



wwPDB X-ray Structure Validation Summary Report ⓘ

Jun 12, 2024 – 08:52 AM EDT

PDB ID : 6NUO
Title : Modified tRNA(Pro) bound to Thermus thermophilus 70S (cognate)
Authors : Hoffer, E.D.; Subaramanian, S.; Hong, S.; Maehigashi, T.; Dunham, C.M.
Deposited on : 2019-02-01
Resolution : 3.20 Å(reported)

This is a wwPDB X-ray Structure Validation Summary 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/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

MolProbity : 4.02b-467
Mogul : 1.8.5 (274361), CSD as541be (2020)
Xtrriage (Phenix) : 1.13
EDS : **FAILED**
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.36.2

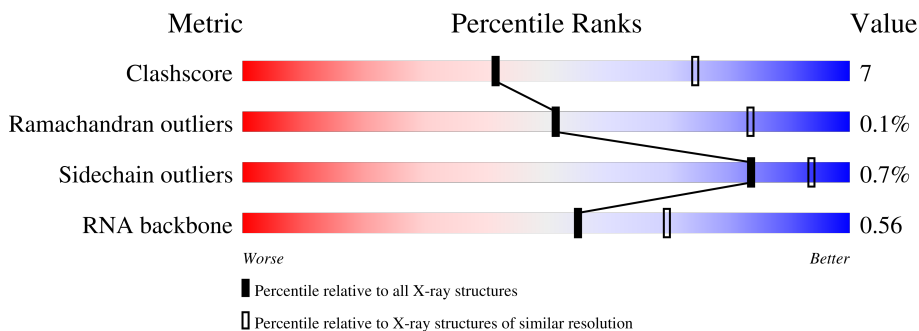
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 3.20 Å.

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



| Metric | Whole archive (#Entries) | Similar resolution (#Entries, resolution range(Å)) |
|-----------------------|-----------------------------|---|
| Clashscore | 141614 | 1253 (3.20-3.20) |
| Ramachandran outliers | 138981 | 1234 (3.20-3.20) |
| Sidechain outliers | 138945 | 1233 (3.20-3.20) |
| RNA backbone | 3102 | 1010 (3.50-2.90) |











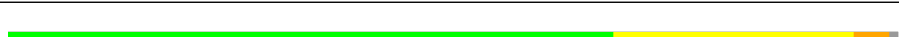


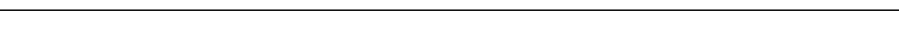
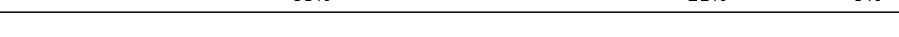
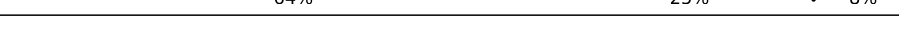



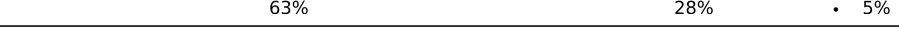





The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively.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

Note EDS failed to run properly.

| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 1 | QA | 1521 | 48% 40% 10% .. |
| 1 | XA | 1521 | 49% 38% 10% .. |
| 2 | QB | 256 | 64% 25% . 8% |
| 2 | XB | 256 | 65% 25% . 8% |
| 3 | QC | 239 | 63% 21% . 14% |
| 3 | XC | 239 | 67% 18% . 14% |

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|--|
| 4 | QD | 209 |  77% 22% |
| 4 | XD | 209 |  66% 30% |
| 5 | QE | 162 |  67% 25% 7% |
| 5 | XE | 162 |  76% 17% 7% |
| 6 | QF | 101 |  74% 25% |
| 6 | XF | 101 |  80% 18% |
| 7 | QG | 156 |  79% 19% .. |
| 7 | XG | 156 |  72% 25% .. |
| 8 | QH | 138 |  78% 22% |
| 8 | XH | 138 |  76% 22% .. |
| 9 | QI | 128 |  68% 27% .. |
| 9 | XI | 128 |  60% 32% 6% |
| 10 | QJ | 105 |  56% 34% 6% |
| 10 | XJ | 105 |  68% 21% 9% |
| 11 | QK | 129 |  64% 25% 8% |
| 11 | XK | 129 |  71% 18% 10% |
| 12 | QL | 132 |  78% 15% 5% |
| 12 | XL | 132 |  67% 20% 5% 8% |
| 13 | QM | 126 |  63% 28% 5% |
| 13 | XM | 126 |  53% 37% 6% |
| 14 | QN | 61 |  51% 43% 5% |
| 14 | XN | 61 |  75% 18% 5% |
| 15 | QO | 89 |  88% 10% .. |
| 15 | XO | 89 |  82% 16% |
| 16 | QP | 88 |  68% 26% 5% |

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 16 | XP | 88 | 68% 25% 5% |
| 17 | QQ | 105 | 61% 32% 5% |
| 17 | XQ | 105 | 79% 15% 5% |
| 18 | QR | 88 | 61% 18% 20% |
| 18 | XR | 88 | 61% 17% 20% |
| 19 | QS | 93 | 66% 22% 11% |
| 19 | XS | 93 | 61% 26% 10% |
| 20 | QT | 106 | 70% 22% 7% |
| 20 | XT | 106 | 60% 31% 7% |
| 21 | QU | 27 | 78% 15% 7% |
| 21 | XU | 27 | 56% 33% 7% |
| 22 | QV | 77 | 38% 47% 13% |
| 22 | XV | 77 | 45% 43% 9% |
| 23 | QX | 19 | 26% 68% 5% |
| 23 | XX | 19 | 26% 58% 11% 5% |
| 24 | RA | 2915 | 51% 35% 11% 2% |
| 24 | YA | 2915 | 50% 35% 11% 2% |
| 25 | RB | 122 | 65% 24% 9% 2% |
| 25 | YB | 122 | 51% 32% 13% 2% |
| 26 | RD | 276 | 78% 21% 1% |
| 26 | YD | 276 | 84% 14% 2% |
| 27 | RE | 206 | 77% 23% |
| 27 | YE | 206 | 78% 20% 2% |
| 28 | RF | 210 | 74% 22% 4% |
| 28 | YF | 210 | 73% 23% 4% |

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 29 | RG | 182 | 67% 29% .. |
| 29 | YG | 182 | 65% 32% ... |
| 30 | RH | 180 | 62% 32% .. |
| 30 | YH | 180 | 82% 14% .. |
| 31 | RI | 148 | 71% 25% .. |
| 31 | YI | 148 | 74% 22% .. |
| 32 | RN | 140 | 85% 13% .. |
| 32 | YN | 140 | 79% 19% . |
| 33 | RO | 122 | 75% 23% . |
| 33 | YO | 122 | 80% 19% . |
| 34 | RP | 150 | 78% 19% ... |
| 34 | YP | 150 | 74% 24% . |
| 35 | RQ | 141 | 62% 35% . |
| 35 | YQ | 141 | 86% 14% |
| 36 | RR | 118 | 75% 23% .. |
| 36 | YR | 118 | 82% 15% .. |
| 37 | RS | 112 | 71% 25% .. |
| 37 | YS | 112 | 79% 20% . |
| 38 | RT | 146 | 65% 25% . 6% |
| 38 | YT | 146 | 67% 23% .. 6% |
| 39 | RU | 118 | 78% 19% .. |
| 39 | YU | 118 | 82% 14% .. |
| 40 | RV | 101 | 80% 19% . |
| 40 | YV | 101 | 82% 13% 5% |
| 41 | RW | 113 | 81% 19% . |



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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 41 | YW | 113 | 82% 17% . |
| 42 | RX | 96 | 82% 14% . |
| 42 | YX | 96 | 86% 11% . |
| 43 | RY | 110 | 78% 18% .. |
| 43 | YY | 110 | 81% 15% .. |
| 44 | RZ | 206 | 54% 32% . 11% |
| 44 | YZ | 206 | 67% 21% 11% |
| 45 | R0 | 85 | 71% 24% . 5% |
| 45 | Y0 | 85 | 75% 13% 12% |
| 46 | R1 | 98 | 79% 16% .. |
| 46 | Y1 | 98 | 72% 20% . 5% |
| 47 | R2 | 72 | 72% 24% . |
| 47 | Y2 | 72 | 69% 22% 8% |
| 48 | R3 | 60 | 72% 27% . |
| 48 | Y3 | 60 | 78% 20% . |
| 49 | R4 | 71 | 58% 37% .. |
| 49 | Y4 | 71 | 56% 35% 6% . |
| 50 | R5 | 60 | 83% 15% . |
| 50 | Y5 | 60 | 83% 15% . |
| 51 | R6 | 54 | 81% 15% .. |
| 51 | Y6 | 54 | 78% 19% .. |
| 52 | R7 | 49 | 80% 16% . |
| 52 | Y7 | 49 | 90% 8% . |
| 53 | R8 | 65 | 60% 38% . |
| 53 | Y8 | 65 | 62% 34% ... |

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| Mol | Chain | Length | Quality of chain | |
|-----|-------|--------|--|-----|
| 54 | R9 | 37 |  78% | 22% |
| 54 | Y9 | 37 |  70% | 30% |

2 Entry composition [i](#)

There are 57 unique types of molecules in this entry. The entry contains 291964 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

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

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|----------------|------------|-----------|------------|-----------|---------|---------|-------|
| | | | Total | C | N | O | P | | | |
| 1 | QA | 1500 | Total 32247 | C 14353 | N 5981 | O 10414 | P 1499 | 0 | 0 | 0 |
| 1 | XA | 1500 | Total 32249 | C 14354 | N 5984 | O 10412 | P 1499 | 0 | 0 | 0 |

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

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|---------------|-----------|----------|----------|--------|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 2 | QB | 235 | Total 1907 | C 1217 | N 342 | O 343 | S 5 | 0 | 0 | 0 |
| 2 | XB | 236 | Total 1915 | C 1223 | N 343 | O 344 | S 5 | 0 | 0 | 0 |

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

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|---------------|-----------|----------|----------|--------|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 3 | QC | 205 | Total 1605 | C 1011 | N 313 | O 280 | S 1 | 0 | 0 | 0 |
| 3 | XC | 205 | Total 1605 | C 1011 | N 313 | O 280 | S 1 | 0 | 0 | 0 |

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

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|---------------|-----------|----------|----------|--------|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 4 | QD | 208 | Total 1703 | C 1066 | N 339 | O 291 | S 7 | 0 | 0 | 0 |
| 4 | XD | 208 | Total 1703 | C 1066 | N 339 | O 291 | S 7 | 0 | 0 | 0 |

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

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 5 | QE | 151 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1155 | 729 | 218 | 204 | 4 | | | |
| 5 | XE | 151 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1155 | 729 | 218 | 204 | 4 | | | |

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

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 6 | QF | 101 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 843 | 531 | 155 | 154 | 3 | | | |
| 6 | XF | 101 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 843 | 531 | 155 | 154 | 3 | | | |

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

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 7 | QG | 155 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1257 | 781 | 252 | 218 | 6 | | | |
| 7 | XG | 155 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1257 | 781 | 252 | 218 | 6 | | | |

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

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 8 | QH | 137 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1108 | 700 | 214 | 192 | 2 | | | |
| 8 | XH | 137 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1108 | 700 | 214 | 192 | 2 | | | |

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

| Mol | Chain | Residues | Atoms | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---------|---------|-------|
| 9 | QI | 127 | Total | C | N | O | 0 | 0 | 0 |
| | | | 1010 | 639 | 197 | 174 | | | |
| 9 | XI | 126 | Total | C | N | O | 0 | 0 | 0 |
| | | | 998 | 633 | 193 | 172 | | | |

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

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 10 | QJ | 99 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 801 | 504 | 157 | 139 | 1 | | | |

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| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 10 | XJ | 96 | 777 | 487 | 153 | 136 | 1 | 0 | 0 | 0 |

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

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 11 | QK | 119 | 885 | 549 | 168 | 165 | 3 | 0 | 0 | 0 |
| 11 | XK | 116 | 864 | 537 | 164 | 160 | 3 | 0 | 0 | 0 |

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

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 12 | QL | 125 | 975 | 614 | 196 | 164 | 1 | 0 | 0 | 0 |
| 12 | XL | 122 | 956 | 603 | 193 | 159 | 1 | 0 | 0 | 0 |

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

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 13 | QM | 120 | 955 | 591 | 197 | 165 | 2 | 0 | 0 | 0 |
| 13 | XM | 119 | 946 | 585 | 195 | 164 | 2 | 0 | 0 | 0 |

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

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

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

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 15 | QO | 88 | 734 | 459 | 147 | 126 | 2 | 0 | 0 | 0 |
| 15 | XO | 87 | 729 | 457 | 146 | 124 | 2 | 0 | 0 | 0 |

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

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 16 | QP | 84 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 705 | 446 | 140 | 118 | 1 | | | |
| 16 | XP | 84 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 705 | 446 | 140 | 118 | 1 | | | |

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

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 17 | QQ | 100 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 834 | 534 | 155 | 143 | 2 | | | |
| 17 | XQ | 100 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 834 | 534 | 155 | 143 | 2 | | | |

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

| Mol | Chain | Residues | Atoms | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|----|---------|---------|-------|
| 18 | QR | 70 | Total | C | N | O | 0 | 0 | 0 |
| | | | 574 | 367 | 112 | 95 | | | |
| 18 | XR | 70 | Total | C | N | O | 0 | 0 | 0 |
| | | | 574 | 367 | 112 | 95 | | | |

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

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 19 | QS | 83 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 665 | 424 | 124 | 115 | 2 | | | |
| 19 | XS | 84 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 674 | 430 | 126 | 116 | 2 | | | |

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

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 20 | QT | 99 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 763 | 470 | 162 | 129 | 2 | | | |
| 20 | XT | 99 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 763 | 470 | 162 | 129 | 2 | | | |

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

| Mol | Chain | Residues | Atoms | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---------|---------|-------|
| 21 | QU | 25 | Total | C | N | O | 0 | 0 | 0 |
| | | | 217 | 134 | 52 | 31 | | | |
| 21 | XU | 25 | Total | C | N | O | 0 | 0 | 0 |
| | | | 217 | 134 | 52 | 31 | | | |

- Molecule 22 is a RNA chain called P-site tRNA-Pro.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|----|---------|---------|-------|
| 22 | QV | 77 | Total | C | N | O | P | 0 | 0 | 0 |
| | | | 1648 | 734 | 295 | 542 | 77 | | | |
| 22 | XV | 77 | Total | C | N | O | P | 0 | 0 | 0 |
| | | | 1648 | 734 | 295 | 542 | 77 | | | |

- Molecule 23 is a RNA chain called mRNA.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|-----|----|---------|---------|-------|
| 23 | QX | 19 | Total | C | N | O | P | 0 | 0 | 0 |
| | | | 418 | 186 | 86 | 127 | 19 | | | |
| 23 | XX | 19 | Total | C | N | O | P | 0 | 0 | 0 |
| | | | 418 | 186 | 86 | 127 | 19 | | | |

- Molecule 24 is a RNA chain called 23S rRNA.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-------|-------|-------|------|---------|---------|-------|
| 24 | RA | 2881 | Total | C | N | O | P | 0 | 0 | 0 |
| | | | 62051 | 27618 | 11609 | 19944 | 2880 | | | |
| 24 | YA | 2883 | Total | C | N | O | P | 0 | 0 | 0 |
| | | | 62091 | 27636 | 11613 | 19960 | 2882 | | | |

- Molecule 25 is a RNA chain called 5S rRNA.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|-----|---------|---------|-------|
| 25 | RB | 120 | Total | C | N | O | P | 0 | 0 | 0 |
| | | | 2573 | 1146 | 476 | 832 | 119 | | | |
| 25 | YB | 120 | Total | C | N | O | P | 0 | 0 | 0 |
| | | | 2573 | 1146 | 476 | 832 | 119 | | | |

- Molecule 26 is a protein called 50S ribosomal protein L2.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|---------|-------|
| 26 | RD | 274 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 2135 | 1347 | 426 | 359 | 3 | | | |

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| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 26 | YD | 274 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 2135 | 1347 | 426 | 359 | 3 | | | |

- Molecule 27 is a protein called 50S ribosomal protein L3.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 27 | RE | 205 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1568 | 991 | 300 | 271 | 6 | | | |
| 27 | YE | 204 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1563 | 988 | 299 | 270 | 6 | | | |

- Molecule 28 is a protein called 50S ribosomal protein L4.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|------|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 28 | RF | 202 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1585 | 1011 | 297 | 275 | 2 | | | |
| 28 | YF | 202 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1585 | 1011 | 297 | 275 | 2 | | | |

- Molecule 29 is a protein called 50S ribosomal protein L5.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 29 | RG | 181 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1474 | 942 | 268 | 260 | 4 | | | |
| 29 | YG | 181 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1474 | 942 | 268 | 260 | 4 | | | |

- Molecule 30 is a protein called 50S ribosomal protein L6.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 30 | RH | 174 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1336 | 848 | 251 | 236 | 1 | | | |
| 30 | YH | 173 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1330 | 845 | 250 | 234 | 1 | | | |

- Molecule 31 is a protein called 50S ribosomal protein L9.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 31 | RI | 146 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1136 | 726 | 201 | 208 | 1 | | | |
| 31 | YI | 146 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1136 | 726 | 201 | 208 | 1 | | | |

- Molecule 32 is a protein called 50S ribosomal protein L13.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 32 | RN | 138 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1104 | 712 | 206 | 182 | 4 | | | |
| 32 | YN | 140 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1121 | 722 | 208 | 187 | 4 | | | |

- Molecule 33 is a protein called 50S ribosomal protein L14.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 33 | RO | 122 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 933 | 588 | 171 | 170 | 4 | | | |
| 33 | YO | 122 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 933 | 588 | 171 | 170 | 4 | | | |

- Molecule 34 is a protein called 50S ribosomal protein L15.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 34 | RP | 149 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1139 | 709 | 231 | 196 | 3 | | | |
| 34 | YP | 147 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1122 | 698 | 229 | 192 | 3 | | | |

- Molecule 35 is a protein called 50S ribosomal protein L16.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 35 | RQ | 141 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1122 | 715 | 212 | 188 | 7 | | | |
| 35 | YQ | 141 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1122 | 715 | 212 | 188 | 7 | | | |

- Molecule 36 is a protein called 50S ribosomal protein L17.

| Mol | Chain | Residues | Atoms | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---------|---------|-------|
| | | | Total | C | N | O | | | |
| 36 | RR | 117 | Total | C | N | O | 0 | 0 | 0 |
| | | | 960 | 599 | 202 | 159 | | | |
| 36 | YR | 117 | Total | C | N | O | 0 | 0 | 0 |
| | | | 960 | 599 | 202 | 159 | | | |

- Molecule 37 is a protein called 50S ribosomal protein L18.

| Mol | Chain | Residues | Atoms | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---------|---------|-------|
| 37 | RS | 111 | Total | C | N | O | 0 | 0 | 0 |
| | | | 882 | 556 | 176 | 150 | | | |
| 37 | YS | 110 | Total | C | N | O | 0 | 0 | 0 |
| | | | 877 | 553 | 175 | 149 | | | |

- Molecule 38 is a protein called 50S ribosomal protein L19.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 38 | RT | 137 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1141 | 710 | 234 | 196 | 1 | | | |
| 38 | YT | 137 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 1141 | 710 | 234 | 196 | 1 | | | |

- Molecule 39 is a protein called 50S ribosomal protein L20.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 39 | RU | 117 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 964 | 610 | 202 | 151 | 1 | | | |
| 39 | YU | 117 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 964 | 610 | 202 | 151 | 1 | | | |

- Molecule 40 is a protein called 50S ribosomal protein L21.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 40 | RV | 101 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 779 | 501 | 142 | 135 | 1 | | | |
| 40 | YV | 101 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 779 | 501 | 142 | 135 | 1 | | | |

- Molecule 41 is a protein called 50S ribosomal protein L22.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| 41 | RW | 113 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 900 | 566 | 177 | 155 | 2 | | | |
| 41 | YW | 113 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 900 | 566 | 177 | 155 | 2 | | | |

- Molecule 42 is a protein called 50S ribosomal protein L23.

| Mol | Chain | Residues | Atoms | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---------|---------|-------|
| 42 | RX | 92 | Total | C | N | O | 0 | 0 | 0 |
| | | | 725 | 471 | 131 | 123 | | | |

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| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 42 | YX | 94 | 742 | 482 | 134 | 125 | 1 | 0 | 0 | 0 |

- Molecule 43 is a protein called 50S ribosomal protein L24.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 43 | RY | 107 | 818 | 525 | 155 | 132 | 6 | 0 | 0 | 0 |
| 43 | YY | 107 | 818 | 525 | 155 | 132 | 6 | 0 | 0 | 0 |

- Molecule 44 is a protein called 50S ribosomal protein L25.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 44 | RZ | 183 | 1461 | 933 | 260 | 265 | 3 | 0 | 0 | 0 |
| 44 | YZ | 183 | 1461 | 933 | 260 | 265 | 3 | 0 | 0 | 0 |

- Molecule 45 is a protein called 50S ribosomal protein L27.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 45 | R0 | 81 | 643 | 398 | 137 | 107 | 1 | 0 | 0 | 0 |
| 45 | Y0 | 75 | 599 | 370 | 127 | 101 | 1 | 0 | 0 | 0 |

- Molecule 46 is a protein called 50S ribosomal protein L28.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 46 | R1 | 97 | 763 | 481 | 150 | 131 | 1 | 0 | 0 | 0 |
| 46 | Y1 | 93 | 729 | 457 | 145 | 126 | 1 | 0 | 0 | 0 |

- Molecule 47 is a protein called 50S ribosomal protein L29.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 47 | R2 | 69 | 581 | 358 | 118 | 104 | 1 | 0 | 0 | 0 |
| 47 | Y2 | 66 | 558 | 346 | 113 | 98 | 1 | 0 | 0 | 0 |

- Molecule 48 is a protein called 50S ribosomal protein L30.

| Mol | Chain | Residues | Atoms | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---------|---------|-------|
| | | | Total | C | N | O | | | |
| 48 | R3 | 59 | 469 | 298 | 90 | 81 | 0 | 0 | 0 |
| 48 | Y3 | 59 | 469 | 298 | 90 | 81 | 0 | 0 | 0 |

- Molecule 49 is a protein called 50S ribosomal protein L31.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 49 | R4 | 69 | 565 | 356 | 103 | 101 | 5 | 0 | 0 | 0 |
| 49 | Y4 | 69 | 565 | 356 | 103 | 101 | 5 | 0 | 0 | 0 |

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

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 50 | R5 | 59 | 459 | 288 | 90 | 76 | 5 | 0 | 0 | 0 |
| 50 | Y5 | 59 | 459 | 288 | 90 | 76 | 5 | 0 | 0 | 0 |

- Molecule 51 is a protein called 50S ribosomal protein L33.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 51 | R6 | 53 | 453 | 281 | 91 | 77 | 4 | 0 | 0 | 0 |
| 51 | Y6 | 53 | 453 | 281 | 91 | 77 | 4 | 0 | 0 | 0 |

- Molecule 52 is a protein called 50S ribosomal protein L34.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|----|---|---------|---------|-------|
| | | | Total | C | N | O | S | | | |
| 52 | R7 | 47 | 409 | 251 | 102 | 54 | 2 | 0 | 0 | 0 |
| 52 | Y7 | 48 | 418 | 257 | 104 | 55 | 2 | 0 | 0 | 0 |

- Molecule 53 is a protein called 50S ribosomal protein L35.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|----|---|---------|---------|-------|
| 53 | R8 | 64 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 517 | 331 | 102 | 82 | 2 | | | |
| 53 | Y8 | 64 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 517 | 331 | 102 | 82 | 2 | | | |

- Molecule 54 is a protein called 50S ribosomal protein L36.

| Mol | Chain | Residues | Atoms | | | | | ZeroOcc | AltConf | Trace |
|-----|-------|----------|-------|-----|----|----|---|---------|---------|-------|
| 54 | R9 | 37 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 307 | 188 | 68 | 47 | 4 | | | |
| 54 | Y9 | 37 | Total | C | N | O | S | 0 | 0 | 0 |
| | | | 307 | 188 | 68 | 47 | 4 | | | |

- Molecule 55 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf |
|-----|-------|----------|-------|-----|---------|---------|
| 55 | QA | 64 | Total | Mg | 0 | 0 |
| | | | 64 | 64 | | |
| 55 | QV | 1 | Total | Mg | 0 | 0 |
| | | | 1 | 1 | | |
| 55 | RA | 444 | Total | Mg | 0 | 0 |
| | | | 444 | 444 | | |
| 55 | RB | 7 | Total | Mg | 0 | 0 |
| | | | 7 | 7 | | |
| 55 | RE | 5 | Total | Mg | 0 | 0 |
| | | | 5 | 5 | | |
| 55 | RF | 1 | Total | Mg | 0 | 0 |
| | | | 1 | 1 | | |
| 55 | RN | 1 | Total | Mg | 0 | 0 |
| | | | 1 | 1 | | |
| 55 | RQ | 1 | Total | Mg | 0 | 0 |
| | | | 1 | 1 | | |
| 55 | RR | 1 | Total | Mg | 0 | 0 |
| | | | 1 | 1 | | |
| 55 | RT | 1 | Total | Mg | 0 | 0 |
| | | | 1 | 1 | | |
| 55 | RX | 1 | Total | Mg | 0 | 0 |
| | | | 1 | 1 | | |
| 55 | R0 | 2 | Total | Mg | 0 | 0 |
| | | | 2 | 2 | | |
| 55 | R8 | 2 | Total | Mg | 0 | 0 |
| | | | 2 | 2 | | |
| 55 | XA | 78 | Total | Mg | 0 | 0 |
| | | | 78 | 78 | | |

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| Mol | Chain | Residues | Atoms | ZeroOcc | AltConf |
|-----|-------|----------|---------------------|---------|---------|
| 55 | XE | 1 | Total Mg 1 1 | 0 | 0 |
| 55 | XM | 2 | Total Mg 2 2 | 0 | 0 |
| 55 | XV | 1 | Total Mg 1 1 | 0 | 0 |
| 55 | YA | 510 | Total Mg 510 510 | 0 | 0 |
| 55 | YB | 7 | Total Mg 7 7 | 0 | 0 |
| 55 | YD | 2 | Total Mg 2 2 | 0 | 0 |
| 55 | YE | 5 | Total Mg 5 5 | 0 | 0 |
| 55 | YP | 3 | Total Mg 3 3 | 0 | 0 |
| 55 | YQ | 3 | Total Mg 3 3 | 0 | 0 |
| 55 | YR | 1 | Total Mg 1 1 | 0 | 0 |
| 55 | Y0 | 2 | Total Mg 2 2 | 0 | 0 |
| 55 | Y1 | 2 | Total Mg 2 2 | 0 | 0 |
| 55 | Y3 | 1 | Total Mg 1 1 | 0 | 0 |
| 55 | Y5 | 1 | Total Mg 1 1 | 0 | 0 |
| 55 | Y7 | 1 | Total Mg 1 1 | 0 | 0 |
| 55 | Y8 | 1 | Total Mg 1 1 | 0 | 0 |

- Molecule 56 is IRON/SULFUR CLUSTER (three-letter code: SF4) (formula: Fe₄S₄).



| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf |
|-----|-------|----------|-------|------|---------|---------|
| 56 | QD | 1 | Total | Fe S | 0 | 0 |
| | | | 8 | 4 4 | | |
| 56 | XD | 1 | Total | Fe S | 0 | 0 |
| | | | 8 | 4 4 | | |

- Molecule 57 is ZINC ION (three-letter code: ZN) (formula: Zn).

| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf |
|-----|-------|----------|-------|----|---------|---------|
| 57 | QN | 1 | Total | Zn | 0 | 0 |
| | | | 1 | 1 | | |
| 57 | RY | 1 | Total | Zn | 0 | 0 |
| | | | 1 | 1 | | |
| 57 | R4 | 1 | Total | Zn | 0 | 0 |
| | | | 1 | 1 | | |
| 57 | R5 | 1 | Total | Zn | 0 | 0 |
| | | | 1 | 1 | | |
| 57 | R6 | 1 | Total | Zn | 0 | 0 |
| | | | 1 | 1 | | |
| 57 | R9 | 1 | Total | Zn | 0 | 0 |
| | | | 1 | 1 | | |
| 57 | XN | 1 | Total | Zn | 0 | 0 |
| | | | 1 | 1 | | |
| 57 | YY | 1 | Total | Zn | 0 | 0 |
| | | | 1 | 1 | | |
| 57 | Y4 | 1 | Total | Zn | 0 | 0 |
| | | | 1 | 1 | | |
| 57 | Y5 | 1 | Total | Zn | 0 | 0 |
| | | | 1 | 1 | | |

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| Mol | Chain | Residues | Atoms | | ZeroOcc | AltConf |
|------------|--------------|-----------------|--------------|---------|----------------|----------------|
| 57 | Y6 | 1 | Total 1 | Zn 1 | 0 | 0 |
| 57 | Y9 | 1 | Total 1 | Zn 1 | 0 | 0 |

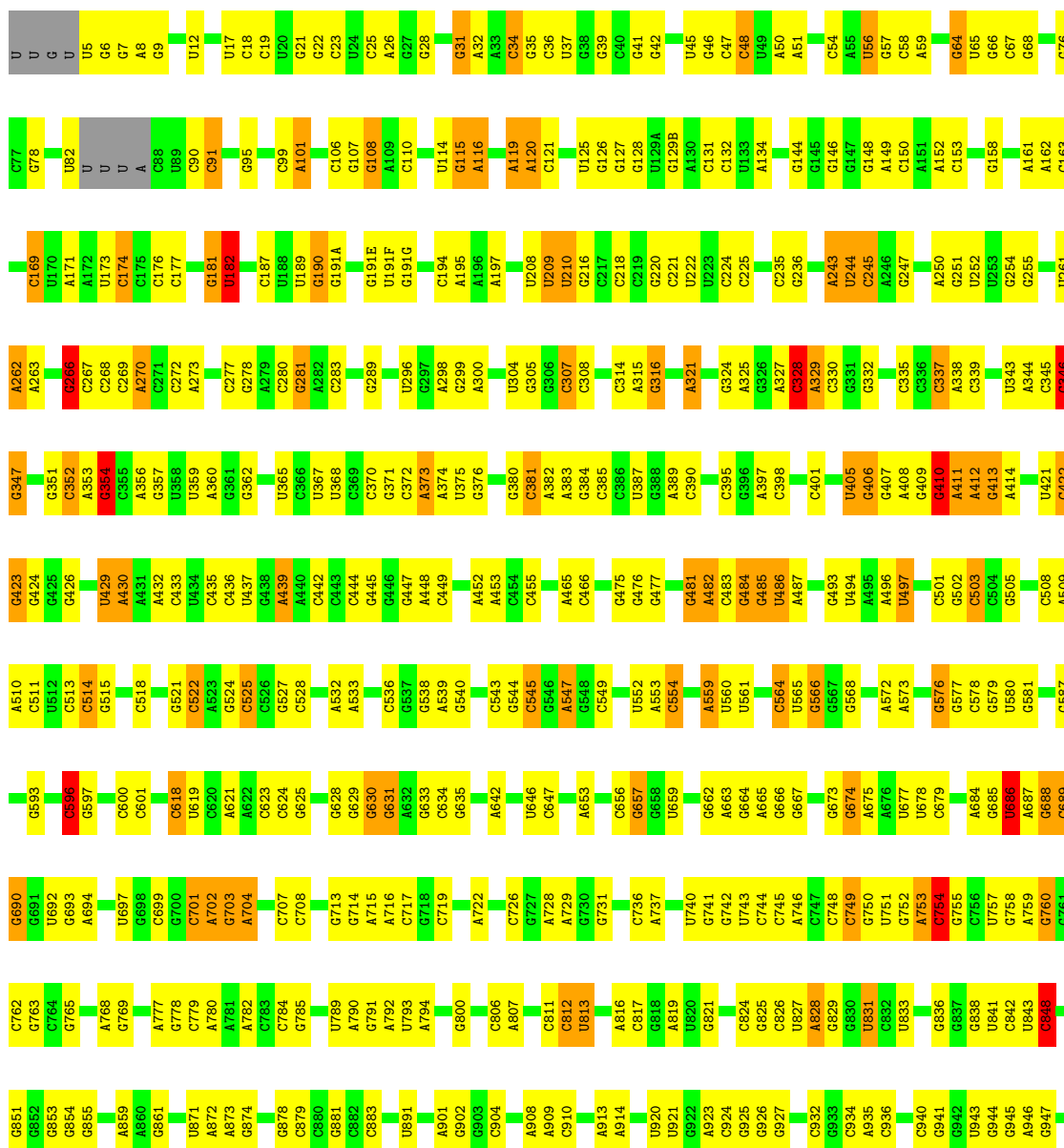
3 Residue-property plots [i](#)

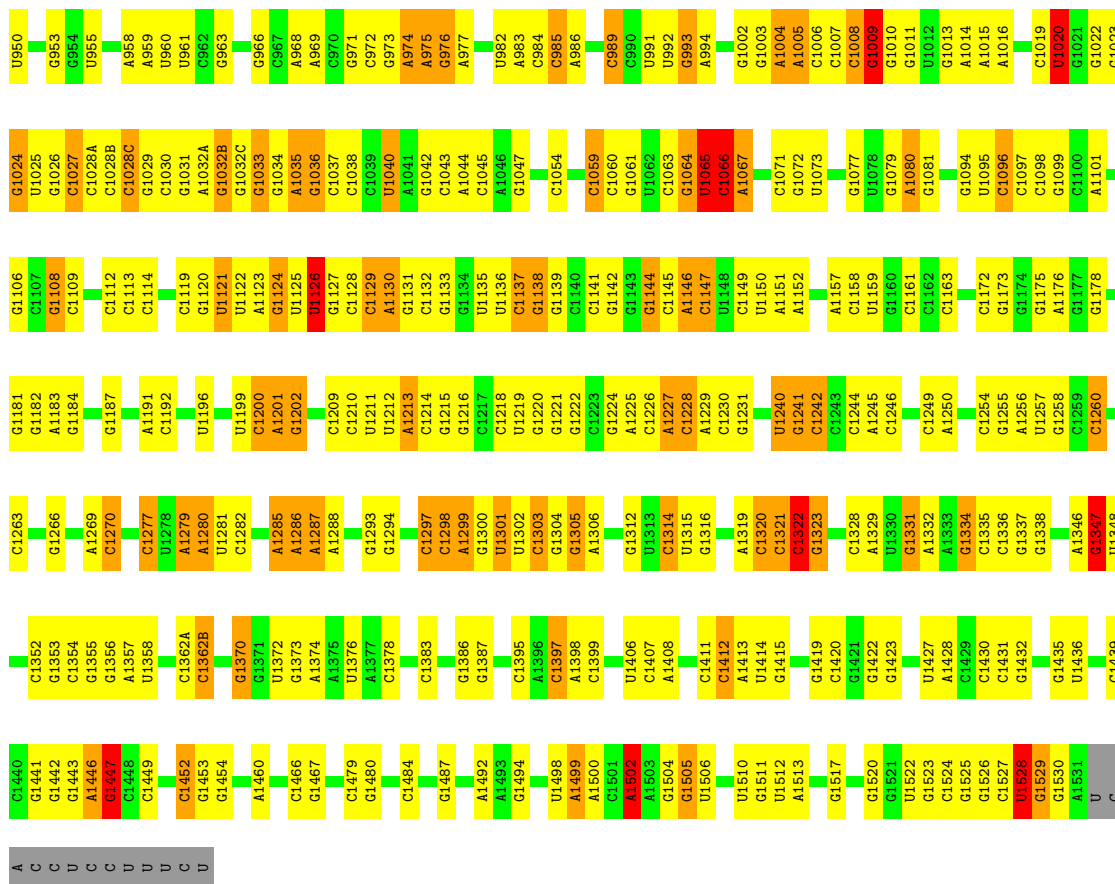
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry. Residues are color-coded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

Note EDS failed to run properly.

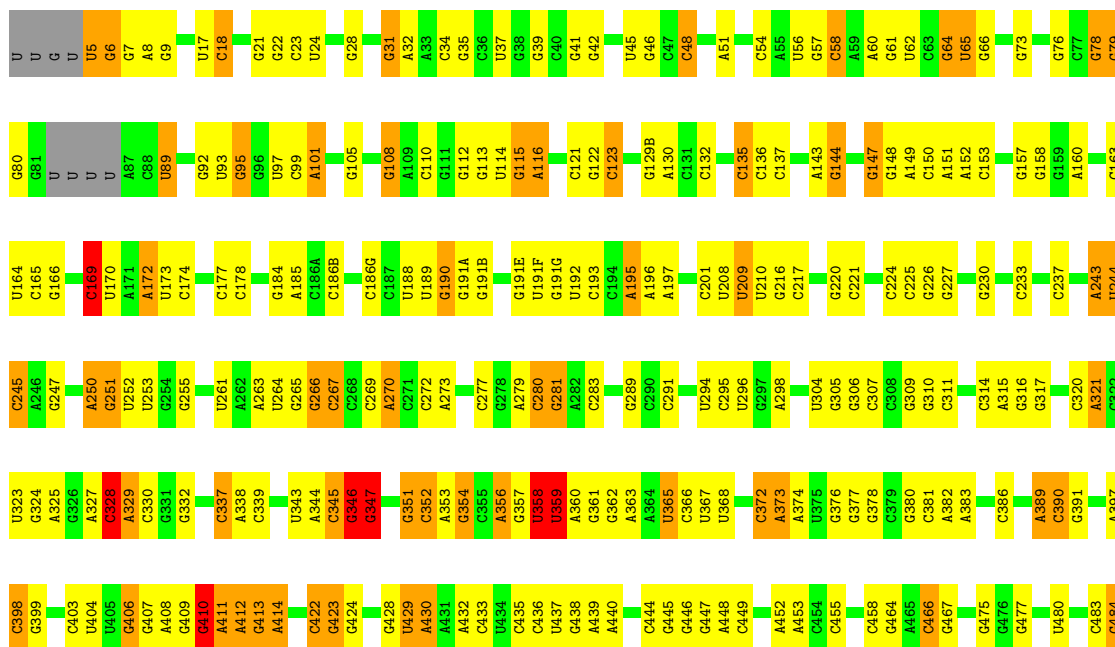
- Molecule 1: 16S rRNA

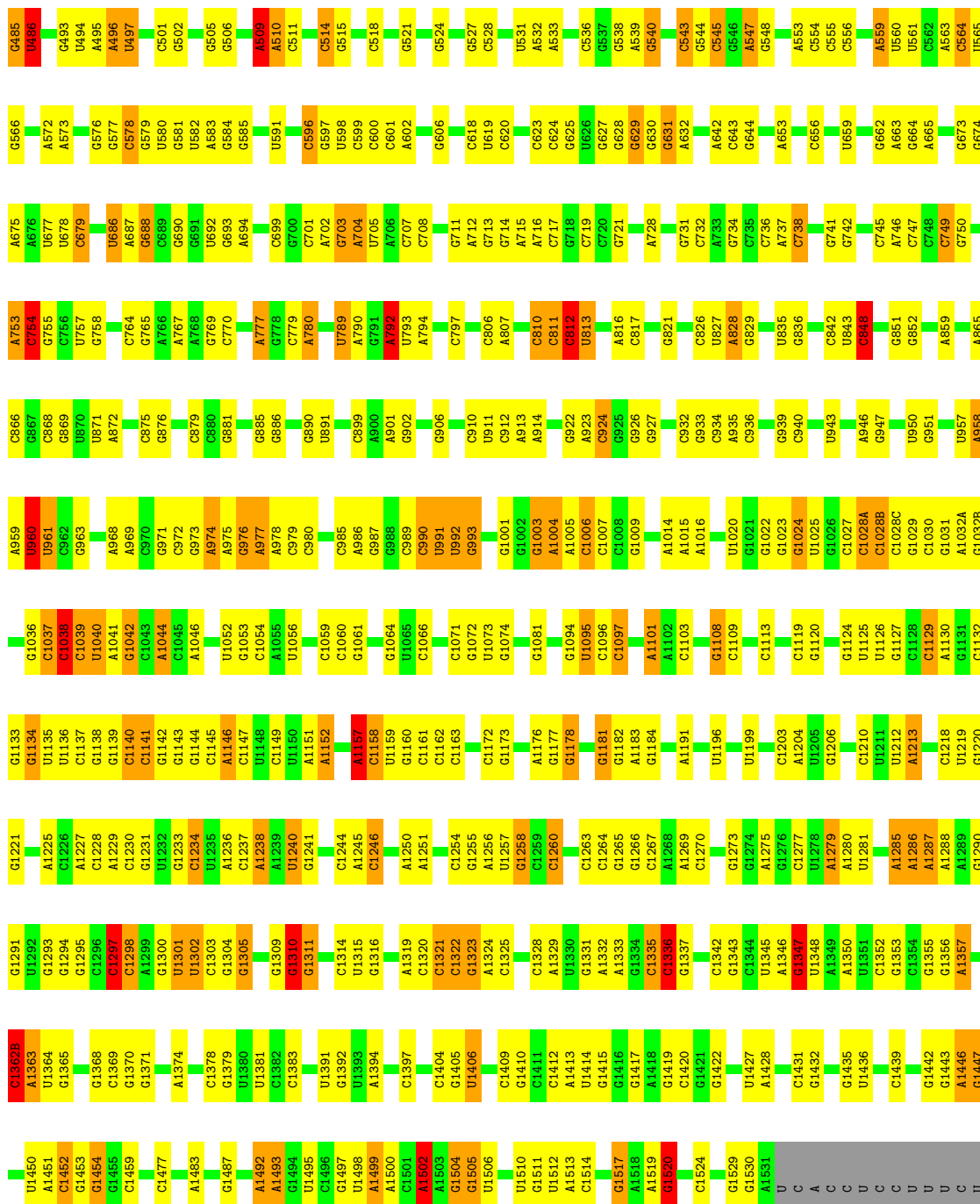
Chain QA:  48% 40% 10% ..





• Molecule 1: 16S rRNA

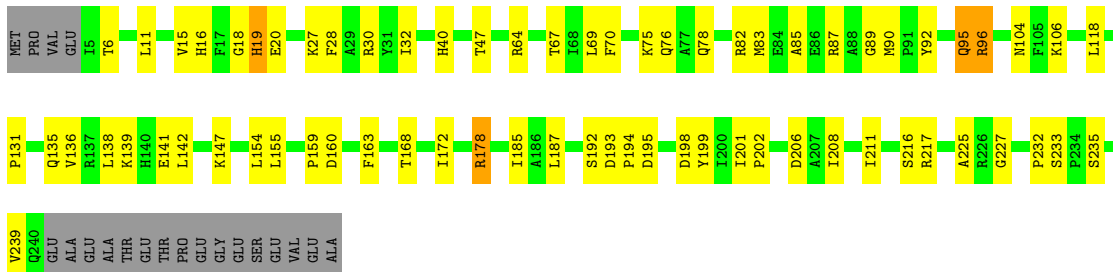




ALA
GLU
GLU
ALA
THR
GLU
THR
PRO
GLY
GLY
SER
GLU
VAL
GLU
ALA

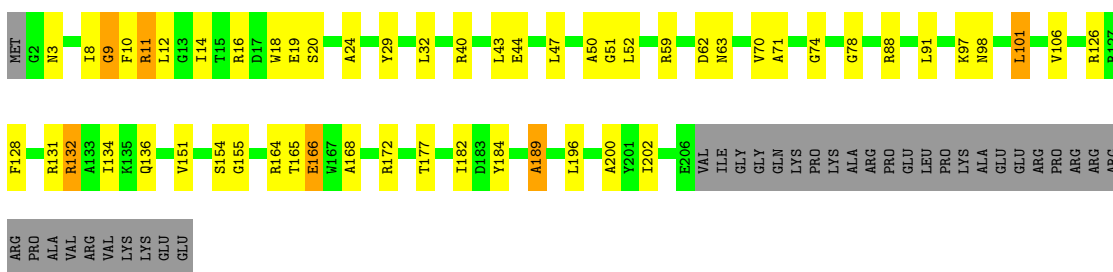
- Molecule 2: 30S ribosomal protein S2

Chain XB:  65% 25% 8%



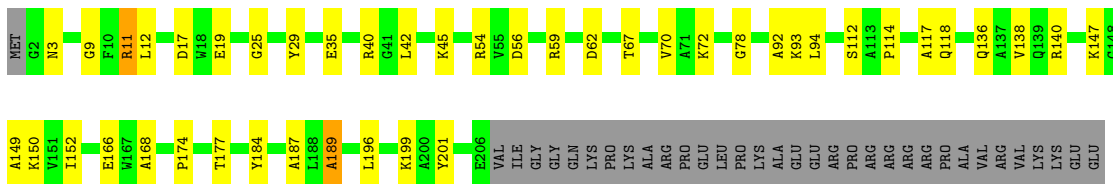
- Molecule 3: 30S ribosomal protein S3

Chain QC:  63% 21% 14%




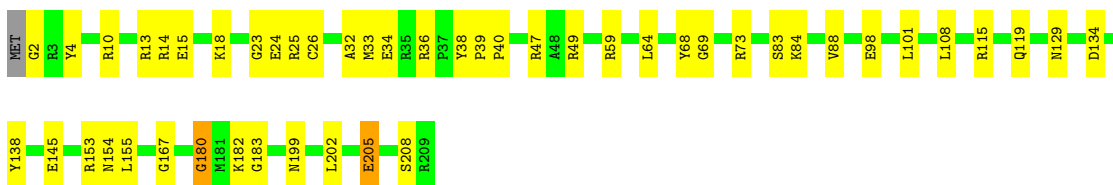
- Molecule 3: 30S ribosomal protein S3

Chain XC:  67% 18% 14%



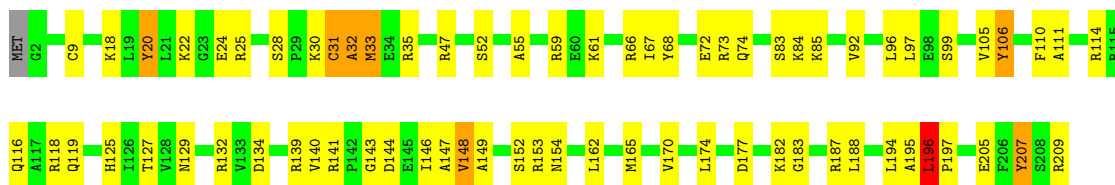
- Molecule 4: 30S ribosomal protein S4

Chain QD:  77% 22%



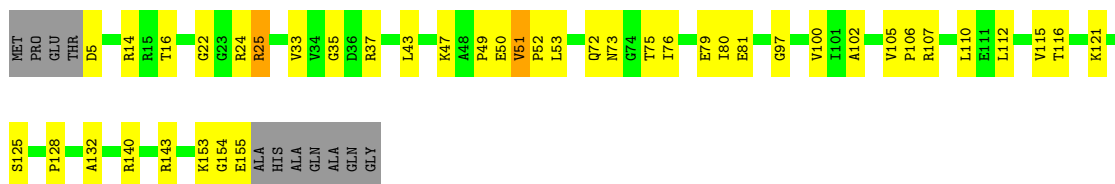
- Molecule 4: 30S ribosomal protein S4

Chain XD:  66% 30%




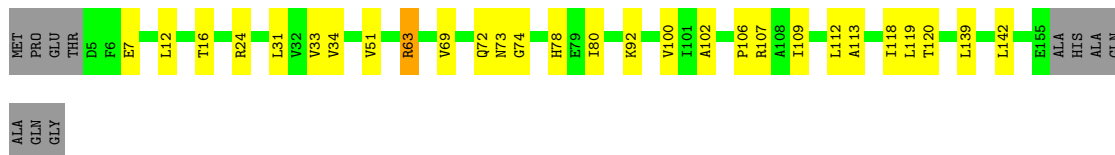
• Molecule 5: 30S ribosomal protein S5

Chain QE:  67% 25% 7%




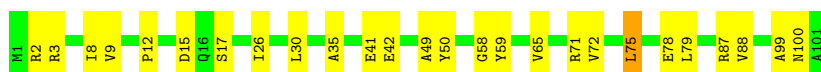
• Molecule 5: 30S ribosomal protein S5

Chain XE:  76% 17% 7%




• Molecule 6: 30S ribosomal protein S6

Chain QF:  74% 25%




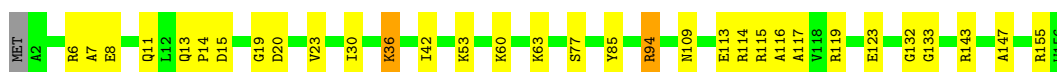
• Molecule 6: 30S ribosomal protein S6

Chain XF:  80% 18%



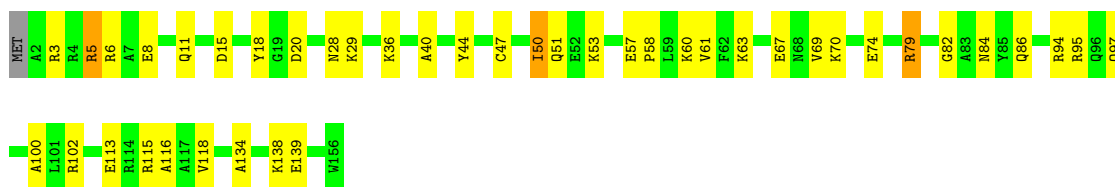
• Molecule 7: 30S ribosomal protein S7

Chain QG:  79% 19%




- Molecule 7: 30S ribosomal protein S7

Chain XG:  72% 25% ..




- Molecule 8: 30S ribosomal protein S8

Chain QH:  78% 22% .



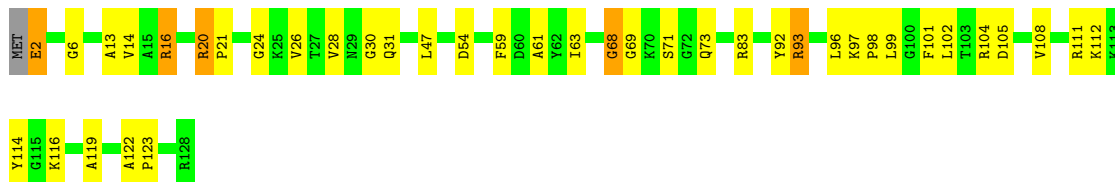
- Molecule 8: 30S ribosomal protein S8

Chain XH:  76% 22% ..



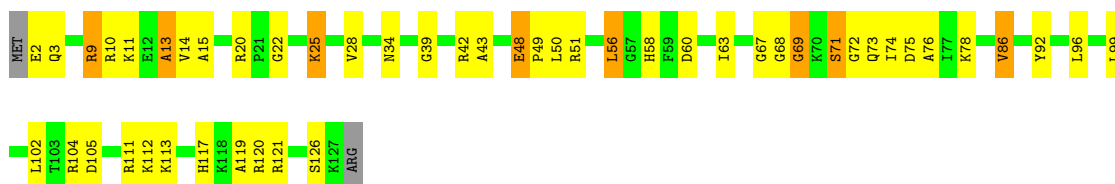
- Molecule 9: 30S ribosomal protein S9

Chain QI:  68% 27% ..



- Molecule 9: 30S ribosomal protein S9

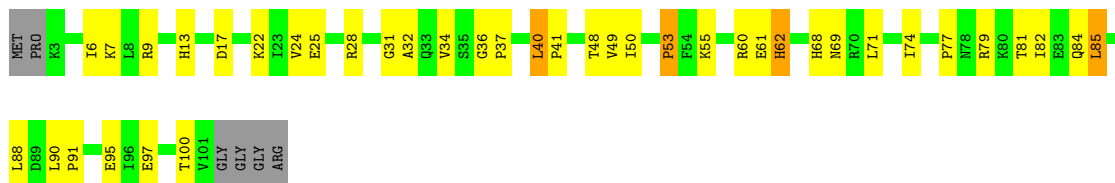
Chain XI:  60% 32% 6% .



- Molecule 10: 30S ribosomal protein S10

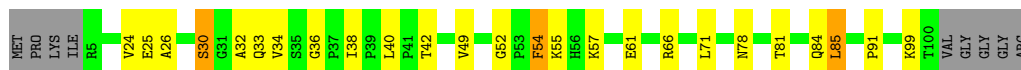
Chain QJ:  56% 34% 6%





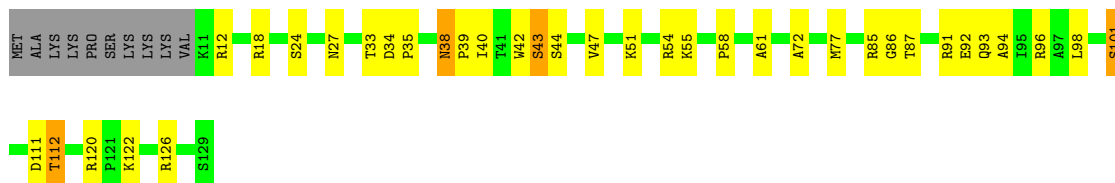
- Molecule 10: 30S ribosomal protein S10

Chain XJ: 68% 21% 9%



- Molecule 11: 30S ribosomal protein S11

Chain QK: 64% 25% 8%



- Molecule 11: 30S ribosomal protein S11

Chain XK: 71% 18% 10%



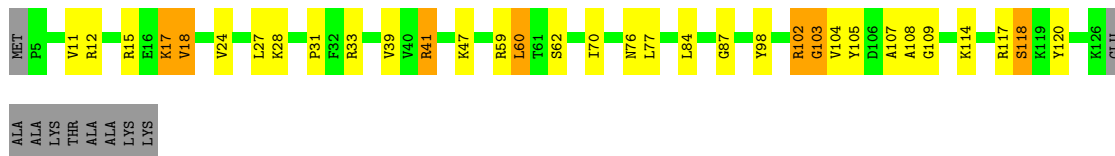
- Molecule 12: 30S ribosomal protein S12

Chain QL: 78% 15% 5%



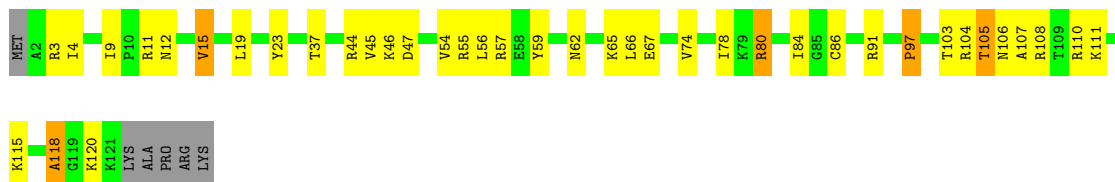
- Molecule 12: 30S ribosomal protein S12

Chain XL: 67% 20% 5% 8%



- Molecule 13: 30S ribosomal protein S13

Chain QM:  63% 28% 5%



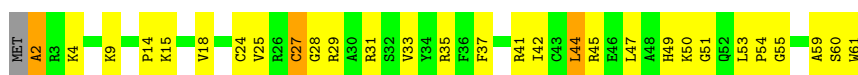
- Molecule 13: 30S ribosomal protein S13

Chain XM:  53% 37% 6%




- Molecule 14: 30S ribosomal protein S14 type Z

Chain QN:  51% 43% 5%




- Molecule 14: 30S ribosomal protein S14 type Z

Chain XN:  75% 18% 5%




- Molecule 15: 30S ribosomal protein S15

Chain QO:  88% 10% 5%



- Molecule 15: 30S ribosomal protein S15

Chain XO:  82% 16% 5%

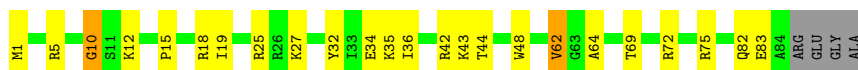


- Molecule 16: 30S ribosomal protein S16

Chain QP:  68% 26% 5%



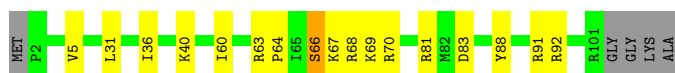
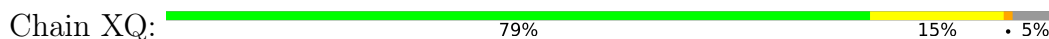
- Molecule 16: 30S ribosomal protein S16



- Molecule 17: 30S ribosomal protein S17



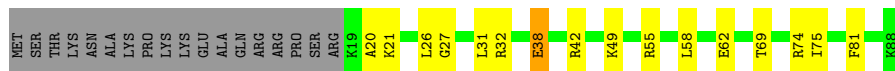
- Molecule 17: 30S ribosomal protein S17



- Molecule 18: 30S ribosomal protein S18



- Molecule 18: 30S ribosomal protein S18



- Molecule 19: 30S ribosomal protein S19



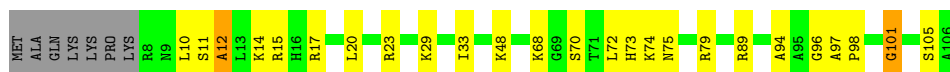
- Molecule 19: 30S ribosomal protein S19

Chain XS:  61% 26% 10%



- Molecule 20: 30S ribosomal protein S20

Chain QT:  70% 22% 7%




- Molecule 20: 30S ribosomal protein S20

Chain XT:  60% 31% 7%



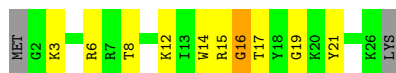
- Molecule 21: 30S ribosomal protein Thx

Chain QU:  78% 15% 7%




- Molecule 21: 30S ribosomal protein Thx

Chain XU:  56% 33% 7%



- Molecule 22: P-site tRNA-Pro

Chain QV:  38% 47% 13% .

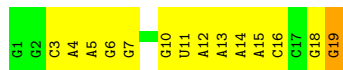
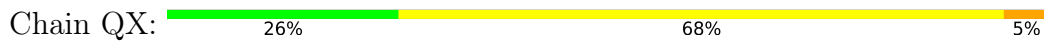


- Molecule 22: P-site tRNA-Pro

Chain XV:  45% 43% 9% .



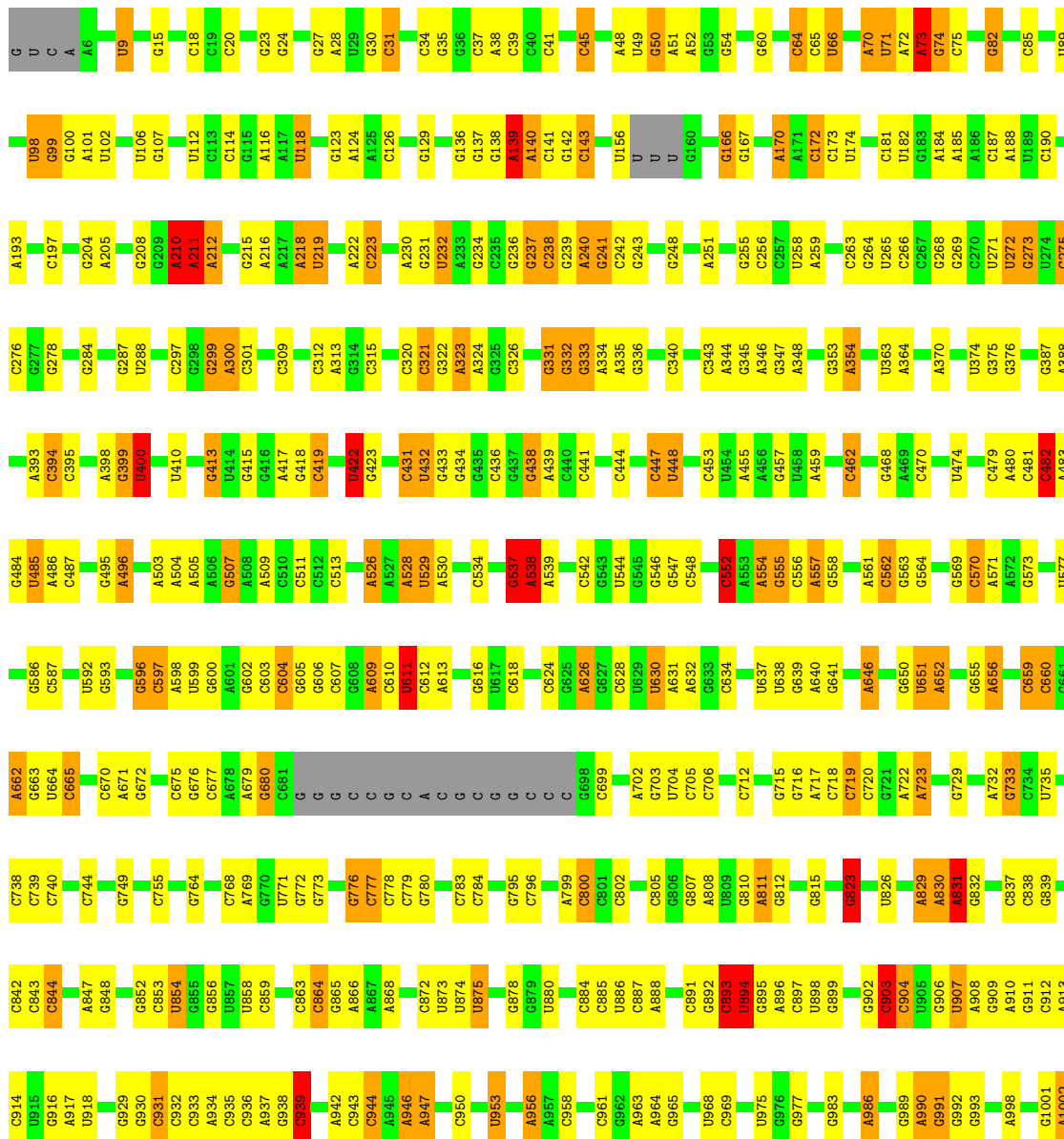
- Molecule 23: mRNA

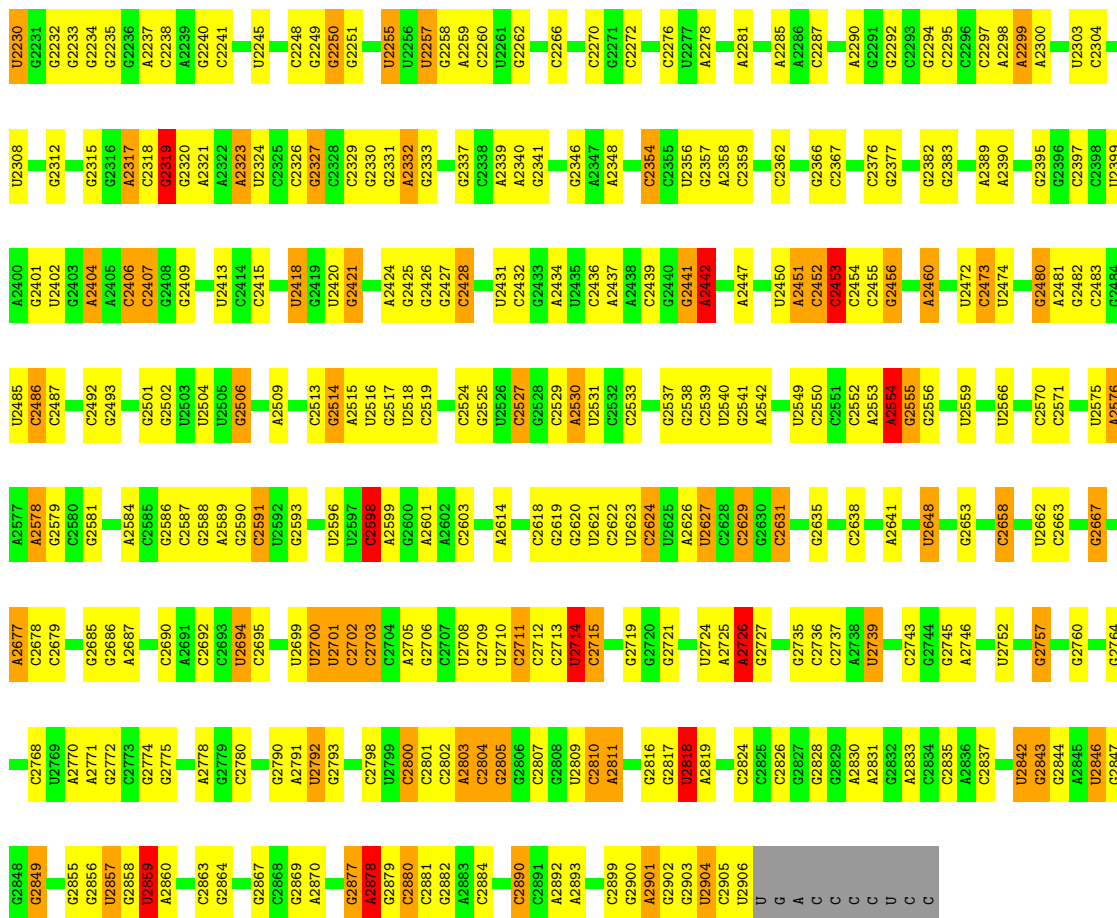


• Molecule 23: mRNA

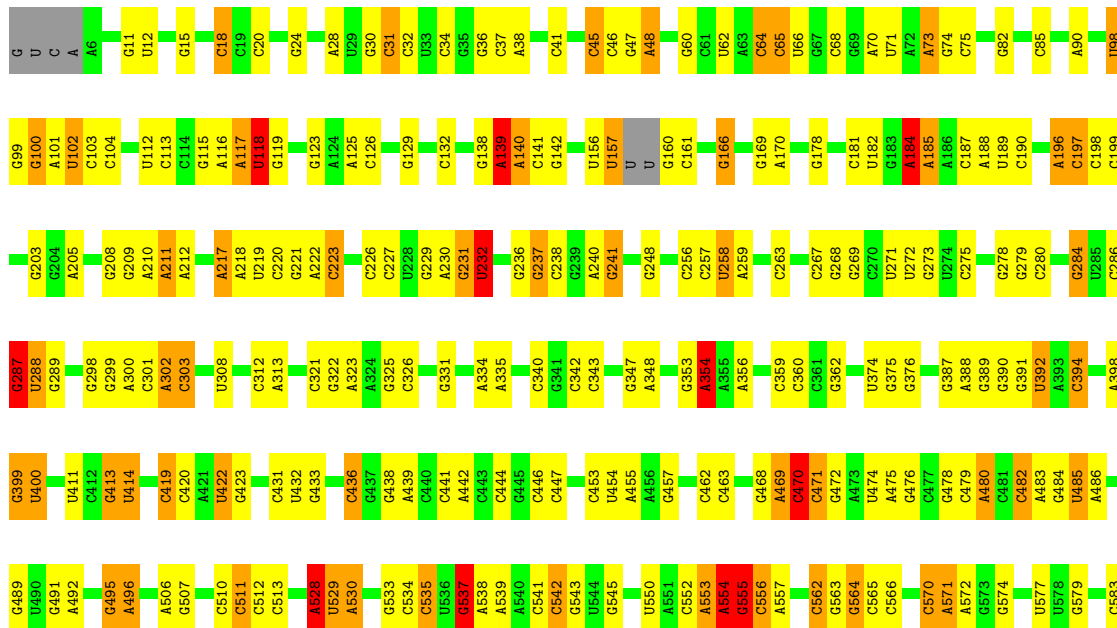


• Molecule 24: 23S rRNA





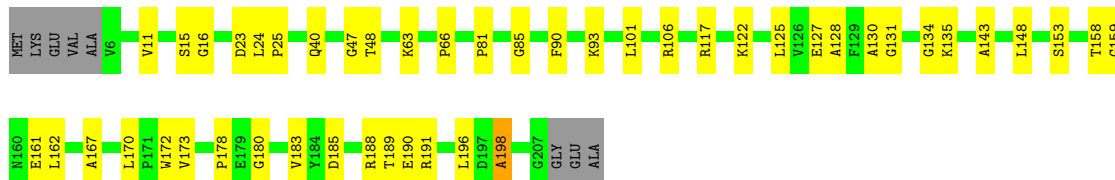
• Molecule 24: 23S rRNA



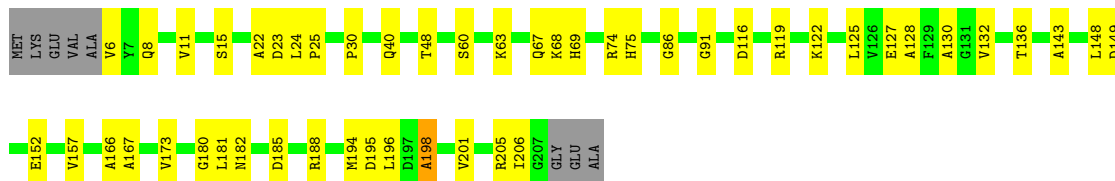
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----|
| C1645 | C1646 | A1649 | C1650 | C1651 | C1652 | A1654 | A1655 | C1656 | C1657 | C1658 | C1661 | A1662 | C1663 | C1664 | C1665 | C1666 | A1667 | C1668 | C1669 | C1670 | A1671 | A1672 | C1673 | C1674 | A1675 | C1676 | C1677 | C1678 | C1679 | C1680 | C1681 | C1682 | C1683 | A1684 | C1685 | C1686 | C1687 | C1688 | C1689 | C1691 | C1692 | C1693 | C1694 | C1695 | C1700 | C1701 | C1702 | C1703 | C1704 | C1705 | C1706 | C1707 | C1708 | C1709 | C1710 | A1711 | A1716 | C1717 | C1718 | C1719 | C1720 | C1721 | C1722 | C1723 | C1724 | C1725 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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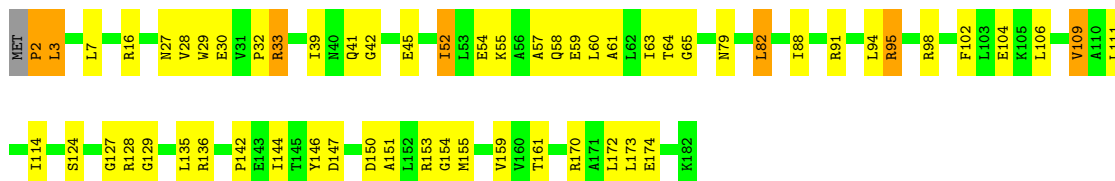
• Molecule 28: 50S ribosomal protein L4



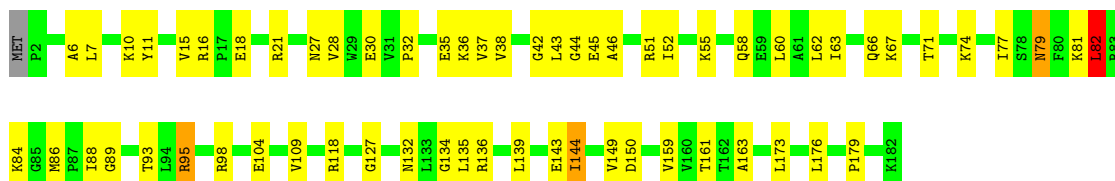
• Molecule 28: 50S ribosomal protein L4



• Molecule 29: 50S ribosomal protein L5

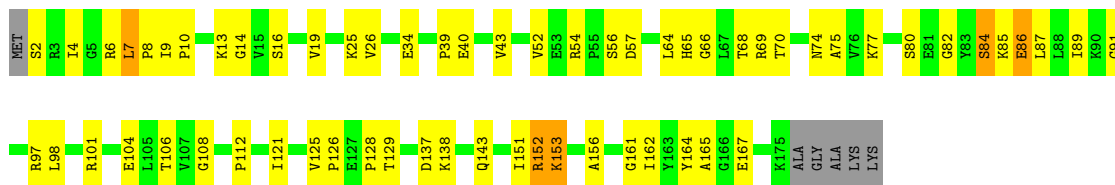


• Molecule 29: 50S ribosomal protein L5



• Molecule 30: 50S ribosomal protein L6





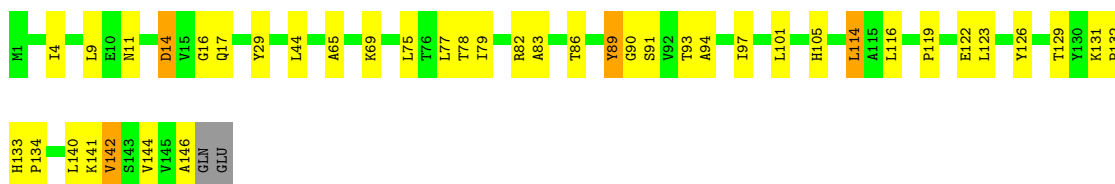
- Molecule 30: 50S ribosomal protein L6

Chain YH: 82% 14% ..



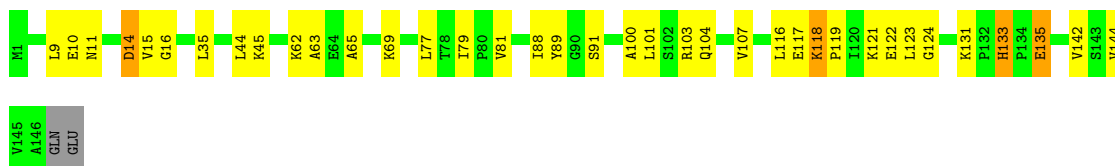
- Molecule 31: 50S ribosomal protein L9

Chain RI: 71% 25% ..



- Molecule 31: 50S ribosomal protein L9

Chain YI: 74% 22% ..



- Molecule 32: 50S ribosomal protein L13

Chain RN: 85% 13% ..




- Molecule 32: 50S ribosomal protein L13

Chain YN: 79% 19% ..




- Molecule 33: 50S ribosomal protein L14

Chain RO:  75% 23%




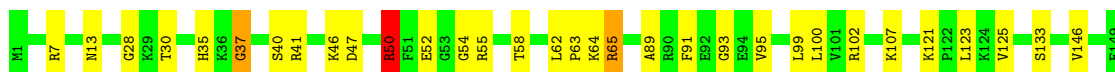
- Molecule 33: 50S ribosomal protein L14

Chain YO:  80% 19%




- Molecule 34: 50S ribosomal protein L15

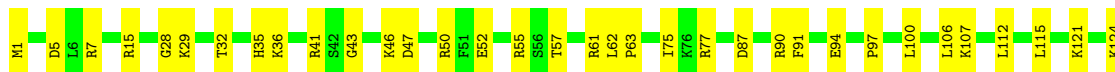
Chain RP:  78% 19%



ALA

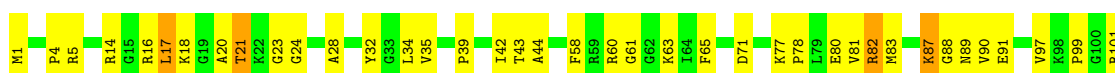
- Molecule 34: 50S ribosomal protein L15

Chain YP:  74% 24%




- Molecule 35: 50S ribosomal protein L16

Chain RQ:  62% 35%




- Molecule 35: 50S ribosomal protein L16

Chain YQ:  86% 14%




- Molecule 36: 50S ribosomal protein L17

Chain RR:  75% 23% ..



- Molecule 36: 50S ribosomal protein L17

Chain YR:  82% 15% ..




- Molecule 37: 50S ribosomal protein L18

Chain RS:  71% 25% ..



- Molecule 37: 50S ribosomal protein L18

Chain YS:  79% 20% .



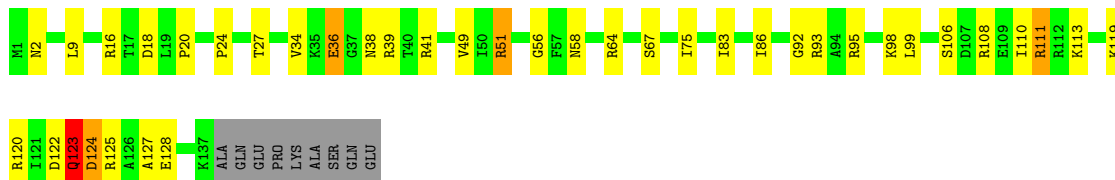
- Molecule 38: 50S ribosomal protein L19

Chain RT:  65% 25% . 6%




- Molecule 38: 50S ribosomal protein L19

Chain YT:  67% 23% . 6%

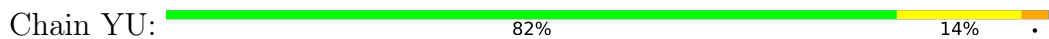


- Molecule 39: 50S ribosomal protein L20

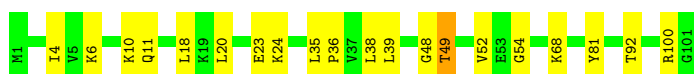
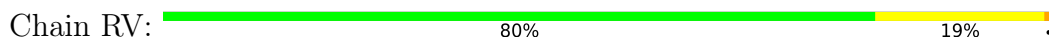
Chain RU:  78% 19% ..



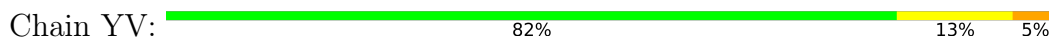
- Molecule 39: 50S ribosomal protein L20



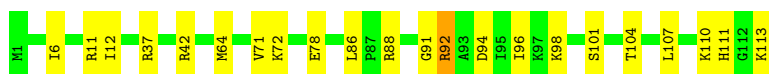
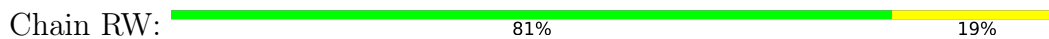
- Molecule 40: 50S ribosomal protein L21



- Molecule 40: 50S ribosomal protein L21



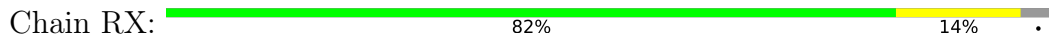
- Molecule 41: 50S ribosomal protein L22



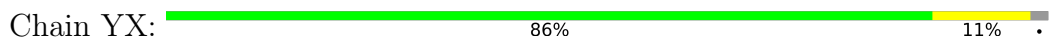
- Molecule 41: 50S ribosomal protein L22

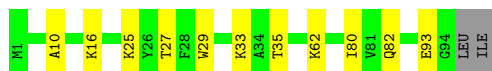


- Molecule 42: 50S ribosomal protein L23

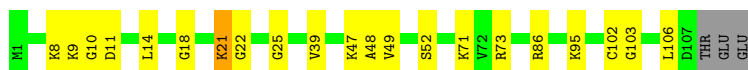
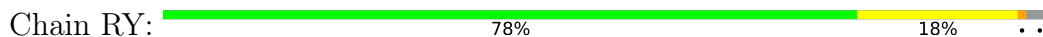


- Molecule 42: 50S ribosomal protein L23

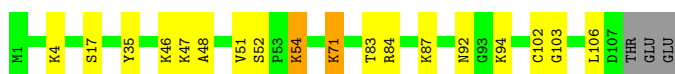
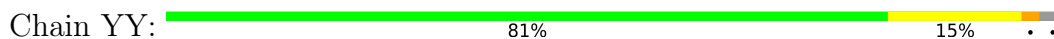




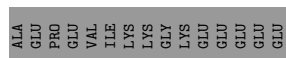
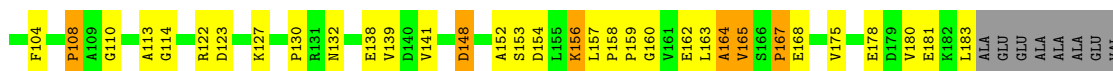
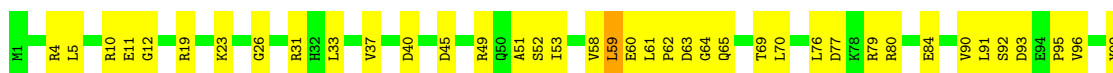
- Molecule 43: 50S ribosomal protein L24



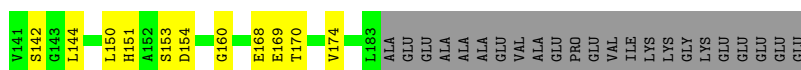
- Molecule 43: 50S ribosomal protein L24



- Molecule 44: 50S ribosomal protein L25



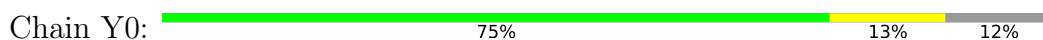
- Molecule 44: 50S ribosomal protein L25



- Molecule 45: 50S ribosomal protein L27



- Molecule 45: 50S ribosomal protein L27





- Molecule 46: 50S ribosomal protein L28

Chain R1: 79% 16%



- Molecule 46: 50S ribosomal protein L28

Chain Y1: 72% 20% 5%



- Molecule 47: 50S ribosomal protein L29

Chain R2: 72% 24%



- Molecule 47: 50S ribosomal protein L29

Chain Y2: 69% 22% 8%



- Molecule 48: 50S ribosomal protein L30

Chain R3: 72% 27%



- Molecule 48: 50S ribosomal protein L30

Chain Y3: 78% 20%

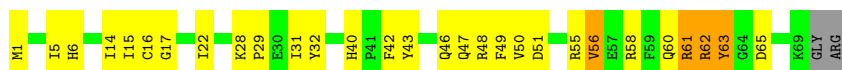


- Molecule 49: 50S ribosomal protein L31

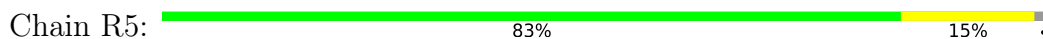
Chain R4: 58% 37%



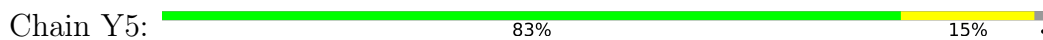
- Molecule 49: 50S ribosomal protein L31



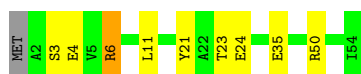
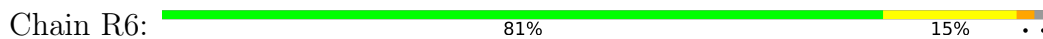
- Molecule 50: 50S ribosomal protein L32



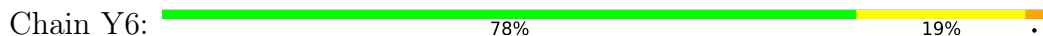
- Molecule 50: 50S ribosomal protein L32



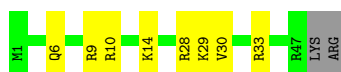
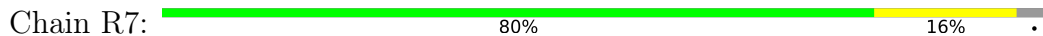
- Molecule 51: 50S ribosomal protein L33



- Molecule 51: 50S ribosomal protein L33

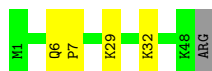


- Molecule 52: 50S ribosomal protein L34



- Molecule 52: 50S ribosomal protein L34





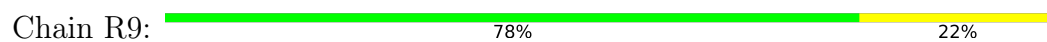
- Molecule 53: 50S ribosomal protein L35



- Molecule 53: 50S ribosomal protein L35



- Molecule 54: 50S ribosomal protein L36



- Molecule 54: 50S ribosomal protein L36



4 Data and refinement statistics

EDS failed to run properly - this section is therefore incomplete.

| Property | Value | Source |
|--|---|-----------|
| Space group | P 21 21 21 | Depositor |
| Cell constants a, b, c, α , β , γ | 210.17Å 451.47Å 620.21Å 90.00° 90.00° 90.00° | Depositor |
| Resolution (Å) | 152.46 – 3.20 | Depositor |
| % Data completeness (in resolution range) | 99.1 (152.46-3.20) | Depositor |
| R_{merge} | 0.26 | Depositor |
| R_{sym} | (Not available) | Depositor |
| $\langle I/\sigma(I) \rangle$ ¹ | 1.69 (at 3.19Å) | Xtrriage |
| Refinement program | PHENIX 1.14_3260 | Depositor |
| R, R_{free} | 0.224 , 0.256 | Depositor |
| Wilson B-factor (Å ²) | 71.2 | Xtrriage |
| Anisotropy | 0.167 | Xtrriage |
| L-test for twinning ² | $\langle L \rangle = 0.42$, $\langle L^2 \rangle = 0.25$ | Xtrriage |
| Estimated twinning fraction | No twinning to report. | Xtrriage |
| Total number of atoms | 291964 | wwPDB-VP |
| Average B, all atoms (Å ²) | 103.0 | wwPDB-VP |

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 1.60% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

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

5 Model quality i

5.1 Standard geometry i

Bond lengths and bond angles in the following residue types are not validated in this section: ZN, SF4, 1MG, MG

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 | QA | 0.96 | 1/36098 (0.0%) | 1.22 | 232/56341 (0.4%) |
| 1 | XA | 0.95 | 3/36101 (0.0%) | 1.23 | 252/56346 (0.4%) |
| 2 | QB | 0.42 | 0/1942 | 0.63 | 0/2619 |
| 2 | XB | 0.42 | 0/1950 | 0.57 | 0/2630 |
| 3 | QC | 0.38 | 0/1629 | 0.62 | 1/2195 (0.0%) |
| 3 | XC | 0.37 | 0/1629 | 0.58 | 0/2195 |
| 4 | QD | 0.52 | 0/1733 | 0.58 | 0/2318 |
| 4 | XD | 0.54 | 1/1733 (0.1%) | 0.64 | 0/2318 |
| 5 | QE | 0.45 | 0/1171 | 0.62 | 0/1576 |
| 5 | XE | 0.49 | 0/1171 | 0.57 | 0/1576 |
| 6 | QF | 0.45 | 0/856 | 0.59 | 0/1154 |
| 6 | XF | 0.55 | 0/856 | 0.54 | 0/1154 |
| 7 | QG | 0.37 | 0/1276 | 0.55 | 0/1709 |
| 7 | XG | 0.37 | 0/1276 | 0.54 | 0/1709 |
| 8 | QH | 0.51 | 0/1128 | 0.61 | 0/1517 |
| 8 | XH | 0.54 | 0/1128 | 0.62 | 0/1517 |
| 9 | QI | 0.34 | 0/1029 | 0.64 | 1/1379 (0.1%) |
| 9 | XI | 0.39 | 0/1017 | 0.64 | 0/1365 |
| 10 | QJ | 0.36 | 0/814 | 0.62 | 0/1095 |
| 10 | XJ | 0.34 | 0/790 | 0.60 | 0/1063 |
| 11 | QK | 0.47 | 0/900 | 0.61 | 0/1213 |
| 11 | XK | 0.49 | 0/879 | 0.54 | 0/1187 |
| 12 | QL | 0.62 | 0/991 | 0.61 | 0/1327 |
| 12 | XL | 0.57 | 0/972 | 0.64 | 1/1301 (0.1%) |
| 13 | QM | 0.37 | 0/965 | 0.64 | 0/1292 |
| 13 | XM | 0.33 | 0/956 | 0.65 | 0/1281 |
| 14 | QN | 0.43 | 0/501 | 0.70 | 1/664 (0.2%) |
| 14 | XN | 0.44 | 0/501 | 0.63 | 1/664 (0.2%) |
| 15 | QO | 0.46 | 0/745 | 0.59 | 0/992 |
| 15 | XO | 0.49 | 0/740 | 0.52 | 0/987 |
| 16 | QP | 0.55 | 0/721 | 0.60 | 0/970 |
| 16 | XP | 0.46 | 0/721 | 0.60 | 0/970 |

| Mol | Chain | Bond lengths | | Bond angles | |
|-----|-------|--------------|------------------|-------------|-------------------|
| | | RMSZ | # Z >5 | RMSZ | # Z >5 |
| 17 | QQ | 0.54 | 0/847 | 0.60 | 0/1131 |
| 17 | XQ | 0.55 | 0/847 | 0.58 | 0/1131 |
| 18 | QR | 0.46 | 0/579 | 0.64 | 0/768 |
| 18 | XR | 0.49 | 0/579 | 0.60 | 0/768 |
| 19 | QS | 0.36 | 0/680 | 0.66 | 0/915 |
| 19 | XS | 0.35 | 0/689 | 0.65 | 0/926 |
| 20 | QT | 0.43 | 0/765 | 0.57 | 0/1007 |
| 20 | XT | 0.36 | 0/765 | 0.58 | 0/1007 |
| 21 | QU | 0.39 | 0/221 | 0.88 | 1/288 (0.3%) |
| 21 | XU | 0.34 | 0/221 | 0.58 | 0/288 |
| 22 | QV | 0.62 | 1/1814 (0.1%) | 1.10 | 6/2825 (0.2%) |
| 22 | XV | 0.57 | 1/1814 (0.1%) | 1.21 | 8/2825 (0.3%) |
| 23 | QX | 0.46 | 0/470 | 1.00 | 1/733 (0.1%) |
| 23 | XX | 0.52 | 0/470 | 1.22 | 6/733 (0.8%) |
| 24 | RA | 1.32 | 53/69498 (0.1%) | 1.31 | 773/108491 (0.7%) |
| 24 | YA | 1.59 | 262/69543 (0.4%) | 1.39 | 981/108563 (0.9%) |
| 25 | RB | 0.92 | 0/2878 | 1.24 | 26/4490 (0.6%) |
| 25 | YB | 1.86 | 31/2878 (1.1%) | 6.09 | 81/4490 (1.8%) |
| 26 | RD | 0.75 | 1/2185 (0.0%) | 0.62 | 0/2944 |
| 26 | YD | 0.87 | 1/2185 (0.0%) | 0.67 | 0/2944 |
| 27 | RE | 0.71 | 0/1601 | 0.61 | 0/2160 |
| 27 | YE | 0.83 | 1/1596 (0.1%) | 0.66 | 0/2153 |
| 28 | RF | 0.68 | 0/1620 | 0.61 | 0/2194 |
| 28 | YF | 0.85 | 0/1620 | 0.63 | 0/2194 |
| 29 | RG | 0.41 | 0/1499 | 0.64 | 0/2016 |
| 29 | YG | 0.51 | 0/1499 | 0.63 | 1/2016 (0.0%) |
| 30 | RH | 0.48 | 0/1362 | 0.65 | 1/1841 (0.1%) |
| 30 | YH | 0.72 | 0/1356 | 0.59 | 0/1833 |
| 31 | RI | 0.44 | 0/1151 | 0.69 | 1/1558 (0.1%) |
| 31 | YI | 0.50 | 0/1151 | 0.70 | 1/1558 (0.1%) |
| 32 | RN | 0.60 | 0/1131 | 0.59 | 0/1525 |
| 32 | YN | 0.82 | 1/1148 (0.1%) | 0.67 | 0/1547 |
| 33 | RO | 0.73 | 0/943 | 0.61 | 0/1269 |
| 33 | YO | 0.82 | 1/943 (0.1%) | 0.66 | 1/1269 (0.1%) |
| 34 | RP | 0.61 | 0/1156 | 0.62 | 0/1537 |
| 34 | YP | 0.74 | 0/1139 | 0.64 | 0/1514 |
| 35 | RQ | 0.60 | 0/1143 | 0.63 | 0/1527 |
| 35 | YQ | 0.82 | 0/1143 | 0.59 | 0/1527 |
| 36 | RR | 0.67 | 0/974 | 0.64 | 1/1302 (0.1%) |
| 36 | YR | 0.77 | 0/974 | 0.72 | 0/1302 |
| 37 | RS | 0.49 | 0/892 | 0.73 | 1/1187 (0.1%) |
| 37 | YS | 0.68 | 0/887 | 0.58 | 0/1180 |
| 38 | RT | 0.62 | 0/1155 | 0.66 | 1/1542 (0.1%) |

| Mol | Chain | Bond lengths | | Bond angles | |
|-----|-------|--------------|-------------------|-------------|--------------------|
| | | RMSZ | # Z >5 | RMSZ | # Z >5 |
| 38 | YT | 0.70 | 0/1155 | 0.67 | 1/1542 (0.1%) |
| 39 | RU | 0.68 | 0/982 | 0.61 | 0/1306 |
| 39 | YU | 0.93 | 0/982 | 0.62 | 0/1306 |
| 40 | RV | 0.62 | 0/790 | 0.61 | 0/1057 |
| 40 | YV | 0.86 | 0/790 | 0.67 | 0/1057 |
| 41 | RW | 0.69 | 0/911 | 0.61 | 0/1220 |
| 41 | YW | 0.89 | 0/911 | 0.64 | 0/1220 |
| 42 | RX | 0.67 | 0/739 | 0.61 | 0/993 |
| 42 | YX | 0.83 | 0/756 | 0.57 | 0/1014 |
| 43 | RY | 0.60 | 0/831 | 0.58 | 0/1108 |
| 43 | YY | 0.74 | 0/831 | 0.60 | 0/1108 |
| 44 | RZ | 0.48 | 0/1493 | 0.71 | 2/2026 (0.1%) |
| 44 | YZ | 0.63 | 0/1493 | 0.57 | 0/2026 |
| 45 | R0 | 0.60 | 0/652 | 0.60 | 0/867 |
| 45 | Y0 | 0.84 | 0/607 | 0.63 | 0/809 |
| 46 | R1 | 0.67 | 0/770 | 0.65 | 0/1022 |
| 46 | Y1 | 0.78 | 0/736 | 0.65 | 0/978 |
| 47 | R2 | 0.47 | 0/583 | 0.52 | 0/771 |
| 47 | Y2 | 0.65 | 0/560 | 0.61 | 0/741 |
| 48 | R3 | 0.62 | 1/474 (0.2%) | 0.61 | 0/635 |
| 48 | Y3 | 0.73 | 0/474 | 0.67 | 0/635 |
| 49 | R4 | 0.39 | 0/578 | 0.64 | 0/776 |
| 49 | Y4 | 0.41 | 0/578 | 0.68 | 0/776 |
| 50 | R5 | 0.71 | 0/473 | 0.58 | 0/639 |
| 50 | Y5 | 0.91 | 1/473 (0.2%) | 0.65 | 1/639 (0.2%) |
| 51 | R6 | 0.62 | 0/460 | 0.65 | 1/613 (0.2%) |
| 51 | Y6 | 0.75 | 0/460 | 0.65 | 1/613 (0.2%) |
| 52 | R7 | 0.74 | 0/417 | 0.57 | 0/550 |
| 52 | Y7 | 0.91 | 0/426 | 0.61 | 0/561 |
| 53 | R8 | 0.68 | 0/525 | 0.71 | 0/691 |
| 53 | Y8 | 0.77 | 0/525 | 0.76 | 1/691 (0.1%) |
| 54 | R9 | 0.62 | 0/310 | 0.53 | 0/407 |
| 54 | Y9 | 0.84 | 0/310 | 0.55 | 0/407 |
| All | All | 1.14 | 360/315985 (0.1%) | 1.30 | 2387/472446 (0.5%) |

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

| Mol | Chain | #Chirality outliers | #Planarity outliers |
|-----|-------|---------------------|---------------------|
| 1 | XA | 0 | 1 |

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| Mol | Chain | #Chirality outliers | #Planarity outliers |
|-----|-------|---------------------|---------------------|
| 2 | QB | 0 | 22 |
| 2 | XB | 0 | 15 |
| 3 | QC | 0 | 15 |
| 3 | XC | 0 | 9 |
| 4 | QD | 0 | 12 |
| 4 | XD | 0 | 15 |
| 5 | QE | 0 | 7 |
| 5 | XE | 0 | 6 |
| 6 | QF | 0 | 5 |
| 6 | XF | 0 | 3 |
| 7 | QG | 0 | 9 |
| 7 | XG | 0 | 10 |
| 8 | QH | 0 | 3 |
| 8 | XH | 0 | 5 |
| 9 | QI | 0 | 15 |
| 9 | XI | 0 | 16 |
| 10 | QJ | 0 | 12 |
| 10 | XJ | 0 | 8 |
| 11 | QK | 0 | 5 |
| 11 | XK | 0 | 4 |
| 12 | QL | 0 | 8 |
| 12 | XL | 0 | 11 |
| 13 | QM | 0 | 13 |
| 13 | XM | 0 | 18 |
| 14 | QN | 0 | 6 |
| 14 | XN | 0 | 2 |
| 15 | QO | 0 | 1 |
| 15 | XO | 0 | 2 |
| 16 | QP | 0 | 5 |
| 16 | XP | 0 | 10 |
| 17 | QQ | 0 | 3 |
| 17 | XQ | 0 | 1 |
| 18 | QR | 0 | 5 |
| 18 | XR | 0 | 6 |
| 19 | QS | 0 | 13 |
| 19 | XS | 0 | 14 |
| 20 | QT | 0 | 10 |
| 20 | XT | 0 | 12 |
| 21 | XU | 0 | 4 |
| 24 | YA | 0 | 2 |
| 26 | RD | 0 | 13 |
| 26 | YD | 0 | 3 |

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| Mol | Chain | #Chirality outliers | #Planarity outliers |
|-----|-------|---------------------|---------------------|
| 27 | RE | 0 | 7 |
| 27 | YE | 0 | 10 |
| 28 | RF | 0 | 12 |
| 28 | YF | 0 | 15 |
| 29 | RG | 0 | 17 |
| 29 | YG | 0 | 20 |
| 30 | RH | 0 | 23 |
| 30 | YH | 0 | 1 |
| 31 | RI | 0 | 17 |
| 31 | YI | 0 | 21 |
| 32 | RN | 0 | 10 |
| 32 | YN | 0 | 7 |
| 33 | RO | 0 | 2 |
| 33 | YO | 0 | 1 |
| 34 | RP | 0 | 8 |
| 34 | YP | 0 | 5 |
| 35 | RQ | 0 | 18 |
| 35 | YQ | 0 | 6 |
| 36 | RR | 0 | 4 |
| 36 | YR | 0 | 5 |
| 37 | RS | 0 | 11 |
| 37 | YS | 0 | 1 |
| 38 | RT | 0 | 15 |
| 38 | YT | 0 | 11 |
| 39 | RU | 0 | 5 |
| 39 | YU | 0 | 5 |
| 40 | RV | 0 | 6 |
| 40 | YV | 0 | 7 |
| 41 | RW | 0 | 5 |
| 41 | YW | 0 | 5 |
| 42 | RX | 0 | 2 |
| 42 | YX | 0 | 1 |
| 43 | RY | 0 | 7 |
| 43 | YY | 0 | 5 |
| 44 | RZ | 0 | 38 |
| 44 | YZ | 0 | 10 |
| 45 | R0 | 0 | 2 |
| 45 | Y0 | 0 | 1 |
| 46 | R1 | 0 | 10 |
| 46 | Y1 | 0 | 7 |
| 47 | R2 | 0 | 5 |
| 47 | Y2 | 0 | 6 |

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| Mol | Chain | #Chirality outliers | #Planarity outliers |
|-----|-------|---------------------|---------------------|
| 48 | R3 | 0 | 1 |
| 48 | Y3 | 0 | 2 |
| 49 | R4 | 0 | 15 |
| 49 | Y4 | 0 | 11 |
| 50 | R5 | 0 | 1 |
| 52 | R7 | 0 | 1 |
| 53 | R8 | 0 | 11 |
| 53 | Y8 | 0 | 6 |
| All | All | 0 | 781 |

The worst 5 of 360 bond length outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(Å) | Ideal(Å) |
|-----|-------|-----|------|-------|--------|-------------|----------|
| 25 | YB | 112 | G | N9-C4 | 30.70 | 1.62 | 1.38 |
| 25 | YB | 114 | G | N9-C4 | 28.24 | 1.60 | 1.38 |
| 25 | YB | 112 | G | N9-C8 | -27.57 | 1.18 | 1.37 |
| 25 | YB | 114 | G | N9-C8 | -26.21 | 1.19 | 1.37 |
| 25 | YB | 112 | G | C8-N7 | 14.77 | 1.39 | 1.30 |

The worst 5 of 2387 bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|----------|---------|-------------|----------|
| 25 | YB | 114 | G | C4-C5-N7 | -176.50 | 40.20 | 110.80 |
| 25 | YB | 112 | G | C4-C5-N7 | -173.34 | 41.46 | 110.80 |
| 25 | YB | 114 | G | N7-C8-N9 | -148.48 | 38.86 | 113.10 |
| 25 | YB | 112 | G | N7-C8-N9 | -146.23 | 39.98 | 113.10 |
| 25 | YB | 112 | G | C8-N9-C4 | -129.76 | 54.49 | 106.40 |

There are no chirality outliers.

5 of 781 planarity outliers are listed below:

| Mol | Chain | Res | Type | Group |
|-----|-------|-----|------|---------|
| 2 | QB | 15 | VAL | Peptide |
| 2 | QB | 18 | GLY | Peptide |
| 2 | QB | 19 | HIS | Peptide |
| 2 | QB | 21 | ARG | Peptide |
| 2 | QB | 38 | GLY | 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 | QA | 32247 | 0 | 16277 | 448 | 0 |
| 1 | XA | 32249 | 0 | 16278 | 456 | 3 |
| 2 | QB | 1907 | 0 | 1958 | 34 | 0 |
| 2 | XB | 1915 | 0 | 1969 | 35 | 0 |
| 3 | QC | 1605 | 0 | 1668 | 29 | 0 |
| 3 | XC | 1605 | 0 | 1668 | 21 | 0 |
| 4 | QD | 1703 | 0 | 1766 | 27 | 0 |
| 4 | XD | 1703 | 0 | 1764 | 37 | 0 |
| 5 | QE | 1155 | 0 | 1213 | 27 | 0 |
| 5 | XE | 1155 | 0 | 1213 | 12 | 0 |
| 6 | QF | 843 | 0 | 857 | 14 | 0 |
| 6 | XF | 843 | 0 | 857 | 11 | 0 |
| 7 | QG | 1257 | 0 | 1296 | 15 | 0 |
| 7 | XG | 1257 | 0 | 1296 | 22 | 0 |
| 8 | QH | 1108 | 0 | 1165 | 19 | 0 |
| 8 | XH | 1108 | 0 | 1165 | 23 | 0 |
| 9 | QI | 1010 | 0 | 1037 | 19 | 0 |
| 9 | XI | 998 | 0 | 1024 | 28 | 0 |
| 10 | QJ | 801 | 0 | 849 | 23 | 0 |
| 10 | XJ | 777 | 0 | 816 | 15 | 0 |
| 11 | QK | 885 | 0 | 904 | 28 | 0 |
| 11 | XK | 864 | 0 | 881 | 13 | 0 |
| 12 | QL | 975 | 0 | 1062 | 13 | 0 |
| 12 | XL | 956 | 0 | 1046 | 22 | 0 |
| 13 | QM | 955 | 0 | 1021 | 21 | 0 |
| 13 | XM | 946 | 0 | 1008 | 24 | 0 |
| 14 | QN | 492 | 0 | 529 | 19 | 0 |
| 14 | XN | 492 | 0 | 529 | 11 | 0 |
| 15 | QO | 734 | 0 | 771 | 9 | 0 |
| 15 | XO | 729 | 0 | 768 | 8 | 0 |
| 16 | QP | 705 | 0 | 725 | 15 | 0 |
| 16 | XP | 705 | 0 | 725 | 12 | 0 |
| 17 | QQ | 834 | 0 | 904 | 24 | 0 |
| 17 | XQ | 834 | 0 | 904 | 15 | 0 |
| 18 | QR | 574 | 0 | 644 | 7 | 0 |
| 18 | XR | 574 | 0 | 644 | 7 | 0 |
| 19 | QS | 665 | 0 | 686 | 8 | 0 |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 19 | XS | 674 | 0 | 699 | 10 | 0 |
| 20 | QT | 763 | 0 | 861 | 13 | 0 |
| 20 | XT | 763 | 0 | 861 | 22 | 0 |
| 21 | QU | 217 | 0 | 234 | 4 | 0 |
| 21 | XU | 217 | 0 | 234 | 4 | 0 |
| 22 | QV | 1648 | 0 | 834 | 28 | 0 |
| 22 | XV | 1648 | 0 | 834 | 23 | 0 |
| 23 | QX | 418 | 0 | 209 | 7 | 0 |
| 23 | XX | 418 | 0 | 209 | 7 | 0 |
| 24 | RA | 62051 | 0 | 31279 | 607 | 3 |
| 24 | YA | 62091 | 0 | 31292 | 530 | 0 |
| 25 | RB | 2573 | 0 | 1306 | 22 | 0 |
| 25 | YB | 2573 | 0 | 1304 | 41 | 0 |
| 26 | RD | 2135 | 0 | 2221 | 35 | 0 |
| 26 | YD | 2135 | 0 | 2221 | 32 | 0 |
| 27 | RE | 1568 | 0 | 1634 | 29 | 0 |
| 27 | YE | 1563 | 0 | 1628 | 27 | 0 |
| 28 | RF | 1585 | 0 | 1632 | 23 | 0 |
| 28 | YF | 1585 | 0 | 1632 | 24 | 0 |
| 29 | RG | 1474 | 0 | 1535 | 35 | 0 |
| 29 | YG | 1474 | 0 | 1535 | 30 | 0 |
| 30 | RH | 1336 | 0 | 1418 | 27 | 0 |
| 30 | YH | 1330 | 0 | 1413 | 18 | 0 |
| 31 | RI | 1136 | 0 | 1223 | 13 | 2 |
| 31 | YI | 1136 | 0 | 1223 | 12 | 0 |
| 32 | RN | 1104 | 0 | 1180 | 8 | 0 |
| 32 | YN | 1121 | 0 | 1194 | 15 | 0 |
| 33 | RO | 933 | 0 | 996 | 25 | 0 |
| 33 | YO | 933 | 0 | 995 | 17 | 0 |
| 34 | RP | 1139 | 0 | 1223 | 26 | 0 |
| 34 | YP | 1122 | 0 | 1206 | 26 | 0 |
| 35 | RQ | 1122 | 0 | 1179 | 27 | 0 |
| 35 | YQ | 1122 | 0 | 1179 | 10 | 0 |
| 36 | RR | 960 | 0 | 1021 | 18 | 0 |
| 36 | YR | 960 | 0 | 1021 | 11 | 0 |
| 37 | RS | 882 | 0 | 943 | 17 | 0 |
| 37 | YS | 877 | 0 | 938 | 15 | 0 |
| 38 | RT | 1141 | 0 | 1202 | 23 | 0 |
| 38 | YT | 1141 | 0 | 1202 | 26 | 0 |
| 39 | RU | 964 | 0 | 1022 | 25 | 0 |
| 39 | YU | 964 | 0 | 1021 | 19 | 0 |
| 40 | RV | 779 | 0 | 852 | 14 | 0 |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|-------|----------|----------|---------|--------------|
| 40 | YV | 779 | 0 | 852 | 12 | 0 |
| 41 | RW | 900 | 0 | 964 | 11 | 0 |
| 41 | YW | 900 | 0 | 964 | 11 | 0 |
| 42 | RX | 725 | 0 | 778 | 7 | 0 |
| 42 | YX | 742 | 0 | 803 | 8 | 0 |
| 43 | RY | 818 | 0 | 909 | 11 | 0 |
| 43 | YY | 818 | 0 | 909 | 13 | 0 |
| 44 | RZ | 1461 | 0 | 1493 | 26 | 0 |
| 44 | YZ | 1461 | 0 | 1493 | 22 | 0 |
| 45 | R0 | 643 | 0 | 667 | 12 | 0 |
| 45 | Y0 | 599 | 0 | 617 | 7 | 0 |
| 46 | R1 | 763 | 0 | 848 | 9 | 0 |
| 46 | Y1 | 729 | 0 | 801 | 10 | 0 |
| 47 | R2 | 581 | 0 | 629 | 7 | 0 |
| 47 | Y2 | 558 | 0 | 610 | 5 | 2 |
| 48 | R3 | 469 | 0 | 517 | 7 | 0 |
| 48 | Y3 | 469 | 0 | 518 | 8 | 0 |
| 49 | R4 | 565 | 0 | 558 | 9 | 0 |
| 49 | Y4 | 565 | 0 | 557 | 13 | 0 |
| 50 | R5 | 459 | 0 | 476 | 7 | 0 |
| 50 | Y5 | 459 | 0 | 476 | 9 | 0 |
| 51 | R6 | 453 | 0 | 473 | 7 | 0 |
| 51 | Y6 | 453 | 0 | 473 | 10 | 0 |
| 52 | R7 | 409 | 0 | 454 | 6 | 0 |
| 52 | Y7 | 418 | 0 | 467 | 3 | 0 |
| 53 | R8 | 517 | 0 | 582 | 12 | 0 |
| 53 | Y8 | 517 | 0 | 582 | 13 | 0 |
| 54 | R9 | 307 | 0 | 335 | 6 | 0 |
| 54 | Y9 | 307 | 0 | 335 | 7 | 0 |
| 55 | QA | 64 | 0 | 0 | 0 | 0 |
| 55 | QV | 1 | 0 | 0 | 0 | 0 |
| 55 | R0 | 2 | 0 | 0 | 0 | 0 |
| 55 | R8 | 2 | 0 | 0 | 0 | 0 |
| 55 | RA | 444 | 0 | 0 | 0 | 0 |
| 55 | RB | 7 | 0 | 0 | 0 | 0 |
| 55 | RE | 5 | 0 | 0 | 0 | 0 |
| 55 | RF | 1 | 0 | 0 | 0 | 0 |
| 55 | RN | 1 | 0 | 0 | 0 | 0 |
| 55 | RQ | 1 | 0 | 0 | 0 | 0 |
| 55 | RR | 1 | 0 | 0 | 0 | 0 |
| 55 | RT | 1 | 0 | 0 | 0 | 0 |
| 55 | RX | 1 | 0 | 0 | 0 | 0 |

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| Mol | Chain | Non-H | H(model) | H(added) | Clashes | Symm-Clashes |
|-----|-------|--------|----------|----------|---------|--------------|
| 55 | XA | 78 | 0 | 0 | 0 | 0 |
| 55 | XE | 1 | 0 | 0 | 0 | 0 |
| 55 | XM | 2 | 0 | 0 | 0 | 0 |
| 55 | XV | 1 | 0 | 0 | 0 | 0 |
| 55 | Y0 | 2 | 0 | 0 | 0 | 0 |
| 55 | Y1 | 2 | 0 | 0 | 0 | 0 |
| 55 | Y3 | 1 | 0 | 0 | 0 | 0 |
| 55 | Y5 | 1 | 0 | 0 | 0 | 0 |
| 55 | Y7 | 1 | 0 | 0 | 0 | 0 |
| 55 | Y8 | 1 | 0 | 0 | 0 | 0 |
| 55 | YA | 510 | 0 | 0 | 0 | 0 |
| 55 | YB | 7 | 0 | 0 | 0 | 0 |
| 55 | YD | 2 | 0 | 0 | 0 | 0 |
| 55 | YE | 5 | 0 | 0 | 0 | 0 |
| 55 | YP | 3 | 0 | 0 | 0 | 0 |
| 55 | YQ | 3 | 0 | 0 | 0 | 0 |
| 55 | YR | 1 | 0 | 0 | 0 | 0 |
| 56 | QD | 8 | 0 | 0 | 0 | 0 |
| 56 | XD | 8 | 0 | 0 | 0 | 0 |
| 57 | QN | 1 | 0 | 0 | 0 | 0 |
| 57 | R4 | 1 | 0 | 0 | 0 | 0 |
| 57 | R5 | 1 | 0 | 0 | 0 | 0 |
| 57 | R6 | 1 | 0 | 0 | 0 | 0 |
| 57 | R9 | 1 | 0 | 0 | 0 | 0 |
| 57 | RY | 1 | 0 | 0 | 0 | 0 |
| 57 | XN | 1 | 0 | 0 | 0 | 0 |
| 57 | Y4 | 1 | 0 | 0 | 0 | 0 |
| 57 | Y5 | 1 | 0 | 0 | 0 | 0 |
| 57 | Y6 | 1 | 0 | 0 | 0 | 0 |
| 57 | Y9 | 1 | 0 | 0 | 0 | 0 |
| 57 | YY | 1 | 0 | 0 | 0 | 0 |
| All | All | 291964 | 0 | 197872 | 3283 | 5 |

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 7.

The worst 5 of 3283 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) |
|------------------|------------------|--------------------------|-------------------|
| 24:RA:1712:A:C2' | 24:RA:1713:G:H5' | 1.74 | 1.18 |
| 43:YY:92:ASN:ND2 | 43:YY:94:LYS:HG2 | 1.60 | 1.15 |

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| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|-----------------|--------------------------|-------------------|
| 24:YA:1405:A:N6 | 24:YA:1418:U:H3 | 1.48 | 1.10 |
| 24:RA:2818:U:C2 | 24:RA:2901:A:N6 | 2.27 | 1.02 |
| 24:RA:2226:C:H1' | 24:RA:2232:G:N2 | 1.74 | 1.01 |

All (5) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

| Atom-1 | Atom-2 | Interatomic distance (Å) | Clash overlap (Å) |
|------------------|------------------------|--------------------------|-------------------|
| 31:RI:91:SER:OG | 1:XA:368:U:OP1[4_555] | 2.00 | 0.20 |
| 24:RA:331:G:OP2 | 47:Y2:17:SER:CA[3_555] | 2.01 | 0.19 |
| 24:RA:331:G:OP2 | 47:Y2:17:SER:CB[3_555] | 2.10 | 0.10 |
| 31:RI:89:TYR:O | 1:XA:357:G:O2'[4_555] | 2.10 | 0.10 |
| 24:RA:2158:C:O2' | 1:XA:1042:G:O2'[4_555] | 2.13 | 0.07 |

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|-----|-------|---------------|-----------|----------|----------|-------------|-----|
| 2 | QB | 233/256 (91%) | 205 (88%) | 28 (12%) | 0 | 100 | 100 |
| 2 | XB | 234/256 (91%) | 207 (88%) | 27 (12%) | 0 | 100 | 100 |
| 3 | QC | 203/239 (85%) | 186 (92%) | 17 (8%) | 0 | 100 | 100 |
| 3 | XC | 203/239 (85%) | 182 (90%) | 21 (10%) | 0 | 100 | 100 |
| 4 | QD | 206/209 (99%) | 198 (96%) | 8 (4%) | 0 | 100 | 100 |
| 4 | XD | 206/209 (99%) | 191 (93%) | 12 (6%) | 3 (2%) | 10 | 44 |
| 5 | QE | 149/162 (92%) | 140 (94%) | 9 (6%) | 0 | 100 | 100 |
| 5 | XE | 149/162 (92%) | 140 (94%) | 9 (6%) | 0 | 100 | 100 |
| 6 | QF | 99/101 (98%) | 97 (98%) | 2 (2%) | 0 | 100 | 100 |
| 6 | XF | 99/101 (98%) | 97 (98%) | 2 (2%) | 0 | 100 | 100 |

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| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|-----|-------|---------------|-----------|----------|----------|-------------|-----|
| 7 | QG | 153/156 (98%) | 150 (98%) | 3 (2%) | 0 | 100 | 100 |
| 7 | XG | 153/156 (98%) | 143 (94%) | 10 (6%) | 0 | 100 | 100 |
| 8 | QH | 135/138 (98%) | 131 (97%) | 4 (3%) | 0 | 100 | 100 |
| 8 | XH | 135/138 (98%) | 129 (96%) | 6 (4%) | 0 | 100 | 100 |
| 9 | QI | 125/128 (98%) | 115 (92%) | 10 (8%) | 0 | 100 | 100 |
| 9 | XI | 124/128 (97%) | 107 (86%) | 17 (14%) | 0 | 100 | 100 |
| 10 | QJ | 97/105 (92%) | 88 (91%) | 9 (9%) | 0 | 100 | 100 |
| 10 | XJ | 94/105 (90%) | 88 (94%) | 6 (6%) | 0 | 100 | 100 |
| 11 | QK | 117/129 (91%) | 101 (86%) | 16 (14%) | 0 | 100 | 100 |
| 11 | XK | 114/129 (88%) | 102 (90%) | 12 (10%) | 0 | 100 | 100 |
| 12 | QL | 123/132 (93%) | 110 (89%) | 13 (11%) | 0 | 100 | 100 |
| 12 | XL | 120/132 (91%) | 100 (83%) | 20 (17%) | 0 | 100 | 100 |
| 13 | QM | 118/126 (94%) | 102 (86%) | 16 (14%) | 0 | 100 | 100 |
| 13 | XM | 117/126 (93%) | 99 (85%) | 17 (14%) | 1 (1%) | 17 | 56 |
| 14 | QN | 58/61 (95%) | 51 (88%) | 7 (12%) | 0 | 100 | 100 |
| 14 | XN | 58/61 (95%) | 50 (86%) | 8 (14%) | 0 | 100 | 100 |
| 15 | QO | 86/89 (97%) | 83 (96%) | 3 (4%) | 0 | 100 | 100 |
| 15 | XO | 85/89 (96%) | 84 (99%) | 1 (1%) | 0 | 100 | 100 |
| 16 | QP | 82/88 (93%) | 79 (96%) | 3 (4%) | 0 | 100 | 100 |
| 16 | XP | 82/88 (93%) | 74 (90%) | 8 (10%) | 0 | 100 | 100 |
| 17 | QQ | 98/105 (93%) | 91 (93%) | 7 (7%) | 0 | 100 | 100 |
| 17 | XQ | 98/105 (93%) | 93 (95%) | 5 (5%) | 0 | 100 | 100 |
| 18 | QR | 68/88 (77%) | 63 (93%) | 5 (7%) | 0 | 100 | 100 |
| 18 | XR | 68/88 (77%) | 65 (96%) | 3 (4%) | 0 | 100 | 100 |
| 19 | QS | 81/93 (87%) | 71 (88%) | 10 (12%) | 0 | 100 | 100 |
| 19 | XS | 82/93 (88%) | 71 (87%) | 11 (13%) | 0 | 100 | 100 |
| 20 | QT | 97/106 (92%) | 90 (93%) | 7 (7%) | 0 | 100 | 100 |
| 20 | XT | 97/106 (92%) | 91 (94%) | 6 (6%) | 0 | 100 | 100 |
| 21 | QU | 23/27 (85%) | 22 (96%) | 1 (4%) | 0 | 100 | 100 |
| 21 | XU | 23/27 (85%) | 23 (100%) | 0 | 0 | 100 | 100 |
| 26 | RD | 272/276 (99%) | 259 (95%) | 13 (5%) | 0 | 100 | 100 |

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| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|-----|-------|---------------|-----------|----------|----------|-------------|-----|
| 26 | YD | 272/276 (99%) | 253 (93%) | 19 (7%) | 0 | 100 | 100 |
| 27 | RE | 203/206 (98%) | 187 (92%) | 16 (8%) | 0 | 100 | 100 |
| 27 | YE | 202/206 (98%) | 189 (94%) | 13 (6%) | 0 | 100 | 100 |
| 28 | RF | 200/210 (95%) | 186 (93%) | 14 (7%) | 0 | 100 | 100 |
| 28 | YF | 200/210 (95%) | 185 (92%) | 15 (8%) | 0 | 100 | 100 |
| 29 | RG | 179/182 (98%) | 155 (87%) | 24 (13%) | 0 | 100 | 100 |
| 29 | YG | 179/182 (98%) | 151 (84%) | 27 (15%) | 1 (1%) | 25 | 64 |
| 30 | RH | 172/180 (96%) | 142 (83%) | 29 (17%) | 1 (1%) | 25 | 64 |
| 30 | YH | 171/180 (95%) | 163 (95%) | 8 (5%) | 0 | 100 | 100 |
| 31 | RI | 144/148 (97%) | 124 (86%) | 20 (14%) | 0 | 100 | 100 |
| 31 | YI | 144/148 (97%) | 120 (83%) | 24 (17%) | 0 | 100 | 100 |
| 32 | RN | 136/140 (97%) | 119 (88%) | 17 (12%) | 0 | 100 | 100 |
| 32 | YN | 138/140 (99%) | 126 (91%) | 12 (9%) | 0 | 100 | 100 |
| 33 | RO | 120/122 (98%) | 114 (95%) | 6 (5%) | 0 | 100 | 100 |
| 33 | YO | 120/122 (98%) | 114 (95%) | 6 (5%) | 0 | 100 | 100 |
| 34 | RP | 147/150 (98%) | 142 (97%) | 5 (3%) | 0 | 100 | 100 |
| 34 | YP | 145/150 (97%) | 138 (95%) | 6 (4%) | 1 (1%) | 22 | 61 |
| 35 | RQ | 139/141 (99%) | 116 (84%) | 22 (16%) | 1 (1%) | 22 | 61 |
| 35 | YQ | 139/141 (99%) | 136 (98%) | 3 (2%) | 0 | 100 | 100 |
| 36 | RR | 115/118 (98%) | 106 (92%) | 8 (7%) | 1 (1%) | 17 | 56 |
| 36 | YR | 115/118 (98%) | 108 (94%) | 7 (6%) | 0 | 100 | 100 |
| 37 | RS | 109/112 (97%) | 89 (82%) | 20 (18%) | 0 | 100 | 100 |
| 37 | YS | 108/112 (96%) | 105 (97%) | 3 (3%) | 0 | 100 | 100 |
| 38 | RT | 135/146 (92%) | 119 (88%) | 14 (10%) | 2 (2%) | 10 | 44 |
| 38 | YT | 135/146 (92%) | 120 (89%) | 13 (10%) | 2 (2%) | 10 | 44 |
| 39 | RU | 115/118 (98%) | 103 (90%) | 12 (10%) | 0 | 100 | 100 |
| 39 | YU | 115/118 (98%) | 107 (93%) | 7 (6%) | 1 (1%) | 17 | 56 |
| 40 | RV | 99/101 (98%) | 94 (95%) | 5 (5%) | 0 | 100 | 100 |
| 40 | YV | 99/101 (98%) | 94 (95%) | 5 (5%) | 0 | 100 | 100 |
| 41 | RW | 111/113 (98%) | 106 (96%) | 5 (4%) | 0 | 100 | 100 |
| 41 | YW | 111/113 (98%) | 104 (94%) | 7 (6%) | 0 | 100 | 100 |

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| Mol | Chain | Analysed | Favoured | Allowed | Outliers | Percentiles | |
|-----|-------|-------------------|-------------|----------|----------|-------------|-----|
| 42 | RX | 90/96 (94%) | 86 (96%) | 4 (4%) | 0 | 100 | 100 |
| 42 | YX | 92/96 (96%) | 90 (98%) | 2 (2%) | 0 | 100 | 100 |
| 43 | RY | 105/110 (96%) | 100 (95%) | 5 (5%) | 0 | 100 | 100 |
| 43 | YY | 105/110 (96%) | 97 (92%) | 8 (8%) | 0 | 100 | 100 |
| 44 | RZ | 181/206 (88%) | 143 (79%) | 38 (21%) | 0 | 100 | 100 |
| 44 | YZ | 181/206 (88%) | 176 (97%) | 4 (2%) | 1 (1%) | 25 | 64 |
| 45 | R0 | 79/85 (93%) | 76 (96%) | 3 (4%) | 0 | 100 | 100 |
| 45 | Y0 | 73/85 (86%) | 70 (96%) | 3 (4%) | 0 | 100 | 100 |
| 46 | R1 | 95/98 (97%) | 84 (88%) | 11 (12%) | 0 | 100 | 100 |
| 46 | Y1 | 91/98 (93%) | 84 (92%) | 7 (8%) | 0 | 100 | 100 |
| 47 | R2 | 67/72 (93%) | 65 (97%) | 2 (3%) | 0 | 100 | 100 |
| 47 | Y2 | 64/72 (89%) | 61 (95%) | 3 (5%) | 0 | 100 | 100 |
| 48 | R3 | 57/60 (95%) | 54 (95%) | 3 (5%) | 0 | 100 | 100 |
| 48 | Y3 | 57/60 (95%) | 55 (96%) | 2 (4%) | 0 | 100 | 100 |
| 49 | R4 | 67/71 (94%) | 54 (81%) | 13 (19%) | 0 | 100 | 100 |
| 49 | Y4 | 67/71 (94%) | 55 (82%) | 12 (18%) | 0 | 100 | 100 |
| 50 | R5 | 57/60 (95%) | 54 (95%) | 3 (5%) | 0 | 100 | 100 |
| 50 | Y5 | 57/60 (95%) | 54 (95%) | 3 (5%) | 0 | 100 | 100 |
| 51 | R6 | 51/54 (94%) | 51 (100%) | 0 | 0 | 100 | 100 |
| 51 | Y6 | 51/54 (94%) | 50 (98%) | 1 (2%) | 0 | 100 | 100 |
| 52 | R7 | 45/49 (92%) | 44 (98%) | 1 (2%) | 0 | 100 | 100 |
| 52 | Y7 | 46/49 (94%) | 45 (98%) | 1 (2%) | 0 | 100 | 100 |
| 53 | R8 | 62/65 (95%) | 49 (79%) | 13 (21%) | 0 | 100 | 100 |
| 53 | Y8 | 62/65 (95%) | 53 (86%) | 8 (13%) | 1 (2%) | 9 | 43 |
| 54 | R9 | 35/37 (95%) | 35 (100%) | 0 | 0 | 100 | 100 |
| 54 | Y9 | 35/37 (95%) | 34 (97%) | 1 (3%) | 0 | 100 | 100 |
| All | All | 11453/12128 (94%) | 10502 (92%) | 935 (8%) | 16 (0%) | 51 | 83 |

5 of 16 Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 36 | RR | 4 | LEU |
| 4 | XD | 31 | CYS |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 44 | YZ | 52 | SER |
| 38 | RT | 123 | GLN |
| 38 | RT | 124 | ASP |

5.3.2 Protein sidechains [i](#)

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

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

| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles | |
|-----|-------|---------------|------------|----------|-------------|-----|
| 2 | QB | 203/220 (92%) | 202 (100%) | 1 (0%) | 88 | 95 |
| 2 | XB | 204/220 (93%) | 203 (100%) | 1 (0%) | 88 | 95 |
| 3 | QC | 159/188 (85%) | 159 (100%) | 0 | 100 | 100 |
| 3 | XC | 159/188 (85%) | 159 (100%) | 0 | 100 | 100 |
| 4 | QD | 180/181 (99%) | 179 (99%) | 1 (1%) | 86 | 94 |
| 4 | XD | 180/181 (99%) | 172 (96%) | 8 (4%) | 28 | 64 |
| 5 | QE | 116/123 (94%) | 114 (98%) | 2 (2%) | 60 | 83 |
| 5 | XE | 116/123 (94%) | 113 (97%) | 3 (3%) | 46 | 76 |
| 6 | QF | 90/90 (100%) | 90 (100%) | 0 | 100 | 100 |
| 6 | XF | 90/90 (100%) | 89 (99%) | 1 (1%) | 73 | 88 |
| 7 | QG | 126/127 (99%) | 123 (98%) | 3 (2%) | 49 | 77 |
| 7 | XG | 126/127 (99%) | 124 (98%) | 2 (2%) | 62 | 84 |
| 8 | QH | 118/119 (99%) | 118 (100%) | 0 | 100 | 100 |
| 8 | XH | 118/119 (99%) | 118 (100%) | 0 | 100 | 100 |
| 9 | QI | 98/99 (99%) | 98 (100%) | 0 | 100 | 100 |
| 9 | XI | 97/99 (98%) | 97 (100%) | 0 | 100 | 100 |
| 10 | QJ | 89/92 (97%) | 88 (99%) | 1 (1%) | 73 | 88 |
| 10 | XJ | 86/92 (94%) | 86 (100%) | 0 | 100 | 100 |
| 11 | QK | 90/99 (91%) | 89 (99%) | 1 (1%) | 73 | 88 |
| 11 | XK | 88/99 (89%) | 88 (100%) | 0 | 100 | 100 |
| 12 | QL | 104/109 (95%) | 104 (100%) | 0 | 100 | 100 |

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| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles | |
|-----|-------|---------------|------------|----------|-------------|-----|
| 12 | XL | 103/109 (94%) | 103 (100%) | 0 | 100 | 100 |
| 13 | QM | 96/101 (95%) | 94 (98%) | 2 (2%) | 53 | 79 |
| 13 | XM | 95/101 (94%) | 95 (100%) | 0 | 100 | 100 |
| 14 | QN | 49/50 (98%) | 47 (96%) | 2 (4%) | 30 | 66 |
| 14 | XN | 49/50 (98%) | 48 (98%) | 1 (2%) | 55 | 80 |
| 15 | QO | 79/80 (99%) | 78 (99%) | 1 (1%) | 69 | 87 |
| 15 | XO | 79/80 (99%) | 79 (100%) | 0 | 100 | 100 |
| 16 | QP | 72/74 (97%) | 71 (99%) | 1 (1%) | 67 | 86 |
| 16 | XP | 72/74 (97%) | 72 (100%) | 0 | 100 | 100 |
| 17 | QQ | 95/97 (98%) | 94 (99%) | 1 (1%) | 73 | 88 |
| 17 | XQ | 95/97 (98%) | 95 (100%) | 0 | 100 | 100 |
| 18 | QR | 61/77 (79%) | 61 (100%) | 0 | 100 | 100 |
| 18 | XR | 61/77 (79%) | 61 (100%) | 0 | 100 | 100 |
| 19 | QS | 72/80 (90%) | 72 (100%) | 0 | 100 | 100 |
| 19 | XS | 73/80 (91%) | 73 (100%) | 0 | 100 | 100 |
| 20 | QT | 76/82 (93%) | 76 (100%) | 0 | 100 | 100 |
| 20 | XT | 76/82 (93%) | 76 (100%) | 0 | 100 | 100 |
| 21 | QU | 20/22 (91%) | 20 (100%) | 0 | 100 | 100 |
| 21 | XU | 20/22 (91%) | 19 (95%) | 1 (5%) | 24 | 60 |
| 26 | RD | 216/218 (99%) | 216 (100%) | 0 | 100 | 100 |
| 26 | YD | 216/218 (99%) | 214 (99%) | 2 (1%) | 78 | 91 |
| 27 | RE | 165/166 (99%) | 164 (99%) | 1 (1%) | 86 | 94 |
| 27 | YE | 165/166 (99%) | 164 (99%) | 1 (1%) | 86 | 94 |
| 28 | RF | 161/166 (97%) | 161 (100%) | 0 | 100 | 100 |
| 28 | YF | 161/166 (97%) | 160 (99%) | 1 (1%) | 86 | 94 |
| 29 | RG | 155/156 (99%) | 153 (99%) | 2 (1%) | 69 | 87 |
| 29 | YG | 155/156 (99%) | 155 (100%) | 0 | 100 | 100 |
| 30 | RH | 145/148 (98%) | 145 (100%) | 0 | 100 | 100 |
| 30 | YH | 144/148 (97%) | 142 (99%) | 2 (1%) | 67 | 86 |
| 31 | RI | 122/124 (98%) | 121 (99%) | 1 (1%) | 81 | 93 |
| 31 | YI | 122/124 (98%) | 121 (99%) | 1 (1%) | 81 | 93 |

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| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles | |
|-----|-------|----------------|------------|----------|-------------|-----|
| 32 | RN | 117/119 (98%) | 116 (99%) | 1 (1%) | 78 | 91 |
| 32 | YN | 119/119 (100%) | 119 (100%) | 0 | 100 | 100 |
| 33 | RO | 100/100 (100%) | 98 (98%) | 2 (2%) | 55 | 80 |
| 33 | YO | 100/100 (100%) | 100 (100%) | 0 | 100 | 100 |
| 34 | RP | 116/116 (100%) | 115 (99%) | 1 (1%) | 78 | 91 |
| 34 | YP | 114/116 (98%) | 113 (99%) | 1 (1%) | 78 | 91 |
| 35 | RQ | 111/111 (100%) | 108 (97%) | 3 (3%) | 44 | 75 |
| 35 | YQ | 111/111 (100%) | 111 (100%) | 0 | 100 | 100 |
| 36 | RR | 100/101 (99%) | 99 (99%) | 1 (1%) | 76 | 90 |
| 36 | YR | 100/101 (99%) | 100 (100%) | 0 | 100 | 100 |
| 37 | RS | 87/88 (99%) | 87 (100%) | 0 | 100 | 100 |
| 37 | YS | 87/88 (99%) | 87 (100%) | 0 | 100 | 100 |
| 38 | RT | 120/127 (94%) | 120 (100%) | 0 | 100 | 100 |
| 38 | YT | 120/127 (94%) | 119 (99%) | 1 (1%) | 81 | 93 |
| 39 | RU | 93/94 (99%) | 92 (99%) | 1 (1%) | 73 | 88 |
| 39 | YU | 93/94 (99%) | 91 (98%) | 2 (2%) | 52 | 79 |
| 40 | RV | 82/82 (100%) | 82 (100%) | 0 | 100 | 100 |
| 40 | YV | 82/82 (100%) | 79 (96%) | 3 (4%) | 34 | 68 |
| 41 | RW | 92/92 (100%) | 91 (99%) | 1 (1%) | 73 | 88 |
| 41 | YW | 92/92 (100%) | 92 (100%) | 0 | 100 | 100 |
| 42 | RX | 74/78 (95%) | 74 (100%) | 0 | 100 | 100 |
| 42 | YX | 76/78 (97%) | 76 (100%) | 0 | 100 | 100 |
| 43 | RY | 88/91 (97%) | 87 (99%) | 1 (1%) | 73 | 88 |
| 43 | YY | 88/91 (97%) | 87 (99%) | 1 (1%) | 73 | 88 |
| 44 | RZ | 162/179 (90%) | 162 (100%) | 0 | 100 | 100 |
| 44 | YZ | 162/179 (90%) | 162 (100%) | 0 | 100 | 100 |
| 45 | R0 | 65/67 (97%) | 63 (97%) | 2 (3%) | 40 | 72 |
| 45 | Y0 | 61/67 (91%) | 60 (98%) | 1 (2%) | 62 | 84 |
| 46 | R1 | 82/83 (99%) | 82 (100%) | 0 | 100 | 100 |
| 46 | Y1 | 78/83 (94%) | 78 (100%) | 0 | 100 | 100 |
| 47 | R2 | 64/67 (96%) | 64 (100%) | 0 | 100 | 100 |

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| Mol | Chain | Analysed | Rotameric | Outliers | Percentiles | |
|-----|-------|------------------|------------|----------|-------------|-----|
| 47 | Y2 | 62/67 (92%) | 62 (100%) | 0 | 100 | 100 |
| 48 | R3 | 51/52 (98%) | 50 (98%) | 1 (2%) | 55 | 80 |
| 48 | Y3 | 51/52 (98%) | 50 (98%) | 1 (2%) | 55 | 80 |
| 49 | R4 | 62/63 (98%) | 62 (100%) | 0 | 100 | 100 |
| 49 | Y4 | 62/63 (98%) | 61 (98%) | 1 (2%) | 62 | 84 |
| 50 | R5 | 51/52 (98%) | 51 (100%) | 0 | 100 | 100 |
| 50 | Y5 | 51/52 (98%) | 51 (100%) | 0 | 100 | 100 |
| 51 | R6 | 51/52 (98%) | 51 (100%) | 0 | 100 | 100 |
| 51 | Y6 | 51/52 (98%) | 50 (98%) | 1 (2%) | 55 | 80 |
| 52 | R7 | 40/42 (95%) | 40 (100%) | 0 | 100 | 100 |
| 52 | Y7 | 41/42 (98%) | 41 (100%) | 0 | 100 | 100 |
| 53 | R8 | 54/55 (98%) | 53 (98%) | 1 (2%) | 57 | 81 |
| 53 | Y8 | 54/55 (98%) | 53 (98%) | 1 (2%) | 57 | 81 |
| 54 | R9 | 34/34 (100%) | 34 (100%) | 0 | 100 | 100 |
| 54 | Y9 | 34/34 (100%) | 34 (100%) | 0 | 100 | 100 |
| All | All | 9692/10066 (96%) | 9620 (99%) | 72 (1%) | 84 | 94 |

5 of 72 residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 30 | YH | 49 | VAL |
| 53 | Y8 | 42 | ARG |
| 34 | YP | 15 | ARG |
| 40 | YV | 80 | GLN |
| 35 | RQ | 21 | THR |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 17 such sidechains are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 28 | YF | 40 | GLN |
| 43 | YY | 92 | ASN |
| 38 | RT | 58 | ASN |
| 45 | R0 | 35 | ASN |
| 53 | R8 | 31 | HIS |

5.3.3 RNA [i](#)

| Mol | Chain | Analysed | Backbone Outliers | Pucker Outliers |
|-----|-------|-----------------|-------------------|-----------------|
| 1 | QA | 1499/1521 (98%) | 289 (19%) | 39 (2%) |
| 1 | XA | 1499/1521 (98%) | 271 (18%) | 33 (2%) |
| 22 | QV | 76/77 (98%) | 22 (28%) | 1 (1%) |
| 22 | XV | 76/77 (98%) | 18 (23%) | 1 (1%) |
| 23 | QX | 18/19 (94%) | 7 (38%) | 1 (5%) |
| 23 | XX | 18/19 (94%) | 6 (33%) | 0 |
| 24 | RA | 2877/2915 (98%) | 591 (20%) | 37 (1%) |
| 24 | YA | 2880/2915 (98%) | 551 (19%) | 43 (1%) |
| 25 | RB | 119/122 (97%) | 18 (15%) | 1 (0%) |
| 25 | YB | 119/122 (97%) | 21 (17%) | 1 (0%) |
| All | All | 9181/9308 (98%) | 1794 (19%) | 157 (1%) |

5 of 1794 RNA backbone outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1 | QA | 6 | G |
| 1 | QA | 9 | G |
| 1 | QA | 32 | A |
| 1 | QA | 39 | G |
| 1 | QA | 47 | C |

5 of 157 RNA pucker outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|------|------|
| 24 | YA | 210 | A |
| 24 | YA | 1700 | G |
| 24 | YA | 302 | A |
| 24 | YA | 1068 | G |
| 24 | YA | 2622 | C |

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

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

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

| Mol | Type | Chain | Res | Link | Bond lengths | | | Bond angles | | |
|-----|------|-------|-----|------|--------------|------|----------|-------------|------|----------|
| | | | | | Counts | RMSZ | # Z > 2 | Counts | RMSZ | # Z > 2 |
| 22 | 1MG | XV | 37 | 22 | 18,26,27 | 0.75 | 0 | 19,39,42 | 1.11 | 2 (10%) |
| 22 | 1MG | QV | 37 | 22 | 18,26,27 | 0.72 | 0 | 19,39,42 | 1.08 | 2 (10%) |

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

| Mol | Type | Chain | Res | Link | Chirals | Torsions | Rings |
|-----|------|-------|-----|------|---------|-----------|---------|
| 22 | 1MG | XV | 37 | 22 | - | 0/3/25/26 | 0/3/3/3 |
| 22 | 1MG | QV | 37 | 22 | - | 0/3/25/26 | 0/3/3/3 |

There are no bond length outliers.

All (4) bond angle outliers are listed below:

| Mol | Chain | Res | Type | Atoms | Z | Observed(°) | Ideal(°) |
|-----|-------|-----|------|----------|------|-------------|----------|
| 22 | XV | 37 | 1MG | C8-N7-C5 | 2.53 | 107.81 | 102.99 |
| 22 | XV | 37 | 1MG | C5-C6-N1 | 2.38 | 117.48 | 113.90 |
| 22 | QV | 37 | 1MG | C8-N7-C5 | 2.37 | 107.50 | 102.99 |
| 22 | QV | 37 | 1MG | C5-C6-N1 | 2.27 | 117.32 | 113.90 |

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

1 monomer is involved in 1 short contact:

| Mol | Chain | Res | Type | Clashes | Symm-Clashes |
|-----|-------|-----|------|---------|--------------|
| 22 | QV | 37 | 1MG | 1 | 0 |

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 1166 ligands modelled in this entry, 1164 are monoatomic - leaving 2 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and

the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

| Mol | Type | Chain | Res | Link | Bond lengths | | | Bond angles | | |
|-----|------|-------|-----|------|--------------|------|----------|-------------|------|----------|
| | | | | | Counts | RMSZ | # Z > 2 | Counts | RMSZ | # Z > 2 |
| 56 | SF4 | QD | 301 | 4 | 0,12,12 | - | - | - | | |
| 56 | SF4 | XD | 301 | 4 | 0,12,12 | - | - | - | | |

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

| Mol | Type | Chain | Res | Link | Chirals | Torsions | Rings |
|-----|------|-------|-----|------|---------|----------|---------|
| 56 | SF4 | QD | 301 | 4 | - | - | 0/6/5/5 |
| 56 | SF4 | XD | 301 | 4 | - | - | 0/6/5/5 |

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

6 Fit of model and data [i](#)

6.1 Protein, DNA and RNA chains [i](#)

EDS failed to run properly - this section is therefore empty.

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

EDS failed to run properly - this section is therefore empty.

6.3 Carbohydrates [i](#)

EDS failed to run properly - this section is therefore empty.

6.4 Ligands [i](#)

EDS failed to run properly - this section is therefore empty.

6.5 Other polymers [i](#)

EDS failed to run properly - this section is therefore empty.