



Full wwPDB EM Validation Report ⓘ

Sep 19, 2023 – 08:56 AM EDT

PDB ID : 8TH8
EMDB ID : EMD-41251
Title : Linker domain of Nexin-dynein regulatory complex from *Tetrahymena thermophila*
Authors : Ghanaeian, A.G.; Bui, K.H.
Deposited on : 2023-07-14
Resolution : 7.40 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:

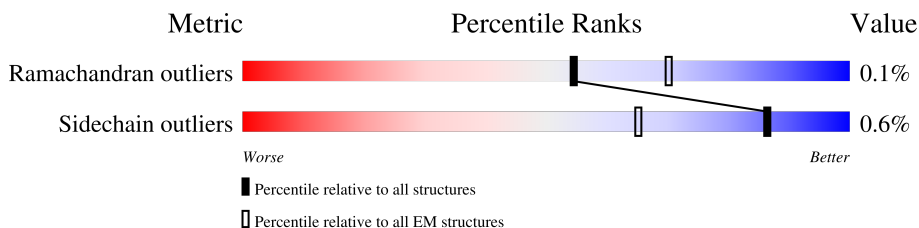
EMDB validation analysis : 0.0.1.dev50
MolProbity : 4.02b-467
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.9
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.35.1

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 7.40 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)
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826

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	826	
2	B	506	
3	C	575	
4	D	472	
5	E	468	
6	F	461	
7	G	345	
8	H	852	
9	I	185	

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Mol	Chain	Length	Quality of chain
9	i	185	<p>25% 99%</p>
10	J	372	<p>25% 98%</p>
11	K	434	<p>21% 98%</p>
12	L	862	<p>15% 99%</p>
13	P	794	<p>8% 38% 62%</p>
14	Q	202	<p>24% 99%</p>
14	R	202	<p>19% 100%</p>
15	S	187	<p>33% 99%</p>
15	s	187	<p>47% 99%</p>

2 Entry composition [i](#)

There are 15 unique types of molecules in this entry. The entry contains 58466 atoms, of which 5024 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 Dynein regulatory complex protein 1/2 N-terminal domain-containing protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	290	2460	1524	439	483	14	0	0

- Molecule 2 is a protein called Coiled-coil protein, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	B	276	2329	1451	421	447	10	0	0

- Molecule 3 is a protein called LRRC48 protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	C	533	4433	2771	760	890	12	0	0

- Molecule 4 is a protein called Growth-arrest-specific microtubule-binding protein.

Mol	Chain	Residues	Atoms						AltConf	Trace
			Total	C	H	N	O	S		
4	D	292	4976	1536	2515	435	482	8	0	0

- Molecule 5 is a protein called Growth-arrest-specific microtubule-binding protein.

Mol	Chain	Residues	Atoms					AltConf	Trace	
			Total	C	H	N	O			S
5	E	291	4952	1528	2509	430	478	7	0	0

- Molecule 6 is a protein called Flagellar associated protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	F	461	3714	2351	632	714	17	0	0

- Molecule 7 is a protein called Kinase domain protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
7	G	345	2780	1763	474	527	16	0	0

- Molecule 8 is a protein called Coiled-coil lobo-like protein, putative.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
8	H	820	6857	4318	1192	1314	33	0	0

- Molecule 9 is a protein called EF-hand calcium-binding domain protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
9	I	185	1553	1002	244	301	6	0	0
9	i	185	1553	1002	244	301	6	0	0

- Molecule 10 is a protein called Dynein regulatory complex protein 9.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
10	J	372	3151	1949	574	620	8	0	0

- Molecule 11 is a protein called Dynein regulatory complex protein 10.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
11	K	434	3588	2229	647	699	13	0	0

- Molecule 12 is a protein called AAA family ATPase CDC48 subfamily protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
12	L	862	7102	4513	1213	1345	31	0	0

- Molecule 13 is a protein called DUF4201 domain-containing protein.

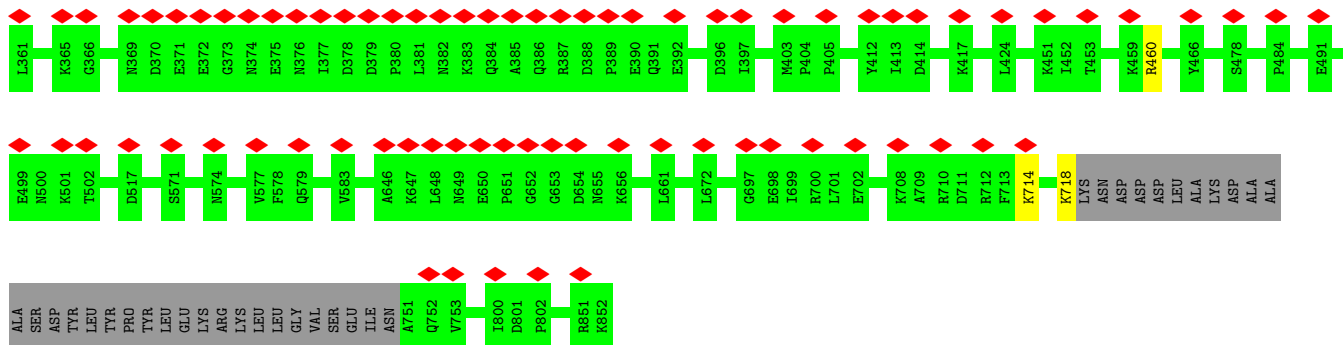
Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
13	P	305	2576	1624	442	502	8	0	0

- Molecule 14 is a protein called Calmodulin 7-2.

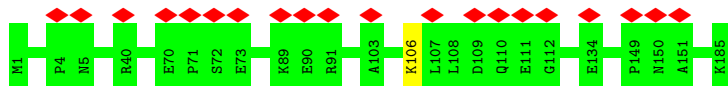
Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
14	Q	202	Total 1679	C 1061	N 276	O 338	S 4	0	0
14	R	202	Total 1679	C 1061	N 276	O 338	S 4	0	0

- Molecule 15 is a protein called Coiled-coil domain-containing protein 153.

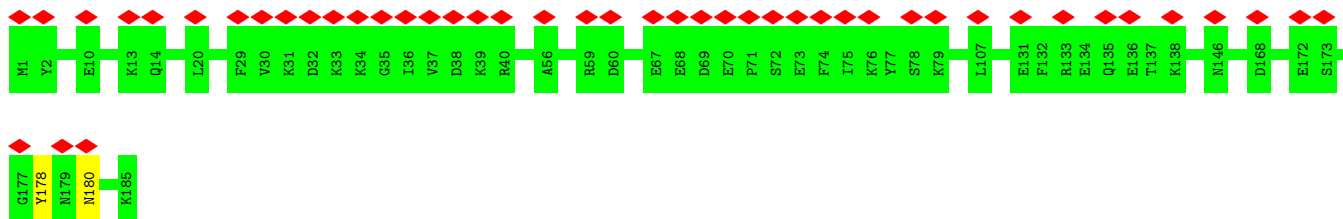
Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
15	S	187	Total 1542	C 943	N 274	O 314	S 11	0	0
15	s	187	Total 1542	C 943	N 274	O 314	S 11	0	0



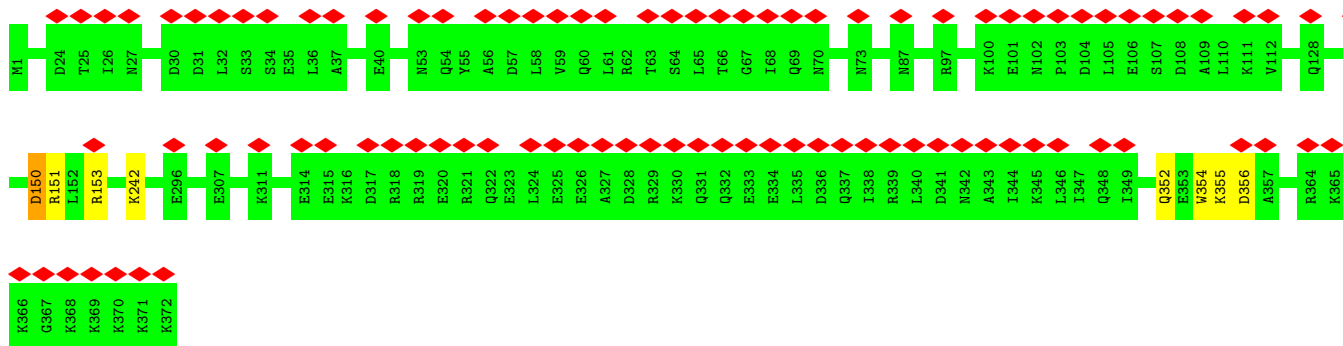
• Molecule 9: EF-hand calcium-binding domain protein



• Molecule 9: EF-hand calcium-binding domain protein

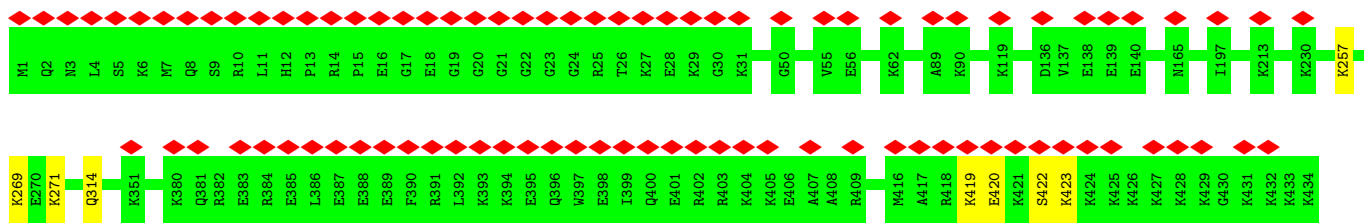


• Molecule 10: Dynein regulatory complex protein 9

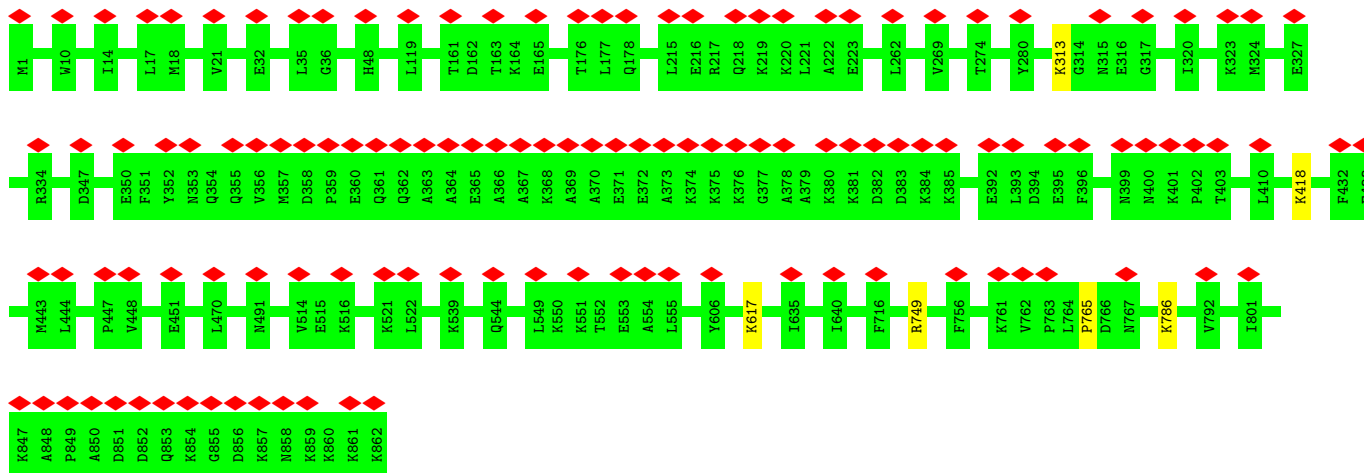


• Molecule 11: Dynein regulatory complex protein 10

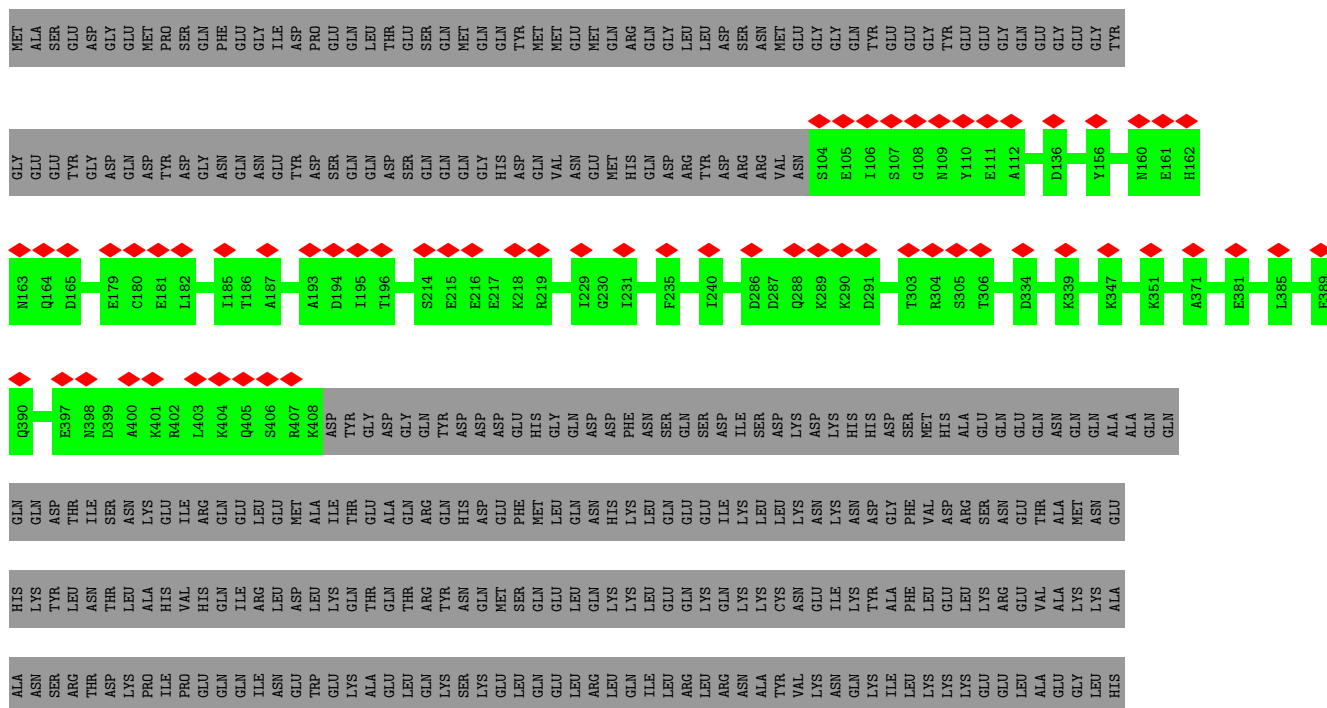




• Molecule 12: AAA family ATPase CDC48 subfamily protein

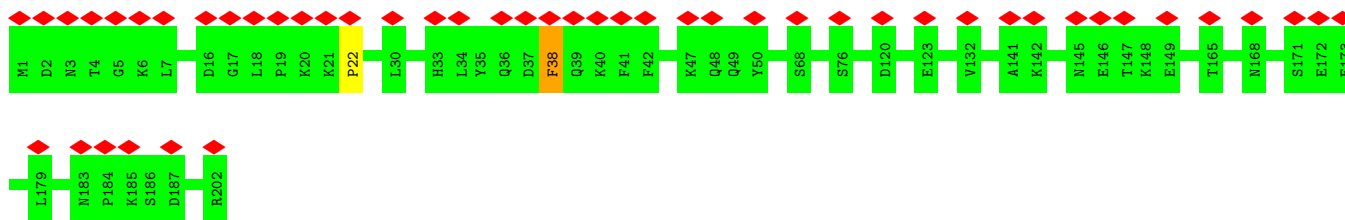


• Molecule 13: DUF4201 domain-containing protein

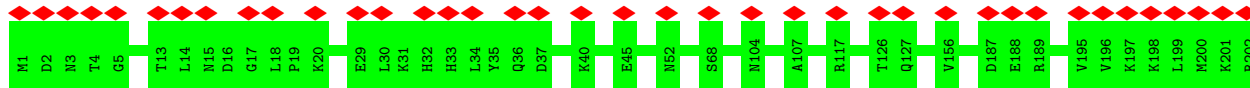


LEU	ILE	ASP	PHE	GLU	GLN	LEU	LYS	ILE	ASP	MET	GLU	SER	ASN	GLN	THR	LEU	ASN	GLU	LYS	ILE	GLU	GLY	ARG	GLU	THR	GLN	ASN	THR	LEU	GLY	GLN	GLY	GLU	ASN	GLU	GLY	ASN	GLN	GLU	ASN								
VAL	ARG	LYS	ASP	GLU	GLN	LEU	LYS	ASP	ASP	MET	GLU	SER	ASN	GLN	THR	LEU	THR	ASN	GLN	LYS	ILE	GLU	THR	GLN	ARG	GLU	THR	LEU	GLY	VAL	ASP	ASP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

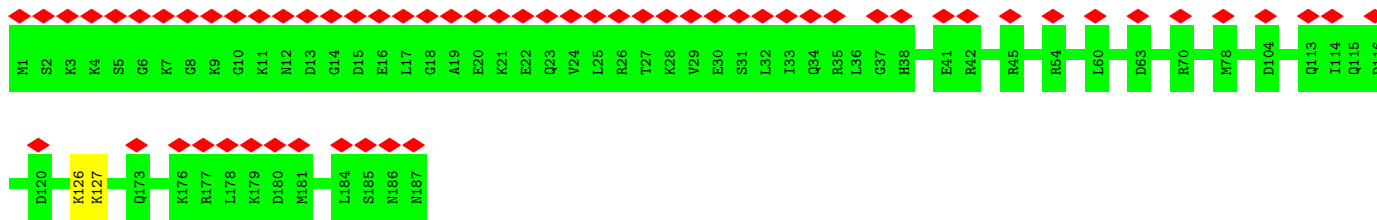
• Molecule 14: Calmodulin 7-2



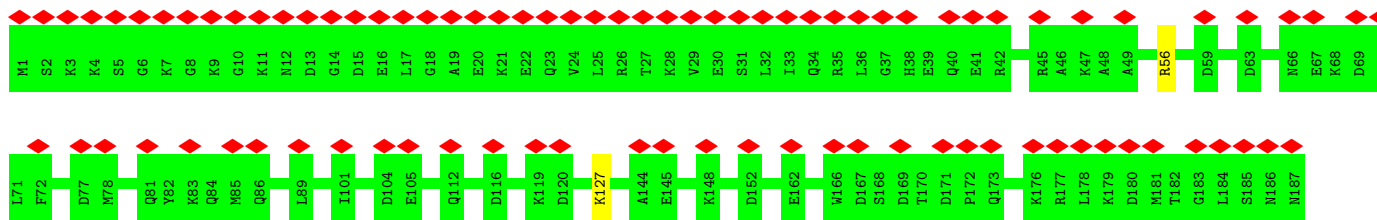
• Molecule 14: Calmodulin 7-2



• Molecule 15: Coiled-coil domain-containing protein 153



• Molecule 15: Coiled-coil domain-containing protein 153



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	211502	Depositor
Resolution determination method	OTHER	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)	1000	Depositor
Maximum defocus (nm)	3000	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.174	Depositor
Minimum map value	-0.099	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.006	Depositor
Recommended contour level	0.0217	Depositor
Map size (\AA)	706.92, 578.14, 569.92	wwPDB
Map dimensions	258, 211, 208	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	2.74, 2.74, 2.74	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	0.25	0/2485	0.47	0/3301
2	B	0.26	0/2356	0.52	0/3138
3	C	0.25	0/4482	0.44	0/6008
4	D	0.26	0/2487	0.47	0/3314
5	E	0.27	0/2470	0.47	1/3290 (0.0%)
6	F	0.24	0/3768	0.44	0/5071
7	G	0.24	0/2821	0.45	1/3772 (0.0%)
8	H	1.20	8/6994 (0.1%)	0.53	3/9419 (0.0%)
9	I	0.25	0/1586	0.41	0/2128
9	i	0.25	0/1586	0.42	0/2128
10	J	0.35	2/3173 (0.1%)	0.53	2/4219 (0.0%)
11	K	0.25	0/3620	0.44	0/4803
12	L	0.29	1/7234 (0.0%)	0.47	3/9693 (0.0%)
13	P	0.27	0/2623	0.50	0/3530
14	Q	1.98	6/1705 (0.4%)	0.61	3/2290 (0.1%)
14	R	0.25	0/1705	0.47	0/2290
15	S	0.24	0/1552	0.44	0/2057
15	s	0.24	0/1552	0.46	0/2057
All	All	0.61	17/54199 (0.0%)	0.48	13/72508 (0.0%)

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
2	B	0	1
4	D	0	1
8	H	0	2
9	i	0	2
10	J	0	2
11	K	0	3
14	Q	0	1

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Mol	Chain	#Chirality outliers	#Planarity outliers
All	All	0	12

All (17) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
8	H	8	TYR	CD2-CE2	53.51	2.19	1.39
8	H	8	TYR	CD1-CE1	51.18	2.16	1.39
14	Q	38	PHE	CD1-CE1	38.85	2.17	1.39
14	Q	38	PHE	CE1-CZ	37.73	2.09	1.37
14	Q	38	PHE	CE2-CZ	37.26	2.08	1.37
14	Q	38	PHE	CD2-CE2	36.03	2.11	1.39
8	H	8	TYR	CE2-CZ	34.73	1.83	1.38
8	H	8	TYR	CE1-CZ	34.40	1.83	1.38
8	H	8	TYR	CG-CD2	27.41	1.74	1.39
8	H	8	TYR	CG-CD1	27.20	1.74	1.39
14	Q	38	PHE	CG-CD1	22.06	1.71	1.38
14	Q	38	PHE	CG-CD2	20.96	1.70	1.38
8	H	6	GLY	N-CA	16.42	1.70	1.46
12	L	765	PRO	CG-CD	-12.14	1.10	1.50
10	J	356	ASP	N-CA	8.70	1.63	1.46
10	J	355	LYS	C-N	8.53	1.53	1.34
8	H	5	GLU	C-N	6.50	1.44	1.33

All (13) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
8	H	5	GLU	C-N-CA	15.07	153.94	122.30
12	L	765	PRO	N-CD-CG	-13.65	82.72	103.20
10	J	355	LYS	C-N-CA	13.37	155.12	121.70
14	Q	38	PHE	CB-CG-CD2	-10.76	113.27	120.80
8	H	6	GLY	N-CA-C	8.49	134.33	113.10
14	Q	38	PHE	CB-CA-C	8.26	126.92	110.40
12	L	765	PRO	CA-N-CD	-7.63	100.82	111.50
12	L	765	PRO	CA-CB-CG	-7.41	89.92	104.00
7	G	135	PRO	CA-N-CD	-6.78	102.01	111.50
14	Q	38	PHE	N-CA-CB	-6.23	99.38	110.60
5	E	36	LYS	CA-CB-CG	5.33	125.12	113.40
8	H	100	PRO	CA-N-CD	-5.24	104.17	111.50
10	J	356	ASP	CB-CA-C	-5.17	100.07	110.40

There are no chirality outliers.

All (12) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
2	B	229	TYR	Peptide
4	D	113	HIS	Peptide
8	H	7	GLY	Peptide
8	H	9	SER	Peptide
10	J	352	GLN	Peptide
10	J	354	TRP	Peptide
11	K	420	GLU	Peptide
11	K	422	SER	Peptide
11	K	423	LYS	Peptide
14	Q	38	PHE	Sidechain
9	i	178	TYR	Peptide
9	i	180	ASN	Peptide

5.2 Too-close contacts [i](#)

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

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	288/826 (35%)	275 (96%)	11 (4%)	2 (1%)	22	63
2	B	274/506 (54%)	243 (89%)	31 (11%)	0	100	100
3	C	529/575 (92%)	505 (96%)	24 (4%)	0	100	100
4	D	290/472 (61%)	284 (98%)	5 (2%)	1 (0%)	41	77
5	E	289/468 (62%)	277 (96%)	12 (4%)	0	100	100
6	F	459/461 (100%)	424 (92%)	35 (8%)	0	100	100
7	G	343/345 (99%)	321 (94%)	22 (6%)	0	100	100
8	H	816/852 (96%)	729 (89%)	87 (11%)	0	100	100
9	I	183/185 (99%)	181 (99%)	2 (1%)	0	100	100
9	i	183/185 (99%)	174 (95%)	9 (5%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
10	J	370/372 (100%)	349 (94%)	20 (5%)	1 (0%)	41	77
11	K	432/434 (100%)	394 (91%)	37 (9%)	1 (0%)	47	81
12	L	860/862 (100%)	823 (96%)	37 (4%)	0	100	100
13	P	303/794 (38%)	283 (93%)	20 (7%)	0	100	100
14	Q	200/202 (99%)	181 (90%)	18 (9%)	1 (0%)	29	69
14	R	200/202 (99%)	180 (90%)	20 (10%)	0	100	100
15	S	185/187 (99%)	175 (95%)	10 (5%)	0	100	100
15	s	185/187 (99%)	183 (99%)	2 (1%)	0	100	100
All	All	6389/8115 (79%)	5981 (94%)	402 (6%)	6 (0%)	54	86

All (6) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	186	LYS
4	D	114	LEU
11	K	419	LYS
1	A	236	GLU
10	J	150	ASP
14	Q	22	PRO

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	271/766 (35%)	270 (100%)	1 (0%)	91	94
2	B	258/473 (54%)	256 (99%)	2 (1%)	81	89
3	C	499/540 (92%)	496 (99%)	3 (1%)	86	92
4	D	272/438 (62%)	271 (100%)	1 (0%)	91	94
5	E	272/434 (63%)	269 (99%)	3 (1%)	73	84
6	F	414/414 (100%)	411 (99%)	3 (1%)	84	90
7	G	310/310 (100%)	309 (100%)	1 (0%)	92	95

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
8	H	759/786 (97%)	756 (100%)	3 (0%)	91	94
9	I	170/170 (100%)	169 (99%)	1 (1%)	86	92
9	i	170/170 (100%)	170 (100%)	0	100	100
10	J	350/350 (100%)	346 (99%)	4 (1%)	73	84
11	K	403/403 (100%)	399 (99%)	4 (1%)	76	86
12	L	776/776 (100%)	771 (99%)	5 (1%)	86	92
13	P	284/733 (39%)	284 (100%)	0	100	100
14	Q	189/189 (100%)	189 (100%)	0	100	100
14	R	189/189 (100%)	189 (100%)	0	100	100
15	S	172/172 (100%)	170 (99%)	2 (1%)	71	83
15	s	172/172 (100%)	170 (99%)	2 (1%)	71	83
All	All	5930/7485 (79%)	5895 (99%)	35 (1%)	86	92

All (35) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	70	LYS
2	B	110	ASP
2	B	239	LYS
3	C	85	ARG
3	C	161	ARG
3	C	541	ARG
4	D	38	LYS
5	E	5	LYS
5	E	53	ARG
5	E	121	LYS
6	F	84	ASN
6	F	91	LYS
6	F	250	ARG
7	G	107	LYS
8	H	460	ARG
8	H	714	LYS
8	H	718	LYS
9	I	106	LYS
10	J	150	ASP
10	J	151	ARG
10	J	153	ARG
10	J	242	LYS

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Mol	Chain	Res	Type
11	K	257	LYS
11	K	269	LYS
11	K	271	LYS
11	K	314	GLN
12	L	313	LYS
12	L	418	LYS
12	L	617	LYS
12	L	749	ARG
12	L	786	LYS
15	S	126	LYS
15	S	127	LYS
15	s	56	ARG
15	s	127	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (66) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	95	GLN
1	A	102	GLN
1	A	133	GLN
1	A	194	GLN
1	A	209	ASN
2	B	41	GLN
2	B	96	GLN
2	B	209	ASN
3	C	148	ASN
3	C	330	GLN
3	C	332	HIS
3	C	374	ASN
3	C	411	GLN
3	C	443	GLN
3	C	496	GLN
3	C	499	GLN
3	C	512	HIS
3	C	548	GLN
3	C	566	GLN
5	E	47	ASN
5	E	58	ASN
5	E	97	GLN
5	E	158	GLN
5	E	206	HIS
5	E	223	HIS

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Mol	Chain	Res	Type
6	F	128	GLN
6	F	151	GLN
6	F	231	ASN
6	F	259	ASN
6	F	294	ASN
7	G	189	GLN
7	G	195	ASN
7	G	214	HIS
7	G	235	GLN
7	G	249	ASN
8	H	85	GLN
8	H	284	HIS
8	H	326	ASN
8	H	332	ASN
8	H	604	ASN
8	H	626	ASN
8	H	643	HIS
10	J	192	GLN
10	J	231	GLN
10	J	252	HIS
11	K	155	ASN
11	K	245	GLN
12	L	11	GLN
12	L	33	GLN
12	L	73	HIS
12	L	75	GLN
12	L	102	ASN
12	L	284	GLN
12	L	415	GLN
12	L	534	GLN
12	L	655	ASN
13	P	284	ASN
13	P	362	GLN
14	Q	32	HIS
14	Q	145	ASN
15	S	158	GLN
15	S	165	GLN
9	i	170	HIS
9	i	179	ASN
9	i	180	ASN
9	i	182	GLN

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 monosaccharides 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.

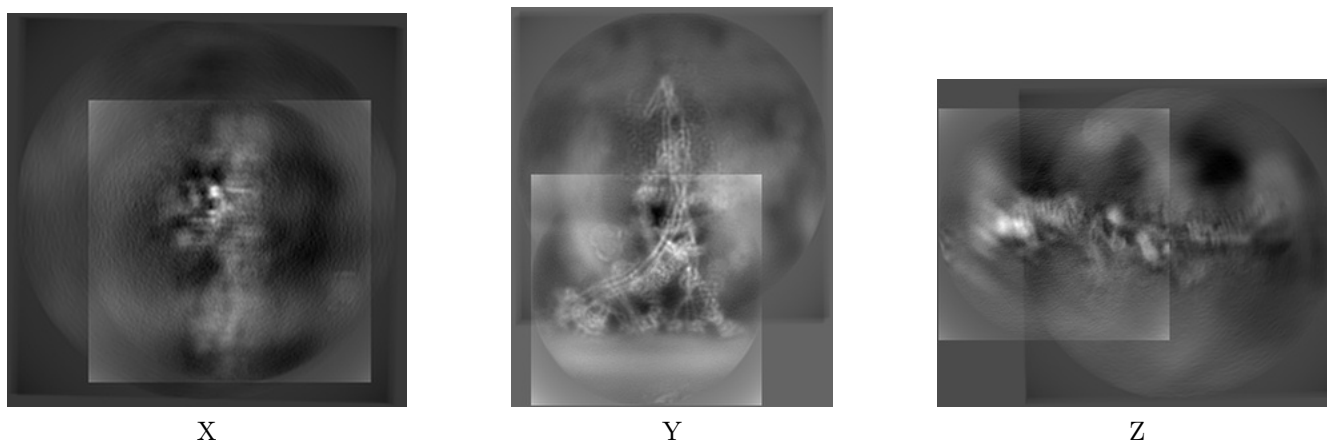
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-41251. These allow visual inspection of the internal detail of the map and identification of artifacts.

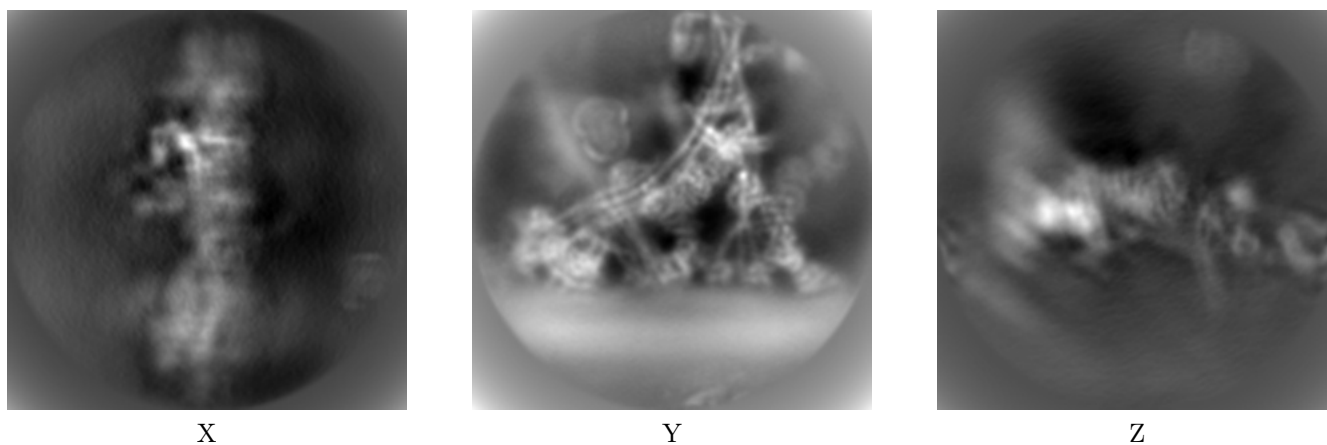
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

6.1.1 Primary map



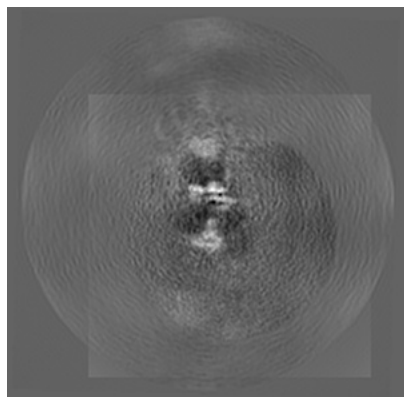
6.1.2 Raw map



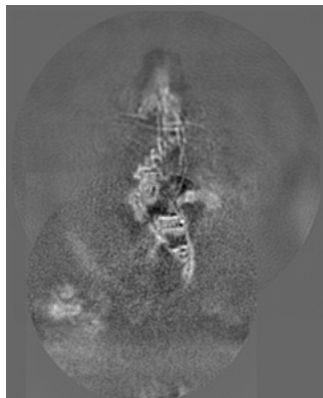
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

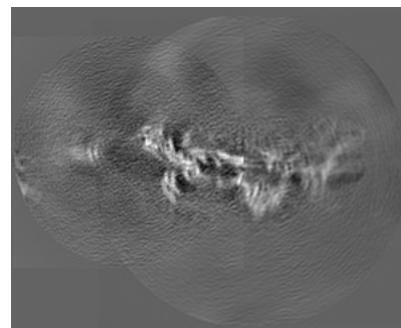
6.2.1 Primary map



X Index: 129

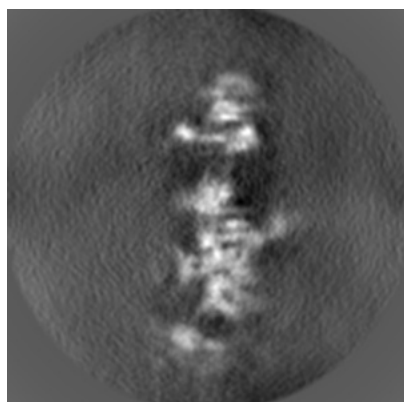


Y Index: 105

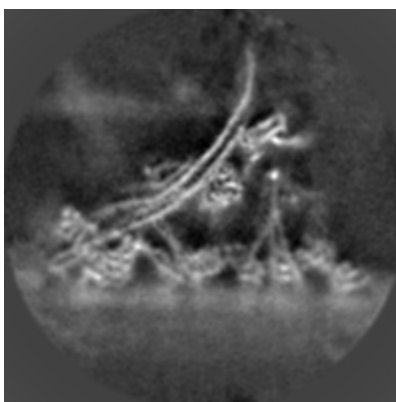


Z Index: 104

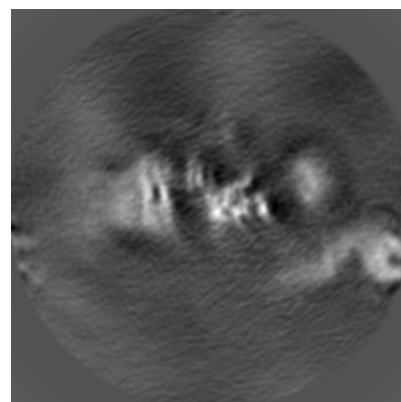
6.2.2 Raw map



X Index: 75



Y Index: 75

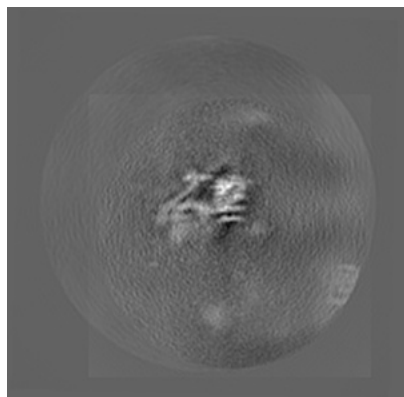


Z Index: 75

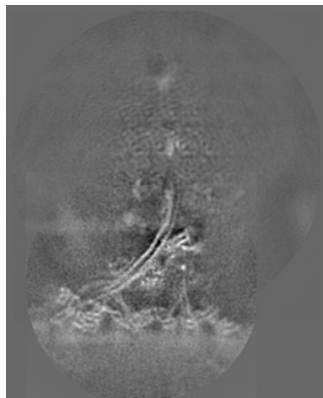
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

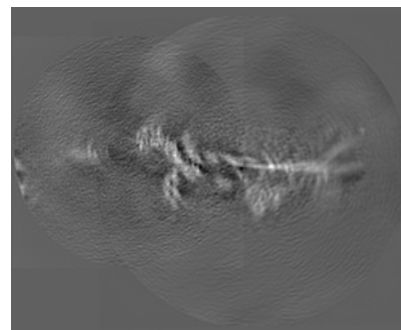
6.3.1 Primary map



X Index: 105

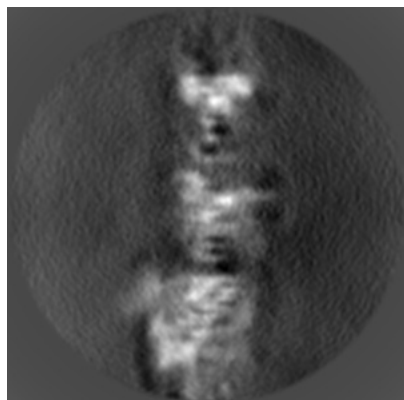


Y Index: 117

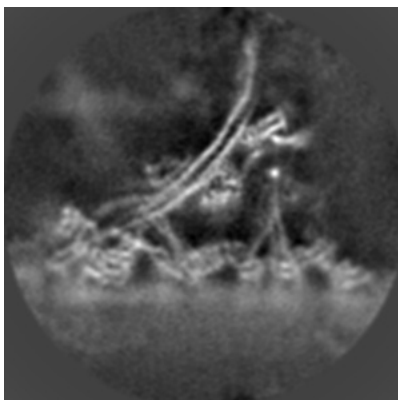


Z Index: 102

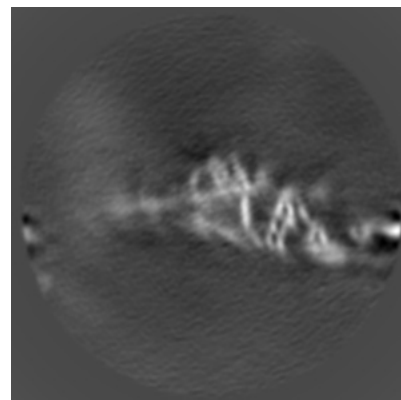
6.3.2 Raw map



X Index: 56



Y Index: 74

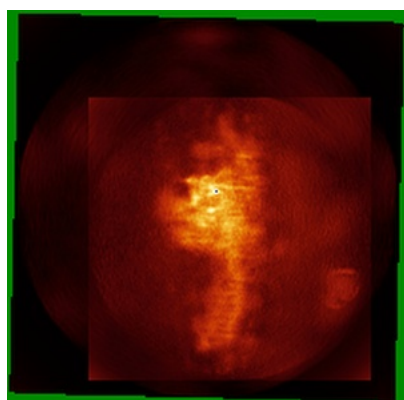


Z Index: 101

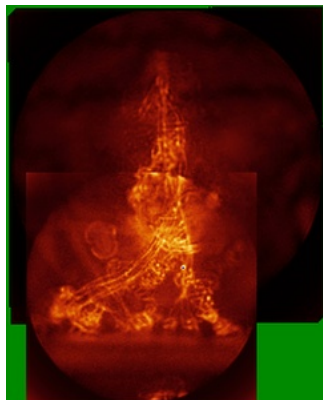
The images above show the largest variance slices of the map in three orthogonal directions.

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

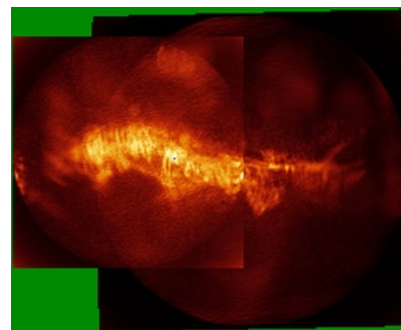
6.4.1 Primary map



X

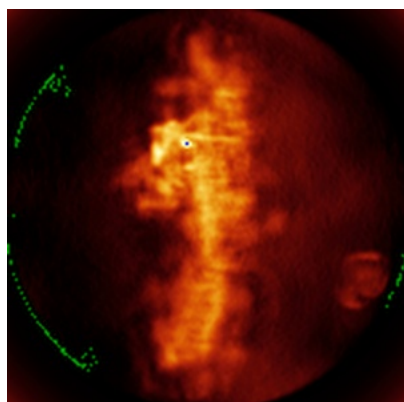


Y

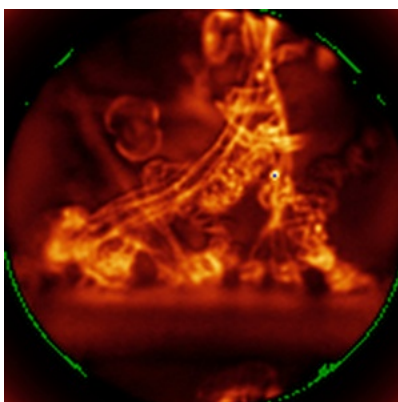


Z

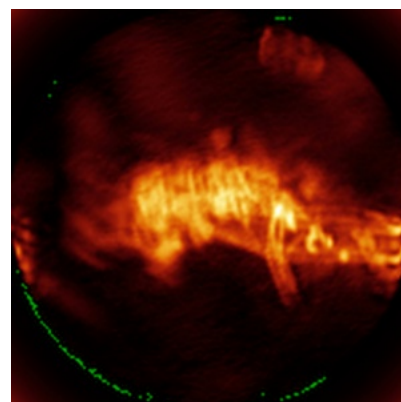
6.4.2 Raw map



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 0.0217. 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.

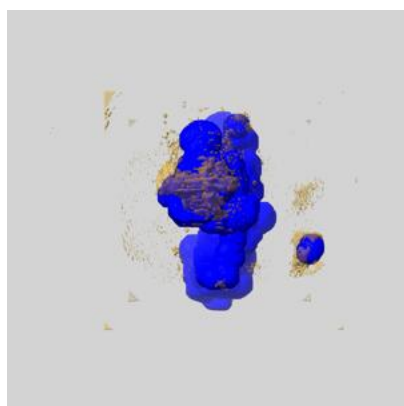
6.6 Mask visualisation [i](#)

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

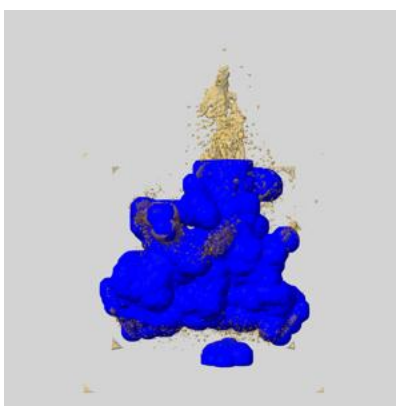
A mask typically either:

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

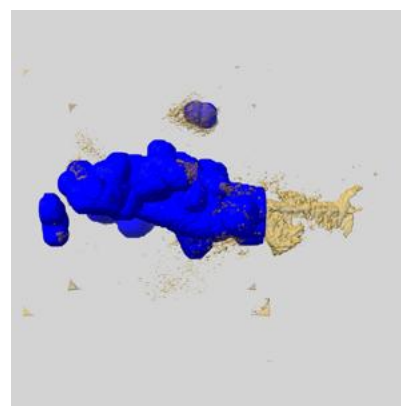
6.6.1 emd_41251_msk_1.map [i](#)



X



Y

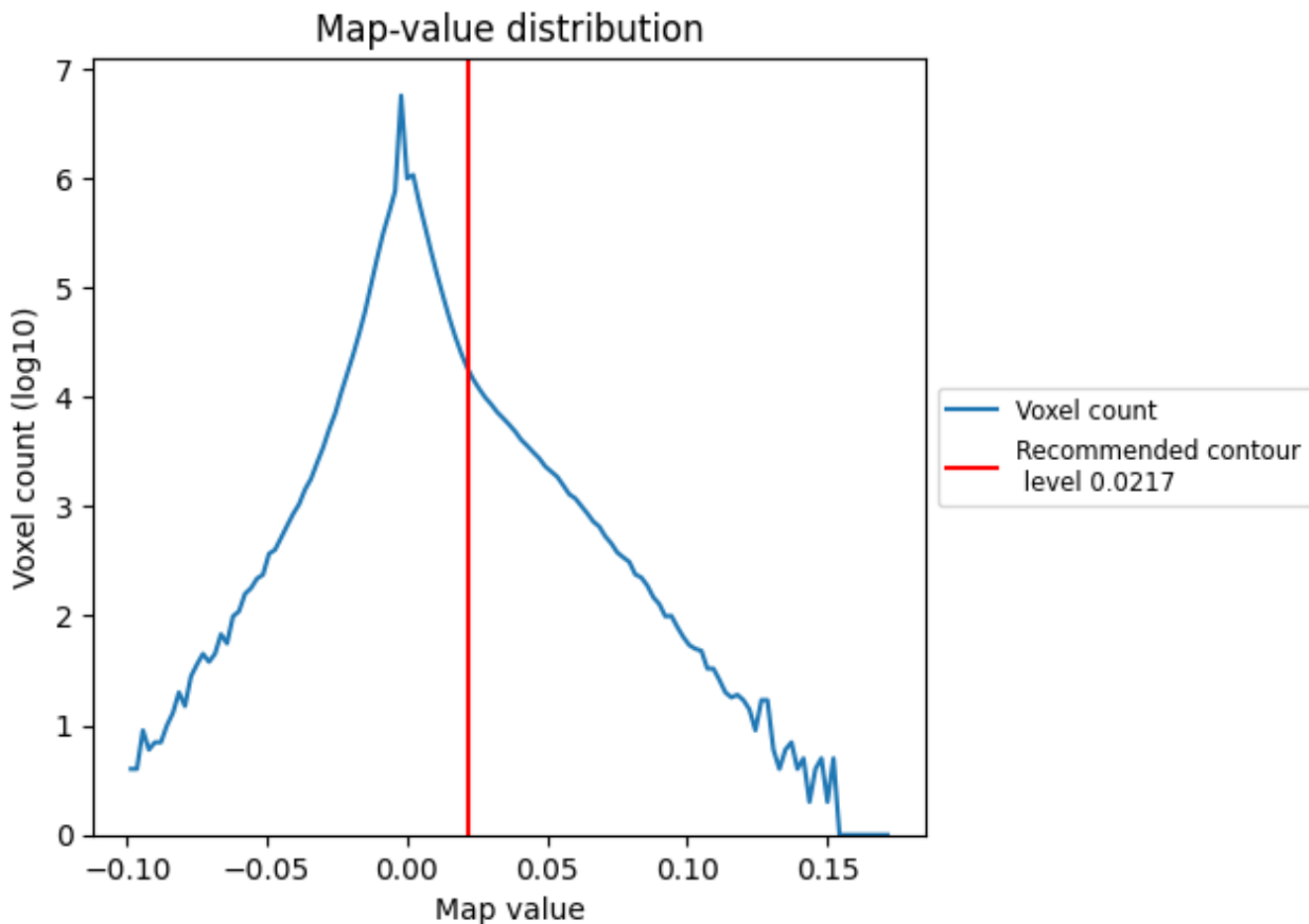


Z

7 Map analysis [i](#)

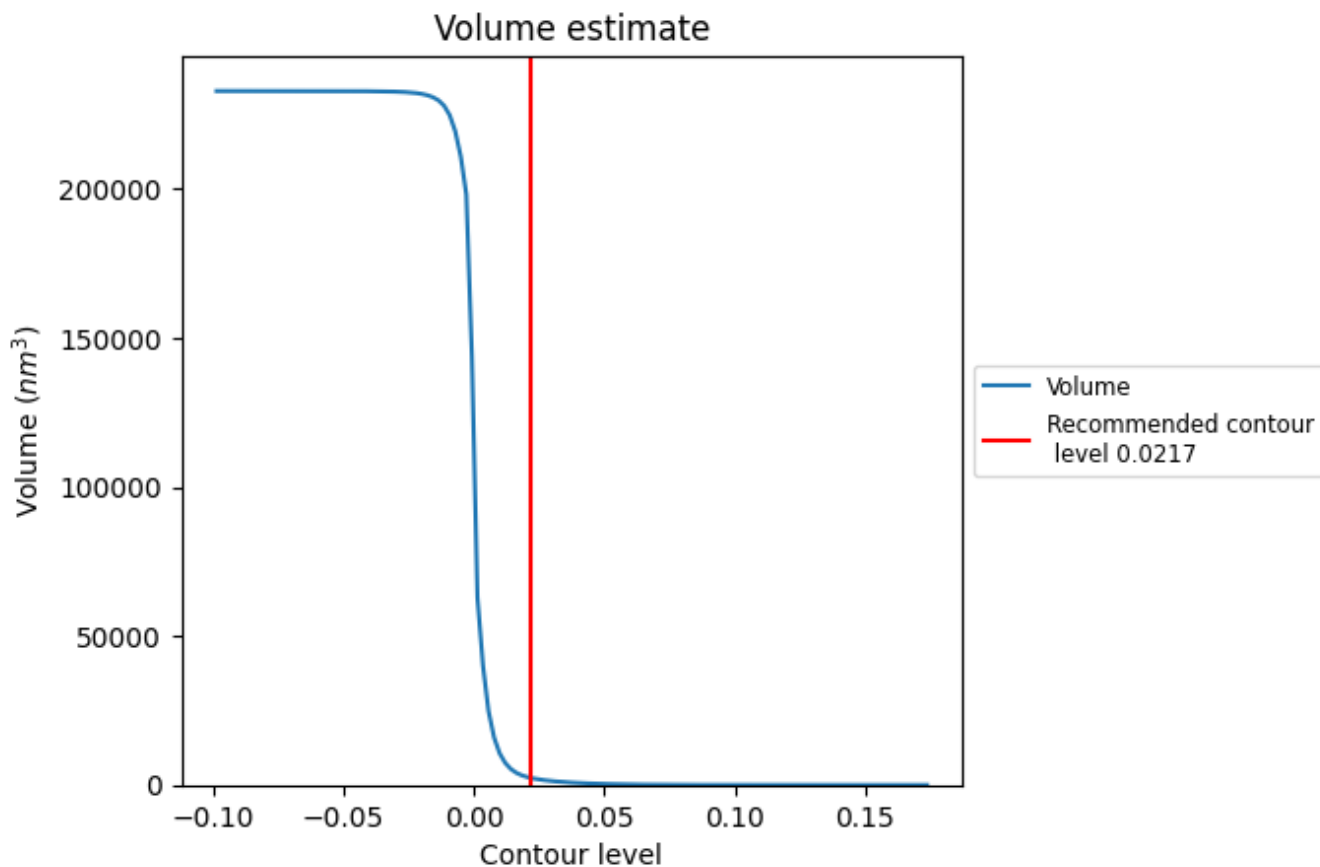
This section contains the results of statistical analysis of the map.

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 2392 nm³; this corresponds to an approximate mass of 2161 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.

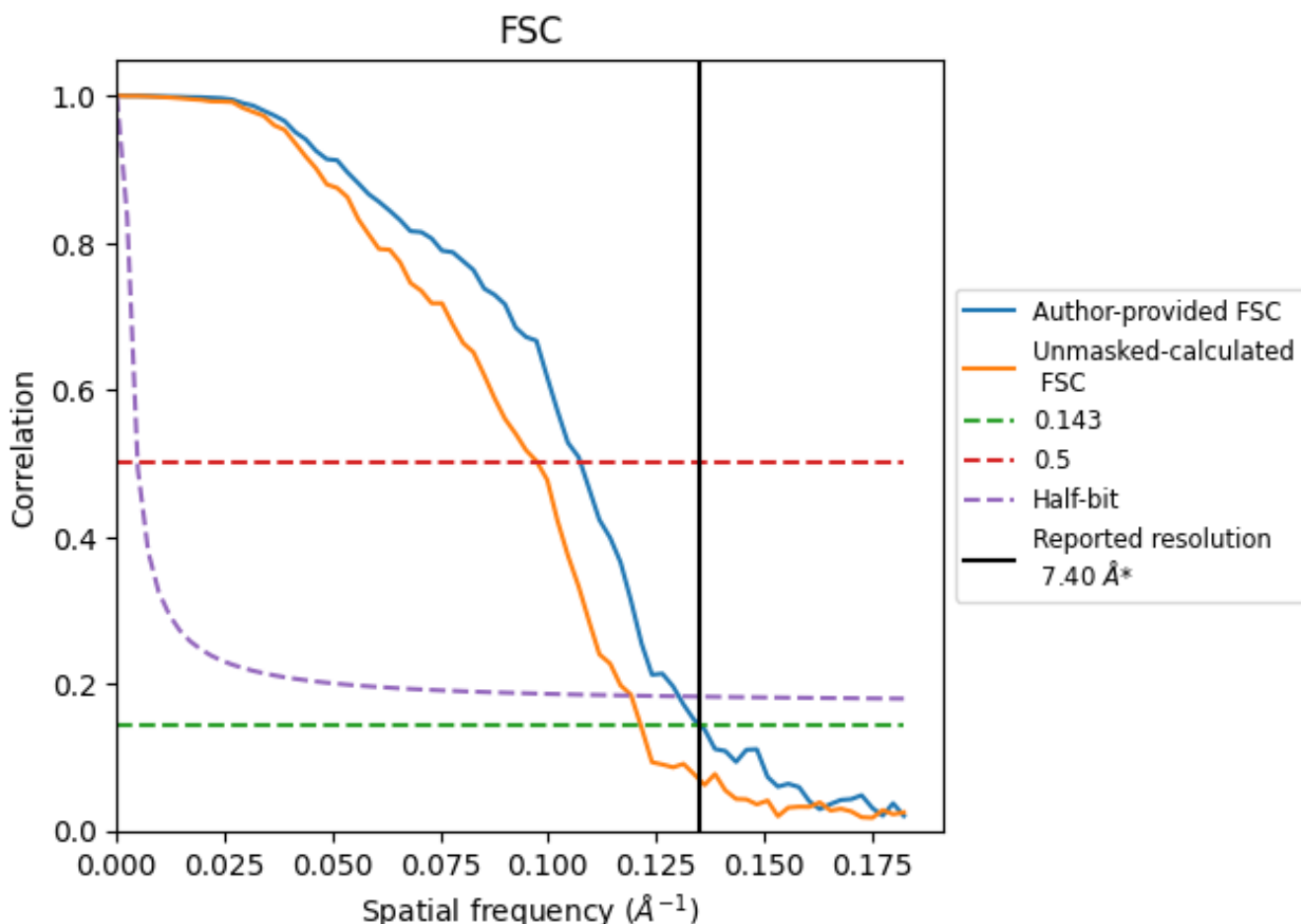
7.3 Rotationally averaged power spectrum [i](#)

This section was not generated. The rotationally averaged power spectrum is only generated for cubic maps.

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 0.135 Å⁻¹

8.2 Resolution estimates [i](#)

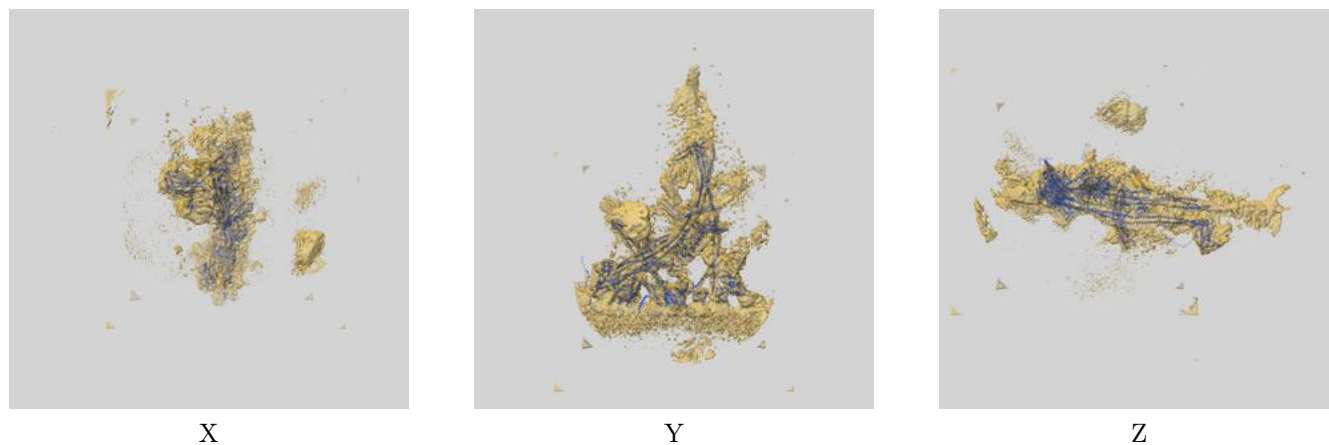
Resolution estimate (Å)	Estimation criterion (FSC cut-off)			
	0.143	0.5	Half-bit	Other
Reported by author	-	-	-	7.40
Author-provided FSC curve	7.39	9.30	7.67	-
Unmasked-calculated*	8.23	10.25	8.38	-

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

9 Map-model fit [i](#)

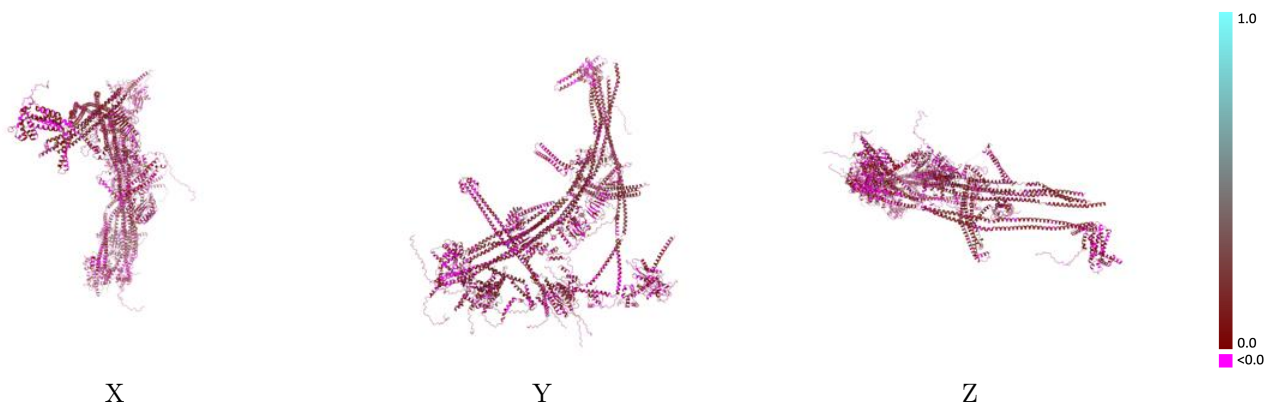
This section contains information regarding the fit between EMDB map EMD-41251 and PDB model 8TH8. Per-residue inclusion information can be found in section 3 on page 7.

9.1 Map-model overlay [i](#)



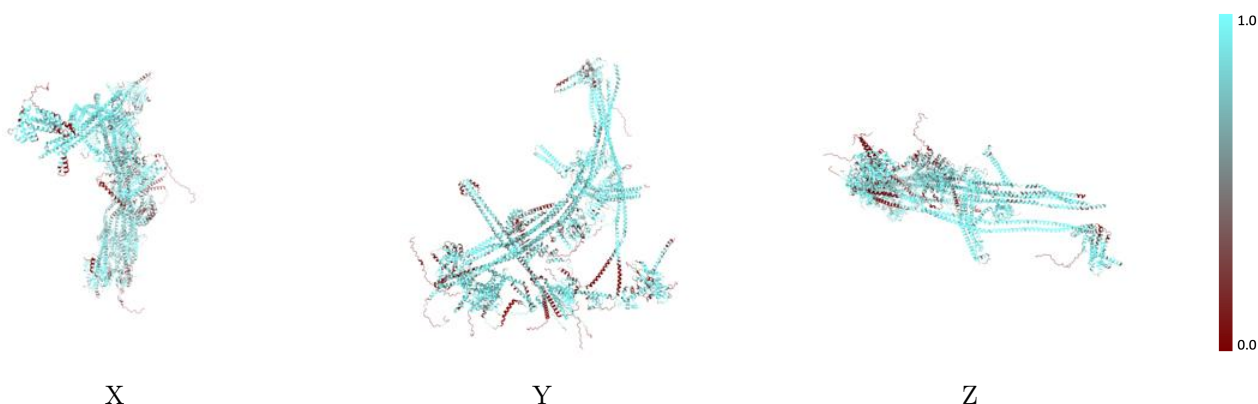
The images above show the 3D surface view of the map at the recommended contour level 0.0217 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



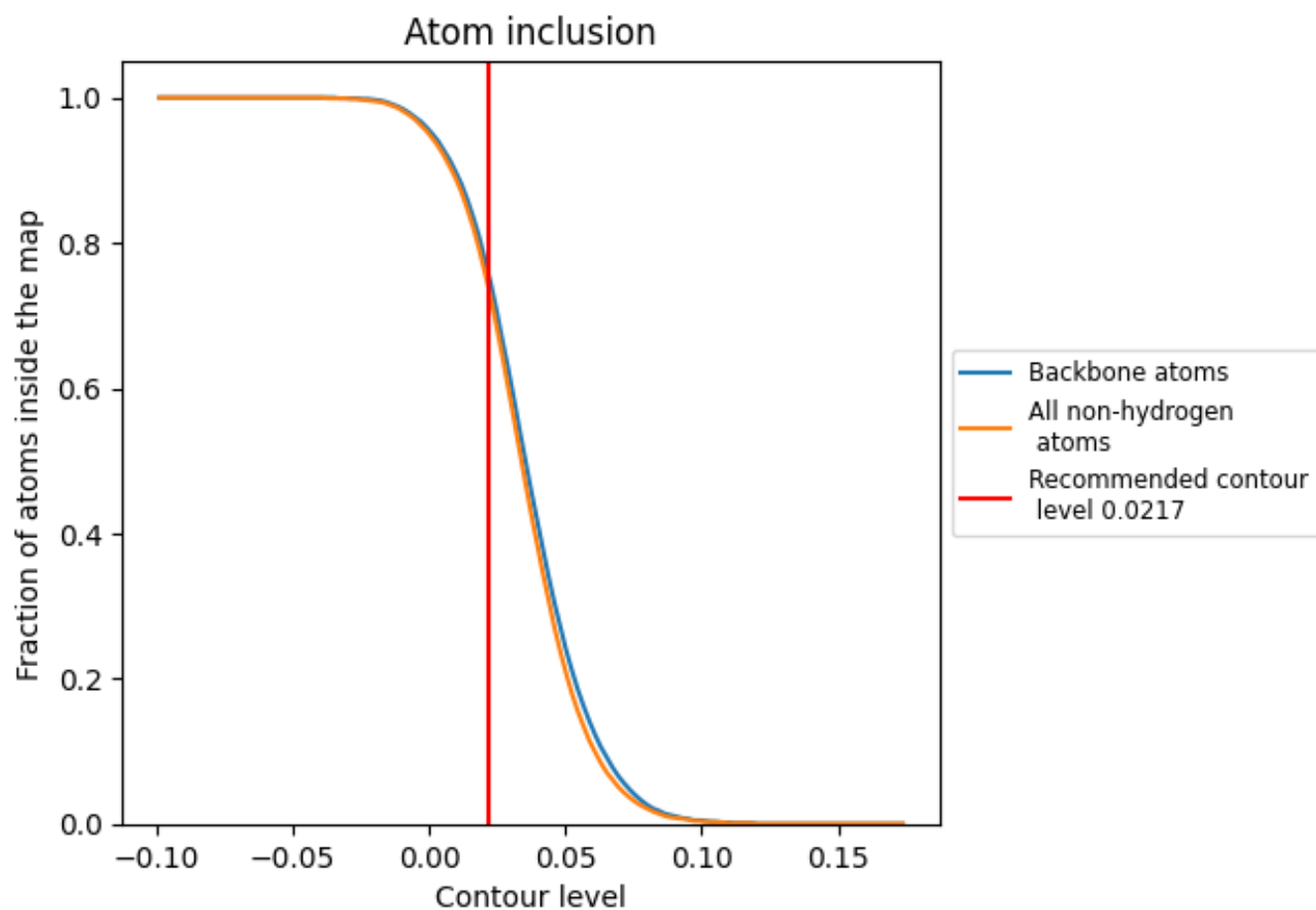
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.0217).







































9.4 Atom inclusion [i](#)



At the recommended contour level, 76% 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 (0.0217) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.7420	 0.0870
A	 0.8020	 0.1410
B	 0.6920	 0.1080
C	 0.8960	 0.1310
D	 0.7720	 0.1100
E	 0.7300	 0.0830
F	 0.5790	 0.0990
G	 0.8340	 0.0890
H	 0.7290	 0.0720
I	 0.8710	 0.0610
J	 0.6900	 0.0730
K	 0.7400	 0.0670
L	 0.7820	 0.0980
P	 0.7140	 0.0590
Q	 0.6980	 0.0600
R	 0.7690	 0.0630
S	 0.5770	 0.0790
i	 0.7130	 0.0500
s	 0.4810	 0.0570

