wwPDB EM Validation Summary Report (i)

Dec 8, 2025 – 08:00 PM JST

PDB ID	:	9L0W / pdb_00009l0w
EMDB ID	:	EMD-62726
Title	:	Structure of gain-of-function polycystin-1/polycystin-2 complex
Authors	:	Chen, M.Y.; Su, Q.; Shi, Y.G.
Deposited on	:	2024-12-13
Resolution	:	3.69 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:

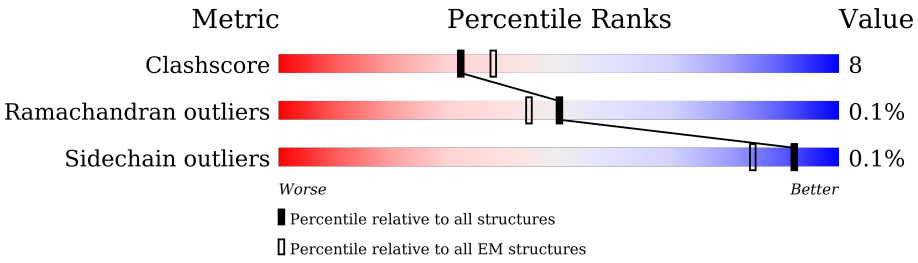
EMDB validation analysis	:	0.0.1.dev129
Mogul	:	1.8.5 (274361), CSD as541be (2020)
MolProbity	:	4-5-2 with Phenix2.0
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.47

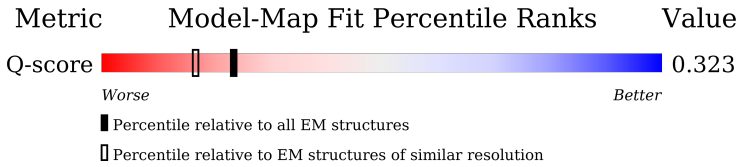
1 Overall quality at a glance (i)

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

The reported resolution of this entry is 3.69 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	11284 (3.19 - 4.18)

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	1262	48% 11% 41%
2	B	1005	40% 8% 53%
2	C	1005	37% 10% 53%
2	D	1005	17% 44% . 53%

2 Entry composition (i)

There are 3 unique types of molecules in this entry. The entry contains 16028 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 Polycystin-1.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	739	Total	C	N	O	S	0	0
			5474	3528	1001	927	18		

There are 10 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	3043	MET	-	initiating methionine	UNP P98161
A	3044	ASP	-	expression tag	UNP P98161
A	3045	TYR	-	expression tag	UNP P98161
A	3046	LYS	-	expression tag	UNP P98161
A	3047	ASP	-	expression tag	UNP P98161
A	3048	ASP	-	expression tag	UNP P98161
A	3049	ASP	-	expression tag	UNP P98161
A	3050	ASP	-	expression tag	UNP P98161
A	3051	LYS	-	expression tag	UNP P98161
A	4304	LEU	-	expression tag	UNP P98161

- Molecule 2 is a protein called Polycystin-2.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	B	476	Total	C	N	O	S	0	0
			3932	2597	621	693	21		
2	C	468	Total	C	N	O	S	0	0
			3860	2550	608	682	20		
2	D	473	Total	C	N	O	S	0	0
			2678	1665	491	517	5		

There are 117 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	-36	MET	-	initiating methionine	UNP Q13563
B	-35	GLY	-	expression tag	UNP Q13563
B	-34	ALA	-	expression tag	UNP Q13563

Continued on next page...

Continued from previous page...

Chain	Residue	Modelled	Actual	Comment	Reference
B	-33	SER	-	expression tag	UNP Q13563
B	-32	SER	-	expression tag	UNP Q13563
B	-31	ALA	-	expression tag	UNP Q13563
B	-30	TRP	-	expression tag	UNP Q13563
B	-29	SER	-	expression tag	UNP Q13563
B	-28	HIS	-	expression tag	UNP Q13563
B	-27	PRO	-	expression tag	UNP Q13563
B	-26	GLN	-	expression tag	UNP Q13563
B	-25	PHE	-	expression tag	UNP Q13563
B	-24	GLU	-	expression tag	UNP Q13563
B	-23	LYS	-	expression tag	UNP Q13563
B	-22	GLY	-	expression tag	UNP Q13563
B	-21	GLY	-	expression tag	UNP Q13563
B	-20	GLY	-	expression tag	UNP Q13563
B	-19	SER	-	expression tag	UNP Q13563
B	-18	GLY	-	expression tag	UNP Q13563
B	-17	GLY	-	expression tag	UNP Q13563
B	-16	GLY	-	expression tag	UNP Q13563
B	-15	SER	-	expression tag	UNP Q13563
B	-14	GLY	-	expression tag	UNP Q13563
B	-13	GLY	-	expression tag	UNP Q13563
B	-12	SER	-	expression tag	UNP Q13563
B	-11	ALA	-	expression tag	UNP Q13563
B	-10	TRP	-	expression tag	UNP Q13563
B	-9	SER	-	expression tag	UNP Q13563
B	-8	HIS	-	expression tag	UNP Q13563
B	-7	PRO	-	expression tag	UNP Q13563
B	-6	GLN	-	expression tag	UNP Q13563
B	-5	PHE	-	expression tag	UNP Q13563
B	-4	GLU	-	expression tag	UNP Q13563
B	-3	LYS	-	expression tag	UNP Q13563
B	-2	GLY	-	expression tag	UNP Q13563
B	-1	GLY	-	expression tag	UNP Q13563
B	0	SER	-	expression tag	UNP Q13563
B	677	ALA	LEU	engineered mutation	UNP Q13563
B	681	ALA	ASN	engineered mutation	UNP Q13563
C	-36	MET	-	initiating methionine	UNP Q13563
C	-35	GLY	-	expression tag	UNP Q13563
C	-34	ALA	-	expression tag	UNP Q13563
C	-33	SER	-	expression tag	UNP Q13563
C	-32	SER	-	expression tag	UNP Q13563
C	-31	ALA	-	expression tag	UNP Q13563

Continued on next page...

Continued from previous page...

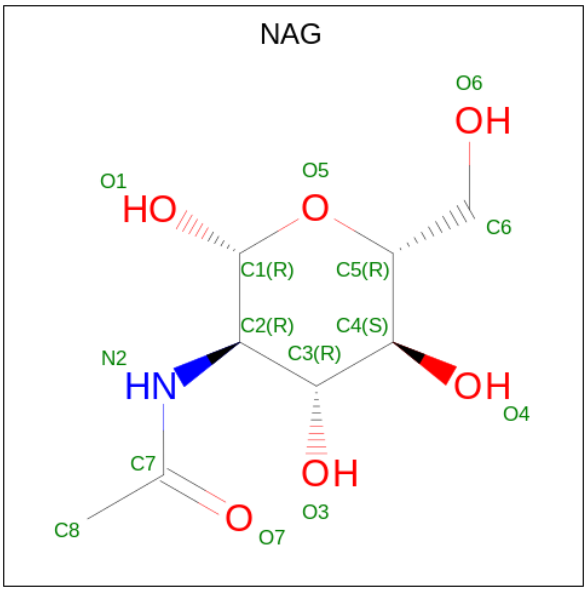
Chain	Residue	Modelled	Actual	Comment	Reference
C	-30	TRP	-	expression tag	UNP Q13563
C	-29	SER	-	expression tag	UNP Q13563
C	-28	HIS	-	expression tag	UNP Q13563
C	-27	PRO	-	expression tag	UNP Q13563
C	-26	GLN	-	expression tag	UNP Q13563
C	-25	PHE	-	expression tag	UNP Q13563
C	-24	GLU	-	expression tag	UNP Q13563
C	-23	LYS	-	expression tag	UNP Q13563
C	-22	GLY	-	expression tag	UNP Q13563
C	-21	GLY	-	expression tag	UNP Q13563
C	-20	GLY	-	expression tag	UNP Q13563
C	-19	SER	-	expression tag	UNP Q13563
C	-18	GLY	-	expression tag	UNP Q13563
C	-17	GLY	-	expression tag	UNP Q13563
C	-16	GLY	-	expression tag	UNP Q13563
C	-15	SER	-	expression tag	UNP Q13563
C	-14	GLY	-	expression tag	UNP Q13563
C	-13	GLY	-	expression tag	UNP Q13563
C	-12	SER	-	expression tag	UNP Q13563
C	-11	ALA	-	expression tag	UNP Q13563
C	-10	TRP	-	expression tag	UNP Q13563
C	-9	SER	-	expression tag	UNP Q13563
C	-8	HIS	-	expression tag	UNP Q13563
C	-7	PRO	-	expression tag	UNP Q13563
C	-6	GLN	-	expression tag	UNP Q13563
C	-5	PHE	-	expression tag	UNP Q13563
C	-4	GLU	-	expression tag	UNP Q13563
C	-3	LYS	-	expression tag	UNP Q13563
C	-2	GLY	-	expression tag	UNP Q13563
C	-1	GLY	-	expression tag	UNP Q13563
C	0	SER	-	expression tag	UNP Q13563
C	677	ALA	LEU	engineered mutation	UNP Q13563
C	681	ALA	ASN	engineered mutation	UNP Q13563
D	-36	MET	-	initiating methionine	UNP Q13563
D	-35	GLY	-	expression tag	UNP Q13563
D	-34	ALA	-	expression tag	UNP Q13563
D	-33	SER	-	expression tag	UNP Q13563
D	-32	SER	-	expression tag	UNP Q13563
D	-31	ALA	-	expression tag	UNP Q13563
D	-30	TRP	-	expression tag	UNP Q13563
D	-29	SER	-	expression tag	UNP Q13563
D	-28	HIS	-	expression tag	UNP Q13563

Continued on next page...

Continued from previous page...

Chain	Residue	Modelled	Actual	Comment	Reference
D	-27	PRO	-	expression tag	UNP Q13563
D	-26	GLN	-	expression tag	UNP Q13563
D	-25	PHE	-	expression tag	UNP Q13563
D	-24	GLU	-	expression tag	UNP Q13563
D	-23	LYS	-	expression tag	UNP Q13563
D	-22	GLY	-	expression tag	UNP Q13563
D	-21	GLY	-	expression tag	UNP Q13563
D	-20	GLY	-	expression tag	UNP Q13563
D	-19	SER	-	expression tag	UNP Q13563
D	-18	GLY	-	expression tag	UNP Q13563
D	-17	GLY	-	expression tag	UNP Q13563
D	-16	GLY	-	expression tag	UNP Q13563
D	-15	SER	-	expression tag	UNP Q13563
D	-14	GLY	-	expression tag	UNP Q13563
D	-13	GLY	-	expression tag	UNP Q13563
D	-12	SER	-	expression tag	UNP Q13563
D	-11	ALA	-	expression tag	UNP Q13563
D	-10	TRP	-	expression tag	UNP Q13563
D	-9	SER	-	expression tag	UNP Q13563
D	-8	HIS	-	expression tag	UNP Q13563
D	-7	PRO	-	expression tag	UNP Q13563
D	-6	GLN	-	expression tag	UNP Q13563
D	-5	PHE	-	expression tag	UNP Q13563
D	-4	GLU	-	expression tag	UNP Q13563
D	-3	LYS	-	expression tag	UNP Q13563
D	-2	GLY	-	expression tag	UNP Q13563
D	-1	GLY	-	expression tag	UNP Q13563
D	0	SER	-	expression tag	UNP Q13563
D	677	ALA	LEU	engineered mutation	UNP Q13563
D	681	ALA	ASN	engineered mutation	UNP Q13563

- Molecule 3 is 2-acetamido-2-deoxy-beta-D-glucopyranose (CCD ID: NAG) (formula: $C_8H_{15}NO_6$).



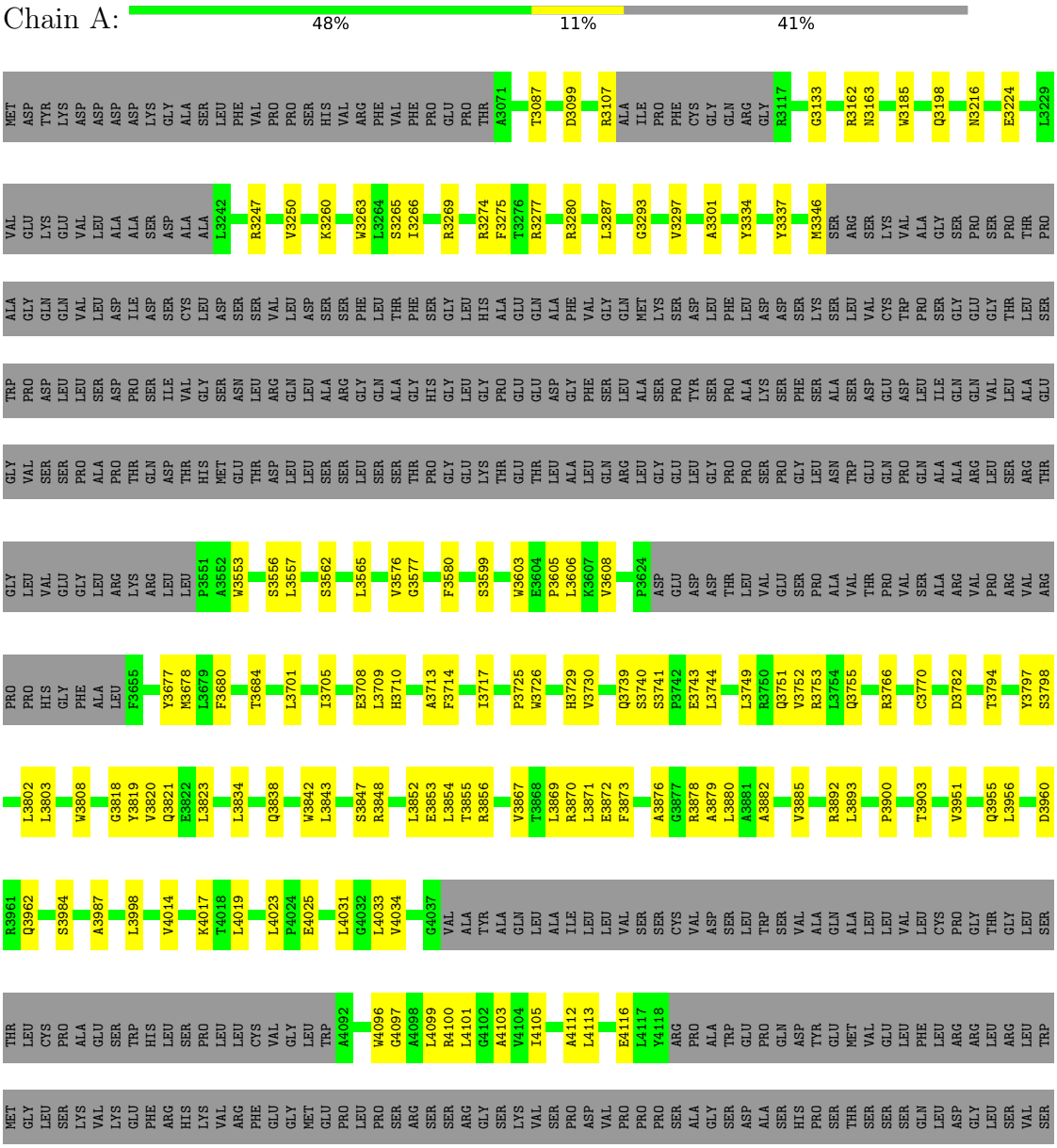
Mol	Chain	Residues	Atoms				AltConf
3	B	1	Total	C	N	O	0
			14	8	1	5	
3	B	1	Total	C	N	O	0
			14	8	1	5	
3	B	1	Total	C	N	O	0
			14	8	1	5	
3	C	1	Total	C	N	O	0
			14	8	1	5	
3	C	1	Total	C	N	O	0
			14	8	1	5	
3	C	1	Total	C	N	O	0
			14	8	1	5	

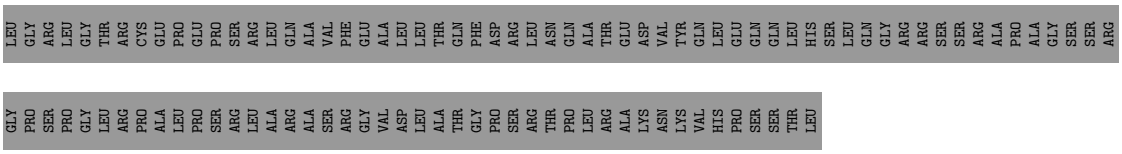
3 Residue-property plots (i)

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: Polycystin-1

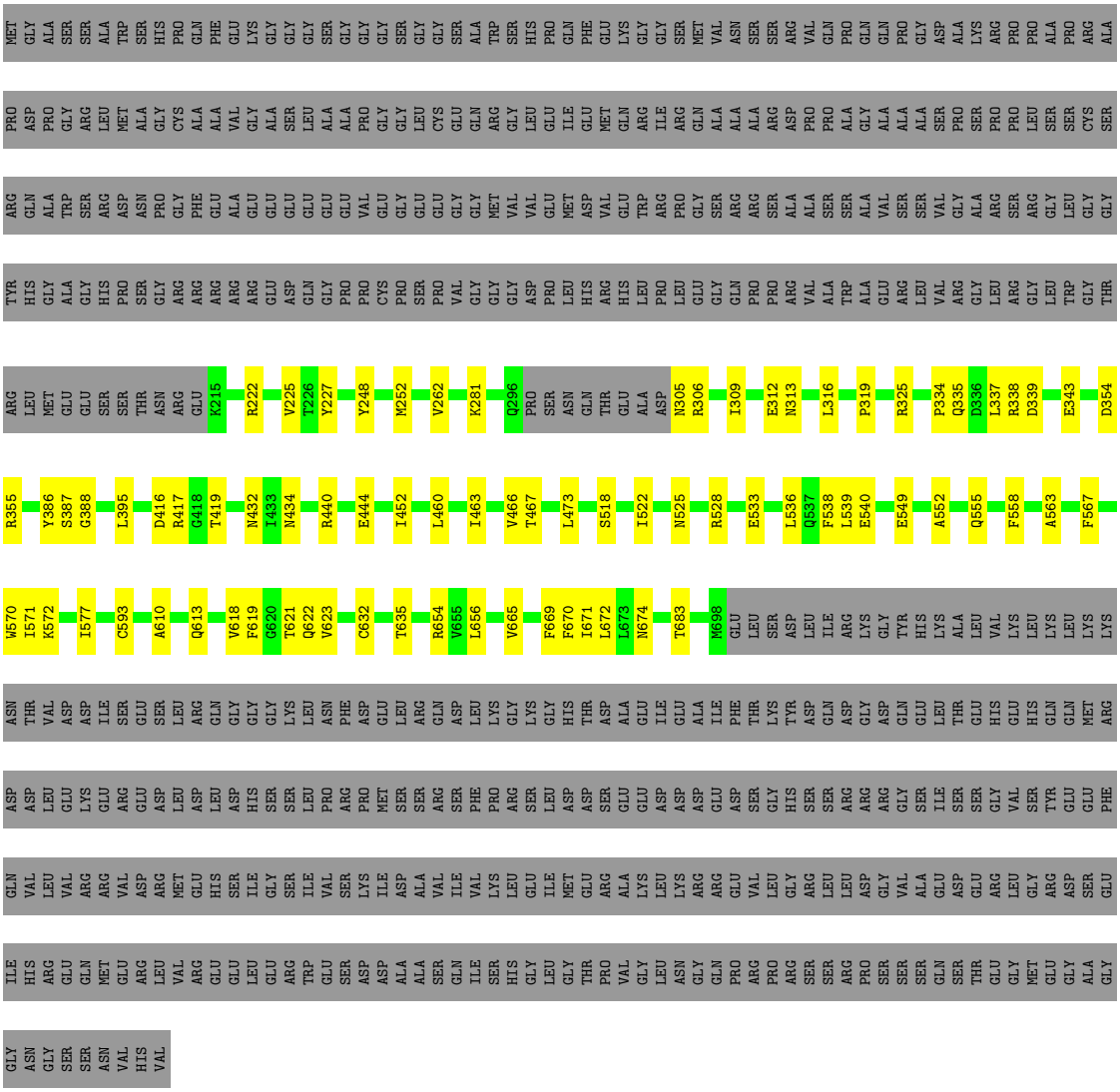
Chain A:





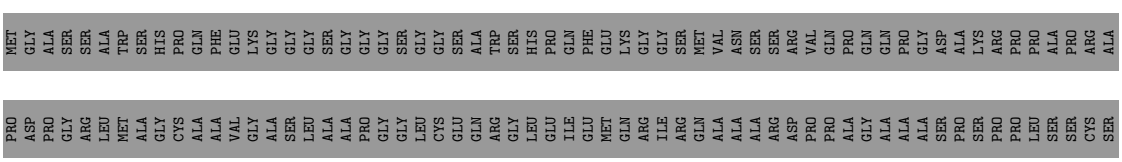
• Molecule 2: Polycystin-2

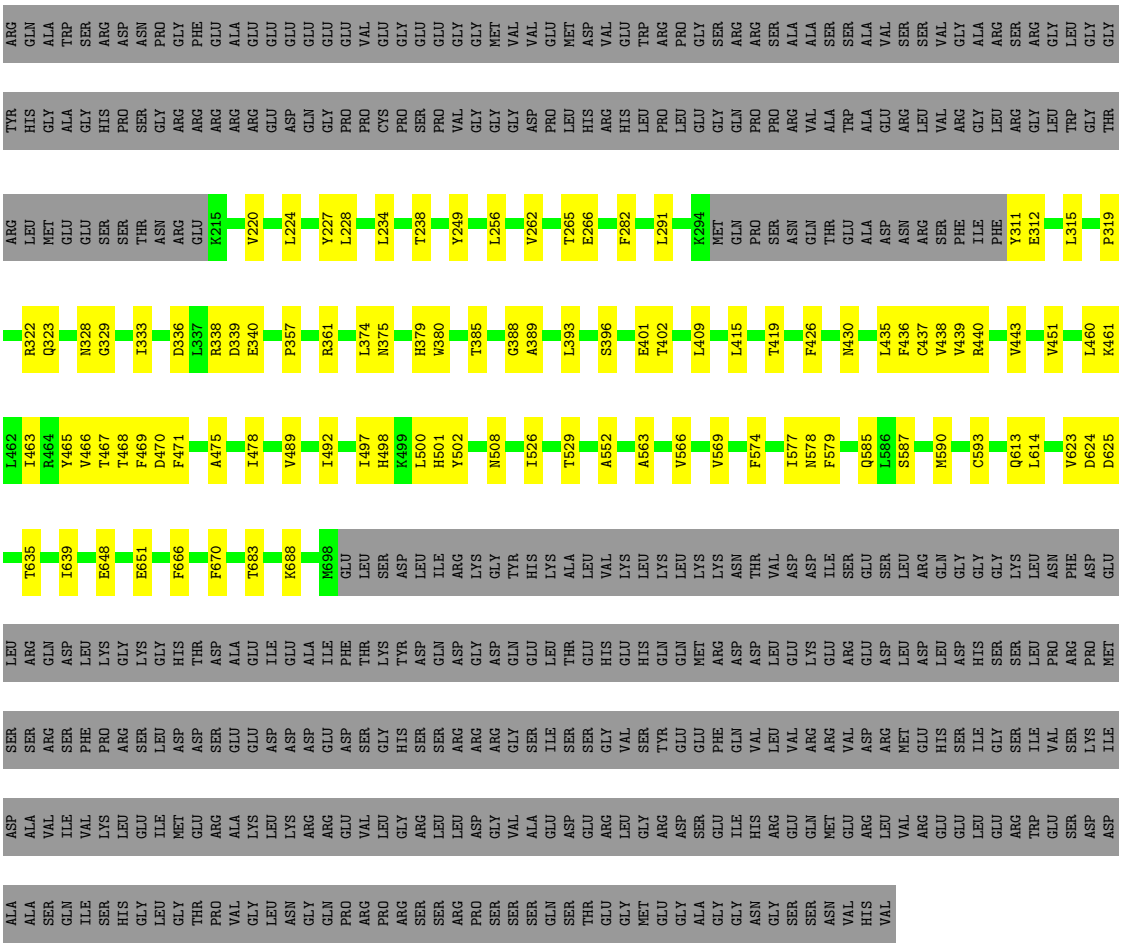
Chain B:



• Molecule 2: Polycystin-2

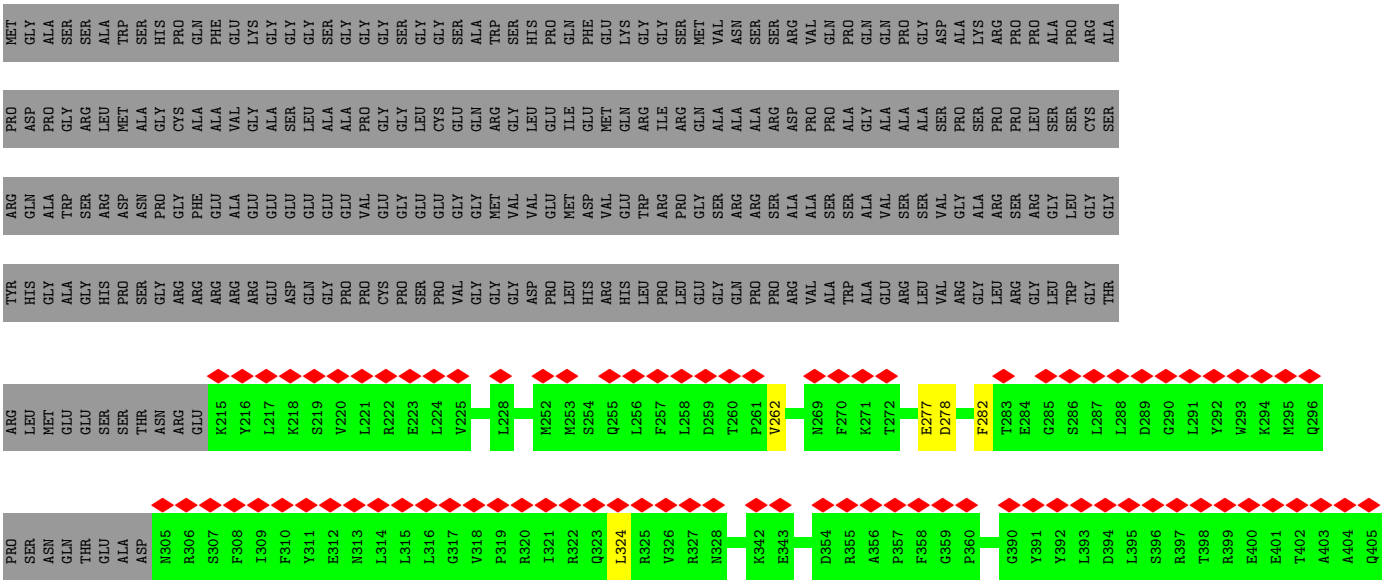
Chain C:

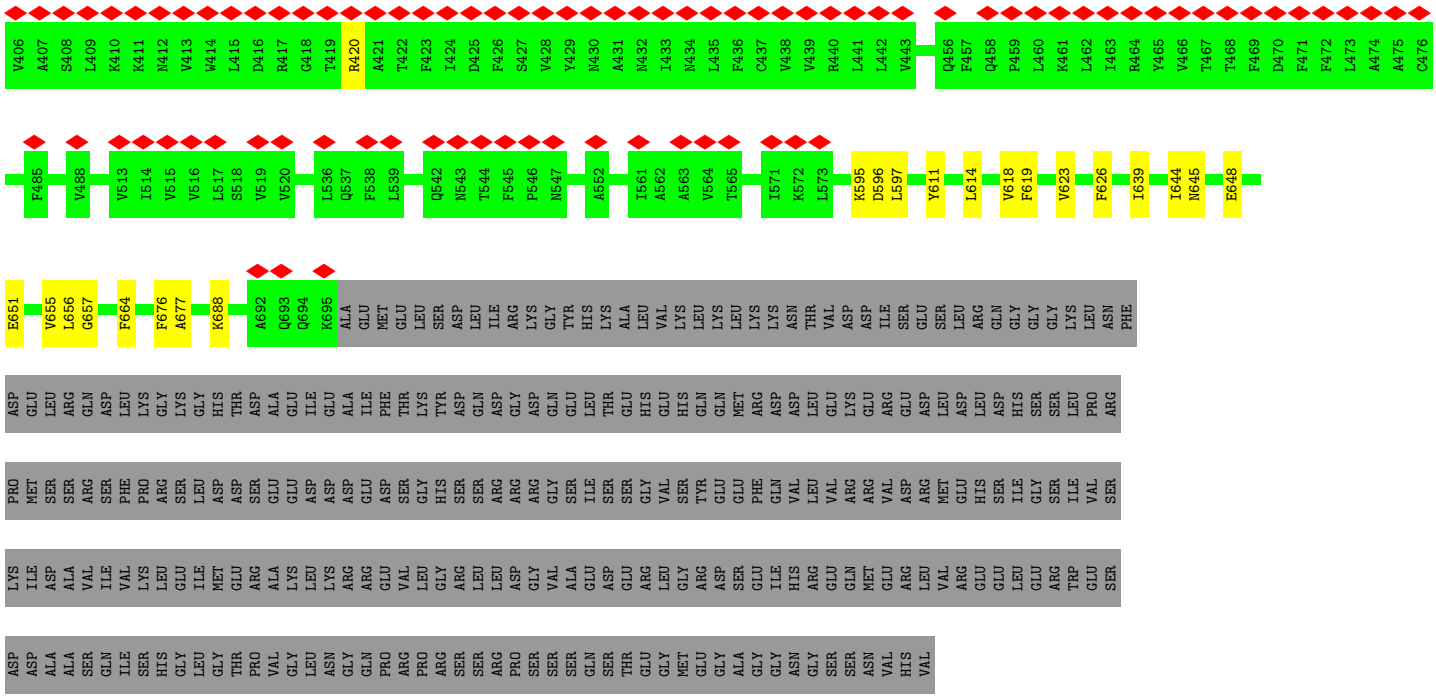




• Molecule 2: Polycystin-2

Chain D:




V406 A407 S408 L409 K410 K411 N412 V413 W414 L415 D416 R417 G418 T419 R420 A421 T422 F423 I424 D425 F426 S427 V428 Y429 N430 A431 N432 I433 N434 L435 F436 C437 V438 V439 R440 L441 L442 V443 Q456 F457 Q458 P459 L460 K461 L462 I463 R464 Y465 V466 T467 T468 F469 D470 F471 F472 L473 A474 A475 C476
F485 V488 V513 I514 V515 V516 L517 S518 V519 V520 L536 Q537 F538 L539 Q542 N543 T544 F545 P546 N547 A552 I561 A562 A563 V564 T565 I571 K572 L573 K595 D596 L597 Y611 L614 V618 F619 V623 F626 I639 I644 N645 E648
E651 V655 L656 G657 F664 F676 A677 K688 A692 Q693 Q694 K695 ALA GLU MET GLU LEU SER ASP LEU ILE ARG LYS GLY TYR HIS LYS ALA LEU VAL LYS LEU LYS LEU LYS LYS ASN THR VAL ASP ASP ILE SER GLU SER LEU ARG GLN GLY GLY GLY LYS LEU ASN PHE
ASP GLU LEU ARG GLN ASP LEU LYS GLY LYS GLY HIS THR ASP ALA GLU ILE GLU ALA ILE PHE THR LYS TYR ASP GLN ASP GLY ASP GLN GLU LEU THR GLU HIS GLU HIS GLN GLN MET ARG ASP ASP LEU GLU LYS GLU ARG GLU ASP LEU ASP LEU ASP HIS SER SER LEU PRO ARG
PRO MET SER SER ARG SER PHE PRO ARG SER LEU ASP ASP SER GLU GLU ASP ASP ASP GLU ASP SER GLY HIS SER SER SER ARG ARG ARG GLY SER ILE SER SER GLY VAL SER TYR GLU GLU PHE GLN VAL LEU VAL ARG ARG VAL ASP ARG MET GLU HIS SER ILE GLY SER ILE VAL SER
LYS ILE ASP ALA VAL ILE VAL LYS LEU GLU ILE MET GLU ARG ALA LYS LEU LYS ARG ARG GLU VAL LEU GLY ARG LEU LEU ASP GLY VAL ALA GLU ASP GLU ARG LEU GLY ARG ASP SER GLU ILE HIS ARG GLU GLN MET GLU ARG LEU VAL ARG GLU GLU LEU GLU ARG TRP GLU SER
ASP ASP ALA ALA SER GLN ILE SER HIS GLY LEU GLY THR PRO VAL GLY LEU ASN GLY GLN PRO ARG PRO ARG SER SER ARG PRO SER SER SER GLN SER THR GLU GLY MET GLU GLY ALA GLY GLY ASN GLY SER SER ASN VAL HIS VAL

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	128014	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	50	Depositor
Minimum defocus (nm)	1400	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	0.948	Depositor
Minimum map value	-0.397	Depositor
Average map value	0.016	Depositor
Map value standard deviation	0.058	Depositor
Recommended contour level	0.15	Depositor
Map size (Å)	260.88, 260.88, 260.88	wwPDB
Map dimensions	240, 240, 240	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.087, 1.087, 1.087	Depositor

5 Model quality

5.1 Standard geometry

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

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	0.15	0/5602	0.41	0/7636
2	B	0.12	0/4036	0.31	0/5473
2	C	0.13	0/3962	0.36	0/5375
2	D	0.11	0/2699	0.32	0/3726
All	All	0.13	0/16299	0.36	0/22210

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	5474	0	5292	124	0
2	B	3932	0	3890	53	0
2	C	3860	0	3821	68	0
2	D	2678	0	1619	19	0
3	B	42	0	39	0	0
3	C	42	0	39	6	0
All	All	16028	0	14700	253	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 8.

The worst 5 of 253 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:C:375:ASN:HD21	3:C:1001:NAG:C1	1.13	1.57
1:A:3766:ARG:CG	1:A:3878:ARG:HH21	1.44	1.31
1:A:3873:PHE:CE1	1:A:3879:ALA:CB	2.37	1.08
1:A:3766:ARG:HG2	1:A:3878:ARG:HH21	0.98	1.08
2:B:306:ARG:HD3	2:C:340:GLU:OE1	1.58	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	727/1262 (58%)	650 (89%)	75 (10%)	2 (0%)	37 67
2	B	472/1005 (47%)	450 (95%)	22 (5%)	0	100 100
2	C	464/1005 (46%)	433 (93%)	31 (7%)	0	100 100
2	D	469/1005 (47%)	446 (95%)	23 (5%)	0	100 100
All	All	2132/4277 (50%)	1979 (93%)	151 (7%)	2 (0%)	50 78

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	3876	ALA
1	A	3770	CYS

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	506/1042 (49%)	505 (100%)	1 (0%)	92 96
2	B	429/858 (50%)	429 (100%)	0	100 100
2	C	421/858 (49%)	421 (100%)	0	100 100
2	D	88/858 (10%)	88 (100%)	0	100 100
All	All	1444/3616 (40%)	1443 (100%)	1 (0%)	92 96

All (1) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	3802	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 8 such sidechains are listed below:

Mol	Chain	Res	Type
2	C	674	ASN
2	C	585	GLN
2	C	379	HIS
2	C	375	ASN
2	C	557	GLN

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

6 ligands are 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	$\#\|Z\| > 2$
3	NAG	C	1003	2	14,14,15	0.22	0	17,19,21	0.45	0
3	NAG	B	1002	2	14,14,15	0.49	0	17,19,21	0.82	1 (5%)
3	NAG	B	1001	2	14,14,15	0.92	1 (7%)	17,19,21	1.25	1 (5%)
3	NAG	C	1001	2	14,14,15	0.29	0	17,19,21	0.61	0
3	NAG	B	1003	2	14,14,15	0.22	0	17,19,21	0.43	0
3	NAG	C	1002	2	14,14,15	0.20	0	17,19,21	0.41	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
3	NAG	C	1003	2	-	2/6/23/26	0/1/1/1
3	NAG	B	1002	2	-	1/6/23/26	0/1/1/1
3	NAG	B	1001	2	-	2/6/23/26	0/1/1/1
3	NAG	C	1001	2	-	5/6/23/26	0/1/1/1
3	NAG	B	1003	2	-	2/6/23/26	0/1/1/1
3	NAG	C	1002	2	-	2/6/23/26	0/1/1/1

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	B	1001	NAG	O5-C1	3.28	1.49	1.43

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	B	1001	NAG	C1-O5-C5	4.94	118.88	112.19
3	B	1002	NAG	C1-O5-C5	2.64	115.77	112.19

There are no chirality outliers.

5 of 14 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	C	1001	NAG	C8-C7-N2-C2
3	C	1001	NAG	O7-C7-N2-C2
3	B	1001	NAG	O5-C5-C6-O6
3	C	1002	NAG	C4-C5-C6-O6
3	C	1002	NAG	O5-C5-C6-O6

There are no ring outliers.

1 monomer is involved in 6 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	C	1001	NAG	6	0

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.

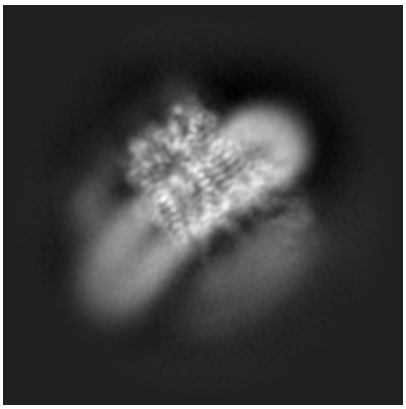
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-62726. These allow visual inspection of the internal detail of the map and identification of artifacts.

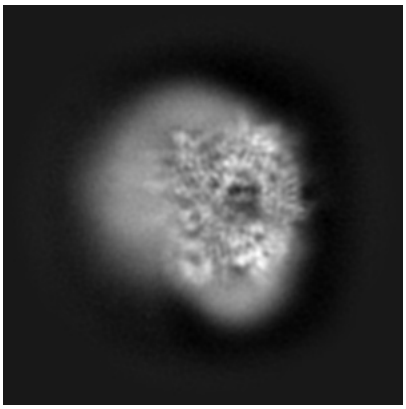
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

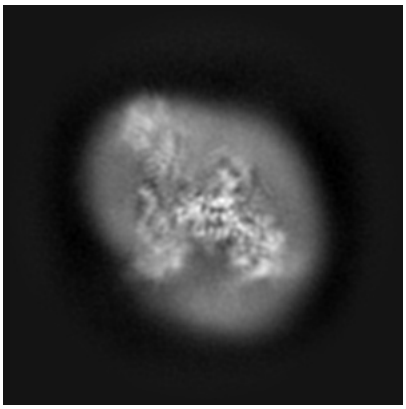
6.1.1 Primary map



X

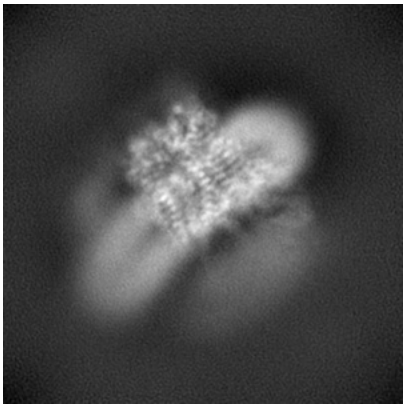


Y

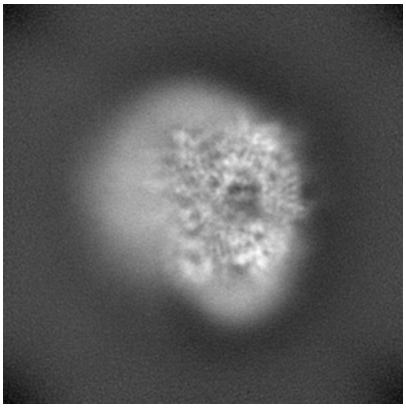


Z

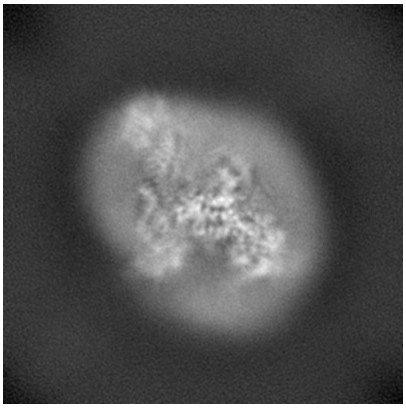
6.1.2 Raw map



X



Y

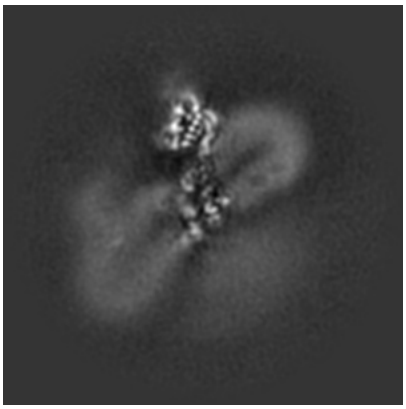


Z

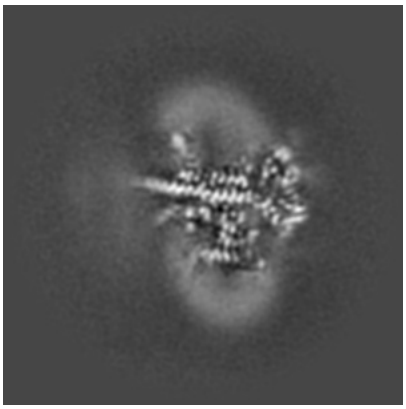
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

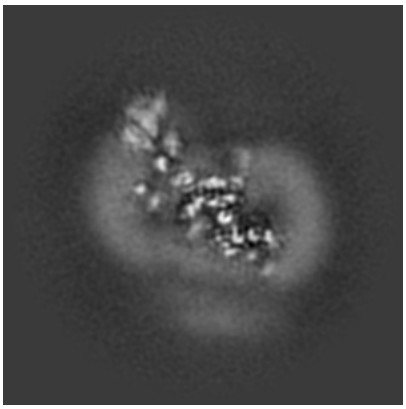
6.2.1 Primary map



X Index: 120

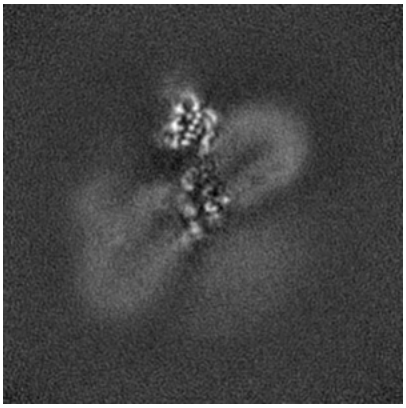


Y Index: 120

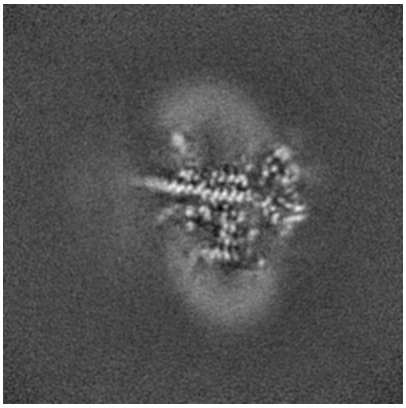


Z Index: 120

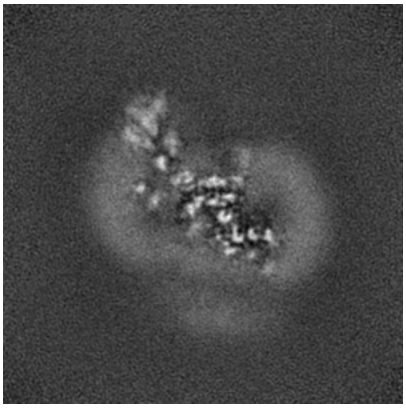
6.2.2 Raw map



X Index: 120



Y Index: 120

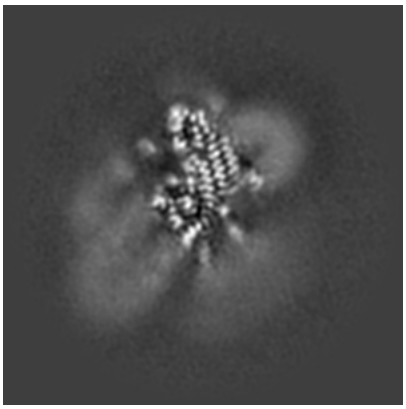


Z Index: 120

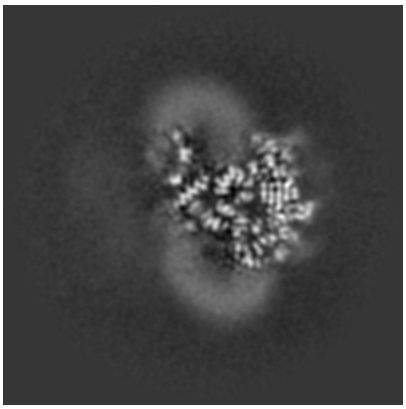
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

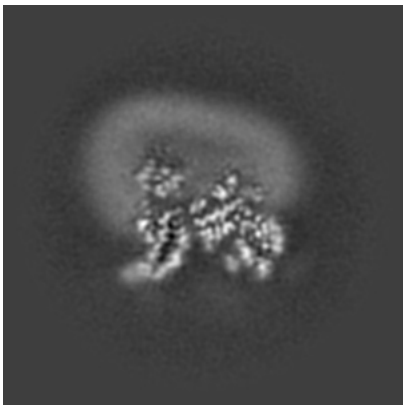
6.3.1 Primary map



X Index: 134

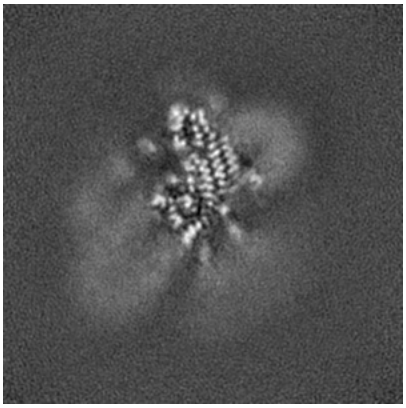


Y Index: 113

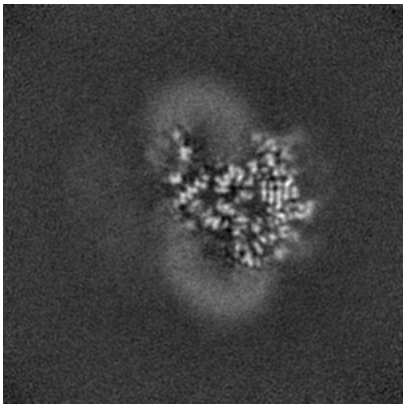


Z Index: 156

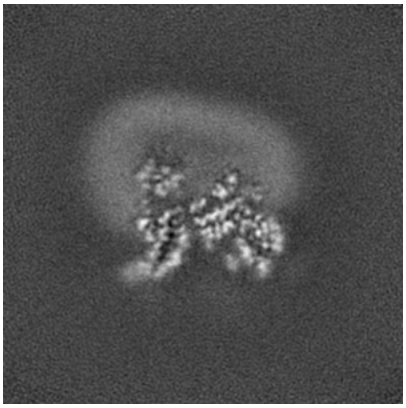
6.3.2 Raw map



X Index: 134



Y Index: 113

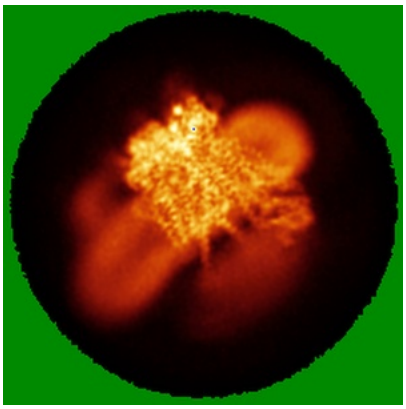


Z Index: 156

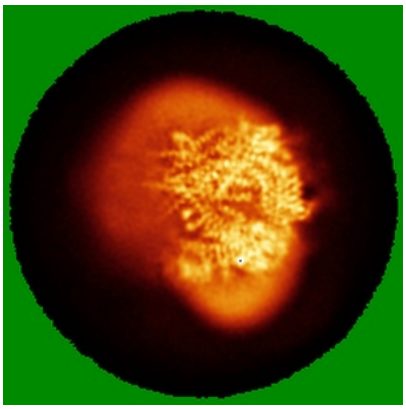
The images above show the largest variance slices of the map in three orthogonal directions.

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

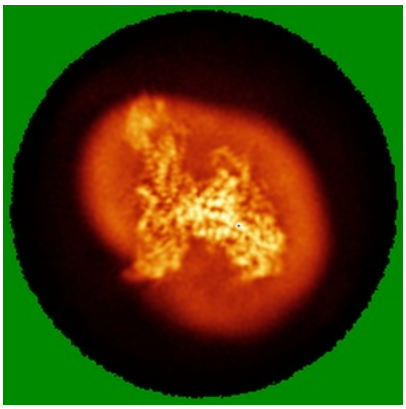
6.4.1 Primary map



X

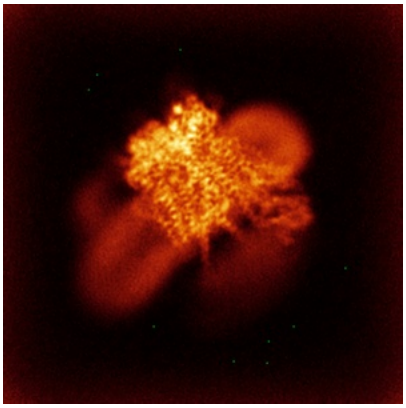


Y

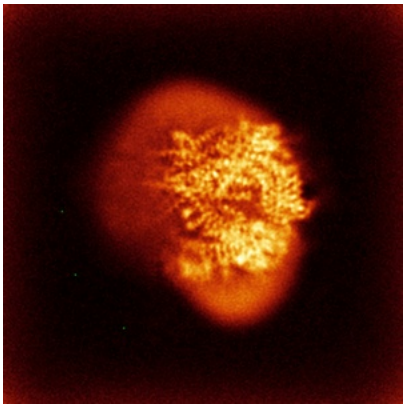


Z

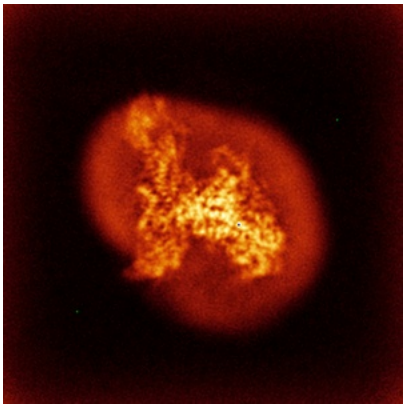
6.4.2 Raw map



X



Y

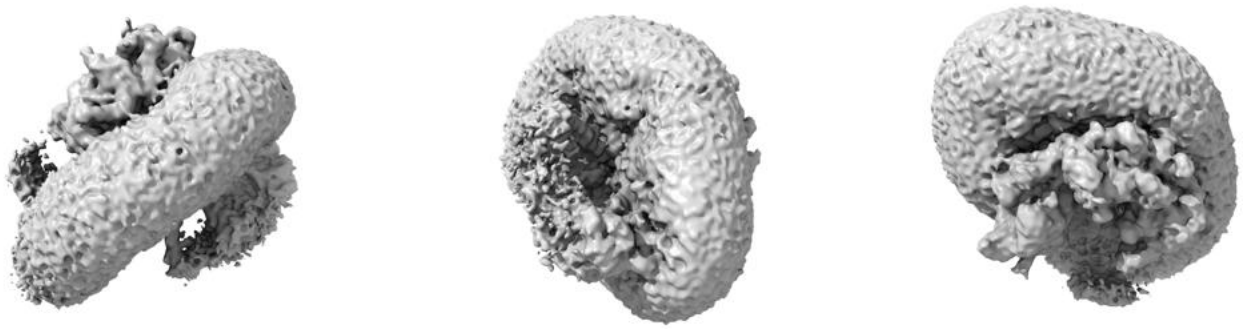


Z

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)

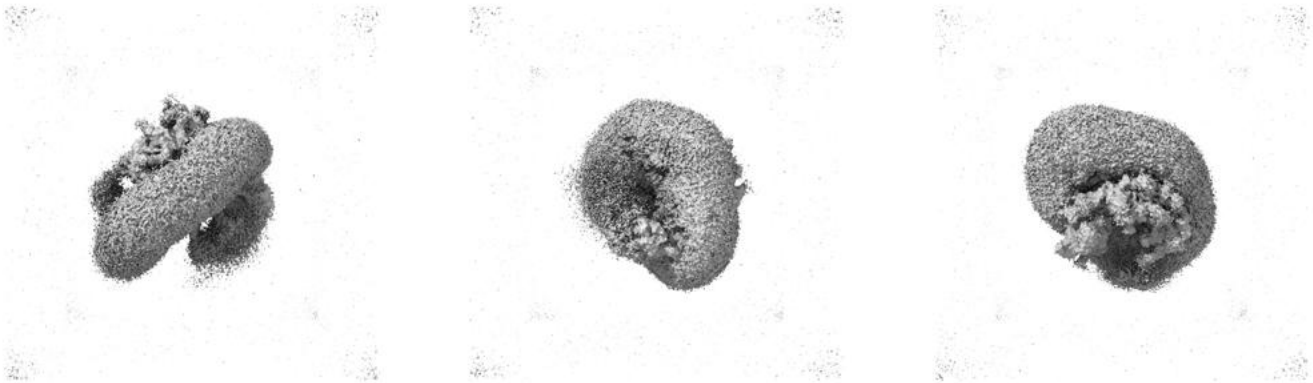
6.5.1 Primary map



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.15. 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.

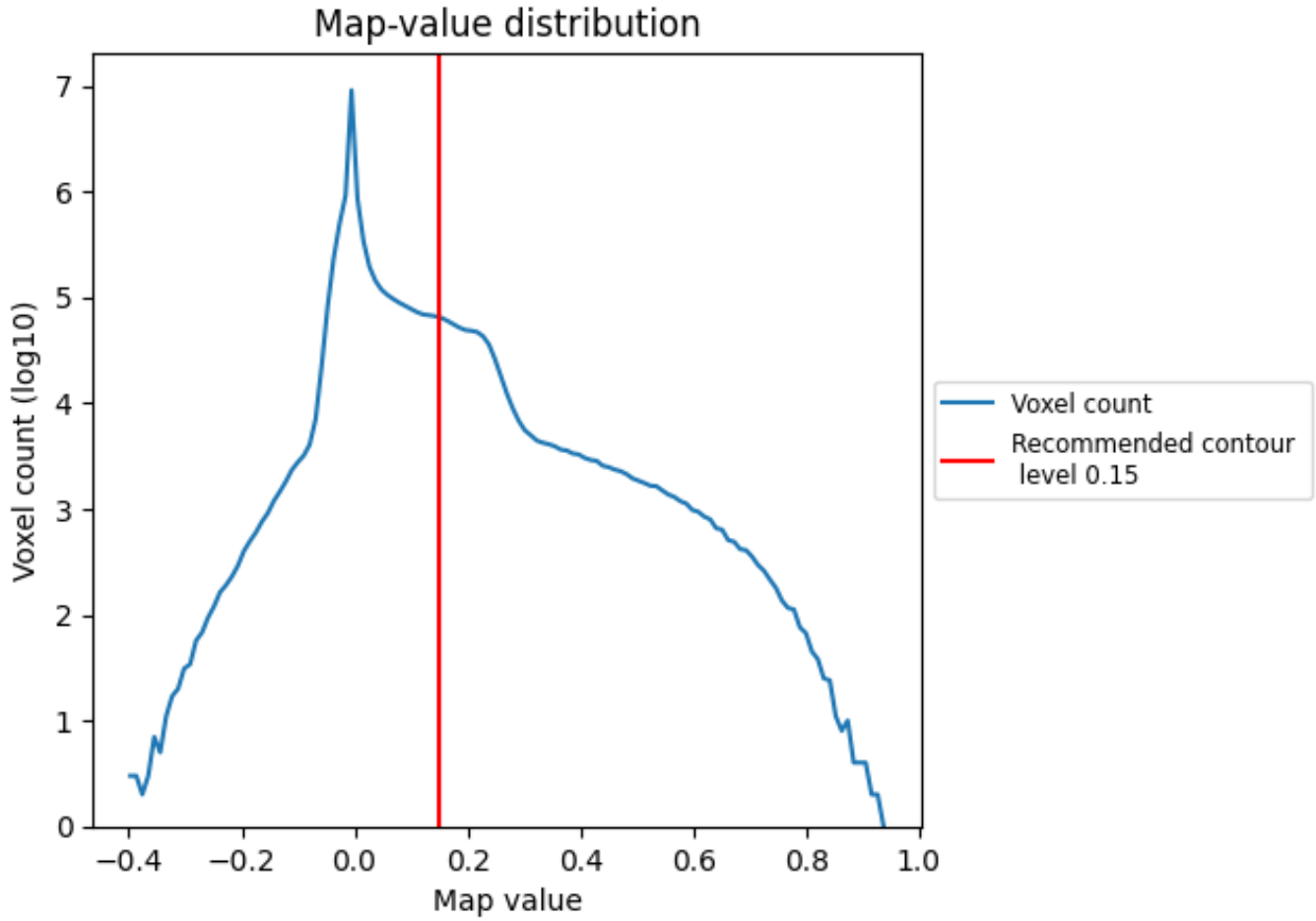
6.6 Mask visualisation (i)

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

7 Map analysis

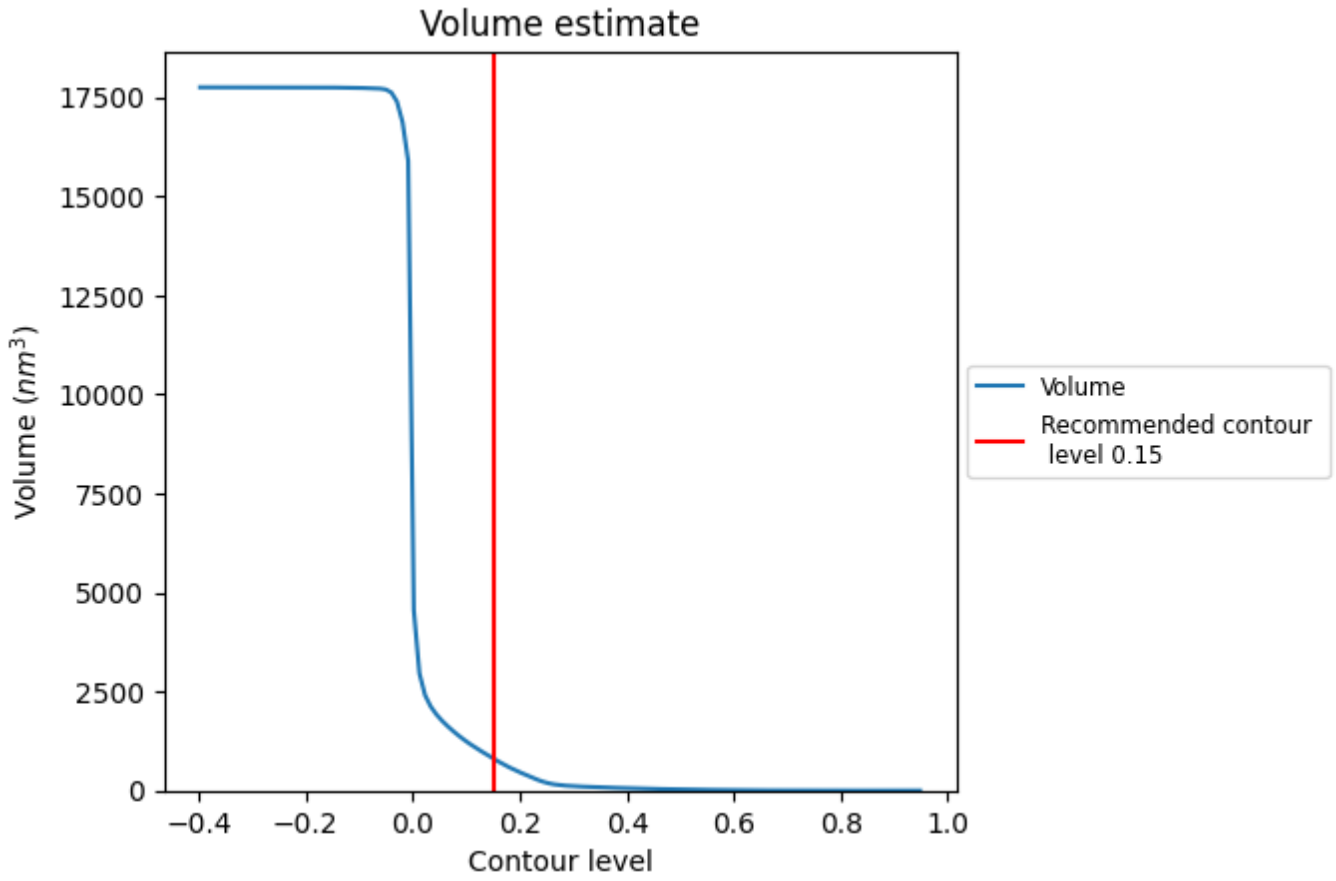
This section contains the results of statistical analysis of the map.

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.

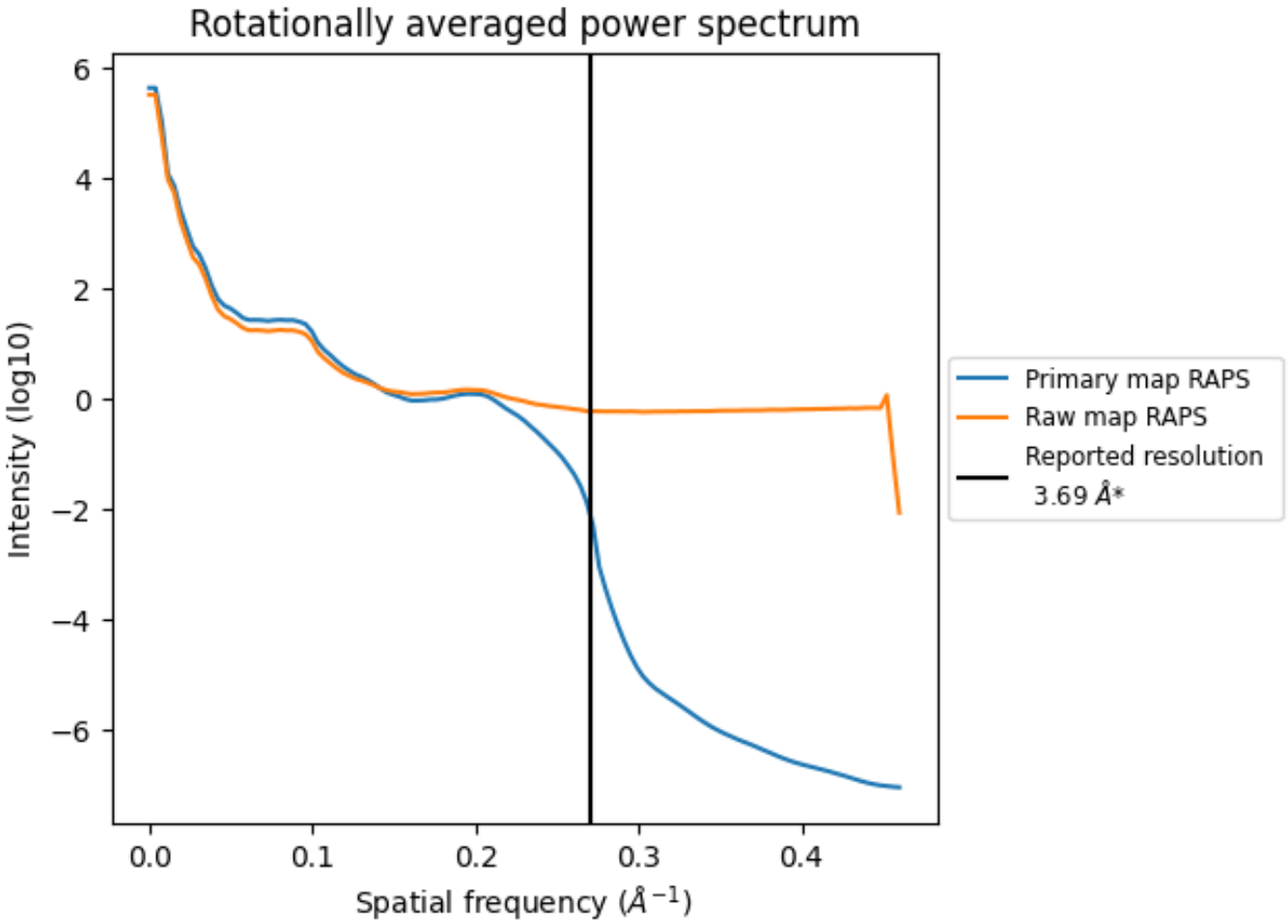
7.2 Volume estimate (i)



The volume at the recommended contour level is 814 nm^3; this corresponds to an approximate mass of 735 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)

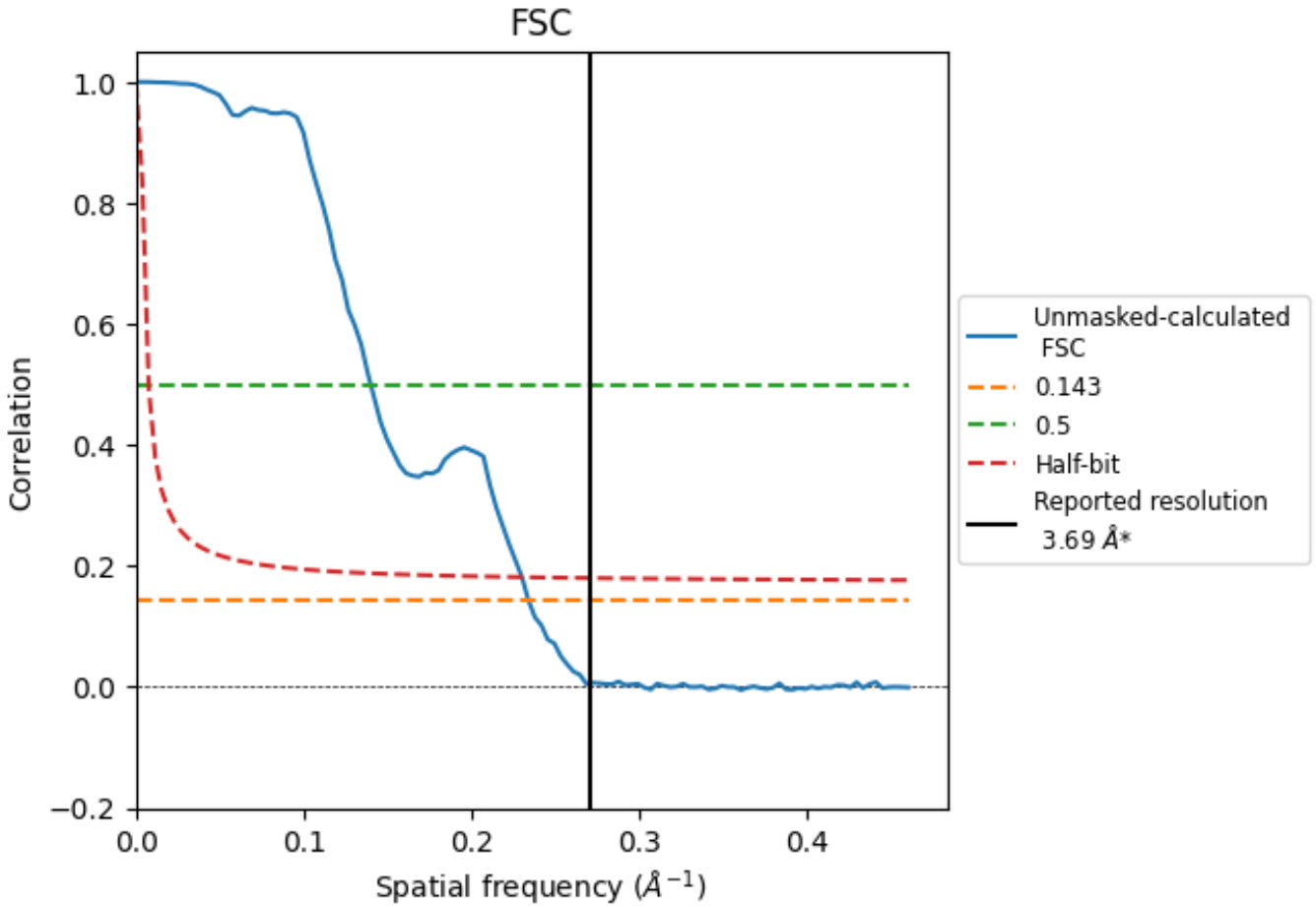


*Reported resolution corresponds to spatial frequency of 0.271 Å^{-1}

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 0.271 Å^{-1}

8.2 Resolution estimates (i)

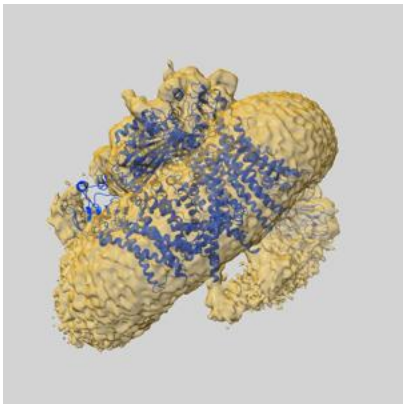
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.69	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	4.28	7.15	4.35

*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 4.28 differs from the reported value 3.69 by more than 10 %

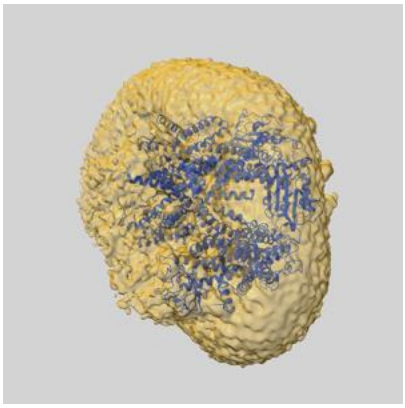
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-62726 and PDB model 9L0W. Per-residue inclusion information can be found in section 3 on page 8.

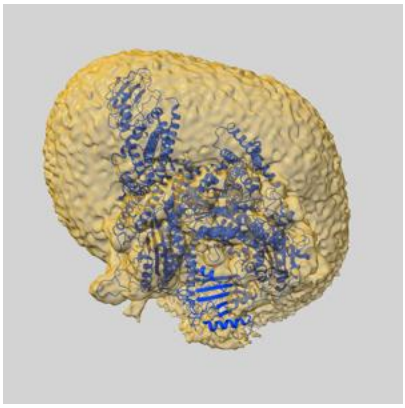
9.1 Map-model overlay



X



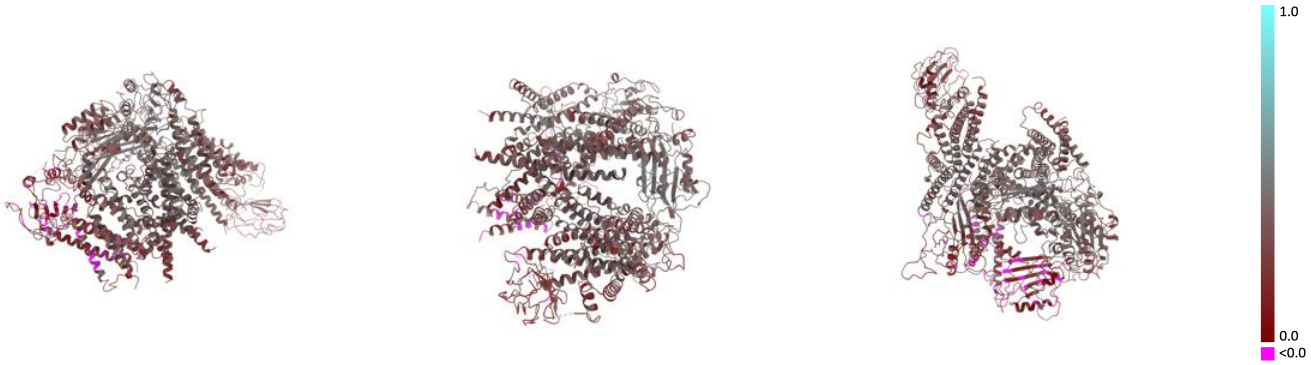
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.15 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.

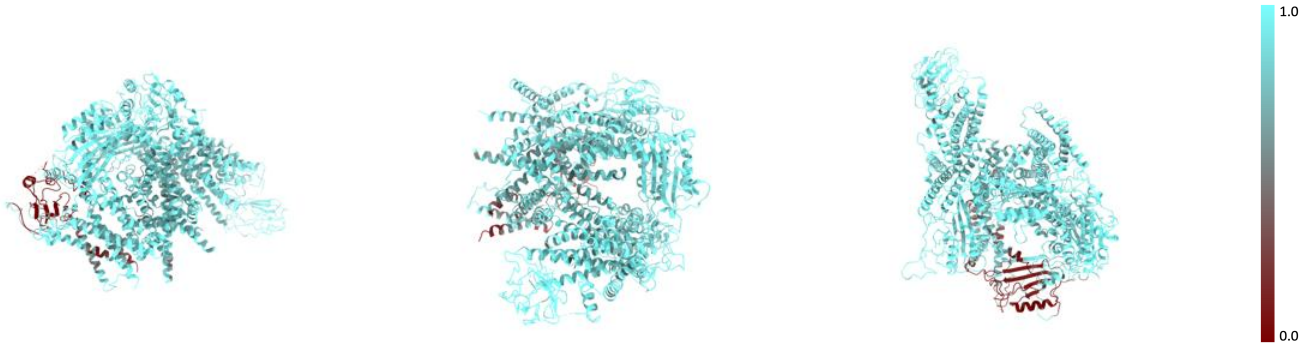
9.2 Q-score mapped to coordinate model (i)



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.

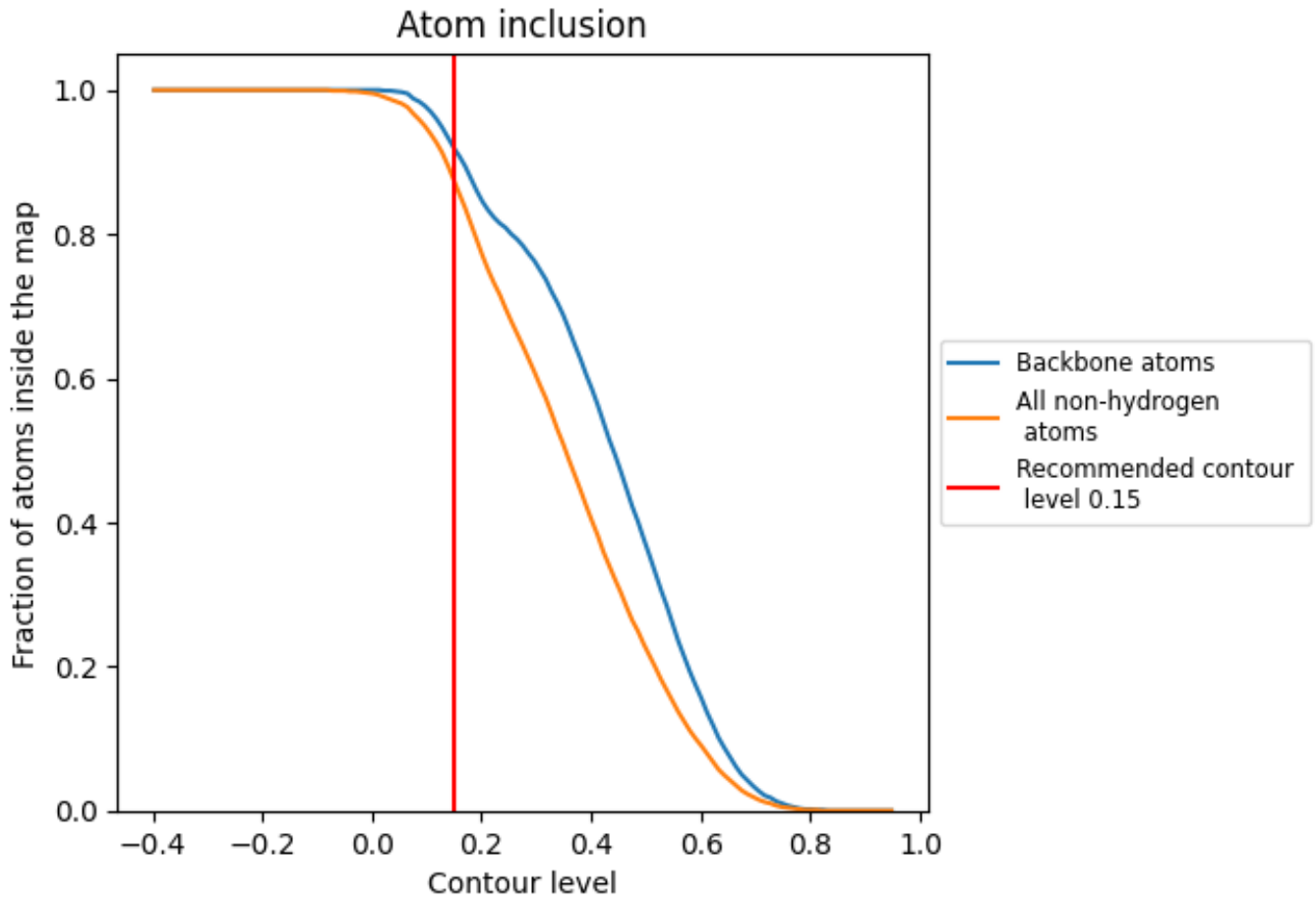
9.3 Atom inclusion mapped to coordinate model (i)



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 (0.15).

9.4 Atom inclusion (i)



At the recommended contour level, 92% of all backbone atoms, 87% 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 (0.15) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8740	0.3230
A	0.9200	0.3020
B	0.9280	0.3820
C	0.9220	0.3640
D	0.6330	0.2170