Full wwPDB EM Validation Report ⓘ

Sep 22, 2025 – 12:30 PM JST

PDB ID	:	9LEO / pdb_00009leo
EMDB ID	:	EMD-63031
Title	:	LayV-G Head in complex of LayG-1069 and LayG-1133
Authors	:	Yan, R.H.; Wu, S.Y.
Deposited on	:	2025-01-07
Resolution	:	2.92 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:

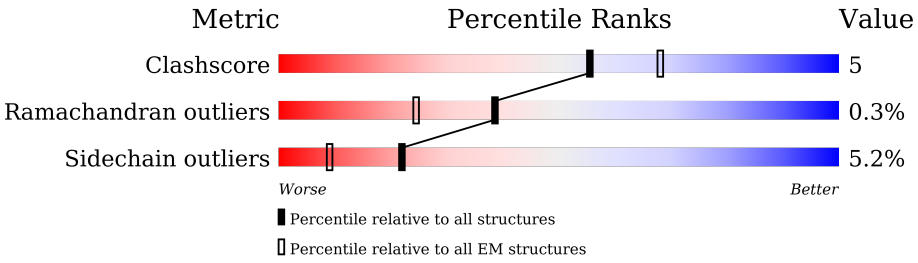
EMDB validation analysis	:	0.0.1.dev129
MolProbity	:	4-5-2 with Phenix2.0
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.46

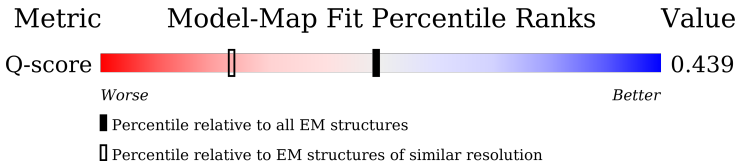
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:
ELECTRON MICROSCOPY

The reported resolution of this entry is 2.92 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	13007 (2.42 - 3.42)

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	A	223	76% 18% 6%
2	B	214	80% 9% • 8%
3	C	222	63% 15% 22%
4	D	214	75% 16% • 7%

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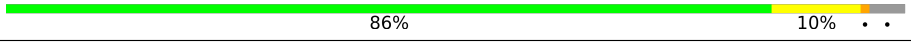
Mol	Chain	Length	Quality of chain
5	H	447	

2 Entry composition (i)

There are 5 unique types of molecules in this entry. The entry contains 18413 atoms, of which 9056 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 LayG-1069 heavy chain.

Mol	Chain	Residues	Atoms						AltConf	Trace
			Total	C	H	N	O	S		
1	A	210	3168	1021	1559	268	315	5	0	0

- Molecule 2 is a protein called LayG-1069 light chain.

Mol	Chain	Residues	Atoms						AltConf	Trace
			Total	C	H	N	O	S		
2	B	196	2995	963	1472	248	306	6	0	0

- Molecule 3 is a protein called LayG-1133 heavy chain.

Mol	Chain	Residues	Atoms						AltConf	Trace
			Total	C	H	N	O	S		
3	C	174	2658	873	1298	213	270	4	0	0

- Molecule 4 is a protein called LayG-1133 light chain.

Mol	Chain	Residues	Atoms						AltConf	Trace
			Total	C	H	N	O	S		
4	D	200	2998	944	1481	257	310	6	0	0

- Molecule 5 is a protein called Attachment glycoprotein.

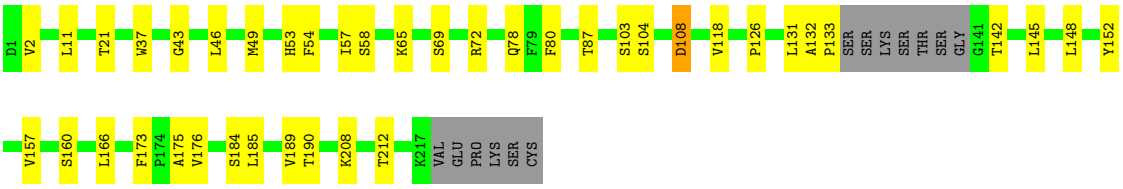
Mol	Chain	Residues	Atoms						AltConf	Trace
			Total	C	H	N	O	S		
5	H	430	6594	2129	3246	550	646	23	0	0

3 Residue-property plots (i)

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.

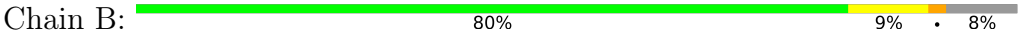
• Molecule 1: LayG-1069 heavy chain

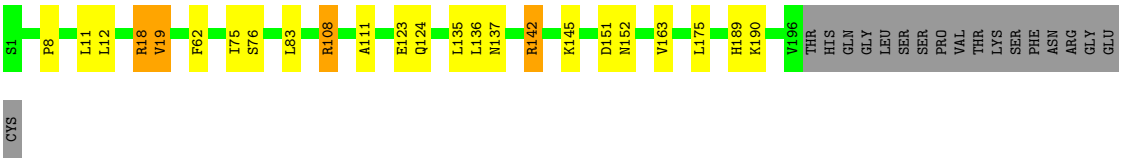
Chain A:



• Molecule 2: LayG-1069 light chain

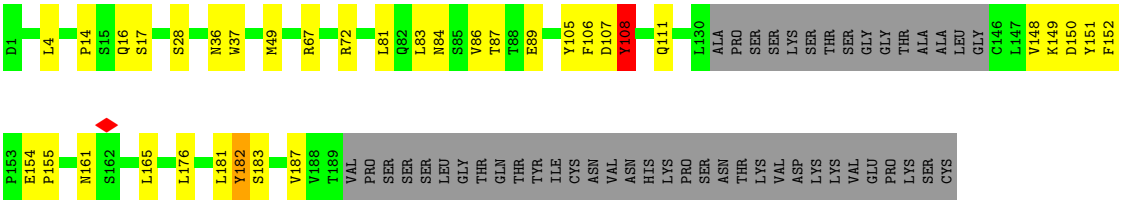
Chain B:





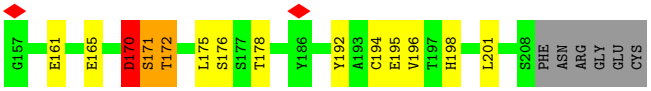
• Molecule 3: LayG-1133 heavy chain

Chain C:



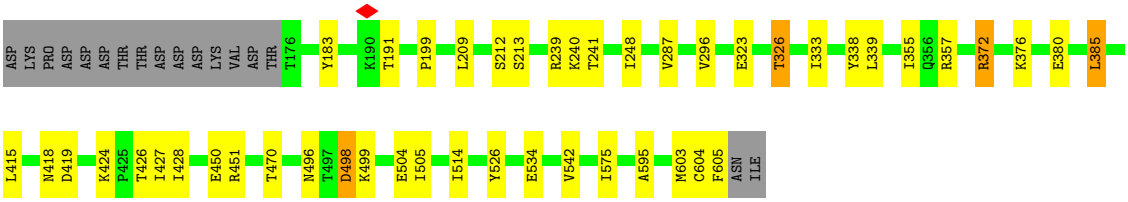
• Molecule 4: LayG-1133 light chain

Chain D:



• Molecule 5: Attachment glycoprotein

Chain H:



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	260375	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 ($e^-/Å^2$)	1.5625	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	0.895	Depositor
Minimum map value	-0.338	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	0.025	Depositor
Recommended contour level	0.1	Depositor
Map size (Å)	256.5, 256.5, 256.5	wwPDB
Map dimensions	300, 300, 300	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.855, 0.855, 0.855	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	0.53	0/1653	0.81	3/2255 (0.1%)
2	B	0.42	0/1557	0.69	1/2114 (0.0%)
3	C	0.57	0/1400	0.88	4/1916 (0.2%)
4	D	0.45	0/1544	0.65	1/2089 (0.0%)
5	H	0.43	0/3432	0.70	1/4660 (0.0%)
All	All	0.47	0/9586	0.74	10/13034 (0.1%)

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	A	0	1
2	B	0	3
3	C	0	2
4	D	0	3
5	H	0	2
All	All	0	11

There are no bond length outliers.

All (10) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	C	182	TYR	CB-CA-C	-6.96	101.24	109.80
1	A	37	TRP	CA-C-O	-6.44	113.41	120.36
1	A	108	ASP	CA-CB-CG	6.21	118.81	112.60
5	H	498	ASP	CA-CB-CG	5.99	118.59	112.60
1	A	43	GLY	N-CA-C	-5.94	107.20	114.92
3	C	108	TYR	N-CA-CB	5.62	120.00	110.49
4	D	170	ASP	CA-C-O	-5.56	113.28	119.67
3	C	182	TYR	N-CA-C	5.54	118.84	110.64

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	137	ASN	CA-C-O	-5.39	115.15	120.70
3	C	154	GLU	N-CA-C	5.31	113.00	108.22

There are no chirality outliers.

All (11) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	72	ARG	Sidechain
2	B	108	ARG	Sidechain
2	B	142	ARG	Sidechain
2	B	18	ARG	Sidechain
3	C	152	PHE	Peptide
3	C	72	ARG	Sidechain
4	D	140	TYR	Peptide
4	D	142	ARG	Sidechain
4	D	69	ARG	Sidechain
5	H	372	ARG	Sidechain
5	H	451	ARG	Sidechain

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	1609	1559	1558	18	0
2	B	1523	1472	1472	14	0
3	C	1360	1298	1297	19	0
4	D	1517	1481	1478	18	0
5	H	3348	3246	3246	22	0
All	All	9357	9056	9051	89	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 (89) 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)
3:C:49:MET:HE1	3:C:81:LEU:HD21	1.60	0.83
4:D:136:LEU:HD22	4:D:175:LEU:HD23	1.71	0.72
4:D:136:LEU:HD21	4:D:196:VAL:HG23	1.73	0.69
1:A:175:ALA:HB2	1:A:185:LEU:HD21	1.78	0.66
5:H:333:ILE:HG21	5:H:427:ILE:HD12	1.76	0.66
2:B:163:VAL:HG12	2:B:175:LEU:HD23	1.79	0.64
2:B:108:ARG:HH12	2:B:111:ALA:CB	2.12	0.61
5:H:603:MET:HE2	5:H:604:CYS:N	2.16	0.60
2:B:19:VAL:HG22	2:B:75:ILE:HG22	1.82	0.60
3:C:151:TYR:CZ	3:C:182:TYR:O	2.56	0.59
5:H:183:TYR:CE2	5:H:575:ILE:HD12	2.38	0.58
1:A:152:TYR:OH	1:A:185:LEU:HD23	2.05	0.57
5:H:514:ILE:HG22	5:H:526:TYR:HB3	1.87	0.56
1:A:131:LEU:HD21	1:A:148:LEU:HB2	1.86	0.56
4:D:47:LEU:HG	4:D:58:MET:HE2	1.88	0.56
4:D:175:LEU:HD12	4:D:176:SER:H	1.70	0.56
3:C:87:THR:HG23	3:C:89:GLU:HB3	1.87	0.55
5:H:415:LEU:HD11	5:H:427:ILE:HG23	1.89	0.55
5:H:385:LEU:HD13	5:H:385:LEU:O	2.06	0.55
1:A:184:SER:C	1:A:185:LEU:HD22	2.32	0.55
1:A:175:ALA:CB	1:A:185:LEU:HD21	2.37	0.54
2:B:108:ARG:HH12	2:B:111:ALA:HB2	1.71	0.54
3:C:150:ASP:HA	3:C:181:LEU:HB3	1.90	0.54
3:C:151:TYR:CE1	3:C:182:TYR:O	2.64	0.51
3:C:83:LEU:HD23	3:C:86:VAL:HG12	1.93	0.51
5:H:338:TYR:O	5:H:339:LEU:HD23	2.11	0.51
3:C:105:TYR:HB2	4:D:46:LEU:HD22	1.94	0.50
5:H:199:PRO:HD3	5:H:542:VAL:HG12	1.94	0.50
5:H:287:VAL:HG12	5:H:296:VAL:HG22	1.95	0.49
2:B:83:LEU:O	2:B:83:LEU:HD12	2.12	0.49
4:D:138:ASN:HA	4:D:172:THR:HG23	1.96	0.48
1:A:166:LEU:HD22	1:A:189:VAL:HG21	1.96	0.48
5:H:376:LYS:HA	5:H:376:LYS:HE2	1.96	0.48
5:H:427:ILE:O	5:H:428:ILE:HD13	2.14	0.47
3:C:37:TRP:CD2	3:C:81:LEU:HD22	2.49	0.47
4:D:15:VAL:HG23	4:D:106:ILE:HD11	1.96	0.47
5:H:240:LYS:HG3	5:H:241:THR:HG23	1.96	0.47
3:C:149:LYS:HA	3:C:183:SER:HB2	1.97	0.47
3:C:161:ASN:HD22	3:C:165:LEU:HB3	1.80	0.46
5:H:239:ARG:HH12	5:H:248:ILE:HD11	1.80	0.46
1:A:126:PRO:HD2	1:A:212:THR:HG21	1.99	0.46
1:A:148:LEU:HD12	1:A:185:LEU:O	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:78:LEU:HD12	4:D:106:ILE:HD13	1.97	0.45
5:H:603:MET:HE2	5:H:603:MET:C	2.42	0.45
3:C:84:ASN:N	3:C:84:ASN:HD22	2.14	0.45
4:D:175:LEU:HD12	4:D:176:SER:N	2.30	0.45
2:B:8:PRO:HG2	2:B:11:LEU:HD21	1.99	0.45
2:B:62:PHE:CE1	2:B:75:ILE:HD12	2.52	0.45
2:B:108:ARG:HH12	2:B:111:ALA:HB3	1.80	0.44
3:C:187:VAL:HG21	4:D:135:LEU:HD11	1.98	0.44
1:A:87:THR:C	1:A:118:VAL:HG11	2.43	0.44
4:D:196:VAL:HG13	4:D:201:LEU:HD23	2.00	0.44
3:C:149:LYS:HD3	3:C:183:SER:HB2	1.98	0.44
5:H:209:LEU:HD22	5:H:595:ALA:CB	2.48	0.44
2:B:12:LEU:H	2:B:12:LEU:HD23	1.82	0.43
3:C:4:LEU:HD11	3:C:108:TYR:HB3	1.99	0.43
3:C:14:PRO:HA	3:C:86:VAL:O	2.18	0.43
1:A:21:THR:HG23	1:A:80:PHE:CE1	2.54	0.42
1:A:132:ALA:HB1	1:A:133:PRO:HD2	2.01	0.42
5:H:323:GLU:HB2	5:H:326:THR:HB	2.00	0.42
1:A:133:PRO:HB3	1:A:145:LEU:HD21	2.01	0.42
4:D:50:GLY:O	4:D:51:ALA:HB3	2.19	0.42
1:A:53:HIS:CE1	1:A:54:PHE:CE2	3.07	0.42
1:A:142:THR:O	1:A:190:THR:HG23	2.19	0.42
2:B:151:ASP:OD2	2:B:189:HIS:ND1	2.53	0.42
4:D:196:VAL:HG22	4:D:196:VAL:O	2.19	0.42
4:D:18:THR:HG22	4:D:76:SER:HA	2.02	0.42
1:A:173:PHE:O	1:A:185:LEU:HD12	2.20	0.41
3:C:67:ARG:HG2	3:C:84:ASN:HB2	2.02	0.41
2:B:123:GLU:OE1	2:B:124:GLN:N	2.53	0.41
5:H:357:ARG:NH2	5:H:450:GLU:OE1	2.52	0.41
5:H:376:LYS:HD3	5:H:376:LYS:C	2.45	0.41
3:C:106:PHE:O	3:C:107:ASP:C	2.63	0.41
5:H:355:ILE:C	5:H:355:ILE:HD12	2.46	0.41
4:D:170:ASP:O	4:D:171:SER:CB	2.68	0.41
2:B:135:LEU:C	2:B:136:LEU:HD12	2.46	0.41
3:C:86:VAL:O	3:C:86:VAL:HG23	2.20	0.41
1:A:142:THR:O	1:A:142:THR:HG22	2.20	0.41
4:D:161:GLU:HG2	4:D:175:LEU:HD11	2.01	0.41
1:A:152:TYR:OH	1:A:157:VAL:HG11	2.21	0.41
2:B:18:ARG:HH21	2:B:76:SER:HA	1.86	0.41
4:D:144:ALA:HA	4:D:198:HIS:HB2	2.01	0.41
4:D:150:VAL:HG13	4:D:192:TYR:CE1	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:49:MET:CE	3:C:81:LEU:HD21	2.43	0.41
2:B:75:ILE:O	2:B:75:ILE:HG23	2.20	0.40
5:H:212:SER:OG	5:H:213:SER:N	2.54	0.40
1:A:176:VAL:O	1:A:176:VAL:HG13	2.20	0.40
5:H:338:TYR:C	5:H:339:LEU:HD23	2.45	0.40
5:H:418:ASN:HD22	5:H:426:THR:HB	1.87	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	206/223 (92%)	194 (94%)	12 (6%)	0	100	100
2	B	194/214 (91%)	185 (95%)	9 (5%)	0	100	100
3	C	170/222 (77%)	155 (91%)	13 (8%)	2 (1%)	11	33
4	D	192/214 (90%)	184 (96%)	6 (3%)	2 (1%)	13	38
5	H	428/447 (96%)	397 (93%)	31 (7%)	0	100	100
All	All	1190/1320 (90%)	1115 (94%)	71 (6%)	4 (0%)	38	65

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
4	D	171	SER
3	C	108	TYR
4	D	112	ALA
3	C	155	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	186/198 (94%)	172 (92%)	14 (8%)	11 32
2	B	172/188 (92%)	167 (97%)	5 (3%)	37 70
3	C	155/196 (79%)	148 (96%)	7 (4%)	23 54
4	D	172/185 (93%)	158 (92%)	14 (8%)	9 28
5	H	373/390 (96%)	358 (96%)	15 (4%)	27 59
All	All	1058/1157 (91%)	1003 (95%)	55 (5%)	22 49

All (55) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	2	VAL
1	A	11	LEU
1	A	46	LEU
1	A	49	MET
1	A	57	ILE
1	A	58	SER
1	A	65	LYS
1	A	69	SER
1	A	78	GLN
1	A	103	SER
1	A	104	SER
1	A	108	ASP
1	A	160	SER
1	A	208	LYS
2	B	19	VAL
2	B	142	ARG
2	B	145	LYS
2	B	152	ASN
2	B	190	LYS
3	C	16	GLN
3	C	17	SER
3	C	28	SER
3	C	36	ASN

Continued on next page...

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Mol	Chain	Res	Type
3	C	111	GLN
3	C	148	VAL
3	C	176	LEU
4	D	39	LYS
4	D	42	LYS
4	D	79	HIS
4	D	105	GLU
4	D	106	ILE
4	D	142	ARG
4	D	143	GLU
4	D	145	LYS
4	D	165	GLU
4	D	170	ASP
4	D	172	THR
4	D	178	THR
4	D	194	CYS
4	D	195	GLU
5	H	191	THR
5	H	326	THR
5	H	372	ARG
5	H	380	GLU
5	H	385	LEU
5	H	419	ASP
5	H	424	LYS
5	H	470	THR
5	H	496	ASN
5	H	498	ASP
5	H	499	LYS
5	H	504	GLU
5	H	505	ILE
5	H	534	GLU
5	H	605	PHE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (14) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	40	GLN
1	A	53	HIS
2	B	155	GLN
3	C	3	GLN
3	C	16	GLN
3	C	84	ASN

Continued on next page...

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Mol	Chain	Res	Type
3	C	161	ASN
4	D	79	HIS
4	D	166	GLN
5	H	192	ASN
5	H	208	ASN
5	H	312	HIS
5	H	418	ASN
5	H	601	GLN

5.3.3 RNA

There are no RNA molecules in this entry.

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 oligosaccharides 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.

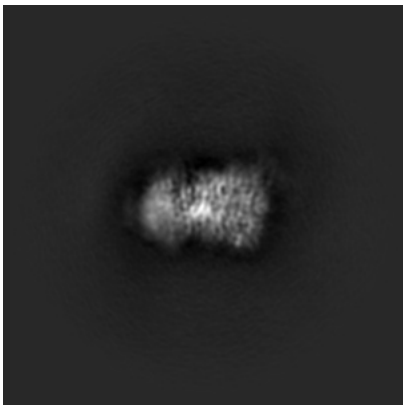
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-63031. These allow visual inspection of the internal detail of the map and identification of artifacts.

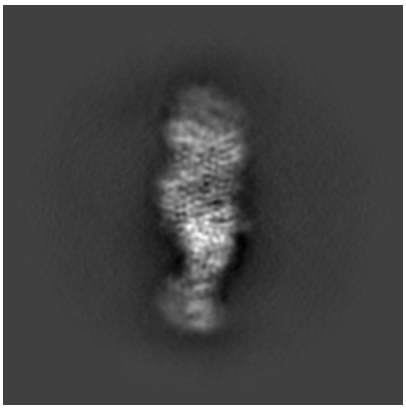
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

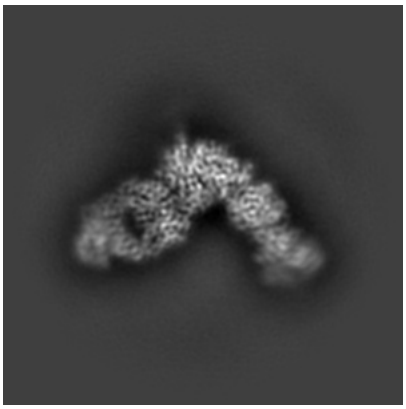
6.1.1 Primary map



X

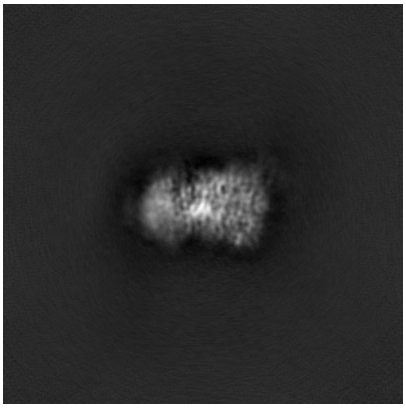


Y

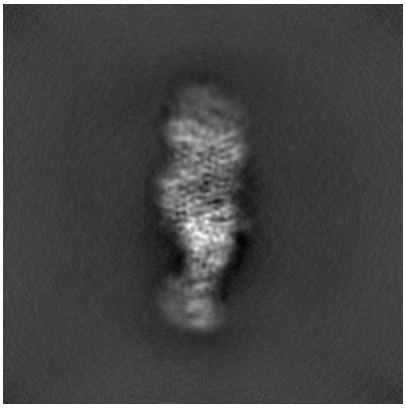


Z

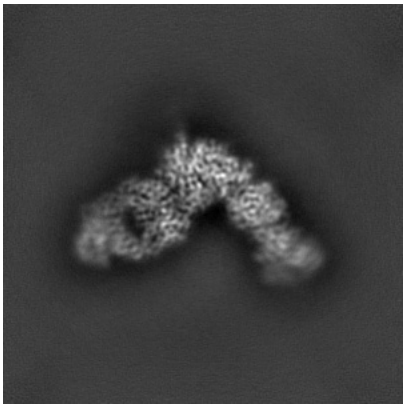
6.1.2 Raw map



X



Y

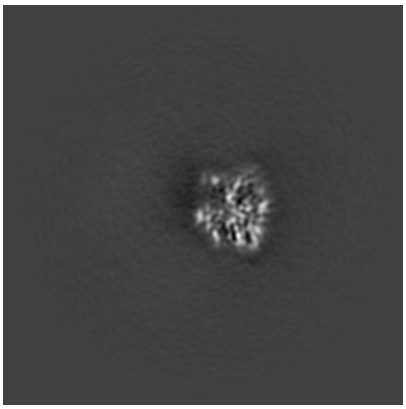


Z

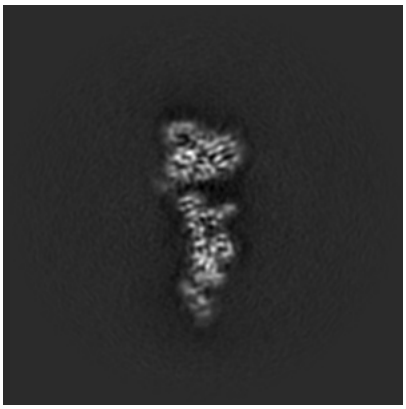
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

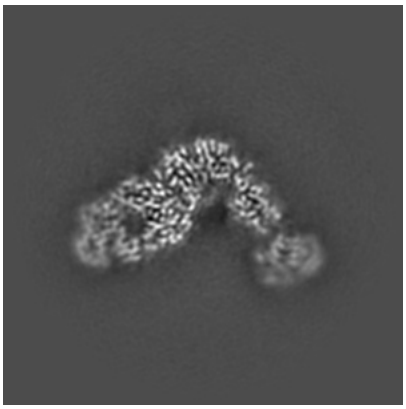
6.2.1 Primary map



X Index: 150

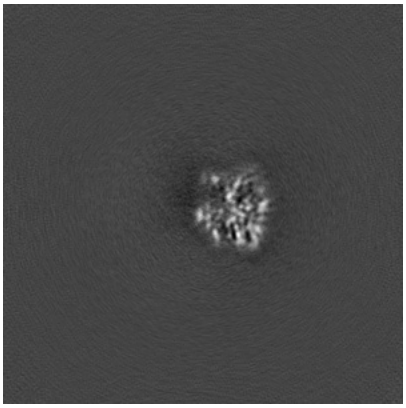


Y Index: 150

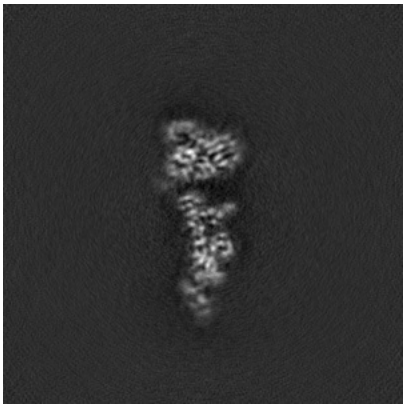


Z Index: 150

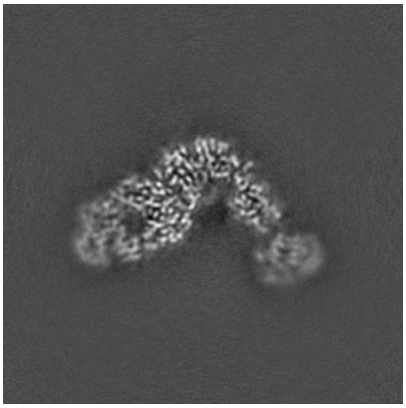
6.2.2 Raw map



X Index: 150



Y Index: 150

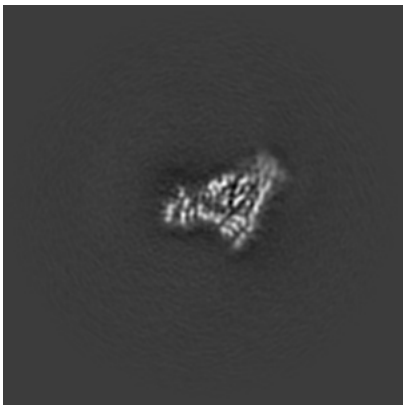


Z Index: 150

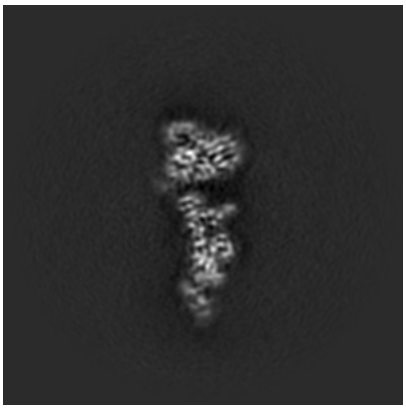
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

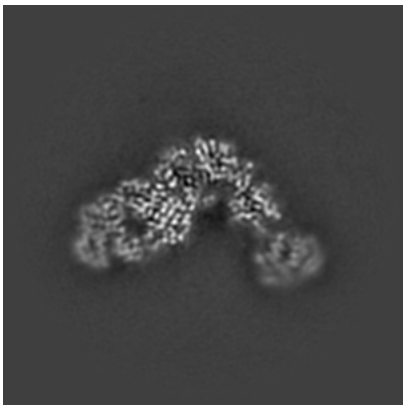
6.3.1 Primary map



X Index: 134

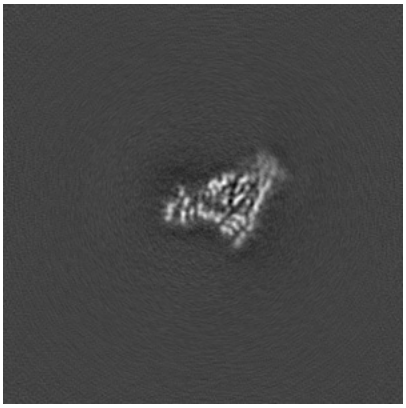


Y Index: 150

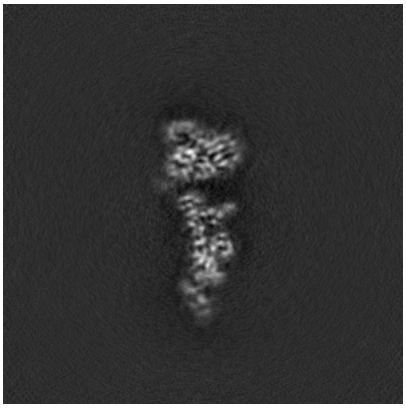


Z Index: 148

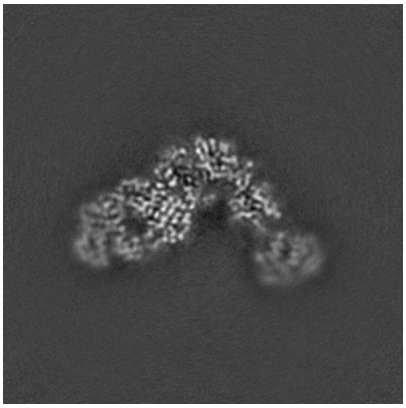
6.3.2 Raw map



X Index: 134



Y Index: 150

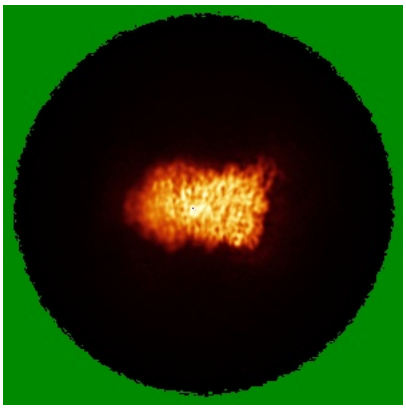


Z Index: 148

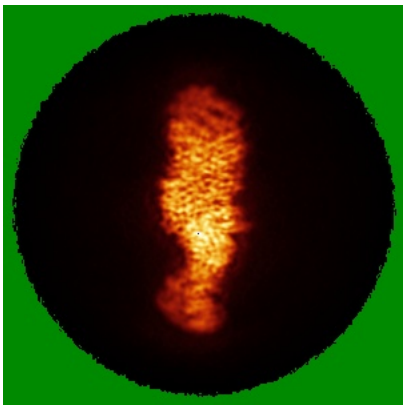
The images above show the largest variance slices of the map in three orthogonal directions.

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

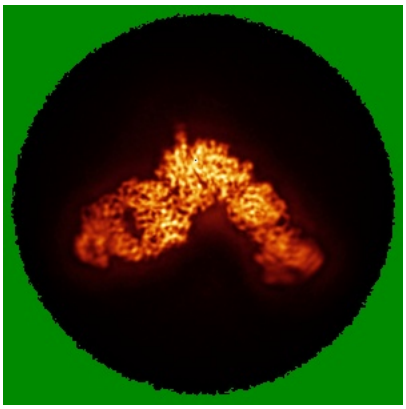
6.4.1 Primary map



X

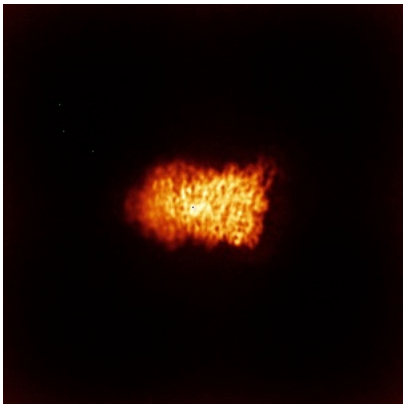


Y

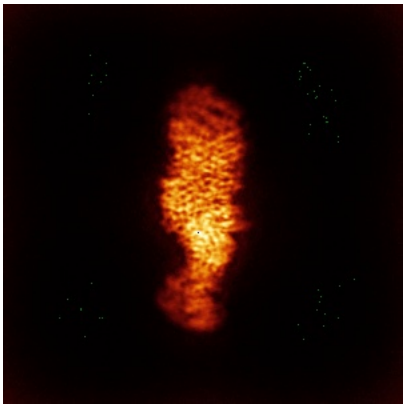


Z

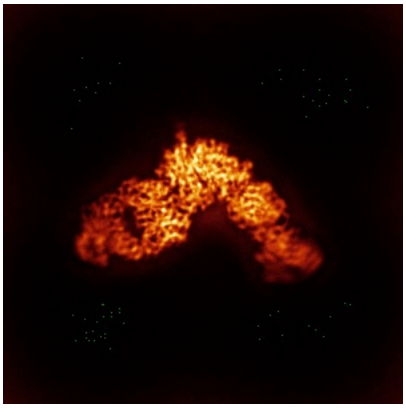
6.4.2 Raw map



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

X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.1. 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

X Y Z

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.

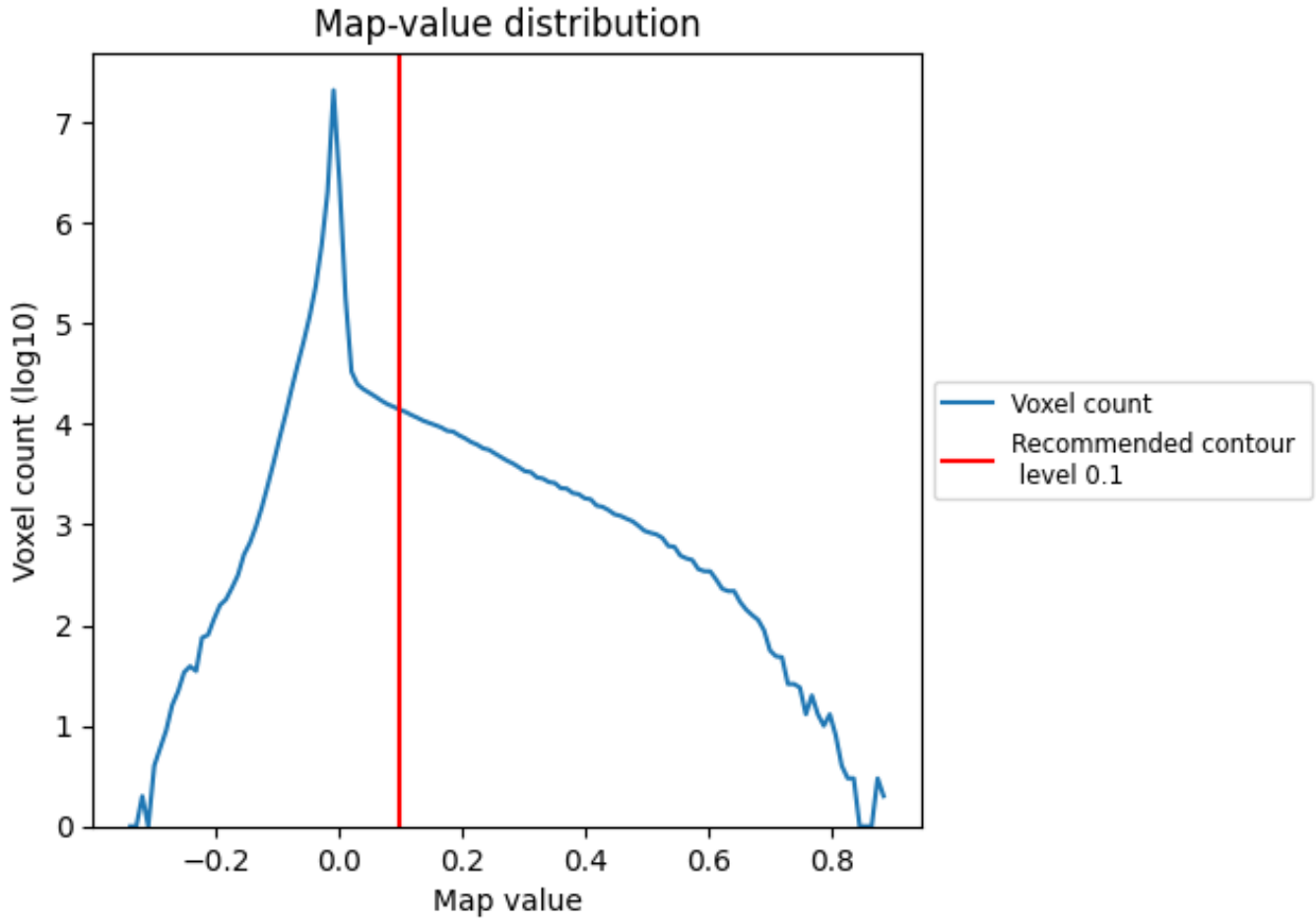
6.6 Mask visualisation (i)

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

7 Map analysis

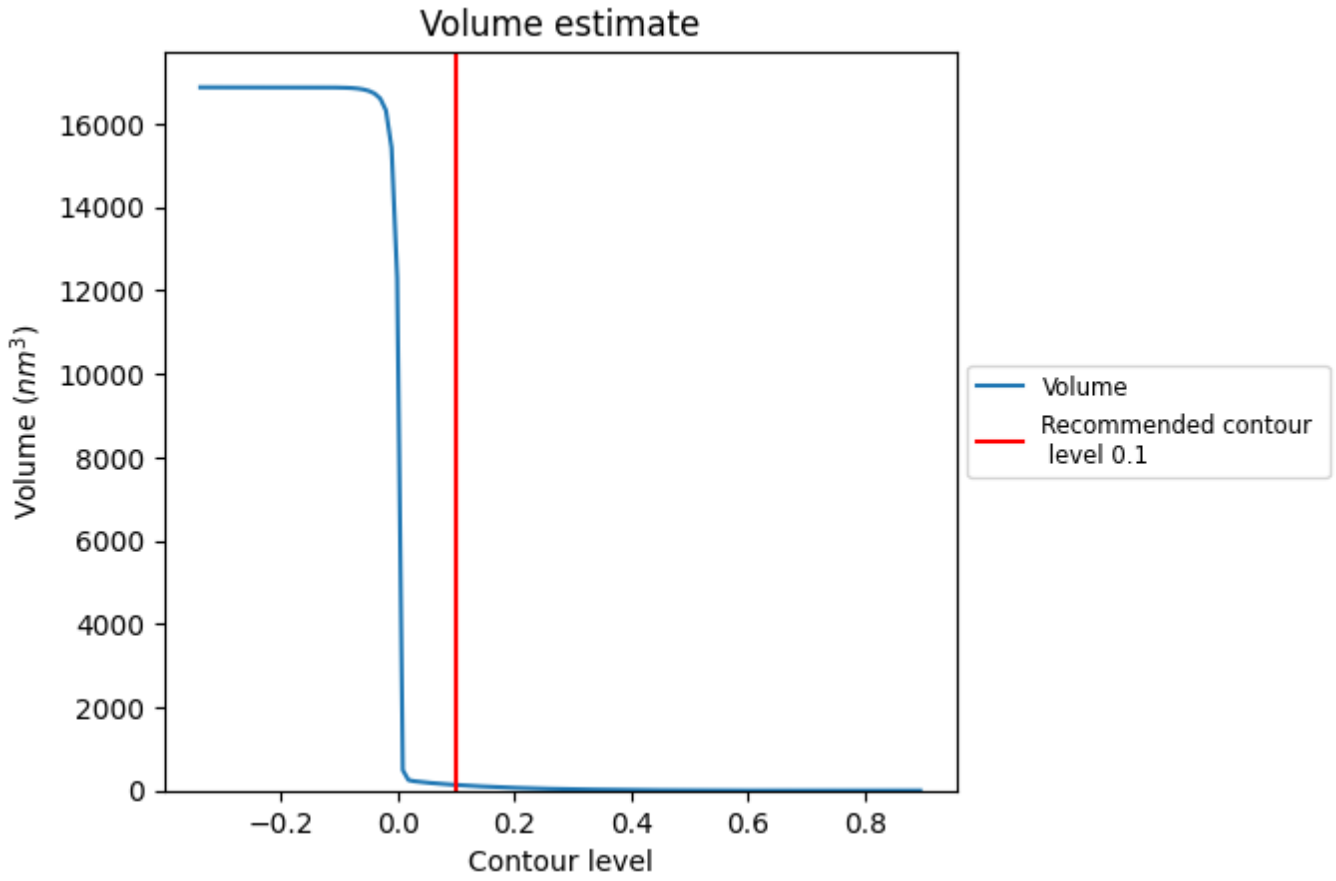
This section contains the results of statistical analysis of the map.

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.

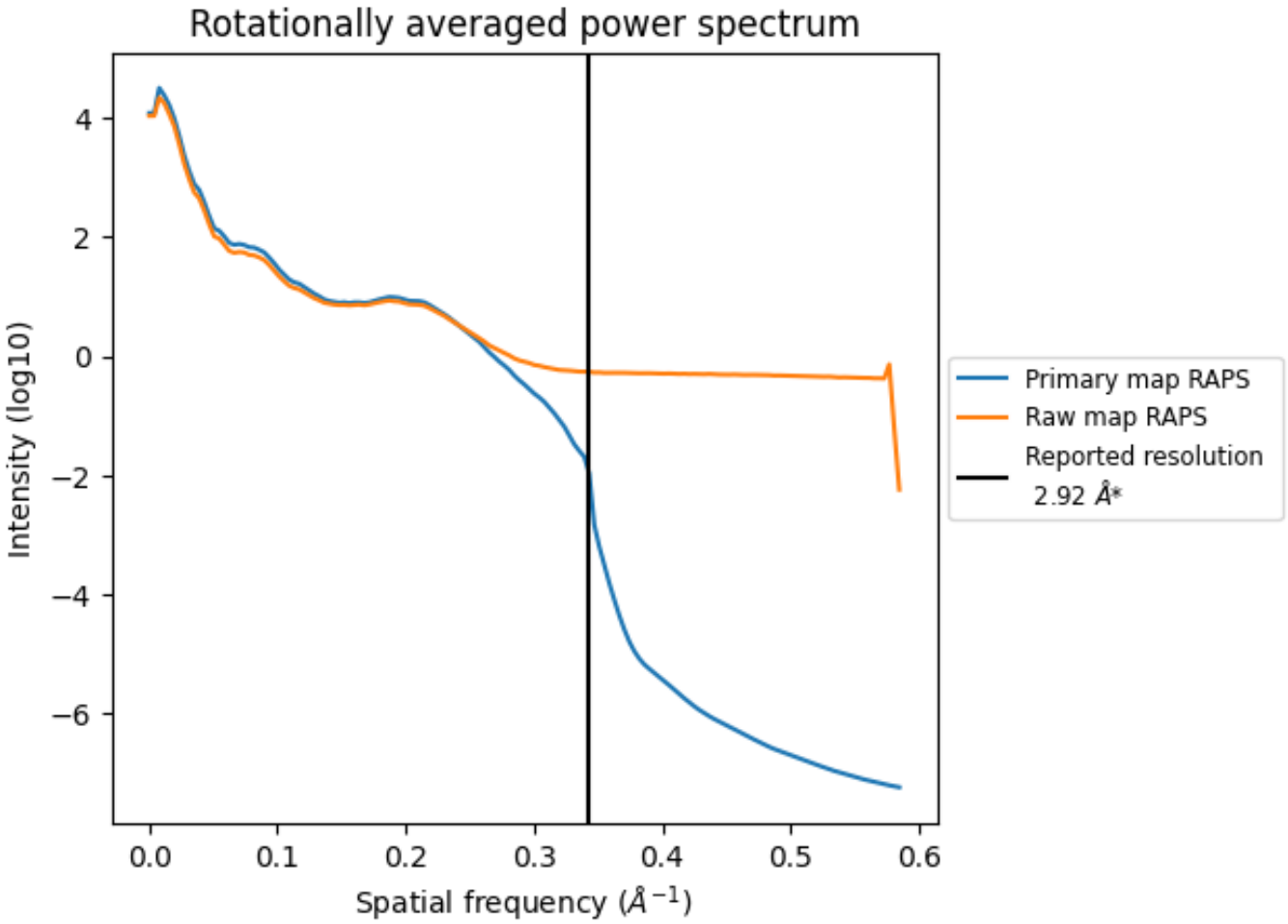
7.2 Volume estimate



The volume at the recommended contour level is 135 nm^3; this corresponds to an approximate mass of 122 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)

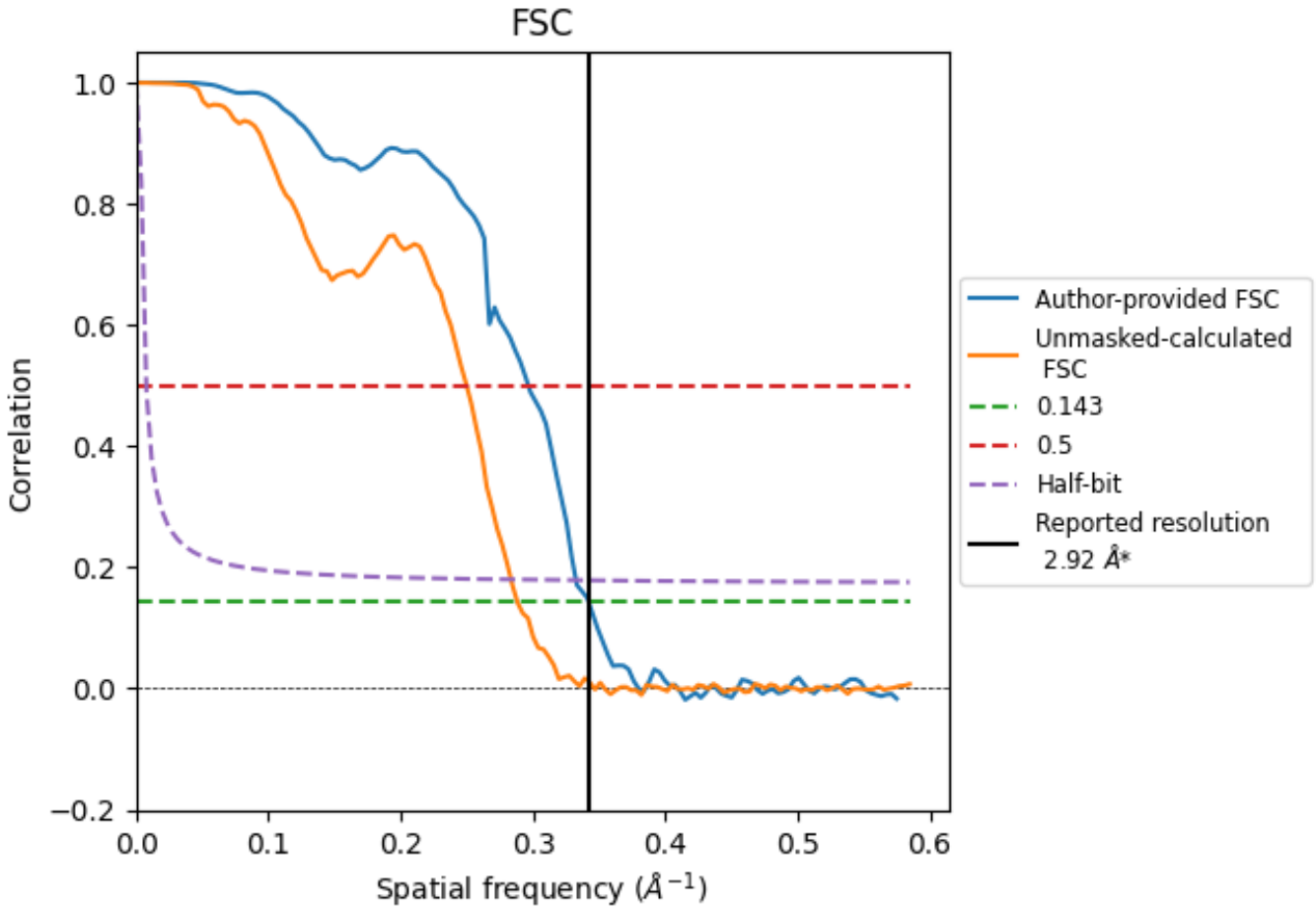


*Reported resolution corresponds to spatial frequency of 0.342 Å^{-1}

8 Fourier-Shell correlation

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



*Reported resolution corresponds to spatial frequency of 0.342 Å^{-1}

8.2 Resolution estimates (i)

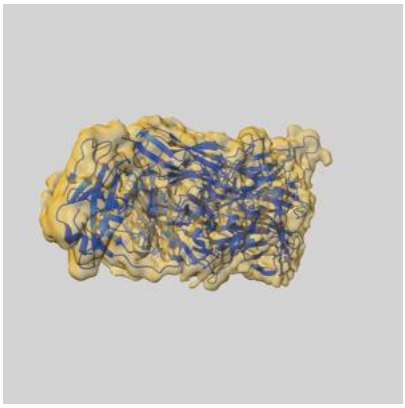
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.92	-	-
Author-provided FSC curve	2.92	3.37	3.01
Unmasked-calculated*	3.47	4.00	3.53

*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 3.47 differs from the reported value 2.92 by more than 10 %

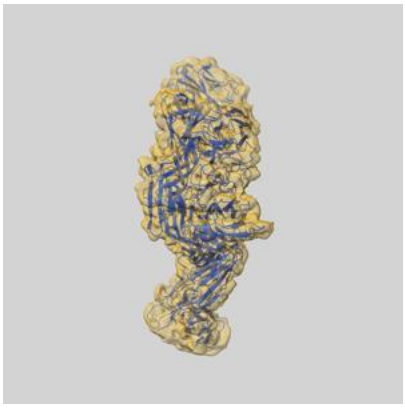
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-63031 and PDB model 9LEO. Per-residue inclusion information can be found in section 3 on page 5.

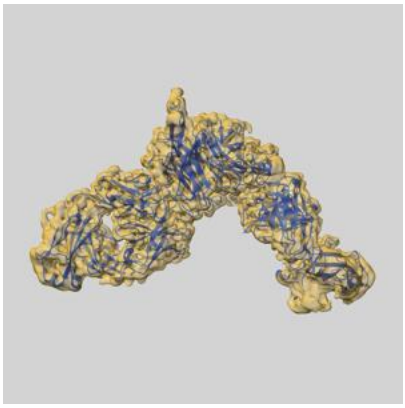
9.1 Map-model overlay



X



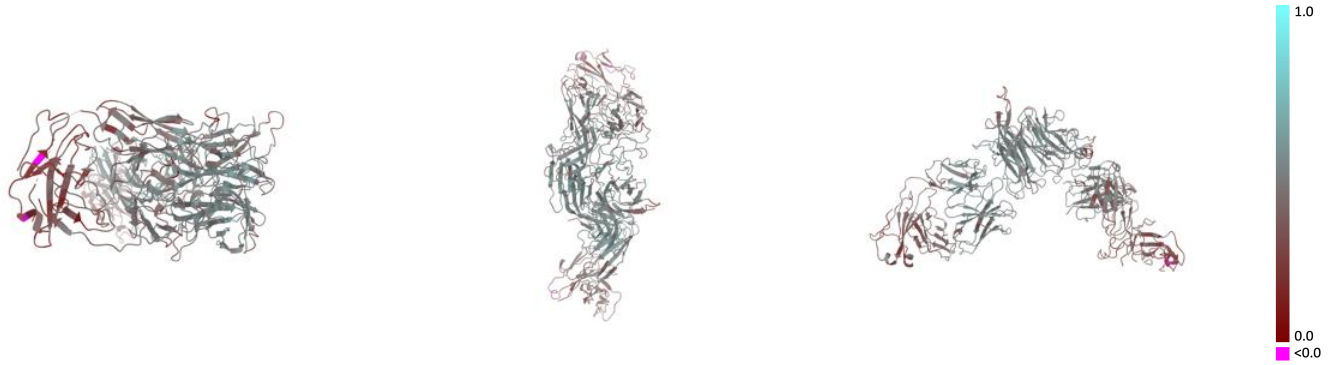
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.1 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)



X Y Z

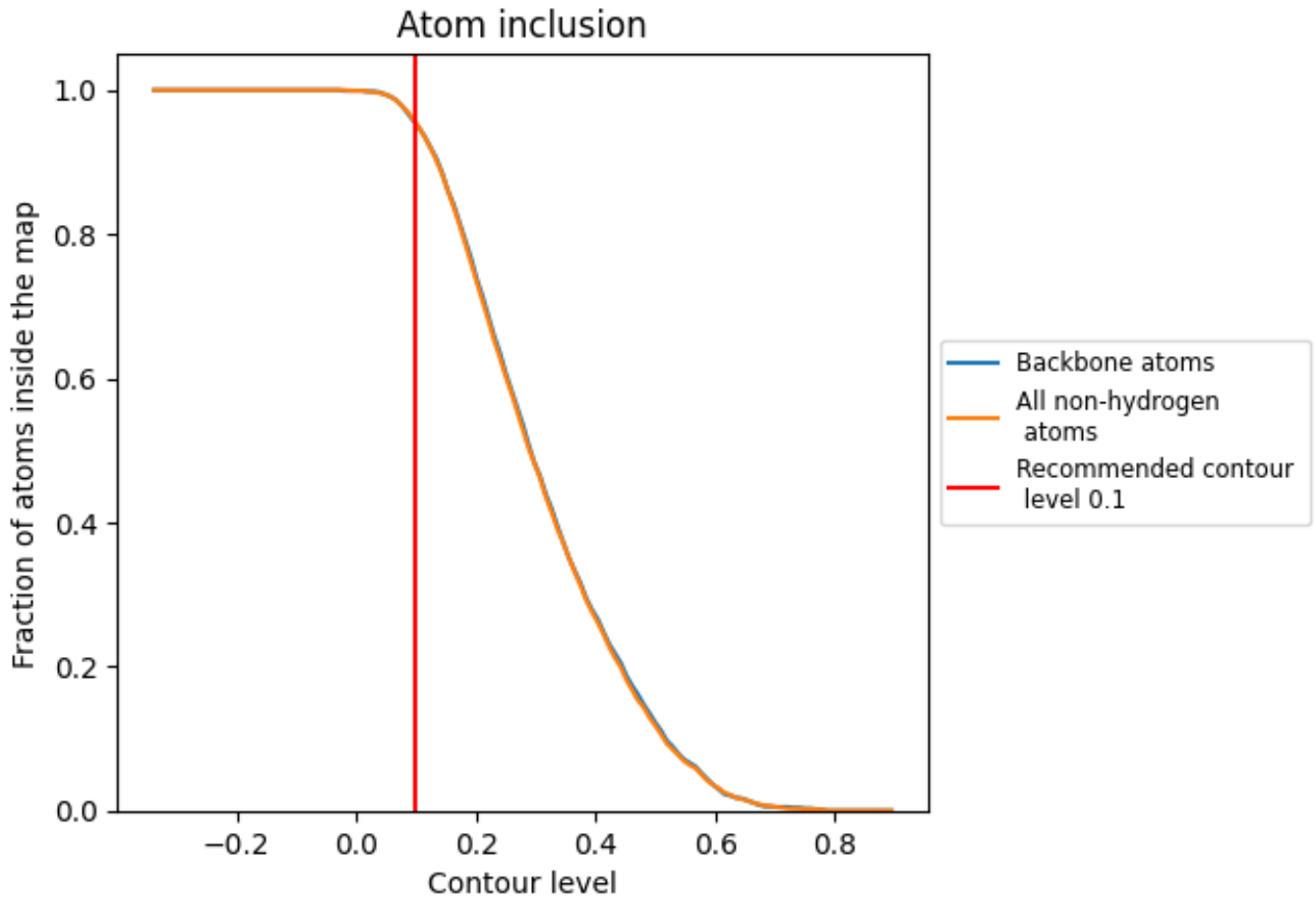
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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 (0.1).

9.4 Atom inclusion (i)



At the recommended contour level, 95% of all backbone atoms, 95% 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 (0.1) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.9540	0.4390
A	0.9700	0.4440
B	0.9550	0.4260
C	0.9320	0.4140
D	0.9260	0.3620
H	0.9780	0.4880