



# wwPDB EM Validation Summary Report ⓘ

Jul 29, 2024 – 06:15 PM EDT

PDB ID : 8SYF  
EMDB ID : EMD-29646  
Title : Homology model of Acto-HMM complex in ADP-state. Chicken smooth muscle HMM and chicken pectoralis actin  
Authors : Hojjatian, A.; Taylor, D.W.; Daneshparvar, N.; Trybus, K.M.; Taylor, K.A.  
Deposited on : 2023-05-25  
Resolution : 19.00 Å(reported)

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

We welcome your comments at [validation@mail.wwpdb.org](mailto: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>.

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

EMDB validation analysis : 0.0.1.dev92  
MolProbity : 4.02b-467  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
MapQ : 1.9.13  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.37.1

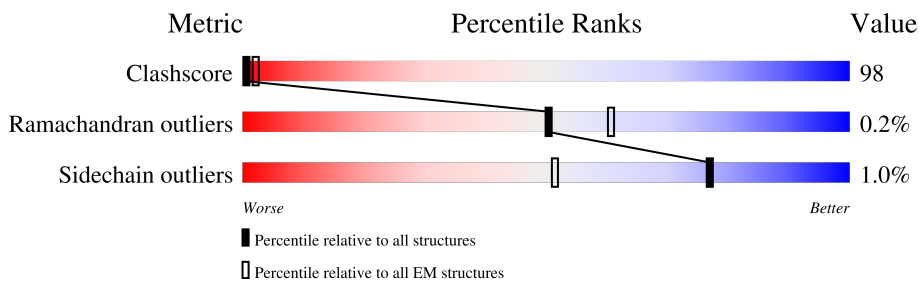
# 1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

*ELECTRON MICROSCOPY*

The reported resolution of this entry is 19.00 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)
Clashscore	158937	4297
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  $\geq 3$ , 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	843	
1	B	843	
2	C	375	
2	D	375	
3	E	148	
3	H	148	
4	F	143	
4	G	143	

## 2 Entry composition [i](#)

There are 4 unique types of molecules in this entry. The entry contains 23456 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 Myosin, heavy chain 11, smooth muscle.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	800	Total	C	N	O	S	0	0
			6474	4129	1118	1195	32		
1	B	800	Total	C	N	O	S	0	0
			6474	4129	1118	1195	32		

- Molecule 2 is a protein called Actin, alpha skeletal muscle.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	C	375	Total	C	N	O	S	0	0
			2933	1854	493	565	21		
2	D	375	Total	C	N	O	S	0	0
			2933	1854	493	565	21		

- Molecule 3 is a protein called Myosin light polypeptide 6.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	E	148	Total	C	N	O	S	0	0
			1160	720	193	236	11		
3	H	148	Total	C	N	O	S	0	0
			1160	720	193	236	11		

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
E	65	ASN	LYS	conflict	UNP P02607
H	65	ASN	LYS	conflict	UNP P02607

- Molecule 4 is a protein called Myosin regulatory light chain 2, smooth muscle major isoform.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	F	143	Total	C	N	O	S	0	0
			1161	727	189	235	10		

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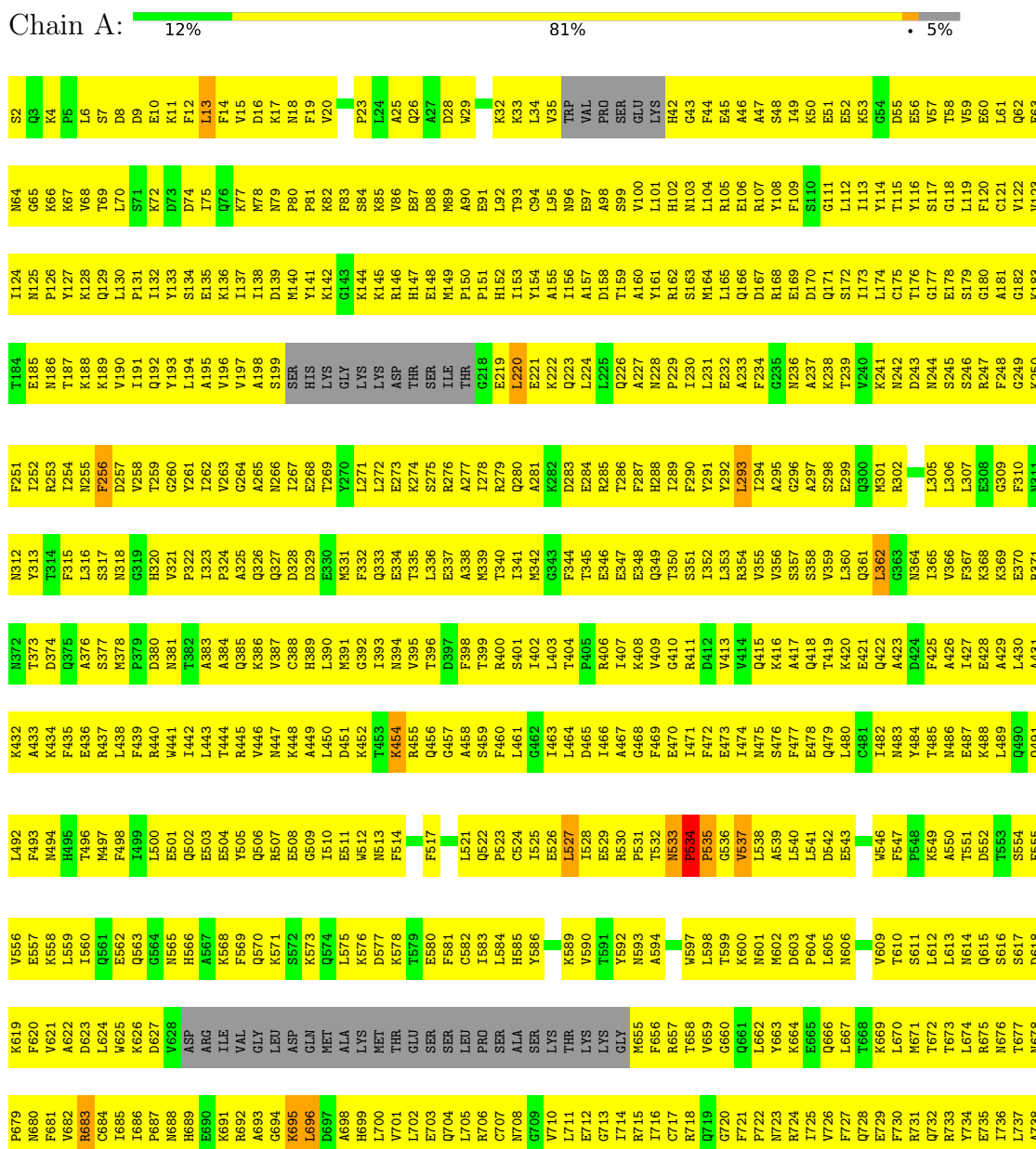
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Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	G	143	1161	727	189	235	10	0	0

### 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: Myosin, heavy chain 11, smooth muscle



A739	A740	A741	A742	A743	A744	A745	A746	G749	K750	A751	A752	C753	I754	L755	M756	I757	K758	A759	L760	E761	L762	D763	D764	M765	L766	Y767	R768	I769	G770	G771	S772	K773	I774	F775	F776	R777	T778	V780	L781	A782	H783	L784	E785	E786	E787	R788	D789	L790	K791	I792	T793	D794	V795	F799	Q800	C803	R804	G805	L806	L807	A808	R809	K810	A811	F812	A813	K814	R815	Q816	Q817	Q818	L819	T820	A821	M822	K823	V824	I825	A831	K834	L835	R836	M837	W838	Q839	W840	W841	R842	L843	F844	T845	K846	L847	K848	P849	L850	L851
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Q802	C803	R804	G805	L806	L807	A808	R809	K810	A811	F812	A813	K814	R815	Q816	Q817	Q818	L819	T820	A821	M822	K823	V824	I825	A831	K834	L835	R836	M837	W838	Q839	W840	W841	R842	L843	F844	T845	K846	L847	K848	P849	L850	L851
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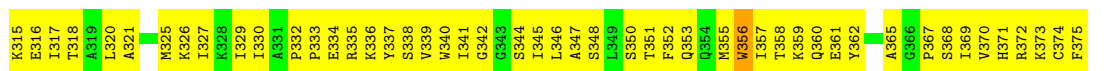
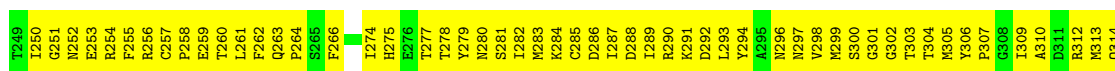
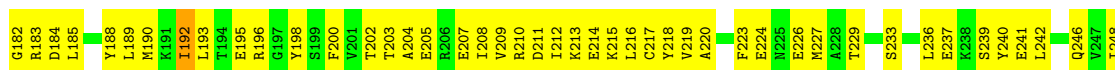
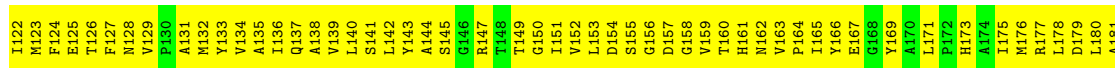
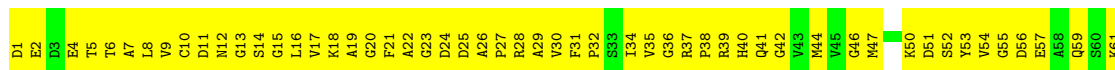
● Molecule 1: Myosin, heavy chain 11, smooth muscle

Chain B:  11% 82% 5%

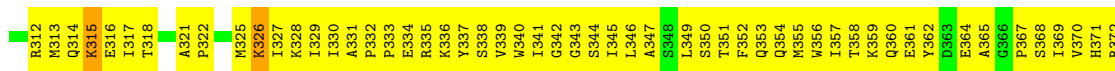
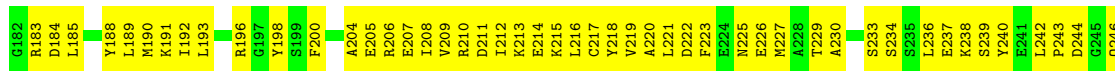
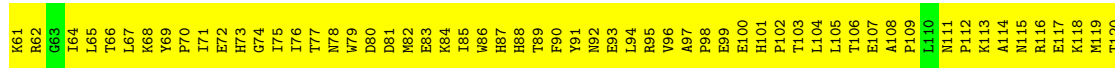
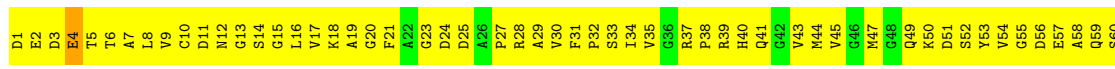
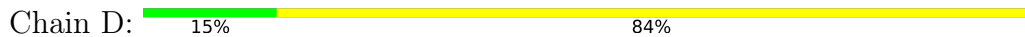
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E63	M64	G65	K66	K67	V68	T69	L70	S71	K72	D73	D74	I75	Q76	Q77	M78	N79	P80	P81	K82	F83	L84	K85	A86	E87	D88	H89	R90	S91	P92	K93	L94	K95	A96	Q96	R97	P98	L99	H100	L101	H102	G43	F44	L104	R105	E45	A46	A47	S48	I49	K50	E51	E52	H53	G54	D55	E56	V57	T58	V59	E60	L61	G182	V122																																																								
V123	I124	M125	K126	L127	K128	Q129	L130	L131	L132	Y133	S134	E135	K136	I137	M138	N139	M140	Y141	K142	G143	K144	K145	A146	E147	E148	M149	P150	A90	E91	L92	K93	L94	K95	A96	Q96	R97	P98	L99	H100	L101	H102	G43	F44	L104	R105	E45	A46	A47	S48	I49	K50	E51	E52	H53	G54	D55	E56	V57	T58	V59	E60	L61	G182	V122																																																							
T184	E185	M186	T187	K188	K189	V190	L191	Q192	L193	L194	A195	V196	L197	S199	SER	HIS	LYS	GLY	LYS	LYS	ASP	THR	SER	ILE	THR	G218	L219	L220	L221	K222	K223	L224	L225	L226	L227	L228	L229	L230	L231	E232	A233	F234	G235	M236	A237	K238	Q239	V240	K241	N242	D243	N244	G245	S246	R247	G248	K250																																																														
F251	L252	L254	F255	D256	V258	T259	G260	Y261	Y262	L262	V263	G264	A265	N266	SER	HIS	LYS	GLY	LYS	ASP	THR	SER	ILE	THR	G218	L219	L220	L221	K222	K223	L224	L225	L226	L227	L228	L229	L230	L231	E232	A233	F234	G235	M236	A237	K238	Q239	V240	K241	N242	D243	N244	G245	S246	R247	G248	K250																																																															
N311	N312	T313	T314	L315	S317	N318	G319	N381	A384	C385	K386	V387	C388	H389	L390	N391	G392	N393	N394	V395	T396	D397	F398	R399	R400	S401	L402	L403	L404	P405	R406	I407	K408	V409	G410	R411	D412	V413	V414	Q415	K416	A417	Q418	T419	K420	E421	Q422	L423	D424	F425	A426	L427	E428	A429	L430	A431	K432	F310																																																													
L433	K434	F435	L436	R437	L438	F439	R440	N441	L442	L443	T444	V445	M446	G447	K448	A449	L450	D451	K452	T453	L454	L455	L456	S457	F460	L461	G462	L463	L464	D465	L466	A467	G468	F469	E470	L471	F472	R473	N474	N475	S476	F477	E478	Q479	L480	C481	Y484	T485	M486	F487	K488	L489	Q490	Q491	L492	F493	N494																																																														
H495	T496	M497	L498	F499	L500	E501	Q502	E503	E504	Y505	Q506	R507	E508	G509	L510	E511	M512	N513	F514	L515	L516	F517	G518	L519	D520	L521	Q522	P523	C524	L525	E526	L527	V528	E529	R530	P531	N532	N533	A534	P535	G536	V537	L538	A539	L540	D541	D542	E543	E544	C545	W546	F547	P548	K549	S552	L553	S554	F555																																																													
V556	E557	K558	L559	L560	Q561	E562	Q563	G564	N565	H566	A567	F568	Q570	K571	S572	K573	Q574	L575	K576	D577	K578	M579	E580	F581	C582	L583	P584	H585	V586	K589	V590	E591	L592	N593	L594	N595	A596	S596	M601	M602	D603	P604	E605	L606	M607	L608	V609	T610	S611	T612	L613	M614	Q615	S616																																																																	
S617	D618	K620	F621	L622	A623	D623	L624	W625	N626	D627	V628	A629	I630	L631	S632	L633	Q634	M635	A636	L637	M638	Y639	G640	L641	S642	S643	L644	L645	L646	L647	L648	L649	L650	L651	L652	L653	L654	L655	L656	L657	L658	L659	L660	L661	L662	L663	L664	L665	L666	L667	L668	L669	L670	L671	L672	L673	L674	L675	L676	L677	L678	L679	L680	L681	L682	L683	L684	L685	L686	L687	L688	L689	L690	L691	L692	L693	L694	L695	L696	L697	L698	L699	L700	L701	L702	L703	L704	L705	L706	L707	L708	L709	L710	L711	L712	L713	L714	L715	L716	L717	L718	L719	L720	L721	L722	L723	L724	L725	L726	L727	L728	L729	L730	L731	L732	L733	L734	L735	L736



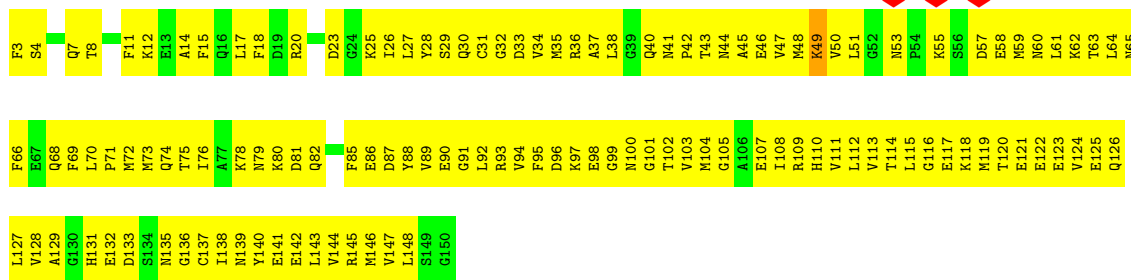
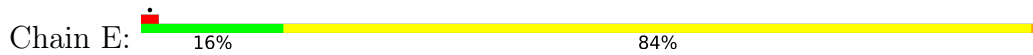
• Molecule 2: Actin, alpha skeletal muscle



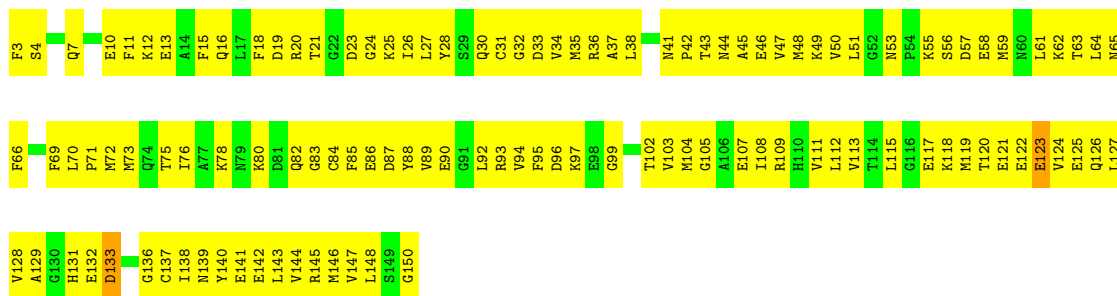
• Molecule 2: Actin, alpha skeletal muscle



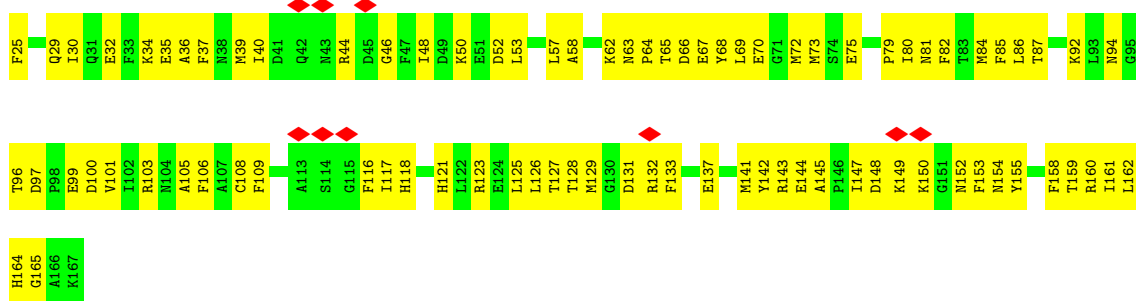
• Molecule 3: Myosin light polypeptide 6



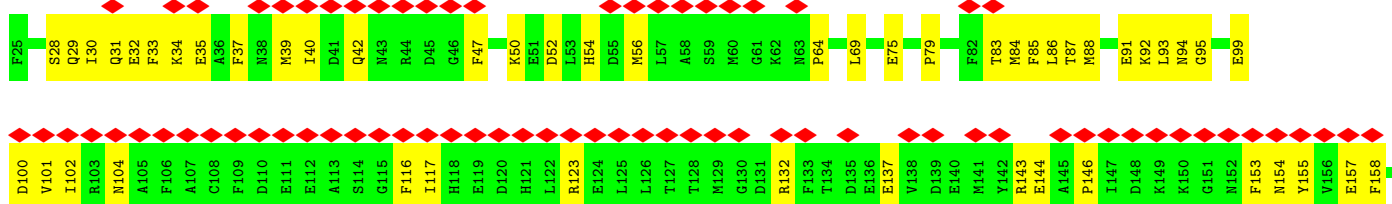
• Molecule 3: Myosin light polypeptide 6



• Molecule 4: Myosin regulatory light chain 2, smooth muscle major isoform



• Molecule 4: Myosin regulatory light chain 2, smooth muscle major isoform





L161
L162
K163
H164
G165
K166
K167

## 4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	17394	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ( $e^-/\text{\AA}^2$ )	29.6	Depositor
Minimum defocus (nm)	200	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	Not provided	
Image detector	DIRECT ELECTRON DE-64 (8k x 8k)	Depositor
Maximum map value	0.261	Depositor
Minimum map value	-0.127	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.026	Depositor
Recommended contour level	0.0472	Depositor
Map size ( $\text{\AA}$ )	537.6, 537.6, 537.6	wwPDB
Map dimensions	210, 210, 210	wwPDB
Map angles ( $^\circ$ )	90.0, 90.0, 90.0	wwPDB
Pixel spacing ( $\text{\AA}$ )	2.56, 2.56, 2.56	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	0.47	1/6595 (0.0%)	0.63	7/8886 (0.1%)
1	B	0.46	0/6595	0.63	3/8886 (0.0%)
2	C	0.43	0/2996	0.59	1/4058 (0.0%)
2	D	0.45	0/2996	0.58	0/4058
3	E	0.39	0/1175	0.63	0/1575
3	H	0.36	0/1175	0.54	0/1575
4	F	0.28	0/1185	0.47	0/1589
4	G	0.27	0/1185	0.45	0/1589
All	All	0.43	1/23902 (0.0%)	0.60	11/32216 (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
1	A	0	3
1	B	0	1
2	C	0	1
2	D	0	1
All	All	0	6

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	806	TYR	CD1-CE1	-5.40	1.31	1.39

The worst 5 of 11 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	220	LEU	CA-CB-CG	-8.53	95.68	115.30
1	B	13	LEU	CB-CG-CD1	-7.79	97.75	111.00
1	B	220	LEU	CA-CB-CG	-7.74	97.50	115.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	403	LEU	CA-CB-CG	6.06	129.24	115.30
1	A	293	LEU	CA-CB-CG	-5.86	101.82	115.30

There are no chirality outliers.

5 of 6 planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	533	ASN	Peptide
1	A	534	PRO	Peptide
1	A	683	ARG	Peptide
1	B	533	ASN	Peptide
2	C	356	TRP	Peptide

## 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	6474	0	6518	1431	0
1	B	6474	0	6518	1470	0
2	C	2933	0	2894	641	0
2	D	2933	0	2894	621	0
3	E	1160	0	1119	274	0
3	H	1160	0	1119	192	0
4	F	1161	0	1076	97	0
4	G	1161	0	1076	57	0
All	All	23456	0	23214	4552	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 98.

The worst 5 of 4552 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:B:2:SER:N	1:B:141:TYR:HH	1.38	1.22
1:B:446:VAL:O	1:B:450:LEU:HB2	1.45	1.16

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:154:ASP:O	2:C:160:THR:HA	1.46	1.14
1:A:61:LEU:O	1:A:65:GLY:N	1.91	1.03
1:A:488:LYS:HB3	1:A:667:LEU:HD11	1.41	1.02

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	792/843 (94%)	655 (83%)	132 (17%)	5 (1%)	25	66
1	B	792/843 (94%)	653 (82%)	138 (17%)	1 (0%)	51	86
2	C	373/375 (100%)	319 (86%)	54 (14%)	0	100	100
2	D	373/375 (100%)	313 (84%)	60 (16%)	0	100	100
3	E	146/148 (99%)	120 (82%)	26 (18%)	0	100	100
3	H	146/148 (99%)	129 (88%)	17 (12%)	0	100	100
4	F	141/143 (99%)	133 (94%)	8 (6%)	0	100	100
4	G	141/143 (99%)	128 (91%)	13 (9%)	0	100	100
All	All	2904/3018 (96%)	2450 (84%)	448 (15%)	6 (0%)	50	81

5 of 6 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	812	PHE
1	B	534	PRO
1	A	813	ALA
1	A	535	PRO
1	A	537	VAL

### 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	703/741 (95%)	697 (99%)	6 (1%)	78	87
1	B	703/741 (95%)	694 (99%)	9 (1%)	69	81
2	C	318/318 (100%)	317 (100%)	1 (0%)	92	95
2	D	318/318 (100%)	314 (99%)	4 (1%)	69	81
3	E	127/127 (100%)	125 (98%)	2 (2%)	62	79
3	H	127/127 (100%)	125 (98%)	2 (2%)	62	79
4	F	125/125 (100%)	124 (99%)	1 (1%)	81	89
4	G	125/125 (100%)	124 (99%)	1 (1%)	81	89
All	All	2546/2622 (97%)	2520 (99%)	26 (1%)	77	86

5 of 26 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	B	812	PHE
2	D	249	THR
3	H	123	GLU
2	D	206	ARG
2	D	315	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 86 such sidechains are listed below:

Mol	Chain	Res	Type
1	B	839	GLN
3	E	53	ASN
2	C	263	GLN
2	D	115	ASN
4	F	81	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 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.

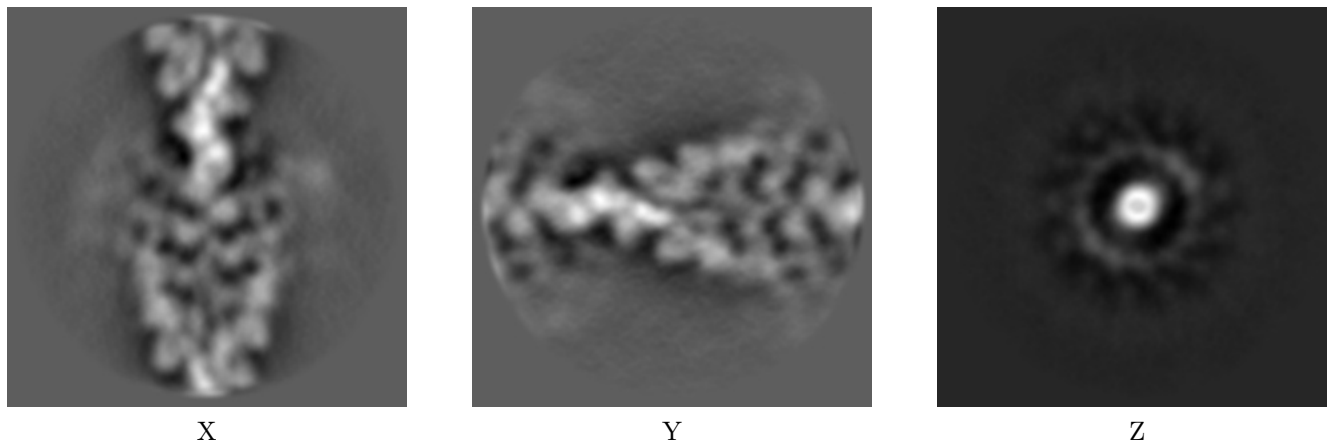
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-29646. These allow visual inspection of the internal detail of the map and identification of artifacts.

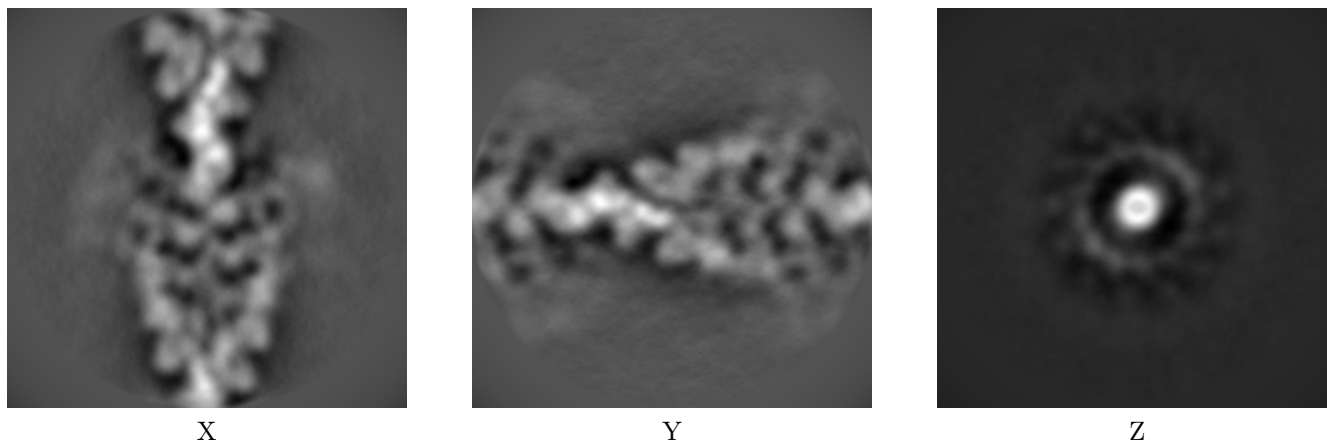
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

### 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.

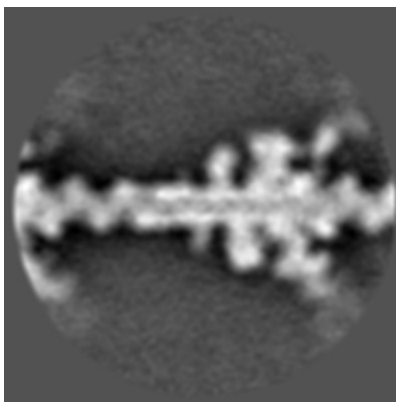


## 6.2 Central slices [i](#)

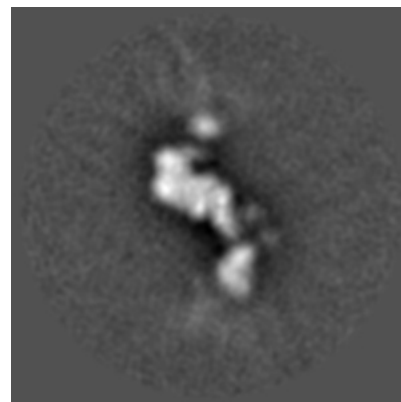
### 6.2.1 Primary map



X Index: 105

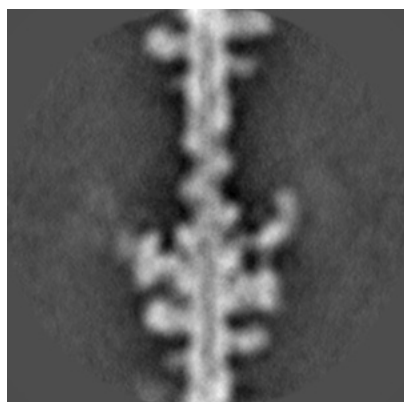


Y Index: 105

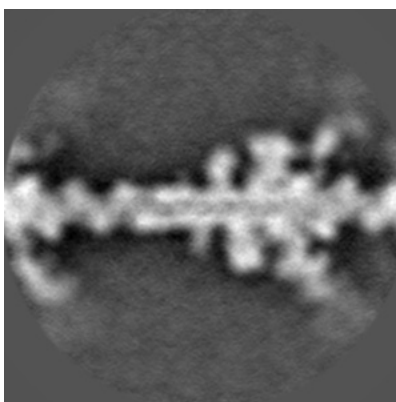


Z Index: 105

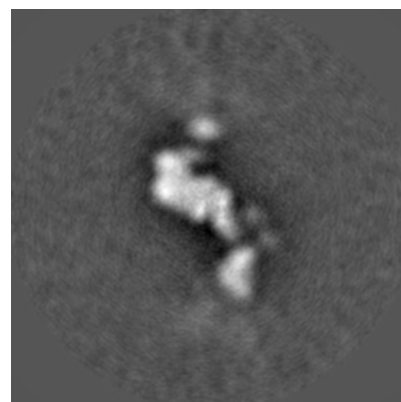
### 6.2.2 Raw map



X Index: 105



Y Index: 105



Z Index: 105

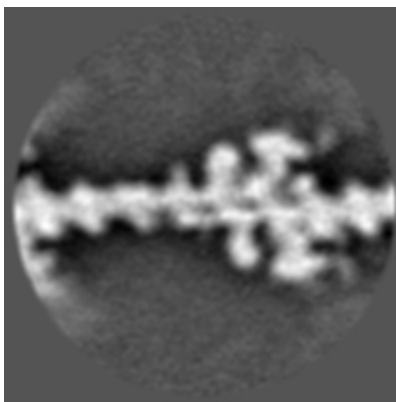
The images above show central slices of the map in three orthogonal directions.

## 6.3 Largest variance slices [i](#)

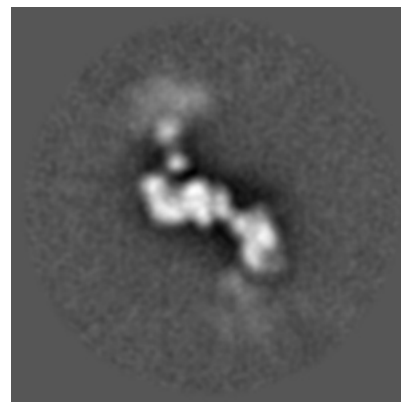
### 6.3.1 Primary map



X Index: 107

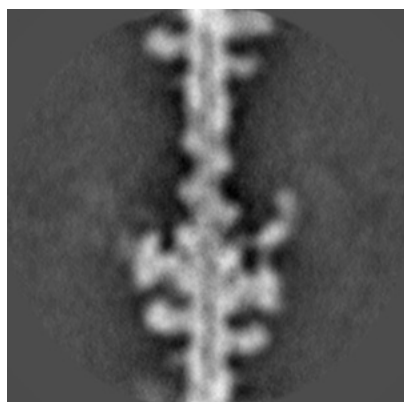


Y Index: 101

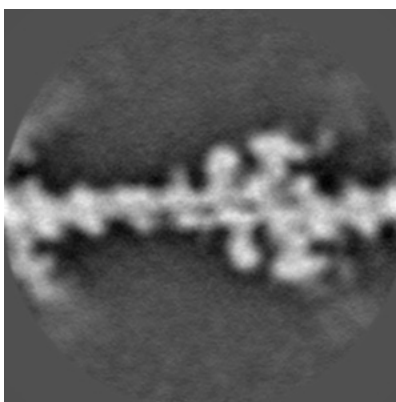


Z Index: 123

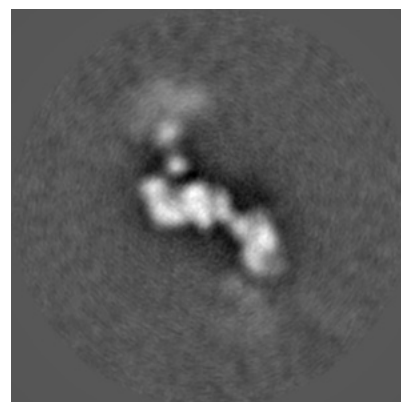
### 6.3.2 Raw map



X Index: 106



Y Index: 101

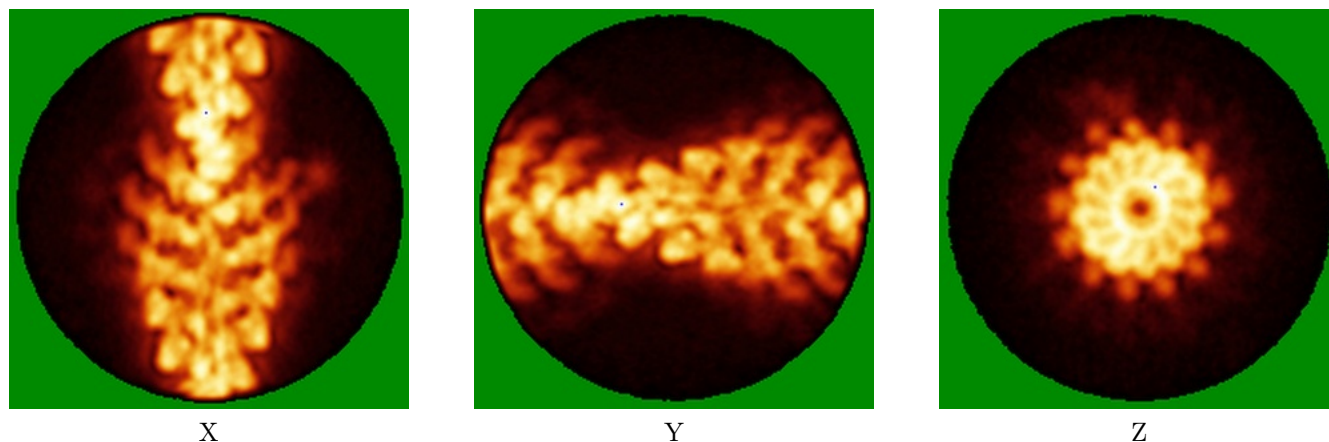


Z Index: 123

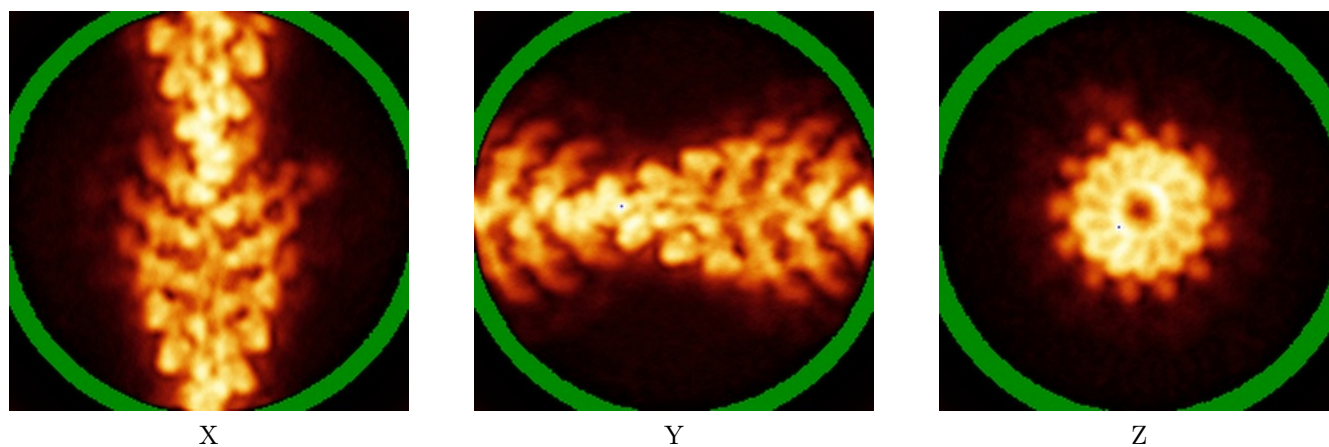
The images above show the largest variance slices of the map in three orthogonal directions.

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

### 6.4.1 Primary map



### 6.4.2 Raw map



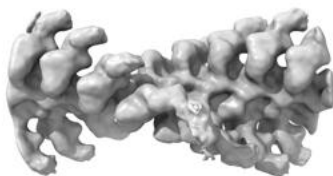
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

## 6.5 Orthogonal surface views [i](#)

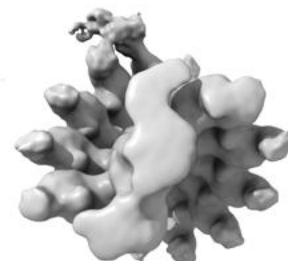
### 6.5.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.0472. 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.

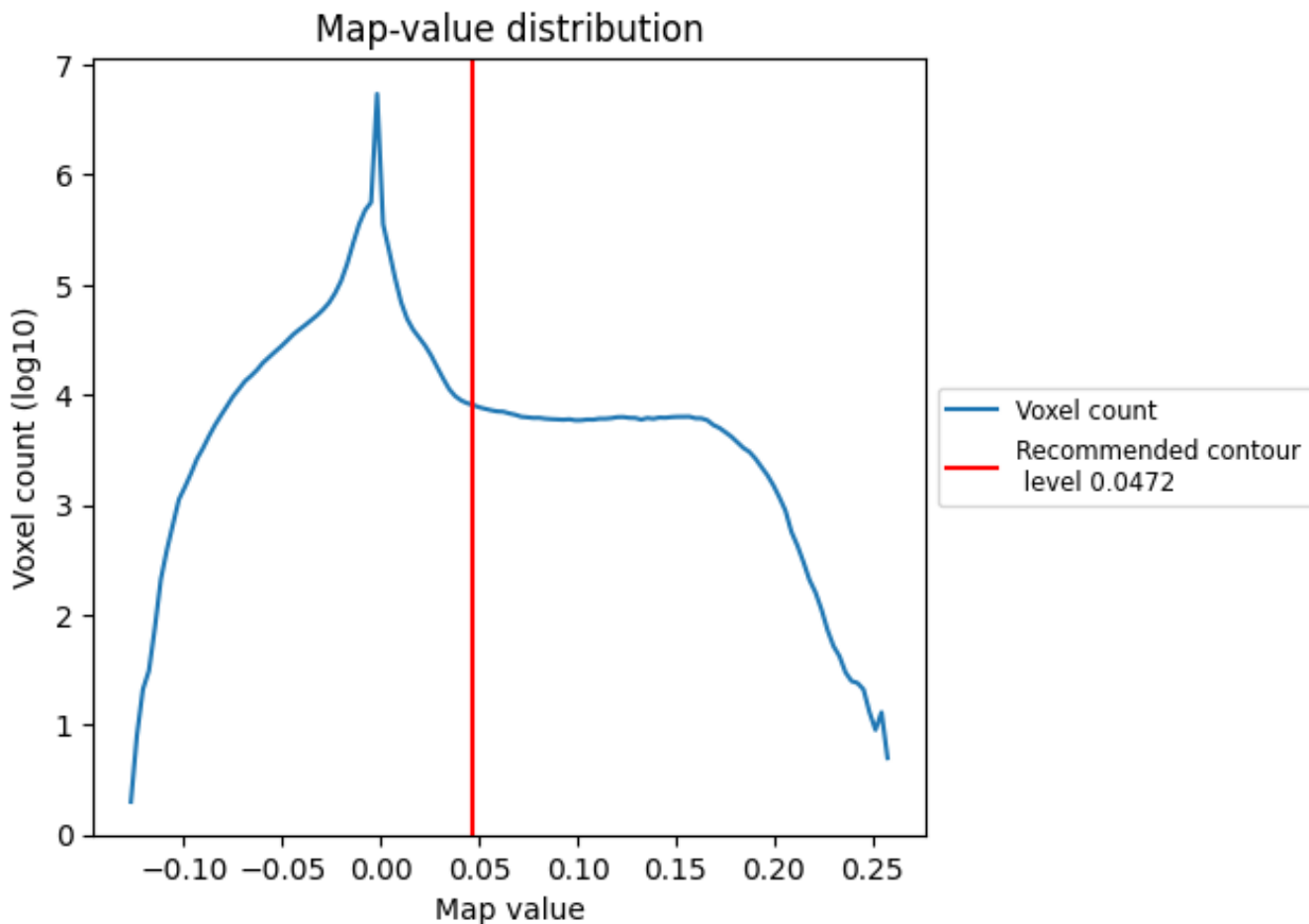
## 6.6 Mask visualisation [i](#)

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

## 7 Map analysis [i](#)

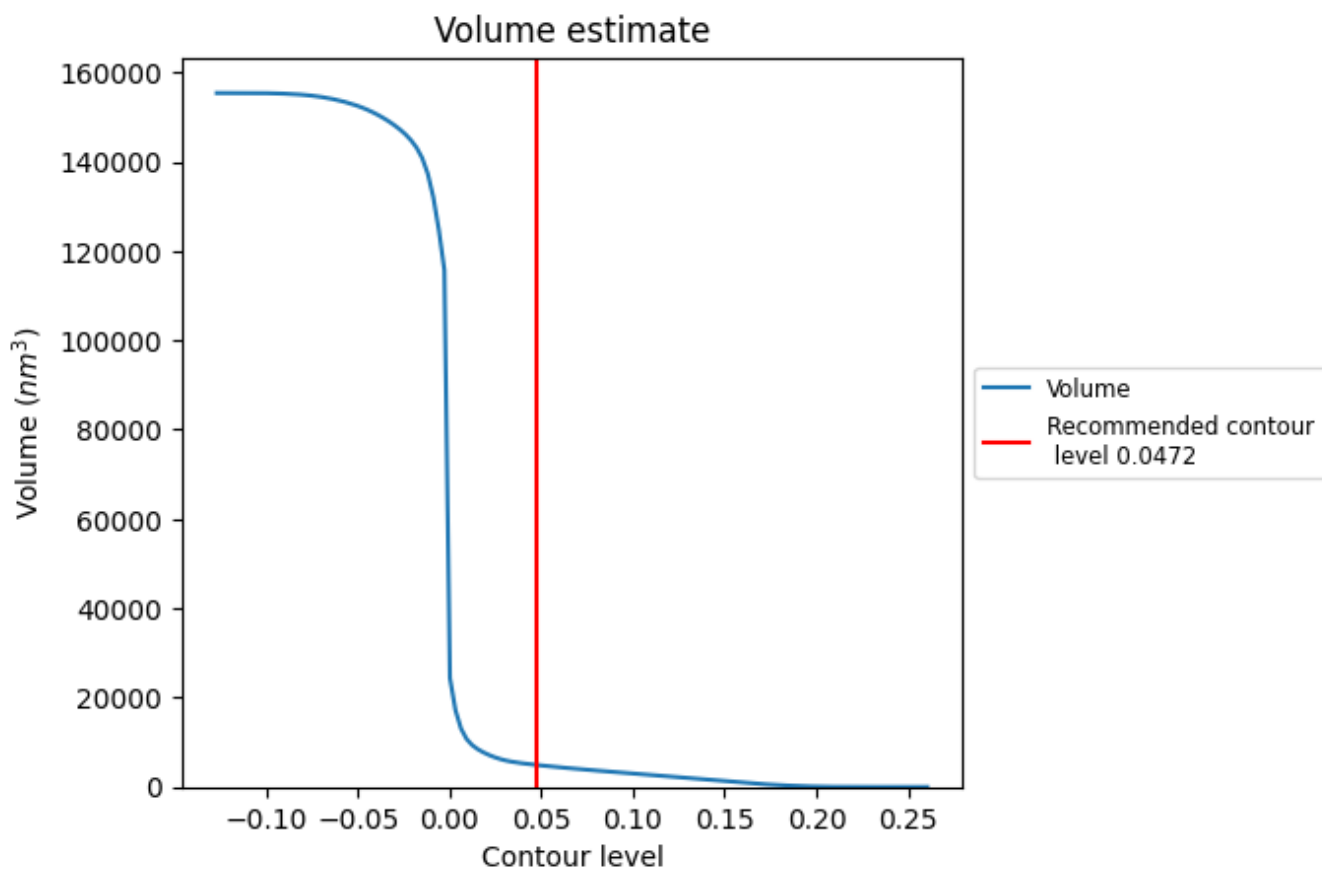
This section contains the results of statistical analysis of the map.

### 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.

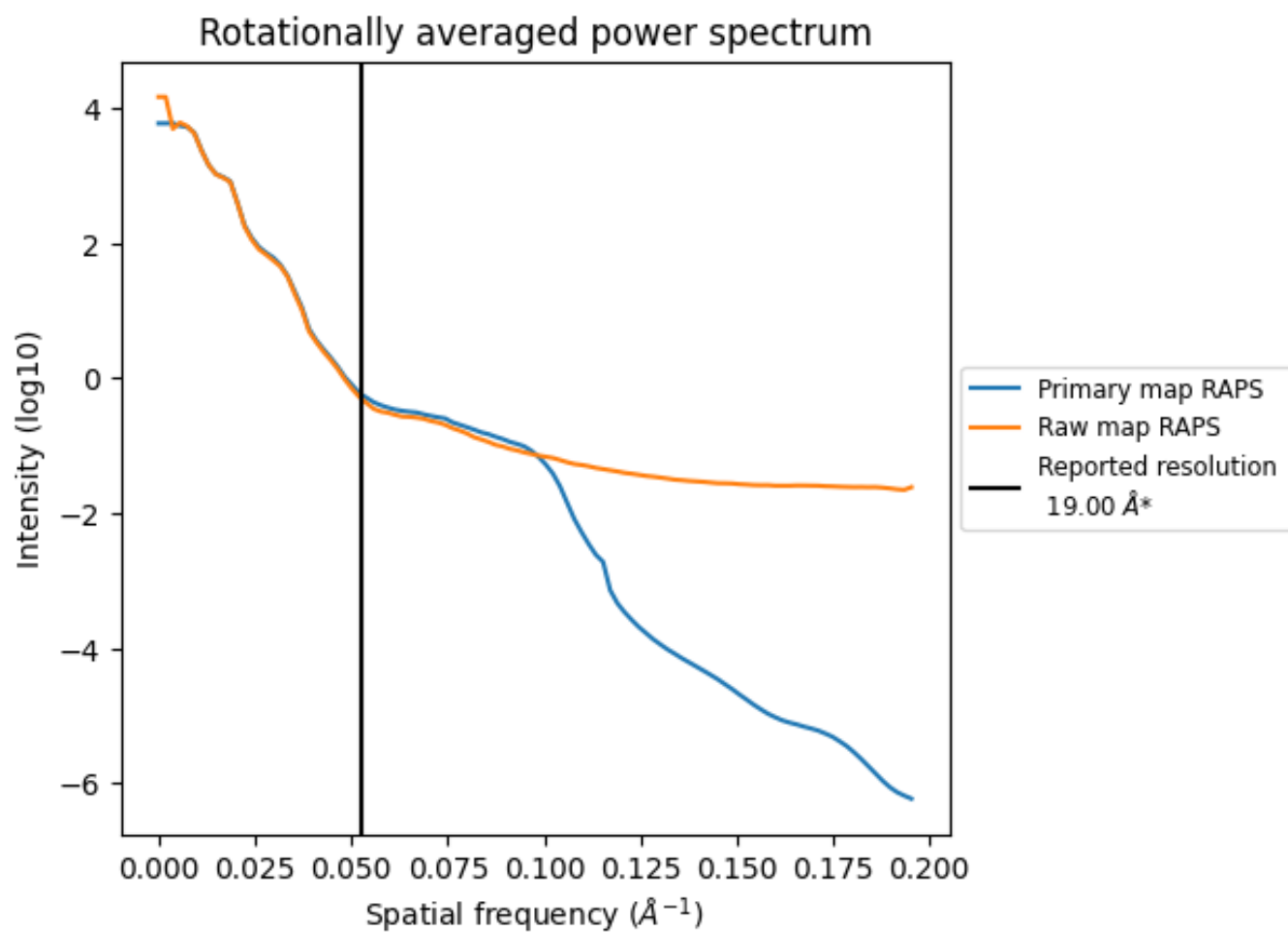
## 7.2 Volume estimate [\(i\)](#)



The volume at the recommended contour level is 4944 nm<sup>3</sup>; this corresponds to an approximate mass of 4466 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](#)

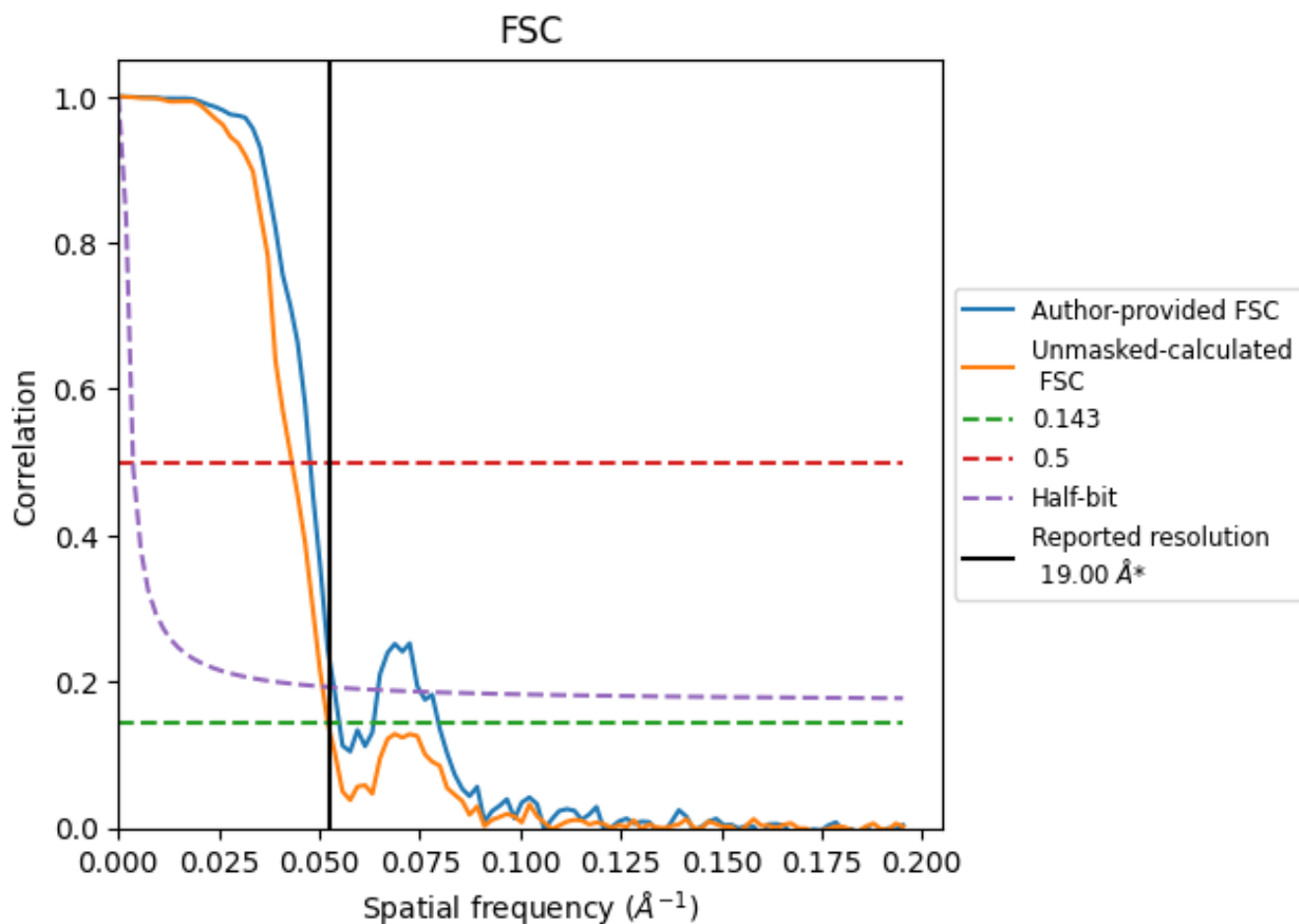


\*Reported resolution corresponds to spatial frequency of 0.053 Å<sup>-1</sup>

## 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 0.053 Å<sup>-1</sup>



## 8.2 Resolution estimates [i](#)

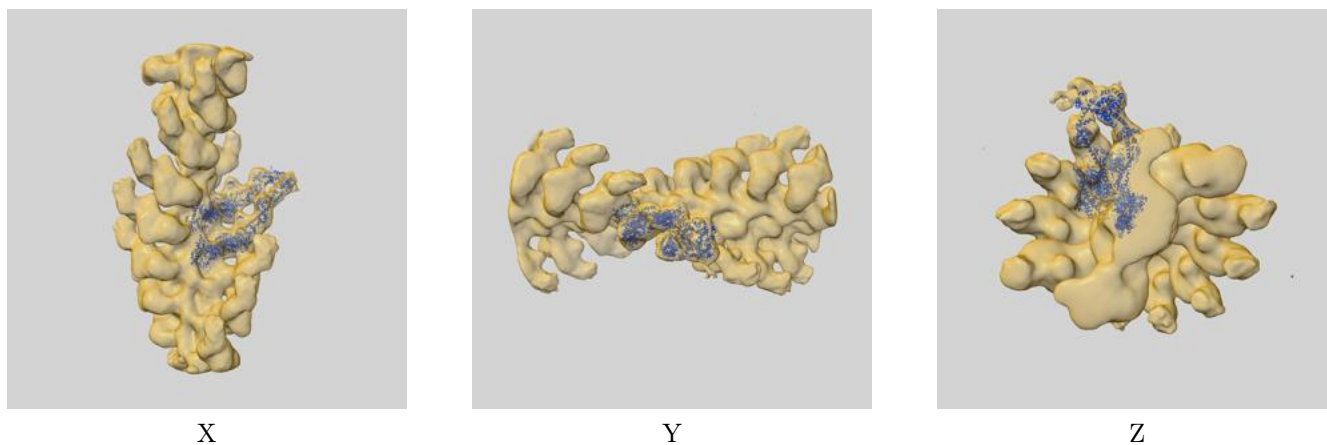
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	19.00	-	-
Author-provided FSC curve	18.18	20.96	18.62
Unmasked-calculated*	19.19	23.15	19.69

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

## 9 Map-model fit [i](#)

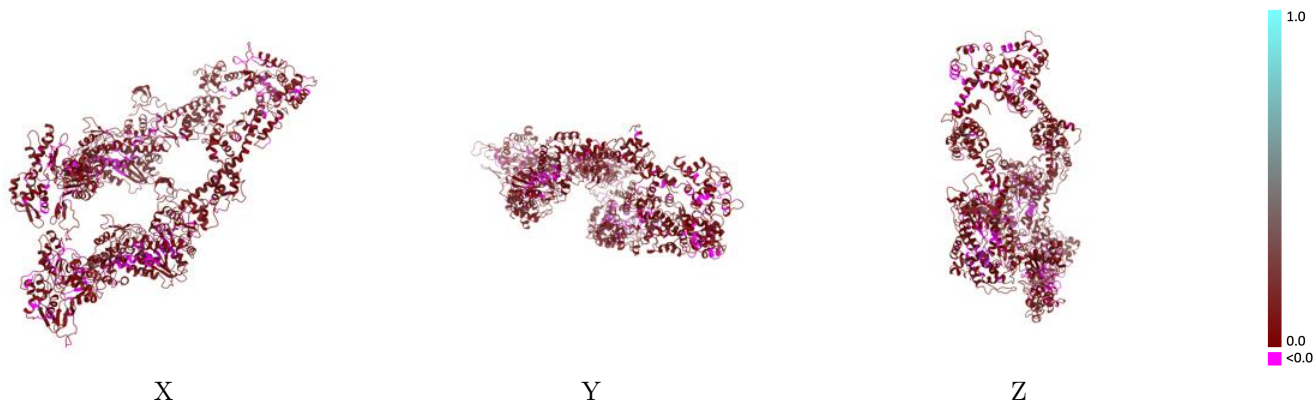
This section contains information regarding the fit between EMDB map EMD-29646 and PDB model 8SYF. Per-residue inclusion information can be found in section 3 on page 5.

### 9.1 Map-model overlay [i](#)



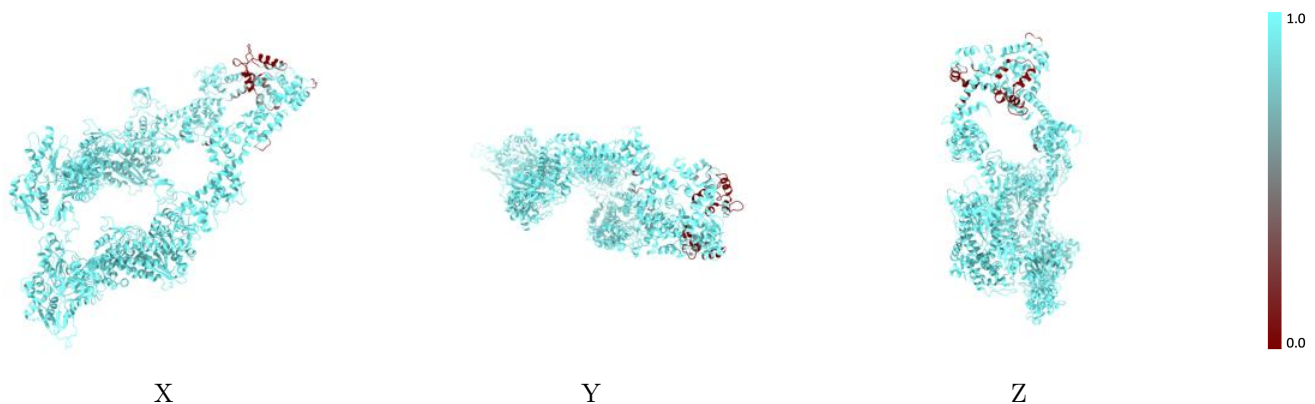
The images above show the 3D surface view of the map at the recommended contour level 0.0472 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



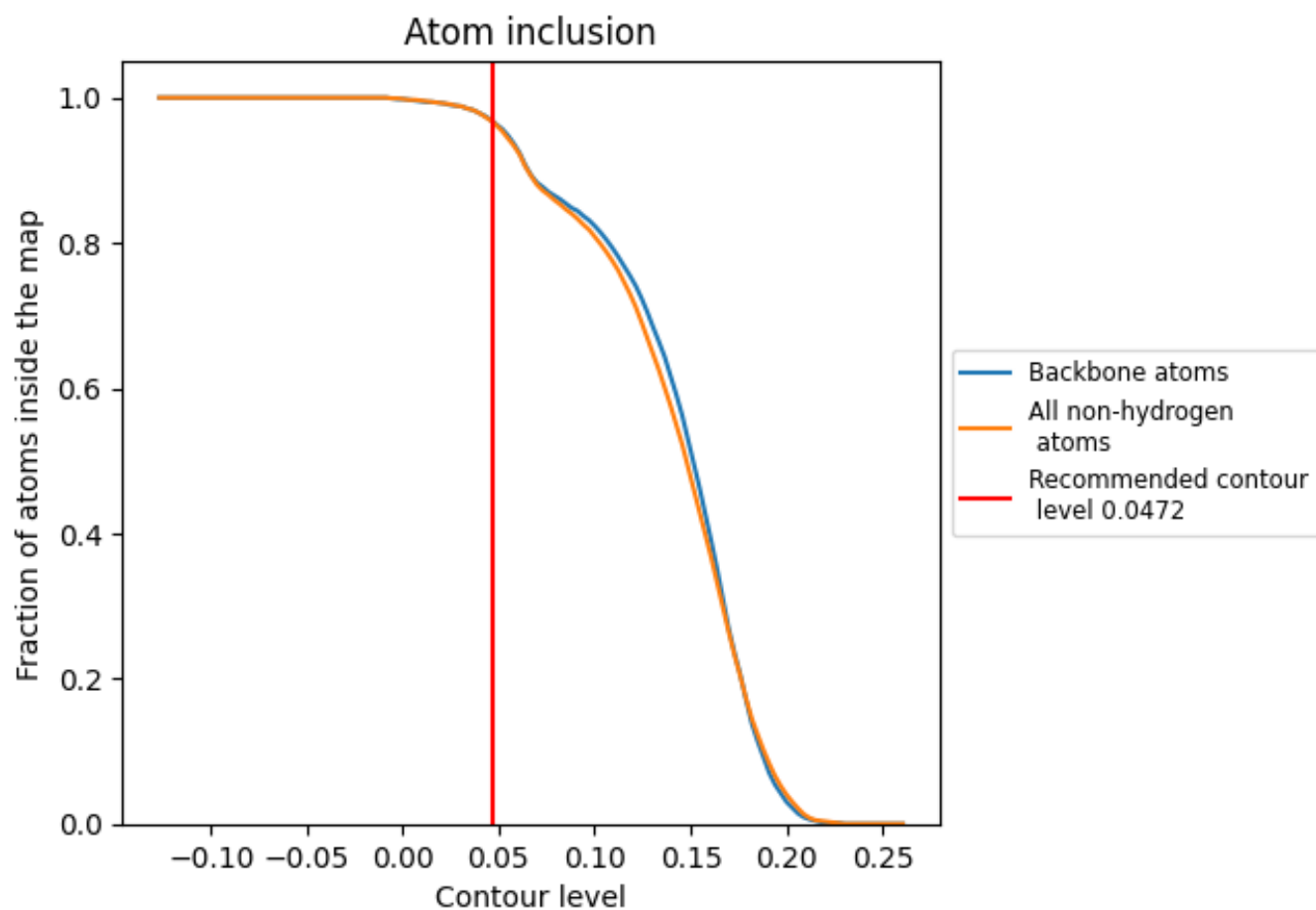
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.0472).



















## 9.4 Atom inclusion [i](#)



At the recommended contour level, 97% of all backbone atoms, 97% 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 (0.0472) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.9660	 0.0800
A	 0.9950	 0.0810
B	 1.0000	 0.0810
C	 1.0000	 0.0740
D	 1.0000	 0.0790
E	 0.9800	 0.0890
F	 0.9160	 0.0870
G	 0.4470	 0.0570
H	 0.9970	 0.1000

