



## wwPDB EM Validation Summary Report ⓘ

Mar 29, 2026 – 08:38 AM UTC

PDB ID : 6VYX / pdb\_00006vyx  
EMDB ID : EMD-21475  
Title : Escherichia coli transcription-translation complex C4 (TTC-C4) containing mRNA with a 21 nt long spacer, transcription factor NusG, and fMet-tRNAs at P-site and E-site  
Authors : Molodtsov, V.; Wang, C.; Su, M.; Ebright, R.H.  
Deposited on : 2020-02-27  
Resolution : 9.90 Å(reported)

This is a wwPDB EM Validation Summary 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.dev132  
MolProbity : **FAILED**  
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)  
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)  
MapQ : 1.9.13  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.49

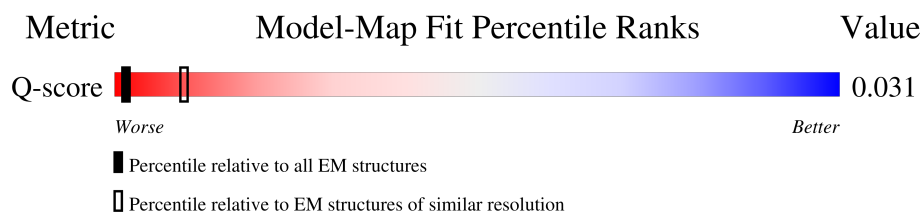
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*ELECTRON MICROSCOPY*

The reported resolution of this entry is 9.90 Å.

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



| Metric  | EM structures<br>(#Entries) | Similar EM resolution<br>(#Entries, resolution range(Å)) |
|---------|-----------------------------|----------------------------------------------------------|
| Q-score | 25397                       | 149 ( 9.40 - 10.40 )                                     |

MolProbity failed to run properly - the sequence quality summary graphics cannot be shown.

## 2 Entry composition

There are 65 unique types of molecules in this entry. The entry contains 297703 atoms, of which 124625 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 protein called 50S ribosomal protein L21.

| Mol | Chain | Residues | Atoms |     |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|-----|---|---------|-------|
| 1   | 0     | 103      | Total | C   | H   | N   | O   | S | 0       | 0     |
|     |       |          | 1655  | 516 | 839 | 153 | 145 | 2 |         |       |

- Molecule 2 is a protein called 50S ribosomal protein L22.

| Mol | Chain | Residues | Atoms |     |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|-----|---|---------|-------|
| 2   | 1     | 110      | Total | C   | H   | N   | O   | S | 0       | 0     |
|     |       |          | 1779  | 532 | 922 | 166 | 156 | 3 |         |       |

- Molecule 3 is a protein called 50S ribosomal protein L23.

| Mol | Chain | Residues | Atoms |     |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|-----|---|---------|-------|
| 3   | 2     | 94       | Total | C   | H   | N   | O   | S | 0       | 0     |
|     |       |          | 1557  | 470 | 811 | 140 | 134 | 2 |         |       |

- Molecule 4 is a protein called 50S ribosomal protein L24.

| Mol | Chain | Residues | Atoms |     |     |     |     | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|-----|---------|-------|
| 4   | 3     | 103      | Total | C   | H   | N   | O   | 0       | 0     |
|     |       |          | 1632  | 498 | 844 | 148 | 142 |         |       |

- Molecule 5 is a protein called 50S ribosomal protein L25.

| Mol | Chain | Residues | Atoms |     |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|-----|---|---------|-------|
| 5   | 4     | 94       | Total | C   | H   | N   | O   | S | 0       | 0     |
|     |       |          | 1533  | 479 | 780 | 137 | 134 | 3 |         |       |

- Molecule 6 is a DNA chain called NT DNA.

| Mol | Chain | Residues | Atoms |     |     |    |     |    | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|----|-----|----|---------|-------|
| 6   | 5     | 23       | Total | C   | H   | N  | O   | P  | 0       | 0     |
|     |       |          | 732   | 225 | 260 | 87 | 137 | 23 |         |       |

- Molecule 7 is a DNA chain called T DNA.

| Mol | Chain | Residues | Atoms |     |     |    |     |    | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|----|-----|----|---------|-------|
| 7   | 6     | 27       | Total | C   | H   | N  | O   | P  | 0       | 0     |
|     |       |          | 848   | 259 | 306 | 89 | 167 | 27 |         |       |

- Molecule 8 is a RNA chain called mRNA with 21 nt long spacer.

| Mol | Chain | Residues | Atoms |     |     |    |     |    | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|----|-----|----|---------|-------|
| 8   | 7     | 16       | Total | C   | H   | N  | O   | P  | 0       | 0     |
|     |       |          | 515   | 154 | 168 | 62 | 115 | 16 |         |       |

- Molecule 9 is a RNA chain called E-site and P-site tRNA (fMet).

| Mol | Chain | Residues | Atoms |     |     |     |     |    | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|-----|----|---------|-------|
| 9   | A     | 76       | Total | C   | H   | N   | O   | P  | 0       | 0     |
|     |       |          | 2446  | 723 | 826 | 295 | 527 | 75 |         |       |
| 9   | B     | 76       | Total | C   | H   | N   | O   | P  | 0       | 0     |
|     |       |          | 2428  | 723 | 808 | 295 | 527 | 75 |         |       |

There are 2 discrepancies between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment  | Reference     |
|-------|---------|----------|--------|----------|---------------|
| A     | ?       | -        | U      | deletion | GB 1848954948 |
| B     | ?       | -        | U      | deletion | GB 1848954948 |

- Molecule 10 is a protein called DNA-directed RNA polymerase subunit beta.

| Mol | Chain | Residues | Atoms |      |      |      |      |    | AltConf | Trace |
|-----|-------|----------|-------|------|------|------|------|----|---------|-------|
| 10  | AA    | 1223     | Total | C    | H    | N    | O    | S  | 0       | 0     |
|     |       |          | 19199 | 6029 | 9589 | 1672 | 1867 | 42 |         |       |

- Molecule 11 is a protein called Transcription termination/antitermination protein NusG.

| Mol | Chain | Residues | Atoms |     |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|-----|---|---------|-------|
| 11  | AB    | 98       | Total | C   | H   | N   | O   | S | 0       | 0     |
|     |       |          | 1573  | 505 | 783 | 139 | 140 | 6 |         |       |

- Molecule 12 is a protein called DNA-directed RNA polymerase subunit alpha.

| Mol | Chain | Residues | Atoms |      |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|------|------|-----|-----|---|---------|-------|
| 12  | AC    | 230      | Total | C    | H    | N   | O   | S | 0       | 0     |
|     |       |          | 3599  | 1112 | 1813 | 317 | 351 | 6 |         |       |

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| Mol | Chain | Residues | Atoms |      |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|------|------|-----|-----|---|---------|-------|
| 12  | AD    | 228      | Total | C    | H    | N   | O   | S | 0       | 0     |
|     |       |          | 3556  | 1100 | 1789 | 312 | 349 | 6 |         |       |

- Molecule 13 is a protein called DNA-directed RNA polymerase subunit beta'.

| Mol | Chain | Residues | Atoms |      |       |      |      |    | AltConf | Trace |
|-----|-------|----------|-------|------|-------|------|------|----|---------|-------|
| 13  | AE    | 1335     | Total | C    | H     | N    | O    | S  | 0       | 0     |
|     |       |          | 20999 | 6526 | 10611 | 1854 | 1958 | 50 |         |       |

- Molecule 14 is a protein called DNA-directed RNA polymerase subunit omega.

| Mol | Chain | Residues | Atoms |     |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|-----|---|---------|-------|
| 14  | AF    | 83       | Total | C   | H   | N   | O   | S | 0       | 0     |
|     |       |          | 1318  | 399 | 663 | 123 | 132 | 1 |         |       |

- Molecule 15 is a protein called 30S ribosomal protein S18.

| Mol | Chain | Residues | Atoms |     |     |     |    |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|----|---|---------|-------|
| 15  | C     | 66       | Total | C   | H   | N   | O  | S | 0       | 0     |
|     |       |          | 1103  | 344 | 559 | 102 | 97 | 1 |         |       |

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

| Mol | Chain | Residues | Atoms |       |       |      |       |      | AltConf | Trace |
|-----|-------|----------|-------|-------|-------|------|-------|------|---------|-------|
| 16  | D     | 1521     | Total | C     | H     | N    | O     | P    | 0       | 0     |
|     |       |          | 49049 | 14557 | 16412 | 5990 | 10569 | 1521 |         |       |

- Molecule 17 is a protein called 30S ribosomal protein S20.

| Mol | Chain | Residues | Atoms |     |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|-----|---|---------|-------|
| 17  | E     | 86       | Total | C   | H   | N   | O   | S | 0       | 0     |
|     |       |          | 1388  | 414 | 719 | 138 | 114 | 3 |         |       |

- Molecule 18 is a protein called 30S ribosomal protein S21.

| Mol | Chain | Residues | Atoms |     |     |     |    |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|----|---|---------|-------|
| 18  | F     | 70       | Total | C   | H   | N   | O  | S | 0       | 0     |
|     |       |          | 1218  | 366 | 629 | 125 | 97 | 1 |         |       |

- Molecule 19 is a protein called 30S ribosomal protein S2.

| Mol | Chain | Residues | Atoms |      |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|------|------|-----|-----|---|---------|-------|
| 19  | G     | 225      | Total | C    | H    | N   | O   | S | 0       | 0     |
|     |       |          | 3545  | 1113 | 1785 | 316 | 323 | 8 |         |       |

- Molecule 20 is a protein called 30S ribosomal protein S1.

| Mol | Chain | Residues | Atoms |      |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|------|------|-----|-----|---|---------|-------|
| 20  | H     | 259      | Total | C    | H    | N   | O   | S | 0       | 0     |
|     |       |          | 3184  | 1073 | 1454 | 305 | 349 | 3 |         |       |

- Molecule 21 is a protein called 30S ribosomal protein S3.

| Mol | Chain | Residues | Atoms |      |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|------|------|-----|-----|---|---------|-------|
| 21  | I     | 208      | Total | C    | H    | N   | O   | S | 0       | 0     |
|     |       |          | 3346  | 1036 | 1710 | 307 | 290 | 3 |         |       |

- Molecule 22 is a protein called 30S ribosomal protein S4.

| Mol | Chain | Residues | Atoms |      |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|------|------|-----|-----|---|---------|-------|
| 22  | J     | 205      | Total | C    | H    | N   | O   | S | 0       | 0     |
|     |       |          | 3350  | 1026 | 1707 | 315 | 298 | 4 |         |       |

- Molecule 23 is a protein called 30S ribosomal protein S5.

| Mol | Chain | Residues | Atoms |     |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|------|-----|-----|---|---------|-------|
| 23  | K     | 156      | Total | C   | H    | N   | O   | S | 0       | 0     |
|     |       |          | 2348  | 717 | 1196 | 217 | 212 | 6 |         |       |

- Molecule 24 is a protein called 30S ribosomal protein S6.

| Mol | Chain | Residues | Atoms |     |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|-----|---|---------|-------|
| 24  | L     | 104      | Total | C   | H   | N   | O   | S | 0       | 0     |
|     |       |          | 1694  | 536 | 846 | 153 | 152 | 7 |         |       |

- Molecule 25 is a protein called 30S ribosomal protein S7.

| Mol | Chain | Residues | Atoms |     |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|------|-----|-----|---|---------|-------|
| 25  | M     | 151      | Total | C   | H    | N   | O   | S | 0       | 0     |
|     |       |          | 2416  | 735 | 1235 | 227 | 215 | 4 |         |       |

- Molecule 26 is a protein called 30S ribosomal protein S8.

| Mol | Chain | Residues | Atoms |     |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|------|-----|-----|---|---------|-------|
| 26  | N     | 129      | Total | C   | H    | N   | O   | S | 0       | 0     |
|     |       |          | 2010  | 616 | 1031 | 173 | 184 | 6 |         |       |

- Molecule 27 is a protein called 30S ribosomal protein S9.

| Mol | Chain | Residues | Atoms |     |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|------|-----|-----|---|---------|-------|
| 27  | O     | 127      | Total | C   | H    | N   | O   | S | 0       | 0     |
|     |       |          | 2092  | 634 | 1070 | 206 | 179 | 3 |         |       |

- Molecule 28 is a protein called 30S ribosomal protein S10.

| Mol | Chain | Residues | Atoms |     |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|-----|---|---------|-------|
| 28  | P     | 99       | Total | C   | H   | N   | O   | S | 0       | 0     |
|     |       |          | 1621  | 495 | 831 | 151 | 143 | 1 |         |       |

- Molecule 29 is a protein called 30S ribosomal protein S11.

| Mol | Chain | Residues | Atoms |     |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|-----|---|---------|-------|
| 29  | Q     | 117      | Total | C   | H   | N   | O   | S | 0       | 0     |
|     |       |          | 1764  | 540 | 887 | 174 | 160 | 3 |         |       |

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

| Mol | Chain | Residues | Atoms |     |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|------|-----|-----|---|---------|-------|
| 30  | R     | 121      | Total | C   | H    | N   | O   | S | 0       | 0     |
|     |       |          | 1940  | 580 | 1001 | 194 | 161 | 4 |         |       |

- Molecule 31 is a protein called 30S ribosomal protein S14.

| Mol | Chain | Residues | Atoms |     |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|-----|---|---------|-------|
| 31  | S     | 100      | Total | C   | H   | N   | O   | S | 0       | 0     |
|     |       |          | 1649  | 499 | 844 | 164 | 139 | 3 |         |       |

- Molecule 32 is a protein called 30S ribosomal protein S15.

| Mol | Chain | Residues | Atoms |     |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|-----|---|---------|-------|
| 32  | T     | 88       | Total | C   | H   | N   | O   | S | 0       | 0     |
|     |       |          | 1448  | 439 | 734 | 144 | 130 | 1 |         |       |

- Molecule 33 is a protein called 30S ribosomal protein S16.

| Mol | Chain | Residues | Atoms |     |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|-----|---|---------|-------|
| 33  | U     | 82       | Total | C   | H   | N   | O   | S | 0       | 0     |
|     |       |          | 1315  | 406 | 666 | 128 | 114 | 1 |         |       |

- Molecule 34 is a protein called 30S ribosomal protein S17.

| Mol | Chain | Residues | Atoms |     |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|-----|---|---------|-------|
| 34  | V     | 80       | Total | C   | H   | N   | O   | S | 0       | 0     |
|     |       |          | 1339  | 411 | 691 | 121 | 113 | 3 |         |       |

- Molecule 35 is a protein called 30S ribosomal protein S19.

| Mol | Chain | Residues | Atoms |     |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|-----|---|---------|-------|
| 35  | W     | 83       | Total | C   | H   | N   | O   | S | 0       | 0     |
|     |       |          | 1351  | 424 | 688 | 126 | 111 | 2 |         |       |

- Molecule 36 is a protein called 30S ribosomal protein S13.

| Mol | Chain | Residues | Atoms |     |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|-----|---|---------|-------|
| 36  | X     | 116      | Total | C   | H   | N   | O   | S | 0       | 0     |
|     |       |          | 1864  | 558 | 964 | 181 | 158 | 3 |         |       |

- Molecule 37 is a RNA chain called mRNA in the ribosomal RNA entrance pore.

| Mol | Chain | Residues | Atoms |    |    |   |    |   | AltConf | Trace |
|-----|-------|----------|-------|----|----|---|----|---|---------|-------|
| 37  | Y     | 3        | Total | C  | H  | N | O  | P | 0       | 0     |
|     |       |          | 89    | 27 | 29 | 6 | 24 | 3 |         |       |

- Molecule 38 is a RNA chain called 23S rRNA.

| Mol | Chain | Residues | Atoms |       |       |       |       |      | AltConf | Trace |
|-----|-------|----------|-------|-------|-------|-------|-------|------|---------|-------|
| 38  | a     | 2880     | Total | C     | H     | N     | O     | P    | 0       | 0     |
|     |       |          | 92910 | 27587 | 31069 | 11398 | 19976 | 2880 |         |       |

There is a discrepancy between the modelled and reference sequences:

| Chain | Residue | Modelled | Actual | Comment  | Reference    |
|-------|---------|----------|--------|----------|--------------|
| a     | 887     | A        | U      | conflict | GB 937521852 |

- Molecule 39 is a protein called 50S ribosomal protein L27.

| Mol | Chain | Residues | Atoms |     |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|-----|---|---------|-------|
| 39  | b     | 76       | Total | C   | H   | N   | O   | S | 0       | 0     |
|     |       |          | 1181  | 360 | 599 | 117 | 104 | 1 |         |       |

- Molecule 40 is a protein called 50S ribosomal protein L28.

| Mol | Chain | Residues | Atoms |     |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|-----|---|---------|-------|
| 40  | c     | 77       | Total | C   | H   | N   | O   | S | 0       | 0     |
|     |       |          | 1277  | 388 | 652 | 129 | 106 | 2 |         |       |

- Molecule 41 is a RNA chain called 5S rRNA.

| Mol | Chain | Residues | Atoms |      |      |     |     |     | AltConf | Trace |
|-----|-------|----------|-------|------|------|-----|-----|-----|---------|-------|
| 41  | d     | 120      | Total | C    | H    | N   | O   | P   | 0       | 0     |
|     |       |          | 3870  | 1144 | 1301 | 468 | 837 | 120 |         |       |

- Molecule 42 is a protein called 50S ribosomal protein L29.

| Mol | Chain | Residues | Atoms |     |     |    |    |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|----|----|---|---------|-------|
| 42  | e     | 62       | Total | C   | H   | N  | O  | S | 0       | 0     |
|     |       |          | 1032  | 308 | 531 | 98 | 94 | 1 |         |       |

- Molecule 43 is a protein called 50S ribosomal protein L30.

| Mol | Chain | Residues | Atoms |     |     |    |    |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|----|----|---|---------|-------|
| 43  | f     | 58       | Total | C   | H   | N  | O  | S | 0       | 0     |
|     |       |          | 936   | 281 | 488 | 87 | 78 | 2 |         |       |

- Molecule 44 is a protein called 50S ribosomal protein L31.

| Mol | Chain | Residues | Atoms |     |     |    |    |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|----|----|---|---------|-------|
| 44  | g     | 66       | Total | C   | H   | N  | O  | S | 0       | 0     |
|     |       |          | 1042  | 323 | 520 | 99 | 94 | 6 |         |       |

- Molecule 45 is a protein called 50S ribosomal protein L2.

| Mol | Chain | Residues | Atoms |      |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|------|------|-----|-----|---|---------|-------|
| 45  | h     | 271      | Total | C    | H    | N   | O   | S | 0       | 0     |
|     |       |          | 4236  | 1288 | 2154 | 423 | 364 | 7 |         |       |

- Molecule 46 is a protein called 50S ribosomal protein L32.

| Mol | Chain | Residues | Atoms |     |     |    |    |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|----|----|---|---------|-------|
| 46  | i     | 56       | Total | C   | H   | N  | O  | S | 0       | 0     |
|     |       |          | 903   | 269 | 459 | 94 | 80 | 1 |         |       |

- Molecule 47 is a protein called 50S ribosomal protein L3.

| Mol | Chain | Residues | Atoms |     |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|------|-----|-----|---|---------|-------|
| 47  | j     | 209      | Total | C   | H    | N   | O   | S | 0       | 0     |
|     |       |          | 3182  | 979 | 1617 | 288 | 294 | 4 |         |       |

- Molecule 48 is a protein called 50S ribosomal protein L33.

| Mol | Chain | Residues | Atoms |     |     |    |    |  | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|----|----|--|---------|-------|
| 48  | k     | 52       | Total | C   | H   | N  | O  |  | 0       | 0     |
|     |       |          | 890   | 275 | 464 | 78 | 73 |  |         |       |

- Molecule 49 is a protein called 50S ribosomal protein L4.

| Mol | Chain | Residues | Atoms |     |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|------|-----|-----|---|---------|-------|
| 49  | l     | 201      | Total | C   | H    | N   | O   | S | 0       | 0     |
|     |       |          | 3171  | 974 | 1619 | 283 | 290 | 5 |         |       |

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

| Mol | Chain | Residues | Atoms |     |     |    |    |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|----|----|---|---------|-------|
| 50  | m     | 46       | Total | C   | H   | N  | O  | S | 0       | 0     |
|     |       |          | 795   | 228 | 418 | 90 | 57 | 2 |         |       |

- Molecule 51 is a protein called 50S ribosomal protein L5.

| Mol | Chain | Residues | Atoms |     |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|------|-----|-----|---|---------|-------|
| 51  | n     | 177      | Total | C   | H    | N   | O   | S | 0       | 0     |
|     |       |          | 2853  | 899 | 1443 | 249 | 256 | 6 |         |       |

- Molecule 52 is a protein called 50S ribosomal protein L35.

| Mol | Chain | Residues | Atoms |     |     |     |    |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|----|---|---------|-------|
| 52  | o     | 64       | Total | C   | H   | N   | O  | S | 0       | 0     |
|     |       |          | 1076  | 323 | 572 | 105 | 74 | 2 |         |       |

- Molecule 53 is a protein called 50S ribosomal protein L6.

| Mol | Chain | Residues | Atoms |     |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|------|-----|-----|---|---------|-------|
| 53  | p     | 175      | Total | C   | H    | N   | O   | S | 0       | 0     |
|     |       |          | 2671  | 826 | 1358 | 241 | 244 | 2 |         |       |

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

| Mol | Chain | Residues | Atoms |     |     |    |    |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|----|----|---|---------|-------|
| 54  | q     | 38       | Total | C   | H   | N  | O  | S | 0       | 0     |
|     |       |          | 645   | 185 | 343 | 65 | 48 | 4 |         |       |

- Molecule 55 is a protein called 50S ribosomal protein L9.

| Mol | Chain | Residues | Atoms |     |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|------|-----|-----|---|---------|-------|
| 55  | r     | 149      | Total | C   | H    | N   | O   | S | 0       | 0     |
|     |       |          | 2259  | 699 | 1148 | 197 | 214 | 1 |         |       |

- Molecule 56 is a protein called 50S ribosomal protein L13.

| Mol | Chain | Residues | Atoms |     |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|------|-----|-----|---|---------|-------|
| 56  | s     | 142      | Total | C   | H    | N   | O   | S | 0       | 0     |
|     |       |          | 2291  | 714 | 1162 | 212 | 199 | 4 |         |       |

- Molecule 57 is a protein called 50S ribosomal protein L14.

| Mol | Chain | Residues | Atoms |     |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|------|-----|-----|---|---------|-------|
| 57  | t     | 123      | Total | C   | H    | N   | O   | S | 0       | 0     |
|     |       |          | 1969  | 593 | 1023 | 181 | 166 | 6 |         |       |

- Molecule 58 is a protein called 50S ribosomal protein L15.

| Mol | Chain | Residues | Atoms |     |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|------|-----|-----|---|---------|-------|
| 58  | u     | 144      | Total | C   | H    | N   | O   | S | 0       | 0     |
|     |       |          | 2182  | 654 | 1129 | 207 | 190 | 2 |         |       |

- Molecule 59 is a protein called 50S ribosomal protein L16.

| Mol | Chain | Residues | Atoms |     |      |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|------|-----|-----|---|---------|-------|
| 59  | v     | 136      | Total | C   | H    | N   | O   | S | 0       | 0     |
|     |       |          | 2231  | 686 | 1157 | 205 | 177 | 6 |         |       |

- Molecule 60 is a protein called 50S ribosomal protein L17.

| Mol | Chain | Residues | Atoms |     |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|-----|---|---------|-------|
| 60  | w     | 119      | Total | C   | H   | N   | O   | S | 0       | 0     |
|     |       |          | 1945  | 588 | 994 | 195 | 163 | 5 |         |       |

- Molecule 61 is a protein called 50S ribosomal protein L18.

| Mol | Chain | Residues | Atoms |     |     |     |     |  | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|-----|--|---------|-------|
| 61  | x     | 116      | Total | C   | H   | N   | O   |  | 0       | 0     |
|     |       |          | 1815  | 552 | 923 | 178 | 162 |  |         |       |

- Molecule 62 is a protein called 50S ribosomal protein L19.

| Mol | Chain | Residues | Atoms |     |     |     |     |   | AltConf | Trace |
|-----|-------|----------|-------|-----|-----|-----|-----|---|---------|-------|
| 62  | y     | 114      | Total | C   | H   | N   | O   | S | 0       | 0     |
|     |       |          | 1879  | 574 | 962 | 179 | 163 | 1 |         |       |

- Molecule 63 is a protein called 50S ribosomal protein L20.

| Mol | Chain | Residues | Atoms |     |      |     |     |  | AltConf | Trace |
|-----|-------|----------|-------|-----|------|-----|-----|--|---------|-------|
| 63  | z     | 117      | Total | C   | H    | N   | O   |  | 0       | 0     |
|     |       |          | 1967  | 604 | 1020 | 192 | 151 |  |         |       |

- Molecule 64 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

| Mol | Chain | Residues | Atoms |    | AltConf |
|-----|-------|----------|-------|----|---------|
| 64  | 7     | 1        | Total | Mg | 0       |
|     |       |          | 1     | 1  |         |

- Molecule 65 is ZINC ION (CCD ID: ZN) (formula: Zn).

| Mol | Chain | Residues | Atoms |    | AltConf |
|-----|-------|----------|-------|----|---------|
| 65  | AE    | 2        | Total | Zn | 0       |
|     |       |          | 2     | 2  |         |

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

### 3 Experimental information

| Property                             | Value                                   | Source    |
|--------------------------------------|-----------------------------------------|-----------|
| EM reconstruction method             | SINGLE PARTICLE                         | Depositor |
| Imposed symmetry                     | POINT, Not provided                     |           |
| Number of particles used             | 6233                                    | 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 ( $e^-/\text{\AA}^2$ ) | 45                                      | Depositor |
| Minimum defocus (nm)                 | Not provided                            |           |
| Maximum defocus (nm)                 | Not provided                            |           |
| Magnification                        | Not provided                            |           |
| Image detector                       | GATAN K2 SUMMIT (4k x 4k)               | Depositor |
| Maximum map value                    | 0.201                                   | Depositor |
| Minimum map value                    | -0.115                                  | Depositor |
| Average map value                    | 0.000                                   | Depositor |
| Map value standard deviation         | 0.010                                   | Depositor |
| Recommended contour level            | 0.0173                                  | Depositor |
| Map size (Å)                         | 564.28796, 564.28796, 564.28796         | wwPDB     |
| Map dimensions                       | 192, 192, 192                           | wwPDB     |
| Map angles (°)                       | 90.0, 90.0, 90.0                        | wwPDB     |
| Pixel spacing (Å)                    | 2.939, 2.939, 2.939                     | Depositor |

## 4 Model quality [i](#)

### 4.1 Standard geometry [i](#)

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

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

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

### 4.3 Torsion angles [i](#)

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

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

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

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

#### 4.3.3 RNA [i](#)

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

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

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

### 4.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

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

Of 3 ligands modelled in this entry, 3 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.

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

There are no such residues in this entry.

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

There are no chain breaks in this entry.

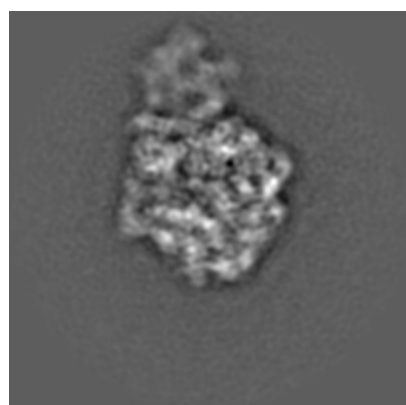
## 5 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-21475. These allow visual inspection of the internal detail of the map and identification of artifacts.

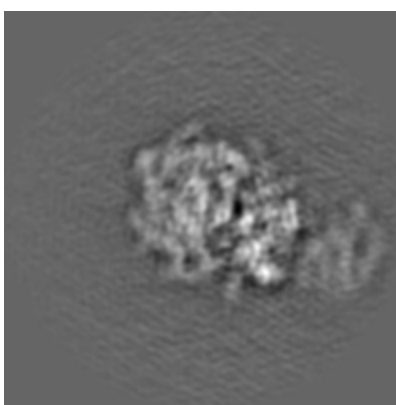
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

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

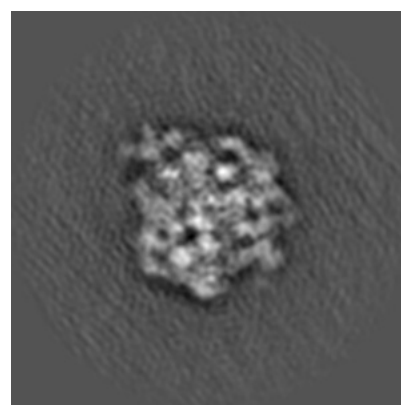
#### 5.1.1 Primary map



X



Y

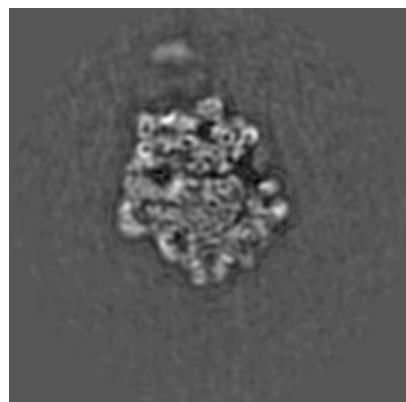


Z

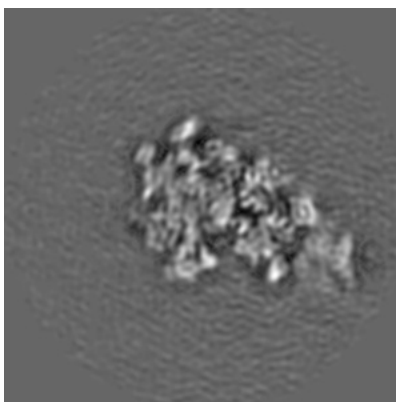
The images above show the map projected in three orthogonal directions.

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

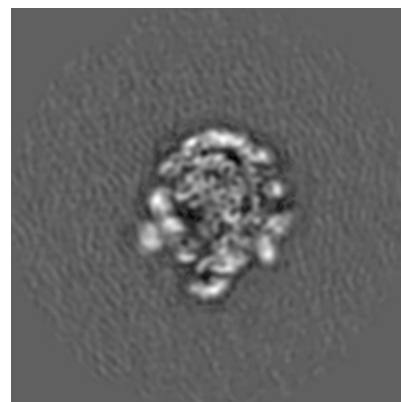
#### 5.2.1 Primary map



X Index: 96



Y Index: 96

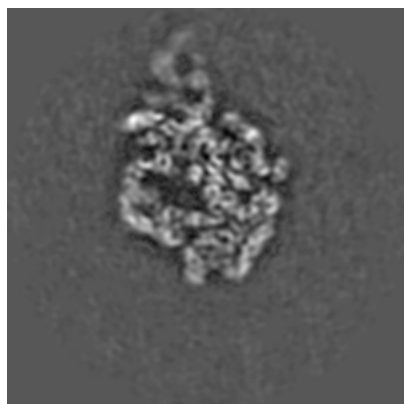


Z Index: 96

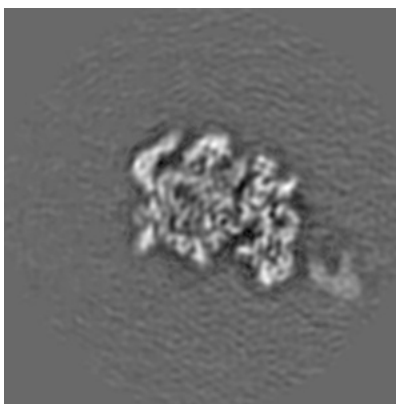
The images above show central slices of the map in three orthogonal directions.

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

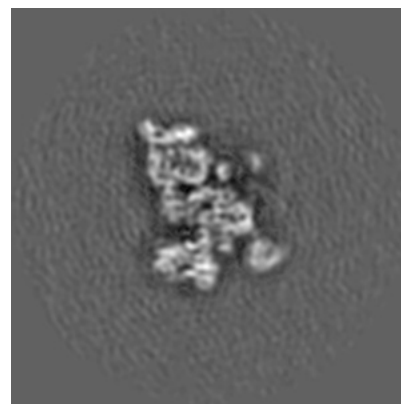
### 5.3.1 Primary map



X Index: 88



Y Index: 104

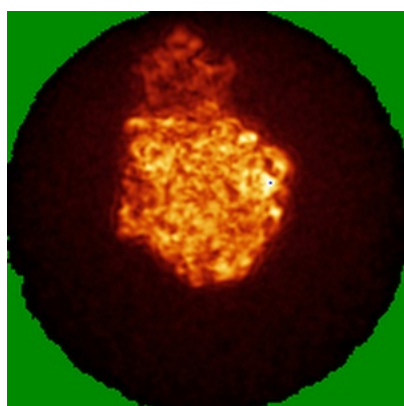


Z Index: 117

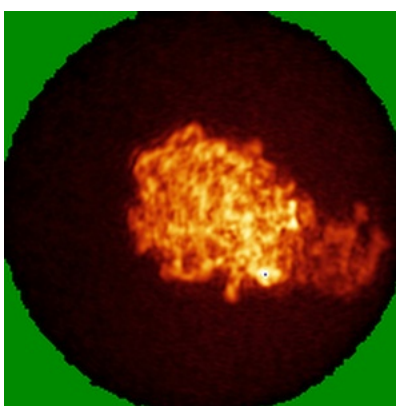
The images above show the largest variance slices of the map in three orthogonal directions.

## 5.4 Orthogonal standard-deviation projections (False-color) [i](#)

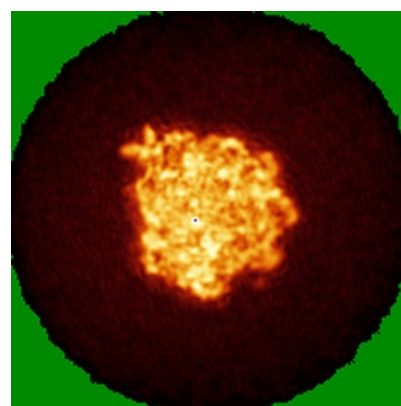
### 5.4.1 Primary map



X



Y

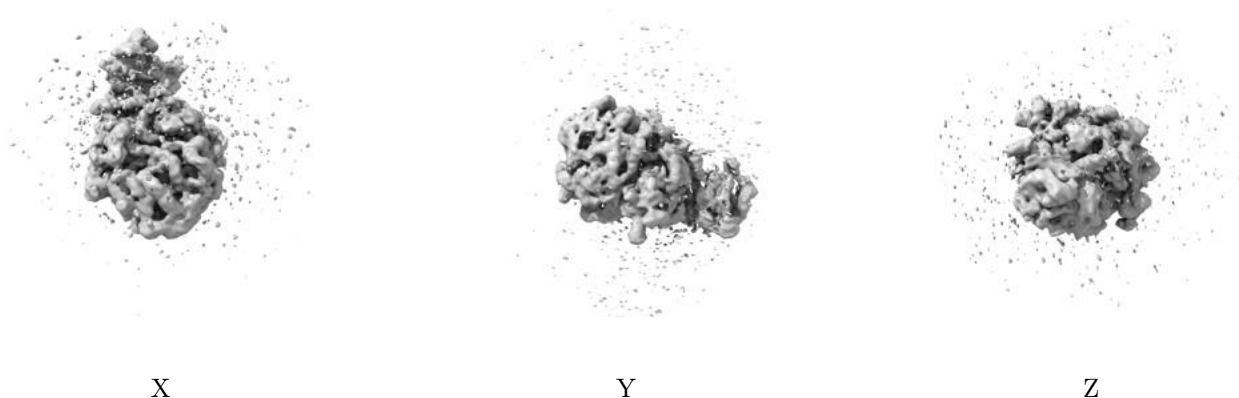


Z

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

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

### 5.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.0173. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

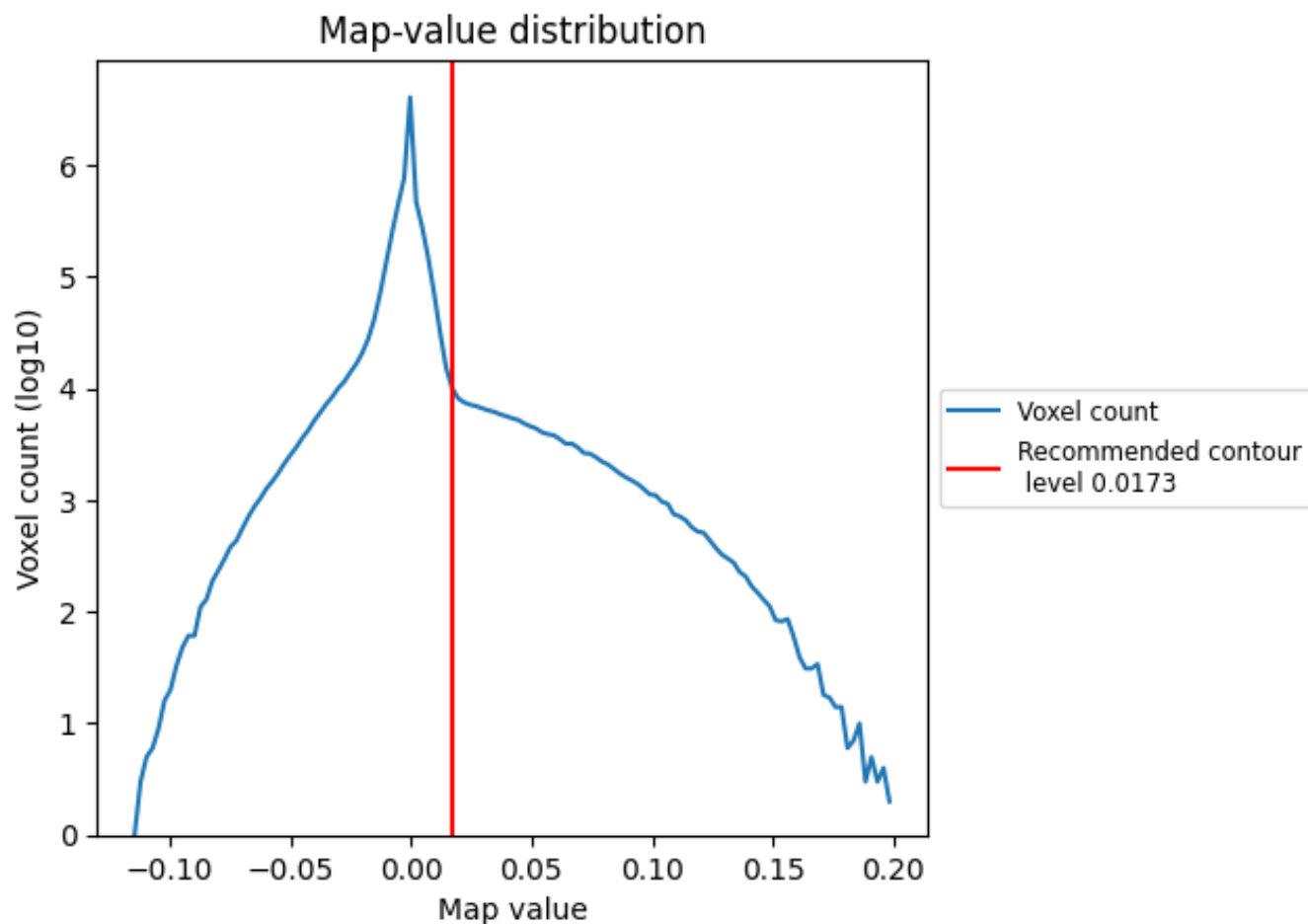
## 5.6 Mask visualisation [i](#)

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

## 6 Map analysis [i](#)

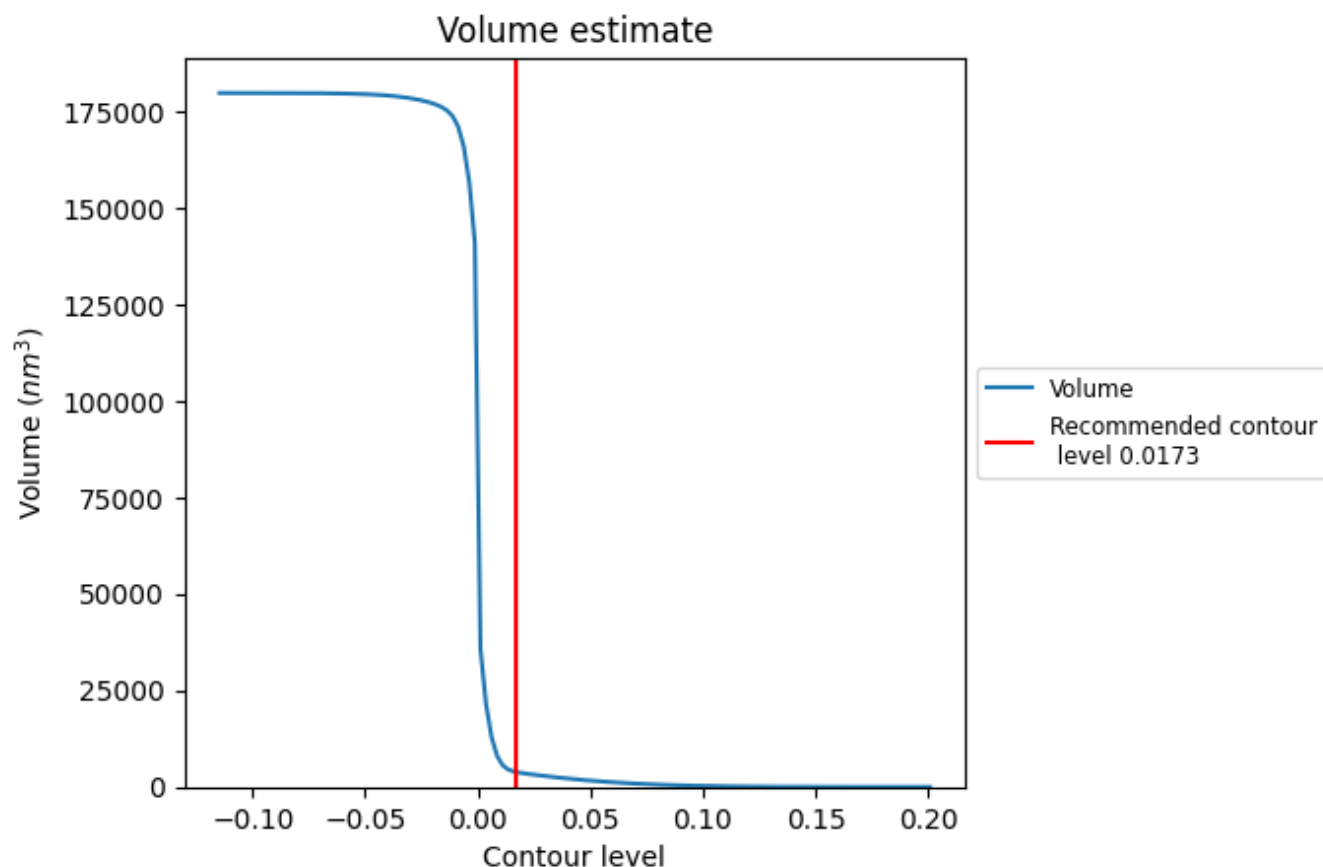
This section contains the results of statistical analysis of the map.

### 6.1 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.

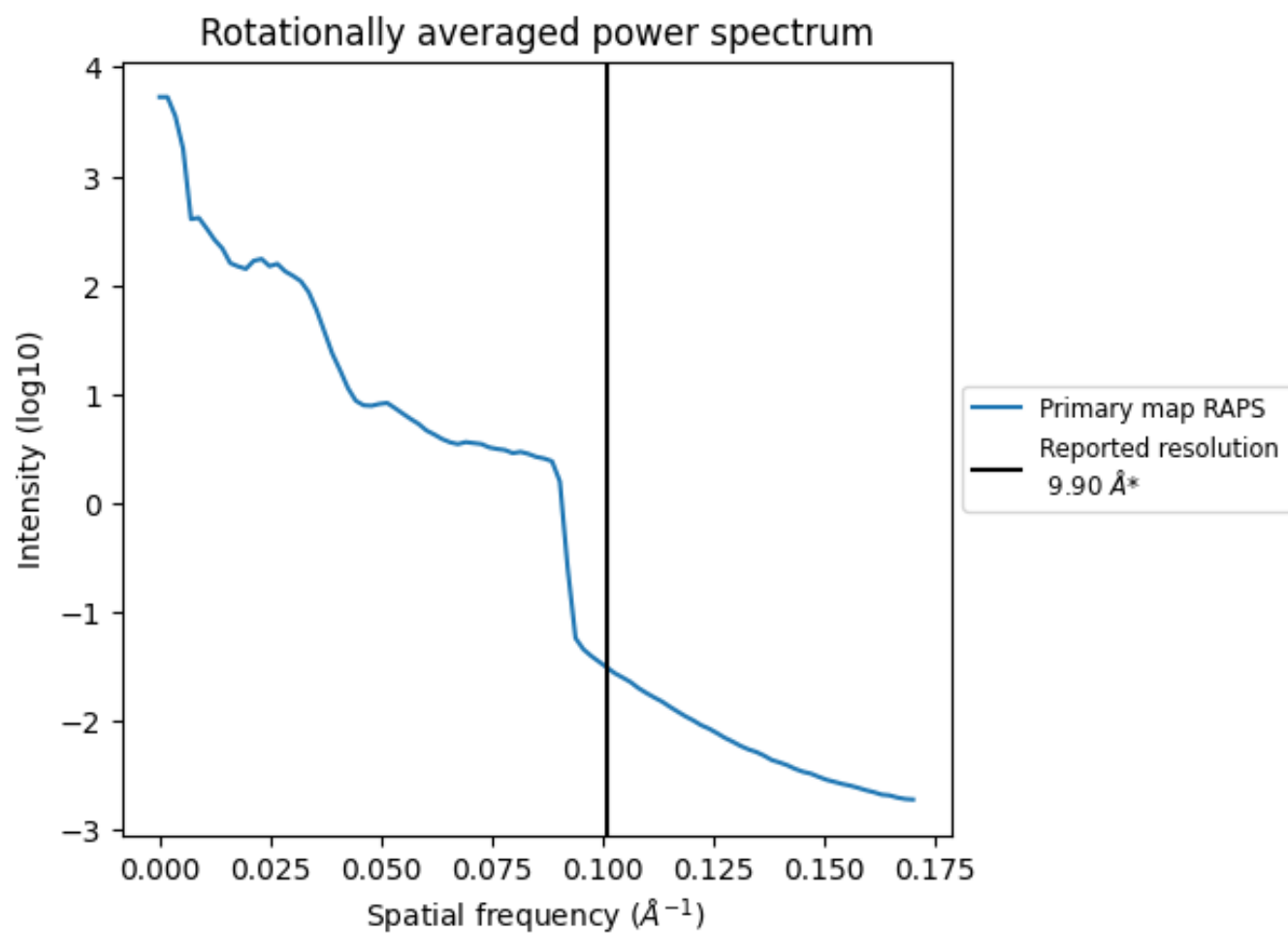
## 6.2 Volume estimate [i](#)



The volume at the recommended contour level is 3841  $\text{nm}^3$ ; this corresponds to an approximate mass of 3469 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.

### 6.3 Rotationally averaged power spectrum ⓘ



\*Reported resolution corresponds to spatial frequency of 0.101 Å<sup>-1</sup>

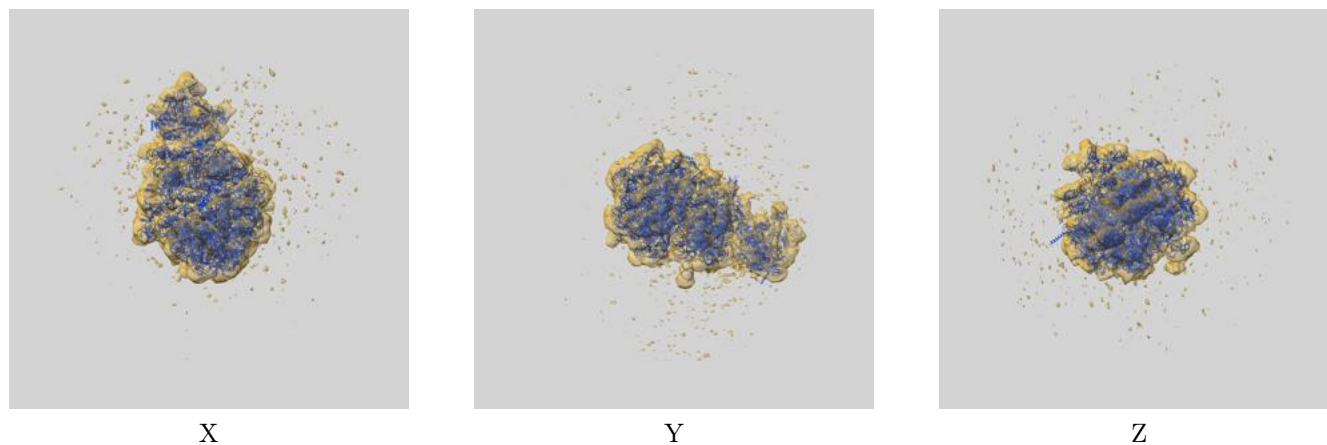
## 7 Fourier-Shell correlation

This section was not generated. No FSC curve or half-maps provided.

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

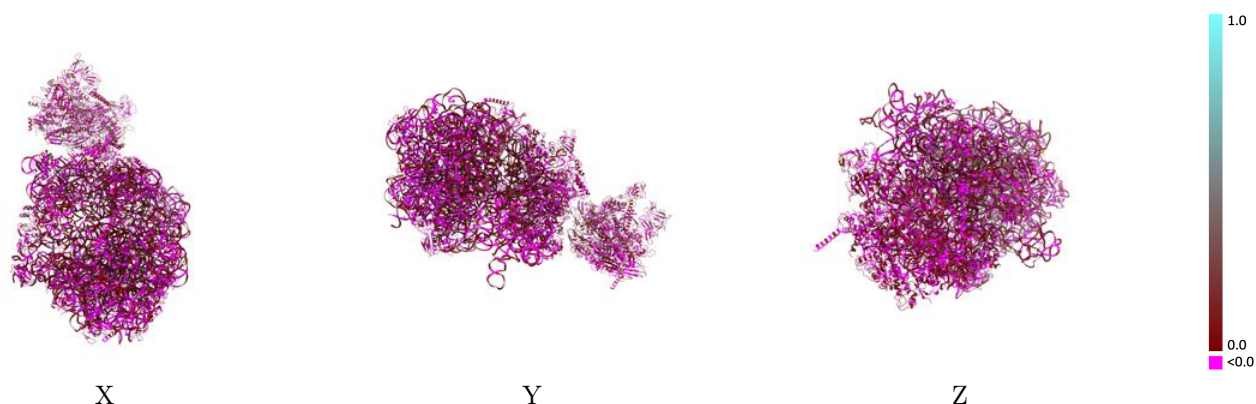
This section contains information regarding the fit between EMDB map EMD-21475 and PDB model 6VYX. Per-residue inclusion information can be found in section ?? on page ??.

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



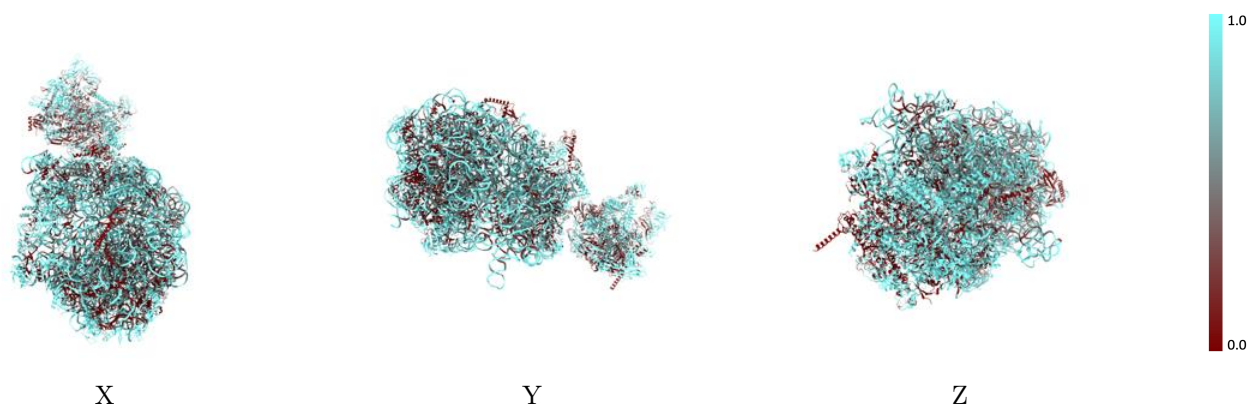
The images above show the 3D surface view of the map at the recommended contour level 0.0173 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



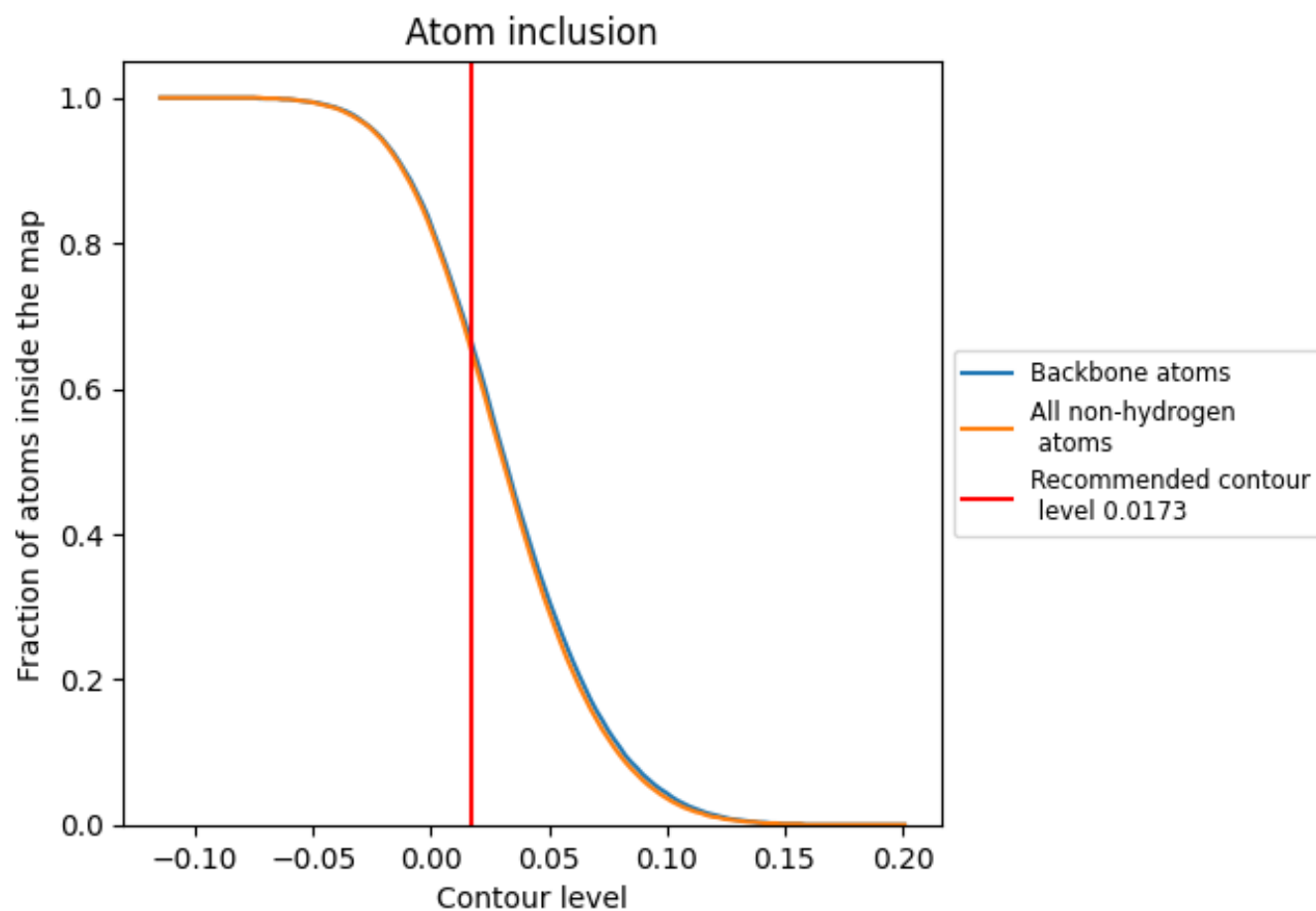
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

## 8.3 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 (0.0173).

## 8.4 Atom inclusion [i](#)



At the recommended contour level, 66% of all backbone atoms, 65% of all non-hydrogen atoms, are inside the map.

## 8.5 Map-model fit summary ⓘ

The table lists the average atom inclusion at the recommended contour level (0.0173) and Q-score for the entire model and for each chain.

| Chain | Atom inclusion                                                                             | Q-score                                                                                     |
|-------|--------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| All   |  0.6510   |  0.0310    |
| 0     |  0.6770   |  0.0170    |
| 1     |  0.2990   |  -0.0020   |
| 2     |  0.5080   |  -0.0160   |
| 3     |  0.7080   |  0.0010    |
| 4     |  0.6940   |  0.0110    |
| 5     |  0.6520   |  0.0330    |
| 6     |  0.8030   |  0.0900    |
| 7     |  0.4800   |  0.0560    |
| A     |  0.6810   |  0.0720    |
| AA    |  0.5950   |  0.0430    |
| AB    |  0.3000   |  -0.0060   |
| AC    |  0.6900   |  0.0640    |
| AD    |  0.6570   |  0.0300    |
| AE    |  0.5810  |  0.0270   |
| AF    |  0.0960 |  -0.0290 |
| B     |  0.7320 |  0.0560  |
| C     |  0.7250 |  -0.0130 |
| D     |  0.7670 |  0.0490  |
| E     |  0.4880 |  -0.0160 |
| F     |  0.2700 |  0.0650  |
| G     |  0.7410 |  -0.0100 |
| H     |  0.3520 |  0.0180  |
| I     |  0.5580 |  0.0060  |
| J     |  0.5270 |  -0.0160 |
| K     |  0.5930 |  0.0360  |
| L     |  0.7510 |  0.0230  |
| M     |  0.6320 |  0.0050  |
| N     |  0.5240 |  -0.0260 |
| O     |  0.5880 |  -0.0200 |
| P     |  0.4930 |  -0.0010 |
| Q     |  0.7850 |  0.0360  |
| R     |  0.6230 |  0.0620  |
| S     |  0.5450 |  -0.0150 |
| T     |  0.7990 |  0.0190  |



*Continued on next page...*

*Continued from previous page...*

| Chain | Atom inclusion                                                                             | Q-score                                                                                     |
|-------|--------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| U     |  0.4350   |  -0.0310   |
| V     |  0.4970   |  0.0200    |
| W     |  0.7370   |  0.0010    |
| X     |  0.6440   |  -0.0040   |
| Y     |  0.0000   |  0.0460    |
| a     |  0.7040   |  0.0410    |
| b     |  0.4030   |  -0.0430   |
| c     |  0.4540   |  0.0110    |
| d     |  0.6130   |  0.0030    |
| e     |  0.5930   |  -0.0020   |
| f     |  0.4060   |  -0.0170   |
| g     |  0.7930   |  0.0330    |
| h     |  0.4960   |  0.0390    |
| i     |  0.4440   |  -0.0210   |
| j     |  0.5410   |  -0.0240   |
| k     |  0.6120   |  0.0040    |
| l     |  0.5740   |  0.0100    |
| m     |  0.3380   |  0.0100    |
| n     |  0.7380   |  0.0070    |
| o     |  0.1690  |  -0.0430  |
| p     |  0.7870 |  0.0230  |
| q     |  0.6100 |  -0.0130 |
| r     |  0.1640 |  -0.0330 |
| s     |  0.3880 |  -0.0250 |
| t     |  0.5310 |  0.0220  |
| u     |  0.5470 |  -0.0010 |
| v     |  0.5860 |  0.0420  |
| w     |  0.3430 |  -0.0340 |
| x     |  0.6510 |  -0.0070 |
| y     |  0.4390 |  -0.0170 |
| z     |  0.5050 |  -0.0230 |