



Full wwPDB EM Validation Report ⓘ

Dec 16, 2025 – 04:08 PM JST

PDB ID : 9U3S / pdb_00009u3s
EMDB ID : EMD-63826
Title : Cryo-EM structure of human AC9 (TM domain)
Authors : Suzuki, S.; Nomura, R.; Suzuki, H.; Nishikawa, K.; Fujiyoshi, Y.
Deposited on : 2025-03-18
Resolution : 3.10 Å(reported)

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

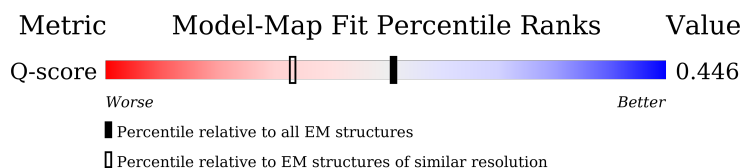
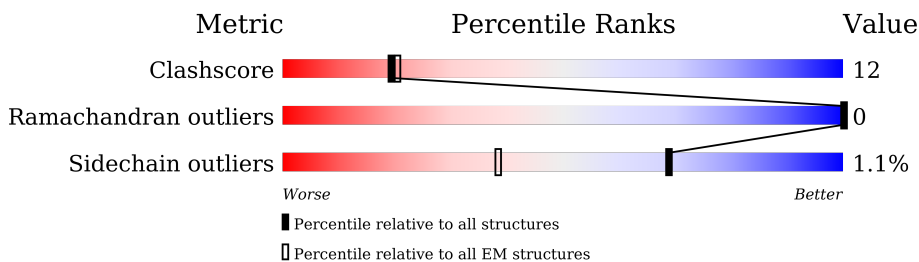
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.10 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	14724 (2.60 - 3.60)

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	1622	

2 Entry composition

There is only 1 type of molecule in this entry. The entry contains 3384 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 Adenylate cyclase type 9, Protein M2-1.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	425	Total	C	N	O	S	0	0
			3384	2249	541	571	23		

There are 30 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	1354	GLY	-	linker	UNP O60503
A	1355	SER	-	linker	UNP O60503
A	1356	ASN	-	linker	UNP O60503
A	1357	SER	-	linker	UNP O60503
A	1358	GLU	-	linker	UNP O60503
A	1359	ASN	-	linker	UNP O60503
A	1360	LEU	-	linker	UNP O60503
A	1361	TYR	-	linker	UNP O60503
A	1362	PHE	-	linker	UNP O60503
A	1363	GLN	-	linker	UNP O60503
A	1364	GLY	-	linker	UNP O60503
A	1365	SER	-	linker	UNP O60503
A	1605	HIS	-	expression tag	UNP A0A1S5SHT2
A	1606	HIS	-	expression tag	UNP A0A1S5SHT2
A	1607	HIS	-	expression tag	UNP A0A1S5SHT2
A	1608	HIS	-	expression tag	UNP A0A1S5SHT2
A	1609	HIS	-	expression tag	UNP A0A1S5SHT2
A	1610	HIS	-	expression tag	UNP A0A1S5SHT2
A	1611	HIS	-	expression tag	UNP A0A1S5SHT2
A	1612	HIS	-	expression tag	UNP A0A1S5SHT2
A	1613	HIS	-	expression tag	UNP A0A1S5SHT2
A	1614	HIS	-	expression tag	UNP A0A1S5SHT2
A	1615	ASP	-	expression tag	UNP A0A1S5SHT2
A	1616	TYR	-	expression tag	UNP A0A1S5SHT2
A	1617	LYS	-	expression tag	UNP A0A1S5SHT2
A	1618	ASP	-	expression tag	UNP A0A1S5SHT2
A	1619	ASP	-	expression tag	UNP A0A1S5SHT2
A	1620	ASP	-	expression tag	UNP A0A1S5SHT2

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Chain	Residue	Modelled	Actual	Comment	Reference
A	1621	ASP	-	expression tag	UNP A0A1S5SHT2
A	1622	LYS	-	expression tag	UNP A0A1S5SHT2

ASN	THR	PHE	GLY	LYS	ILE	GLU	ASP	GLY	THR	VAL	W862	E760
THR	LEU	TYR	GLY	ASP	GLY	GLU	ASP	ASP	LEU	THR	L863	R761
GLU	ASP	ALA	LYS	PHE	ARG	SER	PHE	ASP	LEU	THR	P864	S762
ASP	GLY	THR	GLY	THR	PRO	THR	ASN	GLU	ASN	PRO	R865	Y763
VAL	GLY	ASP	VAL	SER	ASP	VAL	ASN	LEU	ILE	LEU	G869	T764
THR	GLY	GLY	GLY	THR	GLY	SER	ASP	SER	ILE	ASP		T765
GLY	ILE	THR	ILE	ILE	ILE	SER	TRP	LEU	PRO	ALA		S766
GLY	GLY	GLY	GLY	GLY	ALA	MET	PHE	TRP	LYS	VAL	V873	Y767
ALA	GLY	GLY	GLY	GLY	ALA	GLY	ASP	PRO	HIS	GLN	S874	Q768
GLY	GLY	GLY	GLY	GLY	GLY	GLY	ASN	ASN	VAL	ASN	L875	Q769
ASP	ASP	GLY	GLY	GLY	GLY	GLY	PHE	TYR	ALA	PHE	L878	E770
THR	THR	THR	ASP	ASP	VAL	ASP	LYS	SER	GLU	SER	A879	V771
GLY	GLY	GLY	GLY	GLY	PRO	PHE	LEU	SER	GLN	SER	V880	I772
GLY	GLY	GLY	GLY	GLY	VAL	TYR	ARG	ILE	LEU	GLU	K773	K773
GLY	GLY	GLY	GLY	GLY	VAL	TYR	VAL	VAL	LYS	ARG	N774	N774
GLY	GLY	GLY	GLY	GLY	GLN	ARG	GLY	VAL	VAL	ASN	S775	S775
GLY	GLY	GLY	GLY	GLY	GLY	GLY	PHE	ILE	SER	PRO		
GLY	GLY	GLY	GLY	GLY	VAL	THR	ASN	LYS	GLN	CYS	T784	T784
GLY	GLY	GLY	GLY	GLY	ASP	VAL	HIS	THR	THR	ASN		
GLY	GLY	GLY	GLY	GLY	VAL	VAL	GLY	ILE	TYR	SER	L788	L788
GLY	GLY	GLY	GLY	GLY	THR	VAL	PRO	GLY	SER	SER	L789	L789
GLY	GLY	GLY	GLY	GLY	SER	VAL	LEU	ALA	VAL	VAL	D790	D790
GLY	GLY	GLY	GLY	GLY	GLY	GLY	ALA	THR	ASN	PRO	V791	V791
GLY	GLY	GLY	GLY	GLY	GLY	GLY	ALA	THR	ASN	ARG	F792	F792
GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	MET	ASP	ASP	L793	L793
GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	LEU	HIS		
GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	LEU	LEU	T796	T796
GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	VAL	PRO	T800	T800
GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	VAL	PRO	L801	L801
GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	VAL	PRO		
GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	VAL	PRO	T804	T804
GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	VAL	PRO	K808	K808
GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	VAL	PRO	Y809	Y809
GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	VAL	PRO	E810	E810
GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	VAL	PRO	ALA	ALA
GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	VAL	PRO	ALA	ALA
GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	VAL	PRO	THR	THR
GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	VAL	PRO	VAL	VAL
GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	VAL	PRO	P815	P815
GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	VAL	PRO	L830	L830
GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	VAL	PRO	L835	L835
GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	VAL	PRO	S838	S838
GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	VAL	PRO	I839	I839
GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	VAL	PRO	L845	L845
GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	VAL	PRO	E846	E846
GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	VAL	PRO	D847	D847
GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	VAL	PRO	V848	V848
GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	VAL	PRO	M849	M849
GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	VAL	PRO	W858	W858
GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	VAL	PRO	I859	I859
GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	VAL	PRO	A860	A860
GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	VAL	PRO	G861	G861

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	150460	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING ONLY	Depositor
Microscope	JEOL CRYO ARM 300	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	50	Depositor
Minimum defocus (nm)	800	Depositor
Maximum defocus (nm)	1500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	1.779	Depositor
Minimum map value	-0.002	Depositor
Average map value	0.005	Depositor
Map value standard deviation	0.048	Depositor
Recommended contour level	0.11	Depositor
Map size ($\text{\AA}$)	121.2, 121.2, 121.2	wwPDB
Map dimensions	120, 120, 120	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing ($\text{\AA}$)	1.01, 1.01, 1.01	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	0.14	0/3476	0.32	0/4727

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	3384	0	3392	84	0
All	All	3384	0	3392	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 12.

All (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)
1:A:115:ARG:HG2	1:A:237:VAL:HG23	1.67	0.75
1:A:801:LEU:HD21	1:A:880:VAL:HG23	1.71	0.71
1:A:290:CYS:SG	1:A:800:THR:OG1	2.48	0.71
1:A:774:ASN:O	1:A:774:ASN:ND2	2.22	0.69
1:A:906:VAL:HG23	1:A:924:ALA:HB1	1.77	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:141:ARG:NH2	1:A:216:THR:O	2.30	0.64
1:A:869:GLY:HA3	1:A:915:LEU:HD11	1.80	0.64
1:A:762:SER:O	1:A:766:SER:OG	2.15	0.63
1:A:298:LEU:HD13	1:A:1000:PHE:HE2	1.63	0.63
1:A:774:ASN:HD22	1:A:774:ASN:C	2.07	0.61
1:A:304:VAL:HA	1:A:307:ARG:HG2	1.83	0.61
1:A:233:LEU:O	1:A:237:VAL:HG12	2.03	0.59
1:A:309:THR:O	1:A:313:VAL:HG23	2.05	0.57
1:A:752:LEU:HD11	1:A:998:ARG:HD3	1.88	0.56
1:A:187:THR:HG21	1:A:230:VAL:HG21	1.88	0.55
1:A:770:GLU:OE1	1:A:784:THR:OG1	2.21	0.55
1:A:228:ILE:HG23	1:A:291:ILE:HD12	1.90	0.53
1:A:180:THR:HG21	1:A:234:LEU:HD13	1.91	0.53
1:A:301:MET:HE3	1:A:301:MET:HA	1.91	0.53
1:A:747:ILE:HD12	1:A:1005:ARG:HD3	1.90	0.53
1:A:796:THR:O	1:A:800:THR:HG23	2.08	0.53
1:A:768:GLN:O	1:A:772:ILE:HG13	2.09	0.52
1:A:790:ASP:HA	1:A:911:ASN:HD21	1.75	0.52
1:A:849:MET:SD	1:A:849:MET:N	2.83	0.52
1:A:920:ARG:HG3	1:A:920:ARG:HH11	1.74	0.52
1:A:860:ALA:O	1:A:865:ARG:NH1	2.44	0.51
1:A:232:PHE:HE1	1:A:291:ILE:HG13	1.76	0.51
1:A:921:SER:HB3	1:A:994:TRP:CD2	2.46	0.51
1:A:244:LEU:O	1:A:248:LEU:HB2	2.11	0.50
1:A:230:VAL:HA	1:A:233:LEU:HD12	1.93	0.50
1:A:800:THR:O	1:A:804:THR:HG23	2.11	0.50
1:A:830:LEU:HD11	1:A:868:ILE:HD11	1.93	0.50
1:A:748:ASN:OD1	1:A:748:ASN:N	2.42	0.50
1:A:809:TYR:OH	1:A:883:HIS:O	2.30	0.49
1:A:874:SER:O	1:A:878:LEU:HD12	2.12	0.49
1:A:242:LEU:HD13	1:A:299:PHE:CD2	2.48	0.48
1:A:232:PHE:CZ	1:A:907:VAL:HG13	2.49	0.48
1:A:307:ARG:HG3	1:A:308:SER:N	2.28	0.48
1:A:774:ASN:ND2	1:A:774:ASN:C	2.70	0.47
1:A:764:ARG:HD2	1:A:862:TRP:CE2	2.50	0.47
1:A:790:ASP:OD1	1:A:790:ASP:N	2.48	0.47
1:A:864:PRO:O	1:A:868:ILE:HG22	2.14	0.47
1:A:115:ARG:HG3	1:A:999:GLU:OE1	2.15	0.46
1:A:225:SER:HB3	1:A:985:VAL:HG13	1.96	0.46
1:A:1015:ASP:O	1:A:1019:THR:HG23	2.16	0.46
1:A:179:LEU:O	1:A:183:VAL:HG23	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:287:LEU:HD22	1:A:904:ILE:HD12	1.98	0.45
1:A:770:GLU:OE2	1:A:775:SER:HB2	2.16	0.45
1:A:921:SER:HB3	1:A:994:TRP:CE2	2.50	0.45
1:A:752:LEU:O	1:A:1005:ARG:NE	2.50	0.45
1:A:923:LEU:HD23	1:A:923:LEU:HA	1.87	0.45
1:A:792:PHE:O	1:A:796:THR:HG23	2.16	0.45
1:A:863:LEU:HD12	1:A:863:LEU:HA	1.81	0.45
1:A:242:LEU:HD11	1:A:296:VAL:HG23	1.98	0.44
1:A:793:LEU:HD23	1:A:911:ASN:ND2	2.32	0.44
1:A:931:PRO:O	1:A:935:LEU:HB2	2.18	0.44
1:A:858:TRP:CD1	1:A:858:TRP:C	2.96	0.43
1:A:873:VAL:HA	1:A:908:HIS:HE1	1.83	0.43
1:A:835:LEU:O	1:A:839:ILE:HG23	2.18	0.43
1:A:184:PHE:O	1:A:188:LEU:HG	2.18	0.43
1:A:284:ARG:HD2	1:A:284:ARG:HA	1.60	0.43
1:A:904:ILE:HA	1:A:907:VAL:HB	2.01	0.43
1:A:1020:LYS:NZ	1:A:1020:LYS:HB3	2.34	0.43
1:A:311:LEU:O	1:A:315:GLN:HG3	2.18	0.42
1:A:129:LEU:HD23	1:A:129:LEU:HA	1.86	0.42
1:A:228:ILE:HG21	1:A:907:VAL:HG21	2.01	0.42
1:A:253:SER:HB2	1:A:288:HIS:ND1	2.34	0.42
1:A:760:GLU:O	1:A:764:ARG:HG2	2.19	0.42
1:A:792:PHE:CD1	1:A:792:PHE:C	2.98	0.42
1:A:298:LEU:HD11	1:A:910:CYS:HB3	2.02	0.42
1:A:177:LEU:O	1:A:181:LEU:HG	2.19	0.42
1:A:1018:ARG:HG2	1:A:1018:ARG:HH11	1.85	0.42
1:A:234:LEU:HA	1:A:238:MET:HG3	2.01	0.42
1:A:808:LYS:O	1:A:808:LYS:HD2	2.20	0.41
1:A:184:PHE:HZ	1:A:234:LEU:HD22	1.84	0.41
1:A:899:GLY:HA2	1:A:932:LEU:HD21	2.03	0.41
1:A:830:LEU:HD12	1:A:830:LEU:O	2.21	0.41
1:A:764:ARG:HD2	1:A:862:TRP:CD2	2.55	0.41
1:A:220:GLN:CD	1:A:284:ARG:HH22	2.29	0.40
1:A:763:TYR:OH	1:A:1004:TYR:HE1	2.04	0.40
1:A:255:LEU:HD23	1:A:255:LEU:HA	1.87	0.40
1:A:754:PHE:N	1:A:760:GLU:OE1	2.37	0.40
1:A:788:LEU:HA	1:A:838:SER:HB3	2.04	0.40
1:A:875:LEU:HD23	1:A:875:LEU:HA	1.78	0.40

There are no symmetry-related clashes.

5.3 Torsion angles

5.3.1 Protein backbone

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	411/1622 (25%)	408 (99%)	3 (1%)	0	100	100

There are no Ramachandran outliers to report.

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	A	368/1413 (26%)	364 (99%)	4 (1%)	70	84

All (4) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	318	MET
1	A	760	GLU
1	A	774	ASN
1	A	998	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (2) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	171	HIS
1	A	911	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.

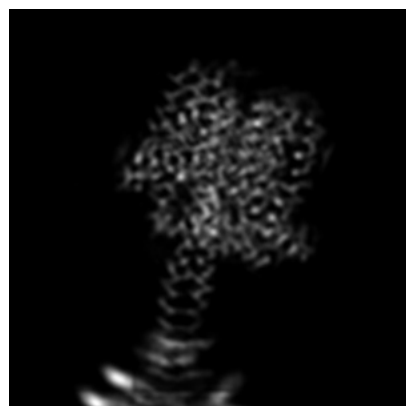
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-63826. These allow visual inspection of the internal detail of the map and identification of artifacts.

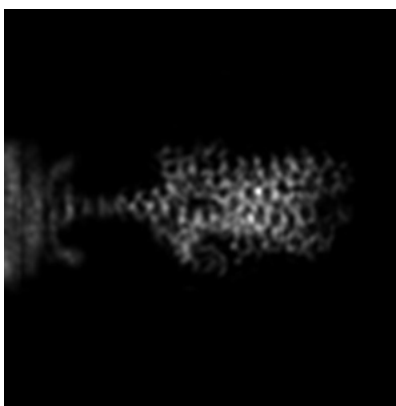
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

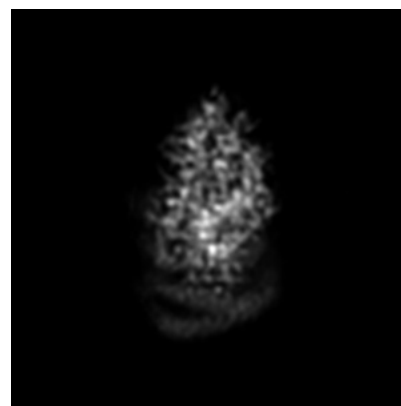
6.1.1 Primary map



X

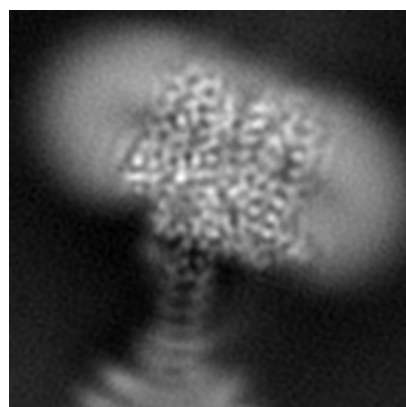


Y

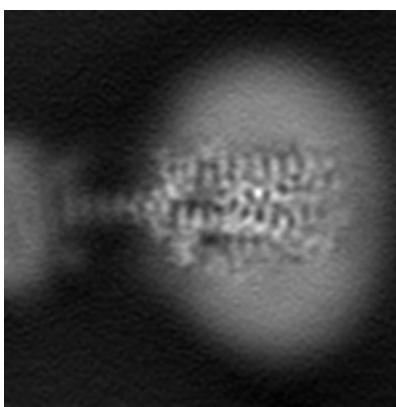


Z

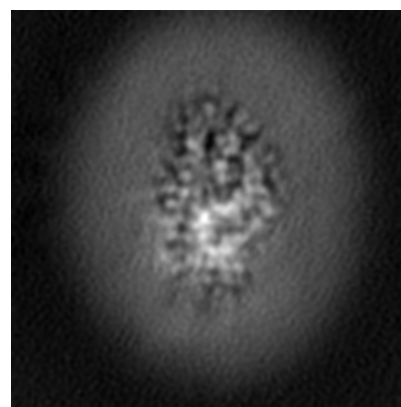
6.1.2 Raw map



X



Y



Z

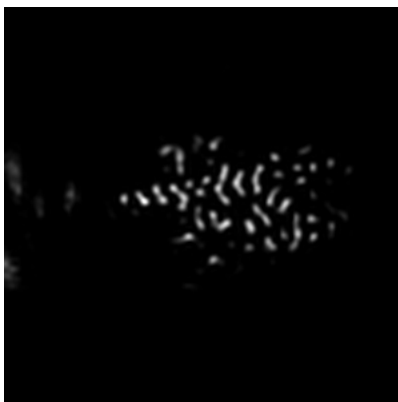
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

6.2.1 Primary map



X Index: 60

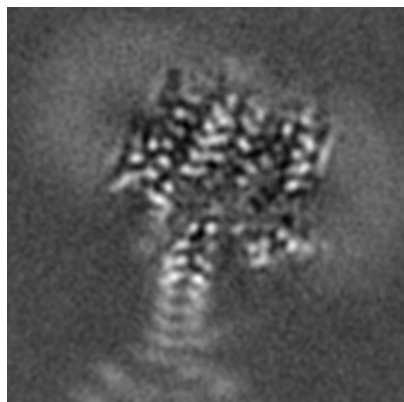


Y Index: 60

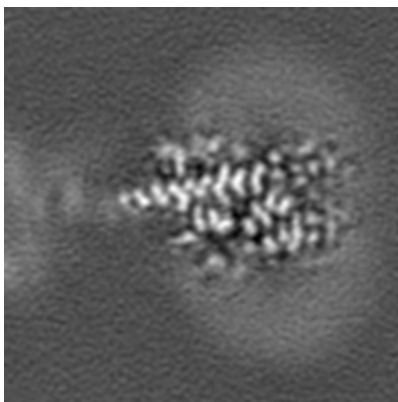


Z Index: 60

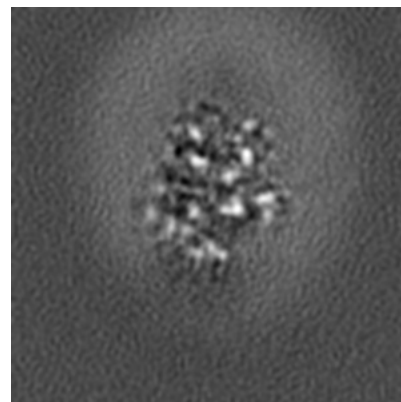
6.2.2 Raw map



X Index: 60



Y Index: 60



Z Index: 60

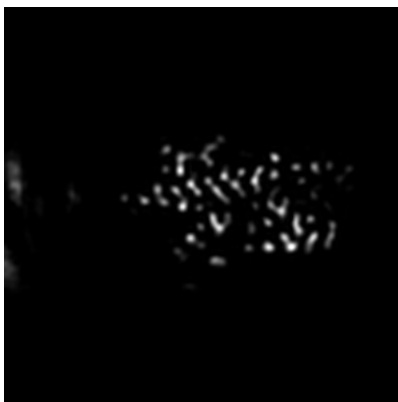
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

6.3.1 Primary map



X Index: 56

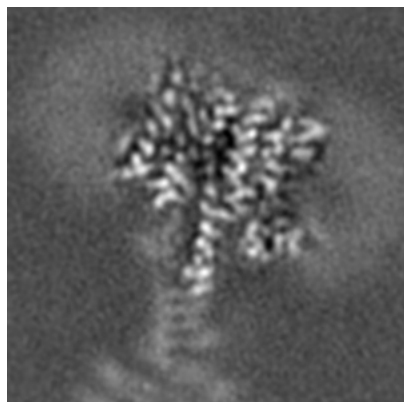


Y Index: 61

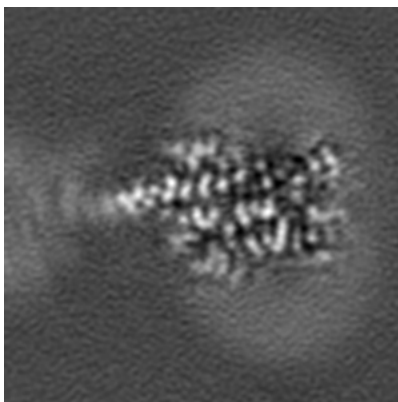


Z Index: 76

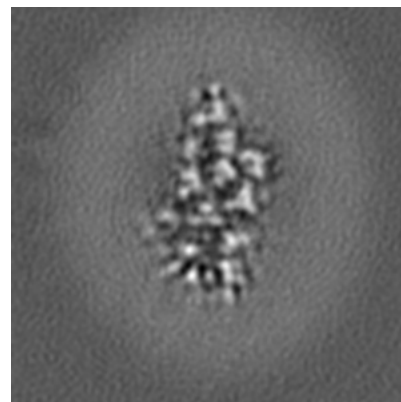
6.3.2 Raw map



X Index: 63



Y Index: 58



Z Index: 76

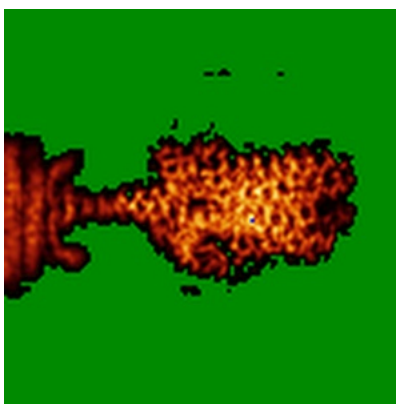
The images above show the largest variance slices of the map in three orthogonal directions.

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

6.4.1 Primary map



X

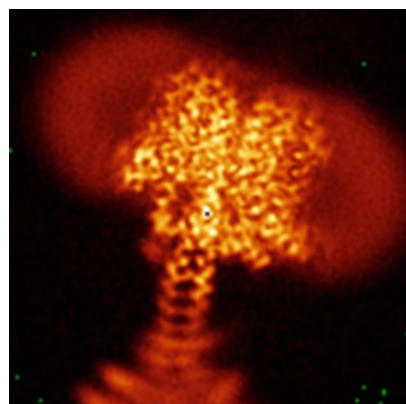


Y

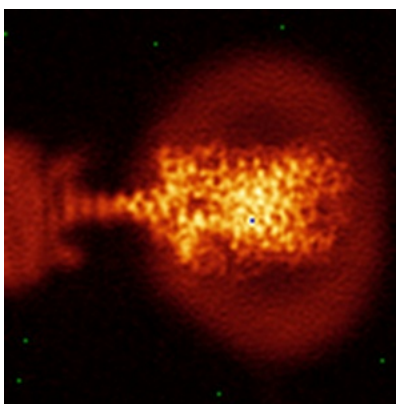


Z

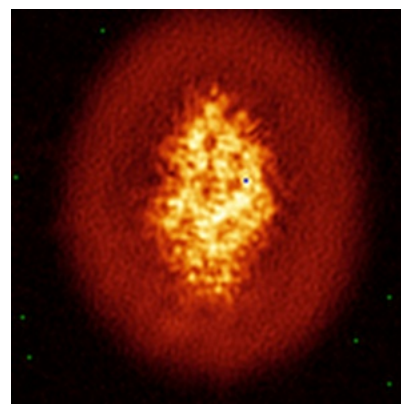
6.4.2 Raw map



X



Y

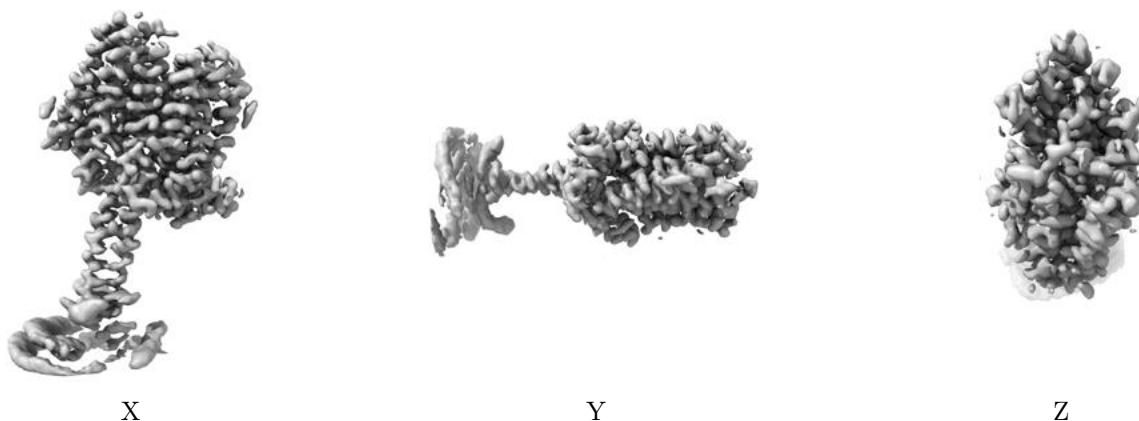


Z

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.

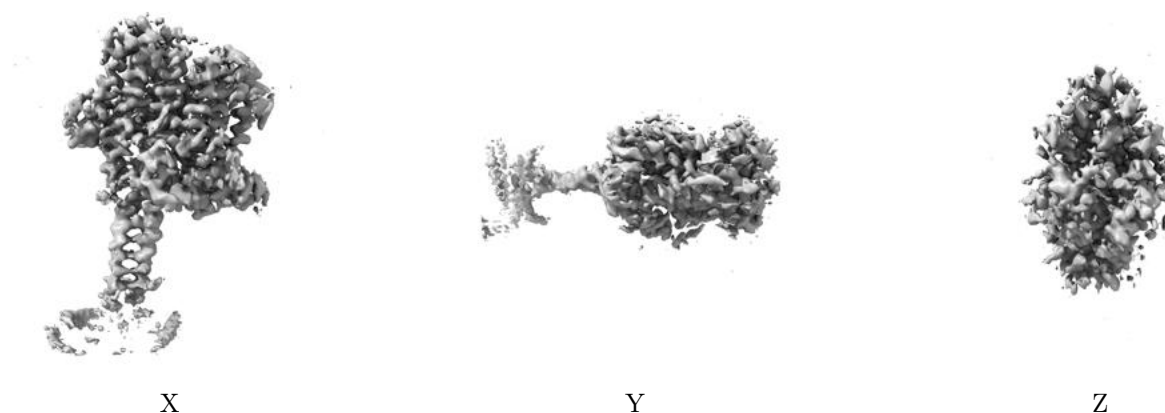
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.11. 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.

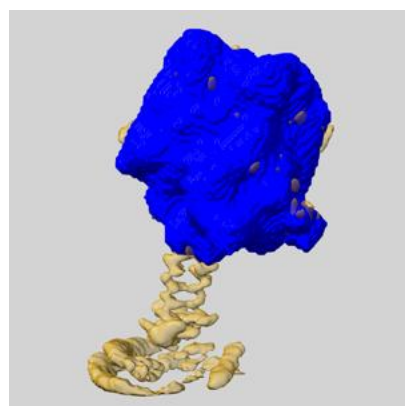
6.6 Mask visualisation [i](#)

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

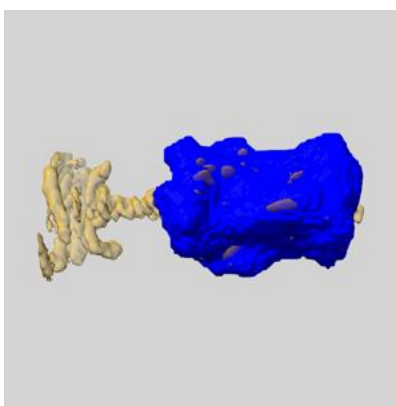
A mask typically either:

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

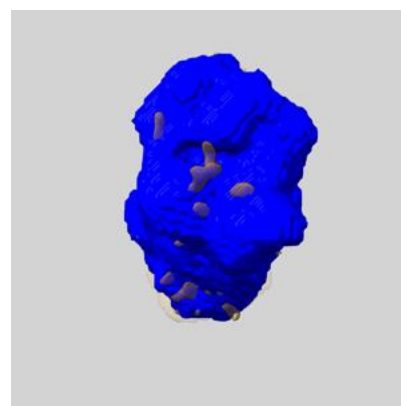
6.6.1 emd_63826_msk_1.map [i](#)



X



Y

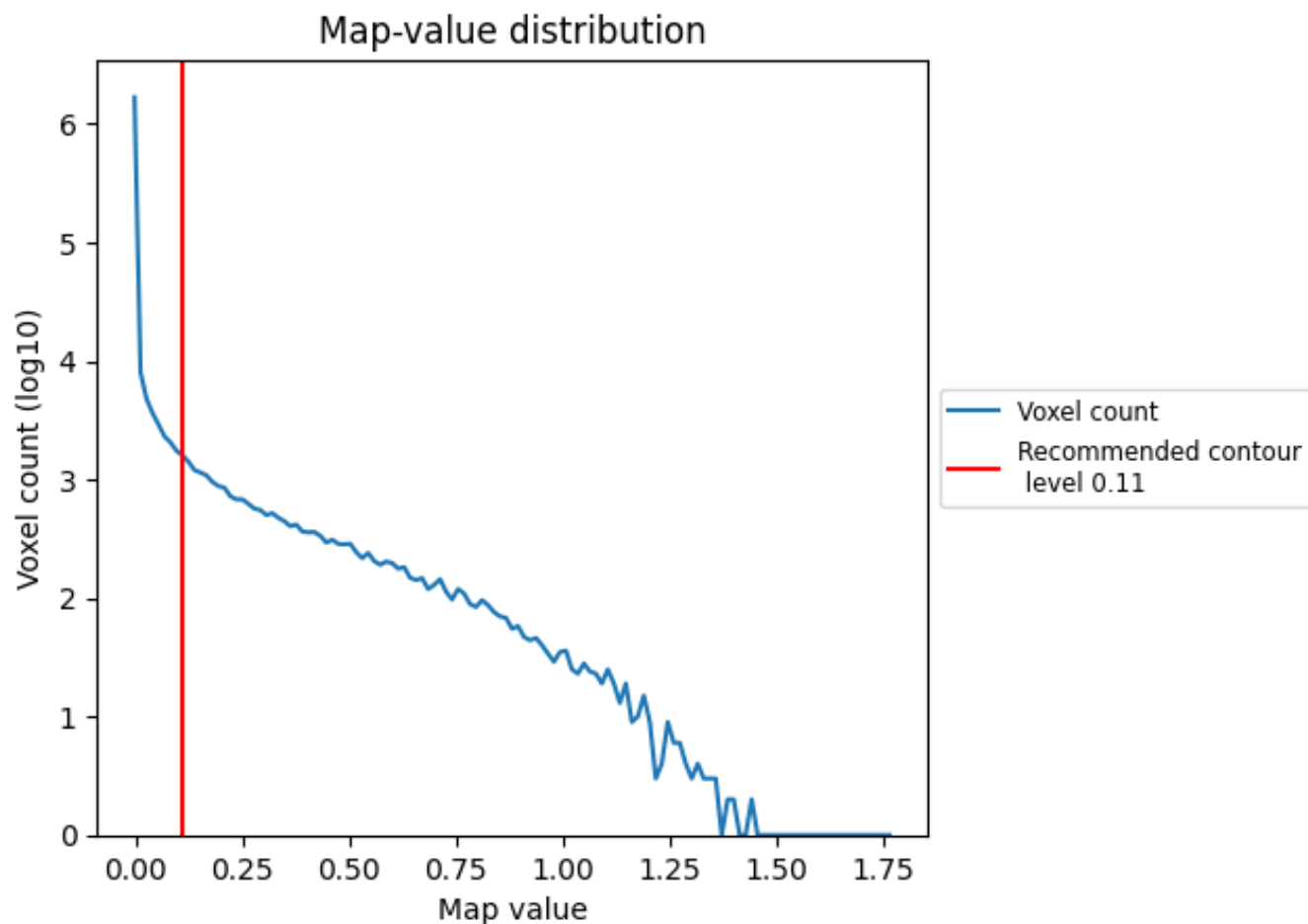


Z

7 Map analysis [i](#)

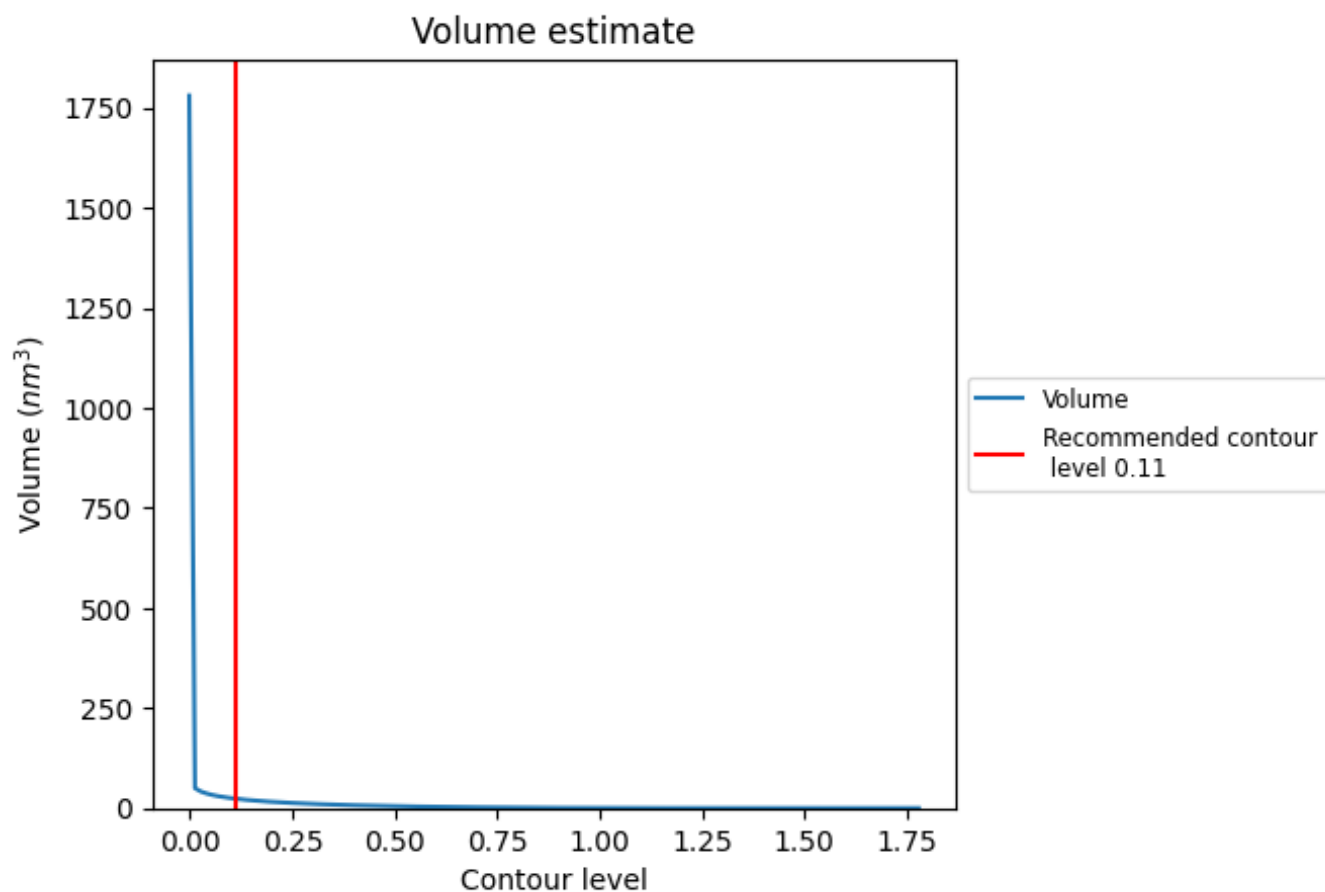
This section contains the results of statistical analysis of the map.

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.

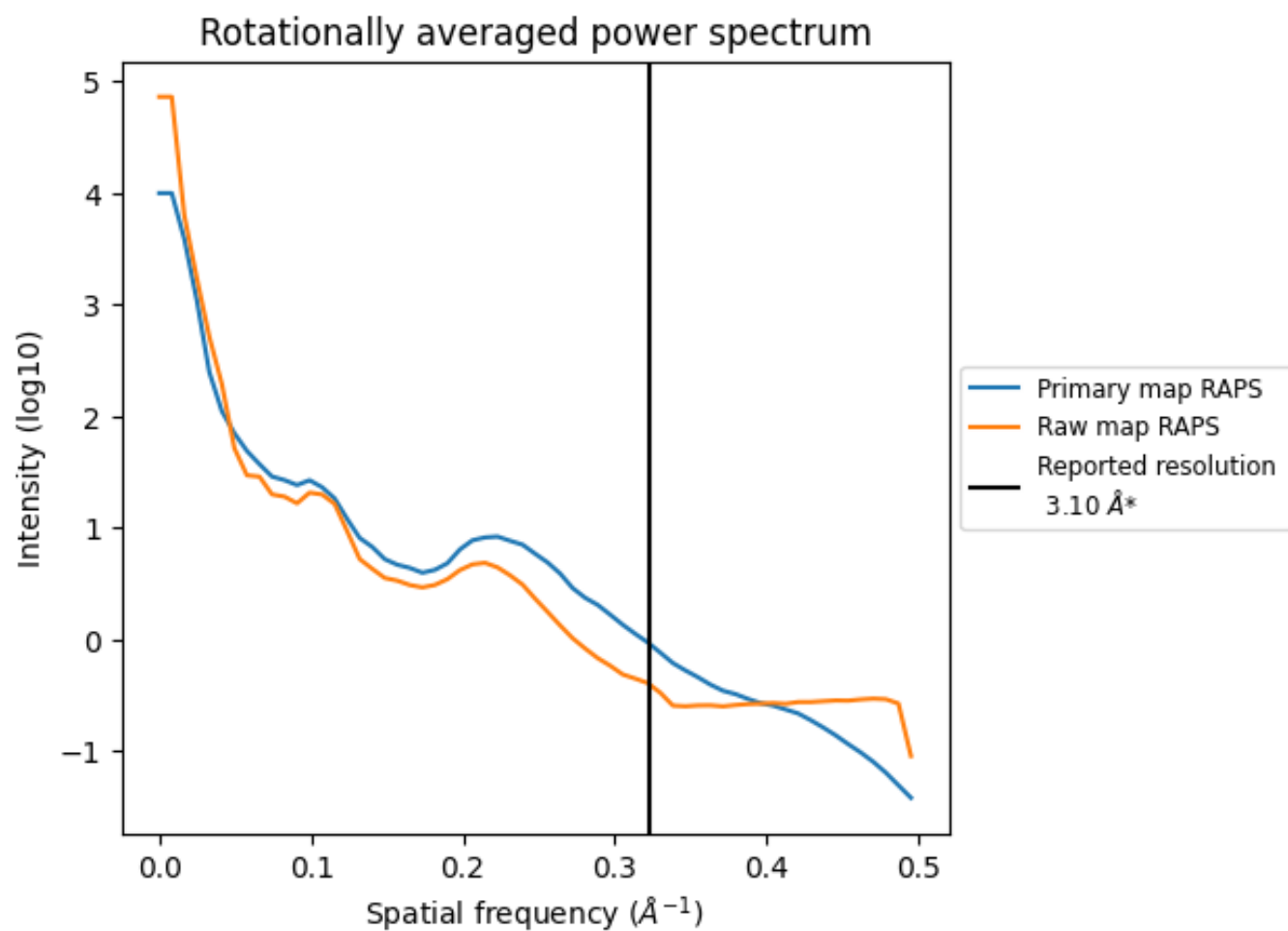
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 24 nm³; this corresponds to an approximate mass of 21 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 ⓘ

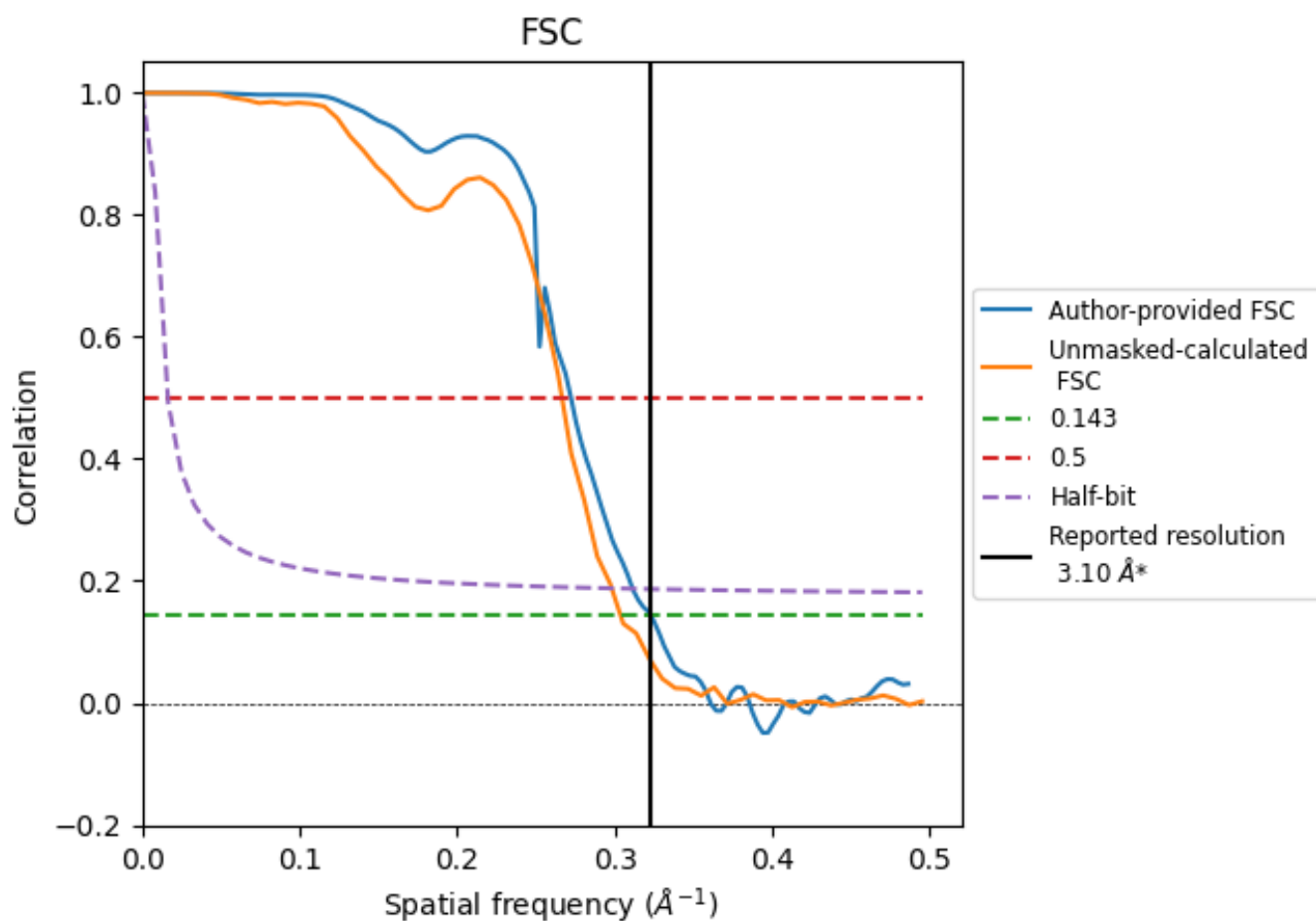


*Reported resolution corresponds to spatial frequency of $0.323 \text{ \AA}^{-1}$

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 $0.323 \text{ \AA}^{-1}$

8.2 Resolution estimates [i](#)

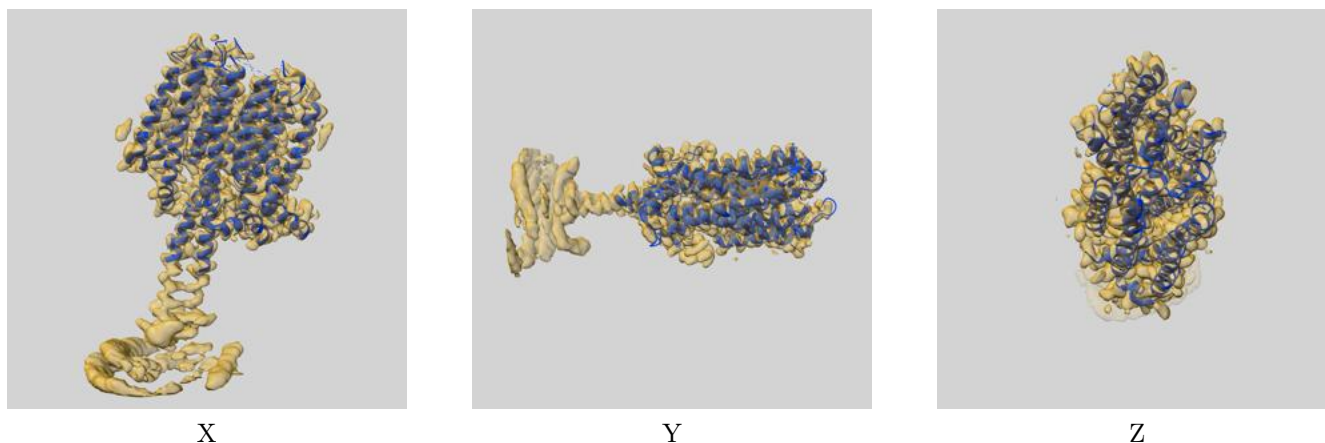
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.10	-	-
Author-provided FSC curve	3.10	3.68	3.19
Unmasked-calculated*	3.29	3.75	3.36

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

9 Map-model fit [i](#)

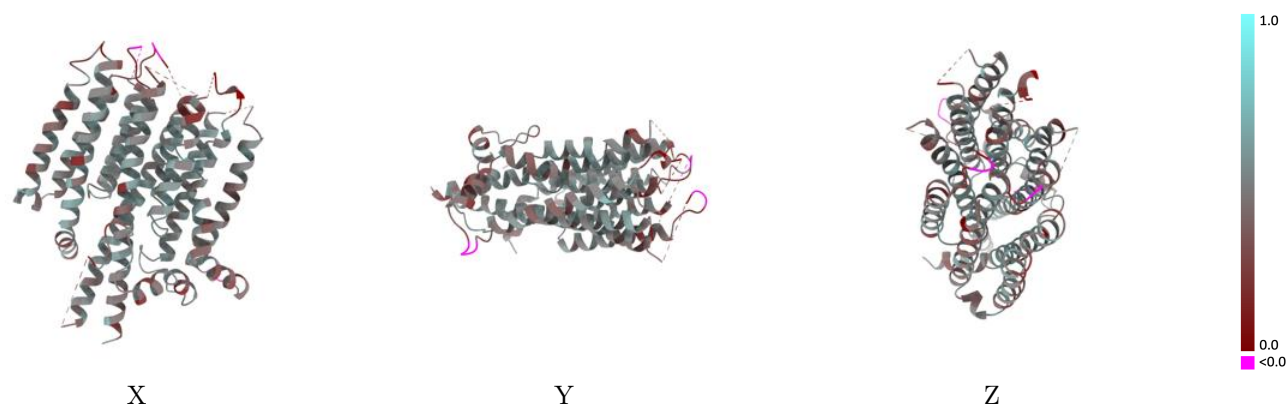
This section contains information regarding the fit between EMDB map EMD-63826 and PDB model 9U3S. Per-residue inclusion information can be found in section [3](#) on page [5](#).

9.1 Map-model overlay [i](#)



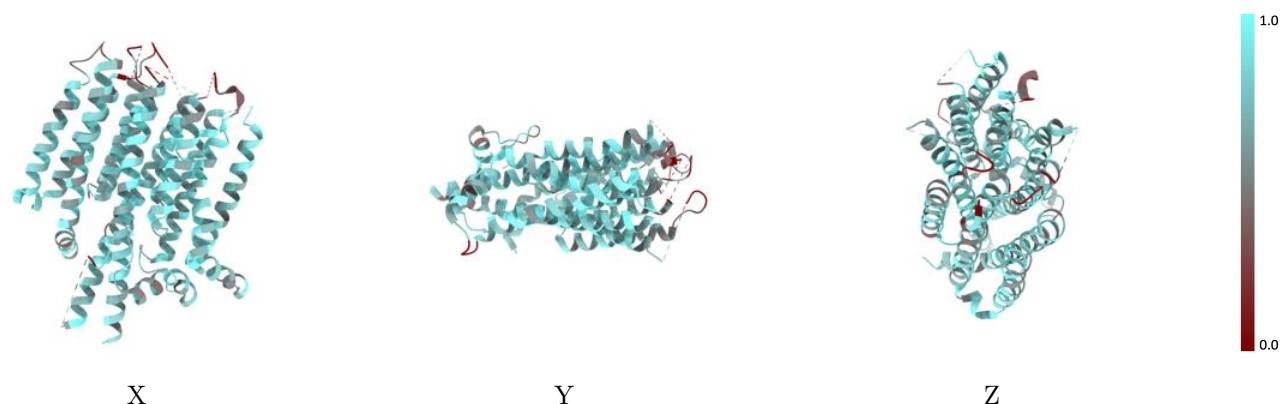
The images above show the 3D surface view of the map at the recommended contour level 0.11 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



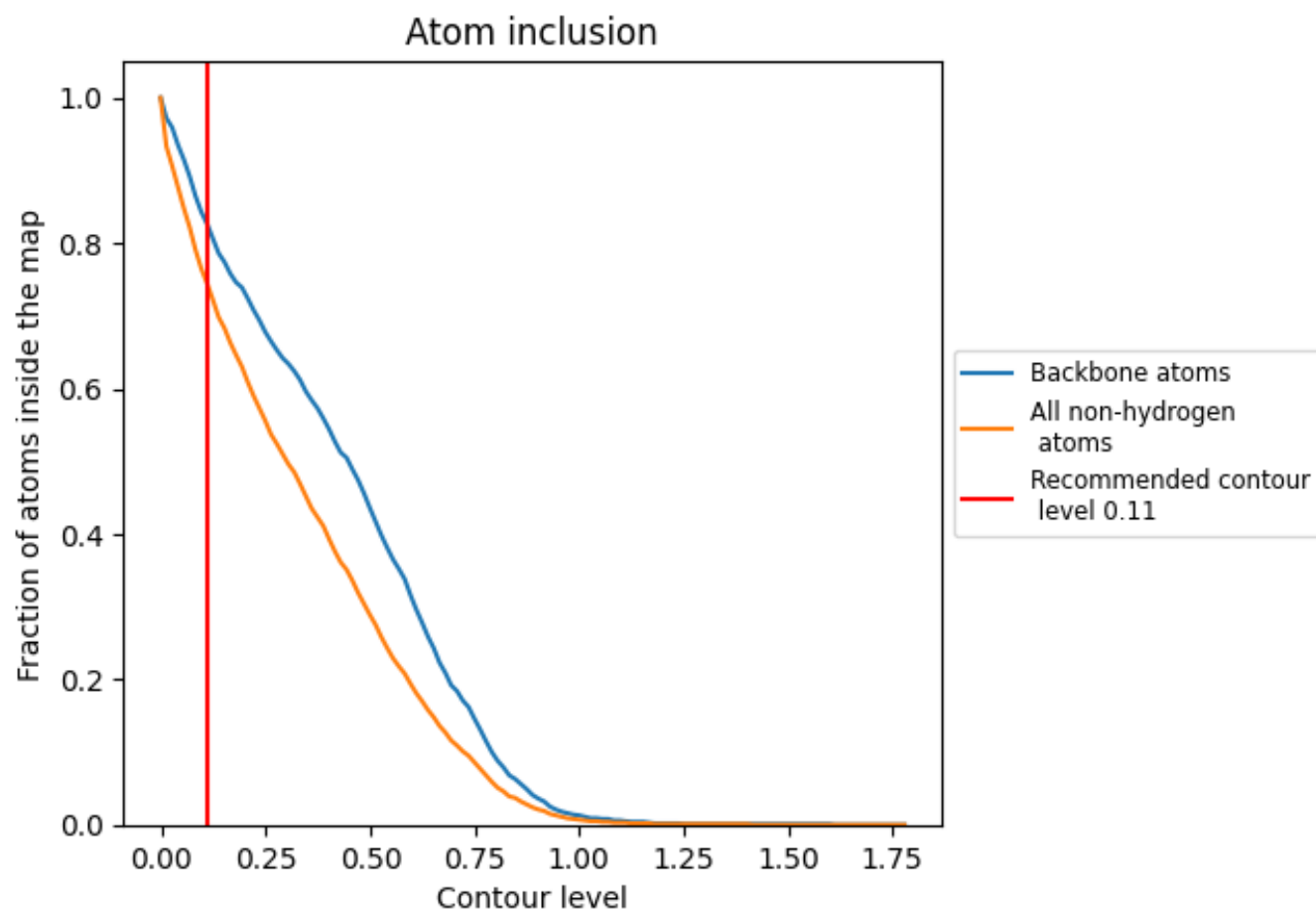
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.11).

9.4 Atom inclusion ⓘ



At the recommended contour level, 83% of all backbone atoms, 74% 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 (0.11) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.7440	0.4460
A	0.7440	0.4460

