# Full wwPDB EM Validation Report

May 12, 2025 – 01:55 AM JST

| | | |
|---|---|---|
| PDB ID | : | 8ZH3 / pdb_00008zh3 |
| EMDB ID | : | EMD-60094 |
| Title | : | 80S ribosome with A/P-P/E tRNA and mRNA of WNV |
| Authors | : | Wu, M.; Yuan, S. |
| Deposited on | : | 2024-05-10 |
| Resolution | : | 2.70 Å(reported) |

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.

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

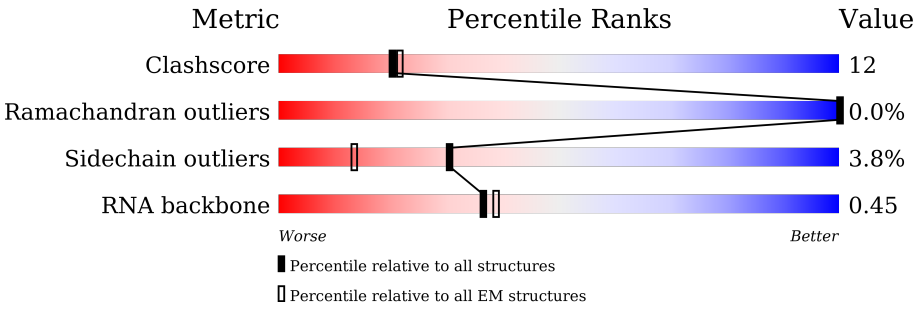
| | | |
|---|---|---|
| EMDB validation analysis | : | 0.0.1.dev118 |
| MolProbity | : | 4-5-2 with Phenix2.0rc1 |
| Percentile statistics | : | 20231227.v01 (using entries in the PDB archive December 27th 2023) |
| MapQ | : | 1.9.13 |
| Ideal geometry (proteins) | : | Engh & Huber (2001) |
| Ideal geometry (DNA, RNA) | : | Parkinson et al. (1996) |
| Validation Pipeline (wwPDB-VP) | : | 2.43.1 |

# 1 Overall quality at a glance (i)

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

The reported resolution of this entry is 2.70 Å.

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




| Metric | Whole archive (#Entries) | EM structures (#Entries) |
|---|---|---|
| Clashscore | 210492 | 15764 |
| Ramachandran outliers | 207382 | 16835 |
| Sidechain outliers | 206894 | 16415 |
| RNA backbone | 6643 | 2191 |

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 | LA | 3393 | 6% 48% 38% 8% 6% |
| 2 | LB | 121 | 57% 36% 7% |
| 3 | LC | 158 | 41% 51% 9% |
| 4 | LD | 251 | 69% 31% |
| 5 | LE | 386 | 70% 29% |
| 6 | LF | 361 | 68% 32% |
| 7 | LG | 294 | 6% 72% 28% |

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| Mol | Chain | Length | Quality of chain |
|---|---|---|---|
| 8 | LH | 175 | 9% 62% 31% 5% |
| 9 | LI | 222 | 72% 26% |
| 10 | LJ | 233 | 6% 71% 26% |
| 11 | LK | 191 | 59% 37% |
| 12 | LL | 218 | 5% 72% 27% |
| 13 | LM | 169 | 67% 31% |
| 14 | LN | 193 | 71% 28% |
| 15 | LO | 136 | 56% 43% |
| 16 | LP | 203 | 68% 28% |
| 17 | LQ | 197 | 76% 24% |
| 18 | LR | 183 | 8% 75% 25% |
| 19 | LS | 185 | 71% 28% |
| 20 | LT | 188 | 9% 82% 18% |
| 21 | LU | 171 | 63% 37% |
| 22 | LV | 159 | 74% 26% |
| 23 | LW | 100 | 15% 71% 27% |
| 24 | LX | 136 | 73% 27% |
| 25 | LY | 65 | 6% 68% 32% |
| 26 | LZ | 121 | 76% 21% |
| 27 | La | 125 | 70% 28% |
| 28 | Lb | 135 | 62% 36% |
| 29 | Lc | 148 | 61% 35% |
| 30 | Ld | 58 | 74% 24% |
| 31 | Le | 96 | 68% 29% |
| 32 | Lf | 109 | 9% 65% 33% |

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| Mol | Chain | Length | Quality of chain |
|---|---|---|---|
| 33 | Lg | 127 | 6% 76% 23% |
| 34 | Lh | 106 | 77% 23% |
| 35 | Li | 112 | 75% 22% |
| 36 | Lj | 119 | 59% 40% |
| 37 | Lk | 99 | 74% 25% |
| 38 | Ll | 81 | 75% 25% |
| 39 | Lm | 77 | 18% 64% 35% |
| 40 | Ln | 50 | 70% 28% |
| 41 | Lo | 52 | 88% 12% |
| 42 | Lp | 25 | 68% 32% |
| 43 | Lq | 103 | 71% 28% |
| 44 | Lr | 91 | 63% 37% |
| 45 | S2 | 1799 | 14% 41% 46% 11% |
| 46 | SA | 223 | 13% 67% 30% |
| 47 | SB | 206 | 19% 58% 40% |
| 48 | SC | 92 | 33% 57% 43% |
| 49 | SD | 124 | 92% 58% 37% |
| 50 | SE | 117 | 19% 65% 34% |
| 51 | SF | 141 | 14% 68% 31% |
| 52 | SG | 125 | 25% 70% 26% |
| 53 | SH | 145 | 13% 61% 39% |
| 54 | SI | 143 | 20% 57% 43% |
| 55 | SJ | 101 | 38% 56% 43% |
| 56 | SK | 82 | 49% 63% 35% |
| 57 | SL | 63 | 22% 57% 41% |

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| Mol | Chain | Length | Quality of chain |
|---|---|---|---|
| 58 | SM | 53 | 6% 55% 43% |
| 59 | SN | 73 | 81% 68% 30% |
| 60 | SO | 312 | 40% 54% 44% |
| 61 | SP | 206 | 11% 64% 34% |
| 62 | SQ | 232 | 8% 61% 35% |
| 63 | SR | 217 | 63% 35% |
| 64 | SS | 260 | 7% 61% 37% |
| 65 | ST | 228 | 32% 67% 32% |
| 66 | SU | 185 | 19% 66% 32% |
| 67 | SV | 199 | 13% 58% 35% 6% |
| 68 | SW | 185 | 17% 56% 41% |
| 69 | SX | 146 | 8% 64% 32% |
| 70 | SY | 150 | 73% 27% |
| 71 | SZ | 128 | 65% 32% |
| 72 | Sa | 87 | 5% 66% 33% |
| 73 | Sb | 129 | 64% 35% |
| 74 | Sc | 144 | 5% 72% 26% |
| 75 | Sd | 134 | 17% 65% 33% |
| 76 | Se | 97 | 75% 25% |
| 77 | Sf | 81 | 12% 64% 36% |
| 78 | Sg | 57 | 25% 67% 33% |
| 79 | Ta | 77 | 44% 17% 62% 21% |
| 80 | Tb | 77 | 29% 40% 42% 18% |
| 81 | mR | 25 | 40% 60% |

# 2 Entry composition

There are 81 unique types of molecules in this entry. The entry contains 202539 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 25S rRNA (3393-MER).

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| | | | Total | C | N | O | P | | |
| 1 | LA | 3184 | 68091 | 30415 | 12259 | 22233 | 3184 | 0 | 0 |

There is a discrepancy between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment | Reference |
|---|---|---|---|---|---|
| LA | ? | - | G | deletion | GB 2209526103 |

- Molecule 2 is a RNA chain called 5S rRNA (121-MER).

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| | | | Total | C | N | O | P | | |
| 2 | LB | 121 | 2579 | 1152 | 461 | 845 | 121 | 0 | 0 |

- Molecule 3 is a RNA chain called 5.8S rRNA (158-MER).

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| | | | Total | C | N | O | P | | |
| 3 | LC | 158 | 3353 | 1500 | 586 | 1109 | 158 | 0 | 0 |

- Molecule 4 is a protein called Large ribosomal subunit protein uL2A.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| | | | Total | C | N | O | S | | |
| 4 | LD | 251 | 1899 | 1182 | 385 | 331 | 1 | 0 | 0 |

- Molecule 5 is a protein called Large ribosomal subunit protein uL3.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| | | | Total | C | N | O | S | | |
| 5 | LE | 386 | 3075 | 1950 | 584 | 533 | 8 | 0 | 0 |

- Molecule 6 is a protein called Large ribosomal subunit protein uL4A.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 6 | LF | 361 | Total | C | N | O | S | 0 | 0 |
| | | | 2748 | 1729 | 522 | 494 | 3 | | |

- Molecule 7 is a protein called Large ribosomal subunit protein uL18.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 7 | LG | 294 | Total | C | N | O | S | 0 | 0 |
| | | | 2351 | 1484 | 410 | 455 | 2 | | |

- Molecule 8 is a protein called Large ribosomal subunit protein eL6B.

| Mol | Chain | Residues | Atoms | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|
| 8 | LH | 167 | Total | C | N | O | 0 | 0 |
| | | | 1307 | 843 | 234 | 230 | | |

- Molecule 9 is a protein called Large ribosomal subunit protein uL30A.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 9 | LI | 222 | Total | C | N | O | S | 0 | 0 |
| | | | 1784 | 1151 | 324 | 308 | 1 | | |

- Molecule 10 is a protein called Large ribosomal subunit protein eL8A.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 10 | LJ | 233 | Total | C | N | O | S | 0 | 0 |
| | | | 1804 | 1151 | 323 | 327 | 3 | | |

- Molecule 11 is a protein called Large ribosomal subunit protein uL6A.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 11 | LK | 191 | Total | C | N | O | S | 0 | 0 |
| | | | 1508 | 957 | 274 | 273 | 4 | | |

- Molecule 12 is a protein called Large ribosomal subunit protein uL16.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 12 | LL | 218 | Total | C | N | O | S | 0 | 0 |
| | | | 1764 | 1117 | 334 | 306 | 7 | | |

- Molecule 13 is a protein called Large ribosomal subunit protein uL5B.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 13 | LM | 169 | Total | C | N | O | S | 0 | 0 |
| | | | 1346 | 843 | 252 | 247 | 4 | | |

- Molecule 14 is a protein called Large ribosomal subunit protein eL13A.

| Mol | Chain | Residues | Atoms | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|
| 14 | LN | 193 | Total | C | N | O | 0 | 0 |
| | | | 1543 | 962 | 315 | 266 | | |

- Molecule 15 is a protein called Large ribosomal subunit protein eL14A.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 15 | LO | 136 | Total | C | N | O | S | 0 | 0 |
| | | | 1053 | 675 | 199 | 177 | 2 | | |

- Molecule 16 is a protein called Large ribosomal subunit protein eL15A.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 16 | LP | 203 | Total | C | N | O | S | 0 | 0 |
| | | | 1720 | 1077 | 361 | 281 | 1 | | |

- Molecule 17 is a protein called Large ribosomal subunit protein uL13A.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 17 | LQ | 197 | Total | C | N | O | S | 197 | 0 |
| | | | 1555 | 1003 | 289 | 262 | 1 | | |

- Molecule 18 is a protein called Large ribosomal subunit protein uL22A.

| Mol | Chain | Residues | Atoms | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|
| 18 | LR | 183 | Total | C | N | O | 0 | 0 |
| | | | 1416 | 879 | 284 | 253 | | |

- Molecule 19 is a protein called Large ribosomal subunit protein eL18A.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 19 | LS | 185 | Total | C | N | O | S | 0 | 0 |
| | | | 1441 | 908 | 290 | 241 | 2 | | |

- Molecule 20 is a protein called Large ribosomal subunit protein eL19A.

| Mol | Chain | Residues | Atoms | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|
| 20 | LT | 188 | Total | C | N | O | 0 | 0 |
| | | | 1515 | 932 | 323 | 260 | | |

- Molecule 21 is a protein called Large ribosomal subunit protein eL20A.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 21 | LU | 171 | Total | C | N | O | S | 0 | 0 |
| | | | 1437 | 925 | 266 | 243 | 3 | | |

- Molecule 22 is a protein called Large ribosomal subunit protein eL21A.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 22 | LV | 159 | Total | C | N | O | S | 0 | 0 |
| | | | 1272 | 802 | 245 | 221 | 4 | | |

- Molecule 23 is a protein called Large ribosomal subunit protein eL22A.

| Mol | Chain | Residues | Atoms | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|
| 23 | LW | 100 | Total | C | N | O | 0 | 0 |
| | | | 796 | 516 | 131 | 149 | | |

- Molecule 24 is a protein called Large ribosomal subunit protein uL14A.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 24 | LX | 136 | Total | C | N | O | S | 0 | 0 |
| | | | 1003 | 628 | 189 | 179 | 7 | | |

- Molecule 25 is a protein called Large ribosomal subunit protein eL24A.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 25 | LY | 65 | Total | C | N | O | S | 0 | 0 |
| | | | 528 | 339 | 104 | 84 | 1 | | |

- Molecule 26 is a protein called Large ribosomal subunit protein uL23.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 26 | LZ | 121 | Total | C | N | O | S | 0 | 0 |
| | | | 964 | 620 | 169 | 173 | 2 | | |

- Molecule 27 is a protein called Large ribosomal subunit protein uL24A.

| Mol | Chain | Residues | Atoms | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|
| 27 | La | 125 | Total<br>984 | C<br>620 | N<br>191 | O<br>173 | 0 | 0 |

- Molecule 28 is a protein called Large ribosomal subunit protein eL27A.

| Mol | Chain | Residues | Atoms | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|
| 28 | Lb | 135 | Total<br>1080 | C<br>701 | N<br>199 | O<br>180 | 0 | 0 |

- Molecule 29 is a protein called Large ribosomal subunit protein uL15.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 29 | Lc | 148 | Total<br>1169 | C<br>747 | N<br>231 | O<br>188 | S<br>3 | 0 | 0 |

- Molecule 30 is a protein called Large ribosomal subunit protein eL29.

| Mol | Chain | Residues | Atoms | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|
| 30 | Ld | 58 | Total<br>462 | C<br>289 | N<br>100 | O<br>73 | 0 | 0 |

- Molecule 31 is a protein called Large ribosomal subunit protein eL30.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 31 | Le | 96 | Total<br>737 | C<br>476 | N<br>123 | O<br>137 | S<br>1 | 0 | 0 |

- Molecule 32 is a protein called Large ribosomal subunit protein eL31A.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 32 | Lf | 109 | Total<br>876 | C<br>556 | N<br>167 | O<br>152 | S<br>1 | 0 | 0 |

- Molecule 33 is a protein called Large ribosomal subunit protein eL32.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 33 | Lg | 127 | Total<br>1017 | C<br>644 | N<br>205 | O<br>167 | S<br>1 | 0 | 0 |

- Molecule 34 is a protein called Large ribosomal subunit protein eL33A.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 34 | Lh | 106 | Total | C | N | O | S | 0 | 0 |
| | | | 850 | 540 | 165 | 144 | 1 | | |

- Molecule 35 is a protein called Large ribosomal subunit protein eL34A.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 35 | Li | 112 | Total | C | N | O | S | 0 | 0 |
| | | | 880 | 545 | 179 | 152 | 4 | | |

- Molecule 36 is a protein called Large ribosomal subunit protein uL29A.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 36 | Lj | 119 | Total | C | N | O | S | 0 | 0 |
| | | | 969 | 615 | 186 | 167 | 1 | | |

- Molecule 37 is a protein called Large ribosomal subunit protein eL36A.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 37 | Lk | 99 | Total | C | N | O | S | 0 | 0 |
| | | | 766 | 478 | 154 | 132 | 2 | | |

- Molecule 38 is a protein called Large ribosomal subunit protein eL37A.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 38 | Ll | 81 | Total | C | N | O | S | 0 | 0 |
| | | | 645 | 393 | 141 | 106 | 5 | | |

- Molecule 39 is a protein called Large ribosomal subunit protein eL38.

| Mol | Chain | Residues | Atoms | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|
| 39 | Lm | 77 | Total | C | N | O | 0 | 0 |
| | | | 612 | 391 | 115 | 106 | | |

- Molecule 40 is a protein called Large ribosomal subunit protein eL39.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 40 | Ln | 50 | Total | C | N | O | S | 0 | 0 |
| | | | 436 | 272 | 97 | 65 | 2 | | |

- Molecule 41 is a protein called Large ribosomal subunit protein eL40A.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 41 | Lo | 52 | Total | C | N | O | S | 0 | 0 |
| | | | 410 | 254 | 86 | 65 | 5 | | |

- Molecule 42 is a protein called Large ribosomal subunit protein eL41A.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 42 | Lp | 25 | Total | C | N | O | S | 0 | 0 |
| | | | 229 | 139 | 62 | 27 | 1 | | |

- Molecule 43 is a protein called Large ribosomal subunit protein eL42A.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 43 | Lq | 103 | Total | C | N | O | S | 0 | 0 |
| | | | 824 | 517 | 167 | 135 | 5 | | |

- Molecule 44 is a protein called Large ribosomal subunit protein eL43A.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 44 | Lr | 91 | Total | C | N | O | S | 0 | 0 |
| | | | 694 | 429 | 138 | 121 | 6 | | |

- Molecule 45 is a RNA chain called chain 2 18S rRNA (1771-MER).

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 45 | S2 | 1771 | Total | C | N | O | P | 0 | 0 |
| | | | 37739 | 16872 | 6683 | 12413 | 1771 | | |

- Molecule 46 is a protein called Small ribosomal subunit protein uS3.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 46 | SA | 222 | Total | C | N | O | S | 0 | 0 |
| | | | 1729 | 1098 | 312 | 313 | 6 | | |

- Molecule 47 is a protein called Small ribosomal subunit protein uS7.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 47 | SB | 206 | Total | C | N | O | S | 0 | 0 |
| | | | 1605 | 1005 | 299 | 298 | 3 | | |

- Molecule 48 is a protein called Small ribosomal subunit protein eS10A.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 48 | SC | 92 | Total | C | N | O | S | 0 | 0 |
| | | | 752 | 487 | 122 | 141 | 2 | | |

- Molecule 49 is a protein called Small ribosomal subunit protein eS12.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 49 | SD | 121 | Total | C | N | O | S | 0 | 0 |
| | | | 875 | 551 | 153 | 169 | 2 | | |

- Molecule 50 is a protein called Small ribosomal subunit protein uS19.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 50 | SE | 117 | Total | C | N | O | S | 0 | 0 |
| | | | 916 | 583 | 171 | 155 | 7 | | |

- Molecule 51 is a protein called Small ribosomal subunit protein uS9A.

| Mol | Chain | Residues | Atoms | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|
| 51 | SF | 141 | Total | C | N | O | 0 | 0 |
| | | | 1105 | 708 | 203 | 194 | | |

- Molecule 52 is a protein called Small ribosomal subunit protein eS17A.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 52 | SG | 121 | Total | C | N | O | S | 0 | 0 |
| | | | 948 | 596 | 179 | 171 | 2 | | |

- Molecule 53 is a protein called Small ribosomal subunit protein uS13A.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 53 | SH | 145 | Total | C | N | O | S | 0 | 0 |
| | | | 1188 | 741 | 237 | 208 | 2 | | |

- Molecule 54 is a protein called Small ribosomal subunit protein eS19A.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 54 | SI | 143 | Total | C | N | O | S | 0 | 0 |
| | | | 1112 | 694 | 208 | 208 | 2 | | |

- Molecule 55 is a protein called Small ribosomal subunit protein uS10.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 55 | SJ | 100 | Total | C | N | O | S | 0 | 0 |
| | | | 797 | 506 | 144 | 146 | 1 | | |

- Molecule 56 is a protein called Small ribosomal subunit protein eS25A.

| Mol | Chain | Residues | Atoms | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|
| 56 | SK | 82 | Total | C | N | O | 0 | 0 |
| | | | 651 | 416 | 123 | 112 | | |

- Molecule 57 is a protein called Small ribosomal subunit protein eS28A.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 57 | SL | 63 | Total | C | N | O | S | 0 | 0 |
| | | | 491 | 303 | 96 | 91 | 1 | | |

- Molecule 58 is a protein called Small ribosomal subunit protein uS14A.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 58 | SM | 53 | Total | C | N | O | S | 0 | 0 |
| | | | 442 | 274 | 92 | 72 | 4 | | |

- Molecule 59 is a protein called Small ribosomal subunit protein eS31.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 59 | SN | 73 | Total | C | N | O | S | 0 | 0 |
| | | | 556 | 352 | 105 | 95 | 4 | | |

- Molecule 60 is a protein called Small ribosomal subunit protein RACK1.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 60 | SO | 312 | Total | C | N | O | S | 0 | 0 |
| | | | 2383 | 1514 | 409 | 452 | 8 | | |

- Molecule 61 is a protein called Small ribosomal subunit protein uS2A.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 61 | SP | 206 | Total | C | N | O | S | 0 | 0 |
| | | | 1603 | 1030 | 284 | 287 | 2 | | |

- Molecule 62 is a protein called Small ribosomal subunit protein eS1A.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 62 | SQ | 226 | Total | C | N | O | S | 0 | 0 |
| | | | 1798 | 1139 | 330 | 325 | 4 | | |

- Molecule 63 is a protein called Small ribosomal subunit protein uS5.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 63 | SR | 216 | Total | C | N | O | S | 0 | 0 |
| | | | 1626 | 1042 | 287 | 295 | 2 | | |

- Molecule 64 is a protein called Small ribosomal subunit protein eS4A.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 64 | SS | 258 | Total | C | N | O | S | 0 | 0 |
| | | | 2056 | 1308 | 387 | 358 | 3 | | |

- Molecule 65 is a protein called Small ribosomal subunit protein eS6A.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 65 | ST | 228 | Total | C | N | O | S | 0 | 0 |
| | | | 1815 | 1138 | 351 | 323 | 3 | | |

- Molecule 66 is a protein called Small ribosomal subunit protein eS7A.

| Mol | Chain | Residues | Atoms | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|
| 66 | SU | 184 | Total | C | N | O | 0 | 0 |
| | | | 1473 | 946 | 263 | 264 | | |

- Molecule 67 is a protein called Small ribosomal subunit protein eS8A.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 67 | SV | 187 | Total | C | N | O | S | 0 | 0 |
| | | | 1476 | 916 | 295 | 263 | 2 | | |

- Molecule 68 is a protein called Small ribosomal subunit protein uS4A.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 68 | SW | 184 | Total | C | N | O | S | 0 | 0 |
| | | | 1479 | 935 | 285 | 258 | 1 | | |

- Molecule 69 is a protein called Small ribosomal subunit protein uS17A.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 69 | SX | 142 | Total | C | N | O | S | 0 | 0 |
| | | | 1142 | 733 | 217 | 189 | 3 | | |

- Molecule 70 is a protein called Small ribosomal subunit protein uS15.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 70 | SY | 150 | Total | C | N | O | S | 0 | 0 |
| | | | 1192 | 759 | 224 | 207 | 2 | | |

- Molecule 71 is a protein called Small ribosomal subunit protein uS11B.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 71 | SZ | 127 | Total | C | N | O | S | 0 | 0 |
| | | | 923 | 568 | 185 | 167 | 3 | | |

- Molecule 72 is a protein called Small ribosomal subunit protein eS21A.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 72 | Sa | 87 | Total | C | N | O | S | 0 | 0 |
| | | | 673 | 415 | 125 | 131 | 2 | | |

- Molecule 73 is a protein called Small ribosomal subunit protein uS8A.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 73 | Sb | 129 | Total | C | N | O | S | 0 | 0 |
| | | | 1021 | 650 | 188 | 180 | 3 | | |

- Molecule 74 is a protein called Small ribosomal subunit protein uS12A.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 74 | Sc | 144 | Total | C | N | O | S | 0 | 0 |
| | | | 1121 | 708 | 220 | 191 | 2 | | |

- Molecule 75 is a protein called Small ribosomal subunit protein eS24A.

| Mol | Chain | Residues | Atoms | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|
| 75 | Sd | 134 | Total | C | N | O | 0 | 0 |
| | | | 1032 | 651 | 195 | 186 | | |

- Molecule 76 is a protein called Small ribosomal subunit protein eS26B.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 76 | Se | 97 | Total | C | N | O | S | 0 | 0 |
| | | | 765 | 473 | 160 | 127 | 5 | | |

- Molecule 77 is a protein called Small ribosomal subunit protein eS27A.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 77 | Sf | 81 | Total | C | N | O | S | 0 | 0 |
| | | | 610 | 382 | 110 | 113 | 5 | | |

- Molecule 78 is a protein called Small ribosomal subunit protein eS30A.

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 78 | Sg | 57 | Total | C | N | O | S | 0 | 0 |
| | | | 451 | 284 | 93 | 73 | 1 | | |

- Molecule 79 is a RNA chain called tRNA (77-MER).

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 79 | Ta | 77 | Total | C | N | O | P | 0 | 0 |
| | | | 1650 | 734 | 303 | 536 | 77 | | |

- Molecule 80 is a RNA chain called tRNA (77-MER).

| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 80 | Tb | 77 | Total | C | N | O | P | 0 | 0 |
| | | | 1645 | 732 | 298 | 538 | 77 | | |

- Molecule 81 is a RNA chain called RNA (5'-R(P*AP*UP*UP*GP*AP*CP*CP*CP*UP*U) -3').

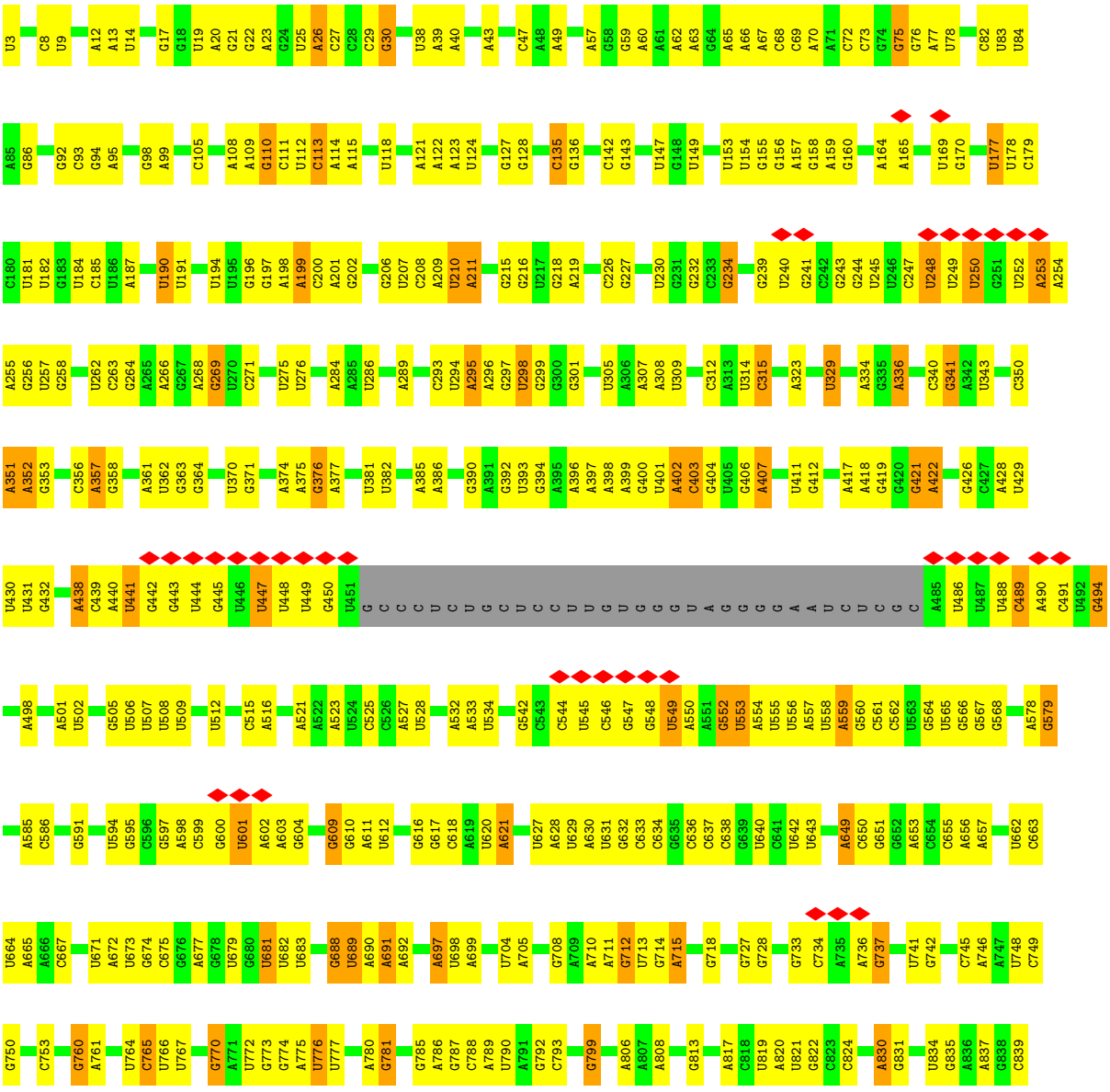
| Mol | Chain | Residues | Atoms | | | | | AltConf | Trace |
|---|---|---|---|---|---|---|---|---|---|
| 81 | mR | 10 | Total | C | N | O | P | 0 | 0 |
| | | | 207 | 93 | 32 | 72 | 10 | | |

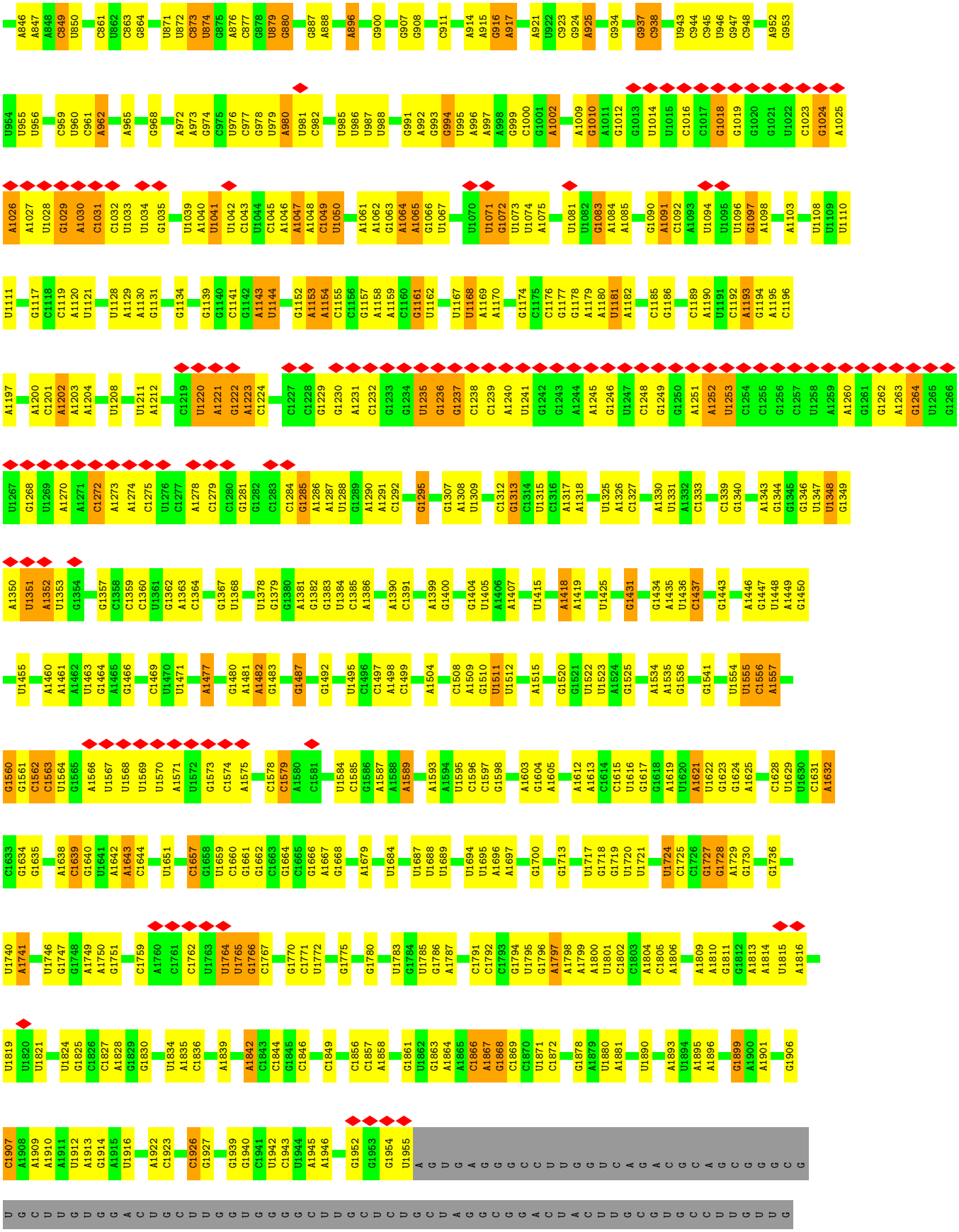
# 3 Residue-property plots (i)

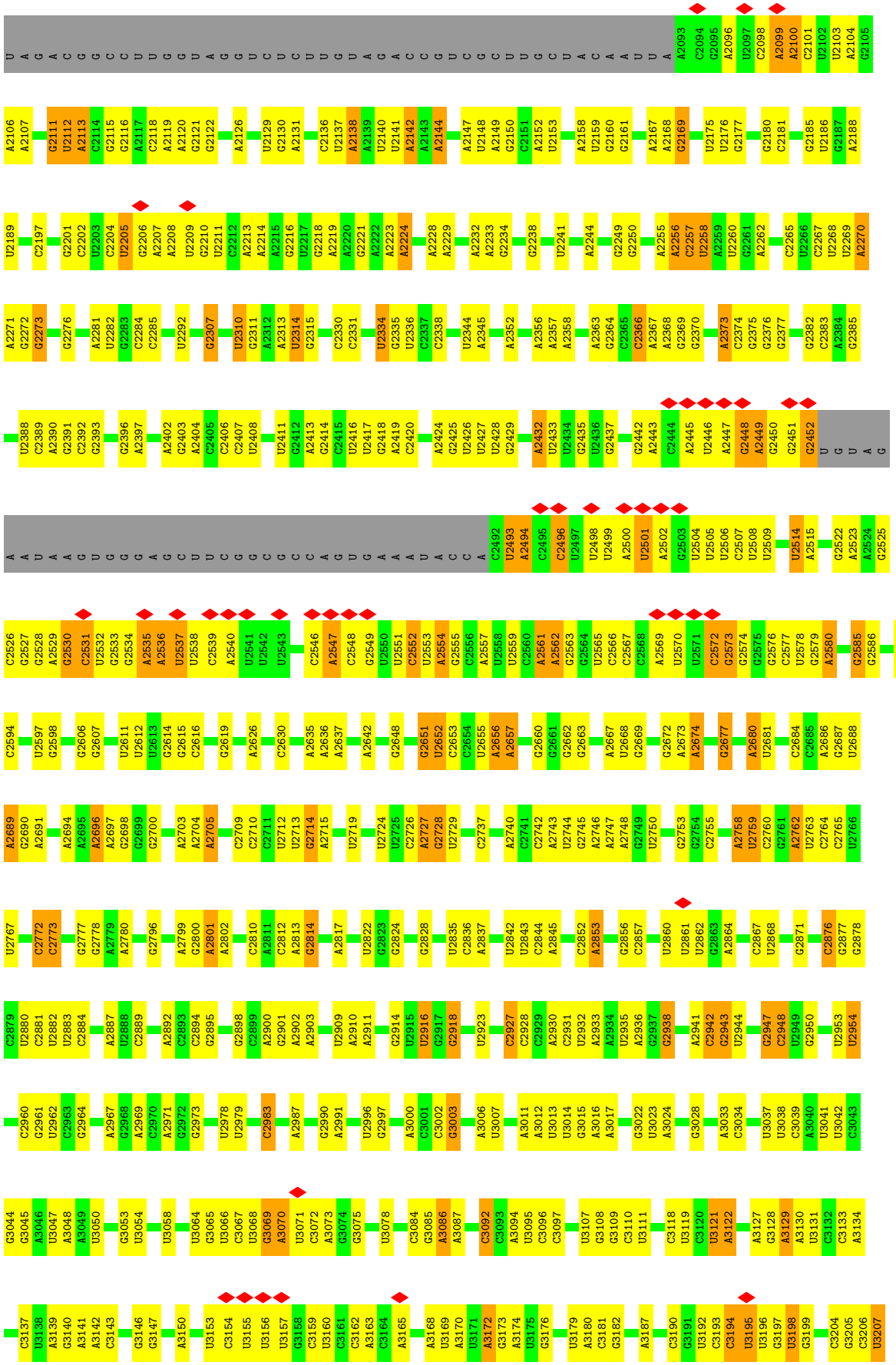
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion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

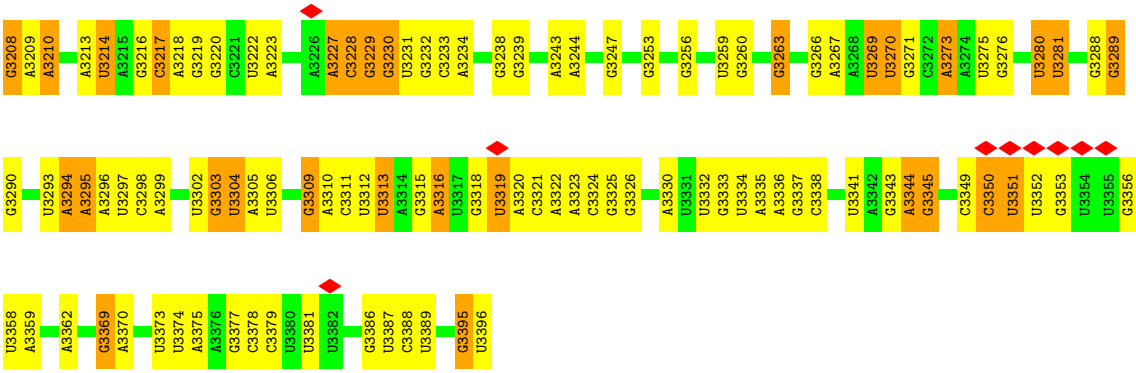
- Molecule 1: 25S rRNA (3393-MER)

Chain LA:

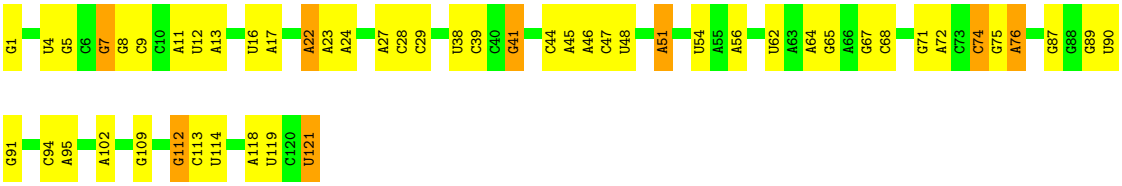







• Molecule 2: 5S rRNA (121-MER)

Chain LB:


• Molecule 3: 5.8S rRNA (158-MER)

Chain LC:

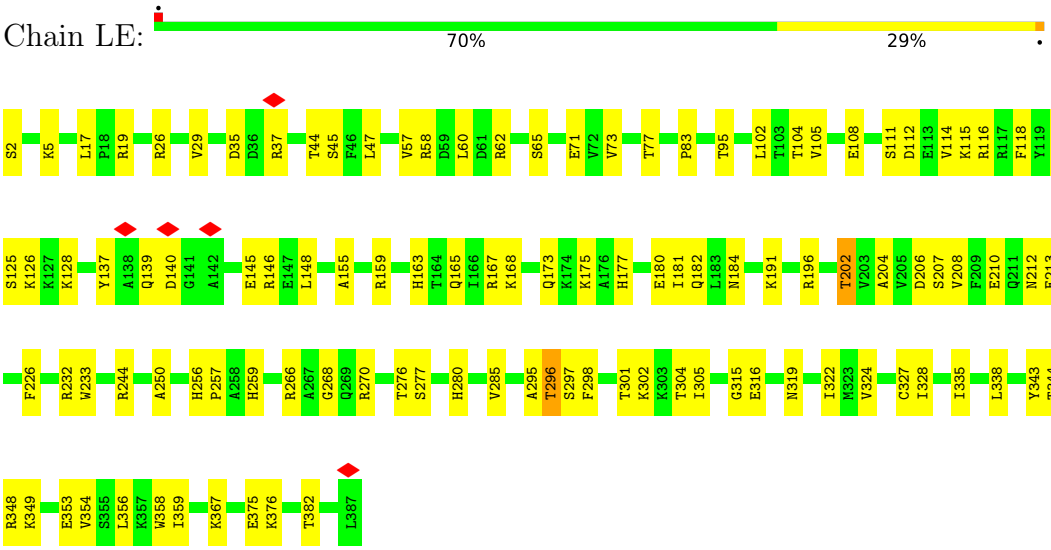


• Molecule 4: Large ribosomal subunit protein uL2A

Chain LD:

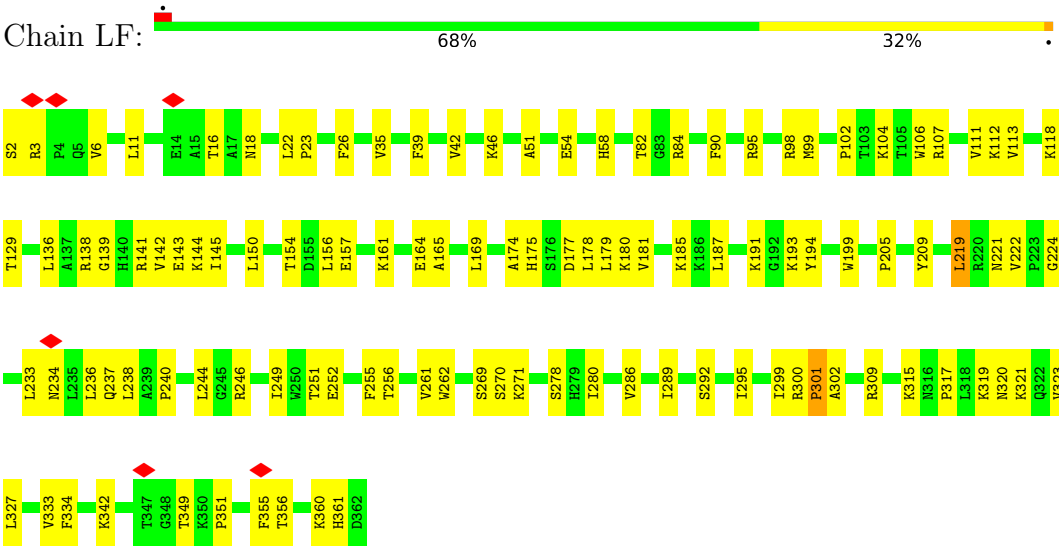

• Molecule 5: Large ribosomal subunit protein uL3

Chain LE:



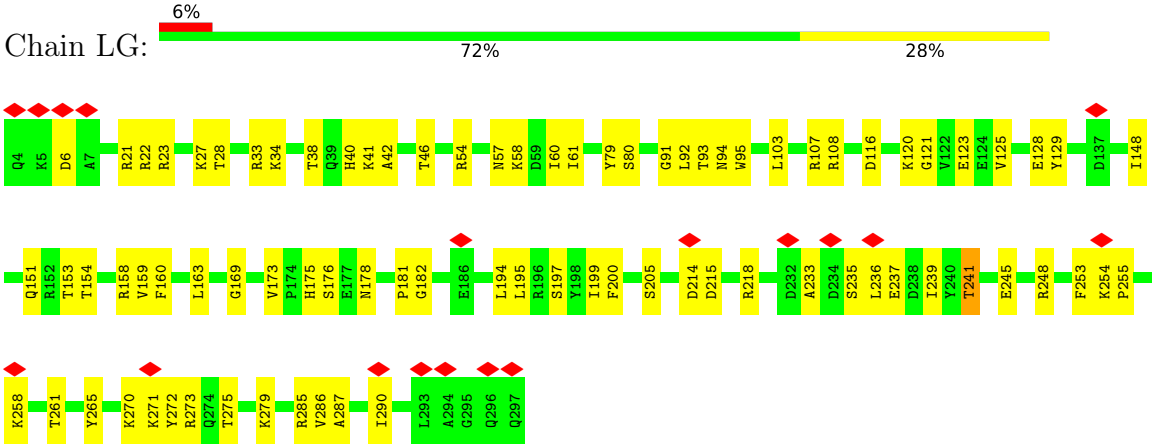

• Molecule 6: Large ribosomal subunit protein uL4A

Chain LF:



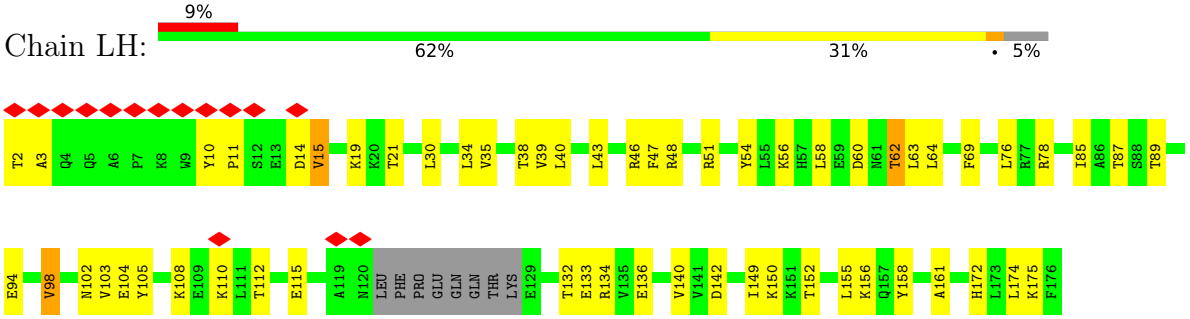

• Molecule 7: Large ribosomal subunit protein uL18

Chain LG:



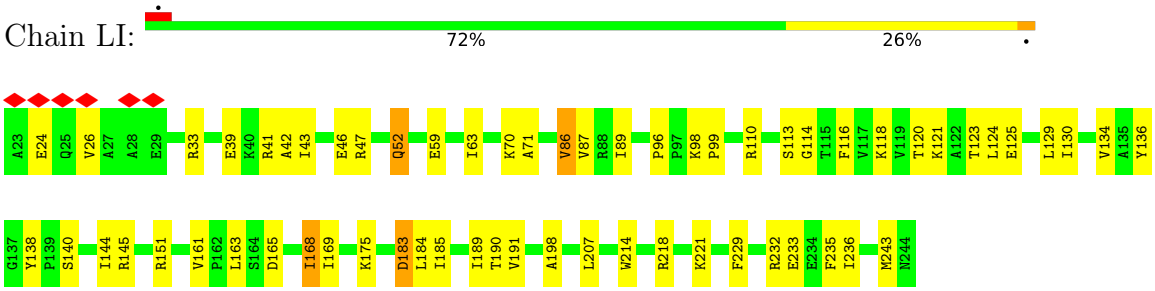
• Molecule 8: Large ribosomal subunit protein eL6B

Chain LH:



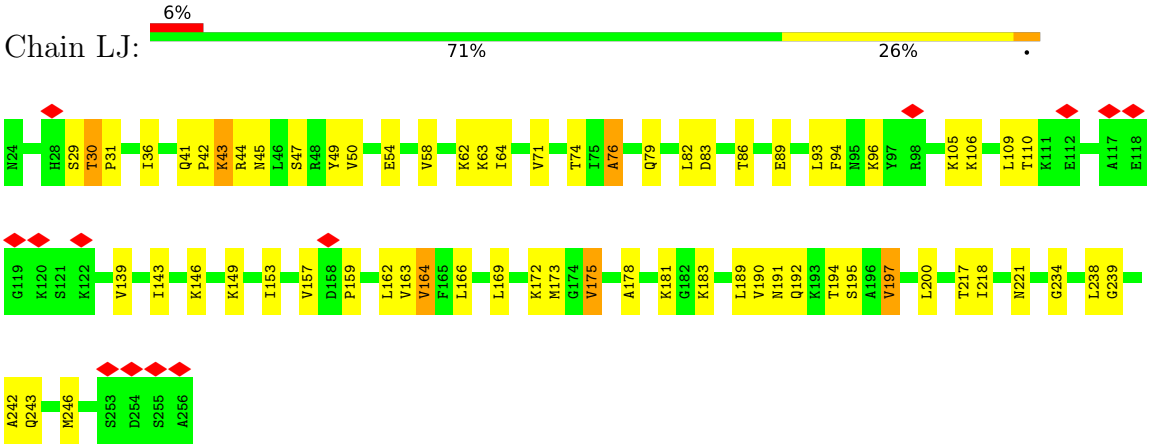

• Molecule 9: Large ribosomal subunit protein uL30A

Chain LI:



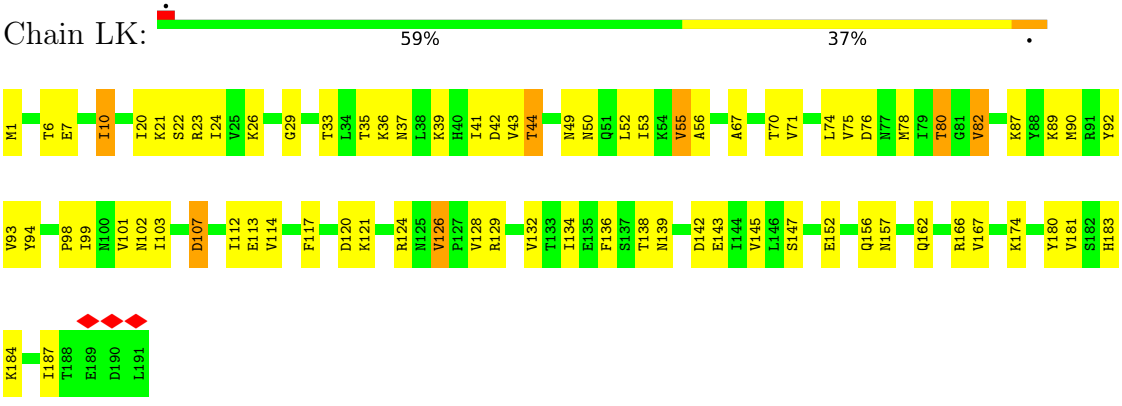

• Molecule 10: Large ribosomal subunit protein eL8A

Chain LJ:



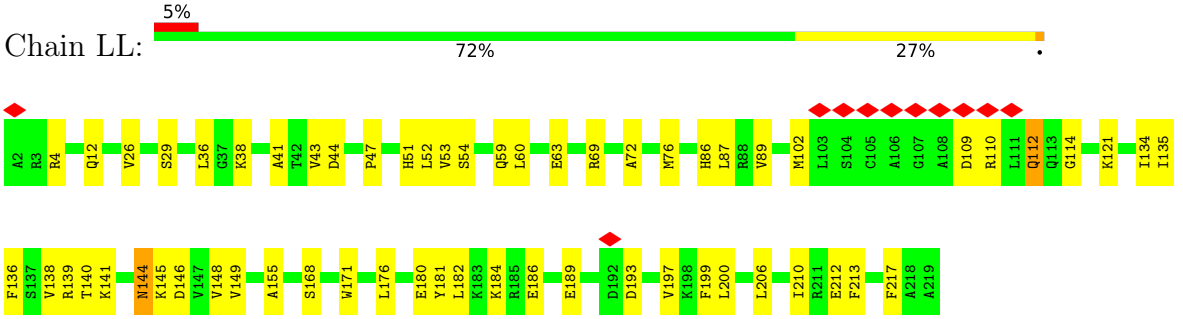

• Molecule 11: Large ribosomal subunit protein uL6A

Chain LK:



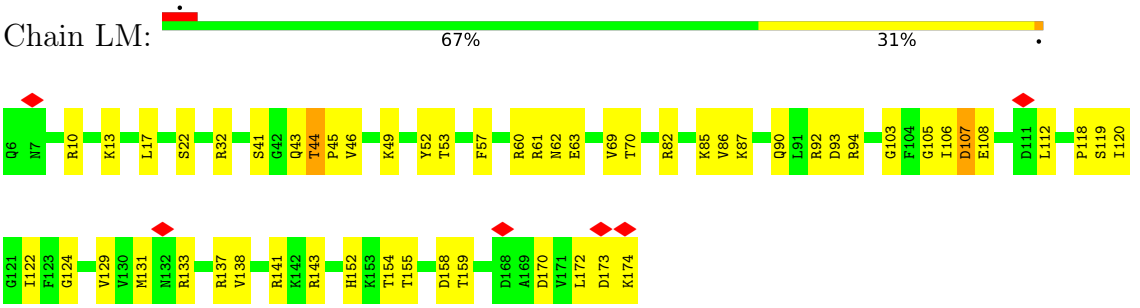
• Molecule 12: Large ribosomal subunit protein uL16

Chain LL:



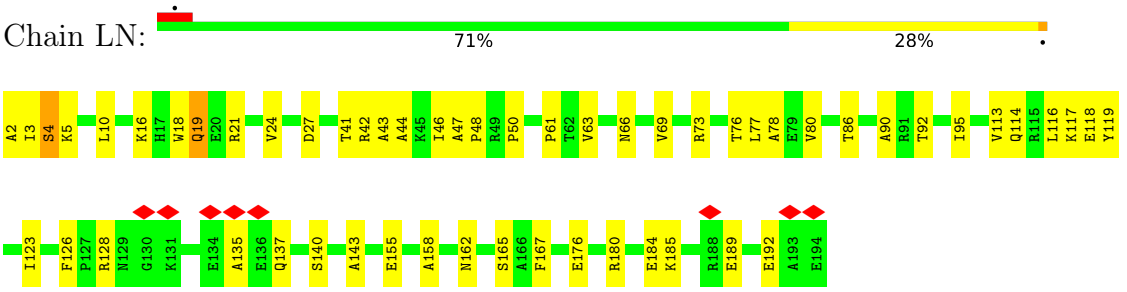

• Molecule 13: Large ribosomal subunit protein uL5B

Chain LM:



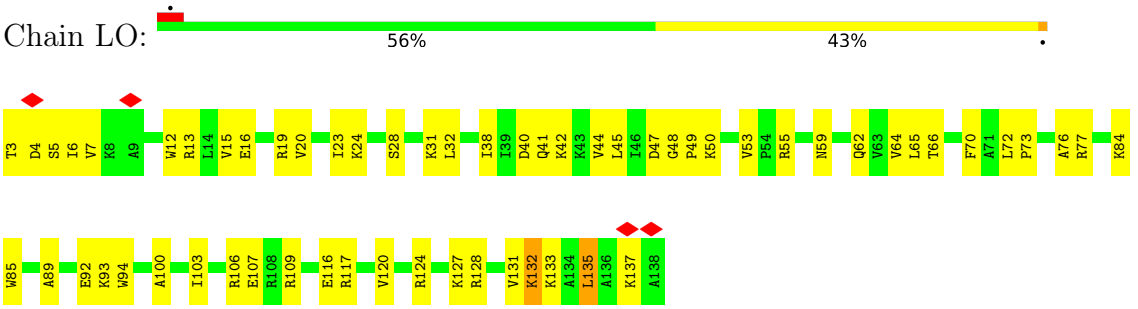

• Molecule 14: Large ribosomal subunit protein eL13A

Chain LN:



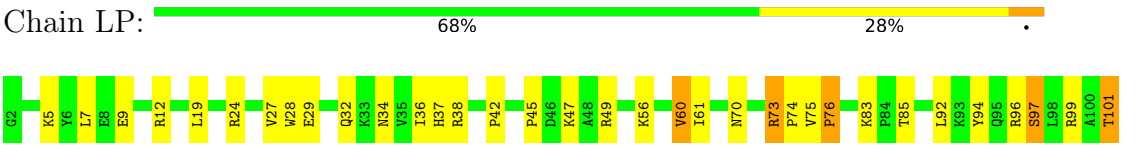

• Molecule 15: Large ribosomal subunit protein eL14A

Chain LO:




• Molecule 16: Large ribosomal subunit protein eL15A

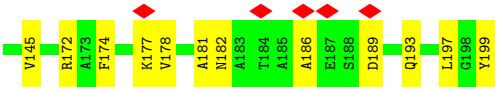
Chain LP:




• Molecule 17: Large ribosomal subunit protein uL13A

Chain LQ:

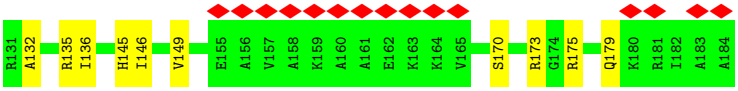





• Molecule 18: Large ribosomal subunit protein uL22A

Chain LR:





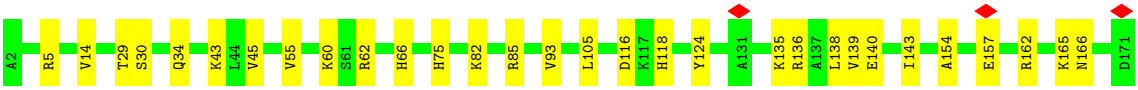

• Molecule 19: Large ribosomal subunit protein eL18A

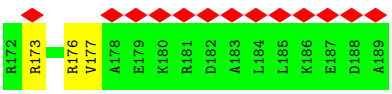
Chain LS:




• Molecule 20: Large ribosomal subunit protein eL19A

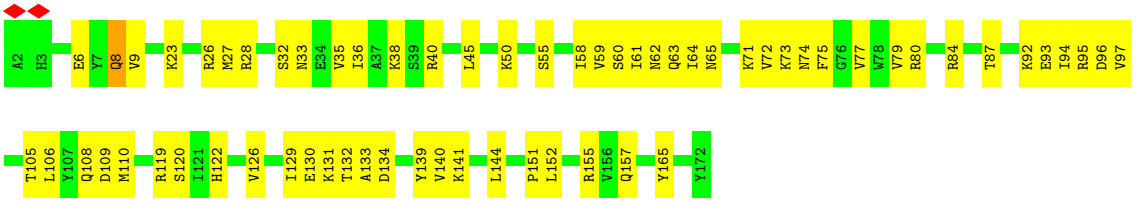
Chain LT:

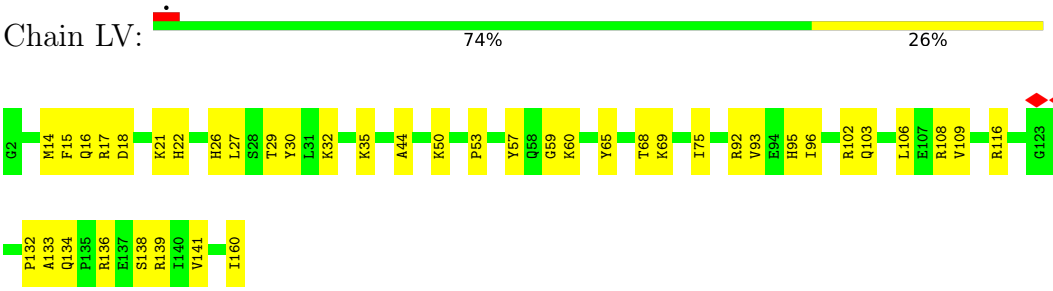




• Molecule 21: Large ribosomal subunit protein eL20A

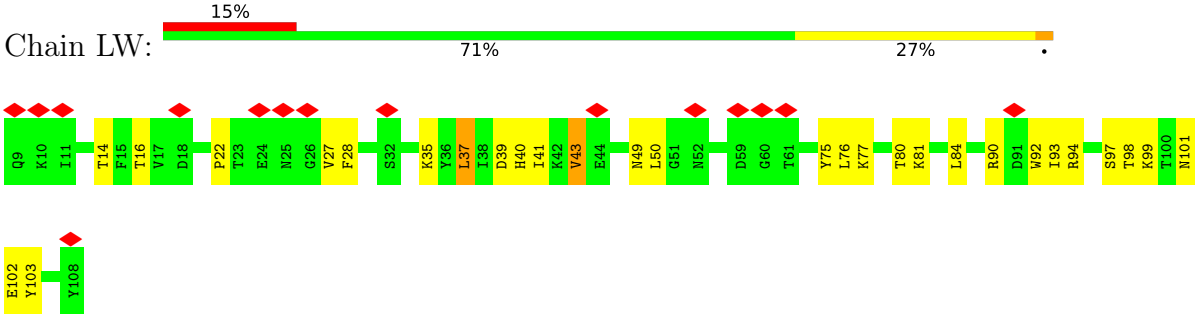
Chain LU:



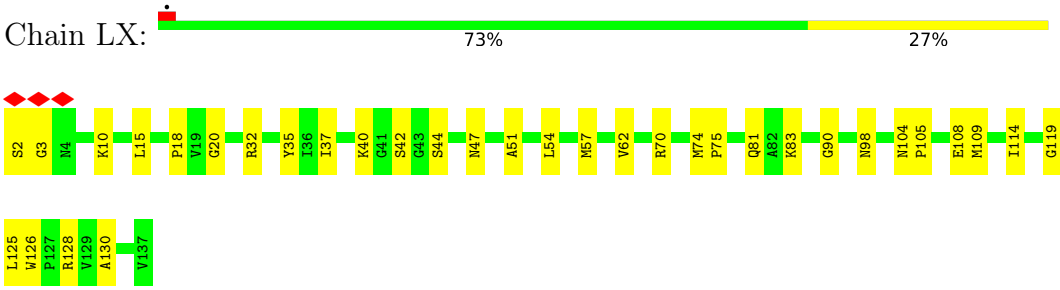

• Molecule 22: Large ribosomal subunit protein eL21A



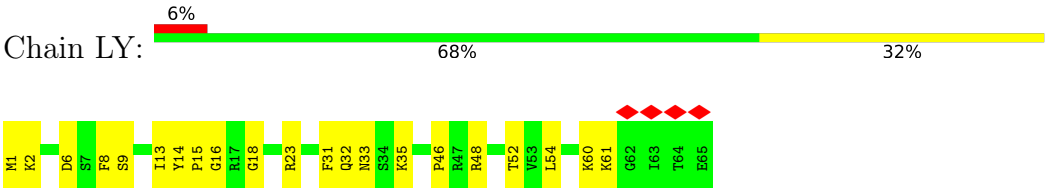

• Molecule 23: Large ribosomal subunit protein eL22A



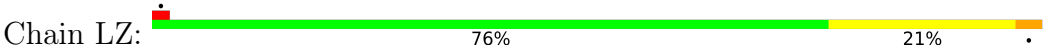

• Molecule 24: Large ribosomal subunit protein uL14A

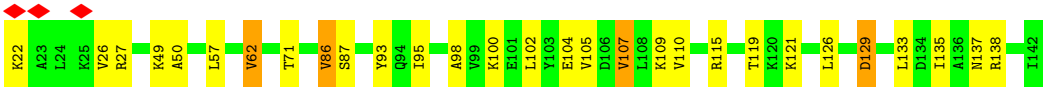



• Molecule 25: Large ribosomal subunit protein eL24A



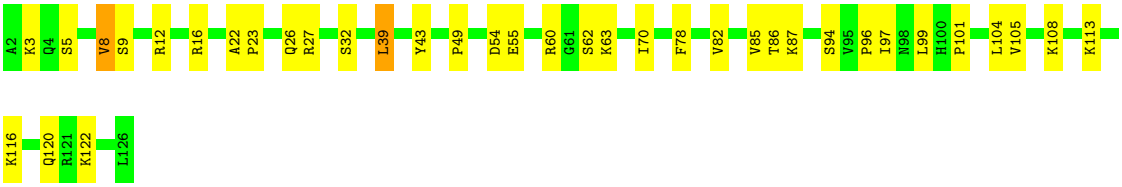

• Molecule 26: Large ribosomal subunit protein uL23





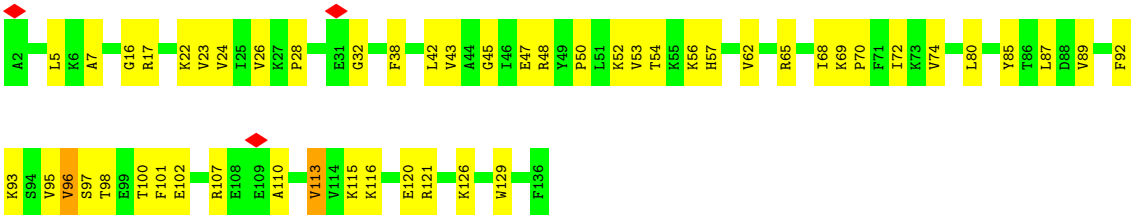

• Molecule 27: Large ribosomal subunit protein uL24A

Chain La:

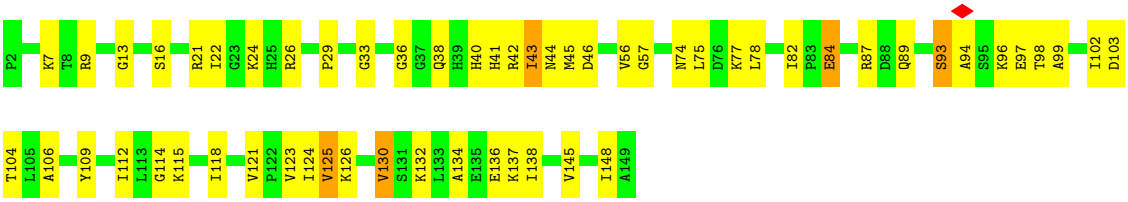

• Molecule 28: Large ribosomal subunit protein eL27A

Chain Lb:

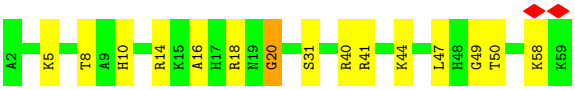

• Molecule 29: Large ribosomal subunit protein uL15

Chain Lc:

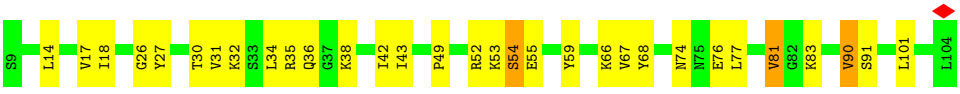

• Molecule 30: Large ribosomal subunit protein eL29

Chain Ld:

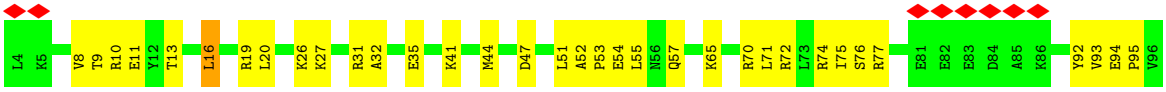

• Molecule 31: Large ribosomal subunit protein eL30

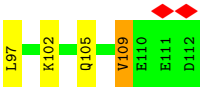
Chain Le:

• Molecule 32: Large ribosomal subunit protein eL31A

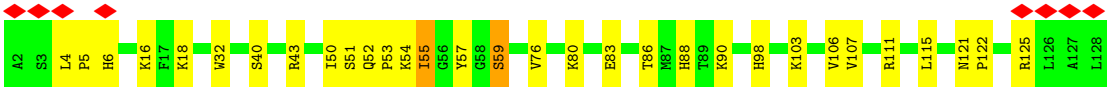
Chain Lf:


• Molecule 33: Large ribosomal subunit protein eL32

Chain Lg:

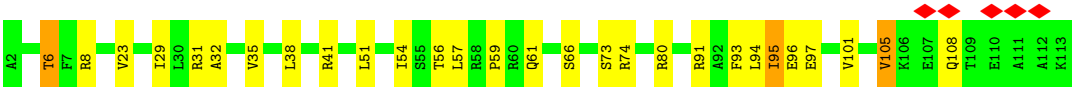

• Molecule 34: Large ribosomal subunit protein eL33A

Chain Lh:



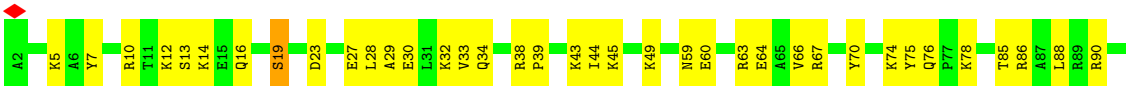
• Molecule 35: Large ribosomal subunit protein eL34A

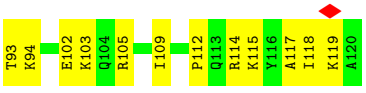
Chain Li:


• Molecule 36: Large ribosomal subunit protein uL29A

Chain Lj:

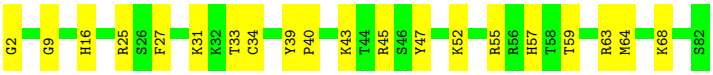




• Molecule 37: Large ribosomal subunit protein eL36A

Chain Lk:

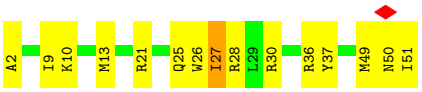

• Molecule 38: Large ribosomal subunit protein eL37A

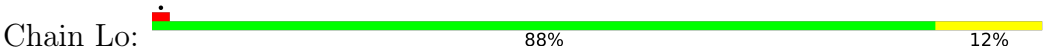

• Molecule 39: Large ribosomal subunit protein eL38

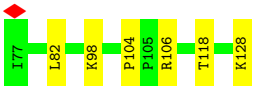


• Molecule 40: Large ribosomal subunit protein eL39

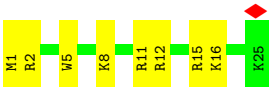




• Molecule 41: Large ribosomal subunit protein eL40A

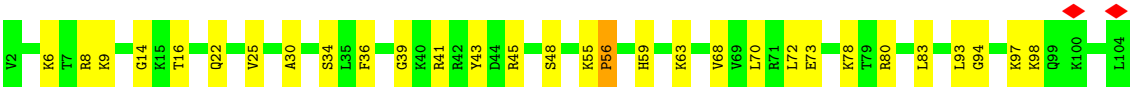



• Molecule 42: Large ribosomal subunit protein eL41A

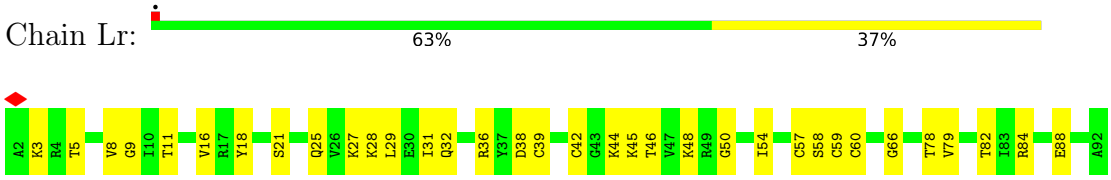




• Molecule 43: Large ribosomal subunit protein eL42A

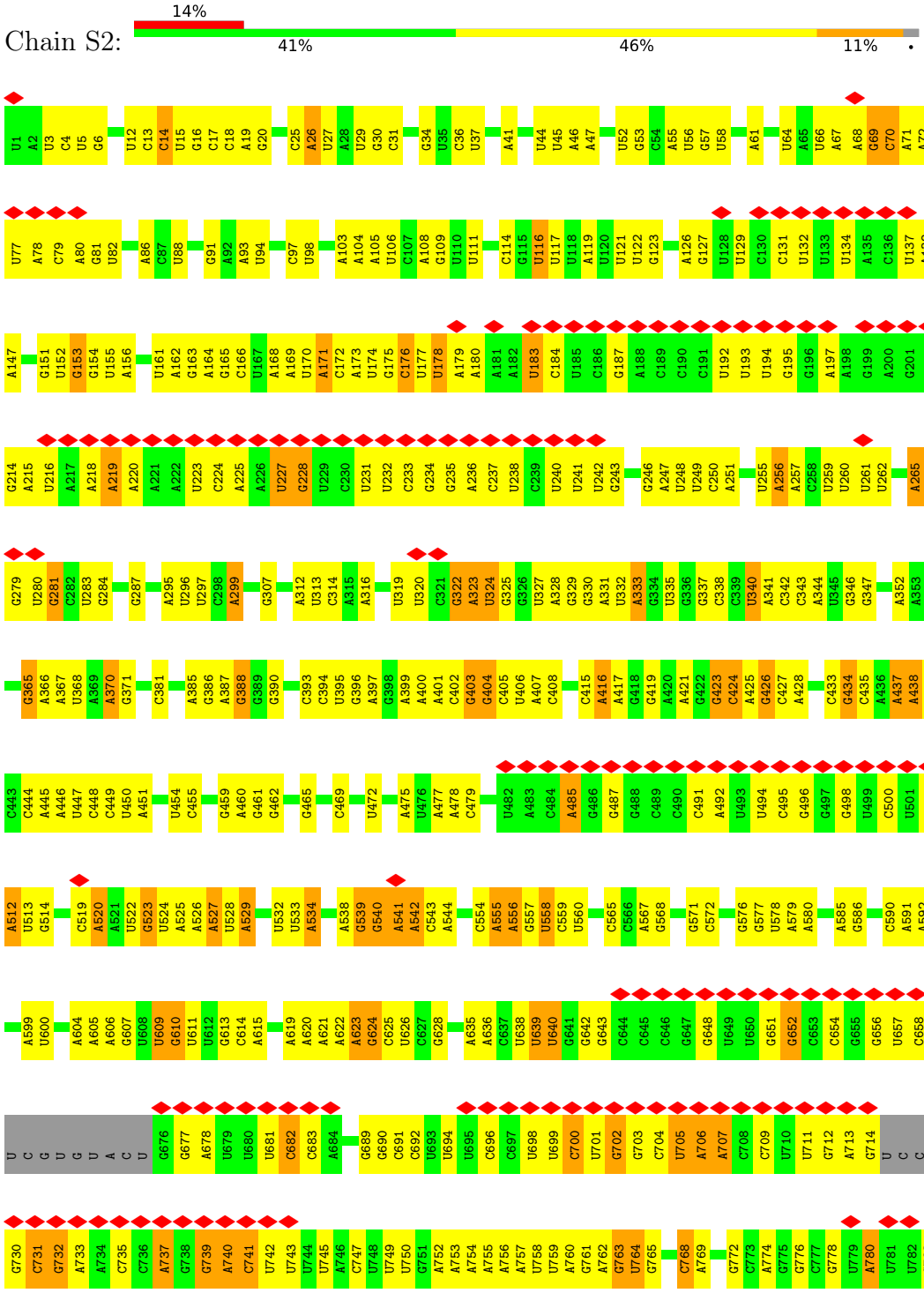

• Molecule 44: Large ribosomal subunit protein eL43A

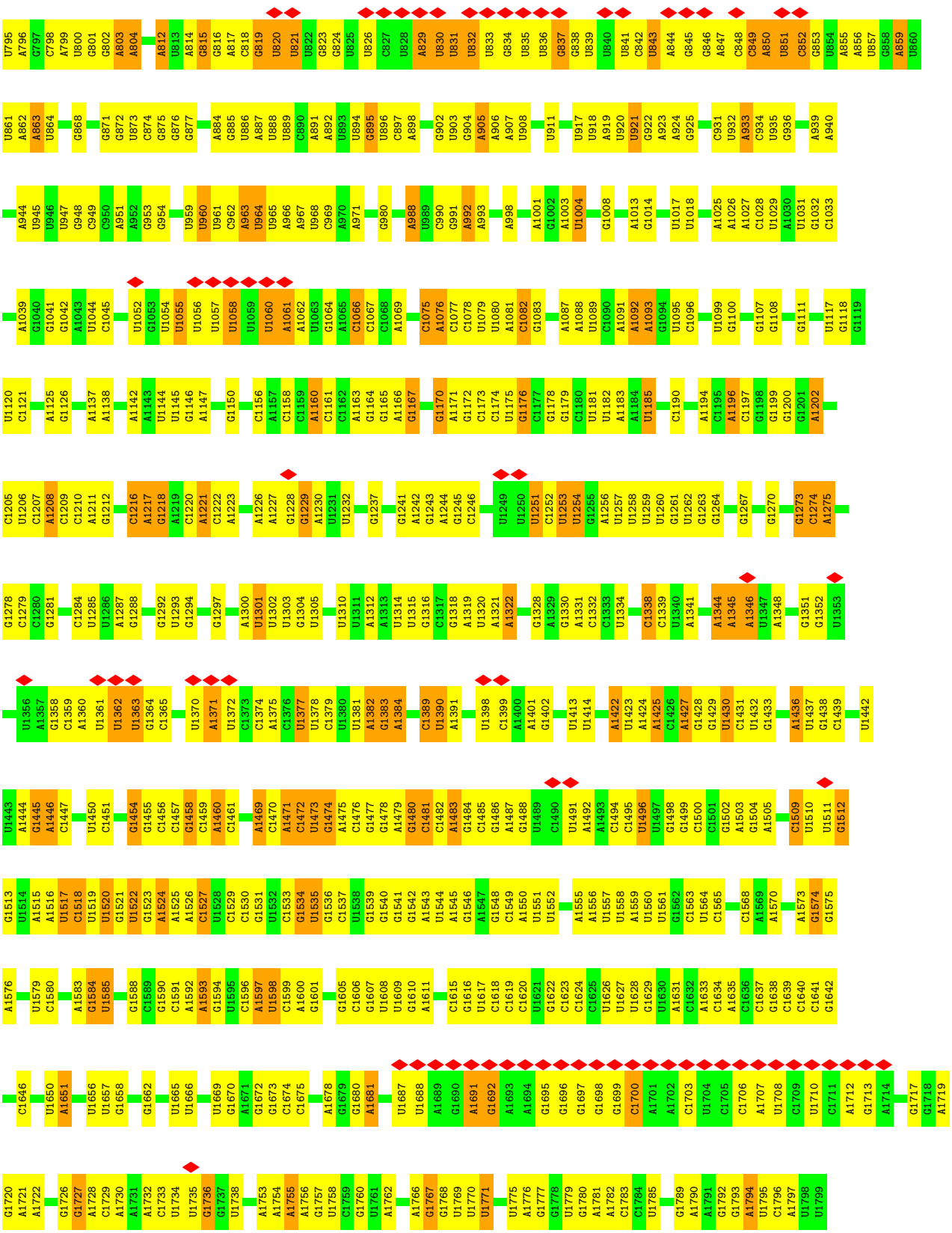
Chain Lr:



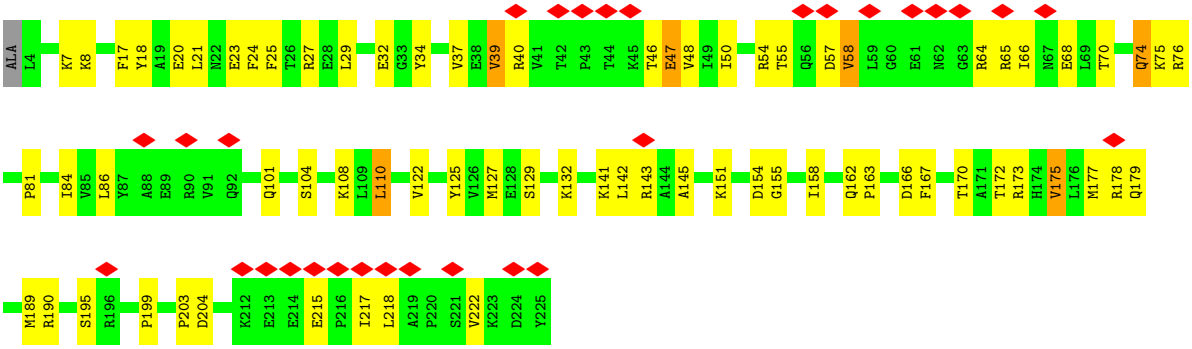

• Molecule 45: chain 2 18S rRNA (1771-MER)

Chain S2:

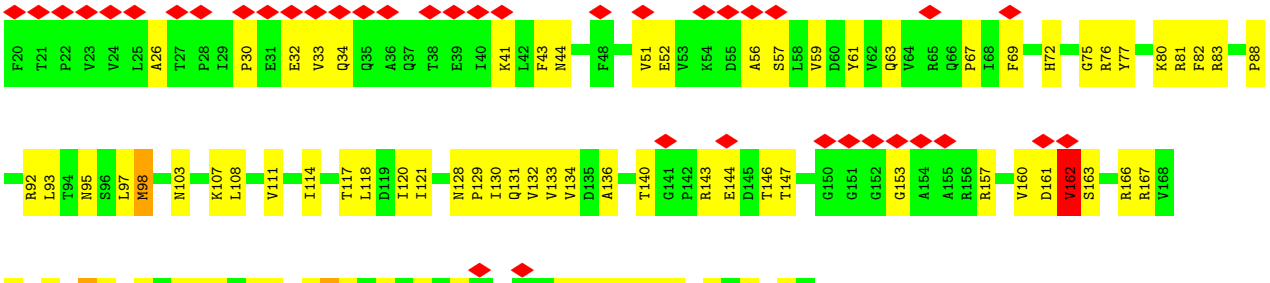




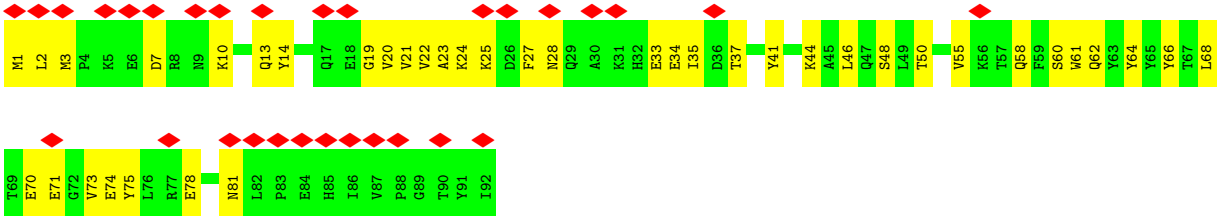
• Molecule 46: Small ribosomal subunit protein uS3



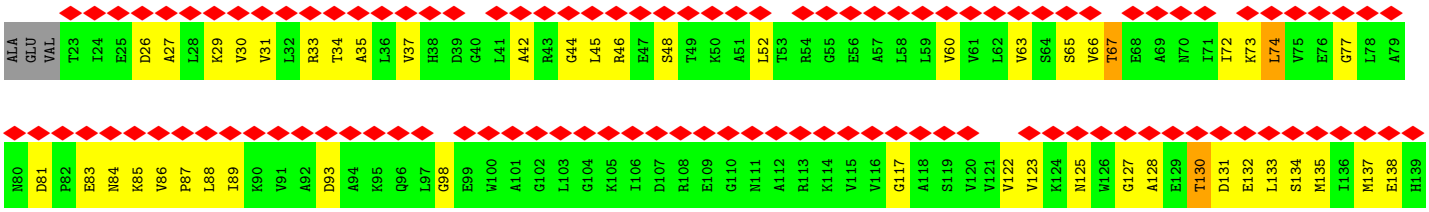

• Molecule 47: Small ribosomal subunit protein uS7

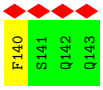




• Molecule 48: Small ribosomal subunit protein eS10A

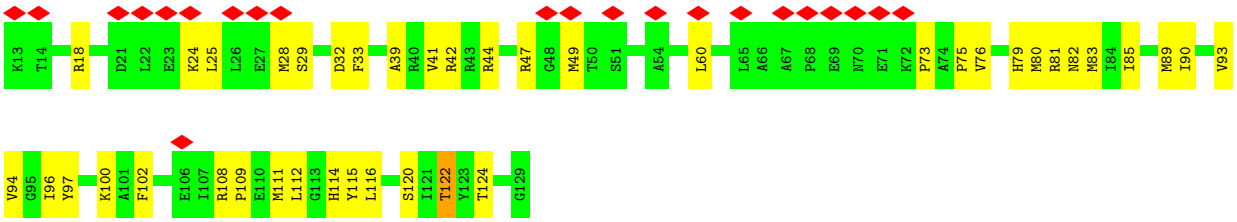

• Molecule 49: Small ribosomal subunit protein eS12



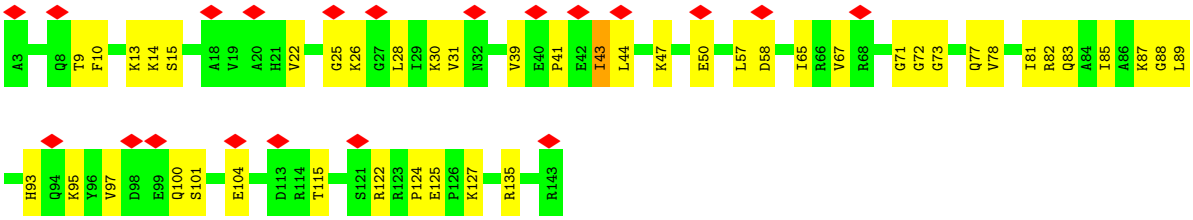

• Molecule 50: Small ribosomal subunit protein uS19

Chain SE:

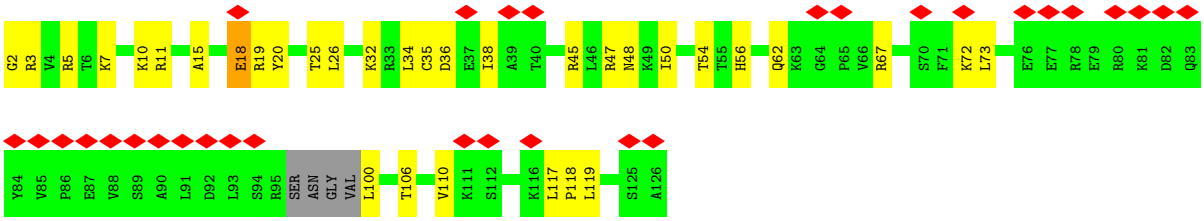

• Molecule 51: Small ribosomal subunit protein uS9A

Chain SF:

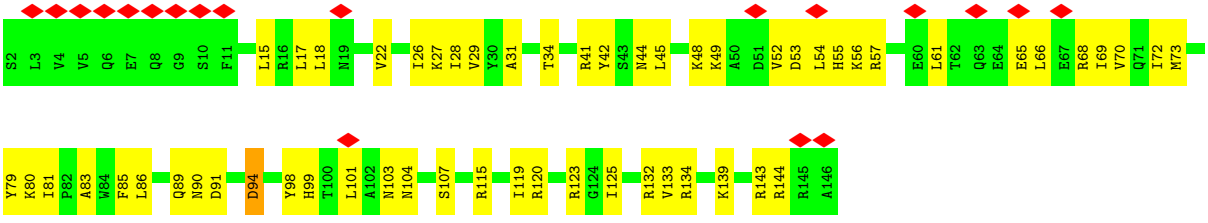

• Molecule 52: Small ribosomal subunit protein eS17A

Chain SG:

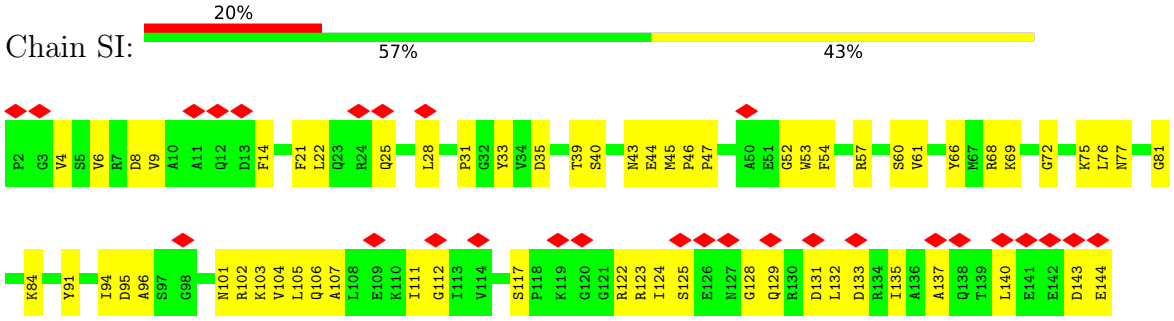

• Molecule 53: Small ribosomal subunit protein uS13A

Chain SH:

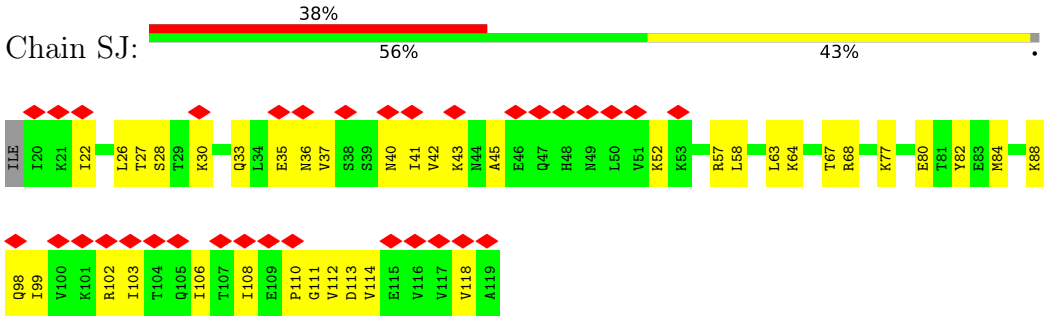

• Molecule 54: Small ribosomal subunit protein eS19A

Chain SI:



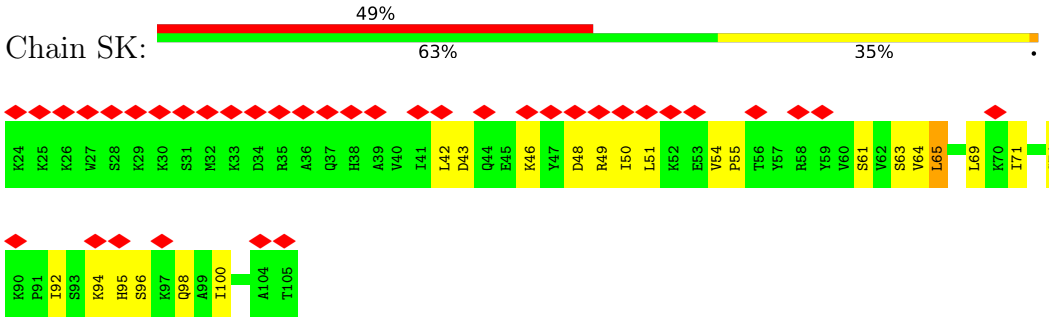

• Molecule 55: Small ribosomal subunit protein uS10

Chain SJ:



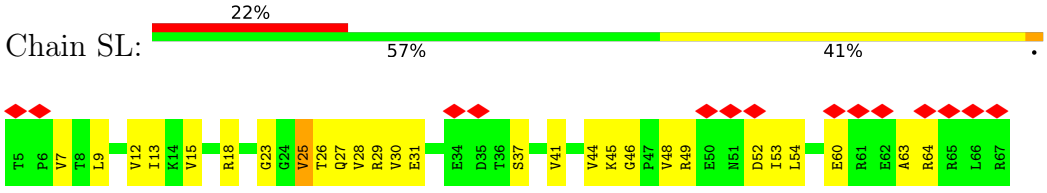

• Molecule 56: Small ribosomal subunit protein eS25A

Chain SK:



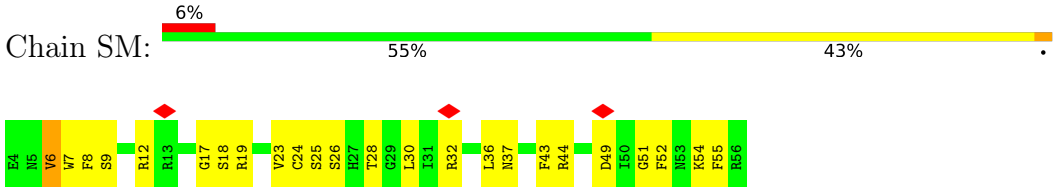

• Molecule 57: Small ribosomal subunit protein eS28A

Chain SL:



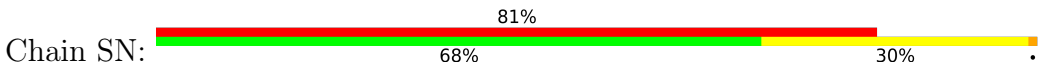

• Molecule 58: Small ribosomal subunit protein uS14A

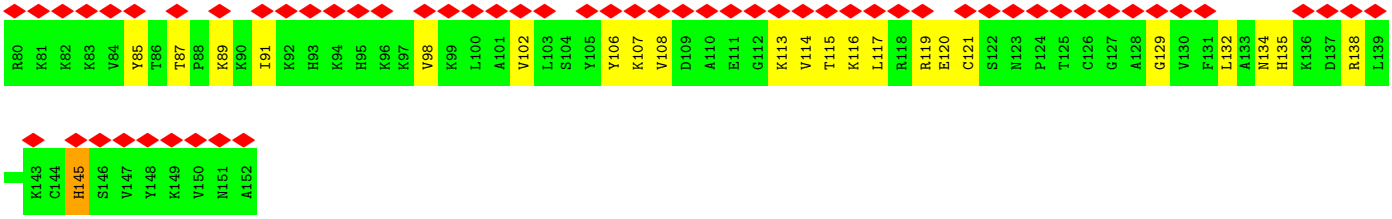
Chain SM:



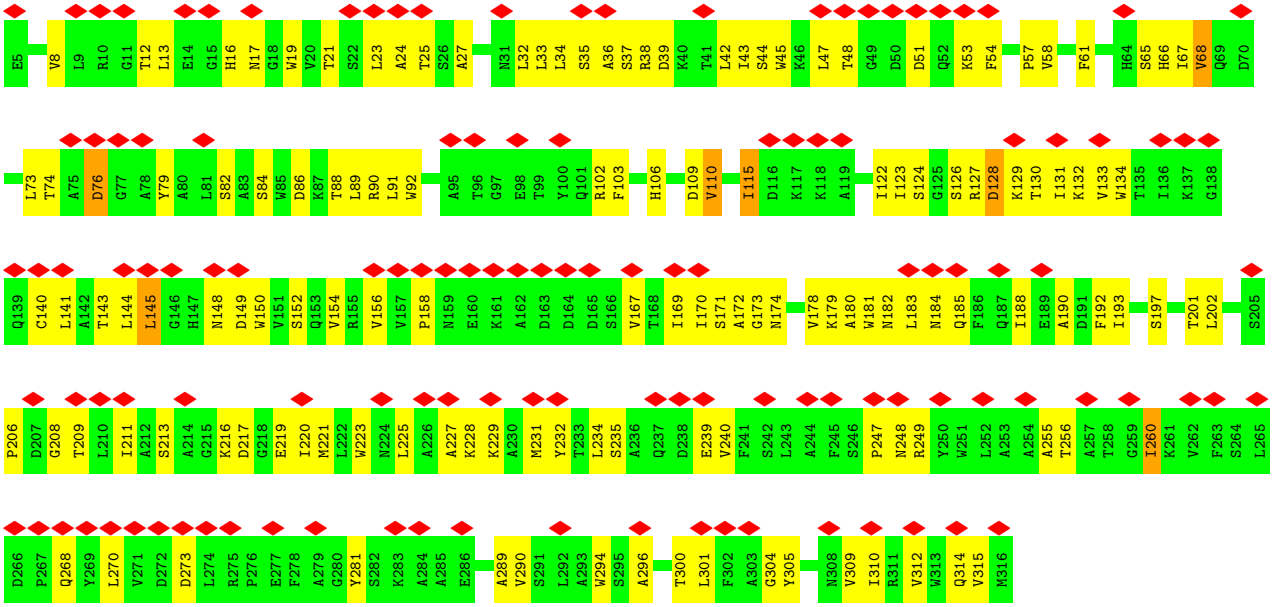

• Molecule 59: Small ribosomal subunit protein eS31

Chain SN:

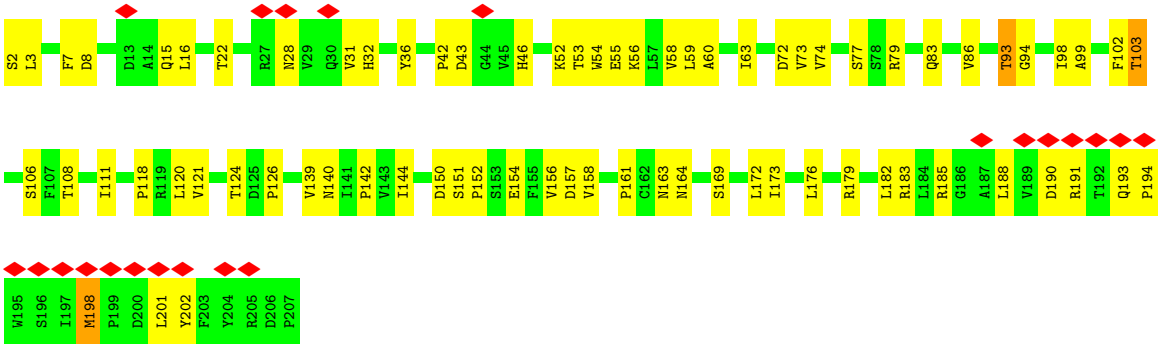




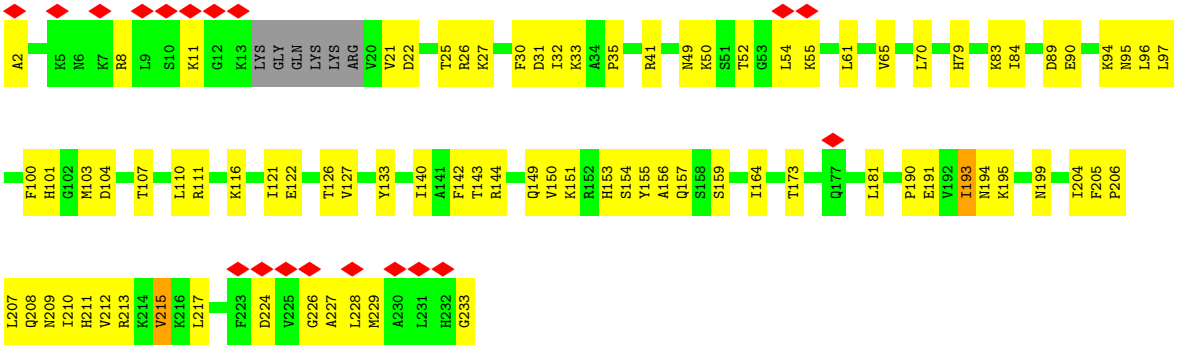

• Molecule 60: Small ribosomal subunit protein RACK1


• Molecule 61: Small ribosomal subunit protein uS2A

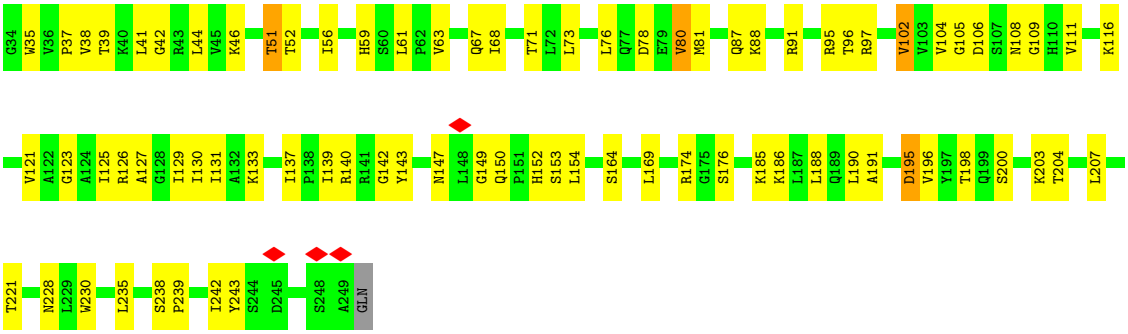




• Molecule 62: Small ribosomal subunit protein eS1A



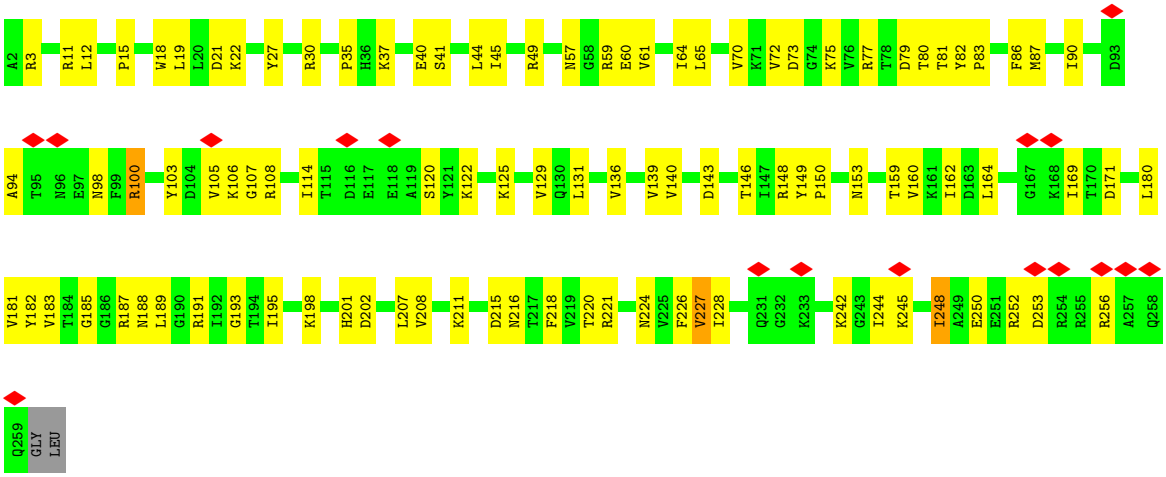
• Molecule 63: Small ribosomal subunit protein uS5

Chain SR:

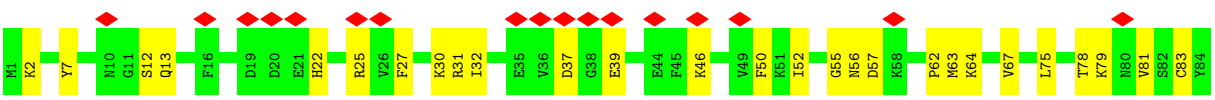
• Molecule 64: Small ribosomal subunit protein eS4A

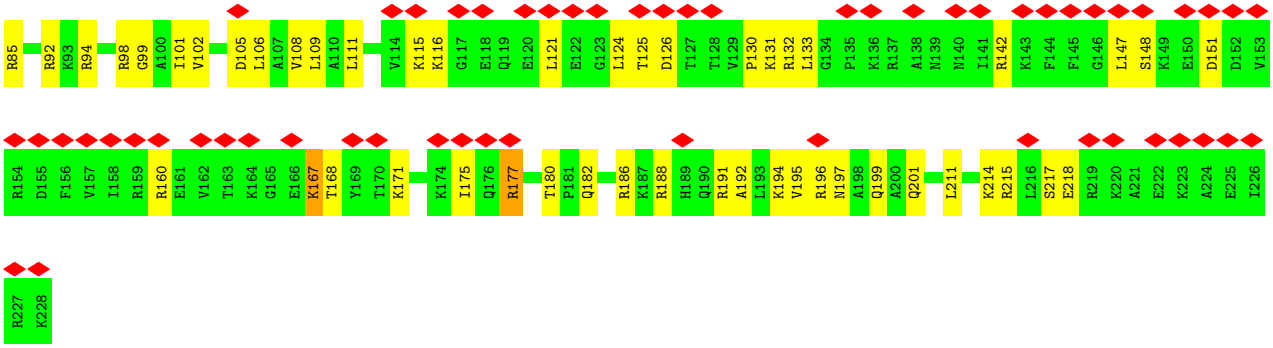
Chain SS:

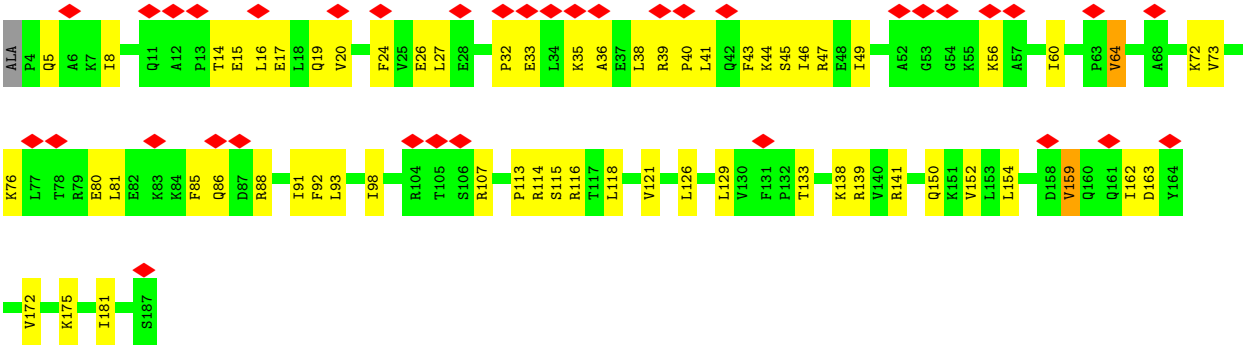
• Molecule 65: Small ribosomal subunit protein eS6A

Chain ST:

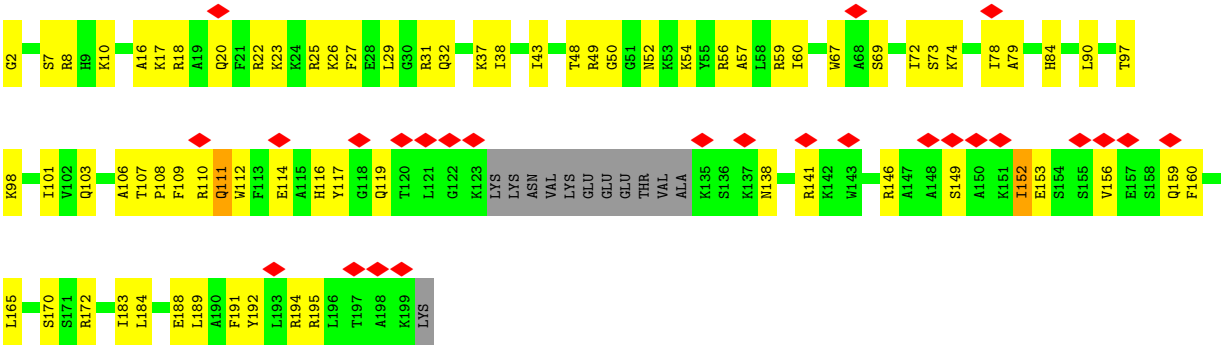





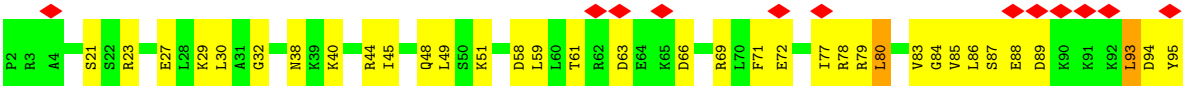

• Molecule 66: Small ribosomal subunit protein eS7A

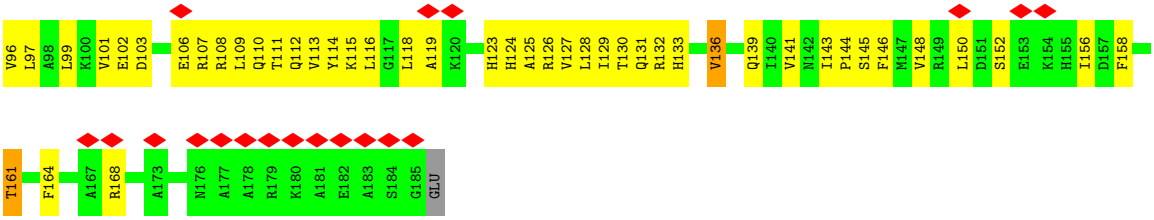




• Molecule 67: Small ribosomal subunit protein eS8A

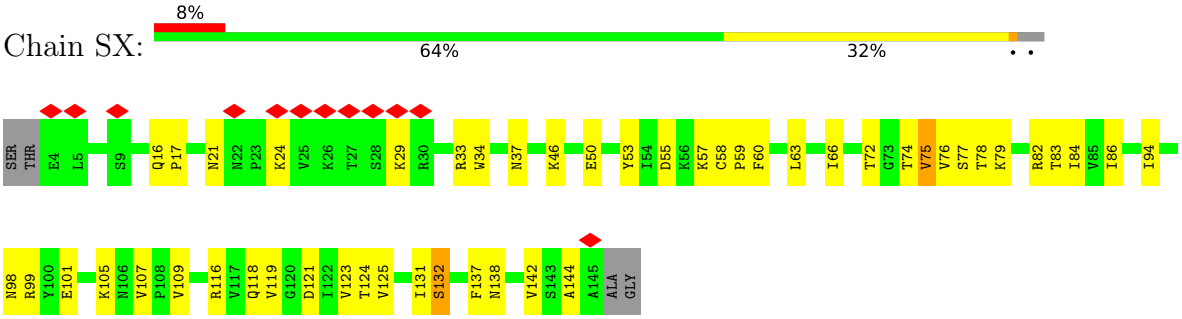




• Molecule 68: Small ribosomal subunit protein uS4A

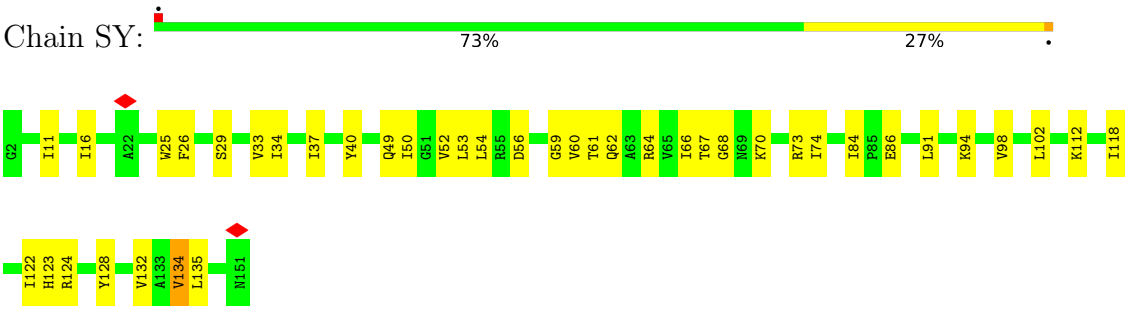





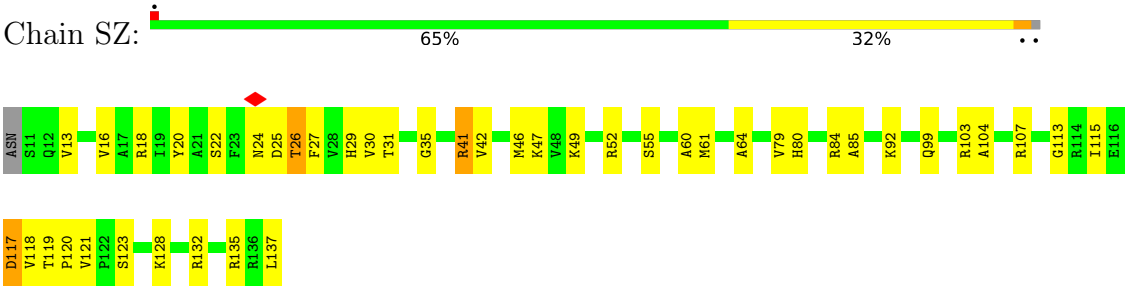

• Molecule 69: Small ribosomal subunit protein uS17A



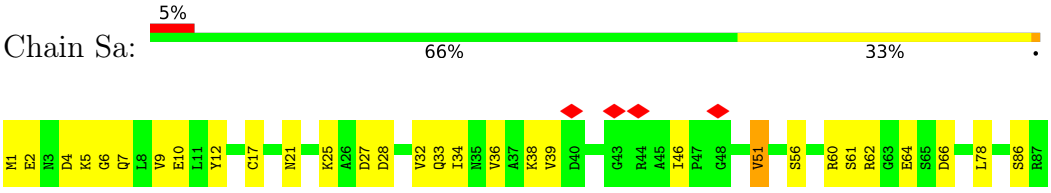

• Molecule 70: Small ribosomal subunit protein uS15




• Molecule 71: Small ribosomal subunit protein uS11B

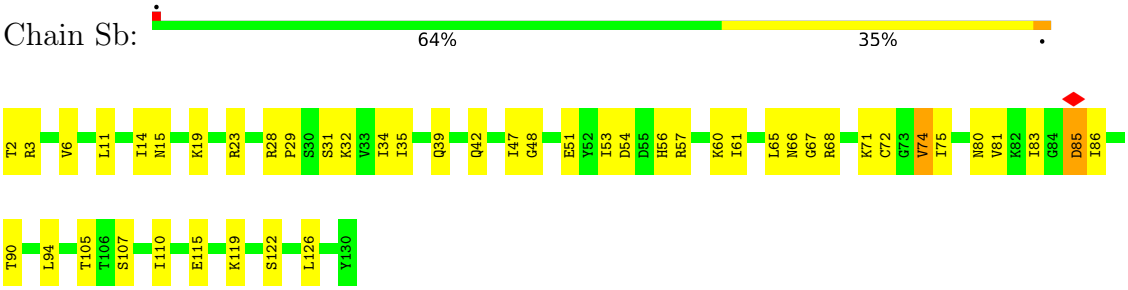



• Molecule 72: Small ribosomal subunit protein eS21A



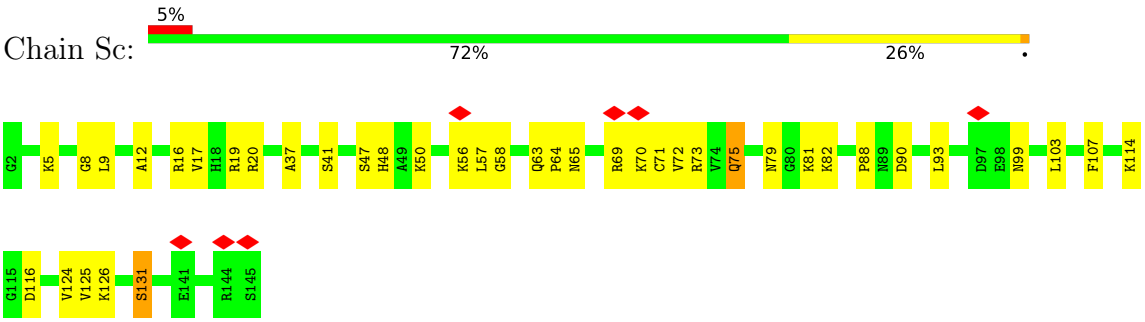

• Molecule 73: Small ribosomal subunit protein uS8A

Chain Sb:



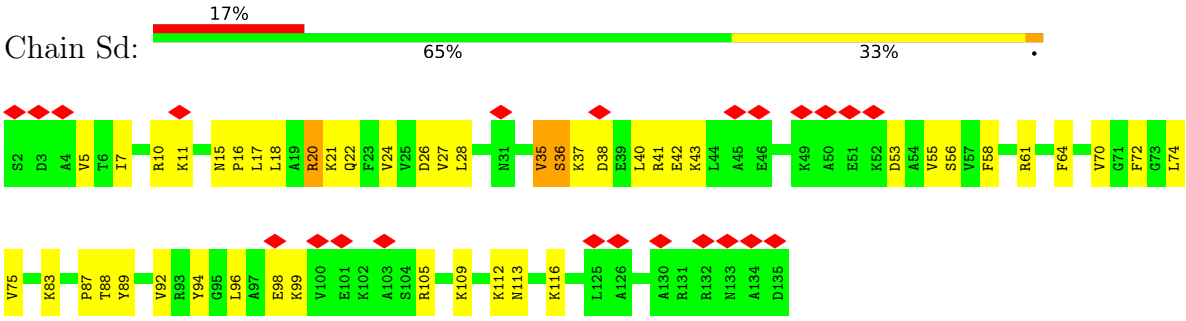

• Molecule 74: Small ribosomal subunit protein uS12A

Chain Sc:



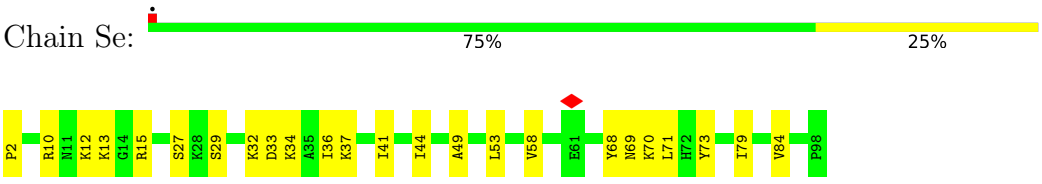

• Molecule 75: Small ribosomal subunit protein eS24A

Chain Sd:



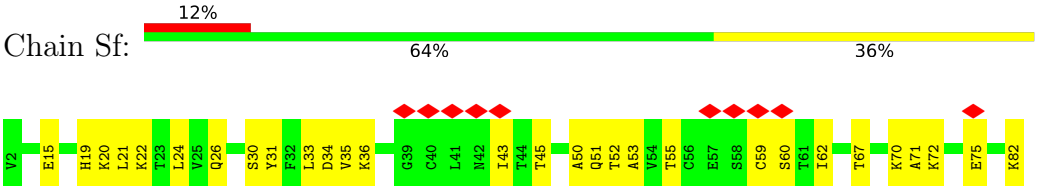

• Molecule 76: Small ribosomal subunit protein eS26B

Chain Se:



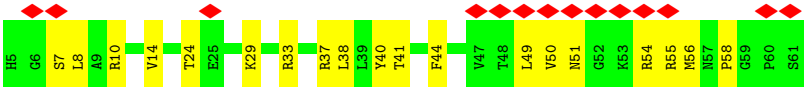

• Molecule 77: Small ribosomal subunit protein eS27A

Chain Sf:



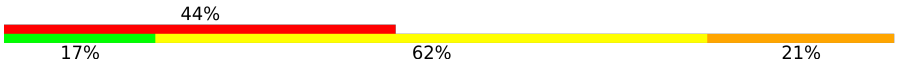

• Molecule 78: Small ribosomal subunit protein eS30A

Chain Sg:




• Molecule 79: tRNA (77-MER)

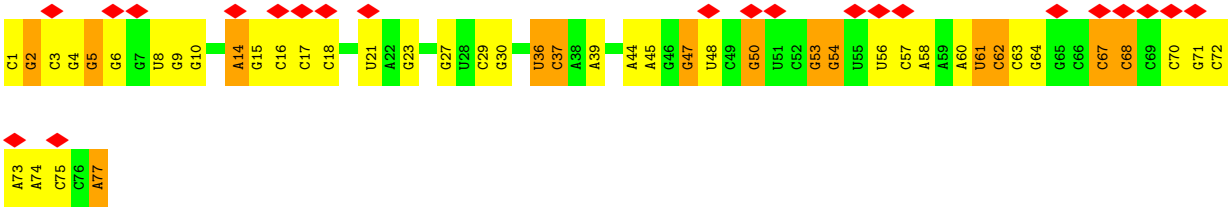
Chain Ta:





• Molecule 80: tRNA (77-MER)

Chain Tb:


• Molecule 81: RNA (5'-R(P*AP*UP*UP*GP*AP*CP*CP*CP*UP*U)-3')

Chain mR:


# 4 Experimental information (i)

| Property | Value | Source |
|---|---|---|
| EM reconstruction method | SINGLE PARTICLE | Depositor |
| Imposed symmetry | POINT, Not provided | |
| Number of particles used | 85406 | Depositor |
| Resolution determination method | FSC 0.143 CUT-OFF | Depositor |
| CTF correction method | PHASE FLIPPING AND AMPLITUDE CORRECTION | Depositor |
| Microscope | JEOL CRYO ARM 300 | Depositor |
| Voltage (kV) | 300 | Depositor |
| Electron dose ($e^-/Å^2$) | 50 | Depositor |
| Minimum defocus (nm) | 1000 | Depositor |
| Maximum defocus (nm) | 2500 | Depositor |
| Magnification | Not provided | |
| Image detector | GATAN K3 (6k x 4k) | Depositor |
| Maximum map value | 3.237 | Depositor |
| Minimum map value | -1.818 | Depositor |
| Average map value | -0.002 | Depositor |
| Map value standard deviation | 0.090 | Depositor |
| Recommended contour level | 0.26 | Depositor |
| Map size (Å) | 570.0, 570.0, 570.0 | wwPDB |
| Map dimensions | 600, 600, 600 | wwPDB |
| Map angles (°) | 90.0, 90.0, 90.0 | wwPDB |
| Pixel spacing (Å) | 0.95, 0.95, 0.95 | Depositor |

# 5 Model quality

## 5.1 Standard geometry

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

| Mol | Chain | Bond lengths | | Bond angles | |
|---|---|---|---|---|---|
| | | RMSZ | #$\|Z\|$ >5 | RMSZ | #$\|Z\|$ >5 |
| 1 | LA | 0.26 | 0/76214 | 0.32 | 0/118821 |
| 2 | LB | 0.22 | 0/2883 | 0.26 | 0/4491 |
| 3 | LC | 0.25 | 0/3746 | 0.33 | 0/5832 |
| 4 | LD | 0.25 | 0/1933 | 0.38 | 0/2598 |
| 5 | LE | 0.23 | 0/3146 | 0.36 | 0/4228 |
| 6 | LF | 0.50 | 1/2800 (0.0%) | 0.49 | 2/3790 (0.1%) |
| 7 | LG | 0.19 | 0/2400 | 0.37 | 0/3239 |
| 8 | LH | 0.19 | 0/1329 | 0.35 | 0/1794 |
| 9 | LI | 0.24 | 0/1821 | 0.39 | 0/2451 |
| 10 | LJ | 0.20 | 0/1836 | 0.39 | 0/2481 |
| 11 | LK | 0.19 | 0/1529 | 0.39 | 0/2060 |
| 12 | LL | 0.21 | 0/1801 | 0.34 | 0/2416 |
| 13 | LM | 0.17 | 0/1367 | 0.38 | 0/1834 |
| 14 | LN | 0.21 | 0/1568 | 0.38 | 0/2106 |
| 15 | LO | 0.19 | 0/1068 | 0.35 | 0/1438 |
| 16 | LP | 0.46 | 2/1757 (0.1%) | 0.44 | 1/2354 (0.0%) |
| 17 | LQ | 0.23 | 0/1585 | 0.37 | 0/2128 |
| 18 | LR | 0.23 | 0/1439 | 0.36 | 0/1938 |
| 19 | LS | 0.24 | 0/1465 | 0.40 | 0/1965 |
| 20 | LT | 0.19 | 0/1532 | 0.33 | 0/2043 |
| 21 | LU | 0.23 | 0/1473 | 0.39 | 0/1980 |
| 22 | LV | 0.22 | 0/1296 | 0.34 | 0/1739 |
| 23 | LW | 0.16 | 0/812 | 0.43 | 1/1099 (0.1%) |
| 24 | LX | 0.22 | 0/1018 | 0.34 | 0/1369 |
| 25 | LY | 0.22 | 0/540 | 0.36 | 0/717 |
| 26 | LZ | 0.19 | 0/979 | 0.32 | 0/1321 |
| 27 | La | 0.19 | 0/995 | 0.32 | 0/1329 |
| 28 | Lb | 0.18 | 0/1106 | 0.33 | 0/1485 |
| 29 | Lc | 0.25 | 0/1200 | 0.40 | 0/1607 |
| 30 | Ld | 0.20 | 0/473 | 0.35 | 0/629 |
| 31 | Le | 0.19 | 0/745 | 0.35 | 0/1001 |
| 32 | Lf | 0.21 | 0/890 | 0.39 | 0/1196 |
| 33 | Lg | 0.23 | 0/1038 | 0.35 | 0/1390 |
| 34 | Lh | 0.24 | 0/868 | 0.38 | 0/1168 |

| Mol | Chain | Bond lengths | | Bond angles | |
|---|---|---|---|---|---|
| | | RMSZ | #\|Z\| >5 | RMSZ | #\|Z\| >5 |
| 35 | Li | 0.22 | 0/890 | 0.36 | 0/1189 |
| 36 | Lj | 0.20 | 0/978 | 0.35 | 0/1301 |
| 37 | Lk | 0.18 | 0/772 | 0.36 | 0/1026 |
| 38 | Ll | 0.26 | 0/660 | 0.36 | 0/875 |
| 39 | Lm | 0.17 | 0/618 | 0.40 | 0/826 |
| 40 | Ln | 0.22 | 0/443 | 0.31 | 0/588 |
| 41 | Lo | 0.18 | 0/416 | 0.29 | 0/553 |
| 42 | Lp | 0.17 | 0/230 | 0.26 | 0/296 |
| 43 | Lq | 0.57 | 3/836 (0.4%) | 0.58 | 1/1104 (0.1%) |
| 44 | Lr | 0.24 | 0/701 | 0.41 | 0/934 |
| 45 | S2 | 0.20 | 0/42211 | 0.31 | 0/65773 |
| 46 | SA | 0.16 | 0/1754 | 0.37 | 0/2361 |
| 47 | SB | 0.17 | 0/1625 | 0.38 | 0/2197 |
| 48 | SC | 0.21 | 0/769 | 0.46 | 0/1039 |
| 49 | SD | 0.14 | 0/883 | 0.49 | 0/1199 |
| 50 | SE | 0.16 | 0/936 | 0.36 | 0/1259 |
| 51 | SF | 0.17 | 0/1125 | 0.40 | 0/1510 |
| 52 | SG | 0.15 | 0/957 | 0.36 | 0/1283 |
| 53 | SH | 0.15 | 0/1207 | 0.38 | 0/1623 |
| 54 | SI | 0.16 | 0/1130 | 0.41 | 0/1517 |
| 55 | SJ | 0.17 | 0/807 | 0.38 | 0/1091 |
| 56 | SK | 0.15 | 0/661 | 0.34 | 0/888 |
| 57 | SL | 0.21 | 0/493 | 0.44 | 0/663 |
| 58 | SM | 0.17 | 0/452 | 0.33 | 0/600 |
| 59 | SN | 0.13 | 0/567 | 0.36 | 0/764 |
| 60 | SO | 0.18 | 0/2436 | 0.46 | 0/3318 |
| 61 | SP | 0.19 | 0/1644 | 0.44 | 0/2249 |
| 62 | SQ | 0.20 | 0/1823 | 0.48 | 0/2447 |
| 63 | SR | 0.20 | 0/1656 | 0.39 | 0/2251 |
| 64 | SS | 0.16 | 0/2097 | 0.37 | 0/2823 |
| 65 | ST | 0.15 | 0/1839 | 0.39 | 0/2460 |
| 66 | SU | 0.17 | 0/1498 | 0.37 | 0/2019 |
| 67 | SV | 0.16 | 0/1501 | 0.34 | 0/2006 |
| 68 | SW | 0.16 | 0/1504 | 0.37 | 0/2016 |
| 69 | SX | 0.19 | 0/1168 | 0.36 | 0/1575 |
| 70 | SY | 0.21 | 0/1215 | 0.39 | 0/1638 |
| 71 | SZ | 0.26 | 0/934 | 0.44 | 0/1257 |
| 72 | Sa | 0.17 | 0/682 | 0.38 | 0/921 |
| 73 | Sb | 0.24 | 0/1038 | 0.42 | 0/1395 |
| 74 | Sc | 0.21 | 0/1139 | 0.40 | 0/1518 |
| 75 | Sd | 0.16 | 0/1046 | 0.37 | 0/1401 |
| 76 | Se | 0.21 | 0/778 | 0.41 | 0/1042 |
| 77 | Sf | 0.17 | 0/620 | 0.38 | 0/838 |

| Mol | Chain | Bond lengths | | Bond angles | |
|---|---|---|---|---|---|
| | | RMSZ | #\|Z\| >5 | RMSZ | #\|Z\| >5 |
| 78 | Sg | 0.14 | 0/459 | 0.38 | 0/611 |
| 79 | Ta | 0.14 | 0/1844 | 0.32 | 0/2873 |
| 80 | Tb | 0.16 | 0/1837 | 0.32 | 0/2861 |
| All | All | 0.23 | 6/217531 (0.0%) | 0.34 | 5/320015 (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 |
|---|---|---|---|
| 10 | LJ | 0 | 2 |
| 30 | Ld | 0 | 1 |
| 47 | SB | 0 | 1 |
| 61 | SP | 0 | 2 |
| 66 | SU | 0 | 1 |
| All | All | 0 | 7 |

All (6) bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|---|---|---|---|---|---|---|---|
| 6 | LF | 301 | PRO | N-CD | 23.03 | 1.79 | 1.47 |
| 16 | LP | 76 | PRO | CA-C | -6.94 | 1.45 | 1.52 |
| 43 | Lq | 55 | LYS | C-O | -6.24 | 1.17 | 1.24 |
| 43 | Lq | 55 | LYS | N-CA | -5.34 | 1.41 | 1.45 |
| 16 | LP | 73 | ARG | CA-C | -5.29 | 1.47 | 1.53 |
| 43 | Lq | 59 | HIS | CA-C | -5.05 | 1.46 | 1.52 |

All (5) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed($^o$) | Ideal($^o$) |
|---|---|---|---|---|---|---|---|
| 6 | LF | 301 | PRO | CA-N-CD | -16.07 | 89.50 | 112.00 |
| 6 | LF | 301 | PRO | N-CD-CG | -7.18 | 92.43 | 103.20 |
| 43 | Lq | 56 | PRO | N-CA-C | 7.10 | 121.53 | 110.80 |
| 23 | LW | 27 | VAL | N-CA-C | -5.12 | 108.30 | 113.47 |
| 16 | LP | 76 | PRO | CB-CA-C | -5.01 | 105.24 | 111.11 |

There are no chirality outliers.

All (7) planarity outliers are listed below:

| Mol | Chain | Res | Type | Group |
|---|---|---|---|---|
| 10 | LJ | 30 | THR | Peptide |
| 10 | LJ | 76 | ALA | Peptide |
| 30 | Ld | 20 | GLY | Peptide |
| 47 | SB | 162 | VAL | Peptide |
| 61 | SP | 193 | GLN | Peptide |
| 61 | SP | 198 | MET | Peptide |
| 66 | SU | 64 | VAL | 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 | LA | 68091 | 0 | 34217 | 1005 | 0 |
| 2 | LB | 2579 | 0 | 1304 | 45 | 0 |
| 3 | LC | 3353 | 0 | 1695 | 75 | 0 |
| 4 | LD | 1899 | 0 | 1957 | 70 | 0 |
| 5 | LE | 3075 | 0 | 3142 | 94 | 0 |
| 6 | LF | 2748 | 0 | 2859 | 99 | 0 |
| 7 | LG | 2351 | 0 | 2294 | 67 | 0 |
| 8 | LH | 1307 | 0 | 1377 | 42 | 0 |
| 9 | LI | 1784 | 0 | 1862 | 51 | 0 |
| 10 | LJ | 1804 | 0 | 1877 | 45 | 0 |
| 11 | LK | 1508 | 0 | 1572 | 66 | 0 |
| 12 | LL | 1764 | 0 | 1804 | 42 | 0 |
| 13 | LM | 1346 | 0 | 1370 | 38 | 0 |
| 14 | LN | 1543 | 0 | 1608 | 47 | 0 |
| 15 | LO | 1053 | 0 | 1149 | 54 | 0 |
| 16 | LP | 1720 | 0 | 1779 | 58 | 0 |
| 17 | LQ | 1555 | 0 | 1659 | 42 | 0 |
| 18 | LR | 1416 | 0 | 1433 | 35 | 0 |
| 19 | LS | 1441 | 0 | 1543 | 45 | 0 |
| 20 | LT | 1515 | 0 | 1606 | 27 | 0 |
| 21 | LU | 1437 | 0 | 1475 | 56 | 0 |
| 22 | LV | 1272 | 0 | 1312 | 34 | 0 |
| 23 | LW | 796 | 0 | 812 | 22 | 0 |
| 24 | LX | 1003 | 0 | 1048 | 26 | 0 |
| 25 | LY | 528 | 0 | 546 | 20 | 0 |
| 26 | LZ | 964 | 0 | 1025 | 19 | 0 |
| 27 | La | 984 | 0 | 1075 | 25 | 0 |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|---|---|---|---|---|---|---|
| 28 | Lb | 1080 | 0 | 1122 | 43 | 0 |
| 29 | Lc | 1169 | 0 | 1211 | 44 | 0 |
| 30 | Ld | 462 | 0 | 491 | 12 | 0 |
| 31 | Le | 737 | 0 | 792 | 23 | 0 |
| 32 | Lf | 876 | 0 | 912 | 31 | 0 |
| 33 | Lg | 1017 | 0 | 1081 | 23 | 0 |
| 34 | Lh | 850 | 0 | 880 | 18 | 0 |
| 35 | Li | 880 | 0 | 945 | 24 | 0 |
| 36 | Lj | 969 | 0 | 1078 | 47 | 0 |
| 37 | Lk | 766 | 0 | 844 | 18 | 0 |
| 38 | Ll | 645 | 0 | 649 | 20 | 0 |
| 39 | Lm | 612 | 0 | 682 | 28 | 0 |
| 40 | Ln | 436 | 0 | 475 | 13 | 0 |
| 41 | Lo | 410 | 0 | 446 | 6 | 0 |
| 42 | Lp | 229 | 0 | 273 | 7 | 0 |
| 43 | Lq | 824 | 0 | 892 | 19 | 0 |
| 44 | Lr | 694 | 0 | 738 | 29 | 0 |
| 45 | S2 | 37739 | 0 | 18988 | 704 | 0 |
| 46 | SA | 1729 | 0 | 1812 | 67 | 0 |
| 47 | SB | 1605 | 0 | 1669 | 75 | 0 |
| 48 | SC | 752 | 0 | 719 | 39 | 0 |
| 49 | SD | 875 | 0 | 878 | 39 | 0 |
| 50 | SE | 916 | 0 | 941 | 44 | 0 |
| 51 | SF | 1105 | 0 | 1166 | 33 | 0 |
| 52 | SG | 948 | 0 | 990 | 29 | 0 |
| 53 | SH | 1188 | 0 | 1216 | 53 | 0 |
| 54 | SI | 1112 | 0 | 1124 | 49 | 0 |
| 55 | SJ | 797 | 0 | 863 | 36 | 0 |
| 56 | SK | 651 | 0 | 682 | 23 | 0 |
| 57 | SL | 491 | 0 | 524 | 26 | 0 |
| 58 | SM | 442 | 0 | 432 | 28 | 0 |
| 59 | SN | 556 | 0 | 549 | 18 | 0 |
| 60 | SO | 2383 | 0 | 2332 | 122 | 0 |
| 61 | SP | 1603 | 0 | 1610 | 54 | 0 |
| 62 | SQ | 1798 | 0 | 1890 | 73 | 0 |
| 63 | SR | 1626 | 0 | 1715 | 66 | 0 |
| 64 | SS | 2056 | 0 | 2140 | 88 | 0 |
| 65 | ST | 1815 | 0 | 1894 | 65 | 0 |
| 66 | SU | 1473 | 0 | 1555 | 51 | 0 |
| 67 | SV | 1476 | 0 | 1501 | 62 | 0 |
| 68 | SW | 1479 | 0 | 1556 | 76 | 0 |
| 69 | SX | 1142 | 0 | 1209 | 44 | 0 |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|---|---|---|---|---|---|---|
| 70 | SY | 1192 | 0 | 1255 | 36 | 0 |
| 71 | SZ | 923 | 0 | 948 | 40 | 0 |
| 72 | Sa | 673 | 0 | 662 | 25 | 0 |
| 73 | Sb | 1021 | 0 | 1060 | 45 | 0 |
| 74 | Sc | 1121 | 0 | 1196 | 34 | 0 |
| 75 | Sd | 1032 | 0 | 1044 | 43 | 0 |
| 76 | Se | 765 | 0 | 814 | 21 | 0 |
| 77 | Sf | 610 | 0 | 633 | 22 | 0 |
| 78 | Sg | 451 | 0 | 494 | 19 | 0 |
| 79 | Ta | 1650 | 0 | 838 | 31 | 0 |
| 80 | Tb | 1645 | 0 | 837 | 22 | 0 |
| 81 | mR | 207 | 0 | 0 | 0 | 0 |
| All | All | 202539 | 0 | 148647 | 4167 | 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 12.

All (4167) 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) |
|---|---|---|---|
| 53:SH:101:LEU:CD2 | 53:SH:104:ASN:ND2 | 1.67 | 1.50 |
| 46:SA:175:VAL:CG2 | 46:SA:177:MET:HE3 | 1.46 | 1.44 |
| 46:SA:175:VAL:HG23 | 46:SA:177:MET:CE | 1.48 | 1.42 |
| 11:LK:23:ARG:HH12 | 11:LK:42:ASP:CA | 1.37 | 1.36 |
| 6:LF:301:PRO:CD | 6:LF:301:PRO:N | 1.80 | 1.31 |
| 60:SO:13:LEU:HB3 | 60:SO:45:TRP:CZ3 | 1.67 | 1.28 |
| 60:SO:34:LEU:HD12 | 60:SO:73:LEU:CD2 | 1.63 | 1.26 |
| 19:LS:81:VAL:HG13 | 19:LS:140:LEU:CD2 | 1.74 | 1.17 |
| 11:LK:23:ARG:NH1 | 11:LK:42:ASP:HA | 1.57 | 1.17 |
| 45:S2:821:U:H3 | 45:S2:852:C:N4 | 1.43 | 1.16 |
| 53:SH:101:LEU:HD21 | 53:SH:104:ASN:ND2 | 1.29 | 1.16 |
| 36:Lj:70:TYR:HB3 | 36:Lj:76:GLN:HE22 | 1.13 | 1.12 |
| 11:LK:23:ARG:HH12 | 11:LK:42:ASP:HA | 1.01 | 1.11 |
| 28:Lb:102:GLU:N | 28:Lb:107:ARG:HH21 | 1.49 | 1.10 |
| 28:Lb:102:GLU:H | 28:Lb:107:ARG:NH2 | 1.49 | 1.09 |
| 44:Lr:38:ASP:OD1 | 44:Lr:45:LYS:NZ | 1.86 | 1.08 |
| 53:SH:101:LEU:HD23 | 53:SH:104:ASN:ND2 | 1.48 | 1.08 |
| 60:SO:34:LEU:HD12 | 60:SO:73:LEU:HD23 | 1.36 | 1.05 |
| 39:Lm:30:LYS:NZ | 39:Lm:40:GLN:OE1 | 1.90 | 1.03 |
| 1:LA:2537:U:H5' | 62:SQ:229:MET:CE | 1.88 | 1.03 |
| 45:S2:1301:U:OP2 | 63:SR:97:ARG:NH2 | 1.94 | 1.01 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 47:SB:162:VAL:HG13 | 57:SL:54:LEU:HD11 | 1.43 | 1.01 |
| 67:SV:194:ARG:HH11 | 67:SV:194:ARG:HB2 | 1.23 | 1.00 |
| 79:Ta:31:G:N2 | 79:Ta:41:C:O2 | 1.95 | 1.00 |
| 11:LK:23:ARG:HH12 | 11:LK:42:ASP:N | 1.59 | 0.99 |
| 1:LA:2537:U:H5' | 62:SQ:229:MET:HE2 | 1.41 | 0.99 |
| 19:LS:81:VAL:HG13 | 19:LS:140:LEU:HD21 | 1.45 | 0.99 |
| 19:LS:81:VAL:HG13 | 19:LS:140:LEU:HD23 | 1.43 | 0.98 |
| 36:Lj:76:GLN:HA | 36:Lj:76:GLN:HE21 | 1.27 | 0.98 |
| 11:LK:23:ARG:NH1 | 11:LK:42:ASP:CA | 2.19 | 0.97 |
| 60:SO:24:ALA:C | 60:SO:73:LEU:HD11 | 1.87 | 0.97 |
| 45:S2:273:G:H1 | 45:S2:283:U:H3 | 1.11 | 0.97 |
| 69:SX:94:ILE:HD11 | 69:SX:101:GLU:OE2 | 1.65 | 0.96 |
| 36:Lj:76:GLN:HA | 36:Lj:76:GLN:NE2 | 1.81 | 0.96 |
| 46:SA:175:VAL:HG21 | 46:SA:177:MET:HE3 | 1.45 | 0.96 |
| 1:LA:1019:G:H1 | 1:LA:1033:U:H3 | 1.09 | 0.95 |
| 25:LY:60:LYS:HE3 | 25:LY:60:LYS:HA | 1.45 | 0.95 |
| 46:SA:175:VAL:HG23 | 46:SA:177:MET:HE3 | 0.97 | 0.95 |
| 10:LJ:62:LYS:HE2 | 16:LP:29:GLU:OE1 | 1.67 | 0.95 |
| 3:LC:121:U:H3 | 3:LC:132:G:H1 | 0.97 | 0.95 |
| 45:S2:69:G:H1 | 45:S2:82:U:H3 | 1.15 | 0.95 |
| 45:S2:142:G:H1 | 45:S2:173:A:N6 | 1.63 | 0.95 |
| 1:LA:2442:G:H1 | 1:LA:2505:U:H3 | 1.10 | 0.94 |
| 79:Ta:31:G:N1 | 79:Ta:41:C:N3 | 2.15 | 0.94 |
| 1:LA:512:U:H3 | 1:LA:579:G:H1 | 1.03 | 0.93 |
| 54:SI:131:ASP:O | 54:SI:135:ILE:HD12 | 1.68 | 0.93 |
| 79:Ta:32:G:N2 | 79:Ta:40:C:N3 | 2.15 | 0.92 |
| 52:SG:47:ARG:HH21 | 52:SG:48:ASN:HD21 | 1.10 | 0.92 |
| 9:LI:39:GLU:OE2 | 9:LI:43:ILE:HD11 | 1.69 | 0.92 |
| 1:LA:418:A:N1 | 3:LC:5:U:O4 | 2.02 | 0.92 |
| 19:LS:81:VAL:CG1 | 19:LS:140:LEU:HD23 | 2.00 | 0.90 |
| 1:LA:1664:G:H1 | 1:LA:1785:U:H3 | 1.20 | 0.90 |
| 46:SA:175:VAL:HG23 | 46:SA:177:MET:HE2 | 1.53 | 0.90 |
| 45:S2:142:G:H1 | 45:S2:173:A:H61 | 0.91 | 0.90 |
| 45:S2:1055:U:H3 | 45:S2:1064:G:H1 | 0.92 | 0.89 |
| 21:LU:63:GLN:NE2 | 21:LU:65:ASN:HD21 | 1.70 | 0.88 |
| 1:LA:418:A:N1 | 3:LC:5:U:C4 | 2.42 | 0.88 |
| 1:LA:3349:C:O2 | 1:LA:3356:G:N2 | 2.06 | 0.88 |
| 49:SD:63:VAL:HG11 | 49:SD:66:VAL:HG23 | 1.56 | 0.88 |
| 75:Sd:61:ARG:NH1 | 75:Sd:61:ARG:HB3 | 1.87 | 0.88 |
| 45:S2:1673:G:H1 | 45:S2:1728:A:H2 | 0.90 | 0.88 |
| 1:LA:341:G:C5 | 6:LF:194:TYR:HE2 | 1.92 | 0.88 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:LA:3234:A:H2 | 1:LA:3253:G:H1 | 1.17 | 0.88 |
| 50:SE:96:ILE:HD11 | 50:SE:116:LEU:HD11 | 1.55 | 0.87 |
| 21:LU:63:GLN:HE22 | 21:LU:65:ASN:ND2 | 1.72 | 0.87 |
| 65:ST:22:HIS:HA | 65:ST:25:ARG:HG3 | 1.57 | 0.87 |
| 1:LA:2138:A:HO2' | 38:Ll:2:GLY:N | 1.71 | 0.87 |
| 62:SQ:207:LEU:O | 62:SQ:210:ILE:HD11 | 1.73 | 0.87 |
| 1:LA:2537:U:C5' | 62:SQ:229:MET:HE2 | 2.04 | 0.87 |
| 1:LA:341:G:C6 | 6:LF:194:TYR:CE2 | 2.63 | 0.86 |
| 1:LA:2450:G:N2 | 1:LA:2496:C:O2 | 2.08 | 0.86 |
| 1:LA:3349:C:N3 | 1:LA:3356:G:N1 | 2.23 | 0.86 |
| 60:SO:24:ALA:O | 60:SO:73:LEU:HD11 | 1.75 | 0.86 |
| 70:SY:26:PHE:HE1 | 70:SY:59:GLY:O | 1.59 | 0.86 |
| 45:S2:555:A:N7 | 45:S2:590:C:O2' | 2.08 | 0.86 |
| 66:SU:17:GLU:HG3 | 66:SU:46:ILE:HG12 | 1.55 | 0.86 |
| 66:SU:27:LEU:HD12 | 66:SU:38:LEU:HD21 | 1.55 | 0.86 |
| 70:SY:26:PHE:CE1 | 70:SY:59:GLY:O | 2.27 | 0.86 |
| 72:Sa:64:GLU:N | 72:Sa:64:GLU:OE1 | 2.08 | 0.86 |
| 45:S2:1588:G:H1 | 45:S2:1608:U:H3 | 0.90 | 0.85 |
| 30:Ld:16:ALA:O | 30:Ld:20:GLY:HA3 | 1.76 | 0.85 |
| 1:LA:760:G:O2' | 1:LA:770:G:N2 | 2.09 | 0.85 |
| 21:LU:63:GLN:HE22 | 21:LU:65:ASN:HD21 | 0.88 | 0.85 |
| 46:SA:175:VAL:CG2 | 46:SA:177:MET:CE | 2.26 | 0.85 |
| 45:S2:741:C:H1' | 66:SU:107:ARG:HH12 | 1.42 | 0.85 |
| 45:S2:1673:G:N1 | 45:S2:1728:A:C2 | 2.45 | 0.84 |
| 45:S2:1673:G:N1 | 45:S2:1728:A:H2 | 1.74 | 0.84 |
| 24:LX:109:MET:HE1 | 24:LX:114:ILE:HD11 | 1.59 | 0.84 |
| 1:LA:528:U:H3 | 1:LA:564:G:H1 | 1.25 | 0.83 |
| 66:SU:46:ILE:HD12 | 66:SU:60:ILE:HD13 | 1.58 | 0.83 |
| 45:S2:1483:A:H4' | 51:SF:71:GLY:HA2 | 1.58 | 0.83 |
| 66:SU:15:GLU:O | 66:SU:19:GLN:OE1 | 1.96 | 0.83 |
| 45:S2:1673:G:O6 | 45:S2:1728:A:N1 | 2.11 | 0.82 |
| 74:Sc:65:ASN:ND2 | 74:Sc:116:ASP:OD2 | 2.12 | 0.82 |
| 60:SO:106:HIS:CD2 | 60:SO:132:LYS:HD2 | 2.15 | 0.82 |
| 10:LJ:83:ASP:OD1 | 10:LJ:86:THR:HG22 | 1.78 | 0.82 |
| 8:LH:102:ASN:ND2 | 8:LH:104:GLU:OE1 | 2.13 | 0.82 |
| 45:S2:442:C:O2' | 45:S2:525:A:N6 | 2.12 | 0.82 |
| 60:SO:106:HIS:HD1 | 60:SO:126:SER:HB3 | 1.45 | 0.82 |
| 60:SO:13:LEU:HB3 | 60:SO:45:TRP:CH2 | 2.14 | 0.81 |
| 60:SO:127:ARG:HA | 60:SO:150:TRP:HB2 | 1.61 | 0.81 |
| 61:SP:74:VAL:CG2 | 61:SP:121:VAL:HG12 | 2.09 | 0.81 |
| 4:LD:27:ALA:O | 4:LD:128:ARG:NH2 | 2.13 | 0.81 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 45:S2:643:G:N2 | 45:S2:691:C:O2 | 2.13 | 0.81 |
| 9:LI:175:LYS:H | 9:LI:175:LYS:HD2 | 1.46 | 0.81 |
| 36:Lj:70:TYR:HB3 | 36:Lj:76:GLN:NE2 | 1.95 | 0.81 |
| 55:SJ:68:ARG:HH12 | 55:SJ:77:LYS:HA | 1.46 | 0.81 |
| 47:SB:57:SER:HA | 57:SL:53:ILE:HB | 1.64 | 0.80 |
| 61:SP:163:ASN:O | 61:SP:169:SER:OG | 1.99 | 0.80 |
| 69:SX:78:THR:HA | 69:SX:84:ILE:HG22 | 1.63 | 0.80 |
| 3:LC:97:A:O2' | 36:Lj:59:ASN:OD1 | 1.98 | 0.80 |
| 8:LH:94:GLU:C | 8:LH:94:GLU:OE1 | 2.25 | 0.80 |
| 67:SV:194:ARG:HB2 | 67:SV:194:ARG:NH1 | 1.97 | 0.80 |
| 60:SO:34:LEU:HD12 | 60:SO:73:LEU:HD22 | 1.63 | 0.79 |
| 1:LA:439:C:O2 | 1:LA:494:G:N2 | 2.14 | 0.79 |
| 1:LA:618:C:OP1 | 18:LR:173:ARG:NH2 | 2.15 | 0.79 |
| 11:LK:23:ARG:NH2 | 11:LK:42:ASP:H | 1.80 | 0.79 |
| 36:Lj:70:TYR:CB | 36:Lj:76:GLN:HE22 | 1.92 | 0.79 |
| 68:SW:110:GLN:HG3 | 68:SW:144:PRO:HB3 | 1.63 | 0.79 |
| 47:SB:162:VAL:HG22 | 57:SL:54:LEU:HD21 | 1.63 | 0.79 |
| 55:SJ:26:LEU:HD22 | 55:SJ:114:VAL:HG22 | 1.65 | 0.79 |
| 47:SB:61:TYR:OH | 57:SL:49:ARG:NH1 | 2.15 | 0.79 |
| 7:LG:200:PHE:HB3 | 7:LG:237:GLU:OE1 | 1.82 | 0.79 |
| 45:S2:1482:C:O2' | 51:SF:72:GLY:O | 2.00 | 0.79 |
| 40:Ln:25:GLN:OE1 | 40:Ln:28:ARG:NH2 | 2.16 | 0.79 |
| 34:Lh:39:GLN:OE1 | 34:Lh:39:GLN:N | 2.16 | 0.78 |
| 45:S2:175:G:H22 | 45:S2:266:A:H5' | 1.48 | 0.78 |
| 1:LA:1666:G:H1 | 1:LA:1783:U:H3 | 1.31 | 0.78 |
| 22:LV:18:ASP:HB3 | 22:LV:21:LYS:HB2 | 1.64 | 0.78 |
| 55:SJ:82:TYR:HB3 | 58:SM:52:PHE:HB3 | 1.66 | 0.78 |
| 45:S2:14:C:OP2 | 63:SR:203:LYS:HE2 | 1.82 | 0.78 |
| 47:SB:162:VAL:HG13 | 57:SL:54:LEU:CD1 | 2.13 | 0.78 |
| 1:LA:2565:U:H3 | 1:LA:2576:G:H1 | 1.31 | 0.78 |
| 1:LA:2206:G:O2' | 1:LA:2208:A:N7 | 2.17 | 0.78 |
| 24:LX:81:GLN:O | 24:LX:98:ASN:ND2 | 2.15 | 0.78 |
| 60:SO:249:ARG:HH12 | 60:SO:315:VAL:HG11 | 1.49 | 0.78 |
| 65:ST:2:LYS:HB2 | 65:ST:108:VAL:HG12 | 1.65 | 0.78 |
| 5:LE:212:ASN:HD21 | 5:LE:354:VAL:HB | 1.48 | 0.78 |
| 28:Lb:57:HIS:HB2 | 28:Lb:62:VAL:HG23 | 1.65 | 0.78 |
| 1:LA:177:U:O2 | 1:LA:241:G:O6 | 2.02 | 0.78 |
| 10:LJ:190:VAL:HG23 | 10:LJ:192:GLN:HG3 | 1.66 | 0.78 |
| 64:SS:79:ASP:HB3 | 64:SS:82:TYR:HB2 | 1.65 | 0.78 |
| 1:LA:2255:A:H8 | 45:S2:1758:U:H1' | 1.49 | 0.77 |
| 31:Le:76:GLU:N | 31:Le:76:GLU:OE2 | 2.17 | 0.77 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 45:S2:1584:G:N2 | 45:S2:1611:A:OP2 | 2.16 | 0.77 |
| 64:SS:181:VAL:HG22 | 64:SS:193:GLY:HA3 | 1.66 | 0.77 |
| 1:LA:2450:G:N1 | 1:LA:2496:C:N3 | 2.33 | 0.77 |
| 41:Lo:98:LYS:HG3 | 41:Lo:118:THR:HG21 | 1.66 | 0.77 |
| 50:SE:96:ILE:CD1 | 50:SE:116:LEU:HD11 | 2.14 | 0.77 |
| 69:SX:84:ILE:HD12 | 69:SX:109:VAL:HG12 | 1.67 | 0.77 |
| 70:SY:52:VAL:O | 70:SY:56:ASP:HB2 | 1.83 | 0.77 |
| 1:LA:2526:C:OP1 | 4:LD:37:ARG:NH1 | 2.17 | 0.77 |
| 44:Lr:45:LYS:HE2 | 44:Lr:45:LYS:N | 1.99 | 0.77 |
| 45:S2:936:G:N7 | 76:Se:15:ARG:NH1 | 2.33 | 0.77 |
| 69:SX:99:ARG:HG3 | 74:Sc:12:ALA:HB2 | 1.66 | 0.77 |
| 45:S2:992:A:O2' | 45:S2:1785:U:O2 | 2.02 | 0.77 |
| 71:SZ:132:ARG:HH11 | 71:SZ:132:ARG:HG3 | 1.48 | 0.77 |
| 19:LS:30:VAL:O | 19:LS:34:THR:HG23 | 1.84 | 0.77 |
| 61:SP:190:ASP:HA | 61:SP:194:PRO:HG2 | 1.67 | 0.77 |
| 47:SB:92:ARG:NH2 | 47:SB:169:ASN:OD1 | 2.17 | 0.76 |
| 3:LC:104:A:H3' | 3:LC:105:A:H5" | 1.68 | 0.76 |
| 75:Sd:56:SER:HG | 75:Sd:94:TYR:HH | 1.31 | 0.76 |
| 67:SV:57:ALA:HB1 | 67:SV:60:ILE:HG13 | 1.68 | 0.76 |
| 10:LJ:94:PHE:HB3 | 10:LJ:189:LEU:HD21 | 1.65 | 0.76 |
| 8:LH:108:LYS:HE3 | 8:LH:110:LYS:HG2 | 1.65 | 0.76 |
| 14:LN:123:ILE:HG22 | 36:Lj:118:ILE:HG13 | 1.67 | 0.76 |
| 46:SA:162:GLN:NE2 | 46:SA:166:ASP:OD2 | 2.19 | 0.76 |
| 68:SW:110:GLN:HE21 | 68:SW:126:ARG:HD3 | 1.50 | 0.76 |
| 1:LA:1863:G:N1 | 1:LA:1866:C:OP2 | 2.15 | 0.75 |
| 18:LR:42:THR:O | 18:LR:46:LYS:HE2 | 1.86 | 0.75 |
| 21:LU:140:VAL:O | 21:LU:144:LEU:HD12 | 1.86 | 0.75 |
| 29:Lc:104:THR:HG22 | 29:Lc:109:TYR:HB2 | 1.68 | 0.75 |
| 64:SS:35:PRO:HD2 | 64:SS:83:PRO:HG2 | 1.67 | 0.75 |
| 65:ST:192:ALA:O | 65:ST:196:ARG:HG3 | 1.86 | 0.75 |
| 17:LQ:56[A]:ASP:HA | 17:LQ:59[A]:ARG:HH12 | 1.51 | 0.75 |
| 47:SB:72:HIS:O | 51:SF:47:LYS:NZ | 2.18 | 0.75 |
| 60:SO:34:LEU:CD1 | 60:SO:73:LEU:CD2 | 2.56 | 0.75 |
| 45:S2:1171:A:H2' | 45:S2:1172:G:C8 | 2.21 | 0.75 |
| 45:S2:1341:A:H1' | 60:SO:65:SER:HB2 | 1.68 | 0.75 |
| 1:LA:879:U:O2' | 18:LR:135:ARG:NH2 | 2.20 | 0.75 |
| 50:SE:25:LEU:HD23 | 50:SE:28:MET:HE1 | 1.69 | 0.75 |
| 1:LA:271:C:O2 | 37:Lk:82:ARG:NH2 | 2.20 | 0.75 |
| 11:LK:23:ARG:NH1 | 11:LK:42:ASP:N | 2.29 | 0.75 |
| 20:LT:173:ARG:NH1 | 45:S2:853:G:OP2 | 2.20 | 0.74 |
| 62:SQ:144:ARG:HD3 | 62:SQ:208:GLN:HB3 | 1.68 | 0.74 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 8:LH:102:ASN:CG | 8:LH:104:GLU:OE1 | 2.29 | 0.74 |
| 62:SQ:22:ASP:HB3 | 62:SQ:25:THR:HG22 | 1.70 | 0.74 |
| 1:LA:1364:C:H5' | 19:LS:3:ILE:HD13 | 1.68 | 0.74 |
| 45:S2:397:A:H4' | 67:SV:50:GLY:HA2 | 1.70 | 0.74 |
| 60:SO:13:LEU:HB2 | 60:SO:310:ILE:HB | 1.69 | 0.74 |
| 65:ST:148:SER:HB2 | 65:ST:151:ASP:HB2 | 1.69 | 0.74 |
| 65:ST:215:ARG:HA | 65:ST:218:GLU:OE1 | 1.88 | 0.74 |
| 45:S2:1377:U:O2 | 45:S2:1379:C:N4 | 2.19 | 0.74 |
| 1:LA:3003:G:OP2 | 5:LE:26:ARG:NH2 | 2.18 | 0.73 |
| 71:SZ:99:GLN:NE2 | 76:Se:44:ILE:O | 2.21 | 0.73 |
| 66:SU:27:LEU:CD1 | 66:SU:38:LEU:HD21 | 2.19 | 0.73 |
| 68:SW:107:ARG:HH21 | 68:SW:150:LEU:HG | 1.51 | 0.73 |
| 1:LA:1477:A:OP1 | 1:LA:3075:G:O2' | 2.07 | 0.73 |
| 1:LA:2880:U:OP1 | 24:LX:47:ASN:ND2 | 2.20 | 0.73 |
| 1:LA:1661:G:H2' | 1:LA:1662:G:C8 | 2.23 | 0.73 |
| 1:LA:2522:G:H1 | 4:LD:68:LYS:NZ | 1.87 | 0.73 |
| 17:LQ:12[A]:LYS:HD3 | 17:LQ:37[A]:ARG:HH21 | 1.53 | 0.73 |
| 1:LA:2452:G:H1 | 1:LA:2493:U:H3 | 0.78 | 0.73 |
| 11:LK:23:ARG:NH1 | 11:LK:42:ASP:H | 1.87 | 0.73 |
| 45:S2:776:G:N7 | 75:Sd:11:LYS:NZ | 2.36 | 0.73 |
| 1:LA:1237:G:N1 | 1:LA:1251:A:N6 | 2.37 | 0.73 |
| 1:LA:3299:A:H61 | 1:LA:3315:G:H1 | 1.36 | 0.72 |
| 10:LJ:42:PRO:HD2 | 10:LJ:44:ARG:HH21 | 1.54 | 0.72 |
| 14:LN:3:ILE:HD13 | 29:Lc:45:MET:HE1 | 1.71 | 0.72 |
| 45:S2:478:A:O2' | 68:SW:124:HIS:ND1 | 2.13 | 0.72 |
| 56:SK:83:LEU:HD23 | 56:SK:89:ILE:HD13 | 1.71 | 0.72 |
| 47:SB:43:PHE:HD1 | 47:SB:44:ASN:H | 1.35 | 0.72 |
| 1:LA:2356:A:H61 | 1:LA:2983:C:H5 | 1.35 | 0.72 |
| 21:LU:80:ARG:HG2 | 21:LU:122:HIS:HB2 | 1.71 | 0.72 |
| 1:LA:2442:G:O6 | 1:LA:2505:U:O4 | 2.06 | 0.72 |
| 6:LF:82:THR:HG22 | 6:LF:84:ARG:H | 1.54 | 0.72 |
| 1:LA:77:A:N7 | 14:LN:73:ARG:NH2 | 2.38 | 0.72 |
| 28:Lb:42:LEU:HD22 | 28:Lb:74:VAL:HG22 | 1.72 | 0.72 |
| 53:SH:79:TYR:HA | 53:SH:80:LYS:HZ3 | 1.52 | 0.72 |
| 65:ST:130:PRO:HB2 | 65:ST:160:ARG:HH21 | 1.53 | 0.72 |
| 8:LH:87:THR:HG22 | 8:LH:89:THR:H | 1.53 | 0.72 |
| 23:LW:99:LYS:HD2 | 23:LW:102:GLU:OE1 | 1.90 | 0.72 |
| 49:SD:66:VAL:HG12 | 49:SD:67:THR:HG22 | 1.70 | 0.72 |
| 62:SQ:2:ALA:N | 71:SZ:49:LYS:O | 2.23 | 0.72 |
| 64:SS:256:ARG:HH22 | 68:SW:78:ARG:CZ | 2.01 | 0.72 |
| 13:LM:133:ARG:NH2 | 13:LM:158:ASP:OD2 | 2.23 | 0.72 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 53:SH:144:ARG:CZ | 53:SH:144:ARG:HA | 2.20 | 0.72 |
| 15:LO:38:ILE:HA | 15:LO:44:VAL:HG12 | 1.71 | 0.72 |
| 45:S2:459:G:OP1 | 75:Sd:109:LYS:NZ | 2.22 | 0.72 |
| 79:Ta:31:G:H3' | 79:Ta:32:G:C8 | 2.25 | 0.72 |
| 39:Lm:40:GLN:HE22 | 39:Lm:42:LYS:HG3 | 1.55 | 0.71 |
| 45:S2:1450:U:H5" | 58:SM:8:PHE:HE1 | 1.54 | 0.71 |
| 77:Sf:55:THR:HB | 77:Sf:62:ILE:HD12 | 1.71 | 0.71 |
| 1:LA:341:G:C6 | 6:LF:194:TYR:HE2 | 2.02 | 0.71 |
| 60:SO:182:ASN:HD21 | 60:SO:185:GLN:HB2 | 1.55 | 0.71 |
| 1:LA:2537:U:OP2 | 62:SQ:228:LEU:N | 2.21 | 0.71 |
| 11:LK:23:ARG:HH22 | 11:LK:42:ASP:H | 1.36 | 0.71 |
| 45:S2:558:U:OP1 | 78:Sg:55:ARG:NH2 | 2.24 | 0.71 |
| 60:SO:128:ASP:N | 60:SO:128:ASP:OD1 | 2.23 | 0.71 |
| 9:LI:86:VAL:HG13 | 9:LI:136:TYR:HB3 | 1.72 | 0.71 |
| 63:SR:95:ARG:HH22 | 63:SR:97:ARG:NH1 | 1.87 | 0.71 |
| 14:LN:48:PRO:HG2 | 36:Lj:115:LYS:HE3 | 1.71 | 0.71 |
| 42:Lp:12:ARG:NH1 | 45:S2:1779:U:O4 | 2.23 | 0.71 |
| 66:SU:98:ILE:HG12 | 66:SU:121:VAL:HG11 | 1.72 | 0.71 |
| 12:LL:110:ARG:NH2 | 79:Ta:75:C:O2' | 2.24 | 0.71 |
| 14:LN:43:ALA:O | 14:LN:47:ALA:HA | 1.91 | 0.71 |
| 45:S2:513:U:H5' | 68:SW:133:HIS:HE1 | 1.54 | 0.71 |
| 48:SC:7:ASP:HA | 48:SC:10:LYS:HG3 | 1.72 | 0.71 |
| 1:LA:1634:G:N7 | 28:Lb:17:ARG:NH2 | 2.38 | 0.71 |
| 1:LA:2901:G:O2' | 1:LA:3024:A:N1 | 2.23 | 0.71 |
| 45:S2:164:A:H1' | 65:ST:13:GLN:OE1 | 1.91 | 0.71 |
| 73:Sb:81:VAL:HG23 | 73:Sb:85:ASP:HB2 | 1.71 | 0.71 |
| 75:Sd:61:ARG:HB3 | 75:Sd:61:ARG:HH11 | 1.54 | 0.71 |
| 6:LF:126:ILE:O | 6:LF:129:THR:OG1 | 2.08 | 0.71 |
| 45:S2:699:U:O2 | 45:S2:739:G:O6 | 2.09 | 0.71 |
| 61:SP:172:LEU:O | 61:SP:176:LEU:HD12 | 1.91 | 0.71 |
| 7:LG:41:LYS:NZ | 22:LV:32:LYS:O | 2.24 | 0.70 |
| 15:LO:92:GLU:N | 15:LO:92:GLU:OE2 | 2.22 | 0.70 |
| 19:LS:170:ARG:HD2 | 29:Lc:57:GLY:HA3 | 1.73 | 0.70 |
| 13:LM:82:ARG:HA | 13:LM:85:LYS:HD2 | 1.73 | 0.70 |
| 45:S2:1310:U:HO2' | 45:S2:1402:G:HO2' | 1.39 | 0.70 |
| 55:SJ:57:ARG:HG2 | 55:SJ:89:ARG:HD2 | 1.71 | 0.70 |
| 1:LA:2948:C:OP1 | 5:LE:244:ARG:NH2 | 2.23 | 0.70 |
| 1:LA:3234:A:N1 | 1:LA:3253:G:O6 | 2.24 | 0.70 |
| 28:Lb:95:VAL:HG21 | 28:Lb:113:VAL:HG11 | 1.71 | 0.70 |
| 46:SA:190:ARG:NH2 | 46:SA:195:SER:HA | 2.06 | 0.70 |
| 64:SS:188:ASN:HB3 | 64:SS:191:ARG:HD2 | 1.73 | 0.70 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 11:LK:23:ARG:CZ | 11:LK:42:ASP:H | 2.03 | 0.70 |
| 26:LZ:50:ALA:HB1 | 36:Lj:66:VAL:HG11 | 1.73 | 0.70 |
| 6:LF:113:VAL:HB | 6:LF:118:LYS:HE3 | 1.74 | 0.70 |
| 45:S2:14:C:H5" | 63:SR:203:LYS:HE2 | 1.71 | 0.70 |
| 24:LX:2:SER:OG | 24:LX:3:GLY:N | 2.24 | 0.70 |
| 45:S2:837:G:H2' | 45:S2:838:G:C8 | 2.25 | 0.70 |
| 45:S2:1520:U:OP2 | 54:SI:75:LYS:NZ | 2.23 | 0.70 |
| 57:SL:15:VAL:HA | 57:SL:28:VAL:HG22 | 1.72 | 0.70 |
| 55:SJ:80:GLU:HB2 | 58:SM:54:LYS:HD3 | 1.72 | 0.70 |
| 4:LD:118:GLU:OE2 | 4:LD:156:LYS:NZ | 2.25 | 0.70 |
| 45:S2:523:G:H22 | 45:S2:528:U:H5 | 1.38 | 0.70 |
| 53:SH:15:LEU:HD12 | 53:SH:66:LEU:HD21 | 1.73 | 0.70 |
| 1:LA:1639:C:OP2 | 35:Li:74:ARG:NH1 | 2.20 | 0.70 |
| 1:LA:2836:C:H5 | 1:LA:2852:C:H42 | 1.37 | 0.70 |
| 16:LP:96:ARG:NH2 | 16:LP:104:GLU:OE1 | 2.24 | 0.70 |
| 39:Lm:61:LYS:HA | 39:Lm:64:LYS:HD2 | 1.74 | 0.70 |
| 3:LC:52:A:H5' | 40:Ln:21:ARG:HD3 | 1.72 | 0.69 |
| 1:LA:3042:U:OP2 | 1:LA:3092:C:N4 | 2.25 | 0.69 |
| 1:LA:896:A:H5" | 4:LD:183:GLY:HA2 | 1.73 | 0.69 |
| 5:LE:19:ARG:NH2 | 5:LE:232:ARG:O | 2.26 | 0.69 |
| 6:LF:35:VAL:HG21 | 6:LF:244:LEU:HD21 | 1.74 | 0.69 |
| 23:LW:102:GLU:CG | 23:LW:102:GLU:O | 2.37 | 0.69 |
| 22:LV:17:ARG:HG2 | 22:LV:22:HIS:HA | 1.73 | 0.69 |
| 28:Lb:50:PRO:HD3 | 28:Lb:68:ILE:HG12 | 1.75 | 0.69 |
| 45:S2:1267:G:H1 | 45:S2:1442:U:H3 | 1.38 | 0.69 |
| 6:LF:181:VAL:HG11 | 6:LF:224:GLY:HA3 | 1.73 | 0.69 |
| 11:LK:23:ARG:HE | 11:LK:39:LYS:HA | 1.58 | 0.69 |
| 47:SB:162:VAL:HB | 57:SL:44:VAL:HA | 1.74 | 0.69 |
| 14:LN:10:LEU:HD23 | 19:LS:166:LEU:HD11 | 1.74 | 0.69 |
| 1:LA:63:A:OP1 | 16:LP:172:ARG:NH2 | 2.25 | 0.69 |
| 1:LA:182:U:H3 | 1:LA:234:G:H1 | 1.39 | 0.69 |
| 1:LA:341:G:C6 | 6:LF:194:TYR:CD2 | 2.79 | 0.69 |
| 1:LA:3016:A:H2' | 1:LA:3017:A:H8 | 1.57 | 0.69 |
| 14:LN:135:ALA:HB1 | 36:Lj:119:LYS:HG2 | 1.74 | 0.69 |
| 47:SB:93:LEU:O | 47:SB:97:LEU:HD23 | 1.92 | 0.69 |
| 52:SG:47:ARG:NH2 | 52:SG:48:ASN:HD21 | 1.88 | 0.69 |
| 1:LA:2228:A:H2' | 1:LA:2229:A:C8 | 2.28 | 0.69 |
| 1:LA:3228:C:H5" | 15:LO:137:LYS:HZ1 | 1.58 | 0.69 |
| 2:LB:1:G:H4' | 7:LG:273:ARG:HH22 | 1.57 | 0.69 |
| 19:LS:40:THR:O | 19:LS:41:ASP:OD1 | 2.10 | 0.69 |
| 31:Le:52:ARG:HH11 | 31:Le:52:ARG:HG3 | 1.56 | 0.69 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 33:Lg:98:HIS:O | 33:Lg:125:ARG:NH2 | 2.26 | 0.69 |
| 45:S2:447:U:OP1 | 64:SS:49:ARG:NH1 | 2.26 | 0.69 |
| 45:S2:700:C:N4 | 45:S2:739:G:O6 | 2.26 | 0.69 |
| 45:S2:1499:G:OP1 | 54:SI:122:ARG:NH1 | 2.26 | 0.69 |
| 46:SA:75:LYS:NZ | 48:SC:20:VAL:O | 2.23 | 0.69 |
| 64:SS:164:LEU:O | 64:SS:164:LEU:HD13 | 1.91 | 0.69 |
| 1:LA:2535:A:C5 | 1:LA:2536:A:H1' | 2.28 | 0.69 |
| 1:LA:3160:U:H3 | 1:LA:3290:G:H1 | 1.41 | 0.69 |
| 42:Lp:15:ARG:HH21 | 45:S2:1125:A:H5" | 1.57 | 0.69 |
| 1:LA:1018:G:O6 | 1:LA:1034:U:O2 | 2.11 | 0.68 |
| 6:LF:187:LEU:HD22 | 6:LF:193:LYS:HD3 | 1.75 | 0.68 |
| 11:LK:89:LYS:HG2 | 11:LK:145:VAL:HG22 | 1.74 | 0.68 |
| 73:Sb:11:LEU:HD12 | 73:Sb:74:VAL:HG23 | 1.74 | 0.68 |
| 49:SD:26:ASP:HA | 49:SD:29:LYS:HE2 | 1.75 | 0.68 |
| 66:SU:150:GLN:HB3 | 66:SU:181:ILE:HG22 | 1.75 | 0.68 |
| 1:LA:1009:A:H61 | 1:LA:1041:U:H3 | 1.40 | 0.68 |
| 3:LC:21:C:OP1 | 6:LF:193:LYS:NZ | 2.26 | 0.68 |
| 23:LW:39:ASP:OD1 | 23:LW:40:HIS:ND1 | 2.23 | 0.68 |
| 46:SA:17:PHE:O | 46:SA:21:LEU:HD23 | 1.93 | 0.68 |
| 49:SD:35:ALA:HB2 | 49:SD:123:VAL:HG13 | 1.76 | 0.68 |
| 68:SW:110:GLN:NE2 | 68:SW:126:ARG:HB2 | 2.07 | 0.68 |
| 32:Lf:74:ARG:HH12 | 32:Lf:109:VAL:HG11 | 1.57 | 0.68 |
| 45:S2:139:C:N4 | 45:S2:175:G:O2' | 2.26 | 0.68 |
| 45:S2:868:G:H1 | 45:S2:960:U:H3 | 1.42 | 0.68 |
| 46:SA:190:ARG:HH21 | 46:SA:195:SER:HA | 1.58 | 0.68 |
| 67:SV:117:TYR:HB3 | 67:SV:119:GLN:HG2 | 1.75 | 0.68 |
| 80:Tb:27:G:H1 | 80:Tb:45:A:H2 | 1.39 | 0.68 |
| 1:LA:2177:G:OP2 | 4:LD:128:ARG:NH1 | 2.26 | 0.68 |
| 1:LA:2185:G:O2' | 1:LA:2314:U:OP2 | 2.11 | 0.68 |
| 22:LV:102:ARG:O | 22:LV:106:LEU:HD22 | 1.94 | 0.68 |
| 1:LA:2452:G:O6 | 1:LA:2493:U:O4 | 2.12 | 0.68 |
| 1:LA:2960:C:H2' | 1:LA:2961:G:C8 | 2.29 | 0.68 |
| 1:LA:3316:A:OP1 | 1:LA:3318:G:N2 | 2.27 | 0.68 |
| 15:LO:65:LEU:HD11 | 21:LU:152:LEU:HD12 | 1.74 | 0.68 |
| 21:LU:77:VAL:HG22 | 21:LU:126:VAL:HG13 | 1.75 | 0.68 |
| 32:Lf:41:LYS:NZ | 32:Lf:47:ASP:OD1 | 2.25 | 0.68 |
| 57:SL:12:VAL:HG22 | 57:SL:52:ASP:H | 1.58 | 0.68 |
| 60:SO:34:LEU:HB2 | 60:SO:73:LEU:HD21 | 1.76 | 0.68 |
| 6:LF:299:ILE:HG23 | 19:LS:39:ARG:HB3 | 1.74 | 0.68 |
| 1:LA:418:A:C6 | 3:LC:5:U:O4 | 2.47 | 0.68 |
| 1:LA:1794:G:H4' | 4:LD:191:LEU:HD21 | 1.76 | 0.68 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 19:LS:74:GLU:OE2 | 19:LS:74:GLU:N | 2.17 | 0.68 |
| 57:SL:27:GLN:NE2 | 57:SL:63:ALA:O | 2.26 | 0.68 |
| 1:LA:994:G:N2 | 1:LA:995:U:O4 | 2.25 | 0.67 |
| 1:LA:3275:U:O2' | 34:Lh:99:ARG:NH1 | 2.26 | 0.67 |
| 21:LU:94:ILE:HG21 | 21:LU:105:THR:HG21 | 1.76 | 0.67 |
| 45:S2:1041:G:H2' | 45:S2:1042:G:C8 | 2.29 | 0.67 |
| 60:SO:106:HIS:ND1 | 60:SO:126:SER:HB3 | 2.09 | 0.67 |
| 45:S2:524:U:N3 | 45:S2:527:A:OP2 | 2.21 | 0.67 |
| 45:S2:1588:G:O6 | 45:S2:1608:U:O4 | 2.12 | 0.67 |
| 1:LA:2450:G:N2 | 1:LA:2496:C:C2 | 2.62 | 0.67 |
| 46:SA:23:GLU:OE2 | 46:SA:27:ARG:NH2 | 2.26 | 0.67 |
| 63:SR:116:LYS:HG2 | 63:SR:127:ALA:HB3 | 1.77 | 0.67 |
| 1:LA:110:G:OP2 | 14:LN:73:ARG:NH1 | 2.22 | 0.67 |
| 1:LA:402:A:OP1 | 40:Ln:36:ARG:NH2 | 2.21 | 0.67 |
| 24:LX:54:LEU:HD21 | 24:LX:119:GLY:HA3 | 1.77 | 0.67 |
| 45:S2:1534:G:OP2 | 56:SK:74:SER:OG | 2.12 | 0.67 |
| 47:SB:162:VAL:HG11 | 57:SL:44:VAL:HG22 | 1.76 | 0.67 |
| 53:SH:79:TYR:HA | 53:SH:80:LYS:NZ | 2.08 | 0.67 |
| 25:LY:9:SER:HA | 25:LY:52:THR:HG23 | 1.76 | 0.67 |
| 29:Lc:82:ILE:O | 29:Lc:87:ARG:NH1 | 2.28 | 0.67 |
| 45:S2:1695:G:N2 | 45:S2:1707:A:O2' | 2.27 | 0.67 |
| 29:Lc:38:GLN:O | 29:Lc:42:ARG:NH1 | 2.27 | 0.67 |
| 45:S2:187:G:N1 | 45:S2:197:A:N1 | 2.32 | 0.67 |
| 45:S2:534:A:OP1 | 68:SW:168:ARG:NH2 | 2.27 | 0.67 |
| 45:S2:1610:G:N7 | 51:SF:14:LYS:NZ | 2.42 | 0.67 |
| 66:SU:113:PRO:HG2 | 66:SU:116:ARG:HD3 | 1.75 | 0.67 |
| 8:LH:40:LEU:HD11 | 8:LH:54:TYR:HB2 | 1.76 | 0.67 |
| 44:Lr:36:ARG:HD3 | 44:Lr:48:LYS:HD3 | 1.75 | 0.67 |
| 1:LA:3325:G:H1 | 1:LA:3381:U:H3 | 1.42 | 0.67 |
| 5:LE:17:LEU:HD11 | 5:LE:233:TRP:HH2 | 1.60 | 0.67 |
| 8:LH:35:VAL:O | 8:LH:38:THR:OG1 | 2.12 | 0.67 |
| 34:Lh:38:PRO:HB3 | 34:Lh:74:THR:HG21 | 1.77 | 0.67 |
| 60:SO:24:ALA:C | 60:SO:73:LEU:CD1 | 2.65 | 0.67 |
| 68:SW:80:LEU:HB3 | 68:SW:86:LEU:HB2 | 1.75 | 0.67 |
| 1:LA:688:G:N2 | 1:LA:692:A:C2 | 2.60 | 0.67 |
| 1:LA:2772:C:H4' | 1:LA:2773:C:H5' | 1.76 | 0.67 |
| 40:Ln:27:ILE:HA | 40:Ln:30:ARG:HG3 | 1.77 | 0.67 |
| 45:S2:652:G:N2 | 45:S2:682:C:O2 | 2.27 | 0.67 |
| 63:SR:105:GLY:HA3 | 63:SR:190:LEU:HB3 | 1.77 | 0.67 |
| 45:S2:614:C:OP2 | 74:Sc:5:LYS:NZ | 2.28 | 0.67 |
| 61:SP:52:LYS:HA | 61:SP:55:GLU:OE1 | 1.95 | 0.67 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:LA:2674:A:H5" | 13:LM:105:GLY:HA3 | 1.76 | 0.66 |
| 6:LF:317:PRO:C | 6:LF:319:LYS:H | 2.02 | 0.66 |
| 24:LX:40:LYS:HG3 | 24:LX:57:MET:HG2 | 1.77 | 0.66 |
| 50:SE:81:ARG:NH2 | 50:SE:120:SER:O | 2.28 | 0.66 |
| 51:SF:22:VAL:HG22 | 51:SF:65:ILE:HG12 | 1.77 | 0.66 |
| 1:LA:2270:A:H2' | 1:LA:2271:A:C8 | 2.29 | 0.66 |
| 1:LA:2432:A:H2 | 16:LP:125:SER:HG | 1.41 | 0.66 |
| 6:LF:351:PRO:HA | 9:LI:71:ALA:HA | 1.77 | 0.66 |
| 1:LA:765:C:H41 | 14:LN:176:GLU:HG2 | 1.60 | 0.66 |
| 1:LA:656:A:H2' | 1:LA:657:A:C8 | 2.31 | 0.66 |
| 19:LS:62:VAL:HG13 | 19:LS:66:ARG:HD2 | 1.76 | 0.66 |
| 27:La:22:ALA:O | 27:La:27:ARG:NH1 | 2.25 | 0.66 |
| 45:S2:963:A:O2' | 45:S2:964:U:O5' | 2.14 | 0.66 |
| 47:SB:76:ARG:HD3 | 51:SF:122:ARG:HD3 | 1.76 | 0.66 |
| 62:SQ:107:THR:O | 62:SQ:111:ARG:HG2 | 1.95 | 0.66 |
| 68:SW:113:VAL:HG12 | 68:SW:119:ALA:HB2 | 1.78 | 0.66 |
| 19:LS:40:THR:HG21 | 19:LS:45:ASN:OD1 | 1.95 | 0.66 |
| 45:S2:903:U:O4 | 71:SZ:24:ASN:ND2 | 2.29 | 0.66 |
| 63:SR:95:ARG:NH2 | 63:SR:97:ARG:NH1 | 2.44 | 0.66 |
| 65:ST:115:LYS:NZ | 65:ST:116:LYS:O | 2.28 | 0.66 |
| 66:SU:38:LEU:HD12 | 66:SU:38:LEU:O | 1.94 | 0.66 |
| 45:S2:17:C:O2' | 45:S2:1137:A:N1 | 2.27 | 0.66 |
| 61:SP:74:VAL:HG23 | 61:SP:121:VAL:HG12 | 1.76 | 0.66 |
| 15:LO:48:GLY:HA3 | 15:LO:53:VAL:HB | 1.78 | 0.66 |
| 21:LU:71:LYS:HZ1 | 21:LU:73:LYS:HB3 | 1.59 | 0.66 |
| 43:Lq:36:PHE:O | 43:Lq:41:ARG:NH1 | 2.29 | 0.66 |
| 49:SD:137:MET:HA | 49:SD:137:MET:HE3 | 1.78 | 0.66 |
| 21:LU:77:VAL:HG11 | 21:LU:106:LEU:HD22 | 1.77 | 0.66 |
| 45:S2:393:C:OP1 | 67:SV:2:GLY:N | 2.28 | 0.66 |
| 45:S2:636:A:H5" | 73:Sb:31:SER:HB2 | 1.76 | 0.66 |
| 47:SB:163:SER:HB3 | 47:SB:166:ARG:HB3 | 1.77 | 0.66 |
| 45:S2:590:C:H2' | 45:S2:591:A:H8 | 1.58 | 0.66 |
| 45:S2:1390:U:H5" | 52:SG:3:ARG:HD3 | 1.78 | 0.66 |
| 45:S2:1487:A:OP2 | 46:SA:8:LYS:NZ | 2.29 | 0.66 |
| 1:LA:68:C:OP2 | 1:LA:301:G:N2 | 2.29 | 0.65 |
| 1:LA:2969:A:N7 | 4:LD:215:ASN:ND2 | 2.43 | 0.65 |
| 11:LK:75:VAL:HA | 11:LK:78:MET:HE3 | 1.77 | 0.65 |
| 73:Sb:15:ASN:ND2 | 73:Sb:72:CYS:O | 2.29 | 0.65 |
| 1:LA:3230:G:H4' | 15:LO:132:LYS:HD3 | 1.77 | 0.65 |
| 45:S2:590:C:H2' | 45:S2:591:A:C8 | 2.32 | 0.65 |
| 45:S2:1672:G:H2' | 45:S2:1673:G:C8 | 2.32 | 0.65 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 65:ST:98:ARG:HH21 | 65:ST:105:ASP:HB3 | 1.62 | 0.65 |
| 66:SU:38:LEU:HD12 | 66:SU:38:LEU:C | 2.22 | 0.65 |
| 11:LK:23:ARG:HH22 | 11:LK:42:ASP:N | 1.92 | 0.65 |
| 27:La:23:PRO:HG2 | 27:La:26:GLN:HG3 | 1.78 | 0.65 |
| 45:S2:539:G:N3 | 45:S2:540:G:N2 | 2.44 | 0.65 |
| 71:SZ:20:TYR:HB3 | 71:SZ:27:PHE:HB2 | 1.78 | 0.65 |
| 45:S2:447:U:O2' | 64:SS:27:TYR:O | 2.14 | 0.65 |
| 45:S2:1171:A:H2' | 45:S2:1172:G:H8 | 1.61 | 0.65 |
| 72:Sa:1:MET:HE2 | 72:Sa:10:GLU:HB2 | 1.79 | 0.65 |
| 21:LU:71:LYS:NZ | 21:LU:73:LYS:HB3 | 2.11 | 0.65 |
| 45:S2:1045:C:OP1 | 62:SQ:153:HIS:NE2 | 2.26 | 0.65 |
| 45:S2:1480:G:O2' | 45:S2:1481:C:OP1 | 2.14 | 0.65 |
| 65:ST:57:ASP:HA | 65:ST:106:LEU:HA | 1.78 | 0.65 |
| 73:Sb:105:THR:HG22 | 73:Sb:110:ILE:HG12 | 1.79 | 0.65 |
| 1:LA:154:U:OP2 | 36:Lj:103:LYS:NZ | 2.21 | 0.65 |
| 45:S2:91:G:OP1 | 45:S2:397:A:N6 | 2.30 | 0.65 |
| 45:S2:319:U:H4' | 45:S2:323:A:C8 | 2.32 | 0.65 |
| 10:LJ:139:VAL:O | 10:LJ:143:ILE:HD12 | 1.97 | 0.65 |
| 12:LL:140:THR:HG21 | 12:LL:148:VAL:HG21 | 1.79 | 0.65 |
| 19:LS:36:LEU:O | 19:LS:40:THR:HG22 | 1.97 | 0.65 |
| 21:LU:71:LYS:HE3 | 21:LU:73:LYS:HD3 | 1.77 | 0.65 |
| 45:S2:307:G:OP2 | 69:SX:105:LYS:NZ | 2.29 | 0.65 |
| 67:SV:48:THR:OG1 | 67:SV:52:ASN:O | 2.15 | 0.65 |
| 19:LS:67:ILE:HD12 | 19:LS:81:VAL:HG11 | 1.79 | 0.65 |
| 28:Lb:47:GLU:HB3 | 28:Lb:69:LYS:HG2 | 1.77 | 0.65 |
| 47:SB:118:LEU:HD22 | 47:SB:129:PRO:HB2 | 1.77 | 0.65 |
| 60:SO:82:SER:OG | 60:SO:92:TRP:NE1 | 2.22 | 0.65 |
| 11:LK:23:ARG:HH21 | 11:LK:39:LYS:C | 2.04 | 0.65 |
| 45:S2:532:U:OP1 | 68:SW:132:ARG:NH2 | 2.30 | 0.65 |
| 45:S2:897:C:O2 | 71:SZ:41:ARG:NH2 | 2.30 | 0.65 |
| 5:LE:45:SER:HB3 | 5:LE:181:ILE:HG12 | 1.80 | 0.65 |
| 8:LH:43:LEU:HD11 | 8:LH:85:ILE:HG13 | 1.79 | 0.65 |
| 8:LH:69:PHE:N | 8:LH:142:ASP:OD2 | 2.29 | 0.65 |
| 45:S2:446:A:OP1 | 64:SS:59:ARG:NE | 2.28 | 0.65 |
| 60:SO:34:LEU:CD2 | 60:SO:44:SER:HB3 | 2.27 | 0.65 |
| 64:SS:103:TYR:O | 64:SS:182:TYR:OH | 2.15 | 0.65 |
| 1:LA:177:U:C2 | 1:LA:241:G:O6 | 2.51 | 0.64 |
| 1:LA:1390:A:N6 | 1:LA:1418:A:O2' | 2.30 | 0.64 |
| 27:La:99:LEU:HD11 | 27:La:104:LEU:HD11 | 1.79 | 0.64 |
| 45:S2:1591:C:H2' | 45:S2:1592:A:H8 | 1.60 | 0.64 |
| 59:SN:134:ASN:ND2 | 59:SN:138:ARG:O | 2.30 | 0.64 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:LA:2307:G:O2' | 1:LA:2310:U:OP2 | 2.13 | 0.64 |
| 71:SZ:132:ARG:HG3 | 71:SZ:132:ARG:NH1 | 2.08 | 0.64 |
| 73:Sb:83:ILE:HD12 | 73:Sb:122:SER:HB2 | 1.78 | 0.64 |
| 2:LB:7:G:OP1 | 7:LG:33:ARG:NH1 | 2.30 | 0.64 |
| 14:LN:128:ARG:NH1 | 36:Lj:112:PRO:HG3 | 2.11 | 0.64 |
| 17:LQ:121[A]:PRO:HA | 17:LQ:124[A]:LEU:HD12 | 1.80 | 0.64 |
| 43:Lq:25:VAL:HG22 | 43:Lq:72:LEU:HD13 | 1.80 | 0.64 |
| 45:S2:333:A:N7 | 67:SV:49:ARG:HD3 | 2.12 | 0.64 |
| 60:SO:202:LEU:HD23 | 60:SO:213:SER:HB3 | 1.79 | 0.64 |
| 62:SQ:110:LEU:HD11 | 62:SQ:213:ARG:HD2 | 1.79 | 0.64 |
| 64:SS:45:ILE:HA | 64:SS:61:VAL:HG11 | 1.80 | 0.64 |
| 45:S2:472:U:O2' | 45:S2:769:A:N3 | 2.28 | 0.64 |
| 63:SR:106:ASP:OD1 | 63:SR:108:ASN:N | 2.30 | 0.64 |
| 64:SS:44:LEU:HD12 | 64:SS:82:TYR:HB3 | 1.77 | 0.64 |
| 1:LA:2373:A:N3 | 1:LA:2824:G:O2' | 2.26 | 0.64 |
| 45:S2:1297:G:N2 | 45:S2:1300:A:OP2 | 2.28 | 0.64 |
| 51:SF:83:GLN:NE2 | 51:SF:115:THR:O | 2.29 | 0.64 |
| 1:LA:1222:G:N2 | 1:LA:1285:G:O2' | 2.27 | 0.64 |
| 18:LR:31:GLU:HA | 18:LR:31:GLU:OE2 | 1.96 | 0.64 |
| 19:LS:40:THR:HG23 | 19:LS:42:ALA:H | 1.62 | 0.64 |
| 45:S2:513:U:H2' | 45:S2:514:G:C8 | 2.33 | 0.64 |
| 60:SO:42:LEU:HB2 | 60:SO:61:PHE:HB2 | 1.78 | 0.64 |
| 60:SO:90:ARG:HE | 60:SO:102:ARG:HG2 | 1.63 | 0.64 |
| 64:SS:65:LEU:HD13 | 64:SS:80:THR:HA | 1.80 | 0.64 |
| 64:SS:80:THR:HG23 | 64:SS:81:THR:HG23 | 1.80 | 0.64 |
| 7:LG:107:ARG:NH1 | 7:LG:169:GLY:O | 2.30 | 0.64 |
| 10:LJ:74:THR:HG22 | 10:LJ:164:VAL:HG22 | 1.79 | 0.64 |
| 1:LA:664:U:H2' | 1:LA:665:A:C8 | 2.32 | 0.64 |
| 23:LW:84:LEU:HD13 | 23:LW:93:ILE:HB | 1.80 | 0.64 |
| 24:LX:120:LYS:NZ | 24:LX:124:ASP:OD1 | 2.29 | 0.64 |
| 29:Lc:104:THR:HG21 | 29:Lc:112:ILE:HD11 | 1.79 | 0.64 |
| 45:S2:271:A:H2' | 45:S2:272:U:H4' | 1.78 | 0.64 |
| 65:ST:31:ARG:HG2 | 65:ST:32:ILE:H | 1.62 | 0.64 |
| 35:Li:80:ARG:HH11 | 35:Li:80:ARG:HG3 | 1.63 | 0.64 |
| 45:S2:178:U:OP2 | 65:ST:191:ARG:NH2 | 2.30 | 0.64 |
| 45:S2:898:A:N1 | 45:S2:911:U:O2' | 2.31 | 0.64 |
| 5:LE:29:VAL:HG22 | 5:LE:218:ILE:HD13 | 1.80 | 0.63 |
| 7:LG:270:LYS:HG3 | 7:LG:273:ARG:HH21 | 1.63 | 0.63 |
| 44:Lr:46:THR:OG1 | 44:Lr:57:CYS:SG | 2.54 | 0.63 |
| 47:SB:128:ASN:HB3 | 47:SB:131:GLN:HB2 | 1.80 | 0.63 |
| 1:LA:1487:G:H1' | 35:Li:6:THR:HG21 | 1.79 | 0.63 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 28:Lb:102:GLU:H | 28:Lb:107:ARG:HH21 | 0.73 | 0.63 |
| 45:S2:1218:G:N2 | 45:S2:1444:A:OP2 | 2.29 | 0.63 |
| 45:S2:1474:G:H2' | 45:S2:1475:A:H8 | 1.63 | 0.63 |
| 65:ST:78:THR:HG23 | 65:ST:92:ARG:HG2 | 1.81 | 0.63 |
| 67:SV:48:THR:HG21 | 67:SV:54:LYS:HD2 | 1.80 | 0.63 |
| 11:LK:92:TYR:HB2 | 11:LK:142:ASP:HB3 | 1.80 | 0.63 |
| 44:Lr:59:CYS:SG | 44:Lr:60:CYS:N | 2.71 | 0.63 |
| 51:SF:50:GLU:OE1 | 51:SF:82:ARG:NH2 | 2.31 | 0.63 |
| 68:SW:125:ALA:O | 68:SW:129:ILE:HG13 | 1.99 | 0.63 |
| 1:LA:655:C:H2' | 1:LA:656:A:C8 | 2.34 | 0.63 |
| 1:LA:1203:A:H2' | 1:LA:1204:A:C8 | 2.34 | 0.63 |
| 11:LK:41:ILE:HG21 | 11:LK:71:VAL:HG11 | 1.80 | 0.63 |
| 34:Lh:38:PRO:O | 34:Lh:42:GLN:HG2 | 1.99 | 0.63 |
| 45:S2:967:A:OP2 | 70:SY:124:ARG:NH2 | 2.31 | 0.63 |
| 45:S2:1081:A:H2 | 45:S2:1082:C:H42 | 1.43 | 0.63 |
| 71:SZ:103:ARG:HD2 | 76:Se:49:ALA:HB2 | 1.80 | 0.63 |
| 1:LA:1447:G:OP1 | 18:LR:65:SER:OG | 2.15 | 0.63 |
| 9:LI:47:ARG:NH1 | 9:LI:183:ASP:OD2 | 2.24 | 0.63 |
| 9:LI:140:SER:O | 9:LI:144:ILE:HG13 | 1.98 | 0.63 |
| 45:S2:1179:G:H21 | 45:S2:1460:A:H62 | 1.46 | 0.63 |
| 52:SG:35:CYS:HA | 52:SG:38:ILE:HG22 | 1.80 | 0.63 |
| 1:LA:938:C:OP2 | 29:Lc:26:ARG:NH1 | 2.32 | 0.63 |
| 1:LA:2383:C:OP2 | 17:LQ:85[A]:ARG:NH2 | 2.30 | 0.63 |
| 61:SP:172:LEU:HG | 61:SP:176:LEU:HD11 | 1.80 | 0.63 |
| 70:SY:33:VAL:HG21 | 70:SY:66:ILE:HG21 | 1.81 | 0.63 |
| 71:SZ:117:ASP:OD1 | 71:SZ:117:ASP:N | 2.31 | 0.63 |
| 1:LA:1223:A:N6 | 1:LA:1285:G:O2' | 2.31 | 0.63 |
| 14:LN:185:LYS:O | 14:LN:189:GLU:HG2 | 1.99 | 0.63 |
| 52:SG:34:LEU:HD12 | 52:SG:35:CYS:N | 2.13 | 0.63 |
| 60:SO:19:TRP:HB2 | 60:SO:38:ARG:HD2 | 1.80 | 0.63 |
| 1:LA:1027:A:H2' | 1:LA:1028:U:H2' | 1.80 | 0.63 |
| 60:SO:152:SER:H | 60:SO:173:GLY:HA2 | 1.64 | 0.63 |
| 20:LT:30:SER:O | 20:LT:34:GLN:HG2 | 1.98 | 0.63 |
| 31:Le:34:LEU:HD13 | 31:Le:59:TYR:HB3 | 1.80 | 0.63 |
| 52:SG:18:GLU:HG2 | 52:SG:19:ARG:HG3 | 1.81 | 0.63 |
| 56:SK:54:VAL:HG23 | 56:SK:55:PRO:HD3 | 1.81 | 0.63 |
| 70:SY:33:VAL:O | 70:SY:37:ILE:HD13 | 1.99 | 0.63 |
| 1:LA:1019:G:O6 | 1:LA:1033:U:O4 | 2.17 | 0.62 |
| 1:LA:3295:A:H2' | 1:LA:3296:A:C8 | 2.34 | 0.62 |
| 45:S2:299:A:OP1 | 64:SS:30:ARG:NH2 | 2.30 | 0.62 |
| 45:S2:1099:U:OP1 | 73:Sb:71:LYS:NZ | 2.32 | 0.62 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 45:S2:1288:G:O2' | 45:S2:1422:A:N6 | 2.32 | 0.62 |
| 1:LA:655:C:H2' | 1:LA:656:A:H8 | 1.64 | 0.62 |
| 1:LA:1014:U:O2 | 1:LA:1016:C:N4 | 2.30 | 0.62 |
| 1:LA:1604:G:H4' | 1:LA:1835:A:H4' | 1.82 | 0.62 |
| 1:LA:2546:C:N4 | 1:LA:2547:A:H62 | 1.98 | 0.62 |
| 11:LK:102:ASN:HB2 | 11:LK:113:GLU:OE2 | 1.99 | 0.62 |
| 28:Lb:68:ILE:O | 28:Lb:115:LYS:NZ | 2.30 | 0.62 |
| 1:LA:69:C:OP1 | 16:LP:178:HIS:ND1 | 2.24 | 0.62 |
| 45:S2:142:G:N2 | 45:S2:173:A:N1 | 2.40 | 0.62 |
| 45:S2:1331:A:OP1 | 52:SG:45:ARG:NH2 | 2.30 | 0.62 |
| 45:S2:1594:G:OP2 | 45:S2:1596:C:N4 | 2.32 | 0.62 |
| 60:SO:126:SER:OG | 60:SO:127:ARG:N | 2.24 | 0.62 |
| 1:LA:112:U:O2' | 1:LA:113:C:O5' | 2.18 | 0.62 |
| 3:LC:142:C:OP1 | 16:LP:38:ARG:NH1 | 2.32 | 0.62 |
| 31:Le:27:TYR:OH | 31:Le:55:GLU:OE2 | 2.16 | 0.62 |
| 45:S2:871:G:H2' | 45:S2:872:G:C8 | 2.34 | 0.62 |
| 60:SO:131:ILE:HG23 | 60:SO:144:LEU:HB2 | 1.80 | 0.62 |
| 1:LA:1237:G:C6 | 1:LA:1251:A:N6 | 2.67 | 0.62 |
| 5:LE:277:SER:OG | 5:LE:280:HIS:NE2 | 2.31 | 0.62 |
| 45:S2:106:U:OP1 | 67:SV:8:ARG:NH2 | 2.33 | 0.62 |
| 58:SM:24:CYS:SG | 58:SM:26:SER:OG | 2.58 | 0.62 |
| 1:LA:498:A:O2' | 1:LA:3273:A:N1 | 2.29 | 0.62 |
| 1:LA:649:A:OP2 | 1:LA:2868:U:O2' | 2.17 | 0.62 |
| 1:LA:1717:U:H2' | 1:LA:1718:G:C8 | 2.35 | 0.62 |
| 19:LS:122:ILE:HG23 | 19:LS:126:GLN:HB2 | 1.81 | 0.62 |
| 45:S2:959:U:O2 | 77:Sf:30:SER:OG | 2.17 | 0.62 |
| 45:S2:1061:A:N6 | 77:Sf:75:GLU:OE2 | 2.29 | 0.62 |
| 45:S2:1445:G:N2 | 59:SN:87:THR:OG1 | 2.33 | 0.62 |
| 16:LP:155:VAL:O | 16:LP:162:ARG:NH2 | 2.32 | 0.62 |
| 50:SE:28:MET:HG2 | 50:SE:29:SER:N | 2.15 | 0.62 |
| 75:Sd:38:ASP:HA | 75:Sd:41:ARG:HD2 | 1.82 | 0.62 |
| 75:Sd:83:LYS:HE2 | 75:Sd:96:LEU:HB3 | 1.82 | 0.62 |
| 1:LA:3092:C:O2' | 1:LA:3094:A:OP2 | 2.17 | 0.62 |
| 1:LA:3313:U:OP1 | 5:LE:173:GLN:NE2 | 2.32 | 0.62 |
| 60:SO:106:HIS:HD1 | 60:SO:126:SER:CB | 2.13 | 0.62 |
| 60:SO:167:VAL:HG13 | 60:SO:183:LEU:HD21 | 1.82 | 0.62 |
| 64:SS:153:ASN:OD1 | 65:ST:215:ARG:NH1 | 2.33 | 0.62 |
| 67:SV:17:LYS:NZ | 67:SV:18:ARG:O | 2.33 | 0.62 |
| 78:Sg:50:VAL:HG12 | 78:Sg:54:ARG:HG2 | 1.81 | 0.62 |
| 1:LA:2176:U:OP1 | 4:LD:54:ARG:NH2 | 2.29 | 0.62 |
| 1:LA:2522:G:O6 | 4:LD:72:ARG:NH2 | 2.31 | 0.62 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 8:LH:175:LYS:O | 15:LO:117:ARG:NH2 | 2.32 | 0.62 |
| 13:LM:107:ASP:OD1 | 13:LM:107:ASP:N | 2.31 | 0.62 |
| 35:Li:91:ARG:O | 35:Li:95:ILE:HG23 | 1.99 | 0.62 |
| 36:Lj:30:GLU:O | 36:Lj:34:GLN:HG3 | 2.00 | 0.62 |
| 36:Lj:76:GLN:NE2 | 36:Lj:76:GLN:CA | 2.56 | 0.62 |
| 39:Lm:17:ARG:NH1 | 39:Lm:52:TYR:OH | 2.32 | 0.62 |
| 45:S2:385:A:H5" | 67:SV:22:ARG:HG2 | 1.82 | 0.62 |
| 62:SQ:32:ILE:HA | 62:SQ:96:LEU:HD12 | 1.82 | 0.62 |
| 1:LA:900:G:H1' | 1:LA:1589:A:N6 | 2.14 | 0.61 |
| 47:SB:162:VAL:HG12 | 57:SL:44:VAL:HG13 | 1.82 | 0.61 |
| 49:SD:65:SER:HA | 49:SD:72:ILE:HD11 | 1.82 | 0.61 |
| 1:LA:1385:C:HO2' | 8:LH:2:THR:N | 1.98 | 0.61 |
| 45:S2:591:A:H2' | 45:S2:592:A:C8 | 2.35 | 0.61 |
| 45:S2:763:G:O2' | 45:S2:764:U:OP1 | 2.18 | 0.61 |
| 47:SB:98:MET:HE2 | 47:SB:107:LYS:HG3 | 1.83 | 0.61 |
| 60:SO:109:ASP:HB2 | 60:SO:127:ARG:HD2 | 1.81 | 0.61 |
| 1:LA:356:C:HO2' | 1:LA:357:A:H8 | 1.47 | 0.61 |
| 1:LA:2344:U:H2' | 1:LA:2345:A:C8 | 2.35 | 0.61 |
| 1:LA:2878:G:H5" | 5:LE:5:LYS:HE2 | 1.82 | 0.61 |
| 1:LA:3002:C:O2' | 5:LE:180:GLU:OE2 | 2.15 | 0.61 |
| 1:LA:3334:U:H4' | 1:LA:3335:A:H5' | 1.82 | 0.61 |
| 4:LD:3:ARG:HB2 | 4:LD:207:VAL:HG22 | 1.81 | 0.61 |
| 6:LF:289:ILE:O | 6:LF:292:SER:OG | 2.18 | 0.61 |
| 9:LI:39:GLU:O | 9:LI:43:ILE:HG13 | 2.00 | 0.61 |
| 20:LT:85:ARG:NH1 | 20:LT:85:ARG:HB2 | 2.16 | 0.61 |
| 30:Ld:16:ALA:O | 30:Ld:20:GLY:CA | 2.46 | 0.61 |
| 35:Li:41:ARG:HA | 35:Li:56:THR:HG22 | 1.81 | 0.61 |
| 39:Lm:9:LYS:O | 39:Lm:13:GLU:OE1 | 2.18 | 0.61 |
| 66:SU:56:LYS:HB2 | 66:SU:88:ARG:HG2 | 1.82 | 0.61 |
| 68:SW:111:THR:OG1 | 68:SW:115:LYS:HE2 | 2.00 | 0.61 |
| 9:LI:110:ARG:HG3 | 9:LI:113:SER:HB2 | 1.81 | 0.61 |
| 45:S2:885:G:H2' | 45:S2:886:U:C6 | 2.34 | 0.61 |
| 46:SA:40:ARG:HB2 | 46:SA:47:GLU:HG3 | 1.82 | 0.61 |
| 64:SS:211:LYS:CE | 64:SS:215:ASP:HA | 2.31 | 0.61 |
| 75:Sd:21:LYS:HG2 | 75:Sd:75:VAL:HG12 | 1.81 | 0.61 |
| 1:LA:1624:G:O2' | 1:LA:1643:A:N1 | 2.33 | 0.61 |
| 1:LA:3016:A:H2' | 1:LA:3017:A:C8 | 2.34 | 0.61 |
| 18:LR:88:VAL:O | 18:LR:92:GLN:HG2 | 2.01 | 0.61 |
| 45:S2:859:A:C5 | 70:SY:73:ARG:HD3 | 2.36 | 0.61 |
| 46:SA:172:THR:O | 46:SA:173:ARG:NH1 | 2.29 | 0.61 |
| 44:Lr:27:LYS:O | 44:Lr:31:ILE:HG12 | 2.01 | 0.61 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 44:Lr:84:ARG:O | 44:Lr:88:GLU:HG2 | 2.01 | 0.61 |
| 45:S2:14:C:C5' | 63:SR:203:LYS:HE2 | 2.29 | 0.61 |
| 47:SB:146:THR:O | 57:SL:45:LYS:NZ | 2.32 | 0.61 |
| 3:LC:103:G:OP2 | 3:LC:105:A:O2' | 2.18 | 0.61 |
| 13:LM:10:ARG:O | 13:LM:133:ARG:NH1 | 2.33 | 0.61 |
| 46:SA:18:TYR:HE2 | 58:SM:49:ASP:HB2 | 1.65 | 0.61 |
| 61:SP:154:GLU:OE2 | 72:Sa:61:SER:O | 2.19 | 0.61 |
| 65:ST:126:ASP:OD1 | 65:ST:126:ASP:N | 2.32 | 0.61 |
| 1:LA:216:G:OP1 | 27:La:16:ARG:NH1 | 2.33 | 0.61 |
| 27:La:63:LYS:HD2 | 27:La:85:VAL:HG13 | 1.83 | 0.61 |
| 60:SO:90:ARG:HH21 | 60:SO:102:ARG:HE | 1.47 | 0.61 |
| 62:SQ:8:ARG:HH21 | 62:SQ:11:LYS:HB2 | 1.65 | 0.61 |
| 64:SS:86:PHE:CZ | 64:SS:87:MET:HE2 | 2.36 | 0.61 |
| 74:Sc:56:LYS:HA | 74:Sc:70:LYS:HE3 | 1.82 | 0.61 |
| 1:LA:3118:C:H4' | 41:Lo:106:ARG:HH22 | 1.65 | 0.61 |
| 16:LP:156:HIS:HB3 | 16:LP:159:ARG:HD2 | 1.82 | 0.61 |
| 29:Lc:132:LYS:O | 29:Lc:136:GLU:HG3 | 2.01 | 0.61 |
| 34:Lh:67:MET:HE1 | 34:Lh:90:PRO:HD3 | 1.83 | 0.61 |
| 37:Lk:66:GLU:OE1 | 37:Lk:91:ASN:ND2 | 2.28 | 0.61 |
| 45:S2:325:G:H4' | 69:SX:83:THR:HG21 | 1.82 | 0.61 |
| 45:S2:1477:G:H2' | 45:S2:1478:G:C8 | 2.35 | 0.61 |
| 45:S2:1502:G:N7 | 54:SI:102:ARG:NH2 | 2.47 | 0.61 |
| 1:LA:1632:A:OP1 | 28:Lb:48:ARG:NH2 | 2.34 | 0.60 |
| 11:LK:129:ARG:NH2 | 11:LK:156:GLN:OE1 | 2.31 | 0.60 |
| 45:S2:163:G:OP2 | 45:S2:163:G:N2 | 2.33 | 0.60 |
| 45:S2:643:G:N1 | 45:S2:691:C:N3 | 2.34 | 0.60 |
| 45:S2:918:U:H2' | 45:S2:919:A:C8 | 2.36 | 0.60 |
| 45:S2:924:A:H2' | 45:S2:925:G:C8 | 2.36 | 0.60 |
| 1:LA:177:U:H3' | 1:LA:178:U:H6 | 1.65 | 0.60 |
| 2:LB:72:A:O2' | 2:LB:74:C:OP1 | 2.17 | 0.60 |
| 3:LC:143:U:OP1 | 16:LP:38:ARG:NH2 | 2.33 | 0.60 |
| 20:LT:105:LEU:HD22 | 20:LT:135:LYS:HG3 | 1.83 | 0.60 |
| 45:S2:615:A:O2' | 45:S2:621:A:N1 | 2.34 | 0.60 |
| 66:SU:49:ILE:HD12 | 66:SU:172:VAL:HG12 | 1.82 | 0.60 |
| 79:Ta:25:U:H2' | 79:Ta:26:C:H5" | 1.83 | 0.60 |
| 1:LA:688:G:H21 | 1:LA:692:A:H2 | 1.48 | 0.60 |
| 16:LP:110:ALA:HB1 | 16:LP:113:LEU:HD23 | 1.83 | 0.60 |
| 19:LS:99:THR:O | 19:LS:119:GLY:HA3 | 2.00 | 0.60 |
| 45:S2:278:U:OP1 | 45:S2:279:G:N2 | 2.34 | 0.60 |
| 72:Sa:32:VAL:HG22 | 72:Sa:60:ARG:HD3 | 1.83 | 0.60 |
| 75:Sd:26:ASP:HB3 | 75:Sd:70:VAL:HG22 | 1.82 | 0.60 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:LA:2256:A:N1 | 79:Ta:38:A:O2' | 2.30 | 0.60 |
| 28:Lb:96:VAL:HG12 | 28:Lb:110:ALA:HB1 | 1.83 | 0.60 |
| 45:S2:932:U:O2 | 76:Se:32:LYS:NZ | 2.33 | 0.60 |
| 45:S2:1294:G:O2' | 61:SP:108:THR:OG1 | 2.19 | 0.60 |
| 73:Sb:28:ARG:HD3 | 73:Sb:60:LYS:HE2 | 1.83 | 0.60 |
| 1:LA:1724:U:H1' | 1:LA:1725:C:C6 | 2.37 | 0.60 |
| 1:LA:3330:A:OP2 | 5:LE:376:LYS:NZ | 2.35 | 0.60 |
| 26:LZ:100:LYS:NZ | 26:LZ:100:LYS:HB2 | 2.17 | 0.60 |
| 28:Lb:101:PHE:O | 28:Lb:102:GLU:HG2 | 2.01 | 0.60 |
| 33:Lg:16:LYS:HE3 | 33:Lg:18:LYS:HG2 | 1.84 | 0.60 |
| 33:Lg:86:THR:HG22 | 33:Lg:115:LEU:HD13 | 1.83 | 0.60 |
| 63:SR:123:GLY:HA2 | 63:SR:126:ARG:HE | 1.66 | 0.60 |
| 1:LA:2099:A:O2' | 1:LA:2100:A:N7 | 2.32 | 0.60 |
| 9:LI:185:ILE:O | 9:LI:189:ILE:HG22 | 2.02 | 0.60 |
| 45:S2:1450:U:O2' | 58:SM:7:TRP:O | 2.14 | 0.60 |
| 80:Tb:61:U:H5" | 80:Tb:62:C:H5 | 1.66 | 0.60 |
| 1:LA:182:U:O4 | 1:LA:234:G:O6 | 2.18 | 0.60 |
| 1:LA:407:A:C2 | 3:LC:17:A:H1' | 2.37 | 0.60 |
| 1:LA:1062:A:H5" | 1:LA:1063:G:H5' | 1.82 | 0.60 |
| 1:LA:1657:C:O2' | 1:LA:1797:A:OP2 | 2.17 | 0.60 |
| 1:LA:1721:U:OP2 | 20:LT:124:TYR:OH | 2.17 | 0.60 |
| 1:LA:3315:G:OP2 | 5:LE:116:ARG:NH2 | 2.35 | 0.60 |
| 13:LM:49:LYS:HB2 | 13:LM:62:ASN:HA | 1.83 | 0.60 |
| 17:LQ:189[A]:ASP:O | 17:LQ:193[A]:GLN:HG2 | 2.02 | 0.60 |
| 27:La:86:THR:HG22 | 27:La:96:PRO:HA | 1.84 | 0.60 |
| 47:SB:69:PHE:HD2 | 51:SF:50:GLU:HG2 | 1.67 | 0.60 |
| 51:SF:9:THR:HG21 | 51:SF:88:GLY:HA2 | 1.82 | 0.60 |
| 54:SI:57:ARG:NH1 | 54:SI:101:ASN:OD1 | 2.35 | 0.60 |
| 58:SM:32:ARG:NH1 | 58:SM:37:ASN:OD1 | 2.34 | 0.60 |
| 1:LA:1222:G:H22 | 1:LA:1285:G:HO2' | 1.48 | 0.60 |
| 7:LG:258:LYS:O | 7:LG:265:TYR:OH | 2.15 | 0.60 |
| 45:S2:1611:A:O2' | 47:SB:95:ASN:O | 2.20 | 0.60 |
| 53:SH:81:ILE:HG22 | 53:SH:83:ALA:H | 1.66 | 0.60 |
| 60:SO:110:VAL:HA | 60:SO:126:SER:HB2 | 1.82 | 0.60 |
| 60:SO:221:MET:HB3 | 60:SO:223:TRP:CZ3 | 2.36 | 0.60 |
| 66:SU:32:PRO:HA | 66:SU:35:LYS:HB2 | 1.83 | 0.60 |
| 67:SV:116:HIS:CE1 | 67:SV:146:ARG:HD3 | 2.35 | 0.60 |
| 1:LA:12:A:H2' | 1:LA:13:A:C8 | 2.37 | 0.60 |
| 1:LA:2537:U:H5' | 62:SQ:229:MET:HE3 | 1.79 | 0.60 |
| 5:LE:108:GLU:HG2 | 5:LE:137:TYR:CD1 | 2.36 | 0.60 |
| 21:LU:8:GLN:HB3 | 21:LU:64:ILE:HD11 | 1.83 | 0.60 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 45:S2:209:U:O3' | 67:SV:170:SER:OG | 2.19 | 0.60 |
| 45:S2:610:G:OP2 | 74:Sc:19:ARG:NE | 2.34 | 0.60 |
| 45:S2:939:A:H2' | 45:S2:940:A:C8 | 2.37 | 0.60 |
| 49:SD:81:ASP:O | 49:SD:83:GLU:N | 2.33 | 0.60 |
| 70:SY:34:ILE:HD11 | 70:SY:67:THR:HG21 | 1.83 | 0.60 |
| 15:LO:109:ARG:HD3 | 17:LQ:199[A]:TYR:CE1 | 2.37 | 0.60 |
| 39:Lm:2:ALA:N | 39:Lm:51:LEU:O | 2.35 | 0.60 |
| 47:SB:157:ARG:NH1 | 47:SB:224:ASN:HD22 | 1.99 | 0.60 |
| 48:SC:23:ALA:O | 48:SC:64:TYR:HB2 | 2.02 | 0.60 |
| 56:SK:82:HIS:NE2 | 56:SK:86:GLU:OE2 | 2.34 | 0.60 |
| 69:SX:78:THR:HG22 | 69:SX:84:ILE:HG21 | 1.84 | 0.60 |
| 1:LA:341:G:O6 | 6:LF:194:TYR:CD2 | 2.55 | 0.59 |
| 1:LA:2561:A:OP2 | 1:LA:2580:A:N6 | 2.33 | 0.59 |
| 36:Lj:10:ARG:NH1 | 36:Lj:60:GLU:OE1 | 2.35 | 0.59 |
| 45:S2:1217:A:C8 | 48:SC:1:MET:HE1 | 2.37 | 0.59 |
| 68:SW:32:GLY:HA3 | 78:Sg:40:TYR:CG | 2.37 | 0.59 |
| 1:LA:341:G:C5 | 6:LF:194:TYR:CE2 | 2.79 | 0.59 |
| 3:LC:128:U:OP1 | 3:LC:129:C:N4 | 2.29 | 0.59 |
| 6:LF:280:ILE:HD12 | 19:LS:104:LEU:HD22 | 1.83 | 0.59 |
| 15:LO:40:ASP:OD1 | 15:LO:41:GLN:N | 2.34 | 0.59 |
| 23:LW:22:PRO:HB2 | 23:LW:28:PHE:HB2 | 1.84 | 0.59 |
| 45:S2:821:U:H3 | 45:S2:852:C:H42 | 0.70 | 0.59 |
| 56:SK:71:ILE:HD12 | 56:SK:75:LEU:HB3 | 1.84 | 0.59 |
| 60:SO:240:VAL:HG22 | 60:SO:256:THR:HG22 | 1.84 | 0.59 |
| 1:LA:358:G:N2 | 1:LA:361:A:OP2 | 2.33 | 0.59 |
| 1:LA:2213:A:H2' | 1:LA:2214:A:C8 | 2.36 | 0.59 |
| 3:LC:58:G:O6 | 38:Ll:63:ARG:NH1 | 2.35 | 0.59 |
| 12:LL:72:ALA:HB2 | 12:LL:155:ALA:HB2 | 1.83 | 0.59 |
| 12:LL:102:MET:SD | 12:LL:112:GLN:NE2 | 2.75 | 0.59 |
| 45:S2:1319:A:P | 52:SG:67:ARG:HH22 | 2.25 | 0.59 |
| 47:SB:80:LYS:HG3 | 47:SB:81:ARG:H | 1.67 | 0.59 |
| 62:SQ:35:PRO:O | 62:SQ:41:ARG:NH1 | 2.36 | 0.59 |
| 65:ST:78:THR:HG22 | 65:ST:79:LYS:H | 1.66 | 0.59 |
| 69:SX:55:ASP:OD2 | 69:SX:58:CYS:HB2 | 2.02 | 0.59 |
| 1:LA:2432:A:H2 | 16:LP:125:SER:OG | 1.84 | 0.59 |
| 2:LB:112:G:H2' | 2:LB:113:C:C6 | 2.38 | 0.59 |
| 12:LL:44:ASP:OD1 | 12:LL:181:TYR:OH | 2.18 | 0.59 |
| 45:S2:555:A:O2' | 45:S2:556:A:O5' | 2.19 | 0.59 |
| 45:S2:1605:G:OP2 | 51:SF:127:LYS:NZ | 2.28 | 0.59 |
| 70:SY:67:THR:HG22 | 70:SY:68:GLY:H | 1.67 | 0.59 |
| 1:LA:937:G:H5" | 29:Lc:29:PRO:HA | 1.85 | 0.59 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:LA:2382:G:N7 | 17:LQ:91[A]:LYS:NZ | 2.50 | 0.59 |
| 1:LA:2522:G:O6 | 4:LD:68:LYS:NZ | 2.31 | 0.59 |
| 1:LA:3107:U:H2' | 1:LA:3108:G:C8 | 2.37 | 0.59 |
| 32:Lf:74:ARG:NH1 | 32:Lf:109:VAL:HG11 | 2.17 | 0.59 |
| 45:S2:1182:U:H5 | 45:S2:1185:U:H5" | 1.67 | 0.59 |
| 46:SA:127:MET:HG3 | 46:SA:154:ASP:OD2 | 2.01 | 0.59 |
| 49:SD:45:LEU:HD13 | 59:SN:102:VAL:HG23 | 1.83 | 0.59 |
| 52:SG:36:ASP:HB2 | 52:SG:47:ARG:HH11 | 1.67 | 0.59 |
| 61:SP:28:ASN:HA | 61:SP:46:HIS:HE1 | 1.66 | 0.59 |
| 1:LA:1405:U:OP2 | 33:Lg:59:SER:OG | 2.20 | 0.59 |
| 45:S2:405:C:O2' | 65:ST:92:ARG:O | 2.19 | 0.59 |
| 45:S2:522:U:H5" | 75:Sd:37:LYS:HG3 | 1.84 | 0.59 |
| 45:S2:594:A:OP2 | 68:SW:38:ASN:ND2 | 2.31 | 0.59 |
| 45:S2:843:U:H2' | 45:S2:844:A:C8 | 2.38 | 0.59 |
| 51:SF:9:THR:HB | 51:SF:87:LYS:HD3 | 1.85 | 0.59 |
| 62:SQ:207:LEU:C | 62:SQ:210:ILE:HD11 | 2.27 | 0.59 |
| 1:LA:2759:U:H5" | 1:LA:2760:C:H5' | 1.84 | 0.59 |
| 9:LI:87:VAL:HG11 | 9:LI:243:MET:HE1 | 1.85 | 0.59 |
| 10:LJ:50:VAL:HG21 | 26:LZ:27:ARG:HD3 | 1.85 | 0.59 |
| 11:LK:93:VAL:HG22 | 41:Lo:82:LEU:HD12 | 1.84 | 0.59 |
| 45:S2:699:U:O4 | 45:S2:737:A:N6 | 2.35 | 0.59 |
| 45:S2:1673:G:C6 | 45:S2:1728:A:N1 | 2.71 | 0.59 |
| 47:SB:72:HIS:CD2 | 47:SB:107:LYS:HD3 | 2.37 | 0.59 |
| 50:SE:49:MET:N | 50:SE:49:MET:SD | 2.76 | 0.59 |
| 1:LA:1262:G:O2' | 1:LA:1264:G:OP1 | 2.19 | 0.59 |
| 45:S2:513:U:H5' | 68:SW:133:HIS:CE1 | 2.37 | 0.59 |
| 51:SF:39:VAL:C | 51:SF:41:PRO:HD3 | 2.27 | 0.59 |
| 64:SS:45:ILE:HD12 | 64:SS:61:VAL:HG21 | 1.85 | 0.59 |
| 1:LA:1916:U:H5" | 20:LT:85:ARG:HH12 | 1.67 | 0.59 |
| 1:LA:2357:A:H2' | 1:LA:2358:A:C8 | 2.37 | 0.59 |
| 12:LL:76:MET:CE | 12:LL:148:VAL:HG13 | 2.33 | 0.59 |
| 52:SG:34:LEU:HD12 | 52:SG:34:LEU:C | 2.27 | 0.59 |
| 60:SO:13:LEU:CB | 60:SO:45:TRP:CZ3 | 2.63 | 0.59 |
| 61:SP:60:ALA:HB1 | 61:SP:144:ILE:HD13 | 1.83 | 0.59 |
| 68:SW:44:ARG:O | 68:SW:48:GLN:HG3 | 2.02 | 0.59 |
| 1:LA:2448:G:O2' | 1:LA:2449:A:OP1 | 2.19 | 0.59 |
| 1:LA:2943:G:OP2 | 5:LE:2:SER:OG | 2.21 | 0.59 |
| 20:LT:162:ARG:CZ | 45:S2:815:G:H1' | 2.33 | 0.59 |
| 45:S2:803:A:O2' | 45:S2:804:A:OP2 | 2.21 | 0.59 |
| 45:S2:1486:G:N2 | 45:S2:1522:U:O4 | 2.36 | 0.59 |
| 45:S2:1502:G:O6 | 54:SI:102:ARG:NH1 | 2.25 | 0.59 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 45:S2:1672:G:H2' | 45:S2:1673:G:H8 | 1.66 | 0.59 |
| 48:SC:24:LYS:HD2 | 48:SC:25:LYS:N | 2.18 | 0.59 |
| 57:SL:18:ARG:NH1 | 57:SL:23:GLY:O | 2.36 | 0.59 |
| 65:ST:37:ASP:HB3 | 65:ST:39:GLU:OE1 | 2.03 | 0.59 |
| 68:SW:113:VAL:HG13 | 68:SW:118:LEU:HB2 | 1.85 | 0.59 |
| 4:LD:249:SER:OG | 4:LD:250:GLN:N | 2.36 | 0.58 |
| 10:LJ:76:ALA:HA | 10:LJ:79:GLN:HG2 | 1.84 | 0.58 |
| 45:S2:931:C:H5" | 62:SQ:116:LYS:HB3 | 1.84 | 0.58 |
| 56:SK:95:HIS:ND1 | 56:SK:96:SER:O | 2.36 | 0.58 |
| 61:SP:36:TYR:OH | 72:Sa:66:ASP:OD2 | 2.21 | 0.58 |
| 69:SX:109:VAL:HG23 | 69:SX:137:PHE:HB2 | 1.83 | 0.58 |
| 73:Sb:6:VAL:HG13 | 73:Sb:29:PRO:HD2 | 1.83 | 0.58 |
| 1:LA:426:G:H5' | 33:Lg:50:ILE:HG22 | 1.85 | 0.58 |
| 1:LA:974:G:H5' | 19:LS:16:ARG:HG3 | 1.84 | 0.58 |
| 1:LA:1596:C:H2' | 1:LA:1597:C:C6 | 2.37 | 0.58 |
| 1:LA:2572:C:H3' | 1:LA:2573:G:H4' | 1.85 | 0.58 |
| 11:LK:89:LYS:HB2 | 11:LK:183:HIS:HB3 | 1.84 | 0.58 |
| 12:LL:176:LEU:HB3 | 12:LL:180:GLU:OE2 | 2.03 | 0.58 |
| 14:LN:92:THR:HG22 | 36:Lj:114:ARG:HG2 | 1.85 | 0.58 |
| 45:S2:329:G:H2' | 45:S2:330:G:H8 | 1.68 | 0.58 |
| 45:S2:386:G:OP2 | 67:SV:25:ARG:NH2 | 2.36 | 0.58 |
| 57:SL:60:GLU:O | 71:SZ:61:MET:HE1 | 2.03 | 0.58 |
| 63:SR:41:LEU:HD11 | 63:SR:56:ILE:CD1 | 2.33 | 0.58 |
| 8:LH:172:HIS:ND1 | 34:Lh:40:ASP:OD1 | 2.32 | 0.58 |
| 33:Lg:107:VAL:HG13 | 33:Lg:111:ARG:HH21 | 1.67 | 0.58 |
| 45:S2:1217:A:H5" | 48:SC:1:MET:HE3 | 1.85 | 0.58 |
| 46:SA:34:TYR:HE1 | 46:SA:37:VAL:HG13 | 1.67 | 0.58 |
| 46:SA:125:TYR:O | 46:SA:129:SER:OG | 2.19 | 0.58 |
| 54:SI:31:PRO:HB3 | 54:SI:103:LYS:HD3 | 1.84 | 0.58 |
| 56:SK:50:ILE:O | 56:SK:54:VAL:HG22 | 2.03 | 0.58 |
| 70:SY:61:THR:O | 70:SY:62:GLN:HG3 | 2.04 | 0.58 |
| 75:Sd:98:GLU:N | 75:Sd:98:GLU:OE1 | 2.35 | 0.58 |
| 3:LC:154:C:H5" | 10:LJ:181:LYS:HG2 | 1.85 | 0.58 |
| 7:LG:91:GLY:O | 7:LG:94:ASN:ND2 | 2.36 | 0.58 |
| 24:LX:15:LEU:HD13 | 24:LX:51:ALA:HB3 | 1.85 | 0.58 |
| 45:S2:322:G:H4' | 45:S2:323:A:H5' | 1.85 | 0.58 |
| 53:SH:94:ASP:OD2 | 53:SH:98:TYR:OH | 2.16 | 0.58 |
| 55:SJ:42:VAL:O | 55:SJ:52:LYS:NZ | 2.35 | 0.58 |
| 64:SS:57:ASN:O | 64:SS:61:VAL:HG23 | 2.03 | 0.58 |
| 1:LA:736:A:C5 | 1:LA:737:G:H1' | 2.38 | 0.58 |
| 1:LA:1667:A:H2' | 1:LA:1668:G:C8 | 2.39 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:LA:2107:A:H2 | 1:LA:3344:A:H8 | 1.49 | 0.58 |
| 19:LS:147:ARG:HB2 | 19:LS:150:VAL:HG13 | 1.84 | 0.58 |
| 45:S2:29:U:H2' | 45:S2:30:G:H8 | 1.69 | 0.58 |
| 45:S2:354:C:H5" | 67:SV:16:ALA:HB2 | 1.85 | 0.58 |
| 53:SH:143:ARG:O | 53:SH:144:ARG:NH2 | 2.37 | 0.58 |
| 65:ST:39:GLU:OE1 | 65:ST:39:GLU:N | 2.37 | 0.58 |
| 78:Sg:37:ARG:O | 78:Sg:41:THR:HG23 | 2.02 | 0.58 |
| 1:LA:2853:A:H5' | 12:LL:63:GLU:HB3 | 1.86 | 0.58 |
| 45:S2:399:A:H4' | 64:SS:3:ARG:HG2 | 1.85 | 0.58 |
| 45:S2:1533:C:OP2 | 56:SK:77:ARG:NH2 | 2.28 | 0.58 |
| 62:SQ:122:GLU:HG3 | 62:SQ:140:ILE:HD12 | 1.85 | 0.58 |
| 77:Sf:31:TYR:HE1 | 77:Sf:33:LEU:HD23 | 1.69 | 0.58 |
| 1:LA:675:C:O2' | 1:LA:679:U:OP1 | 2.21 | 0.58 |
| 1:LA:1235:U:H4' | 1:LA:1236:G:H2' | 1.86 | 0.58 |
| 1:LA:1834:U:OP2 | 40:Ln:10:LYS:NZ | 2.35 | 0.58 |
| 8:LH:60:ASP:OD1 | 8:LH:62:THR:OG1 | 2.21 | 0.58 |
| 66:SU:43:PHE:HE2 | 66:SU:46:ILE:HD11 | 1.69 | 0.58 |
| 69:SX:72:THR:HG23 | 69:SX:124:THR:HG22 | 1.84 | 0.58 |
| 71:SZ:16:VAL:O | 71:SZ:30:VAL:HA | 2.04 | 0.58 |
| 1:LA:1161:G:O2' | 33:Lg:54:LYS:HD2 | 2.03 | 0.58 |
| 1:LA:1679:A:OP1 | 23:LW:94:ARG:NH1 | 2.36 | 0.58 |
| 1:LA:3318:G:O2' | 1:LA:3319:U:O3' | 2.21 | 0.58 |
| 21:LU:74:ASN:HB2 | 21:LU:129:ILE:HG23 | 1.86 | 0.58 |
| 45:S2:567:A:H1' | 78:Sg:14:VAL:HG13 | 1.85 | 0.58 |
| 45:S2:1217:A:C5' | 48:SC:1:MET:HE3 | 2.34 | 0.58 |
| 56:SK:46:LYS:O | 56:SK:50:ILE:HG23 | 2.04 | 0.58 |
| 64:SS:136:VAL:HG21 | 64:SS:148:ARG:HH21 | 1.68 | 0.58 |
| 69:SX:123:VAL:HG12 | 69:SX:142:VAL:HG13 | 1.85 | 0.58 |
| 1:LA:662:U:H2' | 1:LA:663:C:C6 | 2.39 | 0.58 |
| 1:LA:715:A:H8 | 29:Lc:115:LYS:HG3 | 1.69 | 0.58 |
| 8:LH:56:LYS:HD3 | 8:LH:98:VAL:HG13 | 1.85 | 0.58 |
| 11:LK:138:THR:O | 11:LK:139:ASN:ND2 | 2.37 | 0.58 |
| 45:S2:164:A:C1' | 65:ST:13:GLN:OE1 | 2.52 | 0.58 |
| 45:S2:407:A:H2' | 45:S2:408:C:C6 | 2.39 | 0.58 |
| 45:S2:1436:A:OP2 | 46:SA:27:ARG:NH1 | 2.37 | 0.58 |
| 47:SB:146:THR:HG21 | 47:SB:157:ARG:HD2 | 1.85 | 0.58 |
| 1:LA:341:G:O6 | 6:LF:194:TYR:HD2 | 1.87 | 0.58 |
| 1:LA:525:C:OP2 | 15:LO:77:ARG:NH1 | 2.36 | 0.58 |
| 1:LA:799:G:O2' | 14:LN:18:TRP:NE1 | 2.30 | 0.58 |
| 1:LA:2514:U:OP2 | 1:LA:2586:G:N2 | 2.36 | 0.58 |
| 4:LD:33:ASP:O | 4:LD:37:ARG:NH2 | 2.37 | 0.58 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 11:LK:50:ASN:HD21 | 15:LO:4:ASP:HA | 1.68 | 0.58 |
| 20:LT:154:ALA:O | 20:LT:157:GLU:HG3 | 2.04 | 0.58 |
| 35:Li:57:LEU:HB3 | 35:Li:61:GLN:HB3 | 1.86 | 0.58 |
| 45:S2:187:G:N7 | 67:SV:138:ASN:ND2 | 2.52 | 0.58 |
| 45:S2:800:U:H2' | 45:S2:801:G:C8 | 2.39 | 0.58 |
| 45:S2:1055:U:O4 | 45:S2:1064:G:O6 | 2.21 | 0.58 |
| 45:S2:1069:A:OP1 | 61:SP:28:ASN:ND2 | 2.37 | 0.58 |
| 63:SR:80:VAL:HG11 | 63:SR:125:ILE:HD12 | 1.86 | 0.58 |
| 1:LA:1696:A:H2' | 1:LA:1697:A:C8 | 2.39 | 0.57 |
| 1:LA:3000:A:H5" | 5:LE:120:LYS:HE2 | 1.86 | 0.57 |
| 4:LD:144:ASN:HB2 | 4:LD:160:SER:HB2 | 1.86 | 0.57 |
| 8:LH:112:THR:HG23 | 8:LH:115:GLU:H | 1.69 | 0.57 |
| 67:SV:84:HIS:NE2 | 67:SV:97:THR:OG1 | 2.37 | 0.57 |
| 80:Tb:63:C:H2' | 80:Tb:64:G:C8 | 2.39 | 0.57 |
| 1:LA:19:U:H2' | 1:LA:20:A:C8 | 2.38 | 0.57 |
| 1:LA:127:G:H2' | 1:LA:128:G:H8 | 1.68 | 0.57 |
| 45:S2:752:A:N6 | 45:S2:798:C:N3 | 2.52 | 0.57 |
| 47:SB:93:LEU:HD12 | 47:SB:172:ILE:HG23 | 1.84 | 0.57 |
| 54:SI:112:GLY:O | 54:SI:125:SER:OG | 2.15 | 0.57 |
| 60:SO:170:ILE:HG12 | 60:SO:211:ILE:CD1 | 2.34 | 0.57 |
| 64:SS:252:ARG:NH1 | 64:SS:253:ASP:OD1 | 2.36 | 0.57 |
| 1:LA:507:U:H2' | 1:LA:508:U:C6 | 2.39 | 0.57 |
| 1:LA:1333:C:H5" | 9:LI:110:ARG:NH1 | 2.17 | 0.57 |
| 1:LA:1534:A:H2' | 1:LA:1535:A:C8 | 2.40 | 0.57 |
| 1:LA:2206:G:H4' | 62:SQ:11:LYS:HE3 | 1.84 | 0.57 |
| 6:LF:144:LYS:NZ | 6:LF:144:LYS:HB3 | 2.20 | 0.57 |
| 8:LH:54:TYR:CE1 | 8:LH:63:LEU:HG | 2.38 | 0.57 |
| 16:LP:9:GLU:HG3 | 37:Lk:40:VAL:HG12 | 1.86 | 0.57 |
| 31:Le:66:LYS:NZ | 31:Le:101:LEU:O | 2.37 | 0.57 |
| 45:S2:407:A:H2' | 45:S2:408:C:H6 | 1.68 | 0.57 |
| 45:S2:1471:A:H2 | 45:S2:1474:G:N3 | 2.02 | 0.57 |
| 46:SA:66:ILE:HD11 | 46:SA:86:LEU:HB3 | 1.87 | 0.57 |
| 58:SM:19:ARG:HD3 | 58:SM:32:ARG:NH2 | 2.19 | 0.57 |
| 66:SU:38:LEU:HB2 | 66:SU:41:LEU:HD12 | 1.86 | 0.57 |
| 67:SV:110:ARG:NH1 | 67:SV:160:PHE:O | 2.32 | 0.57 |
| 68:SW:77:ILE:HG12 | 68:SW:96:VAL:HG21 | 1.85 | 0.57 |
| 77:Sf:33:LEU:HD13 | 77:Sf:35:VAL:HG23 | 1.85 | 0.57 |
| 1:LA:94:G:H2' | 1:LA:95:A:C8 | 2.40 | 0.57 |
| 1:LA:178:U:H2' | 1:LA:179:C:C6 | 2.40 | 0.57 |
| 1:LA:1009:A:N6 | 1:LA:1041:U:H3 | 2.02 | 0.57 |
| 1:LA:1119:C:H2' | 1:LA:1120:A:H8 | 1.69 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:LA:1809:A:OP2 | 28:Lb:65:ARG:NH1 | 2.35 | 0.57 |
| 5:LE:304:THR:HG22 | 5:LE:305:ILE:N | 2.18 | 0.57 |
| 12:LL:76:MET:HE2 | 12:LL:148:VAL:HG13 | 1.86 | 0.57 |
| 36:Lj:27:GLU:OE2 | 36:Lj:43:LYS:NZ | 2.38 | 0.57 |
| 45:S2:759:U:H2' | 45:S2:760:A:C8 | 2.39 | 0.57 |
| 63:SR:87:GLN:OE1 | 63:SR:96:THR:OG1 | 2.23 | 0.57 |
| 1:LA:689:U:O4 | 6:LF:209:TYR:OH | 2.16 | 0.57 |
| 6:LF:175:HIS:O | 6:LF:179:LEU:HD22 | 2.03 | 0.57 |
| 10:LJ:146:LYS:HD2 | 10:LJ:173:MET:HB3 | 1.85 | 0.57 |
| 11:LK:112:ILE:HB | 11:LK:126:VAL:HG22 | 1.86 | 0.57 |
| 17:LQ:84[A]:LEU:HD22 | 17:LQ:102[A]:LEU:HD22 | 1.87 | 0.57 |
| 26:LZ:115:ARG:NH2 | 26:LZ:119:THR:OG1 | 2.29 | 0.57 |
| 29:Lc:36:GLY:HA3 | 29:Lc:40:HIS:CE1 | 2.39 | 0.57 |
| 45:S2:1027:A:OP1 | 45:S2:1789:G:O2' | 2.19 | 0.57 |
| 45:S2:1628:U:H2' | 45:S2:1629:G:C8 | 2.40 | 0.57 |
| 55:SJ:33:GLN:HA | 55:SJ:36:ASN:ND2 | 2.19 | 0.57 |
| 62:SQ:27:LYS:NZ | 62:SQ:49:ASN:OD1 | 2.33 | 0.57 |
| 67:SV:184:LEU:HB2 | 67:SV:189:LEU:HD23 | 1.85 | 0.57 |
| 68:SW:59:LEU:HD21 | 68:SW:72:GLU:HB3 | 1.86 | 0.57 |
| 75:Sd:27:VAL:HG21 | 75:Sd:35:VAL:HG11 | 1.86 | 0.57 |
| 1:LA:512:U:O2 | 1:LA:579:G:N2 | 2.30 | 0.57 |
| 1:LA:1727:G:OP1 | 44:Lr:44:LYS:NZ | 2.36 | 0.57 |
| 27:La:116:LYS:O | 27:La:120:GLN:HG2 | 2.05 | 0.57 |
| 34:Lh:51:TYR:HD2 | 34:Lh:67:MET:HE2 | 1.70 | 0.57 |
| 45:S2:1301:U:P | 63:SR:97:ARG:NH2 | 2.77 | 0.57 |
| 45:S2:1474:G:H2' | 45:S2:1475:A:C8 | 2.39 | 0.57 |
| 45:S2:1591:C:H2' | 45:S2:1592:A:C8 | 2.37 | 0.57 |
| 64:SS:60:GLU:HG2 | 75:Sd:18:LEU:HD21 | 1.85 | 0.57 |
| 1:LA:1144:U:OP1 | 1:LA:1367:G:O2' | 2.20 | 0.57 |
| 1:LA:2758:A:O2' | 1:LA:2759:U:OP1 | 2.20 | 0.57 |
| 1:LA:3343:G:H21 | 1:LA:3362:A:H2 | 1.51 | 0.57 |
| 13:LM:52:TYR:HA | 13:LM:61:ARG:HG3 | 1.86 | 0.57 |
| 29:Lc:99:ALA:HB3 | 29:Lc:124:ILE:HD12 | 1.86 | 0.57 |
| 39:Lm:61:LYS:O | 39:Lm:64:LYS:HG2 | 2.05 | 0.57 |
| 1:LA:149:U:OP2 | 16:LP:49:ARG:NH1 | 2.36 | 0.57 |
| 1:LA:268:A:C5 | 16:LP:12:ARG:HG2 | 2.40 | 0.57 |
| 1:LA:532:A:H2' | 1:LA:533:A:C8 | 2.39 | 0.57 |
| 1:LA:3153:U:OP2 | 1:LA:3293:U:O2' | 2.20 | 0.57 |
| 7:LG:181:PRO:HD2 | 7:LG:195:LEU:HD13 | 1.87 | 0.57 |
| 17:LQ:56[A]:ASP:HA | 17:LQ:59[A]:ARG:NH1 | 2.20 | 0.57 |
| 45:S2:1681:A:N6 | 45:S2:1720:G:O2' | 2.33 | 0.57 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 70:SY:84:ILE:HG22 | 70:SY:135:LEU:HD21 | 1.86 | 0.57 |
| 8:LH:152:THR:HB | 8:LH:155:LEU:HD12 | 1.86 | 0.57 |
| 45:S2:623:A:O2' | 45:S2:624:G:OP1 | 2.21 | 0.57 |
| 45:S2:884:A:H2' | 45:S2:885:G:C8 | 2.40 | 0.57 |
| 47:SB:214:LYS:HD2 | 47:SB:214:LYS:C | 2.30 | 0.57 |
| 60:SO:115:ILE:HG22 | 60:SO:122:ILE:HD12 | 1.87 | 0.57 |
| 64:SS:256:ARG:NH2 | 68:SW:78:ARG:CZ | 2.68 | 0.57 |
| 79:Ta:31:G:N2 | 79:Ta:41:C:C2 | 2.70 | 0.57 |
| 1:LA:792:G:H2' | 1:LA:793:C:C6 | 2.40 | 0.57 |
| 1:LA:2433:U:H1' | 16:LP:125:SER:HB2 | 1.86 | 0.57 |
| 45:S2:539:G:O2' | 45:S2:540:G:OP2 | 2.19 | 0.57 |
| 45:S2:1500:C:OP1 | 54:SI:106:GLN:NE2 | 2.33 | 0.57 |
| 56:SK:88:ILE:HG13 | 56:SK:89:ILE:N | 2.19 | 0.57 |
| 60:SO:89:LEU:HD13 | 60:SO:134:TRP:HZ3 | 1.70 | 0.57 |
| 62:SQ:209:ASN:OD1 | 62:SQ:211:HIS:NE2 | 2.36 | 0.57 |
| 71:SZ:61:MET:HG3 | 71:SZ:104:ALA:HB2 | 1.87 | 0.57 |
| 72:Sa:62:ARG:HH11 | 72:Sa:62:ARG:HG3 | 1.69 | 0.57 |
| 1:LA:1597:C:H5' | 1:LA:1696:A:H1' | 1.87 | 0.56 |
| 3:LC:57:C:H4' | 3:LC:63:G:N7 | 2.19 | 0.56 |
| 12:LL:36:LEU:HD11 | 12:LL:69:ARG:HH11 | 1.70 | 0.56 |
| 12:LL:182:LEU:O | 12:LL:186:GLU:HG2 | 2.05 | 0.56 |
| 45:S2:1205:C:O2 | 58:SM:17:GLY:N | 2.38 | 0.56 |
| 60:SO:45:TRP:CZ2 | 60:SO:310:ILE:HD13 | 2.39 | 0.56 |
| 6:LF:16:THR:OG1 | 6:LF:18:ASN:OD1 | 2.22 | 0.56 |
| 6:LF:104:LYS:HD2 | 6:LF:106:TRP:CZ2 | 2.40 | 0.56 |
| 6:LF:129:THR:HG22 | 6:LF:246:ARG:O | 2.05 | 0.56 |
| 9:LI:163:LEU:HA | 9:LI:168:ILE:HD11 | 1.87 | 0.56 |
| 45:S2:386:G:H5" | 67:SV:23:LYS:HE2 | 1.87 | 0.56 |
| 45:S2:1592:A:H2' | 45:S2:1593:A:C8 | 2.40 | 0.56 |
| 51:SF:31:VAL:HG12 | 51:SF:67:VAL:HB | 1.87 | 0.56 |
| 55:SJ:57:ARG:HE | 55:SJ:89:ARG:NH1 | 2.03 | 0.56 |
| 70:SY:16:ILE:O | 73:Sb:57:ARG:NH2 | 2.37 | 0.56 |
| 1:LA:371:G:N1 | 1:LA:374:A:OP2 | 2.35 | 0.56 |
| 1:LA:595:G:H1 | 1:LA:609:G:H5" | 1.70 | 0.56 |
| 1:LA:1024:G:O2' | 1:LA:1026:A:OP1 | 2.19 | 0.56 |
| 1:LA:1635:G:N2 | 1:LA:1638:A:OP2 | 2.35 | 0.56 |
| 1:LA:1804:A:H2' | 1:LA:1805:C:H6 | 1.69 | 0.56 |
| 1:LA:3058:U:O4 | 32:Lf:65:LYS:NZ | 2.31 | 0.56 |
| 6:LF:58:HIS:HA | 6:LF:90:PHE:HE1 | 1.70 | 0.56 |
| 12:LL:53:VAL:HG12 | 12:LL:134:ILE:HG13 | 1.85 | 0.56 |
| 40:Ln:13:MET:CE | 40:Ln:49:MET:HE3 | 2.35 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 45:S2:44:U:OP2 | 45:S2:437:A:N6 | 2.37 | 0.56 |
| 45:S2:393:C:H2' | 45:S2:394:C:C6 | 2.40 | 0.56 |
| 45:S2:1075:C:O2' | 76:Se:13:LYS:O | 2.23 | 0.56 |
| 45:S2:1365:C:O2' | 51:SF:30:LYS:NZ | 2.37 | 0.56 |
| 45:S2:1650:U:H2' | 45:S2:1651:A:C8 | 2.40 | 0.56 |
| 61:SP:74:VAL:HG13 | 61:SP:118:PRO:HB3 | 1.85 | 0.56 |
| 63:SR:142:GLY:N | 63:SR:153:SER:O | 2.36 | 0.56 |
| 66:SU:98:ILE:HD13 | 66:SU:118:LEU:HD13 | 1.86 | 0.56 |
| 72:Sa:36:VAL:HB | 72:Sa:51:VAL:HG13 | 1.87 | 0.56 |
| 1:LA:1802:C:O2' | 35:Li:59:PRO:O | 2.20 | 0.56 |
| 10:LJ:157:VAL:HG21 | 10:LJ:163:VAL:HG22 | 1.88 | 0.56 |
| 57:SL:53:ILE:HG22 | 57:SL:54:LEU:H | 1.71 | 0.56 |
| 67:SV:43:ILE:HD11 | 67:SV:60:ILE:HD11 | 1.87 | 0.56 |
| 1:LA:837:A:OP1 | 44:Lr:5:THR:OG1 | 2.21 | 0.56 |
| 1:LA:1203:A:H2' | 1:LA:1204:A:H8 | 1.70 | 0.56 |
| 1:LA:2531:C:C4 | 1:LA:2532:U:H1' | 2.41 | 0.56 |
| 1:LA:2697:A:H2' | 1:LA:2698:G:C8 | 2.40 | 0.56 |
| 1:LA:3006:A:H2' | 1:LA:3007:U:O4' | 2.06 | 0.56 |
| 5:LE:140:ASP:OD1 | 5:LE:140:ASP:N | 2.38 | 0.56 |
| 14:LN:4:SER:O | 29:Lc:44:ASN:ND2 | 2.37 | 0.56 |
| 19:LS:148:GLU:O | 19:LS:151:ARG:HG2 | 2.04 | 0.56 |
| 28:Lb:23:VAL:HG12 | 28:Lb:45:GLY:HA3 | 1.87 | 0.56 |
| 45:S2:623:A:H3' | 45:S2:624:G:H5" | 1.87 | 0.56 |
| 45:S2:1456:C:H5" | 45:S2:1457:C:H5" | 1.86 | 0.56 |
| 49:SD:77:GLY:HA3 | 59:SN:114:VAL:HG23 | 1.87 | 0.56 |
| 70:SY:37:ILE:HD12 | 70:SY:54:LEU:HD11 | 1.87 | 0.56 |
| 1:LA:82:C:H4' | 16:LP:204:LYS:HE2 | 1.87 | 0.56 |
| 1:LA:2537:U:C5' | 62:SQ:229:MET:CE | 2.69 | 0.56 |
| 6:LF:150:LEU:HD23 | 6:LF:249:ILE:HG12 | 1.86 | 0.56 |
| 45:S2:625:C:H2' | 45:S2:626:U:C6 | 2.40 | 0.56 |
| 49:SD:44:GLY:O | 49:SD:48:SER:OG | 2.22 | 0.56 |
| 53:SH:45:LEU:O | 53:SH:49:LYS:HG3 | 2.05 | 0.56 |
| 63:SR:44:LEU:HD21 | 63:SR:243:TYR:HB2 | 1.86 | 0.56 |
| 69:SX:55:ASP:HB2 | 69:SX:82:ARG:CZ | 2.35 | 0.56 |
| 71:SZ:26:THR:HG21 | 71:SZ:60:ALA:HB2 | 1.87 | 0.56 |
| 1:LA:178:U:H2' | 1:LA:179:C:H6 | 1.70 | 0.56 |
| 1:LA:559:A:O2' | 15:LO:84:LYS:NZ | 2.26 | 0.56 |
| 1:LA:1804:A:H2' | 1:LA:1805:C:C6 | 2.40 | 0.56 |
| 6:LF:102:PRO:O | 6:LF:104:LYS:NZ | 2.36 | 0.56 |
| 29:Lc:22:ILE:HD12 | 29:Lc:22:ILE:H | 1.71 | 0.56 |
| 45:S2:265:A:OP2 | 65:ST:194:LYS:NZ | 2.39 | 0.56 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 45:S2:1473:U:O2' | 47:SB:103:ASN:OD1 | 2.14 | 0.56 |
| 64:SS:198:LYS:HB2 | 64:SS:208:VAL:HG12 | 1.87 | 0.56 |
| 80:Tb:14:A:H2' | 80:Tb:15:G:O4' | 2.05 | 0.56 |
| 1:LA:418:A:C2 | 3:LC:5:U:C5 | 2.94 | 0.56 |
| 1:LA:911:C:OP1 | 4:LD:14:SER:OG | 2.20 | 0.56 |
| 1:LA:2552:C:N4 | 31:Le:54:SER:OG | 2.39 | 0.56 |
| 17:LQ:54[A]:TYR:OH | 17:LQ:73[A]:PHE:O | 2.23 | 0.56 |
| 18:LR:47:TYR:OH | 18:LR:57:ALA:O | 2.22 | 0.56 |
| 20:LT:116:ASP:C | 20:LT:116:ASP:OD1 | 2.49 | 0.56 |
| 26:LZ:86:VAL:HG11 | 26:LZ:95:ILE:HD11 | 1.87 | 0.56 |
| 36:Lj:64:GLU:OE1 | 36:Lj:67:ARG:NH1 | 2.39 | 0.56 |
| 45:S2:1058:U:H1' | 45:S2:1060:U:H5" | 1.88 | 0.56 |
| 45:S2:1254:U:OP2 | 49:SD:46:ARG:NH2 | 2.38 | 0.56 |
| 48:SC:81:ASN:ND2 | 49:SD:37:VAL:HG11 | 2.21 | 0.56 |
| 53:SH:81:ILE:HG21 | 53:SH:86:LEU:HD21 | 1.87 | 0.56 |
| 1:LA:361:A:O3' | 38:Ll:45:ARG:NH2 | 2.38 | 0.56 |
| 3:LC:40:A:OP2 | 3:LC:103:G:N1 | 2.32 | 0.56 |
| 6:LF:321:LYS:H | 6:LF:321:LYS:HD3 | 1.71 | 0.56 |
| 18:LR:56:ARG:NH2 | 18:LR:75:GLU:OE2 | 2.19 | 0.56 |
| 54:SI:33:TYR:HE2 | 54:SI:103:LYS:HD2 | 1.71 | 0.56 |
| 74:Sc:57:LEU:O | 74:Sc:71:CYS:N | 2.39 | 0.56 |
| 75:Sd:105:ARG:O | 75:Sd:109:LYS:HG3 | 2.05 | 0.56 |
| 79:Ta:22:A:N6 | 79:Ta:45:A:OP2 | 2.39 | 0.56 |
| 5:LE:57:VAL:HG22 | 5:LE:73:VAL:HG22 | 1.88 | 0.56 |
| 6:LF:177:ASP:HB3 | 6:LF:205:PRO:HD3 | 1.87 | 0.56 |
| 25:LY:60:LYS:HA | 25:LY:60:LYS:CE | 2.28 | 0.56 |
| 31:Le:52:ARG:HG3 | 31:Le:52:ARG:NH1 | 2.19 | 0.56 |
| 39:Lm:58:ASP:HB3 | 39:Lm:61:LYS:HB2 | 1.88 | 0.56 |
| 49:SD:81:ASP:OD2 | 49:SD:85:LYS:NZ | 2.37 | 0.56 |
| 63:SR:106:ASP:OD1 | 63:SR:106:ASP:C | 2.48 | 0.56 |
| 64:SS:94:ALA:HB1 | 75:Sd:16:PRO:HB2 | 1.88 | 0.56 |
| 1:LA:1666:G:H2' | 1:LA:1667:A:H8 | 1.71 | 0.55 |
| 1:LA:1940:G:H21 | 1:LA:3362:A:H8 | 1.53 | 0.55 |
| 1:LA:2103:U:H2' | 1:LA:2104:A:C8 | 2.41 | 0.55 |
| 14:LN:21:ARG:HB3 | 16:LP:196:THR:HA | 1.88 | 0.55 |
| 45:S2:438:A:O2' | 45:S2:465:G:N2 | 2.38 | 0.55 |
| 47:SB:161:ASP:HB2 | 47:SB:162:VAL:HG23 | 1.88 | 0.55 |
| 50:SE:81:ARG:NH1 | 50:SE:97:TYR:O | 2.38 | 0.55 |
| 52:SG:26:LEU:HD21 | 52:SG:62:GLN:HG3 | 1.88 | 0.55 |
| 53:SH:18:LEU:HD13 | 53:SH:101:LEU:HB2 | 1.87 | 0.55 |
| 61:SP:173:ILE:HA | 61:SP:176:LEU:HD12 | 1.88 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 64:SS:211:LYS:HA | 64:SS:216:ASN:O | 2.05 | 0.55 |
| 65:ST:197:ASN:O | 65:ST:201:GLN:HG2 | 2.05 | 0.55 |
| 66:SU:16:LEU:O | 66:SU:20:VAL:HG13 | 2.06 | 0.55 |
| 1:LA:2344:U:H2' | 1:LA:2345:A:H8 | 1.70 | 0.55 |
| 1:LA:2947:G:N3 | 5:LE:250:ALA:HB1 | 2.22 | 0.55 |
| 1:LA:3121:U:H1' | 1:LA:3122:A:H5" | 1.88 | 0.55 |
| 4:LD:180:LEU:HD22 | 44:Lr:18:TYR:HB3 | 1.88 | 0.55 |
| 6:LF:286:VAL:HG21 | 19:LS:28:LEU:HB3 | 1.88 | 0.55 |
| 45:S2:55:A:H5' | 75:Sd:109:LYS:HZ2 | 1.72 | 0.55 |
| 45:S2:1424:A:OP2 | 46:SA:151:LYS:NZ | 2.36 | 0.55 |
| 47:SB:133:VAL:HG22 | 47:SB:198:LEU:HD13 | 1.88 | 0.55 |
| 60:SO:43:ILE:HG23 | 60:SO:45:TRP:HE1 | 1.71 | 0.55 |
| 65:ST:56:ASN:H | 65:ST:108:VAL:HG23 | 1.70 | 0.55 |
| 68:SW:106:GLU:HA | 68:SW:111:THR:HG21 | 1.87 | 0.55 |
| 1:LA:268:A:C4 | 16:LP:12:ARG:HG2 | 2.41 | 0.55 |
| 1:LA:978:G:N2 | 1:LA:979:U:O4 | 2.31 | 0.55 |
| 4:LD:51:ASP:OD2 | 4:LD:54:ARG:NH1 | 2.40 | 0.55 |
| 4:LD:127:ALA:O | 4:LD:169:ILE:HD11 | 2.06 | 0.55 |
| 8:LH:2:THR:OG1 | 8:LH:3:ALA:N | 2.40 | 0.55 |
| 45:S2:123:G:H21 | 64:SS:146:THR:HG21 | 1.70 | 0.55 |
| 45:S2:325:G:OP1 | 69:SX:132:SER:OG | 2.24 | 0.55 |
| 45:S2:1220:C:OP1 | 48:SC:48:SER:OG | 2.21 | 0.55 |
| 45:S2:1312:A:N7 | 52:SG:2:GLY:N | 2.54 | 0.55 |
| 45:S2:1615:C:H2' | 47:SB:81:ARG:HD2 | 1.89 | 0.55 |
| 45:S2:1698:G:O6 | 45:S2:1700:C:O2' | 2.21 | 0.55 |
| 46:SA:162:GLN:N | 46:SA:163:PRO:HD2 | 2.22 | 0.55 |
| 76:Se:36:ILE:HB | 76:Se:73:TYR:HB2 | 1.88 | 0.55 |
| 77:Sf:67:THR:OG1 | 77:Sf:70:LYS:O | 2.17 | 0.55 |
| 80:Tb:27:G:O6 | 80:Tb:45:A:N1 | 2.40 | 0.55 |
| 1:LA:364:G:OP2 | 38:Ll:52:LYS:NZ | 2.30 | 0.55 |
| 1:LA:1746:U:O2' | 39:Lm:4:GLU:OE2 | 2.23 | 0.55 |
| 7:LG:41:LYS:HD2 | 22:LV:93:VAL:HG11 | 1.89 | 0.55 |
| 45:S2:15:U:H2' | 45:S2:16:G:O4' | 2.06 | 0.55 |
| 45:S2:219:A:H5" | 45:S2:831:U:O2' | 2.06 | 0.55 |
| 45:S2:502:U:H2' | 45:S2:503:G:C8 | 2.42 | 0.55 |
| 53:SH:144:ARG:HA | 53:SH:144:ARG:NH1 | 2.22 | 0.55 |
| 64:SS:11:ARG:NH1 | 64:SS:21:ASP:O | 2.39 | 0.55 |
| 68:SW:59:LEU:HD11 | 68:SW:72:GLU:HG3 | 1.88 | 0.55 |
| 79:Ta:71:G:N2 | 79:Ta:72:C:O4' | 2.40 | 0.55 |
| 1:LA:1128:U:OP1 | 12:LL:4:ARG:NH1 | 2.30 | 0.55 |
| 1:LA:1466:G:N2 | 1:LA:1510:G:H5" | 2.21 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:LA:1867:A:N3 | 1:LA:1867:A:H2' | 2.20 | 0.55 |
| 3:LC:69:U:H2' | 3:LC:70:G:O4' | 2.07 | 0.55 |
| 32:Lf:52:ALA:HB1 | 32:Lf:54:GLU:OE1 | 2.06 | 0.55 |
| 45:S2:1446:A:OP1 | 59:SN:85:TYR:OH | 2.24 | 0.55 |
| 52:SG:117:LEU:HD22 | 61:SP:15:GLN:HG3 | 1.88 | 0.55 |
| 53:SH:115:ARG:O | 53:SH:119:ILE:HG23 | 2.07 | 0.55 |
| 60:SO:156:VAL:HG22 | 60:SO:169:ILE:HG22 | 1.88 | 0.55 |
| 71:SZ:80:HIS:HA | 71:SZ:113:GLY:O | 2.05 | 0.55 |
| 1:LA:776:U:H5 | 1:LA:2719:U:O2 | 1.90 | 0.55 |
| 1:LA:2515:A:H5" | 16:LP:28:TRP:CD1 | 2.42 | 0.55 |
| 1:LA:2534:G:H2' | 1:LA:2535:A:C8 | 2.41 | 0.55 |
| 19:LS:76:ALA:HA | 19:LS:79:LYS:HD2 | 1.88 | 0.55 |
| 31:Le:30:THR:HG23 | 31:Le:91:SER:HB3 | 1.88 | 0.55 |
| 45:S2:323:A:H2' | 45:S2:324:U:C6 | 2.42 | 0.55 |
| 46:SA:20:GLU:HG2 | 48:SC:61:TRP:CE3 | 2.41 | 0.55 |
| 53:SH:44:ASN:O | 53:SH:48:LYS:HG3 | 2.06 | 0.55 |
| 79:Ta:11:A:H2' | 79:Ta:12:G:C8 | 2.42 | 0.55 |
| 1:LA:831:G:O2' | 1:LA:1864:A:N3 | 2.36 | 0.55 |
| 16:LP:5:LYS:O | 16:LP:9:GLU:HG2 | 2.06 | 0.55 |
| 21:LU:80:ARG:HH21 | 21:LU:87:THR:HG21 | 1.72 | 0.55 |
| 28:Lb:101:PHE:HB3 | 28:Lb:107:ARG:NH2 | 2.21 | 0.55 |
| 45:S2:953:G:H2' | 45:S2:954:G:C8 | 2.42 | 0.55 |
| 45:S2:1477:G:H2' | 45:S2:1478:G:H8 | 1.71 | 0.55 |
| 46:SA:40:ARG:NH2 | 46:SA:47:GLU:OE1 | 2.40 | 0.55 |
| 48:SC:33:GLU:HG3 | 48:SC:34:GLU:HG3 | 1.88 | 0.55 |
| 54:SI:4:VAL:HG11 | 54:SI:137:ALA:HB2 | 1.89 | 0.55 |
| 62:SQ:121:ILE:HD12 | 62:SQ:207:LEU:HD11 | 1.89 | 0.55 |
| 68:SW:84:GLY:HA3 | 68:SW:107:ARG:HE | 1.71 | 0.55 |
| 74:Sc:17:VAL:HG22 | 74:Sc:20:ARG:NH2 | 2.21 | 0.55 |
| 1:LA:406:G:OP1 | 1:LA:1415:U:O2' | 2.24 | 0.55 |
| 1:LA:673:U:H2' | 1:LA:674:G:C8 | 2.42 | 0.55 |
| 1:LA:2450:G:N3 | 1:LA:2494:A:N6 | 2.54 | 0.55 |
| 6:LF:106:TRP:CZ2 | 14:LN:19:GLN:HG2 | 2.42 | 0.55 |
| 11:LK:128:VAL:HG21 | 11:LK:134:ILE:HD11 | 1.89 | 0.55 |
| 12:LL:109:ASP:N | 12:LL:109:ASP:OD1 | 2.39 | 0.55 |
| 39:Lm:60:GLY:O | 39:Lm:64:LYS:HE3 | 2.06 | 0.55 |
| 45:S2:164:A:H2' | 45:S2:165:G:H8 | 1.72 | 0.55 |
| 45:S2:1579:U:H2' | 45:S2:1580:C:C6 | 2.41 | 0.55 |
| 52:SG:7:LYS:HE3 | 52:SG:11:ARG:CB | 2.37 | 0.55 |
| 60:SO:66:HIS:CG | 60:SO:67:ILE:H | 2.24 | 0.55 |
| 69:SX:84:ILE:HD12 | 69:SX:109:VAL:CG1 | 2.35 | 0.55 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 80:Tb:56:U:H2' | 80:Tb:57:C:H2' | 1.88 | 0.55 |
| 1:LA:2255:A:C8 | 45:S2:1758:U:H1' | 2.37 | 0.55 |
| 1:LA:3309:G:H1' | 18:LR:69:ARG:HD3 | 1.88 | 0.55 |
| 5:LE:83:PRO:HB2 | 5:LE:202:THR:HG22 | 1.89 | 0.55 |
| 17:LQ:74[A]:ARG:O | 17:LQ:142[A]:SER:OG | 2.15 | 0.55 |
| 31:Le:43:ILE:HG23 | 31:Le:68:TYR:HD2 | 1.71 | 0.55 |
| 45:S2:162:A:H2' | 45:S2:163:G:C4 | 2.42 | 0.55 |
| 45:S2:754:A:H5" | 45:S2:755:A:H5' | 1.88 | 0.55 |
| 1:LA:1786:G:H2' | 1:LA:1787:A:C8 | 2.42 | 0.55 |
| 1:LA:2522:G:N1 | 4:LD:68:LYS:NZ | 2.50 | 0.55 |
| 6:LF:23:PRO:HD2 | 6:LF:26:PHE:CD2 | 2.42 | 0.55 |
| 6:LF:315:LYS:HB2 | 6:LF:323:VAL:HG21 | 1.89 | 0.55 |
| 45:S2:1401:A:OP1 | 52:SG:56:HIS:NE2 | 2.37 | 0.55 |
| 47:SB:111:VAL:HA | 47:SB:114:ILE:HG22 | 1.89 | 0.55 |
| 49:SD:128:ALA:HB3 | 49:SD:133:LEU:HD12 | 1.87 | 0.55 |
| 60:SO:202:LEU:HD11 | 60:SO:211:ILE:HD11 | 1.88 | 0.55 |
| 63:SR:152:HIS:ND1 | 63:SR:195:ASP:OD2 | 2.36 | 0.55 |
| 64:SS:100:ARG:HB2 | 64:SS:114:ILE:HD13 | 1.89 | 0.55 |
| 70:SY:132:VAL:HG13 | 70:SY:134:VAL:HG13 | 1.89 | 0.55 |
| 1:LA:314:U:H2' | 1:LA:315:C:C6 | 2.41 | 0.54 |
| 1:LA:363:G:N2 | 6:LF:82:THR:OG1 | 2.40 | 0.54 |
| 1:LA:1063:G:C6 | 22:LV:109:VAL:HG23 | 2.42 | 0.54 |
| 1:LA:1312:C:O2' | 17:LQ:83[A]:ALA:O | 2.25 | 0.54 |
| 19:LS:67:ILE:HG23 | 19:LS:81:VAL:HG11 | 1.89 | 0.54 |
| 23:LW:37:LEU:O | 23:LW:41:ILE:HG12 | 2.07 | 0.54 |
| 32:Lf:9:THR:HG22 | 32:Lf:109:VAL:HG13 | 1.88 | 0.54 |
| 39:Lm:13:GLU:HG3 | 39:Lm:16:ARG:NH2 | 2.23 | 0.54 |
| 44:Lr:45:LYS:HE2 | 44:Lr:45:LYS:H | 1.70 | 0.54 |
| 45:S2:844:A:H2' | 45:S2:845:G:C8 | 2.41 | 0.54 |
| 55:SJ:58:LEU:HD21 | 55:SJ:90:TYR:HE2 | 1.71 | 0.54 |
| 56:SK:88:ILE:HG13 | 56:SK:89:ILE:HG23 | 1.89 | 0.54 |
| 61:SP:201:LEU:HG | 61:SP:202:TYR:H | 1.72 | 0.54 |
| 68:SW:152:SER:O | 68:SW:156:ILE:HG12 | 2.08 | 0.54 |
| 1:LA:507:U:H2' | 1:LA:508:U:H6 | 1.72 | 0.54 |
| 1:LA:1688:U:H2' | 1:LA:1689:U:C6 | 2.43 | 0.54 |
| 1:LA:3322:A:H2' | 1:LA:3323:A:C8 | 2.42 | 0.54 |
| 5:LE:58:ARG:HD2 | 5:LE:354:VAL:HG13 | 1.89 | 0.54 |
| 45:S2:739:G:O2' | 45:S2:740:A:OP1 | 2.25 | 0.54 |
| 45:S2:1526:A:H2' | 45:S2:1527:C:H5' | 1.89 | 0.54 |
| 45:S2:1776:A:H2' | 45:S2:1777:G:C8 | 2.43 | 0.54 |
| 73:Sb:6:VAL:HG12 | 73:Sb:34:ILE:HD11 | 1.89 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:LA:93:C:OP2 | 1:LA:2764:C:O2' | 2.20 | 0.54 |
| 1:LA:3313:U:H4' | 5:LE:173:GLN:HG3 | 1.88 | 0.54 |
| 13:LM:138:VAL:HA | 13:LM:141:ARG:HE | 1.72 | 0.54 |
| 15:LO:19:ARG:NH1 | 15:LO:66:THR:O | 2.38 | 0.54 |
| 28:Lb:42:LEU:HD13 | 28:Lb:101:PHE:HE1 | 1.71 | 0.54 |
| 28:Lb:97:SER:H | 28:Lb:100:THR:HB | 1.73 | 0.54 |
| 39:Lm:32:ASN:OD1 | 39:Lm:33:LYS:N | 2.40 | 0.54 |
| 50:SE:108:ARG:H | 50:SE:111:MET:HE3 | 1.73 | 0.54 |
| 55:SJ:102:ARG:HH12 | 55:SJ:106:ILE:HD13 | 1.73 | 0.54 |
| 59:SN:106:TYR:OH | 59:SN:129:GLY:O | 2.22 | 0.54 |
| 62:SQ:229:MET:O | 62:SQ:233:GLY:C | 2.51 | 0.54 |
| 63:SR:188:LEU:HD13 | 63:SR:196:VAL:HG11 | 1.88 | 0.54 |
| 66:SU:163:ASP:OD1 | 66:SU:163:ASP:N | 2.38 | 0.54 |
| 68:SW:89:ASP:OD1 | 68:SW:89:ASP:N | 2.39 | 0.54 |
| 1:LA:266:A:N6 | 37:Lk:30:LYS:HA | 2.23 | 0.54 |
| 1:LA:746:A:OP1 | 19:LS:145:ASN:ND2 | 2.41 | 0.54 |
| 1:LA:2357:A:H2' | 1:LA:2358:A:H8 | 1.72 | 0.54 |
| 1:LA:2715:A:O2' | 43:Lq:8:ARG:NH2 | 2.41 | 0.54 |
| 17:LQ:61[A]:ALA:HA | 17:LQ:70[A]:PRO:HD2 | 1.89 | 0.54 |
| 18:LR:46:LYS:O | 18:LR:50:GLN:HG3 | 2.08 | 0.54 |
| 45:S2:108:A:H2' | 45:S2:109:G:C8 | 2.42 | 0.54 |
| 45:S2:170:U:OP1 | 45:S2:267:U:O2' | 2.26 | 0.54 |
| 1:LA:1046:A:H2' | 1:LA:1049:C:C5 | 2.43 | 0.54 |
| 1:LA:1799:A:H2' | 1:LA:1800:A:C8 | 2.43 | 0.54 |
| 1:LA:2107:A:N3 | 1:LA:3344:A:O2' | 2.37 | 0.54 |
| 6:LF:161:LYS:HB2 | 6:LF:164:GLU:HG2 | 1.90 | 0.54 |
| 7:LG:60:ILE:N | 7:LG:80:SER:OG | 2.36 | 0.54 |
| 10:LJ:159:PRO:HB2 | 10:LJ:162:LEU:HD23 | 1.89 | 0.54 |
| 13:LM:53:THR:OG1 | 13:LM:61:ARG:N | 2.40 | 0.54 |
| 16:LP:83:LYS:HB2 | 16:LP:85:THR:HG22 | 1.90 | 0.54 |
| 31:Le:32:LYS:O | 31:Le:36:GLN:HG3 | 2.08 | 0.54 |
| 36:Lj:38:ARG:HG3 | 36:Lj:39:PRO:HD2 | 1.90 | 0.54 |
| 45:S2:1592:A:H2' | 45:S2:1593:A:H8 | 1.72 | 0.54 |
| 45:S2:1641:C:H2' | 45:S2:1642:G:C8 | 2.43 | 0.54 |
| 60:SO:106:HIS:NE2 | 60:SO:132:LYS:HD2 | 2.23 | 0.54 |
| 60:SO:149:ASP:HB3 | 60:SO:174:ASN:HB2 | 1.88 | 0.54 |
| 62:SQ:164:ILE:HD11 | 62:SQ:204:ILE:HB | 1.90 | 0.54 |
| 1:LA:692:A:H4' | 6:LF:46:LYS:HB2 | 1.89 | 0.54 |
| 1:LA:772:U:H2' | 1:LA:773:G:O4' | 2.07 | 0.54 |
| 1:LA:877:C:HO2' | 1:LA:880:G:HO2' | 1.51 | 0.54 |
| 1:LA:1220:U:H4' | 1:LA:1221:A:H3' | 1.89 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 13:LM:131:MET:HA | 13:LM:131:MET:HE3 | 1.89 | 0.54 |
| 32:Lf:75:ILE:HG13 | 32:Lf:93:VAL:HG13 | 1.89 | 0.54 |
| 45:S2:980:G:H4' | 45:S2:1776:A:H4' | 1.89 | 0.54 |
| 45:S2:1691:A:H2' | 45:S2:1692:G:C8 | 2.42 | 0.54 |
| 3:LC:8:C:H2' | 3:LC:9:A:C8 | 2.42 | 0.54 |
| 27:La:101:PRO:HA | 27:La:104:LEU:HD23 | 1.90 | 0.54 |
| 45:S2:52:U:H2' | 45:S2:53:G:C8 | 2.43 | 0.54 |
| 45:S2:151:G:N2 | 65:ST:13:GLN:HB3 | 2.23 | 0.54 |
| 45:S2:622:A:H4' | 45:S2:623:A:H5" | 1.89 | 0.54 |
| 45:S2:1196:A:H4' | 45:S2:1197:C:H5" | 1.89 | 0.54 |
| 53:SH:69:ILE:O | 53:SH:73:MET:HG2 | 2.08 | 0.54 |
| 67:SV:107:THR:O | 67:SV:111:GLN:OE1 | 2.26 | 0.54 |
| 68:SW:128:LEU:HD22 | 68:SW:133:HIS:HB2 | 1.88 | 0.54 |
| 1:LA:1615:C:H2' | 1:LA:1616:U:C6 | 2.43 | 0.54 |
| 1:LA:2700:G:O2' | 1:LA:2705:A:N1 | 2.36 | 0.54 |
| 14:LN:119:TYR:O | 14:LN:123:ILE:HG23 | 2.08 | 0.54 |
| 20:LT:136:ARG:O | 20:LT:140:GLU:HG3 | 2.08 | 0.54 |
| 45:S2:93:A:H1' | 64:SS:3:ARG:HB3 | 1.90 | 0.54 |
| 45:S2:346:G:H5' | 69:SX:79:LYS:HE3 | 1.89 | 0.54 |
| 62:SQ:195:LYS:HD2 | 62:SQ:199:ASN:HD21 | 1.72 | 0.54 |
| 64:SS:201:HIS:HD2 | 64:SS:207:LEU:HD12 | 1.73 | 0.54 |
| 65:ST:7:TYR:HB2 | 65:ST:124:LEU:HD11 | 1.90 | 0.54 |
| 1:LA:2406:C:H2' | 1:LA:2407:C:C6 | 2.43 | 0.54 |
| 1:LA:2500:A:N6 | 1:LA:2501:U:O2 | 2.41 | 0.54 |
| 7:LG:54:ARG:HA | 7:LG:151:GLN:HE22 | 1.73 | 0.54 |
| 28:Lb:24:VAL:HG21 | 28:Lb:87:LEU:HB3 | 1.90 | 0.54 |
| 46:SA:32:GLU:OE2 | 46:SA:65:ARG:NH1 | 2.40 | 0.54 |
| 50:SE:47:ARG:C | 50:SE:49:MET:HE1 | 2.33 | 0.54 |
| 60:SO:219:GLU:HA | 60:SO:235:SER:HA | 1.90 | 0.54 |
| 61:SP:198:MET:HG3 | 61:SP:198:MET:O | 2.07 | 0.54 |
| 1:LA:643:U:O2' | 1:LA:1153:A:N1 | 2.31 | 0.54 |
| 1:LA:1230:G:H2' | 1:LA:1231:A:C8 | 2.42 | 0.54 |
| 3:LC:47:C:H1' | 3:LC:61:A:H2' | 1.89 | 0.54 |
| 10:LJ:162:LEU:HA | 16:LP:7:LEU:HD11 | 1.90 | 0.54 |
| 11:LK:129:ARG:HH12 | 11:LK:156:GLN:HB3 | 1.73 | 0.54 |
| 13:LM:32:ARG:HD2 | 13:LM:120:ILE:HA | 1.90 | 0.54 |
| 15:LO:23:ILE:HG21 | 15:LO:28:SER:HB2 | 1.89 | 0.54 |
| 45:S2:861:U:OP1 | 70:SY:64:ARG:NH1 | 2.33 | 0.54 |
| 45:S2:1160:A:H2' | 45:S2:1161:C:C6 | 2.43 | 0.54 |
| 55:SJ:63:LEU:HD12 | 55:SJ:84:MET:HE2 | 1.88 | 0.54 |
| 55:SJ:80:GLU:OE2 | 58:SM:44:ARG:NH1 | 2.32 | 0.54 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 57:SL:13:ILE:HD13 | 57:SL:31:GLU:HB2 | 1.88 | 0.54 |
| 60:SO:65:SER:N | 60:SO:86:ASP:OD2 | 2.40 | 0.54 |
| 60:SO:133:VAL:HG23 | 60:SO:141:LEU:HB3 | 1.88 | 0.54 |
| 64:SS:220:THR:HG22 | 64:SS:224:ASN:HB3 | 1.90 | 0.54 |
| 75:Sd:61:ARG:HB3 | 75:Sd:61:ARG:CZ | 2.38 | 0.54 |
| 1:LA:72:C:H1' | 14:LN:61:PRO:O | 2.08 | 0.53 |
| 1:LA:394:G:N1 | 1:LA:397:A:OP2 | 2.41 | 0.53 |
| 1:LA:846:A:N6 | 45:S2:971:A:N1 | 2.56 | 0.53 |
| 1:LA:945:C:H2' | 1:LA:946:U:C6 | 2.42 | 0.53 |
| 1:LA:1765:U:C5' | 20:LT:43:LYS:HZ1 | 2.21 | 0.53 |
| 9:LI:138:TYR:CE2 | 9:LI:233:GLU:HB3 | 2.43 | 0.53 |
| 47:SB:80:LYS:HB3 | 47:SB:83:ARG:HG2 | 1.90 | 0.53 |
| 60:SO:25:THR:HG22 | 60:SO:33:LEU:HD23 | 1.89 | 0.53 |
| 1:LA:241:G:N2 | 14:LN:44:ALA:O | 2.42 | 0.53 |
| 1:LA:400:G:H4' | 1:LA:401:U:H5' | 1.90 | 0.53 |
| 1:LA:2452:G:N2 | 1:LA:2493:U:O2 | 2.30 | 0.53 |
| 1:LA:3210:A:OP1 | 15:LO:109:ARG:NH1 | 2.41 | 0.53 |
| 1:LA:3234:A:C2 | 1:LA:3253:G:N1 | 2.63 | 0.53 |
| 3:LC:42:G:O2' | 38:Ll:57:HIS:NE2 | 2.34 | 0.53 |
| 9:LI:120:THR:H | 9:LI:123:THR:HB | 1.73 | 0.53 |
| 23:LW:80:THR:O | 23:LW:84:LEU:HG | 2.08 | 0.53 |
| 45:S2:67:A:O2' | 45:S2:69:G:OP1 | 2.25 | 0.53 |
| 45:S2:1226:A:H4' | 45:S2:1230:A:H5' | 1.90 | 0.53 |
| 53:SH:144:ARG:HA | 53:SH:144:ARG:NE | 2.23 | 0.53 |
| 54:SI:128:GLY:O | 54:SI:132:LEU:HG | 2.08 | 0.53 |
| 60:SO:47:LEU:HD11 | 60:SO:54:PHE:CE2 | 2.43 | 0.53 |
| 67:SV:43:ILE:HD13 | 67:SV:57:ALA:HA | 1.89 | 0.53 |
| 1:LA:429:U:H2' | 1:LA:430:U:C6 | 2.43 | 0.53 |
| 1:LA:1555:U:H5' | 1:LA:1556:C:OP2 | 2.08 | 0.53 |
| 1:LA:1643:A:H2' | 1:LA:1644:C:C2 | 2.43 | 0.53 |
| 10:LJ:45:ASN:OD1 | 10:LJ:47:SER:OG | 2.19 | 0.53 |
| 45:S2:448:C:OP1 | 64:SS:49:ARG:NH2 | 2.42 | 0.53 |
| 45:S2:1482:C:N4 | 45:S2:1524:A:OP2 | 2.36 | 0.53 |
| 45:S2:1534:G:OP1 | 53:SH:57:ARG:NH2 | 2.41 | 0.53 |
| 49:SD:87:PRO:O | 49:SD:88:LEU:HD12 | 2.09 | 0.53 |
| 73:Sb:35:ILE:HD11 | 73:Sb:61:ILE:HD11 | 1.90 | 0.53 |
| 77:Sf:50:ALA:O | 77:Sf:52:THR:N | 2.40 | 0.53 |
| 1:LA:2352:A:H5" | 18:LR:83:TRP:O | 2.08 | 0.53 |
| 9:LI:218:ARG:HD3 | 9:LI:221:LYS:HZ1 | 1.74 | 0.53 |
| 11:LK:67:ALA:O | 11:LK:71:VAL:HG13 | 2.07 | 0.53 |
| 29:Lc:93:SER:O | 29:Lc:93:SER:OG | 2.25 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 62:SQ:26:ARG:O | 62:SQ:50:LYS:HG3 | 2.09 | 0.53 |
| 62:SQ:33:LYS:HZ2 | 62:SQ:95:ASN:HA | 1.74 | 0.53 |
| 1:LA:381:U:H2' | 1:LA:382:U:C6 | 2.43 | 0.53 |
| 1:LA:3294:A:H2' | 1:LA:3295:A:O4' | 2.09 | 0.53 |
| 5:LE:347:SER:C | 5:LE:349:LYS:H | 2.16 | 0.53 |
| 13:LM:13:LYS:O | 13:LM:131:MET:HE3 | 2.08 | 0.53 |
| 29:Lc:89:GLN:OE1 | 29:Lc:89:GLN:HA | 2.09 | 0.53 |
| 45:S2:829:A:O2' | 45:S2:830:U:O5' | 2.25 | 0.53 |
| 45:S2:917:U:O2' | 71:SZ:29:HIS:NE2 | 2.39 | 0.53 |
| 45:S2:1252:C:H2' | 45:S2:1253:U:O4' | 2.07 | 0.53 |
| 45:S2:1535:U:H3 | 47:SB:187:ILE:HD12 | 1.74 | 0.53 |
| 47:SB:121:ILE:HG12 | 47:SB:132:VAL:HG11 | 1.90 | 0.53 |
| 62:SQ:61:LEU:HD21 | 62:SQ:96:LEU:CD2 | 2.38 | 0.53 |
| 62:SQ:61:LEU:HD21 | 62:SQ:96:LEU:HD22 | 1.88 | 0.53 |
| 1:LA:20:A:H2' | 1:LA:21:G:C8 | 2.43 | 0.53 |
| 1:LA:2864:A:H5" | 12:LL:114:GLY:HA2 | 1.89 | 0.53 |
| 14:LN:140:SER:HB3 | 14:LN:143:ALA:HB3 | 1.90 | 0.53 |
| 17:LQ:174[A]:PHE:O | 17:LQ:178[A]:VAL:HG12 | 2.09 | 0.53 |
| 42:Lp:1:MET:HB2 | 45:S2:1642:G:H5' | 1.89 | 0.53 |
| 55:SJ:27:THR:OG1 | 55:SJ:113:ASP:OD1 | 2.24 | 0.53 |
| 65:ST:27:PHE:HZ | 65:ST:111:LEU:HD21 | 1.72 | 0.53 |
| 74:Sc:48:HIS:HB3 | 74:Sc:103:LEU:HD11 | 1.90 | 0.53 |
| 1:LA:824:C:H5" | 4:LD:21:ARG:HD3 | 1.90 | 0.53 |
| 2:LB:13:A:OP2 | 2:LB:67:G:N2 | 2.40 | 0.53 |
| 5:LE:210:GLU:O | 5:LE:213:GLU:HB2 | 2.08 | 0.53 |
| 10:LJ:239:GLY:O | 10:LJ:243:GLN:HG2 | 2.09 | 0.53 |
| 18:LR:33:ALA:HB1 | 18:LR:117:ILE:HG12 | 1.89 | 0.53 |
| 28:Lb:87:LEU:CD2 | 28:Lb:121:ARG:HH21 | 2.22 | 0.53 |
| 31:Le:42:ILE:HD11 | 31:Le:67:VAL:HG22 | 1.91 | 0.53 |
| 44:Lr:8:VAL:O | 44:Lr:11:THR:OG1 | 2.25 | 0.53 |
| 45:S2:844:A:H2' | 45:S2:845:G:H8 | 1.74 | 0.53 |
| 45:S2:884:A:H2' | 45:S2:885:G:H8 | 1.74 | 0.53 |
| 45:S2:1001:A:OP1 | 80:Tb:39:A:O2' | 2.24 | 0.53 |
| 45:S2:1498:G:H2' | 45:S2:1499:G:H8 | 1.73 | 0.53 |
| 68:SW:131:GLN:O | 68:SW:132:ARG:HG2 | 2.08 | 0.53 |
| 77:Sf:50:ALA:H | 77:Sf:71:ALA:HB2 | 1.73 | 0.53 |
| 1:LA:209:A:O2' | 1:LA:211:A:OP2 | 2.21 | 0.53 |
| 1:LA:1064:A:H4' | 1:LA:1065:A:O5' | 2.08 | 0.53 |
| 1:LA:1134:G:O2' | 1:LA:2642:A:N3 | 2.35 | 0.53 |
| 1:LA:2228:A:H2' | 1:LA:2229:A:H8 | 1.73 | 0.53 |
| 54:SI:4:VAL:HG23 | 54:SI:140:LEU:HD12 | 1.91 | 0.53 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 54:SI:117:SER:HB3 | 54:SI:123:ARG:HB2 | 1.90 | 0.53 |
| 71:SZ:84:ARG:HA | 71:SZ:119:THR:HG22 | 1.91 | 0.53 |
| 1:LA:1350:A:H2' | 1:LA:1351:U:H4' | 1.91 | 0.53 |
| 1:LA:2506:U:H2' | 1:LA:2507:C:C6 | 2.44 | 0.53 |
| 1:LA:2537:U:O5' | 62:SQ:226:GLY:N | 2.42 | 0.53 |
| 1:LA:3199:G:H5' | 15:LO:6:ILE:HD12 | 1.90 | 0.53 |
| 1:LA:3298:C:C2 | 1:LA:3299:A:C8 | 2.97 | 0.53 |
| 2:LB:4:U:H2' | 2:LB:5:G:H8 | 1.73 | 0.53 |
| 3:LC:26:U:H2' | 3:LC:27:U:C6 | 2.44 | 0.53 |
| 5:LE:71:GLU:OE1 | 25:LY:1:MET:N | 2.41 | 0.53 |
| 9:LI:42:ALA:O | 9:LI:46:GLU:HG2 | 2.08 | 0.53 |
| 15:LO:38:ILE:O | 21:LU:95:ARG:NH2 | 2.40 | 0.53 |
| 45:S2:249:U:N3 | 69:SX:17:PRO:O | 2.42 | 0.53 |
| 45:S2:1087:A:H2' | 45:S2:1088:A:C8 | 2.43 | 0.53 |
| 51:SF:100:GLN:HG2 | 60:SO:57:PRO:HG2 | 1.90 | 0.53 |
| 54:SI:69:LYS:O | 54:SI:123:ARG:HG2 | 2.08 | 0.53 |
| 1:LA:916:G:H5' | 1:LA:917:A:OP1 | 2.09 | 0.53 |
| 1:LA:2197:C:N4 | 1:LA:2241:U:H2' | 2.24 | 0.53 |
| 1:LA:2257:C:N4 | 45:S2:1646:C:O3' | 2.42 | 0.53 |
| 1:LA:2686:A:H2' | 1:LA:2687:G:O4' | 2.09 | 0.53 |
| 2:LB:89:G:H4' | 21:LU:84:ARG:HD3 | 1.90 | 0.53 |
| 3:LC:42:G:HO2' | 38:Ll:57:HIS:HE2 | 1.54 | 0.53 |
| 3:LC:63:G:H22 | 3:LC:97:A:H2 | 1.56 | 0.53 |
| 7:LG:22:ARG:HB3 | 7:LG:28:THR:HG23 | 1.90 | 0.53 |
| 7:LG:128:GLU:OE2 | 7:LG:128:GLU:N | 2.42 | 0.53 |
| 7:LG:235:SER:O | 7:LG:239:ILE:HG23 | 2.10 | 0.53 |
| 8:LH:39:VAL:HG11 | 8:LH:158:TYR:HE2 | 1.74 | 0.53 |
| 21:LU:132:THR:HG22 | 21:LU:133:ALA:H | 1.74 | 0.53 |
| 45:S2:749:U:H5" | 73:Sb:83:ILE:HD13 | 1.90 | 0.53 |
| 45:S2:768:C:H1' | 68:SW:143:ILE:HG21 | 1.91 | 0.53 |
| 58:SM:12:ARG:O | 58:SM:18:SER:HB3 | 2.09 | 0.53 |
| 60:SO:35:SER:O | 60:SO:42:LEU:HA | 2.09 | 0.53 |
| 61:SP:3:LEU:HD13 | 61:SP:7:PHE:HB2 | 1.89 | 0.53 |
| 63:SR:35:TRP:HB3 | 63:SR:46:LYS:HE3 | 1.89 | 0.53 |
| 74:Sc:75:GLN:HG2 | 74:Sc:82:LYS:HD3 | 1.91 | 0.53 |
| 1:LA:418:A:N1 | 3:LC:5:U:C5 | 2.77 | 0.52 |
| 1:LA:925:A:N6 | 4:LD:2:GLY:O | 2.26 | 0.52 |
| 1:LA:1378:U:H2' | 1:LA:1379:G:H8 | 1.74 | 0.52 |
| 4:LD:27:ALA:HA | 4:LD:75:ILE:HG22 | 1.92 | 0.52 |
| 6:LF:300:ARG:C | 6:LF:301:PRO:CD | 2.75 | 0.52 |
| 11:LK:90:MET:HG3 | 11:LK:181:VAL:HA | 1.91 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 45:S2:604:A:H2' | 45:S2:605:A:O4' | 2.09 | 0.52 |
| 45:S2:1081:A:O2' | 45:S2:1083:G:N7 | 2.42 | 0.52 |
| 61:SP:103:THR:O | 61:SP:106:SER:OG | 2.22 | 0.52 |
| 64:SS:201:HIS:CD2 | 64:SS:207:LEU:HD12 | 2.44 | 0.52 |
| 65:ST:27:PHE:HE1 | 65:ST:52:ILE:HD11 | 1.74 | 0.52 |
| 1:LA:422:A:C2 | 1:LA:2363:A:H4' | 2.44 | 0.52 |
| 1:LA:1659:U:H2' | 1:LA:1660:C:C6 | 2.44 | 0.52 |
| 1:LA:2660:G:H1' | 1:LA:2744:U:H1' | 1.90 | 0.52 |
| 1:LA:2960:C:H2' | 1:LA:2961:G:H8 | 1.72 | 0.52 |
| 6:LF:295:ILE:O | 6:LF:299:ILE:HG12 | 2.09 | 0.52 |
| 11:LK:75:VAL:HA | 11:LK:78:MET:CE | 2.38 | 0.52 |
| 16:LP:60:VAL:HG22 | 16:LP:134:LEU:HB2 | 1.91 | 0.52 |
| 20:LT:105:LEU:HD23 | 20:LT:138:LEU:HD23 | 1.90 | 0.52 |
| 24:LX:62:VAL:O | 24:LX:70:ARG:HG2 | 2.09 | 0.52 |
| 28:Lb:72:ILE:HD11 | 28:Lb:107:ARG:HG2 | 1.90 | 0.52 |
| 28:Lb:85:TYR:OH | 35:Li:97:GLU:OE2 | 2.18 | 0.52 |
| 45:S2:395:U:H2' | 45:S2:396:G:O4' | 2.09 | 0.52 |
| 50:SE:90:ILE:HD12 | 50:SE:109:PRO:HA | 1.91 | 0.52 |
| 56:SK:50:ILE:HG13 | 56:SK:51:LEU:N | 2.23 | 0.52 |
| 60:SO:289:ALA:HA | 60:SO:305:TYR:HA | 1.91 | 0.52 |
| 61:SP:120:LEU:HD11 | 61:SP:144:ILE:HG13 | 1.91 | 0.52 |
| 70:SY:70:LYS:O | 70:SY:74:ILE:HG12 | 2.09 | 0.52 |
| 1:LA:728:G:H5" | 19:LS:43:PRO:HB2 | 1.92 | 0.52 |
| 1:LA:1084:A:H2' | 1:LA:1085:A:C8 | 2.44 | 0.52 |
| 1:LA:1795:U:N3 | 44:Lr:50:GLY:O | 2.42 | 0.52 |
| 1:LA:3379:C:H4' | 5:LE:315:GLY:HA2 | 1.91 | 0.52 |
| 2:LB:29:C:O2' | 2:LB:51:A:N1 | 2.31 | 0.52 |
| 26:LZ:57:LEU:HD22 | 26:LZ:62:VAL:HG12 | 1.90 | 0.52 |
| 29:Lc:96:LYS:O | 29:Lc:97:GLU:HG3 | 2.08 | 0.52 |
| 45:S2:585:A:H2' | 45:S2:586:G:H8 | 1.74 | 0.52 |
| 45:S2:592:A:H2' | 45:S2:593:U:O4' | 2.09 | 0.52 |
| 45:S2:1674:C:OP1 | 65:ST:92:ARG:NH1 | 2.32 | 0.52 |
| 64:SS:211:LYS:HE2 | 64:SS:215:ASP:HA | 1.91 | 0.52 |
| 1:LA:1063:G:N7 | 1:LA:1097:G:H2' | 2.24 | 0.52 |
| 1:LA:1460:A:H2' | 1:LA:1461:A:H8 | 1.75 | 0.52 |
| 1:LA:2115:G:H22 | 1:LA:2120:A:H1' | 1.75 | 0.52 |
| 5:LE:204:ALA:O | 5:LE:207:SER:OG | 2.28 | 0.52 |
| 14:LN:76:THR:HG22 | 14:LN:78:ALA:H | 1.74 | 0.52 |
| 19:LS:152:HIS:ND1 | 19:LS:162:ALA:O | 2.39 | 0.52 |
| 50:SE:75:PRO:HA | 50:SE:93:VAL:HG13 | 1.91 | 0.52 |
| 54:SI:143:ASP:OD1 | 54:SI:144:GLU:N | 2.42 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:LA:63:A:N3 | 1:LA:78:U:O2' | 2.36 | 0.52 |
| 1:LA:2881:C:H2' | 1:LA:2882:U:C6 | 2.43 | 0.52 |
| 5:LE:111:SER:O | 5:LE:114:VAL:HG12 | 2.10 | 0.52 |
| 45:S2:907:A:H2' | 45:S2:908:U:H6 | 1.74 | 0.52 |
| 46:SA:162:GLN:HE22 | 46:SA:199:PRO:HG2 | 1.75 | 0.52 |
| 63:SR:59:HIS:CD2 | 63:SR:239:PRO:HD3 | 2.44 | 0.52 |
| 69:SX:94:ILE:CD1 | 69:SX:101:GLU:OE2 | 2.48 | 0.52 |
| 71:SZ:103:ARG:O | 71:SZ:107:ARG:HG2 | 2.09 | 0.52 |
| 79:Ta:5:G:O2' | 79:Ta:6:G:O4' | 2.17 | 0.52 |
| 1:LA:1765:U:H5' | 20:LT:43:LYS:NZ | 2.24 | 0.52 |
| 1:LA:2419:A:H2' | 1:LA:2420:C:C6 | 2.44 | 0.52 |
| 5:LE:346:THR:OG1 | 5:LE:347:SER:N | 2.43 | 0.52 |
| 6:LF:252:GLU:O | 6:LF:256:THR:HG23 | 2.09 | 0.52 |
| 11:LK:101:VAL:HG22 | 11:LK:114:VAL:HG13 | 1.91 | 0.52 |
| 11:LK:103:ILE:HD11 | 11:LK:134:ILE:HG21 | 1.91 | 0.52 |
| 36:Lj:76:GLN:HE21 | 36:Lj:76:GLN:CA | 2.00 | 0.52 |
| 37:Lk:74:LYS:HD2 | 37:Lk:80:PHE:HD1 | 1.75 | 0.52 |
| 43:Lq:6:LYS:HE2 | 43:Lq:94:GLY:HA2 | 1.92 | 0.52 |
| 45:S2:17:C:H2' | 45:S2:18:C:C6 | 2.45 | 0.52 |
| 47:SB:41:LYS:HG3 | 47:SB:67:PRO:HB2 | 1.91 | 0.52 |
| 1:LA:750:G:OP1 | 30:Ld:44:LYS:HE2 | 2.08 | 0.52 |
| 1:LA:1353:U:O2 | 8:LH:10:TYR:N | 2.33 | 0.52 |
| 1:LA:1622:U:H2' | 1:LA:1623:G:H8 | 1.74 | 0.52 |
| 1:LA:1913:A:N3 | 1:LA:2120:A:H2' | 2.25 | 0.52 |
| 2:LB:56:A:H4' | 13:LM:152:HIS:HB2 | 1.91 | 0.52 |
| 6:LF:356:THR:OG1 | 6:LF:360:LYS:NZ | 2.42 | 0.52 |
| 10:LJ:178:ALA:HB2 | 10:LJ:218:ILE:HG23 | 1.91 | 0.52 |
| 29:Lc:102:ILE:HD12 | 29:Lc:123:VAL:HG21 | 1.90 | 0.52 |
| 45:S2:502:U:H2' | 45:S2:503:G:H8 | 1.74 | 0.52 |
| 60:SO:248:ASN:OD1 | 60:SO:249:ARG:N | 2.43 | 0.52 |
| 65:ST:195:VAL:O | 65:ST:199:GLN:HG2 | 2.09 | 0.52 |
| 77:Sf:36:LYS:HD2 | 77:Sf:43:ILE:HD11 | 1.91 | 0.52 |
| 4:LD:201:GLY:HA2 | 4:LD:204:MET:HG3 | 1.90 | 0.52 |
| 5:LE:173:GLN:NE2 | 5:LE:175:LYS:O | 2.43 | 0.52 |
| 10:LJ:195:SER:OG | 10:LJ:197:VAL:O | 2.27 | 0.52 |
| 16:LP:99:ARG:O | 16:LP:103:GLU:HG2 | 2.10 | 0.52 |
| 23:LW:102:GLU:O | 23:LW:102:GLU:HG2 | 2.10 | 0.52 |
| 43:Lq:73:GLU:HG3 | 43:Lq:80:ARG:HG3 | 1.90 | 0.52 |
| 45:S2:41:A:O2' | 45:S2:437:A:O2' | 2.16 | 0.52 |
| 45:S2:340:U:H2' | 45:S2:341:A:H8 | 1.75 | 0.52 |
| 50:SE:39:ALA:HA | 50:SE:42:ARG:HE | 1.75 | 0.52 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 53:SH:94:ASP:OD1 | 53:SH:94:ASP:N | 2.34 | 0.52 |
| 58:SM:24:CYS:HG | 58:SM:26:SER:HG | 1.55 | 0.52 |
| 63:SR:67:GLN:O | 63:SR:71:THR:OG1 | 2.17 | 0.52 |
| 1:LA:501:A:H2' | 1:LA:502:U:C6 | 2.44 | 0.52 |
| 1:LA:671:U:O2' | 19:LS:20:LYS:HD3 | 2.09 | 0.52 |
| 1:LA:1110:U:H2' | 1:LA:1111:U:C6 | 2.45 | 0.52 |
| 1:LA:1348:U:OP1 | 19:LS:39:ARG:NE | 2.43 | 0.52 |
| 9:LI:110:ARG:HH11 | 9:LI:110:ARG:HB2 | 1.75 | 0.52 |
| 32:Lf:9:THR:OG1 | 32:Lf:76:SER:HB2 | 2.10 | 0.52 |
| 33:Lg:32:TRP:CZ2 | 33:Lg:53:PRO:HD2 | 2.45 | 0.52 |
| 45:S2:933:A:OP1 | 76:Se:70:LYS:NZ | 2.43 | 0.52 |
| 47:SB:140:THR:HG21 | 47:SB:210:ALA:HB1 | 1.90 | 0.52 |
| 79:Ta:41:C:H2' | 79:Ta:42:C:H6 | 1.75 | 0.52 |
| 80:Tb:5:G:H2' | 80:Tb:6:G:C8 | 2.45 | 0.52 |
| 1:LA:1071:U:O2' | 1:LA:1072:G:N7 | 2.35 | 0.52 |
| 7:LG:160:PHE:HA | 7:LG:163:LEU:HB3 | 1.91 | 0.52 |
| 7:LG:254:LYS:HD2 | 7:LG:255:PRO:HD2 | 1.92 | 0.52 |
| 12:LL:87:LEU:HD13 | 12:LL:138:VAL:HG22 | 1.92 | 0.52 |
| 45:S2:1208:A:O2' | 45:S2:1270:G:OP2 | 2.23 | 0.52 |
| 53:SH:15:LEU:HD23 | 53:SH:22:VAL:O | 2.09 | 0.52 |
| 76:Se:37:LYS:HA | 76:Se:71:LEU:O | 2.10 | 0.52 |
| 1:LA:629:U:H2' | 1:LA:630:A:C8 | 2.45 | 0.51 |
| 1:LA:2902:A:H2' | 1:LA:2903:A:O4' | 2.09 | 0.51 |
| 1:LA:3209:A:C5 | 15:LO:106:ARG:HD3 | 2.45 | 0.51 |
| 2:LB:8:G:O6 | 7:LG:21:ARG:NH2 | 2.38 | 0.51 |
| 8:LH:58:LEU:HD22 | 8:LH:102:ASN:HA | 1.91 | 0.51 |
| 17:LQ:107[A]:GLY:C | 17:LQ:108[A]:ILE:HD12 | 2.35 | 0.51 |
| 23:LW:102:GLU:O | 23:LW:102:GLU:HG3 | 2.08 | 0.51 |
| 36:Lj:45:LYS:HD2 | 36:Lj:49:LYS:HD3 | 1.90 | 0.51 |
| 45:S2:30:G:H2' | 45:S2:31:C:C6 | 2.45 | 0.51 |
| 45:S2:329:G:H5" | 67:SV:98:LYS:HB3 | 1.92 | 0.51 |
| 47:SB:63:GLN:HB3 | 47:SB:88:PRO:HA | 1.92 | 0.51 |
| 49:SD:73:LYS:HZ1 | 59:SN:108:VAL:HA | 1.75 | 0.51 |
| 54:SI:45:MET:HE3 | 54:SI:46:PRO:HD2 | 1.93 | 0.51 |
| 61:SP:179:ARG:HH11 | 61:SP:179:ARG:HG2 | 1.74 | 0.51 |
| 68:SW:32:GLY:HA3 | 78:Sg:40:TYR:CD1 | 2.45 | 0.51 |
| 1:LA:114:A:N1 | 1:LA:266:A:O2' | 2.38 | 0.51 |
| 1:LA:601:U:H2' | 1:LA:602:A:O4' | 2.11 | 0.51 |
| 1:LA:1119:C:H2' | 1:LA:1120:A:C8 | 2.45 | 0.51 |
| 1:LA:1176:C:H2' | 1:LA:1177:G:N2 | 2.25 | 0.51 |
| 12:LL:210:ILE:HD13 | 12:LL:217:PHE:CD2 | 2.44 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 25:LY:6:ASP:OD2 | 25:LY:32:GLN:N | 2.21 | 0.51 |
| 38:Ll:31:LYS:HB3 | 38:Ll:33:THR:HG22 | 1.92 | 0.51 |
| 45:S2:1216:C:O2' | 45:S2:1217:A:H5' | 2.10 | 0.51 |
| 45:S2:1450:U:H5" | 58:SM:8:PHE:CE1 | 2.40 | 0.51 |
| 47:SB:209:TYR:CZ | 47:SB:213:LYS:HE3 | 2.45 | 0.51 |
| 50:SE:28:MET:HG2 | 50:SE:32:ASP:OD2 | 2.10 | 0.51 |
| 1:LA:813:G:H4' | 38:Ll:47:TYR:OH | 2.10 | 0.51 |
| 5:LE:159:ARG:HD3 | 5:LE:182:GLN:HB2 | 1.92 | 0.51 |
| 24:LX:35:TYR:CE1 | 24:LX:37:ILE:HG22 | 2.46 | 0.51 |
| 46:SA:39:VAL:HG13 | 46:SA:48:VAL:HG22 | 1.91 | 0.51 |
| 48:SC:19:GLY:HA2 | 48:SC:68:LEU:HD22 | 1.92 | 0.51 |
| 53:SH:31:ALA:O | 53:SH:34:THR:HG22 | 2.10 | 0.51 |
| 61:SP:22:THR:HG22 | 61:SP:169:SER:HB2 | 1.92 | 0.51 |
| 1:LA:196:G:N1 | 1:LA:199:A:OP2 | 2.43 | 0.51 |
| 1:LA:874:U:N3 | 1:LA:2978:U:OP1 | 2.37 | 0.51 |
| 1:LA:3034:C:C6 | 11:LK:120:ASP:HB2 | 2.45 | 0.51 |
| 2:LB:44:C:OP2 | 13:LM:137:ARG:NH1 | 2.43 | 0.51 |
| 11:LK:166:ARG:HG2 | 11:LK:166:ARG:HH11 | 1.73 | 0.51 |
| 37:Lk:4:LYS:O | 37:Lk:16:LYS:NZ | 2.43 | 0.51 |
| 39:Lm:40:GLN:NE2 | 39:Lm:55:VAL:HG13 | 2.24 | 0.51 |
| 45:S2:69:G:O6 | 45:S2:82:U:O4 | 2.28 | 0.51 |
| 45:S2:175:G:N2 | 45:S2:266:A:H5' | 2.20 | 0.51 |
| 45:S2:269:G:N7 | 65:ST:186:ARG:NH2 | 2.58 | 0.51 |
| 45:S2:1100:G:O2' | 73:Sb:74:VAL:O | 2.26 | 0.51 |
| 48:SC:61:TRP:CD1 | 58:SM:23:VAL:HG23 | 2.45 | 0.51 |
| 55:SJ:37:VAL:HA | 55:SJ:40:ASN:ND2 | 2.25 | 0.51 |
| 65:ST:132:ARG:HG3 | 65:ST:133:LEU:HD12 | 1.92 | 0.51 |
| 1:LA:329:U:N3 | 6:LF:54:GLU:OE1 | 2.43 | 0.51 |
| 1:LA:1073:U:H2' | 1:LA:1074:U:C6 | 2.46 | 0.51 |
| 1:LA:1246:G:O4' | 1:LA:1264:G:O2' | 2.23 | 0.51 |
| 1:LA:1315:U:OP2 | 17:LQ:44[A]:SER:OG | 2.27 | 0.51 |
| 3:LC:64:U:H5" | 36:Lj:49:LYS:HG3 | 1.91 | 0.51 |
| 4:LD:137:ILE:HD11 | 4:LD:149:ARG:HB2 | 1.93 | 0.51 |
| 5:LE:215:ILE:HD12 | 5:LE:338:LEU:HB3 | 1.92 | 0.51 |
| 7:LG:120:LYS:HE3 | 7:LG:123:GLU:HG3 | 1.93 | 0.51 |
| 8:LH:104:GLU:CD | 8:LH:104:GLU:H | 2.18 | 0.51 |
| 13:LM:118:PRO:HD3 | 53:SH:103:ASN:OD1 | 2.11 | 0.51 |
| 16:LP:9:GLU:HB2 | 37:Lk:44:VAL:HG21 | 1.93 | 0.51 |
| 45:S2:1691:A:H2' | 45:S2:1692:G:N7 | 2.26 | 0.51 |
| 54:SI:105:LEU:HD13 | 54:SI:122:ARG:HD2 | 1.93 | 0.51 |
| 60:SO:76:ASP:OD1 | 60:SO:76:ASP:N | 2.34 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 66:SU:76:LYS:O | 66:SU:80:GLU:HG2 | 2.11 | 0.51 |
| 1:LA:1317:A:O2' | 1:LA:1318:A:H3' | 2.11 | 0.51 |
| 1:LA:1622:U:H2' | 1:LA:1623:G:C8 | 2.46 | 0.51 |
| 1:LA:1940:G:OP1 | 20:LT:75:HIS:ND1 | 2.42 | 0.51 |
| 1:LA:3295:A:H2' | 1:LA:3296:A:H8 | 1.73 | 0.51 |
| 7:LG:38:THR:HG23 | 22:LV:30:TYR:HB3 | 1.92 | 0.51 |
| 8:LH:11:PRO:HG2 | 33:Lg:88:HIS:CD2 | 2.46 | 0.51 |
| 15:LO:73:PRO:HG2 | 15:LO:76:ALA:HB2 | 1.92 | 0.51 |
| 20:LT:162:ARG:NH2 | 45:S2:815:G:C4 | 2.79 | 0.51 |
| 27:La:3:LYS:HD2 | 27:La:8:VAL:HG13 | 1.92 | 0.51 |
| 36:Lj:13:SER:OG | 36:Lj:14:LYS:N | 2.42 | 0.51 |
| 45:S2:812:A:H62 | 45:S2:859:A:H5' | 1.75 | 0.51 |
| 45:S2:1382:A:H2' | 45:S2:1383:G:H8 | 1.75 | 0.51 |
| 45:S2:1584:G:HO2' | 45:S2:1585:U:P | 2.32 | 0.51 |
| 51:SF:93:HIS:HA | 51:SF:97:VAL:HB | 1.92 | 0.51 |
| 55:SJ:30:LYS:HE3 | 55:SJ:111:GLY:HA3 | 1.92 | 0.51 |
| 63:SR:143:TYR:OH | 63:SR:149:GLY:O | 2.23 | 0.51 |
| 71:SZ:85:ALA:H | 71:SZ:119:THR:HG22 | 1.76 | 0.51 |
| 73:Sb:90:THR:O | 73:Sb:94:LEU:HB2 | 2.11 | 0.51 |
| 79:Ta:9:G:H1' | 79:Ta:46:G:H2' | 1.91 | 0.51 |
| 1:LA:1141:C:O2' | 1:LA:1153:A:N3 | 2.40 | 0.51 |
| 1:LA:1525:G:H5' | 1:LA:1830:G:OP2 | 2.11 | 0.51 |
| 1:LA:1695:U:O2' | 1:LA:1749:A:N1 | 2.33 | 0.51 |
| 1:LA:1868:G:O2' | 1:LA:2118:C:O2' | 2.27 | 0.51 |
| 11:LK:24:ILE:HD11 | 11:LK:39:LYS:HE2 | 1.92 | 0.51 |
| 14:LN:162:ASN:OD1 | 14:LN:162:ASN:N | 2.44 | 0.51 |
| 15:LO:59:ASN:HB2 | 15:LO:62:GLN:HG2 | 1.92 | 0.51 |
| 25:LY:18:GLY:HA3 | 25:LY:31:PHE:O | 2.11 | 0.51 |
| 45:S2:86:A:O2' | 45:S2:147:A:O2' | 2.25 | 0.51 |
| 45:S2:1488:G:H3' | 45:S2:1515:A:H61 | 1.75 | 0.51 |
| 45:S2:1729:C:H2' | 45:S2:1730:A:O4' | 2.10 | 0.51 |
| 46:SA:74:GLN:HG3 | 46:SA:84:ILE:CG2 | 2.41 | 0.51 |
| 46:SA:101:GLN:HG3 | 46:SA:122:VAL:HG13 | 1.93 | 0.51 |
| 47:SB:72:HIS:HD2 | 47:SB:107:LYS:HD3 | 1.74 | 0.51 |
| 53:SH:120:ARG:HD3 | 53:SH:125:ILE:HD11 | 1.93 | 0.51 |
| 64:SS:19:LEU:HD21 | 64:SS:108:ARG:HD2 | 1.93 | 0.51 |
| 76:Se:41:ILE:HG12 | 76:Se:68:TYR:CD2 | 2.45 | 0.51 |
| 1:LA:671:U:H2' | 1:LA:672:A:C8 | 2.46 | 0.51 |
| 1:LA:2522:G:H1 | 4:LD:68:LYS:HZ3 | 1.58 | 0.51 |
| 1:LA:3047:U:O2' | 1:LA:3048:A:H5' | 2.10 | 0.51 |
| 3:LC:142:C:H2' | 3:LC:143:U:C6 | 2.45 | 0.51 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 7:LG:182:GLY:HA2 | 7:LG:194:LEU:HD23 | 1.92 | 0.51 |
| 11:LK:162:GLN:HE21 | 11:LK:180:TYR:HD1 | 1.59 | 0.51 |
| 45:S2:340:U:H2' | 45:S2:341:A:C8 | 2.46 | 0.51 |
| 45:S2:917:U:HO2' | 45:S2:918:U:H5' | 1.75 | 0.51 |
| 45:S2:1361:U:O2' | 45:S2:1363:U:OP2 | 2.20 | 0.51 |
| 45:S2:1450:U:H2' | 45:S2:1451:C:C6 | 2.46 | 0.51 |
| 45:S2:1523:G:H21 | 45:S2:1523:G:P | 2.33 | 0.51 |
| 48:SC:27:PHE:C | 48:SC:28:ASN:OD1 | 2.54 | 0.51 |
| 60:SO:300:THR:OG1 | 60:SO:314:GLN:OE1 | 2.28 | 0.51 |
| 1:LA:127:G:H2' | 1:LA:128:G:C8 | 2.46 | 0.51 |
| 1:LA:430:U:H2' | 1:LA:431:U:C6 | 2.45 | 0.51 |
| 1:LA:1541:G:H1' | 1:LA:1557:A:C5 | 2.46 | 0.51 |
| 1:LA:2611:U:H2' | 1:LA:2612:U:C6 | 2.46 | 0.51 |
| 1:LA:3068:U:OP2 | 20:LT:62:ARG:NH2 | 2.35 | 0.51 |
| 5:LE:296:THR:OG1 | 5:LE:297:SER:N | 2.44 | 0.51 |
| 44:Lr:21:SER:O | 44:Lr:25:GLN:HG3 | 2.11 | 0.51 |
| 45:S2:172:C:H2' | 45:S2:173:A:H8 | 1.76 | 0.51 |
| 45:S2:1182:U:H4' | 50:SE:124:THR:HB | 1.92 | 0.51 |
| 45:S2:1525:A:H2' | 45:S2:1526:A:C8 | 2.46 | 0.51 |
| 62:SQ:52:THR:HG23 | 62:SQ:54:LEU:H | 1.76 | 0.51 |
| 65:ST:56:ASN:HD22 | 65:ST:62:PRO:HA | 1.76 | 0.51 |
| 65:ST:180:THR:HG22 | 65:ST:182:GLN:H | 1.76 | 0.51 |
| 71:SZ:29:HIS:HB3 | 71:SZ:41:ARG:HA | 1.92 | 0.51 |
| 1:LA:177:U:O2 | 1:LA:241:G:C6 | 2.63 | 0.51 |
| 1:LA:671:U:H2' | 1:LA:672:A:H8 | 1.76 | 0.51 |
| 1:LA:2100:A:H2' | 1:LA:2101:C:C6 | 2.46 | 0.51 |
| 2:LB:4:U:H2' | 2:LB:5:G:C8 | 2.46 | 0.51 |
| 14:LN:114:GLN:NE2 | 14:LN:118:GLU:OE2 | 2.42 | 0.51 |
| 19:LS:170:ARG:O | 19:LS:171:LYS:HG2 | 2.10 | 0.51 |
| 20:LT:176:ARG:HH21 | 20:LT:177:VAL:HG22 | 1.76 | 0.51 |
| 23:LW:43:VAL:HG13 | 23:LW:49:ASN:HB2 | 1.92 | 0.51 |
| 67:SV:138:ASN:O | 67:SV:141:ARG:HG3 | 2.11 | 0.51 |
| 73:Sb:115:GLU:HG2 | 73:Sb:119:LYS:HD2 | 1.93 | 0.51 |
| 1:LA:616:G:H2' | 1:LA:617:G:C8 | 2.46 | 0.50 |
| 1:LA:3053:G:H2' | 1:LA:3054:U:H6 | 1.76 | 0.50 |
| 6:LF:300:ARG:O | 19:LS:39:ARG:NH1 | 2.37 | 0.50 |
| 10:LJ:143:ILE:HG23 | 10:LJ:175:VAL:HG11 | 1.94 | 0.50 |
| 45:S2:447:U:H2' | 45:S2:448:C:O4' | 2.10 | 0.50 |
| 45:S2:585:A:H2' | 45:S2:586:G:C8 | 2.46 | 0.50 |
| 45:S2:689:G:H2' | 45:S2:690:G:H8 | 1.76 | 0.50 |
| 45:S2:778:G:H5" | 45:S2:780:A:N7 | 2.25 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 45:S2:1253:U:H3' | 49:SD:46:ARG:HH21 | 1.76 | 0.50 |
| 45:S2:1389:C:N4 | 45:S2:1391:A:O4' | 2.44 | 0.50 |
| 45:S2:1496:U:H4' | 45:S2:1519:U:O2' | 2.11 | 0.50 |
| 45:S2:1610:G:OP1 | 47:SB:72:HIS:NE2 | 2.39 | 0.50 |
| 60:SO:13:LEU:CB | 60:SO:45:TRP:CH2 | 2.92 | 0.50 |
| 64:SS:98:ASN:HB2 | 64:SS:114:ILE:HG13 | 1.92 | 0.50 |
| 1:LA:153:U:H4' | 1:LA:158:G:H4' | 1.93 | 0.50 |
| 1:LA:750:G:OP1 | 30:Ld:40:ARG:NH2 | 2.44 | 0.50 |
| 1:LA:2221:G:N2 | 1:LA:2224:A:OP2 | 2.35 | 0.50 |
| 5:LE:173:GLN:HG2 | 5:LE:175:LYS:H | 1.75 | 0.50 |
| 6:LF:157:GLU:HG3 | 6:LF:251:THR:HG21 | 1.93 | 0.50 |
| 9:LI:110:ARG:NH1 | 9:LI:110:ARG:HB2 | 2.26 | 0.50 |
| 45:S2:962:C:H2' | 45:S2:963:A:O4' | 2.10 | 0.50 |
| 48:SC:46:LEU:O | 48:SC:50:THR:HG23 | 2.11 | 0.50 |
| 60:SO:51:ASP:N | 60:SO:51:ASP:OD1 | 2.41 | 0.50 |
| 61:SP:98:ILE:HG21 | 61:SP:102:PHE:HD1 | 1.77 | 0.50 |
| 63:SR:140:ARG:NH2 | 63:SR:228:ASN:OD1 | 2.42 | 0.50 |
| 65:ST:142:ARG:NH2 | 65:ST:177:ARG:HG2 | 2.26 | 0.50 |
| 75:Sd:53:ASP:HB3 | 75:Sd:96:LEU:HD21 | 1.93 | 0.50 |
| 1:LA:2167:A:H2' | 1:LA:2168:A:C8 | 2.46 | 0.50 |
| 1:LA:3015:G:H2' | 1:LA:3016:A:H8 | 1.75 | 0.50 |
| 3:LC:8:C:H2' | 3:LC:9:A:H8 | 1.76 | 0.50 |
| 17:LQ:116[A]:LYS:NZ | 21:LU:165:TYR:O | 2.38 | 0.50 |
| 27:La:32:SER:HA | 27:La:49:PRO:HA | 1.93 | 0.50 |
| 31:Le:18:ILE:HD11 | 31:Le:81:VAL:HG13 | 1.92 | 0.50 |
| 45:S2:396:G:N1 | 45:S2:399:A:OP2 | 2.43 | 0.50 |
| 49:SD:130:THR:O | 49:SD:134:SER:HB3 | 2.11 | 0.50 |
| 77:Sf:19:HIS:HB3 | 77:Sf:22:LYS:HG3 | 1.93 | 0.50 |
| 1:LA:297:G:OP2 | 1:LA:297:G:N2 | 2.29 | 0.50 |
| 1:LA:1666:G:H2' | 1:LA:1667:A:C8 | 2.46 | 0.50 |
| 1:LA:1791:C:H2' | 1:LA:1792:C:C6 | 2.46 | 0.50 |
| 2:LB:27:A:H2' | 2:LB:28:C:C6 | 2.47 | 0.50 |
| 18:LR:46:LYS:HE2 | 18:LR:46:LYS:H | 1.75 | 0.50 |
| 23:LW:101:ASN:OD1 | 23:LW:103:TYR:OH | 2.27 | 0.50 |
| 39:Lm:58:ASP:OD2 | 39:Lm:61:LYS:HD3 | 2.11 | 0.50 |
| 43:Lq:9:LYS:NZ | 43:Lq:22:GLN:OE1 | 2.35 | 0.50 |
| 44:Lr:78:THR:O | 44:Lr:82:THR:HG23 | 2.10 | 0.50 |
| 45:S2:1533:C:H4' | 45:S2:1539:G:C6 | 2.46 | 0.50 |
| 45:S2:1611:A:O3' | 47:SB:95:ASN:HB3 | 2.12 | 0.50 |
| 46:SA:76:ARG:HB2 | 48:SC:22:VAL:HG11 | 1.93 | 0.50 |
| 60:SO:103:PHE:HB3 | 60:SO:134:TRP:CZ3 | 2.47 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 64:SS:15:PRO:HG2 | 64:SS:18:TRP:CE2 | 2.46 | 0.50 |
| 67:SV:153:GLU:HG3 | 67:SV:156:VAL:HG22 | 1.94 | 0.50 |
| 70:SY:29:SER:O | 70:SY:33:VAL:HG23 | 2.11 | 0.50 |
| 78:Sg:55:ARG:CZ | 78:Sg:58:PRO:HA | 2.41 | 0.50 |
| 1:LA:627:U:H2' | 1:LA:628:A:C8 | 2.46 | 0.50 |
| 1:LA:2426:U:H2' | 1:LA:2427:U:C6 | 2.46 | 0.50 |
| 4:LD:109:GLU:HG2 | 4:LD:137:ILE:O | 2.11 | 0.50 |
| 13:LM:158:ASP:OD1 | 13:LM:159:THR:N | 2.44 | 0.50 |
| 18:LR:175:ARG:O | 18:LR:179:GLN:HG2 | 2.11 | 0.50 |
| 45:S2:1220:C:H2' | 45:S2:1221:A:C8 | 2.47 | 0.50 |
| 45:S2:1767:G:OP1 | 45:S2:1770:U:H4' | 2.12 | 0.50 |
| 62:SQ:70:LEU:HB3 | 62:SQ:79:HIS:HB3 | 1.94 | 0.50 |
| 66:SU:93:LEU:HD21 | 66:SU:129:LEU:HD12 | 1.93 | 0.50 |
| 68:SW:23:ARG:O | 68:SW:27:GLU:HG3 | 2.10 | 0.50 |
| 70:SY:91:LEU:HB3 | 70:SY:122:ILE:HG12 | 1.92 | 0.50 |
| 71:SZ:16:VAL:HG12 | 71:SZ:18:ARG:HG2 | 1.94 | 0.50 |
| 76:Se:12:LYS:HB2 | 76:Se:33:ASP:OD2 | 2.10 | 0.50 |
| 1:LA:185:C:H5" | 27:La:122:LYS:HD3 | 1.93 | 0.50 |
| 1:LA:1827:C:H2' | 1:LA:1828:A:C8 | 2.47 | 0.50 |
| 1:LA:2257:C:O2' | 1:LA:2258:U:O4' | 2.28 | 0.50 |
| 1:LA:2369:G:H2' | 1:LA:2370:G:C8 | 2.46 | 0.50 |
| 1:LA:2565:U:O4 | 1:LA:2576:G:O6 | 2.28 | 0.50 |
| 1:LA:3343:G:O2' | 1:LA:3362:A:N6 | 2.44 | 0.50 |
| 3:LC:9:A:H2' | 3:LC:10:A:C8 | 2.45 | 0.50 |
| 4:LD:104:LEU:HD22 | 4:LD:136:ILE:HD11 | 1.93 | 0.50 |
| 7:LG:41:LYS:HB2 | 22:LV:68:THR:O | 2.11 | 0.50 |
| 15:LO:24:LYS:HE3 | 15:LO:64:VAL:HG22 | 1.93 | 0.50 |
| 24:LX:81:GLN:HG2 | 24:LX:83:LYS:H | 1.76 | 0.50 |
| 36:Lj:5:LYS:HD2 | 36:Lj:7:TYR:CE1 | 2.47 | 0.50 |
| 37:Lk:70:ARG:HD3 | 37:Lk:84:LYS:HG3 | 1.94 | 0.50 |
| 45:S2:220:A:N6 | 45:S2:841:U:C4 | 2.80 | 0.50 |
| 45:S2:1182:U:C5 | 45:S2:1185:U:H5" | 2.46 | 0.50 |
| 45:S2:1512:G:H2' | 45:S2:1513:G:C8 | 2.47 | 0.50 |
| 45:S2:1544:U:H5" | 53:SH:132:ARG:NH1 | 2.26 | 0.50 |
| 48:SC:35:ILE:HG22 | 48:SC:37:THR:HG22 | 1.93 | 0.50 |
| 55:SJ:28:SER:HB3 | 55:SJ:112:VAL:HG13 | 1.93 | 0.50 |
| 55:SJ:84:MET:HB2 | 58:SM:52:PHE:CD1 | 2.47 | 0.50 |
| 72:Sa:9:VAL:HG22 | 72:Sa:10:GLU:H | 1.77 | 0.50 |
| 1:LA:2801:A:O2' | 1:LA:2802:A:H2' | 2.12 | 0.50 |
| 1:LA:2941:A:H8 | 1:LA:2941:A:OP2 | 1.95 | 0.50 |
| 3:LC:19:C:H2' | 3:LC:20:U:C6 | 2.47 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 4:LD:20:THR:HG22 | 4:LD:23:ARG:NE | 2.27 | 0.50 |
| 11:LK:37:ASN:HD21 | 11:LK:39:LYS:HG3 | 1.77 | 0.50 |
| 20:LT:139:VAL:O | 20:LT:143:ILE:HD13 | 2.12 | 0.50 |
| 38:Ll:25:ARG:O | 38:Ll:25:ARG:HD3 | 2.11 | 0.50 |
| 45:S2:322:G:O2' | 67:SV:10:LYS:NZ | 2.45 | 0.50 |
| 45:S2:1145:U:H5 | 45:S2:1633:A:N1 | 2.09 | 0.50 |
| 49:SD:42:ALA:HB1 | 49:SD:48:SER:HA | 1.93 | 0.50 |
| 52:SG:32:LYS:HE2 | 52:SG:47:ARG:NH2 | 2.27 | 0.50 |
| 53:SH:48:LYS:HG2 | 53:SH:54:LEU:HD21 | 1.94 | 0.50 |
| 54:SI:6:VAL:HG12 | 54:SI:14:PHE:CE2 | 2.47 | 0.50 |
| 54:SI:77:ASN:HB3 | 54:SI:95:ASP:HB3 | 1.94 | 0.50 |
| 60:SO:294:TRP:CZ3 | 60:SO:301:LEU:HB2 | 2.47 | 0.50 |
| 71:SZ:135:ARG:HH12 | 71:SZ:137:LEU:HD13 | 1.77 | 0.50 |
| 1:LA:1455:U:H1' | 32:Lf:26:LYS:HE3 | 1.94 | 0.50 |
| 1:LA:1895:A:O2' | 1:LA:3053:G:H4' | 2.12 | 0.50 |
| 1:LA:2530:G:H2' | 1:LA:2530:G:N3 | 2.27 | 0.50 |
| 7:LG:120:LYS:CE | 7:LG:123:GLU:HG3 | 2.42 | 0.50 |
| 11:LK:22:SER:OG | 11:LK:39:LYS:NZ | 2.45 | 0.50 |
| 15:LO:47:ASP:OD1 | 15:LO:49:PRO:HD3 | 2.12 | 0.50 |
| 28:Lb:92:PHE:HA | 28:Lb:95:VAL:HG22 | 1.94 | 0.50 |
| 39:Lm:13:GLU:CG | 39:Lm:16:ARG:HH22 | 2.24 | 0.50 |
| 45:S2:837:G:H2' | 45:S2:838:G:H8 | 1.74 | 0.50 |
| 60:SO:184:ASN:ND2 | 60:SO:185:GLN:HG3 | 2.27 | 0.50 |
| 60:SO:209:THR:O | 60:SO:225:LEU:N | 2.45 | 0.50 |
| 61:SP:36:TYR:HD1 | 61:SP:52:LYS:HD3 | 1.77 | 0.50 |
| 62:SQ:194:ASN:ND2 | 62:SQ:212:VAL:HG23 | 2.27 | 0.50 |
| 64:SS:191:ARG:HD3 | 64:SS:218:PHE:CZ | 2.46 | 0.50 |
| 66:SU:36:ALA:HA | 66:SU:39:ARG:HD3 | 1.93 | 0.50 |
| 68:SW:108:ARG:NH2 | 68:SW:145:SER:HB3 | 2.27 | 0.50 |
| 74:Sc:69:ARG:HA | 78:Sg:8:LEU:HA | 1.94 | 0.50 |
| 1:LA:911:C:H42 | 4:LD:3:ARG:HD3 | 1.75 | 0.50 |
| 1:LA:1061:A:O3' | 22:LV:102:ARG:NH1 | 2.45 | 0.50 |
| 1:LA:1229:G:O2' | 1:LA:1230:G:O4' | 2.17 | 0.50 |
| 1:LA:1348:U:H4' | 1:LA:1349:G:H5' | 1.94 | 0.50 |
| 1:LA:3013:U:H2' | 1:LA:3014:U:C6 | 2.47 | 0.50 |
| 3:LC:85:G:OP2 | 27:La:113:LYS:NZ | 2.40 | 0.50 |
| 7:LG:40:HIS:CE1 | 7:LG:42:ALA:HB3 | 2.47 | 0.50 |
| 9:LI:151:ARG:HD2 | 9:LI:207:LEU:HD23 | 1.93 | 0.50 |
| 18:LR:2:ALA:O | 18:LR:18:ARG:NH1 | 2.43 | 0.50 |
| 45:S2:762:A:C8 | 45:S2:789:A:N6 | 2.80 | 0.50 |
| 45:S2:772:G:OP1 | 64:SS:22:LYS:NZ | 2.43 | 0.50 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 45:S2:1680:G:H1' | 45:S2:1721:A:H61 | 1.75 | 0.50 |
| 45:S2:1726:G:H2' | 45:S2:1727:G:O4' | 2.12 | 0.50 |
| 45:S2:1797:A:N6 | 76:Se:84:VAL:HB | 2.27 | 0.50 |
| 53:SH:41:ARG:NE | 54:SI:46:PRO:HD3 | 2.27 | 0.50 |
| 54:SI:14:PHE:CD1 | 54:SI:14:PHE:C | 2.90 | 0.50 |
| 67:SV:149:SER:HB3 | 69:SX:24:LYS:HE3 | 1.93 | 0.50 |
| 1:LA:1509:A:H2' | 1:LA:1510:G:C8 | 2.47 | 0.49 |
| 5:LE:77:THR:HG21 | 5:LE:328:ILE:HG12 | 1.93 | 0.49 |
| 5:LE:111:SER:O | 5:LE:115:LYS:HG2 | 2.12 | 0.49 |
| 5:LE:146:ARG:HA | 5:LE:146:ARG:HE | 1.77 | 0.49 |
| 5:LE:212:ASN:OD1 | 5:LE:353:GLU:OE1 | 2.30 | 0.49 |
| 5:LE:343:TYR:CE2 | 5:LE:345:ASN:HB2 | 2.47 | 0.49 |
| 22:LV:57:TYR:HA | 22:LV:60:LYS:HG3 | 1.92 | 0.49 |
| 45:S2:70:C:H2' | 45:S2:71:A:C8 | 2.46 | 0.49 |
| 52:SG:15:ALA:O | 52:SG:19:ARG:HD3 | 2.12 | 0.49 |
| 55:SJ:36:ASN:OD1 | 55:SJ:37:VAL:N | 2.45 | 0.49 |
| 63:SR:81:MET:HB3 | 63:SR:207:LEU:HD21 | 1.94 | 0.49 |
| 64:SS:181:VAL:HG11 | 64:SS:195:ILE:HD11 | 1.94 | 0.49 |
| 66:SU:15:GLU:HG3 | 66:SU:16:LEU:HD22 | 1.94 | 0.49 |
| 68:SW:63:ASP:OD1 | 68:SW:63:ASP:N | 2.43 | 0.49 |
| 1:LA:876:A:H5" | 1:LA:1890:U:H5" | 1.95 | 0.49 |
| 2:LB:87:G:O2' | 21:LU:119:ARG:NH2 | 2.46 | 0.49 |
| 3:LC:37:A:OP2 | 36:Lj:86:ARG:HD2 | 2.11 | 0.49 |
| 3:LC:55:U:O4 | 3:LC:62:C:N3 | 2.44 | 0.49 |
| 10:LJ:183:LYS:HB2 | 10:LJ:194:THR:HG23 | 1.93 | 0.49 |
| 15:LO:103:ILE:O | 15:LO:107:GLU:HG3 | 2.12 | 0.49 |
| 35:Li:41:ARG:HG2 | 35:Li:56:THR:HG21 | 1.94 | 0.49 |
| 44:Lr:36:ARG:CD | 44:Lr:48:LYS:HD3 | 2.41 | 0.49 |
| 45:S2:424:C:O2' | 45:S2:426:G:OP1 | 2.22 | 0.49 |
| 45:S2:1275:A:N3 | 46:SA:141:LYS:NZ | 2.54 | 0.49 |
| 46:SA:18:TYR:CE2 | 58:SM:49:ASP:HB2 | 2.46 | 0.49 |
| 51:SF:39:VAL:HG13 | 51:SF:41:PRO:HD3 | 1.93 | 0.49 |
| 64:SS:12:LEU:HD21 | 64:SS:22:LYS:HB2 | 1.93 | 0.49 |
| 72:Sa:12:TYR:CG | 72:Sa:12:TYR:O | 2.65 | 0.49 |
| 79:Ta:14:A:H3' | 79:Ta:15:G:H8 | 1.77 | 0.49 |
| 1:LA:447:U:O4 | 1:LA:489:C:O2' | 2.30 | 0.49 |
| 1:LA:664:U:H5' | 6:LF:107:ARG:HA | 1.94 | 0.49 |
| 1:LA:790:U:H5" | 6:LF:112:LYS:HB3 | 1.94 | 0.49 |
| 1:LA:1018:G:O6 | 1:LA:1034:U:C2 | 2.66 | 0.49 |
| 1:LA:1824:U:C2 | 1:LA:1825:G:C8 | 2.99 | 0.49 |
| 1:LA:3150:A:H4' | 5:LE:128:LYS:O | 2.13 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 6:LF:169:LEU:HG | 6:LF:174:ALA:HB3 | 1.94 | 0.49 |
| 8:LH:136:GLU:O | 8:LH:140:VAL:HG23 | 2.11 | 0.49 |
| 11:LK:49:ASN:OD1 | 11:LK:52:LEU:HD12 | 2.13 | 0.49 |
| 17:LQ:74[A]:ARG:HG3 | 17:LQ:145[A]:VAL:HG23 | 1.95 | 0.49 |
| 45:S2:888:U:H2' | 45:S2:889:U:C6 | 2.47 | 0.49 |
| 45:S2:1304:G:OP2 | 45:S2:1305:U:O2' | 2.27 | 0.49 |
| 46:SA:154:ASP:OD1 | 46:SA:155:GLY:N | 2.45 | 0.49 |
| 55:SJ:37:VAL:HA | 55:SJ:40:ASN:HD21 | 1.76 | 0.49 |
| 57:SL:12:VAL:HG12 | 57:SL:30:VAL:HG12 | 1.94 | 0.49 |
| 60:SO:240:VAL:HG22 | 60:SO:256:THR:CG2 | 2.41 | 0.49 |
| 61:SP:93:THR:OG1 | 61:SP:94:GLY:N | 2.46 | 0.49 |
| 63:SR:238:SER:O | 63:SR:242:ILE:HG22 | 2.12 | 0.49 |
| 66:SU:45:SER:C | 66:SU:46:ILE:HD13 | 2.37 | 0.49 |
| 68:SW:30:LEU:HD21 | 68:SW:102:GLU:HG3 | 1.92 | 0.49 |
| 1:LA:428:A:O2' | 34:Lh:88:ASN:ND2 | 2.41 | 0.49 |
| 1:LA:1167:U:H2' | 1:LA:1168:U:O4' | 2.12 | 0.49 |
| 1:LA:2656:A:H4' | 43:Lq:98:LYS:HE3 | 1.94 | 0.49 |
| 1:LA:2680:A:C2 | 13:LM:57:PHE:HB3 | 2.47 | 0.49 |
| 1:LA:2882:U:H2' | 1:LA:2883:U:C6 | 2.47 | 0.49 |
| 1:LA:3207:U:O2' | 1:LA:3208:G:H5' | 2.13 | 0.49 |
| 2:LB:119:U:OP2 | 7:LG:258:LYS:NZ | 2.40 | 0.49 |
| 8:LH:30:LEU:HD22 | 8:LH:34:LEU:HD23 | 1.94 | 0.49 |
| 9:LI:163:LEU:HD13 | 9:LI:169:ILE:HD11 | 1.92 | 0.49 |
| 33:Lg:83:GLU:HA | 33:Lg:86:THR:HG23 | 1.93 | 0.49 |
| 35:Li:80:ARG:HG3 | 35:Li:80:ARG:NH1 | 2.28 | 0.49 |
| 45:S2:823:G:N7 | 45:S2:849:C:O2' | 2.44 | 0.49 |
| 45:S2:1144:U:H2' | 45:S2:1145:U:O2 | 2.13 | 0.49 |
| 45:S2:1669:U:H2' | 45:S2:1670:G:O4' | 2.11 | 0.49 |
| 49:SD:93:ASP:OD1 | 49:SD:93:ASP:N | 2.46 | 0.49 |
| 54:SI:124:ILE:HG12 | 54:SI:129:GLN:HE21 | 1.78 | 0.49 |
| 60:SO:180:ALA:O | 60:SO:188:ILE:HD12 | 2.11 | 0.49 |
| 68:SW:94:ASP:OD1 | 68:SW:95:TYR:N | 2.46 | 0.49 |
| 68:SW:126:ARG:HG2 | 78:Sg:33:ARG:HD3 | 1.95 | 0.49 |
| 72:Sa:17:CYS:HB2 | 72:Sa:56:SER:HB2 | 1.94 | 0.49 |
| 77:Sf:45:THR:OG1 | 77:Sf:82:LYS:NZ | 2.34 | 0.49 |
| 1:LA:68:C:O3' | 16:LP:177:GLY:HA2 | 2.13 | 0.49 |
| 1:LA:952:A:H4' | 1:LA:968:G:N2 | 2.28 | 0.49 |
| 1:LA:2413:A:H2' | 1:LA:2414:G:H8 | 1.77 | 0.49 |
| 1:LA:2696:A:H2' | 1:LA:2697:A:C8 | 2.48 | 0.49 |
| 4:LD:132:ASN:HD22 | 4:LD:151:PRO:HB3 | 1.77 | 0.49 |
| 10:LJ:106:LYS:O | 10:LJ:110:THR:HG23 | 2.13 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 36:Lj:59:ASN:HD21 | 36:Lj:63:ARG:HD2 | 1.78 | 0.49 |
| 37:Lk:66:GLU:HA | 37:Lk:66:GLU:OE2 | 2.13 | 0.49 |
| 45:S2:523:G:H1' | 45:S2:529:A:H61 | 1.77 | 0.49 |
| 45:S2:607:G:H5' | 45:S2:613:G:N2 | 2.27 | 0.49 |
| 45:S2:1488:G:O2' | 45:S2:1494:C:O2 | 2.22 | 0.49 |
| 45:S2:1502:G:N2 | 45:S2:1505:A:OP2 | 2.44 | 0.49 |
| 45:S2:1617:U:H2' | 45:S2:1618:C:C6 | 2.47 | 0.49 |
| 45:S2:1680:G:H1' | 45:S2:1721:A:N6 | 2.27 | 0.49 |
| 63:SR:150:GLN:O | 63:SR:174:ARG:NH2 | 2.45 | 0.49 |
| 64:SS:181:VAL:HA | 64:SS:227:VAL:HA | 1.93 | 0.49 |
| 1:LA:431:U:H2' | 1:LA:432:G:H8 | 1.77 | 0.49 |
| 1:LA:1181:U:H2' | 17:LQ:122[A]:GLN:NE2 | 2.28 | 0.49 |
| 1:LA:2836:C:H5 | 1:LA:2852:C:N4 | 2.08 | 0.49 |
| 1:LA:3110:C:H2' | 1:LA:3111:U:C6 | 2.47 | 0.49 |
| 5:LE:102:LEU:HD21 | 5:LE:155:ALA:HB2 | 1.94 | 0.49 |
| 6:LF:178:LEU:HD21 | 6:LF:225:VAL:HG22 | 1.94 | 0.49 |
| 9:LI:116:PHE:CZ | 9:LI:144:ILE:HG23 | 2.46 | 0.49 |
| 45:S2:953:G:H2' | 45:S2:954:G:H8 | 1.77 | 0.49 |
| 50:SE:28:MET:HG2 | 50:SE:32:ASP:CG | 2.37 | 0.49 |
| 60:SO:21:THR:HG23 | 60:SO:37:SER:HA | 1.95 | 0.49 |
| 65:ST:57:ASP:HB3 | 65:ST:98:ARG:HD2 | 1.94 | 0.49 |
| 70:SY:102:LEU:HD11 | 70:SY:112:LYS:HA | 1.95 | 0.49 |
| 1:LA:532:A:H2' | 1:LA:533:A:H8 | 1.76 | 0.49 |
| 1:LA:651:G:O2' | 1:LA:1435:A:OP1 | 2.31 | 0.49 |
| 1:LA:688:G:N2 | 1:LA:692:A:H2 | 2.08 | 0.49 |
| 1:LA:1211:U:H2' | 1:LA:1212:A:C8 | 2.48 | 0.49 |
| 1:LA:1861:G:O2' | 1:LA:3066:U:OP1 | 2.30 | 0.49 |
| 1:LA:2152:A:H2' | 1:LA:2153:U:H6 | 1.78 | 0.49 |
| 1:LA:2407:C:H2' | 1:LA:2408:U:H6 | 1.78 | 0.49 |
| 1:LA:2536:A:H5' | 62:SQ:224:ASP:OD1 | 2.12 | 0.49 |
| 1:LA:3168:A:H2' | 1:LA:3169:U:C6 | 2.48 | 0.49 |
| 5:LE:148:LEU:CD2 | 5:LE:196:ARG:HE | 2.25 | 0.49 |
| 11:LK:99:ILE:HD12 | 11:LK:117:PHE:HD1 | 1.77 | 0.49 |
| 31:Le:74:ASN:OD1 | 31:Le:74:ASN:N | 2.45 | 0.49 |
| 36:Lj:86:ARG:O | 36:Lj:90:ARG:HG2 | 2.13 | 0.49 |
| 45:S2:819:G:H4' | 45:S2:820:U:O5' | 2.12 | 0.49 |
| 64:SS:136:VAL:HG21 | 64:SS:148:ARG:NH2 | 2.28 | 0.49 |
| 75:Sd:56:SER:OG | 75:Sd:94:TYR:OH | 2.08 | 0.49 |
| 75:Sd:92:VAL:HG11 | 75:Sd:99:LYS:HB3 | 1.93 | 0.49 |
| 1:LA:411:U:H2' | 1:LA:412:G:H8 | 1.77 | 0.49 |
| 1:LA:506:U:H2' | 1:LA:507:U:O4' | 2.12 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:LA:714:G:O2' | 1:LA:753:C:O2' | 2.21 | 0.49 |
| 1:LA:2257:C:O2' | 1:LA:2258:U:O5' | 2.30 | 0.49 |
| 1:LA:2961:G:H2' | 1:LA:2962:U:C6 | 2.48 | 0.49 |
| 1:LA:3050:U:O2' | 25:LY:16:GLY:O | 2.30 | 0.49 |
| 1:LA:3066:U:H2' | 1:LA:3067:C:C6 | 2.48 | 0.49 |
| 3:LC:41:A:H4' | 38:Ll:59:THR:HG23 | 1.94 | 0.49 |
| 6:LF:136:LEU:HD21 | 6:LF:143:GLU:HG3 | 1.95 | 0.49 |
| 9:LI:189:ILE:HG23 | 9:LI:190:THR:H | 1.78 | 0.49 |
| 14:LN:48:PRO:HA | 14:LN:137:GLN:HB3 | 1.95 | 0.49 |
| 36:Lj:74:LYS:HG3 | 36:Lj:75:TYR:CD2 | 2.47 | 0.49 |
| 45:S2:12:U:H2' | 45:S2:13:C:C6 | 2.46 | 0.49 |
| 45:S2:863:A:O5' | 73:Sb:57:ARG:HG2 | 2.12 | 0.49 |
| 61:SP:28:ASN:HA | 61:SP:46:HIS:CE1 | 2.46 | 0.49 |
| 64:SS:73:ASP:C | 64:SS:164:LEU:HD11 | 2.38 | 0.49 |
| 1:LA:1378:U:H2' | 1:LA:1379:G:C8 | 2.48 | 0.49 |
| 1:LA:1463:U:H2' | 1:LA:1464:G:O4' | 2.13 | 0.49 |
| 1:LA:3234:A:N1 | 1:LA:3253:G:C6 | 2.80 | 0.49 |
| 3:LC:121:U:O2 | 3:LC:132:G:N2 | 2.31 | 0.49 |
| 4:LD:80:GLU:HG3 | 44:Lr:66:GLY:HA2 | 1.95 | 0.49 |
| 6:LF:177:ASP:OD1 | 6:LF:180:LYS:HE3 | 2.13 | 0.49 |
| 20:LT:116:ASP:OD1 | 20:LT:118:HIS:N | 2.46 | 0.49 |
| 29:Lc:96:LYS:C | 29:Lc:98:THR:H | 2.21 | 0.49 |
| 45:S2:577:G:C2 | 79:Ta:36:G:H8 | 2.31 | 0.49 |
| 45:S2:1359:C:H3' | 45:S2:1360:A:C8 | 2.48 | 0.49 |
| 50:SE:85:ILE:HG12 | 50:SE:114:HIS:O | 2.12 | 0.49 |
| 60:SO:34:LEU:HD23 | 60:SO:44:SER:HA | 1.94 | 0.49 |
| 60:SO:134:TRP:CD1 | 60:SO:140:CYS:HA | 2.48 | 0.49 |
| 60:SO:220:ILE:N | 60:SO:234:LEU:O | 2.45 | 0.49 |
| 79:Ta:4:G:O2' | 79:Ta:5:G:OP1 | 2.29 | 0.49 |
| 1:LA:1497:C:H2' | 1:LA:1498:A:H8 | 1.78 | 0.49 |
| 1:LA:2106:A:H2' | 1:LA:2107:A:C8 | 2.47 | 0.49 |
| 1:LA:2592:G:H4' | 1:LA:2594:C:C2 | 2.48 | 0.49 |
| 1:LA:2615:G:H2' | 1:LA:2616:C:H6 | 1.78 | 0.49 |
| 1:LA:3315:G:P | 5:LE:116:ARG:HH22 | 2.36 | 0.49 |
| 2:LB:109:G:H5" | 7:LG:279:LYS:HE2 | 1.95 | 0.49 |
| 3:LC:26:U:O2' | 6:LF:51:ALA:O | 2.30 | 0.49 |
| 4:LD:102:LEU:HD12 | 4:LD:102:LEU:H | 1.78 | 0.49 |
| 7:LG:129:TYR:OH | 7:LG:175:HIS:O | 2.22 | 0.49 |
| 24:LX:20:GLY:HA2 | 24:LX:35:TYR:CE2 | 2.48 | 0.49 |
| 45:S2:903:U:H5" | 71:SZ:135:ARG:HH21 | 1.78 | 0.49 |
| 45:S2:1451:C:P | 58:SM:12:ARG:HH22 | 2.36 | 0.49 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 48:SC:2:LEU:HD23 | 48:SC:2:LEU:H | 1.77 | 0.49 |
| 67:SV:37:LYS:HB2 | 67:SV:59:ARG:HG2 | 1.95 | 0.49 |
| 1:LA:118:U:O2 | 1:LA:121:A:H5" | 2.13 | 0.48 |
| 1:LA:3015:G:H2' | 1:LA:3016:A:C8 | 2.48 | 0.48 |
| 6:LF:185:LYS:HG3 | 6:LF:199:TRP:CD1 | 2.47 | 0.48 |
| 8:LH:15:VAL:HG13 | 33:Lg:5:PRO:HD3 | 1.94 | 0.48 |
| 9:LI:52:GLN:HA | 9:LI:52:GLN:HE21 | 1.78 | 0.48 |
| 15:LO:16:GLU:HA | 15:LO:38:ILE:HD11 | 1.95 | 0.48 |
| 15:LO:28:SER:HA | 15:LO:31:LYS:NZ | 2.27 | 0.48 |
| 34:Lh:75:HIS:HB2 | 34:Lh:82:ARG:HG3 | 1.95 | 0.48 |
| 45:S2:1095:U:H4' | 73:Sb:19:LYS:NZ | 2.27 | 0.48 |
| 45:S2:1183:A:C4 | 50:SE:100:LYS:HD2 | 2.48 | 0.48 |
| 45:S2:1241:G:H1' | 50:SE:79:HIS:HB2 | 1.94 | 0.48 |
| 47:SB:208:SER:HB3 | 47:SB:211:ILE:HG22 | 1.95 | 0.48 |
| 52:SG:26:LEU:HD11 | 52:SG:62:GLN:HG3 | 1.95 | 0.48 |
| 62:SQ:157:GLN:C | 62:SQ:159:SER:H | 2.20 | 0.48 |
| 63:SR:78:ASP:HB3 | 63:SR:104:VAL:HG22 | 1.95 | 0.48 |
| 64:SS:64:ILE:HD13 | 75:Sd:17:LEU:HD23 | 1.95 | 0.48 |
| 64:SS:181:VAL:HG12 | 64:SS:227:VAL:HB | 1.95 | 0.48 |
| 67:SV:101:ILE:HD11 | 67:SV:192:TYR:CE1 | 2.48 | 0.48 |
| 67:SV:153:GLU:OE2 | 67:SV:156:VAL:N | 2.46 | 0.48 |
| 75:Sd:58:PHE:CE2 | 75:Sd:72:PHE:HB3 | 2.48 | 0.48 |
| 79:Ta:2:G:O2' | 79:Ta:3:C:OP1 | 2.25 | 0.48 |
| 1:LA:2407:C:H2' | 1:LA:2408:U:C6 | 2.48 | 0.48 |
| 1:LA:2662:G:H2' | 1:LA:2663:G:H8 | 1.77 | 0.48 |
| 1:LA:2703:A:OP2 | 7:LG:23:ARG:NE | 2.43 | 0.48 |
| 2:LB:12:U:OP2 | 2:LB:68:C:O2' | 2.32 | 0.48 |
| 7:LG:205:SER:HB3 | 7:LG:236:LEU:HD11 | 1.94 | 0.48 |
| 13:LM:108:GLU:HA | 13:LM:122:ILE:HG23 | 1.95 | 0.48 |
| 19:LS:157:PRO:HA | 19:LS:186:VAL:HG12 | 1.94 | 0.48 |
| 21:LU:6:GLU:HG2 | 21:LU:64:ILE:HD12 | 1.95 | 0.48 |
| 21:LU:8:GLN:HG3 | 21:LU:8:GLN:O | 2.12 | 0.48 |
| 45:S2:763:G:O2' | 45:S2:764:U:H5' | 2.12 | 0.48 |
| 45:S2:1606:C:H2' | 45:S2:1607:G:C8 | 2.48 | 0.48 |
| 55:SJ:52:LYS:HB3 | 55:SJ:93:LEU:HD13 | 1.96 | 0.48 |
| 56:SK:65:LEU:O | 56:SK:69:LEU:HB2 | 2.13 | 0.48 |
| 63:SR:51:THR:HG23 | 63:SR:52:THR:HG23 | 1.93 | 0.48 |
| 64:SS:182:TYR:N | 64:SS:226:PHE:O | 2.34 | 0.48 |
| 64:SS:220:THR:HG22 | 64:SS:221:ARG:H | 1.78 | 0.48 |
| 66:SU:17:GLU:CG | 66:SU:46:ILE:HG12 | 2.36 | 0.48 |
| 67:SV:194:ARG:HH11 | 67:SV:194:ARG:CB | 2.11 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 75:Sd:26:ASP:N | 75:Sd:26:ASP:OD1 | 2.46 | 0.48 |
| 1:LA:440:A:O2' | 1:LA:489:C:N4 | 2.38 | 0.48 |
| 1:LA:1498:A:H2' | 1:LA:1499:C:C6 | 2.48 | 0.48 |
| 1:LA:2392:C:O2' | 5:LE:266:ARG:NH1 | 2.35 | 0.48 |
| 1:LA:2964:G:N2 | 1:LA:2967:A:OP2 | 2.41 | 0.48 |
| 7:LG:34:LYS:O | 7:LG:38:THR:OG1 | 2.13 | 0.48 |
| 7:LG:272:TYR:HD1 | 7:LG:272:TYR:O | 1.96 | 0.48 |
| 15:LO:45:LEU:HD12 | 21:LU:72:VAL:HG23 | 1.95 | 0.48 |
| 16:LP:177:GLY:O | 16:LP:184:LYS:HE2 | 2.13 | 0.48 |
| 45:S2:116:U:H2' | 45:S2:117:U:C6 | 2.47 | 0.48 |
| 45:S2:1484:G:H2' | 45:S2:1485:C:C6 | 2.48 | 0.48 |
| 45:S2:1545:A:OP2 | 53:SH:134:ARG:HD2 | 2.13 | 0.48 |
| 61:SP:42:PRO:O | 61:SP:43:ASP:HB3 | 2.14 | 0.48 |
| 62:SQ:133:TYR:CE2 | 62:SQ:181:LEU:HD22 | 2.48 | 0.48 |
| 64:SS:185:GLY:N | 64:SS:189:LEU:HD13 | 2.28 | 0.48 |
| 74:Sc:57:LEU:HD11 | 74:Sc:73:ARG:HD3 | 1.95 | 0.48 |
| 1:LA:114:A:H2' | 1:LA:115:A:O4' | 2.13 | 0.48 |
| 1:LA:598:A:H4' | 6:LF:325:LEU:HD13 | 1.96 | 0.48 |
| 1:LA:2367:A:H2' | 1:LA:2368:A:C8 | 2.49 | 0.48 |
| 1:LA:2947:G:C2 | 5:LE:250:ALA:HB1 | 2.48 | 0.48 |
| 1:LA:3343:G:H2' | 1:LA:3344:A:C2 | 2.48 | 0.48 |
| 1:LA:3358:U:H2' | 1:LA:3359:A:H8 | 1.76 | 0.48 |
| 3:LC:78:G:H2' | 3:LC:79:A:H8 | 1.78 | 0.48 |
| 17:LQ:77[A]:SER:HB2 | 17:LQ:104[A]:VAL:HG22 | 1.95 | 0.48 |
| 22:LV:106:LEU:HA | 22:LV:109:VAL:HG12 | 1.95 | 0.48 |
| 45:S2:86:A:HO2' | 45:S2:147:A:HO2' | 1.52 | 0.48 |
| 45:S2:1509:C:H2' | 45:S2:1510:U:C6 | 2.49 | 0.48 |
| 46:SA:34:TYR:CE1 | 46:SA:37:VAL:HG13 | 2.48 | 0.48 |
| 47:SB:41:LYS:HE2 | 47:SB:69:PHE:CZ | 2.48 | 0.48 |
| 51:SF:101:SER:O | 51:SF:104:GLU:HG3 | 2.13 | 0.48 |
| 53:SH:17:LEU:HD23 | 53:SH:18:LEU:HG | 1.95 | 0.48 |
| 55:SJ:40:ASN:HA | 55:SJ:43:LYS:HG2 | 1.96 | 0.48 |
| 58:SM:6:VAL:HA | 58:SM:9:SER:HB3 | 1.96 | 0.48 |
| 64:SS:191:ARG:HE | 64:SS:245:LYS:HD2 | 1.78 | 0.48 |
| 69:SX:33:ARG:NH2 | 69:SX:53:TYR:O | 2.46 | 0.48 |
| 71:SZ:92:LYS:HB2 | 71:SZ:92:LYS:HE3 | 1.67 | 0.48 |
| 73:Sb:105:THR:HG23 | 73:Sb:126:LEU:HD11 | 1.95 | 0.48 |
| 9:LI:130:ILE:HD12 | 9:LI:134:VAL:HG11 | 1.95 | 0.48 |
| 12:LL:76:MET:HE3 | 12:LL:148:VAL:HA | 1.96 | 0.48 |
| 16:LP:183:THR:HG22 | 16:LP:187:ARG:HG3 | 1.95 | 0.48 |
| 39:Lm:8:ILE:HD13 | 39:Lm:54:LEU:HD21 | 1.96 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 45:S2:702:G:N7 | 45:S2:732:G:N1 | 2.60 | 0.48 |
| 45:S2:759:U:H2' | 45:S2:760:A:H8 | 1.76 | 0.48 |
| 45:S2:1170:G:C2 | 45:S2:1171:A:C8 | 3.01 | 0.48 |
| 46:SA:158:ILE:CD1 | 46:SA:163:PRO:HB2 | 2.44 | 0.48 |
| 48:SC:44:LYS:HA | 48:SC:44:LYS:HD2 | 1.70 | 0.48 |
| 60:SO:43:ILE:HG23 | 60:SO:45:TRP:NE1 | 2.27 | 0.48 |
| 60:SO:131:ILE:CG2 | 60:SO:144:LEU:HB2 | 2.42 | 0.48 |
| 63:SR:76:LEU:HA | 63:SR:106:ASP:HA | 1.95 | 0.48 |
| 64:SS:72:VAL:N | 64:SS:75:LYS:O | 2.45 | 0.48 |
| 68:SW:123:HIS:HD2 | 78:Sg:33:ARG:HH11 | 1.61 | 0.48 |
| 70:SY:54:LEU:HD22 | 70:SY:60:VAL:HG21 | 1.95 | 0.48 |
| 1:LA:29:C:H4' | 1:LA:62:A:H4' | 1.95 | 0.48 |
| 1:LA:1153:A:O2' | 1:LA:1154:A:O5' | 2.25 | 0.48 |
| 1:LA:1480:G:O2' | 1:LA:1871:U:O4 | 2.21 | 0.48 |
| 1:LA:1765:U:C5' | 20:LT:43:LYS:NZ | 2.76 | 0.48 |
| 1:LA:1926:C:H5' | 44:Lr:8:VAL:HG13 | 1.95 | 0.48 |
| 1:LA:2585:G:N3 | 1:LA:2585:G:H2' | 2.28 | 0.48 |
| 1:LA:2727:A:OP2 | 1:LA:2728:G:N2 | 2.42 | 0.48 |
| 1:LA:3204:C:H2' | 1:LA:3205:G:C8 | 2.49 | 0.48 |
| 2:LB:11:A:N1 | 2:LB:67:G:O2' | 2.44 | 0.48 |
| 4:LD:10:LYS:HA | 4:LD:16:PHE:CD2 | 2.48 | 0.48 |
| 11:LK:129:ARG:HD3 | 11:LK:157:ASN:HD21 | 1.79 | 0.48 |
| 14:LN:180:ARG:O | 14:LN:184:GLU:HG2 | 2.13 | 0.48 |
| 18:LR:119:VAL:HA | 18:LR:145:HIS:O | 2.12 | 0.48 |
| 30:Ld:47:LEU:HA | 30:Ld:50:THR:HG22 | 1.95 | 0.48 |
| 34:Lh:37:THR:HG23 | 34:Lh:40:ASP:H | 1.79 | 0.48 |
| 45:S2:153:G:N2 | 65:ST:56:ASN:OD1 | 2.46 | 0.48 |
| 45:S2:990:C:H2' | 45:S2:991:G:O4' | 2.13 | 0.48 |
| 45:S2:1089:U:O2' | 45:S2:1093:A:N1 | 2.39 | 0.48 |
| 45:S2:1564:U:H2' | 45:S2:1565:C:C6 | 2.48 | 0.48 |
| 50:SE:116:LEU:HD12 | 50:SE:116:LEU:O | 2.13 | 0.48 |
| 61:SP:83:GLN:HG2 | 61:SP:99:ALA:HB1 | 1.95 | 0.48 |
| 61:SP:172:LEU:C | 61:SP:176:LEU:HD12 | 2.38 | 0.48 |
| 66:SU:133:THR:HG21 | 66:SU:159:VAL:HG13 | 1.96 | 0.48 |
| 1:LA:3:U:OP2 | 26:LZ:22:LYS:N | 2.46 | 0.48 |
| 1:LA:73:C:C5 | 14:LN:66:ASN:OD1 | 2.66 | 0.48 |
| 1:LA:1352:A:H4' | 1:LA:1353:U:H5' | 1.94 | 0.48 |
| 1:LA:1616:U:H2' | 1:LA:1617:G:C8 | 2.48 | 0.48 |
| 1:LA:2406:C:H2' | 1:LA:2407:C:H6 | 1.77 | 0.48 |
| 1:LA:2449:A:H2' | 1:LA:2450:G:C8 | 2.49 | 0.48 |
| 5:LE:148:LEU:HD23 | 5:LE:196:ARG:HE | 1.77 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 23:LW:16:THR:HB | 23:LW:102:GLU:HA | 1.96 | 0.48 |
| 26:LZ:62:VAL:HA | 26:LZ:87:SER:HB3 | 1.96 | 0.48 |
| 45:S2:1175:U:H2' | 45:S2:1176:G:C8 | 2.49 | 0.48 |
| 46:SA:76:ARG:O | 46:SA:76:ARG:NH1 | 2.36 | 0.48 |
| 49:SD:42:ALA:HB3 | 49:SD:122:VAL:HB | 1.95 | 0.48 |
| 51:SF:25:GLY:C | 51:SF:26:LYS:HE2 | 2.38 | 0.48 |
| 54:SI:72:GLY:H | 54:SI:75:LYS:HG3 | 1.79 | 0.48 |
| 60:SO:86:ASP:OD1 | 60:SO:88:THR:OG1 | 2.26 | 0.48 |
| 66:SU:72:LYS:HG2 | 66:SU:73:VAL:HG13 | 1.94 | 0.48 |
| 76:Se:69:ASN:HD21 | 76:Se:71:LEU:HD21 | 1.79 | 0.48 |
| 78:Sg:51:ASN:OD1 | 78:Sg:51:ASN:N | 2.47 | 0.48 |
| 1:LA:8:C:H2' | 1:LA:9:U:C6 | 2.48 | 0.48 |
| 1:LA:419:G:N2 | 3:LC:4:C:O2 | 2.31 | 0.48 |
| 1:LA:1901:A:O3' | 1:LA:2918:G:H5' | 2.14 | 0.48 |
| 1:LA:2553:U:O2' | 35:Li:91:ARG:NE | 2.46 | 0.48 |
| 1:LA:2557:A:OP1 | 4:LD:69:TYR:OH | 2.16 | 0.48 |
| 6:LF:178:LEU:HD11 | 6:LF:222:VAL:HG22 | 1.96 | 0.48 |
| 39:Lm:8:ILE:HD12 | 39:Lm:65:LEU:HD21 | 1.95 | 0.48 |
| 58:SM:43:PHE:CD1 | 58:SM:43:PHE:C | 2.91 | 0.48 |
| 60:SO:179:LYS:HG2 | 60:SO:188:ILE:CD1 | 2.43 | 0.48 |
| 69:SX:121:ASP:HA | 69:SX:144:ALA:HB3 | 1.95 | 0.48 |
| 80:Tb:67:C:C2 | 80:Tb:68:C:H5 | 2.32 | 0.48 |
| 1:LA:765:C:N4 | 14:LN:176:GLU:HG2 | 2.27 | 0.48 |
| 1:LA:943:U:H3' | 29:Lc:13:GLY:HA2 | 1.96 | 0.48 |
| 1:LA:993:G:N3 | 1:LA:2637:A:H2' | 2.29 | 0.48 |
| 1:LA:1612:A:H5" | 39:Lm:51:LEU:HD22 | 1.95 | 0.48 |
| 1:LA:2529:A:C2 | 1:LA:2530:G:H1' | 2.49 | 0.48 |
| 32:Lf:53:PRO:O | 32:Lf:57:GLN:HG3 | 2.13 | 0.48 |
| 45:S2:592:A:O2' | 45:S2:596:C:OP1 | 2.30 | 0.48 |
| 45:S2:788:A:C6 | 64:SS:19:LEU:HD13 | 2.49 | 0.48 |
| 46:SA:27:ARG:HG2 | 48:SC:58:GLN:HE22 | 1.79 | 0.48 |
| 47:SB:117:THR:HG21 | 47:SB:194:LEU:HD23 | 1.96 | 0.48 |
| 54:SI:39:THR:OG1 | 54:SI:43:ASN:ND2 | 2.46 | 0.48 |
| 54:SI:101:ASN:O | 54:SI:104:VAL:HG12 | 2.14 | 0.48 |
| 56:SK:42:LEU:HB2 | 56:SK:46:LYS:HB3 | 1.96 | 0.48 |
| 64:SS:107:GLY:HA2 | 64:SS:189:LEU:HG | 1.95 | 0.48 |
| 65:ST:27:PHE:CE1 | 65:ST:52:ILE:HD11 | 2.48 | 0.48 |
| 69:SX:55:ASP:HB2 | 69:SX:82:ARG:NH2 | 2.29 | 0.48 |
| 69:SX:116:ARG:HH12 | 69:SX:118:GLN:HG2 | 1.79 | 0.48 |
| 71:SZ:25:ASP:N | 71:SZ:55:SER:HB3 | 2.28 | 0.48 |
| 1:LA:595:G:N1 | 1:LA:609:G:H5" | 2.28 | 0.48 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:LA:874:U:OP2 | 1:LA:1907:C:O2' | 2.23 | 0.48 |
| 1:LA:1801:U:H2' | 1:LA:1802:C:C6 | 2.49 | 0.48 |
| 1:LA:2113:A:O2' | 1:LA:2116:G:N7 | 2.42 | 0.48 |
| 1:LA:2180:G:H2' | 1:LA:2181:C:C6 | 2.49 | 0.48 |
| 1:LA:2376:G:H2' | 1:LA:2377:G:C8 | 2.49 | 0.48 |
| 11:LK:23:ARG:NH1 | 11:LK:43:VAL:H | 2.12 | 0.48 |
| 16:LP:140:LYS:O | 16:LP:144:ARG:HG3 | 2.14 | 0.48 |
| 45:S2:789:A:H2 | 64:SS:248:ILE:HG21 | 1.79 | 0.48 |
| 45:S2:802:G:H21 | 73:Sb:107:SER:HB3 | 1.79 | 0.48 |
| 45:S2:1079:U:H2' | 45:S2:1080:U:C6 | 2.49 | 0.48 |
| 45:S2:1753:A:H2' | 45:S2:1754:A:O4' | 2.14 | 0.48 |
| 46:SA:75:LYS:HZ3 | 48:SC:21:VAL:HA | 1.78 | 0.48 |
| 50:SE:44:ARG:NH2 | 50:SE:82:ASN:O | 2.47 | 0.48 |
| 60:SO:34:LEU:HD12 | 60:SO:73:LEU:HD21 | 1.81 | 0.48 |
| 60:SO:109:ASP:O | 60:SO:126:SER:OG | 2.32 | 0.48 |
| 68:SW:136:VAL:HA | 68:SW:156:ILE:HD13 | 1.96 | 0.48 |
| 70:SY:94:LYS:HG2 | 70:SY:118:ILE:HD13 | 1.96 | 0.48 |
| 1:LA:19:U:H2' | 1:LA:20:A:H8 | 1.78 | 0.47 |
| 1:LA:307:A:H2' | 1:LA:308:A:C8 | 2.49 | 0.47 |
| 1:LA:748:U:H5" | 30:Ld:31:SER:HA | 1.96 | 0.47 |
| 1:LA:1010:G:N2 | 12:LL:193:ASP:OD2 | 2.45 | 0.47 |
| 1:LA:1049:C:H2' | 1:LA:1050:U:C6 | 2.49 | 0.47 |
| 1:LA:1157:G:H2' | 1:LA:1158:A:O4' | 2.14 | 0.47 |
| 1:LA:2112:U:H4' | 1:LA:2113:A:H5' | 1.95 | 0.47 |
| 1:LA:2137:U:OP2 | 1:LA:2142:A:N6 | 2.37 | 0.47 |
| 1:LA:2208:A:O2' | 1:LA:2210:G:N7 | 2.47 | 0.47 |
| 1:LA:3238:G:H2' | 1:LA:3239:G:O4' | 2.14 | 0.47 |
| 6:LF:191:LYS:HG2 | 6:LF:194:TYR:OH | 2.14 | 0.47 |
| 27:La:27:ARG:HG2 | 27:La:78:PHE:CE1 | 2.48 | 0.47 |
| 37:Lk:57:LEU:HD21 | 37:Lk:73:ALA:HB2 | 1.96 | 0.47 |
| 43:Lq:56:PRO:O | 80:Tb:77:A:H2' | 2.13 | 0.47 |
| 45:S2:1359:C:H3' | 45:S2:1360:A:H8 | 1.78 | 0.47 |
| 46:SA:215:GLU:OE1 | 46:SA:215:GLU:N | 2.45 | 0.47 |
| 49:SD:89:ILE:HD11 | 49:SD:140:PHE:HB2 | 1.95 | 0.47 |
| 57:SL:25:VAL:HA | 57:SL:44:VAL:O | 2.14 | 0.47 |
| 58:SM:19:ARG:NH1 | 58:SM:32:ARG:HB2 | 2.29 | 0.47 |
| 60:SO:152:SER:N | 60:SO:173:GLY:HA2 | 2.29 | 0.47 |
| 61:SP:56:LYS:NZ | 72:Sa:66:ASP:OD1 | 2.31 | 0.47 |
| 62:SQ:127:VAL:HG11 | 62:SQ:173:THR:HA | 1.95 | 0.47 |
| 68:SW:58:ASP:O | 68:SW:61:THR:HG22 | 2.14 | 0.47 |
| 1:LA:1128:U:H2' | 1:LA:1129:A:O4' | 2.14 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:LA:1460:A:H2' | 1:LA:1461:A:C8 | 2.49 | 0.47 |
| 1:LA:2150:G:O2' | 1:LA:2189:U:OP1 | 2.28 | 0.47 |
| 1:LA:2204:C:H2' | 1:LA:2205:U:H5" | 1.96 | 0.47 |
| 1:LA:2267:C:H2' | 1:LA:2268:U:C6 | 2.49 | 0.47 |
| 4:LD:132:ASN:O | 4:LD:169:ILE:HG13 | 2.13 | 0.47 |
| 5:LE:167:ARG:HH12 | 5:LE:168:LYS:HG3 | 1.79 | 0.47 |
| 8:LH:51:ARG:NH1 | 8:LH:161:ALA:O | 2.46 | 0.47 |
| 14:LN:158:ALA:HA | 29:Lc:97:GLU:HA | 1.95 | 0.47 |
| 29:Lc:22:ILE:HD12 | 29:Lc:22:ILE:N | 2.29 | 0.47 |
| 29:Lc:75:LEU:HB3 | 29:Lc:118:ILE:HG23 | 1.96 | 0.47 |
| 42:Lp:11:ARG:NH2 | 45:S2:1775:U:OP1 | 2.47 | 0.47 |
| 45:S2:88:U:H4' | 45:S2:171:A:H5' | 1.96 | 0.47 |
| 45:S2:577:G:H1' | 79:Ta:36:G:O2' | 2.14 | 0.47 |
| 47:SB:95:ASN:OD1 | 47:SB:107:LYS:HE2 | 2.14 | 0.47 |
| 53:SH:41:ARG:HB3 | 53:SH:85:PHE:HZ | 1.79 | 0.47 |
| 60:SO:91:LEU:HD11 | 60:SO:103:PHE:CE2 | 2.49 | 0.47 |
| 61:SP:2:SER:HB3 | 72:Sa:78:LEU:HA | 1.96 | 0.47 |
| 61:SP:139:VAL:O | 61:SP:140:ASN:HB2 | 2.15 | 0.47 |
| 64:SS:211:LYS:HE2 | 64:SS:211:LYS:HB2 | 1.51 | 0.47 |
| 1:LA:250:U:C4 | 1:LA:253:A:H1' | 2.50 | 0.47 |
| 1:LA:937:G:N2 | 1:LA:961:C:OP1 | 2.47 | 0.47 |
| 1:LA:2597:U:H2' | 1:LA:2598:G:H8 | 1.79 | 0.47 |
| 4:LD:112:ILE:HG13 | 44:Lr:79:VAL:HG22 | 1.96 | 0.47 |
| 6:LF:125:ALA:HB1 | 6:LF:238:LEU:HB3 | 1.97 | 0.47 |
| 31:Le:55:GLU:HB2 | 35:Li:94:LEU:HD11 | 1.96 | 0.47 |
| 33:Lg:32:TRP:HH2 | 33:Lg:52:GLN:HG2 | 1.79 | 0.47 |
| 45:S2:333:A:OP2 | 67:SV:31:ARG:NH2 | 2.44 | 0.47 |
| 45:S2:832:U:H2' | 45:S2:833:U:C6 | 2.49 | 0.47 |
| 45:S2:1173:C:H2' | 45:S2:1174:C:H6 | 1.80 | 0.47 |
| 45:S2:1226:A:O2' | 45:S2:1256:A:N1 | 2.47 | 0.47 |
| 45:S2:1351:G:O6 | 45:S2:1375:A:N6 | 2.47 | 0.47 |
| 45:S2:1461:C:OP1 | 53:SH:144:ARG:NH2 | 2.47 | 0.47 |
| 49:SD:45:LEU:HD23 | 49:SD:45:LEU:H | 1.79 | 0.47 |
| 49:SD:74:LEU:HD11 | 59:SN:106:TYR:HB2 | 1.96 | 0.47 |
| 53:SH:86:LEU:HD22 | 53:SH:99:HIS:HB2 | 1.96 | 0.47 |
| 55:SJ:58:LEU:HD21 | 55:SJ:90:TYR:CE2 | 2.48 | 0.47 |
| 60:SO:12:THR:HG23 | 60:SO:309:VAL:HG13 | 1.97 | 0.47 |
| 60:SO:231:MET:H | 60:SO:231:MET:HG3 | 1.56 | 0.47 |
| 63:SR:126:ARG:O | 63:SR:130:ILE:HD13 | 2.14 | 0.47 |
| 73:Sb:14:ILE:HG23 | 73:Sb:65:LEU:HD21 | 1.96 | 0.47 |
| 1:LA:428:A:H2' | 1:LA:429:U:C6 | 2.49 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:LA:673:U:H2' | 1:LA:674:G:H8 | 1.79 | 0.47 |
| 1:LA:674:G:O6 | 19:LS:56:LYS:NZ | 2.47 | 0.47 |
| 1:LA:1492:G:N7 | 40:Ln:2:ALA:N | 2.62 | 0.47 |
| 1:LA:1497:C:H2' | 1:LA:1498:A:C8 | 2.49 | 0.47 |
| 1:LA:3038:U:H2' | 1:LA:3039:C:O4' | 2.14 | 0.47 |
| 1:LA:3217:C:C5 | 1:LA:3220:G:H1' | 2.49 | 0.47 |
| 1:LA:3304:U:OP2 | 1:LA:3377:G:C4 | 2.68 | 0.47 |
| 2:LB:39:C:H4' | 13:LM:44:THR:HG23 | 1.96 | 0.47 |
| 7:LG:236:LEU:O | 7:LG:239:ILE:HG12 | 2.15 | 0.47 |
| 9:LI:184:LEU:HD12 | 9:LI:198:ALA:HB1 | 1.96 | 0.47 |
| 12:LL:206:LEU:O | 12:LL:210:ILE:HG12 | 2.14 | 0.47 |
| 29:Lc:125:VAL:HG11 | 29:Lc:138:ILE:HD13 | 1.97 | 0.47 |
| 31:Le:77:LEU:HD21 | 31:Le:90:VAL:HG12 | 1.94 | 0.47 |
| 45:S2:896:U:H2' | 45:S2:897:C:C6 | 2.50 | 0.47 |
| 45:S2:1229:G:H21 | 45:S2:1256:A:H62 | 1.63 | 0.47 |
| 45:S2:1288:G:OP1 | 45:S2:1624:C:O2' | 2.32 | 0.47 |
| 45:S2:1552:U:O2' | 45:S2:1597:A:N3 | 2.33 | 0.47 |
| 45:S2:1563:C:OP1 | 54:SI:84:LYS:HE2 | 2.15 | 0.47 |
| 45:S2:1575:G:H2' | 45:S2:1576:A:C8 | 2.50 | 0.47 |
| 47:SB:162:VAL:CG1 | 57:SL:54:LEU:HD11 | 2.31 | 0.47 |
| 52:SG:106:THR:O | 52:SG:110:VAL:HG23 | 2.14 | 0.47 |
| 60:SO:216:LYS:HA | 60:SO:239:GLU:HG2 | 1.96 | 0.47 |
| 62:SQ:143:THR:HG21 | 62:SQ:156:ALA:HB2 | 1.97 | 0.47 |
| 66:SU:60:ILE:HB | 66:SU:92:PHE:HD1 | 1.79 | 0.47 |
| 79:Ta:22:A:O2' | 79:Ta:47:G:O6 | 2.32 | 0.47 |
| 1:LA:377:A:H1' | 1:LA:392:G:N2 | 2.28 | 0.47 |
| 1:LA:1487:G:H1' | 35:Li:6:THR:CG2 | 2.44 | 0.47 |
| 1:LA:2660:G:OP1 | 1:LA:2750:U:O2' | 2.31 | 0.47 |
| 1:LA:3033:A:H2' | 1:LA:3034:C:O2 | 2.13 | 0.47 |
| 1:LA:3180:A:H5' | 17:LQ:116[A]:LYS:HB2 | 1.96 | 0.47 |
| 15:LO:127:LYS:NZ | 17:LQ:186[A]:ALA:HA | 2.30 | 0.47 |
| 21:LU:92:LYS:NZ | 21:LU:109:ASP:OD2 | 2.48 | 0.47 |
| 22:LV:93:VAL:HA | 22:LV:96:ILE:HB | 1.95 | 0.47 |
| 23:LW:101:ASN:HA | 23:LW:103:TYR:CZ | 2.49 | 0.47 |
| 45:S2:416:A:H3' | 45:S2:417:A:H8 | 1.79 | 0.47 |
| 45:S2:505:A:H2' | 45:S2:505:A:N3 | 2.29 | 0.47 |
| 45:S2:691:C:H2' | 45:S2:692:C:C6 | 2.49 | 0.47 |
| 45:S2:919:A:H2' | 45:S2:920:U:C6 | 2.50 | 0.47 |
| 45:S2:1029:U:OP2 | 76:Se:12:LYS:NZ | 2.46 | 0.47 |
| 45:S2:1480:G:H2' | 45:S2:1481:C:N1 | 2.30 | 0.47 |
| 46:SA:40:ARG:HG3 | 55:SJ:110:PRO:HB3 | 1.95 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 52:SG:7:LYS:HE3 | 52:SG:11:ARG:HB3 | 1.95 | 0.47 |
| 1:LA:991:G:N2 | 22:LV:59:GLY:O | 2.39 | 0.47 |
| 1:LA:1570:U:H3 | 1:LA:1573:G:H21 | 1.61 | 0.47 |
| 1:LA:2160:G:H2' | 1:LA:2161:G:H8 | 1.79 | 0.47 |
| 1:LA:2880:U:H1' | 5:LE:250:ALA:HB3 | 1.97 | 0.47 |
| 1:LA:3163:A:N6 | 1:LA:3288:G:O6 | 2.48 | 0.47 |
| 3:LC:3:A:H4' | 18:LR:61:ARG:HD3 | 1.96 | 0.47 |
| 3:LC:155:A:O2' | 3:LC:156:U:OP1 | 2.27 | 0.47 |
| 11:LK:23:ARG:NE | 11:LK:39:LYS:HA | 2.28 | 0.47 |
| 15:LO:4:ASP:OD1 | 15:LO:4:ASP:N | 2.45 | 0.47 |
| 23:LW:50:LEU:H | 23:LW:50:LEU:HD12 | 1.80 | 0.47 |
| 28:Lb:89:VAL:HG22 | 28:Lb:92:PHE:HE1 | 1.80 | 0.47 |
| 45:S2:247:A:H4' | 69:SX:37:ASN:OD1 | 2.14 | 0.47 |
| 45:S2:707:A:H8 | 45:S2:731:C:H42 | 1.61 | 0.47 |
| 45:S2:1319:A:H2' | 45:S2:1320:U:O4' | 2.14 | 0.47 |
| 45:S2:1483:A:H2 | 45:S2:1607:G:H1' | 1.79 | 0.47 |
| 45:S2:1510:U:H2' | 45:S2:1511:U:C6 | 2.49 | 0.47 |
| 45:S2:1555:A:OP2 | 50:SE:47:ARG:NH2 | 2.47 | 0.47 |
| 50:SE:108:ARG:HG2 | 50:SE:111:MET:HE3 | 1.97 | 0.47 |
| 57:SL:18:ARG:HA | 57:SL:26:THR:HA | 1.96 | 0.47 |
| 63:SR:186:LYS:HE2 | 63:SR:186:LYS:HB2 | 1.59 | 0.47 |
| 64:SS:139:VAL:HG13 | 64:SS:150:PRO:HG3 | 1.97 | 0.47 |
| 67:SV:79:ALA:N | 67:SV:103:GLN:O | 2.41 | 0.47 |
| 1:LA:63:A:H5" | 16:LP:174:ILE:HG21 | 1.96 | 0.47 |
| 1:LA:269:G:OP1 | 16:LP:47:LYS:NZ | 2.46 | 0.47 |
| 1:LA:275:U:H2' | 1:LA:276:U:C6 | 2.50 | 0.47 |
| 1:LA:421:G:O6 | 1:LA:2383:C:O2' | 2.24 | 0.47 |
| 1:LA:565:U:C2 | 1:LA:566:G:C8 | 3.02 | 0.47 |
| 1:LA:640:U:OP1 | 29:Lc:21:ARG:NH2 | 2.46 | 0.47 |
| 1:LA:839:C:H4' | 1:LA:1724:U:O2' | 2.15 | 0.47 |
| 1:LA:1511:U:H5" | 1:LA:1512:U:H5 | 1.79 | 0.47 |
| 1:LA:1909:A:H2' | 1:LA:1910:A:C8 | 2.50 | 0.47 |
| 1:LA:2276:G:OP1 | 42:Lp:16:LYS:NZ | 2.47 | 0.47 |
| 1:LA:2282:U:O2 | 1:LA:2310:U:H4' | 2.15 | 0.47 |
| 1:LA:2662:G:H2' | 1:LA:2663:G:C8 | 2.50 | 0.47 |
| 1:LA:2727:A:C2 | 29:Lc:43:ILE:HG23 | 2.50 | 0.47 |
| 1:LA:3107:U:H2' | 1:LA:3108:G:H8 | 1.76 | 0.47 |
| 1:LA:3302:U:N3 | 1:LA:3303:G:O6 | 2.48 | 0.47 |
| 1:LA:3344:A:H3' | 1:LA:3345:G:O4' | 2.14 | 0.47 |
| 1:LA:3395:G:N2 | 1:LA:3396:U:O4 | 2.41 | 0.47 |
| 2:LB:71:G:H2' | 2:LB:72:A:C8 | 2.50 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 3:LC:40:A:H2' | 3:LC:41:A:C8 | 2.50 | 0.47 |
| 4:LD:206:PRO:HD3 | 4:LD:213:GLY:CA | 2.45 | 0.47 |
| 7:LG:254:LYS:HD2 | 7:LG:254:LYS:HA | 1.66 | 0.47 |
| 9:LI:89:ILE:HD12 | 9:LI:214:TRP:CH2 | 2.50 | 0.47 |
| 15:LO:120:VAL:O | 15:LO:124:ARG:HB2 | 2.14 | 0.47 |
| 16:LP:56:LYS:HB2 | 16:LP:56:LYS:HE3 | 1.67 | 0.47 |
| 22:LV:50:LYS:O | 22:LV:92:ARG:HD2 | 2.15 | 0.47 |
| 23:LW:99:LYS:CD | 23:LW:102:GLU:OE1 | 2.60 | 0.47 |
| 32:Lf:74:ARG:HH12 | 32:Lf:109:VAL:CG1 | 2.27 | 0.47 |
| 45:S2:126:A:OP1 | 65:ST:201:GLN:HG3 | 2.14 | 0.47 |
| 45:S2:237:C:O2' | 45:S2:238:U:O4' | 2.27 | 0.47 |
| 45:S2:284:G:O6 | 65:ST:188:ARG:NH2 | 2.47 | 0.47 |
| 45:S2:329:G:H2' | 45:S2:330:G:C8 | 2.49 | 0.47 |
| 45:S2:541:A:O2' | 45:S2:542:A:OP1 | 2.28 | 0.47 |
| 45:S2:699:U:O2 | 45:S2:700:C:N4 | 2.48 | 0.47 |
| 45:S2:780:A:H2 | 75:Sd:10:ARG:HE | 1.62 | 0.47 |
| 45:S2:906:A:H2' | 45:S2:907:A:C8 | 2.50 | 0.47 |
| 45:S2:923:A:H2' | 45:S2:924:A:C8 | 2.50 | 0.47 |
| 45:S2:1160:A:H2' | 45:S2:1161:C:H6 | 1.78 | 0.47 |
| 45:S2:1346:A:N7 | 45:S2:1371:A:N6 | 2.63 | 0.47 |
| 45:S2:1389:C:O2 | 45:S2:1390:U:H4' | 2.15 | 0.47 |
| 45:S2:1457:C:O2' | 45:S2:1458:G:H5' | 2.14 | 0.47 |
| 45:S2:1584:G:O2' | 45:S2:1585:U:P | 2.73 | 0.47 |
| 46:SA:166:ASP:OD1 | 46:SA:167:PHE:N | 2.46 | 0.47 |
| 52:SG:3:ARG:HD2 | 52:SG:5:ARG:NH1 | 2.30 | 0.47 |
| 61:SP:157:ASP:OD1 | 72:Sa:60:ARG:HD2 | 2.15 | 0.47 |
| 66:SU:64:VAL:HG22 | 66:SU:64:VAL:O | 2.14 | 0.47 |
| 67:SV:67:TRP:HB3 | 67:SV:72:ILE:HG22 | 1.97 | 0.47 |
| 69:SX:16:GLN:NE2 | 69:SX:34:TRP:O | 2.48 | 0.47 |
| 69:SX:98:ASN:OD1 | 69:SX:98:ASN:O | 2.33 | 0.47 |
| 72:Sa:38:LYS:O | 72:Sa:46:ILE:HD12 | 2.15 | 0.47 |
| 74:Sc:70:LYS:HD3 | 74:Sc:93:LEU:HD21 | 1.97 | 0.47 |
| 75:Sd:22:GLN:HG3 | 75:Sd:74:LEU:HD21 | 1.97 | 0.47 |
| 1:LA:874:U:H5" | 1:LA:2950:G:OP1 | 2.13 | 0.47 |
| 1:LA:915:A:H8 | 1:LA:2136:C:O2' | 1.98 | 0.47 |
| 4:LD:188:LYS:O | 4:LD:192:LYS:HG3 | 2.15 | 0.47 |
| 10:LJ:191:ASN:O | 10:LJ:191:ASN:ND2 | 2.48 | 0.47 |
| 29:Lc:114:GLY:O | 29:Lc:137:LYS:NZ | 2.48 | 0.47 |
| 45:S2:122:U:H2' | 45:S2:123:G:C8 | 2.50 | 0.47 |
| 45:S2:296:U:H2' | 45:S2:297:U:C6 | 2.49 | 0.47 |
| 45:S2:445:A:C2 | 45:S2:446:A:C8 | 3.02 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 45:S2:1590:G:H2' | 45:S2:1591:C:C6 | 2.50 | 0.47 |
| 48:SC:14:TYR:OH | 48:SC:34:GLU:OE1 | 2.25 | 0.47 |
| 60:SO:131:ILE:HD11 | 60:SO:154:VAL:HG11 | 1.97 | 0.47 |
| 60:SO:148:ASN:OD1 | 60:SO:149:ASP:N | 2.48 | 0.47 |
| 75:Sd:112:LYS:HB3 | 75:Sd:112:LYS:HE3 | 1.54 | 0.47 |
| 1:LA:356:C:O2' | 1:LA:357:A:H8 | 1.96 | 0.47 |
| 1:LA:3127:A:H2' | 1:LA:3128:G:O4' | 2.15 | 0.47 |
| 6:LF:317:PRO:C | 6:LF:319:LYS:N | 2.71 | 0.47 |
| 10:LJ:82:LEU:HB3 | 10:LJ:86:THR:HG23 | 1.96 | 0.47 |
| 14:LN:165:SER:C | 14:LN:167:PHE:H | 2.23 | 0.47 |
| 23:LW:76:LEU:O | 23:LW:80:THR:OG1 | 2.28 | 0.47 |
| 29:Lc:134:ALA:O | 29:Lc:138:ILE:HG13 | 2.15 | 0.47 |
| 32:Lf:102:LYS:HE3 | 32:Lf:102:LYS:HB2 | 1.75 | 0.47 |
| 45:S2:55:A:H3' | 45:S2:403:G:H22 | 1.80 | 0.47 |
| 45:S2:331:A:N7 | 67:SV:172:ARG:NH2 | 2.62 | 0.47 |
| 45:S2:747:C:H4' | 73:Sb:80:ASN:ND2 | 2.30 | 0.47 |
| 45:S2:922:G:H2' | 45:S2:923:A:C8 | 2.50 | 0.47 |
| 49:SD:125:ASN:C | 49:SD:127:GLY:H | 2.23 | 0.47 |
| 56:SK:65:LEU:HD12 | 56:SK:69:LEU:HD12 | 1.96 | 0.47 |
| 61:SP:142:PRO:HB3 | 72:Sa:34:ILE:HD13 | 1.96 | 0.47 |
| 63:SR:35:TRP:CE2 | 63:SR:37:PRO:HB3 | 2.50 | 0.47 |
| 63:SR:143:TYR:CD1 | 63:SR:147:ASN:HA | 2.50 | 0.47 |
| 64:SS:59:ARG:HH22 | 75:Sd:87:PRO:HG3 | 1.80 | 0.47 |
| 78:Sg:7:SER:HA | 78:Sg:10:ARG:NH1 | 2.29 | 0.47 |
| 80:Tb:50:G:P | 80:Tb:50:G:H8 | 2.38 | 0.47 |
| 1:LA:561:C:H2' | 1:LA:562:C:H6 | 1.79 | 0.47 |
| 1:LA:965:A:H2 | 29:Lc:43:ILE:HD12 | 1.80 | 0.47 |
| 1:LA:1584:U:H2' | 1:LA:1585:C:C6 | 2.49 | 0.47 |
| 1:LA:2427:U:H2' | 1:LA:2428:U:C6 | 2.50 | 0.47 |
| 1:LA:3198:U:O4 | 11:LK:26:LYS:HB2 | 2.15 | 0.47 |
| 1:LA:3322:A:H2' | 1:LA:3323:A:H8 | 1.80 | 0.47 |
| 4:LD:57:PRO:HB3 | 44:Lr:54:ILE:CD1 | 2.44 | 0.47 |
| 12:LL:38:LYS:HD3 | 12:LL:41:ALA:HB2 | 1.97 | 0.47 |
| 24:LX:123:ALA:HB1 | 24:LX:130:ALA:HB2 | 1.96 | 0.47 |
| 45:S2:902:G:H2' | 45:S2:903:U:C6 | 2.50 | 0.47 |
| 45:S2:998:A:N6 | 45:S2:1004:U:OP2 | 2.48 | 0.47 |
| 45:S2:1590:G:H2' | 45:S2:1591:C:H6 | 1.80 | 0.47 |
| 48:SC:61:TRP:C | 48:SC:62:GLN:HG2 | 2.40 | 0.47 |
| 58:SM:36:LEU:HD23 | 58:SM:36:LEU:H | 1.79 | 0.47 |
| 59:SN:145:HIS:C | 59:SN:145:HIS:ND1 | 2.73 | 0.47 |
| 66:SU:44:LYS:HD2 | 66:SU:44:LYS:HA | 1.75 | 0.47 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 68:SW:123:HIS:O | 68:SW:127:VAL:HG22 | 2.14 | 0.47 |
| 69:SX:75:VAL:HA | 69:SX:86:ILE:HA | 1.97 | 0.47 |
| 1:LA:177:U:H3' | 1:LA:178:U:C6 | 2.49 | 0.46 |
| 1:LA:792:G:H2' | 1:LA:793:C:H6 | 1.79 | 0.46 |
| 1:LA:1120:A:H2' | 1:LA:1121:U:C6 | 2.50 | 0.46 |
| 1:LA:1621:A:H2' | 1:LA:1622:U:C6 | 2.50 | 0.46 |
| 2:LB:5:G:OP1 | 13:LM:143:ARG:NH2 | 2.38 | 0.46 |
| 3:LC:2:A:H2' | 3:LC:2:A:N3 | 2.30 | 0.46 |
| 9:LI:120:THR:HB | 22:LV:132:PRO:HB2 | 1.97 | 0.46 |
| 11:LK:107:ASP:OD1 | 11:LK:107:ASP:N | 2.47 | 0.46 |
| 12:LL:43:VAL:HG21 | 12:LL:197:VAL:HG23 | 1.96 | 0.46 |
| 14:LN:47:ALA:HB3 | 14:LN:48:PRO:HD3 | 1.96 | 0.46 |
| 17:LQ:110[A]:PRO:N | 17:LQ:111[A]:PRO:HD2 | 2.30 | 0.46 |
| 37:Lk:90:MET:O | 37:Lk:94:ILE:HG23 | 2.14 | 0.46 |
| 38:Ll:25:ARG:NH1 | 40:Ln:50:ASN:O | 2.48 | 0.46 |
| 44:Lr:3:LYS:HE2 | 44:Lr:3:LYS:HB3 | 1.59 | 0.46 |
| 45:S2:533:U:H2' | 45:S2:534:A:H5" | 1.96 | 0.46 |
| 55:SJ:45:ALA:HB3 | 55:SJ:52:LYS:HZ3 | 1.81 | 0.46 |
| 62:SQ:205:PHE:CD2 | 62:SQ:206:PRO:HD2 | 2.50 | 0.46 |
| 63:SR:39:THR:HG22 | 63:SR:41:LEU:H | 1.80 | 0.46 |
| 65:ST:13:GLN:HE21 | 65:ST:13:GLN:HB2 | 1.51 | 0.46 |
| 66:SU:129:LEU:HD11 | 66:SU:172:VAL:CG2 | 2.45 | 0.46 |
| 68:SW:88:GLU:OE1 | 68:SW:88:GLU:N | 2.47 | 0.46 |
| 70:SY:56:ASP:OD2 | 77:Sf:50:ALA:O | 2.33 | 0.46 |
| 80:Tb:5:G:H2' | 80:Tb:6:G:H8 | 1.80 | 0.46 |
| 1:LA:294:U:H4' | 37:Lk:77:LEU:HD23 | 1.96 | 0.46 |
| 1:LA:298:U:O2' | 1:LA:299:G:N7 | 2.48 | 0.46 |
| 2:LB:45:A:H2' | 2:LB:46:A:C8 | 2.51 | 0.46 |
| 2:LB:74:C:H2' | 2:LB:75:G:C8 | 2.50 | 0.46 |
| 5:LE:304:THR:CG2 | 5:LE:305:ILE:N | 2.77 | 0.46 |
| 6:LF:106:TRP:HZ2 | 14:LN:19:GLN:HG2 | 1.80 | 0.46 |
| 7:LG:153:THR:HG23 | 7:LG:160:PHE:HZ | 1.80 | 0.46 |
| 18:LR:107:LEU:HD23 | 18:LR:112:LEU:HD21 | 1.96 | 0.46 |
| 33:Lg:4:LEU:O | 33:Lg:6:HIS:ND1 | 2.47 | 0.46 |
| 45:S2:948:G:H2' | 45:S2:949:C:C6 | 2.50 | 0.46 |
| 45:S2:1091:A:H4' | 45:S2:1092:A:O4' | 2.15 | 0.46 |
| 45:S2:1164:G:H2' | 45:S2:1165:G:C8 | 2.50 | 0.46 |
| 60:SO:206:PRO:HG2 | 60:SO:247:PRO:HA | 1.96 | 0.46 |
| 69:SX:109:VAL:HG21 | 69:SX:125:VAL:HG11 | 1.96 | 0.46 |
| 75:Sd:113:ASN:O | 75:Sd:116:LYS:HG2 | 2.15 | 0.46 |
| 1:LA:552:G:H2' | 1:LA:553:U:C6 | 2.51 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:LA:1431:G:N7 | 29:Lc:9:ARG:NH2 | 2.61 | 0.46 |
| 1:LA:2656:A:OP2 | 43:Lq:97:LYS:HG3 | 2.16 | 0.46 |
| 1:LA:2822:U:H4' | 1:LA:2942:C:OP2 | 2.15 | 0.46 |
| 1:LA:3084:C:O2' | 1:LA:3332:U:OP1 | 2.33 | 0.46 |
| 4:LD:52:SER:HB3 | 4:LD:191:LEU:HD22 | 1.97 | 0.46 |
| 5:LE:298:PHE:CD1 | 5:LE:298:PHE:C | 2.93 | 0.46 |
| 6:LF:269:SER:C | 6:LF:271:LYS:H | 2.23 | 0.46 |
| 22:LV:132:PRO:O | 22:LV:134:GLN:NE2 | 2.46 | 0.46 |
| 27:La:63:LYS:HZ1 | 27:La:97:ILE:HG13 | 1.81 | 0.46 |
| 32:Lf:54:GLU:HB2 | 32:Lf:95:PRO:HG3 | 1.96 | 0.46 |
| 45:S2:119:A:H1' | 45:S2:397:A:C5 | 2.50 | 0.46 |
| 50:SE:76:VAL:O | 50:SE:94:VAL:HA | 2.16 | 0.46 |
| 54:SI:124:ILE:HG21 | 54:SI:129:GLN:HE21 | 1.80 | 0.46 |
| 63:SR:56:ILE:HD13 | 63:SR:61:LEU:HD12 | 1.97 | 0.46 |
| 63:SR:235:LEU:HG | 72:Sa:33:GLN:HE22 | 1.81 | 0.46 |
| 65:ST:214:LYS:O | 65:ST:218:GLU:OE1 | 2.34 | 0.46 |
| 73:Sb:53:ILE:HD13 | 77:Sf:24:LEU:HD22 | 1.96 | 0.46 |
| 1:LA:158:G:H2' | 1:LA:159:A:H8 | 1.80 | 0.46 |
| 1:LA:595:G:OP1 | 9:LI:33:ARG:NH2 | 2.46 | 0.46 |
| 1:LA:863:C:H2' | 1:LA:864:G:O4' | 2.16 | 0.46 |
| 1:LA:911:C:N4 | 4:LD:3:ARG:HD3 | 2.31 | 0.46 |
| 1:LA:3119:U:H4' | 41:Lo:104:PRO:HG2 | 1.96 | 0.46 |
| 9:LI:168:ILE:HG13 | 9:LI:169:ILE:N | 2.30 | 0.46 |
| 10:LJ:54:GLU:O | 10:LJ:58:VAL:HG23 | 2.16 | 0.46 |
| 11:LK:44:THR:HG22 | 11:LK:56:ALA:HB3 | 1.97 | 0.46 |
| 28:Lb:5:LEU:HD12 | 31:Le:35:ARG:HG3 | 1.98 | 0.46 |
| 35:Li:29:ILE:HD11 | 35:Li:31:ARG:NE | 2.30 | 0.46 |
| 43:Lq:6:LYS:HD3 | 43:Lq:93:LEU:HD12 | 1.98 | 0.46 |
| 45:S2:365:G:H5' | 45:S2:757:A:H61 | 1.80 | 0.46 |
| 45:S2:1179:G:O6 | 53:SH:139:LYS:HE3 | 2.16 | 0.46 |
| 45:S2:1273:G:O2' | 45:S2:1430:U:OP2 | 2.23 | 0.46 |
| 45:S2:1619:C:H2' | 45:S2:1620:C:H6 | 1.80 | 0.46 |
| 49:SD:42:ALA:O | 49:SD:48:SER:OG | 2.33 | 0.46 |
| 50:SE:80:MET:HE2 | 50:SE:83:MET:HB2 | 1.96 | 0.46 |
| 53:SH:143:ARG:O | 53:SH:144:ARG:CZ | 2.63 | 0.46 |
| 62:SQ:89:ASP:HB3 | 62:SQ:90:GLU:OE2 | 2.15 | 0.46 |
| 77:Sf:34:ASP:HB3 | 77:Sf:43:ILE:HG23 | 1.97 | 0.46 |
| 1:LA:710:A:H2' | 1:LA:711:A:C8 | 2.50 | 0.46 |
| 1:LA:1498:A:H2' | 1:LA:1499:C:H6 | 1.81 | 0.46 |
| 1:LA:2330:C:H2' | 1:LA:2331:C:H6 | 1.80 | 0.46 |
| 1:LA:2537:U:H4' | 62:SQ:226:GLY:C | 2.40 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:LA:3084:C:H2' | 1:LA:3085:G:O4' | 2.15 | 0.46 |
| 1:LA:3369:G:OP2 | 25:LY:61:LYS:HE3 | 2.14 | 0.46 |
| 2:LB:64:A:OP1 | 12:LL:206:LEU:HB2 | 2.15 | 0.46 |
| 4:LD:42:ARG:HD3 | 4:LD:87:PHE:CD1 | 2.51 | 0.46 |
| 11:LK:36:LYS:NZ | 11:LK:74:LEU:HD12 | 2.31 | 0.46 |
| 25:LY:1:MET:HE2 | 25:LY:15:PRO:CG | 2.46 | 0.46 |
| 32:Lf:31:ARG:O | 32:Lf:35:GLU:HG2 | 2.16 | 0.46 |
| 36:Lj:85:THR:HB | 36:Lj:88:LEU:HB2 | 1.98 | 0.46 |
| 45:S2:29:U:H2' | 45:S2:30:G:C8 | 2.49 | 0.46 |
| 45:S2:97:C:H2' | 45:S2:98:U:C6 | 2.51 | 0.46 |
| 45:S2:461:G:H2' | 45:S2:462:G:H8 | 1.80 | 0.46 |
| 60:SO:34:LEU:CD2 | 60:SO:44:SER:CB | 2.94 | 0.46 |
| 63:SR:41:LEU:HG | 63:SR:68:ILE:CD1 | 2.45 | 0.46 |
| 64:SS:122:LYS:HE2 | 64:SS:143:ASP:OD2 | 2.16 | 0.46 |
| 68:SW:51:LYS:HE3 | 68:SW:51:LYS:HB3 | 1.83 | 0.46 |
| 73:Sb:31:SER:H | 73:Sb:34:ILE:HD12 | 1.80 | 0.46 |
| 73:Sb:57:ARG:NH2 | 77:Sf:26:GLN:OE1 | 2.49 | 0.46 |
| 75:Sd:58:PHE:CE1 | 75:Sd:74:LEU:HD12 | 2.50 | 0.46 |
| 80:Tb:53:G:O2' | 80:Tb:54:G:H8 | 1.99 | 0.46 |
| 1:LA:1295:G:OP1 | 21:LU:84:ARG:HG3 | 2.15 | 0.46 |
| 1:LA:2416:U:H2' | 1:LA:2417:U:C6 | 2.51 | 0.46 |
| 1:LA:2508:U:H2' | 1:LA:2509:U:C6 | 2.51 | 0.46 |
| 1:LA:3206:C:O2 | 15:LO:13:ARG:NH1 | 2.39 | 0.46 |
| 1:LA:3228:C:H4' | 1:LA:3229:G:O5' | 2.14 | 0.46 |
| 12:LL:181:TYR:CD1 | 12:LL:181:TYR:C | 2.93 | 0.46 |
| 13:LM:106:ILE:HD13 | 13:LM:112:LEU:HD21 | 1.98 | 0.46 |
| 24:LX:104:ASN:OD1 | 24:LX:108:GLU:N | 2.47 | 0.46 |
| 28:Lb:16:GLY:O | 35:Li:74:ARG:HG3 | 2.15 | 0.46 |
| 45:S2:251:A:H2 | 64:SS:131:LEU:HD22 | 1.80 | 0.46 |
| 45:S2:800:U:H2' | 45:S2:801:G:H8 | 1.79 | 0.46 |
| 45:S2:1041:G:OP1 | 61:SP:32:HIS:ND1 | 2.45 | 0.46 |
| 45:S2:1220:C:H2' | 45:S2:1221:A:H8 | 1.81 | 0.46 |
| 45:S2:1564:U:H2' | 45:S2:1565:C:H6 | 1.81 | 0.46 |
| 45:S2:1674:C:H2' | 45:S2:1675:C:C6 | 2.51 | 0.46 |
| 45:S2:1755:A:H5" | 74:Sc:63:GLN:HG2 | 1.98 | 0.46 |
| 48:SC:25:LYS:HB3 | 48:SC:62:GLN:HB2 | 1.98 | 0.46 |
| 49:SD:27:ALA:O | 49:SD:31:VAL:HG12 | 2.16 | 0.46 |
| 52:SG:50:ILE:O | 52:SG:54:THR:OG1 | 2.32 | 0.46 |
| 54:SI:22:LEU:HD22 | 54:SI:28:LEU:HD11 | 1.98 | 0.46 |
| 62:SQ:157:GLN:O | 62:SQ:159:SER:N | 2.49 | 0.46 |
| 65:ST:50:PHE:HB3 | 65:ST:111:LEU:HD22 | 1.96 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:LA:17:G:H4' | 36:Lj:75:TYR:CE1 | 2.50 | 0.46 |
| 1:LA:375:A:H1' | 27:La:87:LYS:HE3 | 1.98 | 0.46 |
| 1:LA:748:U:H2' | 1:LA:749:C:C6 | 2.51 | 0.46 |
| 1:LA:3296:A:H2' | 1:LA:3297:U:C6 | 2.51 | 0.46 |
| 6:LF:139:GLY:O | 6:LF:180:LYS:HE2 | 2.16 | 0.46 |
| 6:LF:157:GLU:HG2 | 6:LF:209:TYR:HB2 | 1.98 | 0.46 |
| 11:LK:20:ILE:HB | 15:LO:7:VAL:HG13 | 1.98 | 0.46 |
| 15:LO:120:VAL:HG23 | 17:LQ:197[A]:LEU:HD23 | 1.97 | 0.46 |
| 27:La:54:ASP:O | 27:La:70:ILE:HG12 | 2.15 | 0.46 |
| 45:S2:255:U:H2' | 45:S2:256:A:C8 | 2.50 | 0.46 |
| 45:S2:448:C:H2' | 45:S2:449:C:C6 | 2.51 | 0.46 |
| 45:S2:478:A:P | 78:Sg:37:ARG:HH21 | 2.39 | 0.46 |
| 45:S2:1639:C:H2' | 45:S2:1640:C:O4' | 2.15 | 0.46 |
| 56:SK:43:ASP:OD1 | 56:SK:43:ASP:N | 2.48 | 0.46 |
| 60:SO:90:ARG:HH21 | 60:SO:102:ARG:NE | 2.13 | 0.46 |
| 64:SS:211:LYS:HG3 | 64:SS:211:LYS:O | 2.16 | 0.46 |
| 66:SU:43:PHE:HD1 | 66:SU:43:PHE:H | 1.63 | 0.46 |
| 67:SV:72:ILE:HG13 | 67:SV:73:SER:N | 2.31 | 0.46 |
| 1:LA:399:A:O2' | 1:LA:403:C:O2' | 2.30 | 0.46 |
| 1:LA:1237:G:H1 | 1:LA:1251:A:N6 | 2.11 | 0.46 |
| 1:LA:1914:G:O2' | 20:LT:82:LYS:O | 2.33 | 0.46 |
| 1:LA:1927:G:C8 | 44:Lr:16:VAL:HG12 | 2.51 | 0.46 |
| 1:LA:2767:U:O2' | 43:Lq:30:ALA:O | 2.22 | 0.46 |
| 9:LI:232:ARG:HB2 | 9:LI:235:PHE:HB2 | 1.96 | 0.46 |
| 12:LL:176:LEU:HD21 | 12:LL:199:PHE:HE2 | 1.80 | 0.46 |
| 14:LN:189:GLU:HA | 14:LN:192:GLU:HG2 | 1.97 | 0.46 |
| 17:LQ:110[A]:PRO:HA | 17:LQ:113[A]:ASP:OD1 | 2.15 | 0.46 |
| 24:LX:74:MET:HE2 | 24:LX:74:MET:HB3 | 1.72 | 0.46 |
| 24:LX:125:LEU:HD12 | 24:LX:125:LEU:HA | 1.76 | 0.46 |
| 29:Lc:112:ILE:HB | 29:Lc:130:VAL:HG23 | 1.98 | 0.46 |
| 30:Ld:14:ARG:O | 30:Ld:18:ARG:HG2 | 2.16 | 0.46 |
| 39:Lm:61:LYS:HA | 39:Lm:64:LYS:CD | 2.43 | 0.46 |
| 45:S2:886:U:C2 | 45:S2:887:A:C8 | 3.04 | 0.46 |
| 53:SH:104:ASN:HA | 53:SH:107:SER:HB2 | 1.98 | 0.46 |
| 61:SP:53:THR:OG1 | 61:SP:161:PRO:O | 2.25 | 0.46 |
| 62:SQ:33:LYS:NZ | 62:SQ:95:ASN:HA | 2.31 | 0.46 |
| 62:SQ:149:GLN:NE2 | 62:SQ:151:LYS:O | 2.48 | 0.46 |
| 72:Sa:25:LYS:HB2 | 72:Sa:28:ASP:HB2 | 1.97 | 0.46 |
| 1:LA:567:G:H2' | 1:LA:568:G:C8 | 2.51 | 0.46 |
| 1:LA:697:A:H2' | 1:LA:698:U:C6 | 2.51 | 0.46 |
| 1:LA:745:C:H2' | 1:LA:746:A:H8 | 1.80 | 0.46 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:LA:972:A:H2' | 1:LA:973:A:C8 | 2.51 | 0.46 |
| 1:LA:2292:U:O2' | 45:S2:1656:U:O2' | 2.26 | 0.46 |
| 1:LA:2892:A:N3 | 1:LA:3129:A:O2' | 2.42 | 0.46 |
| 1:LA:3023:U:H2' | 1:LA:3024:A:H8 | 1.80 | 0.46 |
| 1:LA:3066:U:H2' | 1:LA:3067:C:H6 | 1.80 | 0.46 |
| 1:LA:3118:C:H4' | 41:Lo:106:ARG:NH2 | 2.30 | 0.46 |
| 1:LA:3190:C:OP1 | 17:LQ:172[A]:ARG:NH1 | 2.49 | 0.46 |
| 1:LA:3373:U:OP2 | 32:Lf:102:LYS:NZ | 2.33 | 0.46 |
| 4:LD:147:ARG:HG3 | 4:LD:157:VAL:HG22 | 1.98 | 0.46 |
| 6:LF:3:ARG:HG3 | 6:LF:22:LEU:HD12 | 1.97 | 0.46 |
| 14:LN:113:VAL:O | 14:LN:117:LYS:HG3 | 2.16 | 0.46 |
| 15:LO:32:LEU:HB3 | 15:LO:85:TRP:HH2 | 1.81 | 0.46 |
| 16:LP:94:TYR:CZ | 16:LP:96:ARG:HB2 | 2.51 | 0.46 |
| 19:LS:83:VAL:O | 19:LS:103:ALA:HA | 2.15 | 0.46 |
| 25:LY:33:ASN:ND2 | 25:LY:35:LYS:H | 2.14 | 0.46 |
| 45:S2:332:U:P | 67:SV:56:ARG:HH21 | 2.39 | 0.46 |
| 45:S2:1273:G:H4' | 45:S2:1274:C:H3' | 1.98 | 0.46 |
| 45:S2:1381:U:H2' | 45:S2:1382:A:C8 | 2.50 | 0.46 |
| 47:SB:114:ILE:HA | 47:SB:117:THR:HG22 | 1.97 | 0.46 |
| 53:SH:80:LYS:HD3 | 53:SH:80:LYS:N | 2.31 | 0.46 |
| 60:SO:25:THR:N | 60:SO:73:LEU:CD1 | 2.79 | 0.46 |
| 70:SY:94:LYS:HB2 | 70:SY:94:LYS:HE3 | 1.64 | 0.46 |
| 71:SZ:29:HIS:CB | 71:SZ:41:ARG:HA | 2.46 | 0.46 |
| 77:Sf:59:CYS:SG | 77:Sf:60:SER:N | 2.89 | 0.46 |
| 1:LA:987:U:H2' | 1:LA:988:U:C6 | 2.51 | 0.46 |
| 1:LA:1029:G:H5' | 1:LA:1030:A:H8 | 1.81 | 0.46 |
| 1:LA:1143:A:H5' | 1:LA:1368:U:H1' | 1.97 | 0.46 |
| 1:LA:1230:G:H2' | 1:LA:1231:A:H8 | 1.81 | 0.46 |
| 1:LA:2419:A:H2' | 1:LA:2420:C:H6 | 1.81 | 0.46 |
| 1:LA:2953:U:H2' | 1:LA:2954:U:H2' | 1.98 | 0.46 |
| 18:LR:46:LYS:HE2 | 18:LR:46:LYS:N | 2.30 | 0.46 |
| 22:LV:26:HIS:O | 22:LV:29:THR:HG22 | 2.16 | 0.46 |
| 45:S2:255:U:H2' | 45:S2:256:A:H8 | 1.81 | 0.46 |
| 45:S2:1232:U:O4 | 45:S2:1253:U:N3 | 2.36 | 0.46 |
| 51:SF:125:GLU:OE1 | 51:SF:135:ARG:NH2 | 2.47 | 0.46 |
| 60:SO:270:LEU:HD21 | 60:SO:273:ASP:HB3 | 1.98 | 0.46 |
| 63:SR:42:GLY:HA2 | 63:SR:68:ILE:HD11 | 1.98 | 0.46 |
| 63:SR:102:VAL:HG21 | 63:SR:129:ILE:HA | 1.98 | 0.46 |
| 67:SV:110:ARG:O | 67:SV:114:GLU:HG2 | 2.16 | 0.46 |
| 74:Sc:17:VAL:HG22 | 74:Sc:20:ARG:HH22 | 1.81 | 0.46 |
| 1:LA:1034:U:H2' | 1:LA:1035:G:O4' | 2.16 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:LA:2860:U:H1' | 1:LA:2938:G:H4' | 1.97 | 0.45 |
| 5:LE:83:PRO:O | 5:LE:165:GLN:HG3 | 2.16 | 0.45 |
| 5:LE:115:LYS:HA | 5:LE:118:PHE:CD2 | 2.51 | 0.45 |
| 6:LF:23:PRO:HD2 | 6:LF:26:PHE:CE2 | 2.51 | 0.45 |
| 8:LH:94:GLU:OE1 | 8:LH:94:GLU:O | 2.33 | 0.45 |
| 12:LL:184:LYS:HG2 | 12:LL:189:GLU:HB2 | 1.98 | 0.45 |
| 17:LQ:108[A]:ILE:HD12 | 17:LQ:108[A]:ILE:N | 2.31 | 0.45 |
| 18:LR:27:LYS:HD3 | 18:LR:63:PHE:HB3 | 1.98 | 0.45 |
| 21:LU:40:ARG:HA | 21:LU:40:ARG:HD2 | 1.71 | 0.45 |
| 32:Lf:9:THR:HG22 | 32:Lf:109:VAL:CG1 | 2.46 | 0.45 |
| 35:Li:105:VAL:O | 35:Li:108:GLN:HG3 | 2.16 | 0.45 |
| 42:Lp:2:ARG:HB3 | 42:Lp:5:TRP:CD1 | 2.51 | 0.45 |
| 45:S2:58:U:O2' | 45:S2:451:A:N3 | 2.48 | 0.45 |
| 45:S2:576:G:H4' | 45:S2:580:A:C4 | 2.51 | 0.45 |
| 45:S2:968:U:H2' | 45:S2:969:C:O4' | 2.15 | 0.45 |
| 45:S2:1066:C:O3' | 62:SQ:149:GLN:HG3 | 2.15 | 0.45 |
| 45:S2:1494:C:H2' | 45:S2:1495:C:C6 | 2.51 | 0.45 |
| 46:SA:74:GLN:CD | 46:SA:81:PRO:HA | 2.41 | 0.45 |
| 47:SB:75:GLY:HA3 | 47:SB:77:TYR:CZ | 2.51 | 0.45 |
| 55:SJ:41:ILE:HD12 | 55:SJ:103:ILE:HG23 | 1.98 | 0.45 |
| 61:SP:191:ARG:O | 61:SP:191:ARG:NH1 | 2.47 | 0.45 |
| 72:Sa:4:ASP:N | 72:Sa:4:ASP:OD1 | 2.47 | 0.45 |
| 1:LA:594:U:H2' | 1:LA:609:G:O6 | 2.16 | 0.45 |
| 1:LA:1194:G:H2' | 1:LA:1195:A:C8 | 2.51 | 0.45 |
| 1:LA:1495:U:H5 | 1:LA:1835:A:N1 | 2.15 | 0.45 |
| 1:LA:1624:G:H2' | 1:LA:1625:A:H8 | 1.81 | 0.45 |
| 1:LA:2273:G:O2' | 1:LA:2311:G:O6 | 2.28 | 0.45 |
| 1:LA:2883:U:H2' | 1:LA:2884:C:C6 | 2.51 | 0.45 |
| 1:LA:3280:U:O2' | 1:LA:3281:U:H6 | 1.99 | 0.45 |
| 3:LC:135:G:OP1 | 26:LZ:49:LYS:NZ | 2.40 | 0.45 |
| 7:LG:40:HIS:CE1 | 22:LV:69:LYS:HA | 2.51 | 0.45 |
| 16:LP:94:TYR:CE2 | 16:LP:96:ARG:HB2 | 2.51 | 0.45 |
| 31:Le:81:VAL:HG12 | 31:Le:83:LYS:HG2 | 1.98 | 0.45 |
| 39:Lm:15:THR:HA | 39:Lm:20:VAL:HG21 | 1.98 | 0.45 |
| 45:S2:885:G:N2 | 71:SZ:123:SER:O | 2.49 | 0.45 |
| 45:S2:1171:A:O2' | 45:S2:1570:A:N3 | 2.44 | 0.45 |
| 45:S2:1175:U:H2' | 45:S2:1176:G:H8 | 1.81 | 0.45 |
| 45:S2:1665:U:O2 | 45:S2:1736:G:O6 | 2.33 | 0.45 |
| 46:SA:143:ARG:HD3 | 46:SA:143:ARG:HA | 1.76 | 0.45 |
| 57:SL:44:VAL:HG11 | 57:SL:48:VAL:HB | 1.97 | 0.45 |
| 61:SP:191:ARG:HH11 | 61:SP:191:ARG:C | 2.24 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 66:SU:139:ARG:HB3 | 73:Sb:51:GLU:OE2 | 2.16 | 0.45 |
| 76:Se:69:ASN:C | 76:Se:69:ASN:OD1 | 2.58 | 0.45 |
| 1:LA:431:U:H2' | 1:LA:432:G:C8 | 2.51 | 0.45 |
| 1:LA:631:U:H4' | 1:LA:3172:A:N6 | 2.31 | 0.45 |
| 1:LA:1362:G:H2' | 1:LA:1363:A:C8 | 2.52 | 0.45 |
| 1:LA:1621:A:H2' | 1:LA:1622:U:H6 | 1.80 | 0.45 |
| 1:LA:1719:G:H2' | 1:LA:1720:U:O4' | 2.16 | 0.45 |
| 1:LA:2758:A:HO2' | 1:LA:2759:U:P | 2.39 | 0.45 |
| 5:LE:165:GLN:HB3 | 5:LE:168:LYS:HG3 | 1.97 | 0.45 |
| 7:LG:108:ARG:NE | 7:LG:253:PHE:HB2 | 2.32 | 0.45 |
| 7:LG:214:ASP:OD1 | 7:LG:215:ASP:N | 2.49 | 0.45 |
| 12:LL:86:HIS:HB3 | 12:LL:139:ARG:HG3 | 1.98 | 0.45 |
| 13:LM:90:GLN:NE2 | 13:LM:170:ASP:OD2 | 2.40 | 0.45 |
| 21:LU:33:ASN:OD1 | 21:LU:36:ILE:HG13 | 2.16 | 0.45 |
| 21:LU:110:MET:HE3 | 21:LU:110:MET:HB3 | 1.83 | 0.45 |
| 22:LV:106:LEU:O | 22:LV:109:VAL:HG12 | 2.16 | 0.45 |
| 31:Le:36:GLN:HB2 | 31:Le:38:LYS:HG2 | 1.99 | 0.45 |
| 38:Ll:27:PHE:HA | 38:Ll:34:CYS:HA | 1.98 | 0.45 |
| 38:Ll:39:TYR:CD1 | 38:Ll:40:PRO:HA | 2.51 | 0.45 |
| 45:S2:220:A:OP2 | 45:S2:831:U:O2' | 2.29 | 0.45 |
| 45:S2:1790:A:P | 76:Se:10:ARG:HH12 | 2.39 | 0.45 |
| 48:SC:64:TYR:HB3 | 48:SC:66:TYR:CE2 | 2.51 | 0.45 |
| 50:SE:25:LEU:HD23 | 50:SE:28:MET:CE | 2.44 | 0.45 |
| 62:SQ:144:ARG:HB3 | 62:SQ:208:GLN:HB3 | 1.98 | 0.45 |
| 64:SS:129:VAL:HG12 | 64:SS:139:VAL:HG12 | 1.98 | 0.45 |
| 64:SS:159:THR:HG21 | 64:SS:227:VAL:O | 2.15 | 0.45 |
| 69:SX:59:PRO:HB3 | 69:SX:66:ILE:HD11 | 1.99 | 0.45 |
| 70:SY:37:ILE:CD1 | 70:SY:54:LEU:HD11 | 2.46 | 0.45 |
| 71:SZ:84:ARG:HB2 | 71:SZ:118:VAL:HG23 | 1.99 | 0.45 |
| 72:Sa:5:LYS:O | 72:Sa:7:GLN:HG2 | 2.17 | 0.45 |
| 1:LA:149:U:P | 16:LP:49:ARG:HH12 | 2.40 | 0.45 |
| 1:LA:215:G:H5" | 27:La:12:ARG:HG3 | 1.98 | 0.45 |
| 1:LA:393:U:H2' | 1:LA:394:G:O4' | 2.16 | 0.45 |
| 1:LA:2282:U:OP1 | 1:LA:2973:G:O2' | 2.23 | 0.45 |
| 1:LA:2523:A:H2' | 10:LJ:49:TYR:O | 2.16 | 0.45 |
| 1:LA:2916:U:H1' | 24:LX:44:SER:HB3 | 1.97 | 0.45 |
| 1:LA:3294:A:H5" | 5:LE:126:LYS:HE3 | 1.99 | 0.45 |
| 5:LE:60:LEU:HD11 | 5:LE:62:ARG:HB2 | 1.97 | 0.45 |
| 5:LE:62:ARG:HB3 | 5:LE:65:SER:OG | 2.16 | 0.45 |
| 12:LL:212:GLU:HB2 | 12:LL:213:PHE:HD1 | 1.81 | 0.45 |
| 22:LV:65:TYR:HB3 | 22:LV:75:ILE:HD12 | 1.99 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 23:LW:90:ARG:C | 23:LW:92:TRP:H | 2.25 | 0.45 |
| 36:Lj:45:LYS:HE3 | 36:Lj:45:LYS:HB3 | 1.78 | 0.45 |
| 45:S2:968:U:OP1 | 45:S2:1033:C:O2' | 2.33 | 0.45 |
| 62:SQ:193:ILE:H | 62:SQ:193:ILE:HG13 | 1.49 | 0.45 |
| 63:SR:153:SER:OG | 63:SR:154:LEU:N | 2.50 | 0.45 |
| 65:ST:214:LYS:HD3 | 65:ST:217:SER:OG | 2.16 | 0.45 |
| 66:SU:141:ARG:HG3 | 73:Sb:51:GLU:OE1 | 2.17 | 0.45 |
| 68:SW:93:LEU:HA | 68:SW:96:VAL:HG23 | 1.98 | 0.45 |
| 72:Sa:86:SER:O | 72:Sa:86:SER:OG | 2.32 | 0.45 |
| 79:Ta:69:C:O2' | 79:Ta:70:C:O4' | 2.27 | 0.45 |
| 80:Tb:29:C:H2' | 80:Tb:30:G:C8 | 2.52 | 0.45 |
| 1:LA:263:C:H2' | 1:LA:264:G:O4' | 2.17 | 0.45 |
| 1:LA:1740:U:H1' | 1:LA:1741:A:H2 | 1.81 | 0.45 |
| 1:LA:2712:U:H2' | 1:LA:2713:U:C6 | 2.51 | 0.45 |
| 7:LG:57:ASN:O | 7:LG:58:LYS:HG2 | 2.16 | 0.45 |
| 19:LS:81:VAL:CG1 | 19:LS:140:LEU:CD2 | 2.60 | 0.45 |
| 36:Lj:23:ASP:N | 36:Lj:23:ASP:OD1 | 2.49 | 0.45 |
| 39:Lm:13:GLU:HG3 | 39:Lm:16:ARG:HH22 | 1.82 | 0.45 |
| 39:Lm:16:ARG:O | 39:Lm:16:ARG:HG2 | 2.16 | 0.45 |
| 39:Lm:17:ARG:NH2 | 39:Lm:19:ASP:OD2 | 2.28 | 0.45 |
| 45:S2:183:U:H2' | 45:S2:184:C:C6 | 2.51 | 0.45 |
| 45:S2:961:U:O2' | 70:SY:86:GLU:OE2 | 2.35 | 0.45 |
| 45:S2:1120:U:H2' | 45:S2:1121:C:C6 | 2.51 | 0.45 |
| 45:S2:1259:U:H2' | 45:S2:1260:U:C6 | 2.51 | 0.45 |
| 45:S2:1302:U:OP1 | 63:SR:88:LYS:NZ | 2.50 | 0.45 |
| 45:S2:1469:A:H4' | 45:S2:1541:G:H4' | 1.99 | 0.45 |
| 45:S2:1600:A:N3 | 45:S2:1600:A:H2' | 2.32 | 0.45 |
| 58:SM:55:PHE:N | 58:SM:55:PHE:CD1 | 2.85 | 0.45 |
| 63:SR:174:ARG:O | 68:SW:97:LEU:HD13 | 2.16 | 0.45 |
| 64:SS:37:LYS:O | 64:SS:41:SER:HB3 | 2.16 | 0.45 |
| 67:SV:184:LEU:HD23 | 67:SV:188:GLU:HG2 | 1.98 | 0.45 |
| 1:LA:26:A:H2' | 1:LA:27:C:H6 | 1.82 | 0.45 |
| 1:LA:86:G:O2' | 1:LA:98:G:O6 | 2.33 | 0.45 |
| 1:LA:1327:C:O2' | 34:Lh:76:GLY:HA2 | 2.16 | 0.45 |
| 1:LA:1616:U:H2' | 1:LA:1617:G:H8 | 1.82 | 0.45 |
| 1:LA:1651:U:H5" | 4:LD:71:LEU:HD12 | 1.99 | 0.45 |
| 1:LA:2233:A:H2' | 1:LA:2234:G:O4' | 2.17 | 0.45 |
| 1:LA:2673:A:C2 | 1:LA:2681:U:H5 | 2.34 | 0.45 |
| 1:LA:3232:G:H2' | 1:LA:3233:C:C6 | 2.51 | 0.45 |
| 2:LB:94:C:H2' | 2:LB:95:A:H8 | 1.81 | 0.45 |
| 4:LD:140:ASN:O | 4:LD:144:ASN:HA | 2.16 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 6:LF:142:VAL:HG12 | 6:LF:145:ILE:HD12 | 1.99 | 0.45 |
| 6:LF:234:ASN:ND2 | 6:LF:236:LEU:HB2 | 2.32 | 0.45 |
| 15:LO:93:LYS:HB3 | 15:LO:93:LYS:HE3 | 1.83 | 0.45 |
| 45:S2:161:U:OP1 | 65:ST:85:ARG:N | 2.42 | 0.45 |
| 45:S2:333:A:N6 | 67:SV:27:PHE:HB2 | 2.32 | 0.45 |
| 45:S2:366:A:OP1 | 45:S2:758:U:O2' | 2.33 | 0.45 |
| 54:SI:102:ARG:O | 54:SI:106:GLN:HG3 | 2.17 | 0.45 |
| 65:ST:46:LYS:HD3 | 65:ST:46:LYS:HA | 1.74 | 0.45 |
| 65:ST:78:THR:HG22 | 65:ST:79:LYS:N | 2.30 | 0.45 |
| 75:Sd:35:VAL:HG22 | 75:Sd:40:LEU:HG | 1.97 | 0.45 |
| 1:LA:819:U:H2' | 1:LA:820:A:H8 | 1.82 | 0.45 |
| 1:LA:871:U:H2' | 1:LA:872:U:C6 | 2.51 | 0.45 |
| 1:LA:1805:C:H2' | 1:LA:1806:A:H8 | 1.81 | 0.45 |
| 1:LA:3139:A:H2' | 1:LA:3140:G:O4' | 2.17 | 0.45 |
| 3:LC:146:U:H2' | 3:LC:147:U:C6 | 2.52 | 0.45 |
| 5:LE:316:GLU:OE1 | 5:LE:316:GLU:N | 2.50 | 0.45 |
| 9:LI:163:LEU:O | 9:LI:165:ASP:N | 2.50 | 0.45 |
| 11:LK:114:VAL:HB | 11:LK:124:ARG:HB2 | 1.98 | 0.45 |
| 16:LP:158:HIS:HB3 | 16:LP:161:ALA:HB3 | 1.97 | 0.45 |
| 17:LQ:177[A]:LYS:HE3 | 17:LQ:177[A]:LYS:HB3 | 1.68 | 0.45 |
| 30:Ld:5:LYS:HE3 | 30:Ld:8:THR:HB | 1.98 | 0.45 |
| 45:S2:14:C:OP1 | 63:SR:164:SER:N | 2.43 | 0.45 |
| 45:S2:1146:G:H2' | 45:S2:1147:A:C8 | 2.52 | 0.45 |
| 45:S2:1241:G:H2' | 45:S2:1242:A:O4' | 2.16 | 0.45 |
| 45:S2:1332:C:H4' | 46:SA:203:PRO:HB3 | 1.98 | 0.45 |
| 45:S2:1469:A:H2' | 45:S2:1470:C:C6 | 2.52 | 0.45 |
| 45:S2:1550:A:H2' | 45:S2:1551:U:C6 | 2.52 | 0.45 |
| 46:SA:217:ILE:HG13 | 46:SA:218:LEU:H | 1.81 | 0.45 |
| 52:SG:5:ARG:O | 52:SG:10:LYS:NZ | 2.50 | 0.45 |
| 68:SW:95:TYR:O | 68:SW:99:LEU:HD22 | 2.16 | 0.45 |
| 1:LA:656:A:H2' | 1:LA:657:A:H8 | 1.77 | 0.45 |
| 1:LA:1190:A:H2' | 1:LA:1190:A:N3 | 2.32 | 0.45 |
| 1:LA:1836:C:O2' | 1:LA:1842:A:N1 | 2.36 | 0.45 |
| 1:LA:2677:G:H2' | 1:LA:2677:G:N3 | 2.32 | 0.45 |
| 1:LA:2765:C:O3' | 43:Lq:39:GLY:HA3 | 2.16 | 0.45 |
| 1:LA:2813:A:H2' | 1:LA:2814:G:O4' | 2.17 | 0.45 |
| 1:LA:3041:U:H2' | 1:LA:3042:U:C6 | 2.52 | 0.45 |
| 4:LD:133:TYR:HB3 | 4:LD:168:VAL:HG12 | 1.99 | 0.45 |
| 5:LE:37:ARG:HH12 | 5:LE:191:LYS:NZ | 2.15 | 0.45 |
| 8:LH:174:LEU:HG | 15:LO:117:ARG:NH2 | 2.32 | 0.45 |
| 14:LN:135:ALA:HB3 | 36:Lj:117:ALA:HB3 | 1.97 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 29:Lc:103:ASP:HB3 | 29:Lc:106:ALA:HB3 | 1.98 | 0.45 |
| 30:Ld:58:LYS:HB3 | 30:Ld:58:LYS:HE2 | 1.72 | 0.45 |
| 35:Li:8:ARG:HD2 | 35:Li:32:ALA:O | 2.17 | 0.45 |
| 45:S2:333:A:C8 | 67:SV:49:ARG:HD3 | 2.50 | 0.45 |
| 45:S2:1044:U:H2' | 45:S2:1045:C:C6 | 2.52 | 0.45 |
| 45:S2:1117:U:H2' | 45:S2:1118:G:C8 | 2.52 | 0.45 |
| 45:S2:1767:G:H4' | 45:S2:1768:G:C4 | 2.52 | 0.45 |
| 60:SO:170:ILE:HG13 | 60:SO:171:SER:N | 2.31 | 0.45 |
| 68:SW:128:LEU:HD23 | 68:SW:128:LEU:HA | 1.84 | 0.45 |
| 70:SY:128:TYR:O | 70:SY:132:VAL:HG12 | 2.16 | 0.45 |
| 71:SZ:84:ARG:HD2 | 71:SZ:120:PRO:HD3 | 1.98 | 0.45 |
| 80:Tb:23:G:N7 | 80:Tb:47:G:O6 | 2.50 | 0.45 |
| 1:LA:781:G:OP1 | 19:LS:151:ARG:NH1 | 2.50 | 0.45 |
| 1:LA:1211:U:H2' | 1:LA:1212:A:H8 | 1.81 | 0.45 |
| 1:LA:2130:G:O4' | 1:LA:2144:A:H4' | 2.17 | 0.45 |
| 1:LA:2152:A:H2' | 1:LA:2153:U:C6 | 2.52 | 0.45 |
| 1:LA:2506:U:H2' | 1:LA:2507:C:H6 | 1.82 | 0.45 |
| 1:LA:2713:U:H3' | 43:Lq:9:LYS:O | 2.17 | 0.45 |
| 1:LA:2737:C:OP1 | 22:LV:69:LYS:HB3 | 2.17 | 0.45 |
| 1:LA:3214:U:OP2 | 15:LO:128:ARG:NH1 | 2.50 | 0.45 |
| 1:LA:3288:G:O2' | 1:LA:3289:G:O5' | 2.29 | 0.45 |
| 1:LA:3350:C:O2' | 1:LA:3351:U:OP1 | 2.33 | 0.45 |
| 3:LC:18:U:H2' | 3:LC:19:C:C6 | 2.52 | 0.45 |
| 5:LE:57:VAL:HG23 | 5:LE:358:TRP:HE3 | 1.82 | 0.45 |
| 7:LG:108:ARG:CZ | 7:LG:253:PHE:HB2 | 2.47 | 0.45 |
| 10:LJ:47:SER:HA | 10:LJ:50:VAL:HG23 | 1.97 | 0.45 |
| 11:LK:76:ASP:O | 11:LK:80:THR:OG1 | 2.35 | 0.45 |
| 13:LM:173:ASP:OD1 | 13:LM:174:LYS:N | 2.49 | 0.45 |
| 21:LU:9:VAL:HG22 | 21:LU:61:ILE:HG13 | 1.98 | 0.45 |
| 21:LU:23:LYS:HD2 | 21:LU:23:LYS:HA | 1.64 | 0.45 |
| 45:S2:14:C:OP2 | 63:SR:203:LYS:CE | 2.61 | 0.45 |
| 45:S2:14:C:H5" | 63:SR:203:LYS:CE | 2.41 | 0.45 |
| 45:S2:571:G:H5" | 74:Sc:114:LYS:NZ | 2.32 | 0.45 |
| 45:S2:1076:A:O5' | 76:Se:13:LYS:HB3 | 2.17 | 0.45 |
| 45:S2:1142:A:H5" | 76:Se:2:PRO:HB3 | 1.99 | 0.45 |
| 45:S2:1166:A:H2' | 45:S2:1167:G:O4' | 2.16 | 0.45 |
| 45:S2:1383:G:H2' | 45:S2:1384:A:C8 | 2.51 | 0.45 |
| 45:S2:1555:A:P | 50:SE:47:ARG:HH21 | 2.40 | 0.45 |
| 47:SB:224:ASN:C | 47:SB:224:ASN:OD1 | 2.60 | 0.45 |
| 50:SE:111:MET:HG3 | 50:SE:111:MET:O | 2.16 | 0.45 |
| 53:SH:41:ARG:HB3 | 53:SH:85:PHE:CZ | 2.52 | 0.45 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 60:SO:260:ILE:HD12 | 60:SO:260:ILE:O | 2.17 | 0.45 |
| 65:ST:27:PHE:CZ | 65:ST:111:LEU:HD21 | 2.50 | 0.45 |
| 65:ST:121:LEU:HB2 | 65:ST:124:LEU:HB3 | 1.98 | 0.45 |
| 68:SW:109:LEU:HB2 | 68:SW:146:PHE:HB3 | 1.99 | 0.45 |
| 69:SX:109:VAL:HG23 | 69:SX:137:PHE:CB | 2.47 | 0.45 |
| 73:Sb:2:THR:HG22 | 73:Sb:3:ARG:N | 2.31 | 0.45 |
| 77:Sf:72:LYS:HE2 | 77:Sf:72:LYS:HB3 | 1.60 | 0.45 |
| 80:Tb:62:C:H2' | 80:Tb:63:C:C6 | 2.52 | 0.45 |
| 1:LA:830:A:H2' | 1:LA:831:G:O4' | 2.17 | 0.45 |
| 1:LA:976:U:H2' | 1:LA:977:C:O4' | 2.17 | 0.45 |
| 1:LA:2413:A:H2' | 1:LA:2414:G:C8 | 2.52 | 0.45 |
| 1:LA:2762:A:H2' | 1:LA:2763:U:H6 | 1.82 | 0.45 |
| 2:LB:87:G:OP1 | 9:LI:221:LYS:NZ | 2.50 | 0.45 |
| 19:LS:174:ARG:O | 29:Lc:56:VAL:HG11 | 2.17 | 0.45 |
| 35:Li:93:PHE:O | 35:Li:96:GLU:HG3 | 2.17 | 0.45 |
| 42:Lp:8:LYS:O | 42:Lp:12:ARG:HG3 | 2.17 | 0.45 |
| 45:S2:19:A:H2' | 45:S2:20:G:O4' | 2.16 | 0.45 |
| 45:S2:448:C:H2' | 45:S2:449:C:H6 | 1.82 | 0.45 |
| 45:S2:1361:U:O3' | 45:S2:1362:U:H3' | 2.17 | 0.45 |
| 51:SF:44:LEU:HB3 | 51:SF:78:VAL:HG11 | 1.98 | 0.45 |
| 51:SF:58:ASP:OD1 | 51:SF:58:ASP:N | 2.47 | 0.45 |
| 60:SO:68:VAL:HA | 60:SO:84:SER:HA | 1.98 | 0.45 |
| 79:Ta:66:C:H2' | 79:Ta:67:C:C5 | 2.52 | 0.45 |
| 80:Tb:53:G:HO2' | 80:Tb:54:G:H8 | 1.65 | 0.45 |
| 1:LA:25:U:H5' | 1:LA:26:A:OP1 | 2.16 | 0.44 |
| 1:LA:1404:G:N2 | 1:LA:1407:A:OP2 | 2.44 | 0.44 |
| 1:LA:2218:G:H2' | 1:LA:2219:A:H8 | 1.81 | 0.44 |
| 1:LA:2619:G:H1 | 79:Ta:76:C:H5 | 1.64 | 0.44 |
| 1:LA:2714:G:H4' | 1:LA:2715:A:H5" | 1.99 | 0.44 |
| 1:LA:2745:G:N2 | 1:LA:2748:A:OP2 | 2.40 | 0.44 |
| 9:LI:233:GLU:HG3 | 21:LU:35:VAL:HG22 | 1.98 | 0.44 |
| 18:LR:60:PHE:HB3 | 18:LR:64:ASN:HB3 | 1.98 | 0.44 |
| 26:LZ:100:LYS:HB2 | 26:LZ:100:LYS:HZ3 | 1.81 | 0.44 |
| 29:Lc:84:GLU:H | 29:Lc:84:GLU:HG2 | 1.55 | 0.44 |
| 45:S2:103:A:H4' | 45:S2:105:A:C8 | 2.52 | 0.44 |
| 45:S2:756:A:C4 | 45:S2:757:A:C8 | 3.05 | 0.44 |
| 45:S2:1017:U:H2' | 45:S2:1018:U:C6 | 2.52 | 0.44 |
| 45:S2:1211:A:H2' | 45:S2:1212:G:O4' | 2.16 | 0.44 |
| 45:S2:1480:G:H2' | 45:S2:1481:C:C6 | 2.52 | 0.44 |
| 50:SE:96:ILE:HD12 | 50:SE:116:LEU:HG | 1.99 | 0.44 |
| 53:SH:66:LEU:O | 53:SH:70:VAL:HG13 | 2.17 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 63:SR:111:VAL:HG13 | 63:SR:191:ALA:HA | 1.99 | 0.44 |
| 64:SS:185:GLY:H | 64:SS:189:LEU:HD13 | 1.82 | 0.44 |
| 65:ST:98:ARG:NH1 | 65:ST:101:ILE:O | 2.50 | 0.44 |
| 71:SZ:115:ILE:HD11 | 76:Se:53:LEU:HD12 | 1.98 | 0.44 |
| 73:Sb:35:ILE:O | 73:Sb:39:GLN:HG3 | 2.18 | 0.44 |
| 1:LA:289:A:OP2 | 16:LP:170:LYS:NZ | 2.50 | 0.44 |
| 1:LA:1339:C:H2' | 1:LA:1340:G:C8 | 2.52 | 0.44 |
| 1:LA:1798:A:H2' | 1:LA:1799:A:C8 | 2.52 | 0.44 |
| 5:LE:146:ARG:HA | 5:LE:146:ARG:NE | 2.32 | 0.44 |
| 14:LN:95:ILE:HD13 | 14:LN:116:LEU:HD22 | 1.97 | 0.44 |
| 15:LO:55:ARG:NH1 | 15:LO:76:ALA:O | 2.48 | 0.44 |
| 15:LO:135:LEU:HD22 | 15:LO:135:LEU:HA | 1.73 | 0.44 |
| 29:Lc:42:ARG:HG2 | 29:Lc:46:ASP:OD2 | 2.18 | 0.44 |
| 31:Le:14:LEU:HA | 31:Le:17:VAL:HG12 | 2.00 | 0.44 |
| 32:Lf:19:ARG:HB3 | 32:Lf:35:GLU:HG3 | 1.98 | 0.44 |
| 45:S2:213:A:H2' | 45:S2:214:G:O4' | 2.17 | 0.44 |
| 45:S2:1178:G:H5' | 45:S2:1190:C:H42 | 1.83 | 0.44 |
| 45:S2:1185:U:H1' | 45:S2:1455:G:O2' | 2.17 | 0.44 |
| 46:SA:110:LEU:HD13 | 46:SA:177:MET:HE1 | 1.99 | 0.44 |
| 47:SB:108:LEU:H | 47:SB:108:LEU:HD22 | 1.81 | 0.44 |
| 52:SG:32:LYS:HE2 | 52:SG:47:ARG:HH22 | 1.81 | 0.44 |
| 59:SN:116:LYS:HG2 | 59:SN:119:ARG:HG2 | 1.99 | 0.44 |
| 62:SQ:32:ILE:HA | 62:SQ:96:LEU:CD1 | 2.46 | 0.44 |
| 62:SQ:32:ILE:HG12 | 62:SQ:96:LEU:HD11 | 1.98 | 0.44 |
| 65:ST:55:GLY:O | 65:ST:63:MET:HB2 | 2.18 | 0.44 |
| 68:SW:96:VAL:HA | 68:SW:99:LEU:HD21 | 1.99 | 0.44 |
| 75:Sd:41:ARG:NH2 | 75:Sd:94:TYR:CG | 2.86 | 0.44 |
| 1:LA:1152:G:OP2 | 1:LA:1152:G:N2 | 2.49 | 0.44 |
| 1:LA:1236:G:N2 | 1:LA:1272:C:H42 | 2.15 | 0.44 |
| 1:LA:2148:U:H2' | 1:LA:2149:A:C5 | 2.52 | 0.44 |
| 1:LA:3228:C:H5" | 15:LO:137:LYS:NZ | 2.30 | 0.44 |
| 1:LA:3303:G:O2' | 1:LA:3305:A:N6 | 2.48 | 0.44 |
| 2:LB:90:U:H2' | 2:LB:91:G:O4' | 2.17 | 0.44 |
| 6:LF:6:VAL:HG21 | 6:LF:255:PHE:CE2 | 2.52 | 0.44 |
| 6:LF:233:LEU:HD23 | 6:LF:233:LEU:HA | 1.63 | 0.44 |
| 16:LP:5:LYS:HE2 | 16:LP:9:GLU:OE2 | 2.17 | 0.44 |
| 23:LW:97:SER:HA | 23:LW:103:TYR:HA | 2.00 | 0.44 |
| 28:Lb:70:PRO:HD3 | 28:Lb:115:LYS:HD2 | 2.00 | 0.44 |
| 32:Lf:9:THR:HG21 | 32:Lf:74:ARG:HH11 | 1.82 | 0.44 |
| 33:Lg:103:LYS:O | 33:Lg:106:VAL:HG22 | 2.17 | 0.44 |
| 45:S2:16:G:H2' | 45:S2:17:C:C6 | 2.53 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 45:S2:406:U:H5” | 65:ST:94:ARG:HB2 | 1.99 | 0.44 |
| 45:S2:886:U:O2’ | 71:SZ:121:VAL:O | 2.34 | 0.44 |
| 45:S2:1695:G:H2’ | 45:S2:1696:G:C8 | 2.52 | 0.44 |
| 46:SA:75:LYS:HD3 | 48:SC:22:VAL:HG22 | 1.99 | 0.44 |
| 47:SB:146:THR:HG21 | 47:SB:157:ARG:HB3 | 1.98 | 0.44 |
| 50:SE:18:ARG:NH1 | 53:SH:90:ASN:O | 2.50 | 0.44 |
| 51:SF:10:PHE:CD1 | 51:SF:10:PHE:C | 2.96 | 0.44 |
| 67:SV:38:ILE:HG12 | 67:SV:78:ILE:HD12 | 1.98 | 0.44 |
| 67:SV:109:PHE:HE2 | 67:SV:183:ILE:HD11 | 1.81 | 0.44 |
| 1:LA:637:C:C2 | 1:LA:638:C:C5 | 3.05 | 0.44 |
| 1:LA:1062:A:O2’ | 22:LV:108:ARG:NH2 | 2.51 | 0.44 |
| 1:LA:2111:G:H5” | 25:LY:48:ARG:CZ | 2.48 | 0.44 |
| 1:LA:2338:C:H5” | 24:LX:47:ASN:O | 2.17 | 0.44 |
| 1:LA:2615:G:H2’ | 1:LA:2616:C:C6 | 2.53 | 0.44 |
| 1:LA:3069:G:H2’ | 1:LA:3070:A:H8 | 1.81 | 0.44 |
| 1:LA:3269:U:H4’ | 1:LA:3270:U:O5’ | 2.17 | 0.44 |
| 2:LB:44:C:P | 13:LM:137:ARG:HH12 | 2.40 | 0.44 |
| 3:LC:85:G:H4’ | 3:LC:86:U:OP1 | 2.17 | 0.44 |
| 4:LD:30:ARG:NH2 | 4:LD:33:ASP:OD2 | 2.51 | 0.44 |
| 5:LE:173:GLN:HE21 | 5:LE:175:LYS:HB3 | 1.82 | 0.44 |
| 6:LF:141:ARG:CZ | 6:LF:180:LYS:HD3 | 2.47 | 0.44 |
| 11:LK:1:MET:HE3 | 21:LU:139:TYR:HA | 1.98 | 0.44 |
| 15:LO:89:ALA:O | 15:LO:93:LYS:HG2 | 2.17 | 0.44 |
| 15:LO:94:TRP:CE2 | 15:LO:100:ALA:HB2 | 2.52 | 0.44 |
| 21:LU:129:ILE:HD11 | 21:LU:131:LYS:HG2 | 1.99 | 0.44 |
| 23:LW:77:LYS:O | 23:LW:81:LYS:HG3 | 2.17 | 0.44 |
| 26:LZ:129:ASP:N | 26:LZ:129:ASP:OD1 | 2.51 | 0.44 |
| 29:Lc:74:ASN:OD1 | 29:Lc:115:LYS:HB2 | 2.18 | 0.44 |
| 45:S2:401:A:H4’ | 64:SS:3:ARG:HD3 | 2.00 | 0.44 |
| 45:S2:1546:G:OP1 | 53:SH:123:ARG:NH1 | 2.47 | 0.44 |
| 48:SC:3:MET:HG3 | 48:SC:41:TYR:CD2 | 2.53 | 0.44 |
| 48:SC:62:GLN:OE1 | 58:SM:25:SER:OG | 2.33 | 0.44 |
| 52:SG:20:TYR:CE1 | 52:SG:38:ILE:HD11 | 2.52 | 0.44 |
| 61:SP:77:SER:HB2 | 61:SP:86:VAL:HG11 | 1.99 | 0.44 |
| 67:SV:106:ALA:HB2 | 67:SV:165:LEU:HB2 | 1.99 | 0.44 |
| 73:Sb:42:GLN:HG3 | 73:Sb:48:GLY:O | 2.17 | 0.44 |
| 80:Tb:44:A:H2’ | 80:Tb:45:A:C8 | 2.52 | 0.44 |
| 1:LA:1613:A:OP1 | 39:Lm:51:LEU:N | 2.50 | 0.44 |
| 1:LA:1615:C:H2’ | 1:LA:1616:U:H6 | 1.81 | 0.44 |
| 1:LA:1729:A:C6 | 31:Le:49:PRO:HD3 | 2.53 | 0.44 |
| 1:LA:1856:C:H2’ | 1:LA:1857:C:H6 | 1.82 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:LA:3357:U:H2' | 1:LA:3358:U:C6 | 2.53 | 0.44 |
| 2:LB:22:A:H2' | 2:LB:23:A:C8 | 2.52 | 0.44 |
| 9:LI:118:LYS:HE2 | 9:LI:191:VAL:HG11 | 1.99 | 0.44 |
| 10:LJ:29:SER:C | 10:LJ:31:PRO:HD3 | 2.43 | 0.44 |
| 15:LO:20:VAL:O | 15:LO:66:THR:OG1 | 2.28 | 0.44 |
| 16:LP:124:ASP:OD1 | 16:LP:129:TYR:HE1 | 2.01 | 0.44 |
| 21:LU:141:LYS:HA | 21:LU:144:LEU:HD13 | 1.99 | 0.44 |
| 24:LX:18:PRO:HA | 24:LX:51:ALA:HA | 1.99 | 0.44 |
| 43:Lq:70:LEU:HD12 | 43:Lq:83:LEU:HD11 | 2.00 | 0.44 |
| 45:S2:341:A:H2' | 45:S2:342:C:C6 | 2.53 | 0.44 |
| 45:S2:388:G:OP1 | 45:S2:423:G:O2' | 2.27 | 0.44 |
| 45:S2:539:G:H4' | 45:S2:540:G:O5' | 2.18 | 0.44 |
| 45:S2:609:U:H4' | 45:S2:610:G:O5' | 2.16 | 0.44 |
| 45:S2:963:A:H1' | 45:S2:965:U:O4 | 2.18 | 0.44 |
| 45:S2:1013:A:H2' | 45:S2:1014:G:O4' | 2.18 | 0.44 |
| 45:S2:1263:G:H2' | 45:S2:1264:G:O4' | 2.17 | 0.44 |
| 45:S2:1549:C:OP2 | 50:SE:39:ALA:N | 2.50 | 0.44 |
| 45:S2:1597:A:O2' | 45:S2:1598:U:OP1 | 2.34 | 0.44 |
| 47:SB:81:ARG:HG2 | 47:SB:82:PHE:CE2 | 2.53 | 0.44 |
| 49:SD:135:MET:O | 49:SD:138:GLU:HG3 | 2.17 | 0.44 |
| 52:SG:72:LYS:HA | 52:SG:72:LYS:HD2 | 1.64 | 0.44 |
| 53:SH:41:ARG:HD2 | 54:SI:45:MET:HE3 | 2.00 | 0.44 |
| 53:SH:42:TYR:HD1 | 53:SH:85:PHE:HD2 | 1.64 | 0.44 |
| 53:SH:79:TYR:CA | 53:SH:80:LYS:NZ | 2.79 | 0.44 |
| 54:SI:44:GLU:HG3 | 54:SI:45:MET:HG2 | 1.99 | 0.44 |
| 54:SI:81:GLY:HA3 | 54:SI:94:ILE:O | 2.18 | 0.44 |
| 60:SO:16:HIS:CE1 | 60:SO:43:ILE:HG22 | 2.52 | 0.44 |
| 67:SV:152:ILE:HB | 67:SV:156:VAL:HG21 | 1.99 | 0.44 |
| 1:LA:38:U:H2' | 1:LA:39:A:O4' | 2.18 | 0.44 |
| 1:LA:336:A:OP2 | 27:La:9:SER:OG | 2.34 | 0.44 |
| 1:LA:1556:C:H2' | 1:LA:2169:G:N2 | 2.33 | 0.44 |
| 1:LA:3064:U:H2' | 1:LA:3065:G:H8 | 1.82 | 0.44 |
| 5:LE:148:LEU:HD21 | 5:LE:196:ARG:HG3 | 1.99 | 0.44 |
| 12:LL:47:PRO:HB3 | 12:LL:171:TRP:CZ2 | 2.53 | 0.44 |
| 13:LM:60:ARG:N | 13:LM:63:GLU:OE1 | 2.43 | 0.44 |
| 16:LP:42:PRO:HD3 | 16:LP:61:ILE:HG13 | 2.00 | 0.44 |
| 21:LU:129:ILE:HG12 | 21:LU:134:ASP:HB3 | 1.99 | 0.44 |
| 26:LZ:105:VAL:HG11 | 26:LZ:135:ILE:HG13 | 1.99 | 0.44 |
| 45:S2:30:G:OP1 | 74:Sc:126:LYS:NZ | 2.50 | 0.44 |
| 45:S2:347:G:OP1 | 69:SX:77:SER:OG | 2.25 | 0.44 |
| 45:S2:519:C:H3' | 45:S2:520:A:H5" | 1.99 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 45:S2:576:G:O6 | 74:Sc:65:ASN:HA | 2.18 | 0.44 |
| 45:S2:817:A:H2' | 45:S2:818:C:C6 | 2.53 | 0.44 |
| 45:S2:1262:U:H2' | 45:S2:1263:G:C8 | 2.53 | 0.44 |
| 46:SA:132:LYS:HE2 | 46:SA:132:LYS:HB3 | 1.82 | 0.44 |
| 49:SD:44:GLY:O | 49:SD:48:SER:CB | 2.66 | 0.44 |
| 50:SE:73:PRO:HG2 | 50:SE:93:VAL:HG12 | 2.00 | 0.44 |
| 54:SI:9:VAL:HG22 | 54:SI:140:LEU:HD21 | 1.99 | 0.44 |
| 57:SL:29:ARG:HG3 | 57:SL:41:VAL:HG22 | 2.00 | 0.44 |
| 60:SO:123:ILE:HD12 | 60:SO:123:ILE:HA | 1.85 | 0.44 |
| 60:SO:232:TYR:OH | 60:SO:268:GLN:HG2 | 2.18 | 0.44 |
| 61:SP:72:ASP:OD1 | 61:SP:73:VAL:N | 2.51 | 0.44 |
| 61:SP:126:PRO:HG2 | 61:SP:152:PRO:HD2 | 2.00 | 0.44 |
| 62:SQ:126:THR:HG23 | 62:SQ:126:THR:O | 2.16 | 0.44 |
| 69:SX:21:ASN:OD1 | 69:SX:21:ASN:N | 2.50 | 0.44 |
| 74:Sc:47:SER:OG | 74:Sc:48:HIS:ND1 | 2.38 | 0.44 |
| 1:LA:411:U:H2' | 1:LA:412:G:C8 | 2.52 | 0.44 |
| 1:LA:1066:G:H2' | 1:LA:1067:U:C6 | 2.53 | 0.44 |
| 1:LA:1360:C:H5" | 6:LF:309:ARG:HG3 | 2.00 | 0.44 |
| 1:LA:1846:C:O2' | 18:LR:130:TYR:OH | 2.34 | 0.44 |
| 1:LA:1942:U:H2' | 1:LA:1943:C:O4' | 2.18 | 0.44 |
| 1:LA:2712:U:H4' | 1:LA:2743:A:O3' | 2.17 | 0.44 |
| 2:LB:94:C:H2' | 2:LB:95:A:C8 | 2.53 | 0.44 |
| 6:LF:2:SER:OG | 6:LF:3:ARG:N | 2.51 | 0.44 |
| 9:LI:98:LYS:HB3 | 9:LI:99:PRO:HD3 | 2.00 | 0.44 |
| 45:S2:93:A:H4' | 45:S2:94:U:OP2 | 2.18 | 0.44 |
| 45:S2:728:U:H5' | 45:S2:729:G:OP2 | 2.18 | 0.44 |
| 45:S2:739:G:HO2' | 45:S2:740:A:P | 2.41 | 0.44 |
| 45:S2:762:A:OP1 | 68:SW:79:ARG:NH1 | 2.50 | 0.44 |
| 45:S2:1330:G:H2' | 45:S2:1331:A:O4' | 2.17 | 0.44 |
| 45:S2:1590:G:OP1 | 54:SI:91:TYR:HB2 | 2.18 | 0.44 |
| 45:S2:1719:A:H2' | 45:S2:1720:G:O4' | 2.18 | 0.44 |
| 50:SE:96:ILE:CD1 | 50:SE:116:LEU:CD1 | 2.91 | 0.44 |
| 54:SI:61:VAL:HG22 | 54:SI:76:LEU:HD22 | 2.00 | 0.44 |
| 54:SI:107:ALA:O | 54:SI:111:ILE:HG12 | 2.17 | 0.44 |
| 55:SJ:35:GLU:OE2 | 55:SJ:89:ARG:NH1 | 2.43 | 0.44 |
| 60:SO:158:PRO:O | 60:SO:208:GLY:HA3 | 2.18 | 0.44 |
| 66:SU:175:LYS:HB2 | 66:SU:175:LYS:HE2 | 1.72 | 0.44 |
| 75:Sd:88:THR:O | 75:Sd:92:VAL:HG23 | 2.17 | 0.44 |
| 79:Ta:4:G:N3 | 79:Ta:4:G:H2' | 2.33 | 0.44 |
| 1:LA:340:C:H2' | 1:LA:341:G:O4' | 2.18 | 0.44 |
| 1:LA:847:A:H5' | 70:SY:123:HIS:CE1 | 2.52 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:LA:955:U:H2' | 1:LA:956:U:C6 | 2.52 | 0.44 |
| 1:LA:1084:A:H5" | 22:LV:35:LYS:HD3 | 1.99 | 0.44 |
| 1:LA:2129:U:H2' | 1:LA:2130:G:C8 | 2.53 | 0.44 |
| 1:LA:2232:A:H2' | 1:LA:2233:A:C8 | 2.52 | 0.44 |
| 1:LA:3122:A:N1 | 11:LK:70:THR:OG1 | 2.46 | 0.44 |
| 1:LA:3231:U:H2' | 1:LA:3232:G:H8 | 1.83 | 0.44 |
| 3:LC:65:A:C4 | 3:LC:66:A:C8 | 3.05 | 0.44 |
| 4:LD:219:ILE:HD13 | 4:LD:223:SER:HB3 | 2.00 | 0.44 |
| 6:LF:39:PHE:HA | 6:LF:42:VAL:HG22 | 2.00 | 0.44 |
| 8:LH:64:LEU:HD11 | 8:LH:76:LEU:HD22 | 2.00 | 0.44 |
| 9:LI:236:ILE:HD12 | 9:LI:236:ILE:HA | 1.89 | 0.44 |
| 10:LJ:169:LEU:HB2 | 37:Lk:43:LEU:HD11 | 2.00 | 0.44 |
| 12:LL:54:SER:HB2 | 12:LL:135:ILE:HD11 | 1.98 | 0.44 |
| 36:Lj:29:ALA:O | 36:Lj:33:VAL:HG23 | 2.18 | 0.44 |
| 38:Ll:16:HIS:HB3 | 38:Ll:25:ARG:O | 2.18 | 0.44 |
| 45:S2:789:A:C2 | 64:SS:248:ILE:HG21 | 2.53 | 0.44 |
| 45:S2:859:A:C6 | 70:SY:73:ARG:HD3 | 2.52 | 0.44 |
| 45:S2:1303:U:O2' | 45:S2:1322:A:OP2 | 2.32 | 0.44 |
| 45:S2:1561:U:H4' | 45:S2:1599:C:H4' | 1.98 | 0.44 |
| 45:S2:1755:A:O2' | 45:S2:1756:A:O4' | 2.26 | 0.44 |
| 47:SB:143:ARG:HA | 47:SB:167:ARG:HD3 | 2.00 | 0.44 |
| 51:SF:81:ILE:O | 51:SF:85:ILE:HG12 | 2.17 | 0.44 |
| 60:SO:170:ILE:HG12 | 60:SO:211:ILE:HD11 | 1.99 | 0.44 |
| 60:SO:197:SER:HB2 | 60:SO:217:ASP:HB3 | 1.99 | 0.44 |
| 60:SO:248:ASN:OD1 | 60:SO:249:ARG:HD3 | 2.17 | 0.44 |
| 62:SQ:103:MET:HE3 | 62:SQ:215:VAL:HG12 | 2.00 | 0.44 |
| 64:SS:72:VAL:HG22 | 64:SS:90:ILE:HG13 | 2.00 | 0.44 |
| 70:SY:60:VAL:HG13 | 70:SY:66:ILE:HD12 | 2.00 | 0.44 |
| 1:LA:197:G:H2' | 1:LA:198:A:C8 | 2.53 | 0.44 |
| 1:LA:210:U:C2 | 1:LA:230:U:H4' | 2.53 | 0.44 |
| 1:LA:257:U:H2' | 1:LA:258:G:H8 | 1.83 | 0.44 |
| 1:LA:533:A:O2' | 1:LA:534:U:H3' | 2.18 | 0.44 |
| 1:LA:1090:G:O6 | 1:LA:1091:A:N6 | 2.51 | 0.44 |
| 1:LA:2426:U:H2' | 1:LA:2427:U:H6 | 1.81 | 0.44 |
| 1:LA:2525:G:N2 | 10:LJ:44:ARG:HH12 | 2.16 | 0.44 |
| 1:LA:2836:C:H2' | 1:LA:2837:A:O4' | 2.18 | 0.44 |
| 1:LA:3305:A:H2' | 1:LA:3306:U:O4' | 2.18 | 0.44 |
| 6:LF:98:ARG:HG2 | 6:LF:99:MET:O | 2.18 | 0.44 |
| 10:LJ:93:LEU:HA | 10:LJ:96:LYS:HZ3 | 1.83 | 0.44 |
| 11:LK:78:MET:HE3 | 11:LK:78:MET:HB2 | 1.75 | 0.44 |
| 17:LQ:37[A]:ARG:HG2 | 17:LQ:108[A]:ILE:HD11 | 2.00 | 0.44 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 32:Lf:44:MET:O | 32:Lf:77:ARG:NH1 | 2.51 | 0.44 |
| 34:Lh:8:TYR:CE2 | 34:Lh:99:ARG:HD3 | 2.53 | 0.44 |
| 45:S2:367:A:H2' | 45:S2:368:U:O4' | 2.18 | 0.44 |
| 45:S2:920:U:H2' | 45:S2:921:U:O4' | 2.17 | 0.44 |
| 45:S2:1556:A:OP1 | 50:SE:115:TYR:OH | 2.35 | 0.44 |
| 45:S2:1619:C:H2' | 45:S2:1620:C:C6 | 2.53 | 0.44 |
| 47:SB:196:GLU:O | 47:SB:200:ASN:ND2 | 2.51 | 0.44 |
| 59:SN:120:GLU:HG2 | 59:SN:132:LEU:HG | 1.99 | 0.44 |
| 60:SO:115:ILE:HG22 | 60:SO:122:ILE:CD1 | 2.46 | 0.44 |
| 67:SV:26:LYS:HE2 | 67:SV:29:LEU:HD21 | 1.99 | 0.44 |
| 67:SV:84:HIS:CD2 | 67:SV:90:LEU:HD12 | 2.53 | 0.44 |
| 67:SV:152:ILE:H | 67:SV:152:ILE:HG12 | 1.51 | 0.44 |
| 67:SV:191:PHE:O | 67:SV:195:ARG:HG2 | 2.18 | 0.44 |
| 71:SZ:20:TYR:CD1 | 71:SZ:20:TYR:C | 2.95 | 0.44 |
| 71:SZ:31:THR:OG1 | 71:SZ:35:GLY:HA2 | 2.18 | 0.44 |
| 71:SZ:64:ALA:HB3 | 71:SZ:104:ALA:HB3 | 2.00 | 0.44 |
| 77:Sf:15:GLU:HA | 77:Sf:15:GLU:OE2 | 2.18 | 0.44 |
| 1:LA:351:A:H4' | 3:LC:54:A:C8 | 2.52 | 0.43 |
| 1:LA:650:C:H2' | 1:LA:651:G:C8 | 2.53 | 0.43 |
| 1:LA:2103:U:H2' | 1:LA:2104:A:H8 | 1.81 | 0.43 |
| 1:LA:2201:G:H2' | 1:LA:2202:C:C6 | 2.53 | 0.43 |
| 1:LA:2201:G:H2' | 1:LA:2202:C:H6 | 1.82 | 0.43 |
| 1:LA:2213:A:H2' | 1:LA:2214:A:H8 | 1.82 | 0.43 |
| 1:LA:2681:U:H1' | 13:LM:22:SER:HB3 | 1.99 | 0.43 |
| 1:LA:2883:U:H2' | 1:LA:2884:C:H6 | 1.83 | 0.43 |
| 1:LA:3296:A:H2' | 1:LA:3297:U:H6 | 1.82 | 0.43 |
| 3:LC:143:U:H2' | 3:LC:144:G:O4' | 2.18 | 0.43 |
| 5:LE:256:HIS:HA | 5:LE:257:PRO:C | 2.44 | 0.43 |
| 7:LG:286:VAL:O | 7:LG:290:ILE:HG12 | 2.18 | 0.43 |
| 11:LK:129:ARG:HD3 | 11:LK:157:ASN:ND2 | 2.33 | 0.43 |
| 14:LN:2:ALA:HB3 | 29:Lc:41:HIS:CE1 | 2.53 | 0.43 |
| 17:LQ:22[A]:VAL:HG22 | 17:LQ:122[A]:GLN:OE1 | 2.18 | 0.43 |
| 21:LU:140:VAL:HG12 | 21:LU:144:LEU:HD11 | 2.01 | 0.43 |
| 26:LZ:133:LEU:O | 26:LZ:137:ASN:ND2 | 2.51 | 0.43 |
| 29:Lc:126:LYS:HB3 | 29:Lc:148:ILE:HD13 | 2.00 | 0.43 |
| 32:Lf:92:TYR:CE1 | 32:Lf:94:GLU:HG2 | 2.53 | 0.43 |
| 40:Ln:13:MET:HE2 | 40:Ln:49:MET:HE3 | 2.00 | 0.43 |
| 45:S2:72:A:H62 | 65:ST:167:LYS:NZ | 2.16 | 0.43 |
| 45:S2:1055:U:H2' | 45:S2:1056:U:C6 | 2.53 | 0.43 |
| 45:S2:1481:C:O2' | 45:S2:1482:C:O4' | 2.29 | 0.43 |
| 53:SH:27:LYS:HE2 | 53:SH:55:HIS:HA | 1.99 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 59:SN:107:LYS:HG3 | 59:SN:115:THR:OG1 | 2.18 | 0.43 |
| 62:SQ:84:ILE:CD1 | 62:SQ:100:PHE:HE1 | 2.31 | 0.43 |
| 65:ST:78:THR:O | 65:ST:81:VAL:HG22 | 2.18 | 0.43 |
| 67:SV:74:LYS:HB2 | 67:SV:109:PHE:CE1 | 2.53 | 0.43 |
| 1:LA:610:G:O6 | 6:LF:309:ARG:NH2 | 2.47 | 0.43 |
| 1:LA:947:G:H2' | 1:LA:948:C:C6 | 2.53 | 0.43 |
| 1:LA:1290:A:H2' | 1:LA:1291:A:C8 | 2.53 | 0.43 |
| 1:LA:1764:U:H5' | 1:LA:1765:U:H5" | 1.99 | 0.43 |
| 1:LA:2697:A:H2' | 1:LA:2698:G:H8 | 1.80 | 0.43 |
| 1:LA:3013:U:O2 | 1:LA:3041:U:H5 | 2.00 | 0.43 |
| 2:LB:23:A:H2' | 2:LB:24:A:C8 | 2.54 | 0.43 |
| 8:LH:14:ASP:OD1 | 8:LH:14:ASP:N | 2.51 | 0.43 |
| 10:LJ:42:PRO:HD2 | 10:LJ:44:ARG:NH2 | 2.27 | 0.43 |
| 28:Lb:22:LYS:HD3 | 28:Lb:129:TRP:CZ3 | 2.53 | 0.43 |
| 28:Lb:42:LEU:CD2 | 28:Lb:74:VAL:HG22 | 2.46 | 0.43 |
| 36:Lj:28:LEU:HG | 36:Lj:32:LYS:HE2 | 2.00 | 0.43 |
| 45:S2:1164:G:H2' | 45:S2:1165:G:H8 | 1.83 | 0.43 |
| 46:SA:158:ILE:HD13 | 46:SA:189:MET:HE1 | 2.00 | 0.43 |
| 46:SA:158:ILE:HD12 | 46:SA:163:PRO:HB2 | 2.01 | 0.43 |
| 63:SR:73:LEU:O | 63:SR:76:LEU:HG | 2.17 | 0.43 |
| 65:ST:116:LYS:HD2 | 65:ST:125:THR:HG23 | 2.00 | 0.43 |
| 65:ST:180:THR:HG22 | 65:ST:182:GLN:N | 2.32 | 0.43 |
| 67:SV:69:SER:OG | 69:SX:24:LYS:HG3 | 2.18 | 0.43 |
| 68:SW:59:LEU:HD22 | 68:SW:69:ARG:HA | 2.00 | 0.43 |
| 79:Ta:61:U:H3' | 79:Ta:62:C:C6 | 2.52 | 0.43 |
| 1:LA:209:A:N3 | 6:LF:221:ASN:ND2 | 2.60 | 0.43 |
| 1:LA:374:A:N3 | 1:LA:376:G:H5" | 2.33 | 0.43 |
| 1:LA:542:G:C6 | 1:LA:550:A:C6 | 3.07 | 0.43 |
| 1:LA:715:A:N1 | 1:LA:781:G:O2' | 2.49 | 0.43 |
| 1:LA:787:G:H2' | 1:LA:788:C:C6 | 2.52 | 0.43 |
| 1:LA:1522:U:OP2 | 26:LZ:121:LYS:NZ | 2.49 | 0.43 |
| 1:LA:2566:C:H2' | 1:LA:2567:C:C6 | 2.54 | 0.43 |
| 1:LA:3038:U:H5" | 5:LE:62:ARG:HG2 | 2.00 | 0.43 |
| 1:LA:3133:C:H2' | 1:LA:3134:A:O4' | 2.18 | 0.43 |
| 1:LA:3217:C:H6 | 1:LA:3266:G:H21 | 1.66 | 0.43 |
| 4:LD:32:LEU:HD11 | 4:LD:37:ARG:HB3 | 2.00 | 0.43 |
| 5:LE:19:ARG:HB2 | 5:LE:232:ARG:NH2 | 2.33 | 0.43 |
| 5:LE:44:THR:HG21 | 5:LE:184:ASN:OD1 | 2.18 | 0.43 |
| 5:LE:47:LEU:HD22 | 5:LE:335:ILE:HD11 | 1.99 | 0.43 |
| 5:LE:108:GLU:OE2 | 5:LE:137:TYR:HB3 | 2.18 | 0.43 |
| 5:LE:226:PHE:CE1 | 5:LE:268:GLY:HA2 | 2.53 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 5:LE:375:GLU:OE1 | 25:LY:14:TYR:OH | 2.36 | 0.43 |
| 10:LJ:74:THR:HG21 | 37:Lk:47:ILE:HG13 | 2.00 | 0.43 |
| 26:LZ:107:VAL:HA | 26:LZ:126:LEU:HA | 2.01 | 0.43 |
| 45:S2:1257:U:H2' | 48:SC:2:LEU:HB2 | 2.00 | 0.43 |
| 50:SE:47:ARG:O | 50:SE:49:MET:HE1 | 2.18 | 0.43 |
| 51:SF:13:LYS:HD2 | 51:SF:13:LYS:HA | 1.87 | 0.43 |
| 52:SG:32:LYS:CE | 52:SG:47:ARG:NH2 | 2.81 | 0.43 |
| 54:SI:52:GLY:C | 54:SI:54:PHE:H | 2.26 | 0.43 |
| 55:SJ:96:PRO:HD2 | 55:SJ:99:ILE:HD12 | 1.99 | 0.43 |
| 60:SO:23:LEU:HD11 | 60:SO:304:GLY:H | 1.83 | 0.43 |
| 60:SO:53:LYS:HG3 | 60:SO:54:PHE:H | 1.83 | 0.43 |
| 61:SP:183:ARG:HG3 | 61:SP:188:LEU:HD23 | 2.00 | 0.43 |
| 62:SQ:100:PHE:HB3 | 62:SQ:181:LEU:HD21 | 2.00 | 0.43 |
| 64:SS:159:THR:HG23 | 64:SS:227:VAL:HG13 | 1.99 | 0.43 |
| 1:LA:343:U:H1' | 6:LF:95:ARG:HG3 | 2.00 | 0.43 |
| 1:LA:429:U:O2' | 34:Lh:88:ASN:O | 2.29 | 0.43 |
| 1:LA:746:A:P | 19:LS:145:ASN:HD22 | 2.42 | 0.43 |
| 1:LA:1597:C:H2' | 1:LA:1598:G:C8 | 2.52 | 0.43 |
| 1:LA:1623:G:C4 | 1:LA:1624:G:C8 | 3.06 | 0.43 |
| 1:LA:2160:G:H2' | 1:LA:2161:G:C8 | 2.52 | 0.43 |
| 1:LA:2272:G:OP2 | 1:LA:2272:G:N2 | 2.39 | 0.43 |
| 1:LA:2450:G:C2 | 1:LA:2496:C:O2 | 2.70 | 0.43 |
| 1:LA:2536:A:H3' | 62:SQ:227:ALA:H | 1.83 | 0.43 |
| 1:LA:2557:A:OP2 | 1:LA:2557:A:H8 | 2.00 | 0.43 |
| 1:LA:3297:U:H2' | 1:LA:3298:C:H6 | 1.82 | 0.43 |
| 1:LA:3333:G:N2 | 1:LA:3369:G:O2' | 2.51 | 0.43 |
| 3:LC:152:G:O3' | 10:LJ:63:LYS:HD2 | 2.19 | 0.43 |
| 4:LD:127:ALA:HB2 | 4:LD:134:VAL:HG23 | 2.00 | 0.43 |
| 6:LF:234:ASN:HD21 | 6:LF:236:LEU:HD12 | 1.83 | 0.43 |
| 8:LH:51:ARG:HH12 | 8:LH:161:ALA:HB3 | 1.82 | 0.43 |
| 8:LH:78:ARG:HH12 | 8:LH:103:VAL:HG13 | 1.83 | 0.43 |
| 14:LN:2:ALA:HB1 | 29:Lc:33:GLY:O | 2.18 | 0.43 |
| 15:LO:135:LEU:HD21 | 17:LQ:178[A]:VAL:HG23 | 2.00 | 0.43 |
| 16:LP:5:LYS:HD2 | 16:LP:5:LYS:HA | 1.66 | 0.43 |
| 20:LT:85:ARG:NH1 | 20:LT:85:ARG:CB | 2.82 | 0.43 |
| 22:LV:32:LYS:HB2 | 22:LV:32:LYS:HE2 | 1.73 | 0.43 |
| 32:Lf:8:VAL:HG21 | 32:Lf:10:ARG:NH1 | 2.34 | 0.43 |
| 35:Li:29:ILE:HD11 | 35:Li:31:ARG:HE | 1.83 | 0.43 |
| 38:Ll:43:LYS:HB2 | 38:Ll:43:LYS:HE3 | 1.71 | 0.43 |
| 45:S2:5:U:H2' | 45:S2:6:G:H8 | 1.84 | 0.43 |
| 45:S2:279:G:H1' | 45:S2:281:G:H1' | 2.00 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 45:S2:404:G:H2' | 45:S2:405:C:C6 | 2.53 | 0.43 |
| 45:S2:799:A:HO2' | 64:SS:201:HIS:HE2 | 1.66 | 0.43 |
| 45:S2:934:C:C4 | 45:S2:1077:C:H4' | 2.54 | 0.43 |
| 49:SD:31:VAL:HB | 49:SD:133:LEU:HD22 | 1.99 | 0.43 |
| 49:SD:31:VAL:O | 49:SD:34:THR:HG22 | 2.17 | 0.43 |
| 63:SR:41:LEU:HG | 63:SR:68:ILE:HD13 | 1.99 | 0.43 |
| 64:SS:256:ARG:HH22 | 68:SW:78:ARG:NH1 | 2.17 | 0.43 |
| 69:SX:76:VAL:HA | 69:SX:119:VAL:HG13 | 1.99 | 0.43 |
| 1:LA:196:G:H22 | 1:LA:199:A:H5' | 1.84 | 0.43 |
| 1:LA:293:C:H2' | 1:LA:294:U:O4' | 2.19 | 0.43 |
| 1:LA:631:U:H2' | 1:LA:632:G:C8 | 2.53 | 0.43 |
| 1:LA:681:U:O2' | 1:LA:697:A:N1 | 2.51 | 0.43 |
| 1:LA:834:U:H2' | 1:LA:835:G:O4' | 2.18 | 0.43 |
| 1:LA:1252:A:H2' | 1:LA:1253:U:C5 | 2.54 | 0.43 |
| 1:LA:1447:G:OP2 | 18:LR:27:LYS:NZ | 2.51 | 0.43 |
| 1:LA:1810:A:H2' | 1:LA:1811:G:C8 | 2.53 | 0.43 |
| 1:LA:2216:G:H22 | 1:LA:2229:A:H2 | 1.65 | 0.43 |
| 1:LA:2947:G:OP2 | 1:LA:2947:G:H4' | 2.19 | 0.43 |
| 1:LA:2991:A:O2' | 1:LA:3309:G:N7 | 2.51 | 0.43 |
| 3:LC:10:A:H2' | 3:LC:11:C:C6 | 2.52 | 0.43 |
| 4:LD:36:GLU:HA | 4:LD:91:GLY:HA2 | 2.00 | 0.43 |
| 6:LF:321:LYS:HD3 | 6:LF:321:LYS:N | 2.32 | 0.43 |
| 8:LH:105:TYR:CD1 | 8:LH:105:TYR:C | 2.95 | 0.43 |
| 11:LK:29:GLY:HA3 | 11:LK:82:VAL:HG13 | 1.99 | 0.43 |
| 15:LO:135:LEU:HD22 | 17:LQ:181[A]:ALA:HB3 | 2.00 | 0.43 |
| 21:LU:38:LYS:HG2 | 21:LU:58:ILE:HD13 | 1.99 | 0.43 |
| 32:Lf:51:LEU:HB3 | 32:Lf:55:LEU:HD23 | 2.01 | 0.43 |
| 45:S2:174:U:H2' | 45:S2:175:G:O4' | 2.18 | 0.43 |
| 45:S2:236:A:H2' | 45:S2:237:C:O4' | 2.18 | 0.43 |
| 45:S2:343:C:H2' | 45:S2:344:A:H8 | 1.83 | 0.43 |
| 45:S2:795:U:C2 | 45:S2:796:A:C8 | 3.07 | 0.43 |
| 45:S2:1209:C:H2' | 45:S2:1210:C:H6 | 1.82 | 0.43 |
| 45:S2:1278:G:H2' | 45:S2:1279:C:O4' | 2.19 | 0.43 |
| 45:S2:1523:G:N7 | 54:SI:68:ARG:HD3 | 2.33 | 0.43 |
| 45:S2:1530:C:OP1 | 56:SK:95:HIS:HA | 2.18 | 0.43 |
| 47:SB:136:ALA:O | 47:SB:140:THR:OG1 | 2.26 | 0.43 |
| 62:SQ:84:ILE:HD12 | 62:SQ:100:PHE:HE1 | 1.83 | 0.43 |
| 63:SR:116:LYS:HB2 | 63:SR:131:ILE:HD12 | 2.01 | 0.43 |
| 65:ST:171:LYS:HE2 | 65:ST:171:LYS:HB2 | 1.88 | 0.43 |
| 67:SV:107:THR:HG22 | 67:SV:108:PRO:HD3 | 2.01 | 0.43 |
| 69:SX:53:TYR:HD2 | 69:SX:55:ASP:HB3 | 1.83 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 70:SY:26:PHE:CD1 | 70:SY:59:GLY:O | 2.70 | 0.43 |
| 70:SY:34:ILE:CD1 | 70:SY:74:ILE:HD12 | 2.48 | 0.43 |
| 1:LA:75:G:H1' | 14:LN:61:PRO:HG3 | 1.99 | 0.43 |
| 1:LA:682:U:H5" | 1:LA:683:U:H5 | 1.84 | 0.43 |
| 1:LA:1448:U:H2' | 1:LA:1449:A:H8 | 1.83 | 0.43 |
| 1:LA:1596:C:H2' | 1:LA:1597:C:H6 | 1.82 | 0.43 |
| 3:LC:149:A:H2' | 3:LC:150:G:C8 | 2.53 | 0.43 |
| 9:LI:145:ARG:HA | 9:LI:185:ILE:HD13 | 2.00 | 0.43 |
| 13:LM:32:ARG:NH1 | 13:LM:119:SER:O | 2.52 | 0.43 |
| 29:Lc:77:LYS:HG3 | 29:Lc:77:LYS:O | 2.19 | 0.43 |
| 32:Lf:16:LEU:HD23 | 32:Lf:71:LEU:HD13 | 2.01 | 0.43 |
| 36:Lj:5:LYS:HD2 | 36:Lj:7:TYR:HE1 | 1.82 | 0.43 |
| 37:Lk:9:ILE:HD12 | 37:Lk:10:GLY:H | 1.83 | 0.43 |
| 46:SA:17:PHE:CE1 | 46:SA:21:LEU:HD22 | 2.54 | 0.43 |
| 53:SH:79:TYR:C | 53:SH:80:LYS:HE2 | 2.43 | 0.43 |
| 62:SQ:209:ASN:C | 62:SQ:210:ILE:HD13 | 2.44 | 0.43 |
| 62:SQ:210:ILE:HD13 | 62:SQ:210:ILE:N | 2.33 | 0.43 |
| 74:Sc:58:GLY:HA2 | 74:Sc:70:LYS:HA | 2.01 | 0.43 |
| 1:LA:352:A:H3' | 3:LC:54:A:N3 | 2.34 | 0.43 |
| 1:LA:2389:C:H2' | 1:LA:2390:A:C8 | 2.54 | 0.43 |
| 1:LA:2655:U:H4' | 1:LA:2656:A:O4' | 2.19 | 0.43 |
| 1:LA:2667:A:H2' | 1:LA:2668:U:O4' | 2.19 | 0.43 |
| 1:LA:3095:U:H2' | 1:LA:3096:C:C6 | 2.54 | 0.43 |
| 3:LC:76:C:H2' | 3:LC:77:A:O4' | 2.18 | 0.43 |
| 6:LF:361:HIS:O | 21:LU:28:ARG:NH1 | 2.51 | 0.43 |
| 7:LG:287:ALA:HA | 7:LG:290:ILE:HG12 | 2.01 | 0.43 |
| 8:LH:48:ARG:H | 8:LH:48:ARG:HG2 | 1.58 | 0.43 |
| 24:LX:32:ARG:HD3 | 45:S2:1734:U:H5' | 2.00 | 0.43 |
| 43:Lq:78:LYS:HE2 | 43:Lq:78:LYS:HB2 | 1.72 | 0.43 |
| 45:S2:14:C:C6 | 63:SR:203:LYS:NZ | 2.85 | 0.43 |
| 45:S2:30:G:H4' | 74:Sc:131:SER:HB2 | 2.01 | 0.43 |
| 45:S2:749:U:H2' | 45:S2:750:U:C6 | 2.54 | 0.43 |
| 45:S2:874:C:H2' | 45:S2:875:G:C8 | 2.53 | 0.43 |
| 45:S2:1287:A:N1 | 45:S2:1328:G:O2' | 2.45 | 0.43 |
| 45:S2:1358:G:O2' | 54:SI:133:ASP:OD2 | 2.21 | 0.43 |
| 48:SC:28:ASN:ND2 | 58:SM:8:PHE:CG | 2.87 | 0.43 |
| 55:SJ:41:ILE:HD13 | 55:SJ:41:ILE:HA | 1.91 | 0.43 |
| 61:SP:63:ILE:HD13 | 61:SP:158:VAL:HG21 | 1.99 | 0.43 |
| 62:SQ:101:HIS:O | 62:SQ:217:LEU:HB3 | 2.18 | 0.43 |
| 68:SW:103:ASP:O | 68:SW:106:GLU:HG3 | 2.19 | 0.43 |
| 1:LA:996:A:H2' | 1:LA:997:A:O4' | 2.19 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:LA:2653:C:O2' | 1:LA:2657:A:N1 | 2.45 | 0.43 |
| 1:LA:3162:C:H2' | 1:LA:3163:A:H8 | 1.84 | 0.43 |
| 3:LC:4:C:H2' | 3:LC:5:U:O2 | 2.18 | 0.43 |
| 6:LF:165:ALA:HB1 | 6:LF:219:LEU:HD13 | 2.00 | 0.43 |
| 9:LI:24:GLU:HG2 | 9:LI:26:VAL:HG22 | 2.00 | 0.43 |
| 9:LI:118:LYS:HE2 | 9:LI:191:VAL:CG1 | 2.49 | 0.43 |
| 12:LL:76:MET:CE | 12:LL:148:VAL:HA | 2.49 | 0.43 |
| 14:LN:155:GLU:H | 14:LN:155:GLU:CD | 2.26 | 0.43 |
| 15:LO:12:TRP:CD1 | 21:LU:151:PRO:HB2 | 2.52 | 0.43 |
| 21:LU:129:ILE:HD12 | 21:LU:130:GLU:H | 1.84 | 0.43 |
| 26:LZ:98:ALA:O | 26:LZ:102:LEU:HB2 | 2.19 | 0.43 |
| 35:Li:51:LEU:HB3 | 35:Li:54:ILE:HD13 | 2.01 | 0.43 |
| 36:Lj:105:ARG:O | 36:Lj:109:ILE:CD1 | 2.67 | 0.43 |
| 37:Lk:56:ARG:HH22 | 37:Lk:76:ARG:NH2 | 2.17 | 0.43 |
| 43:Lq:45:ARG:O | 43:Lq:48:SER:OG | 2.36 | 0.43 |
| 45:S2:760:A:H2' | 45:S2:761:G:O4' | 2.19 | 0.43 |
| 45:S2:876:G:H1' | 45:S2:944:A:O4' | 2.18 | 0.43 |
| 45:S2:1275:A:O2' | 46:SA:145:ALA:O | 2.24 | 0.43 |
| 45:S2:1472:C:H2' | 45:S2:1535:U:O4 | 2.17 | 0.43 |
| 54:SI:47:PRO:HG2 | 54:SI:53:TRP:CD2 | 2.54 | 0.43 |
| 59:SN:113:LYS:NZ | 59:SN:114:VAL:O | 2.49 | 0.43 |
| 61:SP:79:ARG:NH2 | 61:SP:164:ASN:O | 2.52 | 0.43 |
| 65:ST:211:LEU:O | 65:ST:215:ARG:HG2 | 2.18 | 0.43 |
| 68:SW:40:LYS:HB2 | 68:SW:40:LYS:HE3 | 1.79 | 0.43 |
| 69:SX:63:LEU:HD12 | 69:SX:63:LEU:HA | 1.87 | 0.43 |
| 79:Ta:41:C:H2' | 79:Ta:42:C:C6 | 2.53 | 0.43 |
| 1:LA:1120:A:H2' | 1:LA:1121:U:H6 | 1.84 | 0.43 |
| 1:LA:1631:C:H5" | 1:LA:1632:A:H5" | 2.00 | 0.43 |
| 1:LA:1740:U:H4' | 1:LA:1741:A:H5' | 2.01 | 0.43 |
| 1:LA:2118:C:H2' | 1:LA:2119:A:O4' | 2.19 | 0.43 |
| 1:LA:2835:U:H2' | 1:LA:2836:C:O2 | 2.18 | 0.43 |
| 7:LG:241:THR:O | 7:LG:245:GLU:HG2 | 2.18 | 0.43 |
| 8:LH:51:ARG:HD2 | 8:LH:158:TYR:CZ | 2.52 | 0.43 |
| 8:LH:133:GLU:HG3 | 8:LH:134:ARG:N | 2.32 | 0.43 |
| 11:LK:71:VAL:O | 11:LK:75:VAL:HG23 | 2.18 | 0.43 |
| 11:LK:94:TYR:CD2 | 11:LK:98:PRO:HA | 2.54 | 0.43 |
| 15:LO:28:SER:HA | 15:LO:31:LYS:HZ2 | 1.82 | 0.43 |
| 18:LR:105:LYS:HE3 | 18:LR:105:LYS:HB3 | 1.82 | 0.43 |
| 19:LS:21:SER:HB3 | 19:LS:26:LEU:HD23 | 2.01 | 0.43 |
| 28:Lb:87:LEU:HD21 | 28:Lb:121:ARG:HH21 | 1.83 | 0.43 |
| 44:Lr:29:LEU:HD23 | 44:Lr:29:LEU:HA | 1.79 | 0.43 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 45:S2:26:A:H2' | 45:S2:27:U:C6 | 2.54 | 0.43 |
| 45:S2:385:A:H5" | 67:SV:22:ARG:CG | 2.48 | 0.43 |
| 45:S2:821:U:N3 | 45:S2:852:C:N4 | 2.24 | 0.43 |
| 45:S2:849:C:H5" | 45:S2:850:A:OP1 | 2.19 | 0.43 |
| 45:S2:1330:G:H22 | 46:SA:204:ASP:HB3 | 1.82 | 0.43 |
| 45:S2:1556:A:C5 | 45:S2:1560:U:C2 | 3.06 | 0.43 |
| 45:S2:1574:G:H5" | 45:S2:1575:G:OP1 | 2.19 | 0.43 |
| 46:SA:104:SER:O | 46:SA:108:LYS:HG3 | 2.19 | 0.43 |
| 47:SB:93:LEU:O | 47:SB:97:LEU:CD2 | 2.65 | 0.43 |
| 60:SO:17:ASN:OD1 | 60:SO:39:ASP:HB3 | 2.19 | 0.43 |
| 63:SR:80:VAL:HA | 63:SR:102:VAL:HA | 2.00 | 0.43 |
| 66:SU:24:PHE:HE1 | 66:SU:81:LEU:HD11 | 1.84 | 0.43 |
| 66:SU:129:LEU:HD11 | 66:SU:172:VAL:HG21 | 2.01 | 0.43 |
| 75:Sd:15:ASN:OD1 | 75:Sd:20:ARG:HG2 | 2.18 | 0.43 |
| 79:Ta:40:C:H2' | 79:Ta:41:C:N1 | 2.34 | 0.43 |
| 1:LA:1237:G:H2' | 1:LA:1237:G:N3 | 2.34 | 0.43 |
| 1:LA:1504:A:N1 | 1:LA:1515:A:O2' | 2.43 | 0.43 |
| 1:LA:1660:C:H2' | 1:LA:1661:G:C8 | 2.53 | 0.43 |
| 1:LA:1899:G:O2' | 1:LA:2334:U:O4 | 2.29 | 0.43 |
| 1:LA:2674:A:N6 | 13:LM:124:GLY:O | 2.52 | 0.43 |
| 5:LE:105:VAL:HG11 | 5:LE:148:LEU:HD11 | 2.01 | 0.43 |
| 7:LG:93:THR:HG22 | 7:LG:158:ARG:NH1 | 2.34 | 0.43 |
| 7:LG:116:ASP:OD1 | 7:LG:116:ASP:N | 2.40 | 0.43 |
| 18:LR:132:ALA:O | 18:LR:135:ARG:NH1 | 2.52 | 0.43 |
| 45:S2:64:U:O2' | 45:S2:168:A:N3 | 2.45 | 0.43 |
| 45:S2:461:G:H2' | 45:S2:462:G:C8 | 2.54 | 0.43 |
| 45:S2:554:C:H1' | 45:S2:555:A:H2 | 1.84 | 0.43 |
| 45:S2:638:U:OP2 | 73:Sb:32:LYS:NZ | 2.39 | 0.43 |
| 46:SA:24:PHE:HA | 48:SC:60:SER:OG | 2.19 | 0.43 |
| 58:SM:19:ARG:HB3 | 58:SM:30:LEU:HD23 | 2.01 | 0.43 |
| 60:SO:145:LEU:O | 60:SO:181:TRP:HH2 | 2.01 | 0.43 |
| 60:SO:158:PRO:HD2 | 60:SO:208:GLY:HA2 | 2.00 | 0.43 |
| 65:ST:102:VAL:HG13 | 65:ST:106:LEU:HD12 | 2.01 | 0.43 |
| 69:SX:84:ILE:CD1 | 69:SX:109:VAL:CG1 | 2.96 | 0.43 |
| 1:LA:1129:A:H2' | 1:LA:1130:A:C8 | 2.54 | 0.42 |
| 1:LA:1169:A:H2' | 1:LA:1170:A:C8 | 2.54 | 0.42 |
| 1:LA:1274:A:N3 | 1:LA:1274:A:H2' | 2.34 | 0.42 |
| 1:LA:2175:U:O2' | 4:LD:23:ARG:HD2 | 2.19 | 0.42 |
| 1:LA:2249:G:H2' | 1:LA:2250:G:O4' | 2.19 | 0.42 |
| 1:LA:2450:G:O2' | 1:LA:2494:A:N6 | 2.52 | 0.42 |
| 1:LA:3146:G:H2' | 1:LA:3147:G:C8 | 2.54 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 4:LD:44:ILE:HD11 | 4:LD:85:GLY:HA2 | 2.00 | 0.42 |
| 4:LD:246:LEU:HD23 | 4:LD:246:LEU:H | 1.84 | 0.42 |
| 6:LF:261:VAL:HG13 | 6:LF:262:TRP:CD1 | 2.54 | 0.42 |
| 12:LL:200:LEU:HB2 | 12:LL:213:PHE:CD2 | 2.54 | 0.42 |
| 13:LM:87:LYS:HB3 | 13:LM:87:LYS:HE3 | 1.82 | 0.42 |
| 21:LU:96:ASP:OD1 | 21:LU:97:VAL:N | 2.49 | 0.42 |
| 24:LX:10:LYS:HD3 | 24:LX:125:LEU:HD22 | 2.00 | 0.42 |
| 44:Lr:39:CYS:HB3 | 44:Lr:42:CYS:SG | 2.59 | 0.42 |
| 45:S2:14:C:H6 | 63:SR:203:LYS:HZ3 | 1.64 | 0.42 |
| 45:S2:628:G:OP1 | 70:SY:124:ARG:NH1 | 2.45 | 0.42 |
| 45:S2:1031:U:H4' | 45:S2:1032:G:OP2 | 2.19 | 0.42 |
| 45:S2:1181:U:H2' | 45:S2:1182:U:O4' | 2.19 | 0.42 |
| 45:S2:1529:C:H2' | 45:S2:1530:C:C6 | 2.54 | 0.42 |
| 45:S2:1638:G:H2' | 45:S2:1639:C:O4' | 2.19 | 0.42 |
| 47:SB:177:ILE:O | 47:SB:181:GLU:HG3 | 2.19 | 0.42 |
| 56:SK:48:ASP:OD1 | 56:SK:49:ARG:N | 2.52 | 0.42 |
| 59:SN:89:LYS:HG3 | 59:SN:91:ILE:HG22 | 2.01 | 0.42 |
| 60:SO:34:LEU:HD23 | 60:SO:44:SER:CB | 2.49 | 0.42 |
| 64:SS:160:VAL:HG11 | 64:SS:169:ILE:HD13 | 2.01 | 0.42 |
| 65:ST:79:LYS:HE2 | 65:ST:79:LYS:HB3 | 1.67 | 0.42 |
| 68:SW:71:PHE:CD1 | 68:SW:71:PHE:C | 2.97 | 0.42 |
| 75:Sd:43:LYS:HE2 | 75:Sd:43:LYS:HB3 | 1.59 | 0.42 |
| 1:LA:708:G:N2 | 1:LA:711:A:OP2 | 2.45 | 0.42 |
| 1:LA:1482:A:H2' | 1:LA:1482:A:N3 | 2.34 | 0.42 |
| 1:LA:1561:G:HO2' | 1:LA:1562:C:C5' | 2.30 | 0.42 |
| 1:LA:1765:U:H5" | 20:LT:43:LYS:HZ1 | 1.84 | 0.42 |
| 1:LA:1771:C:H2' | 1:LA:1772:U:O4' | 2.19 | 0.42 |
| 5:LE:167:ARG:NH1 | 5:LE:168:LYS:HG3 | 2.34 | 0.42 |
| 15:LO:116:GLU:HG2 | 17:LQ:197[A]:LEU:HD11 | 2.00 | 0.42 |
| 15:LO:131:VAL:HG22 | 17:LQ:182[A]:ASN:HB2 | 2.00 | 0.42 |
| 16:LP:38:ARG:HD2 | 16:LP:61:ILE:O | 2.19 | 0.42 |
| 19:LS:150:VAL:HA | 19:LS:153:PHE:CD2 | 2.53 | 0.42 |
| 45:S2:788:A:C5 | 64:SS:19:LEU:HD13 | 2.54 | 0.42 |
| 45:S2:1542:G:N2 | 45:S2:1568:C:H1' | 2.34 | 0.42 |
| 45:S2:1584:G:O3' | 51:SF:124:PRO:HA | 2.20 | 0.42 |
| 46:SA:7:LYS:HD3 | 46:SA:7:LYS:HA | 1.65 | 0.42 |
| 47:SB:56:ALA:O | 47:SB:59:VAL:HG12 | 2.19 | 0.42 |
| 54:SI:21:PHE:O | 54:SI:25:GLN:HG2 | 2.18 | 0.42 |
| 62:SQ:52:THR:H | 62:SQ:55:LYS:HG2 | 1.85 | 0.42 |
| 66:SU:5:GLN:HA | 66:SU:8:ILE:HG22 | 2.02 | 0.42 |
| 68:SW:123:HIS:CD2 | 78:Sg:33:ARG:HH11 | 2.37 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 79:Ta:38:A:H2' | 79:Ta:39:A:O4' | 2.19 | 0.42 |
| 1:LA:821:U:H2' | 1:LA:822:G:H8 | 1.84 | 0.42 |
| 1:LA:3176:G:N2 | 1:LA:3213:A:H1' | 2.34 | 0.42 |
| 1:LA:3299:A:N6 | 1:LA:3315:G:H1 | 2.09 | 0.42 |
| 1:LA:3337:G:H2' | 1:LA:3338:C:C6 | 2.54 | 0.42 |
| 2:LB:7:G:H8 | 7:LG:22:ARG:NH1 | 2.16 | 0.42 |
| 2:LB:48:U:OP2 | 7:LG:94:ASN:HB3 | 2.19 | 0.42 |
| 2:LB:76:A:N3 | 21:LU:50:LYS:NZ | 2.60 | 0.42 |
| 3:LC:93:U:H2' | 3:LC:94:C:O4' | 2.18 | 0.42 |
| 5:LE:367:LYS:HD2 | 25:LY:33:ASN:HB2 | 2.00 | 0.42 |
| 6:LF:11:LEU:HD21 | 6:LF:156:LEU:HB2 | 2.00 | 0.42 |
| 7:LG:153:THR:HG23 | 7:LG:160:PHE:CZ | 2.54 | 0.42 |
| 9:LI:163:LEU:HD23 | 9:LI:168:ILE:HD11 | 2.00 | 0.42 |
| 10:LJ:153:ILE:HD13 | 10:LJ:166:LEU:HB3 | 2.01 | 0.42 |
| 36:Lj:94:LYS:HB3 | 36:Lj:94:LYS:HE3 | 1.89 | 0.42 |
| 36:Lj:102:GLU:OE2 | 36:Lj:105:ARG:NE | 2.52 | 0.42 |
| 45:S2:328:A:H2' | 45:S2:329:G:C8 | 2.53 | 0.42 |
| 45:S2:435:C:H5" | 74:Sc:50:LYS:HD3 | 2.02 | 0.42 |
| 45:S2:485:A:N6 | 45:S2:503:G:O6 | 2.53 | 0.42 |
| 45:S2:511:A:H4' | 45:S2:512:A:OP1 | 2.19 | 0.42 |
| 45:S2:778:G:N2 | 45:S2:780:A:N1 | 2.66 | 0.42 |
| 45:S2:1041:G:H2' | 45:S2:1042:G:H8 | 1.81 | 0.42 |
| 45:S2:1056:U:H2' | 45:S2:1057:U:C6 | 2.55 | 0.42 |
| 45:S2:1382:A:O2' | 55:SJ:57:ARG:HD3 | 2.20 | 0.42 |
| 46:SA:25:PHE:CD2 | 46:SA:37:VAL:HG11 | 2.53 | 0.42 |
| 47:SB:183:ALA:HB2 | 47:SB:193:THR:HG21 | 2.01 | 0.42 |
| 50:SE:108:ARG:CG | 50:SE:111:MET:HE3 | 2.50 | 0.42 |
| 53:SH:68:ARG:O | 53:SH:72:ILE:HG12 | 2.19 | 0.42 |
| 64:SS:40:GLU:H | 64:SS:40:GLU:HG2 | 1.57 | 0.42 |
| 65:ST:67:VAL:CG2 | 65:ST:99:GLY:HA2 | 2.49 | 0.42 |
| 66:SU:114:ARG:HD3 | 66:SU:114:ARG:HA | 1.77 | 0.42 |
| 69:SX:101:GLU:OE1 | 74:Sc:16:ARG:NH2 | 2.52 | 0.42 |
| 75:Sd:41:ARG:HG2 | 75:Sd:42:GLU:N | 2.35 | 0.42 |
| 79:Ta:15:G:N2 | 79:Ta:49:C:H42 | 2.16 | 0.42 |
| 1:LA:371:G:H4' | 1:LA:396:A:N1 | 2.34 | 0.42 |
| 1:LA:505:G:OP1 | 6:LF:320:ASN:ND2 | 2.40 | 0.42 |
| 1:LA:633:C:H2' | 1:LA:634:C:O4' | 2.20 | 0.42 |
| 1:LA:900:G:H1' | 1:LA:1589:A:H61 | 1.82 | 0.42 |
| 1:LA:1031:C:H2' | 1:LA:1032:C:H6 | 1.84 | 0.42 |
| 1:LA:1155:C:O2' | 1:LA:1197:A:N1 | 2.44 | 0.42 |
| 1:LA:1343:A:H2' | 1:LA:1344:G:C8 | 2.54 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:LA:1384:U:H2' | 1:LA:1385:C:C6 | 2.55 | 0.42 |
| 1:LA:1687:U:H1' | 23:LW:75:TYR:CD2 | 2.55 | 0.42 |
| 1:LA:2562:A:H2' | 1:LA:2563:G:O4' | 2.20 | 0.42 |
| 2:LB:45:A:H2' | 2:LB:46:A:H8 | 1.84 | 0.42 |
| 2:LB:113:C:H2' | 2:LB:114:U:O4' | 2.20 | 0.42 |
| 5:LE:126:LYS:HB3 | 5:LE:128:LYS:HG2 | 2.02 | 0.42 |
| 10:LJ:149:LYS:N | 10:LJ:200:LEU:O | 2.52 | 0.42 |
| 11:LK:10:ILE:HG22 | 11:LK:53:ILE:O | 2.19 | 0.42 |
| 11:LK:103:ILE:HG12 | 11:LK:136:PHE:CZ | 2.55 | 0.42 |
| 11:LK:174:LYS:HE2 | 11:LK:174:LYS:HB2 | 1.89 | 0.42 |
| 16:LP:45:PRO:O | 16:LP:49:ARG:HG3 | 2.20 | 0.42 |
| 17:LQ:138[A]:LEU:HD12 | 17:LQ:138[A]:LEU:HA | 1.83 | 0.42 |
| 18:LR:130:TYR:CE1 | 18:LR:136:ILE:CD1 | 3.02 | 0.42 |
| 20:LT:165:LYS:HG3 | 20:LT:166:ASN:N | 2.34 | 0.42 |
| 24:LX:128:ARG:HD2 | 24:LX:128:ARG:HA | 1.85 | 0.42 |
| 43:Lq:43:TYR:OH | 80:Tb:77:A:H5' | 2.20 | 0.42 |
| 45:S2:333:A:OP1 | 67:SV:49:ARG:HG3 | 2.19 | 0.42 |
| 45:S2:830:U:O2 | 45:S2:830:U:H2' | 2.19 | 0.42 |
| 45:S2:932:U:OP2 | 62:SQ:155:TYR:OH | 2.28 | 0.42 |
| 45:S2:1107:G:O2' | 45:S2:1108:G:H5' | 2.19 | 0.42 |
| 45:S2:1293:U:H1' | 61:SP:111:ILE:HG12 | 2.02 | 0.42 |
| 45:S2:1479:A:H5" | 54:SI:60:SER:HB2 | 2.01 | 0.42 |
| 48:SC:28:ASN:ND2 | 58:SM:8:PHE:CD2 | 2.88 | 0.42 |
| 48:SC:81:ASN:HD22 | 49:SD:37:VAL:HG11 | 1.82 | 0.42 |
| 50:SE:18:ARG:HG3 | 53:SH:91:ASP:O | 2.18 | 0.42 |
| 54:SI:40:SER:HB2 | 54:SI:96:ALA:HA | 2.00 | 0.42 |
| 64:SS:250:GLU:HA | 64:SS:253:ASP:OD2 | 2.18 | 0.42 |
| 67:SV:112:TRP:O | 67:SV:116:HIS:HB2 | 2.19 | 0.42 |
| 68:SW:139:GLN:HE22 | 75:Sd:64:PHE:HB3 | 1.85 | 0.42 |
| 70:SY:25:TRP:HB2 | 77:Sf:82:LYS:HE2 | 2.01 | 0.42 |
| 70:SY:40:TYR:HB3 | 70:SY:50:ILE:HG12 | 2.00 | 0.42 |
| 75:Sd:56:SER:N | 75:Sd:74:LEU:O | 2.45 | 0.42 |
| 79:Ta:74:A:H2' | 79:Ta:74:A:N3 | 2.34 | 0.42 |
| 1:LA:370:U:H4' | 1:LA:404:G:H5' | 2.01 | 0.42 |
| 1:LA:597:G:H2' | 1:LA:598:A:H8 | 1.85 | 0.42 |
| 1:LA:617:G:H5" | 18:LR:170:SER:OG | 2.18 | 0.42 |
| 1:LA:1312:C:H2' | 1:LA:1313:G:O4' | 2.19 | 0.42 |
| 1:LA:1728:G:H5" | 1:LA:1730:G:O4' | 2.19 | 0.42 |
| 1:LA:1945:A:H2' | 1:LA:1946:A:C8 | 2.54 | 0.42 |
| 1:LA:2532:U:O2 | 1:LA:2532:U:H2' | 2.20 | 0.42 |
| 1:LA:2689:A:H2' | 1:LA:2689:A:N3 | 2.35 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 4:LD:143:GLU:O | 4:LD:145:LYS:HG2 | 2.19 | 0.42 |
| 19:LS:79:LYS:HD3 | 19:LS:138:LEU:HD12 | 2.01 | 0.42 |
| 26:LZ:104:GLU:OE1 | 26:LZ:138:ARG:NH2 | 2.48 | 0.42 |
| 37:Lk:38:LYS:HB2 | 37:Lk:38:LYS:HE3 | 1.72 | 0.42 |
| 43:Lq:14:GLY:C | 43:Lq:16:THR:H | 2.27 | 0.42 |
| 45:S2:122:U:O3' | 64:SS:77:ARG:NH2 | 2.52 | 0.42 |
| 45:S2:273:G:O6 | 45:S2:283:U:O4 | 2.37 | 0.42 |
| 45:S2:894:U:H2' | 45:S2:895:G:C8 | 2.55 | 0.42 |
| 45:S2:1095:U:H4' | 73:Sb:19:LYS:HZ1 | 1.84 | 0.42 |
| 45:S2:1382:A:H2' | 45:S2:1383:G:C8 | 2.55 | 0.42 |
| 45:S2:1517:U:H5" | 45:S2:1518:C:H5 | 1.84 | 0.42 |
| 45:S2:1734:U:H2' | 45:S2:1735:U:C2 | 2.54 | 0.42 |
| 47:SB:52:GLU:OE2 | 47:SB:52:GLU:N | 2.35 | 0.42 |
| 48:SC:71:GLU:O | 48:SC:74:GLU:HG3 | 2.19 | 0.42 |
| 49:SD:31:VAL:HG22 | 49:SD:123:VAL:HG11 | 2.00 | 0.42 |
| 50:SE:96:ILE:HD12 | 50:SE:116:LEU:CG | 2.50 | 0.42 |
| 51:SF:73:GLY:O | 51:SF:77:GLN:HG3 | 2.19 | 0.42 |
| 60:SO:21:THR:N | 60:SO:36:ALA:O | 2.52 | 0.42 |
| 60:SO:54:PHE:CD2 | 60:SO:312:VAL:HG11 | 2.54 | 0.42 |
| 67:SV:72:ILE:HD13 | 67:SV:112:TRP:CE2 | 2.55 | 0.42 |
| 74:Sc:37:ALA:O | 74:Sc:41:SER:OG | 2.26 | 0.42 |
| 75:Sd:36:SER:HB2 | 75:Sd:38:ASP:OD1 | 2.18 | 0.42 |
| 1:LA:47:C:H5" | 14:LN:16:LYS:HG2 | 2.01 | 0.42 |
| 1:LA:226:C:H2' | 1:LA:227:G:O4' | 2.20 | 0.42 |
| 1:LA:938:C:OP1 | 1:LA:962:A:O2' | 2.37 | 0.42 |
| 1:LA:1162:U:H4' | 33:Lg:57:TYR:CE1 | 2.54 | 0.42 |
| 1:LA:2428:U:H2' | 1:LA:2429:G:H8 | 1.84 | 0.42 |
| 1:LA:2635:A:H4' | 1:LA:2636:A:O5' | 2.20 | 0.42 |
| 1:LA:2943:G:H2' | 1:LA:2944:U:O4' | 2.19 | 0.42 |
| 1:LA:3034:C:H5 | 11:LK:121:LYS:H | 1.67 | 0.42 |
| 2:LB:47:C:OP1 | 7:LG:95:TRP:N | 2.42 | 0.42 |
| 3:LC:5:U:C4 | 3:LC:6:U:C4 | 3.08 | 0.42 |
| 3:LC:39:G:O2' | 3:LC:105:A:N1 | 2.51 | 0.42 |
| 5:LE:105:VAL:HG11 | 5:LE:148:LEU:CD1 | 2.49 | 0.42 |
| 6:LF:178:LEU:HD21 | 6:LF:225:VAL:CG2 | 2.50 | 0.42 |
| 7:LG:218:ARG:HD3 | 7:LG:218:ARG:HA | 1.78 | 0.42 |
| 16:LP:110:ALA:HB1 | 16:LP:113:LEU:CD2 | 2.48 | 0.42 |
| 25:LY:8:PHE:CD2 | 25:LY:46:PRO:HG3 | 2.55 | 0.42 |
| 27:La:70:ILE:HD13 | 27:La:82:VAL:HG22 | 2.02 | 0.42 |
| 45:S2:433:C:H2' | 45:S2:434:G:O4' | 2.20 | 0.42 |
| 45:S2:445:A:H1' | 45:S2:525:A:H5' | 2.02 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 45:S2:449:C:H2' | 45:S2:450:U:C6 | 2.55 | 0.42 |
| 45:S2:639:U:H4' | 45:S2:640:U:O5' | 2.19 | 0.42 |
| 45:S2:707:A:H5" | 45:S2:731:C:N4 | 2.34 | 0.42 |
| 45:S2:802:G:O2' | 73:Sb:107:SER:HB2 | 2.20 | 0.42 |
| 45:S2:1017:U:H2' | 45:S2:1018:U:H6 | 1.83 | 0.42 |
| 45:S2:1147:A:OP1 | 63:SR:91:ARG:NH1 | 2.53 | 0.42 |
| 45:S2:1209:C:H2' | 45:S2:1210:C:C6 | 2.55 | 0.42 |
| 45:S2:1563:C:H2' | 45:S2:1564:U:H6 | 1.85 | 0.42 |
| 47:SB:51:VAL:HG11 | 47:SB:130:ILE:HG22 | 2.01 | 0.42 |
| 54:SI:6:VAL:HG22 | 54:SI:66:TYR:CE1 | 2.55 | 0.42 |
| 60:SO:13:LEU:HB3 | 60:SO:45:TRP:CE3 | 2.39 | 0.42 |
| 61:SP:139:VAL:O | 61:SP:139:VAL:HG12 | 2.20 | 0.42 |
| 62:SQ:83:LYS:N | 62:SQ:104:ASP:O | 2.51 | 0.42 |
| 64:SS:125:LYS:HA | 64:SS:159:THR:HG22 | 2.01 | 0.42 |
| 65:ST:30:LYS:HD3 | 65:ST:30:LYS:HA | 1.76 | 0.42 |
| 65:ST:64:LYS:HG3 | 65:ST:83:CYS:SG | 2.60 | 0.42 |
| 68:SW:66:ASP:HB3 | 68:SW:69:ARG:HB3 | 2.00 | 0.42 |
| 68:SW:97:LEU:HD23 | 68:SW:97:LEU:HA | 1.74 | 0.42 |
| 68:SW:112:GLN:O | 68:SW:116:LEU:HD12 | 2.20 | 0.42 |
| 69:SX:99:ARG:HB2 | 74:Sc:9:LEU:O | 2.18 | 0.42 |
| 74:Sc:70:LYS:HB3 | 74:Sc:93:LEU:HD11 | 2.02 | 0.42 |
| 1:LA:269:G:H5' | 16:LP:120:TRP:CE3 | 2.55 | 0.42 |
| 1:LA:1222:G:N2 | 1:LA:1285:G:HO2' | 2.11 | 0.42 |
| 1:LA:1595:U:C2 | 1:LA:1596:C:C5 | 3.08 | 0.42 |
| 1:LA:1639:C:N4 | 35:Li:73:SER:HB2 | 2.35 | 0.42 |
| 1:LA:2573:G:H5' | 28:Lb:56:LYS:O | 2.19 | 0.42 |
| 1:LA:2597:U:H2' | 1:LA:2598:G:C8 | 2.54 | 0.42 |
| 1:LA:3159:C:H4' | 1:LA:3395:G:C4 | 2.54 | 0.42 |
| 4:LD:19:HIS:ND1 | 4:LD:190:ARG:O | 2.46 | 0.42 |
| 5:LE:35:ASP:CG | 5:LE:184:ASN:HD22 | 2.28 | 0.42 |
| 5:LE:356:LEU:HD23 | 5:LE:359:ILE:HD11 | 2.01 | 0.42 |
| 9:LI:121:LYS:HB2 | 22:LV:133:ALA:HB3 | 2.02 | 0.42 |
| 12:LL:168:SER:OG | 22:LV:160:ILE:O | 2.34 | 0.42 |
| 13:LM:93:ASP:N | 13:LM:93:ASP:OD1 | 2.52 | 0.42 |
| 16:LP:73:ARG:HA | 16:LP:74:PRO:HD3 | 1.85 | 0.42 |
| 21:LU:132:THR:HG23 | 21:LU:144:LEU:HD22 | 2.02 | 0.42 |
| 24:LX:75:PRO:HG2 | 24:LX:105:PRO:HD3 | 2.01 | 0.42 |
| 45:S2:804:A:C8 | 73:Sb:107:SER:HA | 2.54 | 0.42 |
| 45:S2:1251:U:H1' | 59:SN:135:HIS:NE2 | 2.34 | 0.42 |
| 45:S2:1292:G:H2' | 45:S2:1293:U:C6 | 2.54 | 0.42 |
| 45:S2:1339:C:O2' | 45:S2:1341:A:N7 | 2.47 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 45:S2:1478:G:OP1 | 54:SI:39:THR:OG1 | 2.27 | 0.42 |
| 45:S2:1674:C:H2' | 45:S2:1675:C:H6 | 1.84 | 0.42 |
| 55:SJ:98:GLN:HG2 | 55:SJ:99:ILE:N | 2.34 | 0.42 |
| 59:SN:121:CYS:H | 59:SN:132:LEU:HD12 | 1.84 | 0.42 |
| 63:SR:104:VAL:HG21 | 63:SR:133:LYS:HG3 | 2.01 | 0.42 |
| 63:SR:230:TRP:CE2 | 73:Sb:68:ARG:HB3 | 2.54 | 0.42 |
| 66:SU:45:SER:OG | 66:SU:46:ILE:N | 2.53 | 0.42 |
| 66:SU:60:ILE:HB | 66:SU:92:PHE:CD1 | 2.54 | 0.42 |
| 72:Sa:32:VAL:CG2 | 72:Sa:60:ARG:HD3 | 2.50 | 0.42 |
| 1:LA:190:U:H2' | 27:La:60:ARG:HH22 | 1.85 | 0.42 |
| 1:LA:417:A:C2 | 3:LC:6:U:H5 | 2.38 | 0.42 |
| 1:LA:649:A:H2' | 1:LA:650:C:C6 | 2.54 | 0.42 |
| 1:LA:849:C:H2' | 1:LA:850:U:C6 | 2.54 | 0.42 |
| 1:LA:1718:G:H2' | 1:LA:1719:G:H8 | 1.85 | 0.42 |
| 1:LA:1922:A:H2' | 1:LA:1923:C:O4' | 2.19 | 0.42 |
| 1:LA:2186:U:H5 | 4:LD:200:ARG:HD3 | 1.85 | 0.42 |
| 1:LA:2522:G:C6 | 4:LD:68:LYS:NZ | 2.75 | 0.42 |
| 1:LA:2537:U:H5" | 62:SQ:229:MET:H | 1.84 | 0.42 |
| 1:LA:2909:U:H2' | 1:LA:2910:A:O4' | 2.20 | 0.42 |
| 1:LA:3222:U:H3 | 1:LA:3263:G:H1 | 1.67 | 0.42 |
| 1:LA:3349:C:N4 | 1:LA:3356:G:O6 | 2.32 | 0.42 |
| 4:LD:100:ASN:O | 4:LD:165:VAL:HA | 2.20 | 0.42 |
| 6:LF:138:ARG:HH21 | 6:LF:240:PRO:CG | 2.33 | 0.42 |
| 9:LI:96:PRO:HB2 | 9:LI:99:PRO:HD2 | 2.01 | 0.42 |
| 22:LV:14:MET:HG2 | 22:LV:15:PHE:CD1 | 2.55 | 0.42 |
| 28:Lb:26:VAL:HG13 | 28:Lb:93:LYS:HA | 2.01 | 0.42 |
| 33:Lg:32:TRP:CH2 | 33:Lg:52:GLN:HG2 | 2.54 | 0.42 |
| 37:Lk:75:LYS:HA | 37:Lk:75:LYS:HD2 | 1.76 | 0.42 |
| 45:S2:176:C:H2' | 45:S2:177:U:C6 | 2.54 | 0.42 |
| 45:S2:205:U:C2 | 45:S2:206:A:C8 | 3.07 | 0.42 |
| 45:S2:512:A:H5' | 68:SW:164:PHE:CZ | 2.55 | 0.42 |
| 45:S2:705:U:O2' | 45:S2:706:A:N7 | 2.53 | 0.42 |
| 45:S2:752:A:P | 64:SS:187:ARG:HE | 2.42 | 0.42 |
| 45:S2:753:A:O2' | 45:S2:754:A:H5' | 2.19 | 0.42 |
| 45:S2:1202:A:N6 | 45:S2:1457:C:O5' | 2.53 | 0.42 |
| 45:S2:1722:A:H4' | 65:ST:75:LEU:HD21 | 2.00 | 0.42 |
| 45:S2:1770:U:H2' | 45:S2:1771:U:C6 | 2.55 | 0.42 |
| 56:SK:92:ILE:HD13 | 56:SK:100:ILE:HG22 | 2.02 | 0.42 |
| 61:SP:179:ARG:HG2 | 61:SP:179:ARG:NH1 | 2.35 | 0.42 |
| 63:SR:109:GLY:O | 63:SR:139:ILE:N | 2.53 | 0.42 |
| 64:SS:136:VAL:HG13 | 64:SS:149:TYR:CE1 | 2.54 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 68:SW:83:VAL:HG13 | 68:SW:85:VAL:HG22 | 2.01 | 0.42 |
| 69:SX:29:LYS:HD2 | 69:SX:29:LYS:HA | 1.81 | 0.42 |
| 75:Sd:5:VAL:HG12 | 75:Sd:7:ILE:HG13 | 2.01 | 0.42 |
| 1:LA:553:U:H3' | 1:LA:554:A:C8 | 2.55 | 0.42 |
| 1:LA:873:C:H5" | 1:LA:874:U:O5' | 2.19 | 0.42 |
| 1:LA:999:G:N3 | 1:LA:1002:A:N6 | 2.67 | 0.42 |
| 1:LA:1018:G:N7 | 1:LA:1035:G:N2 | 2.68 | 0.42 |
| 1:LA:1578:C:H2' | 1:LA:1579:C:O4' | 2.19 | 0.42 |
| 1:LA:2577:C:H2' | 1:LA:2578:U:O4' | 2.20 | 0.42 |
| 1:LA:2651:G:H5" | 1:LA:2652:U:O4' | 2.20 | 0.42 |
| 1:LA:2746:A:H2' | 1:LA:2747:A:O4' | 2.19 | 0.42 |
| 1:LA:2931:C:H2' | 1:LA:2932:U:O4' | 2.20 | 0.42 |
| 1:LA:3299:A:N1 | 1:LA:3315:G:N2 | 2.46 | 0.42 |
| 2:LB:9:C:OP1 | 22:LV:26:HIS:ND1 | 2.53 | 0.42 |
| 5:LE:295:ALA:HB2 | 5:LE:301:THR:O | 2.20 | 0.42 |
| 5:LE:302:LYS:HB3 | 5:LE:302:LYS:HE2 | 1.48 | 0.42 |
| 6:LF:54:GLU:OE2 | 6:LF:54:GLU:N | 2.42 | 0.42 |
| 6:LF:342:LYS:HD2 | 6:LF:342:LYS:HA | 1.82 | 0.42 |
| 7:LG:121:GLY:HA3 | 7:LG:248:ARG:HH22 | 1.84 | 0.42 |
| 9:LI:121:LYS:O | 9:LI:125:GLU:HG2 | 2.19 | 0.42 |
| 17:LQ:174[A]:PHE:HA | 17:LQ:177[A]:LYS:HE3 | 2.01 | 0.42 |
| 21:LU:45:LEU:HA | 21:LU:45:LEU:HD23 | 1.72 | 0.42 |
| 21:LU:71:LYS:HD2 | 21:LU:71:LYS:C | 2.45 | 0.42 |
| 23:LW:35:LYS:O | 23:LW:35:LYS:HD3 | 2.20 | 0.42 |
| 24:LX:125:LEU:HB3 | 24:LX:126:TRP:CD1 | 2.55 | 0.42 |
| 27:La:113:LYS:HE3 | 27:La:113:LYS:HB2 | 1.72 | 0.42 |
| 39:Lm:10:GLN:HA | 39:Lm:13:GLU:OE1 | 2.19 | 0.42 |
| 45:S2:156:A:C2 | 45:S2:415:C:H1' | 2.54 | 0.42 |
| 45:S2:248:U:N3 | 45:S2:250:C:O4' | 2.52 | 0.42 |
| 45:S2:1241:G:H5' | 50:SE:102:PHE:CZ | 2.55 | 0.42 |
| 45:S2:1450:U:H2' | 45:S2:1451:C:H6 | 1.84 | 0.42 |
| 45:S2:1623:C:H2' | 45:S2:1624:C:H6 | 1.85 | 0.42 |
| 46:SA:178:ARG:HE | 46:SA:178:ARG:HB3 | 1.82 | 0.42 |
| 47:SB:144:GLU:HB2 | 47:SB:218:GLU:OE1 | 2.20 | 0.42 |
| 50:SE:44:ARG:HH21 | 50:SE:82:ASN:HB2 | 1.84 | 0.42 |
| 53:SH:61:LEU:HD23 | 53:SH:65:GLU:HB3 | 2.02 | 0.42 |
| 55:SJ:22:ILE:HG22 | 55:SJ:118:VAL:HG22 | 2.02 | 0.42 |
| 65:ST:147:LEU:HD23 | 65:ST:147:LEU:H | 1.85 | 0.42 |
| 68:SW:146:PHE:HD2 | 68:SW:148:VAL:HG12 | 1.85 | 0.42 |
| 69:SX:78:THR:HG21 | 69:SX:118:GLN:HA | 2.02 | 0.42 |
| 74:Sc:79:ASN:HB3 | 74:Sc:81:LYS:HD2 | 2.02 | 0.42 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 77:Sf:53:ALA:HB1 | 77:Sf:62:ILE:HG13 | 2.02 | 0.42 |
| 1:LA:67:A:O2' | 1:LA:315:C:O2 | 2.38 | 0.42 |
| 1:LA:419:G:N2 | 3:LC:4:C:C2 | 2.81 | 0.42 |
| 1:LA:428:A:H1' | 34:Lh:25:PRO:HG2 | 2.02 | 0.42 |
| 1:LA:1202:A:C2 | 1:LA:2857:C:H5' | 2.53 | 0.42 |
| 1:LA:1448:U:H2' | 1:LA:1449:A:C8 | 2.54 | 0.42 |
| 1:LA:1584:U:H2' | 1:LA:1585:C:H6 | 1.85 | 0.42 |
| 1:LA:1844:C:O2 | 38:Ll:9:GLY:HA2 | 2.19 | 0.42 |
| 1:LA:2366:C:H5' | 5:LE:259:HIS:CE1 | 2.55 | 0.42 |
| 1:LA:2673:A:O3' | 13:LM:105:GLY:N | 2.53 | 0.42 |
| 1:LA:3332:U:H2' | 1:LA:3333:G:O4' | 2.20 | 0.42 |
| 2:LB:118:A:H5" | 7:LG:253:PHE:CZ | 2.55 | 0.42 |
| 3:LC:29:U:H5" | 14:LN:27:ASP:HB3 | 2.01 | 0.42 |
| 3:LC:38:U:H5' | 36:Lj:78:LYS:HD3 | 2.02 | 0.42 |
| 9:LI:124:LEU:HD23 | 9:LI:124:LEU:HA | 1.88 | 0.42 |
| 13:LM:17:LEU:HD13 | 13:LM:129:VAL:HG22 | 2.02 | 0.42 |
| 14:LN:50:PRO:HG3 | 36:Lj:118:ILE:HD13 | 2.01 | 0.42 |
| 16:LP:183:THR:O | 16:LP:183:THR:OG1 | 2.34 | 0.42 |
| 17:LQ:3[A]:VAL:HG22 | 17:LQ:4[A]:GLU:OE1 | 2.20 | 0.42 |
| 21:LU:63:GLN:NE2 | 21:LU:65:ASN:ND2 | 2.48 | 0.42 |
| 21:LU:73:LYS:HG3 | 21:LU:75:PHE:CE2 | 2.55 | 0.42 |
| 21:LU:75:PHE:O | 21:LU:93:GLU:HA | 2.20 | 0.42 |
| 25:LY:1:MET:HE2 | 25:LY:15:PRO:CD | 2.50 | 0.42 |
| 25:LY:52:THR:HG22 | 25:LY:54:LEU:H | 1.85 | 0.42 |
| 45:S2:151:G:O6 | 45:S2:164:A:C6 | 2.73 | 0.42 |
| 45:S2:227:U:H2' | 45:S2:228:G:C8 | 2.54 | 0.42 |
| 45:S2:511:A:O2' | 45:S2:512:A:O5' | 2.35 | 0.42 |
| 45:S2:872:G:H2' | 45:S2:873:U:O4' | 2.20 | 0.42 |
| 46:SA:37:VAL:HG12 | 46:SA:50:ILE:HA | 2.01 | 0.42 |
| 48:SC:75:TYR:O | 48:SC:78:GLU:HG3 | 2.20 | 0.42 |
| 51:SF:95:LYS:HD2 | 51:SF:95:LYS:HA | 1.91 | 0.42 |
| 55:SJ:84:MET:HG3 | 58:SM:51:GLY:O | 2.20 | 0.42 |
| 55:SJ:102:ARG:O | 55:SJ:106:ILE:HG23 | 2.20 | 0.42 |
| 64:SS:120:SER:O | 64:SS:164:LEU:HB3 | 2.19 | 0.42 |
| 1:LA:887:G:H2' | 1:LA:888:A:C8 | 2.54 | 0.41 |
| 1:LA:2428:U:H2' | 1:LA:2429:G:C8 | 2.55 | 0.41 |
| 1:LA:3269:U:H5' | 1:LA:3271:G:O4' | 2.19 | 0.41 |
| 1:LA:3324:C:OP1 | 32:Lf:19:ARG:NH1 | 2.45 | 0.41 |
| 6:LF:355:PHE:CZ | 9:LI:70:LYS:HD3 | 2.55 | 0.41 |
| 7:LG:92:LEU:HD23 | 7:LG:92:LEU:HA | 1.91 | 0.41 |
| 10:LJ:238:LEU:HB3 | 10:LJ:242:ALA:HB3 | 2.01 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 18:LR:30:ARG:HD2 | 18:LR:63:PHE:CE2 | 2.54 | 0.41 |
| 22:LV:103:GLN:HA | 22:LV:106:LEU:HD23 | 2.02 | 0.41 |
| 32:Lf:11:GLU:OE2 | 32:Lf:74:ARG:HB2 | 2.20 | 0.41 |
| 40:Ln:26:TRP:CD1 | 40:Ln:26:TRP:H | 2.38 | 0.41 |
| 45:S2:1067:C:H5" | 62:SQ:150:VAL:H | 1.85 | 0.41 |
| 45:S2:1338:C:H2' | 45:S2:1339:C:C6 | 2.55 | 0.41 |
| 45:S2:1424:A:H2' | 45:S2:1425:A:O4' | 2.19 | 0.41 |
| 45:S2:1584:G:H1' | 45:S2:1585:U:H5 | 1.85 | 0.41 |
| 49:SD:33:ARG:O | 49:SD:37:VAL:HG23 | 2.20 | 0.41 |
| 50:SE:60:LEU:HD13 | 50:SE:89:MET:HB3 | 2.01 | 0.41 |
| 53:SH:26:ILE:HG13 | 53:SH:31:ALA:HB2 | 2.01 | 0.41 |
| 62:SQ:154:SER:O | 62:SQ:154:SER:OG | 2.38 | 0.41 |
| 63:SR:121:VAL:O | 63:SR:125:ILE:HG12 | 2.20 | 0.41 |
| 66:SU:85:PHE:HB3 | 66:SU:88:ARG:NH1 | 2.35 | 0.41 |
| 68:SW:77:ILE:HD11 | 68:SW:93:LEU:HB2 | 2.02 | 0.41 |
| 79:Ta:31:G:O6 | 79:Ta:41:C:N4 | 2.38 | 0.41 |
| 1:LA:598:A:H2' | 1:LA:599:C:C6 | 2.56 | 0.41 |
| 1:LA:745:C:H2' | 1:LA:746:A:C8 | 2.56 | 0.41 |
| 1:LA:1747:G:H5" | 39:Lm:42:LYS:HE2 | 2.02 | 0.41 |
| 1:LA:2389:C:H2' | 1:LA:2390:A:H8 | 1.84 | 0.41 |
| 1:LA:2876:C:H2' | 1:LA:2877:G:O4' | 2.21 | 0.41 |
| 1:LA:2927:C:H2' | 1:LA:2928:C:C6 | 2.55 | 0.41 |
| 1:LA:3192:U:H2' | 1:LA:3193:C:C6 | 2.55 | 0.41 |
| 1:LA:3194:C:H2' | 1:LA:3195:U:H5" | 2.01 | 0.41 |
| 1:LA:3356:G:H2' | 1:LA:3357:U:O4' | 2.20 | 0.41 |
| 1:LA:3358:U:H2' | 1:LA:3359:A:C8 | 2.53 | 0.41 |
| 10:LJ:41:GLN:OE1 | 10:LJ:44:ARG:NH2 | 2.53 | 0.41 |
| 11:LK:21:LYS:O | 11:LK:22:SER:C | 2.63 | 0.41 |
| 28:Lb:7:ALA:HB2 | 28:Lb:28:PRO:HD3 | 2.01 | 0.41 |
| 45:S2:323:A:H2' | 45:S2:324:U:H6 | 1.85 | 0.41 |
| 45:S2:404:G:H2' | 45:S2:405:C:H6 | 1.84 | 0.41 |
| 45:S2:556:A:H5' | 78:Sg:56:MET:HE3 | 2.00 | 0.41 |
| 45:S2:794:U:H3' | 45:S2:795:U:H6 | 1.84 | 0.41 |
| 45:S2:1609:U:H2' | 45:S2:1610:G:O4' | 2.20 | 0.41 |
| 46:SA:48:VAL:HB | 46:SA:86:LEU:HD22 | 2.02 | 0.41 |
| 54:SI:8:ASP:C | 54:SI:8:ASP:OD1 | 2.62 | 0.41 |
| 57:SL:12:VAL:HA | 57:SL:30:VAL:HG12 | 2.02 | 0.41 |
| 60:SO:106:HIS:CE1 | 60:SO:126:SER:HB3 | 2.54 | 0.41 |
| 62:SQ:30:PHE:CD2 | 62:SQ:94:LYS:HA | 2.55 | 0.41 |
| 62:SQ:96:LEU:HD12 | 62:SQ:96:LEU:O | 2.20 | 0.41 |
| 63:SR:39:THR:HG22 | 63:SR:41:LEU:N | 2.35 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 64:SS:256:ARG:NH2 | 68:SW:78:ARG:NH2 | 2.68 | 0.41 |
| 68:SW:118:LEU:HD23 | 68:SW:158:PHE:CE1 | 2.55 | 0.41 |
| 71:SZ:24:ASN:C | 71:SZ:55:SER:HB3 | 2.44 | 0.41 |
| 80:Tb:36:U:O2' | 80:Tb:37:C:H6 | 2.02 | 0.41 |
| 1:LA:27:C:H42 | 1:LA:57:A:N6 | 2.18 | 0.41 |
| 1:LA:308:A:H2' | 1:LA:309:U:C6 | 2.56 | 0.41 |
| 1:LA:396:A:O2' | 1:LA:399:A:OP1 | 2.33 | 0.41 |
| 1:LA:585:A:H2' | 1:LA:586:C:C6 | 2.55 | 0.41 |
| 1:LA:973:A:H2' | 1:LA:974:G:O4' | 2.21 | 0.41 |
| 1:LA:1381:A:H2' | 1:LA:1382:G:H8 | 1.86 | 0.41 |
| 1:LA:2218:G:H2' | 1:LA:2219:A:C8 | 2.54 | 0.41 |
| 1:LA:2450:G:C2 | 1:LA:2496:C:C2 | 3.08 | 0.41 |
| 1:LA:2562:A:H4' | 28:Lb:52:LYS:HE2 | 2.02 | 0.41 |
| 1:LA:2812:C:H2' | 1:LA:2813:A:C8 | 2.56 | 0.41 |
| 1:LA:2894:C:H2' | 1:LA:2895:G:H8 | 1.86 | 0.41 |
| 1:LA:3310:A:C2 | 1:LA:3311:C:H1' | 2.55 | 0.41 |
| 3:LC:27:U:H2' | 3:LC:28:C:H6 | 1.84 | 0.41 |
| 4:LD:36:GLU:HG2 | 4:LD:163:ARG:NH1 | 2.35 | 0.41 |
| 4:LD:168:VAL:HG13 | 44:Lr:79:VAL:HG21 | 2.03 | 0.41 |
| 12:LL:199:PHE:N | 12:LL:199:PHE:CD1 | 2.87 | 0.41 |
| 14:LN:77:LEU:HA | 14:LN:80:VAL:HG22 | 2.02 | 0.41 |
| 16:LP:34:ASN:O | 16:LP:37:HIS:ND1 | 2.51 | 0.41 |
| 24:LX:90:GLY:O | 25:LY:16:GLY:HA2 | 2.21 | 0.41 |
| 32:Lf:13:THR:OG1 | 32:Lf:72:ARG:NH1 | 2.50 | 0.41 |
| 32:Lf:16:LEU:HD13 | 32:Lf:16:LEU:HA | 1.90 | 0.41 |
| 33:Lg:40:SER:HB3 | 33:Lg:43:ARG:HB3 | 2.02 | 0.41 |
| 36:Lj:12:LYS:HE3 | 36:Lj:16:GLN:HB3 | 2.01 | 0.41 |
| 44:Lr:36:ARG:HD2 | 44:Lr:46:THR:HA | 2.02 | 0.41 |
| 45:S2:97:C:O2' | 45:S2:426:G:H5' | 2.20 | 0.41 |
| 45:S2:370:A:H2' | 45:S2:371:G:C8 | 2.55 | 0.41 |
| 45:S2:959:U:OP2 | 77:Sf:20:LYS:NZ | 2.51 | 0.41 |
| 45:S2:1429:G:H2' | 45:S2:1430:U:C6 | 2.56 | 0.41 |
| 46:SA:46:THR:HG23 | 46:SA:84:ILE:HA | 2.01 | 0.41 |
| 60:SO:132:LYS:HG2 | 60:SO:143:THR:HG22 | 2.02 | 0.41 |
| 69:SX:58:CYS:SG | 69:SX:60:PHE:N | 2.87 | 0.41 |
| 71:SZ:42:VAL:HA | 71:SZ:46:MET:SD | 2.61 | 0.41 |
| 75:Sd:41:ARG:NH2 | 75:Sd:94:TYR:CD1 | 2.89 | 0.41 |
| 1:LA:30:G:H5' | 16:LP:172:ARG:HG2 | 2.03 | 0.41 |
| 1:LA:115:A:O2' | 16:LP:5:LYS:HD3 | 2.21 | 0.41 |
| 1:LA:207:U:H2' | 1:LA:208:C:C6 | 2.55 | 0.41 |
| 1:LA:247:C:H3' | 1:LA:248:U:H4' | 2.02 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 1:LA:3096:C:H2' | 1:LA:3097:C:C6 | 2.55 | 0.41 |
| 2:LB:16:U:H2' | 2:LB:17:A:C8 | 2.56 | 0.41 |
| 2:LB:121:U:OP2 | 7:LG:265:TYR:OH | 2.38 | 0.41 |
| 4:LD:20:THR:HA | 4:LD:23:ARG:HG3 | 2.03 | 0.41 |
| 4:LD:57:PRO:HB3 | 44:Lr:54:ILE:HD12 | 2.02 | 0.41 |
| 7:LG:103:LEU:O | 7:LG:107:ARG:HG2 | 2.20 | 0.41 |
| 7:LG:148:ILE:HD12 | 7:LG:151:GLN:O | 2.20 | 0.41 |
| 7:LG:195:LEU:O | 7:LG:199:ILE:HG13 | 2.20 | 0.41 |
| 13:LM:172:LEU:HD23 | 13:LM:172:LEU:HA | 1.89 | 0.41 |
| 15:LO:109:ARG:HD3 | 17:LQ:199[A]:TYR:CD1 | 2.55 | 0.41 |
| 17:LQ:113[A]:ASP:OD1 | 17:LQ:113[A]:ASP:N | 2.53 | 0.41 |
| 33:Lg:80:LYS:HB3 | 33:Lg:80:LYS:HE3 | 1.82 | 0.41 |
| 45:S2:162:A:H2' | 45:S2:163:G:N3 | 2.35 | 0.41 |
| 45:S2:381:C:O2' | 45:S2:755:A:N1 | 2.47 | 0.41 |
| 45:S2:406:U:H2' | 45:S2:407:A:C8 | 2.56 | 0.41 |
| 45:S2:624:G:OP1 | 45:S2:624:G:C8 | 2.74 | 0.41 |
| 45:S2:1524:A:H2' | 45:S2:1525:A:C8 | 2.56 | 0.41 |
| 45:S2:1626:U:H2' | 45:S2:1627:U:C6 | 2.55 | 0.41 |
| 45:S2:1794:A:H1' | 76:Se:79:ILE:HD13 | 2.01 | 0.41 |
| 46:SA:64:ARG:O | 46:SA:68:GLU:HG3 | 2.21 | 0.41 |
| 47:SB:83:ARG:HA | 47:SB:83:ARG:HD2 | 1.91 | 0.41 |
| 51:SF:41:PRO:C | 51:SF:43:ILE:H | 2.29 | 0.41 |
| 60:SO:172:ALA:HB2 | 60:SO:202:LEU:HG | 2.02 | 0.41 |
| 61:SP:31:VAL:HG23 | 61:SP:150:ASP:HA | 2.03 | 0.41 |
| 61:SP:182:LEU:HB3 | 61:SP:188:LEU:HB2 | 2.01 | 0.41 |
| 66:SU:32:PRO:HA | 66:SU:35:LYS:HE3 | 2.01 | 0.41 |
| 66:SU:91:ILE:HD12 | 66:SU:92:PHE:H | 1.86 | 0.41 |
| 70:SY:40:TYR:HE2 | 70:SY:53:LEU:HB2 | 1.85 | 0.41 |
| 74:Sc:88:PRO:HD3 | 74:Sc:124:VAL:HG22 | 2.02 | 0.41 |
| 78:Sg:49:LEU:HD12 | 78:Sg:49:LEU:HA | 1.87 | 0.41 |
| 1:LA:351:A:N6 | 40:Ln:37:TYR:O | 2.54 | 0.41 |
| 1:LA:2148:U:H2' | 1:LA:2149:A:C8 | 2.54 | 0.41 |
| 1:LA:2562:A:H1' | 10:LJ:30:THR:HB | 2.03 | 0.41 |
| 2:LB:8:G:OP1 | 22:LV:27:LEU:HD23 | 2.20 | 0.41 |
| 10:LJ:71:VAL:HG22 | 10:LJ:234:GLY:C | 2.46 | 0.41 |
| 13:LM:155:THR:HG23 | 13:LM:158:ASP:H | 1.86 | 0.41 |
| 21:LU:60:SER:OG | 21:LU:62:ASN:OD1 | 2.39 | 0.41 |
| 25:LY:13:ILE:HG12 | 25:LY:32:GLN:HA | 2.02 | 0.41 |
| 25:LY:33:ASN:HD21 | 25:LY:35:LYS:HB3 | 1.86 | 0.41 |
| 27:La:55:GLU:HB3 | 27:La:108:LYS:HB3 | 2.02 | 0.41 |
| 28:Lb:23:VAL:HB | 28:Lb:43:VAL:HB | 2.01 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 28:Lb:26:VAL:HG11 | 28:Lb:96:VAL:HG22 | 2.00 | 0.41 |
| 29:Lc:94:ALA:HA | 29:Lc:121:VAL:HG13 | 2.01 | 0.41 |
| 33:Lg:55:ILE:HD12 | 33:Lg:55:ILE:HA | 1.82 | 0.41 |
| 36:Lj:14:LYS:HE2 | 36:Lj:14:LYS:HB3 | 1.84 | 0.41 |
| 41:Lo:128:LYS:HE2 | 41:Lo:128:LYS:HB2 | 1.85 | 0.41 |
| 45:S2:435:C:OP2 | 74:Sc:50:LYS:HB2 | 2.20 | 0.41 |
| 45:S2:525:A:H4' | 75:Sd:89:TYR:HB2 | 2.01 | 0.41 |
| 45:S2:599:A:H2' | 45:S2:600:U:C6 | 2.56 | 0.41 |
| 45:S2:1077:C:H2' | 45:S2:1078:C:H6 | 1.86 | 0.41 |
| 45:S2:1512:G:H2' | 45:S2:1513:G:H8 | 1.86 | 0.41 |
| 45:S2:1776:A:H2' | 45:S2:1777:G:H8 | 1.84 | 0.41 |
| 47:SB:30:PRO:HB2 | 47:SB:32:GLU:OE2 | 2.21 | 0.41 |
| 47:SB:184:PHE:HE1 | 47:SB:185:ARG:HE | 1.67 | 0.41 |
| 56:SK:84:GLU:OE2 | 56:SK:94:LYS:NZ | 2.53 | 0.41 |
| 59:SN:117:LEU:HD23 | 59:SN:117:LEU:HA | 1.93 | 0.41 |
| 60:SO:178:VAL:HB | 60:SO:192:PHE:HB2 | 2.03 | 0.41 |
| 60:SO:227:ALA:O | 60:SO:229:LYS:HG2 | 2.20 | 0.41 |
| 61:SP:120:LEU:HD12 | 61:SP:142:PRO:O | 2.20 | 0.41 |
| 63:SR:137:ILE:HG22 | 72:Sa:27:ASP:OD2 | 2.20 | 0.41 |
| 71:SZ:20:TYR:C | 71:SZ:20:TYR:HD1 | 2.28 | 0.41 |
| 77:Sf:19:HIS:HE1 | 77:Sf:21:LEU:HD12 | 1.85 | 0.41 |
| 1:LA:181:U:H2' | 1:LA:182:U:O4' | 2.21 | 0.41 |
| 1:LA:208:C:H2' | 1:LA:209:A:O4' | 2.20 | 0.41 |
| 1:LA:837:A:H5' | 44:Lr:9:GLY:C | 2.46 | 0.41 |
| 1:LA:1520:G:O2' | 1:LA:1603:A:N1 | 2.45 | 0.41 |
| 1:LA:1718:G:H2' | 1:LA:1719:G:C8 | 2.55 | 0.41 |
| 1:LA:2147:A:OP2 | 4:LD:200:ARG:NH2 | 2.54 | 0.41 |
| 1:LA:2508:U:H2' | 1:LA:2509:U:H6 | 1.84 | 0.41 |
| 1:LA:2760:C:N3 | 43:Lq:63:LYS:HE3 | 2.36 | 0.41 |
| 1:LA:3137:C:H5" | 5:LE:276:THR:HB | 2.03 | 0.41 |
| 1:LA:3325:G:H2' | 1:LA:3326:G:H8 | 1.86 | 0.41 |
| 3:LC:39:G:H1' | 3:LC:104:A:N6 | 2.35 | 0.41 |
| 4:LD:36:GLU:HG2 | 4:LD:163:ARG:HH11 | 1.85 | 0.41 |
| 6:LF:326:ARG:O | 9:LI:41:ARG:NH1 | 2.53 | 0.41 |
| 8:LH:150:LYS:HD3 | 8:LH:156:LYS:NZ | 2.36 | 0.41 |
| 9:LI:229:PHE:CD1 | 9:LI:229:PHE:C | 2.99 | 0.41 |
| 11:LK:7:GLU:HA | 11:LK:55:VAL:O | 2.19 | 0.41 |
| 12:LL:52:LEU:HB3 | 12:LL:136:PHE:HB2 | 2.02 | 0.41 |
| 15:LO:3:THR:HG23 | 15:LO:4:ASP:N | 2.35 | 0.41 |
| 15:LO:70:PHE:CE2 | 15:LO:72:LEU:HD13 | 2.56 | 0.41 |
| 17:LQ:62[A]:THR:H | 17:LQ:69[A]:GLY:HA3 | 1.86 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 18:LR:84:PRO:HB2 | 18:LR:87:SER:HB2 | 2.03 | 0.41 |
| 27:La:70:ILE:CD1 | 27:La:82:VAL:HG22 | 2.51 | 0.41 |
| 28:Lb:42:LEU:HD13 | 28:Lb:101:PHE:CE1 | 2.52 | 0.41 |
| 29:Lc:7:LYS:HD3 | 29:Lc:7:LYS:HA | 1.88 | 0.41 |
| 32:Lf:97:LEU:HD12 | 32:Lf:97:LEU:O | 2.21 | 0.41 |
| 33:Lg:54:LYS:HD3 | 33:Lg:55:ILE:N | 2.34 | 0.41 |
| 34:Lh:59:VAL:HG23 | 34:Lh:60:ARG:H | 1.85 | 0.41 |
| 38:Ll:25:ARG:HH12 | 40:Ln:50:ASN:HB3 | 1.86 | 0.41 |
| 45:S2:1475:A:C6 | 45:S2:1476:C:C4 | 3.08 | 0.41 |
| 45:S2:1498:G:H2' | 45:S2:1499:G:C8 | 2.55 | 0.41 |
| 47:SB:26:ALA:HB3 | 51:SF:28:LEU:HB3 | 2.03 | 0.41 |
| 60:SO:74:THR:HG21 | 60:SO:79:TYR:HD2 | 1.86 | 0.41 |
| 63:SR:41:LEU:HD11 | 63:SR:56:ILE:HD11 | 2.01 | 0.41 |
| 63:SR:200:SER:OG | 63:SR:204:THR:HG21 | 2.20 | 0.41 |
| 63:SR:235:LEU:HG | 72:Sa:33:GLN:NE2 | 2.35 | 0.41 |
| 64:SS:94:ALA:HB3 | 75:Sd:17:LEU:HD12 | 2.02 | 0.41 |
| 66:SU:33:GLU:H | 66:SU:33:GLU:CD | 2.28 | 0.41 |
| 67:SV:20:GLN:NE2 | 67:SV:22:ARG:O | 2.53 | 0.41 |
| 68:SW:45:ILE:HG22 | 68:SW:101:VAL:HG22 | 2.03 | 0.41 |
| 73:Sb:32:LYS:HB2 | 73:Sb:32:LYS:HE2 | 1.88 | 0.41 |
| 73:Sb:54:ASP:OD1 | 73:Sb:54:ASP:C | 2.64 | 0.41 |
| 75:Sd:41:ARG:HB2 | 75:Sd:55:VAL:HG13 | 2.02 | 0.41 |
| 1:LA:268:A:N1 | 1:LA:295:A:H5' | 2.36 | 0.41 |
| 1:LA:419:G:N1 | 3:LC:4:C:N3 | 2.67 | 0.41 |
| 1:LA:440:A:C6 | 1:LA:441:U:H1' | 2.55 | 0.41 |
| 1:LA:642:U:OP1 | 29:Lc:22:ILE:HG23 | 2.20 | 0.41 |
| 1:LA:691:A:N1 | 3:LC:28:C:O2' | 2.48 | 0.41 |
| 1:LA:704:U:O2 | 29:Lc:77:LYS:NZ | 2.54 | 0.41 |
| 1:LA:1047:A:H2' | 1:LA:1048:A:C8 | 2.56 | 0.41 |
| 1:LA:1856:C:H2' | 1:LA:1857:C:C6 | 2.55 | 0.41 |
| 1:LA:2553:U:H3' | 1:LA:2554:A:H5" | 2.02 | 0.41 |
| 4:LD:132:ASN:ND2 | 4:LD:151:PRO:HB3 | 2.36 | 0.41 |
| 5:LE:123:TYR:CE1 | 5:LE:124:LYS:HG2 | 2.56 | 0.41 |
| 5:LE:145:GLU:HG3 | 5:LE:146:ARG:NH2 | 2.35 | 0.41 |
| 9:LI:59:GLU:O | 9:LI:63:ILE:HG13 | 2.21 | 0.41 |
| 11:LK:152:GLU:O | 11:LK:156:GLN:HB2 | 2.21 | 0.41 |
| 15:LO:50:LYS:HD2 | 15:LO:85:TRP:CD1 | 2.55 | 0.41 |
| 16:LP:47:LYS:HA | 16:LP:47:LYS:HD2 | 1.87 | 0.41 |
| 18:LR:22:LEU:HD12 | 18:LR:146:ILE:HD12 | 2.03 | 0.41 |
| 18:LR:22:LEU:HB3 | 18:LR:90:PHE:CE1 | 2.56 | 0.41 |
| 21:LU:38:LYS:HG3 | 21:LU:61:ILE:HD12 | 2.02 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 24:LX:54:LEU:HA | 24:LX:54:LEU:HD12 | 1.85 | 0.41 |
| 31:Le:14:LEU:HA | 31:Le:14:LEU:HD12 | 1.87 | 0.41 |
| 32:Lf:20:LEU:HD11 | 32:Lf:32:ALA:HB2 | 2.03 | 0.41 |
| 40:Ln:9:ILE:HG23 | 40:Ln:51:ILE:HD11 | 2.02 | 0.41 |
| 45:S2:151:G:H2' | 45:S2:152:U:C6 | 2.56 | 0.41 |
| 45:S2:183:U:H2' | 45:S2:184:C:H6 | 1.86 | 0.41 |
| 45:S2:851:U:H1' | 45:S2:853:G:O6 | 2.21 | 0.41 |
| 45:S2:1358:G:H2' | 45:S2:1359:C:C6 | 2.55 | 0.41 |
| 49:SD:98:GLY:HA3 | 49:SD:117:GLY:HA2 | 2.02 | 0.41 |
| 51:SF:41:PRO:HG2 | 51:SF:44:LEU:HB2 | 2.03 | 0.41 |
| 53:SH:28:ILE:HD13 | 53:SH:61:LEU:HD11 | 2.02 | 0.41 |
| 61:SP:16:LEU:HD13 | 61:SP:172:LEU:HD11 | 2.02 | 0.41 |
| 64:SS:242:LYS:HD3 | 64:SS:242:LYS:N | 2.36 | 0.41 |
| 71:SZ:128:LYS:HE3 | 76:Se:27:SER:HB3 | 2.03 | 0.41 |
| 72:Sa:21:ASN:HB3 | 73:Sb:67:GLY:HA3 | 2.03 | 0.41 |
| 1:LA:406:G:N3 | 3:LC:16:G:C2 | 2.89 | 0.41 |
| 1:LA:412:G:OP1 | 18:LR:62:ARG:NH1 | 2.53 | 0.41 |
| 1:LA:542:G:O6 | 1:LA:549:U:O2 | 2.38 | 0.41 |
| 1:LA:698:U:H2' | 1:LA:699:A:O4' | 2.20 | 0.41 |
| 1:LA:712:G:H2' | 1:LA:713:U:C6 | 2.56 | 0.41 |
| 1:LA:1110:U:OP1 | 19:LS:164:ARG:NH2 | 2.44 | 0.41 |
| 1:LA:1185:C:OP1 | 15:LO:42:LYS:HD3 | 2.21 | 0.41 |
| 1:LA:1667:A:H2' | 1:LA:1668:G:H8 | 1.84 | 0.41 |
| 1:LA:2709:C:H2' | 1:LA:2710:C:C6 | 2.56 | 0.41 |
| 1:LA:2987:A:O2' | 5:LE:259:HIS:HB3 | 2.20 | 0.41 |
| 1:LA:3320:A:H2' | 1:LA:3321:C:C6 | 2.56 | 0.41 |
| 3:LC:145:U:H2' | 3:LC:146:U:C6 | 2.56 | 0.41 |
| 5:LE:163:HIS:HA | 5:LE:177:HIS:O | 2.21 | 0.41 |
| 6:LF:23:PRO:HD2 | 6:LF:26:PHE:HD2 | 1.84 | 0.41 |
| 6:LF:138:ARG:HH21 | 6:LF:240:PRO:HG2 | 1.86 | 0.41 |
| 12:LL:89:VAL:HG13 | 12:LL:136:PHE:HE1 | 1.84 | 0.41 |
| 12:LL:199:PHE:N | 12:LL:199:PHE:HD1 | 2.19 | 0.41 |
| 13:LM:45:PRO:HB3 | 13:LM:69:VAL:HB | 2.02 | 0.41 |
| 14:LN:90:ALA:HB1 | 14:LN:95:ILE:HB | 2.02 | 0.41 |
| 14:LN:126:PHE:CD2 | 36:Lj:115:LYS:HG2 | 2.55 | 0.41 |
| 17:LQ:27[A]:LEU:CD1 | 17:LQ:102[A]:LEU:HB2 | 2.50 | 0.41 |
| 18:LR:116:HIS:HB3 | 18:LR:149:VAL:HB | 2.02 | 0.41 |
| 27:La:39:LEU:HD22 | 27:La:43:TYR:HE2 | 1.85 | 0.41 |
| 33:Lg:83:GLU:O | 33:Lg:86:THR:OG1 | 2.35 | 0.41 |
| 33:Lg:121:ASN:N | 33:Lg:122:PRO:HD3 | 2.36 | 0.41 |
| 35:Li:41:ARG:NH2 | 35:Li:51:LEU:O | 2.53 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 38:Ll:64:MET:O | 38:Ll:68:LYS:HG2 | 2.20 | 0.41 |
| 45:S2:164:A:H2' | 45:S2:165:G:C8 | 2.53 | 0.41 |
| 45:S2:905:A:H5' | 71:SZ:52:ARG:HB3 | 2.03 | 0.41 |
| 45:S2:963:A:O2' | 45:S2:964:U:P | 2.79 | 0.41 |
| 45:S2:1437:U:H2' | 45:S2:1438:G:H8 | 1.84 | 0.41 |
| 45:S2:1478:G:H2' | 45:S2:1479:A:H8 | 1.85 | 0.41 |
| 46:SA:29:LEU:HD13 | 46:SA:58:VAL:HG21 | 2.01 | 0.41 |
| 52:SG:118:PRO:HD2 | 61:SP:15:GLN:HE21 | 1.86 | 0.41 |
| 60:SO:144:LEU:HB3 | 60:SO:181:TRP:CZ3 | 2.55 | 0.41 |
| 61:SP:7:PHE:O | 61:SP:54:TRP:NE1 | 2.42 | 0.41 |
| 63:SR:140:ARG:HB3 | 63:SR:221:THR:HG22 | 2.01 | 0.41 |
| 68:SW:114:TYR:HD2 | 68:SW:115:LYS:NZ | 2.17 | 0.41 |
| 68:SW:114:TYR:HD2 | 68:SW:115:LYS:HZ3 | 1.67 | 0.41 |
| 73:Sb:47:ILE:HG22 | 73:Sb:65:LEU:HD23 | 2.02 | 0.41 |
| 1:LA:353:G:O6 | 38:Ll:55:ARG:NH2 | 2.52 | 0.41 |
| 1:LA:438:A:H2' | 1:LA:439:C:O4' | 2.21 | 0.41 |
| 1:LA:979:U:H4' | 1:LA:980:A:O4' | 2.21 | 0.41 |
| 1:LA:1436:U:O5' | 1:LA:1437:C:H5" | 2.21 | 0.41 |
| 1:LA:1560:G:H2' | 1:LA:1561:G:C8 | 2.56 | 0.41 |
| 1:LA:1766:G:H2' | 1:LA:1767:C:C6 | 2.56 | 0.41 |
| 1:LA:1912:U:H2' | 1:LA:1913:A:O4' | 2.20 | 0.41 |
| 1:LA:2424:A:H2' | 1:LA:2425:G:O4' | 2.21 | 0.41 |
| 1:LA:2552:C:C5 | 31:Le:53:LYS:HE2 | 2.56 | 0.41 |
| 1:LA:2566:C:H2' | 1:LA:2567:C:H6 | 1.85 | 0.41 |
| 1:LA:2573:G:H2' | 1:LA:2574:G:O4' | 2.20 | 0.41 |
| 1:LA:3065:G:H2' | 1:LA:3066:U:C6 | 2.56 | 0.41 |
| 1:LA:3192:U:H2' | 1:LA:3193:C:H6 | 1.84 | 0.41 |
| 2:LB:62:U:O3' | 7:LG:285:ARG:NH2 | 2.50 | 0.41 |
| 3:LC:27:U:H2' | 3:LC:28:C:C6 | 2.56 | 0.41 |
| 3:LC:141:C:H2' | 3:LC:142:C:H6 | 1.85 | 0.41 |
| 4:LD:51:ASP:HB3 | 4:LD:54:ARG:HB3 | 2.02 | 0.41 |
| 5:LE:232:ARG:HA | 5:LE:270:ARG:HD3 | 2.03 | 0.41 |
| 8:LH:46:ARG:HD3 | 8:LH:47:PHE:CZ | 2.56 | 0.41 |
| 8:LH:172:HIS:HD2 | 34:Lh:44:TYR:OH | 2.04 | 0.41 |
| 13:LM:41:SER:OG | 13:LM:43:GLN:HG2 | 2.20 | 0.41 |
| 14:LN:42:ARG:O | 14:LN:46:ILE:HG12 | 2.21 | 0.41 |
| 18:LR:42:THR:O | 18:LR:46:LYS:CE | 2.62 | 0.41 |
| 20:LT:85:ARG:CB | 20:LT:85:ARG:HH11 | 2.34 | 0.41 |
| 21:LU:26:ARG:HG2 | 21:LU:27:MET:N | 2.36 | 0.41 |
| 21:LU:80:ARG:NH2 | 21:LU:87:THR:HG21 | 2.33 | 0.41 |
| 21:LU:132:THR:C | 21:LU:134:ASP:H | 2.28 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 28:Lb:54:THR:H | 28:Lb:57:HIS:CE1 | 2.39 | 0.41 |
| 28:Lb:102:GLU:N | 28:Lb:107:ARG:NH2 | 2.30 | 0.41 |
| 28:Lb:116:LYS:O | 28:Lb:120:GLU:HG2 | 2.21 | 0.41 |
| 32:Lf:16:LEU:HD13 | 32:Lf:19:ARG:HB2 | 2.03 | 0.41 |
| 33:Lg:90:LYS:HB2 | 33:Lg:90:LYS:HE2 | 1.74 | 0.41 |
| 34:Lh:16:TYR:OH | 34:Lh:89:LEU:O | 2.26 | 0.41 |
| 36:Lj:19:SER:O | 36:Lj:23:ASP:OD1 | 2.39 | 0.41 |
| 45:S2:14:C:H6 | 63:SR:203:LYS:NZ | 2.18 | 0.41 |
| 45:S2:640:U:C4 | 66:SU:118:LEU:HD21 | 2.56 | 0.41 |
| 45:S2:829:A:HO2' | 45:S2:830:U:P | 2.44 | 0.41 |
| 45:S2:1125:A:C5 | 45:S2:1126:G:H1' | 2.56 | 0.41 |
| 47:SB:34:GLN:HG2 | 51:SF:57:LEU:HD12 | 2.02 | 0.41 |
| 47:SB:188:LYS:HG2 | 47:SB:192:GLU:HG3 | 2.03 | 0.41 |
| 47:SB:200:ASN:HD22 | 47:SB:200:ASN:N | 2.19 | 0.41 |
| 48:SC:10:LYS:HA | 48:SC:13:GLN:HG2 | 2.02 | 0.41 |
| 48:SC:70:GLU:O | 48:SC:73:VAL:HG12 | 2.21 | 0.41 |
| 50:SE:24:LYS:O | 50:SE:28:MET:HB3 | 2.20 | 0.41 |
| 50:SE:33:PHE:CZ | 50:SE:112:LEU:HB3 | 2.56 | 0.41 |
| 54:SI:22:LEU:HD22 | 54:SI:28:LEU:HD21 | 2.02 | 0.41 |
| 57:SL:31:GLU:OE2 | 57:SL:37:SER:N | 2.54 | 0.41 |
| 60:SO:128:ASP:O | 60:SO:130:THR:HG23 | 2.21 | 0.41 |
| 60:SO:180:ALA:HB3 | 60:SO:190:ALA:HB3 | 2.03 | 0.41 |
| 64:SS:86:PHE:CD2 | 64:SS:87:MET:HG2 | 2.55 | 0.41 |
| 65:ST:67:VAL:HG23 | 65:ST:99:GLY:HA2 | 2.02 | 0.41 |
| 68:SW:123:HIS:CE1 | 78:Sg:37:ARG:HD3 | 2.56 | 0.41 |
| 68:SW:136:VAL:HG13 | 68:SW:152:SER:OG | 2.21 | 0.41 |
| 69:SX:99:ARG:HD3 | 74:Sc:8:GLY:O | 2.21 | 0.41 |
| 71:SZ:47:LYS:HA | 71:SZ:47:LYS:HD2 | 1.89 | 0.41 |
| 74:Sc:70:LYS:HD3 | 74:Sc:93:LEU:HD11 | 2.01 | 0.41 |
| 80:Tb:1:C:N3 | 80:Tb:74:A:H2' | 2.36 | 0.41 |
| 1:LA:663:C:H2' | 1:LA:664:U:C6 | 2.56 | 0.41 |
| 1:LA:1495:U:C5 | 1:LA:1835:A:N1 | 2.89 | 0.41 |
| 1:LA:3227:A:O2' | 15:LO:133:LYS:NZ | 2.54 | 0.41 |
| 1:LA:3387:U:H2' | 1:LA:3388:C:C6 | 2.56 | 0.41 |
| 6:LF:234:ASN:HB3 | 6:LF:237:GLN:HG3 | 2.03 | 0.41 |
| 9:LI:86:VAL:O | 9:LI:114:GLY:HA2 | 2.21 | 0.41 |
| 10:LJ:200:LEU:HD23 | 10:LJ:200:LEU:HA | 1.92 | 0.41 |
| 11:LK:87:LYS:HE3 | 11:LK:187:ILE:HA | 2.02 | 0.41 |
| 12:LL:144:ASN:O | 12:LL:148:VAL:HG23 | 2.21 | 0.41 |
| 16:LP:24:ARG:O | 16:LP:27:VAL:HG12 | 2.21 | 0.41 |
| 19:LS:161:LYS:HD2 | 19:LS:161:LYS:HA | 1.84 | 0.41 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 21:LU:27:MET:HE3 | 21:LU:27:MET:HB2 | 1.84 | 0.41 |
| 22:LV:44:ALA:HB2 | 22:LV:53:PRO:HG2 | 2.03 | 0.41 |
| 38:Ll:39:TYR:CG | 38:Ll:40:PRO:HA | 2.56 | 0.41 |
| 39:Lm:13:GLU:CG | 39:Lm:16:ARG:NH2 | 2.84 | 0.41 |
| 45:S2:918:U:H2' | 45:S2:919:A:H8 | 1.81 | 0.41 |
| 45:S2:1374:C:H2' | 45:S2:1375:A:C8 | 2.56 | 0.41 |
| 49:SD:131:ASP:OD1 | 49:SD:131:ASP:N | 2.52 | 0.41 |
| 55:SJ:64:LYS:HA | 55:SJ:82:TYR:O | 2.21 | 0.41 |
| 55:SJ:88:LYS:O | 55:SJ:89:ARG:HD3 | 2.20 | 0.41 |
| 56:SK:61:SER:H | 56:SK:64:VAL:HB | 1.85 | 0.41 |
| 60:SO:27:ALA:HA | 60:SO:296:ALA:HB2 | 2.02 | 0.41 |
| 60:SO:255:ALA:HB1 | 60:SO:289:ALA:HB3 | 2.02 | 0.41 |
| 68:SW:96:VAL:HA | 68:SW:99:LEU:CD2 | 2.51 | 0.41 |
| 69:SX:46:LYS:O | 69:SX:50:GLU:HG3 | 2.21 | 0.41 |
| 70:SY:94:LYS:O | 70:SY:98:VAL:HG23 | 2.20 | 0.41 |
| 73:Sb:81:VAL:CG2 | 73:Sb:86:ILE:HD13 | 2.50 | 0.41 |
| 78:Sg:29:LYS:HB3 | 78:Sg:29:LYS:HE3 | 1.86 | 0.41 |
| 1:LA:22:G:H1' | 3:LC:104:A:N3 | 2.35 | 0.40 |
| 1:LA:184:U:H3 | 1:LA:232:G:H1 | 1.68 | 0.40 |
| 1:LA:201:A:H2' | 1:LA:202:G:H8 | 1.86 | 0.40 |
| 1:LA:591:G:H1' | 8:LH:19:LYS:HG3 | 2.02 | 0.40 |
| 1:LA:987:U:H5' | 9:LI:125:GLU:HG3 | 2.04 | 0.40 |
| 1:LA:992:A:O2' | 1:LA:993:G:H5' | 2.21 | 0.40 |
| 1:LA:1097:G:O6 | 22:LV:116:ARG:NH1 | 2.45 | 0.40 |
| 1:LA:1326:A:O2' | 34:Lh:77:ASN:OD1 | 2.22 | 0.40 |
| 1:LA:1563:C:H2' | 1:LA:1564:U:C6 | 2.56 | 0.40 |
| 1:LA:1640:G:O6 | 35:Li:73:SER:OG | 2.31 | 0.40 |
| 1:LA:1799:A:H2' | 1:LA:1800:A:H8 | 1.86 | 0.40 |
| 1:LA:2668:U:H2' | 1:LA:2669:G:H8 | 1.86 | 0.40 |
| 1:LA:2673:A:H4' | 13:LM:103:GLY:C | 2.46 | 0.40 |
| 1:LA:2812:C:H2' | 1:LA:2813:A:H8 | 1.86 | 0.40 |
| 1:LA:3232:G:C6 | 1:LA:3256:G:C6 | 3.08 | 0.40 |
| 6:LF:327:LEU:HD23 | 6:LF:327:LEU:HA | 1.89 | 0.40 |
| 7:LG:61:ILE:HG12 | 7:LG:79:TYR:CE2 | 2.56 | 0.40 |
| 7:LG:271:LYS:HE3 | 7:LG:271:LYS:HB3 | 1.75 | 0.40 |
| 10:LJ:86:THR:HA | 10:LJ:89:GLU:HG2 | 2.03 | 0.40 |
| 12:LL:12:GLN:HA | 12:LL:59:GLN:NE2 | 2.37 | 0.40 |
| 16:LP:36:ILE:HG21 | 16:LP:109:ARG:HD2 | 2.02 | 0.40 |
| 16:LP:97:SER:O | 16:LP:101:THR:HG22 | 2.21 | 0.40 |
| 35:Li:31:ARG:NH1 | 35:Li:31:ARG:HG3 | 2.35 | 0.40 |
| 39:Lm:14:LEU:HD23 | 39:Lm:14:LEU:HA | 1.86 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 44:Lr:28:LYS:NZ | 44:Lr:32:GLN:HE22 | 2.18 | 0.40 |
| 45:S2:36:C:H2' | 45:S2:37:U:H6 | 1.85 | 0.40 |
| 45:S2:902:G:O2' | 45:S2:1008:G:H4' | 2.21 | 0.40 |
| 45:S2:1042:G:H22 | 45:S2:1076:A:H2 | 1.69 | 0.40 |
| 45:S2:1344:A:H4' | 45:S2:1345:A:OP1 | 2.21 | 0.40 |
| 45:S2:1548:G:H5' | 53:SH:89:GLN:O | 2.22 | 0.40 |
| 46:SA:54:ARG:HB3 | 46:SA:57:ASP:OD2 | 2.21 | 0.40 |
| 46:SA:70:THR:OG1 | 46:SA:86:LEU:HB2 | 2.21 | 0.40 |
| 47:SB:130:ILE:O | 47:SB:134:VAL:HG12 | 2.20 | 0.40 |
| 48:SC:46:LEU:HB3 | 48:SC:66:TYR:CE1 | 2.56 | 0.40 |
| 50:SE:25:LEU:CD2 | 50:SE:28:MET:HE1 | 2.46 | 0.40 |
| 52:SG:117:LEU:O | 52:SG:119:LEU:HD12 | 2.20 | 0.40 |
| 66:SU:39:ARG:N | 66:SU:40:PRO:HD2 | 2.37 | 0.40 |
| 66:SU:162:ILE:HD12 | 66:SU:162:ILE:O | 2.21 | 0.40 |
| 73:Sb:23:ARG:HA | 73:Sb:23:ARG:HD2 | 1.89 | 0.40 |
| 73:Sb:28:ARG:HA | 73:Sb:29:PRO:HA | 1.90 | 0.40 |
| 1:LA:184:U:H2' | 1:LA:185:C:C6 | 2.57 | 0.40 |
| 1:LA:385:A:H2' | 1:LA:386:A:C8 | 2.56 | 0.40 |
| 1:LA:515:C:H2' | 1:LA:516:A:H8 | 1.85 | 0.40 |
| 1:LA:620:U:O2' | 1:LA:621:A:O5' | 2.34 | 0.40 |
| 1:LA:1083:G:H2' | 1:LA:1084:A:C8 | 2.56 | 0.40 |
| 1:LA:1448:U:OP1 | 18:LR:67:ILE:HG22 | 2.21 | 0.40 |
| 1:LA:1868:G:H2' | 1:LA:1869:C:C6 | 2.56 | 0.40 |
| 1:LA:2527:G:H2' | 1:LA:2528:G:O4' | 2.22 | 0.40 |
| 1:LA:2724:U:OP2 | 1:LA:2726:C:N4 | 2.53 | 0.40 |
| 1:LA:2742:C:H2' | 1:LA:2743:A:H8 | 1.86 | 0.40 |
| 1:LA:3037:U:H5" | 5:LE:348:ARG:HD2 | 2.03 | 0.40 |
| 1:LA:3232:G:H2' | 1:LA:3233:C:H6 | 1.86 | 0.40 |
| 2:LB:38:U:N3 | 2:LB:41:G:OP2 | 2.45 | 0.40 |
| 3:LC:88:A:H3' | 3:LC:89:A:C8 | 2.56 | 0.40 |
| 3:LC:131:A:H5" | 26:LZ:93:TYR:CE2 | 2.56 | 0.40 |
| 4:LD:60:LYS:HD2 | 4:LD:75:ILE:HG13 | 2.03 | 0.40 |
| 4:LD:111:THR:HB | 4:LD:136:ILE:HG13 | 2.03 | 0.40 |
| 5:LE:346:THR:C | 5:LE:348:ARG:H | 2.29 | 0.40 |
| 6:LF:144:LYS:HB3 | 6:LF:144:LYS:HZ1 | 1.87 | 0.40 |
| 6:LF:154:THR:HG23 | 6:LF:157:GLU:OE1 | 2.21 | 0.40 |
| 10:LJ:105:LYS:HZ2 | 10:LJ:109:LEU:HD21 | 1.87 | 0.40 |
| 10:LJ:172:LYS:HB2 | 10:LJ:172:LYS:HE3 | 1.88 | 0.40 |
| 11:LK:37:ASN:ND2 | 11:LK:39:LYS:HG3 | 2.35 | 0.40 |
| 12:LL:51:HIS:CD2 | 12:LL:168:SER:HB2 | 2.56 | 0.40 |
| 26:LZ:109:LYS:HG3 | 26:LZ:110:VAL:N | 2.36 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 45:S2:12:U:H2' | 45:S2:13:C:H6 | 1.85 | 0.40 |
| 45:S2:768:C:C2 | 68:SW:143:ILE:HG13 | 2.57 | 0.40 |
| 45:S2:861:U:O2' | 73:Sb:56:HIS:O | 2.39 | 0.40 |
| 45:S2:1445:G:N1 | 59:SN:85:TYR:HB3 | 2.37 | 0.40 |
| 49:SD:30:VAL:HG21 | 49:SD:132:GLU:HG3 | 2.03 | 0.40 |
| 49:SD:130:THR:OG1 | 49:SD:131:ASP:N | 2.54 | 0.40 |
| 53:SH:41:ARG:HE | 54:SI:46:PRO:HD3 | 1.86 | 0.40 |
| 56:SK:42:LEU:HD23 | 56:SK:42:LEU:H | 1.86 | 0.40 |
| 57:SL:27:GLN:HE22 | 57:SL:64:ARG:C | 2.29 | 0.40 |
| 60:SO:179:LYS:HG2 | 60:SO:188:ILE:HD13 | 2.02 | 0.40 |
| 60:SO:281:TYR:N | 60:SO:281:TYR:CD1 | 2.89 | 0.40 |
| 63:SR:169:LEU:HD22 | 63:SR:198:THR:HG22 | 2.03 | 0.40 |
| 67:SV:159:GLN:HE21 | 67:SV:165:LEU:HG | 1.86 | 0.40 |
| 68:SW:107:ARG:HD2 | 68:SW:107:ARG:HA | 1.90 | 0.40 |
| 74:Sc:73:ARG:HH21 | 74:Sc:82:LYS:HB2 | 1.86 | 0.40 |
| 80:Tb:1:C:H5" | 80:Tb:2:G:OP1 | 2.21 | 0.40 |
| 1:LA:741:U:H2' | 1:LA:742:G:O4' | 2.20 | 0.40 |
| 1:LA:877:C:O2' | 1:LA:880:G:O2' | 2.23 | 0.40 |
| 1:LA:985:U:H2' | 1:LA:986:U:H6 | 1.86 | 0.40 |
| 1:LA:1139:G:O6 | 30:Ld:10:HIS:NE2 | 2.51 | 0.40 |
| 1:LA:2223:A:H2' | 1:LA:2224:A:C8 | 2.56 | 0.40 |
| 1:LA:2255:A:H2 | 1:LA:2260:U:H3 | 1.65 | 0.40 |
| 1:LA:2630:C:H4' | 1:LA:2758:A:O4' | 2.22 | 0.40 |
| 1:LA:2672:G:H5" | 13:LM:94:ARG:O | 2.21 | 0.40 |
| 1:LA:3313:U:H5' | 5:LE:175:LYS:HD3 | 2.03 | 0.40 |
| 7:LG:22:ARG:HH21 | 7:LG:27:LYS:HB3 | 1.86 | 0.40 |
| 11:LK:1:MET:HG3 | 21:LU:139:TYR:HB3 | 2.03 | 0.40 |
| 14:LN:119:TYR:CZ | 14:LN:123:ILE:HG21 | 2.57 | 0.40 |
| 16:LP:70:ASN:HB3 | 16:LP:92:LEU:O | 2.21 | 0.40 |
| 22:LV:136:ARG:HB3 | 22:LV:139:ARG:HH22 | 1.86 | 0.40 |
| 31:Le:26:GLY:O | 31:Le:30:THR:OG1 | 2.31 | 0.40 |
| 36:Lj:38:ARG:NH1 | 36:Lj:38:ARG:HB2 | 2.36 | 0.40 |
| 45:S2:106:U:P | 67:SV:8:ARG:HH22 | 2.44 | 0.40 |
| 45:S2:121:U:H2' | 45:S2:122:U:C6 | 2.56 | 0.40 |
| 46:SA:222:VAL:HG11 | 60:SO:228:LYS:HD2 | 2.03 | 0.40 |
| 47:SB:120:ILE:HD11 | 56:SK:98:GLN:NE2 | 2.36 | 0.40 |
| 47:SB:163:SER:HB2 | 57:SL:46:GLY:H | 1.86 | 0.40 |
| 48:SC:50:THR:HG22 | 48:SC:55:VAL:O | 2.21 | 0.40 |
| 62:SQ:8:ARG:NH2 | 62:SQ:11:LYS:HB2 | 2.35 | 0.40 |
| 62:SQ:33:LYS:NZ | 62:SQ:95:ASN:OD1 | 2.49 | 0.40 |
| 62:SQ:142:PHE:O | 62:SQ:208:GLN:N | 2.54 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 62:SQ:190:PRO:C | 62:SQ:191:GLU:HG2 | 2.46 | 0.40 |
| 66:SU:126:LEU:HD21 | 66:SU:152:VAL:HG11 | 2.03 | 0.40 |
| 66:SU:138:LYS:HB2 | 73:Sb:54:ASP:HB3 | 2.04 | 0.40 |
| 68:SW:29:LYS:HD3 | 78:Sg:44:PHE:CD2 | 2.56 | 0.40 |
| 68:SW:109:LEU:O | 68:SW:112:GLN:N | 2.53 | 0.40 |
| 72:Sa:2:GLU:HB3 | 72:Sa:6:GLY:O | 2.21 | 0.40 |
| 1:LA:76:G:H22 | 1:LA:315:C:H5' | 1.86 | 0.40 |
| 1:LA:123:A:H5' | 1:LA:124:U:OP2 | 2.21 | 0.40 |
| 1:LA:135:C:H1' | 36:Lj:93:THR:HB | 2.04 | 0.40 |
| 1:LA:296:A:N3 | 1:LA:299:G:O2' | 2.47 | 0.40 |
| 1:LA:578:A:H2' | 6:LF:334:PHE:CD1 | 2.56 | 0.40 |
| 1:LA:775:A:H5" | 30:Ld:41:ARG:HE | 1.85 | 0.40 |
| 1:LA:1073:U:O2' | 30:Ld:49:GLY:HA3 | 2.22 | 0.40 |
| 1:LA:1347:U:H5" | 6:LF:302:ALA:HB1 | 2.04 | 0.40 |
| 1:LA:1471:U:H5" | 20:LT:5:ARG:HG3 | 2.02 | 0.40 |
| 1:LA:2364:G:H22 | 1:LA:2396:G:H1' | 1.86 | 0.40 |
| 1:LA:2746:A:H5' | 7:LG:178:ASN:OD1 | 2.22 | 0.40 |
| 1:LA:3086:A:OP1 | 5:LE:367:LYS:NZ | 2.48 | 0.40 |
| 1:LA:3267:A:H2' | 8:LH:69:PHE:CE1 | 2.56 | 0.40 |
| 6:LF:22:LEU:HA | 6:LF:23:PRO:HD3 | 1.83 | 0.40 |
| 6:LF:99:MET:SD | 6:LF:102:PRO:HA | 2.61 | 0.40 |
| 10:LJ:43:LYS:HD3 | 10:LJ:43:LYS:HA | 1.81 | 0.40 |
| 10:LJ:243:GLN:HA | 10:LJ:246:MET:HE3 | 2.04 | 0.40 |
| 12:LL:47:PRO:HD2 | 12:LL:141:LYS:HA | 2.04 | 0.40 |
| 12:LL:146:ASP:HA | 12:LL:149:VAL:HG22 | 2.02 | 0.40 |
| 16:LP:42:PRO:HA | 16:LP:131:GLU:OE2 | 2.21 | 0.40 |
| 16:LP:112:ASN:OD1 | 16:LP:113:LEU:HD22 | 2.21 | 0.40 |
| 19:LS:151:ARG:O | 19:LS:162:ALA:HB3 | 2.22 | 0.40 |
| 20:LT:60:LYS:HE3 | 20:LT:60:LYS:HB3 | 1.91 | 0.40 |
| 21:LU:155:ARG:NE | 21:LU:157:GLN:HE21 | 2.19 | 0.40 |
| 22:LV:44:ALA:HA | 22:LV:95:HIS:HB3 | 2.02 | 0.40 |
| 27:La:5:SER:OG | 27:La:8:VAL:HG12 | 2.21 | 0.40 |
| 28:Lb:70:PRO:HG3 | 28:Lb:115:LYS:HB2 | 2.03 | 0.40 |
| 28:Lb:80:LEU:HD23 | 28:Lb:80:LEU:HA | 1.95 | 0.40 |
| 45:S2:327:U:H2' | 45:S2:328:A:C8 | 2.57 | 0.40 |
| 45:S2:427:C:C4 | 45:S2:428:A:N7 | 2.90 | 0.40 |
| 45:S2:622:A:O2' | 45:S2:1032:G:OP2 | 2.28 | 0.40 |
| 45:S2:861:U:H2' | 45:S2:862:A:O4' | 2.21 | 0.40 |
| 45:S2:875:G:O2' | 45:S2:877:G:OP2 | 2.32 | 0.40 |
| 45:S2:891:A:H2' | 45:S2:892:A:H8 | 1.85 | 0.40 |
| 55:SJ:80:GLU:OE1 | 58:SM:54:LYS:NZ | 2.37 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 64:SS:182:TYR:HD2 | 64:SS:228:ILE:HD13 | 1.86 | 0.40 |
| 66:SU:47:ARG:HG2 | 66:SU:47:ARG:HH11 | 1.86 | 0.40 |
| 67:SV:195:ARG:HA | 67:SV:195:ARG:HD3 | 1.91 | 0.40 |
| 69:SX:57:LYS:HE2 | 69:SX:131:ILE:HG23 | 2.03 | 0.40 |
| 71:SZ:84:ARG:HG3 | 71:SZ:85:ALA:O | 2.21 | 0.40 |
| 1:LA:83:U:H2' | 1:LA:84:U:O4' | 2.22 | 0.40 |
| 1:LA:397:A:H5' | 1:LA:399:A:OP1 | 2.21 | 0.40 |
| 1:LA:1193:A:OP1 | 17:LQ:49[A]:ARG:NH2 | 2.50 | 0.40 |
| 1:LA:2137:U:C6 | 1:LA:2141:U:C4 | 3.09 | 0.40 |
| 1:LA:2746:A:O2' | 7:LG:175:HIS:HA | 2.21 | 0.40 |
| 1:LA:3044:G:H2' | 1:LA:3045:G:C8 | 2.56 | 0.40 |
| 1:LA:3243:A:H4' | 5:LE:95:THR:HB | 2.04 | 0.40 |
| 1:LA:3374:U:OP2 | 32:Lf:70:ARG:NH2 | 2.54 | 0.40 |
| 2:LB:1:G:O2' | 7:LG:273:ARG:NH2 | 2.54 | 0.40 |
| 3:LC:104:A:C3' | 3:LC:105:A:H5" | 2.45 | 0.40 |
| 5:LE:137:TYR:O | 5:LE:139:GLN:NE2 | 2.54 | 0.40 |
| 5:LE:285:VAL:HG22 | 5:LE:322:ILE:HD13 | 2.04 | 0.40 |
| 7:LG:120:LYS:NZ | 7:LG:123:GLU:HG3 | 2.37 | 0.40 |
| 7:LG:123:GLU:HG2 | 7:LG:248:ARG:NE | 2.36 | 0.40 |
| 7:LG:200:PHE:CB | 7:LG:237:GLU:OE1 | 2.61 | 0.40 |
| 7:LG:205:SER:HB2 | 7:LG:233:ALA:HB1 | 2.03 | 0.40 |
| 9:LI:129:LEU:HA | 9:LI:129:LEU:HD23 | 1.84 | 0.40 |
| 16:LP:75:VAL:HA | 16:LP:76:PRO:HD3 | 1.85 | 0.40 |
| 25:LY:2:LYS:HB2 | 25:LY:2:LYS:HE3 | 1.59 | 0.40 |
| 28:Lb:32:GLY:HA2 | 28:Lb:38:PHE:O | 2.21 | 0.40 |
| 45:S2:445:A:C1' | 45:S2:525:A:H5' | 2.52 | 0.40 |
| 45:S2:568:G:O5' | 74:Sc:90:ASP:HA | 2.22 | 0.40 |
| 45:S2:789:A:O2' | 64:SS:106:LYS:NZ | 2.50 | 0.40 |
| 45:S2:888:U:O2 | 45:S2:988:A:O2' | 2.37 | 0.40 |
| 45:S2:1145:U:H5 | 45:S2:1633:A:C2 | 2.39 | 0.40 |
| 45:S2:1274:C:H5' | 45:S2:1427:A:H2' | 2.04 | 0.40 |
| 45:S2:1454:G:H4' | 50:SE:122:THR:HG21 | 2.03 | 0.40 |
| 45:S2:1504:G:N3 | 45:S2:1563:C:O2' | 2.53 | 0.40 |
| 47:SB:172:ILE:O | 47:SB:176:THR:OG1 | 2.38 | 0.40 |
| 47:SB:208:SER:O | 47:SB:212:LYS:HB2 | 2.21 | 0.40 |
| 49:SD:27:ALA:HA | 49:SD:30:VAL:HG22 | 2.04 | 0.40 |
| 53:SH:53:ASP:HB3 | 53:SH:56:LYS:HE3 | 2.03 | 0.40 |
| 60:SO:32:LEU:HD11 | 60:SO:34:LEU:HG | 2.04 | 0.40 |
| 62:SQ:55:LYS:HE2 | 62:SQ:55:LYS:HB2 | 1.84 | 0.40 |
| 62:SQ:90:GLU:OE1 | 62:SQ:229:MET:HE1 | 2.21 | 0.40 |
| 68:SW:161:THR:O | 68:SW:161:THR:OG1 | 2.35 | 0.40 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|---|---|---|---|
| 73:Sb:75:ILE:HD13 | 73:Sb:75:ILE:HA | 1.92 | 0.40 |
| 74:Sc:56:LYS:C | 74:Sc:57:LEU:HD23 | 2.46 | 0.40 |
| 76:Se:10:ARG:HB3 | 76:Se:34:LYS: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 | LD | 249/251 (99%) | 236 (95%) | 13 (5%) | 0 | 100 | 100 |
| 5 | LE | 384/386 (100%) | 358 (93%) | 26 (7%) | 0 | 100 | 100 |
| 6 | LF | 359/361 (99%) | 335 (93%) | 24 (7%) | 0 | 100 | 100 |
| 7 | LG | 292/294 (99%) | 274 (94%) | 18 (6%) | 0 | 100 | 100 |
| 8 | LH | 163/175 (93%) | 156 (96%) | 7 (4%) | 0 | 100 | 100 |
| 9 | LI | 220/222 (99%) | 214 (97%) | 6 (3%) | 0 | 100 | 100 |
| 10 | LJ | 231/233 (99%) | 218 (94%) | 13 (6%) | 0 | 100 | 100 |
| 11 | LK | 189/191 (99%) | 176 (93%) | 13 (7%) | 0 | 100 | 100 |
| 12 | LL | 216/218 (99%) | 205 (95%) | 11 (5%) | 0 | 100 | 100 |
| 13 | LM | 167/169 (99%) | 158 (95%) | 9 (5%) | 0 | 100 | 100 |
| 14 | LN | 191/193 (99%) | 174 (91%) | 17 (9%) | 0 | 100 | 100 |
| 15 | LO | 134/136 (98%) | 130 (97%) | 4 (3%) | 0 | 100 | 100 |
| 16 | LP | 201/203 (99%) | 187 (93%) | 14 (7%) | 0 | 100 | 100 |
| 17 | LQ | 195/197 (99%) | 191 (98%) | 4 (2%) | 0 | 100 | 100 |
| 18 | LR | 181/183 (99%) | 167 (92%) | 14 (8%) | 0 | 100 | 100 |
| 19 | LS | 183/185 (99%) | 173 (94%) | 10 (6%) | 0 | 100 | 100 |
| 20 | LT | 186/188 (99%) | 182 (98%) | 4 (2%) | 0 | 100 | 100 |

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| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|---|---|---|---|---|---|---|---|
| 21 | LU | 169/171 (99%) | 159 (94%) | 10 (6%) | 0 | 100 | 100 |
| 22 | LV | 157/159 (99%) | 148 (94%) | 9 (6%) | 0 | 100 | 100 |
| 23 | LW | 98/100 (98%) | 88 (90%) | 10 (10%) | 0 | 100 | 100 |
| 24 | LX | 134/136 (98%) | 130 (97%) | 4 (3%) | 0 | 100 | 100 |
| 25 | LY | 63/65 (97%) | 60 (95%) | 3 (5%) | 0 | 100 | 100 |
| 26 | LZ | 119/121 (98%) | 118 (99%) | 1 (1%) | 0 | 100 | 100 |
| 27 | La | 123/125 (98%) | 118 (96%) | 5 (4%) | 0 | 100 | 100 |
| 28 | Lb | 133/135 (98%) | 121 (91%) | 12 (9%) | 0 | 100 | 100 |
| 29 | Lc | 146/148 (99%) | 135 (92%) | 11 (8%) | 0 | 100 | 100 |
| 30 | Ld | 56/58 (97%) | 52 (93%) | 4 (7%) | 0 | 100 | 100 |
| 31 | Le | 94/96 (98%) | 94 (100%) | 0 | 0 | 100 | 100 |
| 32 | Lf | 107/109 (98%) | 101 (94%) | 6 (6%) | 0 | 100 | 100 |
| 33 | Lg | 125/127 (98%) | 120 (96%) | 5 (4%) | 0 | 100 | 100 |
| 34 | Lh | 104/106 (98%) | 101 (97%) | 3 (3%) | 0 | 100 | 100 |
| 35 | Li | 110/112 (98%) | 108 (98%) | 2 (2%) | 0 | 100 | 100 |
| 36 | Lj | 117/119 (98%) | 111 (95%) | 6 (5%) | 0 | 100 | 100 |
| 37 | Lk | 97/99 (98%) | 91 (94%) | 6 (6%) | 0 | 100 | 100 |
| 38 | Ll | 79/81 (98%) | 77 (98%) | 2 (2%) | 0 | 100 | 100 |
| 39 | Lm | 75/77 (97%) | 74 (99%) | 1 (1%) | 0 | 100 | 100 |
| 40 | Ln | 48/50 (96%) | 48 (100%) | 0 | 0 | 100 | 100 |
| 41 | Lo | 50/52 (96%) | 49 (98%) | 1 (2%) | 0 | 100 | 100 |
| 42 | Lp | 23/25 (92%) | 23 (100%) | 0 | 0 | 100 | 100 |
| 43 | Lq | 101/103 (98%) | 95 (94%) | 6 (6%) | 0 | 100 | 100 |
| 44 | Lr | 89/91 (98%) | 86 (97%) | 3 (3%) | 0 | 100 | 100 |
| 46 | SA | 220/223 (99%) | 212 (96%) | 8 (4%) | 0 | 100 | 100 |
| 47 | SB | 204/206 (99%) | 183 (90%) | 20 (10%) | 1 (0%) | 25 | 49 |
| 48 | SC | 90/92 (98%) | 78 (87%) | 12 (13%) | 0 | 100 | 100 |
| 49 | SD | 119/124 (96%) | 97 (82%) | 22 (18%) | 0 | 100 | 100 |
| 50 | SE | 115/117 (98%) | 101 (88%) | 14 (12%) | 0 | 100 | 100 |
| 51 | SF | 139/141 (99%) | 130 (94%) | 9 (6%) | 0 | 100 | 100 |
| 52 | SG | 117/125 (94%) | 112 (96%) | 5 (4%) | 0 | 100 | 100 |

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| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|---|---|---|---|---|---|---|---|
| 53 | SH | 143/145 (99%) | 136 (95%) | 7 (5%) | 0 | 100 | 100 |
| 54 | SI | 141/143 (99%) | 131 (93%) | 10 (7%) | 0 | 100 | 100 |
| 55 | SJ | 98/101 (97%) | 92 (94%) | 6 (6%) | 0 | 100 | 100 |
| 56 | SK | 80/82 (98%) | 70 (88%) | 10 (12%) | 0 | 100 | 100 |
| 57 | SL | 61/63 (97%) | 54 (88%) | 7 (12%) | 0 | 100 | 100 |
| 58 | SM | 51/53 (96%) | 49 (96%) | 2 (4%) | 0 | 100 | 100 |
| 59 | SN | 71/73 (97%) | 55 (78%) | 16 (22%) | 0 | 100 | 100 |
| 60 | SO | 310/312 (99%) | 275 (89%) | 35 (11%) | 0 | 100 | 100 |
| 61 | SP | 204/206 (99%) | 177 (87%) | 27 (13%) | 0 | 100 | 100 |
| 62 | SQ | 222/232 (96%) | 203 (91%) | 19 (9%) | 0 | 100 | 100 |
| 63 | SR | 214/217 (99%) | 203 (95%) | 11 (5%) | 0 | 100 | 100 |
| 64 | SS | 256/260 (98%) | 232 (91%) | 24 (9%) | 0 | 100 | 100 |
| 65 | ST | 226/228 (99%) | 211 (93%) | 13 (6%) | 2 (1%) | 14 | 35 |
| 66 | SU | 182/185 (98%) | 172 (94%) | 10 (6%) | 0 | 100 | 100 |
| 67 | SV | 183/199 (92%) | 177 (97%) | 6 (3%) | 0 | 100 | 100 |
| 68 | SW | 182/185 (98%) | 170 (93%) | 12 (7%) | 0 | 100 | 100 |
| 69 | SX | 140/146 (96%) | 132 (94%) | 8 (6%) | 0 | 100 | 100 |
| 70 | SY | 148/150 (99%) | 138 (93%) | 10 (7%) | 0 | 100 | 100 |
| 71 | SZ | 125/128 (98%) | 113 (90%) | 12 (10%) | 0 | 100 | 100 |
| 72 | Sa | 85/87 (98%) | 73 (86%) | 12 (14%) | 0 | 100 | 100 |
| 73 | Sb | 127/129 (98%) | 119 (94%) | 8 (6%) | 0 | 100 | 100 |
| 74 | Sc | 142/144 (99%) | 124 (87%) | 18 (13%) | 0 | 100 | 100 |
| 75 | Sd | 132/134 (98%) | 128 (97%) | 4 (3%) | 0 | 100 | 100 |
| 76 | Se | 95/97 (98%) | 89 (94%) | 6 (6%) | 0 | 100 | 100 |
| 77 | Sf | 79/81 (98%) | 68 (86%) | 10 (13%) | 1 (1%) | 10 | 26 |
| 78 | Sg | 55/57 (96%) | 48 (87%) | 7 (13%) | 0 | 100 | 100 |
| All | All | 10914/11115 (98%) | 10193 (93%) | 717 (7%) | 4 (0%) | 100 | 100 |

All (4) Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|---|---|---|---|
| 65 | ST | 177 | ARG |
| 65 | ST | 175 | ILE |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 77 | Sf | 51 | GLN |
| 47 | SB | 162 | VAL |

### 5.3.2 Protein sidechains (i)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all 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 | LD | 190/193 (98%) | 188 (99%) | 2 (1%) | 70 | 87 |
| 5 | LE | 318/322 (99%) | 305 (96%) | 13 (4%) | 26 | 54 |
| 6 | LF | 288/288 (100%) | 281 (98%) | 7 (2%) | 44 | 73 |
| 7 | LG | 241/243 (99%) | 230 (95%) | 11 (5%) | 23 | 49 |
| 8 | LH | 139/154 (90%) | 133 (96%) | 6 (4%) | 25 | 52 |
| 9 | LI | 186/186 (100%) | 181 (97%) | 5 (3%) | 40 | 69 |
| 10 | LJ | 187/191 (98%) | 179 (96%) | 8 (4%) | 25 | 52 |
| 11 | LK | 168/171 (98%) | 153 (91%) | 15 (9%) | 8 | 20 |
| 12 | LL | 185/185 (100%) | 178 (96%) | 7 (4%) | 28 | 56 |
| 13 | LM | 145/147 (99%) | 138 (95%) | 7 (5%) | 21 | 48 |
| 14 | LN | 154/154 (100%) | 146 (95%) | 8 (5%) | 19 | 44 |
| 15 | LO | 107/107 (100%) | 103 (96%) | 4 (4%) | 29 | 58 |
| 16 | LP | 175/175 (100%) | 166 (95%) | 9 (5%) | 20 | 45 |
| 17 | LQ | 160/160 (100%) | 158 (99%) | 2 (1%) | 65 | 85 |
| 18 | LR | 138/145 (95%) | 136 (99%) | 2 (1%) | 62 | 84 |
| 19 | LS | 150/150 (100%) | 144 (96%) | 6 (4%) | 27 | 55 |
| 20 | LT | 152/153 (99%) | 146 (96%) | 6 (4%) | 27 | 56 |
| 21 | LU | 155/155 (100%) | 148 (96%) | 7 (4%) | 23 | 50 |
| 22 | LV | 135/136 (99%) | 132 (98%) | 3 (2%) | 47 | 76 |
| 23 | LW | 87/87 (100%) | 83 (95%) | 4 (5%) | 23 | 49 |
| 24 | LX | 104/104 (100%) | 103 (99%) | 1 (1%) | 73 | 89 |
| 25 | LY | 54/57 (95%) | 53 (98%) | 1 (2%) | 52 | 79 |

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| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles |
|---|---|---|---|---|---|
| 26 | LZ | 104/105 (99%) | 98 (94%) | 6 (6%) | 17 39 |
| 27 | La | 108/108 (100%) | 103 (95%) | 5 (5%) | 23 49 |
| 28 | Lb | 112/115 (97%) | 107 (96%) | 5 (4%) | 23 50 |
| 29 | Lc | 117/118 (99%) | 108 (92%) | 9 (8%) | 10 26 |
| 30 | Ld | 46/46 (100%) | 46 (100%) | 0 | 100 100 |
| 31 | Le | 81/81 (100%) | 77 (95%) | 4 (5%) | 21 47 |
| 32 | Lf | 92/96 (96%) | 88 (96%) | 4 (4%) | 25 52 |
| 33 | Lg | 108/109 (99%) | 104 (96%) | 4 (4%) | 29 58 |
| 34 | Lh | 90/90 (100%) | 88 (98%) | 2 (2%) | 47 76 |
| 35 | Li | 95/95 (100%) | 87 (92%) | 8 (8%) | 9 22 |
| 36 | Lj | 104/104 (100%) | 102 (98%) | 2 (2%) | 52 79 |
| 37 | Lk | 80/81 (99%) | 78 (98%) | 2 (2%) | 42 72 |
| 38 | Ll | 67/67 (100%) | 67 (100%) | 0 | 100 100 |
| 39 | Lm | 68/68 (100%) | 65 (96%) | 3 (4%) | 24 51 |
| 40 | Ln | 45/45 (100%) | 44 (98%) | 1 (2%) | 47 76 |
| 41 | Lo | 45/47 (96%) | 45 (100%) | 0 | 100 100 |
| 42 | Lp | 22/23 (96%) | 22 (100%) | 0 | 100 100 |
| 43 | Lq | 87/88 (99%) | 85 (98%) | 2 (2%) | 45 74 |
| 44 | Lr | 71/71 (100%) | 70 (99%) | 1 (1%) | 62 84 |
| 46 | SA | 182/182 (100%) | 172 (94%) | 10 (6%) | 18 41 |
| 47 | SB | 172/173 (99%) | 165 (96%) | 7 (4%) | 26 54 |
| 48 | SC | 77/85 (91%) | 77 (100%) | 0 | 100 100 |
| 49 | SD | 88/100 (88%) | 81 (92%) | 7 (8%) | 10 24 |
| 50 | SE | 95/98 (97%) | 93 (98%) | 2 (2%) | 48 76 |
| 51 | SF | 117/117 (100%) | 114 (97%) | 3 (3%) | 41 70 |
| 52 | SG | 101/113 (89%) | 97 (96%) | 4 (4%) | 27 55 |
| 53 | SH | 127/128 (99%) | 123 (97%) | 4 (3%) | 35 64 |
| 54 | SI | 115/115 (100%) | 114 (99%) | 1 (1%) | 75 90 |
| 55 | SJ | 93/94 (99%) | 90 (97%) | 3 (3%) | 34 63 |
| 56 | SK | 67/73 (92%) | 65 (97%) | 2 (3%) | 36 65 |
| 57 | SL | 55/56 (98%) | 52 (94%) | 3 (6%) | 18 41 |

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| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles | |
|---|---|---|---|---|---|---|
| 58 | SM | 47/47 (100%) | 45 (96%) | 2 (4%) | 25 | 52 |
| 59 | SN | 56/64 (88%) | 54 (96%) | 2 (4%) | 30 | 59 |
| 60 | SO | 250/257 (97%) | 235 (94%) | 15 (6%) | 16 | 38 |
| 61 | SP | 170/173 (98%) | 161 (95%) | 9 (5%) | 19 | 43 |
| 62 | SQ | 200/205 (98%) | 194 (97%) | 6 (3%) | 36 | 65 |
| 63 | SR | 175/176 (99%) | 167 (95%) | 8 (5%) | 23 | 49 |
| 64 | SS | 220/221 (100%) | 208 (94%) | 12 (6%) | 18 | 41 |
| 65 | ST | 189/195 (97%) | 184 (97%) | 5 (3%) | 41 | 70 |
| 66 | SU | 163/165 (99%) | 157 (96%) | 6 (4%) | 29 | 58 |
| 67 | SV | 148/160 (92%) | 144 (97%) | 4 (3%) | 40 | 69 |
| 68 | SW | 156/158 (99%) | 147 (94%) | 9 (6%) | 17 | 39 |
| 69 | SX | 126/129 (98%) | 121 (96%) | 5 (4%) | 27 | 55 |
| 70 | SY | 127/127 (100%) | 124 (98%) | 3 (2%) | 44 | 73 |
| 71 | SZ | 90/97 (93%) | 84 (93%) | 6 (7%) | 13 | 33 |
| 72 | Sa | 71/74 (96%) | 69 (97%) | 2 (3%) | 38 | 68 |
| 73 | Sb | 110/110 (100%) | 107 (97%) | 3 (3%) | 40 | 69 |
| 74 | Sc | 119/119 (100%) | 113 (95%) | 6 (5%) | 20 | 46 |
| 75 | Sd | 102/112 (91%) | 97 (95%) | 5 (5%) | 21 | 47 |
| 76 | Se | 82/83 (99%) | 80 (98%) | 2 (2%) | 44 | 73 |
| 77 | Sf | 70/70 (100%) | 70 (100%) | 0 | 100 | 100 |
| 78 | Sg | 48/49 (98%) | 46 (96%) | 2 (4%) | 25 | 53 |
| All | All | 9168/9345 (98%) | 8818 (96%) | 350 (4%) | 30 | 56 |

All (350) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|---|---|---|---|
| 4 | LD | 31 | THR |
| 4 | LD | 113 | VAL |
| 5 | LE | 104 | THR |
| 5 | LE | 112 | ASP |
| 5 | LE | 125 | SER |
| 5 | LE | 202 | THR |
| 5 | LE | 206 | ASP |
| 5 | LE | 208 | VAL |
| 5 | LE | 296 | THR |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 5 | LE | 319 | ASN |
| 5 | LE | 324 | VAL |
| 5 | LE | 327 | CYS |
| 5 | LE | 344 | THR |
| 5 | LE | 346 | THR |
| 5 | LE | 382 | THR |
| 6 | LF | 111 | VAL |
| 6 | LF | 219 | LEU |
| 6 | LF | 227 | THR |
| 6 | LF | 270 | SER |
| 6 | LF | 278 | SER |
| 6 | LF | 333 | VAL |
| 6 | LF | 349 | THR |
| 7 | LG | 6 | ASP |
| 7 | LG | 46 | THR |
| 7 | LG | 125 | VAL |
| 7 | LG | 154 | THR |
| 7 | LG | 159 | VAL |
| 7 | LG | 173 | VAL |
| 7 | LG | 176 | SER |
| 7 | LG | 197 | SER |
| 7 | LG | 241 | THR |
| 7 | LG | 261 | THR |
| 7 | LG | 275 | THR |
| 8 | LH | 15 | VAL |
| 8 | LH | 21 | THR |
| 8 | LH | 62 | THR |
| 8 | LH | 98 | VAL |
| 8 | LH | 132 | THR |
| 8 | LH | 149 | ILE |
| 9 | LI | 52 | GLN |
| 9 | LI | 86 | VAL |
| 9 | LI | 161 | VAL |
| 9 | LI | 168 | ILE |
| 9 | LI | 183 | ASP |
| 10 | LJ | 36 | ILE |
| 10 | LJ | 43 | LYS |
| 10 | LJ | 64 | ILE |
| 10 | LJ | 164 | VAL |
| 10 | LJ | 175 | VAL |
| 10 | LJ | 197 | VAL |
| 10 | LJ | 217 | THR |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 10 | LJ | 221 | ASN |
| 11 | LK | 6 | THR |
| 11 | LK | 10 | ILE |
| 11 | LK | 33 | THR |
| 11 | LK | 35 | THR |
| 11 | LK | 44 | THR |
| 11 | LK | 55 | VAL |
| 11 | LK | 80 | THR |
| 11 | LK | 82 | VAL |
| 11 | LK | 107 | ASP |
| 11 | LK | 126 | VAL |
| 11 | LK | 132 | VAL |
| 11 | LK | 143 | GLU |
| 11 | LK | 147 | SER |
| 11 | LK | 167 | VAL |
| 11 | LK | 184 | LYS |
| 12 | LL | 26 | VAL |
| 12 | LL | 29 | SER |
| 12 | LL | 60 | LEU |
| 12 | LL | 112 | GLN |
| 12 | LL | 121 | LYS |
| 12 | LL | 144 | ASN |
| 12 | LL | 145 | LYS |
| 13 | LM | 44 | THR |
| 13 | LM | 46 | VAL |
| 13 | LM | 70 | THR |
| 13 | LM | 86 | VAL |
| 13 | LM | 92 | ARG |
| 13 | LM | 107 | ASP |
| 13 | LM | 154 | THR |
| 14 | LN | 4 | SER |
| 14 | LN | 5 | LYS |
| 14 | LN | 19 | GLN |
| 14 | LN | 24 | VAL |
| 14 | LN | 41 | THR |
| 14 | LN | 63 | VAL |
| 14 | LN | 69 | VAL |
| 14 | LN | 86 | THR |
| 15 | LO | 5 | SER |
| 15 | LO | 15 | VAL |
| 15 | LO | 132 | LYS |
| 15 | LO | 135 | LEU |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 16 | LP | 19 | LEU |
| 16 | LP | 32 | GLN |
| 16 | LP | 60 | VAL |
| 16 | LP | 97 | SER |
| 16 | LP | 101 | THR |
| 16 | LP | 113 | LEU |
| 16 | LP | 125 | SER |
| 16 | LP | 151 | ILE |
| 16 | LP | 155 | VAL |
| 17 | LQ | 103[A] | LYS |
| 17 | LQ | 142[A] | SER |
| 18 | LR | 20 | SER |
| 18 | LR | 119 | VAL |
| 19 | LS | 12 | ARG |
| 19 | LS | 22 | ASP |
| 19 | LS | 24 | VAL |
| 19 | LS | 39 | ARG |
| 19 | LS | 136 | ASN |
| 19 | LS | 181 | SER |
| 20 | LT | 14 | VAL |
| 20 | LT | 29 | THR |
| 20 | LT | 45 | VAL |
| 20 | LT | 55 | VAL |
| 20 | LT | 66 | HIS |
| 20 | LT | 93 | VAL |
| 21 | LU | 8 | GLN |
| 21 | LU | 32 | SER |
| 21 | LU | 55 | SER |
| 21 | LU | 59 | VAL |
| 21 | LU | 79 | VAL |
| 21 | LU | 108 | GLN |
| 21 | LU | 120 | SER |
| 22 | LV | 16 | GLN |
| 22 | LV | 138 | SER |
| 22 | LV | 141 | VAL |
| 23 | LW | 14 | THR |
| 23 | LW | 37 | LEU |
| 23 | LW | 43 | VAL |
| 23 | LW | 98 | THR |
| 24 | LX | 42 | SER |
| 25 | LY | 23 | ARG |
| 26 | LZ | 26 | VAL |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 26 | LZ | 62 | VAL |
| 26 | LZ | 71 | THR |
| 26 | LZ | 86 | VAL |
| 26 | LZ | 107 | VAL |
| 26 | LZ | 129 | ASP |
| 27 | La | 8 | VAL |
| 27 | La | 39 | LEU |
| 27 | La | 62 | SER |
| 27 | La | 94 | SER |
| 27 | La | 105 | VAL |
| 28 | Lb | 53 | VAL |
| 28 | Lb | 96 | VAL |
| 28 | Lb | 98 | THR |
| 28 | Lb | 113 | VAL |
| 28 | Lb | 126 | LYS |
| 29 | Lc | 16 | SER |
| 29 | Lc | 24 | LYS |
| 29 | Lc | 43 | ILE |
| 29 | Lc | 78 | LEU |
| 29 | Lc | 84 | GLU |
| 29 | Lc | 93 | SER |
| 29 | Lc | 125 | VAL |
| 29 | Lc | 130 | VAL |
| 29 | Lc | 145 | VAL |
| 31 | Le | 31 | VAL |
| 31 | Le | 54 | SER |
| 31 | Le | 81 | VAL |
| 31 | Le | 90 | VAL |
| 32 | Lf | 16 | LEU |
| 32 | Lf | 27 | LYS |
| 32 | Lf | 105 | GLN |
| 32 | Lf | 109 | VAL |
| 33 | Lg | 51 | SER |
| 33 | Lg | 55 | ILE |
| 33 | Lg | 59 | SER |
| 33 | Lg | 76 | VAL |
| 34 | Lh | 15 | SER |
| 34 | Lh | 97 | SER |
| 35 | Li | 6 | THR |
| 35 | Li | 23 | VAL |
| 35 | Li | 35 | VAL |
| 35 | Li | 38 | LEU |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 35 | Li | 66 | SER |
| 35 | Li | 95 | ILE |
| 35 | Li | 101 | VAL |
| 35 | Li | 105 | VAL |
| 36 | Lj | 19 | SER |
| 36 | Lj | 44 | ILE |
| 37 | Lk | 17 | VAL |
| 37 | Lk | 57 | LEU |
| 39 | Lm | 29 | LYS |
| 39 | Lm | 65 | LEU |
| 39 | Lm | 75 | VAL |
| 40 | Ln | 27 | ILE |
| 43 | Lq | 34 | SER |
| 43 | Lq | 68 | VAL |
| 44 | Lr | 58 | SER |
| 46 | SA | 39 | VAL |
| 46 | SA | 47 | GLU |
| 46 | SA | 55 | THR |
| 46 | SA | 58 | VAL |
| 46 | SA | 74 | GLN |
| 46 | SA | 110 | LEU |
| 46 | SA | 142 | LEU |
| 46 | SA | 170 | THR |
| 46 | SA | 175 | VAL |
| 46 | SA | 179 | GLN |
| 47 | SB | 33 | VAL |
| 47 | SB | 98 | MET |
| 47 | SB | 147 | THR |
| 47 | SB | 160 | VAL |
| 47 | SB | 176 | THR |
| 47 | SB | 193 | THR |
| 47 | SB | 220 | VAL |
| 49 | SD | 52 | LEU |
| 49 | SD | 60 | VAL |
| 49 | SD | 67 | THR |
| 49 | SD | 74 | LEU |
| 49 | SD | 84 | ASN |
| 49 | SD | 86 | VAL |
| 49 | SD | 130 | THR |
| 50 | SE | 41 | VAL |
| 50 | SE | 122 | THR |
| 51 | SF | 15 | SER |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 51 | SF | 43 | ILE |
| 51 | SF | 89 | LEU |
| 52 | SG | 18 | GLU |
| 52 | SG | 25 | THR |
| 52 | SG | 73 | LEU |
| 52 | SG | 100 | LEU |
| 53 | SH | 29 | VAL |
| 53 | SH | 52 | VAL |
| 53 | SH | 94 | ASP |
| 53 | SH | 133 | VAL |
| 54 | SI | 35 | ASP |
| 55 | SJ | 67 | THR |
| 55 | SJ | 91 | ILE |
| 55 | SJ | 108 | ILE |
| 56 | SK | 63 | SER |
| 56 | SK | 65 | LEU |
| 57 | SL | 7 | VAL |
| 57 | SL | 9 | LEU |
| 57 | SL | 25 | VAL |
| 58 | SM | 6 | VAL |
| 58 | SM | 28 | THR |
| 59 | SN | 98 | VAL |
| 59 | SN | 145 | HIS |
| 60 | SO | 8 | VAL |
| 60 | SO | 48 | THR |
| 60 | SO | 58 | VAL |
| 60 | SO | 68 | VAL |
| 60 | SO | 76 | ASP |
| 60 | SO | 110 | VAL |
| 60 | SO | 115 | ILE |
| 60 | SO | 124 | SER |
| 60 | SO | 128 | ASP |
| 60 | SO | 129 | LYS |
| 60 | SO | 145 | LEU |
| 60 | SO | 193 | ILE |
| 60 | SO | 201 | THR |
| 60 | SO | 260 | ILE |
| 60 | SO | 290 | VAL |
| 61 | SP | 8 | ASP |
| 61 | SP | 58 | VAL |
| 61 | SP | 59 | LEU |
| 61 | SP | 93 | THR |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 61 | SP | 103 | THR |
| 61 | SP | 124 | THR |
| 61 | SP | 151 | SER |
| 61 | SP | 156 | VAL |
| 61 | SP | 185 | ARG |
| 62 | SQ | 21 | VAL |
| 62 | SQ | 31 | ASP |
| 62 | SQ | 65 | VAL |
| 62 | SQ | 97 | LEU |
| 62 | SQ | 193 | ILE |
| 62 | SQ | 215 | VAL |
| 63 | SR | 38 | VAL |
| 63 | SR | 51 | THR |
| 63 | SR | 63 | VAL |
| 63 | SR | 80 | VAL |
| 63 | SR | 102 | VAL |
| 63 | SR | 176 | SER |
| 63 | SR | 185 | LYS |
| 63 | SR | 195 | ASP |
| 64 | SS | 70 | VAL |
| 64 | SS | 100 | ARG |
| 64 | SS | 105 | VAL |
| 64 | SS | 140 | VAL |
| 64 | SS | 162 | ILE |
| 64 | SS | 171 | ASP |
| 64 | SS | 180 | LEU |
| 64 | SS | 183 | VAL |
| 64 | SS | 202 | ASP |
| 64 | SS | 227 | VAL |
| 64 | SS | 244 | ILE |
| 64 | SS | 248 | ILE |
| 65 | ST | 12 | SER |
| 65 | ST | 109 | LEU |
| 65 | ST | 131 | LYS |
| 65 | ST | 167 | LYS |
| 65 | ST | 168 | THR |
| 66 | SU | 14 | THR |
| 66 | SU | 26 | GLU |
| 66 | SU | 86 | GLN |
| 66 | SU | 115 | SER |
| 66 | SU | 154 | LEU |
| 66 | SU | 159 | VAL |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 67 | SV | 7 | SER |
| 67 | SV | 32 | GLN |
| 67 | SV | 111 | GLN |
| 67 | SV | 152 | ILE |
| 68 | SW | 21 | SER |
| 68 | SW | 49 | LEU |
| 68 | SW | 80 | LEU |
| 68 | SW | 87 | SER |
| 68 | SW | 93 | LEU |
| 68 | SW | 130 | THR |
| 68 | SW | 136 | VAL |
| 68 | SW | 141 | VAL |
| 68 | SW | 161 | THR |
| 69 | SX | 74 | THR |
| 69 | SX | 75 | VAL |
| 69 | SX | 107 | VAL |
| 69 | SX | 132 | SER |
| 69 | SX | 138 | ASN |
| 70 | SY | 11 | ILE |
| 70 | SY | 49 | GLN |
| 70 | SY | 134 | VAL |
| 71 | SZ | 13 | VAL |
| 71 | SZ | 22 | SER |
| 71 | SZ | 26 | THR |
| 71 | SZ | 41 | ARG |
| 71 | SZ | 79 | VAL |
| 71 | SZ | 117 | ASP |
| 72 | Sa | 39 | VAL |
| 72 | Sa | 51 | VAL |
| 73 | Sb | 66 | ASN |
| 73 | Sb | 74 | VAL |
| 73 | Sb | 85 | ASP |
| 74 | Sc | 72 | VAL |
| 74 | Sc | 75 | GLN |
| 74 | Sc | 99 | ASN |
| 74 | Sc | 107 | PHE |
| 74 | Sc | 125 | VAL |
| 74 | Sc | 131 | SER |
| 75 | Sd | 20 | ARG |
| 75 | Sd | 24 | VAL |
| 75 | Sd | 28 | LEU |
| 75 | Sd | 35 | VAL |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 75 | Sd | 36 | SER |
| 76 | Se | 29 | SER |
| 76 | Se | 58 | VAL |
| 78 | Sg | 24 | THR |
| 78 | Sg | 38 | LEU |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (97) such sidechains are listed below:

| Mol | Chain | Res | Type |
|---|---|---|---|
| 4 | LD | 140 | ASN |
| 4 | LD | 205 | ASN |
| 5 | LE | 173 | GLN |
| 5 | LE | 184 | ASN |
| 5 | LE | 212 | ASN |
| 6 | LF | 116 | ASN |
| 6 | LF | 260 | GLN |
| 6 | LF | 296 | GLN |
| 7 | LG | 57 | ASN |
| 8 | LH | 138 | GLN |
| 9 | LI | 37 | ASN |
| 9 | LI | 52 | GLN |
| 11 | LK | 37 | ASN |
| 11 | LK | 64 | HIS |
| 12 | LL | 12 | GLN |
| 12 | LL | 86 | HIS |
| 12 | LL | 113 | GLN |
| 13 | LM | 95 | ASN |
| 13 | LM | 101 | ASN |
| 14 | LN | 66 | ASN |
| 14 | LN | 120 | GLN |
| 14 | LN | 160 | GLN |
| 15 | LO | 105 | GLN |
| 18 | LR | 55 | GLN |
| 18 | LR | 121 | GLN |
| 21 | LU | 65 | ASN |
| 21 | LU | 138 | GLN |
| 22 | LV | 5 | HIS |
| 22 | LV | 127 | GLN |
| 22 | LV | 131 | GLN |
| 24 | LX | 7 | GLN |
| 24 | LX | 98 | ASN |
| 25 | LY | 33 | ASN |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 26 | LZ | 137 | ASN |
| 27 | La | 4 | GLN |
| 28 | Lb | 29 | HIS |
| 28 | Lb | 122 | HIS |
| 28 | Lb | 127 | ASN |
| 28 | Lb | 128 | GLN |
| 30 | Ld | 6 | ASN |
| 32 | Lf | 57 | GLN |
| 33 | Lg | 26 | HIS |
| 33 | Lg | 49 | ASN |
| 34 | Lh | 26 | ASN |
| 34 | Lh | 88 | ASN |
| 35 | Li | 61 | GLN |
| 36 | Lj | 76 | GLN |
| 37 | Lk | 92 | ASN |
| 39 | Lm | 10 | GLN |
| 39 | Lm | 57 | ASN |
| 40 | Ln | 33 | ASN |
| 44 | Lr | 32 | GLN |
| 46 | SA | 101 | GLN |
| 46 | SA | 162 | GLN |
| 47 | SB | 35 | GLN |
| 48 | SC | 9 | ASN |
| 48 | SC | 13 | GLN |
| 48 | SC | 29 | GLN |
| 49 | SD | 96 | GLN |
| 50 | SE | 70 | ASN |
| 50 | SE | 104 | GLN |
| 51 | SF | 8 | GLN |
| 52 | SG | 42 | GLN |
| 52 | SG | 48 | ASN |
| 54 | SI | 43 | ASN |
| 54 | SI | 129 | GLN |
| 55 | SJ | 44 | ASN |
| 57 | SL | 27 | GLN |
| 59 | SN | 134 | ASN |
| 60 | SO | 182 | ASN |
| 60 | SO | 184 | ASN |
| 60 | SO | 299 | GLN |
| 60 | SO | 308 | ASN |
| 61 | SP | 15 | GLN |
| 61 | SP | 23 | HIS |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 62 | SQ | 194 | ASN |
| 64 | SS | 197 | HIS |
| 65 | ST | 13 | GLN |
| 65 | ST | 59 | GLN |
| 65 | ST | 119 | GLN |
| 66 | SU | 29 | ASN |
| 66 | SU | 42 | GLN |
| 67 | SV | 116 | HIS |
| 67 | SV | 138 | ASN |
| 68 | SW | 110 | GLN |
| 68 | SW | 139 | GLN |
| 68 | SW | 176 | ASN |
| 70 | SY | 36 | GLN |
| 72 | Sa | 33 | GLN |
| 73 | Sb | 16 | ASN |
| 73 | Sb | 42 | GLN |
| 73 | Sb | 64 | GLN |
| 73 | Sb | 70 | ASN |
| 73 | Sb | 120 | HIS |
| 74 | Sc | 63 | GLN |
| 74 | Sc | 75 | GLN |
| 77 | Sf | 9 | HIS |

### 5.3.3 RNA (i)

| Mol | Chain | Analysed | Backbone Outliers | Pucker Outliers |
|---|---|---|---|---|
| 1 | LA | 3180/3393 (93%) | 677 (21%) | 15 (0%) |
| 2 | LB | 120/121 (99%) | 11 (9%) | 0 |
| 3 | LC | 157/158 (99%) | 34 (21%) | 2 (1%) |
| 45 | S2 | 1768/1799 (98%) | 485 (27%) | 29 (1%) |
| 79 | Ta | 76/77 (98%) | 44 (57%) | 0 |
| 80 | Tb | 76/77 (98%) | 31 (40%) | 0 |
| 81 | mR | 0/25 | - | - |
| All | All | 5377/5650 (95%) | 1282 (23%) | 46 (0%) |

All (1282) RNA backbone outliers are listed below:

| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | LA | 14 | U |
| 1 | LA | 23 | A |
| 1 | LA | 26 | A |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | LA | 30 | G |
| 1 | LA | 40 | A |
| 1 | LA | 43 | A |
| 1 | LA | 49 | A |
| 1 | LA | 59 | G |
| 1 | LA | 60 | A |
| 1 | LA | 65 | A |
| 1 | LA | 66 | A |
| 1 | LA | 70 | A |
| 1 | LA | 75 | G |
| 1 | LA | 92 | G |
| 1 | LA | 99 | A |
| 1 | LA | 105 | C |
| 1 | LA | 108 | A |
| 1 | LA | 109 | A |
| 1 | LA | 110 | G |
| 1 | LA | 111 | C |
| 1 | LA | 113 | C |
| 1 | LA | 122 | A |
| 1 | LA | 135 | C |
| 1 | LA | 136 | G |
| 1 | LA | 142 | C |
| 1 | LA | 143 | G |
| 1 | LA | 147 | U |
| 1 | LA | 155 | G |
| 1 | LA | 156 | G |
| 1 | LA | 157 | A |
| 1 | LA | 160 | G |
| 1 | LA | 164 | A |
| 1 | LA | 165 | A |
| 1 | LA | 169 | U |
| 1 | LA | 170 | G |
| 1 | LA | 177 | U |
| 1 | LA | 187 | A |
| 1 | LA | 190 | U |
| 1 | LA | 191 | U |
| 1 | LA | 194 | U |
| 1 | LA | 199 | A |
| 1 | LA | 200 | C |
| 1 | LA | 206 | G |
| 1 | LA | 210 | U |
| 1 | LA | 211 | A |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | LA | 218 | G |
| 1 | LA | 219 | A |
| 1 | LA | 234 | G |
| 1 | LA | 239 | G |
| 1 | LA | 240 | U |
| 1 | LA | 243 | G |
| 1 | LA | 244 | G |
| 1 | LA | 245 | U |
| 1 | LA | 248 | U |
| 1 | LA | 249 | U |
| 1 | LA | 250 | U |
| 1 | LA | 252 | U |
| 1 | LA | 253 | A |
| 1 | LA | 254 | A |
| 1 | LA | 255 | A |
| 1 | LA | 256 | G |
| 1 | LA | 262 | U |
| 1 | LA | 269 | G |
| 1 | LA | 284 | A |
| 1 | LA | 286 | U |
| 1 | LA | 295 | A |
| 1 | LA | 298 | U |
| 1 | LA | 305 | U |
| 1 | LA | 312 | C |
| 1 | LA | 315 | C |
| 1 | LA | 323 | A |
| 1 | LA | 329 | U |
| 1 | LA | 334 | A |
| 1 | LA | 336 | A |
| 1 | LA | 341 | G |
| 1 | LA | 350 | C |
| 1 | LA | 351 | A |
| 1 | LA | 352 | A |
| 1 | LA | 357 | A |
| 1 | LA | 362 | U |
| 1 | LA | 376 | G |
| 1 | LA | 390 | G |
| 1 | LA | 398 | A |
| 1 | LA | 402 | A |
| 1 | LA | 403 | C |
| 1 | LA | 407 | A |
| 1 | LA | 421 | G |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | LA | 422 | A |
| 1 | LA | 438 | A |
| 1 | LA | 441 | U |
| 1 | LA | 442 | G |
| 1 | LA | 443 | G |
| 1 | LA | 444 | U |
| 1 | LA | 445 | G |
| 1 | LA | 447 | U |
| 1 | LA | 448 | U |
| 1 | LA | 449 | U |
| 1 | LA | 450 | G |
| 1 | LA | 486 | U |
| 1 | LA | 488 | U |
| 1 | LA | 489 | C |
| 1 | LA | 490 | A |
| 1 | LA | 491 | C |
| 1 | LA | 494 | G |
| 1 | LA | 509 | U |
| 1 | LA | 521 | A |
| 1 | LA | 523 | A |
| 1 | LA | 527 | A |
| 1 | LA | 544 | C |
| 1 | LA | 545 | U |
| 1 | LA | 546 | C |
| 1 | LA | 547 | G |
| 1 | LA | 548 | G |
| 1 | LA | 549 | U |
| 1 | LA | 552 | G |
| 1 | LA | 553 | U |
| 1 | LA | 555 | U |
| 1 | LA | 556 | U |
| 1 | LA | 557 | A |
| 1 | LA | 558 | U |
| 1 | LA | 559 | A |
| 1 | LA | 560 | G |
| 1 | LA | 579 | G |
| 1 | LA | 600 | G |
| 1 | LA | 601 | U |
| 1 | LA | 603 | A |
| 1 | LA | 604 | G |
| 1 | LA | 609 | G |
| 1 | LA | 611 | A |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | LA | 612 | U |
| 1 | LA | 621 | A |
| 1 | LA | 636 | C |
| 1 | LA | 649 | A |
| 1 | LA | 653 | A |
| 1 | LA | 667 | C |
| 1 | LA | 677 | A |
| 1 | LA | 681 | U |
| 1 | LA | 688 | G |
| 1 | LA | 689 | U |
| 1 | LA | 690 | A |
| 1 | LA | 691 | A |
| 1 | LA | 697 | A |
| 1 | LA | 705 | A |
| 1 | LA | 712 | G |
| 1 | LA | 715 | A |
| 1 | LA | 718 | G |
| 1 | LA | 727 | G |
| 1 | LA | 733 | G |
| 1 | LA | 734 | C |
| 1 | LA | 737 | G |
| 1 | LA | 760 | G |
| 1 | LA | 761 | A |
| 1 | LA | 764 | U |
| 1 | LA | 765 | C |
| 1 | LA | 766 | U |
| 1 | LA | 767 | U |
| 1 | LA | 770 | G |
| 1 | LA | 774 | G |
| 1 | LA | 776 | U |
| 1 | LA | 777 | U |
| 1 | LA | 780 | A |
| 1 | LA | 781 | G |
| 1 | LA | 785 | G |
| 1 | LA | 786 | A |
| 1 | LA | 789 | A |
| 1 | LA | 799 | G |
| 1 | LA | 806 | A |
| 1 | LA | 808 | A |
| 1 | LA | 817 | A |
| 1 | LA | 830 | A |
| 1 | LA | 849 | C |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | LA | 861 | C |
| 1 | LA | 874 | U |
| 1 | LA | 879 | U |
| 1 | LA | 880 | G |
| 1 | LA | 896 | A |
| 1 | LA | 907 | G |
| 1 | LA | 908 | G |
| 1 | LA | 914 | A |
| 1 | LA | 916 | G |
| 1 | LA | 917 | A |
| 1 | LA | 921 | A |
| 1 | LA | 923 | C |
| 1 | LA | 924 | G |
| 1 | LA | 925 | A |
| 1 | LA | 934 | G |
| 1 | LA | 937 | G |
| 1 | LA | 938 | C |
| 1 | LA | 944 | C |
| 1 | LA | 953 | G |
| 1 | LA | 959 | C |
| 1 | LA | 960 | U |
| 1 | LA | 962 | A |
| 1 | LA | 980 | A |
| 1 | LA | 981 | U |
| 1 | LA | 982 | C |
| 1 | LA | 994 | G |
| 1 | LA | 1000 | C |
| 1 | LA | 1002 | A |
| 1 | LA | 1010 | G |
| 1 | LA | 1012 | G |
| 1 | LA | 1018 | G |
| 1 | LA | 1023 | C |
| 1 | LA | 1024 | G |
| 1 | LA | 1025 | A |
| 1 | LA | 1026 | A |
| 1 | LA | 1029 | G |
| 1 | LA | 1030 | A |
| 1 | LA | 1031 | C |
| 1 | LA | 1039 | U |
| 1 | LA | 1040 | A |
| 1 | LA | 1041 | U |
| 1 | LA | 1042 | U |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | LA | 1043 | C |
| 1 | LA | 1045 | C |
| 1 | LA | 1047 | A |
| 1 | LA | 1049 | C |
| 1 | LA | 1050 | U |
| 1 | LA | 1064 | A |
| 1 | LA | 1065 | A |
| 1 | LA | 1071 | U |
| 1 | LA | 1072 | G |
| 1 | LA | 1075 | A |
| 1 | LA | 1081 | U |
| 1 | LA | 1083 | G |
| 1 | LA | 1091 | A |
| 1 | LA | 1092 | C |
| 1 | LA | 1094 | U |
| 1 | LA | 1096 | U |
| 1 | LA | 1097 | G |
| 1 | LA | 1098 | A |
| 1 | LA | 1103 | A |
| 1 | LA | 1108 | U |
| 1 | LA | 1117 | G |
| 1 | LA | 1131 | G |
| 1 | LA | 1143 | A |
| 1 | LA | 1144 | U |
| 1 | LA | 1153 | A |
| 1 | LA | 1154 | A |
| 1 | LA | 1159 | A |
| 1 | LA | 1161 | G |
| 1 | LA | 1168 | U |
| 1 | LA | 1174 | G |
| 1 | LA | 1178 | G |
| 1 | LA | 1179 | A |
| 1 | LA | 1180 | A |
| 1 | LA | 1181 | U |
| 1 | LA | 1182 | A |
| 1 | LA | 1186 | G |
| 1 | LA | 1189 | C |
| 1 | LA | 1192 | C |
| 1 | LA | 1193 | A |
| 1 | LA | 1196 | C |
| 1 | LA | 1200 | A |
| 1 | LA | 1201 | C |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | LA | 1202 | A |
| 1 | LA | 1208 | U |
| 1 | LA | 1220 | U |
| 1 | LA | 1221 | A |
| 1 | LA | 1222 | G |
| 1 | LA | 1223 | A |
| 1 | LA | 1224 | C |
| 1 | LA | 1232 | C |
| 1 | LA | 1235 | U |
| 1 | LA | 1236 | G |
| 1 | LA | 1237 | G |
| 1 | LA | 1238 | C |
| 1 | LA | 1239 | C |
| 1 | LA | 1240 | A |
| 1 | LA | 1241 | U |
| 1 | LA | 1245 | A |
| 1 | LA | 1248 | C |
| 1 | LA | 1249 | G |
| 1 | LA | 1252 | A |
| 1 | LA | 1253 | U |
| 1 | LA | 1260 | A |
| 1 | LA | 1263 | A |
| 1 | LA | 1264 | G |
| 1 | LA | 1268 | G |
| 1 | LA | 1270 | A |
| 1 | LA | 1272 | C |
| 1 | LA | 1273 | A |
| 1 | LA | 1275 | C |
| 1 | LA | 1278 | A |
| 1 | LA | 1279 | C |
| 1 | LA | 1281 | G |
| 1 | LA | 1284 | C |
| 1 | LA | 1285 | G |
| 1 | LA | 1286 | A |
| 1 | LA | 1287 | A |
| 1 | LA | 1288 | U |
| 1 | LA | 1292 | C |
| 1 | LA | 1295 | G |
| 1 | LA | 1307 | G |
| 1 | LA | 1308 | A |
| 1 | LA | 1309 | U |
| 1 | LA | 1313 | G |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | LA | 1325 | U |
| 1 | LA | 1330 | A |
| 1 | LA | 1331 | U |
| 1 | LA | 1346 | G |
| 1 | LA | 1348 | U |
| 1 | LA | 1351 | U |
| 1 | LA | 1352 | A |
| 1 | LA | 1357 | G |
| 1 | LA | 1359 | C |
| 1 | LA | 1383 | G |
| 1 | LA | 1386 | A |
| 1 | LA | 1391 | C |
| 1 | LA | 1399 | A |
| 1 | LA | 1400 | G |
| 1 | LA | 1418 | A |
| 1 | LA | 1419 | A |
| 1 | LA | 1425 | U |
| 1 | LA | 1431 | G |
| 1 | LA | 1434 | G |
| 1 | LA | 1437 | C |
| 1 | LA | 1443 | G |
| 1 | LA | 1446 | A |
| 1 | LA | 1450 | G |
| 1 | LA | 1469 | C |
| 1 | LA | 1477 | A |
| 1 | LA | 1481 | A |
| 1 | LA | 1482 | A |
| 1 | LA | 1483 | G |
| 1 | LA | 1487 | G |
| 1 | LA | 1508 | C |
| 1 | LA | 1511 | U |
| 1 | LA | 1523 | U |
| 1 | LA | 1536 | G |
| 1 | LA | 1554 | U |
| 1 | LA | 1555 | U |
| 1 | LA | 1556 | C |
| 1 | LA | 1557 | A |
| 1 | LA | 1560 | G |
| 1 | LA | 1562 | C |
| 1 | LA | 1563 | C |
| 1 | LA | 1566 | A |
| 1 | LA | 1567 | U |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | LA | 1568 | U |
| 1 | LA | 1569 | U |
| 1 | LA | 1571 | A |
| 1 | LA | 1574 | C |
| 1 | LA | 1575 | A |
| 1 | LA | 1579 | C |
| 1 | LA | 1587 | A |
| 1 | LA | 1589 | A |
| 1 | LA | 1593 | A |
| 1 | LA | 1605 | A |
| 1 | LA | 1619 | A |
| 1 | LA | 1621 | A |
| 1 | LA | 1628 | C |
| 1 | LA | 1629 | U |
| 1 | LA | 1632 | A |
| 1 | LA | 1639 | C |
| 1 | LA | 1642 | A |
| 1 | LA | 1643 | A |
| 1 | LA | 1657 | C |
| 1 | LA | 1684 | U |
| 1 | LA | 1694 | U |
| 1 | LA | 1700 | G |
| 1 | LA | 1713 | G |
| 1 | LA | 1724 | U |
| 1 | LA | 1727 | G |
| 1 | LA | 1728 | G |
| 1 | LA | 1736 | G |
| 1 | LA | 1741 | A |
| 1 | LA | 1750 | A |
| 1 | LA | 1751 | G |
| 1 | LA | 1759 | C |
| 1 | LA | 1762 | C |
| 1 | LA | 1764 | U |
| 1 | LA | 1765 | U |
| 1 | LA | 1766 | G |
| 1 | LA | 1770 | G |
| 1 | LA | 1775 | G |
| 1 | LA | 1780 | G |
| 1 | LA | 1796 | G |
| 1 | LA | 1797 | A |
| 1 | LA | 1813 | A |
| 1 | LA | 1814 | A |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | LA | 1815 | U |
| 1 | LA | 1816 | A |
| 1 | LA | 1819 | U |
| 1 | LA | 1821 | U |
| 1 | LA | 1839 | A |
| 1 | LA | 1842 | A |
| 1 | LA | 1849 | C |
| 1 | LA | 1858 | A |
| 1 | LA | 1866 | C |
| 1 | LA | 1867 | A |
| 1 | LA | 1868 | G |
| 1 | LA | 1872 | C |
| 1 | LA | 1878 | G |
| 1 | LA | 1880 | U |
| 1 | LA | 1881 | A |
| 1 | LA | 1893 | A |
| 1 | LA | 1896 | A |
| 1 | LA | 1899 | G |
| 1 | LA | 1906 | G |
| 1 | LA | 1907 | C |
| 1 | LA | 1926 | C |
| 1 | LA | 1939 | G |
| 1 | LA | 1952 | G |
| 1 | LA | 1954 | G |
| 1 | LA | 1955 | U |
| 1 | LA | 2096 | A |
| 1 | LA | 2098 | C |
| 1 | LA | 2099 | A |
| 1 | LA | 2100 | A |
| 1 | LA | 2111 | G |
| 1 | LA | 2113 | A |
| 1 | LA | 2121 | G |
| 1 | LA | 2122 | G |
| 1 | LA | 2126 | A |
| 1 | LA | 2131 | A |
| 1 | LA | 2138 | A |
| 1 | LA | 2140 | U |
| 1 | LA | 2142 | A |
| 1 | LA | 2144 | A |
| 1 | LA | 2158 | A |
| 1 | LA | 2159 | U |
| 1 | LA | 2169 | G |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | LA | 2188 | A |
| 1 | LA | 2205 | U |
| 1 | LA | 2207 | A |
| 1 | LA | 2209 | U |
| 1 | LA | 2211 | U |
| 1 | LA | 2224 | A |
| 1 | LA | 2238 | G |
| 1 | LA | 2244 | A |
| 1 | LA | 2256 | A |
| 1 | LA | 2257 | C |
| 1 | LA | 2258 | U |
| 1 | LA | 2262 | A |
| 1 | LA | 2265 | C |
| 1 | LA | 2269 | U |
| 1 | LA | 2270 | A |
| 1 | LA | 2273 | G |
| 1 | LA | 2281 | A |
| 1 | LA | 2285 | C |
| 1 | LA | 2307 | G |
| 1 | LA | 2310 | U |
| 1 | LA | 2313 | A |
| 1 | LA | 2314 | U |
| 1 | LA | 2315 | G |
| 1 | LA | 2334 | U |
| 1 | LA | 2335 | G |
| 1 | LA | 2336 | U |
| 1 | LA | 2366 | C |
| 1 | LA | 2373 | A |
| 1 | LA | 2374 | C |
| 1 | LA | 2375 | G |
| 1 | LA | 2385 | G |
| 1 | LA | 2388 | U |
| 1 | LA | 2391 | G |
| 1 | LA | 2393 | G |
| 1 | LA | 2397 | A |
| 1 | LA | 2402 | A |
| 1 | LA | 2403 | G |
| 1 | LA | 2404 | A |
| 1 | LA | 2411 | U |
| 1 | LA | 2418 | G |
| 1 | LA | 2432 | A |
| 1 | LA | 2435 | G |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | LA | 2437 | G |
| 1 | LA | 2443 | A |
| 1 | LA | 2445 | A |
| 1 | LA | 2446 | U |
| 1 | LA | 2447 | A |
| 1 | LA | 2449 | A |
| 1 | LA | 2451 | G |
| 1 | LA | 2452 | G |
| 1 | LA | 2493 | U |
| 1 | LA | 2494 | A |
| 1 | LA | 2496 | C |
| 1 | LA | 2498 | U |
| 1 | LA | 2499 | U |
| 1 | LA | 2501 | U |
| 1 | LA | 2502 | A |
| 1 | LA | 2504 | U |
| 1 | LA | 2514 | U |
| 1 | LA | 2530 | G |
| 1 | LA | 2531 | C |
| 1 | LA | 2533 | G |
| 1 | LA | 2535 | A |
| 1 | LA | 2536 | A |
| 1 | LA | 2537 | U |
| 1 | LA | 2538 | U |
| 1 | LA | 2539 | C |
| 1 | LA | 2540 | A |
| 1 | LA | 2547 | A |
| 1 | LA | 2548 | C |
| 1 | LA | 2549 | G |
| 1 | LA | 2551 | U |
| 1 | LA | 2552 | C |
| 1 | LA | 2554 | A |
| 1 | LA | 2555 | G |
| 1 | LA | 2559 | U |
| 1 | LA | 2561 | A |
| 1 | LA | 2562 | A |
| 1 | LA | 2569 | A |
| 1 | LA | 2570 | U |
| 1 | LA | 2572 | C |
| 1 | LA | 2573 | G |
| 1 | LA | 2579 | G |
| 1 | LA | 2580 | A |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | LA | 2585 | G |
| 1 | LA | 2593 | A |
| 1 | LA | 2606 | G |
| 1 | LA | 2607 | G |
| 1 | LA | 2614 | G |
| 1 | LA | 2626 | A |
| 1 | LA | 2648 | G |
| 1 | LA | 2651 | G |
| 1 | LA | 2652 | U |
| 1 | LA | 2656 | A |
| 1 | LA | 2657 | A |
| 1 | LA | 2674 | A |
| 1 | LA | 2677 | G |
| 1 | LA | 2680 | A |
| 1 | LA | 2684 | C |
| 1 | LA | 2688 | U |
| 1 | LA | 2689 | A |
| 1 | LA | 2690 | G |
| 1 | LA | 2691 | A |
| 1 | LA | 2694 | A |
| 1 | LA | 2696 | A |
| 1 | LA | 2704 | A |
| 1 | LA | 2705 | A |
| 1 | LA | 2714 | G |
| 1 | LA | 2727 | A |
| 1 | LA | 2728 | G |
| 1 | LA | 2729 | U |
| 1 | LA | 2740 | A |
| 1 | LA | 2753 | G |
| 1 | LA | 2755 | C |
| 1 | LA | 2758 | A |
| 1 | LA | 2759 | U |
| 1 | LA | 2762 | A |
| 1 | LA | 2772 | C |
| 1 | LA | 2773 | C |
| 1 | LA | 2777 | G |
| 1 | LA | 2778 | G |
| 1 | LA | 2780 | A |
| 1 | LA | 2796 | G |
| 1 | LA | 2799 | A |
| 1 | LA | 2800 | G |
| 1 | LA | 2801 | A |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | LA | 2810 | C |
| 1 | LA | 2814 | G |
| 1 | LA | 2817 | A |
| 1 | LA | 2828 | G |
| 1 | LA | 2842 | U |
| 1 | LA | 2843 | U |
| 1 | LA | 2844 | C |
| 1 | LA | 2845 | A |
| 1 | LA | 2853 | A |
| 1 | LA | 2856 | G |
| 1 | LA | 2861 | U |
| 1 | LA | 2862 | U |
| 1 | LA | 2867 | C |
| 1 | LA | 2871 | G |
| 1 | LA | 2876 | C |
| 1 | LA | 2887 | A |
| 1 | LA | 2889 | C |
| 1 | LA | 2898 | G |
| 1 | LA | 2900 | A |
| 1 | LA | 2911 | A |
| 1 | LA | 2914 | G |
| 1 | LA | 2916 | U |
| 1 | LA | 2918 | G |
| 1 | LA | 2923 | U |
| 1 | LA | 2927 | C |
| 1 | LA | 2930 | A |
| 1 | LA | 2933 | A |
| 1 | LA | 2935 | U |
| 1 | LA | 2936 | A |
| 1 | LA | 2938 | G |
| 1 | LA | 2942 | C |
| 1 | LA | 2943 | G |
| 1 | LA | 2947 | G |
| 1 | LA | 2948 | C |
| 1 | LA | 2954 | U |
| 1 | LA | 2971 | A |
| 1 | LA | 2979 | U |
| 1 | LA | 2983 | C |
| 1 | LA | 2990 | G |
| 1 | LA | 2996 | U |
| 1 | LA | 2997 | G |
| 1 | LA | 3003 | G |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | LA | 3011 | A |
| 1 | LA | 3012 | A |
| 1 | LA | 3022 | G |
| 1 | LA | 3028 | G |
| 1 | LA | 3069 | G |
| 1 | LA | 3070 | A |
| 1 | LA | 3071 | U |
| 1 | LA | 3072 | C |
| 1 | LA | 3073 | A |
| 1 | LA | 3078 | U |
| 1 | LA | 3086 | A |
| 1 | LA | 3087 | A |
| 1 | LA | 3092 | C |
| 1 | LA | 3109 | G |
| 1 | LA | 3122 | A |
| 1 | LA | 3129 | A |
| 1 | LA | 3130 | A |
| 1 | LA | 3131 | U |
| 1 | LA | 3141 | A |
| 1 | LA | 3142 | A |
| 1 | LA | 3143 | C |
| 1 | LA | 3154 | C |
| 1 | LA | 3155 | U |
| 1 | LA | 3156 | U |
| 1 | LA | 3157 | U |
| 1 | LA | 3165 | A |
| 1 | LA | 3170 | A |
| 1 | LA | 3172 | A |
| 1 | LA | 3173 | G |
| 1 | LA | 3174 | A |
| 1 | LA | 3179 | U |
| 1 | LA | 3181 | C |
| 1 | LA | 3182 | G |
| 1 | LA | 3187 | A |
| 1 | LA | 3194 | C |
| 1 | LA | 3195 | U |
| 1 | LA | 3196 | U |
| 1 | LA | 3197 | G |
| 1 | LA | 3198 | U |
| 1 | LA | 3207 | U |
| 1 | LA | 3208 | G |
| 1 | LA | 3210 | A |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | LA | 3214 | U |
| 1 | LA | 3216 | G |
| 1 | LA | 3217 | C |
| 1 | LA | 3218 | A |
| 1 | LA | 3219 | G |
| 1 | LA | 3223 | A |
| 1 | LA | 3227 | A |
| 1 | LA | 3228 | C |
| 1 | LA | 3229 | G |
| 1 | LA | 3230 | G |
| 1 | LA | 3244 | A |
| 1 | LA | 3247 | G |
| 1 | LA | 3259 | U |
| 1 | LA | 3260 | G |
| 1 | LA | 3263 | G |
| 1 | LA | 3270 | U |
| 1 | LA | 3273 | A |
| 1 | LA | 3276 | G |
| 1 | LA | 3280 | U |
| 1 | LA | 3281 | U |
| 1 | LA | 3289 | G |
| 1 | LA | 3294 | A |
| 1 | LA | 3295 | A |
| 1 | LA | 3303 | G |
| 1 | LA | 3304 | U |
| 1 | LA | 3309 | G |
| 1 | LA | 3312 | U |
| 1 | LA | 3313 | U |
| 1 | LA | 3316 | A |
| 1 | LA | 3319 | U |
| 1 | LA | 3336 | A |
| 1 | LA | 3341 | U |
| 1 | LA | 3344 | A |
| 1 | LA | 3345 | G |
| 1 | LA | 3351 | U |
| 1 | LA | 3352 | U |
| 1 | LA | 3353 | G |
| 1 | LA | 3369 | G |
| 1 | LA | 3370 | A |
| 1 | LA | 3375 | A |
| 1 | LA | 3378 | C |
| 1 | LA | 3386 | G |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | LA | 3389 | U |
| 1 | LA | 3395 | G |
| 2 | LB | 7 | G |
| 2 | LB | 22 | A |
| 2 | LB | 41 | G |
| 2 | LB | 51 | A |
| 2 | LB | 54 | U |
| 2 | LB | 65 | G |
| 2 | LB | 74 | C |
| 2 | LB | 76 | A |
| 2 | LB | 102 | A |
| 2 | LB | 112 | G |
| 2 | LB | 121 | U |
| 3 | LC | 3 | A |
| 3 | LC | 23 | U |
| 3 | LC | 34 | U |
| 3 | LC | 35 | C |
| 3 | LC | 38 | U |
| 3 | LC | 48 | A |
| 3 | LC | 51 | G |
| 3 | LC | 52 | A |
| 3 | LC | 55 | U |
| 3 | LC | 59 | A |
| 3 | LC | 62 | C |
| 3 | LC | 63 | G |
| 3 | LC | 80 | A |
| 3 | LC | 81 | U |
| 3 | LC | 82 | U |
| 3 | LC | 83 | C |
| 3 | LC | 84 | C |
| 3 | LC | 86 | U |
| 3 | LC | 87 | G |
| 3 | LC | 88 | A |
| 3 | LC | 90 | U |
| 3 | LC | 95 | G |
| 3 | LC | 104 | A |
| 3 | LC | 105 | A |
| 3 | LC | 106 | C |
| 3 | LC | 111 | A |
| 3 | LC | 112 | U |
| 3 | LC | 113 | U |
| 3 | LC | 125 | U |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 3 | LC | 126 | A |
| 3 | LC | 136 | G |
| 3 | LC | 148 | G |
| 3 | LC | 152 | G |
| 3 | LC | 156 | U |
| 45 | S2 | 3 | U |
| 45 | S2 | 4 | C |
| 45 | S2 | 14 | C |
| 45 | S2 | 25 | C |
| 45 | S2 | 26 | A |
| 45 | S2 | 34 | G |
| 45 | S2 | 45 | U |
| 45 | S2 | 46 | A |
| 45 | S2 | 47 | A |
| 45 | S2 | 56 | U |
| 45 | S2 | 57 | G |
| 45 | S2 | 61 | A |
| 45 | S2 | 66 | U |
| 45 | S2 | 68 | A |
| 45 | S2 | 69 | G |
| 45 | S2 | 70 | C |
| 45 | S2 | 73 | U |
| 45 | S2 | 75 | U |
| 45 | S2 | 76 | A |
| 45 | S2 | 77 | U |
| 45 | S2 | 78 | A |
| 45 | S2 | 79 | C |
| 45 | S2 | 80 | A |
| 45 | S2 | 81 | G |
| 45 | S2 | 104 | A |
| 45 | S2 | 111 | U |
| 45 | S2 | 114 | C |
| 45 | S2 | 116 | U |
| 45 | S2 | 127 | G |
| 45 | S2 | 129 | U |
| 45 | S2 | 131 | C |
| 45 | S2 | 132 | U |
| 45 | S2 | 134 | U |
| 45 | S2 | 137 | U |
| 45 | S2 | 138 | A |
| 45 | S2 | 140 | A |
| 45 | S2 | 141 | U |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 45 | S2 | 142 | G |
| 45 | S2 | 145 | A |
| 45 | S2 | 153 | G |
| 45 | S2 | 154 | G |
| 45 | S2 | 155 | U |
| 45 | S2 | 166 | C |
| 45 | S2 | 169 | A |
| 45 | S2 | 171 | A |
| 45 | S2 | 176 | C |
| 45 | S2 | 178 | U |
| 45 | S2 | 179 | A |
| 45 | S2 | 180 | A |
| 45 | S2 | 183 | U |
| 45 | S2 | 192 | U |
| 45 | S2 | 193 | U |
| 45 | S2 | 194 | U |
| 45 | S2 | 195 | G |
| 45 | S2 | 207 | U |
| 45 | S2 | 208 | U |
| 45 | S2 | 209 | U |
| 45 | S2 | 215 | A |
| 45 | S2 | 216 | U |
| 45 | S2 | 218 | A |
| 45 | S2 | 219 | A |
| 45 | S2 | 223 | U |
| 45 | S2 | 224 | C |
| 45 | S2 | 225 | A |
| 45 | S2 | 227 | U |
| 45 | S2 | 228 | G |
| 45 | S2 | 231 | U |
| 45 | S2 | 232 | U |
| 45 | S2 | 233 | C |
| 45 | S2 | 234 | G |
| 45 | S2 | 235 | G |
| 45 | S2 | 240 | U |
| 45 | S2 | 241 | U |
| 45 | S2 | 242 | U |
| 45 | S2 | 243 | G |
| 45 | S2 | 246 | G |
| 45 | S2 | 256 | A |
| 45 | S2 | 257 | A |
| 45 | S2 | 259 | U |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 45 | S2 | 260 | U |
| 45 | S2 | 261 | U |
| 45 | S2 | 262 | U |
| 45 | S2 | 265 | A |
| 45 | S2 | 266 | A |
| 45 | S2 | 267 | U |
| 45 | S2 | 271 | A |
| 45 | S2 | 272 | U |
| 45 | S2 | 276 | C |
| 45 | S2 | 277 | U |
| 45 | S2 | 278 | U |
| 45 | S2 | 280 | U |
| 45 | S2 | 281 | G |
| 45 | S2 | 287 | G |
| 45 | S2 | 295 | A |
| 45 | S2 | 299 | A |
| 45 | S2 | 312 | A |
| 45 | S2 | 313 | U |
| 45 | S2 | 314 | C |
| 45 | S2 | 316 | A |
| 45 | S2 | 320 | U |
| 45 | S2 | 322 | G |
| 45 | S2 | 323 | A |
| 45 | S2 | 324 | U |
| 45 | S2 | 333 | A |
| 45 | S2 | 335 | U |
| 45 | S2 | 337 | G |
| 45 | S2 | 338 | C |
| 45 | S2 | 340 | U |
| 45 | S2 | 352 | A |
| 45 | S2 | 359 | A |
| 45 | S2 | 360 | A |
| 45 | S2 | 361 | C |
| 45 | S2 | 365 | G |
| 45 | S2 | 370 | A |
| 45 | S2 | 388 | G |
| 45 | S2 | 390 | G |
| 45 | S2 | 400 | A |
| 45 | S2 | 402 | C |
| 45 | S2 | 403 | G |
| 45 | S2 | 404 | G |
| 45 | S2 | 416 | A |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 45 | S2 | 419 | G |
| 45 | S2 | 421 | A |
| 45 | S2 | 423 | G |
| 45 | S2 | 424 | C |
| 45 | S2 | 425 | A |
| 45 | S2 | 426 | G |
| 45 | S2 | 434 | G |
| 45 | S2 | 437 | A |
| 45 | S2 | 438 | A |
| 45 | S2 | 439 | U |
| 45 | S2 | 440 | U |
| 45 | S2 | 444 | C |
| 45 | S2 | 454 | U |
| 45 | S2 | 455 | C |
| 45 | S2 | 460 | A |
| 45 | S2 | 469 | C |
| 45 | S2 | 475 | A |
| 45 | S2 | 477 | A |
| 45 | S2 | 479 | C |
| 45 | S2 | 485 | A |
| 45 | S2 | 487 | G |
| 45 | S2 | 491 | C |
| 45 | S2 | 492 | A |
| 45 | S2 | 494 | U |
| 45 | S2 | 495 | C |
| 45 | S2 | 496 | G |
| 45 | S2 | 498 | G |
| 45 | S2 | 500 | C |
| 45 | S2 | 505 | A |
| 45 | S2 | 506 | A |
| 45 | S2 | 507 | U |
| 45 | S2 | 511 | A |
| 45 | S2 | 512 | A |
| 45 | S2 | 520 | A |
| 45 | S2 | 523 | G |
| 45 | S2 | 526 | A |
| 45 | S2 | 527 | A |
| 45 | S2 | 529 | A |
| 45 | S2 | 534 | A |
| 45 | S2 | 538 | A |
| 45 | S2 | 539 | G |
| 45 | S2 | 540 | G |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 45 | S2 | 541 | A |
| 45 | S2 | 542 | A |
| 45 | S2 | 543 | C |
| 45 | S2 | 544 | A |
| 45 | S2 | 555 | A |
| 45 | S2 | 556 | A |
| 45 | S2 | 557 | G |
| 45 | S2 | 558 | U |
| 45 | S2 | 559 | C |
| 45 | S2 | 560 | U |
| 45 | S2 | 565 | C |
| 45 | S2 | 572 | C |
| 45 | S2 | 578 | U |
| 45 | S2 | 579 | A |
| 45 | S2 | 594 | A |
| 45 | S2 | 595 | G |
| 45 | S2 | 606 | A |
| 45 | S2 | 610 | G |
| 45 | S2 | 611 | U |
| 45 | S2 | 619 | A |
| 45 | S2 | 620 | A |
| 45 | S2 | 623 | A |
| 45 | S2 | 624 | G |
| 45 | S2 | 635 | A |
| 45 | S2 | 639 | U |
| 45 | S2 | 640 | U |
| 45 | S2 | 642 | G |
| 45 | S2 | 648 | G |
| 45 | S2 | 651 | G |
| 45 | S2 | 652 | G |
| 45 | S2 | 654 | C |
| 45 | S2 | 656 | G |
| 45 | S2 | 657 | U |
| 45 | S2 | 658 | C |
| 45 | S2 | 677 | G |
| 45 | S2 | 678 | A |
| 45 | S2 | 681 | U |
| 45 | S2 | 682 | C |
| 45 | S2 | 683 | C |
| 45 | S2 | 694 | U |
| 45 | S2 | 696 | C |
| 45 | S2 | 698 | U |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 45 | S2 | 700 | C |
| 45 | S2 | 701 | U |
| 45 | S2 | 702 | G |
| 45 | S2 | 703 | G |
| 45 | S2 | 704 | C |
| 45 | S2 | 705 | U |
| 45 | S2 | 706 | A |
| 45 | S2 | 707 | A |
| 45 | S2 | 709 | C |
| 45 | S2 | 712 | G |
| 45 | S2 | 713 | A |
| 45 | S2 | 714 | G |
| 45 | S2 | 728 | U |
| 45 | S2 | 729 | G |
| 45 | S2 | 730 | G |
| 45 | S2 | 731 | C |
| 45 | S2 | 732 | G |
| 45 | S2 | 733 | A |
| 45 | S2 | 735 | C |
| 45 | S2 | 737 | A |
| 45 | S2 | 740 | A |
| 45 | S2 | 741 | C |
| 45 | S2 | 742 | U |
| 45 | S2 | 743 | U |
| 45 | S2 | 745 | U |
| 45 | S2 | 764 | U |
| 45 | S2 | 765 | G |
| 45 | S2 | 768 | C |
| 45 | S2 | 774 | A |
| 45 | S2 | 780 | A |
| 45 | S2 | 783 | G |
| 45 | S2 | 789 | A |
| 45 | S2 | 790 | U |
| 45 | S2 | 792 | U |
| 45 | S2 | 794 | U |
| 45 | S2 | 804 | A |
| 45 | S2 | 812 | A |
| 45 | S2 | 814 | A |
| 45 | S2 | 815 | G |
| 45 | S2 | 816 | G |
| 45 | S2 | 819 | G |
| 45 | S2 | 820 | U |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 45 | S2 | 821 | U |
| 45 | S2 | 824 | G |
| 45 | S2 | 826 | U |
| 45 | S2 | 829 | A |
| 45 | S2 | 830 | U |
| 45 | S2 | 831 | U |
| 45 | S2 | 832 | U |
| 45 | S2 | 834 | G |
| 45 | S2 | 835 | U |
| 45 | S2 | 836 | U |
| 45 | S2 | 837 | G |
| 45 | S2 | 839 | U |
| 45 | S2 | 842 | C |
| 45 | S2 | 843 | U |
| 45 | S2 | 846 | G |
| 45 | S2 | 847 | A |
| 45 | S2 | 848 | C |
| 45 | S2 | 849 | C |
| 45 | S2 | 850 | A |
| 45 | S2 | 851 | U |
| 45 | S2 | 852 | C |
| 45 | S2 | 855 | A |
| 45 | S2 | 856 | A |
| 45 | S2 | 857 | U |
| 45 | S2 | 859 | A |
| 45 | S2 | 863 | A |
| 45 | S2 | 864 | U |
| 45 | S2 | 895 | G |
| 45 | S2 | 904 | G |
| 45 | S2 | 905 | A |
| 45 | S2 | 921 | U |
| 45 | S2 | 933 | A |
| 45 | S2 | 935 | U |
| 45 | S2 | 945 | U |
| 45 | S2 | 947 | U |
| 45 | S2 | 951 | A |
| 45 | S2 | 960 | U |
| 45 | S2 | 964 | U |
| 45 | S2 | 966 | A |
| 45 | S2 | 988 | A |
| 45 | S2 | 992 | A |
| 45 | S2 | 993 | A |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 45 | S2 | 1003 | A |
| 45 | S2 | 1004 | U |
| 45 | S2 | 1025 | A |
| 45 | S2 | 1026 | A |
| 45 | S2 | 1028 | C |
| 45 | S2 | 1039 | A |
| 45 | S2 | 1052 | U |
| 45 | S2 | 1054 | U |
| 45 | S2 | 1055 | U |
| 45 | S2 | 1058 | U |
| 45 | S2 | 1060 | U |
| 45 | S2 | 1061 | A |
| 45 | S2 | 1062 | A |
| 45 | S2 | 1066 | C |
| 45 | S2 | 1075 | C |
| 45 | S2 | 1076 | A |
| 45 | S2 | 1082 | C |
| 45 | S2 | 1092 | A |
| 45 | S2 | 1093 | A |
| 45 | S2 | 1096 | C |
| 45 | S2 | 1111 | G |
| 45 | S2 | 1138 | A |
| 45 | S2 | 1150 | G |
| 45 | S2 | 1156 | C |
| 45 | S2 | 1158 | C |
| 45 | S2 | 1160 | A |
| 45 | S2 | 1163 | A |
| 45 | S2 | 1167 | G |
| 45 | S2 | 1170 | G |
| 45 | S2 | 1176 | G |
| 45 | S2 | 1185 | U |
| 45 | S2 | 1194 | A |
| 45 | S2 | 1196 | A |
| 45 | S2 | 1199 | G |
| 45 | S2 | 1200 | G |
| 45 | S2 | 1202 | A |
| 45 | S2 | 1206 | U |
| 45 | S2 | 1208 | A |
| 45 | S2 | 1216 | C |
| 45 | S2 | 1217 | A |
| 45 | S2 | 1218 | G |
| 45 | S2 | 1221 | A |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 45 | S2 | 1222 | C |
| 45 | S2 | 1223 | A |
| 45 | S2 | 1227 | A |
| 45 | S2 | 1228 | G |
| 45 | S2 | 1229 | G |
| 45 | S2 | 1237 | G |
| 45 | S2 | 1243 | G |
| 45 | S2 | 1244 | A |
| 45 | S2 | 1245 | G |
| 45 | S2 | 1246 | C |
| 45 | S2 | 1251 | U |
| 45 | S2 | 1253 | U |
| 45 | S2 | 1254 | U |
| 45 | S2 | 1258 | U |
| 45 | S2 | 1261 | G |
| 45 | S2 | 1273 | G |
| 45 | S2 | 1274 | C |
| 45 | S2 | 1275 | A |
| 45 | S2 | 1281 | G |
| 45 | S2 | 1284 | C |
| 45 | S2 | 1285 | U |
| 45 | S2 | 1301 | U |
| 45 | S2 | 1314 | U |
| 45 | S2 | 1315 | U |
| 45 | S2 | 1316 | G |
| 45 | S2 | 1318 | G |
| 45 | S2 | 1321 | A |
| 45 | S2 | 1322 | A |
| 45 | S2 | 1334 | U |
| 45 | S2 | 1338 | C |
| 45 | S2 | 1344 | A |
| 45 | S2 | 1345 | A |
| 45 | S2 | 1346 | A |
| 45 | S2 | 1348 | A |
| 45 | S2 | 1352 | G |
| 45 | S2 | 1362 | U |
| 45 | S2 | 1363 | U |
| 45 | S2 | 1364 | G |
| 45 | S2 | 1370 | U |
| 45 | S2 | 1371 | A |
| 45 | S2 | 1372 | U |
| 45 | S2 | 1377 | U |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 45 | S2 | 1378 | U |
| 45 | S2 | 1383 | G |
| 45 | S2 | 1384 | A |
| 45 | S2 | 1389 | C |
| 45 | S2 | 1390 | U |
| 45 | S2 | 1398 | U |
| 45 | S2 | 1399 | C |
| 45 | S2 | 1413 | U |
| 45 | S2 | 1414 | U |
| 45 | S2 | 1422 | A |
| 45 | S2 | 1423 | U |
| 45 | S2 | 1425 | A |
| 45 | S2 | 1427 | A |
| 45 | S2 | 1428 | G |
| 45 | S2 | 1431 | C |
| 45 | S2 | 1432 | U |
| 45 | S2 | 1433 | G |
| 45 | S2 | 1436 | A |
| 45 | S2 | 1439 | C |
| 45 | S2 | 1445 | G |
| 45 | S2 | 1446 | A |
| 45 | S2 | 1447 | C |
| 45 | S2 | 1454 | G |
| 45 | S2 | 1459 | C |
| 45 | S2 | 1460 | A |
| 45 | S2 | 1469 | A |
| 45 | S2 | 1471 | A |
| 45 | S2 | 1472 | C |
| 45 | S2 | 1473 | U |
| 45 | S2 | 1474 | G |
| 45 | S2 | 1481 | C |
| 45 | S2 | 1483 | A |
| 45 | S2 | 1491 | U |
| 45 | S2 | 1492 | A |
| 45 | S2 | 1496 | U |
| 45 | S2 | 1503 | A |
| 45 | S2 | 1509 | C |
| 45 | S2 | 1512 | G |
| 45 | S2 | 1516 | A |
| 45 | S2 | 1517 | U |
| 45 | S2 | 1518 | C |
| 45 | S2 | 1520 | U |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 45 | S2 | 1521 | G |
| 45 | S2 | 1522 | U |
| 45 | S2 | 1524 | A |
| 45 | S2 | 1527 | C |
| 45 | S2 | 1531 | G |
| 45 | S2 | 1535 | U |
| 45 | S2 | 1536 | G |
| 45 | S2 | 1537 | C |
| 45 | S2 | 1540 | G |
| 45 | S2 | 1543 | A |
| 45 | S2 | 1557 | U |
| 45 | S2 | 1558 | U |
| 45 | S2 | 1559 | A |
| 45 | S2 | 1573 | A |
| 45 | S2 | 1574 | G |
| 45 | S2 | 1583 | A |
| 45 | S2 | 1584 | G |
| 45 | S2 | 1585 | U |
| 45 | S2 | 1593 | A |
| 45 | S2 | 1598 | U |
| 45 | S2 | 1601 | G |
| 45 | S2 | 1616 | G |
| 45 | S2 | 1622 | G |
| 45 | S2 | 1631 | A |
| 45 | S2 | 1634 | C |
| 45 | S2 | 1635 | A |
| 45 | S2 | 1637 | C |
| 45 | S2 | 1651 | A |
| 45 | S2 | 1657 | U |
| 45 | S2 | 1658 | G |
| 45 | S2 | 1662 | G |
| 45 | S2 | 1666 | U |
| 45 | S2 | 1678 | A |
| 45 | S2 | 1681 | A |
| 45 | S2 | 1687 | U |
| 45 | S2 | 1688 | U |
| 45 | S2 | 1691 | A |
| 45 | S2 | 1692 | G |
| 45 | S2 | 1697 | G |
| 45 | S2 | 1699 | G |
| 45 | S2 | 1700 | C |
| 45 | S2 | 1703 | C |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 45 | S2 | 1706 | C |
| 45 | S2 | 1708 | U |
| 45 | S2 | 1710 | U |
| 45 | S2 | 1712 | A |
| 45 | S2 | 1713 | G |
| 45 | S2 | 1717 | G |
| 45 | S2 | 1727 | G |
| 45 | S2 | 1732 | A |
| 45 | S2 | 1733 | C |
| 45 | S2 | 1736 | G |
| 45 | S2 | 1738 | U |
| 45 | S2 | 1755 | A |
| 45 | S2 | 1757 | G |
| 45 | S2 | 1760 | G |
| 45 | S2 | 1762 | A |
| 45 | S2 | 1766 | A |
| 45 | S2 | 1767 | G |
| 45 | S2 | 1769 | U |
| 45 | S2 | 1771 | U |
| 45 | S2 | 1780 | G |
| 45 | S2 | 1781 | A |
| 45 | S2 | 1782 | A |
| 45 | S2 | 1783 | C |
| 45 | S2 | 1792 | G |
| 45 | S2 | 1793 | G |
| 45 | S2 | 1794 | A |
| 45 | S2 | 1795 | U |
| 45 | S2 | 1796 | C |
| 79 | Ta | 2 | G |
| 79 | Ta | 3 | C |
| 79 | Ta | 5 | G |
| 79 | Ta | 7 | G |
| 79 | Ta | 8 | U |
| 79 | Ta | 9 | G |
| 79 | Ta | 16 | C |
| 79 | Ta | 17 | C |
| 79 | Ta | 18 | C |
| 79 | Ta | 19 | G |
| 79 | Ta | 21 | U |
| 79 | Ta | 22 | A |
| 79 | Ta | 23 | G |
| 79 | Ta | 26 | C |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 79 | Ta | 28 | U |
| 79 | Ta | 30 | G |
| 79 | Ta | 32 | G |
| 79 | Ta | 33 | C |
| 79 | Ta | 34 | U |
| 79 | Ta | 35 | A |
| 79 | Ta | 37 | G |
| 79 | Ta | 48 | U |
| 79 | Ta | 49 | C |
| 79 | Ta | 50 | G |
| 79 | Ta | 51 | U |
| 79 | Ta | 52 | C |
| 79 | Ta | 54 | G |
| 79 | Ta | 56 | U |
| 79 | Ta | 57 | C |
| 79 | Ta | 58 | A |
| 79 | Ta | 59 | A |
| 79 | Ta | 60 | A |
| 79 | Ta | 62 | C |
| 79 | Ta | 63 | C |
| 79 | Ta | 64 | G |
| 79 | Ta | 65 | G |
| 79 | Ta | 67 | C |
| 79 | Ta | 69 | C |
| 79 | Ta | 70 | C |
| 79 | Ta | 71 | G |
| 79 | Ta | 72 | C |
| 79 | Ta | 73 | A |
| 79 | Ta | 74 | A |
| 79 | Ta | 75 | C |
| 80 | Tb | 2 | G |
| 80 | Tb | 3 | C |
| 80 | Tb | 4 | G |
| 80 | Tb | 5 | G |
| 80 | Tb | 8 | U |
| 80 | Tb | 9 | G |
| 80 | Tb | 10 | G |
| 80 | Tb | 14 | A |
| 80 | Tb | 16 | C |
| 80 | Tb | 17 | C |
| 80 | Tb | 18 | C |
| 80 | Tb | 21 | U |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 80 | Tb | 36 | U |
| 80 | Tb | 37 | C |
| 80 | Tb | 47 | G |
| 80 | Tb | 48 | U |
| 80 | Tb | 50 | G |
| 80 | Tb | 53 | G |
| 80 | Tb | 54 | G |
| 80 | Tb | 58 | A |
| 80 | Tb | 60 | A |
| 80 | Tb | 61 | U |
| 80 | Tb | 62 | C |
| 80 | Tb | 67 | C |
| 80 | Tb | 68 | C |
| 80 | Tb | 70 | C |
| 80 | Tb | 71 | G |
| 80 | Tb | 72 | C |
| 80 | Tb | 73 | A |
| 80 | Tb | 75 | C |
| 80 | Tb | 77 | A |

All (46) RNA pucker outliers are listed below:

| Mol | Chain | Res | Type |
|---|---|---|---|
| 1 | LA | 873 | C |
| 1 | LA | 916 | G |
| 1 | LA | 1064 | A |
| 1 | LA | 1097 | G |
| 1 | LA | 1307 | G |
| 1 | LA | 2112 | U |
| 1 | LA | 2284 | C |
| 1 | LA | 2445 | A |
| 1 | LA | 2448 | G |
| 1 | LA | 2758 | A |
| 1 | LA | 3069 | G |
| 1 | LA | 3121 | U |
| 1 | LA | 3228 | C |
| 1 | LA | 3269 | U |
| 1 | LA | 3350 | C |
| 3 | LC | 85 | G |
| 3 | LC | 155 | A |
| 45 | S2 | 387 | A |
| 45 | S2 | 504 | U |

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| Mol | Chain | Res | Type |
|---|---|---|---|
| 45 | S2 | 511 | A |
| 45 | S2 | 539 | G |
| 45 | S2 | 541 | A |
| 45 | S2 | 555 | A |
| 45 | S2 | 609 | U |
| 45 | S2 | 639 | U |
| 45 | S2 | 711 | U |
| 45 | S2 | 739 | G |
| 45 | S2 | 763 | G |
| 45 | S2 | 803 | A |
| 45 | S2 | 819 | G |
| 45 | S2 | 829 | A |
| 45 | S2 | 848 | C |
| 45 | S2 | 963 | A |
| 45 | S2 | 1207 | C |
| 45 | S2 | 1273 | G |
| 45 | S2 | 1274 | C |
| 45 | S2 | 1344 | A |
| 45 | S2 | 1382 | A |
| 45 | S2 | 1430 | U |
| 45 | S2 | 1446 | A |
| 45 | S2 | 1458 | G |
| 45 | S2 | 1480 | G |
| 45 | S2 | 1534 | G |
| 45 | S2 | 1558 | U |
| 45 | S2 | 1584 | G |
| 45 | S2 | 1597 | A |

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

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

## 5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

## 5.6 Ligand geometry (i)

There are no ligands in this entry.

## 5.7 Other polymers (i)

There are no such residues in this entry.

## 5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

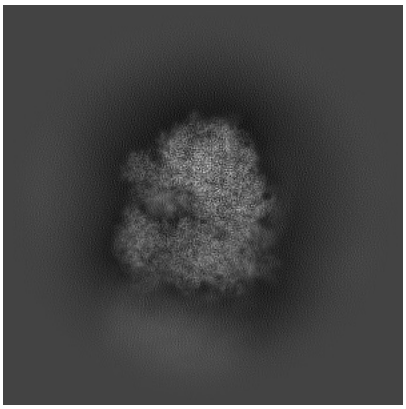
# 6 Map visualisation

This section contains visualisations of the EMDB entry EMD-60094. These allow visual inspection of the internal detail of the map and identification of artifacts.

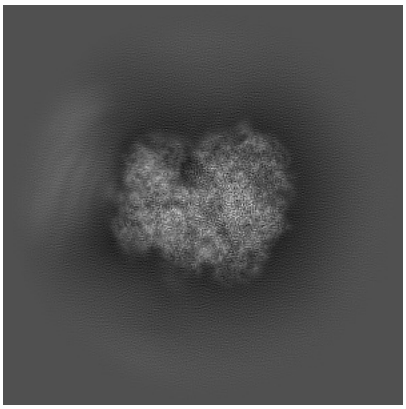
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

## 6.1 Orthogonal projections

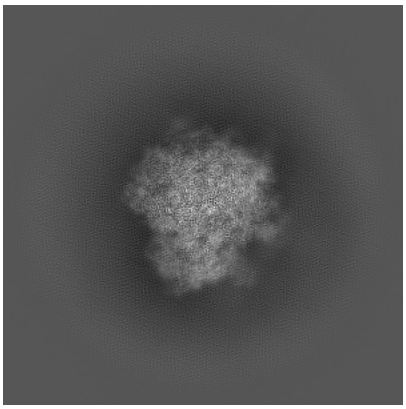
### 6.1.1 Primary map



X

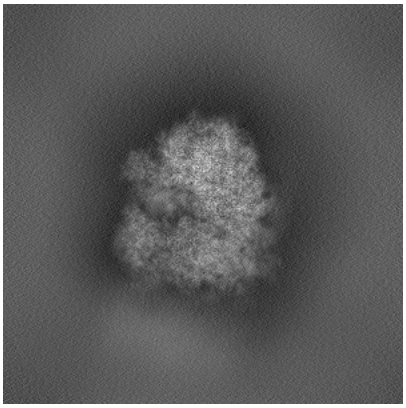


Y

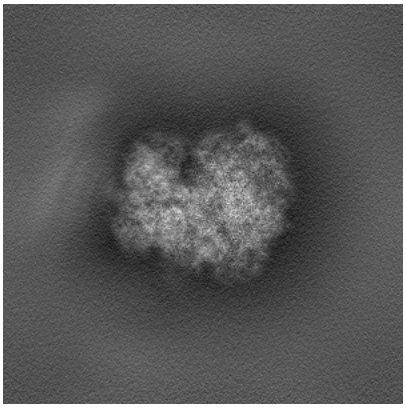


Z

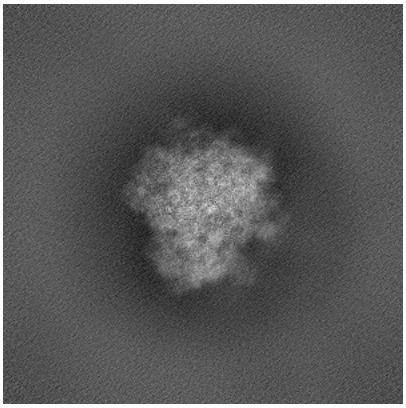
### 6.1.2 Raw map



X



Y

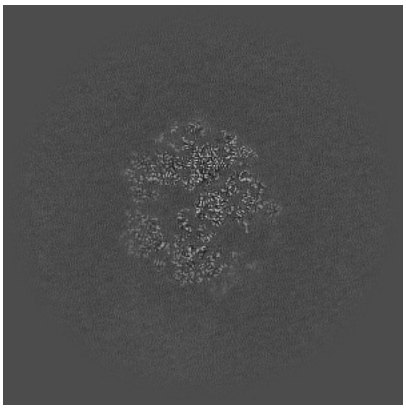


Z

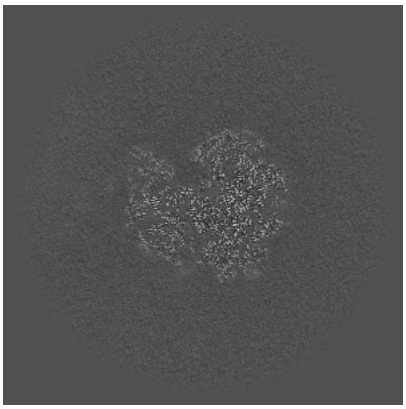
The images above show the map projected in three orthogonal directions.

## 6.2 Central slices (i)

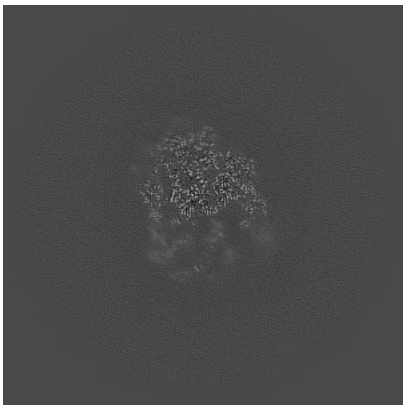
### 6.2.1 Primary map



X Index: 300

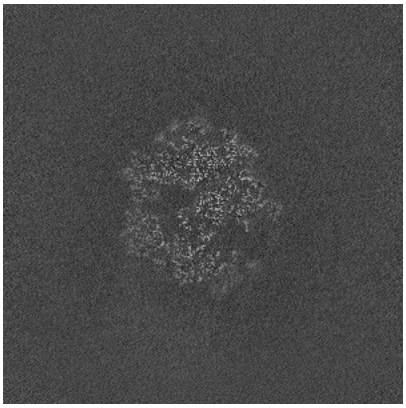


Y Index: 300

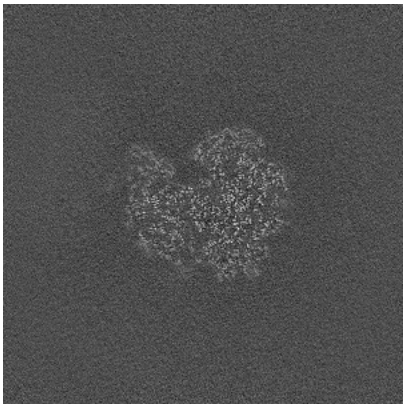


Z Index: 300

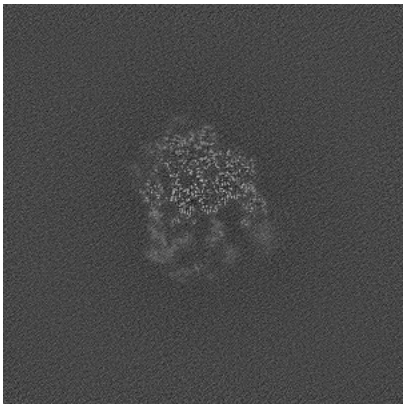
### 6.2.2 Raw map



X Index: 300



Y Index: 300

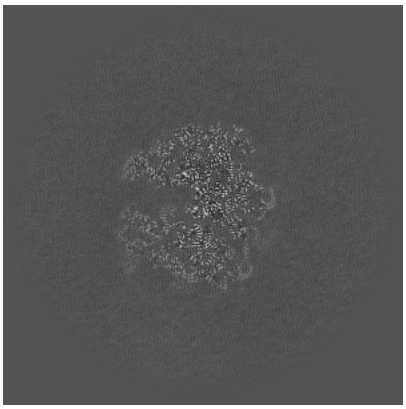


Z Index: 300

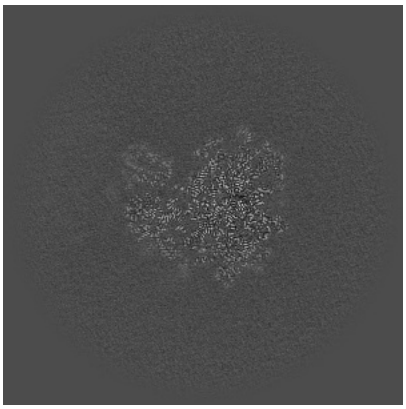
The images above show central slices of the map in three orthogonal directions.

## 6.3 Largest variance slices (i)

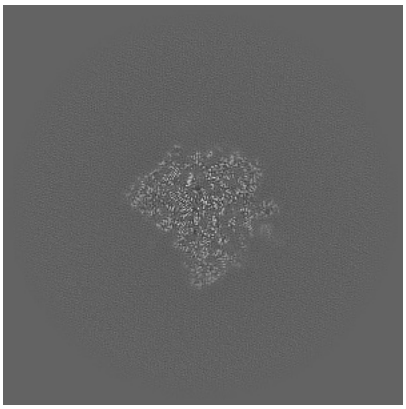
### 6.3.1 Primary map



X Index: 283

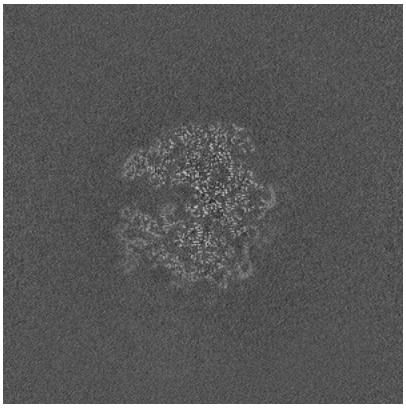


Y Index: 309

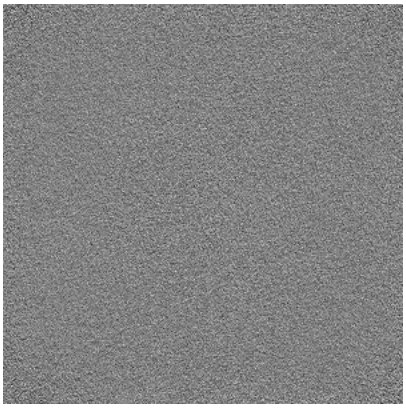


Z Index: 345

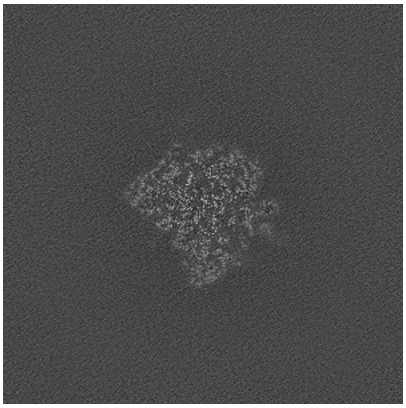
### 6.3.2 Raw map



X Index: 283



Y Index: 0

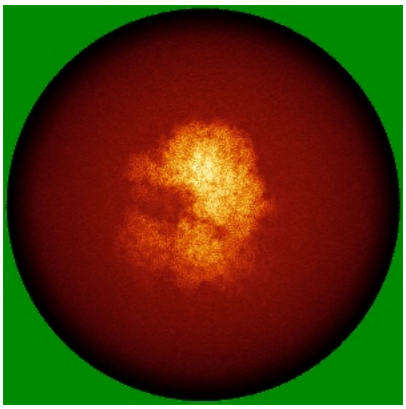


Z Index: 345

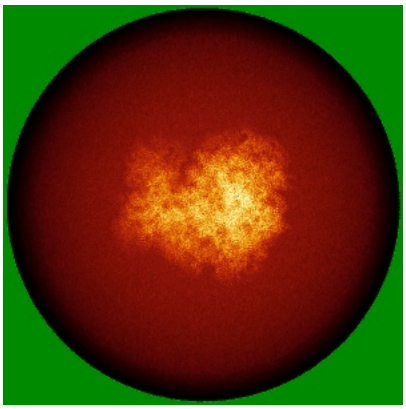
The images above show the largest variance slices of the map in three orthogonal directions.

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

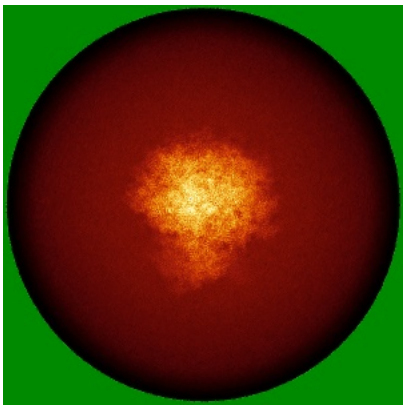
### 6.4.1 Primary map



X

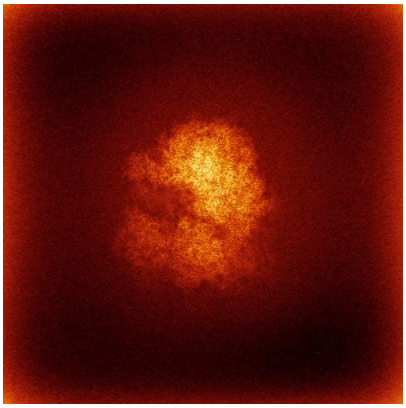


Y

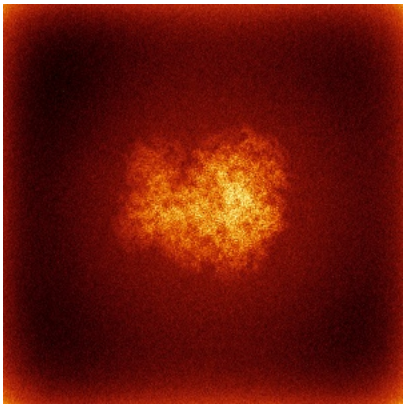


Z

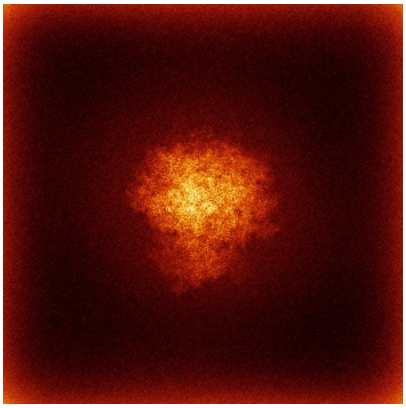
### 6.4.2 Raw map



X



Y

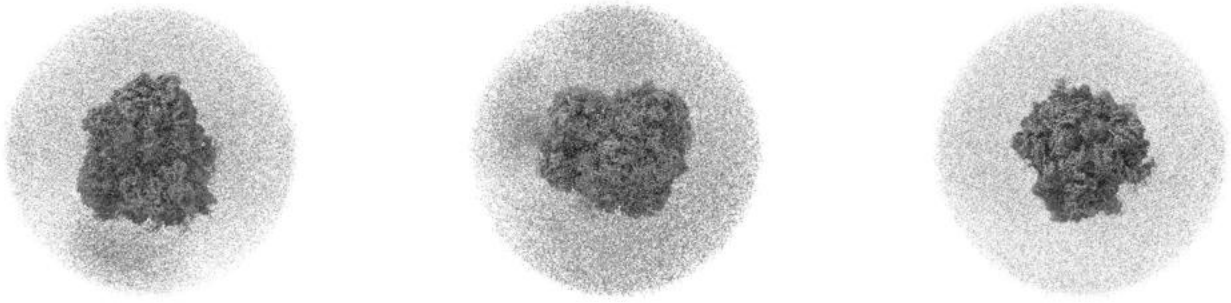


Z

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)

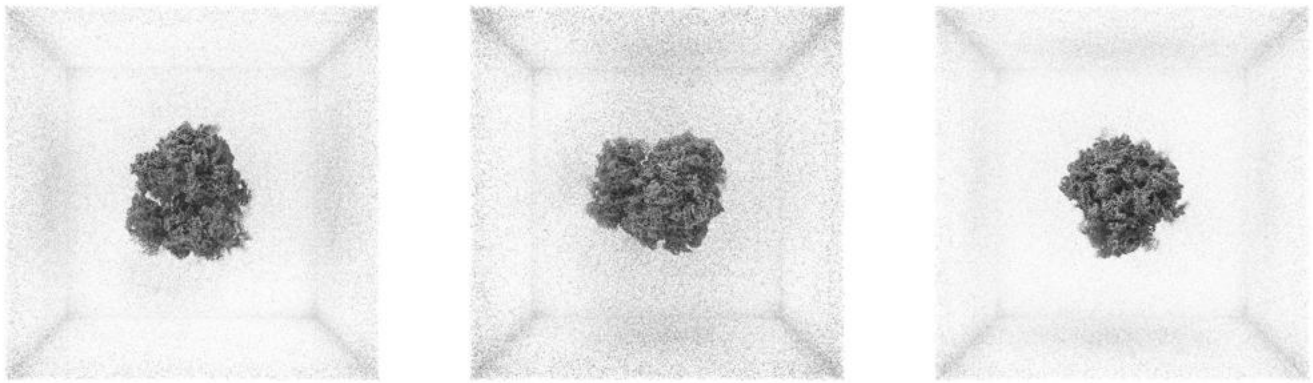
### 6.5.1 Primary map



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.26. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

### 6.5.2 Raw map



X Y Z

These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

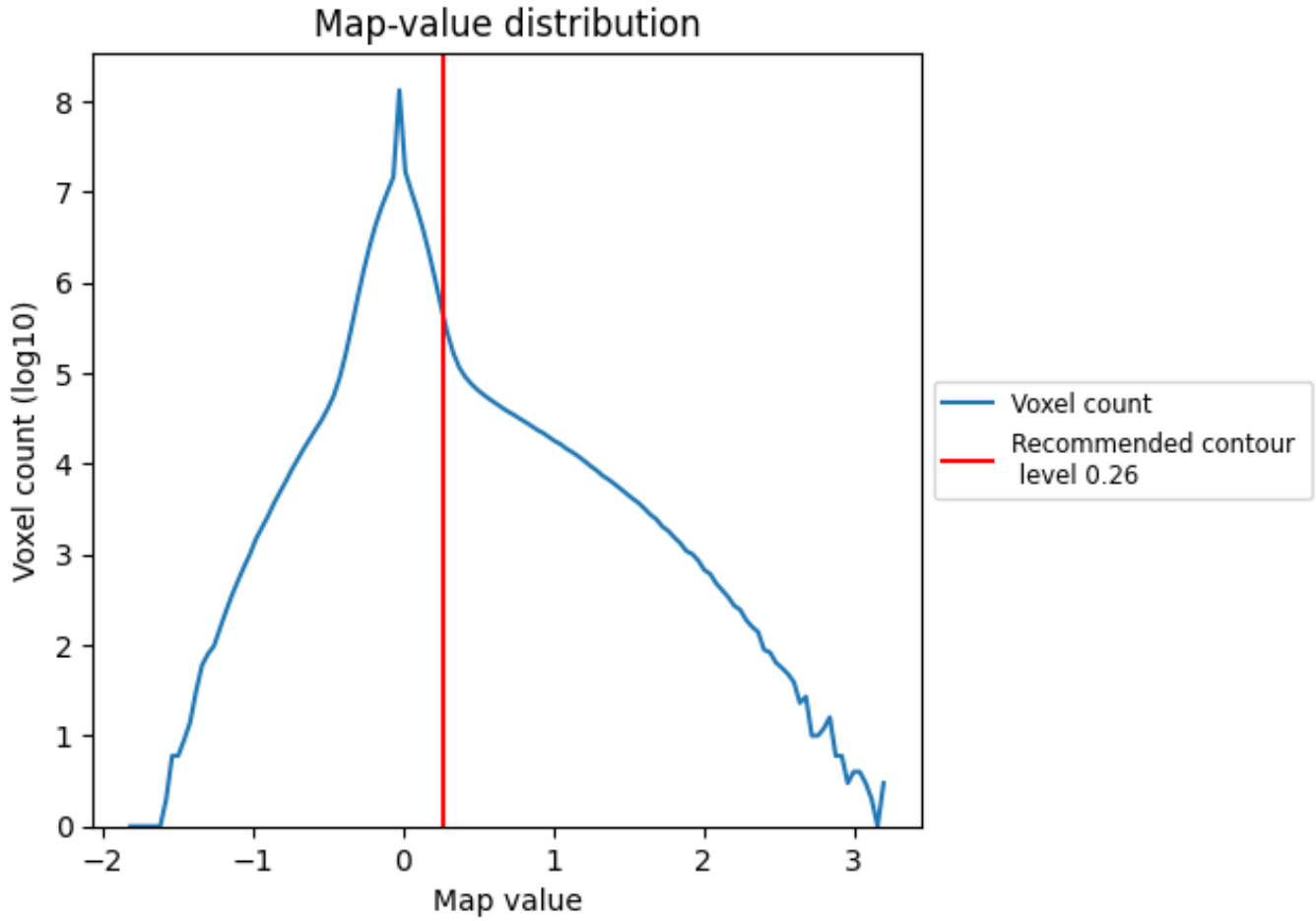
## 6.6 Mask visualisation (i)

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

# 7 Map analysis

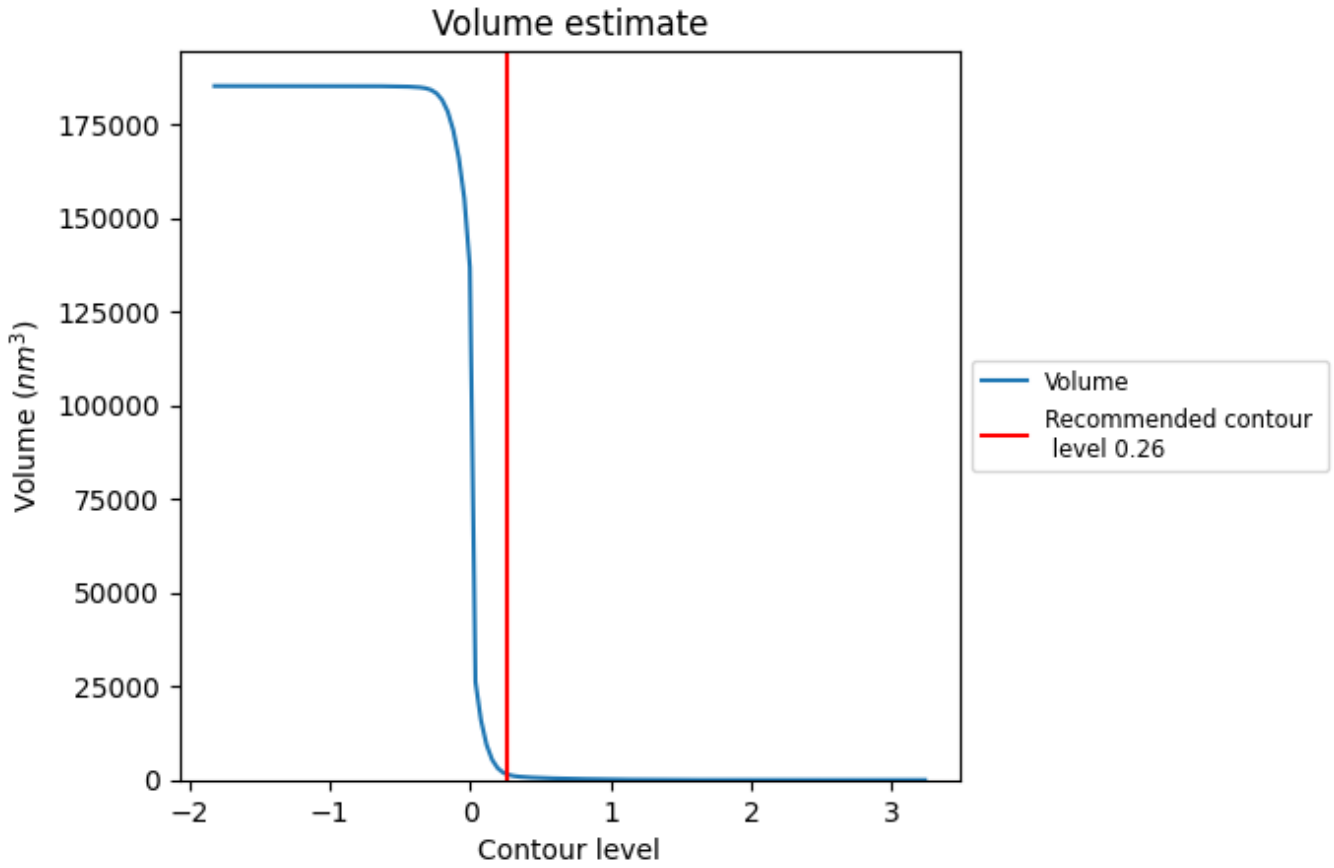
This section contains the results of statistical analysis of the map.

## 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.

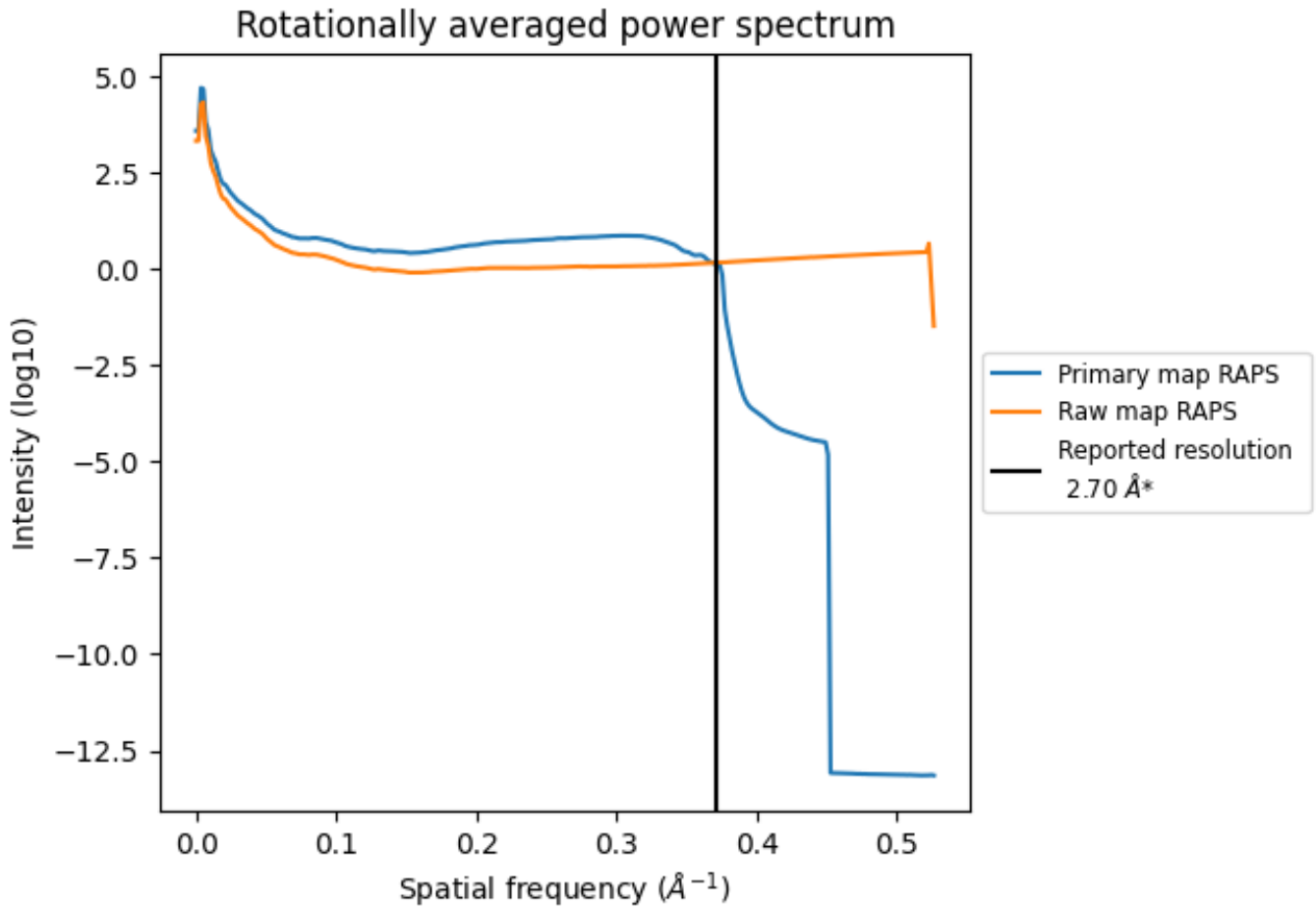
## 7.2 Volume estimate




The volume at the recommended contour level is 1584 $nm^3$; this corresponds to an approximate mass of 1431 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)

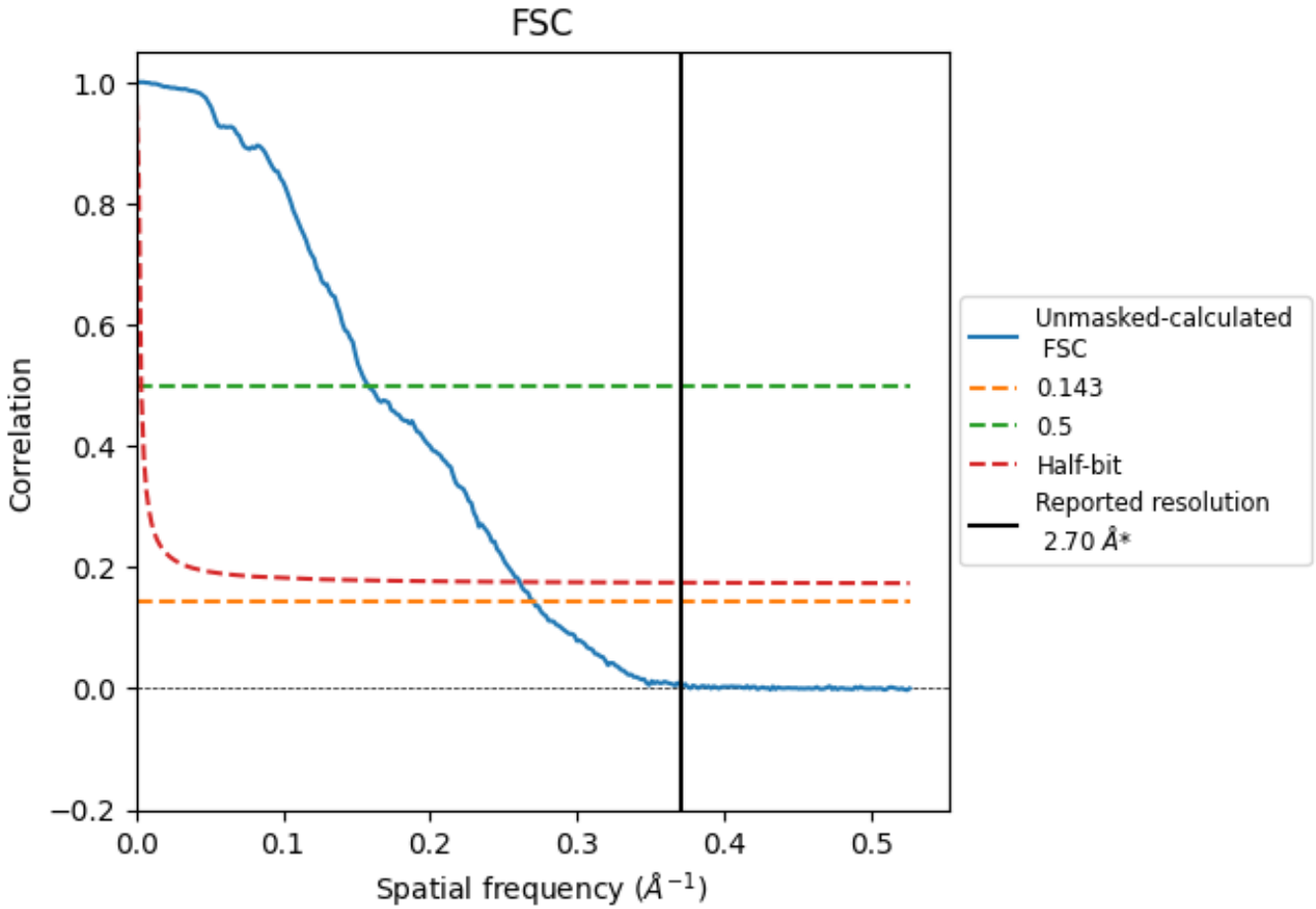



*Reported resolution corresponds to spatial frequency of 0.370 $Å^{-1}$

# 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 0.370 Å$^{-1}$

## 8.2 Resolution estimates (i)

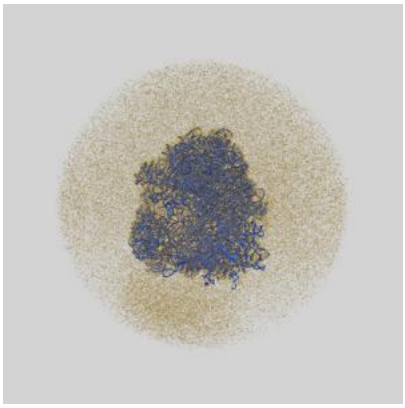
| Resolution estimate (Å) | Estimation criterion (FSC cut-off) | | |
|---|---|---|---|
| | 0.143 | 0.5 | Half-bit |
| Reported by author | 2.70 | - | - |
| Author-provided FSC curve | - | - | - |
| Unmasked-calculated* | 3.70 | 6.34 | 3.83 |

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.70 differs from the reported value 2.7 by more than 10 %

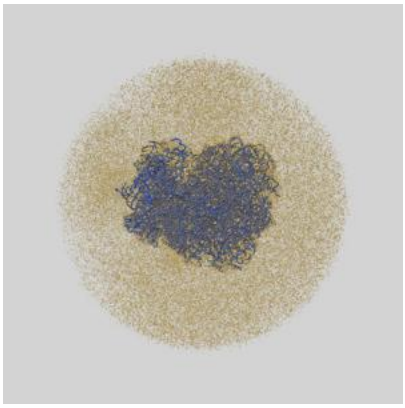
# 9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-60094 and PDB model 8ZH3. Per-residue inclusion information can be found in section 3 on page 18.

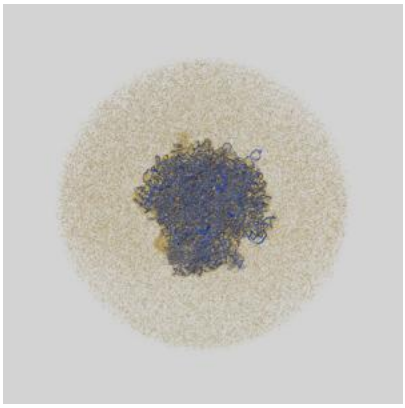
## 9.1 Map-model overlay



X



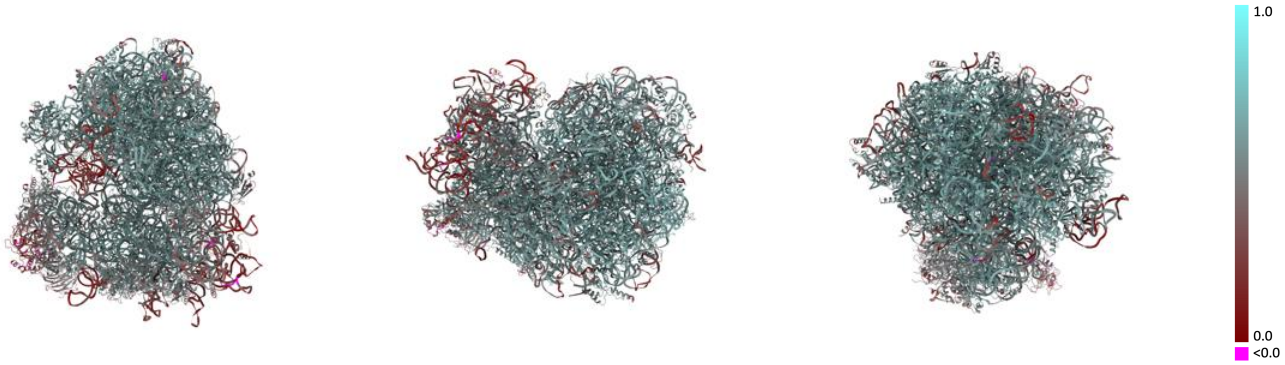
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.26 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

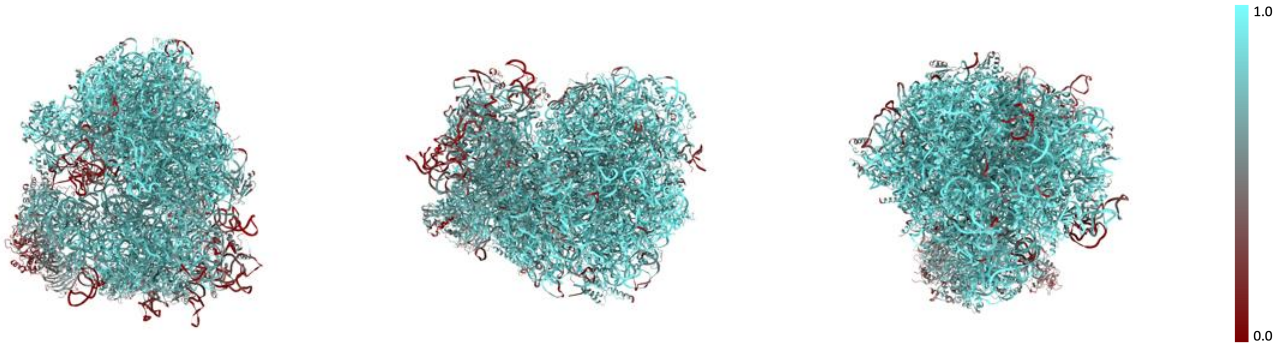
## 9.2 Q-score mapped to coordinate model (i)




X Y Z

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.

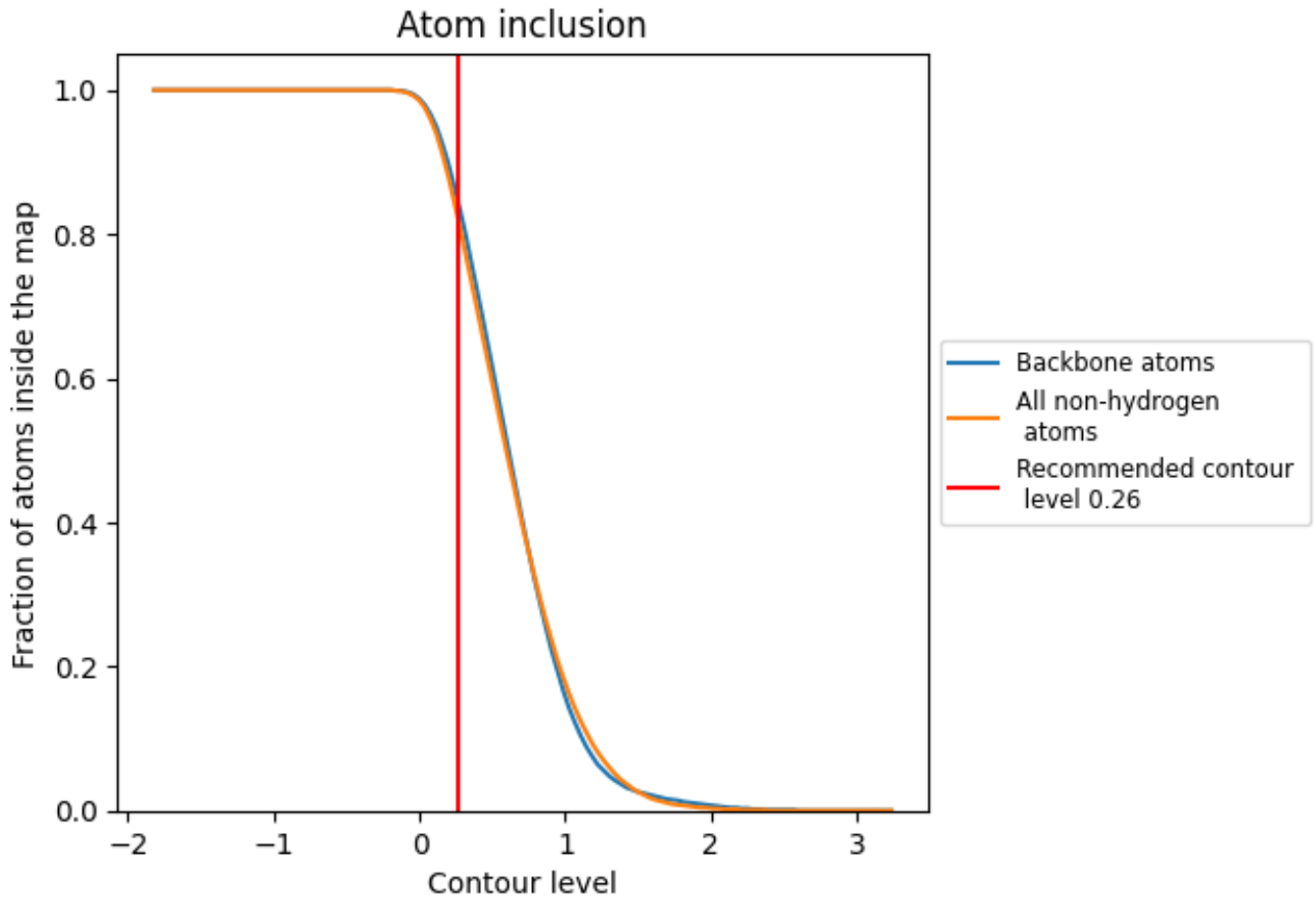
## 9.3 Atom inclusion mapped to coordinate model (i)




X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.26).

## 9.4 Atom inclusion (i)




At the recommended contour level, 85% of all backbone atoms, 83% 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 (0.26) and Q-score for the entire model and for each chain.

| Chain | Atom inclusion | Q-score |
|---|---|---|
| All | 0.8270 | 0.5510 |
| LA | 0.9040 | 0.5850 |
| LB | 0.9610 | 0.6070 |
| LC | 0.9360 | 0.6000 |
| LD | 0.9450 | 0.6420 |
| LE | 0.9120 | 0.6070 |
| LF | 0.9110 | 0.6120 |
| LG | 0.8170 | 0.5570 |
| LH | 0.8040 | 0.5400 |
| LI | 0.9110 | 0.6170 |
| LJ | 0.8130 | 0.5490 |
| LK | 0.8310 | 0.5690 |
| LL | 0.8740 | 0.6040 |
| LM | 0.8030 | 0.5450 |
| LN | 0.8740 | 0.5910 |
| LO | 0.8600 | 0.5700 |
| LP | 0.9620 | 0.6420 |
| LQ | 0.9110 | 0.6050 |
| LR | 0.8880 | 0.6070 |
| LS | 0.9510 | 0.6350 |
| LT | 0.8000 | 0.5640 |
| LU | 0.9050 | 0.6070 |
| LV | 0.9040 | 0.6120 |
| LW | 0.6670 | 0.4810 |
| LX | 0.9200 | 0.6200 |
| LY | 0.9040 | 0.6100 |
| LZ | 0.8750 | 0.6030 |
| La | 0.9170 | 0.6190 |
| Lb | 0.8420 | 0.5710 |
| Lc | 0.9310 | 0.6300 |
| Ld | 0.8760 | 0.5890 |
| Le | 0.8650 | 0.5870 |
| Lf | 0.8450 | 0.5810 |
| Lg | 0.8810 | 0.6100 |
| Lh | 0.9350 | 0.6320 |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| Chain | Atom inclusion | Q-score |
|---|---|---|
| Li | 0.8790 | 0.5970 |
| Lj | 0.8930 | 0.5980 |
| Lk | 0.8430 | 0.5630 |
| Ll | 0.9660 | 0.6450 |
| Lm | 0.6540 | 0.4900 |
| Ln | 0.9080 | 0.6160 |
| Lo | 0.8990 | 0.6060 |
| Lp | 0.8560 | 0.6170 |
| Lq | 0.9060 | 0.6170 |
| Lr | 0.9250 | 0.6330 |
| S2 | 0.7870 | 0.5050 |
| SA | 0.6520 | 0.5100 |
| SB | 0.6090 | 0.4650 |
| SC | 0.5300 | 0.4260 |
| SD | 0.1310 | 0.2180 |
| SE | 0.6800 | 0.4680 |
| SF | 0.6630 | 0.4800 |
| SG | 0.6000 | 0.4490 |
| SH | 0.6790 | 0.4980 |
| SI | 0.6220 | 0.4530 |
| SJ | 0.5220 | 0.4360 |
| SK | 0.4050 | 0.3760 |
| SL | 0.6240 | 0.4530 |
| SM | 0.8060 | 0.5490 |
| SN | 0.2150 | 0.2700 |
| SO | 0.4670 | 0.3910 |
| SP | 0.7360 | 0.5050 |
| SQ | 0.7770 | 0.5360 |
| SR | 0.8430 | 0.5870 |
| SS | 0.7360 | 0.5220 |
| ST | 0.5320 | 0.4140 |
| SU | 0.6410 | 0.4880 |
| SV | 0.6880 | 0.4860 |
| SW | 0.6660 | 0.4870 |
| SX | 0.8140 | 0.5670 |
| SY | 0.8570 | 0.5830 |
| SZ | 0.8400 | 0.5640 |
| Sa | 0.7980 | 0.5530 |
| Sb | 0.9110 | 0.6210 |
| Sc | 0.8510 | 0.5880 |
| Sd | 0.6520 | 0.4500 |
| Se | 0.8920 | 0.6010 |

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| Chain | Atom inclusion | Q-score |
|---|---|---|
| Sf | 0.7550 | 0.5430 |
| Sg | 0.6480 | 0.4640 |
| Ta | 0.4490 | 0.2740 |
| Tb | 0.5820 | 0.3670 |
| mR | 0.9320 | 0.5910 |