



Full wwPDB EM Validation Report ⓘ

Jul 1, 2024 – 10:32 AM EDT

PDB ID : 8SLA
EMDB ID : EMD-40576
Title : Cryo-EM structure of the rat TRPM5 channel in trace calcium, trace-2
Authors : Karuppan, S.; Schrag, L.G.; Jara-Oseguera, A.; Zubcevic, L.
Deposited on : 2023-04-21
Resolution : 3.70 Å(reported)
Based on initial model : .

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

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

EMDB validation analysis : 0.0.1.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

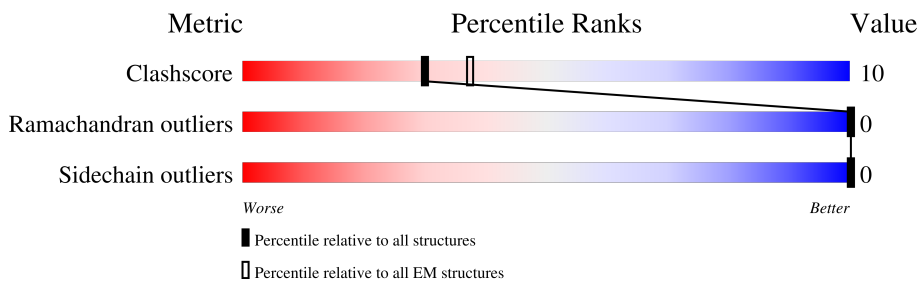
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.70 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 ≥ 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	1169	
1	B	1169	
1	C	1169	
1	D	1169	

2 Entry composition [i](#)

There is only 1 type of molecule in this entry. The entry contains 24491 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 Transient receptor potential cation channel subfamily M member 5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	D	902	6125	3961	1062	1082	20	0	0
1	C	901	6116	3956	1061	1079	20	0	0
1	A	902	6125	3961	1062	1082	20	0	0
1	B	902	6125	3961	1062	1082	20	0	0

There are 52 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
D	-10	MET	-	initiating methionine	UNP A0A455XI77
D	-9	ASP	-	expression tag	UNP A0A455XI77
D	-8	TYR	-	expression tag	UNP A0A455XI77
D	-7	LYS	-	expression tag	UNP A0A455XI77
D	-6	ASP	-	expression tag	UNP A0A455XI77
D	-5	ASP	-	expression tag	UNP A0A455XI77
D	-4	ASP	-	expression tag	UNP A0A455XI77
D	-3	ASP	-	expression tag	UNP A0A455XI77
D	-2	LYS	-	expression tag	UNP A0A455XI77
D	-1	LEU	-	expression tag	UNP A0A455XI77
D	0	GLU	-	expression tag	UNP A0A455XI77
D	156	ALA	-	insertion	UNP A0A455XI77
D	157	GLN	-	insertion	UNP A0A455XI77
C	-10	MET	-	initiating methionine	UNP A0A455XI77
C	-9	ASP	-	expression tag	UNP A0A455XI77
C	-8	TYR	-	expression tag	UNP A0A455XI77
C	-7	LYS	-	expression tag	UNP A0A455XI77
C	-6	ASP	-	expression tag	UNP A0A455XI77
C	-5	ASP	-	expression tag	UNP A0A455XI77
C	-4	ASP	-	expression tag	UNP A0A455XI77
C	-3	ASP	-	expression tag	UNP A0A455XI77

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Chain	Residue	Modelled	Actual	Comment	Reference
C	-2	LYS	-	expression tag	UNP A0A455XI77
C	-1	LEU	-	expression tag	UNP A0A455XI77
C	0	GLU	-	expression tag	UNP A0A455XI77
C	156	ALA	-	insertion	UNP A0A455XI77
C	157	GLN	-	insertion	UNP A0A455XI77
A	-10	MET	-	initiating methionine	UNP A0A455XI77
A	-9	ASP	-	expression tag	UNP A0A455XI77
A	-8	TYR	-	expression tag	UNP A0A455XI77
A	-7	LYS	-	expression tag	UNP A0A455XI77
A	-6	ASP	-	expression tag	UNP A0A455XI77
A	-5	ASP	-	expression tag	UNP A0A455XI77
A	-4	ASP	-	expression tag	UNP A0A455XI77
A	-3	ASP	-	expression tag	UNP A0A455XI77
A	-2	LYS	-	expression tag	UNP A0A455XI77
A	-1	LEU	-	expression tag	UNP A0A455XI77
A	0	GLU	-	expression tag	UNP A0A455XI77
A	156	ALA	-	insertion	UNP A0A455XI77
A	157	GLN	-	insertion	UNP A0A455XI77
B	-10	MET	-	initiating methionine	UNP A0A455XI77
B	-9	ASP	-	expression tag	UNP A0A455XI77
B	-8	TYR	-	expression tag	UNP A0A455XI77
B	-7	LYS	-	expression tag	UNP A0A455XI77
B	-6	ASP	-	expression tag	UNP A0A455XI77
B	-5	ASP	-	expression tag	UNP A0A455XI77
B	-4	ASP	-	expression tag	UNP A0A455XI77
B	-3	ASP	-	expression tag	UNP A0A455XI77
B	-2	LYS	-	expression tag	UNP A0A455XI77
B	-1	LEU	-	expression tag	UNP A0A455XI77
B	0	GLU	-	expression tag	UNP A0A455XI77
B	156	ALA	-	insertion	UNP A0A455XI77
B	157	GLN	-	insertion	UNP A0A455XI77

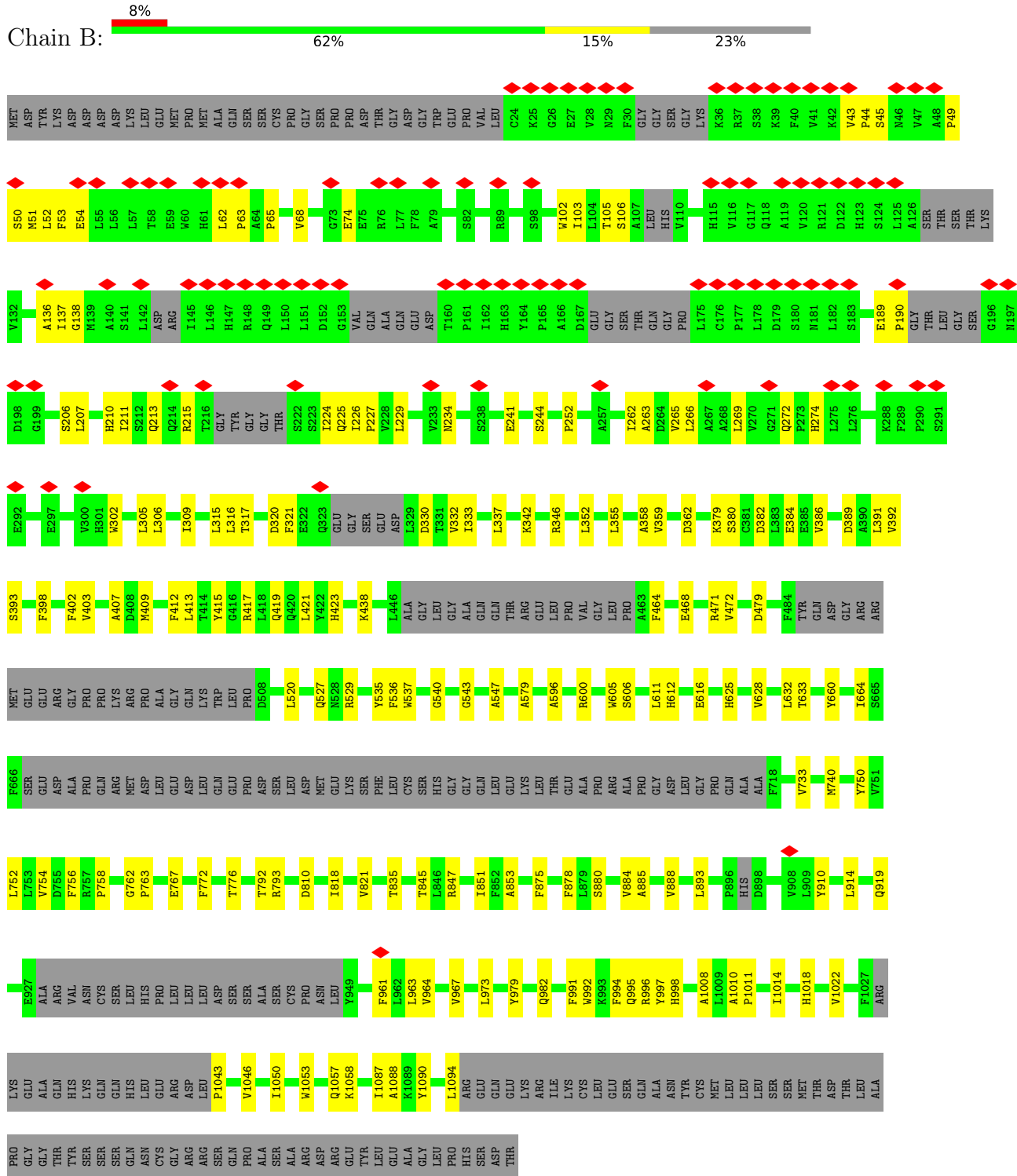
LYS	GLN	GLN	HIS	ASP	GLU	ARG	ASP	P1043	V1046	I1050	W1053	Q1057	K1058	I1087	A1088	K1089	Y1090	L1094	ARG	GLU	GLN	GLU	GLU	LYS	ARG	LEU	LYS	CYS	GLU	SER	GLN	ALA	ASN	TYR	TYR	CYS	MET	GLY	LEU	LEU	LEU	SER	SER	SER	SER	PRO	ALA	ALA	SER	ALA	ALA	ASP	ARG	ARG	GLY	GLY	TYR	LEU	GLU	ALA	GLY	LEU	PRO	HIS	SER	SER	ASP	ASP	THR
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• Molecule 1: Transient receptor potential cation channel subfamily M member 5



MET	ASP	TYR	LYS	ASP	ASP	ASP	ASP	ASP	ASP	LEU	GLU	MET	PRO	ALA	ALA	GLN	SER	SER	ARG	ARG	CYS	PRO	PRO	GLY	GLY	TRP	GLU	PRO	VAL	C74	K25	G76	E27	V78	N79	F30	GLY	GLY	GLY	LYS	K36	R37	S38	K39	F40	V41	K42	V43	P44	S45	M46	V47	A48	P49															
S50	M51	L52	F53	E54	L57	T58	E59	W60	H61	L62	P63	A64	P65	V68	G73	E74	E75	R76	L77	F78	A79	S82	S88	W102	I103	L104	T105	S106	A107	LEU	HIS	V110	A113	R114	H115	V116	G117	Q118	A119	V120	F40	D121	D122	H123	S124	L125	A126	SER	THR	SER	THR	LYS	V132																
A136	I137	G138	M139	S141	L142	ASP	ARG	I145	L146	H147	R148	Q149	L150	L151	D152	G153	VAL	L224	ALA	ALA	GLN	GLU	ASP	T160	P161	I162	H163	Y164	P165	A166	D167	GLU	GLY	SER	THR	GLN	GLY	PRO	L175	C176	P177	L178	D179	S180	N181	L182	S183	H184	F185	E189	P190	THR	THR	LEU	GLY	SER	G196												
M197	D198	G199	S206	L207	H210	I211	S212	Q213	Q214	R215	T216	GLY	TYR	GLY	THR	S222	S223	I224	Q225	L226	P227	V228	L229	V233	R234	E241	S244	P252	I255	L256	A257	L262	A263	D264	V265	L266	A267	A268	L269	Q272	P273	H274	L275	L276	P290	S291	E297																						
A298	I299	V300	W301	H302	L305	L306	L309	L315	L316	T317	D320	F321	E322	Q323	GLU	GLY	SER	GLU	ASP	L329	D330	T331	V332	L333	L337	K342	R346	L352	L355	A358	V359	D362	K379	S380	C381	D382	L383	E384	E385	V386	D389	A390	L391	V392	S393																								
F398	F402	V403	A407	D408	M409	F412	L413	T414	Y415	G416	R417	L418	Q419	Q420	L421	Y422	H423	K438	L446	ALA	GLY	LEU	GLY	ALA	GLN	GLN	THR	ARG	GLU	PRO	VAL	GLY	PRO	A463	F464	E468	R471	V472	D479	F484	TYR	GLN	ASP	ARG	ARG	L391	V392	S393																					
GLU	ARG	PRO	GLY	ASP	PRO	ARG	PRO	ALA	ALA	GLN	MET	HIS	PRO	PRO	ASP	ASP	LEU	LEU	ASP	D508	L520	F521	L522	Q527	N528	R529	Y535	F536	N537	W538	G540	G543	A547	I554	K555	A579	A596	R600	S606	H612	E616	H625	V628	L632	T633	Y660	I664																						
S665	F666	SER	GLU	VAL	ALA	PRO	GLN	ARG	ALA	GLN	MET	HIS	PRO	PRO	ASP	ASP	LEU	LEU	LEU	GLN	GLU	PRO	GLU	ASP	ASP	GLU	LYS	SER	PHE	F536	N537	W538	G540	G543	A547	I554	K555	A579	A596	R600	S606	H612	E616	H625	V628	L632	T633	Y660	I664																				
V753	L752	L753	V754	D755	F756	R757	P758	G762	G763	E767	F772	T776	T792	R793	D810	I818	W821	T835	T845	L846	R847	L851	F852	A853	F875	L876	F877	F878	L879	S880	V684	A885	V688	P896	HIS	D898	V908	L909	Y910	L914	Q919																												
E927	ALA	ARG	VAL	ASN	GLN	SER	LEU	HIS	PRO	PRO	ALA	ALA	CYS	PRO	ASN	LEU	LEU	F961	L962	L963	V964	V967	L973	Y979	Q982	F991	W992	K993	F994	Q995	Y997	H998	V684	A885	V688	P896	HIS	D898	V908	L909	Y910	L914	Q919																										
LYS	GLY	ALA	GLN	HIS	LYS	GLN	GLN	HIS	LEU	LEU	P1043	V1046	I1050	W1053	Q1057	K1058	I1087	A1088	K1089	Y1090	L1094	ARG	GLY	GLN	GLU	LYS	ARG	LEU	LYS	CYS	GLU	LEU	ALA	ASN	TYR	CYS	ASP	GLY	LEU	LEU	LEU	LEU	ALA	SER	SER	SER	PRO	ALA	ALA	ASP	ARG	ARG	GLY	GLY	TYR	LEU	GLU	ALA	GLY	LEU	PRO	HIS	SER	SER	ASP	ASP	THR	THR	ALA
PRO	GLY	THR	THR	SER	SER	SER	GLN	ASN	CYS	GLY	ARG	ARG	SER	ALA	ARG	ASP	LEU	LEU	GLU	GLY	TYR	LEU	GLU	GLU	GLN	GLY	LEU	LEU	LYS	ILE	LYS	CYS	GLU	LEU	SER	SER	GLN	ALA	TYR	CYS	MET	MET	LEU	LEU	LEU	SER	SER	SER	PRO	ALA	ALA	ASP	THR	THR	ASP	THR	THR	LEU	LEU	PRO	HIS	SER	SER	ASP	ASP	THR	THR	ALA	

● Molecule 1: Transient receptor potential cation channel subfamily M member 5



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C4	Depositor
Number of particles used	139580	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	45	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	81000	Depositor
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	2.836	Depositor
Minimum map value	-1.738	Depositor
Average map value	0.003	Depositor
Map value standard deviation	0.032	Depositor
Recommended contour level	0.11	Depositor
Map size (Å)	388.80002, 388.80002, 388.80002	wwPDB
Map dimensions	360, 360, 360	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.08, 1.08, 1.08	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	0.28	0/6259	0.43	0/8592
1	B	0.28	0/6259	0.43	0/8592
1	C	0.28	0/6249	0.43	0/8577
1	D	0.28	0/6259	0.43	0/8592
All	All	0.28	0/25026	0.43	0/34353

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 [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	6125	0	5144	121	0
1	B	6125	0	5144	118	0
1	C	6116	0	5137	114	0
1	D	6125	0	5144	118	0
All	All	24491	0	20569	450	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 10.

All (450) 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:215:ARG:HA	1:B:224:ILE:O	1.41	1.19
1:D:215:ARG:HA	1:D:224:ILE:O	1.41	1.17
1:C:215:ARG:HA	1:C:224:ILE:O	1.41	1.17
1:A:215:ARG:HA	1:A:224:ILE:O	1.41	1.14
1:A:215:ARG:O	1:A:224:ILE:HG13	1.69	0.92
1:C:215:ARG:O	1:C:224:ILE:HG13	1.69	0.92
1:D:215:ARG:O	1:D:224:ILE:HG13	1.69	0.91
1:B:215:ARG:O	1:B:224:ILE:HG13	1.69	0.90
1:B:384:GLU:OE2	1:B:417:ARG:NH2	2.15	0.80
1:C:384:GLU:OE2	1:C:417:ARG:NH2	2.15	0.79
1:A:384:GLU:OE2	1:A:417:ARG:NH2	2.15	0.79
1:D:384:GLU:OE2	1:D:417:ARG:NH2	2.15	0.79
1:B:612:HIS:NE2	1:B:616:GLU:OE2	2.18	0.76
1:D:612:HIS:NE2	1:D:616:GLU:OE2	2.18	0.76
1:C:62:LEU:HD12	1:C:63:PRO:HD2	1.67	0.76
1:C:540:GLY:O	1:C:1058:LYS:NZ	2.19	0.76
1:A:612:HIS:NE2	1:A:616:GLU:OE2	2.18	0.76
1:A:62:LEU:HD12	1:A:63:PRO:HD2	1.67	0.76
1:B:540:GLY:O	1:B:1058:LYS:NZ	2.19	0.75
1:D:540:GLY:O	1:D:1058:LYS:NZ	2.19	0.75
1:C:612:HIS:NE2	1:C:616:GLU:OE2	2.18	0.75
1:A:540:GLY:O	1:A:1058:LYS:NZ	2.19	0.75
1:D:62:LEU:HD12	1:D:63:PRO:HD2	1.67	0.75
1:B:62:LEU:HD12	1:B:63:PRO:HD2	1.67	0.74
1:C:215:ARG:CA	1:C:224:ILE:O	2.31	0.73
1:C:527:GLN:OE1	1:C:529:ARG:NH1	2.22	0.73
1:D:527:GLN:OE1	1:D:529:ARG:NH1	2.22	0.73
1:A:527:GLN:OE1	1:A:529:ARG:NH1	2.22	0.73
1:B:215:ARG:CA	1:B:224:ILE:O	2.31	0.71
1:B:527:GLN:OE1	1:B:529:ARG:NH1	2.22	0.71
1:D:413:LEU:HD13	1:D:520:LEU:HD21	1.73	0.71
1:A:413:LEU:HD13	1:A:520:LEU:HD21	1.73	0.71
1:A:215:ARG:CA	1:A:224:ILE:O	2.31	0.70
1:B:413:LEU:HD13	1:B:520:LEU:HD21	1.72	0.70
1:D:215:ARG:CA	1:D:224:ILE:O	2.31	0.69
1:C:413:LEU:HD13	1:C:520:LEU:HD21	1.73	0.69
1:B:853:ALA:O	1:B:992:TRP:NE1	2.22	0.66
1:D:763:PRO:HB2	1:D:767:GLU:HB2	1.78	0.66
1:C:763:PRO:HB2	1:C:767:GLU:HB2	1.77	0.66
1:A:763:PRO:HB2	1:A:767:GLU:HB2	1.78	0.66
1:A:853:ALA:O	1:A:992:TRP:NE1	2.22	0.66
1:B:244:SER:HB2	1:B:305:LEU:HD21	1.77	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:763:PRO:HB2	1:B:767:GLU:HB2	1.78	0.66
1:A:330:ASP:HA	1:A:333:ILE:HD12	1.77	0.66
1:A:479:ASP:O	1:A:606:SER:OG	2.14	0.66
1:B:330:ASP:HA	1:B:333:ILE:HD12	1.77	0.66
1:B:479:ASP:O	1:B:606:SER:OG	2.14	0.66
1:D:330:ASP:HA	1:D:333:ILE:HD12	1.77	0.65
1:D:244:SER:HB2	1:D:305:LEU:HD21	1.77	0.65
1:C:633:THR:OG1	1:C:996:ARG:NH2	2.30	0.65
1:B:409:MET:HA	1:B:412:PHE:HB3	1.78	0.65
1:C:409:MET:HA	1:C:412:PHE:HB3	1.78	0.65
1:C:244:SER:HB2	1:C:305:LEU:HD21	1.77	0.65
1:C:330:ASP:HA	1:C:333:ILE:HD12	1.77	0.65
1:B:633:THR:OG1	1:B:996:ARG:NH2	2.30	0.65
1:D:479:ASP:O	1:D:606:SER:OG	2.14	0.64
1:D:68:VAL:HG12	1:D:102:TRP:HB2	1.80	0.64
1:C:68:VAL:HG12	1:C:102:TRP:HB2	1.80	0.64
1:C:479:ASP:O	1:C:606:SER:OG	2.14	0.64
1:A:244:SER:HB2	1:A:305:LEU:HD21	1.77	0.64
1:A:409:MET:HA	1:A:412:PHE:HB3	1.78	0.64
1:B:391:LEU:HD11	1:B:536:PHE:HZ	1.63	0.64
1:D:409:MET:HA	1:D:412:PHE:HB3	1.78	0.64
1:A:633:THR:OG1	1:A:996:ARG:NH2	2.30	0.64
1:A:391:LEU:HD11	1:A:536:PHE:HZ	1.63	0.64
1:B:50:SER:HA	1:B:210:HIS:CE1	2.33	0.64
1:D:391:LEU:HD11	1:D:536:PHE:HZ	1.63	0.64
1:B:68:VAL:HG12	1:B:102:TRP:HB2	1.80	0.64
1:C:792:THR:HG22	1:C:793:ARG:H	1.63	0.64
1:D:633:THR:OG1	1:D:996:ARG:NH2	2.30	0.64
1:A:68:VAL:HG12	1:A:102:TRP:HB2	1.80	0.64
1:C:50:SER:HA	1:C:210:HIS:CE1	2.33	0.63
1:A:1010:ALA:O	1:A:1014:ILE:N	2.32	0.63
1:C:1010:ALA:O	1:C:1014:ILE:N	2.32	0.63
1:A:50:SER:HA	1:A:210:HIS:CE1	2.33	0.63
1:C:391:LEU:HD11	1:C:536:PHE:HZ	1.63	0.63
1:D:50:SER:HA	1:D:210:HIS:CE1	2.33	0.63
1:D:1010:ALA:O	1:D:1014:ILE:N	2.32	0.63
1:B:547:ALA:HB3	1:B:579:ALA:HB2	1.81	0.63
1:D:853:ALA:O	1:D:992:TRP:NE1	2.22	0.62
1:A:792:THR:HG22	1:A:793:ARG:H	1.64	0.62
1:D:792:THR:HG22	1:D:793:ARG:H	1.64	0.62
1:C:853:ALA:O	1:C:992:TRP:NE1	2.22	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:252:PRO:HA	1:B:315:LEU:HB3	1.82	0.62
1:B:792:THR:HG22	1:B:793:ARG:H	1.64	0.62
1:C:547:ALA:HB3	1:C:579:ALA:HB2	1.81	0.62
1:A:252:PRO:HA	1:A:315:LEU:HB3	1.82	0.62
1:D:252:PRO:HA	1:D:315:LEU:HB3	1.82	0.62
1:B:1010:ALA:O	1:B:1014:ILE:N	2.32	0.62
1:D:547:ALA:HB3	1:D:579:ALA:HB2	1.81	0.62
1:A:752:LEU:HD12	1:A:756:PHE:HE2	1.64	0.62
1:D:215:ARG:O	1:D:224:ILE:CG1	2.47	0.62
1:C:252:PRO:HA	1:C:315:LEU:HB3	1.81	0.62
1:C:752:LEU:HD12	1:C:756:PHE:HE2	1.64	0.62
1:B:733:VAL:HG22	1:B:1008:ALA:HA	1.82	0.61
1:C:758:PRO:O	1:C:762:GLY:N	2.26	0.61
1:B:758:PRO:O	1:B:762:GLY:N	2.27	0.61
1:D:423:HIS:NE2	1:D:464:PHE:O	2.34	0.61
1:D:752:LEU:HD12	1:D:756:PHE:HE2	1.64	0.61
1:A:215:ARG:O	1:A:224:ILE:CG1	2.47	0.61
1:B:752:LEU:HD12	1:B:756:PHE:HE2	1.64	0.61
1:C:423:HIS:NE2	1:C:464:PHE:O	2.34	0.61
1:A:547:ALA:HB3	1:A:579:ALA:HB2	1.81	0.61
1:C:733:VAL:HG22	1:C:1008:ALA:HA	1.83	0.60
1:A:733:VAL:HG22	1:A:1008:ALA:HA	1.82	0.60
1:B:352:LEU:HA	1:B:355:LEU:HD12	1.84	0.60
1:C:352:LEU:HA	1:C:355:LEU:HD12	1.83	0.60
1:B:103:ILE:HB	1:B:136:ALA:HA	1.84	0.60
1:C:213:GLN:O	1:C:225:GLN:HG3	2.02	0.60
1:D:213:GLN:O	1:D:225:GLN:HG3	2.02	0.59
1:D:733:VAL:HG22	1:D:1008:ALA:HA	1.83	0.59
1:C:103:ILE:HB	1:C:136:ALA:HA	1.84	0.59
1:A:213:GLN:O	1:A:225:GLN:HG3	2.02	0.59
1:D:352:LEU:HA	1:D:355:LEU:HD12	1.83	0.59
1:B:215:ARG:O	1:B:224:ILE:CG1	2.47	0.59
1:B:229:LEU:HD22	1:B:333:ILE:HG23	1.85	0.59
1:A:229:LEU:HD22	1:A:333:ILE:HG23	1.85	0.59
1:A:352:LEU:HA	1:A:355:LEU:HD12	1.83	0.59
1:D:229:LEU:HD22	1:D:333:ILE:HG23	1.85	0.59
1:D:103:ILE:HB	1:D:136:ALA:HA	1.84	0.59
1:B:213:GLN:O	1:B:225:GLN:HG3	2.02	0.59
1:C:229:LEU:HD22	1:C:333:ILE:HG23	1.85	0.58
1:B:423:HIS:NE2	1:B:464:PHE:O	2.34	0.58
1:A:423:HIS:NE2	1:A:464:PHE:O	2.34	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:1088:ALA:HA	1:C:1087:ILE:HD12	1.84	0.58
1:A:103:ILE:HB	1:A:136:ALA:HA	1.84	0.58
1:A:758:PRO:O	1:A:762:GLY:N	2.27	0.58
1:C:49:PRO:HG3	1:C:206:SER:OG	2.05	0.57
1:A:207:LEU:O	1:A:211:ILE:HG13	2.04	0.57
1:C:215:ARG:O	1:C:224:ILE:CG1	2.47	0.57
1:D:49:PRO:HG3	1:D:206:SER:OG	2.05	0.57
1:D:758:PRO:O	1:D:762:GLY:N	2.27	0.57
1:D:810:ASP:OD1	1:D:847:ARG:NH1	2.36	0.57
1:A:49:PRO:HG3	1:A:206:SER:OG	2.05	0.57
1:D:358:ALA:O	1:D:362:ASP:N	2.32	0.57
1:B:49:PRO:HG3	1:B:206:SER:OG	2.05	0.56
1:A:740:MET:HG2	1:A:1010:ALA:HB1	1.88	0.56
1:D:207:LEU:O	1:D:211:ILE:HG13	2.04	0.56
1:C:885:ALA:HB1	1:B:845:THR:HG21	1.87	0.56
1:B:207:LEU:O	1:B:211:ILE:HG13	2.04	0.56
1:D:845:THR:HG21	1:A:885:ALA:HB1	1.88	0.56
1:A:845:THR:HG21	1:B:885:ALA:HB1	1.88	0.56
1:C:207:LEU:O	1:C:211:ILE:HG13	2.04	0.56
1:C:740:MET:HG2	1:C:1010:ALA:HB1	1.88	0.56
1:B:358:ALA:O	1:B:362:ASP:N	2.32	0.56
1:C:358:ALA:O	1:C:362:ASP:N	2.32	0.55
1:A:1046:VAL:O	1:A:1050:ILE:HG13	2.07	0.55
1:D:740:MET:HG2	1:D:1010:ALA:HB1	1.88	0.55
1:B:740:MET:HG2	1:B:1010:ALA:HB1	1.88	0.55
1:B:1046:VAL:O	1:B:1050:ILE:HG13	2.07	0.55
1:C:810:ASP:OD1	1:C:847:ARG:NH1	2.36	0.55
1:C:1046:VAL:O	1:C:1050:ILE:HG13	2.07	0.54
1:A:1087:ILE:HD12	1:B:1088:ALA:HA	1.89	0.54
1:D:1087:ILE:HD12	1:A:1088:ALA:HA	1.88	0.54
1:B:810:ASP:OD1	1:B:847:ARG:NH1	2.36	0.54
1:A:380:SER:O	1:A:384:GLU:CB	2.55	0.54
1:C:380:SER:O	1:C:384:GLU:CB	2.55	0.54
1:D:1046:VAL:O	1:D:1050:ILE:HG13	2.07	0.54
1:C:1088:ALA:HA	1:B:1087:ILE:HD12	1.90	0.54
1:A:810:ASP:OD1	1:A:847:ARG:NH1	2.36	0.54
1:B:380:SER:O	1:B:384:GLU:CB	2.55	0.53
1:A:403:VAL:HG11	1:A:535:TYR:OH	2.09	0.53
1:C:596:ALA:O	1:C:600:ARG:HB2	2.09	0.53
1:A:358:ALA:O	1:A:362:ASP:N	2.32	0.53
1:D:403:VAL:HG11	1:D:535:TYR:OH	2.09	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:885:ALA:HB1	1:C:845:THR:HG21	1.91	0.53
1:C:468:GLU:O	1:C:472:VAL:HG23	2.09	0.53
1:D:468:GLU:O	1:D:472:VAL:HG23	2.09	0.53
1:D:380:SER:O	1:D:384:GLU:CB	2.55	0.53
1:D:596:ALA:O	1:D:600:ARG:HB2	2.09	0.53
1:B:403:VAL:HG11	1:B:535:TYR:OH	2.09	0.53
1:A:468:GLU:O	1:A:472:VAL:HG23	2.09	0.52
1:A:1043:PRO:HB2	1:A:1046:VAL:HG12	1.92	0.52
1:B:468:GLU:O	1:B:472:VAL:HG23	2.09	0.52
1:B:596:ALA:O	1:B:600:ARG:HB2	2.09	0.52
1:B:1043:PRO:HB2	1:B:1046:VAL:HG12	1.92	0.52
1:C:403:VAL:HG11	1:C:535:TYR:OH	2.09	0.52
1:A:596:ALA:O	1:A:600:ARG:HB2	2.09	0.52
1:C:1043:PRO:HB2	1:C:1046:VAL:HG12	1.92	0.52
1:A:43:VAL:HG21	1:A:52:LEU:HD13	1.92	0.52
1:D:43:VAL:HG21	1:D:52:LEU:HD13	1.92	0.52
1:D:1094:LEU:O	1:C:1090:TYR:OH	2.27	0.52
1:D:1043:PRO:HB2	1:D:1046:VAL:HG12	1.92	0.52
1:B:43:VAL:HG21	1:B:52:LEU:HD13	1.92	0.51
1:D:1053:TRP:HE1	1:D:1057:GLN:HE21	1.58	0.51
1:C:43:VAL:HG21	1:C:52:LEU:HD13	1.92	0.51
1:A:355:LEU:O	1:A:359:VAL:HG23	2.12	0.50
1:B:355:LEU:O	1:B:359:VAL:HG23	2.11	0.50
1:B:1053:TRP:HE1	1:B:1057:GLN:HE21	1.58	0.50
1:C:752:LEU:HD12	1:C:756:PHE:CE2	2.47	0.50
1:A:1053:TRP:HE1	1:A:1057:GLN:HE21	1.58	0.50
1:A:265:VAL:HG22	1:A:269:LEU:HD13	1.94	0.50
1:D:1090:TYR:OH	1:A:1094:LEU:O	2.30	0.50
1:C:265:VAL:HG22	1:C:269:LEU:HD13	1.94	0.49
1:A:752:LEU:HD12	1:A:756:PHE:CE2	2.47	0.49
1:A:234:ASN:H	1:A:263:ALA:HB2	1.76	0.49
1:A:537:TRP:HE1	1:A:543:GLY:HA2	1.77	0.49
1:A:1090:TYR:OH	1:B:1094:LEU:O	2.31	0.49
1:B:265:VAL:HG22	1:B:269:LEU:HD13	1.94	0.49
1:B:914:LEU:O	1:B:919:GLN:N	2.44	0.49
1:D:1018:HIS:O	1:D:1022:VAL:HG23	2.13	0.49
1:A:1018:HIS:O	1:A:1022:VAL:HG23	2.13	0.49
1:D:382:ASP:O	1:D:386:VAL:HG12	2.12	0.49
1:C:382:ASP:O	1:C:386:VAL:HG12	2.12	0.49
1:C:660:TYR:O	1:C:664:ILE:N	2.38	0.49
1:A:382:ASP:O	1:A:386:VAL:HG12	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:234:ASN:H	1:D:263:ALA:HB2	1.76	0.49
1:D:265:VAL:HG22	1:D:269:LEU:HD13	1.94	0.49
1:D:537:TRP:HE1	1:D:543:GLY:HA2	1.77	0.49
1:B:234:ASN:H	1:B:263:ALA:HB2	1.76	0.49
1:B:382:ASP:O	1:B:386:VAL:HG12	2.12	0.49
1:B:1018:HIS:O	1:B:1022:VAL:HG23	2.13	0.49
1:C:355:LEU:O	1:C:359:VAL:HG23	2.12	0.49
1:C:389:ASP:O	1:C:393:SER:OG	2.27	0.49
1:D:355:LEU:O	1:D:359:VAL:HG23	2.12	0.49
1:C:880:SER:O	1:C:884:VAL:HG23	2.13	0.49
1:C:1053:TRP:HE1	1:C:1057:GLN:HE21	1.59	0.49
1:C:537:TRP:HE1	1:C:543:GLY:HA2	1.77	0.49
1:A:45:SER:HB2	1:A:190:PRO:HB3	1.95	0.49
1:D:752:LEU:HD12	1:D:756:PHE:CE2	2.47	0.48
1:C:914:LEU:O	1:C:919:GLN:N	2.44	0.48
1:C:1018:HIS:O	1:C:1022:VAL:HG23	2.13	0.48
1:D:914:LEU:O	1:D:919:GLN:N	2.44	0.48
1:A:44:PRO:HA	1:A:189:GLU:H	1.79	0.48
1:D:880:SER:O	1:D:884:VAL:HG23	2.13	0.48
1:C:234:ASN:H	1:C:263:ALA:HB2	1.76	0.48
1:A:660:TYR:O	1:A:664:ILE:N	2.38	0.48
1:B:45:SER:HB2	1:B:190:PRO:HB3	1.95	0.48
1:D:321:PHE:HZ	1:D:332:VAL:HG21	1.78	0.48
1:D:389:ASP:O	1:D:393:SER:OG	2.27	0.48
1:C:45:SER:HB2	1:C:190:PRO:HB3	1.95	0.48
1:A:914:LEU:O	1:A:919:GLN:N	2.44	0.48
1:B:537:TRP:HE1	1:B:543:GLY:HA2	1.77	0.48
1:B:880:SER:O	1:B:884:VAL:HG23	2.13	0.48
1:D:45:SER:HB2	1:D:190:PRO:HB3	1.96	0.48
1:D:44:PRO:HA	1:D:189:GLU:H	1.79	0.48
1:C:227:PRO:HB3	1:C:337:LEU:HD22	1.96	0.48
1:B:227:PRO:HB3	1:B:337:LEU:HD22	1.96	0.48
1:A:321:PHE:HZ	1:A:332:VAL:HG21	1.78	0.48
1:C:262:ILE:HA	1:C:265:VAL:HG12	1.96	0.47
1:A:880:SER:O	1:A:884:VAL:HG23	2.13	0.47
1:A:379:LYS:HD2	1:A:379:LYS:HA	1.67	0.47
1:C:321:PHE:HZ	1:C:332:VAL:HG21	1.78	0.47
1:A:262:ILE:HA	1:A:265:VAL:HG12	1.96	0.47
1:B:321:PHE:HZ	1:B:332:VAL:HG21	1.79	0.47
1:B:44:PRO:HA	1:B:189:GLU:H	1.79	0.47
1:D:227:PRO:HB3	1:D:337:LEU:HD22	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:262:ILE:HA	1:B:265:VAL:HG12	1.96	0.47
1:D:262:ILE:HA	1:D:265:VAL:HG12	1.96	0.47
1:A:227:PRO:HB3	1:A:337:LEU:HD22	1.96	0.47
1:B:226:ILE:HA	1:B:227:PRO:HD3	1.69	0.47
1:D:379:LYS:HA	1:D:379:LYS:HD2	1.68	0.47
1:C:44:PRO:HA	1:C:189:GLU:H	1.79	0.47
1:B:991:PHE:O	1:B:995:GLN:HG2	2.15	0.47
1:D:991:PHE:O	1:D:995:GLN:HG2	2.15	0.46
1:A:991:PHE:O	1:A:995:GLN:HG2	2.15	0.46
1:C:991:PHE:O	1:C:995:GLN:HG2	2.15	0.46
1:D:266:LEU:HD23	1:D:269:LEU:HD22	1.97	0.46
1:D:979:TYR:HD1	1:C:982:GLN:HE22	1.63	0.46
1:A:398:PHE:HB3	1:A:402:PHE:HE2	1.81	0.46
1:B:234:ASN:HA	1:B:263:ALA:H	1.81	0.46
1:B:398:PHE:HB3	1:B:402:PHE:HE2	1.81	0.46
1:B:103:ILE:O	1:B:137:ILE:N	2.49	0.46
1:C:234:ASN:HA	1:C:263:ALA:H	1.81	0.46
1:C:380:SER:O	1:C:384:GLU:HB2	2.16	0.46
1:A:982:GLN:HE22	1:B:979:TYR:HD1	1.64	0.46
1:D:74:GLU:HG3	1:D:106:SER:HB2	1.98	0.46
1:D:103:ILE:O	1:D:137:ILE:N	2.49	0.46
1:D:398:PHE:HB3	1:D:402:PHE:HE2	1.81	0.46
1:C:266:LEU:HD23	1:C:269:LEU:HD22	1.97	0.46
1:C:1094:LEU:O	1:B:1090:TYR:OH	2.34	0.46
1:A:389:ASP:O	1:A:393:SER:OG	2.27	0.45
1:A:961:PHE:O	1:A:964:VAL:HG22	2.17	0.45
1:B:884:VAL:O	1:B:888:VAL:HG23	2.17	0.45
1:C:398:PHE:HB3	1:C:402:PHE:HE2	1.81	0.45
1:A:74:GLU:HG3	1:A:106:SER:HB2	1.98	0.45
1:A:266:LEU:HD23	1:A:269:LEU:HD22	1.97	0.45
1:D:884:VAL:O	1:D:888:VAL:HG23	2.17	0.45
1:B:380:SER:O	1:B:384:GLU:HB2	2.16	0.45
1:D:234:ASN:HA	1:D:263:ALA:H	1.81	0.45
1:D:982:GLN:HE22	1:A:979:TYR:HD1	1.64	0.45
1:C:226:ILE:HA	1:C:227:PRO:HD3	1.69	0.45
1:B:266:LEU:HD23	1:B:269:LEU:HD22	1.97	0.45
1:B:752:LEU:HD12	1:B:756:PHE:CE2	2.47	0.45
1:A:380:SER:O	1:A:384:GLU:HB2	2.16	0.45
1:D:961:PHE:O	1:D:964:VAL:HG22	2.17	0.44
1:A:625:HIS:HB3	1:A:628:VAL:HG23	1.99	0.44
1:D:53:PHE:CD2	1:D:210:HIS:CE1	3.06	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:878:PHE:CE1	1:B:851:ILE:HD11	2.52	0.44
1:A:234:ASN:HA	1:A:263:ALA:H	1.81	0.44
1:A:884:VAL:O	1:A:888:VAL:HG23	2.17	0.44
1:B:74:GLU:HG3	1:B:106:SER:HB2	1.98	0.44
1:B:625:HIS:HB3	1:B:628:VAL:HG23	2.00	0.44
1:B:961:PHE:O	1:B:964:VAL:HG22	2.17	0.44
1:C:884:VAL:O	1:C:888:VAL:HG23	2.17	0.44
1:C:961:PHE:O	1:C:964:VAL:HG22	2.17	0.44
1:A:305:LEU:O	1:A:309:ILE:HG12	2.18	0.44
1:C:53:PHE:CD2	1:C:210:HIS:CE1	3.06	0.44
1:B:818:ILE:HA	1:B:821:VAL:HG12	2.00	0.44
1:C:305:LEU:O	1:C:309:ILE:HG12	2.18	0.44
1:D:302:TRP:O	1:D:306:LEU:HG	2.18	0.44
1:D:380:SER:O	1:D:384:GLU:HB2	2.16	0.44
1:A:103:ILE:O	1:A:137:ILE:N	2.49	0.44
1:B:51:MET:O	1:B:54:GLU:HG3	2.18	0.44
1:C:302:TRP:O	1:C:306:LEU:HG	2.18	0.44
1:C:877:PHE:O	1:C:880:SER:OG	2.31	0.44
1:B:305:LEU:O	1:B:309:ILE:HG12	2.18	0.44
1:D:305:LEU:O	1:D:309:ILE:HG12	2.18	0.43
1:C:51:MET:O	1:C:54:GLU:HG3	2.18	0.43
1:A:875:PHE:CD2	1:A:973:LEU:HD13	2.53	0.43
1:D:772:PHE:O	1:D:776:THR:HG23	2.18	0.43
1:A:53:PHE:CD2	1:A:210:HIS:CE1	3.06	0.43
1:A:750:TYR:O	1:A:754:VAL:HG22	2.18	0.43
1:B:875:PHE:CD2	1:B:973:LEU:HD13	2.53	0.43
1:A:818:ILE:HA	1:A:821:VAL:HG12	2.00	0.43
1:C:625:HIS:HB3	1:C:628:VAL:HG23	1.99	0.43
1:C:740:MET:HG2	1:C:1011:PRO:HD2	2.01	0.43
1:A:302:TRP:O	1:A:306:LEU:HG	2.18	0.43
1:A:380:SER:O	1:A:384:GLU:HB3	2.18	0.43
1:B:740:MET:HG2	1:B:1011:PRO:HD2	2.01	0.43
1:B:1058:LYS:HB2	1:B:1058:LYS:HE3	1.85	0.43
1:D:51:MET:O	1:D:54:GLU:HG3	2.18	0.43
1:D:226:ILE:HA	1:D:227:PRO:HD3	1.69	0.43
1:D:818:ILE:HA	1:D:821:VAL:HG12	2.00	0.43
1:D:875:PHE:CD2	1:D:973:LEU:HD13	2.53	0.43
1:C:380:SER:O	1:C:384:GLU:HB3	2.18	0.43
1:A:226:ILE:HA	1:A:227:PRO:HD3	1.69	0.43
1:B:53:PHE:CD2	1:B:210:HIS:CE1	3.06	0.43
1:B:772:PHE:O	1:B:776:THR:HG23	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:740:MET:HG2	1:D:1011:PRO:HD2	2.01	0.43
1:A:51:MET:O	1:A:54:GLU:HG3	2.18	0.43
1:A:994:PHE:HE2	1:A:998:HIS:NE2	2.17	0.43
1:D:625:HIS:HB3	1:D:628:VAL:HG23	2.00	0.43
1:C:103:ILE:O	1:C:137:ILE:N	2.49	0.43
1:C:994:PHE:HE2	1:C:998:HIS:NE2	2.17	0.43
1:A:215:ARG:O	1:A:224:ILE:CD1	2.67	0.43
1:B:660:TYR:O	1:B:664:ILE:N	2.38	0.43
1:B:750:TYR:O	1:B:754:VAL:HG22	2.18	0.43
1:D:910:TYR:O	1:D:914:LEU:N	2.52	0.43
1:C:750:TYR:O	1:C:754:VAL:HG22	2.19	0.43
1:C:963:LEU:O	1:C:967:VAL:HG23	2.19	0.43
1:A:438:LYS:HE2	1:A:471:ARG:HB3	2.01	0.43
1:B:215:ARG:O	1:B:224:ILE:CD1	2.67	0.43
1:D:963:LEU:O	1:D:967:VAL:HG23	2.19	0.43
1:A:740:MET:HG2	1:A:1011:PRO:HD2	2.01	0.43
1:B:302:TRP:O	1:B:306:LEU:HG	2.18	0.43
1:B:963:LEU:O	1:B:967:VAL:HG23	2.19	0.43
1:A:910:TYR:O	1:A:914:LEU:N	2.52	0.43
1:B:392:VAL:HG22	1:B:421:LEU:HD23	2.01	0.43
1:C:772:PHE:O	1:C:776:THR:HG23	2.18	0.42
1:C:875:PHE:CD2	1:C:973:LEU:HD13	2.53	0.42
1:A:851:ILE:HD11	1:B:878:PHE:CE1	2.54	0.42
1:B:65:PRO:HB3	1:B:102:TRP:CZ2	2.54	0.42
1:D:392:VAL:HG22	1:D:421:LEU:HD23	2.01	0.42
1:C:818:ILE:HA	1:C:821:VAL:HG12	2.00	0.42
1:A:392:VAL:HG22	1:A:421:LEU:HD23	2.01	0.42
1:D:65:PRO:HB3	1:D:102:TRP:CZ2	2.55	0.42
1:D:241:GLU:HA	1:D:305:LEU:HD11	2.02	0.42
1:D:438:LYS:HE2	1:D:471:ARG:HB3	2.01	0.42
1:C:392:VAL:HG22	1:C:421:LEU:HD23	2.01	0.42
1:C:910:TYR:O	1:C:914:LEU:N	2.52	0.42
1:A:963:LEU:O	1:A:967:VAL:HG23	2.19	0.42
1:B:320:ASP:OD1	1:B:320:ASP:O	2.38	0.42
1:B:380:SER:O	1:B:384:GLU:HB3	2.18	0.42
1:D:380:SER:O	1:D:384:GLU:HB3	2.18	0.42
1:D:994:PHE:HE2	1:D:998:HIS:NE2	2.17	0.42
1:C:65:PRO:HB3	1:C:102:TRP:CZ2	2.55	0.42
1:C:316:LEU:HD12	1:C:317:THR:H	1.84	0.42
1:A:316:LEU:HD12	1:A:317:THR:H	1.84	0.42
1:A:772:PHE:O	1:A:776:THR:HG23	2.18	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:265:VAL:HG22	1:B:269:LEU:CD1	2.49	0.42
1:B:632:LEU:HD21	1:B:997:TYR:HD1	1.85	0.42
1:B:910:TYR:O	1:B:914:LEU:N	2.52	0.42
1:D:632:LEU:HD21	1:D:997:TYR:HD1	1.85	0.42
1:D:750:TYR:O	1:D:754:VAL:HG22	2.19	0.42
1:C:215:ARG:O	1:C:224:ILE:CD1	2.67	0.42
1:C:265:VAL:HG22	1:C:269:LEU:CD1	2.49	0.42
1:C:320:ASP:OD1	1:C:320:ASP:O	2.38	0.42
1:C:979:TYR:HD1	1:B:982:GLN:HE22	1.68	0.42
1:B:241:GLU:HA	1:B:305:LEU:HD11	2.02	0.42
1:D:320:ASP:OD1	1:D:320:ASP:O	2.38	0.42
1:C:632:LEU:HD21	1:C:997:TYR:HD1	1.85	0.42
1:C:893:LEU:HD13	1:B:835:THR:HA	2.02	0.42
1:D:265:VAL:HG22	1:D:269:LEU:CD1	2.49	0.42
1:D:851:ILE:HD11	1:A:878:PHE:CE1	2.54	0.42
1:A:57:LEU:HD23	1:A:57:LEU:HA	1.90	0.42
1:B:438:LYS:HE2	1:B:471:ARG:HB3	2.01	0.42
1:D:316:LEU:HD12	1:D:317:THR:H	1.84	0.42
1:D:522:LEU:HD23	1:D:522:LEU:HA	1.88	0.42
1:C:403:VAL:HA	1:C:407:ALA:HB3	2.02	0.42
1:A:632:LEU:HD21	1:A:997:TYR:HD1	1.85	0.42
1:B:316:LEU:HD12	1:B:317:THR:H	1.84	0.42
1:D:342:LYS:HA	1:D:346:ARG:HH11	1.85	0.42
1:D:554:ILE:HG13	1:D:555:LYS:N	2.35	0.42
1:C:241:GLU:HA	1:C:305:LEU:HD11	2.02	0.42
1:A:105:THR:O	1:A:138:GLY:HA2	2.20	0.42
1:A:241:GLU:HA	1:A:305:LEU:HD11	2.02	0.42
1:B:389:ASP:O	1:B:393:SER:OG	2.27	0.42
1:B:403:VAL:HA	1:B:407:ALA:HB3	2.02	0.42
1:B:994:PHE:HE2	1:B:998:HIS:NE2	2.17	0.42
1:D:105:THR:O	1:D:138:GLY:HA2	2.20	0.42
1:C:438:LYS:HE2	1:C:471:ARG:HB3	2.01	0.42
1:A:320:ASP:O	1:A:320:ASP:OD1	2.38	0.42
1:A:346:ARG:HA	1:A:346:ARG:NE	2.35	0.42
1:A:522:LEU:HD23	1:A:522:LEU:HA	1.88	0.42
1:B:379:LYS:HD2	1:B:379:LYS:HA	1.68	0.42
1:D:52:LEU:HD23	1:D:207:LEU:HD21	2.02	0.41
1:A:265:VAL:HG22	1:A:269:LEU:CD1	2.49	0.41
1:A:342:LYS:HA	1:A:346:ARG:HH11	1.85	0.41
1:A:418:LEU:HD12	1:A:418:LEU:HA	1.93	0.41
1:B:52:LEU:HD23	1:B:207:LEU:HD21	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:229:LEU:HD12	1:B:229:LEU:HA	1.88	0.41
1:A:554:ILE:HG13	1:A:555:LYS:N	2.35	0.41
1:D:215:ARG:O	1:D:224:ILE:CD1	2.67	0.41
1:D:272:GLN:O	1:D:274:HIS:ND1	2.53	0.41
1:C:105:THR:O	1:C:138:GLY:HA2	2.20	0.41
1:A:65:PRO:HB3	1:A:102:TRP:CZ2	2.55	0.41
1:A:877:PHE:O	1:A:880:SER:OG	2.31	0.41
1:B:105:THR:O	1:B:138:GLY:HA2	2.20	0.41
1:D:346:ARG:NE	1:D:346:ARG:HA	2.35	0.41
1:C:346:ARG:NE	1:C:346:ARG:HA	2.35	0.41
1:D:963:LEU:HD12	1:D:963:LEU:HA	1.91	0.41
1:C:342:LYS:HA	1:C:346:ARG:HH11	1.85	0.41
1:A:52:LEU:HD23	1:A:207:LEU:HD21	2.02	0.41
1:B:272:GLN:O	1:B:274:HIS:ND1	2.53	0.41
1:B:342:LYS:HA	1:B:346:ARG:HH11	1.85	0.41
1:C:522:LEU:HD23	1:C:522:LEU:HA	1.88	0.41
1:D:418:LEU:HD12	1:D:418:LEU:HA	1.93	0.41
1:C:52:LEU:HD23	1:C:207:LEU:HD21	2.02	0.41
1:D:403:VAL:HA	1:D:407:ALA:HB3	2.02	0.41
1:D:522:LEU:HA	1:D:525:VAL:HG12	2.03	0.41
1:A:233:VAL:HG23	1:A:233:VAL:O	2.21	0.41
1:A:403:VAL:HA	1:A:407:ALA:HB3	2.02	0.41
1:A:415:TYR:O	1:A:419:GLN:HG3	2.21	0.41
1:A:835:THR:HA	1:B:893:LEU:HD13	2.03	0.41
1:A:1058:LYS:HB2	1:A:1058:LYS:HE3	1.85	0.41
1:B:346:ARG:HA	1:B:346:ARG:NE	2.35	0.41
1:B:415:TYR:O	1:B:419:GLN:HG3	2.21	0.41
1:D:415:TYR:O	1:D:419:GLN:HG3	2.21	0.41
1:D:877:PHE:O	1:D:880:SER:OG	2.31	0.40
1:C:272:GLN:O	1:C:274:HIS:ND1	2.53	0.40
1:C:554:ILE:HG13	1:C:555:LYS:N	2.35	0.40
1:A:963:LEU:HD12	1:A:963:LEU:HA	1.90	0.40
1:D:605:TRP:O	1:D:606:SER:OG	2.32	0.40
1:B:611:LEU:HD23	1:B:611:LEU:HA	1.90	0.40
1:C:522:LEU:HA	1:C:525:VAL:HG12	2.03	0.40
1:A:272:GLN:O	1:A:274:HIS:ND1	2.53	0.40
1:D:852:PHE:HB2	1:D:862:ILE:CD1	2.52	0.40
1:C:852:PHE:HB2	1:C:862:ILE:CD1	2.52	0.40
1:B:605:TRP:O	1:B:606:SER:OG	2.32	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	870/1169 (74%)	830 (95%)	40 (5%)	0	100	100
1	B	870/1169 (74%)	830 (95%)	40 (5%)	0	100	100
1	C	867/1169 (74%)	826 (95%)	41 (5%)	0	100	100
1	D	870/1169 (74%)	830 (95%)	40 (5%)	0	100	100
All	All	3477/4676 (74%)	3316 (95%)	161 (5%)	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	468/1009 (46%)	468 (100%)	0	100	100
1	B	468/1009 (46%)	468 (100%)	0	100	100
1	C	467/1009 (46%)	467 (100%)	0	100	100
1	D	468/1009 (46%)	468 (100%)	0	100	100
All	All	1871/4036 (46%)	1871 (100%)	0	100	100

There are no protein residues with a non-rotameric sidechain to report.

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (11) such sidechains are listed below:

Mol	Chain	Res	Type
1	D	210	HIS
1	D	737	ASN
1	C	210	HIS
1	C	314	HIS
1	C	737	ASN
1	A	210	HIS
1	A	314	HIS
1	A	737	ASN
1	B	210	HIS
1	B	314	HIS
1	B	737	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.

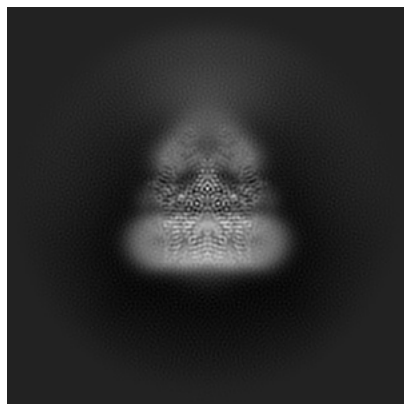
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-40576. These allow visual inspection of the internal detail of the map and identification of artifacts.

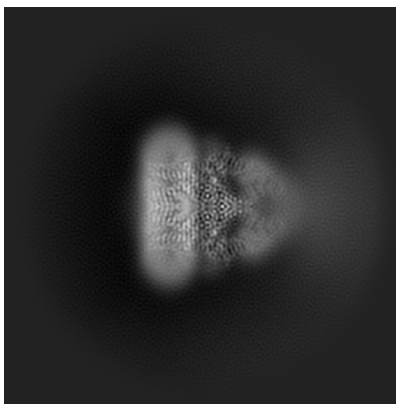
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

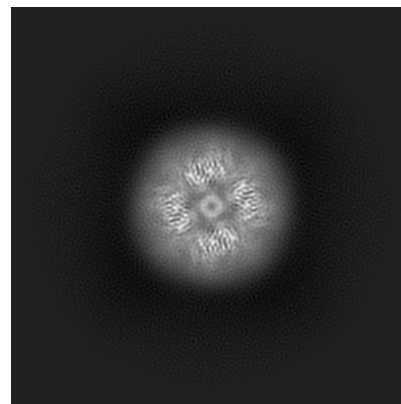
6.1.1 Primary map



X

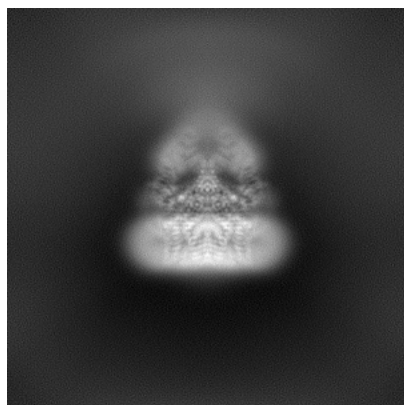


Y

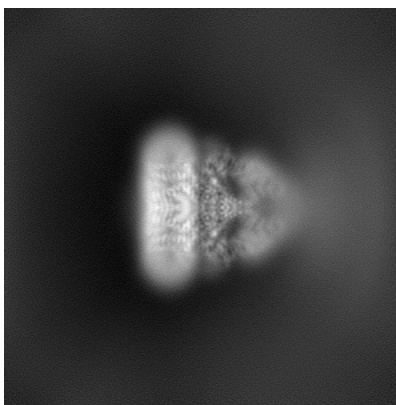


Z

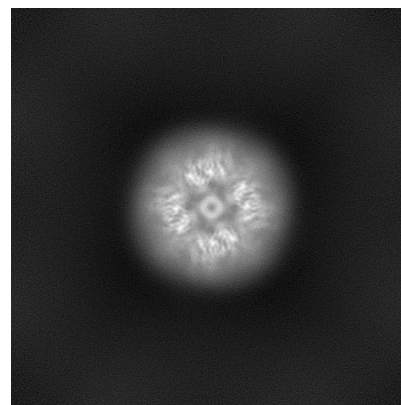
6.1.2 Raw map



X



Y

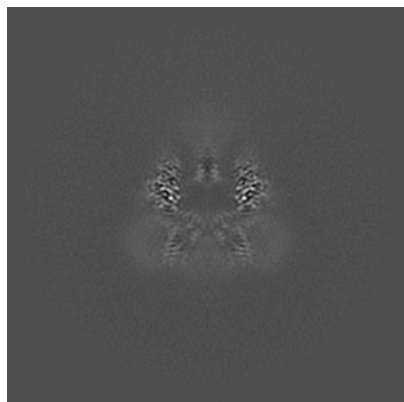


Z

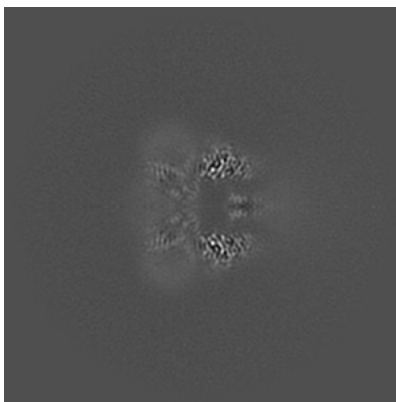
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

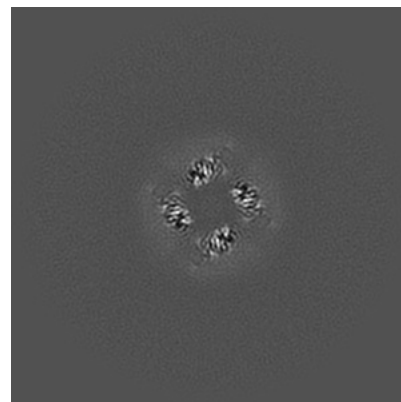
6.2.1 Primary map



X Index: 180

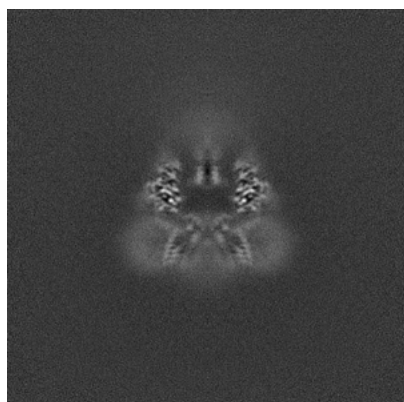


Y Index: 180

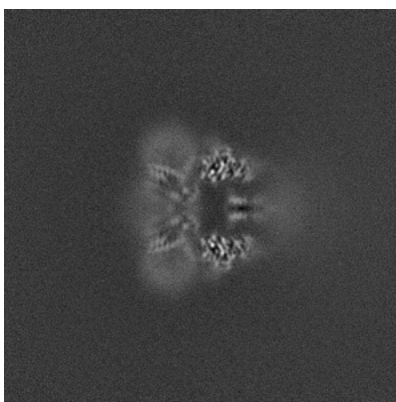


Z Index: 180

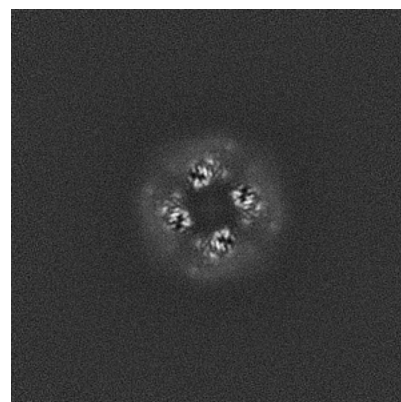
6.2.2 Raw map



X Index: 180



Y Index: 180

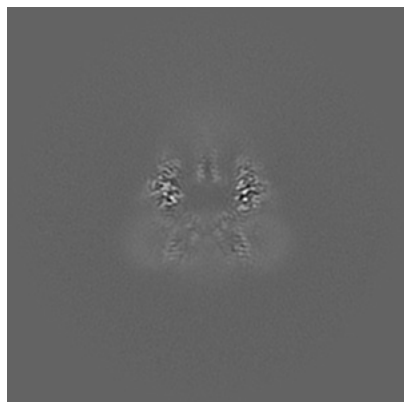


Z Index: 180

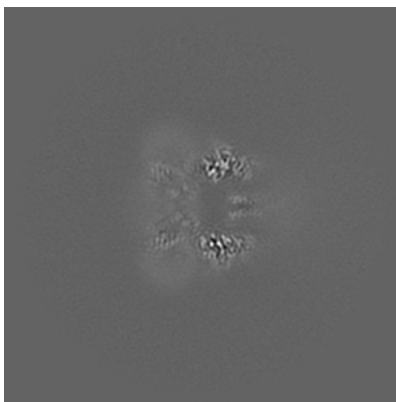
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

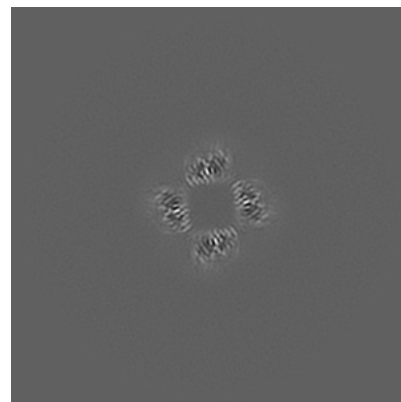
6.3.1 Primary map



X Index: 179

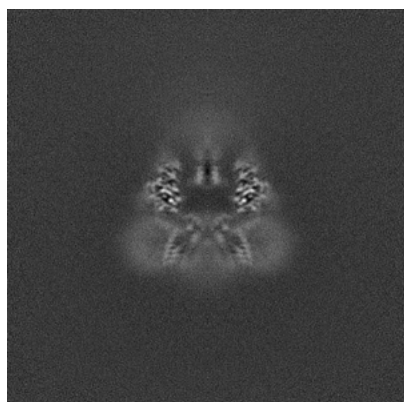


Y Index: 179

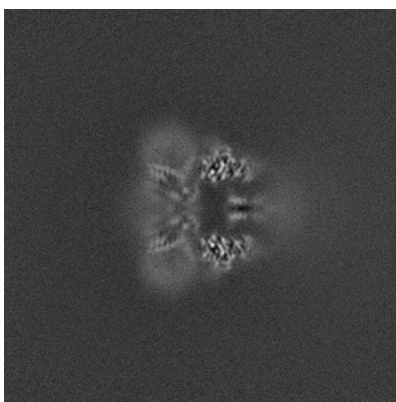


Z Index: 189

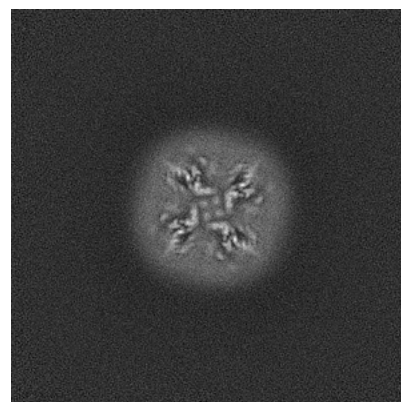
6.3.2 Raw map



X Index: 180



Y Index: 180

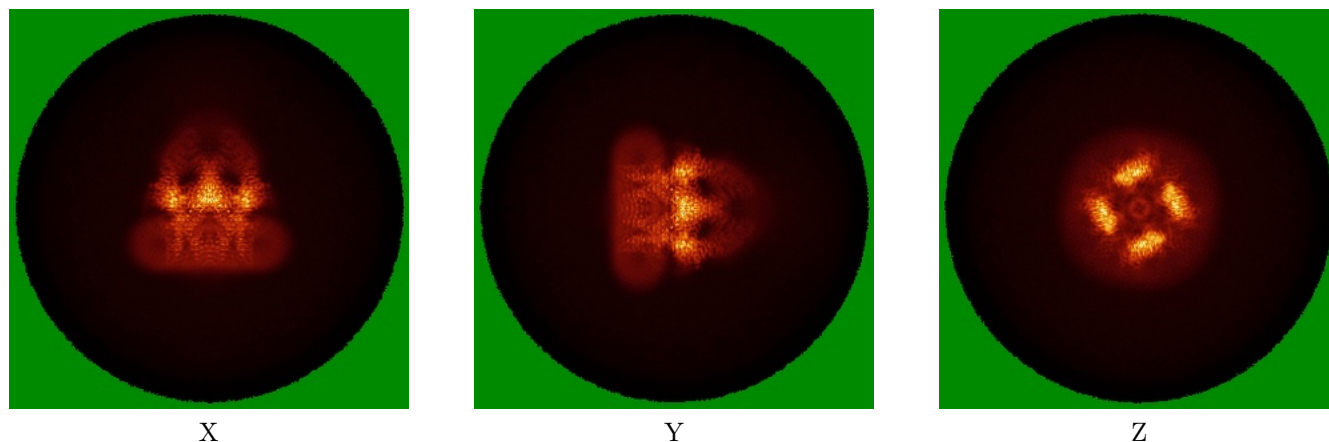


Z Index: 165

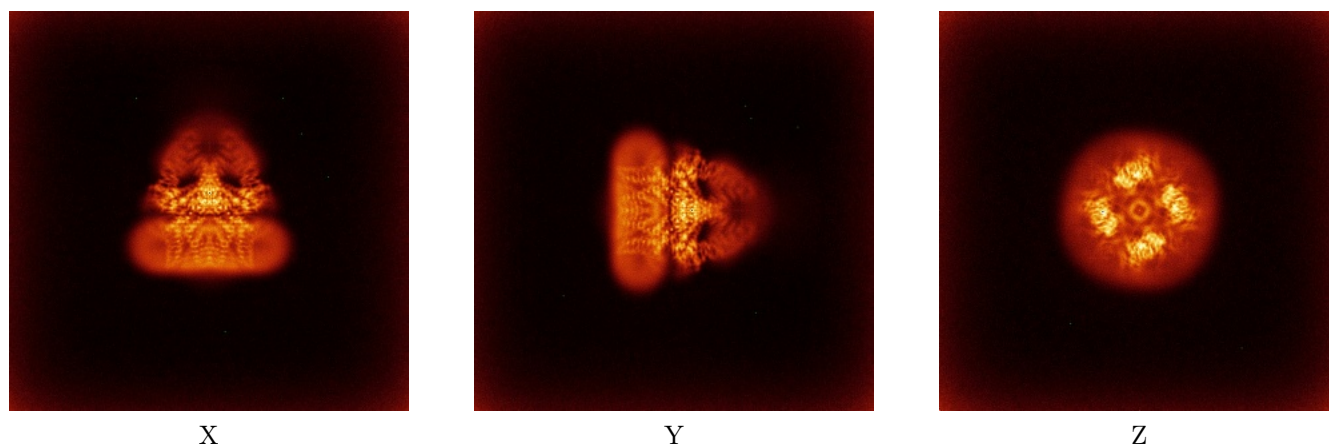
The images above show the largest variance slices of the map in three orthogonal directions.

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

6.4.1 Primary map



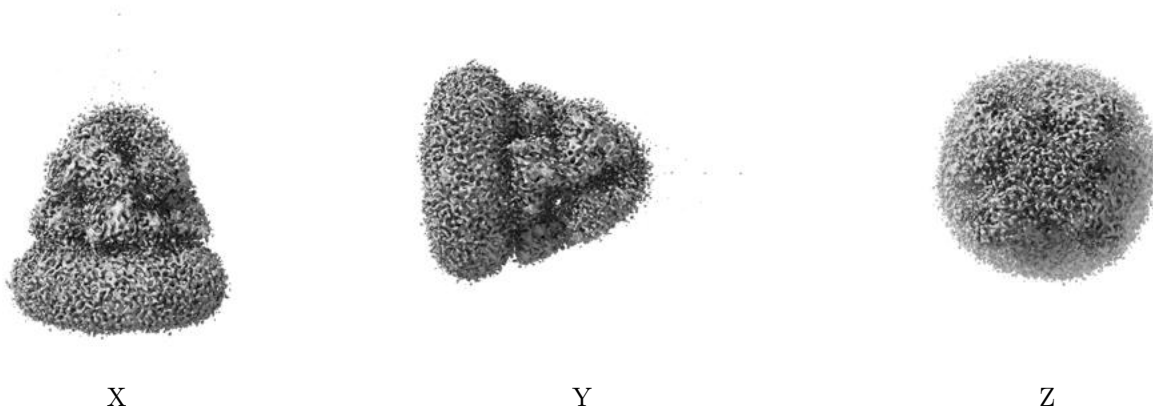
6.4.2 Raw map



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.

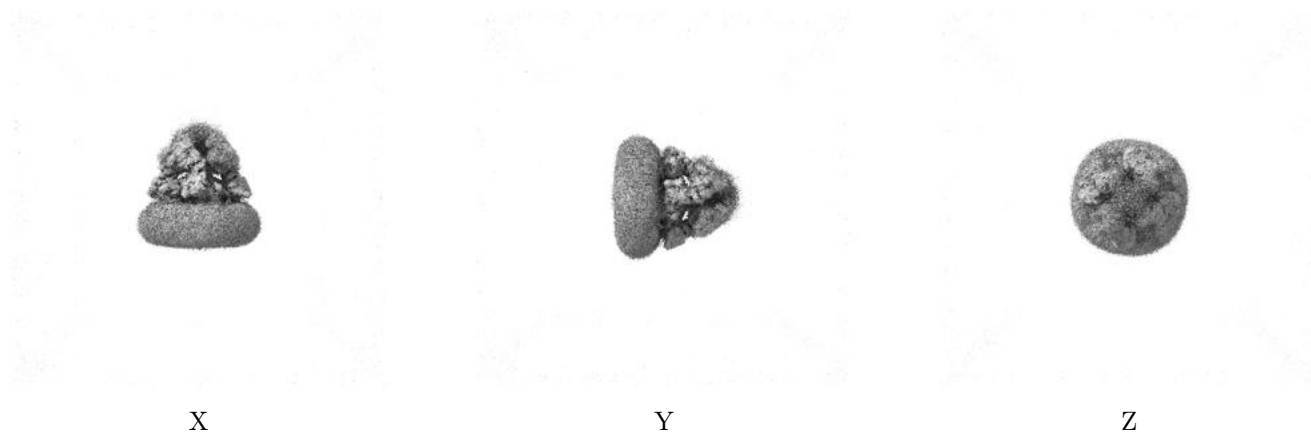
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.11. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

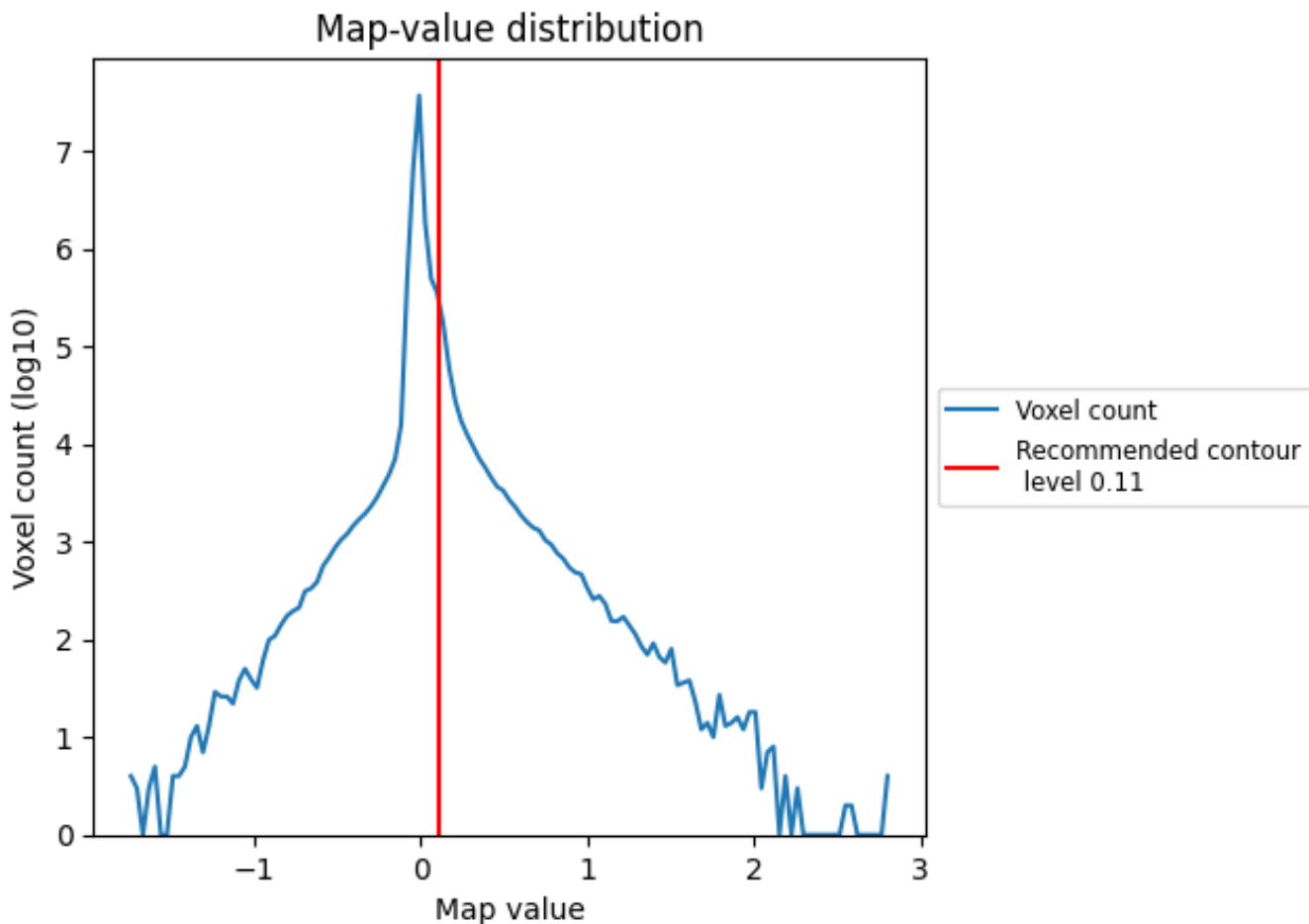
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

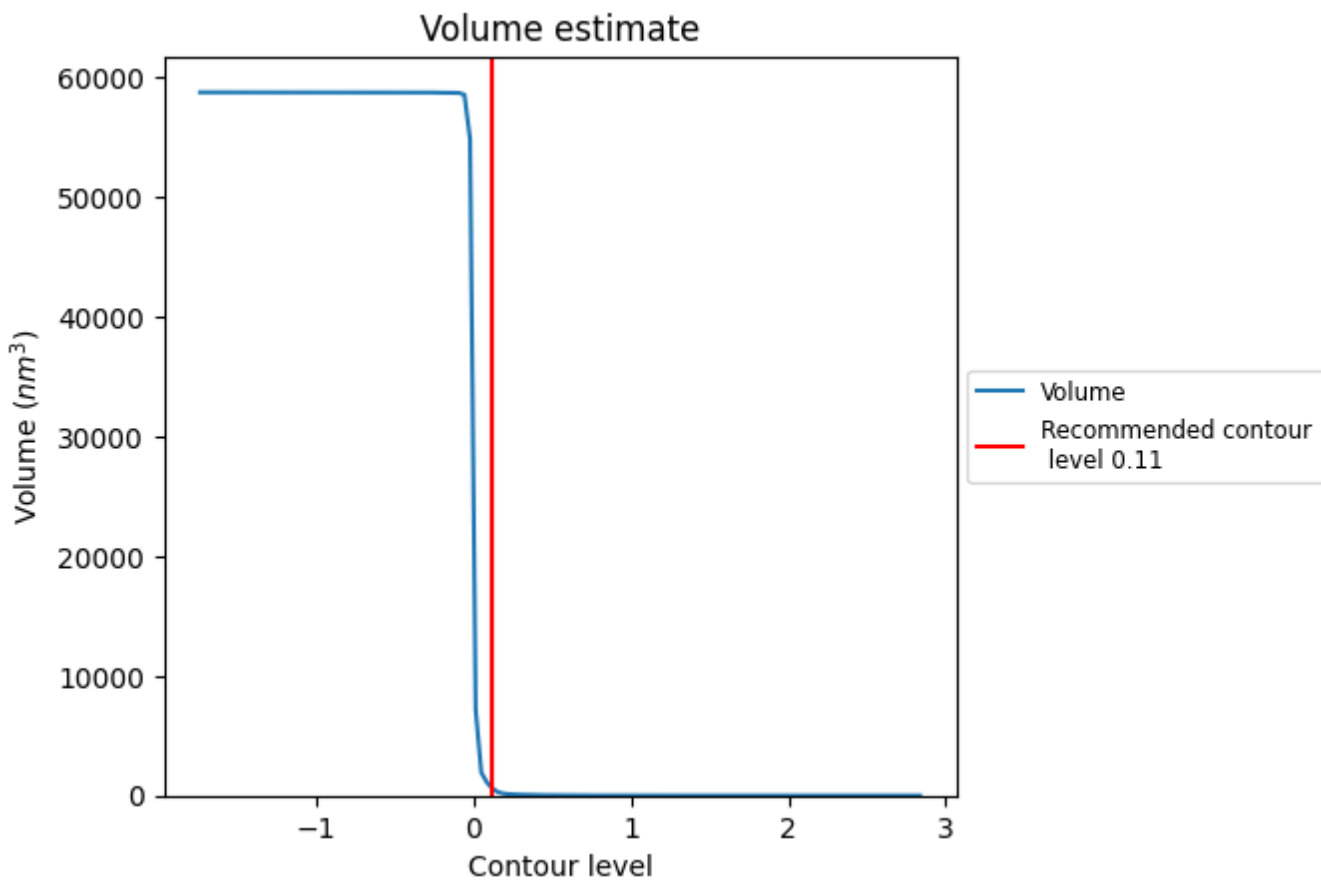
This section contains the results of statistical analysis of the map.

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.

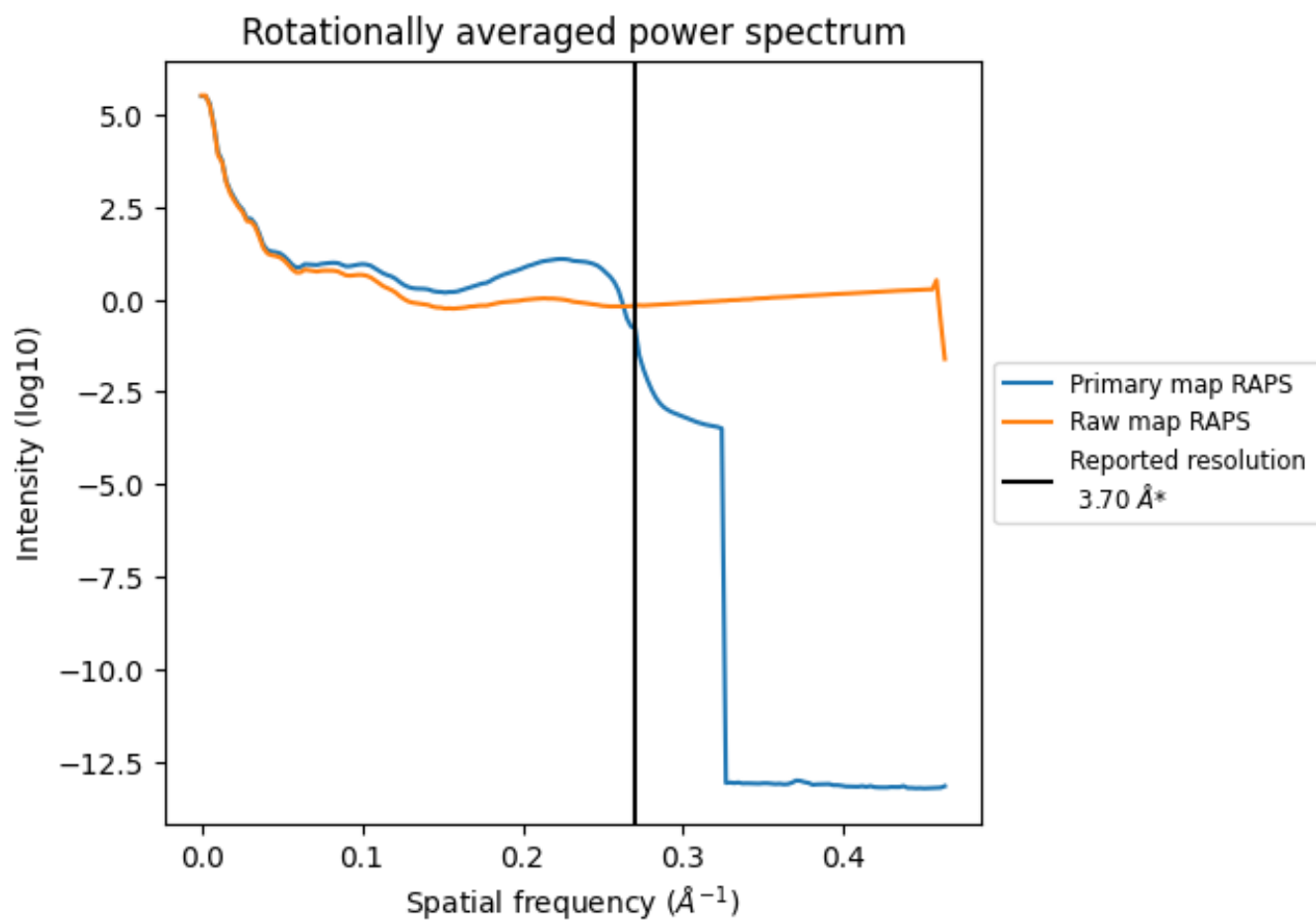
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 734 nm³; this corresponds to an approximate mass of 663 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](#)

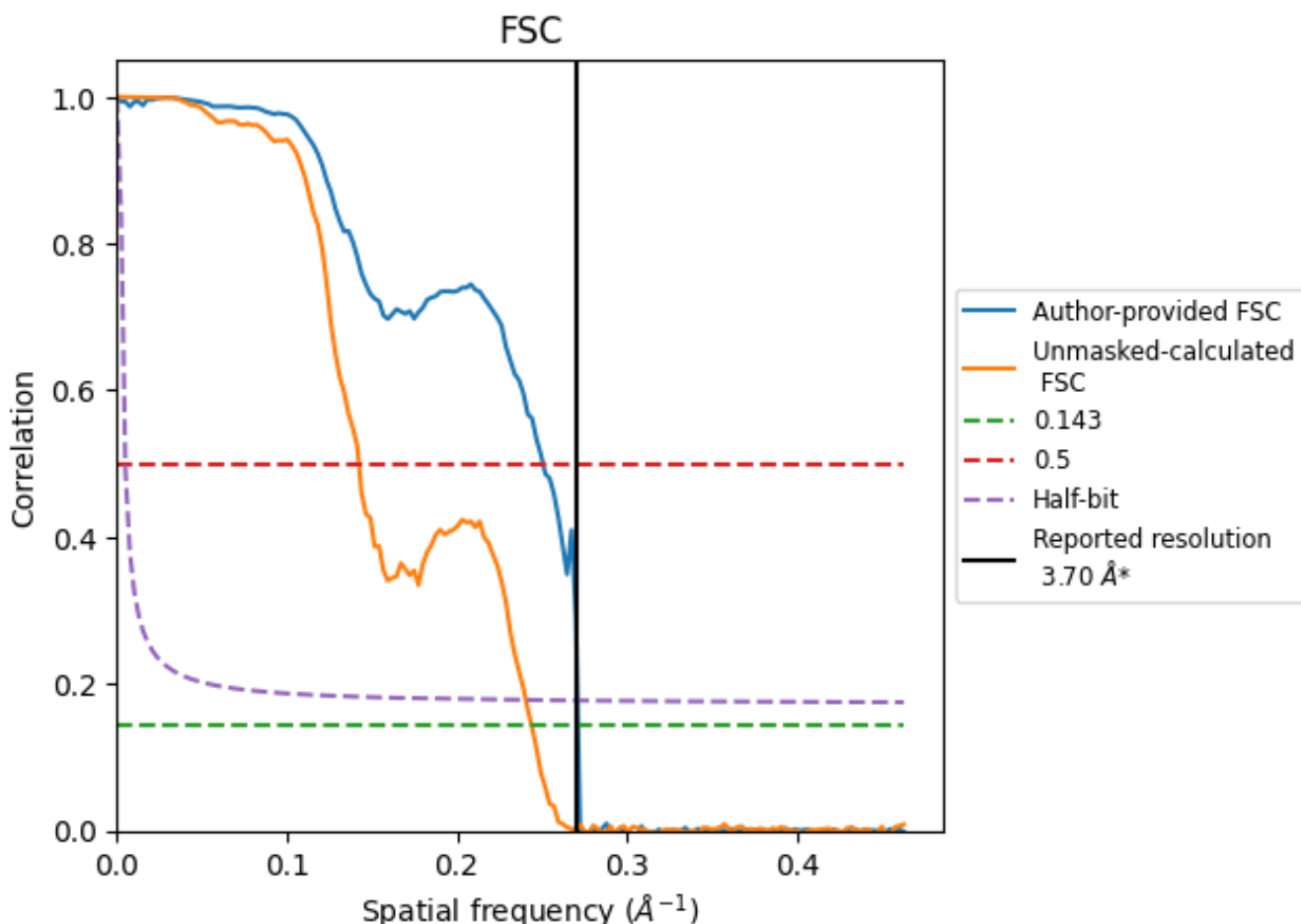


*Reported resolution corresponds to spatial frequency of 0.270 Å⁻¹

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 0.270 \AA^{-1}

8.2 Resolution estimates [i](#)

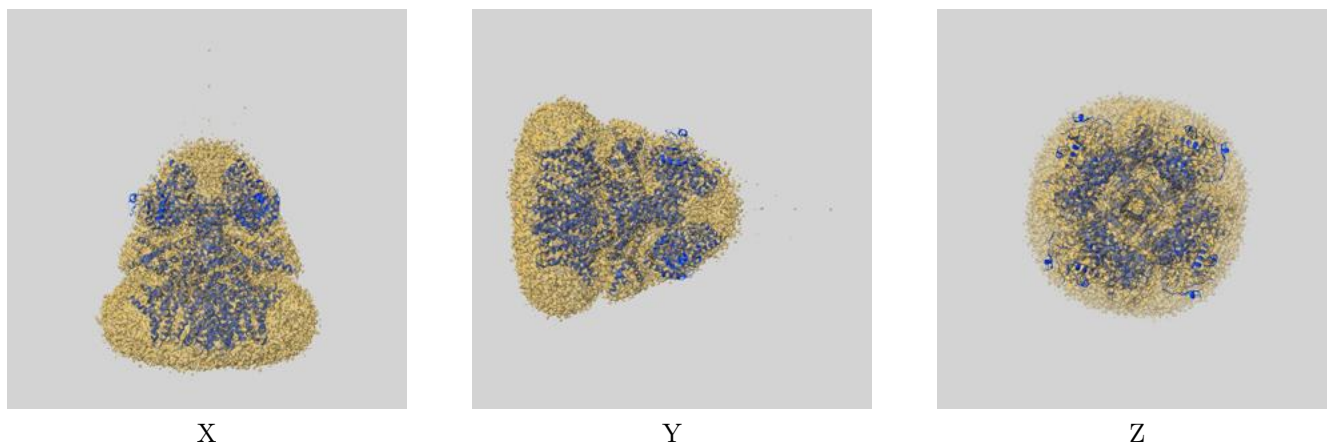
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.70	-	-
Author-provided FSC curve	3.69	3.99	3.69
Unmasked-calculated*	4.10	7.02	4.16

*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 4.10 differs from the reported value 3.7 by more than 10 %

9 Map-model fit [i](#)

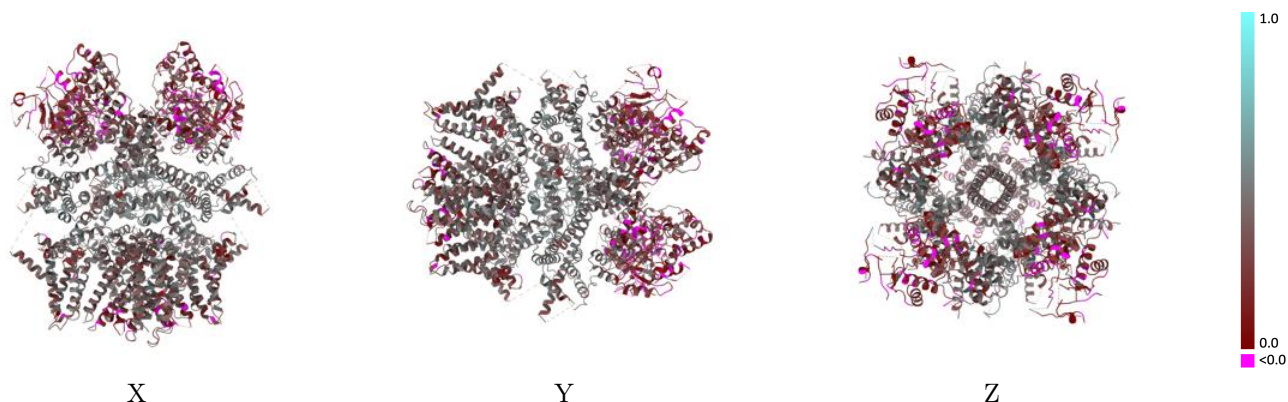
This section contains information regarding the fit between EMDB map EMD-40576 and PDB model 8SLA. Per-residue inclusion information can be found in section 3 on page 5.

9.1 Map-model overlay [i](#)



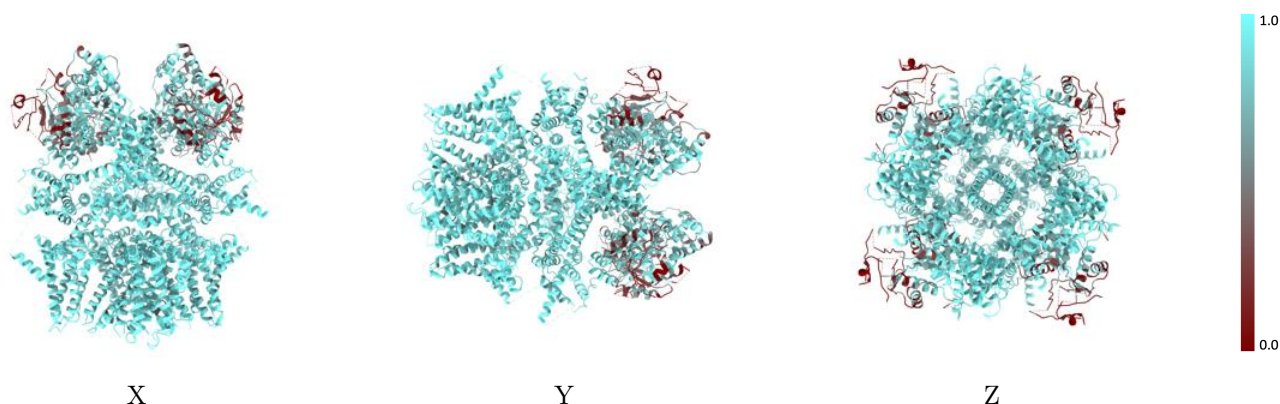
The images above show the 3D surface view of the map at the recommended contour level 0.11 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



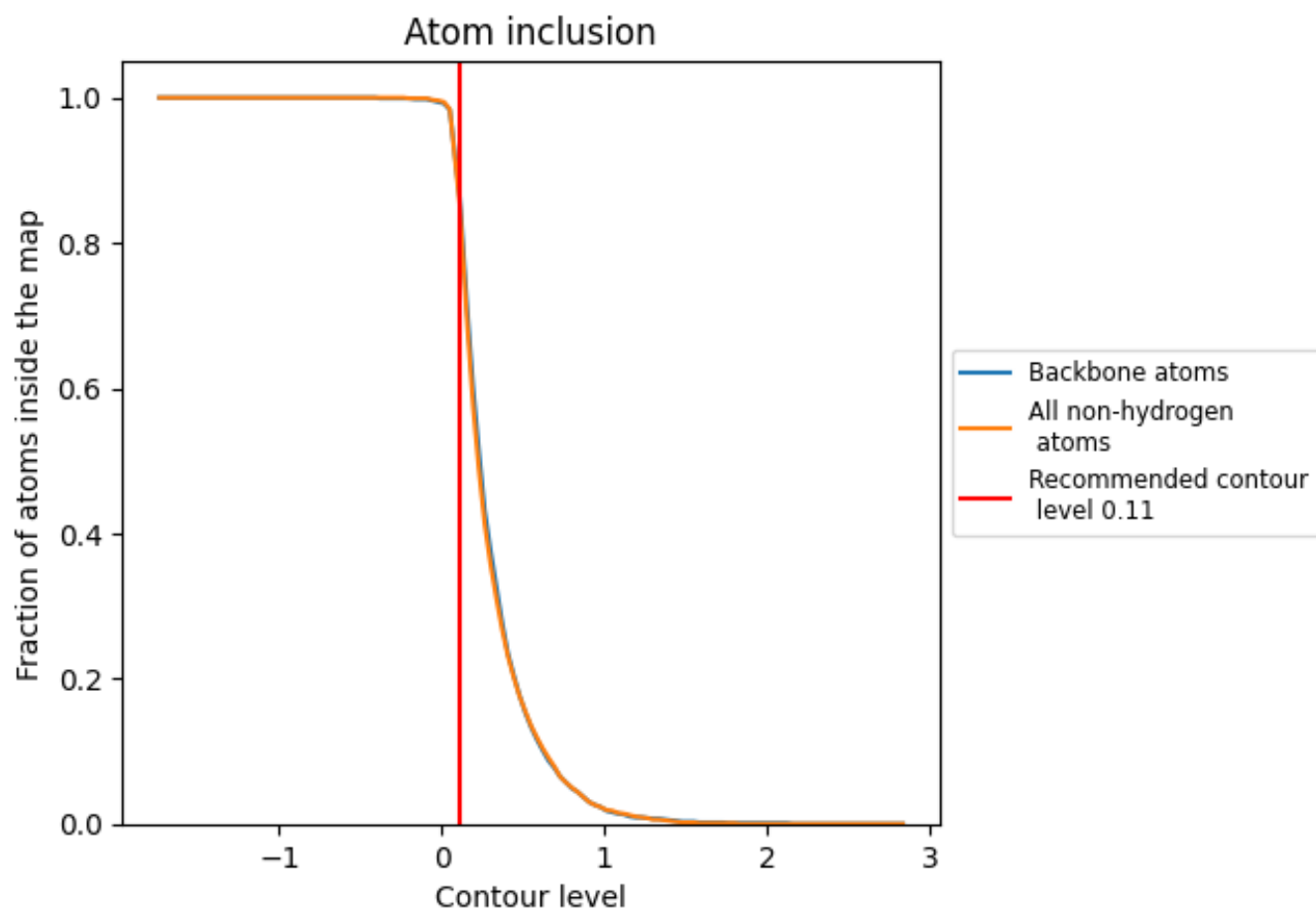
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.11).











9.4 Atom inclusion [i](#)



At the recommended contour level, 86% of all backbone atoms, 85% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary [i](#)

The table lists the average atom inclusion at the recommended contour level (0.11) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8530	 0.3430
A	 0.8550	 0.3430
B	 0.8520	 0.3440
C	 0.8540	 0.3430
D	 0.8520	 0.3430

