68 | 0.41 |
| 68:Sg:20:GLN:HB3 | 68:Sg:34:ALA:HB3 | 2.02 | 0.41 |
| 68:Sg:135:LEU:H | 68:Sg:135:LEU:HD23 | 1.86 | 0.41 |
| 71:SJ:91:LYS:HG3 | 71:SJ:96:TYR:CG | 2.56 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 74:SO:33:ILE:HB | 74:SO:97:LEU:HD12 | 2.02 | 0.41 |
| 76:SY:87:PRO:HG2 | 76:SY:90:ARG:HH11 | 1.86 | 0.41 |
| 80:Sf:97:LYS:HB2 | 80:Sf:99:LYS:HE2 | 2.02 | 0.41 |
| 81:CA:122:ALA:HB3 | 81:CA:320:LYS:HB3 | 2.02 | 0.41 |
| 82:CB:37:ASP:OD1 | 82:CB:55:ARG:N | 2.46 | 0.41 |
| 82:CB:206:ASP:HB3 | 82:CB:209:LEU:HG | 2.03 | 0.41 |
| 82:CB:689:GLU:O | 82:CB:730:TYR:OH | 2.27 | 0.41 |
| 1:L5:18:C:H2' | 1:L5:19:G:C8 | 2.55 | 0.41 |
| 1:L5:737:C:C4 | 1:L5:739:G:H5" | 2.56 | 0.41 |
| 1:L5:1248:C:H2' | 1:L5:1249:C:H6 | 1.86 | 0.41 |
| 1:L5:1699:A:H61 | 1:L5:1706:A:H4' | 1.86 | 0.41 |
| 1:L5:1837:A:O2' | 22:LT:130:ARG:O | 2.32 | 0.41 |
| 23:LU:106:SER:OG | 23:LU:107:LYS:O | 2.39 | 0.41 |
| 24:LV:27:ASN:O | 24:LV:102:ALA:HA | 2.21 | 0.41 |
| 46:Lz:31:THR:HA | 46:Lz:171:HIS:CD2 | 2.57 | 0.41 |
| 47:S2:367:U:H4' | 47:S2:371:A:C8 | 2.56 | 0.41 |
| 47:S2:1040:G:H2' | 47:S2:1041:G:C8 | 2.56 | 0.41 |
| 47:S2:1199:A:H2' | 47:S2:1200:A:C8 | 2.56 | 0.41 |
| 47:S2:1457:U:H2' | 47:S2:1458:G:C8 | 2.56 | 0.41 |
| 53:SH:20:GLU:HG3 | 53:SH:24:SER:H | 1.86 | 0.41 |
| 54:SI:38:ILE:HD12 | 54:SI:94:LYS:HE2 | 2.02 | 0.41 |
| 60:SS:70:ILE:HG22 | 60:SS:77:TYR:CZ | 2.56 | 0.41 |
| 63:SV:17:CYS:O | 63:SV:21:ASN:N | 2.53 | 0.41 |
| 68:Sg:175:LYS:HB3 | 68:Sg:177:TRP:NE1 | 2.36 | 0.41 |
| 71:SJ:143:ASN:OD1 | 71:SJ:143:ASN:N | 2.50 | 0.41 |
| 77:SZ:91:LEU:HD12 | 77:SZ:91:LEU:HA | 1.94 | 0.41 |
| 81:CA:356:ALA:HA | 81:CA:359:GLN:HE21 | 1.86 | 0.41 |
| 83:CC:20:U:N3 | 83:CC:21:A:O2' | 2.49 | 0.41 |
| 1:L5:186:G:N3 | 1:L5:1366:G:N2 | 2.68 | 0.40 |
| 1:L5:221:C:H2' | 1:L5:222:C:C6 | 2.57 | 0.40 |
| 1:L5:705:G:H2' | 1:L5:706:C:C6 | 2.55 | 0.40 |
| 1:L5:722:G:H2' | 1:L5:723:A:C8 | 2.56 | 0.40 |
| 1:L5:740:G:H2' | 1:L5:741:C:H6 | 1.85 | 0.40 |
| 1:L5:740:G:H2' | 1:L5:741:C:C6 | 2.56 | 0.40 |
| 1:L5:982:U:H2' | 1:L5:983:C:C6 | 2.56 | 0.40 |
| 1:L5:1479:G:H2' | 1:L5:1480:C:C6 | 2.56 | 0.40 |
| 1:L5:1751:A:H2' | 1:L5:1752:G:H8 | 1.86 | 0.40 |
| 1:L5:3727:A:H2' | 1:L5:3728:A:C8 | 2.56 | 0.40 |
| 1:L5:3932:U:H2' | 1:L5:3933:G:H8 | 1.85 | 0.40 |
| 1:L5:4246:G:H2' | 1:L5:4247:G:H8 | 1.86 | 0.40 |
| 1:L5:4416:G:C6 | 1:L5:4427:G:C2 | 3.09 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:L5:4770:U:H2' | 1:L5:4771:C:C6 | 2.56 | 0.40 |
| 1:L5:5024:C:N4 | 1:L5:5029:C:O4' | 2.55 | 0.40 |
| 3:L8:70:G:O2' | 3:L8:87:G:N2 | 2.54 | 0.40 |
| 4:LA:27:ALA:O | 4:LA:128:ARG:NH2 | 2.38 | 0.40 |
| 5:LB:286:LYS:HB3 | 5:LB:332:MET:HB3 | 2.02 | 0.40 |
| 5:LB:288:GLY:HA3 | 5:LB:330:PHE:CE1 | 2.57 | 0.40 |
| 8:LE:223:ARG:HA | 8:LE:224:LYS:HA | 1.68 | 0.40 |
| 14:LL:94:ILE:HA | 14:LL:94:ILE:HD13 | 1.86 | 0.40 |
| 18:LP:53:LEU:HD23 | 18:LP:53:LEU:HA | 1.86 | 0.40 |
| 24:LV:16:ILE:HD11 | 24:LV:56:GLY:HA3 | 2.03 | 0.40 |
| 30:Lb:120:ARG:HA | 30:Lb:121:PRO:HD3 | 1.90 | 0.40 |
| 46:Lz:12:GLU:CD | 46:Lz:19:HIS:HD1 | 2.28 | 0.40 |
| 47:S2:24:C:H42 | 47:S2:650:A:H61 | 0.68 | 0.40 |
| 47:S2:795:A:H2' | 47:S2:796:G:C8 | 2.56 | 0.40 |
| 47:S2:835:C:H4' | 47:S2:836:G:N7 | 2.36 | 0.40 |
| 47:S2:1247:C:OP2 | 84:CD:188:ARG:NH2 | 2.40 | 0.40 |
| 48:SA:143:PRO:HB3 | 63:SV:32:ILE:HD12 | 2.03 | 0.40 |
| 49:SB:36:PRO:HD3 | 49:SB:98:THR:HG23 | 2.03 | 0.40 |
| 54:SI:103:LEU:HD23 | 54:SI:103:LEU:HA | 1.84 | 0.40 |
| 60:SS:9:PHE:CE1 | 60:SS:57:GLY:HA3 | 2.56 | 0.40 |
| 60:SS:15:VAL:HG13 | 60:SS:16:LEU:H | 1.86 | 0.40 |
| 61:ST:112:MET:HE3 | 61:ST:127:GLY:HA2 | 2.03 | 0.40 |
| 61:ST:113:VAL:HA | 61:ST:123:LEU:HA | 2.03 | 0.40 |
| 62:SU:19:ARG:NH1 | 62:SU:90:ASP:OD2 | 2.54 | 0.40 |
| 62:SU:51:LYS:HB2 | 62:SU:90:ASP:HB3 | 2.02 | 0.40 |
| 68:Sg:63:SER:OG | 68:Sg:84:ASP:OD1 | 2.39 | 0.40 |
| 68:Sg:112:ALA:HB3 | 68:Sg:121:VAL:HG22 | 2.03 | 0.40 |
| 68:Sg:121:VAL:HA | 68:Sg:130:LYS:O | 2.21 | 0.40 |
| 72:SM:21:VAL:HA | 72:SM:24:THR:HG22 | 2.03 | 0.40 |
| 83:CC:70:C:H2' | 83:CC:71:C:C6 | 2.56 | 0.40 |
| 1:L5:1220:G:H2' | 1:L5:1221:G:C8 | 2.57 | 0.40 |
| 1:L5:1281:G:N1 | 8:LE:128:HIS:HB2 | 2.36 | 0.40 |
| 1:L5:2375:A:H2' | 1:L5:2376:A:C8 | 2.56 | 0.40 |
| 1:L5:2396:A:N7 | 1:L5:2814:C:O2' | 2.43 | 0.40 |
| 1:L5:3610:A:H2' | 1:L5:3611:A:H8 | 1.85 | 0.40 |
| 1:L5:3944:G:N2 | 1:L5:4069:U:O2 | 2.43 | 0.40 |
| 1:L5:4951:G:H2' | 1:L5:4952:G:H8 | 1.87 | 0.40 |
| 10:LG:120:LYS:HD3 | 10:LG:120:LYS:HA | 1.79 | 0.40 |
| 15:LM:12:VAL:HB | 15:LM:60:PHE:HB2 | 2.04 | 0.40 |
| 16:LN:193:ARG:O | 16:LN:197:THR:HG23 | 2.22 | 0.40 |
| 17:LO:54:TYR:OH | 17:LO:73:PHE:O | 2.39 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 20:LR:15:LEU:HD12 | 20:LR:15:LEU:HA | 1.91 | 0.40 |
| 20:LR:106:LEU:HD23 | 20:LR:106:LEU:HA | 1.88 | 0.40 |
| 43:Lo:34:TYR:O | 43:Lo:39:ARG:NE | 2.48 | 0.40 |
| 47:S2:472:C:O2' | 47:S2:474:G:OP1 | 2.28 | 0.40 |
| 47:S2:931:C:H2' | 47:S2:932:G:C8 | 2.56 | 0.40 |
| 47:S2:946:U:H2' | 47:S2:947:G:C8 | 2.57 | 0.40 |
| 52:SF:42:LYS:HD3 | 52:SF:42:LYS:HA | 1.91 | 0.40 |
| 53:SH:155:LYS:HB2 | 53:SH:155:LYS:HE2 | 1.86 | 0.40 |
| 54:SI:177:SER:OG | 54:SI:178:ARG:N | 2.54 | 0.40 |
| 68:Sg:65:PHE:HB2 | 68:Sg:83:TRP:CD1 | 2.56 | 0.40 |
| 68:Sg:194:TYR:CE2 | 68:Sg:212:LYS:HD3 | 2.57 | 0.40 |
| 69:SC:240:THR:O | 69:SC:244:ILE:HG13 | 2.21 | 0.40 |
| 76:SY:15:ASN:OD1 | 76:SY:15:ASN:N | 2.52 | 0.40 |
| 81:CA:14:GLU:O | 81:CA:18:VAL:HG23 | 2.21 | 0.40 |
| 82:CB:745:TYR:CE1 | 82:CB:790:VAL:HG12 | 2.56 | 0.40 |
| 1:L5:471:A:N6 | 1:L5:684:G:N1 | 2.63 | 0.40 |
| 1:L5:1097:C:H2' | 1:L5:1098:G:H8 | 1.86 | 0.40 |
| 1:L5:1100:U:C4 | 1:L5:1195:G:O6 | 2.74 | 0.40 |
| 1:L5:1274:A:O2' | 1:L5:1275:G:H8 | 2.05 | 0.40 |
| 1:L5:1554:A:OP2 | 44:Lp:4:ARG:NE | 2.54 | 0.40 |
| 1:L5:2485:U:H1' | 1:L5:2486:G:N1 | 2.36 | 0.40 |
| 1:L5:2647:A:H3' | 1:L5:2648:G:H8 | 1.86 | 0.40 |
| 1:L5:2666:U:O4 | 20:LR:128:LYS:HE2 | 2.21 | 0.40 |
| 1:L5:3606:U:H2' | 1:L5:3607:U:H6 | 1.86 | 0.40 |
| 1:L5:3610:A:H2' | 1:L5:3611:A:C8 | 2.56 | 0.40 |
| 8:LE:277:LEU:HD23 | 8:LE:277:LEU:HA | 1.94 | 0.40 |
| 9:LF:179:LEU:HB3 | 9:LF:184:ILE:HB | 2.02 | 0.40 |
| 10:LG:89:ARG:O | 10:LG:93:THR:HG23 | 2.22 | 0.40 |
| 15:LM:139:SER:HA | 15:LM:140:PRO:HD3 | 1.95 | 0.40 |
| 23:LU:27:HIS:HA | 23:LU:30:GLU:HG2 | 2.03 | 0.40 |
| 24:LV:58:GLY:HA2 | 24:LV:125:CYS:HB3 | 2.03 | 0.40 |
| 24:LV:99:GLU:HG3 | 25:LW:23:ARG:HA | 2.02 | 0.40 |
| 47:S2:368:U:H3' | 47:S2:369:C:H3' | 2.03 | 0.40 |
| 47:S2:480:G:H5' | 82:CB:407:LYS:HD3 | 2.03 | 0.40 |
| 47:S2:1172:U:H2' | 47:S2:1173:A:H8 | 1.87 | 0.40 |
| 47:S2:1317:C:H2' | 47:S2:1318:G:H8 | 1.86 | 0.40 |
| 47:S2:1344:A:N1 | 47:S2:1385:G:O2' | 2.48 | 0.40 |
| 48:SA:183:LEU:HB3 | 48:SA:188:THR:OG1 | 2.22 | 0.40 |
| 50:SD:61:GLU:H | 50:SD:64:ARG:HB2 | 1.86 | 0.40 |
| 52:SF:149:GLN:O | 52:SF:153:LEU:HG | 2.20 | 0.40 |
| 60:SS:36:VAL:HG13 | 60:SS:40:TYR:HD2 | 1.87 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 68:Sg:87:LEU:HD21 | 68:Sg:122:SER:HB3 | 2.03 | 0.40 |
| 75:SW:37:PHE:HE1 | 75:SW:103:VAL:HG11 | 1.87 | 0.40 |
| 76:SY:99:LYS:HB3 | 76:SY:99:LYS:HE2 | 1.77 | 0.40 |
| 81:CA:78:THR:HA | 81:CA:109:ASP:O | 2.21 | 0.40 |
| 82:CB:325:SER:HB2 | 82:CB:326:GLU:H | 1.72 | 0.40 |
| 82:CB:402:VAL:HG13 | 82:CB:411:TYR:HB2 | 2.04 | 0.40 |
| 82:CB:453:MET:C | 82:CB:454:MET:HE2 | 2.47 | 0.40 |
| 1:L5:223:G:N3 | 6:LC:223:ASN:ND2 | 2.66 | 0.40 |
| 1:L5:519:C:H1' | 1:L5:643:C:C2 | 2.56 | 0.40 |
| 1:L5:1247:U:H2' | 1:L5:1248:C:C6 | 2.56 | 0.40 |
| 1:L5:2009:A:N7 | 82:CB:753:GLU:OE2 | 2.55 | 0.40 |
| 1:L5:2362:U:H2' | 1:L5:2363:A:H8 | 1.85 | 0.40 |
| 1:L5:2639:U:O2' | 1:L5:2694:G:O6 | 2.40 | 0.40 |
| 1:L5:3681:G:OP2 | 4:LA:128:ARG:NH1 | 2.47 | 0.40 |
| 1:L5:4772:C:N3 | 1:L5:4863:G:N1 | 2.69 | 0.40 |
| 1:L5:4906:C:H2' | 1:L5:4907:G:H8 | 1.86 | 0.40 |
| 5:LB:150:PHE:HD1 | 5:LB:194:LEU:HD21 | 1.86 | 0.40 |
| 7:LD:208:MET:O | 7:LD:212:MET:CB | 2.69 | 0.40 |
| 17:LO:80:PHE:O | 17:LO:83:THR:OG1 | 2.36 | 0.40 |
| 24:LV:111:GLU:N | 24:LV:111:GLU:OE1 | 2.54 | 0.40 |
| 36:Lh:71:LYS:HA | 36:Lh:71:LYS:HD2 | 1.93 | 0.40 |
| 47:S2:1507:G:H22 | 80:Sf:87:THR:H | 1.68 | 0.40 |
| 47:S2:1660:C:H3' | 67:Sd:32:ARG:HH22 | 1.86 | 0.40 |
| 48:SA:38:ILE:HD12 | 48:SA:38:ILE:HA | 1.85 | 0.40 |
| 52:SF:102:LEU:HD11 | 77:SZ:110:THR:HB | 2.03 | 0.40 |
| 57:SP:95:GLY:HA2 | 57:SP:103:ASN:O | 2.20 | 0.40 |
| 60:SS:34:LYS:HE3 | 60:SS:34:LYS:HB3 | 1.96 | 0.40 |
| 65:Sa:49:ALA:HB1 | 74:SO:117:ARG:HG3 | 2.04 | 0.40 |
| 68:Sg:44:LYS:HD3 | 68:Sg:44:LYS:HA | 1.87 | 0.40 |
| 70:SG:147:LEU:HB3 | 70:SG:151:ASP:HB2 | 2.02 | 0.40 |
| 71:SJ:146:SER:O | 71:SJ:146:SER:OG | 2.30 | 0.40 |
| 72:SM:77:ILE:HD13 | 72:SM:77:ILE:HA | 1.89 | 0.40 |
| 73:SN:118:ILE:HD13 | 73:SN:121:ARG:HH11 | 1.86 | 0.40 |
| 81:CA:12:ILE:HD12 | 81:CA:17:VAL:HG12 | 2.04 | 0.40 |
| 81:CA:90:SER:HB2 | 81:CA:281:ARG:HH12 | 1.86 | 0.40 |
| 82:CB:376:PRO:HA | 82:CB:377:PRO:HD3 | 1.96 | 0.40 |
| 83:CC:7:G:O2' | 83:CC:58:G:O4' | 2.37 | 0.40 |
| 1:L5:2341:A:OP2 | 29:La:4:ARG:NH2 | 2.45 | 0.40 |
| 3:L8:83:C:H42 | 27:LY:50:ARG:NH2 | 2.18 | 0.40 |
| 6:LC:161:TYR:HD1 | 6:LC:161:TYR:HA | 1.78 | 0.40 |
| 12:LI:51:HIS:HB3 | 12:LI:134:VAL:HG13 | 2.02 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 14:LL:63:THR:O | 14:LL:67:HIS:N | 2.54 | 0.40 |
| 17:LO:191:LYS:HE2 | 17:LO:191:LYS:HB3 | 1.84 | 0.40 |
| 17:LO:202:LEU:HD23 | 17:LO:202:LEU:HA | 1.86 | 0.40 |
| 19:LQ:35:LEU:HD23 | 19:LQ:35:LEU:HA | 1.94 | 0.40 |
| 19:LQ:90:VAL:HB | 29:La:80:THR:HG21 | 2.03 | 0.40 |
| 21:LS:17:LEU:HD12 | 21:LS:58:SER:HA | 2.04 | 0.40 |
| 31:Lc:82:GLY:HA2 | 31:Lc:91:VAL:HG12 | 2.04 | 0.40 |
| 36:Lh:113:LEU:HD23 | 36:Lh:113:LEU:HA | 1.85 | 0.40 |
| 38:Lj:83:THR:HA | 38:Lj:84:PRO:HD3 | 1.96 | 0.40 |
| 42:Ln:2:ARG:NE | 47:S2:1842:C:OP2 | 2.43 | 0.40 |
| 47:S2:55:U:OP1 | 47:S2:451:G:N1 | 2.46 | 0.40 |
| 47:S2:1545:A:H2 | 47:S2:1671:G:H1' | 1.87 | 0.40 |
| 47:S2:1657:G:H2' | 47:S2:1658:G:C8 | 2.57 | 0.40 |
| 47:S2:1687:C:H2' | 47:S2:1688:C:H6 | 1.86 | 0.40 |
| 50:SD:148:LYS:HE3 | 50:SD:148:LYS:HB2 | 1.97 | 0.40 |
| 56:SL:82:MET:HE3 | 56:SL:85:THR:HG23 | 2.03 | 0.40 |
| 61:ST:64:LEU:HA | 61:ST:64:LEU:HD23 | 1.90 | 0.40 |
| 68:Sg:174:VAL:HB | 68:Sg:188:HIS:HB2 | 2.03 | 0.40 |
| 70:SG:132:ARG:HA | 70:SG:132:ARG:HD2 | 1.93 | 0.40 |
| 72:SM:31:LEU:HA | 72:SM:112:LYS:HZ2 | 1.86 | 0.40 |
| 82:CB:58:ASP:O | 82:CB:64:GLN:NE2 | 2.53 | 0.40 |
| 82:CB:488:PHE:CZ | 82:CB:490:HIS:HB2 | 2.57 | 0.40 |
| 82:CB:686:ALA:HB2 | 82:CB:726:ARG:HG3 | 2.03 | 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 PDB entries followed by that with respect to all EM entries.

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

| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles |
|---|---|---|---|---|---|---|
| 4 | LA | 246/257 (96%) | 221 (90%) | 24 (10%) | 1 (0%) | 30 61 |
| 5 | LB | 400/403 (99%) | 371 (93%) | 27 (7%) | 2 (0%) | 24 57 |

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| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|---|---|---|---|---|---|---|---|
| 6 | LC | 366/427 (86%) | 335 (92%) | 31 (8%) | 0 | 100 | 100 |
| 7 | LD | 291/297 (98%) | 266 (91%) | 25 (9%) | 0 | 100 | 100 |
| 8 | LE | 232/288 (81%) | 210 (90%) | 21 (9%) | 1 (0%) | 30 | 61 |
| 9 | LF | 223/248 (90%) | 210 (94%) | 13 (6%) | 0 | 100 | 100 |
| 10 | LG | 239/266 (90%) | 218 (91%) | 21 (9%) | 0 | 100 | 100 |
| 11 | LH | 188/192 (98%) | 171 (91%) | 17 (9%) | 0 | 100 | 100 |
| 12 | LI | 198/214 (92%) | 181 (91%) | 17 (9%) | 0 | 100 | 100 |
| 13 | LJ | 174/178 (98%) | 155 (89%) | 18 (10%) | 1 (1%) | 21 | 52 |
| 14 | LL | 208/211 (99%) | 190 (91%) | 18 (9%) | 0 | 100 | 100 |
| 15 | LM | 137/215 (64%) | 124 (90%) | 12 (9%) | 1 (1%) | 18 | 49 |
| 16 | LN | 201/204 (98%) | 185 (92%) | 15 (8%) | 1 (0%) | 24 | 57 |
| 17 | LO | 199/203 (98%) | 188 (94%) | 11 (6%) | 0 | 100 | 100 |
| 18 | LP | 151/184 (82%) | 140 (93%) | 11 (7%) | 0 | 100 | 100 |
| 19 | LQ | 185/188 (98%) | 177 (96%) | 8 (4%) | 0 | 100 | 100 |
| 20 | LR | 185/196 (94%) | 180 (97%) | 5 (3%) | 0 | 100 | 100 |
| 21 | LS | 173/176 (98%) | 161 (93%) | 12 (7%) | 0 | 100 | 100 |
| 22 | LT | 157/160 (98%) | 143 (91%) | 14 (9%) | 0 | 100 | 100 |
| 23 | LU | 99/128 (77%) | 83 (84%) | 16 (16%) | 0 | 100 | 100 |
| 24 | LV | 129/140 (92%) | 119 (92%) | 10 (8%) | 0 | 100 | 100 |
| 25 | LW | 114/157 (73%) | 108 (95%) | 6 (5%) | 0 | 100 | 100 |
| 26 | LX | 118/156 (76%) | 110 (93%) | 8 (7%) | 0 | 100 | 100 |
| 27 | LY | 132/145 (91%) | 121 (92%) | 11 (8%) | 0 | 100 | 100 |
| 28 | LZ | 133/136 (98%) | 119 (90%) | 14 (10%) | 0 | 100 | 100 |
| 29 | La | 145/148 (98%) | 137 (94%) | 8 (6%) | 0 | 100 | 100 |
| 30 | Lb | 105/159 (66%) | 96 (91%) | 9 (9%) | 0 | 100 | 100 |
| 31 | Lc | 96/115 (84%) | 90 (94%) | 6 (6%) | 0 | 100 | 100 |
| 32 | Ld | 105/125 (84%) | 96 (91%) | 9 (9%) | 0 | 100 | 100 |
| 33 | Le | 126/135 (93%) | 119 (94%) | 6 (5%) | 1 (1%) | 16 | 47 |
| 34 | Lf | 107/110 (97%) | 98 (92%) | 7 (6%) | 2 (2%) | 6 | 27 |
| 35 | Lg | 112/117 (96%) | 109 (97%) | 3 (3%) | 0 | 100 | 100 |
| 36 | Lh | 120/123 (98%) | 116 (97%) | 4 (3%) | 0 | 100 | 100 |

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| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|---|---|---|---|---|---|---|---|
| 37 | Li | 100/105 (95%) | 95 (95%) | 5 (5%) | 0 | 100 | 100 |
| 38 | Lj | 84/97 (87%) | 76 (90%) | 8 (10%) | 0 | 100 | 100 |
| 39 | Lk | 67/70 (96%) | 64 (96%) | 3 (4%) | 0 | 100 | 100 |
| 40 | Ll | 48/51 (94%) | 46 (96%) | 2 (4%) | 0 | 100 | 100 |
| 41 | Lm | 50/128 (39%) | 49 (98%) | 1 (2%) | 0 | 100 | 100 |
| 42 | Ln | 22/25 (88%) | 22 (100%) | 0 | 0 | 100 | 100 |
| 43 | Lo | 103/106 (97%) | 97 (94%) | 6 (6%) | 0 | 100 | 100 |
| 44 | Lp | 89/92 (97%) | 85 (96%) | 4 (4%) | 0 | 100 | 100 |
| 45 | Lr | 123/137 (90%) | 117 (95%) | 6 (5%) | 0 | 100 | 100 |
| 46 | Lz | 215/217 (99%) | 159 (74%) | 55 (26%) | 1 (0%) | 24 | 57 |
| 48 | SA | 219/295 (74%) | 196 (90%) | 23 (10%) | 0 | 100 | 100 |
| 49 | SB | 212/264 (80%) | 201 (95%) | 11 (5%) | 0 | 100 | 100 |
| 50 | SD | 225/243 (93%) | 204 (91%) | 21 (9%) | 0 | 100 | 100 |
| 51 | SE | 260/263 (99%) | 238 (92%) | 22 (8%) | 0 | 100 | 100 |
| 52 | SF | 187/204 (92%) | 162 (87%) | 25 (13%) | 0 | 100 | 100 |
| 53 | SH | 182/194 (94%) | 155 (85%) | 27 (15%) | 0 | 100 | 100 |
| 54 | SI | 204/208 (98%) | 194 (95%) | 10 (5%) | 0 | 100 | 100 |
| 55 | SK | 96/165 (58%) | 83 (86%) | 13 (14%) | 0 | 100 | 100 |
| 56 | SL | 151/158 (96%) | 141 (93%) | 10 (7%) | 0 | 100 | 100 |
| 57 | SP | 119/145 (82%) | 108 (91%) | 11 (9%) | 0 | 100 | 100 |
| 58 | SQ | 142/146 (97%) | 125 (88%) | 16 (11%) | 1 (1%) | 18 | 49 |
| 59 | SR | 133/135 (98%) | 121 (91%) | 12 (9%) | 0 | 100 | 100 |
| 60 | SS | 143/152 (94%) | 127 (89%) | 16 (11%) | 0 | 100 | 100 |
| 61 | ST | 141/145 (97%) | 127 (90%) | 13 (9%) | 1 (1%) | 18 | 49 |
| 62 | SU | 102/119 (86%) | 90 (88%) | 12 (12%) | 0 | 100 | 100 |
| 63 | SV | 81/83 (98%) | 74 (91%) | 7 (9%) | 0 | 100 | 100 |
| 64 | SX | 139/143 (97%) | 125 (90%) | 11 (8%) | 3 (2%) | 5 | 24 |
| 65 | Sa | 100/115 (87%) | 90 (90%) | 9 (9%) | 1 (1%) | 12 | 41 |
| 66 | Sc | 62/69 (90%) | 48 (77%) | 14 (23%) | 0 | 100 | 100 |
| 67 | Sd | 53/56 (95%) | 50 (94%) | 2 (4%) | 1 (2%) | 6 | 27 |
| 68 | Sg | 311/317 (98%) | 265 (85%) | 46 (15%) | 0 | 100 | 100 |

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| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|---|---|---|---|---|---|---|---|
| 69 | SC | 220/293 (75%) | 204 (93%) | 16 (7%) | 0 | 100 | 100 |
| 70 | SG | 235/249 (94%) | 220 (94%) | 15 (6%) | 0 | 100 | 100 |
| 71 | SJ | 183/194 (94%) | 168 (92%) | 15 (8%) | 0 | 100 | 100 |
| 72 | SM | 120/132 (91%) | 109 (91%) | 11 (9%) | 0 | 100 | 100 |
| 73 | SN | 148/151 (98%) | 140 (95%) | 8 (5%) | 0 | 100 | 100 |
| 74 | SO | 138/151 (91%) | 129 (94%) | 9 (6%) | 0 | 100 | 100 |
| 75 | SW | 127/130 (98%) | 119 (94%) | 8 (6%) | 0 | 100 | 100 |
| 76 | SY | 129/133 (97%) | 120 (93%) | 9 (7%) | 0 | 100 | 100 |
| 77 | SZ | 73/125 (58%) | 61 (84%) | 12 (16%) | 0 | 100 | 100 |
| 78 | Sb | 81/84 (96%) | 69 (85%) | 12 (15%) | 0 | 100 | 100 |
| 79 | Se | 56/59 (95%) | 47 (84%) | 9 (16%) | 0 | 100 | 100 |
| 80 | Sf | 65/156 (42%) | 49 (75%) | 16 (25%) | 0 | 100 | 100 |
| 81 | CA | 350/394 (89%) | 335 (96%) | 15 (4%) | 0 | 100 | 100 |
| 82 | CB | 842/858 (98%) | 780 (93%) | 59 (7%) | 3 (0%) | 30 | 61 |
| 84 | CD | 51/408 (12%) | 47 (92%) | 4 (8%) | 0 | 100 | 100 |
| All | All | 12775/14565 (88%) | 11678 (91%) | 1076 (8%) | 21 (0%) | 44 | 73 |

All (21) Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|---|---|---|---|
| 16 | LN | 124 | ASP |
| 64 | SX | 127 | ASN |
| 65 | Sa | 47 | ALA |
| 82 | CB | 56 | PHE |
| 82 | CB | 326 | GLU |
| 15 | LM | 88 | ALA |
| 61 | ST | 41 | LYS |
| 82 | CB | 325 | SER |
| 5 | LB | 4 | ARG |
| 34 | Lf | 80 | ASN |
| 5 | LB | 302 | ASN |
| 13 | LJ | 18 | ARG |
| 46 | Lz | 18 | LEU |
| 64 | SX | 87 | ASN |
| 64 | SX | 126 | ALA |
| 67 | Sd | 14 | PHE |
| 4 | LA | 55 | GLY |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 8 | LE | 179 | LEU |
| 33 | Le | 73 | GLY |
| 34 | Lf | 107 | PRO |
| 58 | SQ | 44 | PRO |

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

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

| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles |
|---|---|---|---|---|---|
| 4 | LA | 190/199 (96%) | 187 (98%) | 3 (2%) | 55 75 |
| 5 | LB | 348/349 (100%) | 347 (100%) | 1 (0%) | 86 87 |
| 6 | LC | 306/348 (88%) | 305 (100%) | 1 (0%) | 86 87 |
| 7 | LD | 246/250 (98%) | 246 (100%) | 0 | 100 100 |
| 8 | LE | 209/252 (83%) | 209 (100%) | 0 | 100 100 |
| 9 | LF | 194/215 (90%) | 194 (100%) | 0 | 100 100 |
| 10 | LG | 203/223 (91%) | 203 (100%) | 0 | 100 100 |
| 11 | LH | 169/171 (99%) | 169 (100%) | 0 | 100 100 |
| 12 | LI | 172/181 (95%) | 171 (99%) | 1 (1%) | 78 83 |
| 13 | LJ | 148/149 (99%) | 147 (99%) | 1 (1%) | 76 82 |
| 14 | LL | 176/177 (99%) | 176 (100%) | 0 | 100 100 |
| 15 | LM | 118/161 (73%) | 116 (98%) | 2 (2%) | 53 74 |
| 16 | LN | 171/172 (99%) | 171 (100%) | 0 | 100 100 |
| 17 | LO | 173/174 (99%) | 173 (100%) | 0 | 100 100 |
| 18 | LP | 134/163 (82%) | 133 (99%) | 1 (1%) | 76 82 |
| 19 | LQ | 164/165 (99%) | 163 (99%) | 1 (1%) | 78 83 |
| 20 | LR | 166/175 (95%) | 165 (99%) | 1 (1%) | 78 83 |
| 21 | LS | 156/157 (99%) | 155 (99%) | 1 (1%) | 78 83 |
| 22 | LT | 139/140 (99%) | 139 (100%) | 0 | 100 100 |
| 23 | LU | 91/115 (79%) | 91 (100%) | 0 | 100 100 |

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| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles |
|---|---|---|---|---|---|
| 24 | LV | 101/107 (94%) | 100 (99%) | 1 (1%) | 68 79 |
| 25 | LW | 97/126 (77%) | 97 (100%) | 0 | 100 100 |
| 26 | LX | 108/133 (81%) | 107 (99%) | 1 (1%) | 70 80 |
| 27 | LY | 124/135 (92%) | 124 (100%) | 0 | 100 100 |
| 28 | LZ | 117/118 (99%) | 117 (100%) | 0 | 100 100 |
| 29 | La | 120/121 (99%) | 119 (99%) | 1 (1%) | 73 81 |
| 30 | Lb | 88/126 (70%) | 88 (100%) | 0 | 100 100 |
| 31 | Lc | 83/97 (86%) | 82 (99%) | 1 (1%) | 63 78 |
| 32 | Ld | 98/110 (89%) | 97 (99%) | 1 (1%) | 68 79 |
| 33 | Le | 114/121 (94%) | 112 (98%) | 2 (2%) | 51 73 |
| 34 | Lf | 88/89 (99%) | 87 (99%) | 1 (1%) | 65 78 |
| 35 | Lg | 98/100 (98%) | 98 (100%) | 0 | 100 100 |
| 36 | Lh | 109/110 (99%) | 109 (100%) | 0 | 100 100 |
| 37 | Li | 86/89 (97%) | 86 (100%) | 0 | 100 100 |
| 38 | Lj | 73/80 (91%) | 72 (99%) | 1 (1%) | 59 76 |
| 39 | Lk | 64/65 (98%) | 63 (98%) | 1 (2%) | 55 75 |
| 40 | Ll | 47/48 (98%) | 47 (100%) | 0 | 100 100 |
| 41 | Lm | 48/116 (41%) | 48 (100%) | 0 | 100 100 |
| 42 | Ln | 23/24 (96%) | 23 (100%) | 0 | 100 100 |
| 43 | Lo | 93/94 (99%) | 93 (100%) | 0 | 100 100 |
| 44 | Lp | 74/75 (99%) | 74 (100%) | 0 | 100 100 |
| 45 | Lr | 109/121 (90%) | 108 (99%) | 1 (1%) | 70 80 |
| 46 | Lz | 195/196 (100%) | 195 (100%) | 0 | 100 100 |
| 48 | SA | 183/243 (75%) | 182 (100%) | 1 (0%) | 81 85 |
| 49 | SB | 195/231 (84%) | 195 (100%) | 0 | 100 100 |
| 50 | SD | 190/202 (94%) | 190 (100%) | 0 | 100 100 |
| 51 | SE | 224/225 (100%) | 223 (100%) | 1 (0%) | 84 86 |
| 52 | SF | 159/170 (94%) | 159 (100%) | 0 | 100 100 |
| 53 | SH | 166/174 (95%) | 164 (99%) | 2 (1%) | 63 78 |
| 54 | SI | 178/180 (99%) | 176 (99%) | 2 (1%) | 65 78 |
| 55 | SK | 89/136 (65%) | 89 (100%) | 0 | 100 100 |

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| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles | |
|---|---|---|---|---|---|---|
| 56 | SL | 137/142 (96%) | 137 (100%) | 0 | 100 | 100 |
| 57 | SP | 107/130 (82%) | 107 (100%) | 0 | 100 | 100 |
| 58 | SQ | 119/121 (98%) | 117 (98%) | 2 (2%) | 53 | 74 |
| 59 | SR | 122/122 (100%) | 122 (100%) | 0 | 100 | 100 |
| 60 | SS | 126/132 (96%) | 125 (99%) | 1 (1%) | 73 | 81 |
| 61 | ST | 113/115 (98%) | 113 (100%) | 0 | 100 | 100 |
| 62 | SU | 94/107 (88%) | 94 (100%) | 0 | 100 | 100 |
| 63 | SV | 67/67 (100%) | 67 (100%) | 0 | 100 | 100 |
| 64 | SX | 113/115 (98%) | 112 (99%) | 1 (1%) | 70 | 80 |
| 65 | Sa | 89/98 (91%) | 88 (99%) | 1 (1%) | 65 | 78 |
| 66 | Sc | 57/62 (92%) | 57 (100%) | 0 | 100 | 100 |
| 67 | Sd | 48/49 (98%) | 48 (100%) | 0 | 100 | 100 |
| 68 | Sg | 272/275 (99%) | 272 (100%) | 0 | 100 | 100 |
| 69 | SC | 188/225 (84%) | 188 (100%) | 0 | 100 | 100 |
| 70 | SG | 207/218 (95%) | 205 (99%) | 2 (1%) | 68 | 79 |
| 71 | SJ | 161/168 (96%) | 159 (99%) | 2 (1%) | 63 | 78 |
| 72 | SM | 102/108 (94%) | 102 (100%) | 0 | 100 | 100 |
| 73 | SN | 130/131 (99%) | 129 (99%) | 1 (1%) | 73 | 81 |
| 74 | SO | 110/119 (92%) | 110 (100%) | 0 | 100 | 100 |
| 75 | SW | 112/113 (99%) | 112 (100%) | 0 | 100 | 100 |
| 76 | SY | 113/115 (98%) | 113 (100%) | 0 | 100 | 100 |
| 77 | SZ | 66/103 (64%) | 66 (100%) | 0 | 100 | 100 |
| 78 | Sb | 75/76 (99%) | 75 (100%) | 0 | 100 | 100 |
| 79 | Se | 47/48 (98%) | 47 (100%) | 0 | 100 | 100 |
| 80 | Sf | 60/140 (43%) | 60 (100%) | 0 | 100 | 100 |
| 81 | CA | 303/336 (90%) | 303 (100%) | 0 | 100 | 100 |
| 82 | CB | 722/730 (99%) | 717 (99%) | 5 (1%) | 76 | 82 |
| 84 | CD | 46/328 (14%) | 46 (100%) | 0 | 100 | 100 |
| All | All | 11120/12391 (90%) | 11075 (100%) | 45 (0%) | 81 | 86 |

All (45) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|---|---|---|---|
| 4 | LA | 4 | VAL |
| 4 | LA | 45 | VAL |
| 4 | LA | 207 | VAL |
| 5 | LB | 101 | THR |
| 6 | LC | 73 | VAL |
| 12 | LI | 44 | ASP |
| 13 | LJ | 47 | THR |
| 15 | LM | 25 | VAL |
| 15 | LM | 38 | VAL |
| 18 | LP | 36 | ILE |
| 19 | LQ | 83 | VAL |
| 20 | LR | 30 | ASN |
| 21 | LS | 129 | VAL |
| 24 | LV | 65 | VAL |
| 26 | LX | 147 | LEU |
| 29 | La | 15 | VAL |
| 31 | Lc | 78 | ASN |
| 32 | Ld | 56 | GLU |
| 33 | Le | 34 | ASN |
| 33 | Le | 45 | VAL |
| 34 | Lf | 33 | VAL |
| 38 | Lj | 83 | THR |
| 39 | Lk | 10 | ASP |
| 45 | Lr | 21 | ASN |
| 48 | SA | 49 | ILE |
| 51 | SE | 69 | PHE |
| 53 | SH | 146 | VAL |
| 53 | SH | 166 | VAL |
| 54 | SI | 76 | THR |
| 54 | SI | 130 | THR |
| 58 | SQ | 34 | VAL |
| 58 | SQ | 118 | THR |
| 60 | SS | 103 | LEU |
| 64 | SX | 85 | VAL |
| 65 | Sa | 87 | ARG |
| 70 | SG | 102 | VAL |
| 70 | SG | 217 | MET |
| 71 | SJ | 61 | LEU |
| 71 | SJ | 97 | ILE |
| 73 | SN | 102 | LEU |
| 82 | CB | 28 | VAL |
| 82 | CB | 109 | VAL |
| 82 | CB | 212 | VAL |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 82 | CB | 329 | ASP |
| 82 | CB | 657 | THR |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (173) such sidechains are listed below:

| Mol | Chain | Res | Type |
|---|---|---|---|
| 4 | LA | 162 | ASN |
| 4 | LA | 205 | ASN |
| 4 | LA | 216 | HIS |
| 5 | LB | 184 | GLN |
| 5 | LB | 204 | GLN |
| 5 | LB | 258 | HIS |
| 5 | LB | 302 | ASN |
| 6 | LC | 178 | ASN |
| 6 | LC | 317 | ASN |
| 6 | LC | 329 | ASN |
| 6 | LC | 347 | HIS |
| 7 | LD | 131 | ASN |
| 7 | LD | 191 | ASN |
| 7 | LD | 229 | ASN |
| 7 | LD | 250 | ASN |
| 7 | LD | 267 | ASN |
| 7 | LD | 282 | GLN |
| 7 | LD | 291 | GLN |
| 8 | LE | 266 | GLN |
| 9 | LF | 24 | ASN |
| 9 | LF | 39 | GLN |
| 10 | LG | 159 | HIS |
| 11 | LH | 7 | ASN |
| 11 | LH | 42 | ASN |
| 11 | LH | 98 | HIS |
| 11 | LH | 106 | GLN |
| 11 | LH | 140 | GLN |
| 11 | LH | 189 | GLN |
| 12 | LI | 73 | ASN |
| 12 | LI | 144 | ASN |
| 13 | LJ | 98 | ASN |
| 14 | LL | 111 | GLN |
| 14 | LL | 205 | GLN |
| 16 | LN | 8 | GLN |
| 16 | LN | 32 | GLN |
| 16 | LN | 37 | HIS |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 17 | LO | 26 | GLN |
| 17 | LO | 143 | HIS |
| 17 | LO | 173 | GLN |
| 17 | LO | 180 | GLN |
| 17 | LO | 184 | ASN |
| 18 | LP | 72 | GLN |
| 18 | LP | 75 | GLN |
| 18 | LP | 116 | HIS |
| 19 | LQ | 7 | HIS |
| 19 | LQ | 21 | GLN |
| 19 | LQ | 44 | ASN |
| 19 | LQ | 125 | GLN |
| 19 | LQ | 160 | HIS |
| 19 | LQ | 188 | ASN |
| 20 | LR | 7 | GLN |
| 20 | LR | 34 | ASN |
| 20 | LR | 39 | GLN |
| 20 | LR | 86 | ASN |
| 21 | LS | 37 | HIS |
| 22 | LT | 66 | ASN |
| 23 | LU | 17 | GLN |
| 24 | LV | 36 | ASN |
| 24 | LV | 77 | HIS |
| 25 | LW | 79 | GLN |
| 27 | LY | 43 | ASN |
| 27 | LY | 66 | GLN |
| 28 | LZ | 78 | ASN |
| 29 | La | 28 | HIS |
| 30 | Lb | 6 | ASN |
| 30 | Lb | 60 | ASN |
| 33 | Le | 23 | HIS |
| 33 | Le | 43 | ASN |
| 33 | Le | 57 | ASN |
| 33 | Le | 80 | HIS |
| 33 | Le | 107 | ASN |
| 34 | Lf | 80 | ASN |
| 34 | Lf | 99 | HIS |
| 37 | Li | 80 | HIS |
| 38 | Lj | 30 | GLN |
| 38 | Lj | 66 | HIS |
| 40 | Ll | 38 | ASN |
| 41 | Lm | 117 | HIS |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 43 | Lo | 45 | GLN |
| 43 | Lo | 51 | GLN |
| 44 | Lp | 34 | HIS |
| 44 | Lp | 56 | HIS |
| 45 | Lr | 100 | ASN |
| 46 | Lz | 140 | HIS |
| 46 | Lz | 143 | ASN |
| 48 | SA | 9 | GLN |
| 48 | SA | 141 | ASN |
| 49 | SB | 43 | ASN |
| 49 | SB | 75 | GLN |
| 49 | SB | 101 | HIS |
| 49 | SB | 158 | HIS |
| 49 | SB | 160 | GLN |
| 49 | SB | 186 | ASN |
| 50 | SD | 101 | GLN |
| 51 | SE | 67 | GLN |
| 51 | SE | 98 | ASN |
| 51 | SE | 138 | HIS |
| 51 | SE | 157 | ASN |
| 51 | SE | 197 | ASN |
| 51 | SE | 214 | ASN |
| 52 | SF | 65 | GLN |
| 52 | SF | 74 | ASN |
| 52 | SF | 148 | ASN |
| 54 | SI | 52 | ASN |
| 54 | SI | 88 | ASN |
| 54 | SI | 165 | GLN |
| 55 | SK | 39 | ASN |
| 55 | SK | 44 | HIS |
| 55 | SK | 50 | GLN |
| 56 | SL | 11 | GLN |
| 56 | SL | 83 | GLN |
| 56 | SL | 94 | HIS |
| 58 | SQ | 48 | GLN |
| 58 | SQ | 77 | HIS |
| 59 | SR | 83 | ASN |
| 60 | SS | 10 | GLN |
| 60 | SS | 73 | ASN |
| 60 | SS | 85 | ASN |
| 61 | ST | 42 | HIS |
| 61 | ST | 85 | ASN |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 61 | ST | 91 | HIS |
| 61 | ST | 128 | GLN |
| 61 | ST | 142 | ASN |
| 62 | SU | 92 | HIS |
| 63 | SV | 35 | ASN |
| 64 | SX | 97 | ASN |
| 66 | Sc | 7 | GLN |
| 67 | Sd | 5 | GLN |
| 68 | Sg | 14 | HIS |
| 68 | Sg | 20 | GLN |
| 68 | Sg | 64 | HIS |
| 68 | Sg | 117 | ASN |
| 68 | Sg | 162 | ASN |
| 68 | Sg | 187 | ASN |
| 68 | Sg | 191 | HIS |
| 68 | Sg | 222 | ASN |
| 69 | SC | 113 | GLN |
| 69 | SC | 267 | GLN |
| 70 | SG | 81 | HIS |
| 70 | SG | 105 | ASN |
| 70 | SG | 110 | ASN |
| 71 | SJ | 125 | HIS |
| 73 | SN | 49 | GLN |
| 75 | SW | 90 | GLN |
| 75 | SW | 91 | ASN |
| 76 | SY | 2 | ASN |
| 76 | SY | 19 | GLN |
| 76 | SY | 89 | HIS |
| 76 | SY | 112 | ASN |
| 76 | SY | 124 | ASN |
| 78 | Sb | 65 | GLN |
| 80 | Sf | 111 | ASN |
| 81 | CA | 10 | GLN |
| 81 | CA | 29 | ASN |
| 81 | CA | 83 | ASN |
| 81 | CA | 120 | ASN |
| 81 | CA | 162 | GLN |
| 81 | CA | 193 | HIS |
| 81 | CA | 303 | GLN |
| 81 | CA | 359 | GLN |
| 82 | CB | 21 | ASN |
| 82 | CB | 91 | GLN |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 82 | CB | 145 | GLN |
| 82 | CB | 184 | ASN |
| 82 | CB | 186 | ASN |
| 82 | CB | 270 | ASN |
| 82 | CB | 448 | GLN |
| 82 | CB | 630 | GLN |
| 82 | CB | 764 | ASN |
| 82 | CB | 803 | ASN |
| 82 | CB | 816 | HIS |
| 82 | CB | 827 | ASN |
| 82 | CB | 853 | ASN |

### 5.3.3 RNA

| Mol | Chain | Analysed | Backbone Outliers | Pucker Outliers |
|---|---|---|---|---|
| 1 | L5 | 3704/5070 (73%) | 970 (26%) | 17 (0%) |
| 2 | L7 | 119/121 (98%) | 16 (13%) | 0 |
| 3 | L8 | 155/157 (98%) | 29 (18%) | 0 |
| 47 | S2 | 1715/1869 (91%) | 458 (26%) | 7 (0%) |
| 83 | CC | 84/85 (98%) | 23 (27%) | 2 (2%) |
| All | All | 5777/7302 (79%) | 1496 (25%) | 26 (0%) |

All (1496) RNA backbone outliers are listed below:

| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | L5 | 2 | G |
| 1 | L5 | 15 | A |
| 1 | L5 | 17 | A |
| 1 | L5 | 25 | A |
| 1 | L5 | 26 | C |
| 1 | L5 | 30 | C |
| 1 | L5 | 39 | A |
| 1 | L5 | 42 | A |
| 1 | L5 | 48 | G |
| 1 | L5 | 56 | A |
| 1 | L5 | 59 | A |
| 1 | L5 | 64 | A |
| 1 | L5 | 65 | A |
| 1 | L5 | 69 | A |
| 1 | L5 | 73 | A |
| 1 | L5 | 75 | G |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | L5 | 91 | G |
| 1 | L5 | 98 | A |
| 1 | L5 | 104 | G |
| 1 | L5 | 108 | A |
| 1 | L5 | 109 | G |
| 1 | L5 | 110 | C |
| 1 | L5 | 116 | G |
| 1 | L5 | 119 | G |
| 1 | L5 | 120 | A |
| 1 | L5 | 122 | U |
| 1 | L5 | 132 | G |
| 1 | L5 | 133 | C |
| 1 | L5 | 134 | G |
| 1 | L5 | 135 | G |
| 1 | L5 | 137 | G |
| 1 | L5 | 145 | G |
| 1 | L5 | 152 | U |
| 1 | L5 | 159 | C |
| 1 | L5 | 164 | G |
| 1 | L5 | 165 | A |
| 1 | L5 | 166 | C |
| 1 | L5 | 172 | C |
| 1 | L5 | 181 | C |
| 1 | L5 | 182 | G |
| 1 | L5 | 183 | C |
| 1 | L5 | 184 | U |
| 1 | L5 | 185 | C |
| 1 | L5 | 187 | U |
| 1 | L5 | 188 | G |
| 1 | L5 | 189 | G |
| 1 | L5 | 200 | U |
| 1 | L5 | 209 | U |
| 1 | L5 | 216 | C |
| 1 | L5 | 218 | A |
| 1 | L5 | 220 | C |
| 1 | L5 | 233 | U |
| 1 | L5 | 234 | G |
| 1 | L5 | 255 | C |
| 1 | L5 | 256 | G |
| 1 | L5 | 258 | G |
| 1 | L5 | 261 | G |
| 1 | L5 | 265 | C |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | L5 | 266 | C |
| 1 | L5 | 267 | G |
| 1 | L5 | 269 | G |
| 1 | L5 | 275 | C |
| 1 | L5 | 276 | C |
| 1 | L5 | 278 | G |
| 1 | L5 | 280 | G |
| 1 | L5 | 297 | U |
| 1 | L5 | 306 | A |
| 1 | L5 | 315 | G |
| 1 | L5 | 316 | U |
| 1 | L5 | 340 | C |
| 1 | L5 | 350 | C |
| 1 | L5 | 354 | U |
| 1 | L5 | 355 | A |
| 1 | L5 | 362 | A |
| 1 | L5 | 370 | U |
| 1 | L5 | 373 | G |
| 1 | L5 | 387 | G |
| 1 | L5 | 388 | A |
| 1 | L5 | 406 | C |
| 1 | L5 | 407 | A |
| 1 | L5 | 408 | A |
| 1 | L5 | 409 | G |
| 1 | L5 | 410 | A |
| 1 | L5 | 411 | G |
| 1 | L5 | 412 | G |
| 1 | L5 | 413 | G |
| 1 | L5 | 415 | G |
| 1 | L5 | 431 | G |
| 1 | L5 | 432 | U |
| 1 | L5 | 439 | G |
| 1 | L5 | 449 | C |
| 1 | L5 | 450 | G |
| 1 | L5 | 452 | A |
| 1 | L5 | 453 | G |
| 1 | L5 | 454 | U |
| 1 | L5 | 456 | C |
| 1 | L5 | 457 | G |
| 1 | L5 | 464 | G |
| 1 | L5 | 465 | G |
| 1 | L5 | 467 | U |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | L5 | 468 | U |
| 1 | L5 | 472 | C |
| 1 | L5 | 473 | C |
| 1 | L5 | 484 | U |
| 1 | L5 | 485 | C |
| 1 | L5 | 486 | C |
| 1 | L5 | 489 | C |
| 1 | L5 | 493 | G |
| 1 | L5 | 494 | U |
| 1 | L5 | 497 | G |
| 1 | L5 | 498 | C |
| 1 | L5 | 499 | G |
| 1 | L5 | 500 | G |
| 1 | L5 | 501 | C |
| 1 | L5 | 502 | C |
| 1 | L5 | 503 | C |
| 1 | L5 | 504 | G |
| 1 | L5 | 505 | G |
| 1 | L5 | 506 | C |
| 1 | L5 | 509 | A |
| 1 | L5 | 510 | U |
| 1 | L5 | 512 | U |
| 1 | L5 | 513 | U |
| 1 | L5 | 514 | U |
| 1 | L5 | 517 | C |
| 1 | L5 | 518 | G |
| 1 | L5 | 643 | C |
| 1 | L5 | 645 | G |
| 1 | L5 | 646 | G |
| 1 | L5 | 654 | C |
| 1 | L5 | 655 | C |
| 1 | L5 | 657 | C |
| 1 | L5 | 658 | C |
| 1 | L5 | 659 | G |
| 1 | L5 | 665 | C |
| 1 | L5 | 666 | G |
| 1 | L5 | 667 | A |
| 1 | L5 | 668 | C |
| 1 | L5 | 669 | C |
| 1 | L5 | 672 | C |
| 1 | L5 | 673 | C |
| 1 | L5 | 674 | G |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | L5 | 685 | C |
| 1 | L5 | 686 | A |
| 1 | L5 | 687 | U |
| 1 | L5 | 688 | U |
| 1 | L5 | 696 | C |
| 1 | L5 | 703 | G |
| 1 | L5 | 704 | C |
| 1 | L5 | 708 | G |
| 1 | L5 | 731 | G |
| 1 | L5 | 738 | C |
| 1 | L5 | 739 | G |
| 1 | L5 | 742 | G |
| 1 | L5 | 753 | C |
| 1 | L5 | 758 | G |
| 1 | L5 | 759 | G |
| 1 | L5 | 760 | G |
| 1 | L5 | 904 | C |
| 1 | L5 | 906 | C |
| 1 | L5 | 907 | C |
| 1 | L5 | 910 | G |
| 1 | L5 | 912 | G |
| 1 | L5 | 913 | U |
| 1 | L5 | 914 | U |
| 1 | L5 | 915 | A |
| 1 | L5 | 917 | A |
| 1 | L5 | 918 | G |
| 1 | L5 | 923 | C |
| 1 | L5 | 924 | C |
| 1 | L5 | 926 | G |
| 1 | L5 | 932 | A |
| 1 | L5 | 933 | G |
| 1 | L5 | 934 | C |
| 1 | L5 | 936 | C |
| 1 | L5 | 937 | U |
| 1 | L5 | 941 | C |
| 1 | L5 | 943 | A |
| 1 | L5 | 944 | A |
| 1 | L5 | 945 | U |
| 1 | L5 | 959 | G |
| 1 | L5 | 960 | A |
| 1 | L5 | 961 | G |
| 1 | L5 | 962 | C |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | L5 | 965 | G |
| 1 | L5 | 966 | A |
| 1 | L5 | 967 | C |
| 1 | L5 | 968 | C |
| 1 | L5 | 969 | C |
| 1 | L5 | 970 | G |
| 1 | L5 | 971 | U |
| 1 | L5 | 982 | U |
| 1 | L5 | 984 | C |
| 1 | L5 | 985 | C |
| 1 | L5 | 989 | U |
| 1 | L5 | 990 | C |
| 1 | L5 | 992 | C |
| 1 | L5 | 993 | G |
| 1 | L5 | 995 | C |
| 1 | L5 | 996 | G |
| 1 | L5 | 1048 | G |
| 1 | L5 | 1049 | C |
| 1 | L5 | 1050 | C |
| 1 | L5 | 1051 | G |
| 1 | L5 | 1066 | G |
| 1 | L5 | 1070 | G |
| 1 | L5 | 1074 | G |
| 1 | L5 | 1075 | G |
| 1 | L5 | 1082 | C |
| 1 | L5 | 1083 | U |
| 1 | L5 | 1094 | G |
| 1 | L5 | 1095 | A |
| 1 | L5 | 1168 | G |
| 1 | L5 | 1169 | G |
| 1 | L5 | 1171 | G |
| 1 | L5 | 1172 | C |
| 1 | L5 | 1173 | G |
| 1 | L5 | 1178 | G |
| 1 | L5 | 1179 | U |
| 1 | L5 | 1180 | C |
| 1 | L5 | 1181 | C |
| 1 | L5 | 1182 | C |
| 1 | L5 | 1183 | C |
| 1 | L5 | 1184 | A |
| 1 | L5 | 1189 | G |
| 1 | L5 | 1202 | C |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | L5 | 1203 | G |
| 1 | L5 | 1204 | C |
| 1 | L5 | 1210 | C |
| 1 | L5 | 1211 | G |
| 1 | L5 | 1215 | C |
| 1 | L5 | 1216 | C |
| 1 | L5 | 1217 | G |
| 1 | L5 | 1218 | G |
| 1 | L5 | 1219 | G |
| 1 | L5 | 1222 | A |
| 1 | L5 | 1235 | G |
| 1 | L5 | 1241 | C |
| 1 | L5 | 1242 | G |
| 1 | L5 | 1243 | C |
| 1 | L5 | 1245 | C |
| 1 | L5 | 1246 | G |
| 1 | L5 | 1247 | U |
| 1 | L5 | 1253 | G |
| 1 | L5 | 1254 | A |
| 1 | L5 | 1255 | A |
| 1 | L5 | 1257 | A |
| 1 | L5 | 1258 | G |
| 1 | L5 | 1261 | G |
| 1 | L5 | 1262 | G |
| 1 | L5 | 1266 | G |
| 1 | L5 | 1267 | C |
| 1 | L5 | 1269 | G |
| 1 | L5 | 1270 | A |
| 1 | L5 | 1271 | G |
| 1 | L5 | 1272 | C |
| 1 | L5 | 1273 | G |
| 1 | L5 | 1274 | A |
| 1 | L5 | 1275 | G |
| 1 | L5 | 1280 | C |
| 1 | L5 | 1284 | G |
| 1 | L5 | 1285 | U |
| 1 | L5 | 1287 | G |
| 1 | L5 | 1294 | A |
| 1 | L5 | 1295 | C |
| 1 | L5 | 1301 | C |
| 1 | L5 | 1302 | U |
| 1 | L5 | 1303 | A |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | L5 | 1324 | A |
| 1 | L5 | 1326 | A |
| 1 | L5 | 1337 | A |
| 1 | L5 | 1339 | U |
| 1 | L5 | 1345 | A |
| 1 | L5 | 1354 | A |
| 1 | L5 | 1358 | G |
| 1 | L5 | 1359 | G |
| 1 | L5 | 1360 | G |
| 1 | L5 | 1365 | C |
| 1 | L5 | 1366 | G |
| 1 | L5 | 1367 | C |
| 1 | L5 | 1368 | A |
| 1 | L5 | 1370 | G |
| 1 | L5 | 1379 | C |
| 1 | L5 | 1387 | A |
| 1 | L5 | 1394 | G |
| 1 | L5 | 1397 | A |
| 1 | L5 | 1403 | G |
| 1 | L5 | 1404 | G |
| 1 | L5 | 1405 | C |
| 1 | L5 | 1407 | C |
| 1 | L5 | 1409 | C |
| 1 | L5 | 1410 | U |
| 1 | L5 | 1411 | C |
| 1 | L5 | 1412 | G |
| 1 | L5 | 1414 | C |
| 1 | L5 | 1415 | G |
| 1 | L5 | 1417 | C |
| 1 | L5 | 1418 | C |
| 1 | L5 | 1420 | A |
| 1 | L5 | 1433 | A |
| 1 | L5 | 1435 | G |
| 1 | L5 | 1437 | C |
| 1 | L5 | 1439 | C |
| 1 | L5 | 1441 | C |
| 1 | L5 | 1443 | A |
| 1 | L5 | 1445 | U |
| 1 | L5 | 1446 | C |
| 1 | L5 | 1447 | C |
| 1 | L5 | 1457 | G |
| 1 | L5 | 1482 | G |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | L5 | 1483 | C |
| 1 | L5 | 1493 | G |
| 1 | L5 | 1494 | U |
| 1 | L5 | 1497 | A |
| 1 | L5 | 1498 | G |
| 1 | L5 | 1502 | G |
| 1 | L5 | 1513 | U |
| 1 | L5 | 1515 | A |
| 1 | L5 | 1517 | G |
| 1 | L5 | 1518 | A |
| 1 | L5 | 1534 | A |
| 1 | L5 | 1547 | A |
| 1 | L5 | 1562 | G |
| 1 | L5 | 1566 | C |
| 1 | L5 | 1578 | U |
| 1 | L5 | 1582 | U |
| 1 | L5 | 1591 | U |
| 1 | L5 | 1596 | U |
| 1 | L5 | 1611 | C |
| 1 | L5 | 1612 | G |
| 1 | L5 | 1624 | G |
| 1 | L5 | 1625 | G |
| 1 | L5 | 1627 | G |
| 1 | L5 | 1631 | A |
| 1 | L5 | 1633 | G |
| 1 | L5 | 1634 | A |
| 1 | L5 | 1637 | A |
| 1 | L5 | 1638 | A |
| 1 | L5 | 1640 | C |
| 1 | L5 | 1641 | G |
| 1 | L5 | 1642 | A |
| 1 | L5 | 1654 | G |
| 1 | L5 | 1661 | C |
| 1 | L5 | 1663 | C |
| 1 | L5 | 1676 | C |
| 1 | L5 | 1677 | U |
| 1 | L5 | 1678 | C |
| 1 | L5 | 1681 | G |
| 1 | L5 | 1691 | G |
| 1 | L5 | 1694 | C |
| 1 | L5 | 1697 | G |
| 1 | L5 | 1698 | C |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | L5 | 1699 | A |
| 1 | L5 | 1700 | G |
| 1 | L5 | 1703 | C |
| 1 | L5 | 1704 | C |
| 1 | L5 | 1705 | G |
| 1 | L5 | 1707 | C |
| 1 | L5 | 1717 | C |
| 1 | L5 | 1718 | C |
| 1 | L5 | 1724 | G |
| 1 | L5 | 1730 | U |
| 1 | L5 | 1734 | G |
| 1 | L5 | 1740 | C |
| 1 | L5 | 1741 | G |
| 1 | L5 | 1742 | A |
| 1 | L5 | 1750 | G |
| 1 | L5 | 1753 | G |
| 1 | L5 | 1757 | U |
| 1 | L5 | 1758 | G |
| 1 | L5 | 1760 | G |
| 1 | L5 | 1761 | G |
| 1 | L5 | 1762 | C |
| 1 | L5 | 1763 | C |
| 1 | L5 | 1764 | G |
| 1 | L5 | 1765 | A |
| 1 | L5 | 1766 | A |
| 1 | L5 | 1767 | A |
| 1 | L5 | 1768 | C |
| 1 | L5 | 1769 | G |
| 1 | L5 | 1770 | A |
| 1 | L5 | 1771 | U |
| 1 | L5 | 1772 | C |
| 1 | L5 | 1773 | U |
| 1 | L5 | 1775 | A |
| 1 | L5 | 1785 | C |
| 1 | L5 | 1787 | A |
| 1 | L5 | 1792 | U |
| 1 | L5 | 1797 | G |
| 1 | L5 | 1804 | A |
| 1 | L5 | 1810 | G |
| 1 | L5 | 1815 | G |
| 1 | L5 | 1820 | C |
| 1 | L5 | 1821 | G |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | L5 | 1822 | U |
| 1 | L5 | 1834 | U |
| 1 | L5 | 1836 | G |
| 1 | L5 | 1837 | A |
| 1 | L5 | 1842 | G |
| 1 | L5 | 1843 | A |
| 1 | L5 | 1855 | G |
| 1 | L5 | 1867 | A |
| 1 | L5 | 1869 | G |
| 1 | L5 | 1878 | G |
| 1 | L5 | 1882 | U |
| 1 | L5 | 1883 | G |
| 1 | L5 | 1892 | A |
| 1 | L5 | 1897 | A |
| 1 | L5 | 1915 | C |
| 1 | L5 | 1918 | U |
| 1 | L5 | 1919 | G |
| 1 | L5 | 1920 | C |
| 1 | L5 | 1921 | C |
| 1 | L5 | 1922 | G |
| 1 | L5 | 1925 | G |
| 1 | L5 | 1928 | C |
| 1 | L5 | 1931 | C |
| 1 | L5 | 1932 | A |
| 1 | L5 | 1936 | C |
| 1 | L5 | 1939 | A |
| 1 | L5 | 1940 | G |
| 1 | L5 | 1945 | G |
| 1 | L5 | 1948 | G |
| 1 | L5 | 1949 | U |
| 1 | L5 | 1951 | G |
| 1 | L5 | 1959 | U |
| 1 | L5 | 1961 | G |
| 1 | L5 | 1962 | A |
| 1 | L5 | 1972 | G |
| 1 | L5 | 1974 | U |
| 1 | L5 | 1975 | G |
| 1 | L5 | 1976 | G |
| 1 | L5 | 1977 | C |
| 1 | L5 | 1978 | C |
| 1 | L5 | 1979 | A |
| 1 | L5 | 1980 | U |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | L5 | 1981 | G |
| 1 | L5 | 1982 | G |
| 1 | L5 | 1983 | A |
| 1 | L5 | 1984 | A |
| 1 | L5 | 1985 | G |
| 1 | L5 | 1986 | U |
| 1 | L5 | 1990 | A |
| 1 | L5 | 1991 | A |
| 1 | L5 | 1992 | U |
| 1 | L5 | 1993 | C |
| 1 | L5 | 1997 | U |
| 1 | L5 | 2002 | A |
| 1 | L5 | 2010 | A |
| 1 | L5 | 2011 | C |
| 1 | L5 | 2014 | C |
| 1 | L5 | 2017 | A |
| 1 | L5 | 2018 | C |
| 1 | L5 | 2024 | G |
| 1 | L5 | 2026 | A |
| 1 | L5 | 2033 | A |
| 1 | L5 | 2034 | G |
| 1 | L5 | 2044 | U |
| 1 | L5 | 2046 | G |
| 1 | L5 | 2048 | U |
| 1 | L5 | 2055 | G |
| 1 | L5 | 2056 | G |
| 1 | L5 | 2069 | A |
| 1 | L5 | 2084 | C |
| 1 | L5 | 2085 | G |
| 1 | L5 | 2089 | G |
| 1 | L5 | 2091 | C |
| 1 | L5 | 2092 | G |
| 1 | L5 | 2093 | A |
| 1 | L5 | 2095 | A |
| 1 | L5 | 2096 | G |
| 1 | L5 | 2097 | U |
| 1 | L5 | 2098 | G |
| 1 | L5 | 2101 | C |
| 1 | L5 | 2102 | G |
| 1 | L5 | 2107 | C |
| 1 | L5 | 2108 | G |
| 1 | L5 | 2110 | C |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | L5 | 2111 | G |
| 1 | L5 | 2112 | G |
| 1 | L5 | 2250 | C |
| 1 | L5 | 2252 | G |
| 1 | L5 | 2253 | A |
| 1 | L5 | 2255 | C |
| 1 | L5 | 2256 | C |
| 1 | L5 | 2258 | C |
| 1 | L5 | 2259 | G |
| 1 | L5 | 2260 | C |
| 1 | L5 | 2262 | G |
| 1 | L5 | 2263 | A |
| 1 | L5 | 2270 | G |
| 1 | L5 | 2277 | C |
| 1 | L5 | 2289 | C |
| 1 | L5 | 2294 | G |
| 1 | L5 | 2300 | A |
| 1 | L5 | 2301 | G |
| 1 | L5 | 2306 | G |
| 1 | L5 | 2313 | A |
| 1 | L5 | 2316 | G |
| 1 | L5 | 2332 | A |
| 1 | L5 | 2333 | G |
| 1 | L5 | 2348 | G |
| 1 | L5 | 2351 | C |
| 1 | L5 | 2360 | A |
| 1 | L5 | 2364 | G |
| 1 | L5 | 2369 | U |
| 1 | L5 | 2397 | G |
| 1 | L5 | 2402 | G |
| 1 | L5 | 2404 | A |
| 1 | L5 | 2412 | A |
| 1 | L5 | 2417 | A |
| 1 | L5 | 2418 | A |
| 1 | L5 | 2421 | G |
| 1 | L5 | 2425 | U |
| 1 | L5 | 2437 | C |
| 1 | L5 | 2441 | C |
| 1 | L5 | 2450 | G |
| 1 | L5 | 2453 | A |
| 1 | L5 | 2460 | A |
| 1 | L5 | 2464 | C |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | L5 | 2465 | C |
| 1 | L5 | 2470 | C |
| 1 | L5 | 2474 | G |
| 1 | L5 | 2475 | G |
| 1 | L5 | 2478 | C |
| 1 | L5 | 2479 | G |
| 1 | L5 | 2480 | G |
| 1 | L5 | 2483 | G |
| 1 | L5 | 2484 | A |
| 1 | L5 | 2485 | U |
| 1 | L5 | 2487 | G |
| 1 | L5 | 2488 | C |
| 1 | L5 | 2489 | C |
| 1 | L5 | 2490 | U |
| 1 | L5 | 2491 | C |
| 1 | L5 | 2493 | G |
| 1 | L5 | 2494 | U |
| 1 | L5 | 2503 | G |
| 1 | L5 | 2504 | C |
| 1 | L5 | 2505 | C |
| 1 | L5 | 2506 | G |
| 1 | L5 | 2511 | A |
| 1 | L5 | 2513 | A |
| 1 | L5 | 2519 | U |
| 1 | L5 | 2537 | A |
| 1 | L5 | 2544 | G |
| 1 | L5 | 2546 | G |
| 1 | L5 | 2547 | G |
| 1 | L5 | 2554 | U |
| 1 | L5 | 2555 | G |
| 1 | L5 | 2557 | G |
| 1 | L5 | 2559 | G |
| 1 | L5 | 2560 | C |
| 1 | L5 | 2561 | C |
| 1 | L5 | 2565 | A |
| 1 | L5 | 2567 | G |
| 1 | L5 | 2568 | C |
| 1 | L5 | 2583 | C |
| 1 | L5 | 2586 | G |
| 1 | L5 | 2587 | A |
| 1 | L5 | 2589 | C |
| 1 | L5 | 2601 | A |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | L5 | 2602 | G |
| 1 | L5 | 2627 | C |
| 1 | L5 | 2638 | G |
| 1 | L5 | 2652 | G |
| 1 | L5 | 2653 | C |
| 1 | L5 | 2662 | G |
| 1 | L5 | 2669 | C |
| 1 | L5 | 2670 | C |
| 1 | L5 | 2676 | A |
| 1 | L5 | 2687 | U |
| 1 | L5 | 2694 | G |
| 1 | L5 | 2695 | A |
| 1 | L5 | 2696 | A |
| 1 | L5 | 2703 | G |
| 1 | L5 | 2707 | U |
| 1 | L5 | 2708 | U |
| 1 | L5 | 2710 | C |
| 1 | L5 | 2711 | G |
| 1 | L5 | 2713 | C |
| 1 | L5 | 2721 | G |
| 1 | L5 | 2724 | G |
| 1 | L5 | 2725 | A |
| 1 | L5 | 2726 | G |
| 1 | L5 | 2738 | C |
| 1 | L5 | 2739 | C |
| 1 | L5 | 2742 | G |
| 1 | L5 | 2743 | A |
| 1 | L5 | 2746 | A |
| 1 | L5 | 2756 | G |
| 1 | L5 | 2761 | U |
| 1 | L5 | 2762 | G |
| 1 | L5 | 2763 | U |
| 1 | L5 | 2764 | A |
| 1 | L5 | 2769 | U |
| 1 | L5 | 2770 | C |
| 1 | L5 | 2787 | A |
| 1 | L5 | 2788 | U |
| 1 | L5 | 2790 | U |
| 1 | L5 | 2806 | A |
| 1 | L5 | 2826 | U |
| 1 | L5 | 2827 | G |
| 1 | L5 | 2829 | U |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | L5 | 2838 | G |
| 1 | L5 | 2848 | G |
| 1 | L5 | 2855 | G |
| 1 | L5 | 2867 | C |
| 1 | L5 | 2877 | G |
| 1 | L5 | 2895 | A |
| 1 | L5 | 2897 | G |
| 1 | L5 | 2900 | U |
| 1 | L5 | 2902 | G |
| 1 | L5 | 2903 | G |
| 1 | L5 | 2904 | U |
| 1 | L5 | 2905 | C |
| 1 | L5 | 2906 | G |
| 1 | L5 | 2908 | U |
| 1 | L5 | 2909 | C |
| 1 | L5 | 3586 | G |
| 1 | L5 | 3587 | C |
| 1 | L5 | 3588 | C |
| 1 | L5 | 3590 | G |
| 1 | L5 | 3591 | C |
| 1 | L5 | 3594 | C |
| 1 | L5 | 3595 | U |
| 1 | L5 | 3596 | A |
| 1 | L5 | 3597 | G |
| 1 | L5 | 3599 | A |
| 1 | L5 | 3604 | A |
| 1 | L5 | 3605 | C |
| 1 | L5 | 3615 | G |
| 1 | L5 | 3618 | C |
| 1 | L5 | 3626 | G |
| 1 | L5 | 3630 | A |
| 1 | L5 | 3635 | A |
| 1 | L5 | 3644 | U |
| 1 | L5 | 3646 | A |
| 1 | L5 | 3662 | A |
| 1 | L5 | 3664 | G |
| 1 | L5 | 3670 | C |
| 1 | L5 | 3672 | G |
| 1 | L5 | 3673 | C |
| 1 | L5 | 3674 | G |
| 1 | L5 | 3709 | U |
| 1 | L5 | 3710 | G |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | L5 | 3711 | A |
| 1 | L5 | 3713 | U |
| 1 | L5 | 3714 | G |
| 1 | L5 | 3727 | A |
| 1 | L5 | 3729 | U |
| 1 | L5 | 3735 | G |
| 1 | L5 | 3740 | G |
| 1 | L5 | 3741 | C |
| 1 | L5 | 3748 | A |
| 1 | L5 | 3750 | G |
| 1 | L5 | 3756 | A |
| 1 | L5 | 3759 | A |
| 1 | L5 | 3760 | A |
| 1 | L5 | 3772 | U |
| 1 | L5 | 3773 | U |
| 1 | L5 | 3774 | A |
| 1 | L5 | 3776 | G |
| 1 | L5 | 3777 | G |
| 1 | L5 | 3784 | A |
| 1 | L5 | 3786 | U |
| 1 | L5 | 3788 | C |
| 1 | L5 | 3802 | U |
| 1 | L5 | 3810 | C |
| 1 | L5 | 3811 | G |
| 1 | L5 | 3812 | C |
| 1 | L5 | 3814 | U |
| 1 | L5 | 3817 | A |
| 1 | L5 | 3819 | G |
| 1 | L5 | 3823 | G |
| 1 | L5 | 3838 | U |
| 1 | L5 | 3839 | G |
| 1 | L5 | 3840 | U |
| 1 | L5 | 3841 | C |
| 1 | L5 | 3851 | U |
| 1 | L5 | 3867 | A |
| 1 | L5 | 3876 | A |
| 1 | L5 | 3877 | A |
| 1 | L5 | 3878 | C |
| 1 | L5 | 3879 | G |
| 1 | L5 | 3885 | G |
| 1 | L5 | 3887 | C |
| 1 | L5 | 3890 | A |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | L5 | 3892 | U |
| 1 | L5 | 3897 | G |
| 1 | L5 | 3901 | A |
| 1 | L5 | 3906 | A |
| 1 | L5 | 3907 | G |
| 1 | L5 | 3908 | A |
| 1 | L5 | 3915 | U |
| 1 | L5 | 3916 | G |
| 1 | L5 | 3938 | G |
| 1 | L5 | 3939 | G |
| 1 | L5 | 3942 | A |
| 1 | L5 | 3943 | A |
| 1 | L5 | 3947 | A |
| 1 | L5 | 3948 | C |
| 1 | L5 | 3949 | A |
| 1 | L5 | 3950 | U |
| 1 | L5 | 3951 | G |
| 1 | L5 | 3954 | A |
| 1 | L5 | 3956 | G |
| 1 | L5 | 3957 | U |
| 1 | L5 | 3958 | G |
| 1 | L5 | 3959 | U |
| 1 | L5 | 3960 | A |
| 1 | L5 | 3962 | A |
| 1 | L5 | 3963 | A |
| 1 | L5 | 3964 | U |
| 1 | L5 | 3966 | A |
| 1 | L5 | 3969 | G |
| 1 | L5 | 3970 | G |
| 1 | L5 | 3972 | A |
| 1 | L5 | 3973 | G |
| 1 | L5 | 3974 | G |
| 1 | L5 | 3975 | C |
| 1 | L5 | 3977 | C |
| 1 | L5 | 4038 | C |
| 1 | L5 | 4039 | G |
| 1 | L5 | 4041 | C |
| 1 | L5 | 4042 | G |
| 1 | L5 | 4043 | G |
| 1 | L5 | 4044 | U |
| 1 | L5 | 4045 | G |
| 1 | L5 | 4046 | A |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | L5 | 4048 | A |
| 1 | L5 | 4049 | U |
| 1 | L5 | 4050 | A |
| 1 | L5 | 4051 | C |
| 1 | L5 | 4052 | C |
| 1 | L5 | 4053 | A |
| 1 | L5 | 4055 | U |
| 1 | L5 | 4056 | A |
| 1 | L5 | 4057 | C |
| 1 | L5 | 4058 | U |
| 1 | L5 | 4059 | C |
| 1 | L5 | 4060 | U |
| 1 | L5 | 4061 | G |
| 1 | L5 | 4062 | A |
| 1 | L5 | 4063 | U |
| 1 | L5 | 4064 | C |
| 1 | L5 | 4065 | G |
| 1 | L5 | 4069 | U |
| 1 | L5 | 4076 | G |
| 1 | L5 | 4086 | G |
| 1 | L5 | 4093 | G |
| 1 | L5 | 4096 | C |
| 1 | L5 | 4097 | G |
| 1 | L5 | 4099 | G |
| 1 | L5 | 4101 | C |
| 1 | L5 | 4102 | C |
| 1 | L5 | 4103 | C |
| 1 | L5 | 4104 | G |
| 1 | L5 | 4108 | G |
| 1 | L5 | 4111 | U |
| 1 | L5 | 4113 | U |
| 1 | L5 | 4114 | C |
| 1 | L5 | 4115 | G |
| 1 | L5 | 4116 | C |
| 1 | L5 | 4117 | U |
| 1 | L5 | 4119 | C |
| 1 | L5 | 4127 | A |
| 1 | L5 | 4133 | C |
| 1 | L5 | 4134 | C |
| 1 | L5 | 4136 | G |
| 1 | L5 | 4140 | C |
| 1 | L5 | 4141 | G |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | L5 | 4142 | C |
| 1 | L5 | 4143 | G |
| 1 | L5 | 4144 | C |
| 1 | L5 | 4146 | G |
| 1 | L5 | 4149 | C |
| 1 | L5 | 4150 | G |
| 1 | L5 | 4162 | C |
| 1 | L5 | 4163 | U |
| 1 | L5 | 4168 | G |
| 1 | L5 | 4170 | A |
| 1 | L5 | 4177 | C |
| 1 | L5 | 4183 | G |
| 1 | L5 | 4184 | G |
| 1 | L5 | 4191 | G |
| 1 | L5 | 4196 | G |
| 1 | L5 | 4197 | G |
| 1 | L5 | 4201 | G |
| 1 | L5 | 4203 | A |
| 1 | L5 | 4212 | A |
| 1 | L5 | 4222 | G |
| 1 | L5 | 4225 | G |
| 1 | L5 | 4229 | U |
| 1 | L5 | 4232 | U |
| 1 | L5 | 4233 | A |
| 1 | L5 | 4251 | A |
| 1 | L5 | 4254 | G |
| 1 | L5 | 4255 | A |
| 1 | L5 | 4257 | A |
| 1 | L5 | 4265 | U |
| 1 | L5 | 4268 | A |
| 1 | L5 | 4273 | A |
| 1 | L5 | 4281 | A |
| 1 | L5 | 4291 | G |
| 1 | L5 | 4304 | A |
| 1 | L5 | 4305 | G |
| 1 | L5 | 4314 | C |
| 1 | L5 | 4319 | C |
| 1 | L5 | 4329 | G |
| 1 | L5 | 4330 | G |
| 1 | L5 | 4332 | C |
| 1 | L5 | 4339 | A |
| 1 | L5 | 4349 | C |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | L5 | 4354 | U |
| 1 | L5 | 4371 | G |
| 1 | L5 | 4373 | G |
| 1 | L5 | 4374 | U |
| 1 | L5 | 4376 | A |
| 1 | L5 | 4377 | G |
| 1 | L5 | 4378 | A |
| 1 | L5 | 4379 | A |
| 1 | L5 | 4380 | A |
| 1 | L5 | 4387 | C |
| 1 | L5 | 4391 | G |
| 1 | L5 | 4394 | A |
| 1 | L5 | 4421 | C |
| 1 | L5 | 4422 | A |
| 1 | L5 | 4426 | C |
| 1 | L5 | 4444 | C |
| 1 | L5 | 4448 | G |
| 1 | L5 | 4449 | A |
| 1 | L5 | 4452 | U |
| 1 | L5 | 4453 | C |
| 1 | L5 | 4464 | A |
| 1 | L5 | 4466 | C |
| 1 | L5 | 4475 | G |
| 1 | L5 | 4488 | A |
| 1 | L5 | 4500 | U |
| 1 | L5 | 4504 | C |
| 1 | L5 | 4512 | U |
| 1 | L5 | 4513 | A |
| 1 | L5 | 4519 | C |
| 1 | L5 | 4524 | G |
| 1 | L5 | 4525 | C |
| 1 | L5 | 4528 | G |
| 1 | L5 | 4531 | U |
| 1 | L5 | 4532 | U |
| 1 | L5 | 4545 | G |
| 1 | L5 | 4548 | A |
| 1 | L5 | 4549 | G |
| 1 | L5 | 4556 | U |
| 1 | L5 | 4557 | U |
| 1 | L5 | 4560 | C |
| 1 | L5 | 4567 | G |
| 1 | L5 | 4569 | U |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | L5 | 4573 | G |
| 1 | L5 | 4575 | G |
| 1 | L5 | 4589 | A |
| 1 | L5 | 4590 | A |
| 1 | L5 | 4600 | G |
| 1 | L5 | 4601 | U |
| 1 | L5 | 4611 | A |
| 1 | L5 | 4617 | G |
| 1 | L5 | 4635 | A |
| 1 | L5 | 4636 | U |
| 1 | L5 | 4637 | G |
| 1 | L5 | 4647 | G |
| 1 | L5 | 4648 | A |
| 1 | L5 | 4652 | G |
| 1 | L5 | 4656 | A |
| 1 | L5 | 4658 | G |
| 1 | L5 | 4659 | G |
| 1 | L5 | 4670 | C |
| 1 | L5 | 4672 | A |
| 1 | L5 | 4687 | A |
| 1 | L5 | 4695 | C |
| 1 | L5 | 4707 | A |
| 1 | L5 | 4708 | A |
| 1 | L5 | 4709 | U |
| 1 | L5 | 4719 | G |
| 1 | L5 | 4720 | C |
| 1 | L5 | 4733 | C |
| 1 | L5 | 4734 | A |
| 1 | L5 | 4735 | G |
| 1 | L5 | 4741 | C |
| 1 | L5 | 4742 | G |
| 1 | L5 | 4745 | G |
| 1 | L5 | 4750 | G |
| 1 | L5 | 4754 | G |
| 1 | L5 | 4757 | C |
| 1 | L5 | 4759 | C |
| 1 | L5 | 4761 | G |
| 1 | L5 | 4765 | G |
| 1 | L5 | 4771 | C |
| 1 | L5 | 4772 | C |
| 1 | L5 | 4773 | C |
| 1 | L5 | 4775 | C |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | L5 | 4776 | G |
| 1 | L5 | 4859 | C |
| 1 | L5 | 4860 | G |
| 1 | L5 | 4863 | G |
| 1 | L5 | 4868 | G |
| 1 | L5 | 4870 | G |
| 1 | L5 | 4871 | C |
| 1 | L5 | 4875 | G |
| 1 | L5 | 4880 | C |
| 1 | L5 | 4881 | U |
| 1 | L5 | 4882 | U |
| 1 | L5 | 4883 | C |
| 1 | L5 | 4888 | U |
| 1 | L5 | 4889 | G |
| 1 | L5 | 4891 | G |
| 1 | L5 | 4895 | C |
| 1 | L5 | 4896 | G |
| 1 | L5 | 4897 | G |
| 1 | L5 | 4900 | C |
| 1 | L5 | 4901 | G |
| 1 | L5 | 4902 | C |
| 1 | L5 | 4910 | G |
| 1 | L5 | 4912 | G |
| 1 | L5 | 4914 | C |
| 1 | L5 | 4918 | C |
| 1 | L5 | 4922 | C |
| 1 | L5 | 4923 | C |
| 1 | L5 | 4924 | C |
| 1 | L5 | 4925 | U |
| 1 | L5 | 4927 | G |
| 1 | L5 | 4928 | C |
| 1 | L5 | 4931 | G |
| 1 | L5 | 4937 | C |
| 1 | L5 | 4940 | C |
| 1 | L5 | 4941 | G |
| 1 | L5 | 4943 | A |
| 1 | L5 | 4944 | C |
| 1 | L5 | 4951 | G |
| 1 | L5 | 4955 | A |
| 1 | L5 | 4960 | G |
| 1 | L5 | 4961 | G |
| 1 | L5 | 4963 | G |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | L5 | 4966 | A |
| 1 | L5 | 4973 | U |
| 1 | L5 | 4975 | G |
| 1 | L5 | 4976 | U |
| 1 | L5 | 4988 | U |
| 1 | L5 | 4989 | U |
| 1 | L5 | 4990 | C |
| 1 | L5 | 4991 | U |
| 1 | L5 | 5006 | U |
| 1 | L5 | 5007 | A |
| 1 | L5 | 5013 | C |
| 1 | L5 | 5014 | A |
| 1 | L5 | 5017 | G |
| 1 | L5 | 5024 | C |
| 1 | L5 | 5025 | C |
| 1 | L5 | 5026 | U |
| 1 | L5 | 5027 | C |
| 1 | L5 | 5028 | G |
| 1 | L5 | 5029 | C |
| 1 | L5 | 5030 | U |
| 1 | L5 | 5032 | C |
| 1 | L5 | 5034 | A |
| 1 | L5 | 5040 | U |
| 1 | L5 | 5041 | G |
| 1 | L5 | 5050 | C |
| 1 | L5 | 5053 | U |
| 1 | L5 | 5054 | C |
| 1 | L5 | 5055 | G |
| 1 | L5 | 5061 | A |
| 1 | L5 | 5069 | U |
| 2 | L7 | 2 | U |
| 2 | L7 | 4 | U |
| 2 | L7 | 7 | G |
| 2 | L7 | 22 | A |
| 2 | L7 | 24 | C |
| 2 | L7 | 33 | U |
| 2 | L7 | 38 | U |
| 2 | L7 | 53 | U |
| 2 | L7 | 54 | A |
| 2 | L7 | 63 | C |
| 2 | L7 | 64 | G |
| 2 | L7 | 97 | G |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 2 | L7 | 100 | A |
| 2 | L7 | 111 | C |
| 2 | L7 | 118 | C |
| 2 | L7 | 120 | U |
| 3 | L8 | 25 | G |
| 3 | L8 | 34 | U |
| 3 | L8 | 35 | C |
| 3 | L8 | 38 | U |
| 3 | L8 | 48 | A |
| 3 | L8 | 52 | A |
| 3 | L8 | 59 | A |
| 3 | L8 | 60 | G |
| 3 | L8 | 62 | A |
| 3 | L8 | 63 | U |
| 3 | L8 | 82 | A |
| 3 | L8 | 84 | A |
| 3 | L8 | 85 | U |
| 3 | L8 | 87 | G |
| 3 | L8 | 94 | G |
| 3 | L8 | 95 | A |
| 3 | L8 | 103 | A |
| 3 | L8 | 105 | C |
| 3 | L8 | 110 | U |
| 3 | L8 | 111 | U |
| 3 | L8 | 114 | G |
| 3 | L8 | 123 | U |
| 3 | L8 | 124 | U |
| 3 | L8 | 125 | C |
| 3 | L8 | 126 | C |
| 3 | L8 | 127 | U |
| 3 | L8 | 128 | C |
| 3 | L8 | 150 | C |
| 3 | L8 | 151 | G |
| 47 | S2 | 13 | C |
| 47 | S2 | 14 | C |
| 47 | S2 | 17 | C |
| 47 | S2 | 25 | A |
| 47 | S2 | 33 | G |
| 47 | S2 | 37 | C |
| 47 | S2 | 39 | A |
| 47 | S2 | 41 | G |
| 47 | S2 | 42 | A |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 47 | S2 | 44 | U |
| 47 | S2 | 45 | A |
| 47 | S2 | 46 | A |
| 47 | S2 | 49 | C |
| 47 | S2 | 56 | G |
| 47 | S2 | 58 | C |
| 47 | S2 | 62 | G |
| 47 | S2 | 64 | A |
| 47 | S2 | 67 | C |
| 47 | S2 | 68 | A |
| 47 | S2 | 72 | C |
| 47 | S2 | 73 | C |
| 47 | S2 | 74 | G |
| 47 | S2 | 76 | U |
| 47 | S2 | 79 | A |
| 47 | S2 | 83 | A |
| 47 | S2 | 92 | A |
| 47 | S2 | 103 | A |
| 47 | S2 | 113 | G |
| 47 | S2 | 114 | G |
| 47 | S2 | 115 | U |
| 47 | S2 | 116 | U |
| 47 | S2 | 126 | G |
| 47 | S2 | 129 | C |
| 47 | S2 | 130 | G |
| 47 | S2 | 142 | C |
| 47 | S2 | 143 | U |
| 47 | S2 | 147 | A |
| 47 | S2 | 149 | A |
| 47 | S2 | 154 | U |
| 47 | S2 | 155 | G |
| 47 | S2 | 159 | A |
| 47 | S2 | 160 | U |
| 47 | S2 | 161 | U |
| 47 | S2 | 162 | C |
| 47 | S2 | 163 | U |
| 47 | S2 | 175 | A |
| 47 | S2 | 179 | C |
| 47 | S2 | 182 | C |
| 47 | S2 | 187 | G |
| 47 | S2 | 190 | G |
| 47 | S2 | 196 | C |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 47 | S2 | 197 | U |
| 47 | S2 | 198 | U |
| 47 | S2 | 199 | C |
| 47 | S2 | 200 | G |
| 47 | S2 | 203 | G |
| 47 | S2 | 204 | G |
| 47 | S2 | 206 | G |
| 47 | S2 | 208 | G |
| 47 | S2 | 211 | G |
| 47 | S2 | 212 | C |
| 47 | S2 | 213 | G |
| 47 | S2 | 214 | U |
| 47 | S2 | 290 | U |
| 47 | S2 | 291 | G |
| 47 | S2 | 292 | A |
| 47 | S2 | 293 | C |
| 47 | S2 | 295 | C |
| 47 | S2 | 302 | A |
| 47 | S2 | 306 | C |
| 47 | S2 | 307 | G |
| 47 | S2 | 308 | G |
| 47 | S2 | 309 | G |
| 47 | S2 | 310 | C |
| 47 | S2 | 311 | C |
| 47 | S2 | 312 | G |
| 47 | S2 | 313 | A |
| 47 | S2 | 318 | A |
| 47 | S2 | 319 | C |
| 47 | S2 | 322 | C |
| 47 | S2 | 323 | C |
| 47 | S2 | 324 | C |
| 47 | S2 | 325 | C |
| 47 | S2 | 326 | C |
| 47 | S2 | 327 | G |
| 47 | S2 | 328 | U |
| 47 | S2 | 329 | G |
| 47 | S2 | 332 | G |
| 47 | S2 | 338 | G |
| 47 | S2 | 339 | A |
| 47 | S2 | 347 | G |
| 47 | S2 | 351 | G |
| 47 | S2 | 360 | A |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 47 | S2 | 361 | U |
| 47 | S2 | 362 | C |
| 47 | S2 | 364 | A |
| 47 | S2 | 368 | U |
| 47 | S2 | 370 | G |
| 47 | S2 | 375 | U |
| 47 | S2 | 381 | C |
| 47 | S2 | 385 | G |
| 47 | S2 | 386 | C |
| 47 | S2 | 400 | C |
| 47 | S2 | 408 | A |
| 47 | S2 | 409 | C |
| 47 | S2 | 421 | G |
| 47 | S2 | 438 | G |
| 47 | S2 | 442 | C |
| 47 | S2 | 448 | A |
| 47 | S2 | 449 | A |
| 47 | S2 | 450 | C |
| 47 | S2 | 452 | G |
| 47 | S2 | 463 | C |
| 47 | S2 | 464 | A |
| 47 | S2 | 465 | A |
| 47 | S2 | 466 | G |
| 47 | S2 | 467 | G |
| 47 | S2 | 471 | G |
| 47 | S2 | 472 | C |
| 47 | S2 | 473 | A |
| 47 | S2 | 474 | G |
| 47 | S2 | 476 | A |
| 47 | S2 | 482 | G |
| 47 | S2 | 487 | U |
| 47 | S2 | 488 | U |
| 47 | S2 | 492 | C |
| 47 | S2 | 493 | A |
| 47 | S2 | 502 | C |
| 47 | S2 | 516 | A |
| 47 | S2 | 525 | A |
| 47 | S2 | 530 | U |
| 47 | S2 | 531 | A |
| 47 | S2 | 532 | C |
| 47 | S2 | 533 | A |
| 47 | S2 | 536 | A |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 47 | S2 | 537 | C |
| 47 | S2 | 538 | U |
| 47 | S2 | 540 | U |
| 47 | S2 | 542 | U |
| 47 | S2 | 545 | A |
| 47 | S2 | 546 | G |
| 47 | S2 | 547 | G |
| 47 | S2 | 551 | U |
| 47 | S2 | 556 | U |
| 47 | S2 | 557 | U |
| 47 | S2 | 558 | G |
| 47 | S2 | 559 | G |
| 47 | S2 | 560 | A |
| 47 | S2 | 563 | G |
| 47 | S2 | 564 | A |
| 47 | S2 | 566 | U |
| 47 | S2 | 576 | A |
| 47 | S2 | 583 | A |
| 47 | S2 | 587 | A |
| 47 | S2 | 589 | G |
| 47 | S2 | 590 | A |
| 47 | S2 | 591 | U |
| 47 | S2 | 596 | U |
| 47 | S2 | 597 | G |
| 47 | S2 | 606 | G |
| 47 | S2 | 607 | U |
| 47 | S2 | 614 | C |
| 47 | S2 | 617 | G |
| 47 | S2 | 623 | G |
| 47 | S2 | 626 | G |
| 47 | S2 | 628 | A |
| 47 | S2 | 629 | A |
| 47 | S2 | 631 | U |
| 47 | S2 | 638 | C |
| 47 | S2 | 643 | A |
| 47 | S2 | 644 | G |
| 47 | S2 | 655 | A |
| 47 | S2 | 660 | C |
| 47 | S2 | 662 | G |
| 47 | S2 | 663 | C |
| 47 | S2 | 664 | A |
| 47 | S2 | 668 | A |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 47 | S2 | 669 | A |
| 47 | S2 | 671 | A |
| 47 | S2 | 672 | A |
| 47 | S2 | 673 | G |
| 47 | S2 | 683 | G |
| 47 | S2 | 684 | G |
| 47 | S2 | 687 | C |
| 47 | S2 | 689 | U |
| 47 | S2 | 692 | G |
| 47 | S2 | 693 | A |
| 47 | S2 | 694 | G |
| 47 | S2 | 695 | C |
| 47 | S2 | 696 | G |
| 47 | S2 | 697 | G |
| 47 | S2 | 698 | G |
| 47 | S2 | 732 | U |
| 47 | S2 | 733 | C |
| 47 | S2 | 736 | C |
| 47 | S2 | 738 | C |
| 47 | S2 | 739 | C |
| 47 | S2 | 748 | C |
| 47 | S2 | 749 | U |
| 47 | S2 | 751 | G |
| 47 | S2 | 752 | G |
| 47 | S2 | 788 | G |
| 47 | S2 | 790 | C |
| 47 | S2 | 791 | C |
| 47 | S2 | 792 | C |
| 47 | S2 | 793 | G |
| 47 | S2 | 794 | A |
| 47 | S2 | 798 | G |
| 47 | S2 | 799 | U |
| 47 | S2 | 810 | A |
| 47 | S2 | 811 | A |
| 47 | S2 | 821 | G |
| 47 | S2 | 822 | U |
| 47 | S2 | 823 | U |
| 47 | S2 | 824 | C |
| 47 | S2 | 830 | A |
| 47 | S2 | 834 | C |
| 47 | S2 | 835 | C |
| 47 | S2 | 836 | G |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 47 | S2 | 837 | A |
| 47 | S2 | 838 | G |
| 47 | S2 | 839 | C |
| 47 | S2 | 840 | C |
| 47 | S2 | 841 | G |
| 47 | S2 | 842 | C |
| 47 | S2 | 847 | A |
| 47 | S2 | 869 | A |
| 47 | S2 | 870 | A |
| 47 | S2 | 871 | U |
| 47 | S2 | 872 | A |
| 47 | S2 | 873 | G |
| 47 | S2 | 874 | G |
| 47 | S2 | 880 | G |
| 47 | S2 | 882 | U |
| 47 | S2 | 888 | U |
| 47 | S2 | 889 | U |
| 47 | S2 | 891 | G |
| 47 | S2 | 892 | U |
| 47 | S2 | 896 | U |
| 47 | S2 | 897 | U |
| 47 | S2 | 898 | U |
| 47 | S2 | 899 | U |
| 47 | S2 | 900 | C |
| 47 | S2 | 901 | G |
| 47 | S2 | 903 | A |
| 47 | S2 | 904 | A |
| 47 | S2 | 905 | C |
| 47 | S2 | 913 | A |
| 47 | S2 | 914 | U |
| 47 | S2 | 919 | A |
| 47 | S2 | 920 | A |
| 47 | S2 | 927 | C |
| 47 | S2 | 933 | G |
| 47 | S2 | 934 | G |
| 47 | S2 | 943 | U |
| 47 | S2 | 963 | A |
| 47 | S2 | 971 | G |
| 47 | S2 | 972 | A |
| 47 | S2 | 978 | G |
| 47 | S2 | 990 | A |
| 47 | S2 | 992 | A |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 47 | S2 | 999 | G |
| 47 | S2 | 1001 | A |
| 47 | S2 | 1008 | A |
| 47 | S2 | 1017 | U |
| 47 | S2 | 1023 | A |
| 47 | S2 | 1027 | A |
| 47 | S2 | 1033 | G |
| 47 | S2 | 1045 | U |
| 47 | S2 | 1061 | U |
| 47 | S2 | 1062 | A |
| 47 | S2 | 1067 | C |
| 47 | S2 | 1078 | C |
| 47 | S2 | 1083 | A |
| 47 | S2 | 1085 | C |
| 47 | S2 | 1088 | U |
| 47 | S2 | 1109 | C |
| 47 | S2 | 1114 | U |
| 47 | S2 | 1115 | U |
| 47 | S2 | 1116 | C |
| 47 | S2 | 1119 | A |
| 47 | S2 | 1121 | G |
| 47 | S2 | 1133 | A |
| 47 | S2 | 1138 | C |
| 47 | S2 | 1148 | A |
| 47 | S2 | 1153 | C |
| 47 | S2 | 1154 | U |
| 47 | S2 | 1155 | U |
| 47 | S2 | 1195 | A |
| 47 | S2 | 1208 | A |
| 47 | S2 | 1215 | C |
| 47 | S2 | 1216 | C |
| 47 | S2 | 1217 | A |
| 47 | S2 | 1224 | G |
| 47 | S2 | 1227 | G |
| 47 | S2 | 1242 | U |
| 47 | S2 | 1243 | U |
| 47 | S2 | 1251 | A |
| 47 | S2 | 1253 | A |
| 47 | S2 | 1256 | G |
| 47 | S2 | 1257 | G |
| 47 | S2 | 1259 | A |
| 47 | S2 | 1264 | C |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 47 | S2 | 1265 | A |
| 47 | S2 | 1274 | G |
| 47 | S2 | 1275 | G |
| 47 | S2 | 1283 | C |
| 47 | S2 | 1284 | A |
| 47 | S2 | 1286 | G |
| 47 | S2 | 1294 | G |
| 47 | S2 | 1295 | A |
| 47 | S2 | 1301 | A |
| 47 | S2 | 1302 | G |
| 47 | S2 | 1303 | C |
| 47 | S2 | 1305 | C |
| 47 | S2 | 1306 | U |
| 47 | S2 | 1308 | U |
| 47 | S2 | 1312 | G |
| 47 | S2 | 1341 | C |
| 47 | S2 | 1342 | U |
| 47 | S2 | 1348 | G |
| 47 | S2 | 1364 | U |
| 47 | S2 | 1371 | U |
| 47 | S2 | 1372 | U |
| 47 | S2 | 1373 | C |
| 47 | S2 | 1376 | A |
| 47 | S2 | 1378 | A |
| 47 | S2 | 1396 | A |
| 47 | S2 | 1401 | A |
| 47 | S2 | 1402 | A |
| 47 | S2 | 1408 | U |
| 47 | S2 | 1412 | C |
| 47 | S2 | 1414 | A |
| 47 | S2 | 1415 | C |
| 47 | S2 | 1418 | C |
| 47 | S2 | 1419 | C |
| 47 | S2 | 1420 | G |
| 47 | S2 | 1421 | A |
| 47 | S2 | 1422 | G |
| 47 | S2 | 1423 | C |
| 47 | S2 | 1424 | G |
| 47 | S2 | 1428 | G |
| 47 | S2 | 1433 | C |
| 47 | S2 | 1435 | C |
| 47 | S2 | 1436 | C |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 47 | S2 | 1438 | A |
| 47 | S2 | 1446 | A |
| 47 | S2 | 1449 | G |
| 47 | S2 | 1450 | G |
| 47 | S2 | 1454 | A |
| 47 | S2 | 1463 | U |
| 47 | S2 | 1466 | G |
| 47 | S2 | 1480 | A |
| 47 | S2 | 1486 | A |
| 47 | S2 | 1488 | C |
| 47 | S2 | 1489 | A |
| 47 | S2 | 1490 | G |
| 47 | S2 | 1497 | G |
| 47 | S2 | 1498 | A |
| 47 | S2 | 1505 | U |
| 47 | S2 | 1507 | G |
| 47 | S2 | 1521 | C |
| 47 | S2 | 1522 | A |
| 47 | S2 | 1533 | A |
| 47 | S2 | 1534 | C |
| 47 | S2 | 1536 | G |
| 47 | S2 | 1537 | A |
| 47 | S2 | 1546 | G |
| 47 | S2 | 1552 | G |
| 47 | S2 | 1556 | A |
| 47 | S2 | 1558 | C |
| 47 | S2 | 1560 | U |
| 47 | S2 | 1570 | G |
| 47 | S2 | 1573 | G |
| 47 | S2 | 1575 | G |
| 47 | S2 | 1578 | U |
| 47 | S2 | 1580 | A |
| 47 | S2 | 1582 | C |
| 47 | S2 | 1585 | U |
| 47 | S2 | 1586 | U |
| 47 | S2 | 1587 | G |
| 47 | S2 | 1588 | A |
| 47 | S2 | 1598 | G |
| 47 | S2 | 1599 | U |
| 47 | S2 | 1600 | G |
| 47 | S2 | 1601 | A |
| 47 | S2 | 1606 | G |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 47 | S2 | 1621 | U |
| 47 | S2 | 1623 | A |
| 47 | S2 | 1633 | A |
| 47 | S2 | 1637 | A |
| 47 | S2 | 1638 | G |
| 47 | S2 | 1639 | G |
| 47 | S2 | 1640 | A |
| 47 | S2 | 1644 | C |
| 47 | S2 | 1646 | C |
| 47 | S2 | 1648 | G |
| 47 | S2 | 1654 | G |
| 47 | S2 | 1661 | A |
| 47 | S2 | 1663 | A |
| 47 | S2 | 1665 | G |
| 47 | S2 | 1671 | G |
| 47 | S2 | 1680 | G |
| 47 | S2 | 1683 | C |
| 47 | S2 | 1699 | A |
| 47 | S2 | 1715 | A |
| 47 | S2 | 1719 | A |
| 47 | S2 | 1721 | U |
| 47 | S2 | 1722 | G |
| 47 | S2 | 1726 | G |
| 47 | S2 | 1742 | C |
| 47 | S2 | 1743 | G |
| 47 | S2 | 1744 | G |
| 47 | S2 | 1745 | A |
| 47 | S2 | 1748 | G |
| 47 | S2 | 1752 | C |
| 47 | S2 | 1753 | C |
| 47 | S2 | 1754 | G |
| 47 | S2 | 1756 | C |
| 47 | S2 | 1757 | G |
| 47 | S2 | 1758 | G |
| 47 | S2 | 1760 | G |
| 47 | S2 | 1761 | U |
| 47 | S2 | 1772 | C |
| 47 | S2 | 1773 | C |
| 47 | S2 | 1774 | C |
| 47 | S2 | 1775 | U |
| 47 | S2 | 1776 | G |
| 47 | S2 | 1777 | G |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 47 | S2 | 1782 | G |
| 47 | S2 | 1783 | C |
| 47 | S2 | 1784 | G |
| 47 | S2 | 1785 | C |
| 47 | S2 | 1786 | U |
| 47 | S2 | 1787 | G |
| 47 | S2 | 1798 | C |
| 47 | S2 | 1808 | U |
| 47 | S2 | 1809 | A |
| 47 | S2 | 1810 | U |
| 47 | S2 | 1812 | U |
| 47 | S2 | 1813 | A |
| 47 | S2 | 1822 | A |
| 47 | S2 | 1823 | A |
| 47 | S2 | 1825 | A |
| 47 | S2 | 1826 | G |
| 47 | S2 | 1829 | G |
| 47 | S2 | 1831 | A |
| 47 | S2 | 1832 | A |
| 47 | S2 | 1835 | A |
| 47 | S2 | 1838 | U |
| 47 | S2 | 1849 | G |
| 47 | S2 | 1851 | A |
| 47 | S2 | 1852 | C |
| 47 | S2 | 1861 | G |
| 47 | S2 | 1862 | G |
| 47 | S2 | 1863 | A |
| 47 | S2 | 1864 | U |
| 47 | S2 | 1865 | C |
| 83 | CC | 7 | G |
| 83 | CC | 8 | U |
| 83 | CC | 9 | G |
| 83 | CC | 14 | A |
| 83 | CC | 16 | U |
| 83 | CC | 17 | G |
| 83 | CC | 18 | G |
| 83 | CC | 19 | U |
| 83 | CC | 20 | U |
| 83 | CC | 21 | A |
| 83 | CC | 22 | A |
| 83 | CC | 24 | G |
| 83 | CC | 25 | C |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 83 | CC | 26 | G |
| 83 | CC | 40 | C |
| 83 | CC | 41 | C |
| 83 | CC | 45 | G |
| 83 | CC | 48 | G |
| 83 | CC | 49 | U |
| 83 | CC | 51 | U |
| 83 | CC | 56 | G |
| 83 | CC | 70 | C |
| 83 | CC | 85 | A |

All (26) RNA pucker outliers are listed below:

| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | L5 | 406 | C |
| 1 | L5 | 493 | G |
| 1 | L5 | 504 | G |
| 1 | L5 | 914 | U |
| 1 | L5 | 1082 | C |
| 1 | L5 | 1633 | G |
| 1 | L5 | 1976 | G |
| 1 | L5 | 1977 | C |
| 1 | L5 | 2033 | A |
| 1 | L5 | 2416 | G |
| 1 | L5 | 2675 | G |
| 1 | L5 | 2760 | G |
| 1 | L5 | 2786 | C |
| 1 | L5 | 3614 | G |
| 1 | L5 | 3673 | C |
| 1 | L5 | 4378 | A |
| 1 | L5 | 4913 | G |
| 47 | S2 | 112 | U |
| 47 | S2 | 291 | G |
| 47 | S2 | 420 | G |
| 47 | S2 | 563 | G |
| 47 | S2 | 688 | U |
| 47 | S2 | 1434 | C |
| 47 | S2 | 1781 | A |
| 83 | CC | 18 | G |
| 83 | CC | 50 | C |

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

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

## 5.5 Carbohydrates

There are no oligosaccharides in this entry.

## 5.6 Ligand geometry

Of 264 ligands modelled in this entry, 264 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

## 5.7 Other polymers

There are no such residues in this entry.

## 5.8 Polymer linkage issues

There are no chain breaks in this entry.

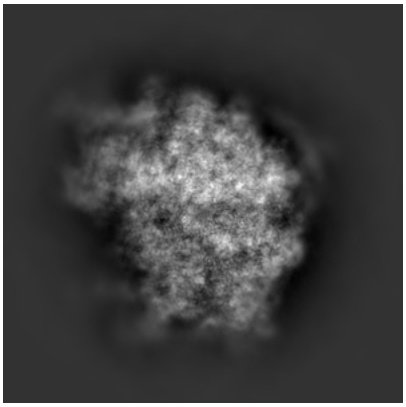
# 6 Map visualisation

This section contains visualisations of the EMDB entry EMD-11099. These allow visual inspection of the internal detail of the map and identification of artifacts.

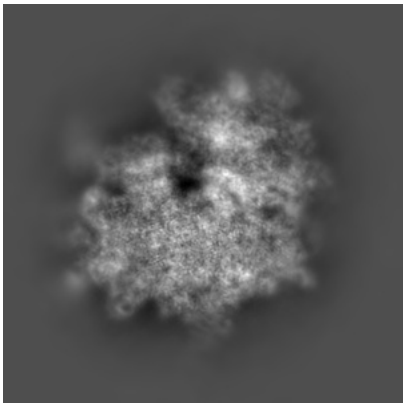
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

## 6.1 Orthogonal projections

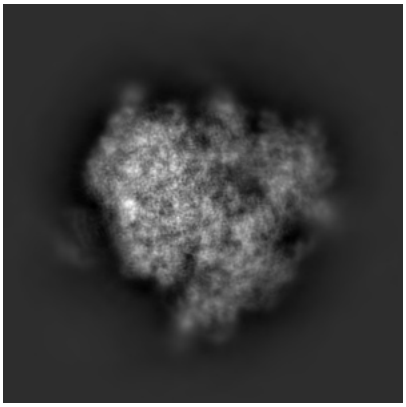
### 6.1.1 Primary map



X



Y

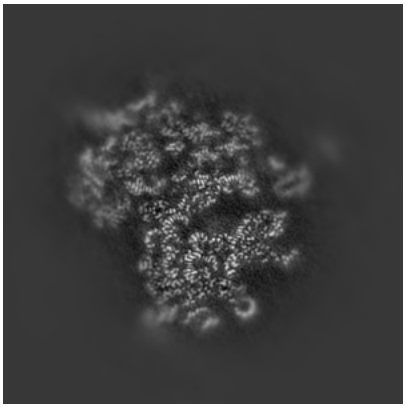


Z

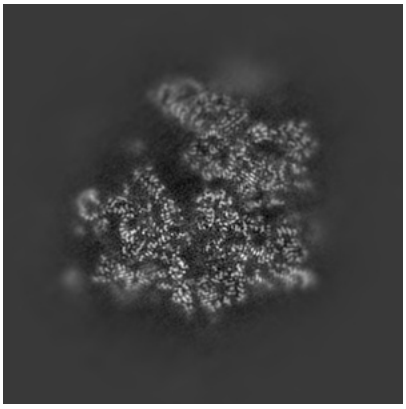
The images above show the map projected in three orthogonal directions.

## 6.2 Central slices

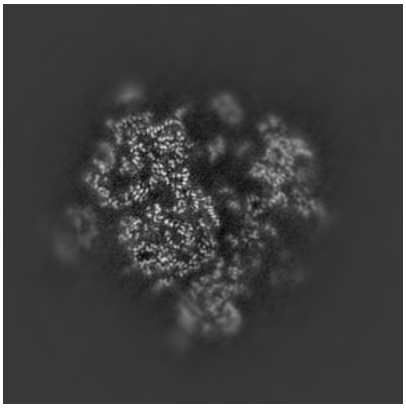
### 6.2.1 Primary map



X Index: 200



Y Index: 200

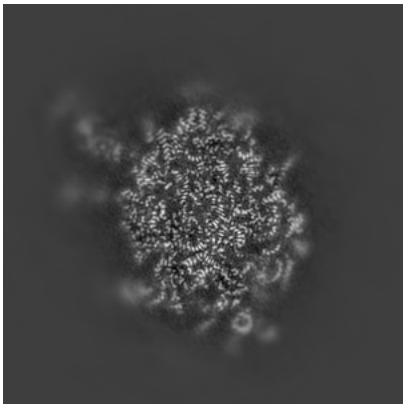


Z Index: 200

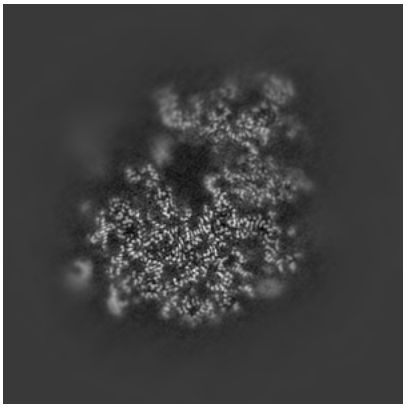
The images above show central slices of the map in three orthogonal directions.

## 6.3 Largest variance slices (i)

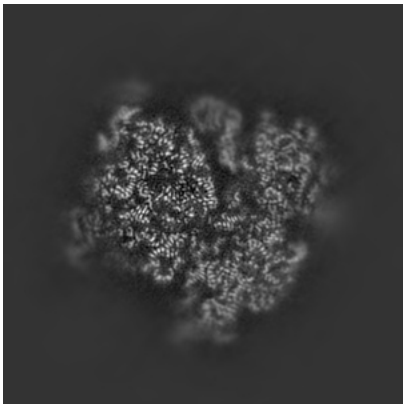
### 6.3.1 Primary map



X Index: 172



Y Index: 216

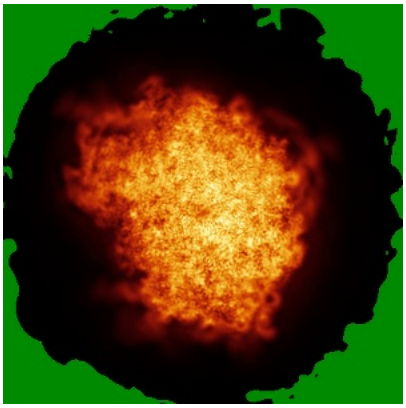


Z Index: 219

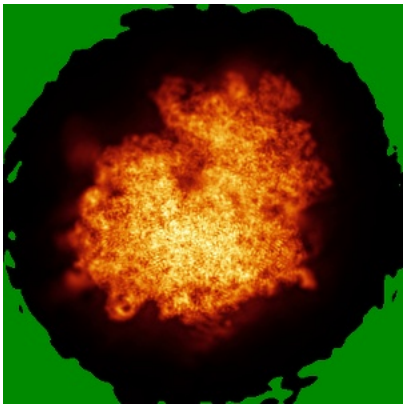
The images above show the largest variance slices of the map in three orthogonal directions.

## 6.4 Orthogonal standard-deviation projections (False-color) (i)

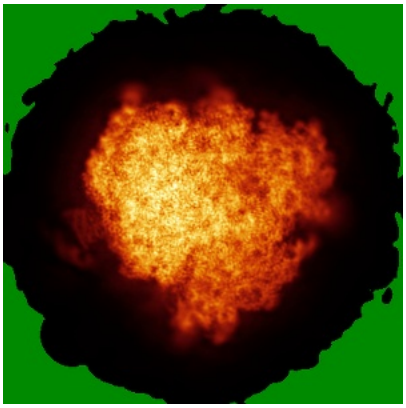
### 6.4.1 Primary map



X



Y



Z

The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

## 6.5 Orthogonal surface views (i)

This section was not generated.

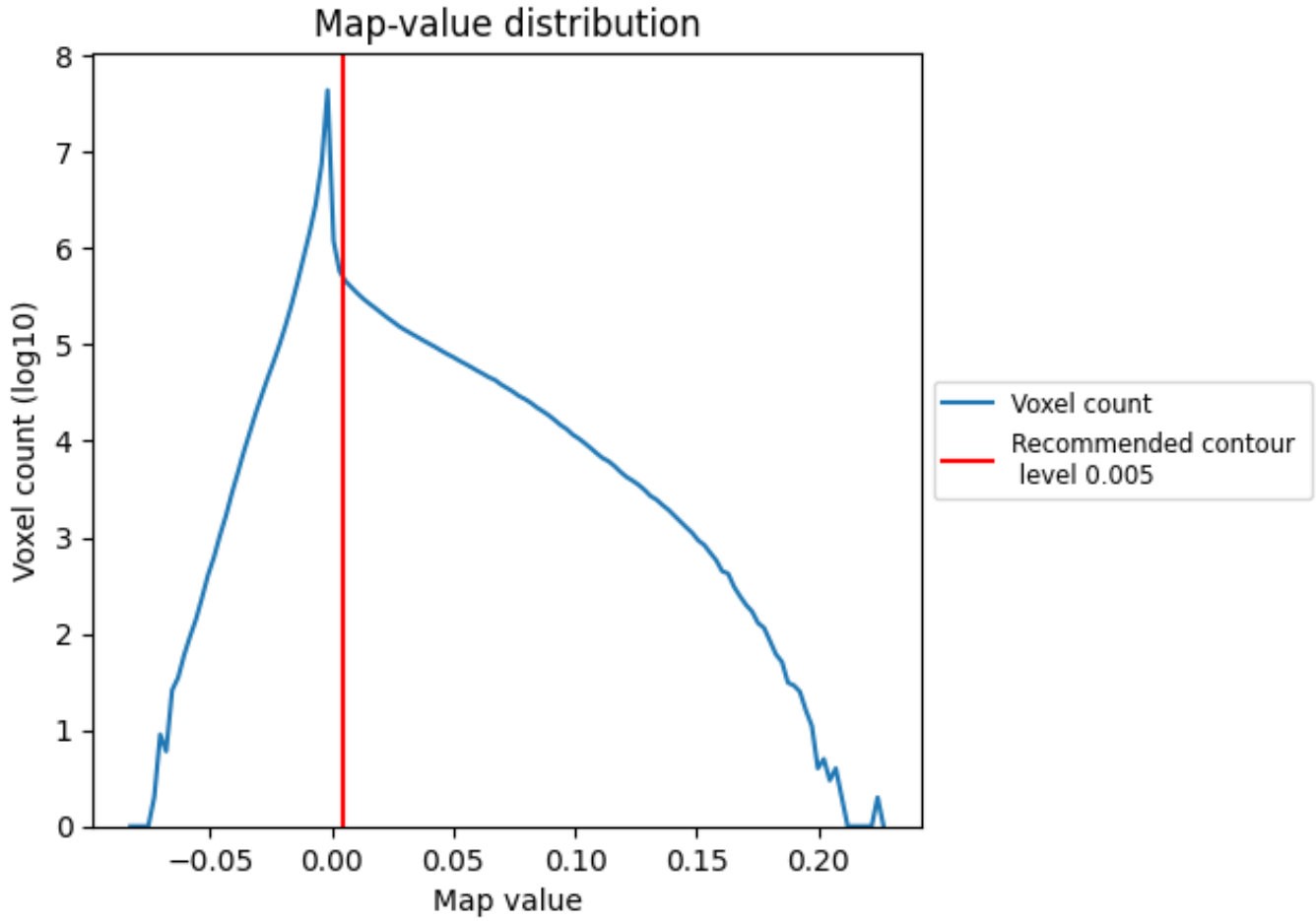
## 6.6 Mask visualisation (i)

This section was not generated. No masks/segmentation were deposited.

# 7 Map analysis

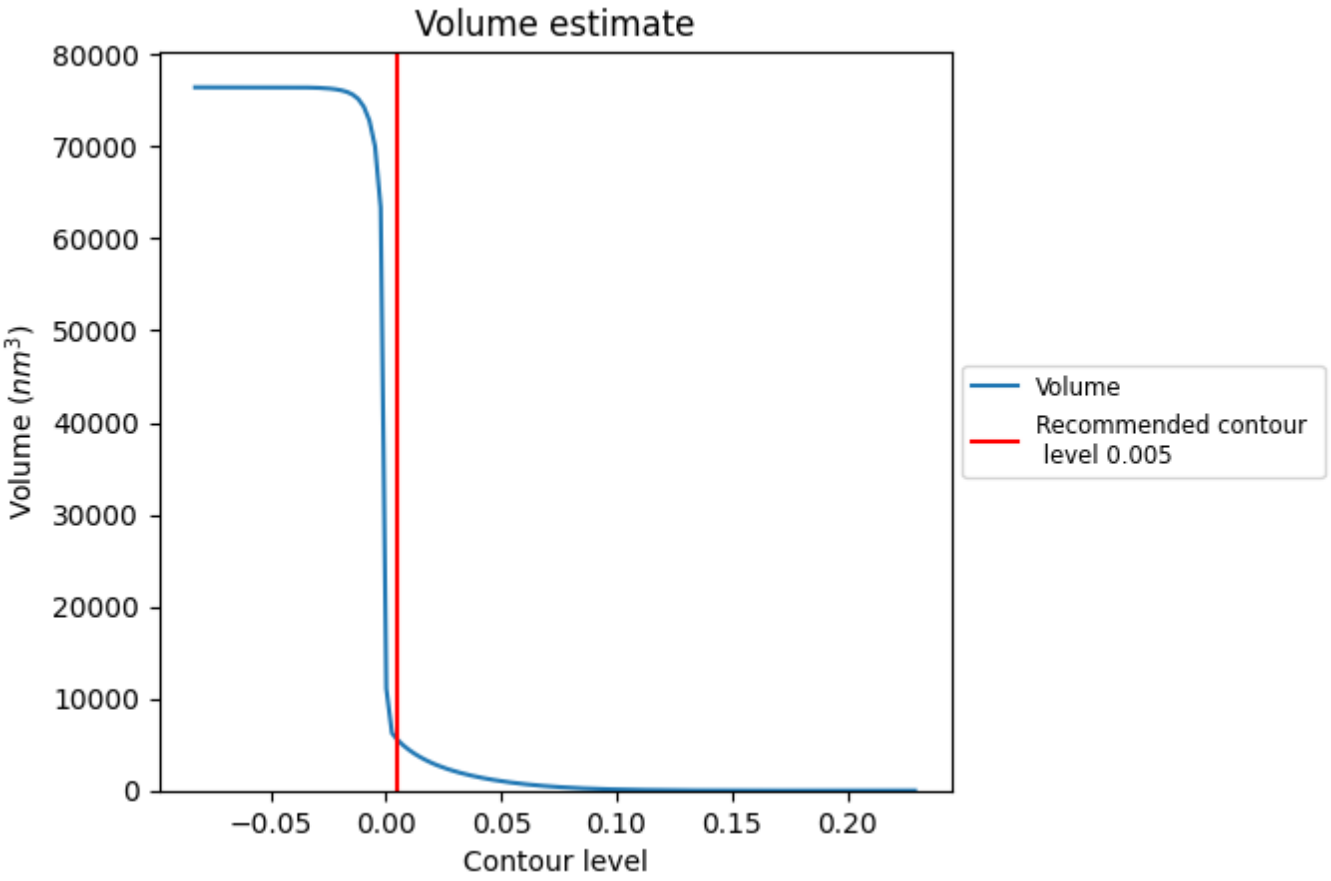
This section contains the results of statistical analysis of the map.

## 7.1 Map-value distribution




The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

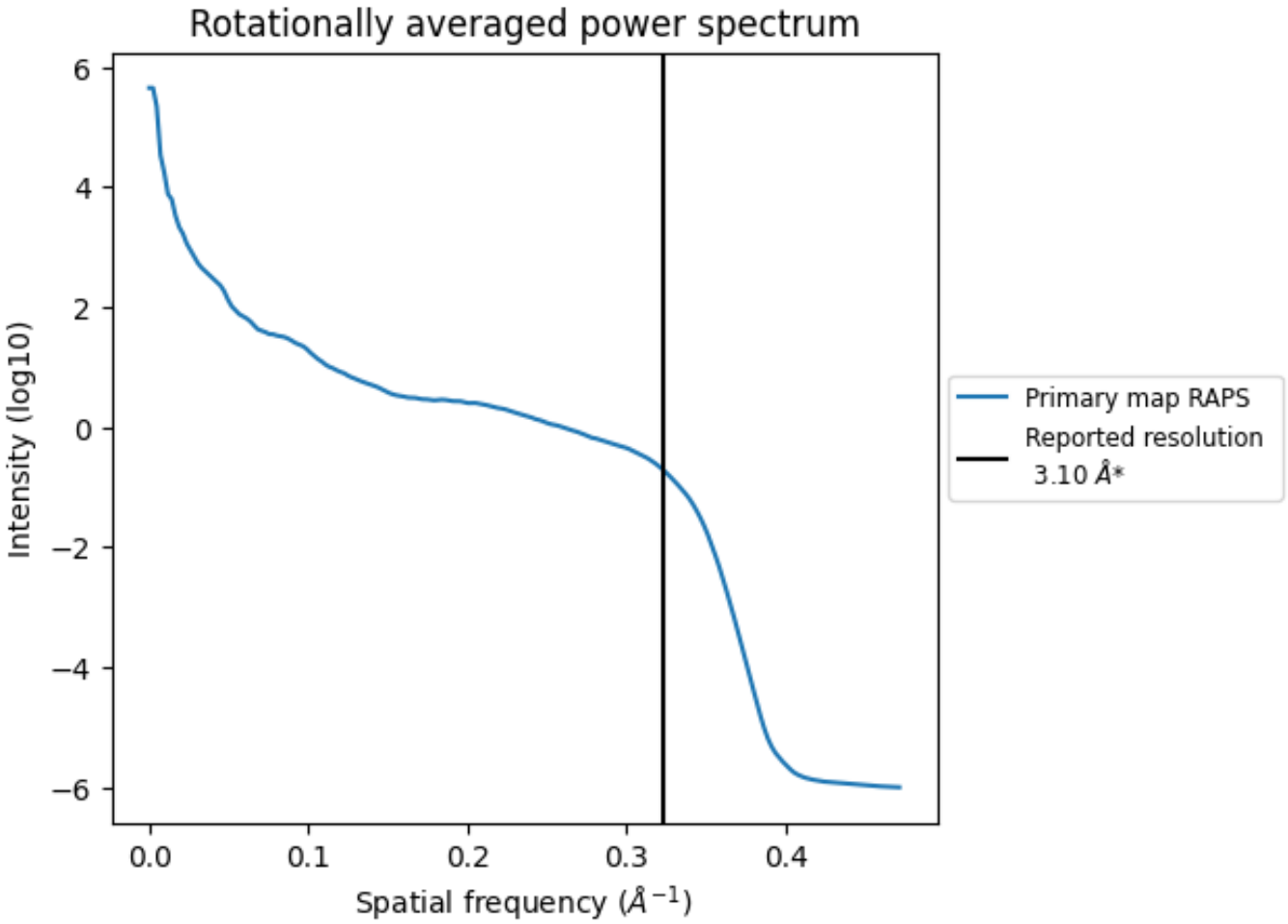
## 7.2 Volume estimate




The volume at the recommended contour level is 5515 $nm^3$; this corresponds to an approximate mass of 4981 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

## 7.3 Rotationally averaged power spectrum (i)

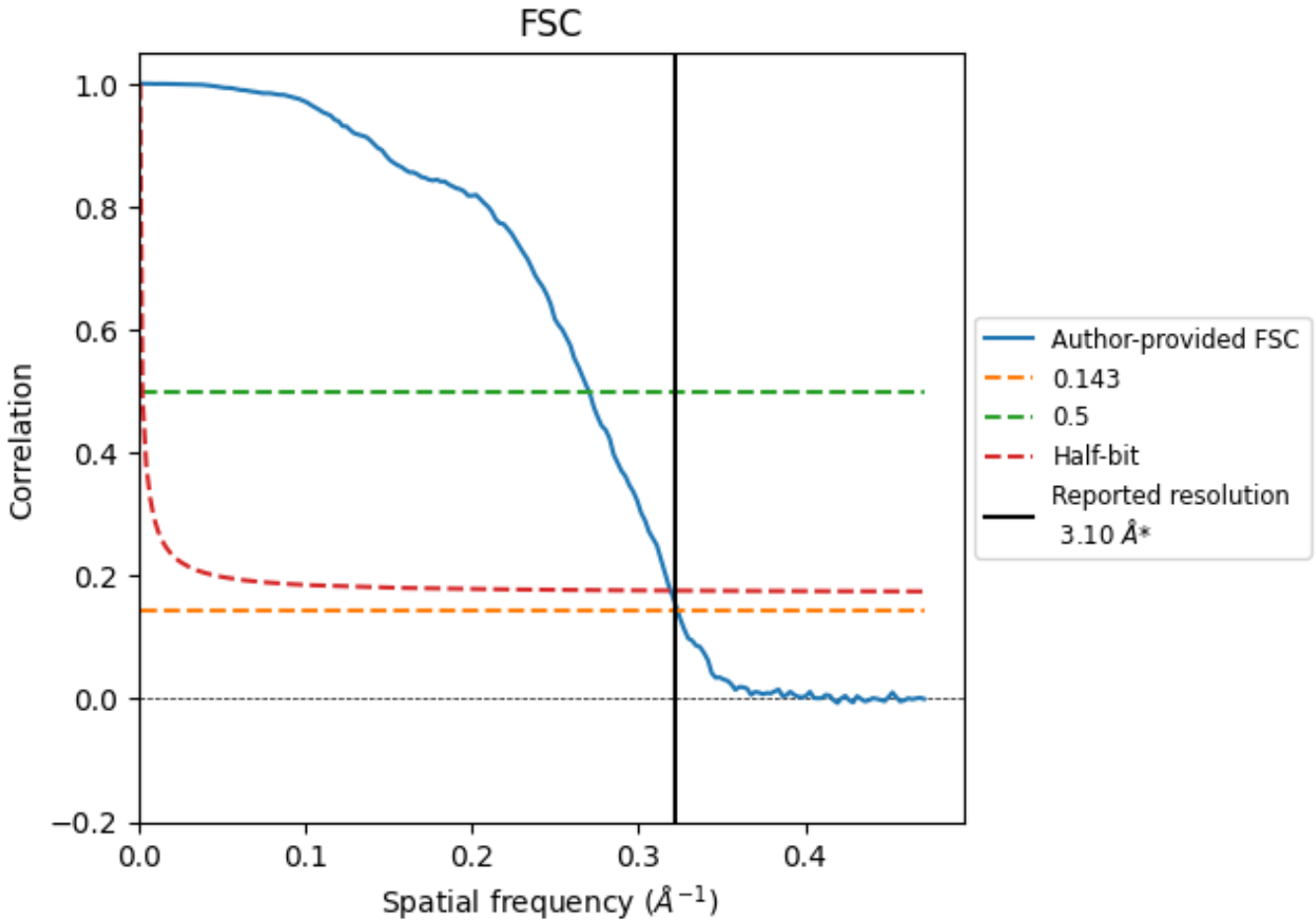



*Reported resolution corresponds to spatial frequency of 0.323 Å$^{-1}$

# 8 Fourier-Shell correlation

Fourier-Shell Correlation (FSC) is the most commonly used method to estimate the resolution of single-particle and subtomogram-averaged maps. The shape of the curve depends on the imposed symmetry, mask and whether or not the two 3D reconstructions used were processed from a common reference. The reported resolution is shown as a black line. A curve is displayed for the half-bit criterion in addition to lines showing the 0.143 gold standard cut-off and 0.5 cut-off.

## 8.1 FSC




*Reported resolution corresponds to spatial frequency of 0.323 Å$^{-1}$

## 8.2 Resolution estimates (i)

| Resolution estimate (Å) | Estimation criterion (FSC cut-off) | | |
|---|---|---|---|
| | 0.143 | 0.5 | Half-bit |
| Reported by author | 3.10 | - | - |
| Author-provided FSC curve | 3.09 | 3.70 | 3.13 |
| Unmasked-calculated* | - | - | - |

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps.

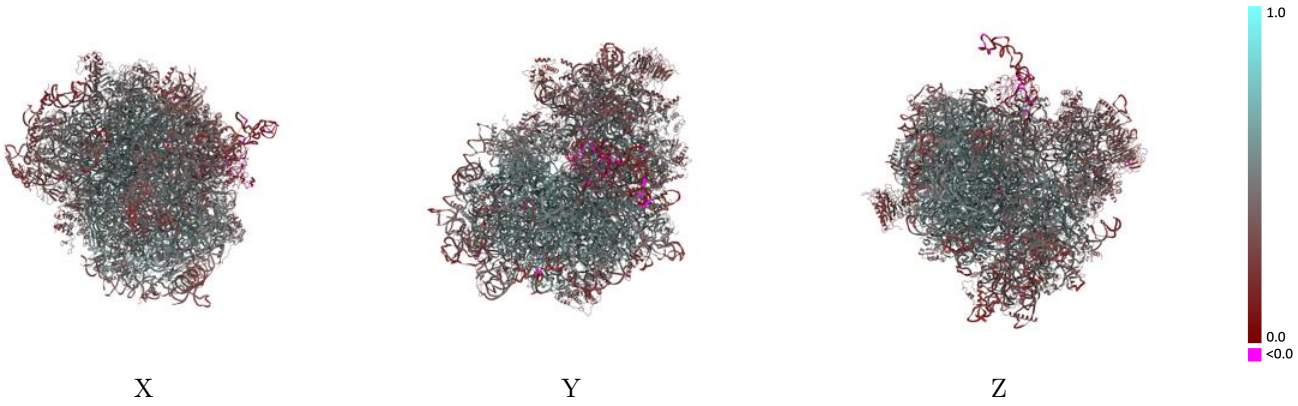
# 9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-11099 and PDB model 6Z6M. Per-residue inclusion information can be found in section 3 on page 21.

## 9.1 Map-model overlay

This section was not generated.

## 9.2 Q-score mapped to coordinate model

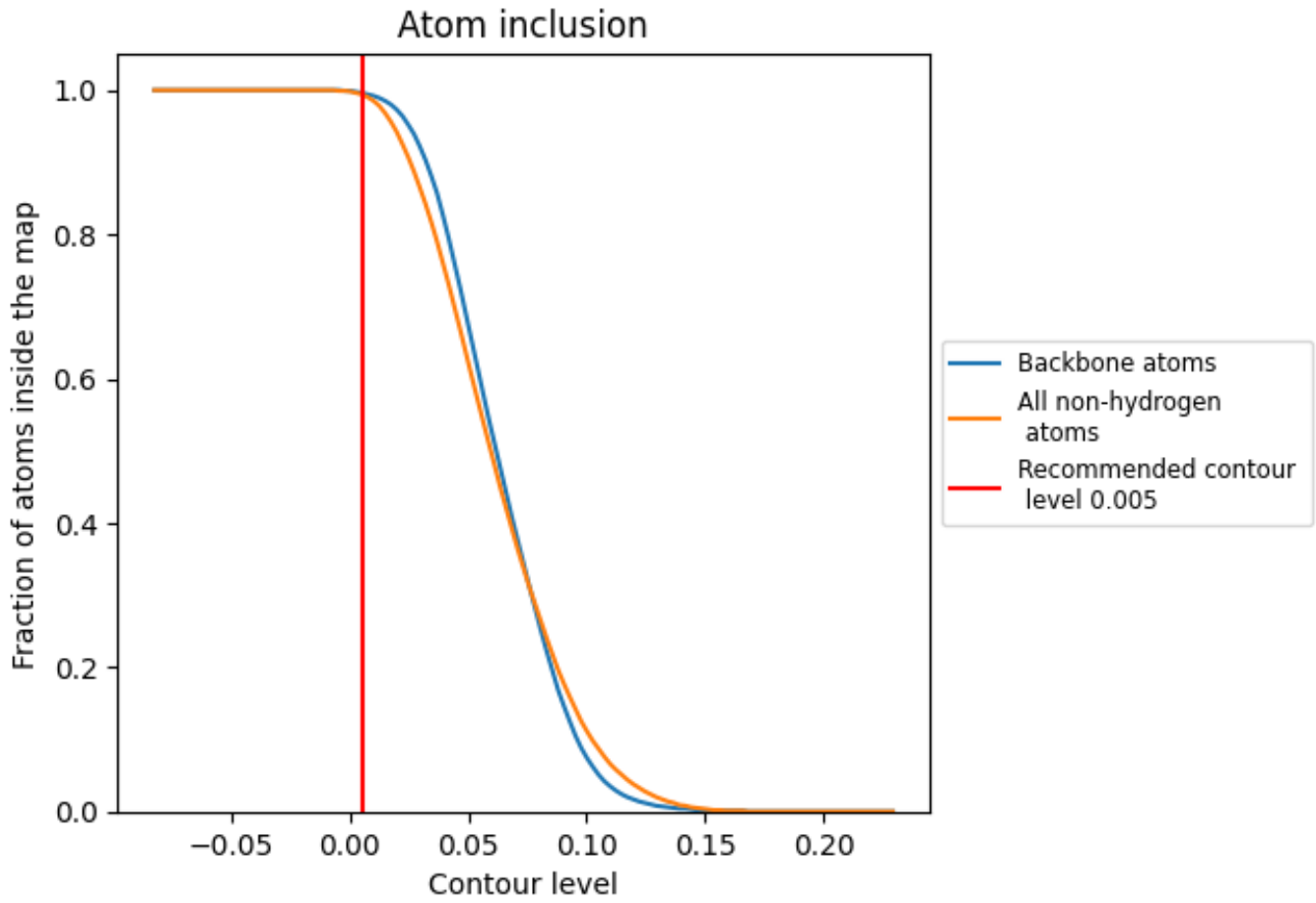



The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions at which atoms can be resolved. Low Q-score values may therefore be expected for many entries.

## 9.3 Atom inclusion mapped to coordinate model

This section was not generated.

## 9.4 Atom inclusion (i)




At the recommended contour level, 100% of all backbone atoms, 99% of all non-hydrogen atoms, are inside the map.

## 9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.005) and Q-score for the entire model and for each chain.

| Chain | Atom inclusion | Q-score |
|---|---|---|
| All | 0.9940 | 0.4740 |
| CA | 0.9820 | 0.3040 |
| CB | 0.9720 | 0.4230 |
| CC | 0.9900 | 0.3700 |
| CD | 0.9910 | 0.4420 |
| L5 | 0.9980 | 0.5060 |
| L7 | 1.0000 | 0.5410 |
| L8 | 0.9990 | 0.5280 |
| LA | 0.9900 | 0.5770 |
| LB | 0.9940 | 0.5440 |
| LC | 0.9950 | 0.5390 |
| LD | 1.0000 | 0.4750 |
| LE | 0.9960 | 0.4540 |
| LF | 0.9910 | 0.5410 |
| LG | 0.9910 | 0.4600 |
| LH | 0.9950 | 0.5190 |
| LI | 0.9920 | 0.5400 |
| LJ | 0.9960 | 0.4270 |
| LL | 0.9850 | 0.4980 |
| LM | 0.9980 | 0.4950 |
| LN | 0.9900 | 0.5790 |
| LO | 0.9910 | 0.5510 |
| LP | 0.9950 | 0.5530 |
| LQ | 0.9920 | 0.5670 |
| LR | 0.9840 | 0.4820 |
| LS | 0.9940 | 0.5600 |
| LT | 0.9910 | 0.5310 |
| LU | 0.9960 | 0.4130 |
| LV | 0.9840 | 0.5580 |
| LW | 0.9980 | 0.4060 |
| LX | 0.9930 | 0.5250 |
| LY | 0.9980 | 0.5140 |
| LZ | 0.9980 | 0.4880 |
| La | 0.9980 | 0.5650 |
| Lb | 0.9840 | 0.4600 |

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| Chain | Atom inclusion | Q-score |
|---|---|---|
| Lc | 0.9770 | 0.4810 |
| Ld | 0.9950 | 0.5230 |
| Le | 0.9940 | 0.5700 |
| Lf | 0.9960 | 0.5730 |
| Lg | 0.9970 | 0.5410 |
| Lh | 0.9960 | 0.4930 |
| Li | 0.9990 | 0.4950 |
| Lj | 0.9990 | 0.5790 |
| Lk | 0.9960 | 0.4510 |
| Ll | 0.9910 | 0.5530 |
| Lm | 0.9830 | 0.5460 |
| Ln | 0.9900 | 0.5700 |
| Lo | 0.9810 | 0.5380 |
| Lp | 0.9810 | 0.5560 |
| Lr | 0.9940 | 0.5320 |
| Lz | 0.8510 | 0.0960 |
| S2 | 0.9990 | 0.4520 |
| SA | 0.9900 | 0.4270 |
| SB | 0.9920 | 0.4250 |
| SC | 0.9930 | 0.4760 |
| SD | 0.9910 | 0.4120 |
| SE | 0.9980 | 0.4500 |
| SF | 0.9840 | 0.3460 |
| SG | 0.9950 | 0.3300 |
| SH | 0.9970 | 0.3500 |
| SI | 0.9910 | 0.4130 |
| SJ | 0.9930 | 0.4360 |
| SK | 1.0000 | 0.3810 |
| SL | 0.9930 | 0.4760 |
| SM | 0.9980 | 0.2330 |
| SN | 0.9870 | 0.4680 |
| SO | 0.9640 | 0.4350 |
| SP | 0.9980 | 0.3730 |
| SQ | 0.9910 | 0.3900 |
| SR | 0.9950 | 0.3850 |
| SS | 0.9970 | 0.3450 |
| ST | 1.0000 | 0.3590 |
| SU | 0.9990 | 0.3690 |
| SV | 0.9940 | 0.4440 |
| SW | 0.9900 | 0.5080 |
| SX | 0.9940 | 0.5290 |
| SY | 0.9750 | 0.3840 |

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| Chain | Atom inclusion | Q-score |
|---|---|---|
| SZ | 0.9880 | 0.2750 |
| Sa | 0.9920 | 0.4930 |
| Sb | 0.9950 | 0.4290 |
| Sc | 0.9750 | 0.3490 |
| Sd | 0.9930 | 0.4670 |
| Se | 0.9800 | 0.4370 |
| Sf | 1.0000 | 0.2810 |
| Sg | 0.9990 | 0.3120 |