



Full wwPDB EM Validation Report ⓘ

Nov 8, 2022 – 04:21 pm GMT

PDB ID : 8BC0
EMDB ID : EMD-15958
Title : Cryo-EM structure of Ca²⁺-bound mTMEM16F F518A Q623A mutant in GDN open/closed
Authors : Arndt, M.; Alvadia, C.; Straub, M.; Clerico-Mosina, V.; Paulino, C.; Dutzler, R.
Deposited on : 2022-10-14
Resolution : 3.09 Å(reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

EMDB validation analysis : 0.0.1.dev43
MolProbity : 4.02b-467
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.9
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.31.2

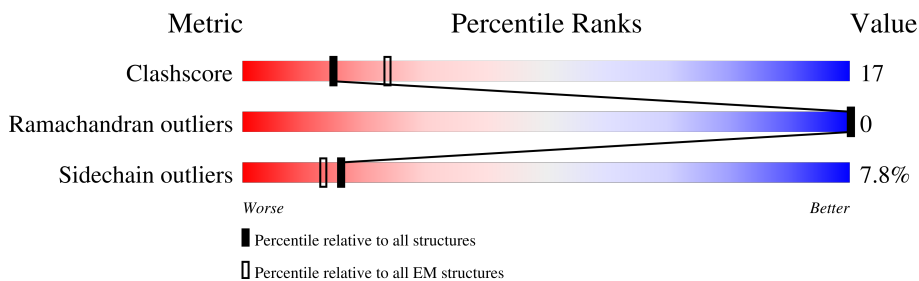
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.09 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	975	
1	B	975	

2 Entry composition i

There are 2 unique types of molecules in this entry. The entry contains 10861 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 Anoctamin-6.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	680	5611	3696	905	973	37	0	0
1	B	636	5244	3464	844	902	34	0	0

There are 132 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	518	ALA	PHE	engineered mutation	UNP Q6P9J9
A	623	ALA	GLN	engineered mutation	UNP Q6P9J9
A	912	ALA	-	expression tag	UNP Q6P9J9
A	913	LEU	-	expression tag	UNP Q6P9J9
A	914	GLU	-	expression tag	UNP Q6P9J9
A	915	VAL	-	expression tag	UNP Q6P9J9
A	916	LEU	-	expression tag	UNP Q6P9J9
A	917	PHE	-	expression tag	UNP Q6P9J9
A	918	GLN	-	expression tag	UNP Q6P9J9
A	919	GLY	-	expression tag	UNP Q6P9J9
A	920	PRO	-	expression tag	UNP Q6P9J9
A	921	GLN	-	expression tag	UNP Q6P9J9
A	922	GLY	-	expression tag	UNP Q6P9J9
A	923	THR	-	expression tag	UNP Q6P9J9
A	924	GLU	-	expression tag	UNP Q6P9J9
A	925	GLN	-	expression tag	UNP Q6P9J9
A	926	LYS	-	expression tag	UNP Q6P9J9
A	927	LEU	-	expression tag	UNP Q6P9J9
A	928	ILE	-	expression tag	UNP Q6P9J9
A	929	SER	-	expression tag	UNP Q6P9J9
A	930	GLU	-	expression tag	UNP Q6P9J9
A	931	GLU	-	expression tag	UNP Q6P9J9
A	932	ASP	-	expression tag	UNP Q6P9J9
A	933	LEU	-	expression tag	UNP Q6P9J9
A	934	ARG	-	expression tag	UNP Q6P9J9
A	935	GLY	-	expression tag	UNP Q6P9J9

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Chain	Residue	Modelled	Actual	Comment	Reference
A	936	ALA	-	expression tag	UNP Q6P9J9
A	937	SER	-	expression tag	UNP Q6P9J9
A	938	MET	-	expression tag	UNP Q6P9J9
A	939	ASP	-	expression tag	UNP Q6P9J9
A	940	GLU	-	expression tag	UNP Q6P9J9
A	941	LYS	-	expression tag	UNP Q6P9J9
A	942	THR	-	expression tag	UNP Q6P9J9
A	943	THR	-	expression tag	UNP Q6P9J9
A	944	GLY	-	expression tag	UNP Q6P9J9
A	945	TRP	-	expression tag	UNP Q6P9J9
A	946	ARG	-	expression tag	UNP Q6P9J9
A	947	GLY	-	expression tag	UNP Q6P9J9
A	948	GLY	-	expression tag	UNP Q6P9J9
A	949	HIS	-	expression tag	UNP Q6P9J9
A	950	VAL	-	expression tag	UNP Q6P9J9
A	951	VAL	-	expression tag	UNP Q6P9J9
A	952	GLU	-	expression tag	UNP Q6P9J9
A	953	GLY	-	expression tag	UNP Q6P9J9
A	954	LEU	-	expression tag	UNP Q6P9J9
A	955	ALA	-	expression tag	UNP Q6P9J9
A	956	GLY	-	expression tag	UNP Q6P9J9
A	957	GLU	-	expression tag	UNP Q6P9J9
A	958	LEU	-	expression tag	UNP Q6P9J9
A	959	GLU	-	expression tag	UNP Q6P9J9
A	960	GLN	-	expression tag	UNP Q6P9J9
A	961	LEU	-	expression tag	UNP Q6P9J9
A	962	ARG	-	expression tag	UNP Q6P9J9
A	963	ALA	-	expression tag	UNP Q6P9J9
A	964	ARG	-	expression tag	UNP Q6P9J9
A	965	LEU	-	expression tag	UNP Q6P9J9
A	966	GLU	-	expression tag	UNP Q6P9J9
A	967	HIS	-	expression tag	UNP Q6P9J9
A	968	HIS	-	expression tag	UNP Q6P9J9
A	969	PRO	-	expression tag	UNP Q6P9J9
A	970	GLN	-	expression tag	UNP Q6P9J9
A	971	GLY	-	expression tag	UNP Q6P9J9
A	972	GLN	-	expression tag	UNP Q6P9J9
A	973	ARG	-	expression tag	UNP Q6P9J9
A	974	GLU	-	expression tag	UNP Q6P9J9
A	975	PRO	-	expression tag	UNP Q6P9J9
B	518	ALA	PHE	engineered mutation	UNP Q6P9J9
B	623	ALA	GLN	engineered mutation	UNP Q6P9J9

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Chain	Residue	Modelled	Actual	Comment	Reference
B	912	ALA	-	expression tag	UNP Q6P9J9
B	913	LEU	-	expression tag	UNP Q6P9J9
B	914	GLU	-	expression tag	UNP Q6P9J9
B	915	VAL	-	expression tag	UNP Q6P9J9
B	916	LEU	-	expression tag	UNP Q6P9J9
B	917	PHE	-	expression tag	UNP Q6P9J9
B	918	GLN	-	expression tag	UNP Q6P9J9
B	919	GLY	-	expression tag	UNP Q6P9J9
B	920	PRO	-	expression tag	UNP Q6P9J9
B	921	GLN	-	expression tag	UNP Q6P9J9
B	922	GLY	-	expression tag	UNP Q6P9J9
B	923	THR	-	expression tag	UNP Q6P9J9
B	924	GLU	-	expression tag	UNP Q6P9J9
B	925	GLN	-	expression tag	UNP Q6P9J9
B	926	LYS	-	expression tag	UNP Q6P9J9
B	927	LEU	-	expression tag	UNP Q6P9J9
B	928	ILE	-	expression tag	UNP Q6P9J9
B	929	SER	-	expression tag	UNP Q6P9J9
B	930	GLU	-	expression tag	UNP Q6P9J9
B	931	GLU	-	expression tag	UNP Q6P9J9
B	932	ASP	-	expression tag	UNP Q6P9J9
B	933	LEU	-	expression tag	UNP Q6P9J9
B	934	ARG	-	expression tag	UNP Q6P9J9
B	935	GLY	-	expression tag	UNP Q6P9J9
B	936	ALA	-	expression tag	UNP Q6P9J9
B	937	SER	-	expression tag	UNP Q6P9J9
B	938	MET	-	expression tag	UNP Q6P9J9
B	939	ASP	-	expression tag	UNP Q6P9J9
B	940	GLU	-	expression tag	UNP Q6P9J9
B	941	LYS	-	expression tag	UNP Q6P9J9
B	942	THR	-	expression tag	UNP Q6P9J9
B	943	THR	-	expression tag	UNP Q6P9J9
B	944	GLY	-	expression tag	UNP Q6P9J9
B	945	TRP	-	expression tag	UNP Q6P9J9
B	946	ARG	-	expression tag	UNP Q6P9J9
B	947	GLY	-	expression tag	UNP Q6P9J9
B	948	GLY	-	expression tag	UNP Q6P9J9
B	949	HIS	-	expression tag	UNP Q6P9J9
B	950	VAL	-	expression tag	UNP Q6P9J9
B	951	VAL	-	expression tag	UNP Q6P9J9
B	952	GLU	-	expression tag	UNP Q6P9J9
B	953	GLY	-	expression tag	UNP Q6P9J9

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Chain	Residue	Modelled	Actual	Comment	Reference
B	954	LEU	-	expression tag	UNP Q6P9J9
B	955	ALA	-	expression tag	UNP Q6P9J9
B	956	GLY	-	expression tag	UNP Q6P9J9
B	957	GLU	-	expression tag	UNP Q6P9J9
B	958	LEU	-	expression tag	UNP Q6P9J9
B	959	GLU	-	expression tag	UNP Q6P9J9
B	960	GLN	-	expression tag	UNP Q6P9J9
B	961	LEU	-	expression tag	UNP Q6P9J9
B	962	ARG	-	expression tag	UNP Q6P9J9
B	963	ALA	-	expression tag	UNP Q6P9J9
B	964	ARG	-	expression tag	UNP Q6P9J9
B	965	LEU	-	expression tag	UNP Q6P9J9
B	966	GLU	-	expression tag	UNP Q6P9J9
B	967	HIS	-	expression tag	UNP Q6P9J9
B	968	HIS	-	expression tag	UNP Q6P9J9
B	969	PRO	-	expression tag	UNP Q6P9J9
B	970	GLN	-	expression tag	UNP Q6P9J9
B	971	GLY	-	expression tag	UNP Q6P9J9
B	972	GLN	-	expression tag	UNP Q6P9J9
B	973	ARG	-	expression tag	UNP Q6P9J9
B	974	GLU	-	expression tag	UNP Q6P9J9
B	975	PRO	-	expression tag	UNP Q6P9J9

- Molecule 2 is CALCIUM ION (three-letter code: CA) (formula: Ca) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms	AltConf
2	A	3	Total Ca 3 3	0
2	B	3	Total Ca 3 3	0

PRO	PHE	THR	THR	GLN	CYS	GLY	LYS	LYS	CYS	I451	R452	V453	T454	L455	C456	A457	S458	A459	V460	F461	F462	V463	I464	L465	L466	I467	I468	A469	S470	V471	I472	G473	I474	I475	VAL	TYR	ARG	LEU	SER	VAL	PHE	ILE	VAL	PHE	SER	THR	THR	LEU	PRO	LYS	ASN	PRO	ASN	GLY	THR	ASP	PRO	ILE	GLN	LYS	TYR						
LEU	THR	PRO	GLN	MET	ALA	T509	S510	I511	T512	A513	S514	I515	I521	M522	I523	L524	N525	T526	I527	Y528	E529	K530	V531	A532	I533	M534	I535	T536	N537	F538	E539	L540	P541	R542	T543	Q544	T545	D546	Y547	E548	N549	S550	L551	T552	M553	K554	L557	F558	Q559	F560	V561	N562	Y563	Y569	I570	A571											
F572	F573	K574	K575	K576	F577	D583	P584	V585	Y586	L587	L588	G589	K590	Y591	C596	D597	P598	G599	L602	L603	E604	L605	T606	T607	Q608	L609	I612	M613	G614	G615	K616	M619	N620	N621	V625	L626	L627	P628	M629	V630	I634	G635	R636	Y637	K638	ARG	VAL	SER	GLY	SER	GLU	K645															
I646	P647	R648	K649	M650	E651	Q652	D653	Y654	H655	L656	Q657	K661	L662	F665	Y668	L669	E670	M671	I672	Q674	F675	G676	F677	L680	D749	F681	V682	F685	P686	L687	A688	P689	L690	L691	A692	L693	V694	N695	I697	L698	E699	I700	R701	V702	D703	K706	L707	T708	T709	Q710	F711	R712															
R713	M714	V715	K718	A719	Q720	D721	A724	W725	Q726	P727	Q730	L735	V738	T739	N740	A741	M742	I743	I744	A745	F746	T747	S748	D749	M750	I751	P752	R753	L754	V755	V756	Y757	F760	S761	I762	P763	P764	Y765	G766	D767	H768	T769	Y770	Y771	T772	M773	D774	G775	V776	I777	N778	T779	I780														
L781	S782	V783	D788	PHE	LYS	ASN	THR	ASP	LYS	GLU	ASN	PRO	TYR	ILE	GLY	LEU	GLY	ASN	TYR	T805	L806	C807	R808	Y809	R810	D811	F812	R813	N814	P815	P816	Y822	K823	H824	N825	Y828	V831	I832	K835	L836	I839	I840	H844	S848	V849	K850	F851	Y855	A856																		
D859	V860	S861	R862	T863	T864	K865	S866	K867	L868	K869	R870	GLU	ARG	ILE	GLY	ALA	TYR	LEU	THR	GLN	LYS	LEU	HIS	GLU	TRP	SER	HIS	GLY	LEU	LYS	ASP	LEU	THR	LYS	ASN	MET	GLY	ILE	LEU	ALA	GLU	GLN	ARG	ILE	GLY	THR	VAL	LEU	ASP	ASN	SER	VAL	PRO	ARG	GLN	LYS	LEU	GLU	ALA	ALA	GLU	VAL	LEU	PHE	GLN		
GLY	PRO	GLN	THR	GLU	GLN	LYS	LEU	ILE	SER	GLU	ASP	LEU	ARG	GLY	ALA	TYR	LEU	THR	MET	ASP	GLU	LYS	THR	THR	GLY	TRP	SER	HIS	GLY	LEU	LYS	ASP	VAL	VAL	GLU	LYS	ASN	MET	GLY	ILE	LEU	ALA	GLU	GLN	ARG	ILE	GLY	THR	VAL	LEU	ASP	ASN	SER	VAL	PRO	ARG	GLN	LYS	LEU	GLU	ALA	ALA	GLU	VAL	LEU	PHE	GLN

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	208801	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 ($e^-/\text{\AA}^2$)	59.46	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	2400	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	1.036	Depositor
Minimum map value	-0.785	Depositor
Average map value	-0.001	Depositor
Map value standard deviation	0.019	Depositor
Recommended contour level	0.19	Depositor
Map size (\AA)	338.52002, 338.52002, 338.52002	wwPDB
Map dimensions	260, 260, 260	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	1.302, 1.302, 1.302	Depositor

5 Model quality [i](#)

5.1 Standard geometry [i](#)

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

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	0.30	0/5765	0.47	0/7814
1	B	0.30	0/5388	0.48	0/7302
All	All	0.30	0/11153	0.47	0/15116

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	5611	0	5585	168	0
1	B	5244	0	5251	198	0
2	A	3	0	0	0	0
2	B	3	0	0	0	0
All	All	10861	0	10836	365	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 17.

All (365) 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:745:ALA:HB1	1:B:835:LYS:HB2	1.28	1.15
1:B:832:ILE:HA	1:B:835:LYS:NZ	1.72	1.02
1:A:559:GLN:HG3	1:A:669:LEU:HD21	1.51	0.92
1:B:832:ILE:HA	1:B:835:LYS:HZ3	1.40	0.87
1:A:616:LYS:O	1:A:620:ASN:HB3	1.75	0.86
1:B:832:ILE:HA	1:B:835:LYS:HZ2	1.42	0.85
1:B:757:TYR:O	1:B:761:SER:HB2	1.76	0.84
1:A:309:MET:HB3	1:A:389:TRP:HE1	1.44	0.80
1:B:745:ALA:CB	1:B:835:LYS:HB2	2.12	0.77
1:A:249:HIS:HD1	1:A:291:TYR:HH	1.32	0.76
1:A:310:LEU:HD22	1:A:689:PRO:HB3	1.67	0.76
1:A:750:MET:O	1:A:753:ARG:HG2	1.87	0.75
1:A:284:PRO:HB2	1:A:287:LEU:HB3	1.70	0.74
1:B:761:SER:HB3	1:B:772:THR:H	1.51	0.74
1:B:467:ILE:HG23	1:B:561:VAL:HG11	1.68	0.74
1:B:674:GLN:OE1	1:B:695:ASN:ND2	2.21	0.74
1:B:783:VAL:HB	1:B:816:PRO:HD2	1.68	0.73
1:A:62:LEU:HD11	1:A:250:ASP:HA	1.69	0.73
1:B:612:ILE:HA	1:B:616:LYS:HD3	1.72	0.72
1:A:247:PRO:HD3	1:A:715:VAL:HG22	1.70	0.72
1:A:310:LEU:HD12	1:A:696:ASN:HD21	1.53	0.72
1:B:460:VAL:HG21	1:B:554:LYS:HD2	1.71	0.72
1:B:334:SER:OG	1:B:372:CYS:SG	2.47	0.71
1:A:73:PHE:HE2	1:A:245:ALA:HB1	1.56	0.71
1:A:528:TYR:HA	1:A:531:VAL:HG22	1.73	0.71
1:A:574:LYS:NZ	1:A:601:CYS:SG	2.63	0.70
1:B:574:LYS:HE2	1:B:596:CYS:HA	1.74	0.70
1:B:752:PRO:HG3	1:B:831:VAL:HG13	1.74	0.70
1:B:64:PHE:HD2	1:B:69:ARG:HE	1.40	0.69
1:B:654:TYR:O	1:B:712:ARG:NH2	2.25	0.69
1:B:270:TYR:HA	1:B:274:ALA:HB3	1.72	0.69
1:A:647:THR:O	1:A:652:GLN:NE2	2.25	0.69
1:B:809:TYR:OH	1:B:813:ARG:NH1	2.25	0.69
1:A:649:ARG:NH1	1:A:652:GLN:OE1	2.26	0.69
1:A:529:GLU:HG2	1:A:555:MET:HE1	1.74	0.68
1:A:71:ILE:HD13	1:A:127:LYS:HD2	1.75	0.68
1:B:328:GLN:O	1:B:335:LYS:NZ	2.25	0.68
1:A:587:LEU:H	1:A:591:TYR:HA	1.58	0.68
1:A:587:LEU:HD11	1:A:593:SER:HB3	1.76	0.68
1:A:399:ARG:HH21	1:A:858:PRO:HG2	1.59	0.68
1:B:756:TYR:HA	1:B:760:PHE:HD1	1.59	0.67
1:B:620:ASN:ND2	1:B:670:GLU:OE2	2.27	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:783:VAL:HG23	1:A:816:PRO:HD2	1.77	0.67
1:B:742:MET:HA	1:B:839:ILE:HD11	1.78	0.66
1:A:525:ASN:OD1	1:A:559:GLN:NE2	2.29	0.66
1:A:234:ASN:OD1	1:A:234:ASN:N	2.23	0.66
1:B:292:TYR:HB3	1:B:296:ILE:HD12	1.76	0.66
1:A:278:SER:O	1:A:701:ARG:NH1	2.28	0.65
1:A:54:GLU:HB2	1:A:116:ARG:H	1.60	0.65
1:A:647:THR:HG23	1:A:652:GLN:HE21	1.62	0.65
1:B:709:THR:OG1	1:B:710:GLN:NE2	2.30	0.65
1:B:348:MET:HG3	1:B:361:LEU:HD21	1.79	0.64
1:A:71:ILE:HG21	1:A:127:LYS:HB3	1.80	0.64
1:A:285:LEU:HD23	1:A:288:ILE:HD11	1.80	0.64
1:B:270:TYR:O	1:B:275:HIS:N	2.27	0.64
1:B:331:CYS:SG	1:B:334:SER:OG	2.55	0.64
1:A:205:ASN:HD22	1:A:290:LYS:HE2	1.63	0.63
1:A:291:TYR:O	1:A:713:ARG:NH2	2.20	0.63
1:A:689:PRO:O	1:A:693:LEU:N	2.26	0.63
1:B:757:TYR:O	1:B:761:SER:CB	2.45	0.63
1:A:307:THR:HG23	1:A:696:ASN:HB2	1.81	0.63
1:A:814:ASN:N	1:A:823:LYS:O	2.31	0.62
1:B:674:GLN:NE2	1:B:696:ASN:OD1	2.21	0.62
1:A:211:ARG:HD3	1:A:716:PRO:HB2	1.82	0.62
1:A:598:PRO:HA	1:A:810:ARG:HG3	1.81	0.61
1:B:746:PHE:CE1	1:B:835:LYS:HE2	2.35	0.61
1:A:286:ASP:OD1	1:A:286:ASP:N	2.24	0.61
1:B:333:TRP:CD1	1:B:777:ILE:HD11	2.34	0.61
1:B:612:ILE:O	1:B:616:LYS:HB2	2.01	0.61
1:B:98:ARG:NH1	1:B:102:GLU:OE1	2.33	0.61
1:B:104:ASN:O	1:B:108:HIS:ND1	2.30	0.61
1:A:105:LEU:HD22	1:A:110:LEU:HD12	1.81	0.61
1:B:698:LEU:O	1:B:702:VAL:HG12	2.01	0.60
1:B:742:MET:O	1:B:746:PHE:HB2	2.01	0.60
1:B:814:ASN:HB3	1:B:825:ASN:HD22	1.67	0.60
1:B:559:GLN:HG3	1:B:669:LEU:HD21	1.83	0.60
1:B:832:ILE:HG12	1:B:836:LEU:HD23	1.83	0.59
1:A:63:PHE:HB3	1:A:67:GLY:HA2	1.83	0.59
1:B:394:LEU:O	1:B:398:LYS:HG2	2.02	0.59
1:B:745:ALA:HB1	1:B:835:LYS:CB	2.19	0.59
1:B:361:LEU:O	1:B:365:CYS:N	2.31	0.59
1:B:269:LEU:HB2	1:B:273:TRP:HE3	1.67	0.59
1:A:249:HIS:HB3	1:A:266:ARG:HD2	1.84	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:76:VAL:HG13	1:B:243:LYS:HB2	1.84	0.59
1:B:608:GLN:HE21	1:B:612:ILE:HD11	1.68	0.58
1:A:626:LEU:O	1:A:630:VAL:N	2.27	0.57
1:A:253:PHE:HB2	1:A:270:TYR:CG	2.39	0.57
1:B:648:PRO:HG2	1:B:651:GLU:HB2	1.85	0.57
1:A:303:LEU:O	1:A:307:THR:OG1	2.22	0.57
1:A:266:ARG:NH2	1:A:708:THR:O	2.38	0.57
1:A:698:LEU:O	1:A:702:VAL:HG12	2.05	0.57
1:B:386:MET:HG3	1:B:682:VAL:HG21	1.86	0.57
1:A:708:THR:HG23	1:A:709:THR:HG23	1.86	0.57
1:A:213:VAL:O	1:A:217:LEU:HG	2.04	0.56
1:B:110:LEU:HD11	1:B:216:ILE:HG21	1.87	0.56
1:B:251:CYS:HB2	1:B:649:ARG:HH11	1.70	0.56
1:B:628:PRO:O	1:B:657:GLN:NE2	2.37	0.56
1:A:846:ILE:O	1:A:850:LYS:HG3	2.06	0.56
1:B:587:LEU:H	1:B:587:LEU:HD23	1.71	0.56
1:B:214:TYR:OH	1:B:234:ASN:ND2	2.37	0.55
1:B:511:ILE:HG23	1:B:619:TRP:HZ2	1.70	0.55
1:A:777:ILE:O	1:A:808:ARG:NH2	2.29	0.55
1:B:294:GLU:HG3	1:B:718:LYS:HD2	1.88	0.55
1:A:784:PHE:N	1:A:807:CYS:O	2.40	0.55
1:A:344:GLY:HA2	1:A:362:ASN:HD21	1.71	0.55
1:B:410:THR:HA	1:B:718:LYS:HE3	1.88	0.55
1:A:98:ARG:NH2	1:A:102:GLU:OE2	2.41	0.54
1:A:361:LEU:HD11	1:A:598:PRO:HG2	1.89	0.54
1:B:840:ILE:O	1:B:844:HIS:ND1	2.40	0.54
1:A:207:ALA:O	1:A:211:ARG:NH1	2.41	0.54
1:A:296:ILE:HG23	1:A:300:PHE:CE2	2.42	0.54
1:A:339:ASP:O	1:A:343:GLY:N	2.40	0.54
1:B:273:TRP:CH2	1:B:288:ILE:HG13	2.43	0.54
1:B:746:PHE:CD1	1:B:835:LYS:HE2	2.43	0.54
1:A:125:PHE:CD2	1:A:650:TRP:HB2	2.43	0.53
1:A:391:THR:OG1	1:A:850:LYS:HG2	2.07	0.53
1:A:386:MET:HG3	1:A:682:VAL:HG21	1.90	0.53
1:B:105:LEU:HD22	1:B:112:LEU:HD11	1.89	0.53
1:B:669:LEU:O	1:B:673:ILE:HG12	2.08	0.53
1:B:586:TYR:CD2	1:B:591:TYR:HB2	2.44	0.53
1:B:648:PRO:HB2	1:B:650:TRP:CD1	2.43	0.53
1:B:656:LEU:O	1:B:712:ARG:NH2	2.31	0.53
1:B:814:ASN:OD1	1:B:822:TYR:N	2.42	0.53
1:A:371:LEU:HD21	1:A:599:GLY:HA3	1.89	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:574:LYS:NZ	1:A:595:GLU:O	2.41	0.53
1:A:757:TYR:HB2	1:A:773:MET:SD	2.49	0.53
1:B:571:ALA:O	1:B:576:LYS:NZ	2.34	0.53
1:B:860:VAL:O	1:B:865:LYS:NZ	2.39	0.53
1:B:521:ILE:O	1:B:525:ASN:ND2	2.41	0.52
1:B:625:VAL:HG13	1:B:702:VAL:HG23	1.91	0.52
1:A:561:VAL:O	1:A:565:SER:HB3	2.09	0.52
1:B:832:ILE:CA	1:B:835:LYS:HZ3	2.17	0.52
1:B:391:THR:OG1	1:B:850:LYS:HG2	2.10	0.52
1:A:111:GLN:HB2	1:A:129:HIS:ND1	2.25	0.52
1:A:127:LYS:HD3	1:A:650:TRP:CE3	2.44	0.52
1:A:659:MET:HG2	1:A:714:MET:HE2	1.92	0.52
1:A:247:PRO:HG3	1:A:715:VAL:HA	1.91	0.51
1:A:674:GLN:NE2	1:A:696:ASN:OD1	2.27	0.51
1:A:69:ARG:HD2	1:A:129:HIS:CE1	2.45	0.51
1:A:305:TYR:OH	1:A:396:PHE:HB2	2.10	0.51
1:B:545:THR:O	1:B:548:GLU:HG3	2.11	0.51
1:B:706:LYS:HG3	1:B:707:LEU:N	2.26	0.51
1:B:832:ILE:CA	1:B:835:LYS:NZ	2.61	0.51
1:A:366:GLU:O	1:A:369:LYS:HB2	2.11	0.51
1:B:54:GLU:HG3	1:B:116:ARG:H	1.76	0.51
1:B:353:ASP:OD1	1:B:354:ARG:NH2	2.43	0.51
1:A:788:ASP:OD1	1:A:789:PHE:N	2.43	0.51
1:B:125:PHE:HE2	1:B:651:GLU:HG2	1.76	0.51
1:A:420:ARG:HD2	1:A:544:GLN:HA	1.93	0.50
1:B:233:ILE:HA	1:B:236:LEU:HD13	1.93	0.50
1:A:581:PRO:HB2	1:A:784:PHE:CZ	2.46	0.50
1:B:64:PHE:HE1	1:B:71:ILE:HG23	1.76	0.50
1:B:236:LEU:HB3	1:B:241:ILE:HD11	1.93	0.50
1:A:142:MET:HE3	1:A:212:ILE:HG12	1.93	0.50
1:A:391:THR:HG21	1:A:850:LYS:HA	1.93	0.50
1:B:289:ARG:HD2	1:B:408:TRP:CE2	2.47	0.50
1:B:467:ILE:HD12	1:B:470:SER:HB2	1.93	0.50
1:A:344:GLY:O	1:A:360:ARG:NH1	2.45	0.50
1:A:732:ILE:O	1:A:736:ALA:N	2.39	0.50
1:B:551:LEU:HD23	1:B:662:LEU:HD21	1.93	0.50
1:A:696:ASN:O	1:A:700:ILE:HG13	2.12	0.50
1:B:105:LEU:HD13	1:B:112:LEU:HD21	1.94	0.50
1:B:746:PHE:HD1	1:B:835:LYS:CE	2.24	0.50
1:A:296:ILE:HG23	1:A:300:PHE:HE2	1.76	0.49
1:A:811:ASP:OD1	1:A:812:PHE:N	2.43	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:375:ASP:OD1	1:B:753:ARG:NH1	2.45	0.49
1:A:353:ASP:OD1	1:A:592:ARG:NH1	2.45	0.49
1:B:530:LYS:NZ	1:B:534:MET:SD	2.68	0.49
1:A:251:CYS:O	1:A:649:ARG:NH2	2.46	0.49
1:A:138:TYR:CZ	1:A:216:ILE:HG12	2.47	0.49
1:B:768:HIS:HD2	1:B:772:THR:HB	1.77	0.49
1:B:208:THR:HG22	1:B:211:ARG:HH22	1.76	0.49
1:B:303:LEU:HD13	1:B:671:MET:HG3	1.94	0.49
1:B:377:PHE:CZ	1:B:754:LEU:HD11	2.47	0.49
1:A:52:PHE:CZ	1:A:116:ARG:HB2	2.48	0.49
1:B:612:ILE:HG23	1:B:616:LYS:NZ	2.28	0.49
1:A:394:LEU:O	1:A:398:LYS:HE3	2.12	0.49
1:A:363:ILE:HG13	1:A:364:THR:HG23	1.95	0.48
1:A:627:LEU:HB3	1:A:628:PRO:HD3	1.94	0.48
1:B:265:GLU:N	1:B:265:GLU:OE1	2.46	0.48
1:A:52:PHE:HA	1:A:114:ALA:HB3	1.93	0.48
1:B:278:SER:HB2	1:B:281:LYS:HD3	1.94	0.48
1:B:391:THR:HG21	1:B:850:LYS:HA	1.95	0.48
1:A:564:TYR:OH	1:A:673:ILE:O	2.28	0.48
1:B:400:ARG:HH21	1:B:404:LEU:HD21	1.79	0.48
1:B:756:TYR:HA	1:B:760:PHE:CD1	2.44	0.48
1:A:54:GLU:HB2	1:A:116:ARG:N	2.28	0.48
1:B:74:ILE:HD13	1:B:248:LEU:HD23	1.94	0.48
1:B:371:LEU:HD11	1:B:602:LEU:HD12	1.96	0.48
1:B:309:MET:HB3	1:B:389:TRP:CZ2	2.49	0.48
1:A:706:LYS:HA	1:A:710:GLN:HG2	1.96	0.48
1:B:399:ARG:HE	1:B:861:SER:HB2	1.77	0.48
1:A:690:LEU:O	1:A:693:LEU:HB3	2.14	0.48
1:B:743:ILE:HA	1:B:747:THR:HG23	1.96	0.47
1:A:211:ARG:HB2	1:A:211:ARG:HH11	1.79	0.47
1:B:714:MET:SD	1:B:715:VAL:N	2.87	0.47
1:B:235:ARG:O	1:B:238:SER:OG	2.29	0.47
1:A:105:LEU:HA	1:A:108:HIS:HB2	1.96	0.47
1:A:676:GLY:O	1:A:680:LEU:HB2	2.14	0.47
1:B:351:GLN:HE22	1:B:598:PRO:HG3	1.79	0.47
1:B:746:PHE:CD1	1:B:835:LYS:CE	2.97	0.47
1:A:569:TYR:CZ	1:A:574:LYS:HB2	2.50	0.47
1:B:252:ARG:H	1:B:649:ARG:HD3	1.79	0.47
1:B:296:ILE:HD13	1:B:707:LEU:HD11	1.96	0.47
1:A:631:MET:HA	1:A:634:ILE:HG22	1.97	0.47
1:B:840:ILE:HG23	1:B:844:HIS:CE1	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:114:ALA:HA	1:A:125:PHE:O	2.15	0.47
1:B:217:LEU:HD13	1:B:233:ILE:HD12	1.97	0.47
1:B:746:PHE:HE1	1:B:835:LYS:HE2	1.79	0.47
1:B:861:SER:HB3	1:B:864:THR:HG23	1.96	0.47
1:A:116:ARG:NE	1:A:121:ASP:O	2.38	0.47
1:A:755:VAL:HG12	1:A:760:PHE:HE2	1.80	0.47
1:B:142:MET:SD	1:B:142:MET:N	2.88	0.47
1:B:305:TYR:CE2	1:B:397:TRP:HB2	2.51	0.47
1:B:657:GLN:CD	1:B:657:GLN:H	2.17	0.47
1:A:53:GLU:N	1:A:114:ALA:O	2.47	0.46
1:A:616:LYS:O	1:A:620:ASN:CB	2.57	0.46
1:B:205:ASN:OD1	1:B:205:ASN:N	2.47	0.46
1:B:246:PHE:CG	1:B:712:ARG:HD3	2.50	0.46
1:A:217:LEU:HD13	1:A:233:ILE:HD12	1.95	0.46
1:A:580:TYR:CD2	1:A:822:TYR:HB3	2.50	0.46
1:B:215:PHE:O	1:B:218:SER:OG	2.28	0.46
1:B:552:THR:HG21	1:B:724:ALA:HB3	1.97	0.46
1:B:605:LEU:HD23	1:B:605:LEU:HA	1.80	0.46
1:B:613:MET:HB2	1:B:691:LEU:HD23	1.97	0.46
1:B:649:ARG:HA	1:B:652:GLN:HE22	1.80	0.46
1:A:74:ILE:O	1:A:245:ALA:HA	2.16	0.46
1:A:725:TRP:O	1:A:729:MET:HG3	2.15	0.46
1:B:339:ASP:O	1:B:343:GLY:N	2.48	0.46
1:A:71:ILE:CG2	1:A:127:LYS:HB3	2.43	0.46
1:A:138:TYR:O	1:A:142:MET:HG2	2.16	0.46
1:A:212:ILE:O	1:A:216:ILE:HG13	2.16	0.46
1:B:612:ILE:HG23	1:B:616:LYS:HZ2	1.81	0.46
1:B:861:SER:O	1:B:864:THR:OG1	2.28	0.46
1:A:211:ARG:NH1	1:A:211:ARG:HB2	2.30	0.46
1:A:310:LEU:HD12	1:A:696:ASN:ND2	2.26	0.46
1:A:745:ALA:HB1	1:A:835:LYS:HB3	1.98	0.46
1:A:780:THR:HG22	1:A:781:LEU:HD23	1.98	0.46
1:B:739:THR:HA	1:B:742:MET:HG2	1.98	0.46
1:B:291:TYR:O	1:B:713:ARG:NH2	2.43	0.45
1:B:812:PHE:O	1:B:828:TYR:HB2	2.16	0.45
1:A:512:THR:O	1:A:516:ILE:HG12	2.17	0.45
1:B:74:ILE:O	1:B:245:ALA:HA	2.15	0.45
1:B:306:TYR:HA	1:B:393:PHE:HE1	1.81	0.45
1:B:333:TRP:HD1	1:B:777:ILE:HD11	1.78	0.45
1:B:464:ILE:HG23	1:B:561:VAL:HG21	1.98	0.45
1:B:735:LEU:HA	1:B:738:VAL:HG12	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:584:PRO:HD2	1:B:586:TYR:HE1	1.81	0.45
1:A:249:HIS:CE1	1:A:713:ARG:HB2	2.51	0.45
1:A:524:LEU:HG	1:A:558:PHE:HZ	1.81	0.45
1:B:273:TRP:O	1:B:701:ARG:NH1	2.50	0.45
1:B:206:PRO:HA	1:B:209:ARG:HD3	1.98	0.45
1:A:52:PHE:CZ	1:A:116:ARG:HD3	2.52	0.45
1:B:612:ILE:HG21	1:B:677:PHE:CZ	2.52	0.45
1:A:142:MET:HA	1:A:413:LEU:HD23	1.98	0.44
1:A:669:LEU:O	1:A:673:ILE:HG12	2.17	0.44
1:B:760:PHE:HA	1:B:765:TYR:HB3	1.99	0.44
1:A:299:TYR:CD2	1:A:664:LEU:HD13	2.52	0.44
1:A:783:VAL:HB	1:A:806:LEU:HD23	2.00	0.44
1:A:269:LEU:HD12	1:A:269:LEU:HA	1.88	0.44
1:A:525:ASN:O	1:A:529:GLU:HG3	2.17	0.44
1:A:691:LEU:O	1:A:694:VAL:HB	2.18	0.44
1:B:606:THR:HG22	1:B:685:PHE:HB3	2.00	0.44
1:A:744:ILE:HA	1:A:748:SER:HB3	1.99	0.44
1:A:756:TYR:HA	1:A:760:PHE:HD2	1.83	0.44
1:B:250:ASP:N	1:B:291:TYR:OH	2.51	0.44
1:A:310:LEU:HD23	1:A:310:LEU:HA	1.83	0.43
1:A:572:PHE:O	1:A:576:LYS:HG3	2.18	0.43
1:B:270:TYR:CE2	1:B:275:HIS:HD2	2.35	0.43
1:B:371:LEU:O	1:B:375:ASP:N	2.50	0.43
1:B:751:ILE:HG21	1:B:835:LYS:HA	2.00	0.43
1:B:863:ILE:O	1:B:867:LYS:HG2	2.18	0.43
1:A:596:CYS:SG	1:A:597:ASP:N	2.92	0.43
1:A:753:ARG:HG3	1:A:754:LEU:N	2.32	0.43
1:A:763:PRO:N	1:A:764:PRO:HD2	2.33	0.43
1:A:818:HIS:HD1	1:A:820:GLN:C	2.21	0.43
1:B:597:ASP:HB3	1:B:604:GLU:OE2	2.17	0.43
1:B:726:GLN:HB3	1:B:727:PRO:HD3	2.00	0.43
1:A:361:LEU:HD12	1:A:361:LEU:HA	1.83	0.43
1:A:693:LEU:HA	1:A:696:ASN:ND2	2.33	0.43
1:B:366:GLU:O	1:B:369:LYS:HG2	2.18	0.43
1:A:249:HIS:CG	1:A:266:ARG:HD2	2.54	0.43
1:A:587:LEU:HB2	1:A:591:TYR:N	2.34	0.43
1:B:337:VAL:O	1:B:343:GLY:HA3	2.18	0.43
1:B:825:ASN:O	1:B:828:TYR:N	2.52	0.43
1:B:662:LEU:O	1:B:665:PHE:HB3	2.19	0.43
1:A:506:GLN:NE2	1:A:597:ASP:OD1	2.48	0.43
1:B:763:PRO:N	1:B:764:PRO:HD2	2.33	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:386:MET:HG3	1:A:682:VAL:HG11	2.01	0.43
1:B:401:GLN:NE2	1:B:721:ASP:HB2	2.34	0.43
1:B:525:ASN:HD22	1:B:525:ASN:N	2.17	0.43
1:B:525:ASN:OD1	1:B:559:GLN:NE2	2.40	0.43
1:B:563:TYR:HE1	1:B:616:LYS:NZ	2.16	0.43
1:B:782:SER:HA	1:B:815:PRO:HG3	2.01	0.43
1:A:688:ALA:HB3	1:A:689:PRO:HD3	2.00	0.43
1:B:105:LEU:HD23	1:B:110:LEU:HD13	2.01	0.43
1:B:835:LYS:HG3	1:B:836:LEU:N	2.34	0.43
1:A:95:LYS:HE2	1:A:99:GLN:NE2	2.34	0.43
1:A:768:HIS:NE2	1:A:774:ASP:OD1	2.52	0.43
1:B:413:LEU:HD22	1:B:414:GLN:H	1.84	0.43
1:B:523:ILE:O	1:B:526:THR:OG1	2.30	0.43
1:B:386:MET:O	1:B:390:VAL:HG23	2.20	0.42
1:A:602:LEU:HD11	1:A:684:SER:HA	2.02	0.42
1:B:365:CYS:SG	1:B:366:GLU:N	2.92	0.42
1:B:749:ASP:C	1:B:752:PRO:HD2	2.39	0.42
1:A:112:LEU:HA	1:A:127:LYS:O	2.19	0.42
1:A:292:TYR:HB2	1:A:296:ILE:HG21	2.01	0.42
1:B:73:PHE:HE1	1:B:245:ALA:HB1	1.84	0.42
1:B:400:ARG:HA	1:B:403:GLU:HG2	2.02	0.42
1:B:299:TYR:OH	1:B:703:ASP:OD2	2.25	0.42
1:B:327:ASP:OD1	1:B:327:ASP:N	2.50	0.42
1:B:743:ILE:O	1:B:747:THR:OG1	2.13	0.42
1:B:773:MET:SD	1:B:773:MET:N	2.88	0.42
1:A:836:LEU:C	1:B:836:LEU:HD11	2.39	0.42
1:B:63:PHE:HB2	1:B:67:GLY:HA2	2.00	0.42
1:B:138:TYR:CZ	1:B:216:ILE:HG12	2.55	0.42
1:B:205:ASN:HD22	1:B:290:LYS:HG2	1.84	0.42
1:B:289:ARG:HD2	1:B:408:TRP:CD2	2.54	0.42
1:B:346:ILE:O	1:B:361:LEU:HD23	2.18	0.42
1:A:295:LYS:HB2	1:A:295:LYS:HE3	1.73	0.42
1:B:781:LEU:HD22	1:B:808:ARG:HB3	2.01	0.42
1:A:762:ILE:HD12	1:A:764:PRO:HG2	2.02	0.42
1:B:213:VAL:O	1:B:217:LEU:HG	2.20	0.42
1:A:401:GLN:O	1:A:405:GLU:HG3	2.20	0.41
1:A:668:TYR:HD1	1:A:668:TYR:HA	1.73	0.41
1:B:686:PRO:O	1:B:689:PRO:HD2	2.20	0.41
1:B:859:ASP:OD1	1:B:859:ASP:N	2.52	0.41
1:A:581:PRO:HB2	1:A:784:PHE:CE2	2.54	0.41
1:B:586:TYR:HE2	1:B:591:TYR:HD2	1.67	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:566:SER:O	1:A:570:ILE:HG13	2.19	0.41
1:A:718:LYS:HE3	1:A:718:LYS:HB3	1.89	0.41
1:B:405:GLU:HG2	1:B:410:THR:OG1	2.21	0.41
1:A:749:ASP:OD1	1:A:752:PRO:HG2	2.21	0.41
1:B:668:TYR:HB3	1:B:725:TRP:NE1	2.36	0.41
1:A:69:ARG:NE	1:A:111:GLN:OE1	2.54	0.41
1:A:518:ALA:O	1:A:522:MET:HG2	2.21	0.41
1:B:735:LEU:O	1:B:739:THR:OG1	2.30	0.41
1:A:73:PHE:HB3	1:A:128:VAL:HB	2.03	0.41
1:A:275:HIS:CD2	1:A:277:ARG:HB3	2.55	0.41
1:A:423:TYR:CD1	1:A:540:LEU:HB3	2.56	0.41
1:A:516:ILE:O	1:A:520:ILE:HG12	2.21	0.41
1:A:762:ILE:O	1:A:766:GLY:N	2.22	0.41
1:A:781:LEU:O	1:A:808:ARG:NH2	2.49	0.41
1:B:309:MET:HB3	1:B:389:TRP:HZ2	1.86	0.41
1:B:377:PHE:HE2	1:B:754:LEU:HD21	1.85	0.41
1:B:753:ARG:HG3	1:B:776:TYR:CE2	2.56	0.41
1:A:750:MET:O	1:A:753:ARG:CG	2.64	0.41
1:B:346:ILE:HG23	1:B:361:LEU:HG	2.03	0.41
1:B:137:THR:O	1:B:141:ILE:HG13	2.21	0.40
1:B:272:GLU:O	1:B:281:LYS:NZ	2.37	0.40
1:B:333:TRP:HH2	1:B:371:LEU:HG	1.86	0.40
1:B:304:GLY:O	1:B:308:GLN:HG2	2.22	0.40
1:B:316:VAL:HG21	1:B:385:PHE:CZ	2.57	0.40
1:B:383:ALA:CB	1:B:744:ILE:HD11	2.51	0.40
1:B:676:GLY:O	1:B:680:LEU:HB2	2.22	0.40
1:A:346:ILE:HB	1:A:361:LEU:HB2	2.04	0.40
1:A:370:LYS:H	1:A:370:LYS:HG2	1.69	0.40
1:A:751:ILE:HD13	1:A:751:ILE:HA	1.93	0.40
1:A:861:SER:HB3	1:A:864:THR:OG1	2.21	0.40
1:B:569:TYR:CD1	1:B:573:PHE:HB3	2.56	0.40
1:B:627:LEU:HA	1:B:630:VAL:HG22	2.03	0.40
1:B:688:ALA:HB3	1:B:689:PRO:HD3	2.03	0.40
1:A:98:ARG:HB2	1:A:241:ILE:HG21	2.04	0.40
1:A:278:SER:O	1:A:278:SER:OG	2.40	0.40
1:B:528:TYR:HA	1:B:531:VAL:HG22	2.03	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	660/975 (68%)	624 (94%)	36 (6%)	0	100	100
1	B	616/975 (63%)	588 (96%)	28 (4%)	0	100	100
All	All	1276/1950 (65%)	1212 (95%)	64 (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	608/876 (69%)	577 (95%)	31 (5%)	24	56
1	B	568/876 (65%)	507 (89%)	61 (11%)	6	26
All	All	1176/1752 (67%)	1084 (92%)	92 (8%)	16	40

All (92) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	56	ASN
1	A	112	LEU
1	A	129	HIS
1	A	211	ARG
1	A	234	ASN
1	A	286	ASP
1	A	307	THR
1	A	365	CYS

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Mol	Chain	Res	Type
1	A	370	LYS
1	A	394	LEU
1	A	395	GLU
1	A	463	TRP
1	A	536	THR
1	A	580	TYR
1	A	597	ASP
1	A	634	ILE
1	A	638	LYS
1	A	647	THR
1	A	655	HIS
1	A	668	TYR
1	A	682	VAL
1	A	685	PHE
1	A	699	GLU
1	A	702	VAL
1	A	765	TYR
1	A	783	VAL
1	A	805	THR
1	A	810	ARG
1	A	826	ILE
1	A	827	TYR
1	A	832	ILE
1	B	71	ILE
1	B	73	PHE
1	B	74	ILE
1	B	77	TYR
1	B	93	LYS
1	B	94	GLN
1	B	105	LEU
1	B	127	LYS
1	B	128	VAL
1	B	142	MET
1	B	205	ASN
1	B	242	TYR
1	B	248	LEU
1	B	277	ARG
1	B	285	LEU
1	B	288	ILE
1	B	309	MET
1	B	327	ASP
1	B	329	ASP

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Mol	Chain	Res	Type
1	B	333	TRP
1	B	334	SER
1	B	347	LEU
1	B	349	CYS
1	B	365	CYS
1	B	391	THR
1	B	396	PHE
1	B	411	VAL
1	B	455	LEU
1	B	462	PHE
1	B	466	LEU
1	B	525	ASN
1	B	529	GLU
1	B	540	LEU
1	B	554	LYS
1	B	572	PHE
1	B	573	PHE
1	B	591	TYR
1	B	637	TYR
1	B	638	LYS
1	B	662	LEU
1	B	668	TYR
1	B	682	VAL
1	B	701	ARG
1	B	702	VAL
1	B	707	LEU
1	B	714	MET
1	B	730	GLN
1	B	750	MET
1	B	755	VAL
1	B	770	TYR
1	B	771	TYR
1	B	781	LEU
1	B	805	THR
1	B	807	CYS
1	B	808	ARG
1	B	810	ARG
1	B	811	ASP
1	B	814	ASN
1	B	836	LEU
1	B	869	LYS
1	B	870	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (16) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	91	ASN
1	A	205	ASN
1	A	562	ASN
1	A	730	GLN
1	A	779	ASN
1	B	94	GLN
1	B	99	GLN
1	B	111	GLN
1	B	328	GLN
1	B	351	GLN
1	B	401	GLN
1	B	544	GLN
1	B	608	GLN
1	B	620	ASN
1	B	710	GLN
1	B	830	HIS

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](#)

Of 6 ligands modelled in this entry, 6 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

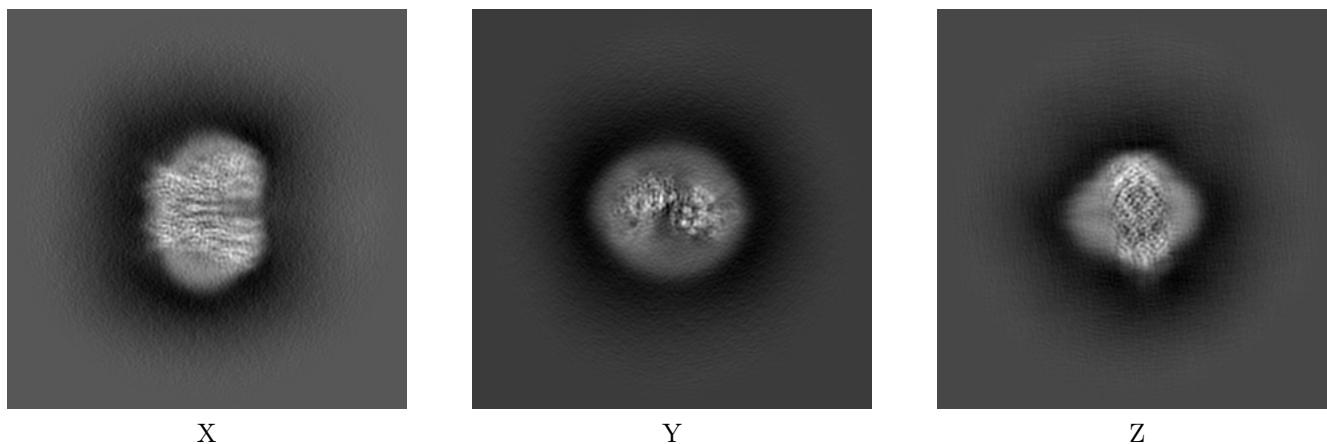
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-15958. These allow visual inspection of the internal detail of the map and identification of artifacts.

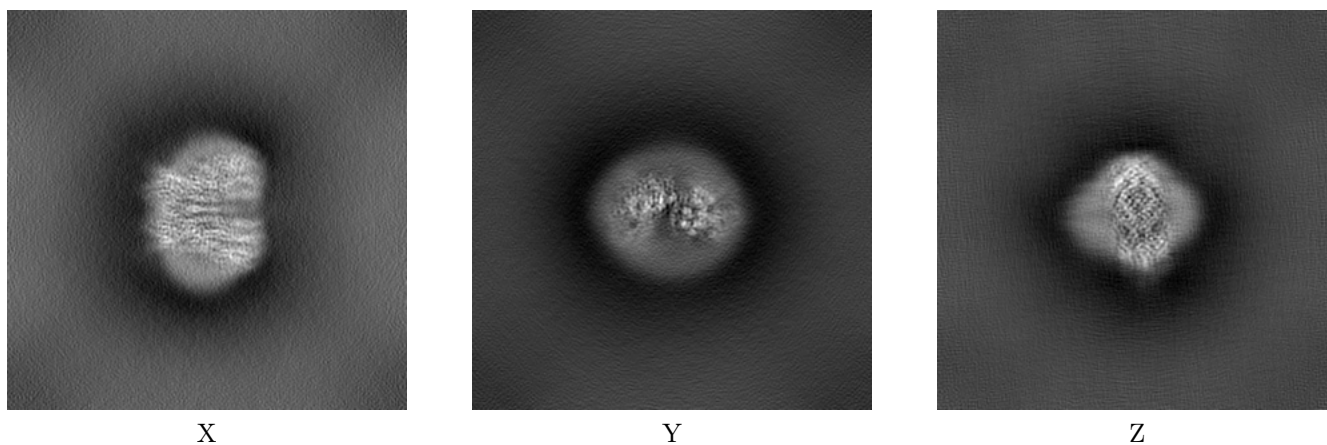
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

6.1.1 Primary map



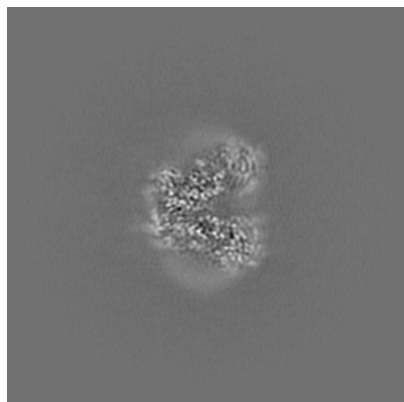
6.1.2 Raw map



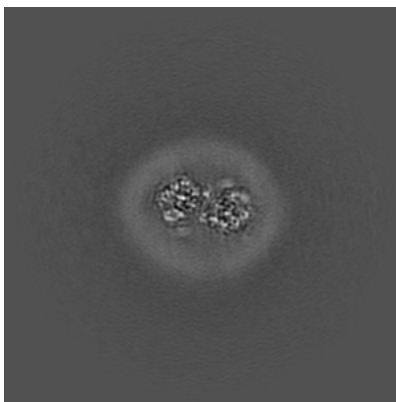
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

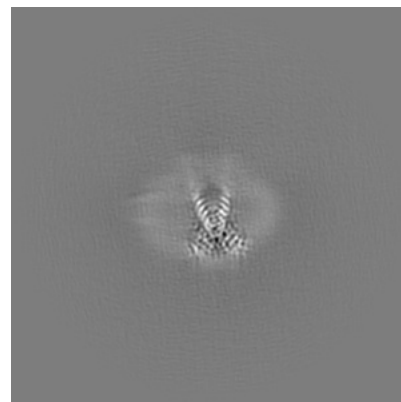
6.2.1 Primary map



X Index: 130

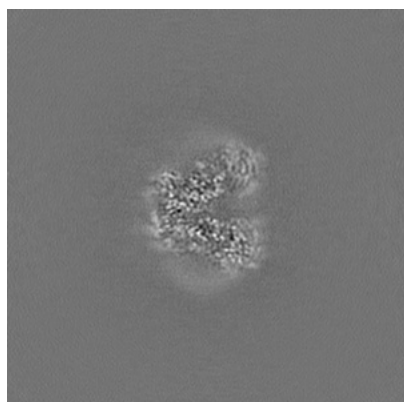


Y Index: 130

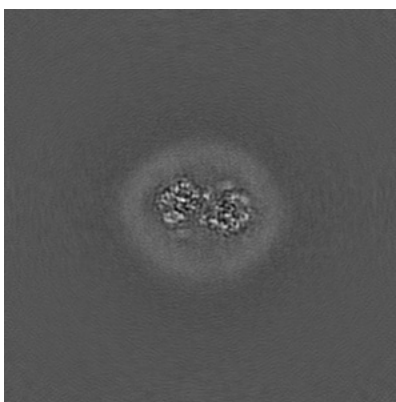


Z Index: 130

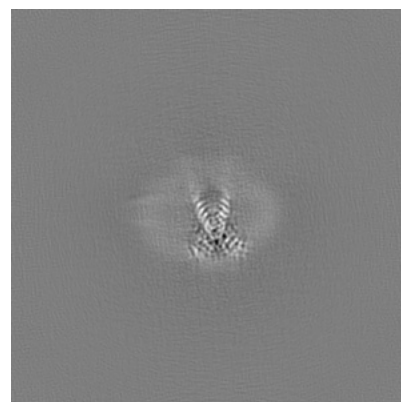
6.2.2 Raw map



X Index: 130



Y Index: 130

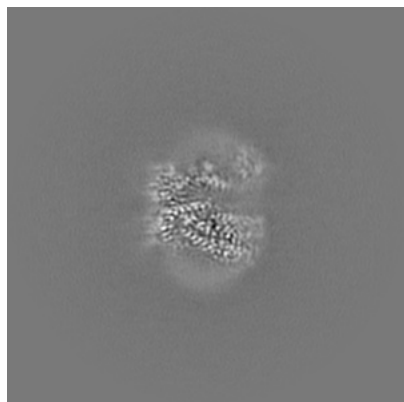


Z Index: 130

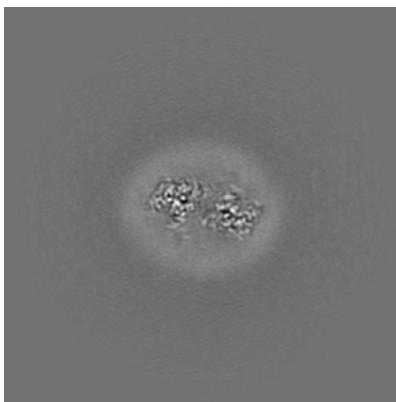
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

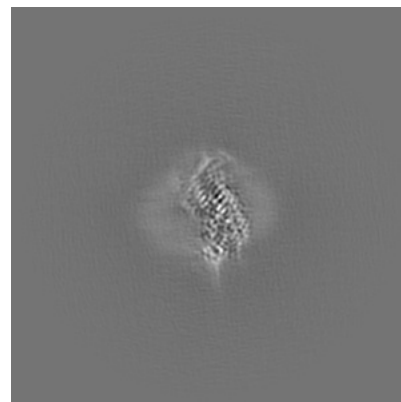
6.3.1 Primary map



X Index: 136

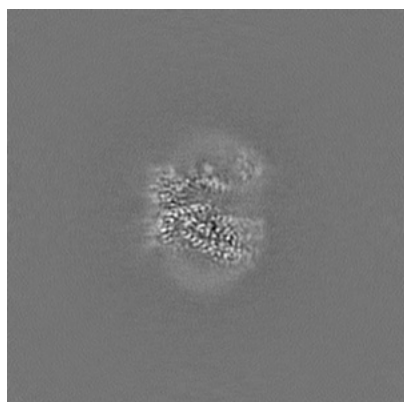


Y Index: 136

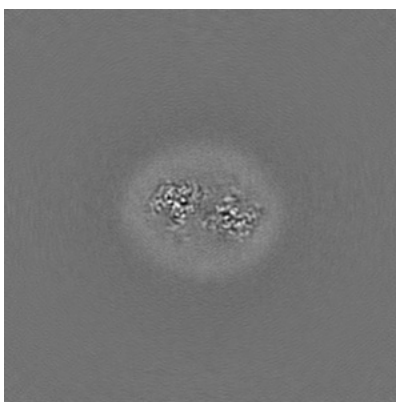


Z Index: 116

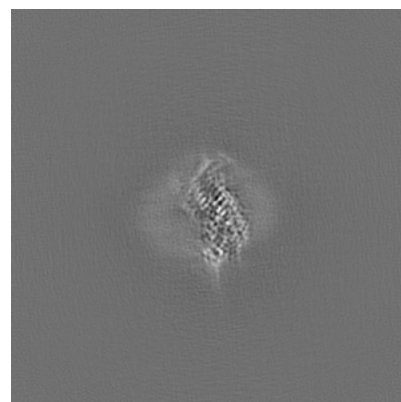
6.3.2 Raw map



X Index: 136



Y Index: 136

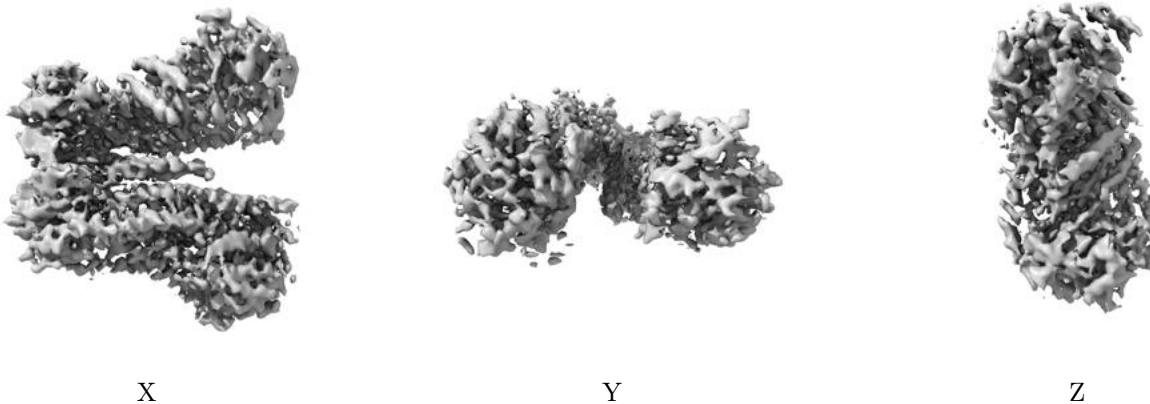


Z Index: 116

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

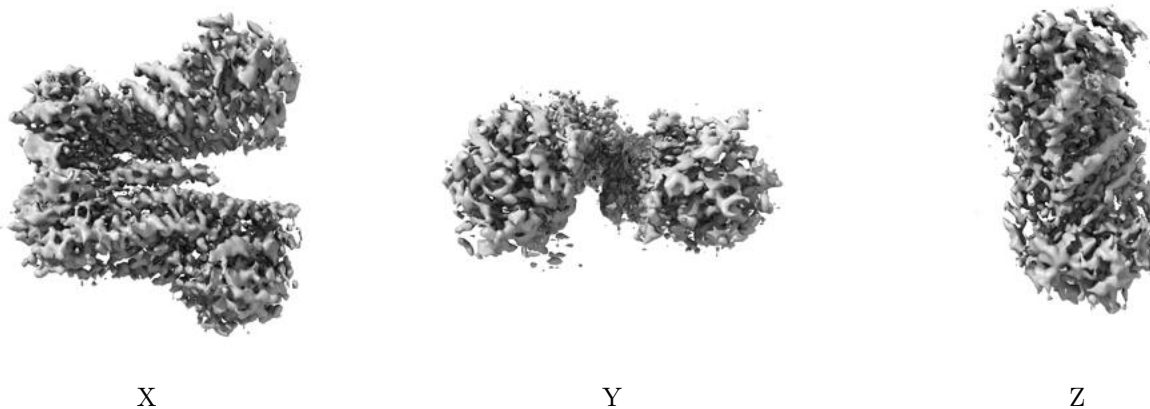
6.4 Orthogonal surface views [i](#)

6.4.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.19. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.4.2 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.

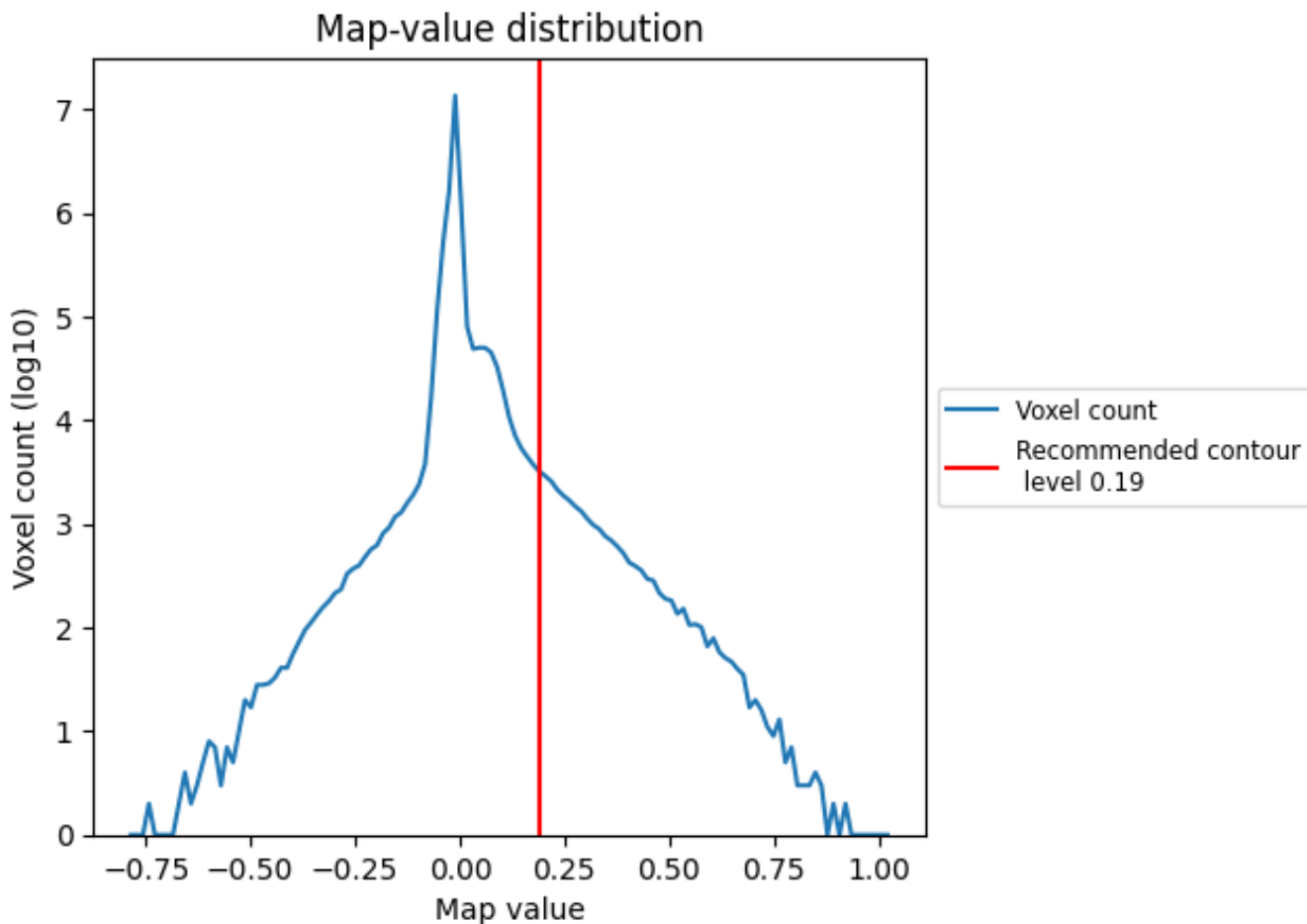
6.5 Mask visualisation [i](#)

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

7 Map analysis [i](#)

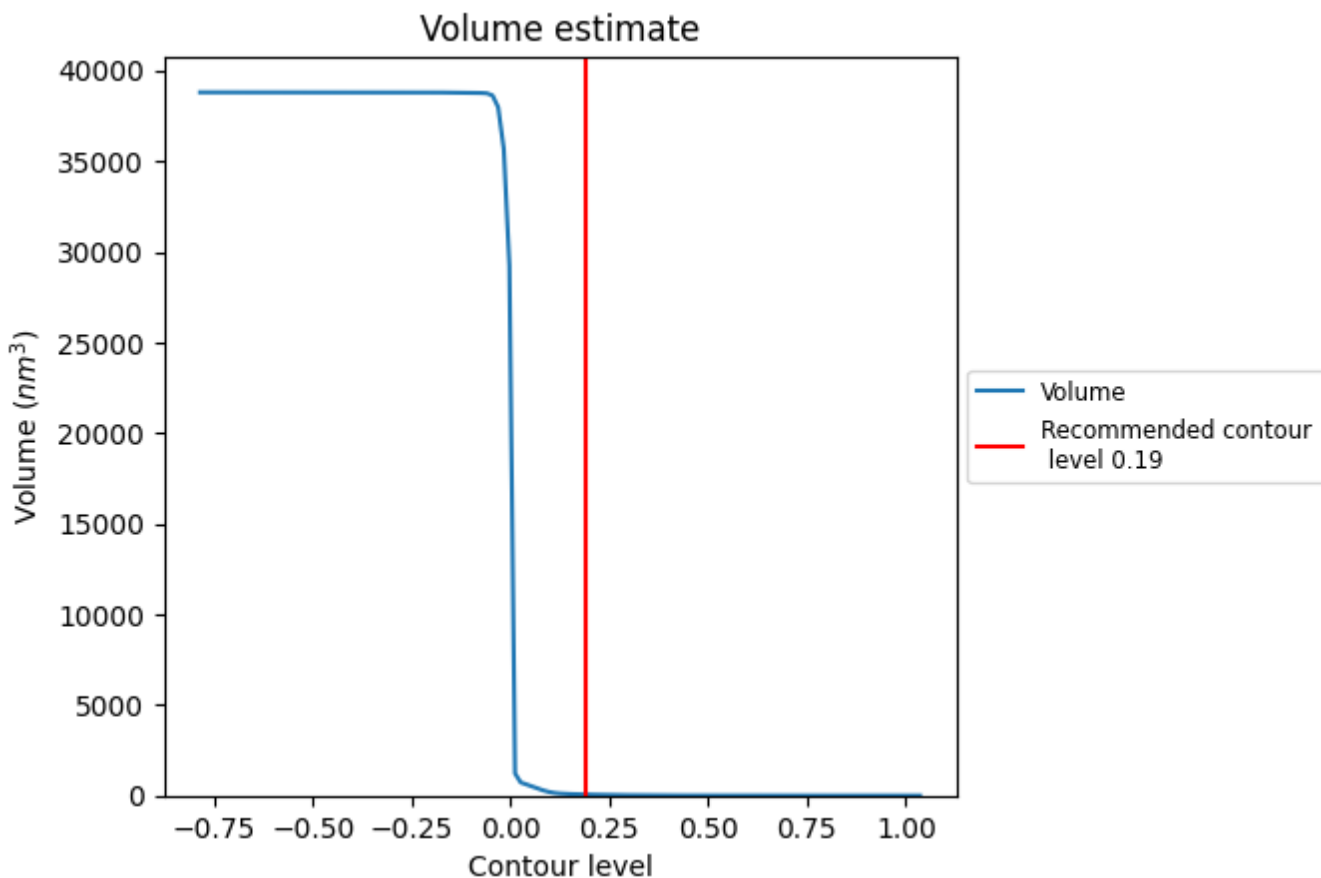
This section contains the results of statistical analysis of the map.

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.

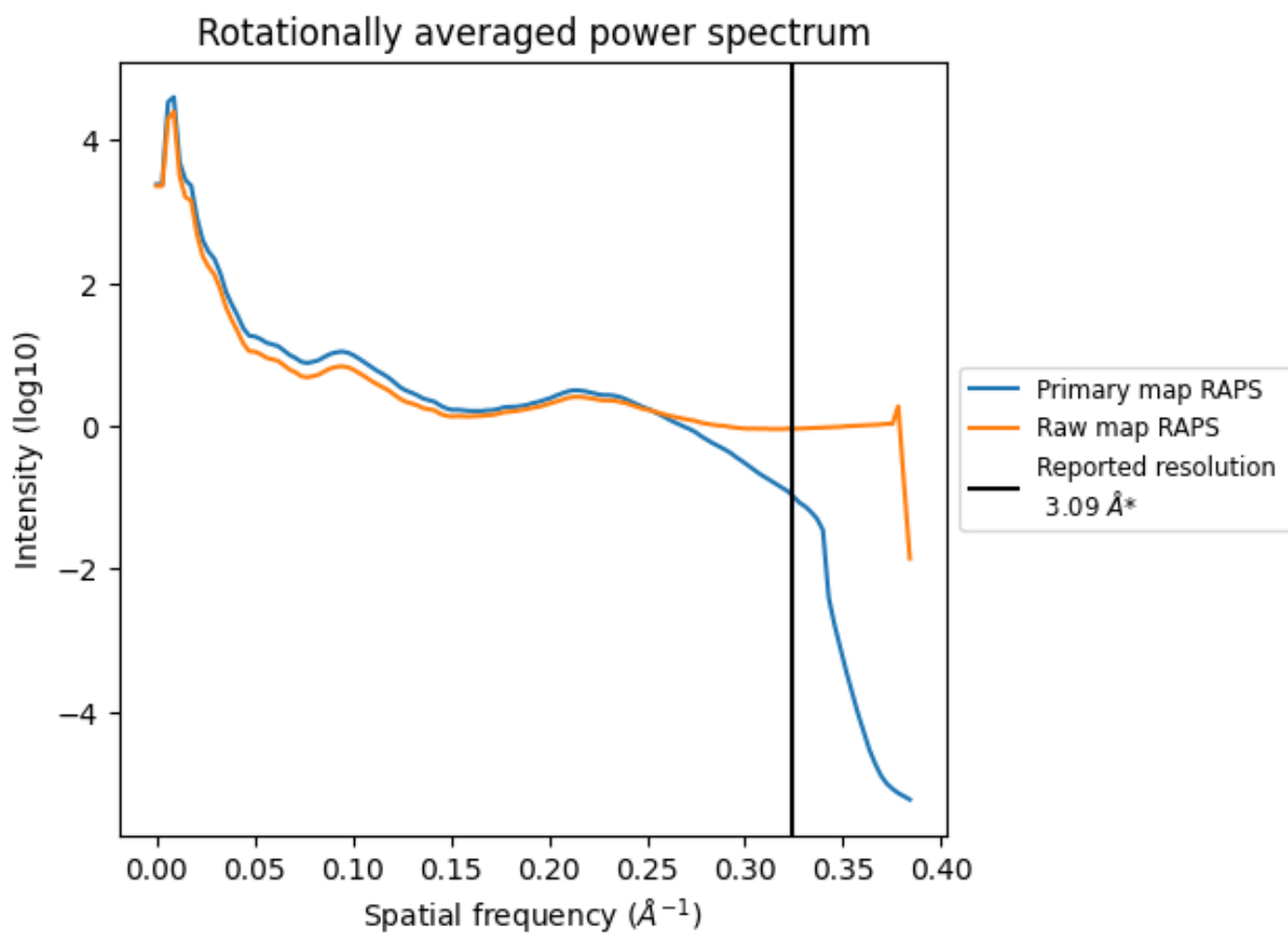
7.2 Volume estimate [\(i\)](#)



The volume at the recommended contour level is 58 nm³; this corresponds to an approximate mass of 52 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 [\(i\)](#)

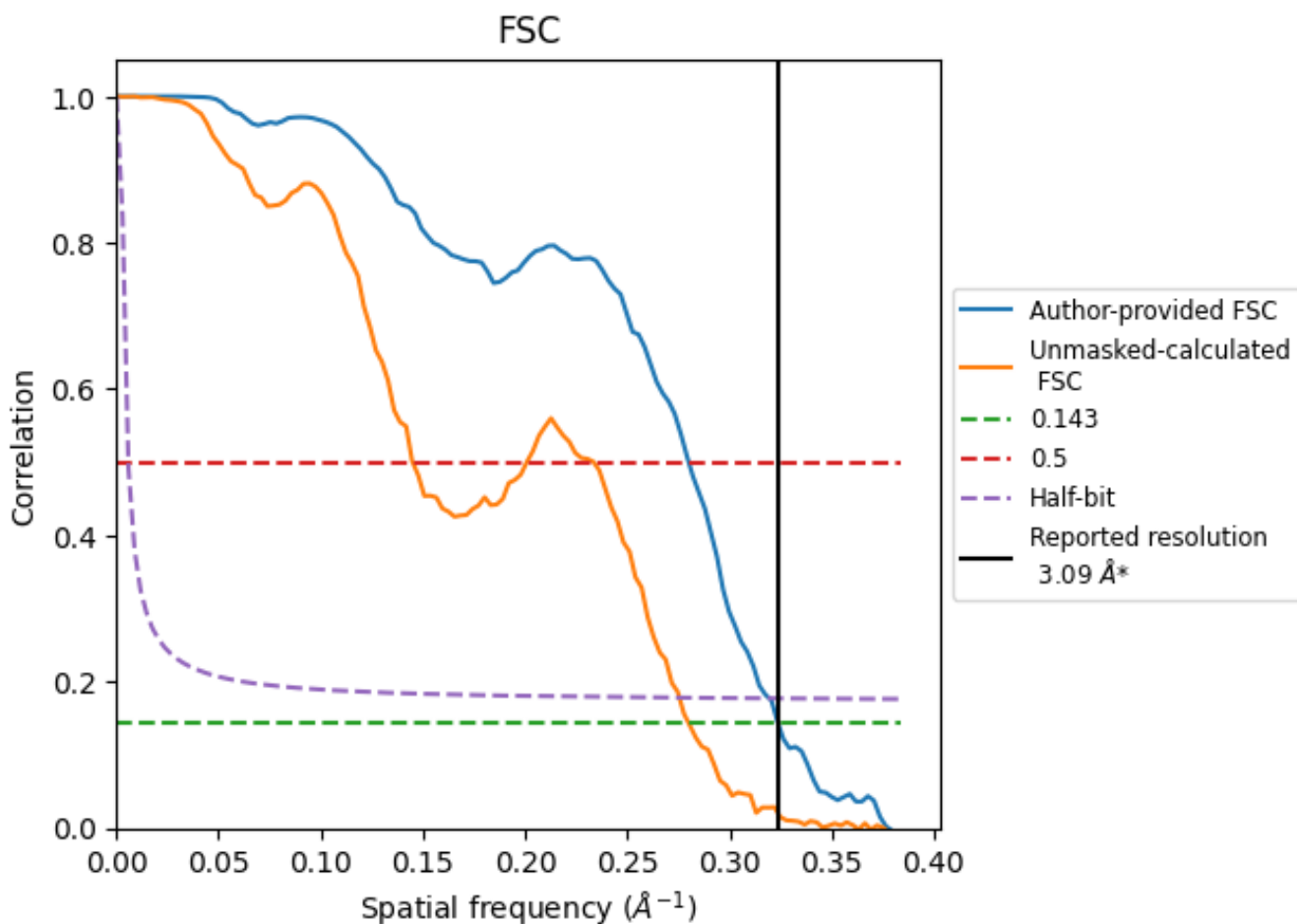


*Reported resolution corresponds to spatial frequency of 0.324 \AA^{-1}

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 0.324 Å⁻¹

8.2 Resolution estimates [i](#)

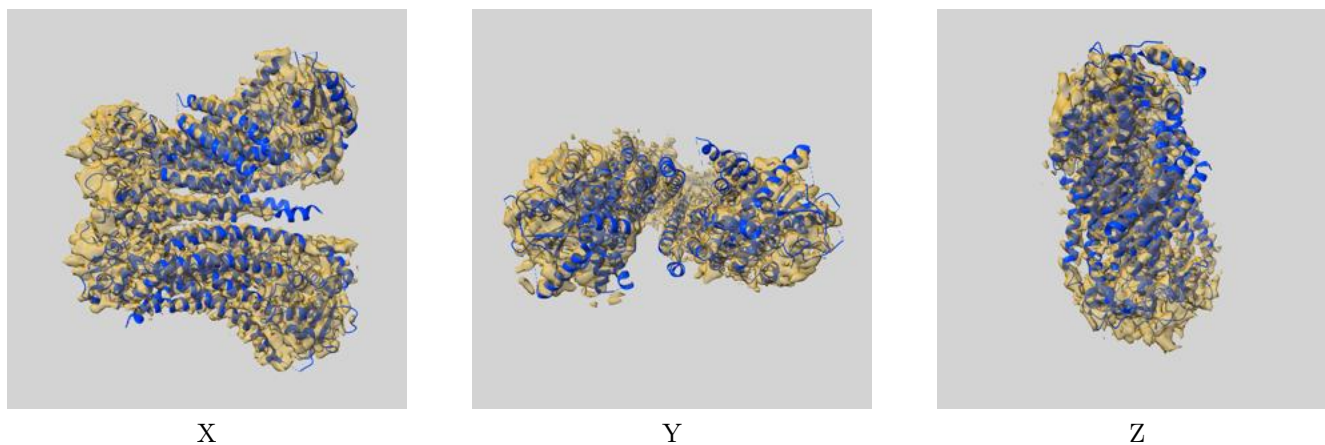
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.09	-	-
Author-provided FSC curve	3.09	3.57	3.13
Unmasked-calculated*	3.57	6.90	3.63

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.57 differs from the reported value 3.09 by more than 10 %

9 Map-model fit [i](#)

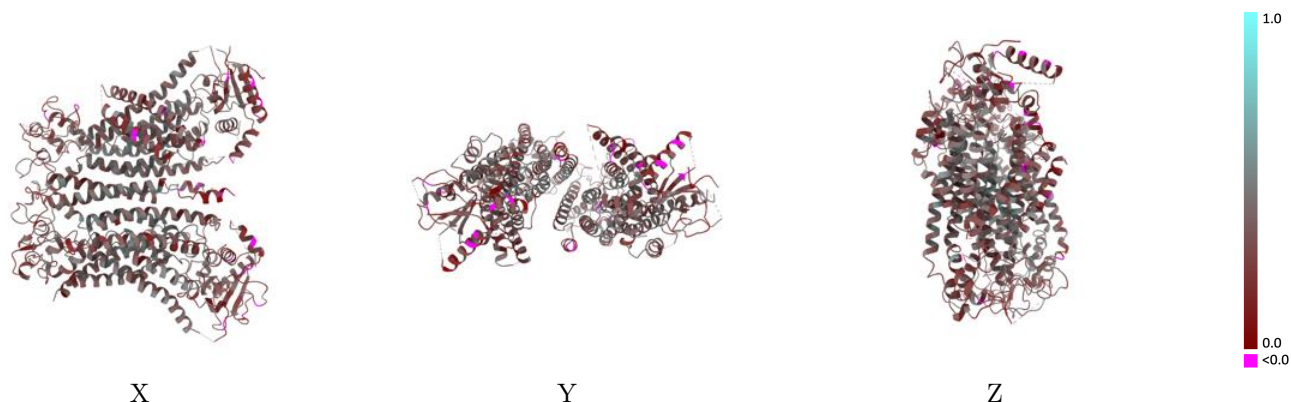
This section contains information regarding the fit between EMDB map EMD-15958 and PDB model 8BC0. Per-residue inclusion information can be found in section 3 on page 7.

9.1 Map-model overlay [i](#)



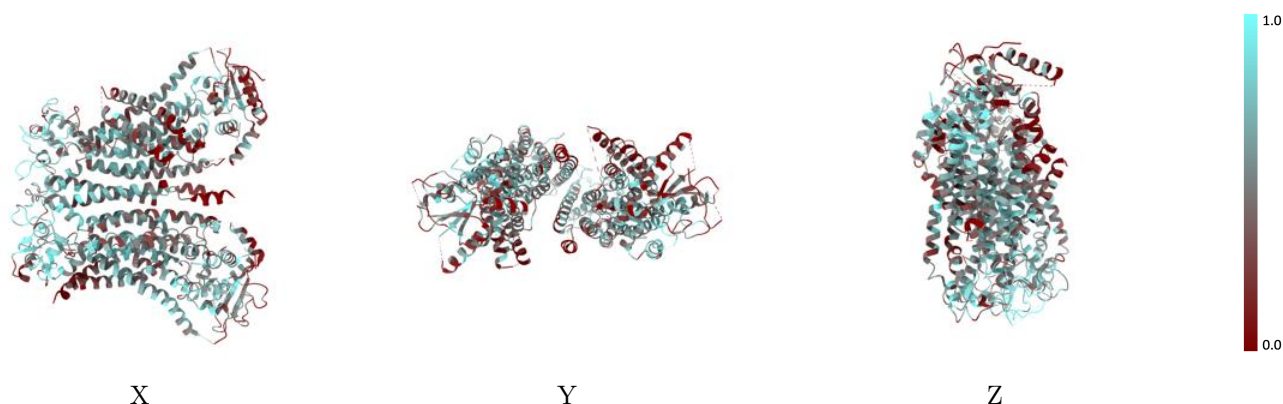
The images above show the 3D surface view of the map at the recommended contour level 0.19 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



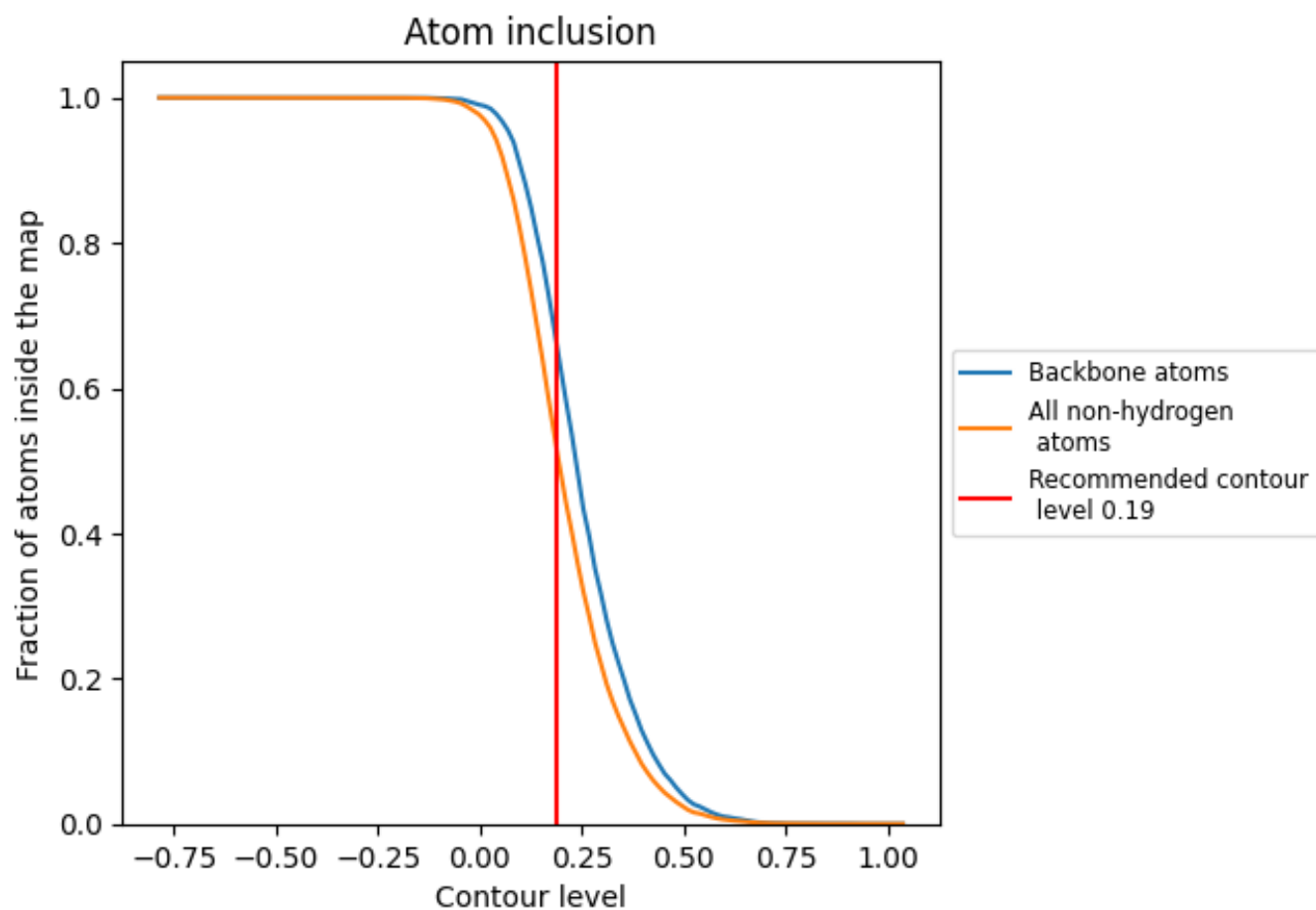
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.19).







9.4 Atom inclusion [i](#)



At the recommended contour level, 65% of all backbone atoms, 51% 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 (0.19) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.5085	 0.3400
A	 0.5120	 0.3380
B	 0.5048	 0.3410

