



Full wwPDB EM Validation Report ⓘ

Dec 18, 2025 – 12:39 pm GMT

PDB ID : 9S41 / pdb_00009s41
EMDB ID : EMD-54558
Title : Cerebellar GluA1/4 TMD with TARP gamma 7 (focused refinement)
Authors : Sengupta, N.; Scrutton, A.; Greger, I.H.; Krieger, J.M.
Deposited on : 2025-07-25
Resolution : 3.66 Å (reported)
Based on initial models : ., 7OCE

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

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

EMDB validation analysis : 0.0.1.dev129
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
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) : 2.47

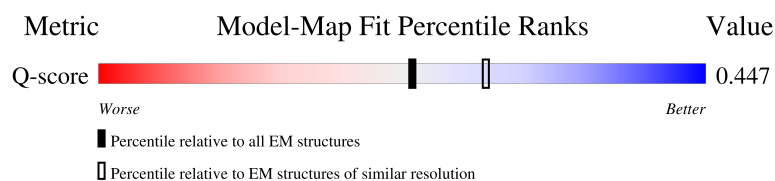
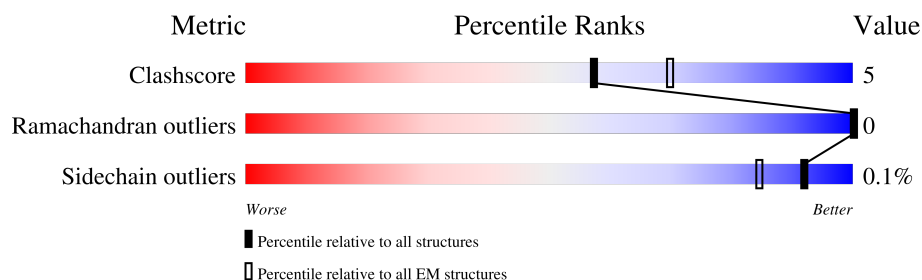
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.66 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
Q-score	-	25397	11491 (3.16 - 4.16)

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 $\leq 5\%$. 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	A	888	
1	C	888	
2	B	863	
2	D	863	

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Mol	Chain	Length	Quality of chain
3	I	275	 51% 15% 34%
3	J	275	 51% 15% 34%

2 Entry composition

There are 3 unique types of molecules in this entry. The entry contains 6879 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 Glutamate receptor 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	138	Total	C	N	O	S	0	0
			1044	705	159	173	7		
1	C	138	Total	C	N	O	S	0	0
			1043	705	159	172	7		

- Molecule 2 is a protein called Glutamate receptor 4.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	B	138	Total	C	N	O	S	0	0
			1036	700	159	171	6		
2	D	138	Total	C	N	O	S	0	0
			1036	700	159	171	6		

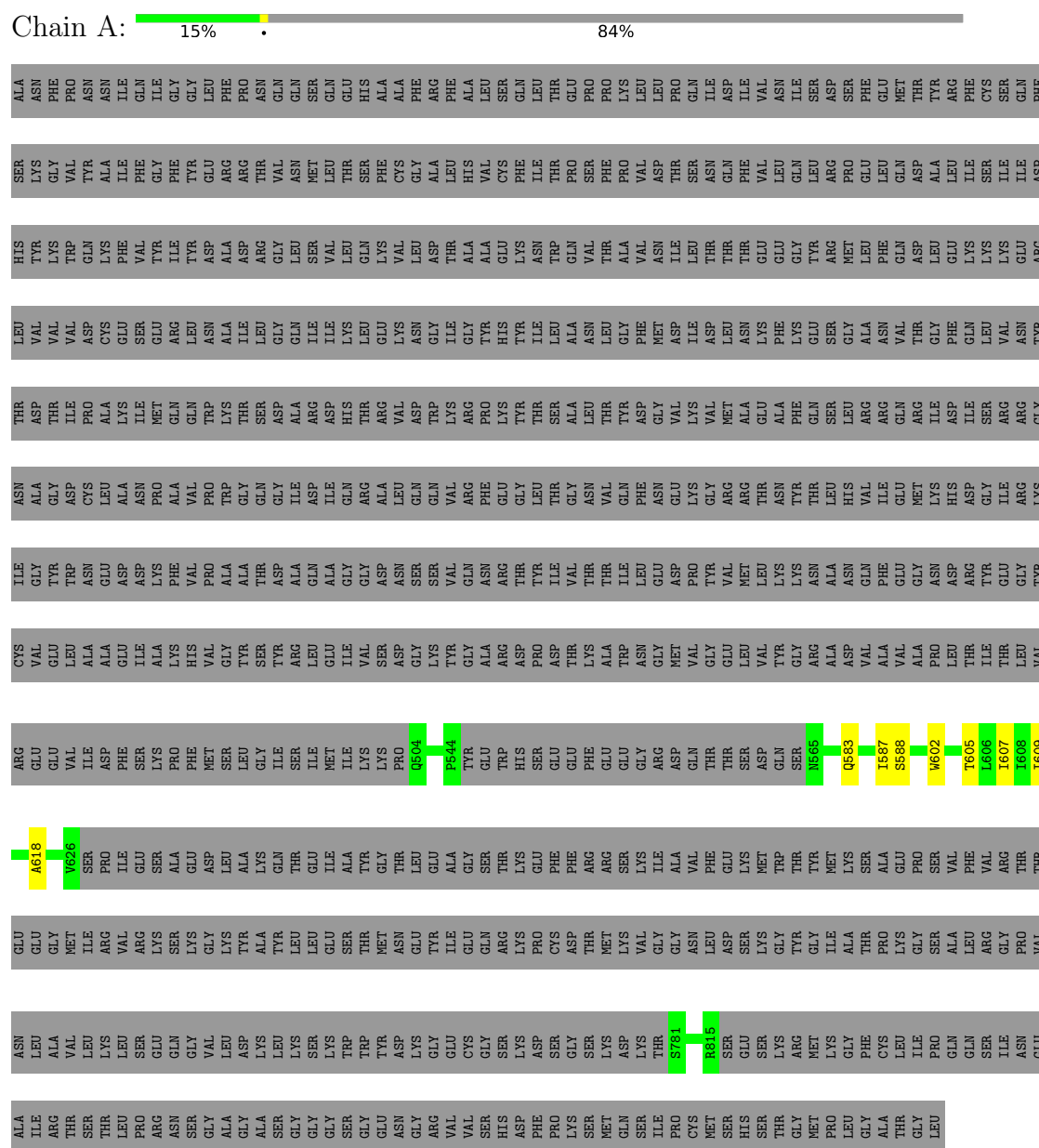
- Molecule 3 is a protein called Voltage-dependent calcium channel gamma-7 subunit.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	I	181	Total	C	N	O	S	0	0
			1360	901	216	236	7		
3	J	181	Total	C	N	O	S	0	0
			1360	901	216	236	7		

3 Residue-property plots

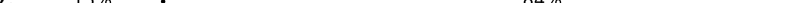
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion 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: Glutamate receptor 1

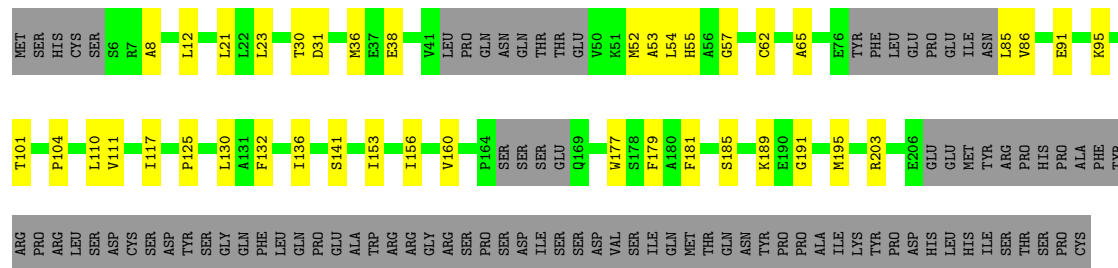


[illegible]

- Molecule 2: Glutamate receptor 4

Chain D:  15% 84%

LYS	THR	ILE	PHE	ASP	LEU	ALA	ALA
TYR	GLY	SER	GLN	ARG	LEU	PHE	ALA
GLU	PRO	ARG	LEU	ARG	SER	CYS	PRO
GLY	ARG	ARG	VAL	GLN	LEU	SER	SER
TYR	LYS	GLY	ASP	GLY	LEU	GLN	SER
CYS	VAL	ASN	PHE	LYS	ASP	TYR	VAL
VAL	GLY	ALA	ASN	LYS	HIS	SER	GLN
ASP	TYR	GLY	THR	PHE	TYR	ARG	ILE
LEU	TRP	ASP	PRO	VAL	GLY	GLY	GLY
ALA	ASN	CYS	MET	ILE	TRP	VAL	GLY
SER	ASP	LEU	VAL	ASP	ASN	PHE	LEU
GLU	MET	ALA	THR	CYS	CYS	ALA	PHE
ILE	ASP	ASN	LYS	GLY	PHE	ILE	ILE
ALA	LYS	PRO	LEU	ILE	VAL	PHE	ASN
LYS	VAL	ALA	MET	GLY	PHE	GLY	ASN
HIS	VAL	ALA	ASP	ARG	LEU	LEU	THR
ILE	LEU	PRO	ARG	LEU	TYR	TYR	ASP
GLY	ILE	TRP	TRP	GLN	ASP	ASP	GLN
ILE	GLN	GLY	LYS	ASN	THR	LYS	GLU
TYR	ASP	GLY	LYS	ILE	ASP	ARG	TYR
LYS	VAL	GLY	LEU	GLY	ARG	SER	THR
PRO	PRO	ILE	ASP	GLY	VAL	PHE	ALA
ASP	THR	ASP	GLY	GLY	ALA	ALA	PHE
GLY	ALA	LYS	SER	LYS	ILE	CYS	LEU
LYS	ALA	GLN	GLU	HIS	MET	SER	HIS
TYR	ILE	VAL	THR	VAL	GLU	ALA	ASN
GLY	GLU	GLN	PRO	LYS	LEU	LEU	THR
ALA	ASN	ILE	PRO	GLY	ALA	HIS	PRO
ARG	ARG	GLN	LYS	TYR	GLY	ILE	ASN
ASP	THR	GLY	TYR	HIS	GLN	SER	ASN
ALA	VAL	LEU	THR	TYR	ASN	LEU	ALA
ASP	VAL	THR	SER	ILE	GLY	ILE	SER
LYS	THR	GLY	ALA	ILE	TRP	THR	GLU
ILE	THR	VAL	LEU	ASN	VAL	PRO	ALA
TRP	ILE	GLN	THR	ASN	SER	PHE	PHE
ASN	MET	PHE	ASP	GLY	ALA	PRO	ASN
GLY	GLU	ASP	GLY	PHE	ILE	THR	LEU
MET	SER	HIS	VAL	LYS	CYS	VAL	VAL
VAL	PRO	TYR	LEU	ASP	VAL	GLY	PRO
GLY	VAL	GLY	VAL	ILE	GLU	GLU	HIS
GLU	VAL	ARG	MET	SER	ASN	SER	VAL
LEU	MET	ARG	ALA	LEU	PHE	GLN	ASP
VAL	TYR	VAL	GLU	GLU	PHE	PHE	ASN
VAL	LYS	ASN	PHE	ARG	ASP	VAL	ILE
GLY	LYS	THR	THR	PHE	VAL	LEU	GLY
LYS	ASN	THR	ARG	ILE	SER	GLN	THR
ALA	HIS	MET	ASN	HIS	TYR	LEU	ALA
GLU	GLU	ASP	LEU	GLY	ARG	ARG	ASN
ILE	MET	VAL	ARG	GLY	GLN	PRO	SER
ILE	PHE	PHE	VAL	ALA	LEU	LEU	PHE
ALA	GLY	LEU	GLN	ASN	GLY	VAL	ALA
PRO	ASN	LYS	ILE	VAL	GLU	ARG	VAL
LEU	ASP	THR	THR	THR	LEU	GLY	THR
ALA	SER	SER	ASP	GLY	LEU	ALA	ALA



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C2	Depositor
Number of particles used	124708	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	40	Depositor
Minimum defocus (nm)	1200	Depositor
Maximum defocus (nm)	2400	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	2.479	Depositor
Minimum map value	-1.773	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.044	Depositor
Recommended contour level	0.2	Depositor
Map size (Å)	363.44, 363.44, 363.44	wwPDB
Map dimensions	440, 440, 440	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.82600003, 0.82600003, 0.82600003	Depositor

5 Model quality [i](#)

5.1 Standard geometry [i](#)

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	A	0.11	0/1072	0.25	0/1459
1	C	0.11	0/1071	0.25	0/1458
2	B	0.09	0/1064	0.22	0/1449
2	D	0.10	0/1064	0.22	0/1449
3	I	0.13	0/1392	0.30	0/1892
3	J	0.13	0/1392	0.30	0/1892
All	All	0.11	0/7055	0.26	0/9599

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	1044	0	1026	6	0
1	C	1043	0	1023	6	0
2	B	1036	0	1010	6	0
2	D	1036	0	1010	5	0
3	I	1360	0	1325	25	0
3	J	1360	0	1325	23	0
All	All	6879	0	6719	63	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 5.

All (63) 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:D:595:ARG:HA	2:D:600:ARG:HH21	1.65	0.61
3:J:8:ALA:O	3:J:12:LEU:HD23	2.00	0.61
3:J:125:PRO:HB3	3:J:203:ARG:HH21	1.69	0.57
3:I:125:PRO:HB3	3:I:203:ARG:HH21	1.69	0.56
3:I:23:LEU:HB3	3:I:185:SER:HB3	1.88	0.55
3:I:111:VAL:HG21	3:I:189:LYS:HZ2	1.70	0.55
3:J:23:LEU:HB3	3:J:185:SER:HB3	1.87	0.55
3:J:111:VAL:HG21	3:J:189:LYS:HZ2	1.72	0.55
1:A:607:ILE:HG21	2:B:796:VAL:HG11	1.90	0.54
3:J:156:ILE:O	3:J:160:VAL:HG12	2.09	0.53
3:I:91:GLU:OE2	3:I:95:LYS:HE3	2.09	0.53
3:I:156:ILE:O	3:I:160:VAL:HG12	2.09	0.52
3:J:91:GLU:OE2	3:J:95:LYS:HE3	2.09	0.52
3:J:153:ILE:HD11	3:J:179:PHE:HZ	1.75	0.51
3:I:110:LEU:HB3	3:I:141:SER:HB2	1.93	0.51
3:J:110:LEU:HB3	3:J:141:SER:HB2	1.94	0.50
3:I:153:ILE:HD11	3:I:179:PHE:HZ	1.76	0.50
3:J:23:LEU:HG	3:J:181:PHE:CD1	2.47	0.50
3:J:85:LEU:HD23	3:J:86:VAL:HG12	1.93	0.49
3:I:23:LEU:HG	3:I:181:PHE:CD1	2.47	0.49
3:J:153:ILE:HD11	3:J:179:PHE:CZ	2.47	0.49
3:J:23:LEU:HG	3:J:181:PHE:HD1	1.78	0.49
3:J:55:HIS:CE1	3:J:62:CYS:HB2	2.47	0.49
3:J:101:THR:O	3:J:104:PRO:HD2	2.13	0.49
3:I:23:LEU:HG	3:I:181:PHE:HD1	1.78	0.49
3:I:101:THR:O	3:I:104:PRO:HD2	2.13	0.49
2:D:606:TRP:O	2:D:610:THR:HG23	2.13	0.49
3:I:55:HIS:CE1	3:I:62:CYS:HB2	2.47	0.49
3:I:153:ILE:HD11	3:I:179:PHE:CZ	2.48	0.48
3:I:21:LEU:HD23	3:I:111:VAL:HG13	1.96	0.48
3:J:53:ALA:HB3	3:J:65:ALA:HB3	1.96	0.47
3:I:117:ILE:HG13	3:I:130:LEU:HD12	1.97	0.47
3:J:21:LEU:HD23	3:J:111:VAL:HG13	1.96	0.47
3:I:53:ALA:HB3	3:I:65:ALA:HB3	1.96	0.47
3:J:117:ILE:HG13	3:J:130:LEU:HD12	1.96	0.46
1:C:605:THR:O	1:C:609:ILE:HG12	2.15	0.46
1:A:605:THR:O	1:A:609:ILE:HG12	2.15	0.46
3:I:132:PHE:O	3:I:136:ILE:HG12	2.15	0.46
1:C:600:VAL:HG11	2:D:803:GLY:HA3	1.98	0.46
3:J:132:PHE:O	3:J:136:ILE:HG12	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:603:PHE:O	1:C:607:ILE:HG12	2.17	0.45
3:I:38:GLU:OE2	3:I:52:MET:HE2	2.17	0.45
3:I:30:THR:HG21	3:I:177:TRP:CH2	2.52	0.45
3:I:31:ASP:HA	3:I:57:GLY:HA3	2.00	0.44
3:J:38:GLU:OE2	3:J:52:MET:HE2	2.17	0.44
3:J:30:THR:HG21	3:J:177:TRP:CH2	2.52	0.43
3:J:31:ASP:HA	3:J:57:GLY:HA3	2.00	0.43
2:B:800:LEU:O	2:B:804:LEU:HG	2.19	0.43
1:C:530:ILE:HG22	3:I:190:GLU:OE1	2.19	0.42
3:I:131:ALA:HB3	3:I:200:PHE:HB2	2.02	0.42
1:A:583:GLN:HG3	2:D:607:TRP:CG	2.55	0.42
3:J:36:MET:HE3	3:J:54:LEU:HD11	2.02	0.42
1:A:618:ALA:HA	2:B:626:THR:HG22	2.02	0.41
1:A:602:TRP:CD2	2:B:588:GLN:HG3	2.55	0.41
1:C:530:ILE:O	1:C:534:VAL:HG23	2.21	0.41
3:I:36:MET:HE3	3:I:54:LEU:HD11	2.02	0.41
3:J:191:GLY:O	3:J:195:MET:HG2	2.21	0.41
3:I:198:TYR:HD1	3:I:198:TYR:HA	1.76	0.40
2:D:801:VAL:HG11	3:I:147:VAL:CG2	2.52	0.40
1:A:587:ILE:HD12	1:A:588:SER:H	1.86	0.40
3:I:191:GLY:O	3:I:195:MET:HG2	2.22	0.40
2:B:600:ARG:HD2	1:C:570:PHE:CZ	2.57	0.40
2:B:585:PHE:HA	2:B:610:THR:HG21	2.03	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	132/888 (15%)	132 (100%)	0	0	100	100
1	C	132/888 (15%)	132 (100%)	0	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	B	132/863 (15%)	130 (98%)	2 (2%)	0	100	100
2	D	132/863 (15%)	131 (99%)	1 (1%)	0	100	100
3	I	173/275 (63%)	172 (99%)	1 (1%)	0	100	100
3	J	173/275 (63%)	172 (99%)	1 (1%)	0	100	100
All	All	874/4052 (22%)	869 (99%)	5 (1%)	0	100	100

There are no Ramachandran outliers to report.

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	
1	A	106/756 (14%)	106 (100%)	0	100	100
1	C	105/756 (14%)	105 (100%)	0	100	100
2	B	103/740 (14%)	103 (100%)	0	100	100
2	D	103/740 (14%)	103 (100%)	0	100	100
3	I	137/241 (57%)	136 (99%)	1 (1%)	81	88
3	J	137/241 (57%)	137 (100%)	0	100	100
All	All	691/3474 (20%)	690 (100%)	1 (0%)	92	96

All (1) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
3	I	35	TYR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (4) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	787	ASN
2	B	792	ASN
3	I	89	ASN

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Mol	Chain	Res	Type
3	J	89	ASN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

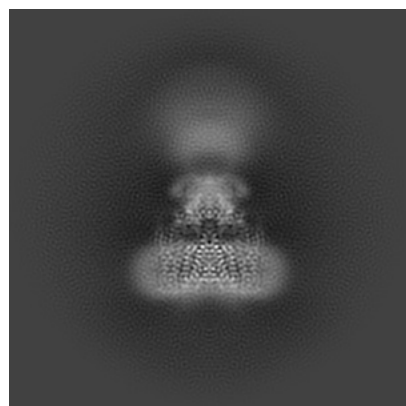
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-54558. These allow visual inspection of the internal detail of the map and identification of artifacts.

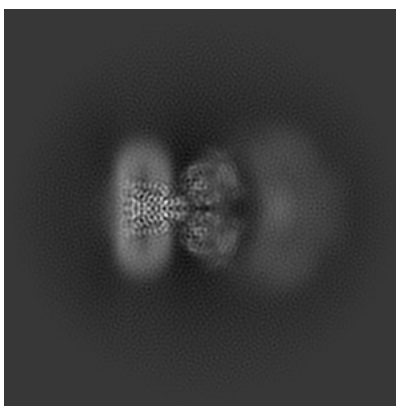
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

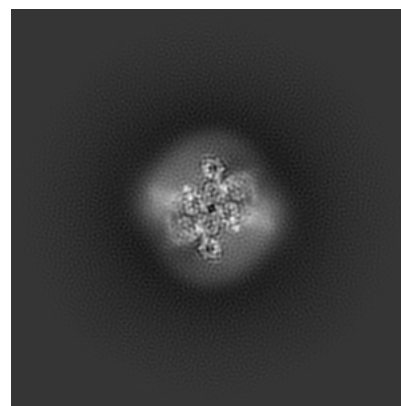
6.1.1 Primary map



X

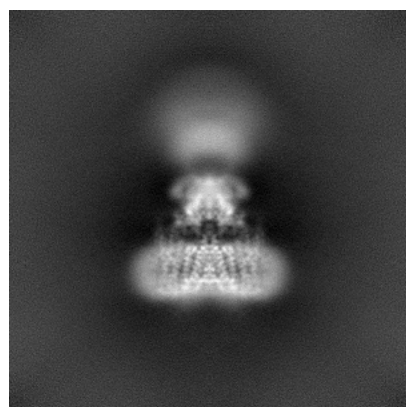


Y

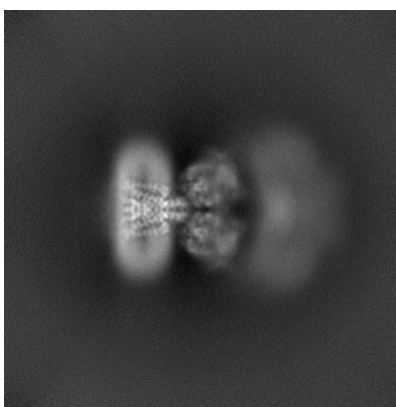


Z

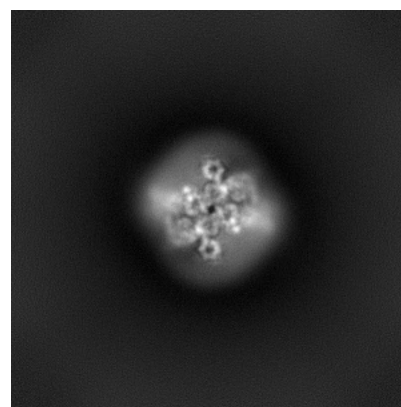
6.1.2 Raw map



X



Y

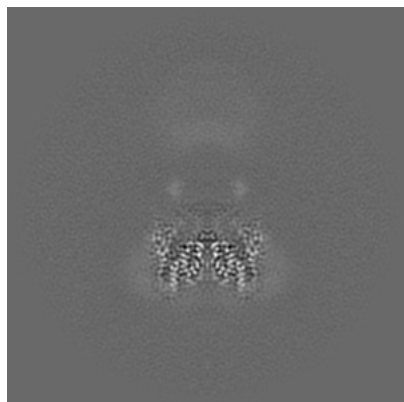


Z

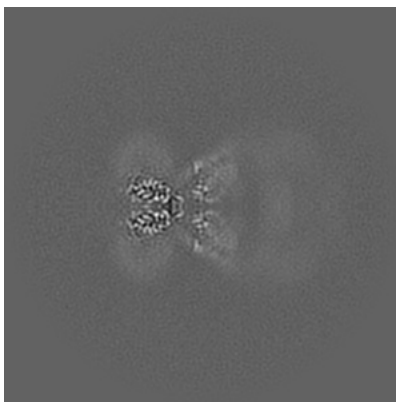
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

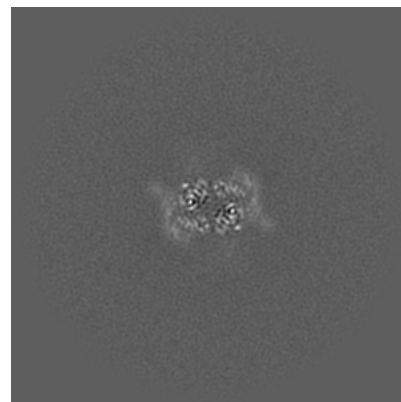
6.2.1 Primary map



X Index: 220

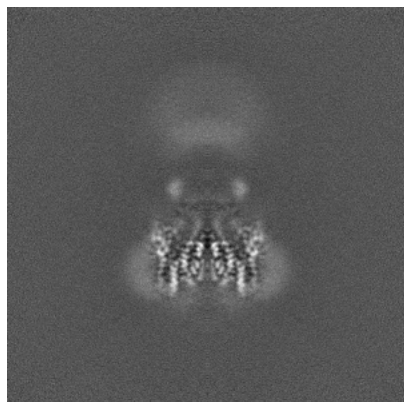


Y Index: 220

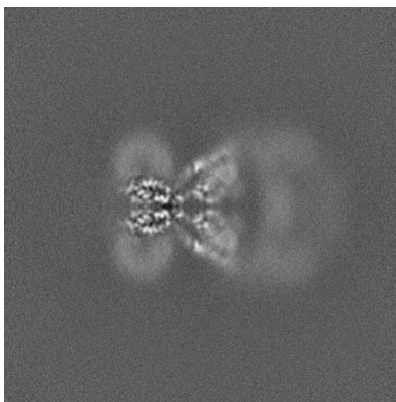


Z Index: 220

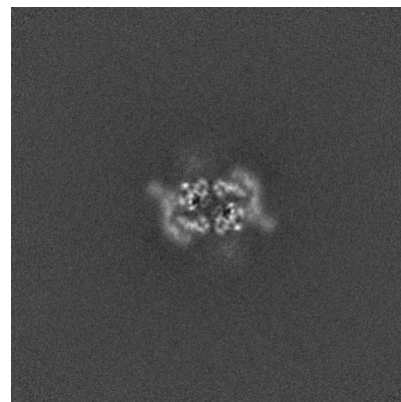
6.2.2 Raw map



X Index: 220



Y Index: 220

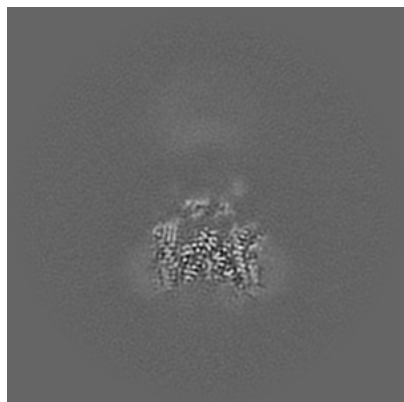


Z Index: 220

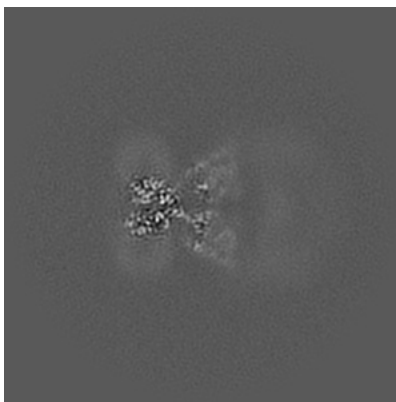
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

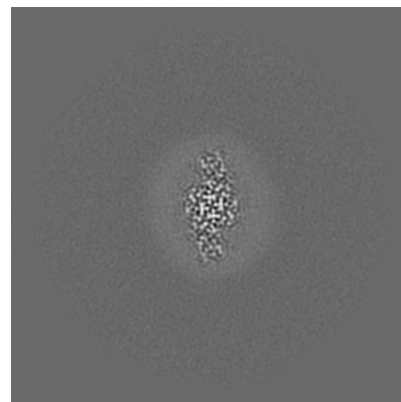
6.3.1 Primary map



X Index: 226

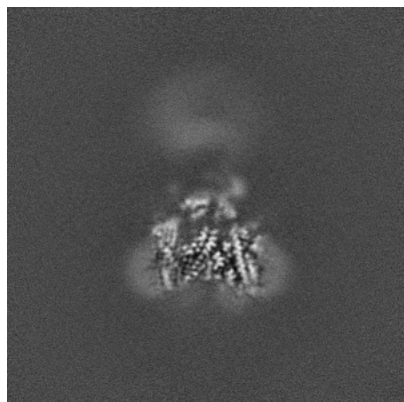


Y Index: 222

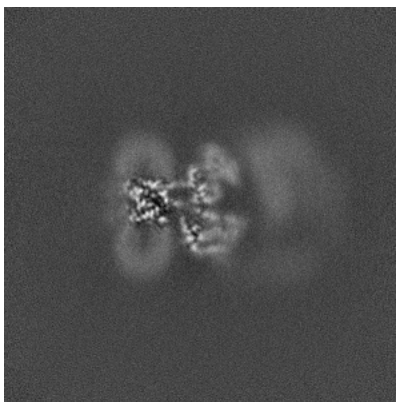


Z Index: 173

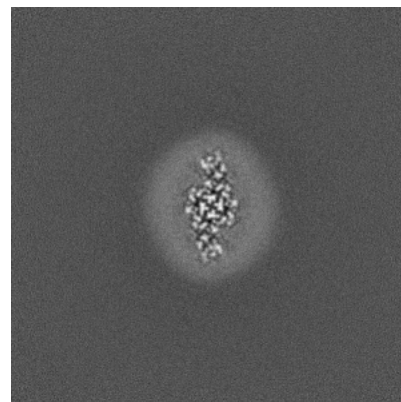
6.3.2 Raw map



X Index: 227



Y Index: 206

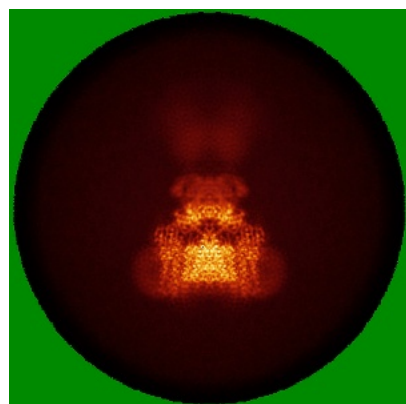


Z Index: 173

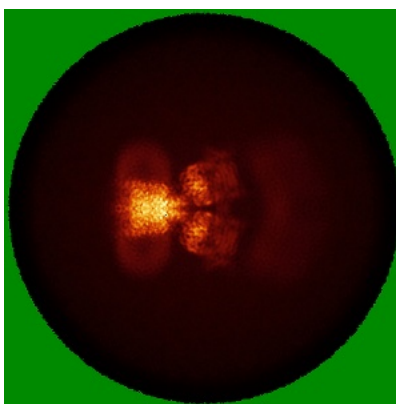
The images above show the largest variance slices of the map in three orthogonal directions.

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

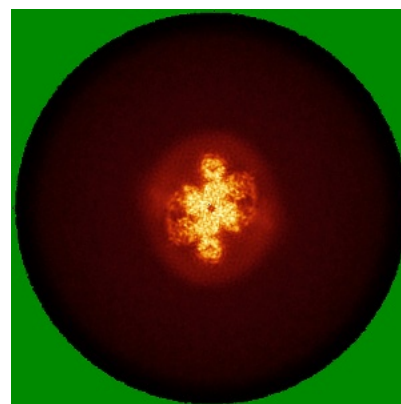
6.4.1 Primary map



X

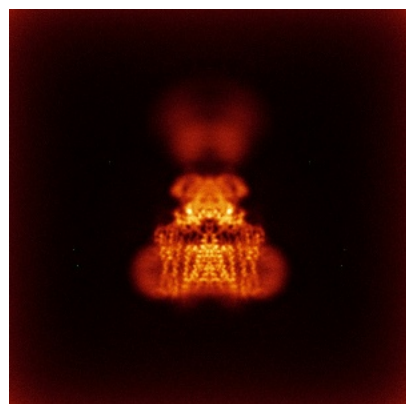


Y

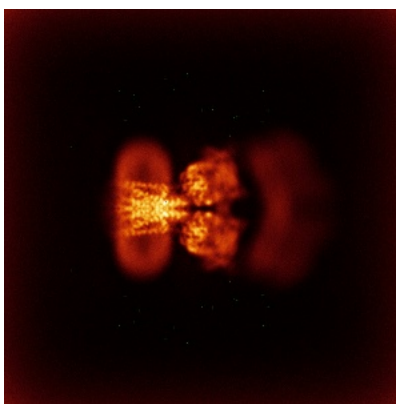


Z

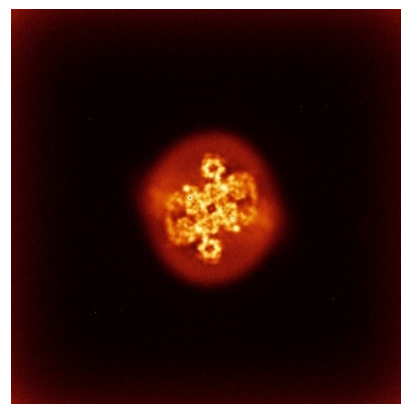
6.4.2 Raw map



X



Y

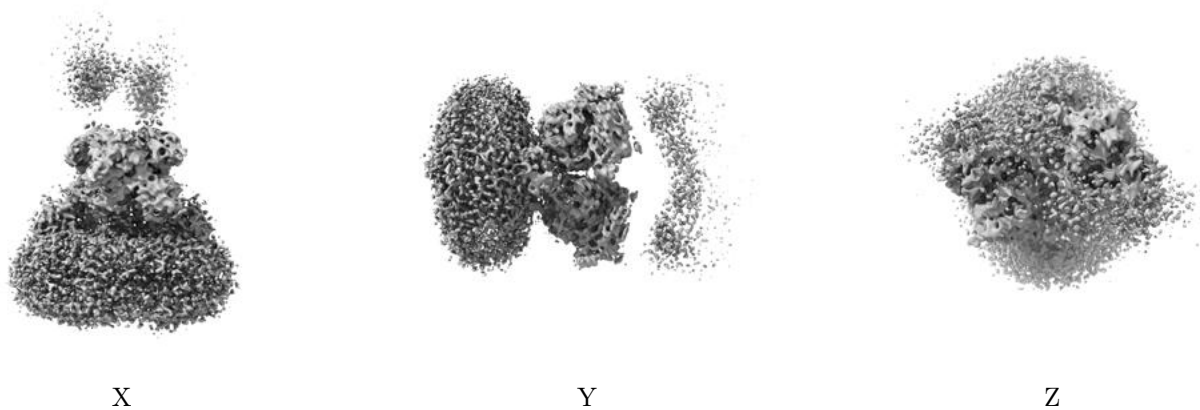


Z

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

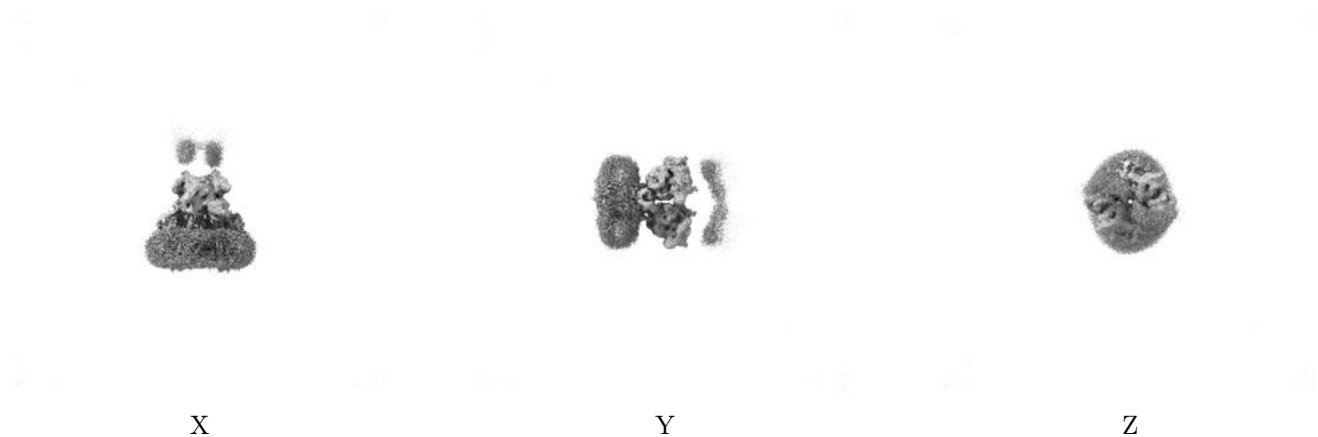
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.2. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



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

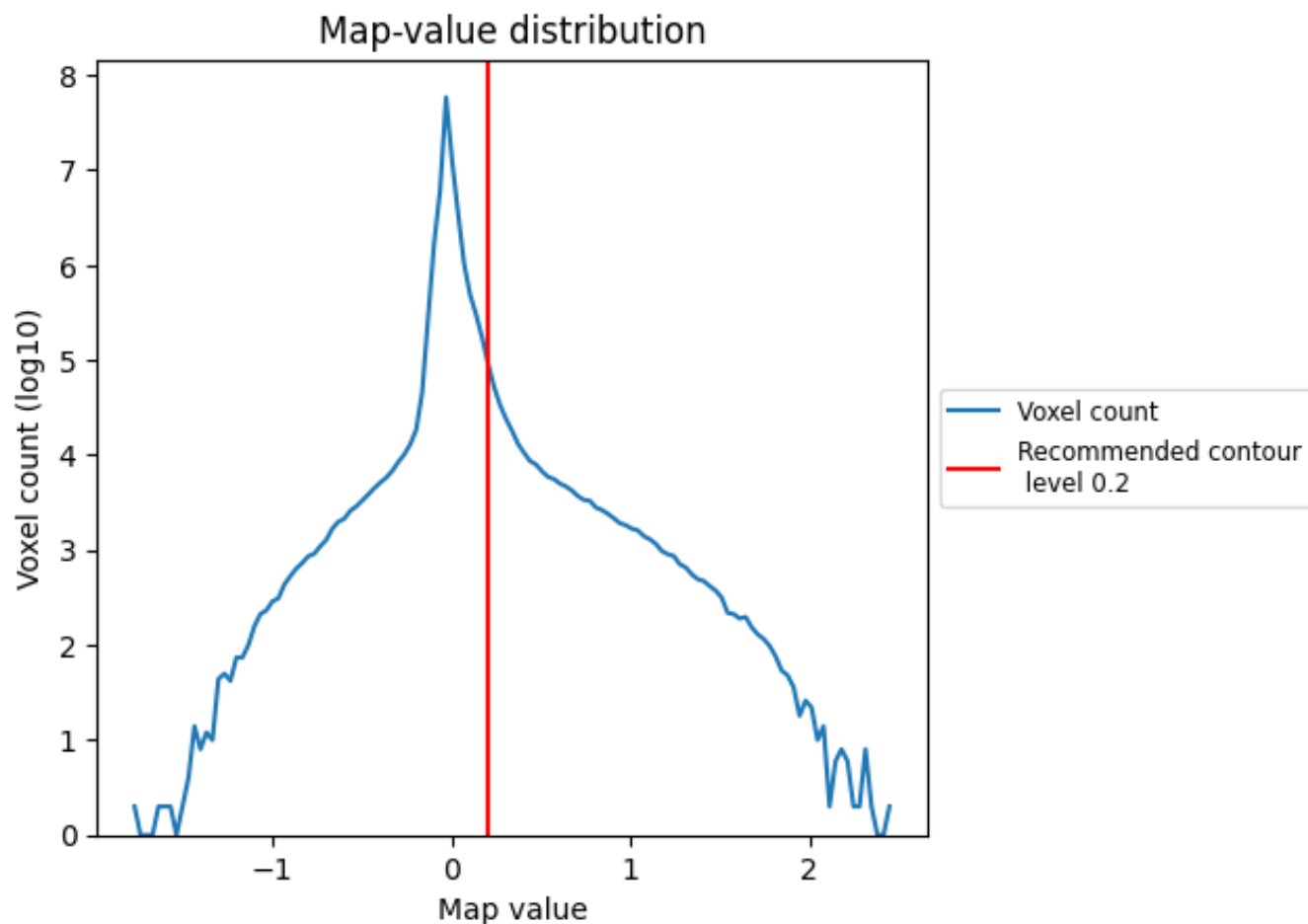
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

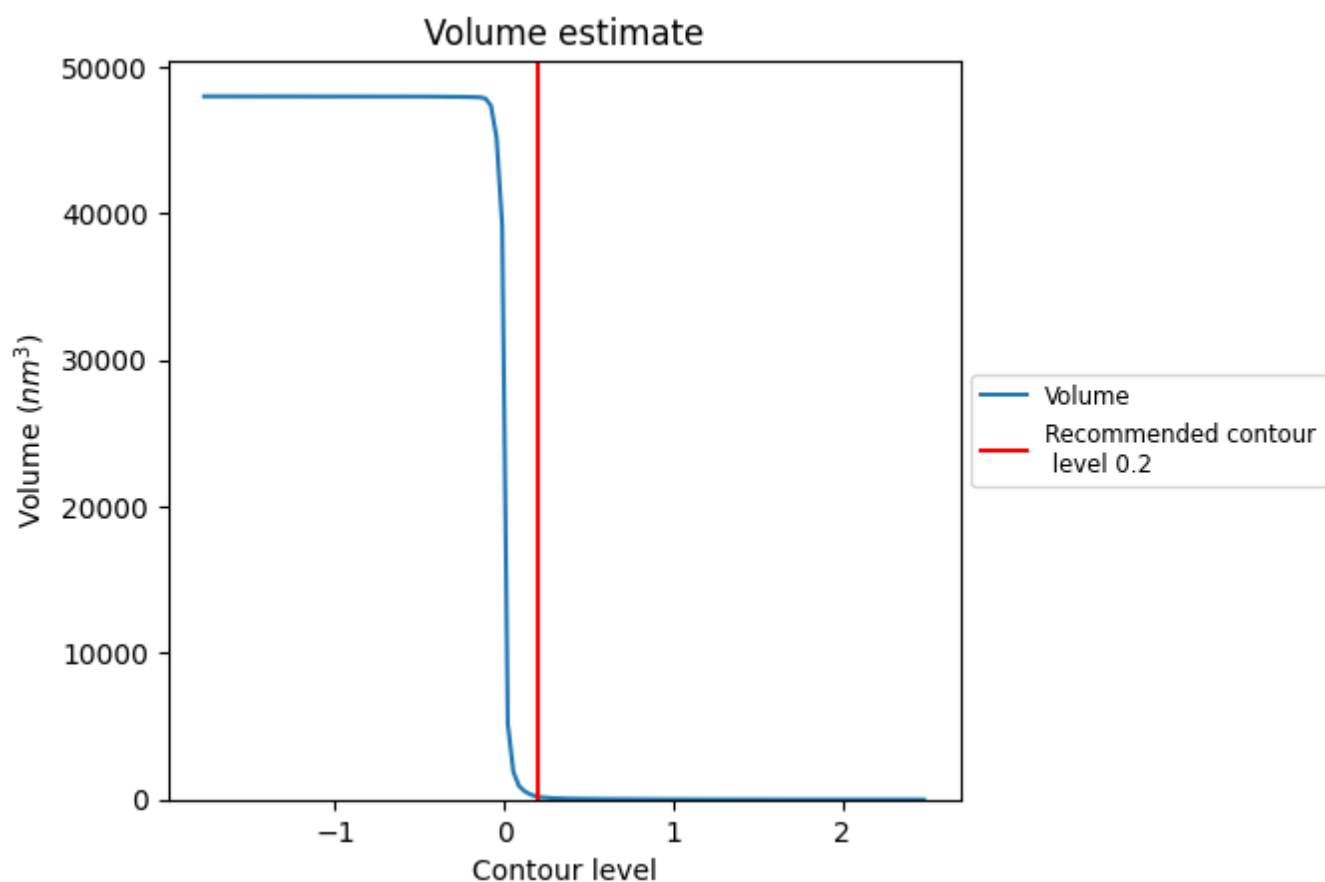
This section contains the results of statistical analysis of the map.

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.

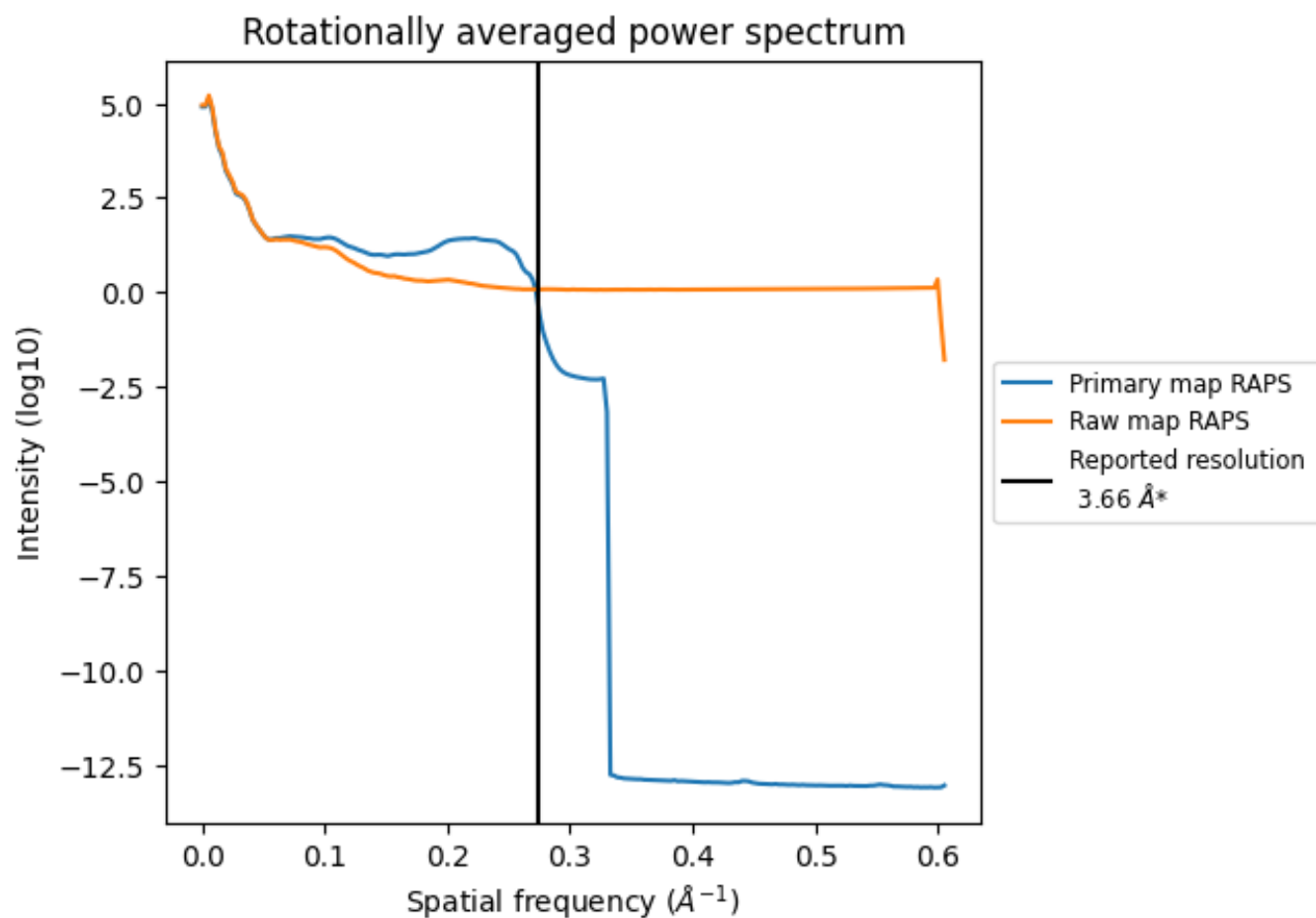
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 198 nm³; this corresponds to an approximate mass of 179 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 ⓘ

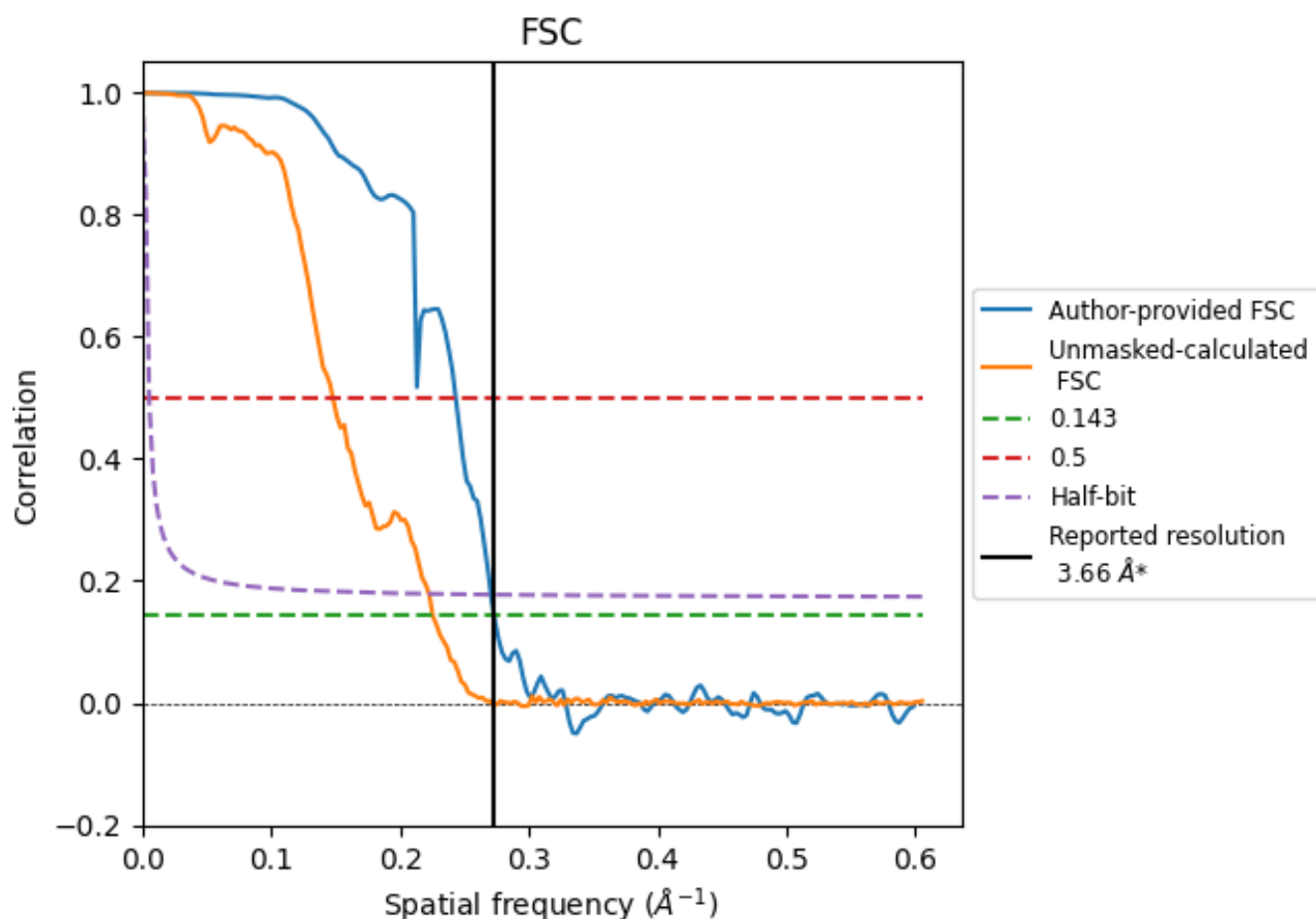


*Reported resolution corresponds to spatial frequency of 0.273 Å⁻¹

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 0.273 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

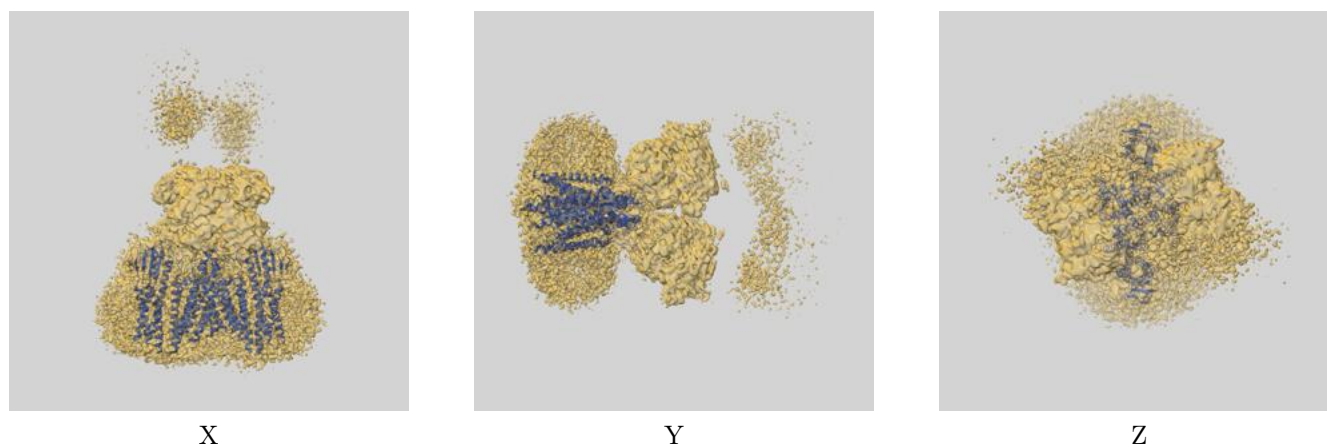
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.66	-	-
Author-provided FSC curve	3.66	4.11	3.69
Unmasked-calculated*	4.43	6.76	4.49

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 4.43 differs from the reported value 3.66 by more than 10 %

9 Map-model fit [i](#)

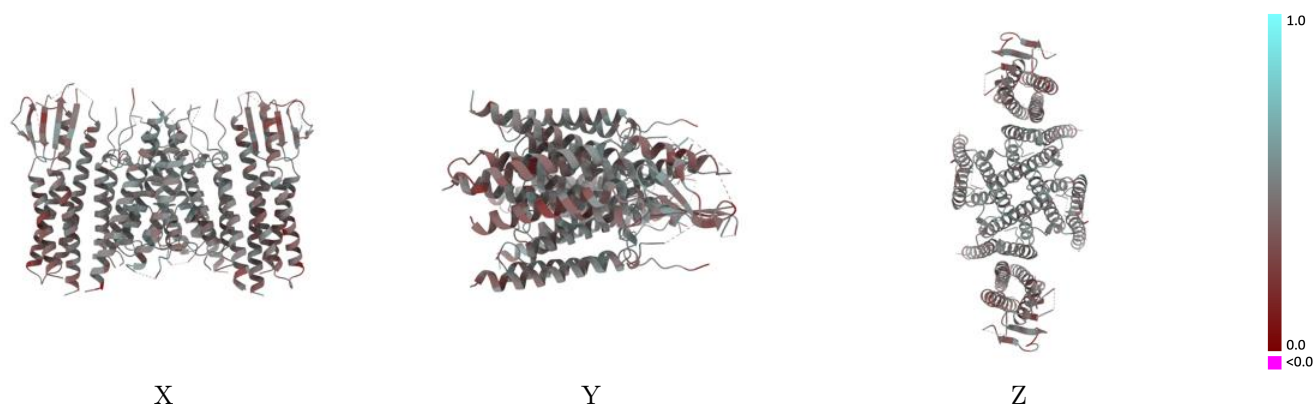
This section contains information regarding the fit between EMDB map EMD-54558 and PDB model 9S41. Per-residue inclusion information can be found in section [3](#) on page [5](#).

9.1 Map-model overlay [i](#)



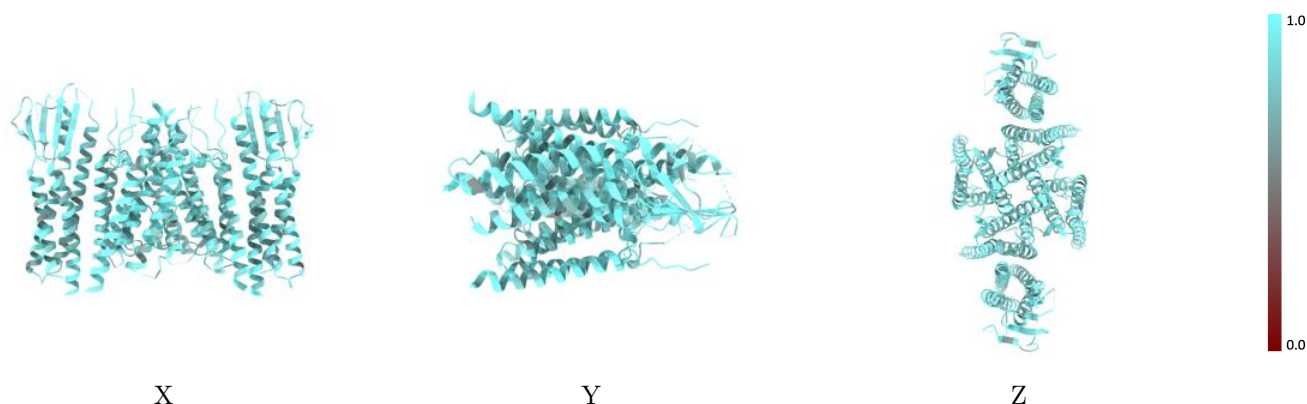
The images above show the 3D surface view of the map at the recommended contour level 0.2 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



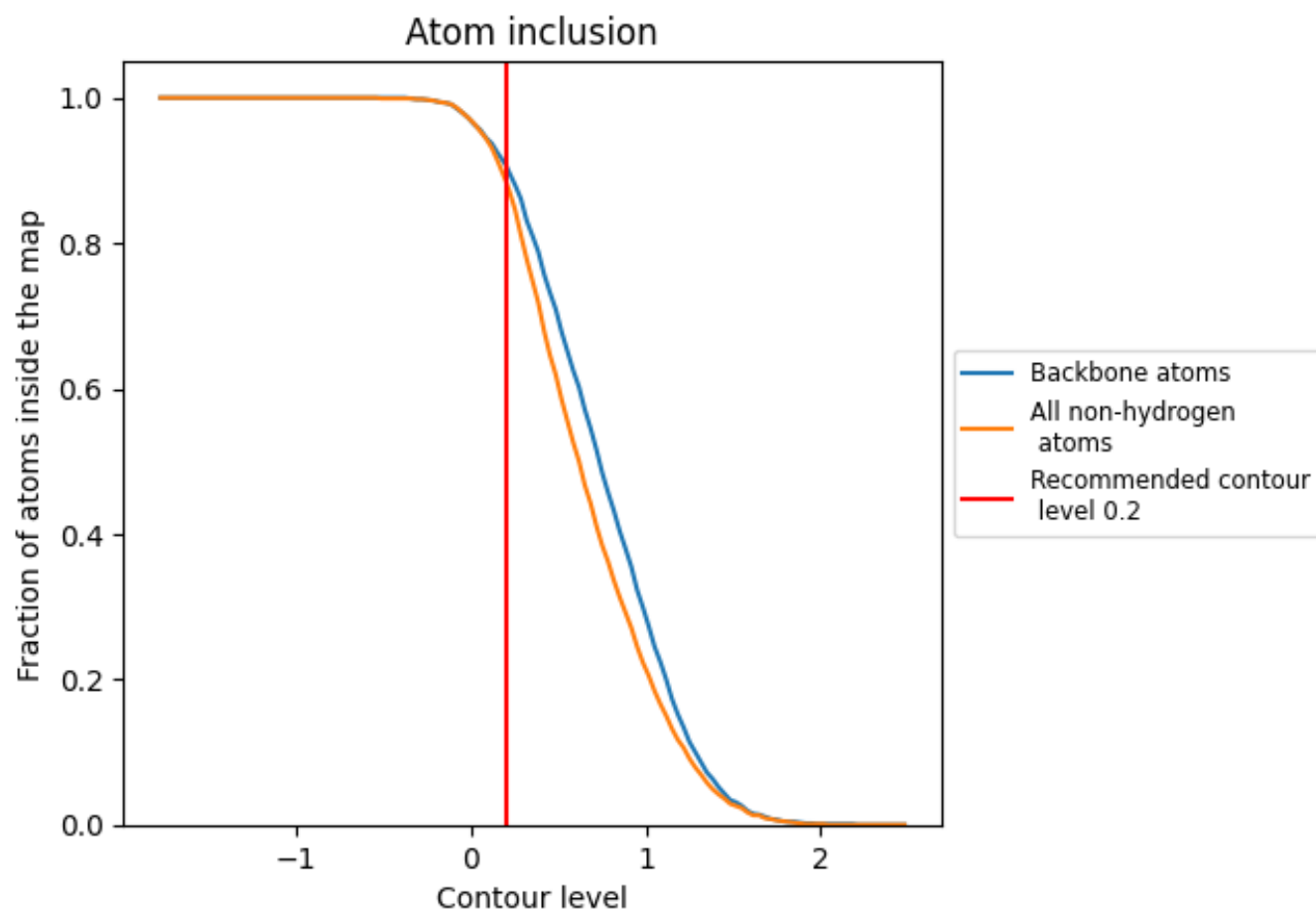
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.2).

9.4 Atom inclusion [i](#)



At the recommended contour level, 91% of all backbone atoms, 89% 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 (0.2) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8860	0.4470
A	0.8930	0.4640
B	0.9000	0.4780
C	0.8930	0.4700
D	0.8980	0.4760
I	0.8710	0.4100
J	0.8730	0.4090

1.0

0.0

<0.0