wwPDB EM Validation Summary Report (i)

Oct 6, 2024 – 11:45 AM EDT

PDB ID	:	8G2Y
EMDB ID	:	EMD-29684
Title	:	Cryo-EM structure of ADGRF1 coupled to miniGs/q
Authors	:	Jones, D.; Rawson, S.; Blacklow, S.
Deposited on	:	2023-02-06
Resolution	:	3.44 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*
A user guide is available at
https://www.wwpdb.org/validation/2017/EMValidationReportHelp
with specific help available everywhere you see the (i) 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 (i)) were used in the production of this report:

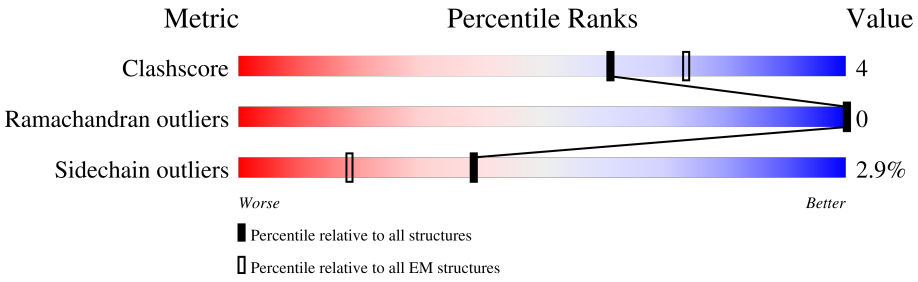
EMDB validation analysis	:	0.0.1.dev113
Mogul	:	2022.3.0, CSD as543be (2022)
MolProbity	:	4.02b-467
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.39

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 3.44 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	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415

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	423	43% 54%
2	B	358	72% 9% 19%
3	G	71	41% 49% 46%
4	N	181	56% 8% 35%
5	R	411	18% 53% 7% 39%

2 Entry composition (i)

There are 6 unique types of molecules in this entry. The entry contains 13019 atoms, of which 6342 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 MiniG alpha s/q chimera.

Mol	Chain	Residues	Atoms						AltConf	Trace
			Total	C	H	N	O	S		
1	A	194	2951	982	1433	268	262	6	0	0

- Molecule 2 is a protein called Guanine nucleotide-binding protein G(I)/G(S)/G(T) subunit beta-1.

Mol	Chain	Residues	Atoms						AltConf	Trace
			Total	C	H	N	O	S		
2	B	291	4062	1331	1954	367	393	17	0	0

There are 19 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	-17	MET	-	expression tag	UNP P62873
B	-16	HIS	-	expression tag	UNP P62873
B	-15	HIS	-	expression tag	UNP P62873
B	-14	HIS	-	expression tag	UNP P62873
B	-13	HIS	-	expression tag	UNP P62873
B	-12	HIS	-	expression tag	UNP P62873
B	-11	HIS	-	expression tag	UNP P62873
B	-10	LEU	-	expression tag	UNP P62873
B	-9	GLU	-	expression tag	UNP P62873
B	-8	VAL	-	expression tag	UNP P62873
B	-7	LEU	-	expression tag	UNP P62873
B	-6	PHE	-	expression tag	UNP P62873
B	-5	GLN	-	expression tag	UNP P62873
B	-4	GLY	-	expression tag	UNP P62873
B	-3	PRO	-	expression tag	UNP P62873
B	-2	GLY	-	expression tag	UNP P62873
B	-1	SER	-	expression tag	UNP P62873
B	0	SER	-	expression tag	UNP P62873
B	1	GLY	-	expression tag	UNP P62873

- Molecule 3 is a protein called Guanine nucleotide-binding protein G(I)/G(S)/G(O) subunit gamma-2.

Mol	Chain	Residues	Atoms						AltConf	Trace
3	G	38	Total	C	H	N	O	S	0	0
			452	154	207	41	47	3		

- Molecule 4 is a protein called Nanobody 35.

Mol	Chain	Residues	Atoms						AltConf	Trace
4	N	117	Total	C	H	N	O	S	0	0
			1647	544	784	149	164	6		

- Molecule 5 is a protein called Adhesion G-protein-coupled receptor F1.

Mol	Chain	Residues	Atoms						AltConf	Trace
5	R	251	Total	C	H	N	O	S	0	0
			3876	1307	1964	297	295	13		

There are 67 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
R	523	MET	-	initiating methionine	UNP A0A0C4DH10
R	524	LYS	-	expression tag	UNP A0A0C4DH10
R	525	THR	-	expression tag	UNP A0A0C4DH10
R	526	ILE	-	expression tag	UNP A0A0C4DH10
R	527	ILE	-	expression tag	UNP A0A0C4DH10
R	528	ALA	-	expression tag	UNP A0A0C4DH10
R	529	LEU	-	expression tag	UNP A0A0C4DH10
R	530	SER	-	expression tag	UNP A0A0C4DH10
R	531	TYR	-	expression tag	UNP A0A0C4DH10
R	532	ILE	-	expression tag	UNP A0A0C4DH10
R	533	PHE	-	expression tag	UNP A0A0C4DH10
R	534	CYS	-	expression tag	UNP A0A0C4DH10
R	535	LEU	-	expression tag	UNP A0A0C4DH10
R	536	VAL	-	expression tag	UNP A0A0C4DH10
R	537	PHE	-	expression tag	UNP A0A0C4DH10
R	538	ALA	-	expression tag	UNP A0A0C4DH10
R	539	ASP	-	expression tag	UNP A0A0C4DH10
R	540	TYR	-	expression tag	UNP A0A0C4DH10
R	541	LYS	-	expression tag	UNP A0A0C4DH10
R	542	ASP	-	expression tag	UNP A0A0C4DH10
R	543	HIS	-	expression tag	UNP A0A0C4DH10
R	544	ASP	-	expression tag	UNP A0A0C4DH10

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Chain	Residue	Modelled	Actual	Comment	Reference
R	545	GLY	-	expression tag	UNP A0A0C4DH10
R	546	ASP	-	expression tag	UNP A0A0C4DH10
R	547	TYR	-	expression tag	UNP A0A0C4DH10
R	548	LYS	-	expression tag	UNP A0A0C4DH10
R	549	ASP	-	expression tag	UNP A0A0C4DH10
R	550	HIS	-	expression tag	UNP A0A0C4DH10
R	551	ASP	-	expression tag	UNP A0A0C4DH10
R	552	ILE	-	expression tag	UNP A0A0C4DH10
R	553	ASP	-	expression tag	UNP A0A0C4DH10
R	554	TYR	-	expression tag	UNP A0A0C4DH10
R	555	LYS	-	expression tag	UNP A0A0C4DH10
R	556	ASP	-	expression tag	UNP A0A0C4DH10
R	557	ASP	-	expression tag	UNP A0A0C4DH10
R	558	ASP	-	expression tag	UNP A0A0C4DH10
R	559	ASP	-	expression tag	UNP A0A0C4DH10
R	560	LYS	-	expression tag	UNP A0A0C4DH10
R	561	GLU	-	expression tag	UNP A0A0C4DH10
R	562	ASN	-	expression tag	UNP A0A0C4DH10
R	563	LEU	-	expression tag	UNP A0A0C4DH10
R	564	TYR	-	expression tag	UNP A0A0C4DH10
R	565	PHE	-	expression tag	UNP A0A0C4DH10
R	566	GLN	-	expression tag	UNP A0A0C4DH10
R	911	GLY	-	expression tag	UNP A0A0C4DH10
R	912	GLY	-	expression tag	UNP A0A0C4DH10
R	913	GLY	-	expression tag	UNP A0A0C4DH10
R	914	GLY	-	expression tag	UNP A0A0C4DH10
R	915	SER	-	expression tag	UNP A0A0C4DH10
R	916	GLY	-	expression tag	UNP A0A0C4DH10
R	917	GLY	-	expression tag	UNP A0A0C4DH10
R	918	GLY	-	expression tag	UNP A0A0C4DH10
R	919	GLY	-	expression tag	UNP A0A0C4DH10
R	920	SER	-	expression tag	UNP A0A0C4DH10
R	921	SER	-	expression tag	UNP A0A0C4DH10
R	922	GLY	-	expression tag	UNP A0A0C4DH10
R	923	VAL	-	expression tag	UNP A0A0C4DH10
R	924	THR	-	expression tag	UNP A0A0C4DH10
R	925	GLY	-	expression tag	UNP A0A0C4DH10
R	926	TYR	-	expression tag	UNP A0A0C4DH10
R	927	ARG	-	expression tag	UNP A0A0C4DH10
R	928	LEU	-	expression tag	UNP A0A0C4DH10
R	929	PHE	-	expression tag	UNP A0A0C4DH10
R	930	GLU	-	expression tag	UNP A0A0C4DH10

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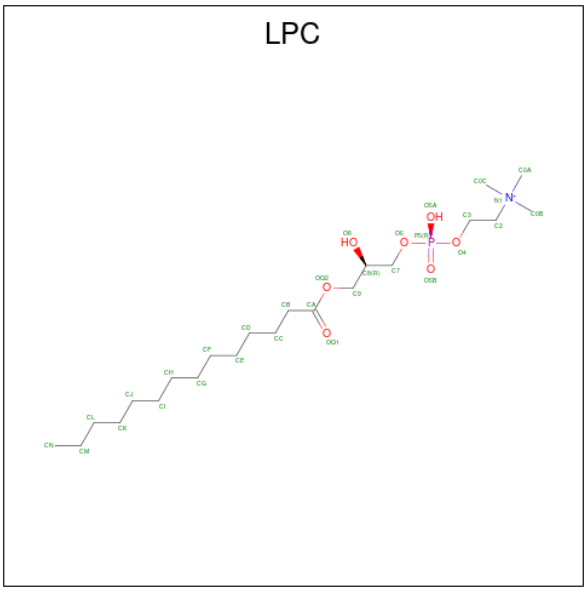
Chain	Residue	Modelled	Actual	Comment	Reference
R	931	GLU	-	expression tag	UNP A0A0C4DH10
R	932	ILE	-	expression tag	UNP A0A0C4DH10
R	933	LEU	-	expression tag	UNP A0A0C4DH10

- Molecule 6 is [1-MYRISTOYL-GLYCEROL-3-YL]PHOSPHONYLCHOLINE (three-letter code: LPC) (formula: $C_{22}H_{47}NO_7P$) (labeled as "Ligand of Interest" by depositor).



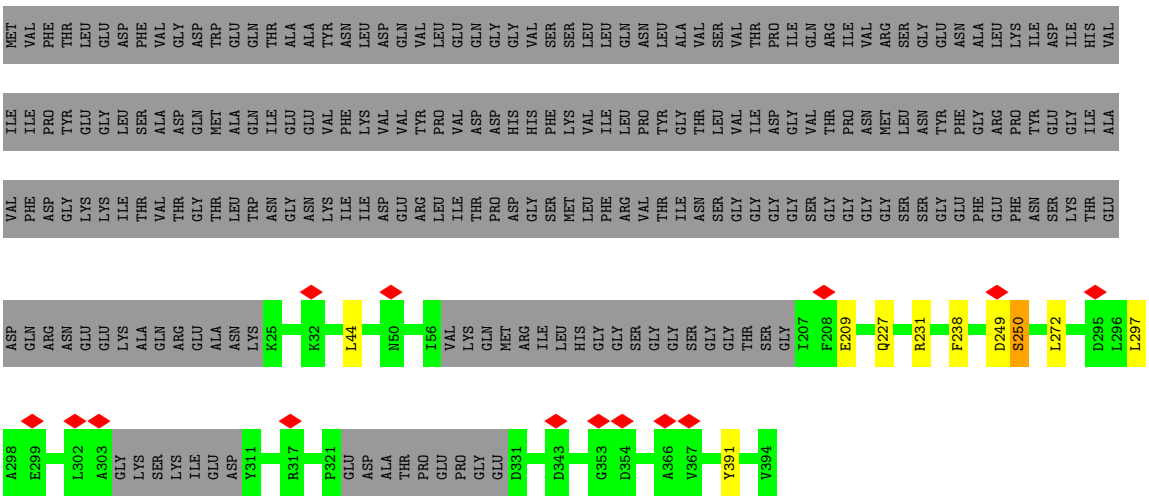
Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
6	R	1	31	22	1	7	1	0

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.

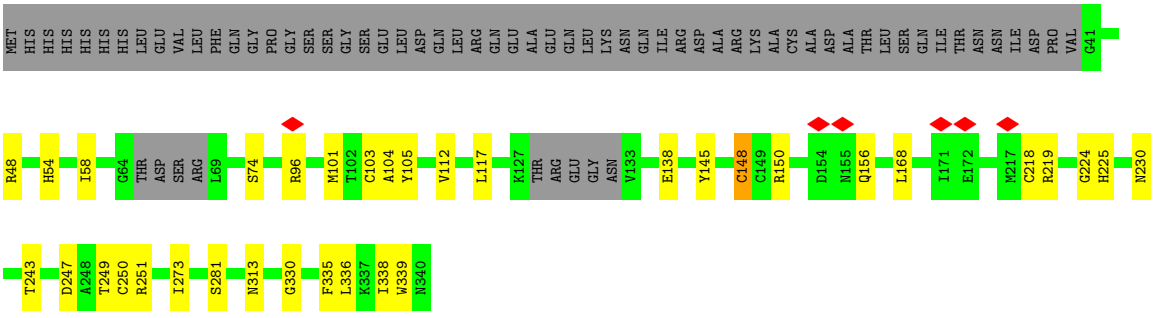
• Molecule 1: MiniG alpha s/q chimera

Chain A:



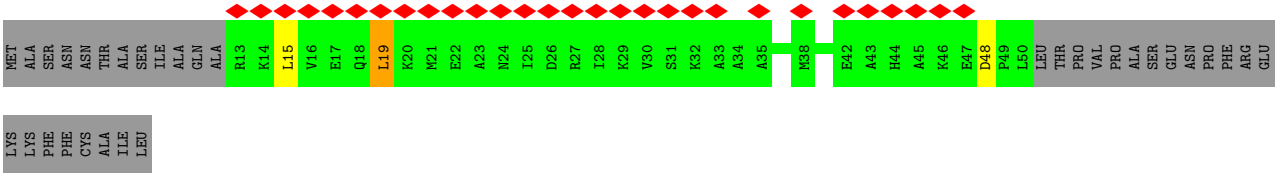
• Molecule 2: Guanine nucleotide-binding protein G(I)/G(S)/G(T) subunit beta-1

Chain B:



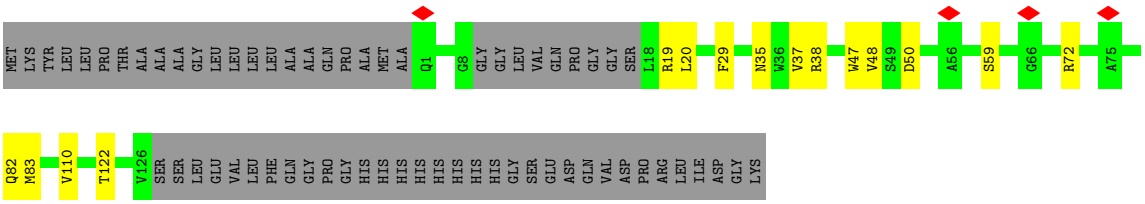
• Molecule 3: Guanine nucleotide-binding protein G(I)/G(S)/G(O) subunit gamma-2

Chain G:



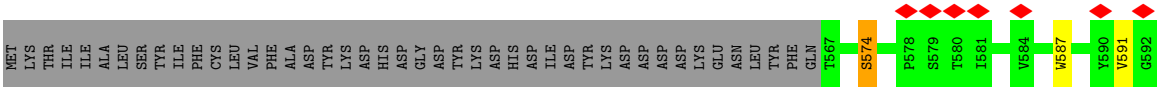
• Molecule 4: Nanobody 35

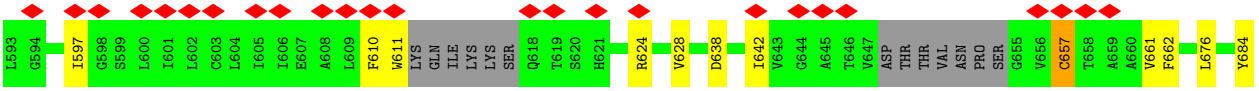
Chain N:

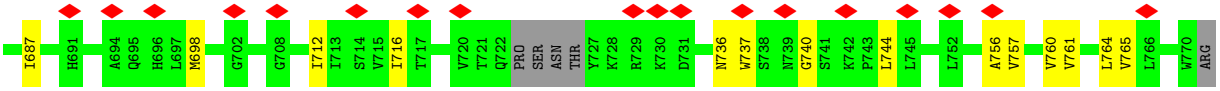


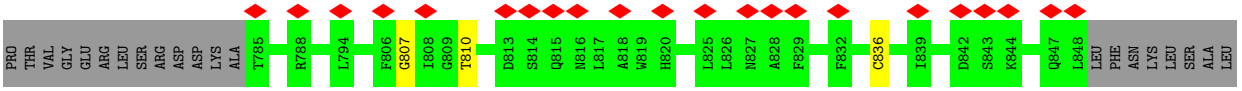
• Molecule 5: Adhesion G-protein-coupled receptor F1

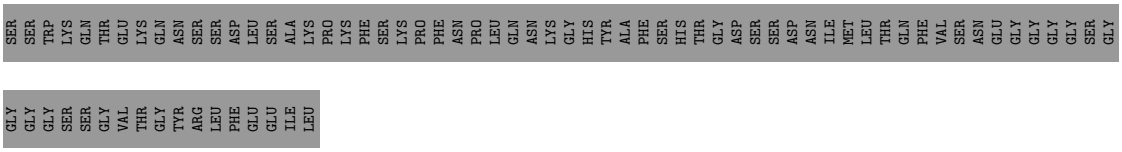
Chain R:











4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	73903	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 ($e^-/Å^2$)	53.5	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	1500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	1.608	Depositor
Minimum map value	-0.992	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	0.031	Depositor
Recommended contour level	0.22	Depositor
Map size (Å)	264.0, 264.0, 264.0	wwPDB
Map dimensions	320, 320, 320	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.825, 0.825, 0.825	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: LPC

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	0.28	0/1550	0.56	0/2101
2	B	0.31	0/2152	0.61	0/2932
3	G	0.27	0/247	0.45	0/339
4	N	0.31	0/881	0.63	0/1198
5	R	0.28	0/1962	0.52	0/2683
All	All	0.29	0/6792	0.57	0/9253

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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	1518	1433	1431	8	0
2	B	2108	1954	1951	20	0
3	G	245	207	206	2	0
4	N	863	784	791	10	0
5	R	1912	1964	1971	17	0
6	R	31	0	46	3	0
All	All	6677	6342	6396	55	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 4.

The worst 5 of 55 close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:96:ARG:NH1	2:B:138:GLU:OE2	2.30	0.64
2:B:54:HIS:ND1	2:B:74:SER:OG	2.31	0.63
2:B:148:CYS:SG	2:B:150:ARG:NH2	2.73	0.61
1:A:231:ARG:HH21	1:A:272:LEU:HD22	1.65	0.61
2:B:218:CYS:SG	2:B:219:ARG:N	2.74	0.60

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	186/423 (44%)	182 (98%)	4 (2%)	0	100	100
2	B	285/358 (80%)	269 (94%)	16 (6%)	0	100	100
3	G	36/71 (51%)	35 (97%)	1 (3%)	0	100	100
4	N	113/181 (62%)	105 (93%)	8 (7%)	0	100	100
5	R	241/411 (59%)	231 (96%)	10 (4%)	0	100	100
All	All	861/1444 (60%)	822 (96%)	39 (4%)	0	100	100

There are no Ramachandran outliers to report.

5.3.2 Protein sidechains (i)

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

The Analysed column shows the number of residues for which the sidechain conformation was

analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	A	148/365 (40%)	145 (98%)	3 (2%)	50 72
2	B	205/298 (69%)	198 (97%)	7 (3%)	32 60
3	G	18/58 (31%)	17 (94%)	1 (6%)	17 45
4	N	85/147 (58%)	85 (100%)	0	100 100
5	R	198/357 (56%)	190 (96%)	8 (4%)	27 55
All	All	654/1225 (53%)	635 (97%)	19 (3%)	39 64

5 of 19 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
5	R	638	ASP
5	R	684	TYR
5	R	836	CYS
5	R	662	PHE
2	B	335	PHE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. There are no such sidechains identified.

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

1 ligand is modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and

the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. 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 $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
6	LPC	R	1001	-	30,30,30	0.54	0	35,37,37	0.53	0

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
6	LPC	R	1001	-	-	19/32/32/32	-

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

5 of 19 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
6	R	1001	LPC	C3-O4-P5-O6
6	R	1001	LPC	C7-O6-P5-O4
6	R	1001	LPC	C7-O6-P5-O5A
6	R	1001	LPC	C7-O6-P5-O5B
6	R	1001	LPC	OQ1-CA-OQ2-C9

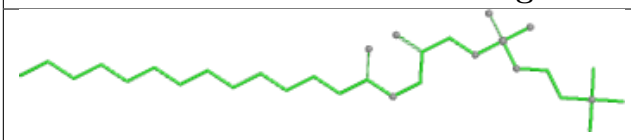
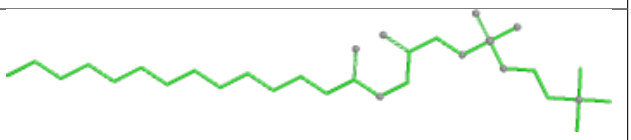
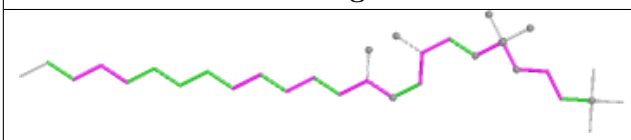
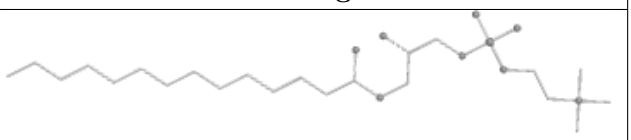
There are no ring outliers.

1 monomer is involved in 3 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
6	R	1001	LPC	3	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring

in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

Ligand LPC R 1001	
 Bond lengths	 Bond angles
 Torsions	 Rings

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.

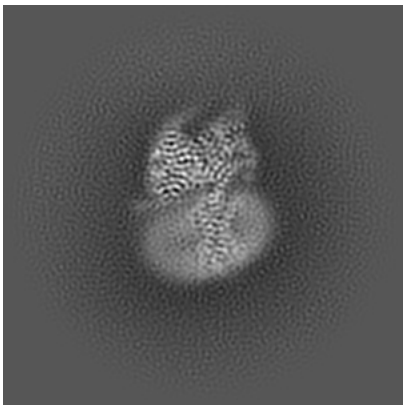
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-29684. These allow visual inspection of the internal detail of the map and identification of artifacts.

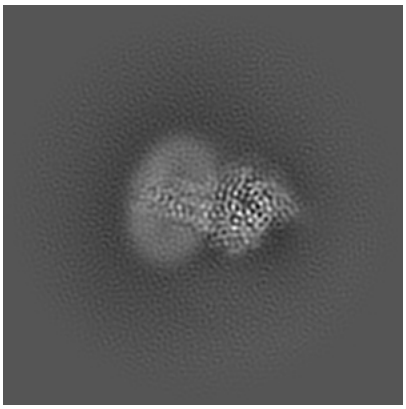
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

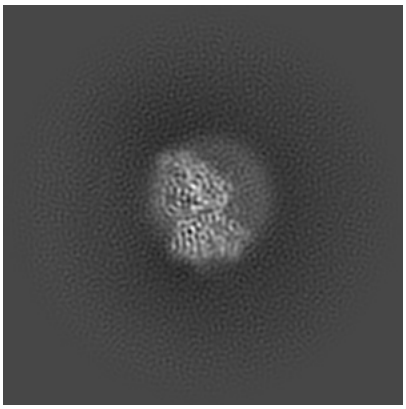
6.1.1 Primary map



X

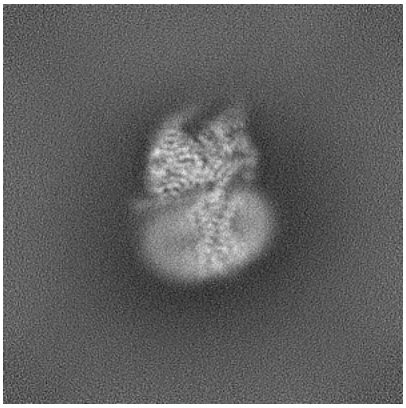


Y

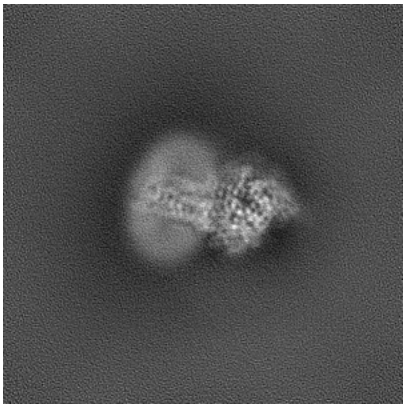


Z

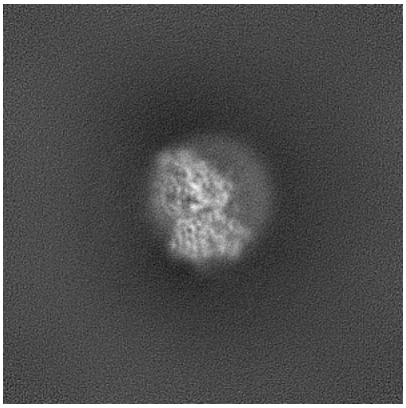
6.1.2 Raw map



X



Y

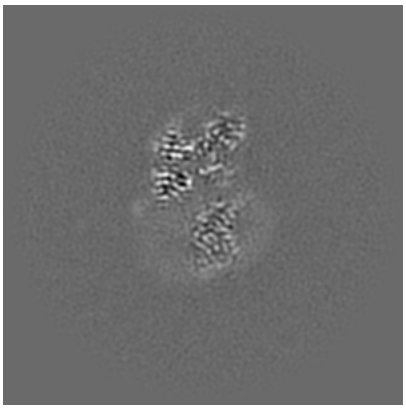


Z

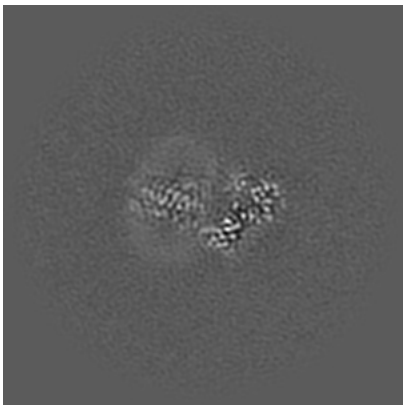
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

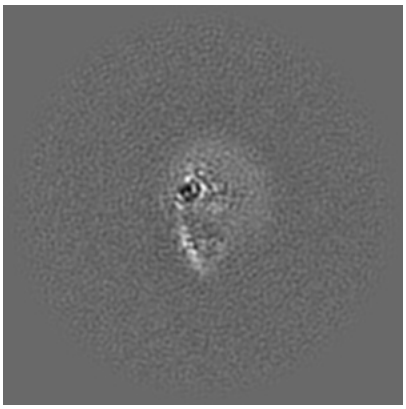
6.2.1 Primary map



X Index: 160

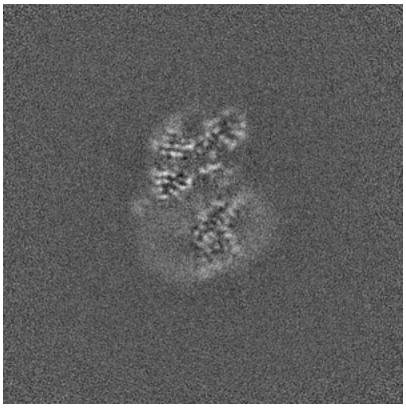


Y Index: 160

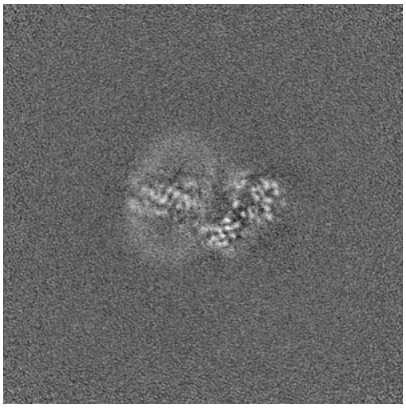


Z Index: 160

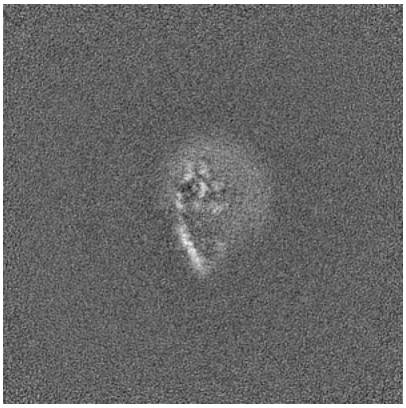
6.2.2 Raw map



X Index: 160



Y Index: 160

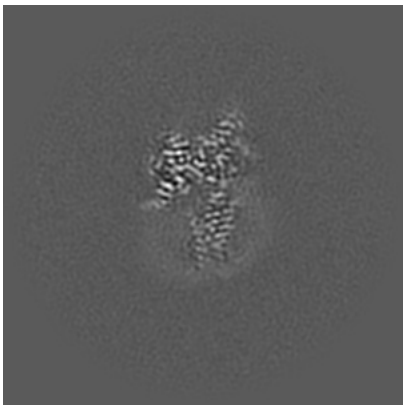


Z Index: 160

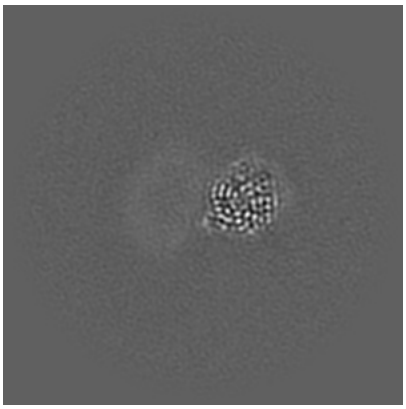
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

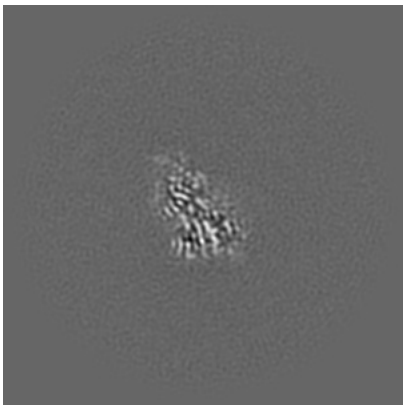
6.3.1 Primary map



X Index: 151

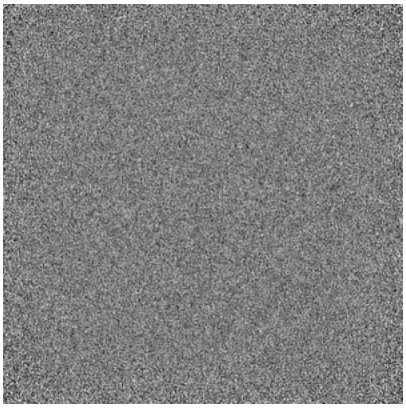


Y Index: 134

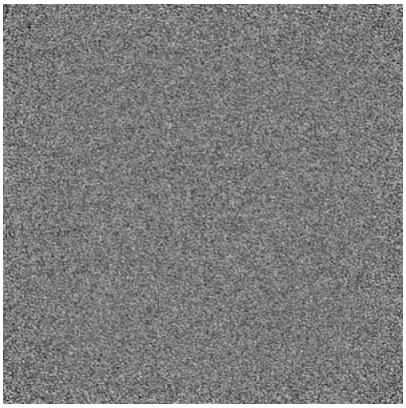


Z Index: 185

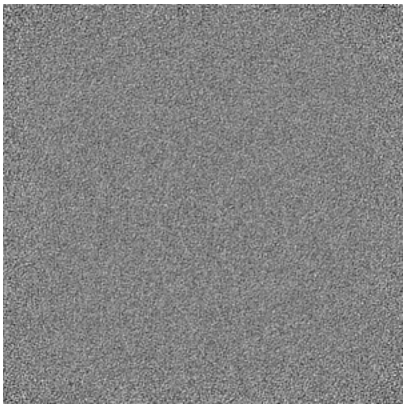
6.3.2 Raw map



X Index: 0



Y Index: 0

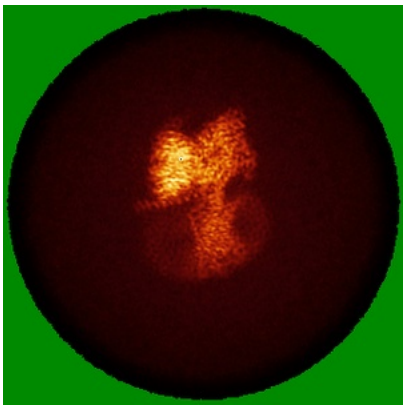


Z Index: 0

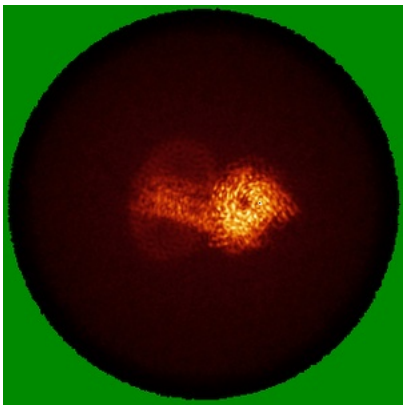
The images above show the largest variance slices of the map in three orthogonal directions.

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

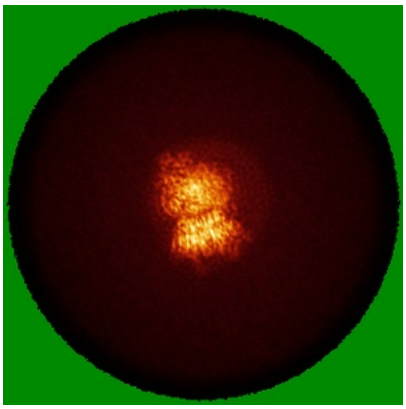
6.4.1 Primary map



X

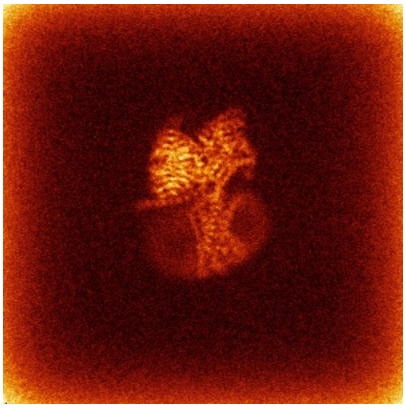


Y

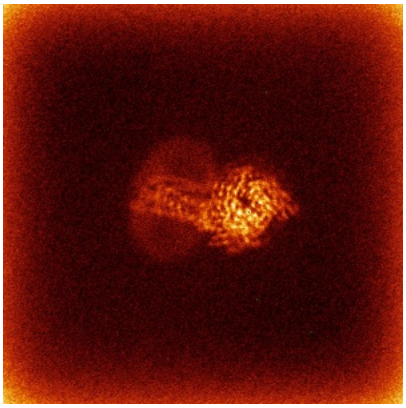


Z

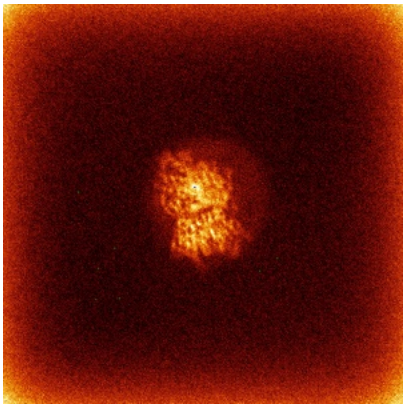
6.4.2 Raw map



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 0.22. 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.

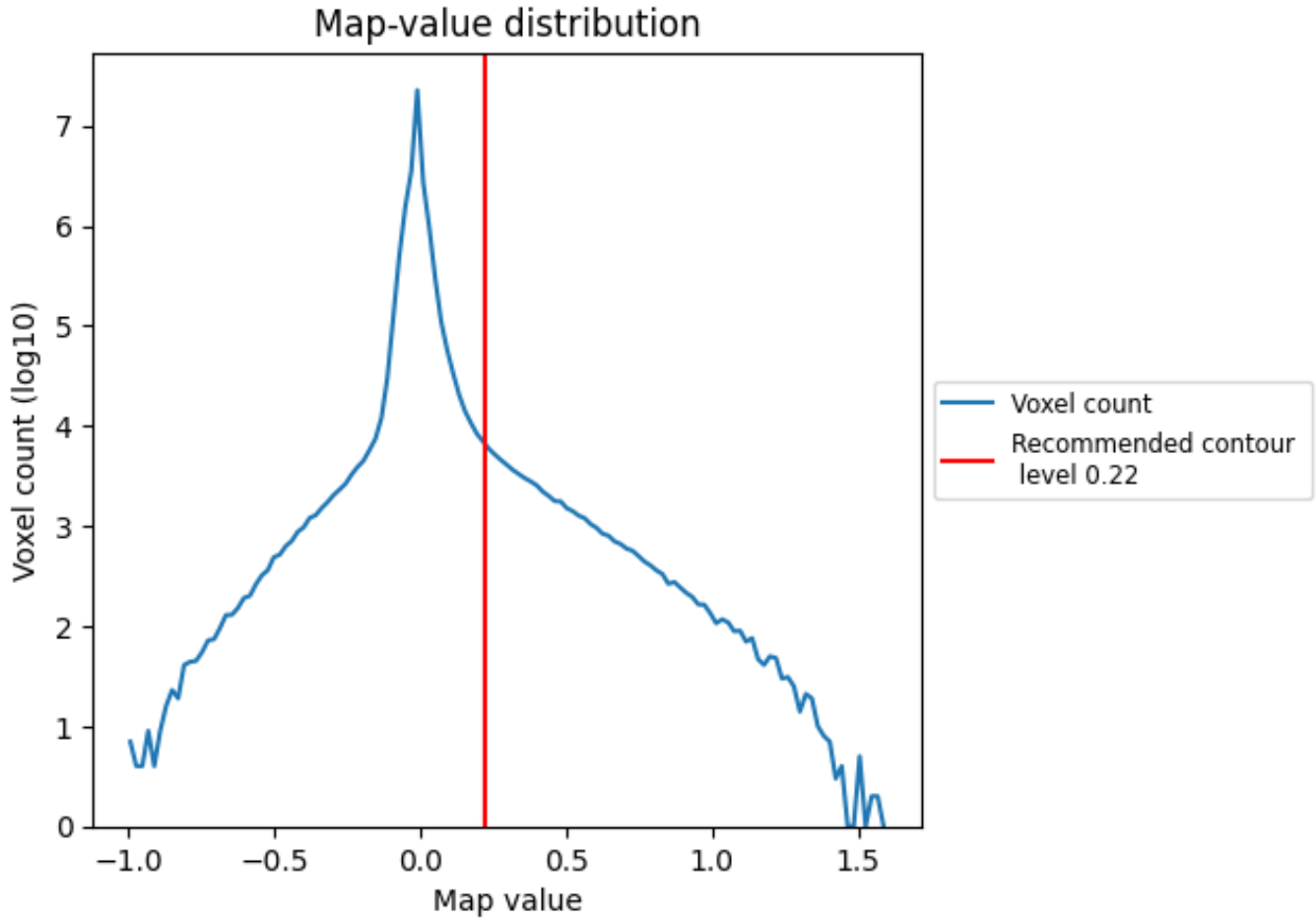
6.6 Mask visualisation (i)

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

7 Map analysis

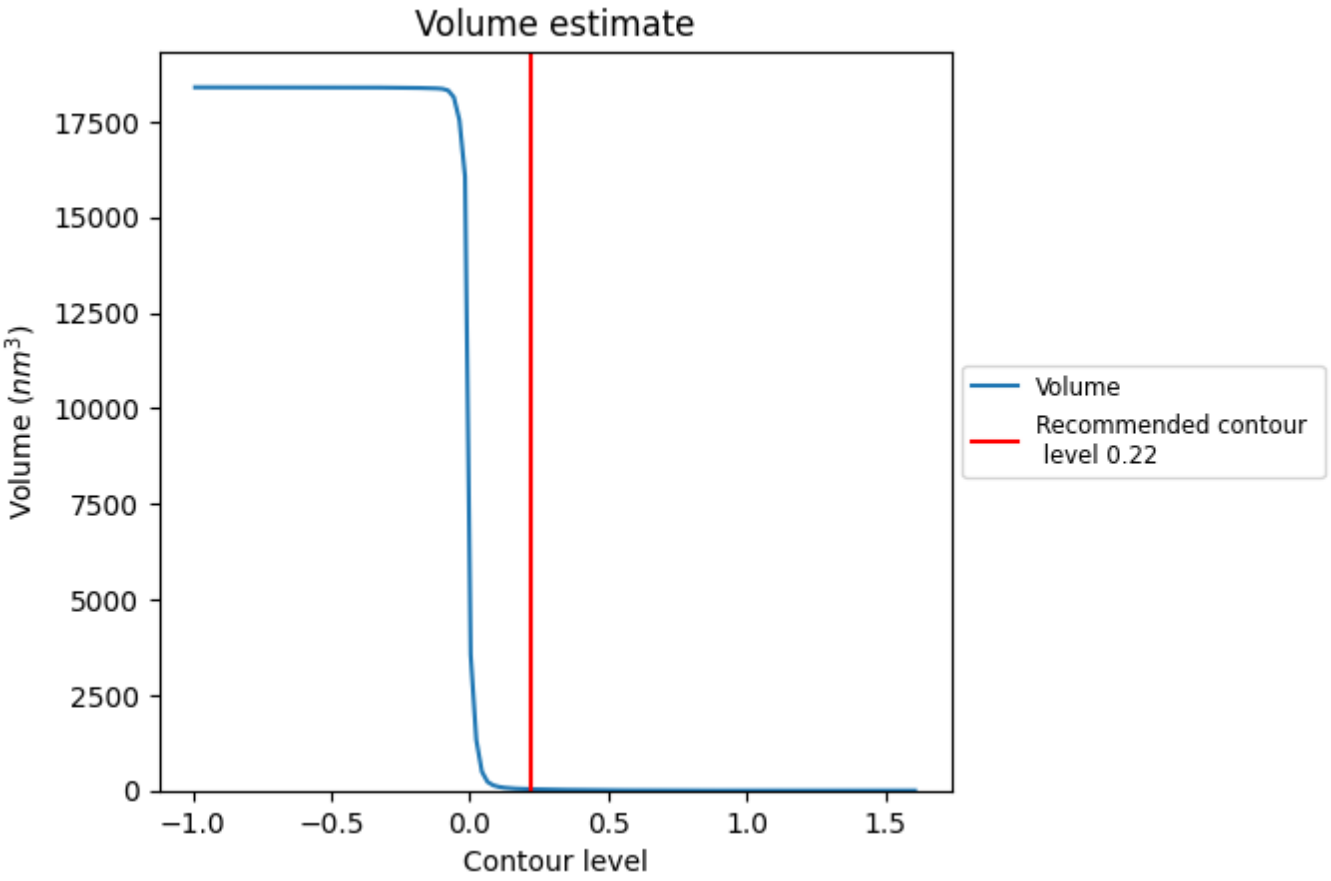
This section contains the results of statistical analysis of the map.

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.

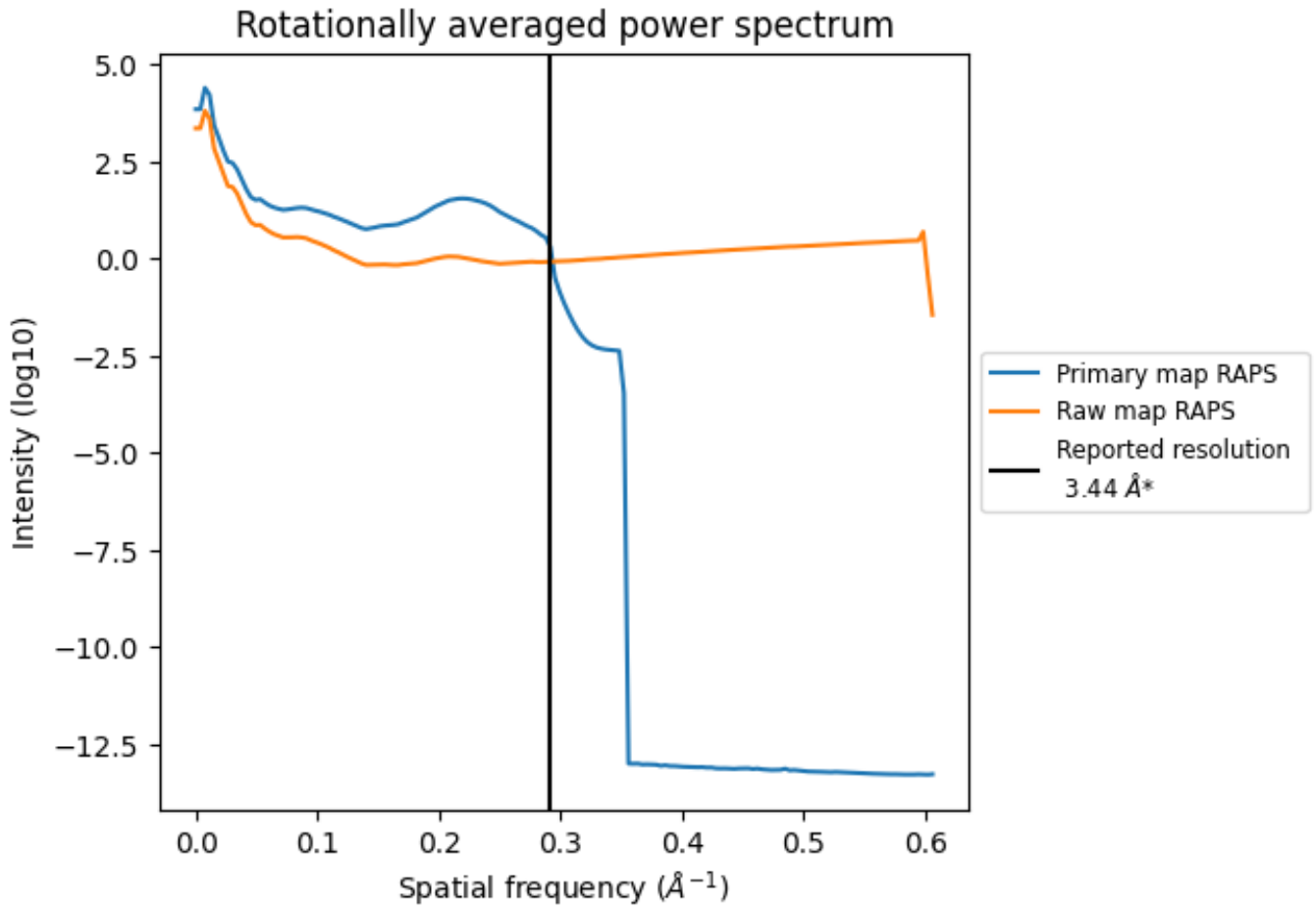
7.2 Volume estimate (i)



The volume at the recommended contour level is 36 nm^3; this corresponds to an approximate mass of 33 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)

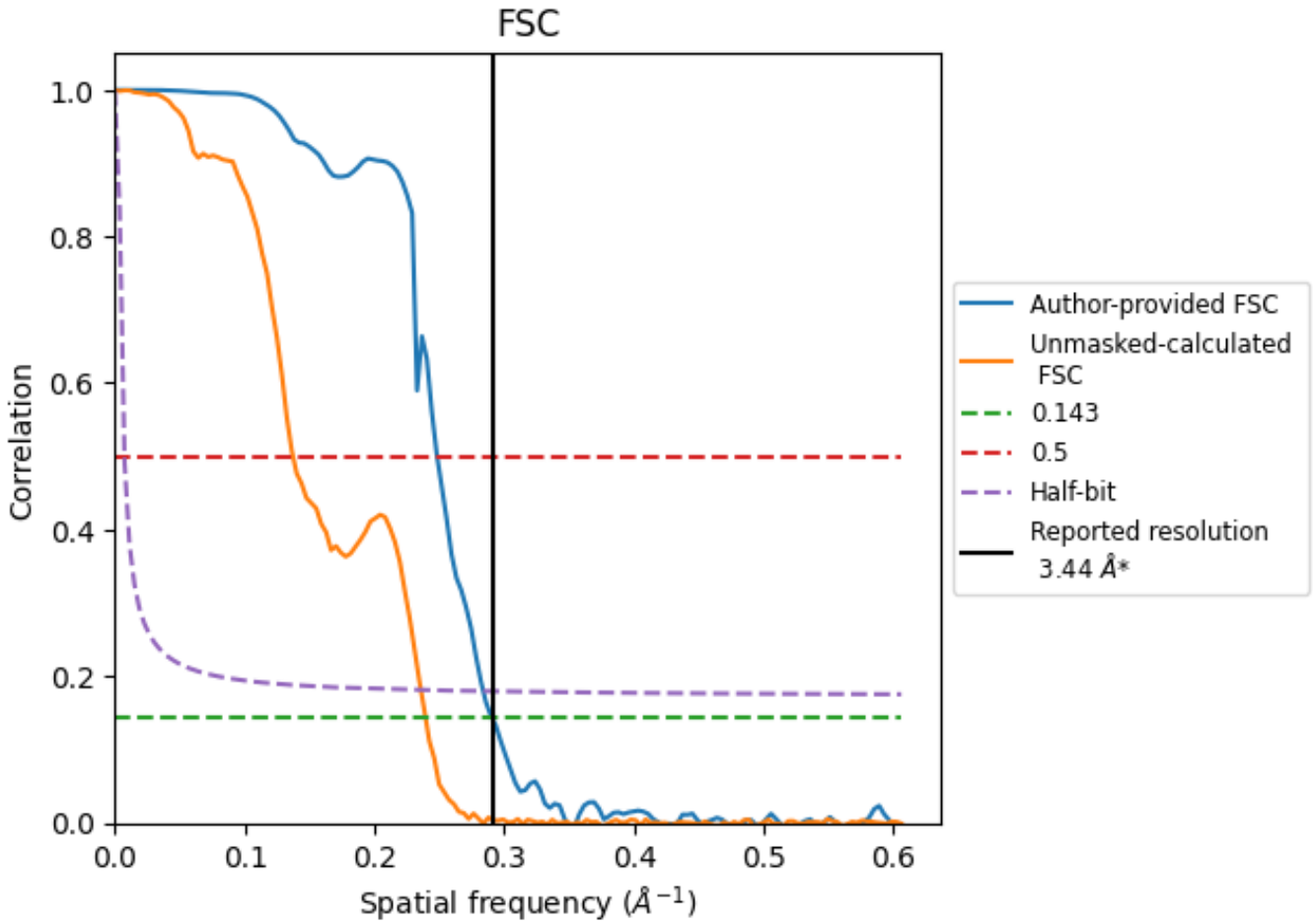


*Reported resolution corresponds to spatial frequency of 0.291 $Å^{-1}$

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 0.291 Å^{-1}

8.2 Resolution estimates (i)

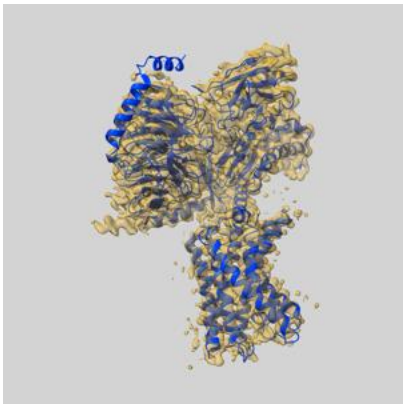
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.44	-	-
Author-provided FSC curve	3.44	4.03	3.52
Unmasked-calculated*	4.17	7.28	4.24

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 4.17 differs from the reported value 3.44 by more than 10 %

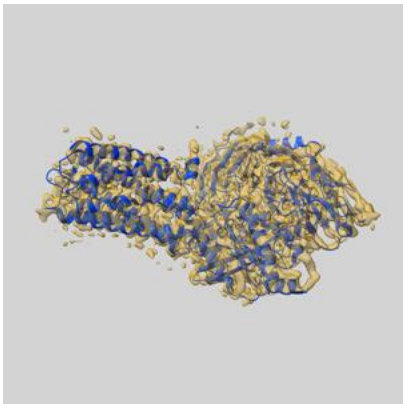
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-29684 and PDB model 8G2Y. Per-residue inclusion information can be found in section 3 on page 7.

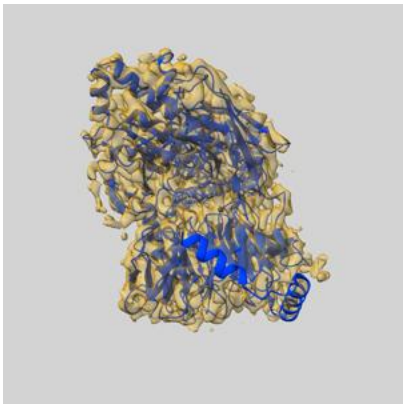
9.1 Map-model overlay



X



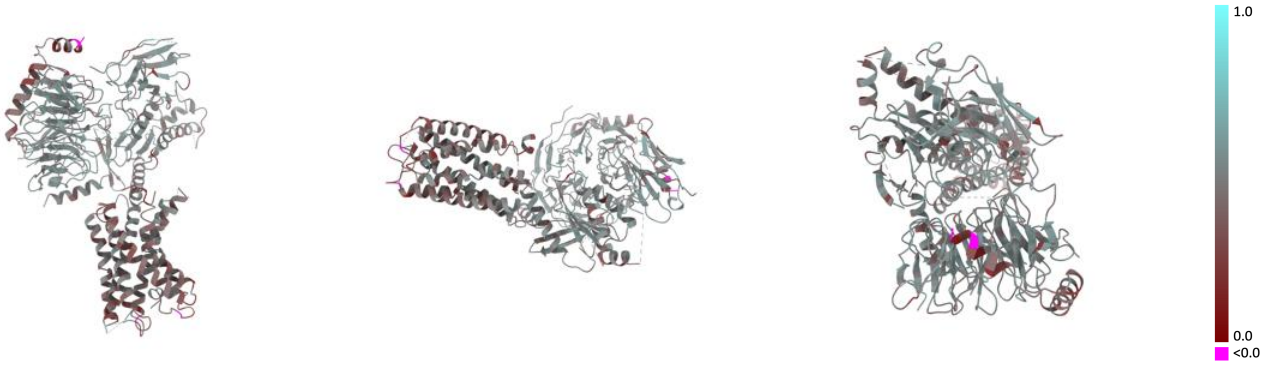
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.22 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.

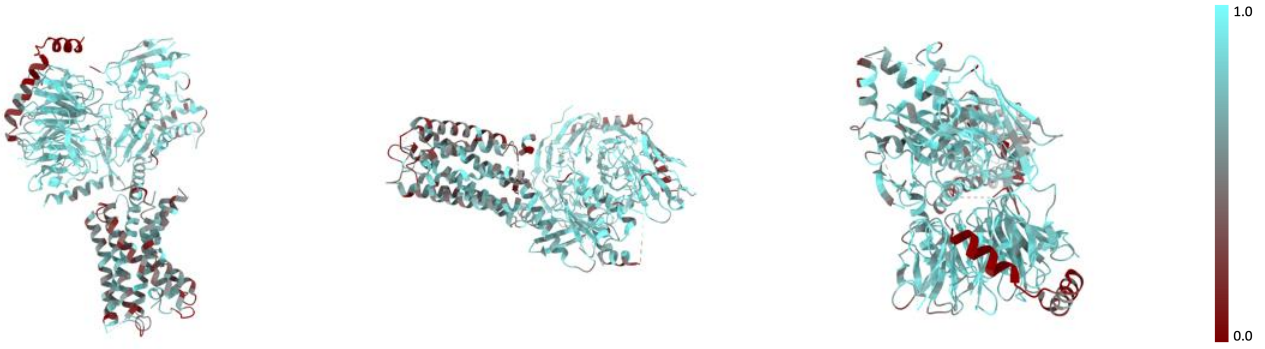
9.2 Q-score mapped to coordinate model (i)



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.

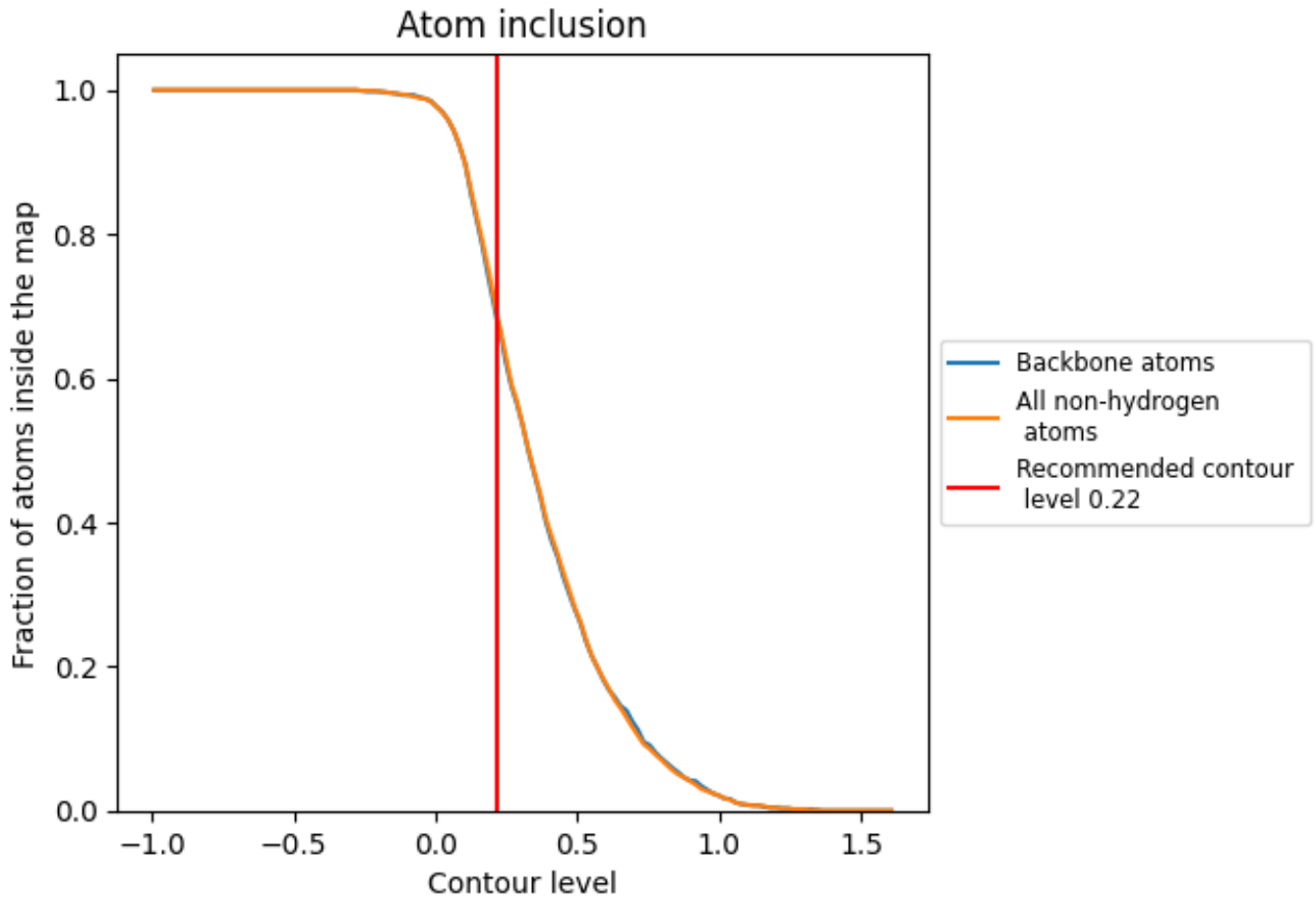
9.3 Atom inclusion mapped to coordinate model (i)



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 (0.22).

9.4 Atom inclusion (i)



At the recommended contour level, 68% of all backbone atoms, 68% 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 (0.22) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.6810	0.4700
A	0.7500	0.4850
B	0.7840	0.5070
G	0.2210	0.3480
N	0.7800	0.5070
R	0.5490	0.4160