WORLDWIDE PDB
PROTEIN DATA BANK

wwPDB EM Validation Summary Report (i)

Feb 14, 2024 – 11:07 AM EST

PDB ID	:	3J45
EMDB ID	:	EMD-5692
Title	:	Structure of a non-translocating SecY protein channel with the 70S ribosome
Authors	:	Menetret, J.F.; Park, E.; Gumbart, J.C.; Ludtke, S.J.; Li, W.; Whynot, A.; Rapoport, T.A.; Akey, C.W.
Deposited on	:	2013-06-18
Resolution	:	9.50 Å(reported)
Based on initial models	:	3J01, 2I2P

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

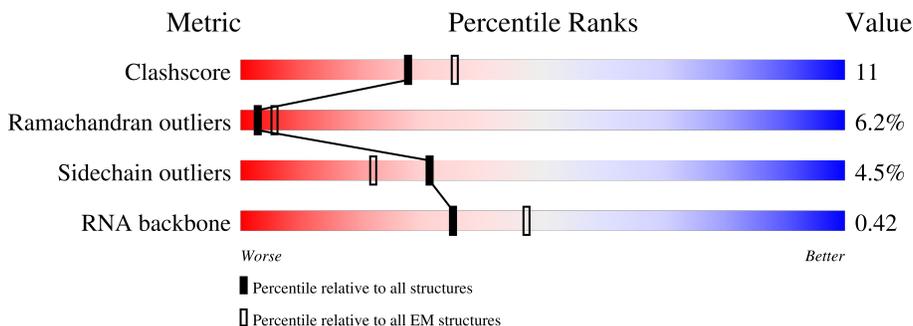|		
EMDB validation analysis	:	0.0.1.dev70
Mogul	:	1.8.5 (274361), CSD as541be (2020)
MolProbity	:	4.02b-467
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.9
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36

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 9.50 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	Percentile Ranks	Value
Clashscore		11
Ramachandran outliers		6.2%
Sidechain outliers		4.5%
RNA backbone		0.42

Worse — *Better*

▮ Percentile relative to all structures
▯ Percentile relative to all EM structures

Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	158937	4297
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 >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5% The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion < 40%). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	y	437	16% / 74% / 21% / •
2	E	56	18% / 64% / 32% / •
3	G	65	25% / 51% / 34% / 12% / •
4	T	100	5% / 67% / 26% / 7%
5	U	103	8% / 68% / 22% / 9% / •
6	Y	63	71% / 25% / •
7	1	63	46% / 38% / 16%

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Mol	Chain	Length	Quality of chain
8	2	36	50% 36% 14%
9	3	18	33% 50% 17%
10	4	61	56% 43%
11	5	108	27% 55% 19%

2 Entity composition ⓘ

There are 11 unique types of molecules in this entry. The entry contains 12465 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 protein called Protein translocase subunit SecY.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	y	437	Total 3361	C 2220	N 554	O 570	S 17	0	1

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
y	5	ACE	-	acetylation	UNP P0AGA2
y	441	NH2	-	amidation	UNP P0AGA2

- Molecule 2 is a protein called Preprotein translocase subunit SecE.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	E	56	Total 433	C 283	N 76	O 73	S 1	0	1

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
E	73	ACE	-	acetylation	UNP P0AG96
E	128	NH2	-	amidation	UNP P0AG96

- Molecule 3 is a protein called Protein-export membrane protein SecG.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	G	65	Total 457	C 299	N 73	O 81	S 4	0	0

- Molecule 4 is a protein called 50S ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	T	100	Total 787	C 496	N 146	O 143	S 2	0	0

- Molecule 5 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms				AltConf	Trace
5	U	103	Total	C	N	O	0	0
			789	498	148	143		

- Molecule 6 is a protein called 50S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	Y	63	Total	C	N	O	S	0	0
			509	313	99	95	2		

- Molecule 7 is a RNA chain called 23S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	1	63	Total	C	N	O	P	0	0
			1350	603	245	439	63		

- Molecule 8 is a RNA chain called 23S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	2	36	Total	C	N	O	P	0	0
			775	345	142	252	36		

- Molecule 9 is a RNA chain called 23S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	3	18	Total	C	N	O	P	0	0
			387	172	71	126	18		

- Molecule 10 is a RNA chain called 23S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	4	61	Total	C	N	O	P	0	0
			1312	584	240	427	61		

- Molecule 11 is a RNA chain called 23S ribosomal RNA.

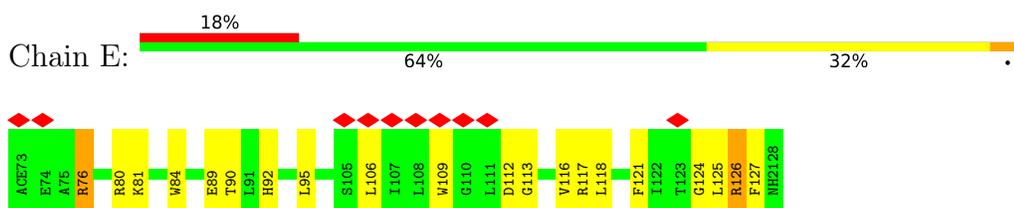| Mol	Chain	Residues	Atoms					AltConf	Trace
11	5	108	Total	C	N	O	P	0	0
			2305	1029	406	762	108		

3 Residue-property plots ⓘ

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: Protein translocase subunit SecY
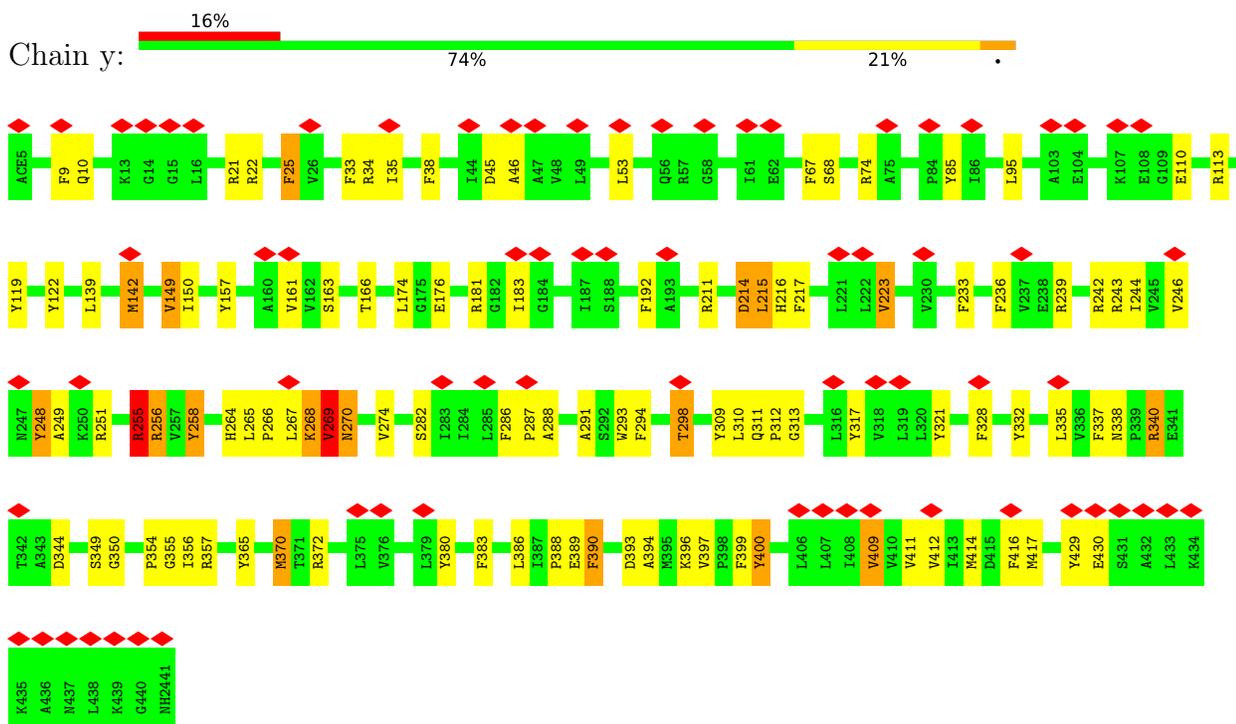
• Molecule 2: Preprotein translocase subunit SecE
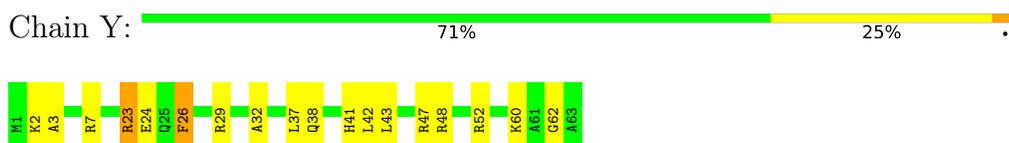

• Molecule 3: Protein-export membrane protein SecG
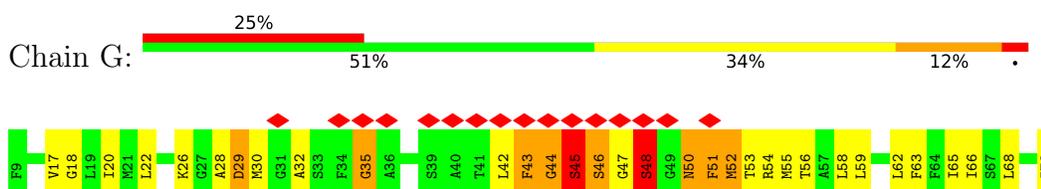
- Molecule 4: 50S ribosomal protein L23

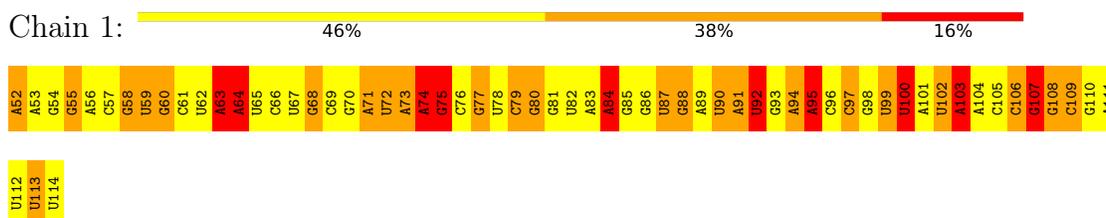Chain T:

5%

67%   26%   7%

M1 I2 R3 E4 E5 R6 L7 V10 L11 R12 E18 S21 E25 K26 T29 K36 D37 A38 E42 E52 E56 V57 V58 L61 K64 G65 K66 V67 K68 R73 I74 G75 R76 R77 Y84 V85 T86 E89 N92 L93 D94 F95 V96 G97

E100

- Molecule 5: 50S ribosomal protein L24

Chain U:

8%

68%   22%   9%   •

A1 A2 K3 I4 R5 R6 D7 V10 I11 V12 L13 T14 R21 G22 K23 S29 S30 G31 K32 V35 E36 G37 I38 P47 V48 P49 A50 L51 A62 A63 N73 A74 A75 T76 A79 D80 R81 V82 G83 F84 R85 F86 G89 K90 F94 F95 E100 T101 I102

K103

- Molecule 6: 50S ribosomal protein L29

Chain Y:

71%   25%   •

M1 K2 A3 R7 R23 E24 Q25 F26 R29 A32 L37 Q38 H41 L42 L43 R47 R48 R52 K60 A61 G62 A63
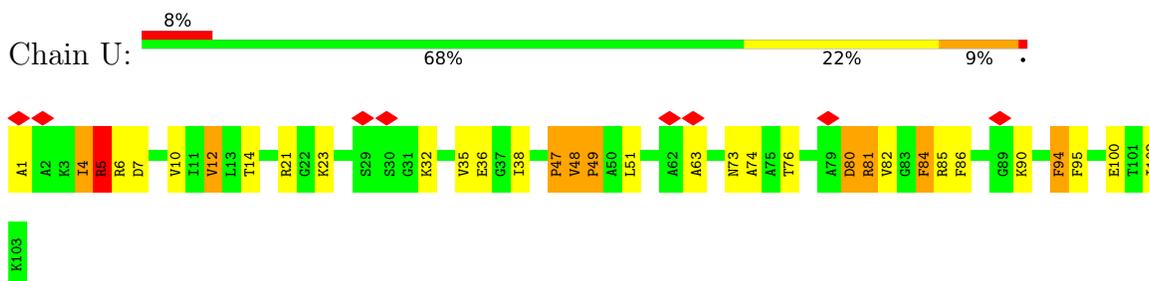
- Molecule 7: 23S ribosomal RNA

Chain 1:

46%   38%   16%

A52 A53 G54 G55 A56 C57 G58 U59 G60 C61 U62 A63 A64 U65 C66 U67 G68 C69 G70 A71 U72 A73 A74 G75 C76 G77 U78 C79 G80 G81 U82 A83 A84 G85 G86 U87 G88 A89 U90 A91 U92 G93 A94 A95 C96 C97 G98 U99 U100 A101 U102 A103 A104 C105 C106 G107 G108 C109 G110 A111

U112 U113 U114

- Molecule 8: 23S ribosomal RNA

Chain 2:

50%   36%   14%

A1307 A1308 G1309 G1310 G1311 U1312 U1313 C1314 C1315 U1316 G1317 U1318 C1319 C1320 A1321 A1322 C1323 G1324 U1325 U1326 A1327 A1328 U1329 C1330 G1331 G1332 G1333 G1334 C1335 A1336 G1337 G1338 G1339 U1340 A1341 A1342
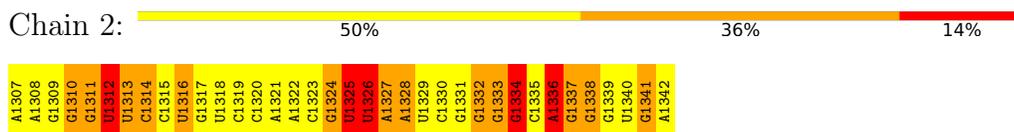
- Molecule 9: 23S ribosomal RNA

Chain 3:

33%   50%   17%

C1526 G1527 A1528 G1529 G1530 C1531 A1532 C1533 U1534 A1535 C1536 G1537 G1538 U1539 G1540 C1541 U1542 G1543

• Molecule 10: 23S ribosomal RNA

Chain 4:

56%   43%

C1838 G1839 G1840 U1841 G1842 C1843 C1844 G1845 G1846 A1847 A1848 G1849 G1850 U1851 U1852 A1853 A1854 U1855 U1856 G1857 A1858 U1859 G1860 G1861 G1862 U1863 U1864 U1865 A1866 G1867 C1868 G1869 C1870 A1871 A1872 G1873 C1874 C1875 A1876 A1877 G1878 C1879 U1880 C1881 U1882 U1883 G1884 A1885 U1886 C1887 G1888 A1889 A1890 G1891 C1892 C1893 C1894 C1895 G1896 G1897

U1898

• Molecule 11: 23S ribosomal RNA

Chain 5:

27%   55%   19%

U2092 G2093 A2094 A2095 C2096 A2097 U2098 U2099 G2100 A2101 G2102 C2103 C2104 U2105 U2106 G2107 A2108 U2109 G2110 U2111 G2112 U2113 U2114 G2115 G2116 A2117 U2118 A2119 G2120 G2121 U2122 G2123 G2124 G2125 A2126 G2127 G2128 C2129 U2130 U2131 U2132 G2133 A2134 A2135 G2136 U2137 G2138 U2139 G2140 G2141 A2142 C2143 G2144 C2145 C2146 A2147 G2148 U2149 C2150 U2151

G2152 C2153 A2154 U2155 G2156 G2157 A2158 G2159 C2160 C2161 G2162 A2163 C2164 C2165 U2166 U2167 G2168 A2169 A2170 A2171 U2172 A2173 C2174 C2175 A2176 C2177 C2178 C2179 U2180 U2181 U2182 A2183 A2184 U2185 G2186 U2187 U2188 U2189 G2190 A2191 U2192 G2193 U2194 U2195 C2196 U2197 A2198 A2199

4 Experimental information ⓘ

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	39000	Depositor
Resolution determination method	OTHER	Depositor
CTF correction method	per micrograph	Depositor
Microscope	FEI TECNAI F20	Depositor
Voltage (kV)	200	Depositor
Electron dose $(e^-/\text{Å}^2)$	20	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	51000	Depositor
Image detector	KODAK SO-163 FILM	Depositor
Maximum map value	11.232	Depositor
Minimum map value	-5.482	Depositor
Average map value	0.204	Depositor
Map value standard deviation	0.928	Depositor
Recommended contour level	1.8	Depositor
Map size (Å)	393.12, 393.12, 393.12	wwPDB
Map dimensions	144, 144, 144	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	2.73, 2.73, 2.73	Depositor

5 Model quality ⓘ

5.1 Standard geometry ⓘ

Bond lengths and bond angles in the following residue types are not validated in this section: NH2, ACE

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	y	1.70	23/3434 (0.7%)	2.02	104/4657 (2.2%)
2	E	1.79	5/437 (1.1%)	2.35	17/596 (2.9%)
3	G	0.27	0/462	1.57	12/620 (1.9%)
4	T	1.64	7/794 (0.9%)	1.92	16/1060 (1.5%)
5	U	1.71	7/797 (0.9%)	1.95	20/1062 (1.9%)
6	Y	1.80	5/510 (1.0%)	1.93	13/677 (1.9%)
7	1	3.51	207/1511 (13.7%)	3.45	299/2354 (12.7%)
8	2	3.40	117/867 (13.5%)	3.56	188/1351 (13.9%)
9	3	3.68	75/432 (17.4%)	3.86	100/672 (14.9%)
10	4	3.59	206/1468 (14.0%)	3.69	312/2289 (13.6%)
11	5	3.40	375/2577 (14.6%)	3.71	573/4015 (14.3%)
All	All	2.75	1027/13289 (7.7%)	3.01	1654/19353 (8.5%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	y	0	6
2	E	0	1
3	G	3	0
4	T	0	1
5	U	0	3
6	Y	0	1
7	1	0	30
8	2	0	15
9	3	0	10
10	4	0	20
11	5	0	54
All	All	3	141

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The worst 5 of 1027 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
10	4	1892	C	N1-C6	18.20	1.48	1.37
7	1	114	U	C2-N3	16.37	1.49	1.37
9	3	1532	A	N3-C4	-15.69	1.25	1.34
10	4	1854	A	N9-C4	-15.56	1.28	1.37
10	4	1850	G	N7-C5	-15.20	1.30	1.39

The worst 5 of 1654 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
9	3	1540	G	N1-C6-O6	26.41	135.75	119.90
11	5	2198	A	N1-C6-N6	26.09	134.26	118.60
10	4	1857	G	N1-C6-O6	24.56	134.64	119.90
10	4	1857	G	C5-C6-O6	-22.03	115.38	128.60
11	5	2171	A	N1-C6-N6	21.65	131.59	118.60

All (3) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
3	G	45	SER	CA
3	G	48	SER	CA
3	G	51	PHE	CA

5 of 141 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	y	216	HIS	Sidechain
1	y	248	TYR	Sidechain
1	y	25	PHE	Sidechain
1	y	309	TYR	Sidechain
1	y	390	PHE	Sidechain

5.2   Too-close contacts   ⓘ

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	y	3361	0	3514	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	E	433	0	466	24	0
3	G	457	0	481	63	0
4	T	787	0	846	5	0
5	U	789	0	847	4	0
6	Y	509	0	543	3	0
7	1	1350	0	676	1	0
8	2	775	0	385	0	0
9	3	387	0	196	0	0
10	4	1312	0	659	3	0
11	5	2305	0	1156	4	0
All	All	12465	0	9769	84	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 11.

The worst 5 of 84 close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:126:ARG:HE	3:G:68:LEU:CD2	1.54	1.20
2:E:126:ARG:CB	3:G:68:LEU:HD21	1.73	1.18
2:E:126:ARG:HE	3:G:68:LEU:HD22	1.02	1.08
2:E:126:ARG:NH2	3:G:65:ILE:HG12	1.68	1.08
2:E:126:ARG:HB3	3:G:68:LEU:CD2	1.87	1.04

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	y	435/437 (100%)	386 (89%)	27 (6%)	22 (5%)	2	19
2	E	54/56 (96%)	49 (91%)	3 (6%)	2 (4%)	3	24

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
3	G	63/65 (97%)	50 (79%)	7 (11%)	6 (10%)	0	10
4	T	98/100 (98%)	71 (72%)	18 (18%)	9 (9%)	1	11
5	U	101/103 (98%)	79 (78%)	13 (13%)	9 (9%)	1	11
6	Y	61/63 (97%)	48 (79%)	11 (18%)	2 (3%)	4	26
All	All	812/824 (98%)	683 (84%)	79 (10%)	50 (6%)	3	17

5 of 50 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	y	142	MET
1	y	258	TYR
1	y	266	PRO
1	y	338	ASN
1	y	340	ARG

5.3.2   Protein sidechains ⓘ

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	
1	y	353/353 (100%)	336 (95%)	17 (5%)	25	51
2	E	47/47 (100%)	45 (96%)	2 (4%)	29	53
3	G	46/46 (100%)	43 (94%)	3 (6%)	17	42
4	T	84/84 (100%)	80 (95%)	4 (5%)	25	51
5	U	84/84 (100%)	81 (96%)	3 (4%)	35	59
6	Y	55/55 (100%)	54 (98%)	1 (2%)	59	77
All	All	669/669 (100%)	639 (96%)	30 (4%)	31	52

5 of 30 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	y	370	MET
5	U	23	LYS

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Mol	Chain	Res	Type
2	E	76	ARG
6	Y	41	HIS
4	T	61	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 8 such sidechains are listed below:

Mol	Chain	Res	Type
6	Y	41	HIS
6	Y	38	GLN
4	T	70	HIS
4	T	59	ASN
4	T	92	ASN

5.3.3   RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
10	4	60/61 (98%)	2 (3%)	0
11	5	107/108 (99%)	37 (34%)	8 (7%)
7	1	62/63 (98%)	12 (19%)	0
8	2	35/36 (97%)	7 (20%)	2 (5%)
9	3	17/18 (94%)	5 (29%)	0
All	All	281/286 (98%)	63 (22%)	10 (3%)

5 of 63 RNA backbone outliers are listed below:

Mol	Chain	Res	Type
7	1	63	A
7	1	64	A
7	1	71	A
7	1	74	A
7	1	75	G

5 of 10 RNA pucker outliers are listed below:

Mol	Chain	Res	Type
11	5	2152	G
11	5	2164	C
11	5	2172	U
11	5	2120	G
11	5	2126	A

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

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

5.5 Carbohydrates ⓘ

There are no monosaccharides in this entry.

5.6 Ligand geometry ⓘ

There are no ligands in this entry.

5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

There are no chain breaks in this entry.

6 Map visualisation ⓘ

This section contains visualisations of the EMDB entry EMD-5692. These allow visual inspection of the internal detail of the map and identification of artifacts.

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

6.1 Orthogonal projections ⓘ

6.1.1 Primary map

| X | Y | Z |
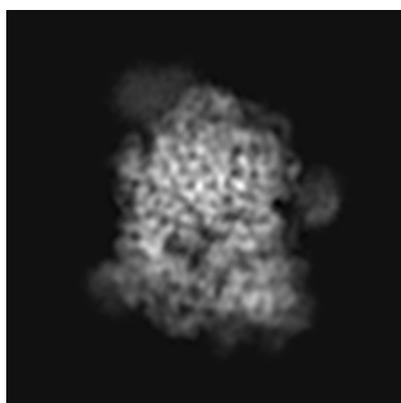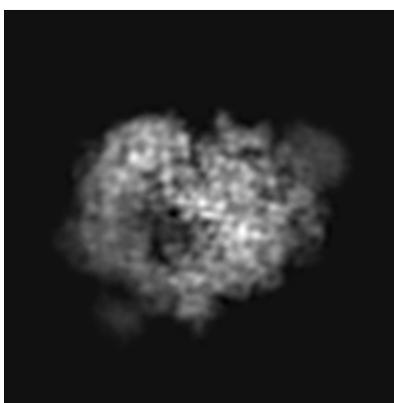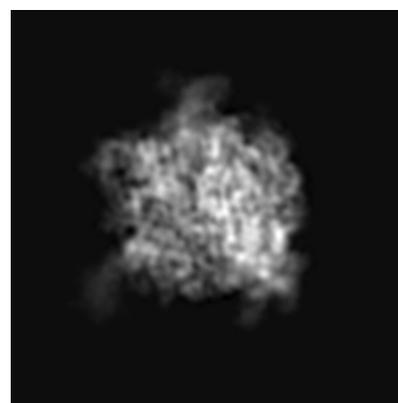
The images above show the map projected in three orthogonal directions.

6.2 Central slices ⓘ
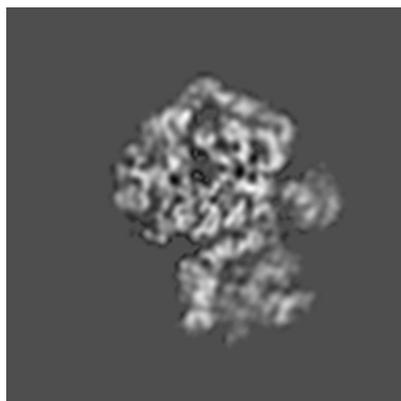
6.2.1 Primary map
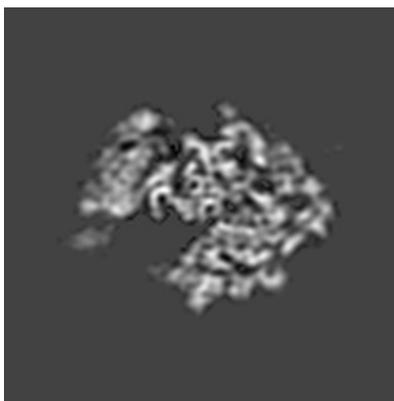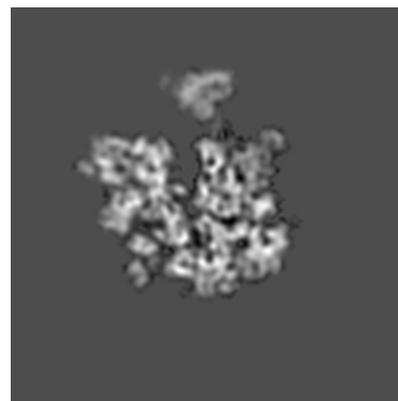
| X Index: 72 | Y Index: 72 | Z Index: 72 |

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

6.3   Largest variance slices ⓘ
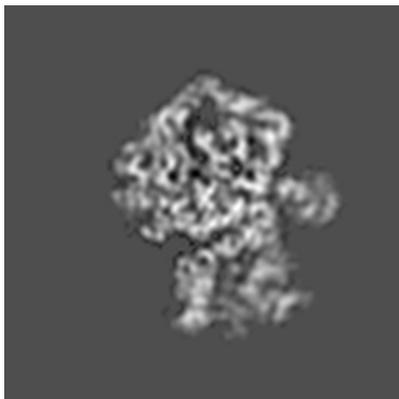
6.3.1   Primary map
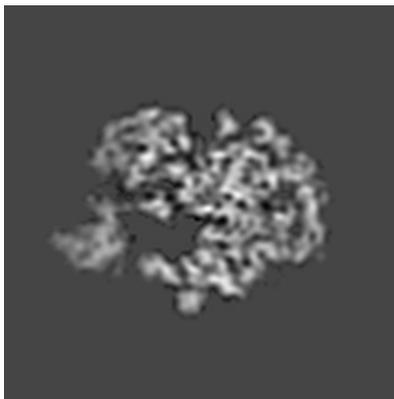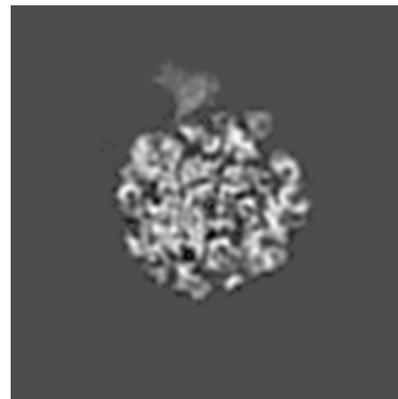
X Index: 73	Y Index: 77	Z Index: 81

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

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

6.4.1   Primary map

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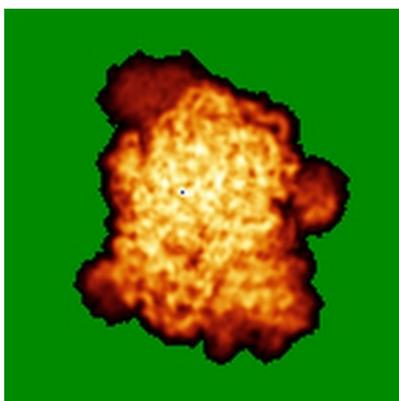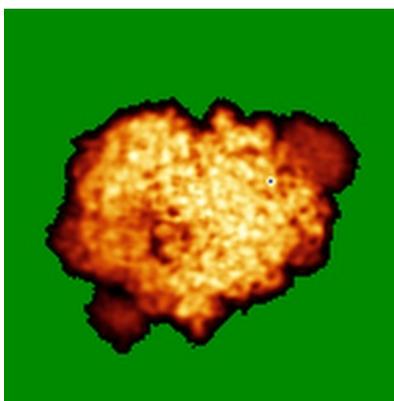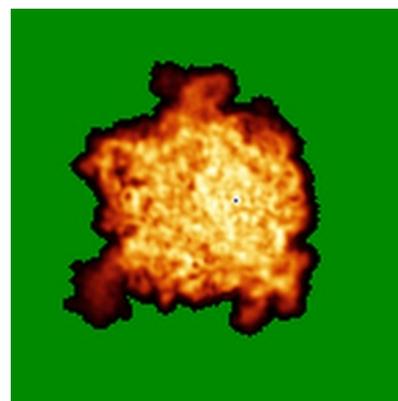
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views ⓘ

6.5.1 Primary map

| X | Y | Z |
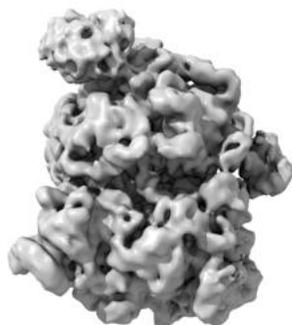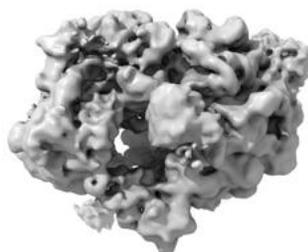
The images above show the 3D surface view of the map at the recommended contour level 1.8. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.6   Mask visualisation (i)

This section shows the 3D surface view of the primary map at 50% transparency overlaid with the specified mask at 0% transparency

A mask typically either:

- Encompasses the whole structure

- Separates out a domain, a functional unit, a monomer or an area of interest from a larger structure

6.6.1   emd_5692_msk_4.map (i)
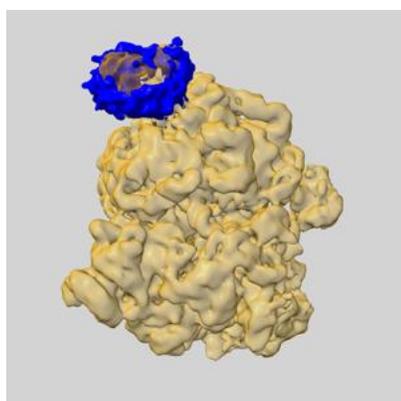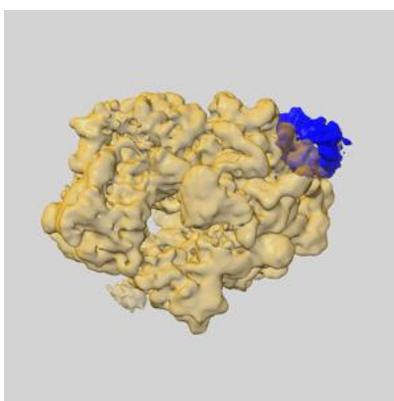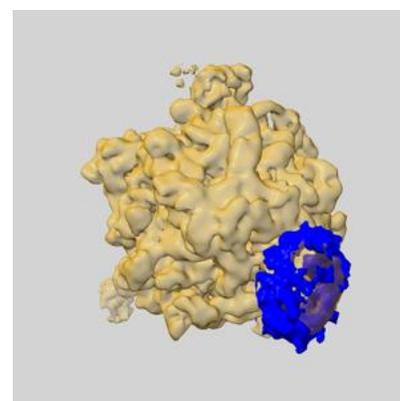
X   Y   Z

6.6.2   emd_5692_msk_3.map (i)
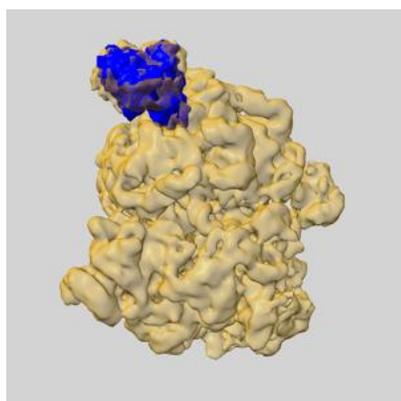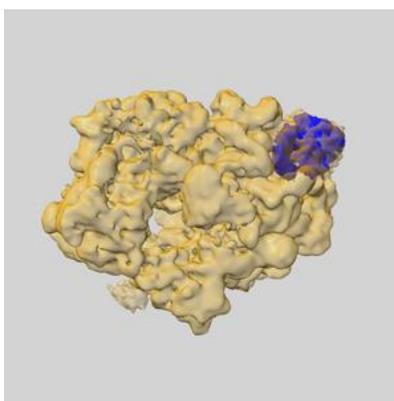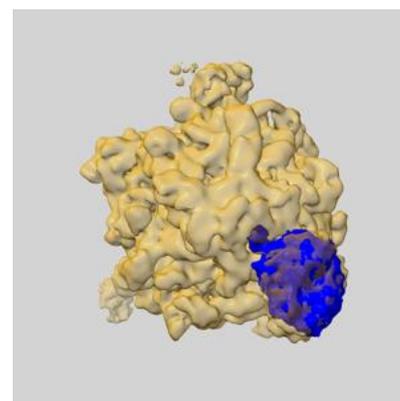
X   Y   Z

6.6.3　emd_5692_msk_2.map　ⓘ
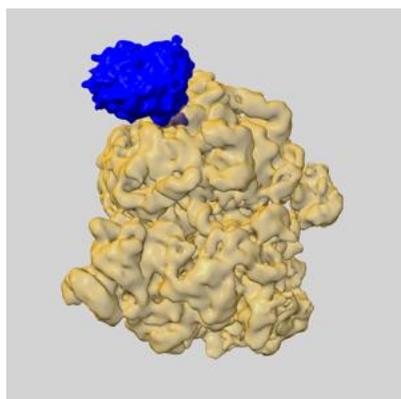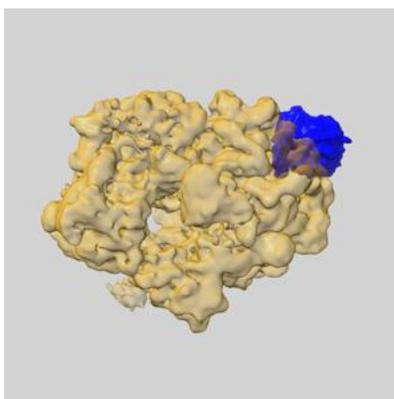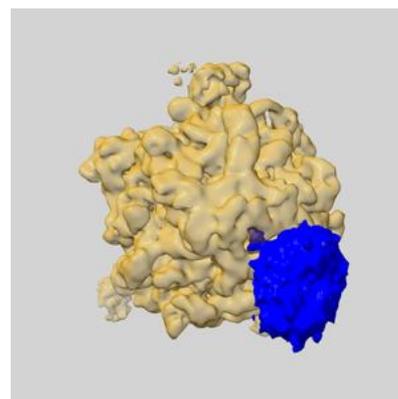
| X | Y | Z |

6.6.4　emd_5692_msk_1.map　ⓘ
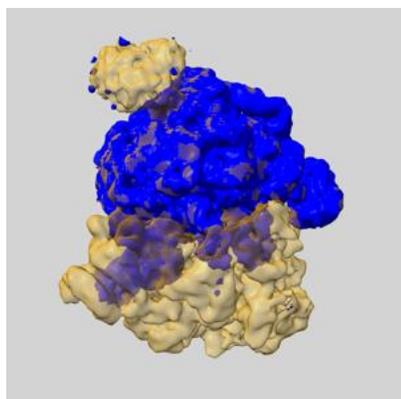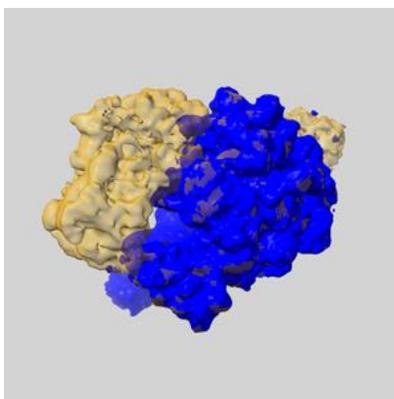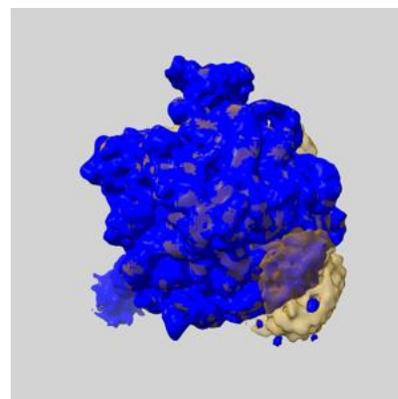
| X | Y | Z |

6.6.5　emd_5692_msk_5.map　ⓘ

| X | Y | Z |
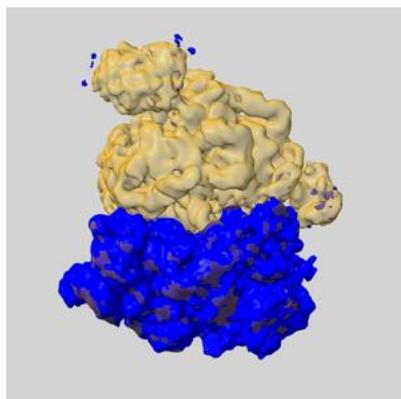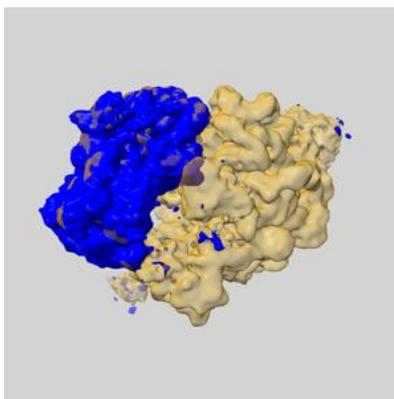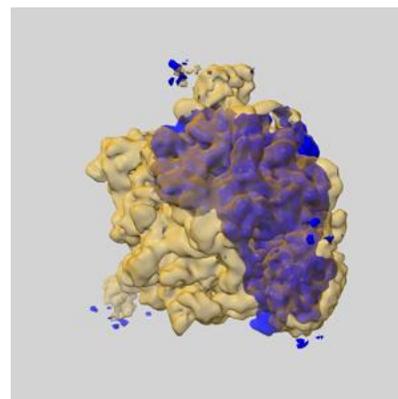
7 Map analysis ⓘ

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

7.1 Map-value distribution ⓘ

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

7.2 Volume estimate (i)
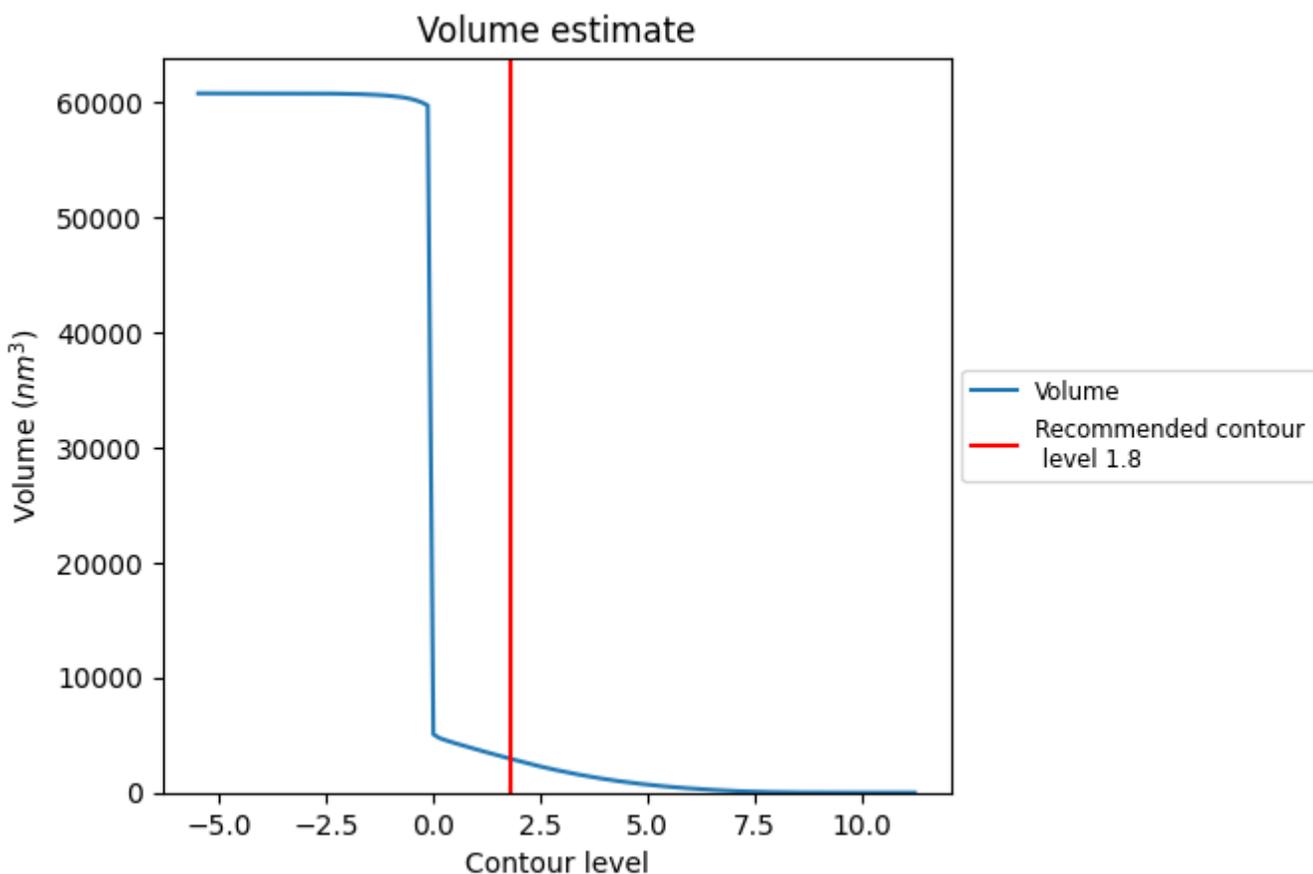
The volume at the recommended contour level is 2943 nm^3; this corresponds to an approximate mass of 2659 kDa.

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)
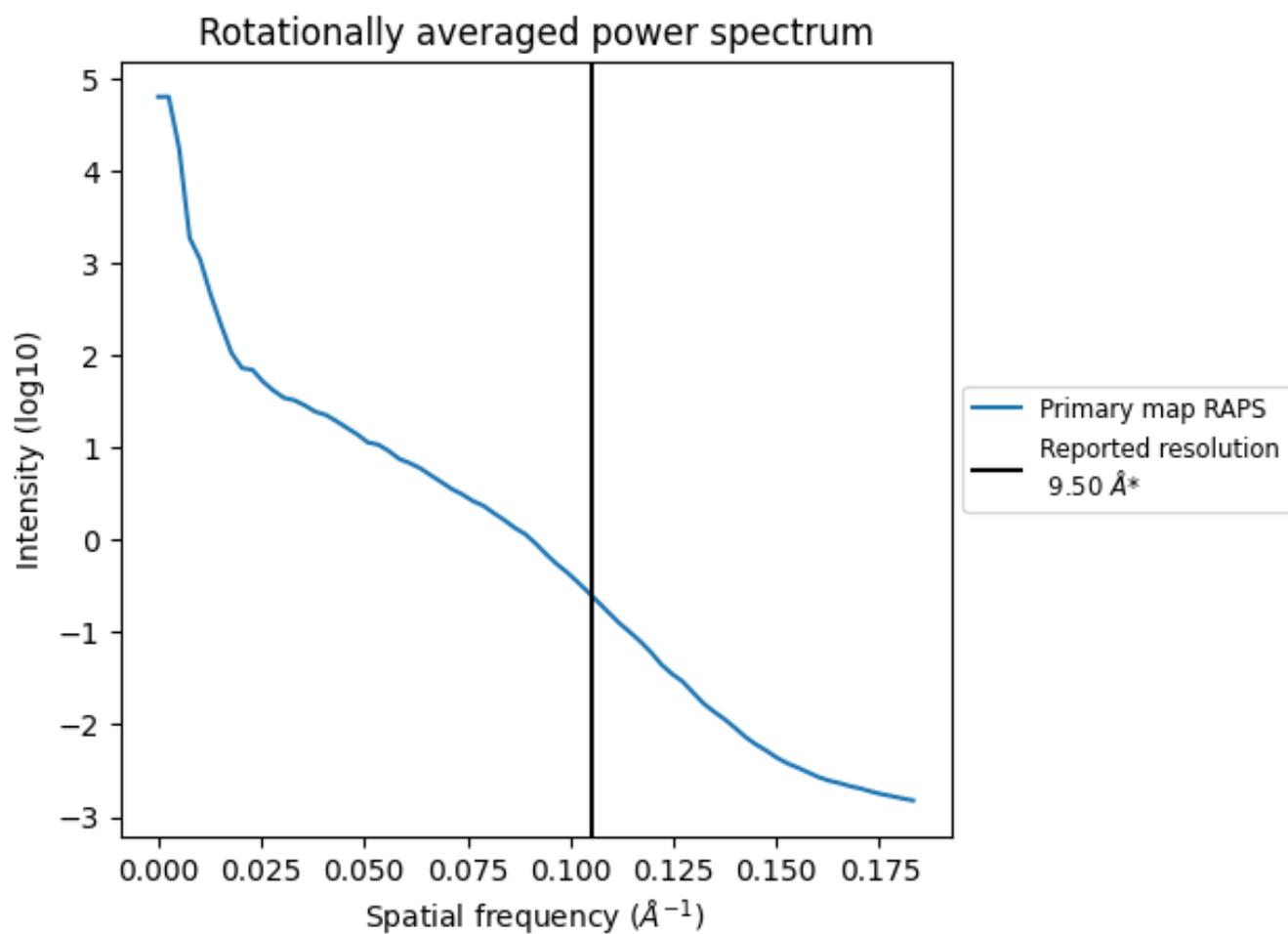
*Reported resolution corresponds to spatial frequency of 0.105 Å^{-1}
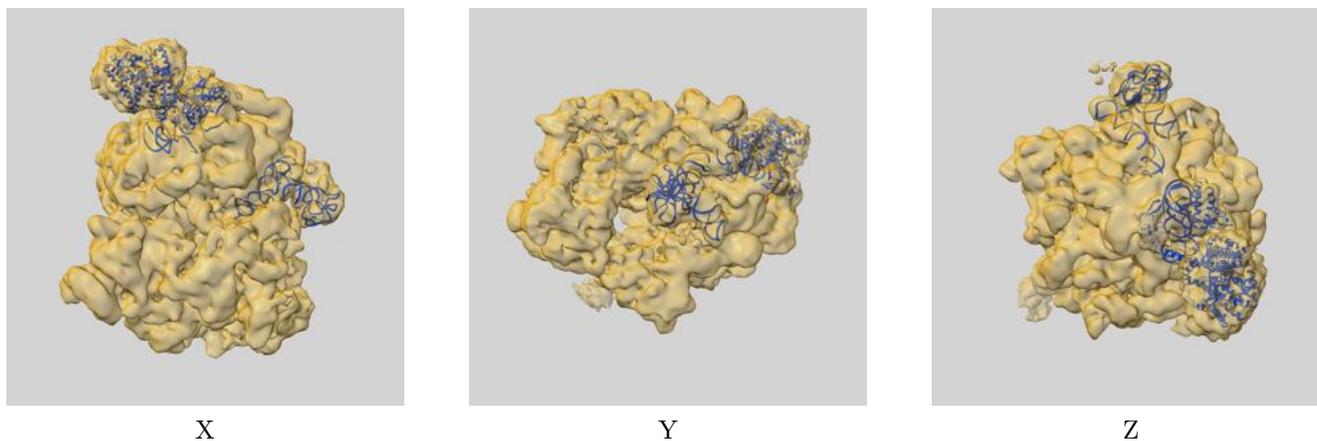
8 Fourier-Shell correlation ⓘ

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

9   Map-model fit ⓘ

This section contains information regarding the fit between EMDB map EMD-5692 and PDB model 3J45. Per-residue inclusion information can be found in section 3 on page 6.

## 9.1   Map-model overlay ⓘ

| X | Y | Z |

The images above show the 3D surface view of the map at the recommended contour level 1.8 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 ⓘ

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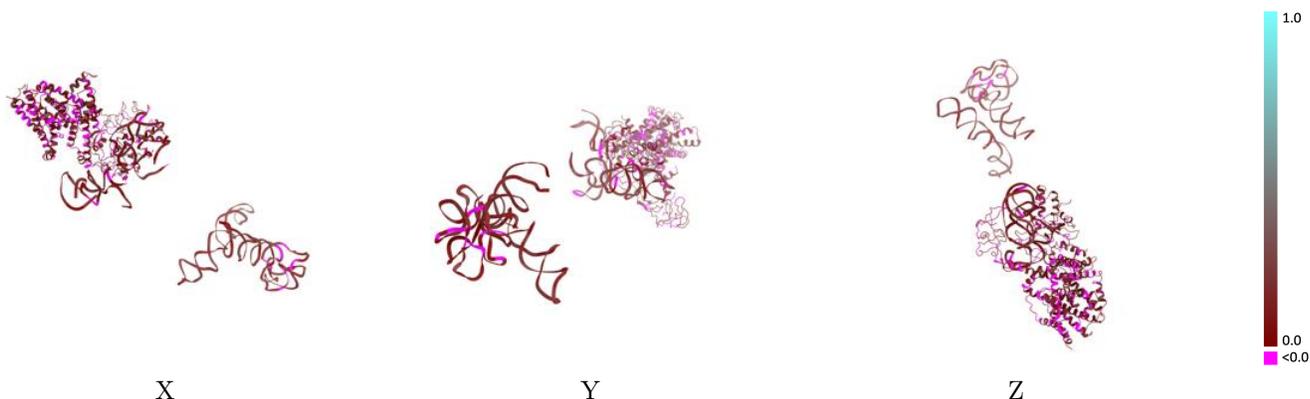
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

9.3   Atom inclusion mapped to coordinate model ⓘ

X   Y   Z
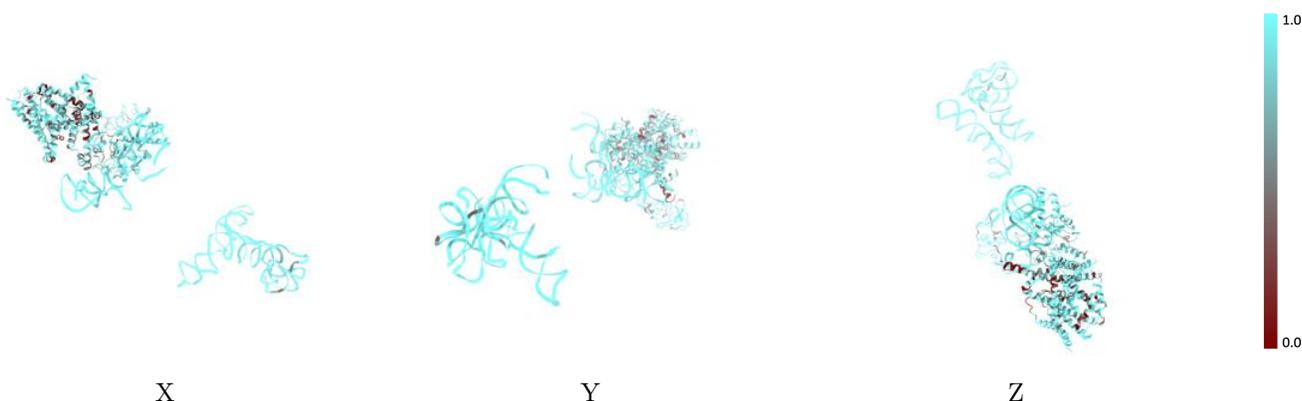
The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (1.8).

9.4   Atom inclusion ⓘ
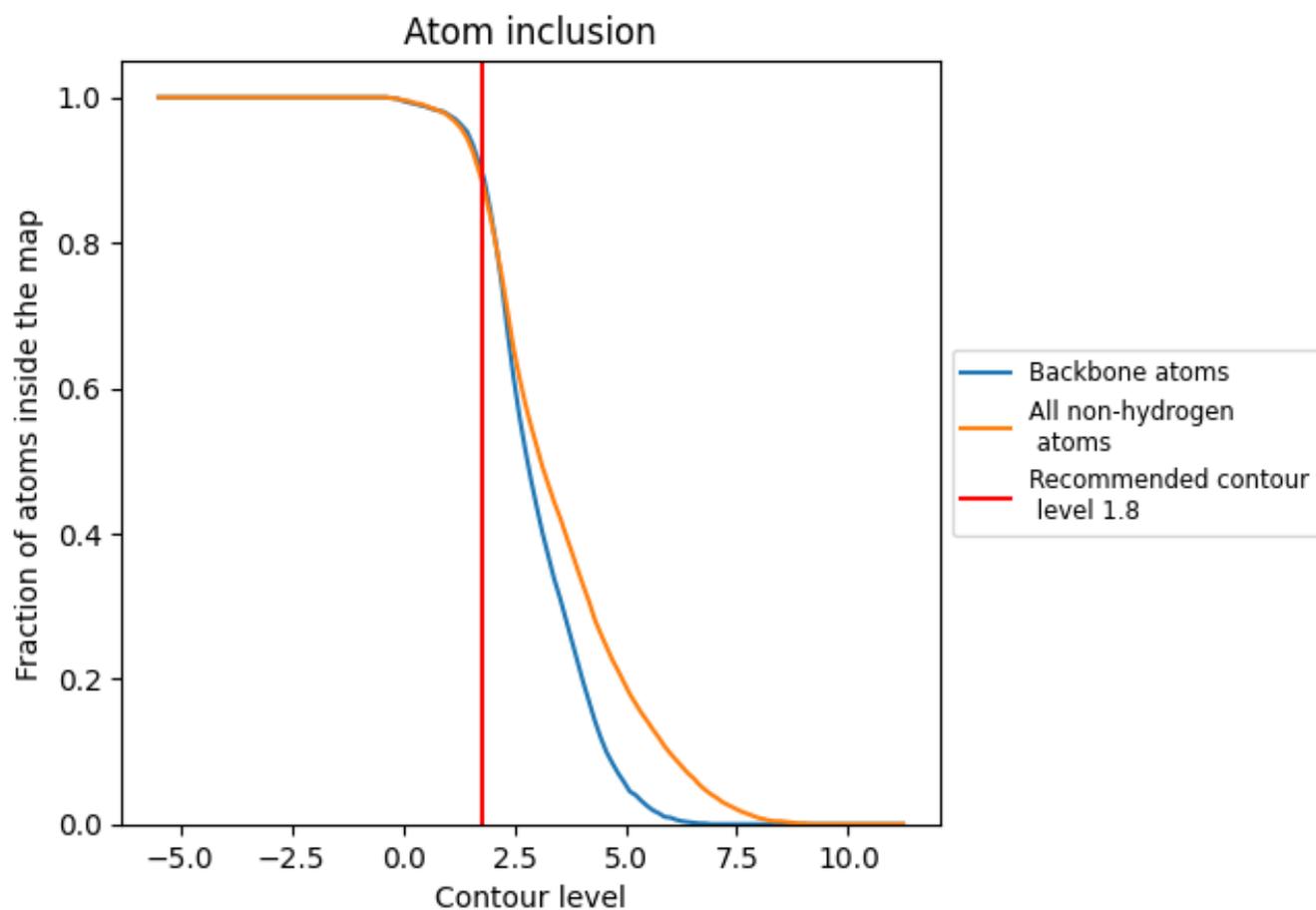
At the recommended contour level, 89% of all backbone atoms, 88% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary ⓘ

The table lists the average atom inclusion at the recommended contour level (1.8) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8800	0.1030
1	0.9840	0.1370
2	0.9830	0.1250
3	0.9480	0.1510
4	0.9780	0.1660
5	0.9560	0.1170
E	0.7570	0.0690
G	0.7140	0.0290
T	0.8370	0.0830
U	0.8850	0.0870
Y	0.9280	0.1180
y	0.7550	0.0660

1.0

0.0
<0.0

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PROTEIN DATA BANK