



## Full wwPDB EM Validation Report ⓘ

Dec 17, 2022 – 01:41 pm GMT

PDB ID : 6Z6L  
EMDB ID : EMD-11098  
Title : Cryo-EM structure of human CCDC124 bound to 80S ribosomes  
Authors : Wells, J.N.; Buschauer, R.; Mackens-Kiani, T.; Best, K.; Kratzat, H.; Berninghausen, O.; Becker, T.; Cheng, J.; Beckmann, R.  
Deposited on : 2020-05-28  
Resolution : 3.00 Å(reported)  
Based on initial model : 6EK0

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

EMDB validation analysis : 0.0.1.dev43  
MolProbity : 4.02b-467  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
MapQ : 1.9.9  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.31.3

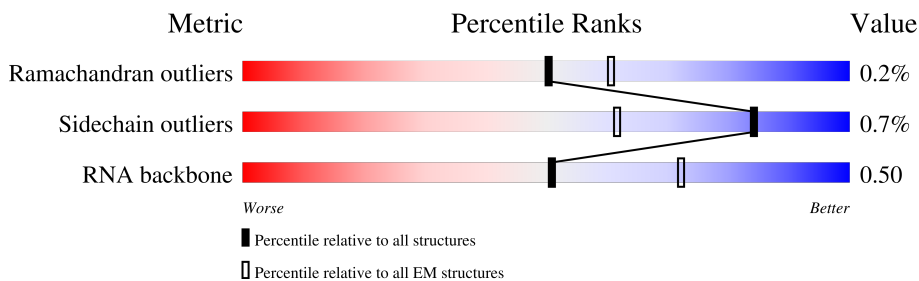
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*ELECTRON MICROSCOPY*

The reported resolution of this entry is 3.00 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.





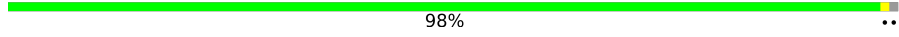
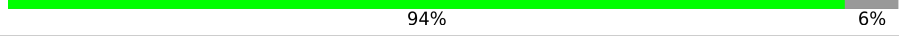
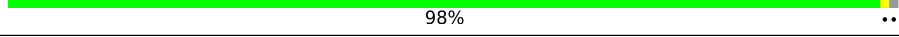
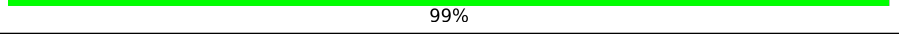

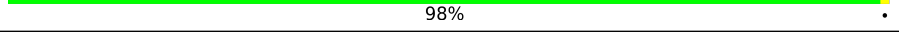
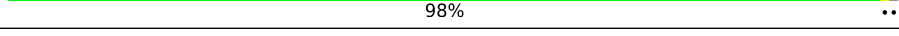

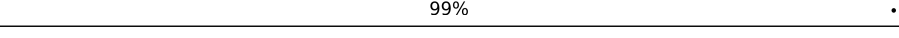
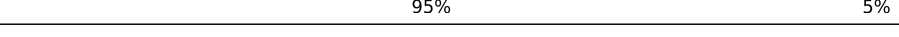
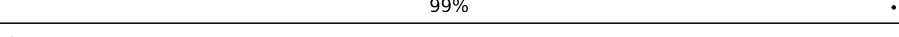
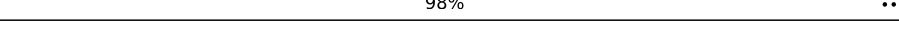

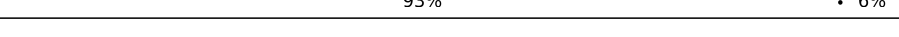
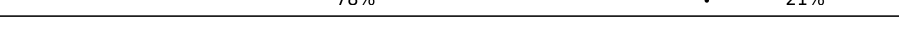

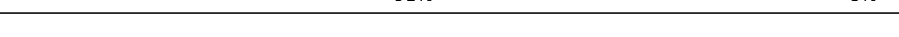






| Metric                | Whole archive<br>(#Entries) | EM structures<br>(#Entries) |
|-----------------------|-----------------------------|-----------------------------|
| Ramachandran outliers | 154571                      | 4023                        |
| Sidechain outliers    | 154315                      | 3826                        |
| RNA backbone          | 4643                        | 859                         |

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions  $\leq 5\%$ . The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion  $< 40\%$ ). The numeric value is given above the bar.

| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 1   | L5    | 5070   |                  |
| 2   | L7    | 121    |                  |
| 3   | L8    | 157    |                  |
| 4   | LA    | 257    |                  |
| 5   | LB    | 403    |                  |
| 6   | LC    | 427    |                  |
| 7   | LD    | 297    |                  |
| 8   | LE    | 288    |                  |

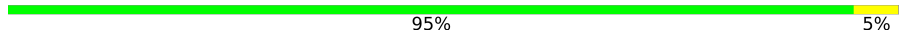
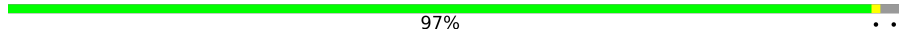
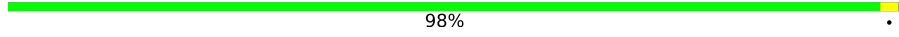
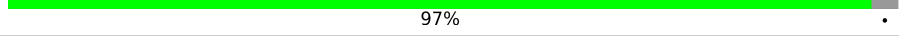

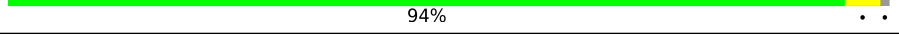
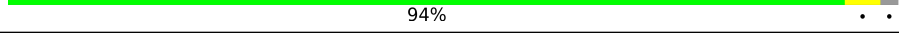

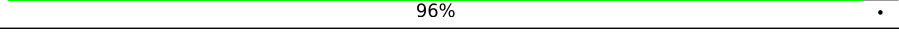
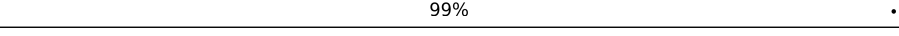
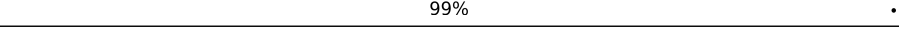
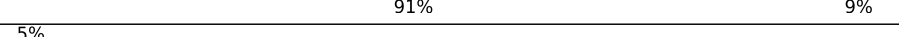
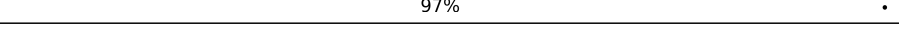
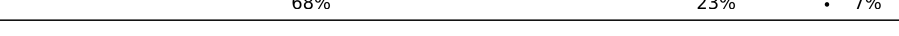


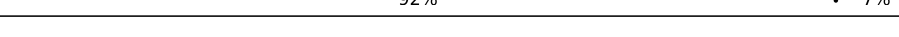
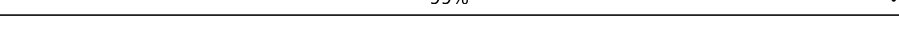
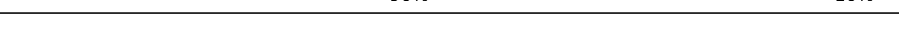






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| Mol | Chain | Length | Quality of chain   |
|-----|-------|--------|--|
| 9   | LF    | 248    |  90% 9%    |
| 10  | LG    | 266    |  90% 9%    |
| 11  | LH    | 192    |  98% ..    |
| 12  | LI    | 214    |  94% 6%    |
| 13  | LJ    | 178    |  98% ..    |
| 14  | LL    | 211    |  99%       |
| 15  | LM    | 215    |  64% 35%   |
| 16  | LN    | 204    |  98% .     |
| 17  | LO    | 203    |  98% ..    |
| 18  | LP    | 184    |  83% 17%   |
| 19  | LQ    | 188    |  99% .     |
| 20  | LR    | 196    |  95% 5%   |
| 21  | LS    | 176    |  99% .   |
| 22  | LT    | 160    |  98% ..  |
| 23  | LU    | 128    |  78% 21% |
| 24  | LV    | 140    |  93% 6%  |
| 25  | LW    | 157    |  78% 21% |
| 26  | LX    | 156    |  77% 23% |
| 27  | LY    | 145    |  91% 8%  |
| 28  | LZ    | 136    |  99% .   |
| 29  | La    | 148    |  97% ..  |
| 30  | Lb    | 159    |  67% 31% |
| 31  | Lc    | 115    |  84% 15% |
| 32  | Ld    | 125    |  85% 14% |
| 33  | Le    | 135    |  94% 5%  |

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| Mol | Chain | Length | Quality of chain  |
|-----|-------|--------|---|
| 34  | Lf    | 110    |  95% 5%       |
| 35  | Lg    | 117    |  97%          |
| 36  | Lh    | 123    |  98%          |
| 37  | Li    | 105    |  97%          |
| 38  | Lj    | 97     |  86% 11%      |
| 39  | Lk    | 70     |  94%          |
| 40  | Ll    | 51     |  94%          |
| 41  | Lm    | 128    |  41% 59%      |
| 42  | Ln    | 25     |  96%          |
| 43  | Lo    | 104    |  99%          |
| 44  | Lp    | 92     |  99%          |
| 45  | Lr    | 137    |  91% 9%      |
| 46  | Lz    | 217    |  5% 97%     |
| 47  | S2    | 1869   |  68% 23% 7% |
| 48  | SA    | 295    |  75% 25%    |
| 49  | SB    | 264    |  80% 19%    |
| 50  | SD    | 243    |  92% 7%     |
| 51  | SE    | 263    |  99%        |
| 52  | SF    | 204    |  90% 10%    |
| 53  | SH    | 194    |  93%        |
| 54  | SI    | 208    |  99%        |
| 55  | SK    | 165    |  58% 41%    |
| 56  | SL    | 158    |  96%        |
| 57  | SP    | 145    |  86% 12%    |
| 58  | SQ    | 146    |  97%        |

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| Mol | Chain | Length | Quality of chain |
|-----|-------|--------|------------------|
| 59  | SR    | 135    | 100%             |
| 60  | SS    | 152    | 95% 5%           |
| 61  | ST    | 145    | 97% ...          |
| 62  | SU    | 119    | 87% 13%          |
| 63  | SV    | 83     | 98% .            |
| 64  | SX    | 143    | 96% ..           |
| 65  | Sa    | 115    | 85% . 11%        |
| 66  | Sc    | 69     | 93% 7%           |
| 67  | Sd    | 56     | 96% ..           |
| 68  | Sg    | 317    | 98% ..           |
| 69  | SC    | 293    | 75% 24%          |
| 70  | SG    | 249    | 94% . 5%         |
| 71  | SJ    | 194    | 95% 5%           |
| 72  | SM    | 132    | 91% . 8%         |
| 73  | SN    | 151    | 99% .            |
| 74  | SO    | 151    | 92% . 7%         |
| 75  | SW    | 130    | 99% .            |
| 76  | SY    | 133    | 97% ..           |
| 77  | SZ    | 125    | 56% . 40%        |
| 78  | Sb    | 84     | 99% .            |
| 79  | Se    | 59     | 98% .            |
| 80  | Sf    | 156    | 42% . 57%        |
| 81  | CA    | 394    | 90% 10%          |
| 82  | CC    | 75     | 65% 29% 5%       |
| 83  | CE    | 223    | 33% 67%          |

## 2 Entry composition

There are 85 unique types of molecules in this entry. The entry contains 222284 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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



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

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

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

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

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

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

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

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

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
|     |       |          | Total | C   | N   | O   | S |         |       |
| 25  | LW    | 124      | 1015  | 634 | 207 | 170 | 4 | 0       | 0     |

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 43  | Lo    | 103      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 842   | 528 | 172 | 136 | 6 |         |       |

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 52  | SF    | 184      | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 1461  | 914 | 276 | 264 | 7 |         |       |

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

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

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

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

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

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

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

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

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

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
|     |       |          | Total | C   | N   | O   | S |         |       |
| 57  | SP    | 127      | 1045  | 663 | 198 | 177 | 7 | 0       | 0     |

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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



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

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

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

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

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

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

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

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

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

- Molecule 82 is a RNA chain called tRNA.

| Mol | Chain | Residues | Atoms |     |     |     |    | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|----|---------|-------|
| 82  | CC    | 75       | Total | C   | N   | O   | P  | 0       | 0     |
|     |       |          | 1589  | 710 | 279 | 525 | 75 |         |       |

- Molecule 83 is a protein called Coiled-coil domain-containing protein 124.

| Mol | Chain | Residues | Atoms |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|---|---------|-------|
| 83  | CE    | 73       | Total | C   | N   | O   | S | 0       | 0     |
|     |       |          | 613   | 369 | 122 | 121 | 1 |         |       |

- Molecule 84 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

| Mol | Chain | Residues | Atoms               | AltConf |
|-----|-------|----------|---------------------|---------|
| 84  | L5    | 210      | Total Mg<br>210 210 | 0       |
| 84  | L7    | 3        | Total Mg<br>3 3     | 0       |
| 84  | L8    | 5        | Total Mg<br>5 5     | 0       |
| 84  | LA    | 1        | Total Mg<br>1 1     | 0       |
| 84  | LI    | 1        | Total Mg<br>1 1     | 0       |
| 84  | LP    | 1        | Total Mg<br>1 1     | 0       |
| 84  | LV    | 1        | Total Mg<br>1 1     | 0       |
| 84  | Le    | 2        | Total Mg<br>2 2     | 0       |
| 84  | Lg    | 1        | Total Mg<br>1 1     | 0       |
| 84  | Lj    | 1        | Total Mg<br>1 1     | 0       |
| 84  | S2    | 29       | Total Mg<br>29 29   | 0       |
| 84  | SG    | 1        | Total Mg<br>1 1     | 0       |

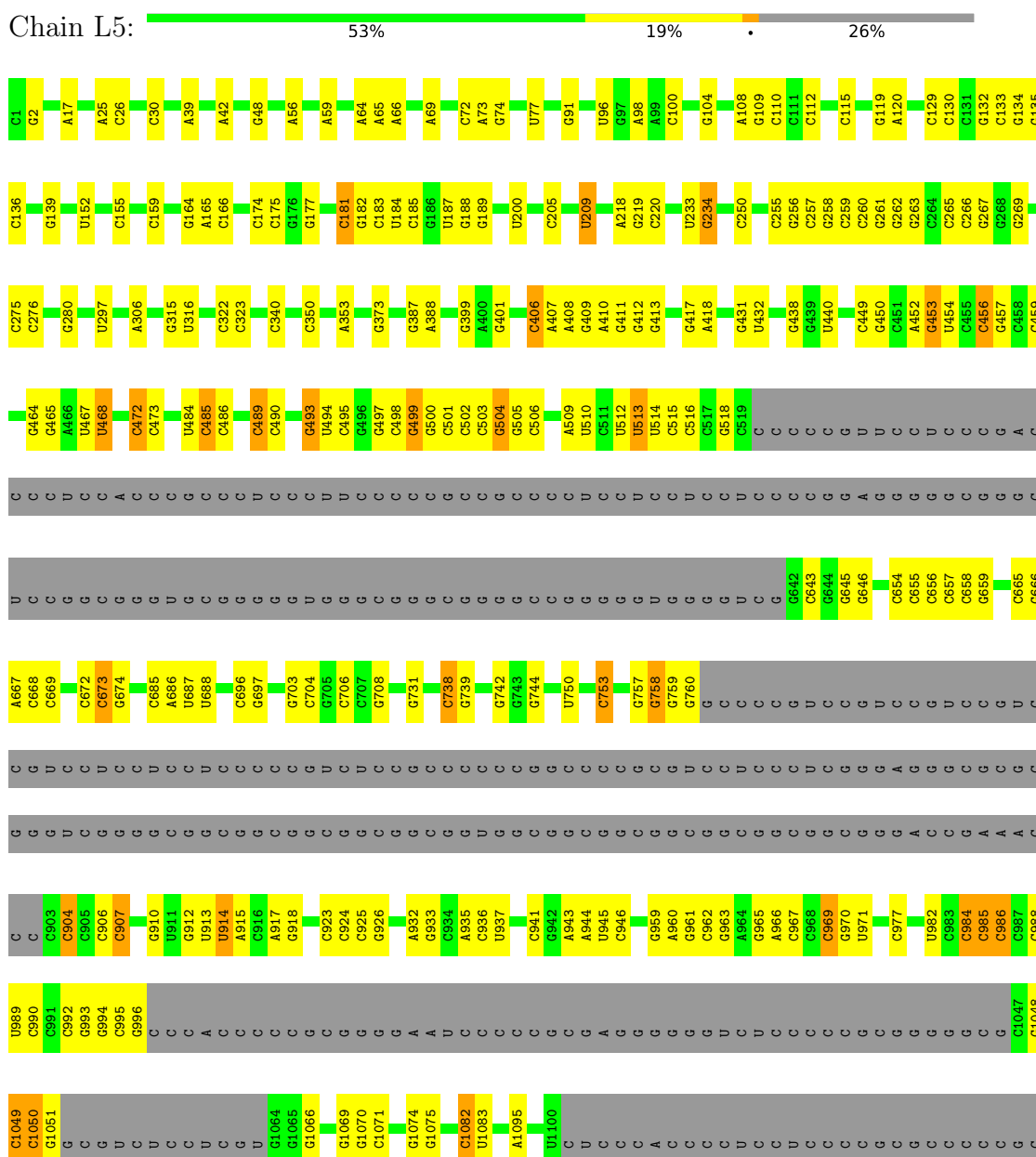
- Molecule 85 is ZINC ION (three-letter code: ZN) (formula: Zn).

| Mol | Chain | Residues | Atoms           | AltConf |
|-----|-------|----------|-----------------|---------|
| 85  | Lg    | 1        | Total Zn<br>1 1 | 0       |
| 85  | Lj    | 1        | Total Zn<br>1 1 | 0       |
| 85  | Lm    | 1        | Total Zn<br>1 1 | 0       |
| 85  | Lo    | 1        | Total Zn<br>1 1 | 0       |
| 85  | Lp    | 1        | Total Zn<br>1 1 | 0       |
| 85  | Sa    | 1        | Total Zn<br>1 1 | 0       |
| 85  | Sd    | 1        | Total Zn<br>1 1 | 0       |
| 85  | Sf    | 1        | Total Zn<br>1 1 | 0       |

### 3 Residue-property plots [i](#)

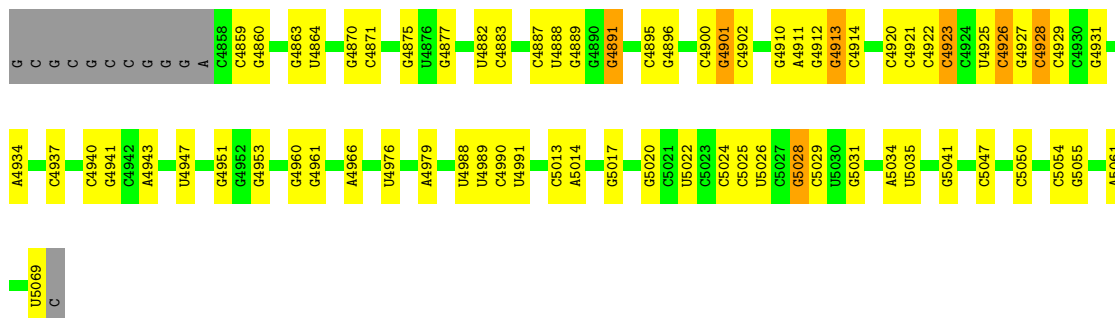
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

- Molecule 1: 28S rRNA





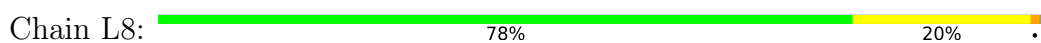




• Molecule 2: 5S rRNA



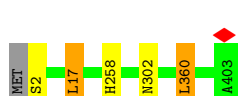
• Molecule 3: 5.8S rRNA



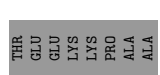
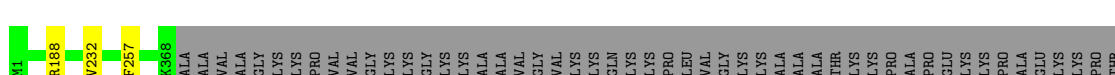
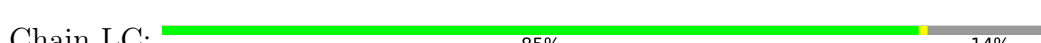
• Molecule 4: 60S ribosomal protein L8



• Molecule 5: 60S ribosomal protein L3

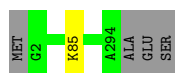


• Molecule 6: 60S ribosomal protein L4




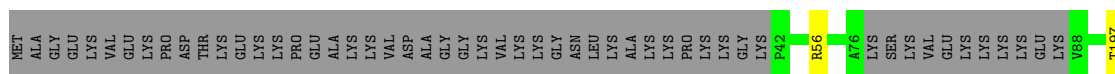
• Molecule 7: 60S ribosomal protein L5

Chain LD:  98%



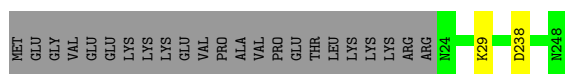
- Molecule 8: 60S ribosomal protein L6

Chain LE:  81%



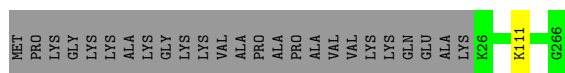
- Molecule 9: 60S ribosomal protein L7

Chain LF:  90%



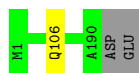
- Molecule 10: 60S ribosomal protein L7a

Chain LG:  90%



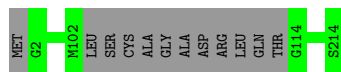
- Molecule 11: 60S ribosomal protein L9

Chain LH:  98%



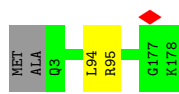
- Molecule 12: 60S ribosomal protein L10-like

Chain LI:  94%

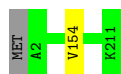


- Molecule 13: 60S ribosomal protein L11

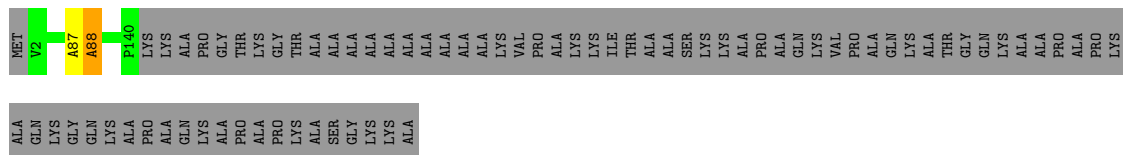
Chain LJ:  98%



• Molecule 14: 60S ribosomal protein L13



• Molecule 15: 60S ribosomal protein L14



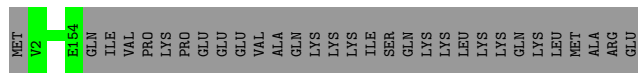
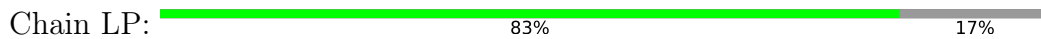
• Molecule 16: 60S ribosomal protein L15



• Molecule 17: 60S ribosomal protein L13a



• Molecule 18: 60S ribosomal protein L17



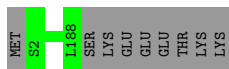
• Molecule 19: 60S ribosomal protein L18



• Molecule 20: 60S ribosomal protein L19







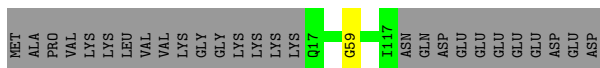
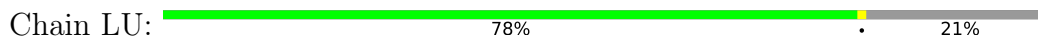
- Molecule 21: 60S ribosomal protein L18a



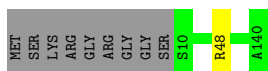
- Molecule 22: 60S ribosomal protein L21



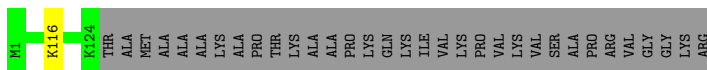
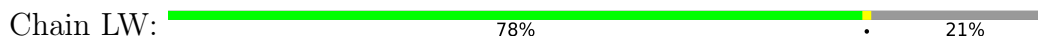
- Molecule 23: 60S ribosomal protein L22



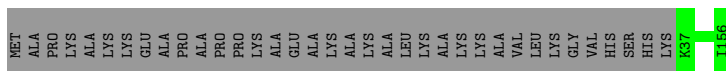
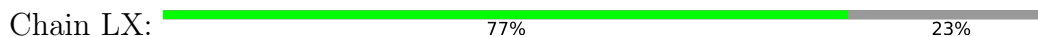
- Molecule 24: 60S ribosomal protein L23



- Molecule 25: 60S ribosomal protein L24

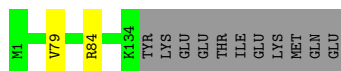


- Molecule 26: 60S ribosomal protein L23a



- Molecule 27: 60S ribosomal protein L26





- Molecule 28: 60S ribosomal protein L27

Chain LZ: 99%



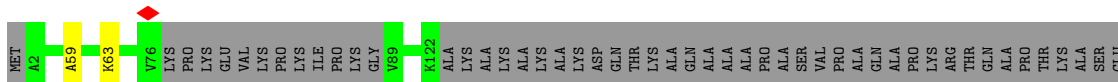
- Molecule 29: 60S ribosomal protein L27a

Chain La: 97%



- Molecule 30: 60S ribosomal protein L29

Chain Lb: 67%



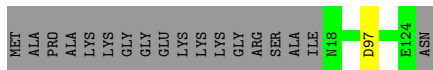
- Molecule 31: 60S ribosomal protein L30

Chain Lc: 84%



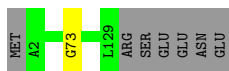
- Molecule 32: 60S ribosomal protein L31

Chain Ld: 85%



- Molecule 33: 60S ribosomal protein L32

Chain Le: 94%



- Molecule 34: 60S ribosomal protein L35a

Chain Lf: 95%



- Molecule 35: 60S ribosomal protein L34

Chain Lg: 97%



- Molecule 36: 60S ribosomal protein L35

Chain Lh: 98%



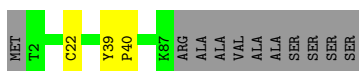
- Molecule 37: 60S ribosomal protein L36

Chain Li: 97%



- Molecule 38: 60S ribosomal protein L37

Chain Lj: 86% 11%



- Molecule 39: 60S ribosomal protein L38

Chain Lk: 94%



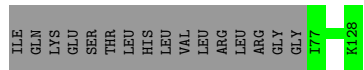
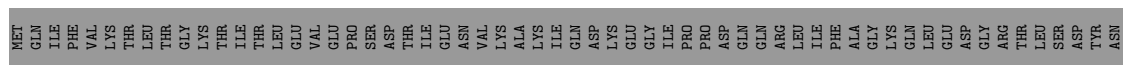
- Molecule 40: 60S ribosomal protein L39

Chain Ll: 94%



- Molecule 41: Ubiquitin-60S ribosomal protein L40

Chain Lm: 41% 59%



• Molecule 42: 60S ribosomal protein L41



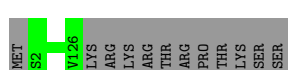
• Molecule 43: 60S ribosomal protein L36a



• Molecule 44: 60S ribosomal protein L37a



• Molecule 45: 60S ribosomal protein L28

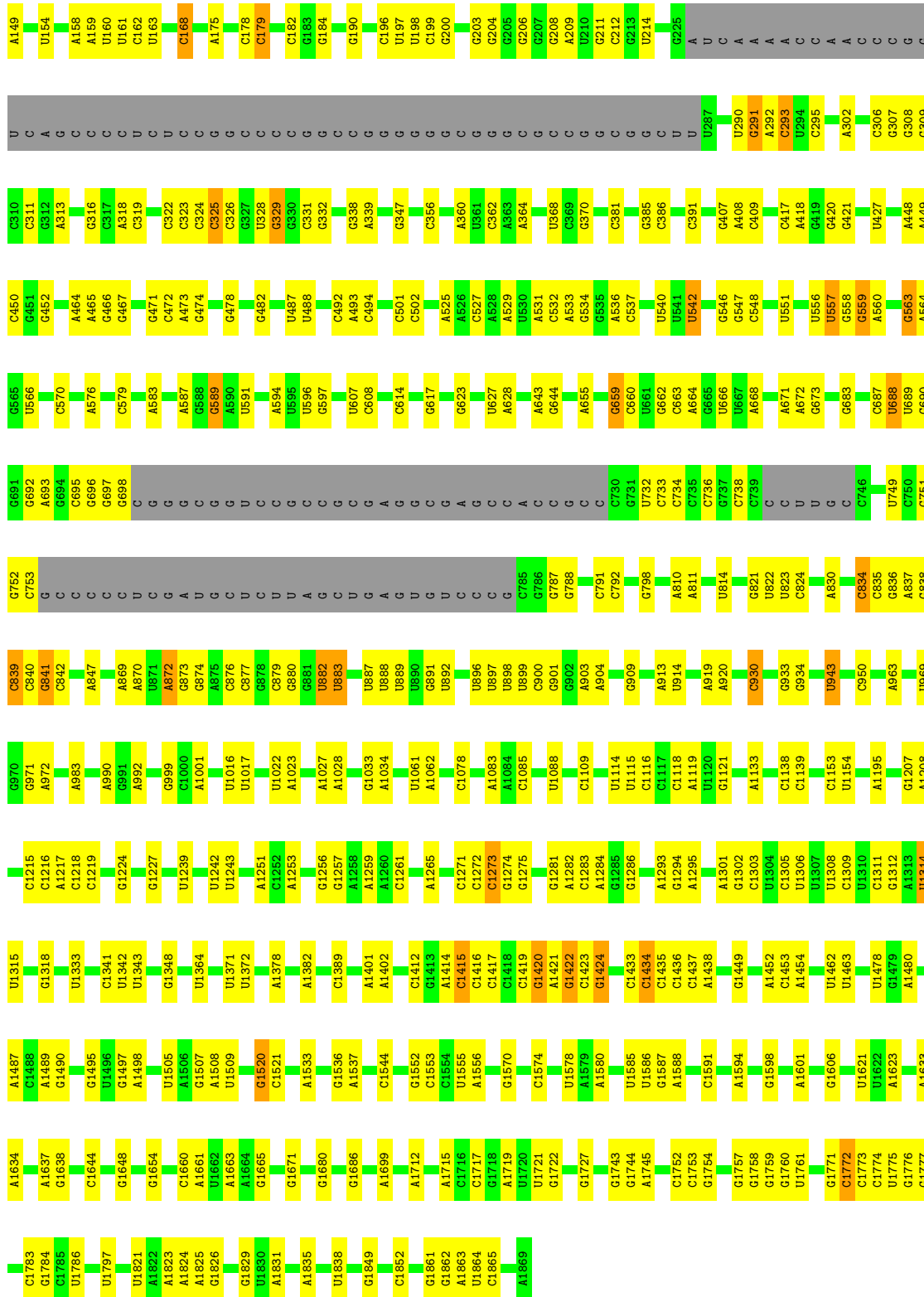


• Molecule 46: 60S ribosomal protein L10a

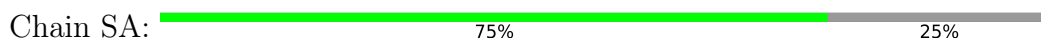


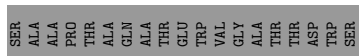
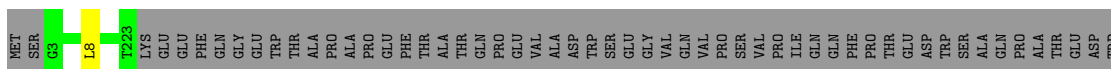
• Molecule 47: 18S rRNA





● Molecule 48: 40S ribosomal protein SA





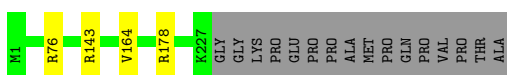
- Molecule 49: 40S ribosomal protein S3a

Chain SB: 80% 19%



- Molecule 50: 40S ribosomal protein S3

Chain SD: 92% 7%



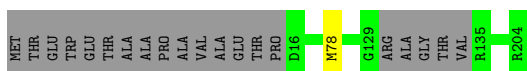
- Molecule 51: 40S ribosomal protein S4, X isoform

Chain SE: 99%



- Molecule 52: 40S ribosomal protein S5

Chain SF: 90% 10%



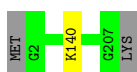
- Molecule 53: 40S ribosomal protein S7

Chain SH: 93%



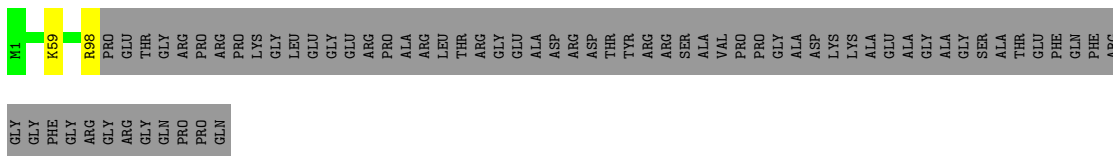
- Molecule 54: 40S ribosomal protein S8

Chain SI: 99%



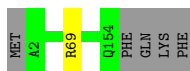
- Molecule 55: 40S ribosomal protein S10

Chain SK:  58% 41%




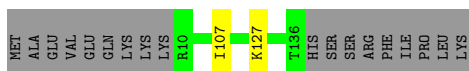
- Molecule 56: 40S ribosomal protein S11

Chain SL:  96%



- Molecule 57: 40S ribosomal protein S15

Chain SP:  86% 12%



- Molecule 58: 40S ribosomal protein S16

Chain SQ:  97%



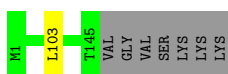
- Molecule 59: 40S ribosomal protein S17

Chain SR:  100%

There are no outlier residues recorded for this chain.

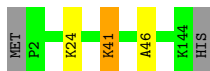
- Molecule 60: 40S ribosomal protein S18

Chain SS:  95% 5%




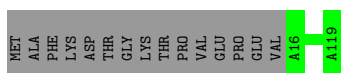
- Molecule 61: 40S ribosomal protein S19

Chain ST:  97%



- Molecule 62: 40S ribosomal protein S20

Chain SU:  87% 13%



- Molecule 63: 40S ribosomal protein S21

Chain SV:  98%



- Molecule 64: 40S ribosomal protein S23

Chain SX:  96%



- Molecule 65: 40S ribosomal protein S26

Chain Sa:  85% 11%



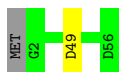
- Molecule 66: 40S ribosomal protein S28

Chain Sc:  93% 7%



- Molecule 67: 40S ribosomal protein S29

Chain Sd:  96%




- Molecule 68: Receptor of activated protein C kinase 1

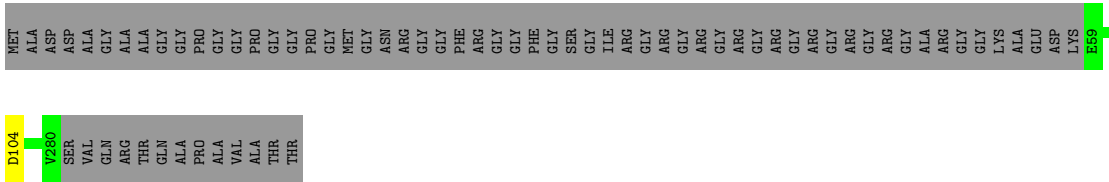
Chain Sg:  98%



- Molecule 69: 40S ribosomal protein S2

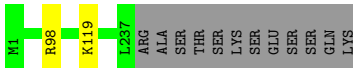


Chain SC:  75% 24%



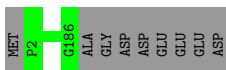
- Molecule 70: 40S ribosomal protein S6

Chain SG:  94% 5%



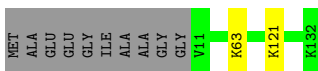
- Molecule 71: 40S ribosomal protein S9

Chain SJ:  95% 5%



- Molecule 72: 40S ribosomal protein S12

Chain SM:  91% 8%



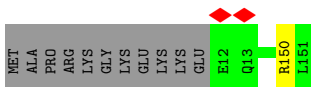
- Molecule 73: 40S ribosomal protein S13

Chain SN:  99% 1%



- Molecule 74: 40S ribosomal protein S14

Chain SO:  92% 7%



- Molecule 75: 40S ribosomal protein S15a

Chain SW:  99% 1%



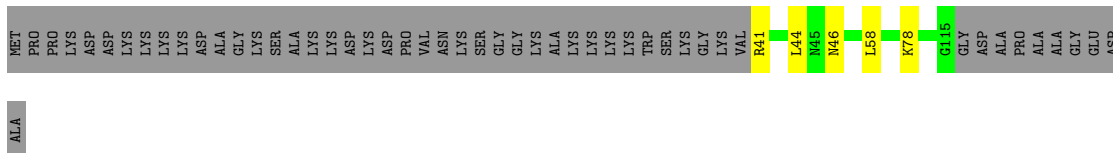
- Molecule 76: 40S ribosomal protein S24

Chain SY:  97%



- Molecule 77: 40S ribosomal protein S25

Chain SZ:  56%



- Molecule 78: 40S ribosomal protein S27

Chain Sb:  99%



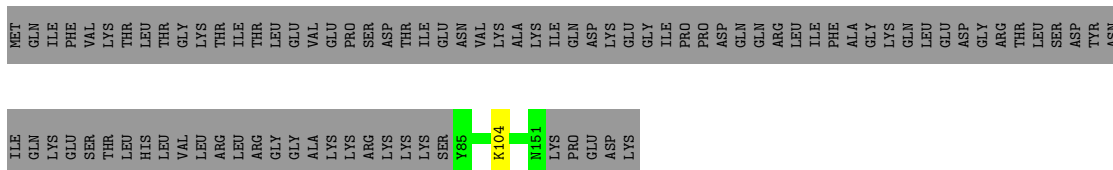
- Molecule 79: 40S ribosomal protein S30

Chain Se:  98%



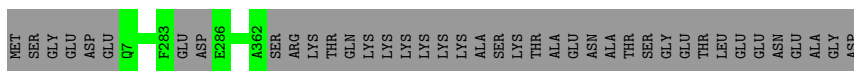
- Molecule 80: Ubiquitin-40S ribosomal protein S27a

Chain Sf:  42%



- Molecule 81: Proliferation-associated protein 2G4

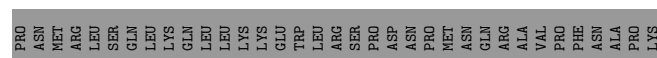
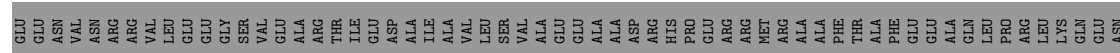
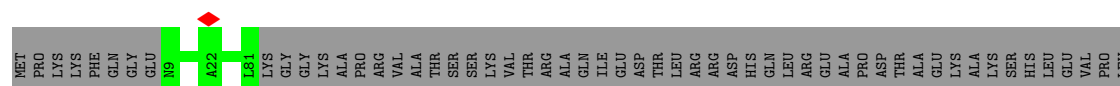
Chain CA:  90%



- Molecule 82: tRNA



● Molecule 83: Coiled-coil domain-containing protein 124



## 4 Experimental information

| Property                             | Value                                   | Source    |
|--------------------------------------|---|-----------|
| EM reconstruction method             | SINGLE PARTICLE                         | Depositor |
| Imposed symmetry                     | POINT, C1                               | Depositor |
| Number of particles used             | 84429                                   | Depositor |
| Resolution determination method      | FSC 0.143 CUT-OFF                       | Depositor |
| CTF correction method                | PHASE FLIPPING AND AMPLITUDE CORRECTION | Depositor |
| Microscope                           | FEI TITAN KRIOS                         | Depositor |
| Voltage (kV)                         | 300                                     | Depositor |
| Electron dose ( $e^-/\text{\AA}^2$ ) | 28                                      | Depositor |
| Minimum defocus (nm)                 | Not provided                            |           |
| Maximum defocus (nm)                 | Not provided                            |           |
| Magnification                        | Not provided                            |           |
| Image detector                       | FEI FALCON III (4k x 4k)                | Depositor |
| Maximum map value                    | 0.245                                   | Depositor |
| Minimum map value                    | -0.084                                  | Depositor |
| Average map value                    | 0.001                                   | Depositor |
| Map value standard deviation         | 0.011                                   | Depositor |
| Recommended contour level            | 0.005                                   | Depositor |
| Map size (Å)                         | 424.4, 424.4, 424.4                     | wwPDB     |
| Map dimensions                       | 400, 400, 400                           | wwPDB     |
| Map angles (°)                       | 90.0, 90.0, 90.0                        | wwPDB     |
| Pixel spacing (Å)                    | 1.061, 1.061, 1.061                     | Depositor |

## 5 Model quality i

### 5.1 Standard geometry i

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

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

| Mol | Chain | Bond lengths |                | Bond angles |                   |
|-----|-------|--------------|----------------|-------------|-------------------|
|     |       | RMSZ         | # Z  >5        | RMSZ        | # Z  >5           |
| 1   | L5    | 0.75         | 3/89570 (0.0%) | 1.06        | 467/139647 (0.3%) |
| 2   | L7    | 0.72         | 0/2861         | 0.93        | 2/4459 (0.0%)     |
| 3   | L8    | 0.72         | 0/3701         | 0.91        | 4/5766 (0.1%)     |
| 4   | LA    | 0.44         | 0/1936         | 0.60        | 1/2596 (0.0%)     |
| 5   | LB    | 0.40         | 0/3306         | 0.57        | 2/4424 (0.0%)     |
| 6   | LC    | 0.39         | 0/2981         | 0.54        | 0/4002            |
| 7   | LD    | 0.36         | 0/2428         | 0.50        | 0/3252            |
| 8   | LE    | 0.33         | 0/1942         | 0.55        | 0/2606            |
| 9   | LF    | 0.41         | 0/1905         | 0.53        | 0/2539            |
| 10  | LG    | 0.36         | 0/1960         | 0.53        | 0/2637            |
| 11  | LH    | 0.37         | 0/1537         | 0.52        | 0/2066            |
| 12  | LI    | 0.38         | 0/1673         | 0.51        | 0/2233            |
| 13  | LJ    | 0.34         | 0/1433         | 0.61        | 0/1915            |
| 14  | LL    | 0.35         | 0/1732         | 0.53        | 0/2315            |
| 15  | LM    | 0.36         | 0/1161         | 0.53        | 0/1554            |
| 16  | LN    | 0.43         | 0/1746         | 0.56        | 1/2338 (0.0%)     |
| 17  | LO    | 0.40         | 0/1682         | 0.48        | 0/2250            |
| 18  | LP    | 0.39         | 0/1268         | 0.50        | 0/1701            |
| 19  | LQ    | 0.40         | 0/1537         | 0.52        | 0/2052            |
| 20  | LR    | 0.34         | 0/1582         | 0.51        | 0/2091            |
| 21  | LS    | 0.40         | 0/1493         | 0.48        | 0/2003            |
| 22  | LT    | 0.40         | 0/1326         | 0.54        | 0/1770            |
| 23  | LU    | 0.34         | 0/839          | 0.58        | 0/1126            |
| 24  | LV    | 0.42         | 0/993          | 0.56        | 0/1332            |
| 25  | LW    | 0.36         | 0/1030         | 0.50        | 0/1364            |
| 26  | LX    | 0.36         | 0/1002         | 0.51        | 0/1345            |
| 27  | LY    | 0.37         | 0/1132         | 0.50        | 0/1504            |
| 28  | LZ    | 0.39         | 0/1130         | 0.51        | 0/1507            |
| 29  | La    | 0.39         | 0/1191         | 0.51        | 0/1591            |
| 30  | Lb    | 0.33         | 0/889          | 0.51        | 0/1175            |
| 31  | Lc    | 0.38         | 0/774          | 0.53        | 0/1038            |
| 32  | Ld    | 0.39         | 0/903          | 0.54        | 1/1216 (0.1%)     |

| Mol | Chain | Bond lengths |         | Bond angles |                  |
|-----|-------|--------------|---------|-------------|------------------|
|     |       | RMSZ         | # Z  >5 | RMSZ        | # Z  >5          |
| 33  | Le    | 0.41         | 0/1071  | 0.54        | 0/1429           |
| 34  | Lf    | 0.41         | 0/895   | 0.56        | 0/1198           |
| 35  | Lg    | 0.39         | 0/916   | 0.54        | 0/1220           |
| 36  | Lh    | 0.33         | 0/1023  | 0.49        | 0/1351           |
| 37  | Li    | 0.31         | 0/843   | 0.48        | 0/1115           |
| 38  | Lj    | 0.42         | 0/720   | 0.53        | 0/952            |
| 39  | Lk    | 0.36         | 0/575   | 0.54        | 0/761            |
| 40  | Ll    | 0.37         | 0/454   | 0.49        | 0/599            |
| 41  | Lm    | 0.36         | 0/435   | 0.52        | 0/575            |
| 42  | Ln    | 0.37         | 0/231   | 0.46        | 0/294            |
| 43  | Lo    | 0.39         | 0/855   | 0.49        | 0/1128           |
| 44  | Lp    | 0.40         | 0/718   | 0.51        | 0/953            |
| 45  | Lr    | 0.37         | 0/1017  | 0.52        | 0/1364           |
| 46  | Lz    | 0.31         | 0/1769  | 0.62        | 0/2371           |
| 47  | S2    | 0.61         | 0/41244 | 1.02        | 175/64263 (0.3%) |
| 48  | SA    | 0.35         | 0/1778  | 0.53        | 0/2416           |
| 49  | SB    | 0.33         | 0/1765  | 0.53        | 0/2362           |
| 50  | SD    | 0.32         | 0/1793  | 0.56        | 0/2414           |
| 51  | SE    | 0.33         | 0/2118  | 0.52        | 0/2849           |
| 52  | SF    | 0.31         | 0/1481  | 0.53        | 0/1988           |
| 53  | SH    | 0.33         | 0/1519  | 0.59        | 1/2033 (0.0%)    |
| 54  | SI    | 0.34         | 0/1715  | 0.55        | 0/2287           |
| 55  | SK    | 0.29         | 0/851   | 0.55        | 0/1147           |
| 56  | SL    | 0.37         | 0/1268  | 0.53        | 0/1696           |
| 57  | SP    | 0.29         | 0/1065  | 0.58        | 1/1423 (0.1%)    |
| 58  | SQ    | 0.31         | 0/1160  | 0.57        | 0/1553           |
| 59  | SR    | 0.29         | 0/1105  | 0.57        | 0/1484           |
| 60  | SS    | 0.28         | 0/1216  | 0.52        | 0/1628           |
| 61  | ST    | 0.28         | 0/1131  | 0.51        | 0/1515           |
| 62  | SU    | 0.28         | 0/831   | 0.54        | 0/1115           |
| 63  | SV    | 0.32         | 0/643   | 0.53        | 0/860            |
| 64  | SX    | 0.36         | 0/1116  | 0.57        | 0/1490           |
| 65  | Sa    | 0.36         | 0/836   | 0.56        | 0/1121           |
| 66  | Sc    | 0.31         | 0/508   | 0.59        | 0/680            |
| 67  | Sd    | 0.32         | 0/470   | 0.53        | 0/623            |
| 68  | Sg    | 0.28         | 0/2493  | 0.57        | 1/3394 (0.0%)    |
| 69  | SC    | 0.37         | 0/1762  | 0.55        | 0/2381           |
| 70  | SG    | 0.29         | 0/1946  | 0.51        | 0/2590           |
| 71  | SJ    | 0.33         | 0/1550  | 0.51        | 0/2069           |
| 72  | SM    | 0.29         | 0/950   | 0.62        | 0/1275           |
| 73  | SN    | 0.35         | 0/1232  | 0.48        | 0/1656           |
| 74  | SO    | 0.34         | 0/1062  | 0.55        | 0/1425           |
| 75  | SW    | 0.36         | 0/1051  | 0.51        | 0/1406           |

| Mol | Chain | Bond lengths |                 | Bond angles |                   |
|-----|-------|--------------|-----------------|-------------|-------------------|
|     |       | RMSZ         | # Z  >5         | RMSZ        | # Z  >5           |
| 76  | SY    | 0.32         | 0/1083          | 0.48        | 0/1438            |
| 77  | SZ    | 0.31         | 0/604           | 0.65        | 1/810 (0.1%)      |
| 78  | Sb    | 0.31         | 0/665           | 0.52        | 0/891             |
| 79  | Se    | 0.30         | 0/465           | 0.50        | 0/612             |
| 80  | Sf    | 0.28         | 0/560           | 0.59        | 0/745             |
| 81  | CA    | 0.32         | 0/2810          | 0.64        | 0/3780            |
| 82  | CC    | 0.43         | 0/1773          | 1.13        | 15/2759 (0.5%)    |
| 83  | CE    | 0.28         | 0/616           | 0.54        | 0/812             |
| All | All   | 0.59         | 3/238400 (0.0%) | 0.88        | 672/349714 (0.2%) |

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 |
|-----|-------|---------------------|---------------------|
| 4   | LA    | 0                   | 2                   |
| 5   | LB    | 0                   | 3                   |
| 11  | LH    | 0                   | 1                   |
| 13  | LJ    | 0                   | 1                   |
| 14  | LL    | 0                   | 1                   |
| 15  | LM    | 0                   | 2                   |
| 17  | LO    | 0                   | 2                   |
| 22  | LT    | 0                   | 1                   |
| 30  | Lb    | 0                   | 1                   |
| 34  | Lf    | 0                   | 2                   |
| 36  | Lh    | 0                   | 1                   |
| 38  | Lj    | 0                   | 1                   |
| 46  | Lz    | 0                   | 1                   |
| 49  | SB    | 0                   | 1                   |
| 50  | SD    | 0                   | 1                   |
| 52  | SF    | 0                   | 1                   |
| 53  | SH    | 0                   | 1                   |
| 57  | SP    | 0                   | 1                   |
| 58  | SQ    | 0                   | 1                   |
| 61  | ST    | 0                   | 1                   |
| 63  | SV    | 0                   | 1                   |
| 64  | SX    | 0                   | 2                   |
| 65  | Sa    | 0                   | 1                   |
| 77  | SZ    | 0                   | 1                   |
| All | All   | 0                   | 31                  |

All (3) bond length outliers are listed below:

| Mol | Chain | Res  | Type | Atoms | Z     | Observed(Å) | Ideal(Å) |
|-----|-------|------|------|-------|-------|-------------|----------|
| 1   | L5    | 1709 | C    | N3-C4 | -6.39 | 1.29        | 1.33     |
| 1   | L5    | 1761 | G    | C6-N1 | -5.18 | 1.35        | 1.39     |
| 1   | L5    | 1173 | G    | N9-C4 | -5.07 | 1.33        | 1.38     |

All (672) bond angle outliers are listed below:

| Mol | Chain | Res  | Type | Atoms     | Z      | Observed(°) | Ideal(°) |
|-----|-------|------|------|-----------|--------|-------------|----------|
| 47  | S2    | 1417 | C    | N3-C4-N4  | -24.05 | 101.17      | 118.00   |
| 47  | S2    | 1422 | G    | N1-C6-O6  | -20.08 | 107.85      | 119.90   |
| 47  | S2    | 1417 | C    | C5-C4-N4  | 18.43  | 133.10      | 120.20   |
| 47  | S2    | 1422 | G    | C5-C6-O6  | 17.25  | 138.95      | 128.60   |
| 1   | L5    | 1716 | G    | N1-C6-O6  | -15.48 | 110.61      | 119.90   |
| 47  | S2    | 1772 | C    | N3-C2-O2  | -14.72 | 111.59      | 121.90   |
| 47  | S2    | 1772 | C    | N1-C2-O2  | 14.47  | 127.58      | 118.90   |
| 1   | L5    | 1761 | G    | C5-C6-O6  | 13.35  | 136.61      | 128.60   |
| 82  | CC    | 27   | U    | N3-C2-O2  | -12.75 | 113.28      | 122.20   |
| 1   | L5    | 485  | C    | C2-N1-C1' | 12.64  | 132.70      | 118.80   |
| 47  | S2    | 293  | C    | N1-C2-O2  | 12.39  | 126.33      | 118.90   |
| 1   | L5    | 1761 | G    | N1-C6-O6  | -12.34 | 112.50      | 119.90   |
| 1   | L5    | 2710 | C    | C2-N1-C1' | 12.22  | 132.24      | 118.80   |
| 1   | L5    | 2710 | C    | N1-C2-O2  | 12.06  | 126.14      | 118.90   |
| 47  | S2    | 839  | C    | N1-C2-O2  | 12.05  | 126.13      | 118.90   |
| 1   | L5    | 1709 | C    | C5-C4-N4  | 11.95  | 128.57      | 120.20   |
| 47  | S2    | 883  | U    | N3-C2-O2  | -11.83 | 113.92      | 122.20   |
| 1   | L5    | 2019 | C    | N3-C2-O2  | -11.55 | 113.81      | 121.90   |
| 1   | L5    | 1709 | C    | N3-C4-N4  | -11.52 | 109.94      | 118.00   |
| 1   | L5    | 906  | C    | N3-C2-O2  | -11.39 | 113.93      | 121.90   |
| 1   | L5    | 985  | C    | N3-C2-O2  | -11.07 | 114.15      | 121.90   |
| 1   | L5    | 3948 | C    | C2-N1-C1' | 10.97  | 130.86      | 118.80   |
| 1   | L5    | 1173 | G    | N3-C4-N9  | -10.66 | 119.60      | 126.00   |
| 1   | L5    | 1709 | C    | N1-C2-O2  | 10.61  | 125.27      | 118.90   |
| 1   | L5    | 181  | C    | N1-C2-O2  | 10.49  | 125.19      | 118.90   |
| 1   | L5    | 1414 | C    | N3-C2-O2  | -10.20 | 114.76      | 121.90   |
| 47  | S2    | 293  | C    | C2-N1-C1' | 10.19  | 130.01      | 118.80   |
| 1   | L5    | 1709 | C    | N3-C2-O2  | -10.16 | 114.78      | 121.90   |
| 1   | L5    | 2019 | C    | N1-C2-O2  | 10.16  | 125.00      | 118.90   |
| 1   | L5    | 322  | C    | N3-C2-O2  | -10.06 | 114.86      | 121.90   |
| 82  | CC    | 44   | A    | N1-C6-N6  | -10.02 | 112.59      | 118.60   |
| 47  | S2    | 1453 | C    | C2-N1-C1' | 9.90   | 129.69      | 118.80   |
| 1   | L5    | 1709 | C    | C6-N1-C2  | -9.86  | 116.36      | 120.30   |
| 47  | S2    | 501  | C    | C2-N1-C1' | 9.85   | 129.63      | 118.80   |
| 1   | L5    | 969  | C    | N1-C2-O2  | 9.84   | 124.80      | 118.90   |
| 47  | S2    | 501  | C    | N1-C2-O2  | 9.79   | 124.78      | 118.90   |

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| Mol | Chain | Res  | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 47  | S2    | 322  | C    | N3-C2-O2   | -9.74 | 115.08      | 121.90   |
| 47  | S2    | 1453 | C    | N1-C2-O2   | 9.68  | 124.71      | 118.90   |
| 57  | SP    | 107  | ILE  | C-N-CA     | 9.66  | 145.85      | 121.70   |
| 1   | L5    | 485  | C    | C6-N1-C1'  | -9.65 | 109.22      | 120.80   |
| 47  | S2    | 839  | C    | N3-C2-O2   | -9.55 | 115.22      | 121.90   |
| 1   | L5    | 323  | C    | N3-C2-O2   | -9.53 | 115.23      | 121.90   |
| 47  | S2    | 1417 | C    | C4-C5-C6   | -9.49 | 112.66      | 117.40   |
| 1   | L5    | 1082 | C    | O4'-C1'-N1 | 9.38  | 115.70      | 108.20   |
| 1   | L5    | 655  | C    | N3-C2-O2   | -9.38 | 115.34      | 121.90   |
| 1   | L5    | 2505 | C    | N1-C2-O2   | 9.37  | 124.52      | 118.90   |
| 1   | L5    | 2710 | C    | N3-C2-O2   | -9.32 | 115.37      | 121.90   |
| 1   | L5    | 174  | C    | N3-C2-O2   | -9.32 | 115.38      | 121.90   |
| 1   | L5    | 1050 | C    | N3-C2-O2   | -9.29 | 115.40      | 121.90   |
| 47  | S2    | 1772 | C    | C6-N1-C2   | -9.26 | 116.60      | 120.30   |
| 1   | L5    | 4923 | C    | N3-C2-O2   | -9.23 | 115.44      | 121.90   |
| 47  | S2    | 49   | C    | N3-C2-O2   | -9.22 | 115.45      | 121.90   |
| 47  | S2    | 882  | U    | N1-C2-O2   | 9.15  | 129.20      | 122.80   |
| 1   | L5    | 1414 | C    | N1-C2-O2   | 9.00  | 124.30      | 118.90   |
| 1   | L5    | 969  | C    | C2-N1-C1'  | 8.93  | 128.63      | 118.80   |
| 47  | S2    | 293  | C    | N3-C2-O2   | -8.89 | 115.68      | 121.90   |
| 47  | S2    | 882  | U    | C2-N1-C1'  | 8.88  | 128.36      | 117.70   |
| 1   | L5    | 456  | C    | N3-C2-O2   | -8.84 | 115.71      | 121.90   |
| 1   | L5    | 753  | C    | N1-C2-O2   | 8.82  | 124.19      | 118.90   |
| 1   | L5    | 2710 | C    | C6-N1-C1'  | -8.79 | 110.25      | 120.80   |
| 1   | L5    | 234  | G    | N9-C4-C5   | -8.76 | 101.89      | 105.40   |
| 1   | L5    | 181  | C    | N3-C2-O2   | -8.76 | 115.77      | 121.90   |
| 1   | L5    | 4149 | C    | N3-C2-O2   | -8.72 | 115.80      | 121.90   |
| 1   | L5    | 459  | C    | N3-C2-O2   | -8.67 | 115.83      | 121.90   |
| 1   | L5    | 485  | C    | N1-C2-O2   | 8.63  | 124.08      | 118.90   |
| 1   | L5    | 986  | C    | C6-N1-C2   | -8.63 | 116.85      | 120.30   |
| 1   | L5    | 4138 | C    | N3-C2-O2   | -8.60 | 115.88      | 121.90   |
| 1   | L5    | 1762 | C    | C2-N1-C1'  | 8.59  | 128.25      | 118.80   |
| 1   | L5    | 1762 | C    | N1-C2-O2   | 8.58  | 124.05      | 118.90   |
| 47  | S2    | 1417 | C    | N3-C4-C5   | 8.57  | 125.33      | 121.90   |
| 1   | L5    | 3948 | C    | N1-C2-O2   | 8.54  | 124.02      | 118.90   |
| 1   | L5    | 260  | C    | N3-C2-O2   | -8.53 | 115.93      | 121.90   |
| 1   | L5    | 234  | G    | O4'-C1'-N9 | 8.53  | 115.02      | 108.20   |
| 1   | L5    | 181  | C    | C2-N1-C1'  | 8.51  | 128.16      | 118.80   |
| 1   | L5    | 1447 | C    | N3-C2-O2   | -8.50 | 115.95      | 121.90   |
| 1   | L5    | 985  | C    | N1-C2-O2   | 8.44  | 123.96      | 118.90   |
| 1   | L5    | 100  | C    | C2-N1-C1'  | 8.39  | 128.03      | 118.80   |
| 47  | S2    | 118  | C    | N1-C2-O2   | 8.37  | 123.92      | 118.90   |

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| Mol | Chain | Res  | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 1   | L5    | 3771 | C    | N3-C2-O2   | -8.35 | 116.05      | 121.90   |
| 1   | L5    | 4746 | C    | C2-N1-C1'  | 8.34  | 127.98      | 118.80   |
| 1   | L5    | 4926 | C    | N1-C2-O2   | 8.29  | 123.87      | 118.90   |
| 47  | S2    | 1772 | C    | C2-N1-C1'  | 8.26  | 127.89      | 118.80   |
| 1   | L5    | 4921 | C    | N3-C2-O2   | -8.26 | 116.12      | 121.90   |
| 47  | S2    | 356  | C    | C2-N1-C1'  | 8.25  | 127.88      | 118.80   |
| 47  | S2    | 1139 | C    | N1-C2-O2   | 8.25  | 123.85      | 118.90   |
| 1   | L5    | 515  | C    | C2-N1-C1'  | 8.25  | 127.87      | 118.80   |
| 1   | L5    | 3647 | A    | C6-N1-C2   | -8.23 | 113.67      | 118.60   |
| 1   | L5    | 4101 | C    | N3-C4-C5   | 8.22  | 125.19      | 121.90   |
| 47  | S2    | 1139 | C    | N3-C2-O2   | -8.20 | 116.16      | 121.90   |
| 1   | L5    | 4928 | C    | C2-N1-C1'  | 8.20  | 127.82      | 118.80   |
| 1   | L5    | 417  | G    | O4'-C1'-N9 | 8.15  | 114.72      | 108.20   |
| 1   | L5    | 1367 | C    | N1-C2-O2   | 8.13  | 123.78      | 118.90   |
| 1   | L5    | 516  | C    | N1-C2-O2   | 8.12  | 123.77      | 118.90   |
| 1   | L5    | 515  | C    | N1-C2-O2   | 8.12  | 123.77      | 118.90   |
| 1   | L5    | 3948 | C    | C6-N1-C1'  | -8.11 | 111.07      | 120.80   |
| 47  | S2    | 1139 | C    | C2-N1-C1'  | 8.10  | 127.71      | 118.80   |
| 1   | L5    | 209  | U    | C2-N1-C1'  | 8.07  | 127.39      | 117.70   |
| 1   | L5    | 234  | G    | C8-N9-C1'  | -8.06 | 116.52      | 127.00   |
| 1   | L5    | 969  | C    | N3-C2-O2   | -8.06 | 116.26      | 121.90   |
| 47  | S2    | 688  | U    | N3-C2-O2   | -8.06 | 116.56      | 122.20   |
| 1   | L5    | 234  | G    | C4-C5-N7   | 8.04  | 114.01      | 110.80   |
| 1   | L5    | 1367 | C    | C2-N1-C1'  | 8.03  | 127.63      | 118.80   |
| 1   | L5    | 1173 | G    | N3-C4-C5   | 8.02  | 132.61      | 128.60   |
| 47  | S2    | 877  | C    | N3-C2-O2   | -8.01 | 116.29      | 121.90   |
| 47  | S2    | 356  | C    | N1-C2-O2   | 7.99  | 123.69      | 118.90   |
| 47  | S2    | 501  | C    | N3-C2-O2   | -7.98 | 116.31      | 121.90   |
| 1   | L5    | 456  | C    | O4'-C1'-N1 | 7.98  | 114.58      | 108.20   |
| 1   | L5    | 1709 | C    | C2-N1-C1'  | 7.97  | 127.56      | 118.80   |
| 1   | L5    | 1716 | G    | C5-C6-N1   | 7.97  | 115.48      | 111.50   |
| 1   | L5    | 234  | G    | C6-C5-N7   | -7.96 | 125.62      | 130.40   |
| 1   | L5    | 3647 | A    | C5-C6-N1   | 7.95  | 121.68      | 117.70   |
| 1   | L5    | 4101 | C    | N3-C4-N4   | -7.90 | 112.47      | 118.00   |
| 47  | S2    | 1416 | C    | N3-C2-O2   | -7.86 | 116.40      | 121.90   |
| 1   | L5    | 1252 | C    | N3-C2-O2   | -7.83 | 116.42      | 121.90   |
| 1   | L5    | 4709 | U    | C2-N1-C1'  | 7.82  | 127.08      | 117.70   |
| 1   | L5    | 4926 | C    | C2-N1-C1'  | 7.79  | 127.38      | 118.80   |
| 1   | L5    | 1082 | C    | N3-C2-O2   | -7.79 | 116.45      | 121.90   |
| 1   | L5    | 100  | C    | N3-C2-O2   | -7.79 | 116.45      | 121.90   |
| 47  | S2    | 118  | C    | C2-N1-C1'  | 7.78  | 127.36      | 118.80   |
| 1   | L5    | 2303 | C    | N1-C2-O2   | 7.75  | 123.55      | 118.90   |

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| Mol | Chain | Res  | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 1   | L5    | 2627 | C    | C2-N1-C1'  | 7.73  | 127.30      | 118.80   |
| 1   | L5    | 907  | C    | N3-C2-O2   | -7.67 | 116.53      | 121.90   |
| 1   | L5    | 490  | C    | C6-N1-C2   | -7.66 | 117.24      | 120.30   |
| 1   | L5    | 1173 | G    | C4-N9-C1'  | -7.65 | 116.56      | 126.50   |
| 1   | L5    | 753  | C    | N3-C2-O2   | -7.60 | 116.58      | 121.90   |
| 82  | CC    | 44   | A    | C5-C6-N6   | 7.60  | 129.78      | 123.70   |
| 1   | L5    | 4355 | G    | C5-C6-O6   | 7.58  | 133.15      | 128.60   |
| 1   | L5    | 472  | C    | N1-C2-O2   | 7.58  | 123.45      | 118.90   |
| 1   | L5    | 473  | C    | N3-C2-O2   | -7.55 | 116.61      | 121.90   |
| 47  | S2    | 293  | C    | C6-N1-C1'  | -7.54 | 111.75      | 120.80   |
| 1   | L5    | 1969 | G    | N1-C2-N2   | -7.54 | 109.42      | 116.20   |
| 1   | L5    | 4356 | G    | N3-C4-N9   | -7.53 | 121.48      | 126.00   |
| 1   | L5    | 4112 | C    | N3-C2-O2   | -7.52 | 116.63      | 121.90   |
| 1   | L5    | 516  | C    | N3-C2-O2   | -7.52 | 116.64      | 121.90   |
| 1   | L5    | 1216 | C    | C2-N1-C1'  | 7.48  | 127.03      | 118.80   |
| 47  | S2    | 688  | U    | N1-C2-O2   | 7.45  | 128.01      | 122.80   |
| 1   | L5    | 4928 | C    | N1-C2-O2   | 7.42  | 123.35      | 118.90   |
| 47  | S2    | 1520 | G    | C4-N9-C1'  | 7.40  | 136.12      | 126.50   |
| 1   | L5    | 1173 | G    | C8-N9-C1'  | 7.40  | 136.62      | 127.00   |
| 47  | S2    | 1309 | C    | C2-N1-C1'  | 7.39  | 126.93      | 118.80   |
| 1   | L5    | 1050 | C    | N1-C2-O2   | 7.39  | 123.34      | 118.90   |
| 1   | L5    | 3757 | G    | O4'-C1'-N9 | 7.39  | 114.11      | 108.20   |
| 47  | S2    | 1022 | U    | C2-N1-C1'  | 7.38  | 126.56      | 117.70   |
| 47  | S2    | 882  | U    | N3-C2-O2   | -7.35 | 117.05      | 122.20   |
| 1   | L5    | 4355 | G    | N9-C4-C5   | 7.35  | 108.34      | 105.40   |
| 1   | L5    | 489  | C    | C2-N1-C1'  | 7.31  | 126.84      | 118.80   |
| 1   | L5    | 175  | C    | N3-C2-O2   | -7.31 | 116.79      | 121.90   |
| 47  | S2    | 883  | U    | C6-N1-C2   | -7.29 | 116.63      | 121.00   |
| 1   | L5    | 2505 | C    | N3-C2-O2   | -7.29 | 116.80      | 121.90   |
| 47  | S2    | 688  | U    | C2-N1-C1'  | 7.25  | 126.39      | 117.70   |
| 1   | L5    | 4303 | C    | C2-N1-C1'  | 7.22  | 126.75      | 118.80   |
| 1   | L5    | 1405 | C    | N1-C2-O2   | 7.21  | 123.23      | 118.90   |
| 1   | L5    | 1968 | G    | N3-C4-N9   | 7.21  | 130.33      | 126.00   |
| 1   | L5    | 4355 | G    | N1-C6-O6   | -7.21 | 115.57      | 119.90   |
| 1   | L5    | 100  | C    | N1-C2-O2   | 7.21  | 123.22      | 118.90   |
| 82  | CC    | 27   | U    | N1-C2-O2   | 7.20  | 127.84      | 122.80   |
| 47  | S2    | 527  | C    | N3-C2-O2   | -7.17 | 116.88      | 121.90   |
| 1   | L5    | 234  | G    | C4-N9-C1'  | 7.16  | 135.81      | 126.50   |
| 47  | S2    | 1453 | C    | N3-C2-O2   | -7.16 | 116.89      | 121.90   |
| 1   | L5    | 4356 | G    | C5-C6-O6   | 7.15  | 132.89      | 128.60   |
| 1   | L5    | 906  | C    | N1-C2-O2   | 7.11  | 123.16      | 118.90   |
| 1   | L5    | 1193 | C    | C2-N1-C1'  | 7.10  | 126.61      | 118.80   |

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| Mol | Chain | Res  | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 1   | L5    | 1969 | G    | C2-N3-C4   | -7.09 | 108.36      | 111.90   |
| 1   | L5    | 1367 | C    | N3-C2-O2   | -7.08 | 116.95      | 121.90   |
| 1   | L5    | 1772 | C    | N3-C4-N4   | -7.07 | 113.05      | 118.00   |
| 1   | L5    | 3775 | A    | O4'-C1'-N9 | 7.07  | 113.86      | 108.20   |
| 47  | S2    | 1453 | C    | C6-N1-C1'  | -7.07 | 112.32      | 120.80   |
| 1   | L5    | 673  | C    | C2-N1-C1'  | 7.05  | 126.56      | 118.80   |
| 1   | L5    | 907  | C    | C6-N1-C2   | -7.02 | 117.49      | 120.30   |
| 47  | S2    | 883  | U    | N1-C2-O2   | 7.02  | 127.71      | 122.80   |
| 1   | L5    | 1968 | G    | C4-N9-C1'  | 7.00  | 135.60      | 126.50   |
| 1   | L5    | 4557 | U    | N3-C2-O2   | -7.00 | 117.30      | 122.20   |
| 1   | L5    | 2710 | C    | C6-N1-C2   | -6.98 | 117.51      | 120.30   |
| 1   | L5    | 986  | C    | N3-C2-O2   | -6.96 | 117.03      | 121.90   |
| 1   | L5    | 4775 | C    | N1-C2-O2   | 6.92  | 123.05      | 118.90   |
| 1   | L5    | 472  | C    | C2-N1-C1'  | 6.89  | 126.38      | 118.80   |
| 1   | L5    | 2257 | C    | C2-N1-C1'  | 6.89  | 126.38      | 118.80   |
| 1   | L5    | 985  | C    | C6-N1-C2   | -6.89 | 117.55      | 120.30   |
| 1   | L5    | 2410 | C    | C2-N1-C1'  | 6.88  | 126.37      | 118.80   |
| 47  | S2    | 570  | C    | N1-C2-O2   | 6.88  | 123.03      | 118.90   |
| 1   | L5    | 4557 | U    | N1-C2-O2   | 6.87  | 127.61      | 122.80   |
| 1   | L5    | 490  | C    | N3-C2-O2   | -6.85 | 117.11      | 121.90   |
| 1   | L5    | 77   | U    | N3-C2-O2   | -6.84 | 117.41      | 122.20   |
| 1   | L5    | 1173 | G    | C6-C5-N7   | 6.83  | 134.50      | 130.40   |
| 1   | L5    | 1716 | G    | C5-C6-O6   | 6.82  | 132.69      | 128.60   |
| 1   | L5    | 1241 | C    | N1-C2-O2   | 6.82  | 122.99      | 118.90   |
| 47  | S2    | 883  | U    | C2-N1-C1'  | 6.82  | 125.88      | 117.70   |
| 82  | CC    | 34   | U    | C2-N1-C1'  | 6.82  | 125.88      | 117.70   |
| 1   | L5    | 4926 | C    | N3-C2-O2   | -6.81 | 117.13      | 121.90   |
| 1   | L5    | 3775 | A    | N7-C8-N9   | 6.81  | 117.20      | 113.80   |
| 1   | L5    | 2528 | G    | C4-N9-C1'  | 6.81  | 135.35      | 126.50   |
| 47  | S2    | 1520 | G    | N3-C4-N9   | 6.81  | 130.08      | 126.00   |
| 47  | S2    | 501  | C    | C6-N1-C2   | -6.79 | 117.58      | 120.30   |
| 47  | S2    | 118  | C    | N3-C2-O2   | -6.78 | 117.15      | 121.90   |
| 1   | L5    | 1082 | C    | OP1-P-O3'  | 6.77  | 120.09      | 105.20   |
| 47  | S2    | 1273 | C    | C6-N1-C2   | -6.76 | 117.60      | 120.30   |
| 1   | L5    | 3909 | C    | C6-N1-C2   | -6.74 | 117.61      | 120.30   |
| 1   | L5    | 2005 | G    | C4-N9-C1'  | 6.72  | 135.24      | 126.50   |
| 47  | S2    | 501  | C    | C6-N1-C1'  | -6.72 | 112.73      | 120.80   |
| 1   | L5    | 1714 | C    | N1-C2-O2   | 6.71  | 122.93      | 118.90   |
| 1   | L5    | 4557 | U    | C2-N1-C1'  | 6.70  | 125.74      | 117.70   |
| 47  | S2    | 1520 | G    | C8-N9-C1'  | -6.70 | 118.29      | 127.00   |
| 1   | L5    | 969  | C    | C6-N1-C2   | -6.67 | 117.63      | 120.30   |
| 47  | S2    | 356  | C    | N3-C2-O2   | -6.67 | 117.23      | 121.90   |

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| Mol | Chain | Res  | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 1   | L5    | 1217 | G    | N3-C4-N9   | 6.66  | 130.00      | 126.00   |
| 1   | L5    | 925  | C    | C6-N1-C2   | -6.64 | 117.64      | 120.30   |
| 1   | L5    | 654  | C    | N1-C2-O2   | 6.64  | 122.88      | 118.90   |
| 1   | L5    | 1082 | C    | P-O3'-C3'  | 6.63  | 127.66      | 119.70   |
| 1   | L5    | 4356 | G    | N9-C4-C5   | 6.62  | 108.05      | 105.40   |
| 1   | L5    | 2260 | C    | N1-C2-O2   | 6.61  | 122.87      | 118.90   |
| 1   | L5    | 1762 | C    | N3-C2-O2   | -6.61 | 117.27      | 121.90   |
| 1   | L5    | 2260 | C    | C2-N1-C1'  | 6.60  | 126.06      | 118.80   |
| 1   | L5    | 4923 | C    | N1-C2-O2   | 6.60  | 122.86      | 118.90   |
| 1   | L5    | 1216 | C    | N1-C2-O2   | 6.58  | 122.85      | 118.90   |
| 1   | L5    | 4355 | G    | N3-C4-N9   | -6.58 | 122.05      | 126.00   |
| 1   | L5    | 1968 | G    | C8-N9-C1'  | -6.57 | 118.46      | 127.00   |
| 82  | CC    | 27   | U    | N1-C2-N3   | 6.57  | 118.84      | 114.90   |
| 1   | L5    | 4149 | C    | C6-N1-C2   | -6.56 | 117.67      | 120.30   |
| 1   | L5    | 925  | C    | N1-C2-O2   | 6.56  | 122.84      | 118.90   |
| 47  | S2    | 570  | C    | C2-N1-C1'  | 6.56  | 126.02      | 118.80   |
| 1   | L5    | 1241 | C    | C2-N1-C1'  | 6.56  | 126.01      | 118.80   |
| 1   | L5    | 4356 | G    | N3-C2-N2   | -6.55 | 115.31      | 119.90   |
| 47  | S2    | 322  | C    | N1-C2-O2   | 6.54  | 122.83      | 118.90   |
| 47  | S2    | 872  | A    | O4'-C1'-N9 | 6.54  | 113.43      | 108.20   |
| 1   | L5    | 4746 | C    | C6-N1-C1'  | -6.53 | 112.96      | 120.80   |
| 1   | L5    | 4303 | C    | N1-C2-O2   | 6.53  | 122.82      | 118.90   |
| 1   | L5    | 323  | C    | N3-C4-N4   | -6.53 | 113.43      | 118.00   |
| 1   | L5    | 3778 | U    | N1-C2-O2   | 6.52  | 127.36      | 122.80   |
| 47  | S2    | 882  | U    | C5-C6-N1   | 6.51  | 125.95      | 122.70   |
| 47  | S2    | 841  | G    | N1-C6-O6   | -6.50 | 116.00      | 119.90   |
| 47  | S2    | 943  | U    | C2-N1-C1'  | 6.50  | 125.50      | 117.70   |
| 1   | L5    | 4303 | C    | N3-C2-O2   | -6.49 | 117.36      | 121.90   |
| 1   | L5    | 459  | C    | C6-N1-C2   | -6.48 | 117.71      | 120.30   |
| 1   | L5    | 100  | C    | C6-N1-C2   | -6.46 | 117.72      | 120.30   |
| 1   | L5    | 4097 | G    | C5-C6-O6   | 6.43  | 132.46      | 128.60   |
| 1   | L5    | 2627 | C    | N1-C2-O2   | 6.43  | 122.76      | 118.90   |
| 1   | L5    | 2303 | C    | N3-C2-O2   | -6.43 | 117.40      | 121.90   |
| 47  | S2    | 877  | C    | C6-N1-C2   | -6.43 | 117.73      | 120.30   |
| 1   | L5    | 2021 | G    | N3-C4-N9   | 6.42  | 129.85      | 126.00   |
| 1   | L5    | 925  | C    | N3-C2-O2   | -6.41 | 117.41      | 121.90   |
| 47  | S2    | 1273 | C    | N3-C2-O2   | -6.41 | 117.41      | 121.90   |
| 1   | L5    | 4929 | C    | N3-C2-O2   | -6.41 | 117.42      | 121.90   |
| 1   | L5    | 753  | C    | C2-N1-C1'  | 6.39  | 125.83      | 118.80   |
| 1   | L5    | 1251 | C    | N1-C2-O2   | 6.39  | 122.73      | 118.90   |
| 47  | S2    | 548  | C    | C2-N1-C1'  | 6.38  | 125.82      | 118.80   |
| 1   | L5    | 1049 | C    | N1-C2-O2   | 6.38  | 122.73      | 118.90   |

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| Mol | Chain | Res  | Type | Atoms     | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-----------|-------|-------------|----------|
| 1   | L5    | 2505 | C    | C2-N1-C1' | 6.37  | 125.81      | 118.80   |
| 47  | S2    | 1139 | C    | C6-N1-C2  | -6.37 | 117.75      | 120.30   |
| 1   | L5    | 453  | G    | N3-C4-C5  | -6.36 | 125.42      | 128.60   |
| 1   | L5    | 1808 | C    | N3-C2-O2  | -6.35 | 117.45      | 121.90   |
| 3   | L8    | 64   | U    | N3-C2-O2  | -6.35 | 117.76      | 122.20   |
| 1   | L5    | 4138 | C    | C6-N1-C2  | -6.34 | 117.76      | 120.30   |
| 3   | L8    | 84   | A    | O5'-P-OP2 | -6.34 | 100.00      | 105.70   |
| 82  | CC    | 55   | C    | N1-C2-O2  | 6.33  | 122.70      | 118.90   |
| 1   | L5    | 4742 | G    | C8-N9-C1' | 6.33  | 135.23      | 127.00   |
| 1   | L5    | 129  | C    | N3-C2-O2  | -6.33 | 117.47      | 121.90   |
| 1   | L5    | 130  | C    | N3-C2-O2  | -6.32 | 117.48      | 121.90   |
| 1   | L5    | 4147 | G    | C5-C6-O6  | 6.31  | 132.39      | 128.60   |
| 1   | L5    | 2262 | G    | C4-N9-C1' | 6.31  | 134.70      | 126.50   |
| 1   | L5    | 4355 | G    | C4-C5-N7  | -6.31 | 108.28      | 110.80   |
| 1   | L5    | 1762 | C    | C6-N1-C1' | -6.31 | 113.23      | 120.80   |
| 1   | L5    | 3778 | U    | N3-C2-O2  | -6.30 | 117.79      | 122.20   |
| 47  | S2    | 179  | C    | N1-C2-O2  | 6.29  | 122.67      | 118.90   |
| 47  | S2    | 1591 | C    | N1-C2-O2  | 6.28  | 122.67      | 118.90   |
| 47  | S2    | 1417 | C    | N1-C2-N3  | -6.28 | 114.80      | 119.20   |
| 1   | L5    | 3948 | C    | C5-C6-N1  | 6.28  | 124.14      | 121.00   |
| 1   | L5    | 1447 | C    | C6-N1-C2  | -6.28 | 117.79      | 120.30   |
| 1   | L5    | 1772 | C    | N3-C4-C5  | 6.27  | 124.41      | 121.90   |
| 47  | S2    | 688  | U    | P-O3'-C3' | 6.26  | 127.21      | 119.70   |
| 47  | S2    | 1389 | C    | C2-N1-C1' | 6.25  | 125.67      | 118.80   |
| 1   | L5    | 2760 | G    | P-O3'-C3' | 6.24  | 127.19      | 119.70   |
| 1   | L5    | 4773 | C    | N1-C2-O2  | 6.24  | 122.64      | 118.90   |
| 1   | L5    | 4112 | C    | N1-C2-O2  | 6.23  | 122.64      | 118.90   |
| 1   | L5    | 3772 | U    | C2-N1-C1' | 6.21  | 125.15      | 117.70   |
| 1   | L5    | 504  | G    | C4-N9-C1' | 6.21  | 134.57      | 126.50   |
| 1   | L5    | 906  | C    | C6-N1-C2  | -6.20 | 117.82      | 120.30   |
| 1   | L5    | 1327 | C    | C5-C6-N1  | 6.20  | 124.10      | 121.00   |
| 1   | L5    | 2257 | C    | N1-C2-O2  | 6.20  | 122.62      | 118.90   |
| 5   | LB    | 17   | LEU  | CA-CB-CG  | 6.20  | 129.55      | 115.30   |
| 1   | L5    | 234  | G    | N3-C2-N2  | 6.19  | 124.23      | 119.90   |
| 47  | S2    | 168  | C    | N1-C2-O2  | 6.18  | 122.61      | 118.90   |
| 47  | S2    | 1453 | C    | C5-C6-N1  | 6.18  | 124.09      | 121.00   |
| 1   | L5    | 209  | U    | C6-N1-C1' | -6.16 | 112.58      | 121.20   |
| 1   | L5    | 2096 | G    | C4-N9-C1' | 6.15  | 134.50      | 126.50   |
| 47  | S2    | 1415 | C    | N1-C2-O2  | 6.15  | 122.59      | 118.90   |
| 1   | L5    | 485  | C    | C5-C6-N1  | 6.15  | 124.07      | 121.00   |
| 1   | L5    | 453  | G    | N3-C4-N9  | 6.15  | 129.69      | 126.00   |
| 1   | L5    | 4742 | G    | C4-N9-C1' | -6.14 | 118.52      | 126.50   |

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| Mol | Chain | Res  | Type | Atoms     | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-----------|-------|-------------|----------|
| 47  | S2    | 909  | G    | N3-C4-N9  | 6.12  | 129.68      | 126.00   |
| 1   | L5    | 738  | C    | N1-C2-O2  | 6.12  | 122.57      | 118.90   |
| 1   | L5    | 914  | U    | P-O3'-C3' | 6.11  | 127.03      | 119.70   |
| 1   | L5    | 4147 | G    | N1-C6-O6  | -6.11 | 116.23      | 119.90   |
| 1   | L5    | 738  | C    | C2-N1-C1' | 6.10  | 125.51      | 118.80   |
| 1   | L5    | 1772 | C    | C5-C6-N1  | 6.09  | 124.05      | 121.00   |
| 1   | L5    | 1417 | C    | C2-N1-C1' | 6.09  | 125.50      | 118.80   |
| 47  | S2    | 478  | G    | C5-C6-O6  | 6.09  | 132.25      | 128.60   |
| 47  | S2    | 1078 | C    | C2-N1-C1' | 6.08  | 125.49      | 118.80   |
| 47  | S2    | 1272 | C    | N1-C2-O2  | 6.08  | 122.55      | 118.90   |
| 1   | L5    | 2494 | U    | N1-C2-O2  | 6.08  | 127.06      | 122.80   |
| 47  | S2    | 478  | G    | N3-C4-N9  | -6.07 | 122.36      | 126.00   |
| 1   | L5    | 2096 | G    | N3-C4-N9  | 6.07  | 129.64      | 126.00   |
| 1   | L5    | 4887 | C    | N1-C2-O2  | 6.07  | 122.54      | 118.90   |
| 1   | L5    | 515  | C    | C6-N1-C1' | -6.07 | 113.52      | 120.80   |
| 47  | S2    | 1314 | U    | C2-N1-C1' | 6.06  | 124.97      | 117.70   |
| 1   | L5    | 2560 | C    | C2-N1-C1' | 6.06  | 125.47      | 118.80   |
| 1   | L5    | 1217 | G    | C4-N9-C1' | 6.06  | 134.38      | 126.50   |
| 47  | S2    | 1261 | C    | C2-N1-C1' | 6.06  | 125.47      | 118.80   |
| 1   | L5    | 2528 | G    | N3-C4-N9  | 6.06  | 129.63      | 126.00   |
| 47  | S2    | 557  | U    | C2-N3-C4  | -6.05 | 123.37      | 127.00   |
| 1   | L5    | 4682 | U    | N3-C2-O2  | -6.05 | 117.97      | 122.20   |
| 1   | L5    | 2710 | C    | C5-C6-N1  | 6.05  | 124.02      | 121.00   |
| 1   | L5    | 181  | C    | C6-N1-C2  | -6.03 | 117.89      | 120.30   |
| 1   | L5    | 262  | G    | N1-C6-O6  | -6.02 | 116.29      | 119.90   |
| 1   | L5    | 129  | C    | C6-N1-C2  | -6.02 | 117.89      | 120.30   |
| 1   | L5    | 904  | C    | N1-C2-O2  | 6.01  | 122.51      | 118.90   |
| 1   | L5    | 234  | G    | N3-C4-N9  | 6.01  | 129.61      | 126.00   |
| 47  | S2    | 178  | C    | N1-C2-O2  | 6.01  | 122.51      | 118.90   |
| 1   | L5    | 2528 | G    | C8-N9-C1' | -6.00 | 119.21      | 127.00   |
| 1   | L5    | 4758 | U    | C2-N1-C1' | 5.99  | 124.89      | 117.70   |
| 1   | L5    | 489  | C    | N1-C2-O2  | 5.98  | 122.49      | 118.90   |
| 1   | L5    | 969  | C    | C6-N1-C1' | -5.98 | 113.62      | 120.80   |
| 47  | S2    | 1022 | U    | N1-C2-O2  | 5.98  | 126.98      | 122.80   |
| 1   | L5    | 2675 | G    | P-O3'-C3' | 5.97  | 126.86      | 119.70   |
| 1   | L5    | 4040 | C    | N1-C2-O2  | 5.97  | 122.48      | 118.90   |
| 1   | L5    | 1807 | C    | N1-C2-O2  | 5.96  | 122.48      | 118.90   |
| 1   | L5    | 1173 | G    | N9-C4-C5  | 5.96  | 107.78      | 105.40   |
| 1   | L5    | 1217 | G    | C8-N9-C1' | -5.96 | 119.25      | 127.00   |
| 1   | L5    | 4775 | C    | N3-C2-O2  | -5.96 | 117.73      | 121.90   |
| 1   | L5    | 2900 | U    | C2-N1-C1' | 5.95  | 124.84      | 117.70   |
| 1   | L5    | 1182 | C    | N1-C2-O2  | 5.95  | 122.47      | 118.90   |

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| Mol | Chain | Res  | Type | Atoms     | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-----------|-------|-------------|----------|
| 1   | L5    | 1188 | C    | C6-N1-C2  | -5.95 | 117.92      | 120.30   |
| 1   | L5    | 4040 | C    | N3-C2-O2  | -5.95 | 117.74      | 121.90   |
| 47  | S2    | 1416 | C    | C6-N1-C2  | -5.95 | 117.92      | 120.30   |
| 1   | L5    | 3584 | C    | N1-C2-O2  | 5.94  | 122.47      | 118.90   |
| 1   | L5    | 155  | C    | N3-C2-O2  | -5.94 | 117.74      | 121.90   |
| 1   | L5    | 453  | G    | C4-N9-C1' | 5.93  | 134.21      | 126.50   |
| 1   | L5    | 115  | C    | C2-N1-C1' | 5.93  | 125.32      | 118.80   |
| 1   | L5    | 4229 | U    | N3-C2-O2  | -5.92 | 118.06      | 122.20   |
| 47  | S2    | 427  | U    | C2-N1-C1' | 5.92  | 124.80      | 117.70   |
| 1   | L5    | 4928 | C    | N3-C2-O2  | -5.91 | 117.76      | 121.90   |
| 1   | L5    | 1216 | C    | N3-C2-O2  | -5.91 | 117.76      | 121.90   |
| 47  | S2    | 329  | G    | N1-C2-N2  | -5.91 | 110.88      | 116.20   |
| 82  | CC    | 34   | U    | N3-C2-O2  | -5.91 | 118.06      | 122.20   |
| 47  | S2    | 1309 | C    | C5-C6-N1  | 5.91  | 123.95      | 121.00   |
| 1   | L5    | 654  | C    | C2-N1-C1' | 5.91  | 125.30      | 118.80   |
| 47  | S2    | 130  | G    | C4-N9-C1' | 5.90  | 134.17      | 126.50   |
| 47  | S2    | 1016 | U    | N1-C2-O2  | 5.90  | 126.93      | 122.80   |
| 1   | L5    | 473  | C    | C6-N1-C2  | -5.90 | 117.94      | 120.30   |
| 1   | L5    | 4682 | U    | N1-C2-O2  | 5.89  | 126.93      | 122.80   |
| 82  | CC    | 35   | U    | P-O3'-C3' | 5.88  | 126.75      | 119.70   |
| 1   | L5    | 994  | G    | N3-C2-N2  | 5.87  | 124.01      | 119.90   |
| 1   | L5    | 234  | G    | N1-C2-N2  | -5.86 | 110.93      | 116.20   |
| 1   | L5    | 4926 | C    | C6-N1-C2  | -5.86 | 117.96      | 120.30   |
| 1   | L5    | 4913 | G    | P-O3'-C3' | 5.85  | 126.72      | 119.70   |
| 47  | S2    | 882  | U    | C6-N1-C1' | -5.85 | 113.01      | 121.20   |
| 1   | L5    | 2262 | G    | N3-C4-C5  | -5.84 | 125.68      | 128.60   |
| 47  | S2    | 1271 | C    | C2-N1-C1' | 5.84  | 125.22      | 118.80   |
| 82  | CC    | 74   | C    | C6-N1-C2  | -5.84 | 117.97      | 120.30   |
| 1   | L5    | 1182 | C    | C2-N1-C1' | 5.83  | 125.21      | 118.80   |
| 47  | S2    | 1016 | U    | N3-C2-O2  | -5.83 | 118.12      | 122.20   |
| 1   | L5    | 2099 | G    | C5-C6-O6  | 5.82  | 132.09      | 128.60   |
| 1   | L5    | 2494 | U    | N3-C2-O2  | -5.82 | 118.13      | 122.20   |
| 47  | S2    | 356  | C    | C6-N1-C1' | -5.81 | 113.83      | 120.80   |
| 47  | S2    | 943  | U    | C5-C4-O4  | -5.80 | 122.42      | 125.90   |
| 1   | L5    | 323  | C    | C5-C4-N4  | 5.80  | 124.26      | 120.20   |
| 1   | L5    | 181  | C    | C6-N1-C1' | -5.80 | 113.84      | 120.80   |
| 1   | L5    | 994  | G    | N1-C2-N2  | -5.79 | 110.98      | 116.20   |
| 47  | S2    | 1453 | C    | C6-N1-C2  | -5.79 | 117.98      | 120.30   |
| 47  | S2    | 814  | U    | N3-C2-O2  | -5.79 | 118.15      | 122.20   |
| 1   | L5    | 259  | C    | N1-C2-O2  | 5.79  | 122.37      | 118.90   |
| 1   | L5    | 1245 | C    | C2-N1-C1' | 5.79  | 125.16      | 118.80   |
| 1   | L5    | 904  | C    | N3-C2-O2  | -5.78 | 117.85      | 121.90   |

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| Mol | Chain | Res  | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 1   | L5    | 489  | C    | C6-N1-C1'  | -5.77 | 113.87      | 120.80   |
| 1   | L5    | 4709 | U    | C6-N1-C1'  | -5.77 | 113.12      | 121.20   |
| 47  | S2    | 930  | C    | N1-C2-O2   | 5.76  | 122.36      | 118.90   |
| 1   | L5    | 4742 | G    | N3-C4-N9   | -5.76 | 122.54      | 126.00   |
| 1   | L5    | 4758 | U    | N1-C2-O2   | 5.75  | 126.82      | 122.80   |
| 47  | S2    | 427  | U    | N3-C2-O2   | -5.75 | 118.18      | 122.20   |
| 1   | L5    | 2814 | C    | N1-C2-O2   | 5.74  | 122.35      | 118.90   |
| 1   | L5    | 2005 | G    | C8-N9-C1'  | -5.73 | 119.55      | 127.00   |
| 1   | L5    | 4742 | G    | O4'-C1'-N9 | 5.73  | 112.78      | 108.20   |
| 1   | L5    | 1853 | G    | C4-N9-C1'  | 5.73  | 133.95      | 126.50   |
| 1   | L5    | 220  | C    | C2-N1-C1'  | 5.72  | 125.10      | 118.80   |
| 1   | L5    | 1191 | C    | N3-C2-O2   | -5.72 | 117.89      | 121.90   |
| 1   | L5    | 1405 | C    | N3-C2-O2   | -5.72 | 117.90      | 121.90   |
| 1   | L5    | 1968 | G    | C6-C5-N7   | -5.72 | 126.97      | 130.40   |
| 1   | L5    | 4107 | G    | C4-N9-C1'  | 5.71  | 133.92      | 126.50   |
| 47  | S2    | 1660 | C    | C2-N1-C1'  | 5.71  | 125.08      | 118.80   |
| 1   | L5    | 4281 | A    | O4'-C1'-N9 | 5.71  | 112.77      | 108.20   |
| 1   | L5    | 112  | C    | C2-N1-C1'  | 5.71  | 125.08      | 118.80   |
| 1   | L5    | 985  | C    | C2-N1-C1'  | 5.71  | 125.08      | 118.80   |
| 1   | L5    | 925  | C    | C5-C6-N1   | 5.70  | 123.85      | 121.00   |
| 1   | L5    | 4355 | G    | N1-C2-N3   | 5.70  | 127.32      | 123.90   |
| 47  | S2    | 1261 | C    | N1-C2-O2   | 5.70  | 122.32      | 118.90   |
| 1   | L5    | 4928 | C    | C6-N1-C1'  | -5.70 | 113.96      | 120.80   |
| 47  | S2    | 1578 | U    | N3-C2-O2   | -5.70 | 118.21      | 122.20   |
| 1   | L5    | 1969 | G    | C5-C6-O6   | 5.69  | 132.01      | 128.60   |
| 1   | L5    | 2820 | C    | N1-C2-O2   | 5.69  | 122.31      | 118.90   |
| 1   | L5    | 1821 | G    | N3-C4-N9   | 5.69  | 129.41      | 126.00   |
| 1   | L5    | 655  | C    | C6-N1-C2   | -5.68 | 118.03      | 120.30   |
| 1   | L5    | 4864 | U    | N1-C2-O2   | 5.67  | 126.77      | 122.80   |
| 1   | L5    | 260  | C    | C6-N1-C2   | -5.67 | 118.03      | 120.30   |
| 1   | L5    | 4040 | C    | C6-N1-C2   | -5.66 | 118.04      | 120.30   |
| 47  | S2    | 570  | C    | N3-C2-O2   | -5.66 | 117.94      | 121.90   |
| 47  | S2    | 1420 | G    | C4-N9-C1'  | 5.66  | 133.86      | 126.50   |
| 1   | L5    | 2096 | G    | N3-C4-C5   | -5.65 | 125.78      | 128.60   |
| 1   | L5    | 4709 | U    | C5-C4-O4   | -5.64 | 122.52      | 125.90   |
| 1   | L5    | 504  | G    | N3-C4-N9   | 5.64  | 129.38      | 126.00   |
| 1   | L5    | 1188 | C    | C6-N1-C1'  | 5.64  | 127.56      | 120.80   |
| 1   | L5    | 3948 | C    | C6-N1-C2   | -5.64 | 118.05      | 120.30   |
| 47  | S2    | 659  | G    | C4-N9-C1'  | 5.64  | 133.83      | 126.50   |
| 16  | LN    | 134  | LEU  | CA-CB-CG   | 5.63  | 128.26      | 115.30   |
| 4   | LA    | 149  | LYS  | C-N-CA     | 5.63  | 135.77      | 121.70   |
| 47  | S2    | 1520 | G    | N3-C4-C5   | -5.63 | 125.79      | 128.60   |

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| Mol | Chain | Res  | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 1   | L5    | 1714 | C    | N3-C2-O2   | -5.62 | 117.96      | 121.90   |
| 1   | L5    | 1808 | C    | C6-N1-C1'  | 5.62  | 127.55      | 120.80   |
| 1   | L5    | 3772 | U    | N3-C2-O2   | -5.62 | 118.27      | 122.20   |
| 47  | S2    | 130  | G    | N3-C4-N9   | 5.62  | 129.37      | 126.00   |
| 1   | L5    | 513  | U    | N1-C2-O2   | 5.62  | 126.73      | 122.80   |
| 1   | L5    | 3948 | C    | N3-C2-O2   | -5.61 | 117.97      | 121.90   |
| 47  | S2    | 4    | C    | C2-N1-C1'  | 5.61  | 124.97      | 118.80   |
| 47  | S2    | 579  | C    | N1-C2-O2   | 5.60  | 122.26      | 118.90   |
| 47  | S2    | 527  | C    | N1-C2-O2   | 5.59  | 122.25      | 118.90   |
| 1   | L5    | 139  | G    | N9-C4-C5   | 5.59  | 107.64      | 105.40   |
| 1   | L5    | 984  | C    | N1-C2-O2   | 5.58  | 122.25      | 118.90   |
| 1   | L5    | 2033 | A    | P-O3'-C3'  | 5.58  | 126.40      | 119.70   |
| 1   | L5    | 485  | C    | C6-N1-C2   | -5.58 | 118.07      | 120.30   |
| 47  | S2    | 1315 | U    | N1-C2-O2   | 5.57  | 126.70      | 122.80   |
| 82  | CC    | 55   | C    | N3-C2-O2   | -5.57 | 118.00      | 121.90   |
| 47  | S2    | 834  | C    | N3-C2-O2   | -5.56 | 118.01      | 121.90   |
| 1   | L5    | 2491 | C    | N3-C2-O2   | -5.56 | 118.01      | 121.90   |
| 1   | L5    | 2820 | C    | N3-C2-O2   | -5.55 | 118.01      | 121.90   |
| 5   | LB    | 360  | LEU  | CA-CB-CG   | 5.55  | 128.06      | 115.30   |
| 47  | S2    | 478  | G    | N9-C4-C5   | 5.55  | 107.62      | 105.40   |
| 1   | L5    | 1367 | C    | C6-N1-C2   | -5.54 | 118.08      | 120.30   |
| 1   | L5    | 4040 | C    | C2-N1-C1'  | 5.54  | 124.90      | 118.80   |
| 1   | L5    | 2262 | G    | N3-C4-N9   | 5.54  | 129.32      | 126.00   |
| 1   | L5    | 4398 | C    | N1-C2-O2   | 5.53  | 122.22      | 118.90   |
| 1   | L5    | 1969 | G    | N3-C2-N2   | 5.53  | 123.77      | 119.90   |
| 2   | L7    | 102  | U    | N1-C2-O2   | 5.53  | 126.67      | 122.80   |
| 47  | S2    | 814  | U    | N1-C2-O2   | 5.53  | 126.67      | 122.80   |
| 47  | S2    | 1016 | U    | C2-N1-C1'  | 5.52  | 124.33      | 117.70   |
| 47  | S2    | 112  | U    | P-O3'-C3'  | 5.52  | 126.33      | 119.70   |
| 47  | S2    | 529  | A    | C5-C6-N6   | -5.51 | 119.29      | 123.70   |
| 47  | S2    | 1022 | U    | N3-C2-O2   | -5.51 | 118.34      | 122.20   |
| 1   | L5    | 130  | C    | C6-N1-C2   | -5.51 | 118.09      | 120.30   |
| 1   | L5    | 2362 | U    | N3-C2-O2   | -5.51 | 118.34      | 122.20   |
| 47  | S2    | 559  | G    | O4'-C1'-N9 | 5.51  | 112.61      | 108.20   |
| 47  | S2    | 883  | U    | N1-C2-N3   | 5.51  | 118.20      | 114.90   |
| 47  | S2    | 478  | G    | N1-C6-O6   | -5.50 | 116.60      | 119.90   |
| 1   | L5    | 1472 | C    | C2-N1-C1'  | 5.49  | 124.84      | 118.80   |
| 47  | S2    | 118  | C    | C6-N1-C1'  | -5.49 | 114.21      | 120.80   |
| 1   | L5    | 2627 | C    | C6-N1-C1'  | -5.49 | 114.22      | 120.80   |
| 3   | L8    | 51   | U    | N3-C2-O2   | -5.49 | 118.36      | 122.20   |
| 1   | L5    | 4498 | U    | C2-N3-C4   | -5.48 | 123.71      | 127.00   |
| 1   | L5    | 504  | G    | C8-N9-C1'  | -5.48 | 119.88      | 127.00   |

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| Mol | Chain | Res  | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 3   | L8    | 51   | U    | N1-C2-O2   | 5.48  | 126.63      | 122.80   |
| 1   | L5    | 2492 | C    | C6-N1-C2   | -5.47 | 118.11      | 120.30   |
| 1   | L5    | 2005 | G    | N3-C4-N9   | 5.47  | 129.28      | 126.00   |
| 47  | S2    | 1364 | U    | N1-C2-O2   | 5.46  | 126.62      | 122.80   |
| 1   | L5    | 100  | C    | C6-N1-C1'  | -5.46 | 114.25      | 120.80   |
| 1   | L5    | 468  | U    | N3-C4-O4   | 5.45  | 123.22      | 119.40   |
| 47  | S2    | 1420 | G    | N3-C4-N9   | 5.45  | 129.27      | 126.00   |
| 1   | L5    | 323  | C    | C6-N1-C2   | -5.45 | 118.12      | 120.30   |
| 1   | L5    | 1633 | G    | P-O3'-C3'  | 5.45  | 126.24      | 119.70   |
| 47  | S2    | 1417 | C    | C2-N3-C4   | 5.45  | 122.62      | 119.90   |
| 1   | L5    | 257  | C    | C6-N1-C2   | -5.45 | 118.12      | 120.30   |
| 1   | L5    | 1367 | C    | C6-N1-C1'  | -5.45 | 114.27      | 120.80   |
| 47  | S2    | 983  | A    | N3-C4-N9   | 5.44  | 131.75      | 127.40   |
| 1   | L5    | 1831 | G    | C5-C6-O6   | 5.44  | 131.86      | 128.60   |
| 1   | L5    | 234  | G    | N9-C1'-C2' | 5.44  | 121.07      | 114.00   |
| 1   | L5    | 205  | C    | N3-C2-O2   | -5.43 | 118.10      | 121.90   |
| 47  | S2    | 1424 | G    | N3-C4-N9   | 5.43  | 129.26      | 126.00   |
| 1   | L5    | 2528 | G    | N3-C4-C5   | -5.43 | 125.89      | 128.60   |
| 1   | L5    | 468  | U    | C5-C4-O4   | -5.42 | 122.65      | 125.90   |
| 1   | L5    | 516  | C    | C2-N1-C1'  | 5.42  | 124.77      | 118.80   |
| 1   | L5    | 4356 | G    | N1-C6-O6   | -5.42 | 116.64      | 119.90   |
| 1   | L5    | 115  | C    | N1-C2-O2   | 5.42  | 122.15      | 118.90   |
| 47  | S2    | 876  | C    | N1-C2-O2   | 5.42  | 122.15      | 118.90   |
| 1   | L5    | 3909 | C    | C2-N1-C1'  | 5.41  | 124.75      | 118.80   |
| 47  | S2    | 322  | C    | C6-N1-C2   | -5.41 | 118.14      | 120.30   |
| 47  | S2    | 325  | C    | C2-N1-C1'  | 5.41  | 124.75      | 118.80   |
| 1   | L5    | 3775 | A    | C8-N9-C4   | -5.41 | 103.64      | 105.80   |
| 1   | L5    | 5028 | G    | N3-C4-N9   | 5.41  | 129.25      | 126.00   |
| 1   | L5    | 1821 | G    | N3-C4-C5   | -5.40 | 125.90      | 128.60   |
| 1   | L5    | 3778 | U    | C2-N1-C1'  | 5.40  | 124.18      | 117.70   |
| 1   | L5    | 738  | C    | C6-N1-C2   | -5.40 | 118.14      | 120.30   |
| 47  | S2    | 130  | G    | N3-C4-C5   | -5.40 | 125.90      | 128.60   |
| 1   | L5    | 4773 | C    | N3-C2-O2   | -5.40 | 118.12      | 121.90   |
| 1   | L5    | 4420 | U    | C2-N1-C1'  | 5.39  | 124.17      | 117.70   |
| 1   | L5    | 758  | G    | C5-C6-O6   | 5.39  | 131.83      | 128.60   |
| 47  | S2    | 1219 | C    | N1-C2-O2   | 5.38  | 122.13      | 118.90   |
| 1   | L5    | 323  | C    | N1-C2-N3   | 5.38  | 122.97      | 119.20   |
| 1   | L5    | 5035 | U    | N3-C2-O2   | -5.37 | 118.44      | 122.20   |
| 77  | SZ    | 58   | LEU  | CA-CB-CG   | 5.37  | 127.66      | 115.30   |
| 1   | L5    | 4887 | C    | C2-N1-C1'  | 5.37  | 124.71      | 118.80   |
| 1   | L5    | 1731 | C    | C2-N1-C1'  | 5.37  | 124.70      | 118.80   |
| 47  | S2    | 563  | G    | P-O3'-C3'  | 5.37  | 126.14      | 119.70   |

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| Mol | Chain | Res  | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 47  | S2    | 1434 | C    | P-O3'-C3'  | 5.37  | 126.14      | 119.70   |
| 1   | L5    | 4901 | G    | N1-C6-O6   | -5.36 | 116.68      | 119.90   |
| 1   | L5    | 1173 | G    | C5-C6-O6   | 5.36  | 131.82      | 128.60   |
| 1   | L5    | 3693 | U    | N1-C2-O2   | 5.35  | 126.55      | 122.80   |
| 1   | L5    | 1405 | C    | C6-N1-C2   | -5.35 | 118.16      | 120.30   |
| 1   | L5    | 2786 | C    | P-O3'-C3'  | 5.35  | 126.12      | 119.70   |
| 1   | L5    | 4864 | U    | N3-C2-O2   | -5.35 | 118.45      | 122.20   |
| 47  | S2    | 494  | C    | N1-C2-O2   | 5.35  | 122.11      | 118.90   |
| 47  | S2    | 501  | C    | C5-C6-N1   | 5.35  | 123.68      | 121.00   |
| 1   | L5    | 499  | G    | C4-N9-C1'  | 5.35  | 133.46      | 126.50   |
| 47  | S2    | 542  | U    | N1-C2-O2   | 5.35  | 126.55      | 122.80   |
| 1   | L5    | 4928 | C    | C6-N1-C2   | -5.35 | 118.16      | 120.30   |
| 1   | L5    | 175  | C    | C6-N1-C1'  | 5.34  | 127.21      | 120.80   |
| 47  | S2    | 293  | C    | C5-C6-N1   | 5.34  | 123.67      | 121.00   |
| 1   | L5    | 2260 | C    | N3-C2-O2   | -5.34 | 118.16      | 121.90   |
| 1   | L5    | 1216 | C    | C6-N1-C2   | -5.33 | 118.17      | 120.30   |
| 1   | L5    | 456  | C    | N1-C2-O2   | 5.33  | 122.10      | 118.90   |
| 1   | L5    | 4758 | U    | N3-C2-O2   | -5.33 | 118.47      | 122.20   |
| 1   | L5    | 77   | U    | N1-C2-O2   | 5.33  | 126.53      | 122.80   |
| 1   | L5    | 1582 | U    | N1-C2-O2   | 5.32  | 126.53      | 122.80   |
| 1   | L5    | 1808 | C    | N1-C2-N3   | 5.32  | 122.93      | 119.20   |
| 1   | L5    | 4747 | C    | C2-N1-C1'  | 5.32  | 124.65      | 118.80   |
| 1   | L5    | 1241 | C    | N3-C2-O2   | -5.32 | 118.18      | 121.90   |
| 1   | L5    | 2855 | G    | N1-C2-N2   | -5.31 | 111.42      | 116.20   |
| 1   | L5    | 4891 | G    | C5-C6-O6   | 5.31  | 131.79      | 128.60   |
| 1   | L5    | 2096 | G    | C8-N9-C1'  | -5.31 | 120.10      | 127.00   |
| 1   | L5    | 3839 | G    | O4'-C1'-N9 | -5.31 | 103.95      | 108.20   |
| 1   | L5    | 4901 | G    | C5-C6-O6   | 5.31  | 131.78      | 128.60   |
| 82  | CC    | 44   | A    | N1-C2-N3   | -5.31 | 126.65      | 129.30   |
| 47  | S2    | 1578 | U    | N1-C2-O2   | 5.31  | 126.52      | 122.80   |
| 1   | L5    | 259  | C    | N3-C2-O2   | -5.31 | 118.19      | 121.90   |
| 1   | L5    | 4360 | U    | N3-C2-O2   | -5.30 | 118.49      | 122.20   |
| 1   | L5    | 2255 | C    | C2-N1-C1'  | 5.30  | 124.63      | 118.80   |
| 47  | S2    | 1218 | C    | C5-C6-N1   | 5.30  | 123.65      | 121.00   |
| 47  | S2    | 1660 | C    | N1-C2-O2   | 5.30  | 122.08      | 118.90   |
| 1   | L5    | 485  | C    | N3-C2-O2   | -5.29 | 118.19      | 121.90   |
| 1   | L5    | 1327 | C    | C6-N1-C2   | -5.29 | 118.18      | 120.30   |
| 1   | L5    | 456  | C    | C6-N1-C2   | -5.29 | 118.18      | 120.30   |
| 1   | L5    | 1702 | C    | C2-N1-C1'  | 5.29  | 124.62      | 118.80   |
| 1   | L5    | 4112 | C    | C6-N1-C2   | -5.28 | 118.19      | 120.30   |
| 1   | L5    | 472  | C    | N3-C2-O2   | -5.27 | 118.21      | 121.90   |
| 82  | CC    | 34   | U    | N1-C2-O2   | 5.27  | 126.49      | 122.80   |

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| Mol | Chain | Res  | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 1   | L5    | 2767 | U    | N3-C2-O2   | -5.27 | 118.51      | 122.20   |
| 47  | S2    | 589  | G    | O4'-C1'-N9 | -5.27 | 103.99      | 108.20   |
| 1   | L5    | 129  | C    | N1-C2-N3   | 5.27  | 122.89      | 119.20   |
| 1   | L5    | 209  | U    | N1-C2-O2   | 5.27  | 126.49      | 122.80   |
| 82  | CC    | 47   | C    | C2-N1-C1'  | -5.26 | 113.01      | 118.80   |
| 47  | S2    | 1139 | C    | C6-N1-C1'  | -5.26 | 114.49      | 120.80   |
| 1   | L5    | 1714 | C    | C2-N1-C1'  | 5.25  | 124.58      | 118.80   |
| 1   | L5    | 2560 | C    | N1-C2-O2   | 5.25  | 122.05      | 118.90   |
| 1   | L5    | 4097 | G    | N1-C6-O6   | -5.25 | 116.75      | 119.90   |
| 1   | L5    | 4107 | G    | N1-C6-O6   | -5.25 | 116.75      | 119.90   |
| 1   | L5    | 4042 | G    | N3-C4-N9   | 5.25  | 129.15      | 126.00   |
| 1   | L5    | 969  | C    | C5-C6-N1   | 5.24  | 123.62      | 121.00   |
| 47  | S2    | 1591 | C    | N3-C2-O2   | -5.24 | 118.24      | 121.90   |
| 1   | L5    | 1853 | G    | C8-N9-C1'  | -5.23 | 120.20      | 127.00   |
| 47  | S2    | 1415 | C    | N3-C2-O2   | -5.23 | 118.24      | 121.90   |
| 1   | L5    | 977  | C    | C2-N1-C1'  | 5.23  | 124.55      | 118.80   |
| 1   | L5    | 3673 | C    | P-O3'-C3'  | 5.22  | 125.97      | 119.70   |
| 47  | S2    | 1219 | C    | C2-N1-C1'  | 5.22  | 124.55      | 118.80   |
| 47  | S2    | 1309 | C    | N1-C2-O2   | 5.22  | 122.03      | 118.90   |
| 1   | L5    | 406  | C    | P-O3'-C3'  | 5.21  | 125.96      | 119.70   |
| 1   | L5    | 4775 | C    | C2-N1-C1'  | 5.21  | 124.54      | 118.80   |
| 1   | L5    | 1378 | C    | N1-C2-O2   | 5.21  | 122.03      | 118.90   |
| 1   | L5    | 1552 | G    | O4'-C1'-N9 | 5.21  | 112.37      | 108.20   |
| 1   | L5    | 2410 | C    | C5-C6-N1   | 5.21  | 123.60      | 121.00   |
| 1   | L5    | 4356 | G    | C4-C5-N7   | -5.21 | 108.72      | 110.80   |
| 47  | S2    | 841  | G    | N1-C2-N2   | -5.21 | 111.51      | 116.20   |
| 1   | L5    | 472  | C    | C6-N1-C1'  | -5.19 | 114.57      | 120.80   |
| 47  | S2    | 1271 | C    | N1-C2-O2   | 5.18  | 122.01      | 118.90   |
| 47  | S2    | 1261 | C    | N3-C2-O2   | -5.18 | 118.27      | 121.90   |
| 1   | L5    | 490  | C    | C6-N1-C1'  | 5.18  | 127.02      | 120.80   |
| 1   | L5    | 2021 | G    | C4-N9-C1'  | 5.18  | 133.23      | 126.50   |
| 1   | L5    | 493  | G    | P-O3'-C3'  | 5.18  | 125.91      | 119.70   |
| 1   | L5    | 963  | G    | N3-C4-C5   | -5.18 | 126.01      | 128.60   |
| 1   | L5    | 3909 | C    | N3-C2-O2   | -5.18 | 118.28      | 121.90   |
| 1   | L5    | 3930 | U    | C2-N1-C1'  | 5.17  | 123.91      | 117.70   |
| 1   | L5    | 4682 | U    | C2-N1-C1'  | 5.17  | 123.90      | 117.70   |
| 1   | L5    | 1403 | G    | N3-C4-N9   | 5.17  | 129.10      | 126.00   |
| 1   | L5    | 4773 | C    | C2-N1-C1'  | 5.17  | 124.49      | 118.80   |
| 47  | S2    | 427  | U    | N1-C2-O2   | 5.17  | 126.42      | 122.80   |
| 1   | L5    | 1049 | C    | C5-C6-N1   | 5.17  | 123.58      | 121.00   |
| 1   | L5    | 2094 | G    | C4-N9-C1'  | 5.17  | 133.22      | 126.50   |
| 1   | L5    | 4043 | G    | N3-C4-N9   | 5.17  | 129.10      | 126.00   |

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| Mol | Chain | Res  | Type | Atoms     | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-----------|-------|-------------|----------|
| 47  | S2    | 1422 | G    | C6-C5-N7  | 5.16  | 133.50      | 130.40   |
| 1   | L5    | 1259 | G    | N1-C2-N2  | -5.16 | 111.56      | 116.20   |
| 47  | S2    | 1389 | C    | N1-C2-O2  | 5.15  | 121.99      | 118.90   |
| 1   | L5    | 963  | G    | C4-N9-C1' | 5.15  | 133.19      | 126.50   |
| 47  | S2    | 293  | C    | C6-N1-C2  | -5.15 | 118.24      | 120.30   |
| 47  | S2    | 391  | C    | C2-N1-C1' | 5.15  | 124.46      | 118.80   |
| 1   | L5    | 963  | G    | N3-C4-N9  | 5.14  | 129.09      | 126.00   |
| 47  | S2    | 1417 | C    | N1-C2-O2  | 5.14  | 121.99      | 118.90   |
| 47  | S2    | 291  | G    | P-O3'-C3' | 5.14  | 125.87      | 119.70   |
| 1   | L5    | 757  | G    | N1-C2-N2  | -5.14 | 111.58      | 116.20   |
| 1   | L5    | 1582 | U    | N3-C2-O2  | -5.13 | 118.61      | 122.20   |
| 1   | L5    | 2899 | C    | C2-N1-C1' | 5.13  | 124.44      | 118.80   |
| 1   | L5    | 2667 | C    | N1-C2-O2  | 5.13  | 121.98      | 118.90   |
| 1   | L5    | 1663 | C    | C2-N1-C1' | 5.13  | 124.44      | 118.80   |
| 1   | L5    | 1340 | C    | C6-N1-C2  | -5.12 | 118.25      | 120.30   |
| 1   | L5    | 2900 | U    | N1-C2-O2  | 5.11  | 126.38      | 122.80   |
| 1   | L5    | 4926 | C    | C6-N1-C1' | -5.11 | 114.67      | 120.80   |
| 1   | L5    | 1808 | C    | C5-C4-N4  | 5.11  | 123.78      | 120.20   |
| 1   | L5    | 2627 | C    | C5-C6-N1  | 5.11  | 123.56      | 121.00   |
| 1   | L5    | 4398 | C    | N3-C2-O2  | -5.11 | 118.32      | 121.90   |
| 47  | S2    | 331  | C    | N1-C2-O2  | 5.11  | 121.96      | 118.90   |
| 1   | L5    | 3770 | U    | N1-C2-O2  | 5.10  | 126.37      | 122.80   |
| 1   | L5    | 4471 | U    | N3-C2-O2  | -5.10 | 118.63      | 122.20   |
| 1   | L5    | 516  | C    | C6-N1-C2  | -5.10 | 118.26      | 120.30   |
| 1   | L5    | 177  | G    | N1-C2-N2  | -5.09 | 111.61      | 116.20   |
| 1   | L5    | 1716 | G    | C6-N1-C2  | -5.09 | 122.04      | 125.10   |
| 1   | L5    | 2416 | G    | P-O3'-C3' | 5.09  | 125.81      | 119.70   |
| 82  | CC    | 74   | C    | P-O3'-C3' | 5.09  | 125.81      | 119.70   |
| 1   | L5    | 504  | G    | N3-C4-C5  | -5.09 | 126.06      | 128.60   |
| 1   | L5    | 2262 | G    | C8-N9-C1' | -5.09 | 120.39      | 127.00   |
| 32  | Ld    | 97   | ASP  | C-N-CA    | 5.08  | 134.40      | 121.70   |
| 1   | L5    | 139  | G    | N3-C2-N2  | -5.08 | 116.34      | 119.90   |
| 1   | L5    | 4303 | C    | C6-N1-C1' | -5.08 | 114.71      | 120.80   |
| 47  | S2    | 1437 | C    | N1-C2-O2  | 5.08  | 121.95      | 118.90   |
| 1   | L5    | 1050 | C    | C6-N1-C2  | -5.07 | 118.27      | 120.30   |
| 47  | S2    | 1364 | U    | N3-C2-O2  | -5.07 | 118.65      | 122.20   |
| 1   | L5    | 655  | C    | N1-C2-N3  | 5.07  | 122.75      | 119.20   |
| 1   | L5    | 220  | C    | C6-N1-C2  | -5.07 | 118.27      | 120.30   |
| 1   | L5    | 2257 | C    | C6-N1-C1' | -5.07 | 114.72      | 120.80   |
| 1   | L5    | 2487 | G    | N1-C6-O6  | -5.07 | 116.86      | 119.90   |
| 1   | L5    | 4742 | G    | C6-C5-N7  | 5.07  | 133.44      | 130.40   |
| 1   | L5    | 2021 | G    | C8-N9-C1' | -5.06 | 120.42      | 127.00   |

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| Mol | Chain | Res  | Type | Atoms      | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|------------|-------|-------------|----------|
| 47  | S2    | 1309 | C    | C6-N1-C2   | -5.06 | 118.27      | 120.30   |
| 2   | L7    | 102  | U    | N3-C2-O2   | -5.06 | 118.66      | 122.20   |
| 1   | L5    | 1968 | G    | N3-C4-C5   | -5.06 | 126.07      | 128.60   |
| 1   | L5    | 175  | C    | C6-N1-C2   | -5.06 | 118.28      | 120.30   |
| 1   | L5    | 1808 | C    | C6-N1-C2   | -5.06 | 118.28      | 120.30   |
| 47  | S2    | 1315 | U    | N3-C2-O2   | -5.05 | 118.66      | 122.20   |
| 1   | L5    | 738  | C    | C5-C6-N1   | 5.05  | 123.53      | 121.00   |
| 47  | S2    | 1309 | C    | C6-N1-C1'  | -5.05 | 114.74      | 120.80   |
| 1   | L5    | 1993 | C    | N1-C2-O2   | 5.05  | 121.93      | 118.90   |
| 1   | L5    | 96   | U    | N3-C2-O2   | -5.05 | 118.67      | 122.20   |
| 1   | L5    | 1251 | C    | N3-C2-O2   | -5.05 | 118.37      | 121.90   |
| 47  | S2    | 659  | G    | C8-N9-C1'  | -5.05 | 120.44      | 127.00   |
| 1   | L5    | 3771 | C    | C6-N1-C2   | -5.04 | 118.28      | 120.30   |
| 47  | S2    | 1424 | G    | C4-N9-C1'  | 5.04  | 133.06      | 126.50   |
| 1   | L5    | 1447 | C    | N1-C2-O2   | 5.04  | 121.92      | 118.90   |
| 1   | L5    | 2005 | G    | N7-C8-N9   | 5.04  | 115.62      | 113.10   |
| 47  | S2    | 329  | G    | N3-C2-N2   | 5.04  | 123.43      | 119.90   |
| 68  | Sg    | 7    | LEU  | CA-CB-CG   | 5.04  | 126.90      | 115.30   |
| 1   | L5    | 5028 | G    | C4-N9-C1'  | 5.04  | 133.05      | 126.50   |
| 47  | S2    | 1417 | C    | C5-C6-N1   | 5.04  | 123.52      | 121.00   |
| 1   | L5    | 654  | C    | C5-C6-N1   | 5.03  | 123.52      | 121.00   |
| 1   | L5    | 1929 | A    | C4-N9-C1'  | 5.03  | 135.36      | 126.30   |
| 53  | SH    | 35   | ASP  | CB-CG-OD2  | 5.03  | 122.83      | 118.30   |
| 1   | L5    | 753  | C    | C6-N1-C2   | -5.03 | 118.29      | 120.30   |
| 1   | L5    | 3772 | U    | N1-C2-O2   | 5.03  | 126.32      | 122.80   |
| 1   | L5    | 4399 | U    | N3-C2-O2   | -5.03 | 118.68      | 122.20   |
| 47  | S2    | 356  | C    | C6-N1-C2   | -5.03 | 118.29      | 120.30   |
| 1   | L5    | 2560 | C    | C5-C6-N1   | 5.03  | 123.51      | 121.00   |
| 1   | L5    | 3771 | C    | N1-C2-O2   | 5.03  | 121.92      | 118.90   |
| 1   | L5    | 260  | C    | N1-C2-O2   | 5.03  | 121.92      | 118.90   |
| 1   | L5    | 3930 | U    | N3-C2-O2   | -5.02 | 118.68      | 122.20   |
| 47  | S2    | 559  | G    | C5-C6-O6   | 5.02  | 131.61      | 128.60   |
| 1   | L5    | 2095 | A    | O4'-C1'-N9 | 5.02  | 112.22      | 108.20   |
| 1   | L5    | 499  | G    | N3-C4-N9   | 5.02  | 129.01      | 126.00   |
| 1   | L5    | 1069 | G    | N3-C4-N9   | -5.02 | 122.99      | 126.00   |
| 1   | L5    | 4920 | C    | N1-C2-O2   | 5.02  | 121.91      | 118.90   |
| 47  | S2    | 119  | U    | N3-C2-O2   | -5.02 | 118.69      | 122.20   |
| 1   | L5    | 1252 | C    | C6-N1-C2   | -5.02 | 118.29      | 120.30   |
| 1   | L5    | 2410 | C    | C6-N1-C2   | -5.02 | 118.29      | 120.30   |
| 47  | S2    | 1660 | C    | N3-C2-O2   | -5.02 | 118.39      | 121.90   |
| 47  | S2    | 130  | G    | C8-N9-C1'  | -5.02 | 120.48      | 127.00   |
| 47  | S2    | 666  | U    | C2-N1-C1'  | 5.01  | 123.72      | 117.70   |

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| Mol | Chain | Res  | Type | Atoms     | Z     | Observed(°) | Ideal(°) |
|-----|-------|------|------|-----------|-------|-------------|----------|
| 1   | L5    | 1720 | C    | C6-N1-C2  | -5.01 | 118.30      | 120.30   |
| 1   | L5    | 4746 | C    | N1-C2-O2  | 5.01  | 121.90      | 118.90   |
| 1   | L5    | 504  | G    | OP1-P-O3' | 5.00  | 116.21      | 105.20   |
| 1   | L5    | 4254 | G    | N3-C4-N9  | 5.00  | 129.00      | 126.00   |
| 47  | S2    | 179  | C    | N3-C2-O2  | -5.00 | 118.40      | 121.90   |
| 47  | S2    | 1420 | G    | C8-N9-C1' | -5.00 | 120.50      | 127.00   |

There are no chirality outliers.

All (31) planarity outliers are listed below:

| Mol | Chain | Res | Type | Group   |
|-----|-------|-----|------|---------|
| 4   | LA    | 110 | GLY  | Peptide |
| 4   | LA    | 54  | ARG  | Peptide |
| 5   | LB    | 17  | LEU  | Peptide |
| 5   | LB    | 2   | SER  | Peptide |
| 5   | LB    | 258 | HIS  | Peptide |
| 11  | LH    | 106 | GLN  | Peptide |
| 13  | LJ    | 94  | LEU  | Peptide |
| 14  | LL    | 154 | VAL  | Peptide |
| 15  | LM    | 87  | ALA  | Peptide |
| 15  | LM    | 88  | ALA  | Peptide |
| 17  | LO    | 110 | PRO  | Peptide |
| 17  | LO    | 30  | GLY  | Peptide |
| 22  | LT    | 136 | ARG  | Peptide |
| 30  | Lb    | 59  | ALA  | Peptide |
| 34  | Lf    | 103 | VAL  | Peptide |
| 34  | Lf    | 106 | TYR  | Peptide |
| 36  | Lh    | 86  | LYS  | Peptide |
| 38  | Lj    | 39  | TYR  | Peptide |
| 46  | Lz    | 183 | ILE  | Peptide |
| 49  | SB    | 221 | PRO  | Peptide |
| 50  | SD    | 164 | VAL  | Peptide |
| 52  | SF    | 78  | MET  | Peptide |
| 53  | SH    | 15  | LYS  | Peptide |
| 57  | SP    | 127 | LYS  | Peptide |
| 58  | SQ    | 43  | GLU  | Peptide |
| 61  | ST    | 46  | ALA  | Peptide |
| 63  | SV    | 78  | ILE  | Peptide |
| 64  | SX    | 126 | ALA  | Peptide |
| 64  | SX    | 86  | PRO  | Peptide |
| 77  | SZ    | 46  | ASN  | Peptide |
| 65  | Sa    | 93  | LYS  | Peptide |



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

Due to software issues we are unable to calculate clashes - this section is therefore empty.

## 5.3 Torsion angles [i](#)

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

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

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

| Mol | Chain | Analysed      | Favoured  | Allowed  | Outliers | Percentiles |     |
|-----|-------|---------------|-----------|----------|----------|-------------|-----|
| 4   | LA    | 246/257 (96%) | 224 (91%) | 21 (8%)  | 1 (0%)   | 34          | 72  |
| 5   | LB    | 400/403 (99%) | 370 (92%) | 28 (7%)  | 2 (0%)   | 29          | 68  |
| 6   | LC    | 366/427 (86%) | 331 (90%) | 34 (9%)  | 1 (0%)   | 41          | 76  |
| 7   | LD    | 291/297 (98%) | 271 (93%) | 20 (7%)  | 0        | 100         | 100 |
| 8   | LE    | 232/288 (81%) | 216 (93%) | 16 (7%)  | 0        | 100         | 100 |
| 9   | LF    | 223/248 (90%) | 213 (96%) | 10 (4%)  | 0        | 100         | 100 |
| 10  | LG    | 239/266 (90%) | 223 (93%) | 16 (7%)  | 0        | 100         | 100 |
| 11  | LH    | 188/192 (98%) | 168 (89%) | 20 (11%) | 0        | 100         | 100 |
| 12  | LI    | 198/214 (92%) | 183 (92%) | 15 (8%)  | 0        | 100         | 100 |
| 13  | LJ    | 174/178 (98%) | 158 (91%) | 16 (9%)  | 0        | 100         | 100 |
| 14  | LL    | 208/211 (99%) | 191 (92%) | 17 (8%)  | 0        | 100         | 100 |
| 15  | LM    | 137/215 (64%) | 125 (91%) | 11 (8%)  | 1 (1%)   | 22          | 60  |
| 16  | LN    | 201/204 (98%) | 191 (95%) | 8 (4%)   | 2 (1%)   | 15          | 53  |
| 17  | LO    | 199/203 (98%) | 190 (96%) | 9 (4%)   | 0        | 100         | 100 |
| 18  | LP    | 151/184 (82%) | 140 (93%) | 11 (7%)  | 0        | 100         | 100 |
| 19  | LQ    | 185/188 (98%) | 176 (95%) | 9 (5%)   | 0        | 100         | 100 |
| 20  | LR    | 185/196 (94%) | 180 (97%) | 5 (3%)   | 0        | 100         | 100 |
| 21  | LS    | 173/176 (98%) | 162 (94%) | 11 (6%)  | 0        | 100         | 100 |
| 22  | LT    | 157/160 (98%) | 146 (93%) | 11 (7%)  | 0        | 100         | 100 |
| 23  | LU    | 99/128 (77%)  | 85 (86%)  | 13 (13%) | 1 (1%)   | 15          | 53  |
| 24  | LV    | 129/140 (92%) | 120 (93%) | 9 (7%)   | 0        | 100         | 100 |

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| Mol | Chain | Analysed      | Favoured  | Allowed  | Outliers | Percentiles |     |
|-----|-------|---------------|-----------|----------|----------|-------------|-----|
| 25  | LW    | 122/157 (78%) | 115 (94%) | 7 (6%)   | 0        | 100         | 100 |
| 26  | LX    | 118/156 (76%) | 112 (95%) | 6 (5%)   | 0        | 100         | 100 |
| 27  | LY    | 132/145 (91%) | 120 (91%) | 12 (9%)  | 0        | 100         | 100 |
| 28  | LZ    | 133/136 (98%) | 121 (91%) | 12 (9%)  | 0        | 100         | 100 |
| 29  | La    | 145/148 (98%) | 136 (94%) | 9 (6%)   | 0        | 100         | 100 |
| 30  | Lb    | 105/159 (66%) | 97 (92%)  | 8 (8%)   | 0        | 100         | 100 |
| 31  | Lc    | 96/115 (84%)  | 90 (94%)  | 6 (6%)   | 0        | 100         | 100 |
| 32  | Ld    | 105/125 (84%) | 100 (95%) | 5 (5%)   | 0        | 100         | 100 |
| 33  | Le    | 126/135 (93%) | 120 (95%) | 5 (4%)   | 1 (1%)   | 19          | 57  |
| 34  | Lf    | 107/110 (97%) | 98 (92%)  | 7 (6%)   | 2 (2%)   | 8           | 36  |
| 35  | Lg    | 112/117 (96%) | 108 (96%) | 4 (4%)   | 0        | 100         | 100 |
| 36  | Lh    | 120/123 (98%) | 117 (98%) | 3 (2%)   | 0        | 100         | 100 |
| 37  | Li    | 100/105 (95%) | 96 (96%)  | 4 (4%)   | 0        | 100         | 100 |
| 38  | Lj    | 84/97 (87%)   | 76 (90%)  | 7 (8%)   | 1 (1%)   | 13          | 48  |
| 39  | Lk    | 67/70 (96%)   | 61 (91%)  | 6 (9%)   | 0        | 100         | 100 |
| 40  | Ll    | 48/51 (94%)   | 44 (92%)  | 4 (8%)   | 0        | 100         | 100 |
| 41  | Lm    | 50/128 (39%)  | 50 (100%) | 0        | 0        | 100         | 100 |
| 42  | Ln    | 22/25 (88%)   | 22 (100%) | 0        | 0        | 100         | 100 |
| 43  | Lo    | 101/104 (97%) | 95 (94%)  | 6 (6%)   | 0        | 100         | 100 |
| 44  | Lp    | 89/92 (97%)   | 83 (93%)  | 6 (7%)   | 0        | 100         | 100 |
| 45  | Lr    | 123/137 (90%) | 116 (94%) | 7 (6%)   | 0        | 100         | 100 |
| 46  | Lz    | 215/217 (99%) | 171 (80%) | 44 (20%) | 0        | 100         | 100 |
| 48  | SA    | 219/295 (74%) | 196 (90%) | 23 (10%) | 0        | 100         | 100 |
| 49  | SB    | 212/264 (80%) | 197 (93%) | 15 (7%)  | 0        | 100         | 100 |
| 50  | SD    | 225/243 (93%) | 202 (90%) | 23 (10%) | 0        | 100         | 100 |
| 51  | SE    | 260/263 (99%) | 242 (93%) | 18 (7%)  | 0        | 100         | 100 |
| 52  | SF    | 180/204 (88%) | 165 (92%) | 15 (8%)  | 0        | 100         | 100 |
| 53  | SH    | 182/194 (94%) | 161 (88%) | 21 (12%) | 0        | 100         | 100 |
| 54  | SI    | 204/208 (98%) | 193 (95%) | 11 (5%)  | 0        | 100         | 100 |
| 55  | SK    | 96/165 (58%)  | 85 (88%)  | 11 (12%) | 0        | 100         | 100 |
| 56  | SL    | 151/158 (96%) | 139 (92%) | 12 (8%)  | 0        | 100         | 100 |

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| Mol | Chain | Analysed          | Favoured    | Allowed  | Outliers | Percentiles |     |
|-----|-------|-------------------|-------------|----------|----------|-------------|-----|
| 57  | SP    | 125/145 (86%)     | 115 (92%)   | 10 (8%)  | 0        | 100         | 100 |
| 58  | SQ    | 142/146 (97%)     | 128 (90%)   | 13 (9%)  | 1 (1%)   | 22          | 60  |
| 59  | SR    | 133/135 (98%)     | 121 (91%)   | 12 (9%)  | 0        | 100         | 100 |
| 60  | SS    | 143/152 (94%)     | 131 (92%)   | 12 (8%)  | 0        | 100         | 100 |
| 61  | ST    | 141/145 (97%)     | 129 (92%)   | 11 (8%)  | 1 (1%)   | 22          | 60  |
| 62  | SU    | 102/119 (86%)     | 91 (89%)    | 11 (11%) | 0        | 100         | 100 |
| 63  | SV    | 81/83 (98%)       | 73 (90%)    | 7 (9%)   | 1 (1%)   | 13          | 48  |
| 64  | SX    | 139/143 (97%)     | 124 (89%)   | 14 (10%) | 1 (1%)   | 22          | 60  |
| 65  | Sa    | 100/115 (87%)     | 90 (90%)    | 9 (9%)   | 1 (1%)   | 15          | 53  |
| 66  | Sc    | 62/69 (90%)       | 50 (81%)    | 12 (19%) | 0        | 100         | 100 |
| 67  | Sd    | 53/56 (95%)       | 49 (92%)    | 4 (8%)   | 0        | 100         | 100 |
| 68  | Sg    | 311/317 (98%)     | 267 (86%)   | 44 (14%) | 0        | 100         | 100 |
| 69  | SC    | 220/293 (75%)     | 206 (94%)   | 14 (6%)  | 0        | 100         | 100 |
| 70  | SG    | 235/249 (94%)     | 218 (93%)   | 17 (7%)  | 0        | 100         | 100 |
| 71  | SJ    | 183/194 (94%)     | 170 (93%)   | 13 (7%)  | 0        | 100         | 100 |
| 72  | SM    | 120/132 (91%)     | 109 (91%)   | 11 (9%)  | 0        | 100         | 100 |
| 73  | SN    | 148/151 (98%)     | 140 (95%)   | 8 (5%)   | 0        | 100         | 100 |
| 74  | SO    | 138/151 (91%)     | 126 (91%)   | 12 (9%)  | 0        | 100         | 100 |
| 75  | SW    | 127/130 (98%)     | 121 (95%)   | 6 (5%)   | 0        | 100         | 100 |
| 76  | SY    | 129/133 (97%)     | 121 (94%)   | 8 (6%)   | 0        | 100         | 100 |
| 77  | SZ    | 73/125 (58%)      | 59 (81%)    | 13 (18%) | 1 (1%)   | 11          | 43  |
| 78  | Sb    | 81/84 (96%)       | 70 (86%)    | 11 (14%) | 0        | 100         | 100 |
| 79  | Se    | 56/59 (95%)       | 52 (93%)    | 4 (7%)   | 0        | 100         | 100 |
| 80  | Sf    | 65/156 (42%)      | 54 (83%)    | 11 (17%) | 0        | 100         | 100 |
| 81  | CA    | 350/394 (89%)     | 332 (95%)   | 18 (5%)  | 0        | 100         | 100 |
| 83  | CE    | 71/223 (32%)      | 70 (99%)    | 1 (1%)   | 0        | 100         | 100 |
| All | All   | 11958/13520 (88%) | 11007 (92%) | 933 (8%) | 18 (0%)  | 50          | 82  |

All (18) Ramachandran outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 16  | LN    | 124 | ASP  |
| 64  | SX    | 127 | ASN  |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 15  | LM    | 88  | ALA  |
| 61  | ST    | 41  | LYS  |
| 5   | LB    | 302 | ASN  |
| 5   | LB    | 360 | LEU  |
| 34  | Lf    | 80  | ASN  |
| 65  | Sa    | 47  | ALA  |
| 77  | SZ    | 78  | LYS  |
| 4   | LA    | 55  | GLY  |
| 58  | SQ    | 44  | PRO  |
| 38  | Lj    | 40  | PRO  |
| 16  | LN    | 83  | LYS  |
| 6   | LC    | 232 | VAL  |
| 23  | LU    | 59  | GLY  |
| 33  | Le    | 73  | GLY  |
| 34  | Lf    | 107 | PRO  |
| 63  | SV    | 79  | VAL  |

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

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

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

| Mol | Chain | Analysed       | Rotameric  | Outliers | Percentiles |     |
|-----|-------|----------------|------------|----------|-------------|-----|
| 4   | LA    | 190/199 (96%)  | 188 (99%)  | 2 (1%)   | 73          | 90  |
| 5   | LB    | 348/349 (100%) | 348 (100%) | 0        | 100         | 100 |
| 6   | LC    | 306/348 (88%)  | 304 (99%)  | 2 (1%)   | 84          | 94  |
| 7   | LD    | 246/250 (98%)  | 245 (100%) | 1 (0%)   | 91          | 97  |
| 8   | LE    | 209/252 (83%)  | 207 (99%)  | 2 (1%)   | 76          | 91  |
| 9   | LF    | 194/215 (90%)  | 192 (99%)  | 2 (1%)   | 76          | 91  |
| 10  | LG    | 203/223 (91%)  | 202 (100%) | 1 (0%)   | 88          | 96  |
| 11  | LH    | 169/171 (99%)  | 169 (100%) | 0        | 100         | 100 |
| 12  | LI    | 172/181 (95%)  | 172 (100%) | 0        | 100         | 100 |
| 13  | LJ    | 148/149 (99%)  | 147 (99%)  | 1 (1%)   | 84          | 94  |
| 14  | LL    | 176/177 (99%)  | 176 (100%) | 0        | 100         | 100 |

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| Mol | Chain | Analysed      | Rotameric  | Outliers | Percentiles |     |
|-----|-------|---------------|------------|----------|-------------|-----|
| 15  | LM    | 118/161 (73%) | 118 (100%) | 0        | 100         | 100 |
| 16  | LN    | 171/172 (99%) | 171 (100%) | 0        | 100         | 100 |
| 17  | LO    | 173/174 (99%) | 172 (99%)  | 1 (1%)   | 86          | 95  |
| 18  | LP    | 134/163 (82%) | 134 (100%) | 0        | 100         | 100 |
| 19  | LQ    | 164/165 (99%) | 164 (100%) | 0        | 100         | 100 |
| 20  | LR    | 166/175 (95%) | 166 (100%) | 0        | 100         | 100 |
| 21  | LS    | 156/157 (99%) | 156 (100%) | 0        | 100         | 100 |
| 22  | LT    | 139/140 (99%) | 138 (99%)  | 1 (1%)   | 84          | 94  |
| 23  | LU    | 91/115 (79%)  | 91 (100%)  | 0        | 100         | 100 |
| 24  | LV    | 101/107 (94%) | 100 (99%)  | 1 (1%)   | 76          | 91  |
| 25  | LW    | 103/126 (82%) | 102 (99%)  | 1 (1%)   | 76          | 91  |
| 26  | LX    | 108/133 (81%) | 108 (100%) | 0        | 100         | 100 |
| 27  | LY    | 124/135 (92%) | 122 (98%)  | 2 (2%)   | 62          | 86  |
| 28  | LZ    | 117/118 (99%) | 117 (100%) | 0        | 100         | 100 |
| 29  | La    | 120/121 (99%) | 117 (98%)  | 3 (2%)   | 47          | 79  |
| 30  | Lb    | 88/126 (70%)  | 87 (99%)   | 1 (1%)   | 73          | 90  |
| 31  | Lc    | 83/97 (86%)   | 82 (99%)   | 1 (1%)   | 71          | 90  |
| 32  | Ld    | 98/110 (89%)  | 98 (100%)  | 0        | 100         | 100 |
| 33  | Le    | 114/121 (94%) | 114 (100%) | 0        | 100         | 100 |
| 34  | Lf    | 88/89 (99%)   | 87 (99%)   | 1 (1%)   | 73          | 90  |
| 35  | Lg    | 98/100 (98%)  | 97 (99%)   | 1 (1%)   | 76          | 91  |
| 36  | Lh    | 109/110 (99%) | 108 (99%)  | 1 (1%)   | 78          | 92  |
| 37  | Li    | 86/89 (97%)   | 86 (100%)  | 0        | 100         | 100 |
| 38  | Lj    | 73/80 (91%)   | 72 (99%)   | 1 (1%)   | 67          | 88  |
| 39  | Lk    | 64/65 (98%)   | 61 (95%)   | 3 (5%)   | 26          | 63  |
| 40  | Ll    | 47/48 (98%)   | 45 (96%)   | 2 (4%)   | 29          | 66  |
| 41  | Lm    | 48/116 (41%)  | 48 (100%)  | 0        | 100         | 100 |
| 42  | Ln    | 23/24 (96%)   | 23 (100%)  | 0        | 100         | 100 |
| 43  | Lo    | 91/92 (99%)   | 91 (100%)  | 0        | 100         | 100 |
| 44  | Lp    | 74/75 (99%)   | 74 (100%)  | 0        | 100         | 100 |
| 45  | Lr    | 109/121 (90%) | 109 (100%) | 0        | 100         | 100 |

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| Mol | Chain | Analysed       | Rotameric  | Outliers | Percentiles |     |
|-----|-------|----------------|------------|----------|-------------|-----|
| 46  | Lz    | 195/196 (100%) | 190 (97%)  | 5 (3%)   | 46          | 78  |
| 48  | SA    | 183/243 (75%)  | 182 (100%) | 1 (0%)   | 88          | 96  |
| 49  | SB    | 195/231 (84%)  | 193 (99%)  | 2 (1%)   | 76          | 91  |
| 50  | SD    | 190/202 (94%)  | 187 (98%)  | 3 (2%)   | 62          | 86  |
| 51  | SE    | 224/225 (100%) | 222 (99%)  | 2 (1%)   | 78          | 92  |
| 52  | SF    | 156/170 (92%)  | 156 (100%) | 0        | 100         | 100 |
| 53  | SH    | 166/174 (95%)  | 163 (98%)  | 3 (2%)   | 59          | 85  |
| 54  | SI    | 178/180 (99%)  | 177 (99%)  | 1 (1%)   | 86          | 95  |
| 55  | SK    | 89/136 (65%)   | 87 (98%)   | 2 (2%)   | 52          | 81  |
| 56  | SL    | 137/142 (96%)  | 136 (99%)  | 1 (1%)   | 84          | 94  |
| 57  | SP    | 113/130 (87%)  | 113 (100%) | 0        | 100         | 100 |
| 58  | SQ    | 119/121 (98%)  | 118 (99%)  | 1 (1%)   | 81          | 93  |
| 59  | SR    | 122/122 (100%) | 122 (100%) | 0        | 100         | 100 |
| 60  | SS    | 126/132 (96%)  | 125 (99%)  | 1 (1%)   | 81          | 93  |
| 61  | ST    | 113/115 (98%)  | 111 (98%)  | 2 (2%)   | 59          | 85  |
| 62  | SU    | 94/107 (88%)   | 94 (100%)  | 0        | 100         | 100 |
| 63  | SV    | 67/67 (100%)   | 67 (100%)  | 0        | 100         | 100 |
| 64  | SX    | 113/115 (98%)  | 112 (99%)  | 1 (1%)   | 78          | 92  |
| 65  | Sa    | 89/98 (91%)    | 87 (98%)   | 2 (2%)   | 52          | 81  |
| 66  | Sc    | 57/62 (92%)    | 57 (100%)  | 0        | 100         | 100 |
| 67  | Sd    | 48/49 (98%)    | 47 (98%)   | 1 (2%)   | 53          | 82  |
| 68  | Sg    | 272/275 (99%)  | 271 (100%) | 1 (0%)   | 91          | 97  |
| 69  | SC    | 188/225 (84%)  | 187 (100%) | 1 (0%)   | 88          | 96  |
| 70  | SG    | 207/218 (95%)  | 205 (99%)  | 2 (1%)   | 76          | 91  |
| 71  | SJ    | 161/168 (96%)  | 161 (100%) | 0        | 100         | 100 |
| 72  | SM    | 102/108 (94%)  | 100 (98%)  | 2 (2%)   | 55          | 83  |
| 73  | SN    | 130/131 (99%)  | 130 (100%) | 0        | 100         | 100 |
| 74  | SO    | 110/119 (92%)  | 109 (99%)  | 1 (1%)   | 78          | 92  |
| 75  | SW    | 112/113 (99%)  | 112 (100%) | 0        | 100         | 100 |
| 76  | SY    | 113/115 (98%)  | 111 (98%)  | 2 (2%)   | 59          | 85  |
| 77  | SZ    | 66/103 (64%)   | 64 (97%)   | 2 (3%)   | 41          | 75  |

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| Mol | Chain | Analysed          | Rotameric   | Outliers | Percentiles |     |
|-----|-------|-------------------|-------------|----------|-------------|-----|
| 78  | Sb    | 75/76 (99%)       | 75 (100%)   | 0        | 100         | 100 |
| 79  | Se    | 47/48 (98%)       | 47 (100%)   | 0        | 100         | 100 |
| 80  | Sf    | 60/140 (43%)      | 59 (98%)    | 1 (2%)   | 60          | 85  |
| 81  | CA    | 303/336 (90%)     | 303 (100%)  | 0        | 100         | 100 |
| 83  | CE    | 62/190 (33%)      | 62 (100%)   | 0        | 100         | 100 |
| All | All   | 10421/11521 (90%) | 10350 (99%) | 71 (1%)  | 84          | 94  |

All (71) residues with a non-rotameric sidechain are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 4   | LA    | 207 | VAL  |
| 4   | LA    | 247 | ARG  |
| 6   | LC    | 188 | ARG  |
| 6   | LC    | 257 | PHE  |
| 7   | LD    | 85  | LYS  |
| 8   | LE    | 56  | ARG  |
| 8   | LE    | 197 | THR  |
| 9   | LF    | 29  | LYS  |
| 9   | LF    | 238 | ASP  |
| 10  | LG    | 111 | LYS  |
| 13  | LJ    | 95  | ARG  |
| 17  | LO    | 117 | ARG  |
| 22  | LT    | 36  | LYS  |
| 24  | LV    | 48  | ARG  |
| 25  | LW    | 116 | LYS  |
| 27  | LY    | 79  | VAL  |
| 27  | LY    | 84  | ARG  |
| 29  | La    | 76  | ASP  |
| 29  | La    | 92  | LYS  |
| 29  | La    | 116 | LYS  |
| 30  | Lb    | 63  | LYS  |
| 31  | Lc    | 23  | LYS  |
| 34  | Lf    | 37  | ASP  |
| 35  | Lg    | 54  | ARG  |
| 36  | Lh    | 97  | LYS  |
| 38  | Lj    | 22  | CYS  |
| 39  | Lk    | 21  | LYS  |
| 39  | Lk    | 29  | LYS  |
| 39  | Lk    | 55  | LYS  |
| 40  | Ll    | 36  | ARG  |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 40         | Ll           | 46         | ARG         |
| 46         | Lz           | 7          | ARG         |
| 46         | Lz           | 85         | MET         |
| 46         | Lz           | 122        | ARG         |
| 46         | Lz           | 161        | LYS         |
| 46         | Lz           | 172        | VAL         |
| 48         | SA           | 8          | LEU         |
| 49         | SB           | 56         | LYS         |
| 49         | SB           | 195        | LYS         |
| 50         | SD           | 76         | ARG         |
| 50         | SD           | 143        | ARG         |
| 50         | SD           | 178        | ARG         |
| 51         | SE           | 69         | PHE         |
| 51         | SE           | 254        | LYS         |
| 53         | SH           | 32         | MET         |
| 53         | SH           | 57         | ARG         |
| 53         | SH           | 118        | ARG         |
| 54         | SI           | 140        | LYS         |
| 55         | SK           | 59         | LYS         |
| 55         | SK           | 98         | ARG         |
| 56         | SL           | 69         | ARG         |
| 58         | SQ           | 25         | CYS         |
| 60         | SS           | 103        | LEU         |
| 61         | ST           | 24         | LYS         |
| 61         | ST           | 41         | LYS         |
| 64         | SX           | 105        | PHE         |
| 65         | Sa           | 52         | ASP         |
| 65         | Sa           | 94         | ASP         |
| 67         | Sd           | 49         | ASP         |
| 68         | Sg           | 47         | ARG         |
| 69         | SC           | 104        | ASP         |
| 70         | SG           | 98         | ARG         |
| 70         | SG           | 119        | LYS         |
| 72         | SM           | 63         | LYS         |
| 72         | SM           | 121        | LYS         |
| 74         | SO           | 150        | ARG         |
| 76         | SY           | 16         | ARG         |
| 76         | SY           | 118        | ARG         |
| 77         | SZ           | 41         | ARG         |
| 77         | SZ           | 44         | LEU         |
| 80         | Sf           | 104        | LYS         |

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (106)



such sidechains are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 4   | LA    | 97  | ASN  |
| 4   | LA    | 132 | ASN  |
| 4   | LA    | 162 | ASN  |
| 4   | LA    | 216 | HIS  |
| 5   | LB    | 204 | GLN  |
| 5   | LB    | 208 | ASN  |
| 6   | LC    | 21  | ASN  |
| 6   | LC    | 38  | ASN  |
| 6   | LC    | 48  | ASN  |
| 6   | LC    | 50  | GLN  |
| 6   | LC    | 299 | GLN  |
| 7   | LD    | 191 | ASN  |
| 7   | LD    | 198 | HIS  |
| 7   | LD    | 225 | GLN  |
| 7   | LD    | 282 | GLN  |
| 8   | LE    | 190 | HIS  |
| 9   | LF    | 39  | GLN  |
| 13  | LJ    | 3   | GLN  |
| 13  | LJ    | 98  | ASN  |
| 16  | LN    | 196 | ASN  |
| 17  | LO    | 184 | ASN  |
| 18  | LP    | 21  | ASN  |
| 18  | LP    | 80  | GLN  |
| 18  | LP    | 97  | ASN  |
| 18  | LP    | 116 | HIS  |
| 18  | LP    | 137 | ASN  |
| 19  | LQ    | 21  | GLN  |
| 19  | LQ    | 44  | ASN  |
| 20  | LR    | 40  | GLN  |
| 20  | LR    | 130 | ASN  |
| 20  | LR    | 143 | HIS  |
| 21  | LS    | 77  | ASN  |
| 22  | LT    | 144 | ASN  |
| 23  | LU    | 50  | ASN  |
| 24  | LV    | 77  | HIS  |
| 27  | LY    | 14  | ASN  |
| 29  | La    | 34  | ASN  |
| 29  | La    | 66  | ASN  |
| 30  | Lb    | 50  | ASN  |
| 30  | Lb    | 60  | ASN  |
| 31  | Lc    | 15  | ASN  |
| 33  | Le    | 107 | ASN  |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 34         | Lf           | 56         | ASN         |
| 34         | Lf           | 80         | ASN         |
| 38         | Lj           | 13         | ASN         |
| 38         | Lj           | 66         | HIS         |
| 38         | Lj           | 76         | HIS         |
| 41         | Lm           | 87         | GLN         |
| 43         | Lo           | 45         | GLN         |
| 44         | Lp           | 56         | HIS         |
| 45         | Lr           | 6          | GLN         |
| 45         | Lr           | 100        | ASN         |
| 46         | Lz           | 19         | HIS         |
| 46         | Lz           | 35         | GLN         |
| 46         | Lz           | 72         | GLN         |
| 48         | SA           | 131        | HIS         |
| 48         | SA           | 141        | ASN         |
| 49         | SB           | 53         | GLN         |
| 49         | SB           | 149        | GLN         |
| 49         | SB           | 177        | GLN         |
| 49         | SB           | 186        | ASN         |
| 50         | SD           | 57         | ASN         |
| 50         | SD           | 145        | GLN         |
| 51         | SE           | 98         | ASN         |
| 51         | SE           | 138        | HIS         |
| 51         | SE           | 157        | ASN         |
| 52         | SF           | 31         | ASN         |
| 52         | SF           | 148        | ASN         |
| 54         | SI           | 9          | HIS         |
| 54         | SI           | 35         | ASN         |
| 55         | SK           | 44         | HIS         |
| 55         | SK           | 50         | GLN         |
| 56         | SL           | 11         | GLN         |
| 56         | SL           | 19         | ASN         |
| 56         | SL           | 65         | ASN         |
| 57         | SP           | 24         | GLN         |
| 57         | SP           | 98         | ASN         |
| 57         | SP           | 104        | GLN         |
| 58         | SQ           | 29         | ASN         |
| 58         | SQ           | 80         | GLN         |
| 59         | SR           | 31         | ASN         |
| 59         | SR           | 62         | GLN         |
| 59         | SR           | 93         | GLN         |
| 60         | SS           | 10         | GLN         |

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| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 61  | ST    | 128 | GLN  |
| 62  | SU    | 92  | HIS  |
| 64  | SX    | 127 | ASN  |
| 67  | Sd    | 26  | ASN  |
| 68  | Sg    | 14  | HIS  |
| 68  | Sg    | 15  | ASN  |
| 68  | Sg    | 117 | ASN  |
| 68  | Sg    | 237 | ASN  |
| 68  | Sg    | 296 | GLN  |
| 73  | SN    | 5   | HIS  |
| 73  | SN    | 49  | GLN  |
| 74  | SO    | 13  | GLN  |
| 78  | Sb    | 26  | GLN  |
| 81  | CA    | 10  | GLN  |
| 81  | CA    | 29  | ASN  |
| 81  | CA    | 113 | HIS  |
| 81  | CA    | 134 | GLN  |
| 81  | CA    | 161 | ASN  |
| 81  | CA    | 162 | GLN  |
| 81  | CA    | 165 | GLN  |
| 81  | CA    | 178 | ASN  |
| 81  | CA    | 203 | GLN  |

### 5.3.3 RNA

| Mol | Chain | Analysed        | Backbone Outliers | Pucker Outliers |
|-----|-------|-----------------|-------------------|-----------------|
| 1   | L5    | 3705/5070 (73%) | 962 (25%)         | 19 (0%)         |
| 2   | L7    | 119/121 (98%)   | 10 (8%)           | 0               |
| 3   | L8    | 155/157 (98%)   | 31 (20%)          | 2 (1%)          |
| 47  | S2    | 1717/1869 (91%) | 426 (24%)         | 8 (0%)          |
| 82  | CC    | 74/75 (98%)     | 22 (29%)          | 3 (4%)          |
| All | All   | 5770/7292 (79%) | 1451 (25%)        | 32 (0%)         |

All (1451) RNA backbone outliers are listed below:

| Mol | Chain | Res | Type |
|-----|-------|-----|------|
| 1   | L5    | 2   | G    |
| 1   | L5    | 17  | A    |
| 1   | L5    | 25  | A    |
| 1   | L5    | 26  | C    |
| 1   | L5    | 30  | C    |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | L5           | 39         | A           |
| 1          | L5           | 42         | A           |
| 1          | L5           | 48         | G           |
| 1          | L5           | 56         | A           |
| 1          | L5           | 59         | A           |
| 1          | L5           | 64         | A           |
| 1          | L5           | 65         | A           |
| 1          | L5           | 66         | A           |
| 1          | L5           | 69         | A           |
| 1          | L5           | 72         | C           |
| 1          | L5           | 73         | A           |
| 1          | L5           | 74         | G           |
| 1          | L5           | 91         | G           |
| 1          | L5           | 98         | A           |
| 1          | L5           | 104        | G           |
| 1          | L5           | 108        | A           |
| 1          | L5           | 109        | G           |
| 1          | L5           | 110        | C           |
| 1          | L5           | 119        | G           |
| 1          | L5           | 120        | A           |
| 1          | L5           | 132        | G           |
| 1          | L5           | 133        | C           |
| 1          | L5           | 134        | G           |
| 1          | L5           | 135        | G           |
| 1          | L5           | 136        | C           |
| 1          | L5           | 152        | U           |
| 1          | L5           | 159        | C           |
| 1          | L5           | 164        | G           |
| 1          | L5           | 165        | A           |
| 1          | L5           | 166        | C           |
| 1          | L5           | 181        | C           |
| 1          | L5           | 182        | G           |
| 1          | L5           | 183        | C           |
| 1          | L5           | 184        | U           |
| 1          | L5           | 185        | C           |
| 1          | L5           | 187        | U           |
| 1          | L5           | 188        | G           |
| 1          | L5           | 189        | G           |
| 1          | L5           | 200        | U           |
| 1          | L5           | 209        | U           |
| 1          | L5           | 218        | A           |
| 1          | L5           | 219        | G           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | L5           | 233        | U           |
| 1          | L5           | 234        | G           |
| 1          | L5           | 250        | C           |
| 1          | L5           | 255        | C           |
| 1          | L5           | 256        | G           |
| 1          | L5           | 258        | G           |
| 1          | L5           | 261        | G           |
| 1          | L5           | 263        | G           |
| 1          | L5           | 265        | C           |
| 1          | L5           | 266        | C           |
| 1          | L5           | 267        | G           |
| 1          | L5           | 269        | G           |
| 1          | L5           | 275        | C           |
| 1          | L5           | 276        | C           |
| 1          | L5           | 280        | G           |
| 1          | L5           | 297        | U           |
| 1          | L5           | 306        | A           |
| 1          | L5           | 315        | G           |
| 1          | L5           | 316        | U           |
| 1          | L5           | 340        | C           |
| 1          | L5           | 350        | C           |
| 1          | L5           | 353        | A           |
| 1          | L5           | 373        | G           |
| 1          | L5           | 387        | G           |
| 1          | L5           | 388        | A           |
| 1          | L5           | 399        | G           |
| 1          | L5           | 401        | G           |
| 1          | L5           | 407        | A           |
| 1          | L5           | 408        | A           |
| 1          | L5           | 409        | G           |
| 1          | L5           | 410        | A           |
| 1          | L5           | 411        | G           |
| 1          | L5           | 412        | G           |
| 1          | L5           | 413        | G           |
| 1          | L5           | 418        | A           |
| 1          | L5           | 431        | G           |
| 1          | L5           | 432        | U           |
| 1          | L5           | 438        | G           |
| 1          | L5           | 440        | U           |
| 1          | L5           | 449        | C           |
| 1          | L5           | 450        | G           |
| 1          | L5           | 452        | A           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | L5           | 453        | G           |
| 1          | L5           | 454        | U           |
| 1          | L5           | 456        | C           |
| 1          | L5           | 457        | G           |
| 1          | L5           | 464        | G           |
| 1          | L5           | 465        | G           |
| 1          | L5           | 467        | U           |
| 1          | L5           | 468        | U           |
| 1          | L5           | 472        | C           |
| 1          | L5           | 484        | U           |
| 1          | L5           | 485        | C           |
| 1          | L5           | 486        | C           |
| 1          | L5           | 489        | C           |
| 1          | L5           | 493        | G           |
| 1          | L5           | 494        | U           |
| 1          | L5           | 495        | C           |
| 1          | L5           | 497        | G           |
| 1          | L5           | 498        | C           |
| 1          | L5           | 499        | G           |
| 1          | L5           | 500        | G           |
| 1          | L5           | 501        | C           |
| 1          | L5           | 502        | C           |
| 1          | L5           | 503        | C           |
| 1          | L5           | 504        | G           |
| 1          | L5           | 505        | G           |
| 1          | L5           | 506        | C           |
| 1          | L5           | 509        | A           |
| 1          | L5           | 510        | U           |
| 1          | L5           | 512        | U           |
| 1          | L5           | 513        | U           |
| 1          | L5           | 514        | U           |
| 1          | L5           | 518        | G           |
| 1          | L5           | 643        | C           |
| 1          | L5           | 645        | G           |
| 1          | L5           | 646        | G           |
| 1          | L5           | 656        | C           |
| 1          | L5           | 657        | C           |
| 1          | L5           | 658        | C           |
| 1          | L5           | 659        | G           |
| 1          | L5           | 665        | C           |
| 1          | L5           | 666        | G           |
| 1          | L5           | 667        | A           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | L5           | 668        | C           |
| 1          | L5           | 669        | C           |
| 1          | L5           | 672        | C           |
| 1          | L5           | 673        | C           |
| 1          | L5           | 674        | G           |
| 1          | L5           | 685        | C           |
| 1          | L5           | 686        | A           |
| 1          | L5           | 687        | U           |
| 1          | L5           | 688        | U           |
| 1          | L5           | 696        | C           |
| 1          | L5           | 697        | G           |
| 1          | L5           | 703        | G           |
| 1          | L5           | 704        | C           |
| 1          | L5           | 706        | C           |
| 1          | L5           | 708        | G           |
| 1          | L5           | 731        | G           |
| 1          | L5           | 738        | C           |
| 1          | L5           | 739        | G           |
| 1          | L5           | 742        | G           |
| 1          | L5           | 744        | G           |
| 1          | L5           | 750        | U           |
| 1          | L5           | 753        | C           |
| 1          | L5           | 758        | G           |
| 1          | L5           | 759        | G           |
| 1          | L5           | 760        | G           |
| 1          | L5           | 904        | C           |
| 1          | L5           | 907        | C           |
| 1          | L5           | 910        | G           |
| 1          | L5           | 912        | G           |
| 1          | L5           | 913        | U           |
| 1          | L5           | 914        | U           |
| 1          | L5           | 915        | A           |
| 1          | L5           | 917        | A           |
| 1          | L5           | 918        | G           |
| 1          | L5           | 923        | C           |
| 1          | L5           | 924        | C           |
| 1          | L5           | 926        | G           |
| 1          | L5           | 932        | A           |
| 1          | L5           | 933        | G           |
| 1          | L5           | 935        | A           |
| 1          | L5           | 936        | C           |
| 1          | L5           | 937        | U           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | L5           | 941        | C           |
| 1          | L5           | 943        | A           |
| 1          | L5           | 944        | A           |
| 1          | L5           | 945        | U           |
| 1          | L5           | 946        | C           |
| 1          | L5           | 959        | G           |
| 1          | L5           | 960        | A           |
| 1          | L5           | 961        | G           |
| 1          | L5           | 962        | C           |
| 1          | L5           | 965        | G           |
| 1          | L5           | 966        | A           |
| 1          | L5           | 967        | C           |
| 1          | L5           | 969        | C           |
| 1          | L5           | 970        | G           |
| 1          | L5           | 971        | U           |
| 1          | L5           | 982        | U           |
| 1          | L5           | 984        | C           |
| 1          | L5           | 985        | C           |
| 1          | L5           | 986        | C           |
| 1          | L5           | 988        | C           |
| 1          | L5           | 989        | U           |
| 1          | L5           | 990        | C           |
| 1          | L5           | 992        | C           |
| 1          | L5           | 993        | G           |
| 1          | L5           | 995        | C           |
| 1          | L5           | 996        | G           |
| 1          | L5           | 1048       | G           |
| 1          | L5           | 1049       | C           |
| 1          | L5           | 1050       | C           |
| 1          | L5           | 1051       | G           |
| 1          | L5           | 1066       | G           |
| 1          | L5           | 1070       | G           |
| 1          | L5           | 1071       | C           |
| 1          | L5           | 1074       | G           |
| 1          | L5           | 1075       | G           |
| 1          | L5           | 1082       | C           |
| 1          | L5           | 1083       | U           |
| 1          | L5           | 1095       | A           |
| 1          | L5           | 1168       | G           |
| 1          | L5           | 1170       | G           |
| 1          | L5           | 1171       | G           |
| 1          | L5           | 1172       | C           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | L5           | 1173       | G           |
| 1          | L5           | 1178       | G           |
| 1          | L5           | 1179       | U           |
| 1          | L5           | 1180       | C           |
| 1          | L5           | 1181       | C           |
| 1          | L5           | 1182       | C           |
| 1          | L5           | 1183       | C           |
| 1          | L5           | 1184       | A           |
| 1          | L5           | 1193       | C           |
| 1          | L5           | 1202       | C           |
| 1          | L5           | 1203       | G           |
| 1          | L5           | 1204       | C           |
| 1          | L5           | 1206       | C           |
| 1          | L5           | 1210       | C           |
| 1          | L5           | 1211       | G           |
| 1          | L5           | 1214       | C           |
| 1          | L5           | 1215       | C           |
| 1          | L5           | 1216       | C           |
| 1          | L5           | 1217       | G           |
| 1          | L5           | 1218       | G           |
| 1          | L5           | 1219       | G           |
| 1          | L5           | 1222       | A           |
| 1          | L5           | 1235       | G           |
| 1          | L5           | 1241       | C           |
| 1          | L5           | 1242       | G           |
| 1          | L5           | 1243       | C           |
| 1          | L5           | 1246       | G           |
| 1          | L5           | 1247       | U           |
| 1          | L5           | 1253       | G           |
| 1          | L5           | 1254       | A           |
| 1          | L5           | 1255       | A           |
| 1          | L5           | 1257       | A           |
| 1          | L5           | 1258       | G           |
| 1          | L5           | 1259       | G           |
| 1          | L5           | 1261       | G           |
| 1          | L5           | 1262       | G           |
| 1          | L5           | 1266       | G           |
| 1          | L5           | 1267       | C           |
| 1          | L5           | 1269       | G           |
| 1          | L5           | 1270       | A           |
| 1          | L5           | 1271       | G           |
| 1          | L5           | 1272       | C           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | L5           | 1273       | G           |
| 1          | L5           | 1274       | A           |
| 1          | L5           | 1275       | G           |
| 1          | L5           | 1277       | G           |
| 1          | L5           | 1280       | C           |
| 1          | L5           | 1284       | G           |
| 1          | L5           | 1285       | U           |
| 1          | L5           | 1287       | G           |
| 1          | L5           | 1294       | A           |
| 1          | L5           | 1295       | C           |
| 1          | L5           | 1296       | G           |
| 1          | L5           | 1301       | C           |
| 1          | L5           | 1302       | U           |
| 1          | L5           | 1312       | A           |
| 1          | L5           | 1313       | C           |
| 1          | L5           | 1324       | A           |
| 1          | L5           | 1326       | A           |
| 1          | L5           | 1337       | A           |
| 1          | L5           | 1354       | A           |
| 1          | L5           | 1358       | G           |
| 1          | L5           | 1359       | G           |
| 1          | L5           | 1365       | C           |
| 1          | L5           | 1367       | C           |
| 1          | L5           | 1368       | A           |
| 1          | L5           | 1379       | C           |
| 1          | L5           | 1381       | U           |
| 1          | L5           | 1387       | A           |
| 1          | L5           | 1393       | G           |
| 1          | L5           | 1394       | G           |
| 1          | L5           | 1397       | A           |
| 1          | L5           | 1399       | G           |
| 1          | L5           | 1404       | G           |
| 1          | L5           | 1405       | C           |
| 1          | L5           | 1407       | C           |
| 1          | L5           | 1409       | C           |
| 1          | L5           | 1410       | U           |
| 1          | L5           | 1411       | C           |
| 1          | L5           | 1412       | G           |
| 1          | L5           | 1414       | C           |
| 1          | L5           | 1415       | G           |
| 1          | L5           | 1417       | C           |
| 1          | L5           | 1420       | A           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | L5           | 1435       | G           |
| 1          | L5           | 1437       | C           |
| 1          | L5           | 1439       | C           |
| 1          | L5           | 1440       | U           |
| 1          | L5           | 1441       | C           |
| 1          | L5           | 1442       | C           |
| 1          | L5           | 1445       | U           |
| 1          | L5           | 1446       | C           |
| 1          | L5           | 1447       | C           |
| 1          | L5           | 1457       | G           |
| 1          | L5           | 1482       | G           |
| 1          | L5           | 1483       | C           |
| 1          | L5           | 1497       | A           |
| 1          | L5           | 1498       | G           |
| 1          | L5           | 1502       | G           |
| 1          | L5           | 1515       | A           |
| 1          | L5           | 1517       | G           |
| 1          | L5           | 1518       | A           |
| 1          | L5           | 1534       | A           |
| 1          | L5           | 1547       | A           |
| 1          | L5           | 1562       | G           |
| 1          | L5           | 1566       | C           |
| 1          | L5           | 1578       | U           |
| 1          | L5           | 1591       | U           |
| 1          | L5           | 1596       | U           |
| 1          | L5           | 1597       | G           |
| 1          | L5           | 1621       | A           |
| 1          | L5           | 1624       | G           |
| 1          | L5           | 1625       | G           |
| 1          | L5           | 1631       | A           |
| 1          | L5           | 1632       | A           |
| 1          | L5           | 1633       | G           |
| 1          | L5           | 1634       | A           |
| 1          | L5           | 1638       | A           |
| 1          | L5           | 1640       | C           |
| 1          | L5           | 1641       | G           |
| 1          | L5           | 1642       | A           |
| 1          | L5           | 1654       | G           |
| 1          | L5           | 1660       | U           |
| 1          | L5           | 1661       | C           |
| 1          | L5           | 1663       | C           |
| 1          | L5           | 1670       | G           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | L5           | 1676       | C           |
| 1          | L5           | 1677       | U           |
| 1          | L5           | 1678       | C           |
| 1          | L5           | 1681       | G           |
| 1          | L5           | 1691       | G           |
| 1          | L5           | 1697       | G           |
| 1          | L5           | 1699       | A           |
| 1          | L5           | 1700       | G           |
| 1          | L5           | 1703       | C           |
| 1          | L5           | 1704       | C           |
| 1          | L5           | 1705       | G           |
| 1          | L5           | 1707       | C           |
| 1          | L5           | 1715       | C           |
| 1          | L5           | 1719       | A           |
| 1          | L5           | 1731       | C           |
| 1          | L5           | 1734       | G           |
| 1          | L5           | 1741       | G           |
| 1          | L5           | 1742       | A           |
| 1          | L5           | 1750       | G           |
| 1          | L5           | 1753       | G           |
| 1          | L5           | 1755       | C           |
| 1          | L5           | 1757       | U           |
| 1          | L5           | 1758       | G           |
| 1          | L5           | 1759       | G           |
| 1          | L5           | 1760       | G           |
| 1          | L5           | 1762       | C           |
| 1          | L5           | 1763       | C           |
| 1          | L5           | 1764       | G           |
| 1          | L5           | 1765       | A           |
| 1          | L5           | 1766       | A           |
| 1          | L5           | 1767       | A           |
| 1          | L5           | 1768       | C           |
| 1          | L5           | 1770       | A           |
| 1          | L5           | 1772       | C           |
| 1          | L5           | 1775       | A           |
| 1          | L5           | 1776       | A           |
| 1          | L5           | 1787       | A           |
| 1          | L5           | 1797       | G           |
| 1          | L5           | 1804       | A           |
| 1          | L5           | 1806       | G           |
| 1          | L5           | 1810       | G           |
| 1          | L5           | 1820       | C           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | L5           | 1821       | G           |
| 1          | L5           | 1822       | U           |
| 1          | L5           | 1833       | G           |
| 1          | L5           | 1834       | U           |
| 1          | L5           | 1836       | G           |
| 1          | L5           | 1837       | A           |
| 1          | L5           | 1842       | G           |
| 1          | L5           | 1843       | A           |
| 1          | L5           | 1855       | G           |
| 1          | L5           | 1869       | G           |
| 1          | L5           | 1882       | U           |
| 1          | L5           | 1889       | U           |
| 1          | L5           | 1892       | A           |
| 1          | L5           | 1897       | A           |
| 1          | L5           | 1898       | C           |
| 1          | L5           | 1918       | U           |
| 1          | L5           | 1919       | G           |
| 1          | L5           | 1920       | C           |
| 1          | L5           | 1921       | C           |
| 1          | L5           | 1922       | G           |
| 1          | L5           | 1925       | G           |
| 1          | L5           | 1931       | C           |
| 1          | L5           | 1932       | A           |
| 1          | L5           | 1935       | C           |
| 1          | L5           | 1936       | C           |
| 1          | L5           | 1940       | G           |
| 1          | L5           | 1948       | G           |
| 1          | L5           | 1949       | U           |
| 1          | L5           | 1959       | U           |
| 1          | L5           | 1960       | A           |
| 1          | L5           | 1961       | G           |
| 1          | L5           | 1962       | A           |
| 1          | L5           | 1966       | C           |
| 1          | L5           | 1968       | G           |
| 1          | L5           | 1970       | A           |
| 1          | L5           | 1971       | C           |
| 1          | L5           | 1972       | G           |
| 1          | L5           | 1974       | U           |
| 1          | L5           | 1975       | G           |
| 1          | L5           | 1976       | G           |
| 1          | L5           | 1977       | C           |
| 1          | L5           | 1978       | C           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | L5           | 1979       | A           |
| 1          | L5           | 1980       | U           |
| 1          | L5           | 1981       | G           |
| 1          | L5           | 1982       | G           |
| 1          | L5           | 1983       | A           |
| 1          | L5           | 1985       | G           |
| 1          | L5           | 1987       | C           |
| 1          | L5           | 1988       | G           |
| 1          | L5           | 1990       | A           |
| 1          | L5           | 1991       | A           |
| 1          | L5           | 1992       | U           |
| 1          | L5           | 1993       | C           |
| 1          | L5           | 1994       | C           |
| 1          | L5           | 1995       | G           |
| 1          | L5           | 1996       | C           |
| 1          | L5           | 1997       | U           |
| 1          | L5           | 1998       | A           |
| 1          | L5           | 1999       | A           |
| 1          | L5           | 2001       | G           |
| 1          | L5           | 2002       | A           |
| 1          | L5           | 2003       | G           |
| 1          | L5           | 2005       | G           |
| 1          | L5           | 2006       | U           |
| 1          | L5           | 2007       | G           |
| 1          | L5           | 2009       | A           |
| 1          | L5           | 2010       | A           |
| 1          | L5           | 2011       | C           |
| 1          | L5           | 2012       | A           |
| 1          | L5           | 2013       | A           |
| 1          | L5           | 2014       | C           |
| 1          | L5           | 2015       | U           |
| 1          | L5           | 2018       | C           |
| 1          | L5           | 2019       | C           |
| 1          | L5           | 2020       | U           |
| 1          | L5           | 2021       | G           |
| 1          | L5           | 2024       | G           |
| 1          | L5           | 2025       | A           |
| 1          | L5           | 2026       | A           |
| 1          | L5           | 2034       | G           |
| 1          | L5           | 2044       | U           |
| 1          | L5           | 2046       | G           |
| 1          | L5           | 2048       | U           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | L5           | 2055       | G           |
| 1          | L5           | 2056       | G           |
| 1          | L5           | 2069       | A           |
| 1          | L5           | 2084       | C           |
| 1          | L5           | 2085       | G           |
| 1          | L5           | 2089       | G           |
| 1          | L5           | 2092       | G           |
| 1          | L5           | 2093       | A           |
| 1          | L5           | 2095       | A           |
| 1          | L5           | 2096       | G           |
| 1          | L5           | 2097       | U           |
| 1          | L5           | 2098       | G           |
| 1          | L5           | 2100       | A           |
| 1          | L5           | 2101       | C           |
| 1          | L5           | 2102       | G           |
| 1          | L5           | 2107       | C           |
| 1          | L5           | 2108       | G           |
| 1          | L5           | 2110       | C           |
| 1          | L5           | 2111       | G           |
| 1          | L5           | 2112       | G           |
| 1          | L5           | 2250       | C           |
| 1          | L5           | 2252       | G           |
| 1          | L5           | 2253       | A           |
| 1          | L5           | 2256       | C           |
| 1          | L5           | 2258       | C           |
| 1          | L5           | 2259       | G           |
| 1          | L5           | 2260       | C           |
| 1          | L5           | 2263       | A           |
| 1          | L5           | 2270       | G           |
| 1          | L5           | 2289       | C           |
| 1          | L5           | 2300       | A           |
| 1          | L5           | 2301       | G           |
| 1          | L5           | 2306       | G           |
| 1          | L5           | 2313       | A           |
| 1          | L5           | 2316       | G           |
| 1          | L5           | 2332       | A           |
| 1          | L5           | 2333       | G           |
| 1          | L5           | 2348       | G           |
| 1          | L5           | 2350       | U           |
| 1          | L5           | 2351       | C           |
| 1          | L5           | 2360       | A           |
| 1          | L5           | 2364       | G           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | L5           | 2369       | U           |
| 1          | L5           | 2395       | A           |
| 1          | L5           | 2397       | G           |
| 1          | L5           | 2408       | U           |
| 1          | L5           | 2417       | A           |
| 1          | L5           | 2418       | A           |
| 1          | L5           | 2421       | G           |
| 1          | L5           | 2425       | U           |
| 1          | L5           | 2437       | C           |
| 1          | L5           | 2441       | C           |
| 1          | L5           | 2450       | G           |
| 1          | L5           | 2464       | C           |
| 1          | L5           | 2465       | C           |
| 1          | L5           | 2467       | U           |
| 1          | L5           | 2474       | G           |
| 1          | L5           | 2475       | G           |
| 1          | L5           | 2477       | A           |
| 1          | L5           | 2478       | C           |
| 1          | L5           | 2479       | G           |
| 1          | L5           | 2483       | G           |
| 1          | L5           | 2484       | A           |
| 1          | L5           | 2485       | U           |
| 1          | L5           | 2487       | G           |
| 1          | L5           | 2488       | C           |
| 1          | L5           | 2489       | C           |
| 1          | L5           | 2490       | U           |
| 1          | L5           | 2491       | C           |
| 1          | L5           | 2494       | U           |
| 1          | L5           | 2495       | U           |
| 1          | L5           | 2503       | G           |
| 1          | L5           | 2504       | C           |
| 1          | L5           | 2505       | C           |
| 1          | L5           | 2506       | G           |
| 1          | L5           | 2513       | A           |
| 1          | L5           | 2519       | U           |
| 1          | L5           | 2537       | A           |
| 1          | L5           | 2544       | G           |
| 1          | L5           | 2546       | G           |
| 1          | L5           | 2547       | G           |
| 1          | L5           | 2554       | U           |
| 1          | L5           | 2555       | G           |
| 1          | L5           | 2556       | G           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | L5           | 2559       | G           |
| 1          | L5           | 2560       | C           |
| 1          | L5           | 2561       | C           |
| 1          | L5           | 2583       | C           |
| 1          | L5           | 2586       | G           |
| 1          | L5           | 2587       | A           |
| 1          | L5           | 2589       | C           |
| 1          | L5           | 2601       | A           |
| 1          | L5           | 2638       | G           |
| 1          | L5           | 2653       | C           |
| 1          | L5           | 2661       | U           |
| 1          | L5           | 2662       | G           |
| 1          | L5           | 2669       | C           |
| 1          | L5           | 2675       | G           |
| 1          | L5           | 2676       | A           |
| 1          | L5           | 2687       | U           |
| 1          | L5           | 2695       | A           |
| 1          | L5           | 2696       | A           |
| 1          | L5           | 2703       | G           |
| 1          | L5           | 2707       | U           |
| 1          | L5           | 2708       | U           |
| 1          | L5           | 2709       | C           |
| 1          | L5           | 2710       | C           |
| 1          | L5           | 2711       | G           |
| 1          | L5           | 2713       | C           |
| 1          | L5           | 2721       | G           |
| 1          | L5           | 2724       | G           |
| 1          | L5           | 2725       | A           |
| 1          | L5           | 2726       | G           |
| 1          | L5           | 2738       | C           |
| 1          | L5           | 2739       | C           |
| 1          | L5           | 2742       | G           |
| 1          | L5           | 2743       | A           |
| 1          | L5           | 2746       | A           |
| 1          | L5           | 2756       | G           |
| 1          | L5           | 2761       | U           |
| 1          | L5           | 2763       | U           |
| 1          | L5           | 2764       | A           |
| 1          | L5           | 2769       | U           |
| 1          | L5           | 2770       | C           |
| 1          | L5           | 2787       | A           |
| 1          | L5           | 2788       | U           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | L5           | 2790       | U           |
| 1          | L5           | 2794       | C           |
| 1          | L5           | 2795       | A           |
| 1          | L5           | 2825       | A           |
| 1          | L5           | 2826       | U           |
| 1          | L5           | 2827       | G           |
| 1          | L5           | 2835       | A           |
| 1          | L5           | 2838       | G           |
| 1          | L5           | 2842       | G           |
| 1          | L5           | 2848       | G           |
| 1          | L5           | 2855       | G           |
| 1          | L5           | 2877       | G           |
| 1          | L5           | 2892       | C           |
| 1          | L5           | 2895       | A           |
| 1          | L5           | 2900       | U           |
| 1          | L5           | 2902       | G           |
| 1          | L5           | 2903       | G           |
| 1          | L5           | 2904       | U           |
| 1          | L5           | 2905       | C           |
| 1          | L5           | 2906       | G           |
| 1          | L5           | 2908       | U           |
| 1          | L5           | 2909       | C           |
| 1          | L5           | 3585       | G           |
| 1          | L5           | 3588       | C           |
| 1          | L5           | 3590       | G           |
| 1          | L5           | 3591       | C           |
| 1          | L5           | 3592       | G           |
| 1          | L5           | 3594       | C           |
| 1          | L5           | 3595       | U           |
| 1          | L5           | 3596       | A           |
| 1          | L5           | 3597       | G           |
| 1          | L5           | 3605       | C           |
| 1          | L5           | 3606       | U           |
| 1          | L5           | 3615       | G           |
| 1          | L5           | 3616       | U           |
| 1          | L5           | 3618       | C           |
| 1          | L5           | 3626       | G           |
| 1          | L5           | 3630       | A           |
| 1          | L5           | 3635       | A           |
| 1          | L5           | 3644       | U           |
| 1          | L5           | 3646       | A           |
| 1          | L5           | 3662       | A           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | L5           | 3664       | G           |
| 1          | L5           | 3670       | C           |
| 1          | L5           | 3672       | G           |
| 1          | L5           | 3673       | C           |
| 1          | L5           | 3674       | G           |
| 1          | L5           | 3685       | C           |
| 1          | L5           | 3711       | A           |
| 1          | L5           | 3713       | U           |
| 1          | L5           | 3714       | G           |
| 1          | L5           | 3727       | A           |
| 1          | L5           | 3729       | U           |
| 1          | L5           | 3735       | G           |
| 1          | L5           | 3748       | A           |
| 1          | L5           | 3750       | G           |
| 1          | L5           | 3753       | G           |
| 1          | L5           | 3754       | G           |
| 1          | L5           | 3757       | G           |
| 1          | L5           | 3758       | U           |
| 1          | L5           | 3759       | A           |
| 1          | L5           | 3760       | A           |
| 1          | L5           | 3761       | C           |
| 1          | L5           | 3771       | C           |
| 1          | L5           | 3775       | A           |
| 1          | L5           | 3776       | G           |
| 1          | L5           | 3777       | G           |
| 1          | L5           | 3783       | A           |
| 1          | L5           | 3784       | A           |
| 1          | L5           | 3786       | U           |
| 1          | L5           | 3802       | U           |
| 1          | L5           | 3811       | G           |
| 1          | L5           | 3812       | C           |
| 1          | L5           | 3814       | U           |
| 1          | L5           | 3817       | A           |
| 1          | L5           | 3818       | U           |
| 1          | L5           | 3819       | G           |
| 1          | L5           | 3838       | U           |
| 1          | L5           | 3839       | G           |
| 1          | L5           | 3840       | U           |
| 1          | L5           | 3851       | U           |
| 1          | L5           | 3867       | A           |
| 1          | L5           | 3876       | A           |
| 1          | L5           | 3877       | A           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | L5           | 3878       | C           |
| 1          | L5           | 3879       | G           |
| 1          | L5           | 3885       | G           |
| 1          | L5           | 3887       | C           |
| 1          | L5           | 3890       | A           |
| 1          | L5           | 3892       | U           |
| 1          | L5           | 3897       | G           |
| 1          | L5           | 3901       | A           |
| 1          | L5           | 3906       | A           |
| 1          | L5           | 3907       | G           |
| 1          | L5           | 3908       | A           |
| 1          | L5           | 3915       | U           |
| 1          | L5           | 3938       | G           |
| 1          | L5           | 3939       | G           |
| 1          | L5           | 3942       | A           |
| 1          | L5           | 3943       | A           |
| 1          | L5           | 3944       | G           |
| 1          | L5           | 3947       | A           |
| 1          | L5           | 3950       | U           |
| 1          | L5           | 3955       | G           |
| 1          | L5           | 3956       | G           |
| 1          | L5           | 3957       | U           |
| 1          | L5           | 3958       | G           |
| 1          | L5           | 3959       | U           |
| 1          | L5           | 3960       | A           |
| 1          | L5           | 3961       | G           |
| 1          | L5           | 3962       | A           |
| 1          | L5           | 3963       | A           |
| 1          | L5           | 3964       | U           |
| 1          | L5           | 3965       | A           |
| 1          | L5           | 3966       | A           |
| 1          | L5           | 3967       | G           |
| 1          | L5           | 3968       | U           |
| 1          | L5           | 3969       | G           |
| 1          | L5           | 3970       | G           |
| 1          | L5           | 3971       | G           |
| 1          | L5           | 3972       | A           |
| 1          | L5           | 3973       | G           |
| 1          | L5           | 3974       | G           |
| 1          | L5           | 3975       | C           |
| 1          | L5           | 3977       | C           |
| 1          | L5           | 4034       | G           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | L5           | 4036       | G           |
| 1          | L5           | 4038       | C           |
| 1          | L5           | 4039       | G           |
| 1          | L5           | 4041       | C           |
| 1          | L5           | 4042       | G           |
| 1          | L5           | 4043       | G           |
| 1          | L5           | 4044       | U           |
| 1          | L5           | 4045       | G           |
| 1          | L5           | 4046       | A           |
| 1          | L5           | 4048       | A           |
| 1          | L5           | 4049       | U           |
| 1          | L5           | 4051       | C           |
| 1          | L5           | 4052       | C           |
| 1          | L5           | 4053       | A           |
| 1          | L5           | 4054       | C           |
| 1          | L5           | 4055       | U           |
| 1          | L5           | 4056       | A           |
| 1          | L5           | 4057       | C           |
| 1          | L5           | 4058       | U           |
| 1          | L5           | 4059       | C           |
| 1          | L5           | 4062       | A           |
| 1          | L5           | 4063       | U           |
| 1          | L5           | 4064       | C           |
| 1          | L5           | 4065       | G           |
| 1          | L5           | 4076       | G           |
| 1          | L5           | 4084       | G           |
| 1          | L5           | 4086       | G           |
| 1          | L5           | 4096       | C           |
| 1          | L5           | 4097       | G           |
| 1          | L5           | 4098       | A           |
| 1          | L5           | 4099       | G           |
| 1          | L5           | 4101       | C           |
| 1          | L5           | 4102       | C           |
| 1          | L5           | 4103       | C           |
| 1          | L5           | 4104       | G           |
| 1          | L5           | 4106       | G           |
| 1          | L5           | 4107       | G           |
| 1          | L5           | 4108       | G           |
| 1          | L5           | 4109       | G           |
| 1          | L5           | 4111       | U           |
| 1          | L5           | 4112       | C           |
| 1          | L5           | 4114       | C           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | L5           | 4115       | G           |
| 1          | L5           | 4116       | C           |
| 1          | L5           | 4117       | U           |
| 1          | L5           | 4119       | C           |
| 1          | L5           | 4122       | G           |
| 1          | L5           | 4127       | A           |
| 1          | L5           | 4140       | C           |
| 1          | L5           | 4141       | G           |
| 1          | L5           | 4142       | C           |
| 1          | L5           | 4143       | G           |
| 1          | L5           | 4144       | C           |
| 1          | L5           | 4146       | G           |
| 1          | L5           | 4150       | G           |
| 1          | L5           | 4160       | C           |
| 1          | L5           | 4162       | C           |
| 1          | L5           | 4163       | U           |
| 1          | L5           | 4168       | G           |
| 1          | L5           | 4170       | A           |
| 1          | L5           | 4183       | G           |
| 1          | L5           | 4191       | G           |
| 1          | L5           | 4196       | G           |
| 1          | L5           | 4197       | G           |
| 1          | L5           | 4203       | A           |
| 1          | L5           | 4212       | A           |
| 1          | L5           | 4222       | G           |
| 1          | L5           | 4228       | G           |
| 1          | L5           | 4229       | U           |
| 1          | L5           | 4233       | A           |
| 1          | L5           | 4251       | A           |
| 1          | L5           | 4254       | G           |
| 1          | L5           | 4255       | A           |
| 1          | L5           | 4256       | A           |
| 1          | L5           | 4257       | A           |
| 1          | L5           | 4265       | U           |
| 1          | L5           | 4268       | A           |
| 1          | L5           | 4273       | A           |
| 1          | L5           | 4281       | A           |
| 1          | L5           | 4291       | G           |
| 1          | L5           | 4295       | U           |
| 1          | L5           | 4304       | A           |
| 1          | L5           | 4305       | G           |
| 1          | L5           | 4314       | C           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | L5           | 4319       | C           |
| 1          | L5           | 4329       | G           |
| 1          | L5           | 4330       | G           |
| 1          | L5           | 4332       | C           |
| 1          | L5           | 4339       | A           |
| 1          | L5           | 4349       | C           |
| 1          | L5           | 4354       | U           |
| 1          | L5           | 4371       | G           |
| 1          | L5           | 4373       | G           |
| 1          | L5           | 4377       | G           |
| 1          | L5           | 4378       | A           |
| 1          | L5           | 4379       | A           |
| 1          | L5           | 4380       | A           |
| 1          | L5           | 4381       | A           |
| 1          | L5           | 4386       | C           |
| 1          | L5           | 4387       | C           |
| 1          | L5           | 4391       | G           |
| 1          | L5           | 4394       | A           |
| 1          | L5           | 4405       | G           |
| 1          | L5           | 4422       | A           |
| 1          | L5           | 4424       | A           |
| 1          | L5           | 4448       | G           |
| 1          | L5           | 4449       | A           |
| 1          | L5           | 4450       | U           |
| 1          | L5           | 4452       | U           |
| 1          | L5           | 4453       | C           |
| 1          | L5           | 4464       | A           |
| 1          | L5           | 4466       | C           |
| 1          | L5           | 4471       | U           |
| 1          | L5           | 4475       | G           |
| 1          | L5           | 4488       | A           |
| 1          | L5           | 4500       | U           |
| 1          | L5           | 4512       | U           |
| 1          | L5           | 4513       | A           |
| 1          | L5           | 4518       | A           |
| 1          | L5           | 4519       | C           |
| 1          | L5           | 4524       | G           |
| 1          | L5           | 4529       | G           |
| 1          | L5           | 4531       | U           |
| 1          | L5           | 4545       | G           |
| 1          | L5           | 4548       | A           |
| 1          | L5           | 4549       | G           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | L5           | 4556       | U           |
| 1          | L5           | 4557       | U           |
| 1          | L5           | 4560       | C           |
| 1          | L5           | 4567       | G           |
| 1          | L5           | 4573       | G           |
| 1          | L5           | 4575       | G           |
| 1          | L5           | 4589       | A           |
| 1          | L5           | 4590       | A           |
| 1          | L5           | 4600       | G           |
| 1          | L5           | 4601       | U           |
| 1          | L5           | 4617       | G           |
| 1          | L5           | 4626       | A           |
| 1          | L5           | 4627       | U           |
| 1          | L5           | 4635       | A           |
| 1          | L5           | 4636       | U           |
| 1          | L5           | 4637       | G           |
| 1          | L5           | 4652       | G           |
| 1          | L5           | 4656       | A           |
| 1          | L5           | 4659       | G           |
| 1          | L5           | 4670       | C           |
| 1          | L5           | 4672       | A           |
| 1          | L5           | 4679       | G           |
| 1          | L5           | 4682       | U           |
| 1          | L5           | 4684       | A           |
| 1          | L5           | 4687       | A           |
| 1          | L5           | 4691       | A           |
| 1          | L5           | 4694       | G           |
| 1          | L5           | 4695       | C           |
| 1          | L5           | 4700       | A           |
| 1          | L5           | 4708       | A           |
| 1          | L5           | 4709       | U           |
| 1          | L5           | 4719       | G           |
| 1          | L5           | 4720       | C           |
| 1          | L5           | 4731       | G           |
| 1          | L5           | 4733       | C           |
| 1          | L5           | 4734       | A           |
| 1          | L5           | 4735       | G           |
| 1          | L5           | 4740       | G           |
| 1          | L5           | 4741       | C           |
| 1          | L5           | 4742       | G           |
| 1          | L5           | 4745       | G           |
| 1          | L5           | 4747       | C           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | L5           | 4750       | G           |
| 1          | L5           | 4754       | G           |
| 1          | L5           | 4757       | C           |
| 1          | L5           | 4759       | C           |
| 1          | L5           | 4761       | G           |
| 1          | L5           | 4765       | G           |
| 1          | L5           | 4770       | U           |
| 1          | L5           | 4771       | C           |
| 1          | L5           | 4772       | C           |
| 1          | L5           | 4775       | C           |
| 1          | L5           | 4776       | G           |
| 1          | L5           | 4859       | C           |
| 1          | L5           | 4860       | G           |
| 1          | L5           | 4863       | G           |
| 1          | L5           | 4870       | G           |
| 1          | L5           | 4871       | C           |
| 1          | L5           | 4875       | G           |
| 1          | L5           | 4877       | G           |
| 1          | L5           | 4882       | U           |
| 1          | L5           | 4883       | C           |
| 1          | L5           | 4888       | U           |
| 1          | L5           | 4889       | G           |
| 1          | L5           | 4891       | G           |
| 1          | L5           | 4895       | C           |
| 1          | L5           | 4896       | G           |
| 1          | L5           | 4900       | C           |
| 1          | L5           | 4901       | G           |
| 1          | L5           | 4902       | C           |
| 1          | L5           | 4910       | G           |
| 1          | L5           | 4911       | A           |
| 1          | L5           | 4912       | G           |
| 1          | L5           | 4914       | C           |
| 1          | L5           | 4922       | C           |
| 1          | L5           | 4923       | C           |
| 1          | L5           | 4925       | U           |
| 1          | L5           | 4926       | C           |
| 1          | L5           | 4927       | G           |
| 1          | L5           | 4928       | C           |
| 1          | L5           | 4931       | G           |
| 1          | L5           | 4934       | A           |
| 1          | L5           | 4937       | C           |
| 1          | L5           | 4940       | C           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | L5           | 4941       | G           |
| 1          | L5           | 4943       | A           |
| 1          | L5           | 4947       | U           |
| 1          | L5           | 4951       | G           |
| 1          | L5           | 4953       | G           |
| 1          | L5           | 4960       | G           |
| 1          | L5           | 4961       | G           |
| 1          | L5           | 4966       | A           |
| 1          | L5           | 4976       | U           |
| 1          | L5           | 4979       | A           |
| 1          | L5           | 4988       | U           |
| 1          | L5           | 4989       | U           |
| 1          | L5           | 4990       | C           |
| 1          | L5           | 4991       | U           |
| 1          | L5           | 5013       | C           |
| 1          | L5           | 5014       | A           |
| 1          | L5           | 5017       | G           |
| 1          | L5           | 5020       | G           |
| 1          | L5           | 5022       | U           |
| 1          | L5           | 5024       | C           |
| 1          | L5           | 5025       | C           |
| 1          | L5           | 5026       | U           |
| 1          | L5           | 5028       | G           |
| 1          | L5           | 5029       | C           |
| 1          | L5           | 5031       | G           |
| 1          | L5           | 5034       | A           |
| 1          | L5           | 5041       | G           |
| 1          | L5           | 5047       | C           |
| 1          | L5           | 5050       | C           |
| 1          | L5           | 5054       | C           |
| 1          | L5           | 5055       | G           |
| 1          | L5           | 5061       | A           |
| 1          | L5           | 5069       | U           |
| 2          | L7           | 5          | A           |
| 2          | L7           | 7          | G           |
| 2          | L7           | 24         | C           |
| 2          | L7           | 38         | U           |
| 2          | L7           | 53         | U           |
| 2          | L7           | 54         | A           |
| 2          | L7           | 63         | C           |
| 2          | L7           | 64         | G           |
| 2          | L7           | 100        | A           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 2          | L7           | 111        | C           |
| 3          | L8           | 2          | G           |
| 3          | L8           | 25         | G           |
| 3          | L8           | 34         | U           |
| 3          | L8           | 35         | C           |
| 3          | L8           | 48         | A           |
| 3          | L8           | 59         | A           |
| 3          | L8           | 60         | G           |
| 3          | L8           | 61         | A           |
| 3          | L8           | 62         | A           |
| 3          | L8           | 63         | U           |
| 3          | L8           | 68         | G           |
| 3          | L8           | 82         | A           |
| 3          | L8           | 83         | C           |
| 3          | L8           | 84         | A           |
| 3          | L8           | 85         | U           |
| 3          | L8           | 86         | U           |
| 3          | L8           | 87         | G           |
| 3          | L8           | 94         | G           |
| 3          | L8           | 103        | A           |
| 3          | L8           | 105        | C           |
| 3          | L8           | 110        | U           |
| 3          | L8           | 111        | U           |
| 3          | L8           | 114        | G           |
| 3          | L8           | 123        | U           |
| 3          | L8           | 124        | U           |
| 3          | L8           | 125        | C           |
| 3          | L8           | 126        | C           |
| 3          | L8           | 127        | U           |
| 3          | L8           | 150        | C           |
| 3          | L8           | 151        | G           |
| 3          | L8           | 156        | U           |
| 47         | S2           | 2          | A           |
| 47         | S2           | 13         | C           |
| 47         | S2           | 14         | C           |
| 47         | S2           | 25         | A           |
| 47         | S2           | 33         | G           |
| 47         | S2           | 39         | A           |
| 47         | S2           | 41         | G           |
| 47         | S2           | 46         | A           |
| 47         | S2           | 49         | C           |
| 47         | S2           | 56         | G           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 47         | S2           | 58         | C           |
| 47         | S2           | 59         | U           |
| 47         | S2           | 62         | G           |
| 47         | S2           | 64         | A           |
| 47         | S2           | 67         | C           |
| 47         | S2           | 68         | A           |
| 47         | S2           | 72         | C           |
| 47         | S2           | 73         | C           |
| 47         | S2           | 74         | G           |
| 47         | S2           | 76         | U           |
| 47         | S2           | 92         | A           |
| 47         | S2           | 103        | A           |
| 47         | S2           | 113        | G           |
| 47         | S2           | 115        | U           |
| 47         | S2           | 116        | U           |
| 47         | S2           | 126        | G           |
| 47         | S2           | 130        | G           |
| 47         | S2           | 139        | C           |
| 47         | S2           | 142        | C           |
| 47         | S2           | 143        | U           |
| 47         | S2           | 149        | A           |
| 47         | S2           | 154        | U           |
| 47         | S2           | 158        | A           |
| 47         | S2           | 159        | A           |
| 47         | S2           | 160        | U           |
| 47         | S2           | 161        | U           |
| 47         | S2           | 162        | C           |
| 47         | S2           | 163        | U           |
| 47         | S2           | 168        | C           |
| 47         | S2           | 175        | A           |
| 47         | S2           | 179        | C           |
| 47         | S2           | 182        | C           |
| 47         | S2           | 184        | G           |
| 47         | S2           | 190        | G           |
| 47         | S2           | 196        | C           |
| 47         | S2           | 197        | U           |
| 47         | S2           | 198        | U           |
| 47         | S2           | 199        | C           |
| 47         | S2           | 200        | G           |
| 47         | S2           | 203        | G           |
| 47         | S2           | 204        | G           |
| 47         | S2           | 206        | G           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 47         | S2           | 208        | G           |
| 47         | S2           | 209        | A           |
| 47         | S2           | 211        | G           |
| 47         | S2           | 212        | C           |
| 47         | S2           | 214        | U           |
| 47         | S2           | 290        | U           |
| 47         | S2           | 291        | G           |
| 47         | S2           | 292        | A           |
| 47         | S2           | 293        | C           |
| 47         | S2           | 295        | C           |
| 47         | S2           | 302        | A           |
| 47         | S2           | 306        | C           |
| 47         | S2           | 307        | G           |
| 47         | S2           | 308        | G           |
| 47         | S2           | 309        | G           |
| 47         | S2           | 311        | C           |
| 47         | S2           | 313        | A           |
| 47         | S2           | 316        | G           |
| 47         | S2           | 318        | A           |
| 47         | S2           | 319        | C           |
| 47         | S2           | 323        | C           |
| 47         | S2           | 324        | C           |
| 47         | S2           | 325        | C           |
| 47         | S2           | 326        | C           |
| 47         | S2           | 328        | U           |
| 47         | S2           | 329        | G           |
| 47         | S2           | 332        | G           |
| 47         | S2           | 338        | G           |
| 47         | S2           | 339        | A           |
| 47         | S2           | 347        | G           |
| 47         | S2           | 360        | A           |
| 47         | S2           | 362        | C           |
| 47         | S2           | 364        | A           |
| 47         | S2           | 368        | U           |
| 47         | S2           | 370        | G           |
| 47         | S2           | 381        | C           |
| 47         | S2           | 385        | G           |
| 47         | S2           | 386        | C           |
| 47         | S2           | 407        | G           |
| 47         | S2           | 408        | A           |
| 47         | S2           | 409        | C           |
| 47         | S2           | 417        | C           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 47         | S2           | 418        | A           |
| 47         | S2           | 421        | G           |
| 47         | S2           | 448        | A           |
| 47         | S2           | 449        | A           |
| 47         | S2           | 450        | C           |
| 47         | S2           | 452        | G           |
| 47         | S2           | 464        | A           |
| 47         | S2           | 465        | A           |
| 47         | S2           | 466        | G           |
| 47         | S2           | 467        | G           |
| 47         | S2           | 471        | G           |
| 47         | S2           | 472        | C           |
| 47         | S2           | 473        | A           |
| 47         | S2           | 474        | G           |
| 47         | S2           | 482        | G           |
| 47         | S2           | 487        | U           |
| 47         | S2           | 488        | U           |
| 47         | S2           | 492        | C           |
| 47         | S2           | 493        | A           |
| 47         | S2           | 502        | C           |
| 47         | S2           | 525        | A           |
| 47         | S2           | 531        | A           |
| 47         | S2           | 532        | C           |
| 47         | S2           | 533        | A           |
| 47         | S2           | 534        | G           |
| 47         | S2           | 536        | A           |
| 47         | S2           | 537        | C           |
| 47         | S2           | 540        | U           |
| 47         | S2           | 542        | U           |
| 47         | S2           | 546        | G           |
| 47         | S2           | 547        | G           |
| 47         | S2           | 551        | U           |
| 47         | S2           | 556        | U           |
| 47         | S2           | 557        | U           |
| 47         | S2           | 558        | G           |
| 47         | S2           | 559        | G           |
| 47         | S2           | 560        | A           |
| 47         | S2           | 563        | G           |
| 47         | S2           | 564        | A           |
| 47         | S2           | 566        | U           |
| 47         | S2           | 576        | A           |
| 47         | S2           | 583        | A           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 47         | S2           | 587        | A           |
| 47         | S2           | 589        | G           |
| 47         | S2           | 591        | U           |
| 47         | S2           | 594        | A           |
| 47         | S2           | 596        | U           |
| 47         | S2           | 597        | G           |
| 47         | S2           | 607        | U           |
| 47         | S2           | 608        | C           |
| 47         | S2           | 614        | C           |
| 47         | S2           | 617        | G           |
| 47         | S2           | 623        | G           |
| 47         | S2           | 627        | U           |
| 47         | S2           | 628        | A           |
| 47         | S2           | 643        | A           |
| 47         | S2           | 644        | G           |
| 47         | S2           | 655        | A           |
| 47         | S2           | 659        | G           |
| 47         | S2           | 660        | C           |
| 47         | S2           | 662        | G           |
| 47         | S2           | 663        | C           |
| 47         | S2           | 664        | A           |
| 47         | S2           | 668        | A           |
| 47         | S2           | 671        | A           |
| 47         | S2           | 672        | A           |
| 47         | S2           | 673        | G           |
| 47         | S2           | 683        | G           |
| 47         | S2           | 687        | C           |
| 47         | S2           | 688        | U           |
| 47         | S2           | 689        | U           |
| 47         | S2           | 690        | G           |
| 47         | S2           | 692        | G           |
| 47         | S2           | 693        | A           |
| 47         | S2           | 695        | C           |
| 47         | S2           | 696        | G           |
| 47         | S2           | 697        | G           |
| 47         | S2           | 698        | G           |
| 47         | S2           | 732        | U           |
| 47         | S2           | 733        | C           |
| 47         | S2           | 734        | C           |
| 47         | S2           | 736        | C           |
| 47         | S2           | 738        | C           |
| 47         | S2           | 749        | U           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 47         | S2           | 751        | G           |
| 47         | S2           | 752        | G           |
| 47         | S2           | 753        | C           |
| 47         | S2           | 787        | G           |
| 47         | S2           | 788        | G           |
| 47         | S2           | 791        | C           |
| 47         | S2           | 792        | C           |
| 47         | S2           | 798        | G           |
| 47         | S2           | 810        | A           |
| 47         | S2           | 811        | A           |
| 47         | S2           | 821        | G           |
| 47         | S2           | 822        | U           |
| 47         | S2           | 823        | U           |
| 47         | S2           | 824        | C           |
| 47         | S2           | 830        | A           |
| 47         | S2           | 834        | C           |
| 47         | S2           | 835        | C           |
| 47         | S2           | 836        | G           |
| 47         | S2           | 837        | A           |
| 47         | S2           | 838        | G           |
| 47         | S2           | 839        | C           |
| 47         | S2           | 840        | C           |
| 47         | S2           | 841        | G           |
| 47         | S2           | 842        | C           |
| 47         | S2           | 847        | A           |
| 47         | S2           | 869        | A           |
| 47         | S2           | 870        | A           |
| 47         | S2           | 872        | A           |
| 47         | S2           | 873        | G           |
| 47         | S2           | 874        | G           |
| 47         | S2           | 879        | C           |
| 47         | S2           | 880        | G           |
| 47         | S2           | 882        | U           |
| 47         | S2           | 883        | U           |
| 47         | S2           | 887        | U           |
| 47         | S2           | 888        | U           |
| 47         | S2           | 889        | U           |
| 47         | S2           | 891        | G           |
| 47         | S2           | 892        | U           |
| 47         | S2           | 896        | U           |
| 47         | S2           | 897        | U           |
| 47         | S2           | 898        | U           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 47         | S2           | 899        | U           |
| 47         | S2           | 900        | C           |
| 47         | S2           | 901        | G           |
| 47         | S2           | 903        | A           |
| 47         | S2           | 904        | A           |
| 47         | S2           | 913        | A           |
| 47         | S2           | 914        | U           |
| 47         | S2           | 919        | A           |
| 47         | S2           | 920        | A           |
| 47         | S2           | 930        | C           |
| 47         | S2           | 933        | G           |
| 47         | S2           | 934        | G           |
| 47         | S2           | 943        | U           |
| 47         | S2           | 950        | C           |
| 47         | S2           | 963        | A           |
| 47         | S2           | 969        | U           |
| 47         | S2           | 971        | G           |
| 47         | S2           | 972        | A           |
| 47         | S2           | 990        | A           |
| 47         | S2           | 992        | A           |
| 47         | S2           | 999        | G           |
| 47         | S2           | 1001       | A           |
| 47         | S2           | 1017       | U           |
| 47         | S2           | 1023       | A           |
| 47         | S2           | 1027       | A           |
| 47         | S2           | 1028       | A           |
| 47         | S2           | 1033       | G           |
| 47         | S2           | 1034       | A           |
| 47         | S2           | 1061       | U           |
| 47         | S2           | 1062       | A           |
| 47         | S2           | 1083       | A           |
| 47         | S2           | 1085       | C           |
| 47         | S2           | 1088       | U           |
| 47         | S2           | 1109       | C           |
| 47         | S2           | 1114       | U           |
| 47         | S2           | 1115       | U           |
| 47         | S2           | 1116       | C           |
| 47         | S2           | 1118       | C           |
| 47         | S2           | 1119       | A           |
| 47         | S2           | 1121       | G           |
| 47         | S2           | 1133       | A           |
| 47         | S2           | 1138       | C           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 47         | S2           | 1153       | C           |
| 47         | S2           | 1154       | U           |
| 47         | S2           | 1195       | A           |
| 47         | S2           | 1207       | G           |
| 47         | S2           | 1208       | A           |
| 47         | S2           | 1215       | C           |
| 47         | S2           | 1216       | C           |
| 47         | S2           | 1217       | A           |
| 47         | S2           | 1224       | G           |
| 47         | S2           | 1227       | G           |
| 47         | S2           | 1239       | U           |
| 47         | S2           | 1242       | U           |
| 47         | S2           | 1243       | U           |
| 47         | S2           | 1251       | A           |
| 47         | S2           | 1253       | A           |
| 47         | S2           | 1256       | G           |
| 47         | S2           | 1257       | G           |
| 47         | S2           | 1259       | A           |
| 47         | S2           | 1265       | A           |
| 47         | S2           | 1273       | C           |
| 47         | S2           | 1274       | G           |
| 47         | S2           | 1275       | G           |
| 47         | S2           | 1281       | G           |
| 47         | S2           | 1282       | A           |
| 47         | S2           | 1283       | C           |
| 47         | S2           | 1284       | A           |
| 47         | S2           | 1286       | G           |
| 47         | S2           | 1293       | A           |
| 47         | S2           | 1294       | G           |
| 47         | S2           | 1295       | A           |
| 47         | S2           | 1301       | A           |
| 47         | S2           | 1302       | G           |
| 47         | S2           | 1303       | C           |
| 47         | S2           | 1305       | C           |
| 47         | S2           | 1306       | U           |
| 47         | S2           | 1308       | U           |
| 47         | S2           | 1311       | C           |
| 47         | S2           | 1312       | G           |
| 47         | S2           | 1314       | U           |
| 47         | S2           | 1318       | G           |
| 47         | S2           | 1333       | U           |
| 47         | S2           | 1341       | C           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 47         | S2           | 1342       | U           |
| 47         | S2           | 1343       | U           |
| 47         | S2           | 1348       | G           |
| 47         | S2           | 1371       | U           |
| 47         | S2           | 1372       | U           |
| 47         | S2           | 1378       | A           |
| 47         | S2           | 1382       | A           |
| 47         | S2           | 1401       | A           |
| 47         | S2           | 1402       | A           |
| 47         | S2           | 1412       | C           |
| 47         | S2           | 1414       | A           |
| 47         | S2           | 1415       | C           |
| 47         | S2           | 1419       | C           |
| 47         | S2           | 1420       | G           |
| 47         | S2           | 1421       | A           |
| 47         | S2           | 1422       | G           |
| 47         | S2           | 1423       | C           |
| 47         | S2           | 1424       | G           |
| 47         | S2           | 1433       | C           |
| 47         | S2           | 1434       | C           |
| 47         | S2           | 1435       | C           |
| 47         | S2           | 1436       | C           |
| 47         | S2           | 1438       | A           |
| 47         | S2           | 1449       | G           |
| 47         | S2           | 1452       | A           |
| 47         | S2           | 1454       | A           |
| 47         | S2           | 1462       | U           |
| 47         | S2           | 1463       | U           |
| 47         | S2           | 1478       | U           |
| 47         | S2           | 1480       | A           |
| 47         | S2           | 1487       | A           |
| 47         | S2           | 1489       | A           |
| 47         | S2           | 1490       | G           |
| 47         | S2           | 1495       | G           |
| 47         | S2           | 1497       | G           |
| 47         | S2           | 1498       | A           |
| 47         | S2           | 1505       | U           |
| 47         | S2           | 1507       | G           |
| 47         | S2           | 1508       | A           |
| 47         | S2           | 1509       | U           |
| 47         | S2           | 1520       | G           |
| 47         | S2           | 1521       | C           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 47         | S2           | 1533       | A           |
| 47         | S2           | 1536       | G           |
| 47         | S2           | 1537       | A           |
| 47         | S2           | 1544       | C           |
| 47         | S2           | 1552       | G           |
| 47         | S2           | 1553       | C           |
| 47         | S2           | 1555       | U           |
| 47         | S2           | 1556       | A           |
| 47         | S2           | 1570       | G           |
| 47         | S2           | 1574       | C           |
| 47         | S2           | 1580       | A           |
| 47         | S2           | 1585       | U           |
| 47         | S2           | 1586       | U           |
| 47         | S2           | 1587       | G           |
| 47         | S2           | 1588       | A           |
| 47         | S2           | 1594       | A           |
| 47         | S2           | 1598       | G           |
| 47         | S2           | 1601       | A           |
| 47         | S2           | 1606       | G           |
| 47         | S2           | 1621       | U           |
| 47         | S2           | 1623       | A           |
| 47         | S2           | 1633       | A           |
| 47         | S2           | 1634       | A           |
| 47         | S2           | 1637       | A           |
| 47         | S2           | 1638       | G           |
| 47         | S2           | 1644       | C           |
| 47         | S2           | 1648       | G           |
| 47         | S2           | 1654       | G           |
| 47         | S2           | 1661       | A           |
| 47         | S2           | 1663       | A           |
| 47         | S2           | 1665       | G           |
| 47         | S2           | 1671       | G           |
| 47         | S2           | 1680       | G           |
| 47         | S2           | 1686       | G           |
| 47         | S2           | 1699       | A           |
| 47         | S2           | 1712       | A           |
| 47         | S2           | 1715       | A           |
| 47         | S2           | 1717       | C           |
| 47         | S2           | 1719       | A           |
| 47         | S2           | 1721       | U           |
| 47         | S2           | 1722       | G           |
| 47         | S2           | 1727       | G           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 47         | S2           | 1743       | G           |
| 47         | S2           | 1744       | G           |
| 47         | S2           | 1745       | A           |
| 47         | S2           | 1752       | C           |
| 47         | S2           | 1753       | C           |
| 47         | S2           | 1754       | G           |
| 47         | S2           | 1757       | G           |
| 47         | S2           | 1758       | G           |
| 47         | S2           | 1759       | G           |
| 47         | S2           | 1760       | G           |
| 47         | S2           | 1761       | U           |
| 47         | S2           | 1771       | G           |
| 47         | S2           | 1772       | C           |
| 47         | S2           | 1773       | C           |
| 47         | S2           | 1774       | C           |
| 47         | S2           | 1775       | U           |
| 47         | S2           | 1776       | G           |
| 47         | S2           | 1777       | G           |
| 47         | S2           | 1783       | C           |
| 47         | S2           | 1784       | G           |
| 47         | S2           | 1786       | U           |
| 47         | S2           | 1797       | U           |
| 47         | S2           | 1821       | U           |
| 47         | S2           | 1823       | A           |
| 47         | S2           | 1824       | A           |
| 47         | S2           | 1825       | A           |
| 47         | S2           | 1826       | G           |
| 47         | S2           | 1829       | G           |
| 47         | S2           | 1831       | A           |
| 47         | S2           | 1835       | A           |
| 47         | S2           | 1838       | U           |
| 47         | S2           | 1849       | G           |
| 47         | S2           | 1852       | C           |
| 47         | S2           | 1861       | G           |
| 47         | S2           | 1862       | G           |
| 47         | S2           | 1863       | A           |
| 47         | S2           | 1864       | U           |
| 47         | S2           | 1865       | C           |
| 82         | CC           | 7          | A           |
| 82         | CC           | 11         | C           |
| 82         | CC           | 16         | C           |
| 82         | CC           | 17         | G           |

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| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 82         | CC           | 19         | C           |
| 82         | CC           | 20         | U           |
| 82         | CC           | 28         | C           |
| 82         | CC           | 32         | C           |
| 82         | CC           | 33         | U           |
| 82         | CC           | 35         | U           |
| 82         | CC           | 36         | C           |
| 82         | CC           | 37         | A           |
| 82         | CC           | 38         | C           |
| 82         | CC           | 39         | C           |
| 82         | CC           | 43         | G           |
| 82         | CC           | 44         | A           |
| 82         | CC           | 45         | G           |
| 82         | CC           | 46         | A           |
| 82         | CC           | 47         | C           |
| 82         | CC           | 51         | G           |
| 82         | CC           | 72         | G           |
| 82         | CC           | 75         | A           |

All (32) RNA pucker outliers are listed below:

| <b>Mol</b> | <b>Chain</b> | <b>Res</b> | <b>Type</b> |
|------------|--------------|------------|-------------|
| 1          | L5           | 183        | C           |
| 1          | L5           | 406        | C           |
| 1          | L5           | 493        | G           |
| 1          | L5           | 504        | G           |
| 1          | L5           | 914        | U           |
| 1          | L5           | 1082       | C           |
| 1          | L5           | 1633       | G           |
| 1          | L5           | 2019       | C           |
| 1          | L5           | 2033       | A           |
| 1          | L5           | 2416       | G           |
| 1          | L5           | 2675       | G           |
| 1          | L5           | 2760       | G           |
| 1          | L5           | 2786       | C           |
| 1          | L5           | 3614       | G           |
| 1          | L5           | 3673       | C           |
| 1          | L5           | 4045       | G           |
| 1          | L5           | 4378       | A           |
| 1          | L5           | 4699       | U           |
| 1          | L5           | 4913       | G           |
| 3          | L8           | 83         | C           |

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| Mol | Chain | Res  | Type |
|-----|-------|------|------|
| 3   | L8    | 86   | U    |
| 47  | S2    | 112  | U    |
| 47  | S2    | 291  | G    |
| 47  | S2    | 417  | C    |
| 47  | S2    | 420  | G    |
| 47  | S2    | 563  | G    |
| 47  | S2    | 668  | A    |
| 47  | S2    | 688  | U    |
| 47  | S2    | 1434 | C    |
| 82  | CC    | 35   | U    |
| 82  | CC    | 37   | A    |
| 82  | CC    | 74   | C    |

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

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

#### 5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

#### 5.6 Ligand geometry [i](#)

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

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

#### 5.7 Other polymers [i](#)

There are no such residues in this entry.

## 5.8 Polymer linkage issues

There are no chain breaks in this entry.



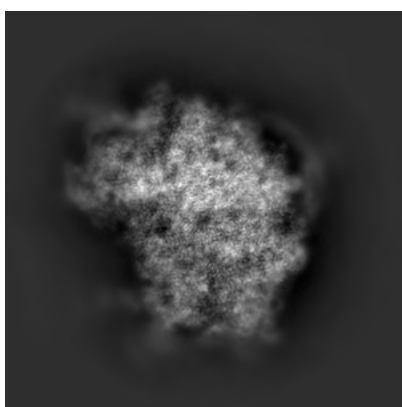
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-11098. These allow visual inspection of the internal detail of the map and identification of artifacts.

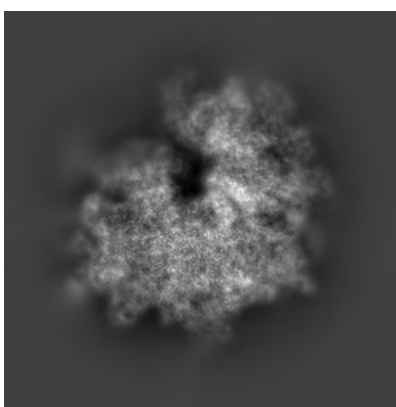
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

### 6.1 Orthogonal projections [i](#)

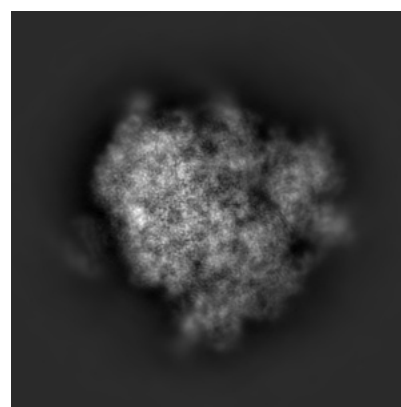
#### 6.1.1 Primary map



X



Y

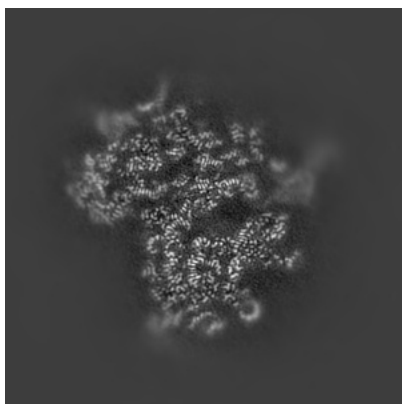


Z

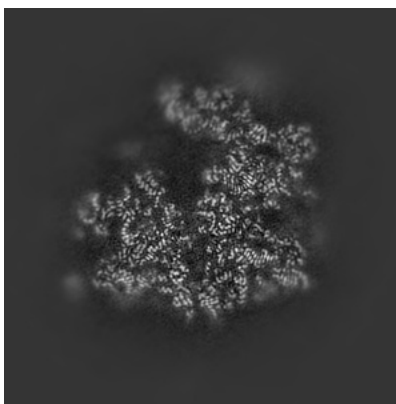
The images above show the map projected in three orthogonal directions.

### 6.2 Central slices [i](#)

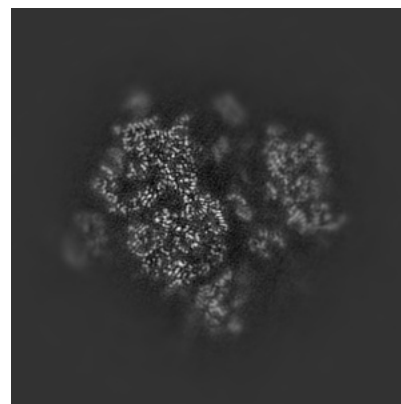
#### 6.2.1 Primary map



X Index: 200



Y Index: 200

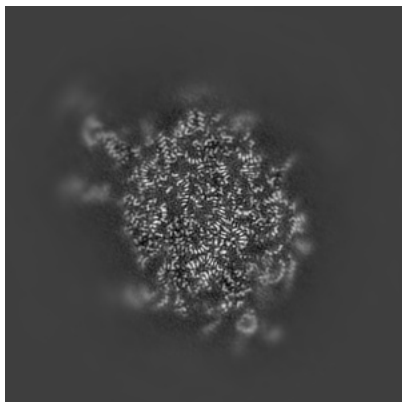


Z Index: 200

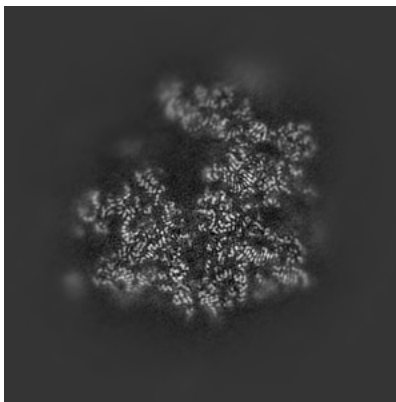
The images above show central slices of the map in three orthogonal directions.

## 6.3 Largest variance slices [i](#)

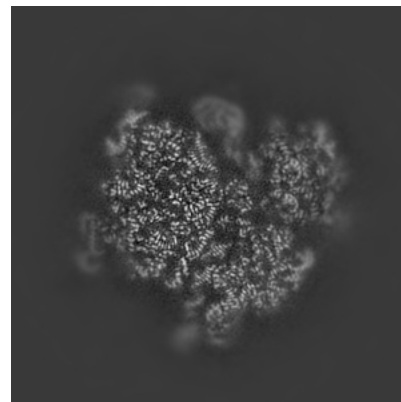
### 6.3.1 Primary map



X Index: 172



Y Index: 200



Z Index: 222

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

## 6.4 Orthogonal surface views [i](#)

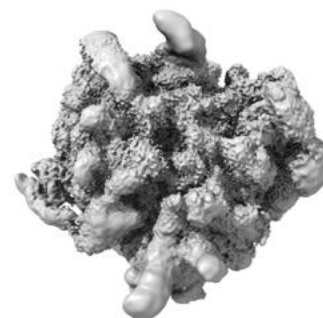
### 6.4.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.005. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

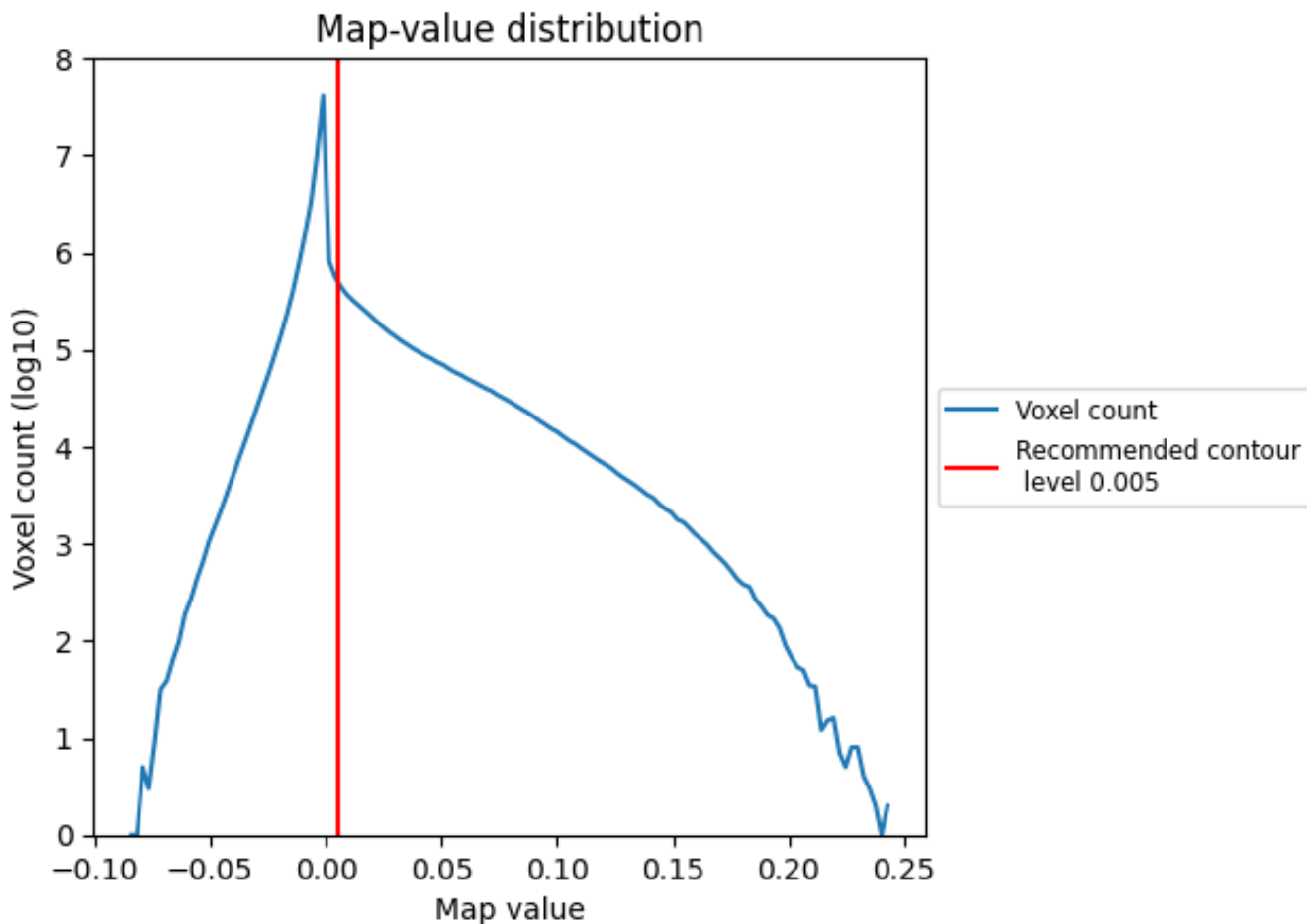
## 6.5 Mask visualisation

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

## 7 Map analysis [i](#)

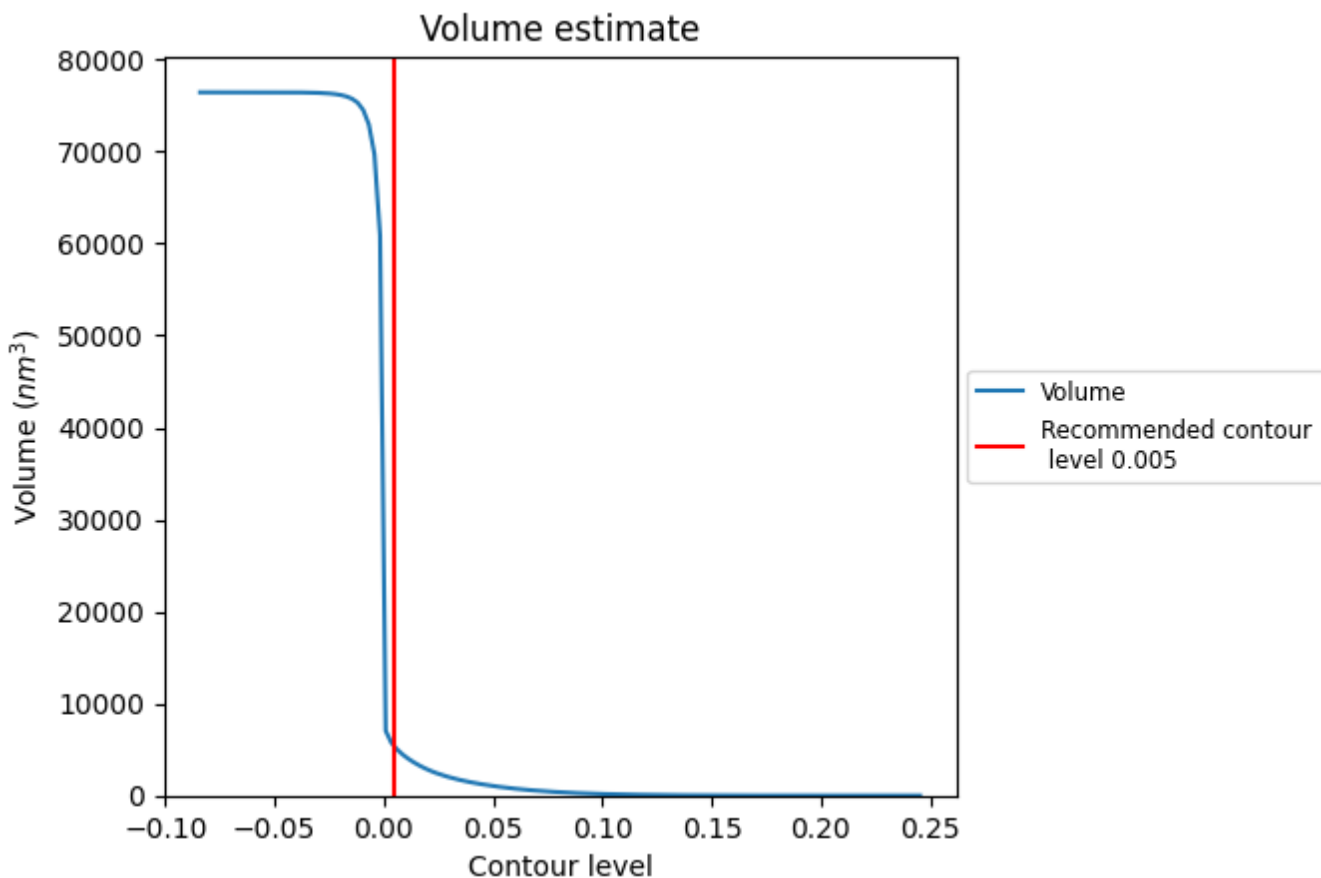
This section contains the results of statistical analysis of the map.

### 7.1 Map-value distribution [i](#)



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

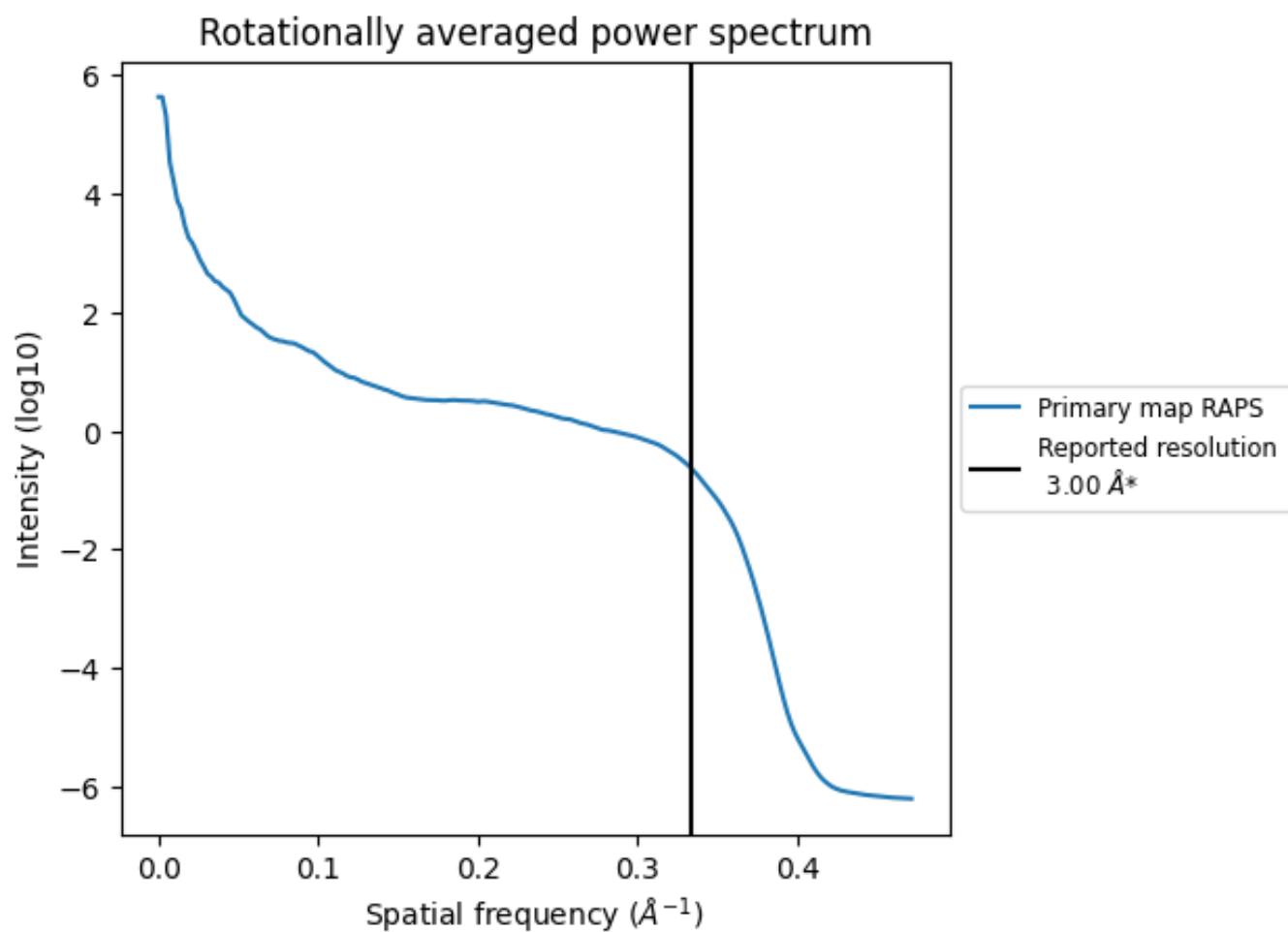
## 7.2 Volume estimate [i](#)



The volume at the recommended contour level is 5303 nm<sup>3</sup>; this corresponds to an approximate mass of 4790 kDa.

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

### 7.3 Rotationally averaged power spectrum i

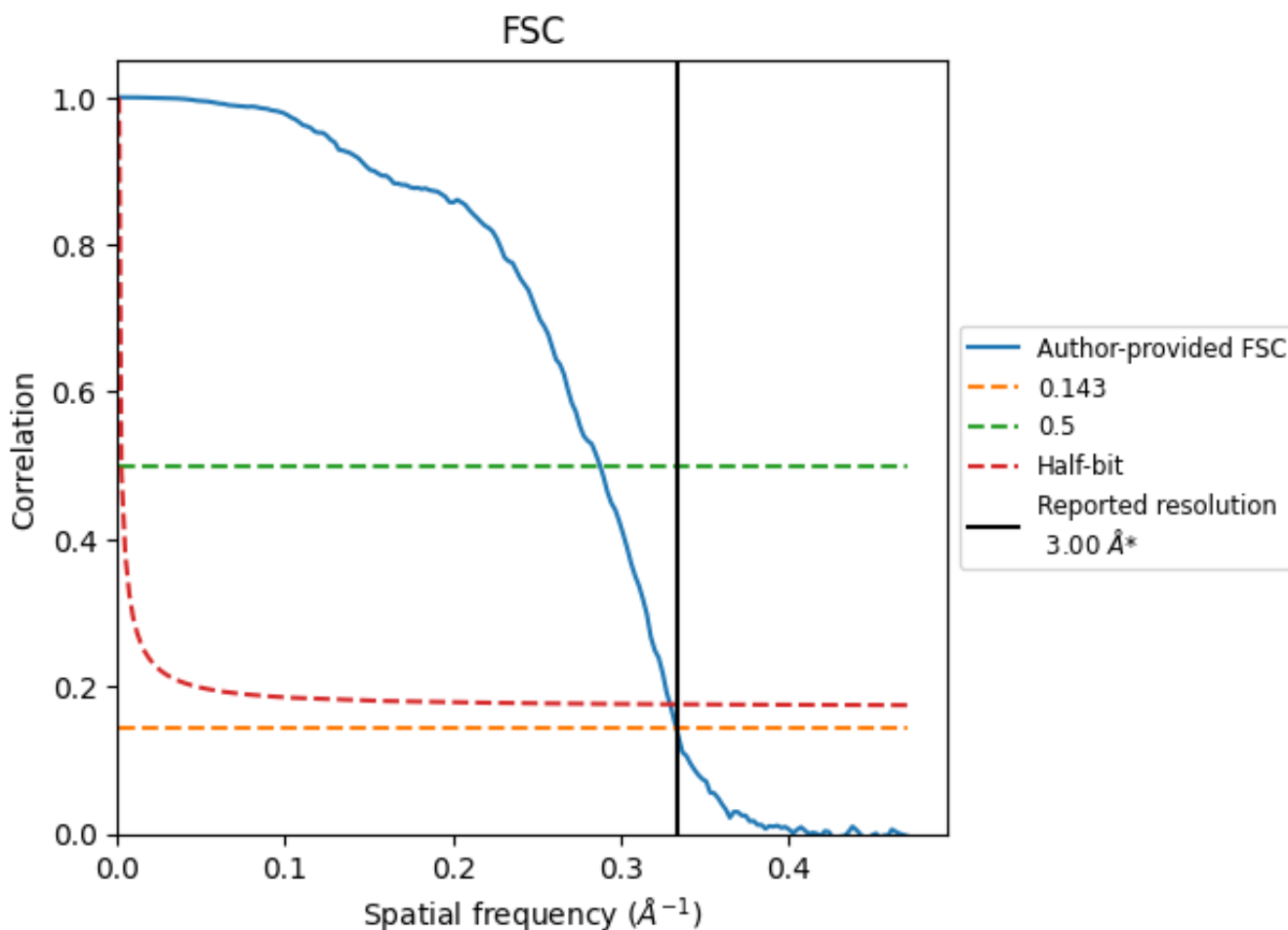


\*Reported resolution corresponds to spatial frequency of 0.333 Å<sup>-1</sup>

## 8 Fourier-Shell correlation [\(i\)](#)

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

### 8.1 FSC [\(i\)](#)



\*Reported resolution corresponds to spatial frequency of 0.333 Å<sup>-1</sup>

## 8.2 Resolution estimates [i](#)

| Resolution estimate (Å)   | Estimation criterion (FSC cut-off) |      |          |
|---------------------------|------------------------------------|------|----------|
|                           | 0.143                              | 0.5  | Half-bit |
| Reported by author        | 3.00                               | -    | -        |
| Author-provided FSC curve | 3.00                               | 3.48 | 3.03     |
| Unmasked-calculated*      | -                                  | -    | -        |

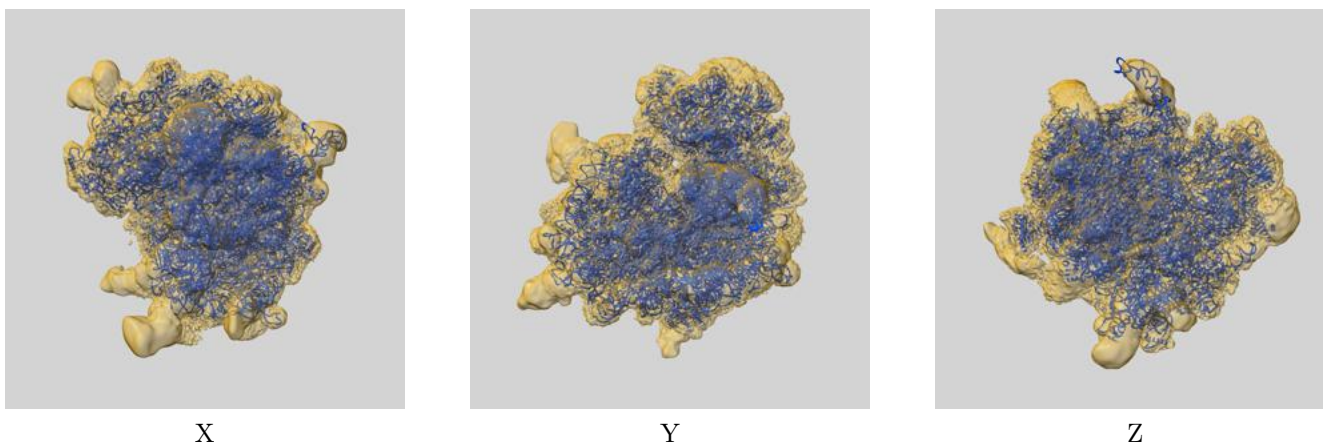
\*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps.



## 9 Map-model fit [i](#)

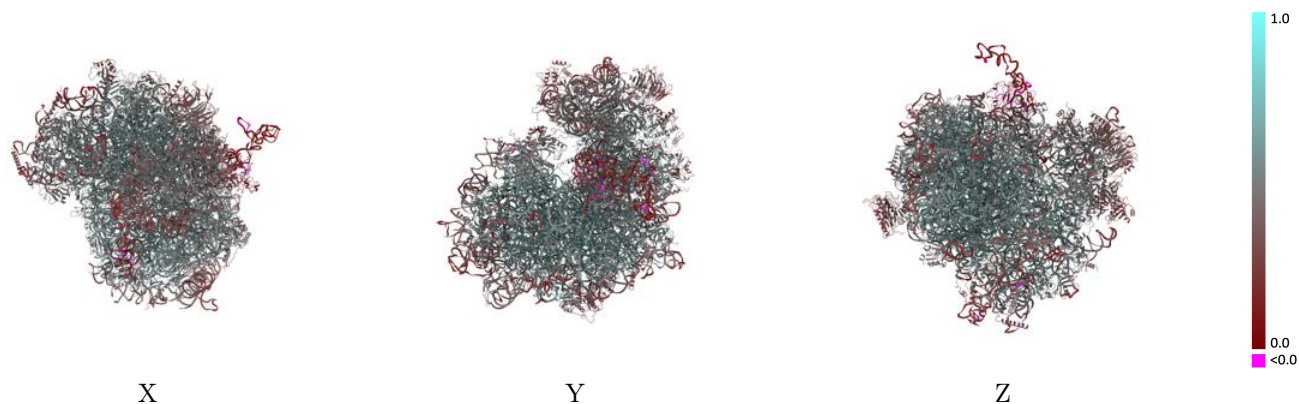
This section contains information regarding the fit between EMDB map EMD-11098 and PDB model 6Z6L. Per-residue inclusion information can be found in section 3 on page 19.

### 9.1 Map-model overlay [i](#)



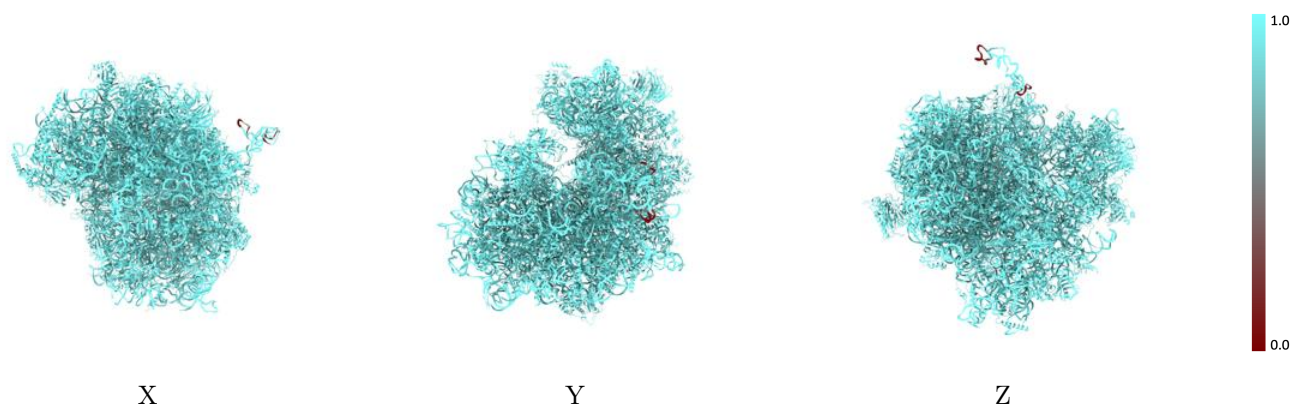
The images above show the 3D surface view of the map at the recommended contour level 0.005 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



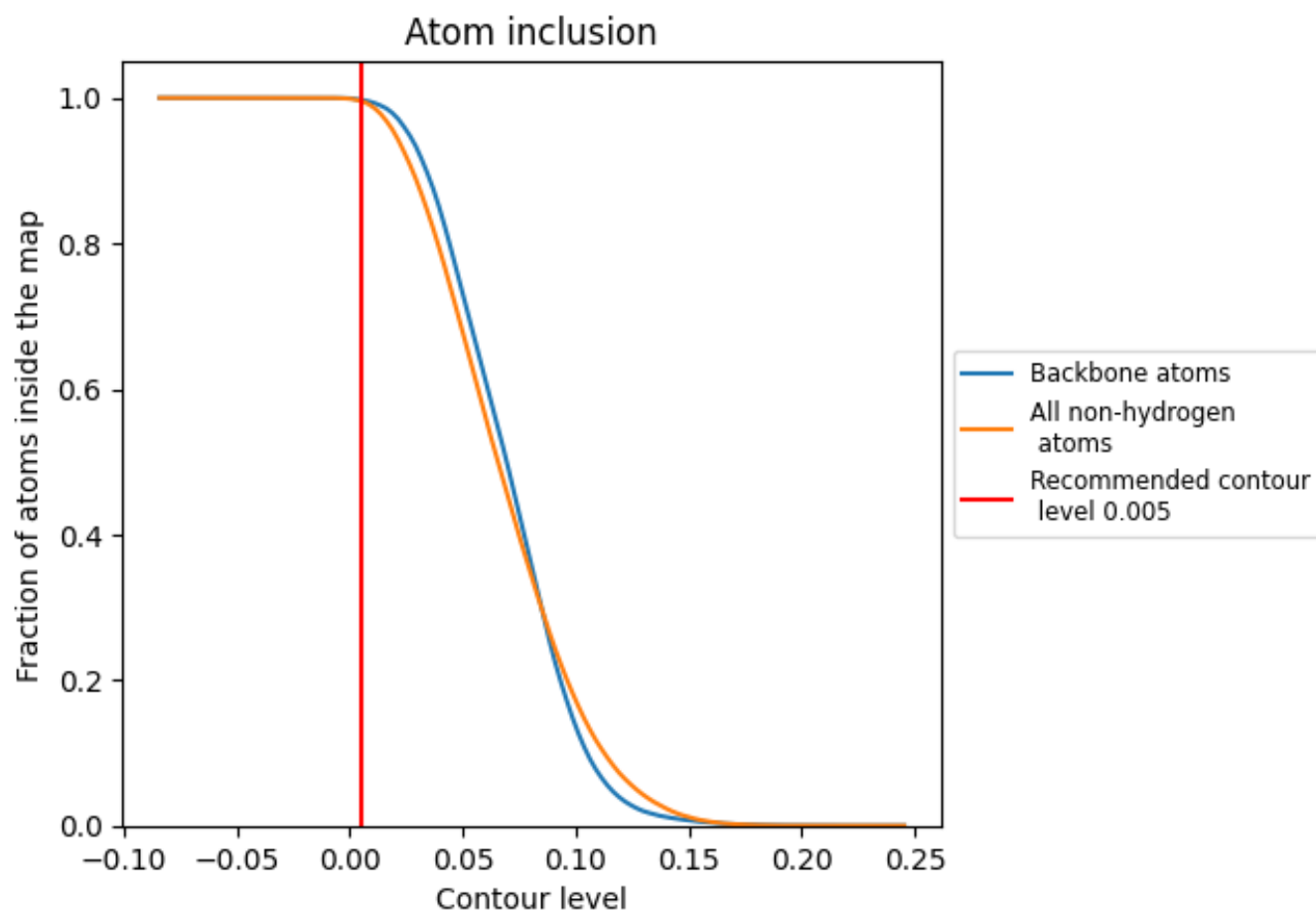
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.005).







































































## 9.4 Atom inclusion [i](#)



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

## 9.5 Map-model fit summary





















































































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

| Chain | Atom inclusion   | Q-score  |
|-------|--|--|
| All   |  0.9958   |  0.4990   |
| CA    |  0.9806   |  0.3130   |
| CC    |  0.9899   |  0.3030   |
| CE    |  0.8550   |  0.3980   |
| L5    |  0.9980   |  0.5190   |
| L7    |  1.0000   |  0.5610   |
| L8    |  0.9991   |  0.5420   |
| LA    |  0.9940   |  0.5970   |
| LB    |  0.9953   |  0.5600   |
| LC    |  0.9958   |  0.5540   |
| LD    |  0.9996   |  0.4970   |
| LE    |  0.9973   |  0.4710   |
| LF    |  0.9956   |  0.5580   |
| LG    |  0.9941   |  0.4750   |
| LH    |  0.9966  |  0.5240  |
| LI    |  0.9918 |  0.5480 |
| LJ    |  0.9890 |  0.4430 |
| LL    |  0.9933 |  0.5130 |
| LM    |  0.9946 |  0.5090 |
| LN    |  0.9957 |  0.5940 |
| LO    |  0.9925 |  0.5690 |
| LP    |  0.9959 |  0.5780 |
| LQ    |  0.9938 |  0.5800 |
| LR    |  0.9980 |  0.5240 |
| LS    |  0.9993 |  0.5750 |
| LT    |  0.9913 |  0.5470 |
| LU    |  0.9988 |  0.4450 |
| LV    |  0.9916 |  0.5750 |
| LW    |  0.9918 |  0.4110 |
| LX    |  0.9916 |  0.5400 |
| LY    |  0.9981 |  0.5300 |
| LZ    |  1.0000 |  0.5180 |
| La    |  0.9956 |  0.5790 |
| Lb    |  0.9882 |  0.4870 |
| Lc    |  0.9880 |  0.5300 |

















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| Chain | Atom inclusion   | Q-score  |
|-------|--|--|
| Ld    |  0.9965   |  0.5370   |
| Le    |  0.9951   |  0.5880   |
| Lf    |  0.9905   |  0.5860   |
| Lg    |  0.9954   |  0.5650   |
| Lh    |  0.9908   |  0.5190   |
| Li    |  0.9975   |  0.5100   |
| Lj    |  0.9941   |  0.5850   |
| Lk    |  0.9946   |  0.4860   |
| Ll    |  0.9882   |  0.5700   |
| Lm    |  0.9904   |  0.5420   |
| Ln    |  0.9952   |  0.5990   |
| Lo    |  0.9902   |  0.5580   |
| Lp    |  0.9869   |  0.5760   |
| Lr    |  0.9979   |  0.5470   |
| Lz    |  0.9358   |  0.1350   |
| S2    |  0.9998   |  0.4920   |
| SA    |  0.9982   |  0.4750   |
| SB    |  0.9959  |  0.5010  |
| SC    |  0.9947 |  0.5190 |
| SD    |  0.9954 |  0.4220 |
| SE    |  0.9985 |  0.5130 |
| SF    |  0.9937 |  0.4390 |
| SG    |  0.9984 |  0.4140 |
| SH    |  0.9946 |  0.4040 |
| SI    |  0.9939 |  0.4970 |
| SJ    |  0.9911 |  0.4820 |
| SK    |  1.0000 |  0.3350 |
| SL    |  0.9868 |  0.5410 |
| SM    |  0.9968 |  0.2010 |
| SN    |  0.9898 |  0.5370 |
| SO    |  0.9716 |  0.5010 |
| SP    |  0.9960 |  0.3540 |
| SQ    |  0.9955 |  0.4320 |
| SR    |  0.9953 |  0.4330 |
| SS    |  0.9957 |  0.3880 |
| ST    |  1.0000 |  0.4070 |
| SU    |  0.9962 |  0.3900 |
| SV    |  1.0000 |  0.4810 |
| SW    |  0.9911 |  0.5500 |
| SX    |  0.9925 |  0.5450 |
| SY    |  0.9981 |  0.4420 |
| SZ    |  1.0000 |  0.3380 |

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| Chain | Atom inclusion   | Q-score  |
|-------|--|--|
| Sa    |  0.9911 |  0.5280 |
| Sb    |  1.0000 |  0.4920 |
| Sc    |  0.9938 |  0.4410 |
| Sd    |  0.9955 |  0.4590 |
| Se    |  0.9595 |  0.4460 |
| Sf    |  1.0000 |  0.2130 |
| Sg    |  0.9996 |  0.3530 |