



## Full wwPDB EM Validation Report ⓘ

Aug 8, 2023 – 04:19 PM JST

PDB ID : 8HKK  
EMDB ID : EMD-34853  
Title : ion channel  
Authors : Jiang, D.H.; Zhang, J.T.  
Deposited on : 2022-11-27  
Resolution : 2.84 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](mailto:validation@mail.wwpdb.org)

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

EMDB validation analysis : 0.0.1.dev50  
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) : 2.35

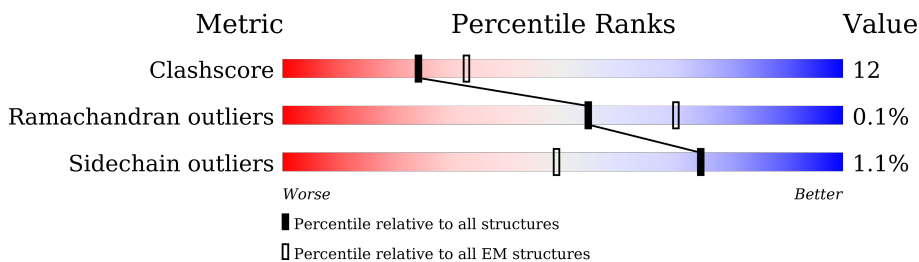
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*ELECTRON MICROSCOPY*

The reported resolution of this entry is 2.84 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions  $\leq 5\%$ . The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion  $< 40\%$ ). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	1235	
1	B	1235	
1	C	1235	
1	D	1235	

## 2 Entry composition [i](#)

There are 4 unique types of molecules in this entry. The entry contains 28687 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 Potassium channel subfamily T member 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	899	7166	4644	1192	1277	53	0	0
1	B	899	7166	4644	1192	1277	53	0	0
1	C	899	7166	4644	1192	1277	53	0	0
1	D	899	7166	4644	1192	1277	53	0	0

- Molecule 2 is ZINC ION (three-letter code: ZN) (formula: Zn) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		AltConf
2	A	1	Total 1	Zn 1	0
2	B	1	Total 1	Zn 1	0
2	C	1	Total 1	Zn 1	0
2	D	1	Total 1	Zn 1	0

- Molecule 3 is SODIUM ION (three-letter code: NA) (formula: Na) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		AltConf
3	A	1	Total 1	Na 1	0

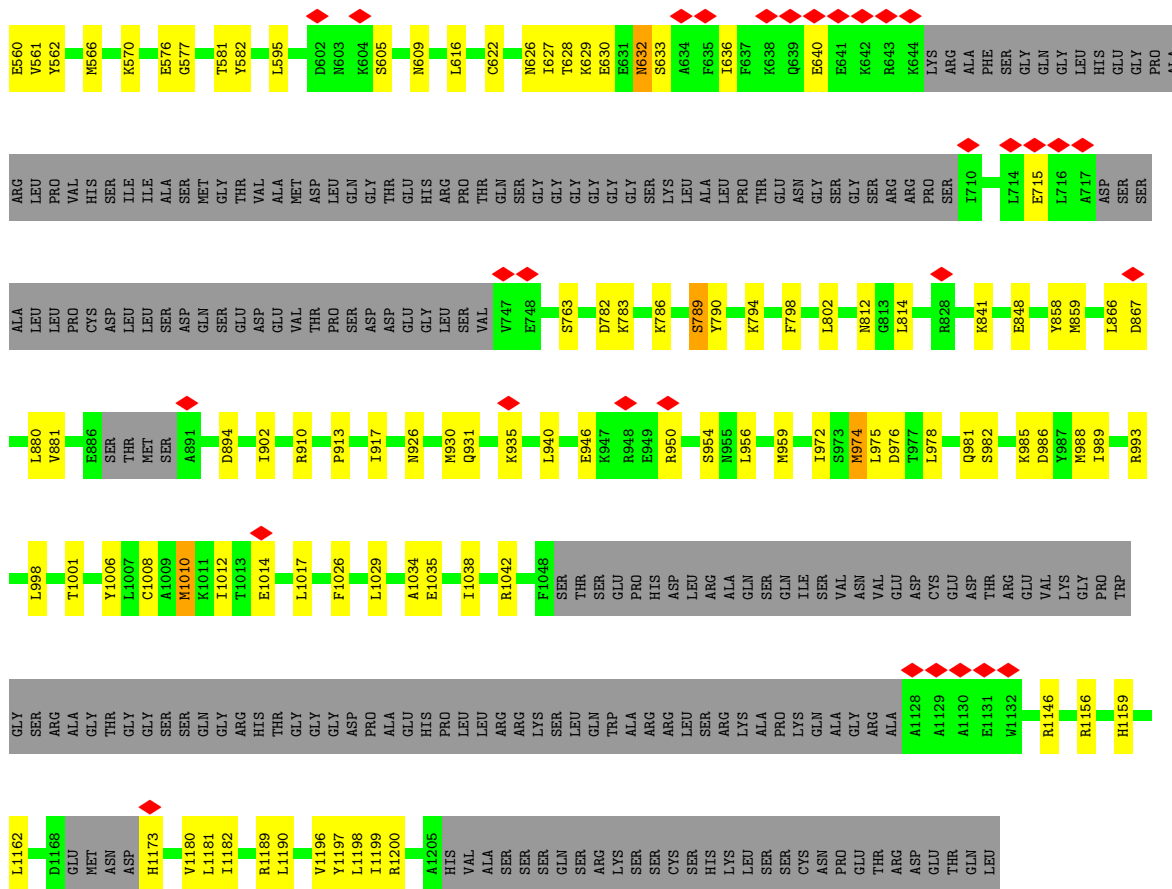
- Molecule 4 is POTASSIUM ION (three-letter code: K) (formula: K) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms	AltConf
4	A	6	Total K 6 6	0
4	B	4	Total K 4 4	0
4	C	4	Total K 4 4	0
4	D	4	Total K 4 4	0

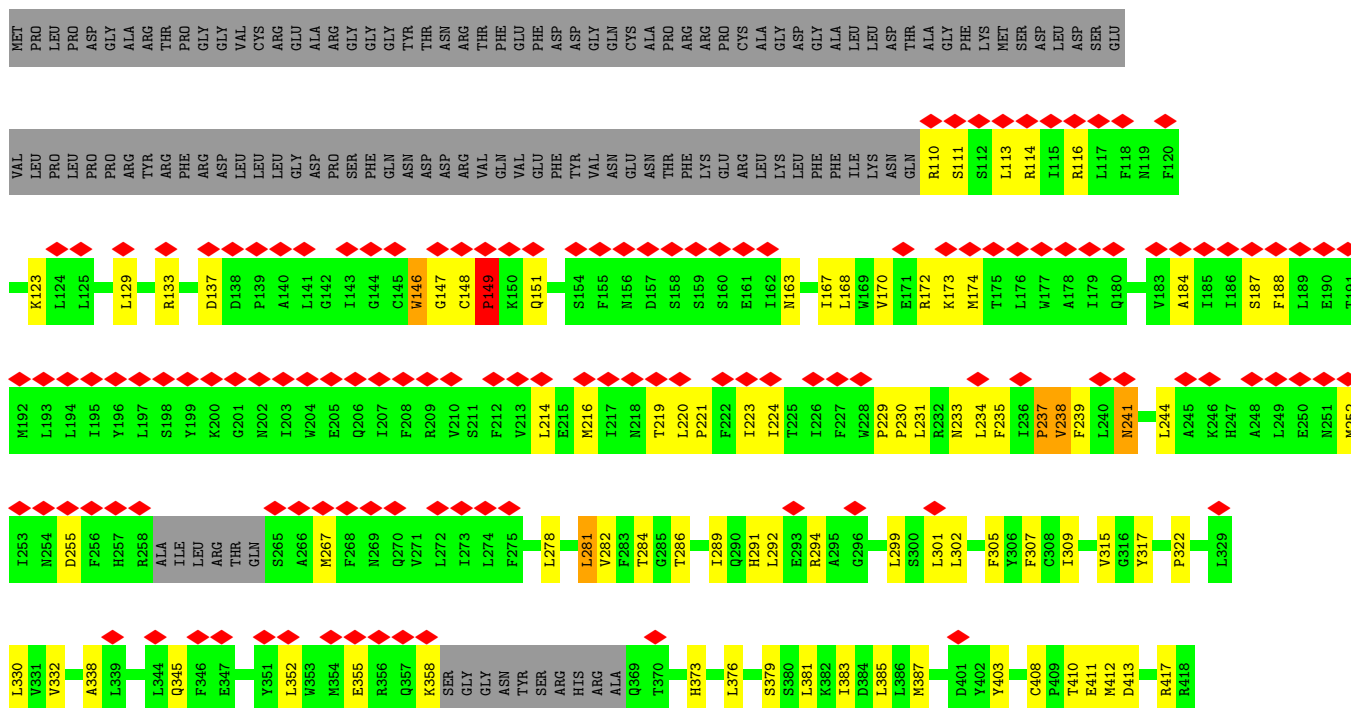








• Molecule 1: Potassium channel subfamily T member 1





V419	P423	L424	S435	M436	L437	K438	D439	M443	F454	I455	L456	S457	S458	I472	L473	R474	P483	Q490	E495	M496	K497	F502	E511	C512	K513	M516	L519	C523	P524	A525	L529	T531	E541	S545	W549	Q550	R551	M552	E560	V561														
Y562	M566	K570	K578	T581	Y582	D602	N603	K604	S605	M609	L616	I625	N626	I627	T628	K629	E630	S633	A634	F635	I636	F637	K638	Q639	E640	E641	K642	R643	K644	LYS	ARG	ALA	PHE	ILE	GLY	GLN	GLY	LEU	HIS	GLY	PRO	ALA	R551	M552	E560	PRO	VAL	HIS	SER	ILE				
ILE	ALA	SER	GLN	MET	THR	THR	VAL	ALA	MET	ASP	LEU	GLM	ASP	THR	GLU	HIS	ARG	PRO	SER	THR	GLN	SER	S633	LYS	LEU	ALA	LEU	PRO	THR	THR	ASN	ASN	GLY	SER	GLY	SER	LEU	ILE	L714	E715	L716	A717	ASP	SER	SER	GLY	ALA	LEU	LEU	LEU	PRO	CYS	ASP	LEU
LEU	SER	ASP	GLN	SER	GLU	ASP	GLU	VAL	THR	PRO	SER	ASP	ASP	GLU	GLY	LEU	SER	VAL	V747	E748	S763	K773	F776	K786	Y790	A793	F798	K799	L802	N812	G813	L814	S827	E830	K841	H844	E848	Y858	L866	Y876	L880													
E886	SER	THR	MET	SER	A891	E892	E893	D894	D898	A899	K900	T901	I902	V903	N904	R910	P913	I917	L921	N926	M930	Q931	K935	A941	K944	L945	E946	K947	R950	S954	A957	G967	S971	I972	S973	M974	L975	D976	T977	L978	Q981	S982												
K985	D986	Y987	M988	I989	R993	L998	T1001	Y1006	L1007	C1008	I1012	F1026	L1029	A1034	E1035	I1038	Y1041	R1042	F1048	SER	THR	GLU	GLU	PRO	HIS	ASP	LEU	ARG	ALA	GLN	SER	GLN	ILE	VAL	ASN	VAL	GLU	ASP	CYS	GLU	ASP	THR	ARG	GLU	VAL	LYS								
GLY	PRO	TRP	GLY	SER	ARG	ALA	ALA	THR	GLY	GLY	SER	SER	GLN	GLY	GLY	ASP	PRO	ALA	ALA	GLU	LYS	SER	GLN	TRP	ALA	ARG	ARG	ALA	PRO	LYS	PRO	LYS	GLN	ALA	ARG	ALA	A1128	A1129	A1130	E1131	W1132	L1140	Y1141	R1142										
R1143	R1146	Q1147	E1148	K1154	M1156	M1157	L1162	E1168	GLU	MET	ASN	ASP	H1173	T1176	V1180	L1181	I1182	R1189	L1190	I1195	V1196	Y1197	L1198	I1199	R1200	A1205	HIS	VAL	ALA	SER	SER	GLN	SER	ARG	LYS	SER	SER	SER	CYS	SER	HIS	LYS	LEU	SER	SER	CYS	ASN	PRO	GLU					
THR	ARG	ASP	GLU	THR	THR	GLN	LEU																																															

## 4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	47885	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 ( $e^-/\text{\AA}^2$ )	60	Depositor
Minimum defocus (nm)	1200	Depositor
Maximum defocus (nm)	2200	Depositor
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	5.730	Depositor
Minimum map value	-0.400	Depositor
Average map value	0.044	Depositor
Map value standard deviation	0.156	Depositor
Recommended contour level	0.641	Depositor
Map size (Å)	266.24, 266.24, 266.24	wwPDB
Map dimensions	256, 256, 256	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.04, 1.04, 1.04	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: NA, K, ZN

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	0.27	0/7332	0.56	6/9949 (0.1%)
1	B	0.41	4/7332 (0.1%)	0.60	8/9949 (0.1%)
1	C	0.42	4/7332 (0.1%)	0.69	12/9949 (0.1%)
1	D	0.43	3/7332 (0.0%)	0.60	12/9949 (0.1%)
All	All	0.39	11/29328 (0.0%)	0.62	38/39796 (0.1%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand. A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	C	0	1

All (11) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	D	237	PRO	CG-CD	-25.46	0.66	1.50
1	C	237	PRO	CB-CG	20.15	2.50	1.50
1	B	237	PRO	CB-CG	19.95	2.49	1.50
1	B	237	PRO	CG-CD	-15.89	0.98	1.50
1	C	237	PRO	CG-CD	-15.47	0.99	1.50
1	D	237	PRO	CB-CG	10.70	2.03	1.50
1	C	149	PRO	C-N	7.34	1.50	1.34
1	D	237	PRO	N-CD	6.97	1.57	1.47
1	B	237	PRO	N-CD	6.08	1.56	1.47
1	C	237	PRO	N-CD	5.35	1.55	1.47
1	B	237	PRO	N-CA	-5.12	1.38	1.47

All (38) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	C	237	PRO	CB-CG-CD	-27.30	0.01	106.50
1	B	237	PRO	CB-CG-CD	-26.66	2.52	106.50
1	C	147	GLY	N-CA-C	22.49	169.32	113.10
1	C	147	GLY	C-N-CA	19.53	170.51	121.70
1	D	237	PRO	N-CD-CG	-18.08	76.08	103.20
1	A	146	TRP	CB-CA-C	-17.10	76.20	110.40
1	B	237	PRO	CA-N-CD	-13.93	92.00	111.50
1	C	237	PRO	CA-N-CD	-13.32	92.85	111.50
1	D	146	TRP	CB-CA-C	-12.95	84.51	110.40
1	B	237	PRO	N-CA-CB	-11.39	89.63	103.30
1	C	237	PRO	N-CA-CB	-10.87	90.26	103.30
1	A	423	PRO	CA-N-CD	-10.82	96.35	111.50
1	D	147	GLY	N-CA-C	10.45	139.24	113.10
1	D	237	PRO	CA-CB-CG	-9.96	85.07	104.00
1	D	423	PRO	CA-N-CD	-8.95	98.97	111.50
1	C	423	PRO	CA-N-CD	-8.89	99.05	111.50
1	D	237	PRO	CA-N-CD	-8.72	99.28	111.50
1	D	237	PRO	N-CA-CB	-8.12	93.55	103.30
1	A	229	PRO	CA-N-CD	-7.82	100.56	111.50
1	D	146	TRP	N-CA-C	7.71	131.83	111.00
1	D	237	PRO	CB-CG-CD	-7.64	76.69	106.50
1	A	237	PRO	CA-N-CD	-7.63	100.81	111.50
1	B	237	PRO	CA-CB-CG	-7.48	89.78	104.00
1	D	149	PRO	N-CA-C	7.35	131.21	112.10
1	C	237	PRO	CA-CB-CG	-7.00	90.71	104.00
1	D	1140	LEU	CA-CB-CG	6.95	131.29	115.30
1	C	149	PRO	N-CA-C	6.90	130.04	112.10
1	A	146	TRP	N-CA-C	6.87	129.54	111.00
1	C	146	TRP	N-CA-C	-6.83	92.56	111.00
1	B	423	PRO	CA-N-CD	-6.68	102.14	111.50
1	B	149	PRO	N-CA-C	6.04	127.79	112.10
1	C	147	GLY	O-C-N	-6.00	113.10	122.70
1	C	236	ILE	C-N-CD	5.91	140.80	128.40
1	C	149	PRO	O-C-N	5.66	131.76	122.70
1	B	236	ILE	C-N-CD	5.53	140.02	128.40
1	D	238	VAL	N-CA-C	-5.47	96.24	111.00
1	B	146	TRP	N-CA-C	5.44	125.68	111.00
1	A	149	PRO	N-CA-C	5.12	125.42	112.10

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	C	147	GLY	Mainchain

## 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	7166	0	7160	160	0
1	B	7166	0	7160	169	0
1	C	7166	0	7159	182	0
1	D	7166	0	7160	190	0
2	A	1	0	0	0	0
2	B	1	0	0	0	0
2	C	1	0	0	0	0
2	D	1	0	0	0	0
3	A	1	0	0	0	0
4	A	6	0	0	0	0
4	B	4	0	0	0	0
4	C	4	0	0	0	0
4	D	4	0	0	0	0
All	All	28687	0	28639	684	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 12.

All (684) 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:A:113:LEU:HD11	1:A:252:MET:SD	1.12	1.69
1:D:412:MET:SD	1:D:417:ARG:HD2	1.51	1.50
1:D:235:PHE:CE1	1:D:291:HIS:HD2	1.29	1.50
1:B:235:PHE:CE1	1:B:291:HIS:CD2	2.03	1.46
1:D:315:VAL:HG11	1:D:317:TYR:CZ	1.54	1.41
1:A:113:LEU:CD1	1:A:252:MET:SD	2.08	1.39
1:B:235:PHE:CD1	1:B:291:HIS:NE2	1.91	1.39
1:B:235:PHE:HE1	1:B:291:HIS:CD2	1.36	1.38
1:D:235:PHE:CE1	1:D:291:HIS:CD2	2.10	1.37
1:B:946:GLU:OE2	1:B:950:ARG:HD2	1.24	1.33

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:315:VAL:CG1	1:D:317:TYR:CE1	2.12	1.31
1:C:782:ASP:OD1	1:C:859:MET:HG3	1.30	1.30
1:A:1006:TYR:CE2	1:A:1008:CYS:SG	2.25	1.29
1:C:946:GLU:OE2	1:C:950:ARG:HD2	1.26	1.29
1:C:239:PHE:CD1	1:C:284:THR:HG23	1.68	1.25
1:C:1006:TYR:CE2	1:C:1008:CYS:SG	2.29	1.25
1:D:1006:TYR:CE2	1:D:1008:CYS:SG	2.30	1.25
1:B:1006:TYR:CE2	1:B:1008:CYS:SG	2.30	1.25
1:D:235:PHE:CD1	1:D:291:HIS:CD2	2.26	1.23
1:A:315:VAL:HG11	1:A:317:TYR:CE1	1.74	1.22
1:D:412:MET:SD	1:D:417:ARG:CD	2.28	1.20
1:D:566:MET:CE	1:D:616:LEU:HD13	1.72	1.19
1:A:315:VAL:CG1	1:A:317:TYR:CE1	2.26	1.19
1:D:802:LEU:HD13	1:D:876:TYR:CE1	1.79	1.18
1:D:802:LEU:CD1	1:D:876:TYR:CE1	2.28	1.16
1:A:146:TRP:CG	1:A:146:TRP:O	1.80	1.14
1:D:315:VAL:HG11	1:D:317:TYR:CE1	1.78	1.14
1:A:315:VAL:HG11	1:A:317:TYR:CZ	1.81	1.13
1:C:782:ASP:OD1	1:C:859:MET:CG	1.97	1.12
1:B:235:PHE:CD1	1:B:291:HIS:CE1	2.38	1.10
1:A:146:TRP:O	1:A:146:TRP:CD1	2.05	1.08
1:D:802:LEU:CD1	1:D:876:TYR:HE1	1.63	1.08
1:C:239:PHE:CE1	1:C:284:THR:HG23	1.91	1.05
1:A:1006:TYR:OH	1:A:1200:ARG:HD2	1.56	1.04
1:D:146:TRP:CG	1:D:146:TRP:O	1.97	1.02
1:D:802:LEU:HD11	1:D:876:TYR:HE1	1.21	1.02
1:C:566:MET:CE	1:C:616:LEU:HD13	1.89	1.01
1:B:946:GLU:OE2	1:B:950:ARG:CD	2.09	1.01
1:B:566:MET:CE	1:B:616:LEU:HD13	1.92	0.99
1:D:315:VAL:CG1	1:D:317:TYR:CZ	2.38	0.99
1:C:782:ASP:CG	1:C:859:MET:HG3	1.83	0.98
1:B:235:PHE:CE1	1:B:291:HIS:CG	2.53	0.96
1:C:946:GLU:OE2	1:C:950:ARG:CD	2.12	0.96
1:B:235:PHE:HD1	1:B:291:HIS:NE2	1.41	0.95
1:A:1006:TYR:HE2	1:A:1008:CYS:SG	1.87	0.94
1:B:235:PHE:CE1	1:B:291:HIS:NE2	2.25	0.94
1:D:566:MET:HE3	1:D:616:LEU:HD13	1.48	0.93
1:C:239:PHE:HD1	1:C:284:THR:HG23	1.21	0.93
1:B:566:MET:HE3	1:B:616:LEU:HD13	1.51	0.92
1:D:315:VAL:HG12	1:D:317:TYR:CE1	2.04	0.90
1:A:1006:TYR:CD2	1:A:1008:CYS:SG	2.67	0.88

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1006:TYR:HE2	1:B:1008:CYS:SG	1.95	0.87
1:D:566:MET:SD	1:D:616:LEU:HD13	2.14	0.87
1:D:235:PHE:CD1	1:D:291:HIS:NE2	2.42	0.87
1:C:566:MET:HE3	1:C:616:LEU:HD13	1.56	0.85
1:D:148:CYS:HB3	1:D:149:PRO:HD2	1.59	0.84
1:B:148:CYS:HB3	1:B:149:PRO:HD2	1.59	0.84
1:C:148:CYS:HB3	1:C:149:PRO:HD2	1.59	0.84
1:A:148:CYS:HB3	1:A:149:PRO:HD2	1.59	0.83
1:D:1006:TYR:HE2	1:D:1008:CYS:SG	1.94	0.83
1:B:1006:TYR:CD2	1:B:1008:CYS:SG	2.72	0.83
1:D:1006:TYR:CD2	1:D:1008:CYS:SG	2.71	0.82
1:C:1006:TYR:HE2	1:C:1008:CYS:SG	1.93	0.82
1:D:267:MET:HA	1:D:352:LEU:HD21	1.61	0.82
1:D:123:LYS:HD2	1:D:241:ASN:HD21	1.44	0.82
1:C:867:ASP:OD2	1:C:1156:ARG:NH1	2.13	0.81
1:C:1006:TYR:CD2	1:C:1008:CYS:SG	2.72	0.81
1:D:802:LEU:HD11	1:D:876:TYR:CE1	2.07	0.81
1:D:786:LYS:H	1:D:786:LYS:HD2	1.46	0.80
1:C:978:LEU:CD1	1:C:988:MET:HG3	2.12	0.80
1:A:978:LEU:CD1	1:A:988:MET:HG3	2.12	0.80
1:D:793:ALA:HB1	1:D:876:TYR:OH	1.82	0.80
1:C:786:LYS:H	1:C:786:LYS:HD2	1.48	0.79
1:C:123:LYS:HD2	1:C:241:ASN:HD21	1.48	0.78
1:D:566:MET:CE	1:D:616:LEU:CD1	2.58	0.78
1:B:978:LEU:CD1	1:B:988:MET:HG3	2.15	0.77
1:B:236:ILE:HA	1:B:237:PRO:HG2	1.66	0.77
1:D:1012:ILE:HD13	1:D:1190:LEU:HD22	1.66	0.76
1:C:324:ILE:HD13	1:C:326:PRO:HD2	1.67	0.76
1:A:129:LEU:HD23	1:A:180:GLN:HG3	1.68	0.76
1:A:1008:CYS:SG	1:A:1200:ARG:NH1	2.58	0.76
1:B:566:MET:SD	1:B:616:LEU:HD13	2.26	0.76
1:C:267:MET:HA	1:C:352:LEU:HD21	1.68	0.76
1:D:146:TRP:O	1:D:146:TRP:CD1	2.40	0.75
1:D:978:LEU:CD1	1:D:988:MET:HG3	2.17	0.75
1:C:566:MET:SD	1:C:616:LEU:HD13	2.25	0.75
1:D:941:ALA:HA	1:D:944:LYS:NZ	2.02	0.75
1:B:1012:ILE:HD13	1:B:1190:LEU:HD22	1.69	0.75
1:D:802:LEU:HD13	1:D:876:TYR:CD1	2.22	0.75
1:C:113:LEU:HD11	1:C:252:MET:HG3	1.70	0.74
1:B:239:PHE:CD1	1:B:284:THR:HG23	2.23	0.74
1:D:315:VAL:HG11	1:D:317:TYR:OH	1.85	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:235:PHE:HE1	1:D:291:HIS:CD2	2.01	0.74
1:C:512:CYS:HB2	1:C:975:LEU:HD11	1.71	0.73
1:D:137:ASP:OD2	1:D:294:ARG:NH1	2.22	0.73
1:C:239:PHE:CE1	1:C:284:THR:CG2	2.71	0.72
1:C:782:ASP:OD1	1:C:859:MET:SD	2.47	0.71
1:C:782:ASP:CG	1:C:859:MET:CG	2.55	0.71
1:D:315:VAL:HG12	1:D:317:TYR:CD1	2.26	0.71
1:B:239:PHE:HD1	1:B:284:THR:HG23	1.54	0.70
1:A:315:VAL:CG1	1:A:317:TYR:CD1	2.73	0.70
1:B:188:PHE:HB2	1:B:219:THR:HG21	1.74	0.70
1:A:512:CYS:HB2	1:A:975:LEU:HD11	1.74	0.70
1:A:1012:ILE:HD13	1:A:1190:LEU:HD22	1.73	0.69
1:A:220:LEU:HG	1:A:221:PRO:HD3	1.74	0.69
1:C:235:PHE:CE2	1:C:291:HIS:HD2	2.08	0.69
1:C:1012:ILE:HD13	1:C:1190:LEU:HD22	1.74	0.69
1:B:581:THR:HG21	1:B:1034:ALA:HB1	1.75	0.69
1:C:220:LEU:HG	1:C:221:PRO:HD3	1.75	0.68
1:D:188:PHE:HB2	1:D:219:THR:HG21	1.76	0.68
1:A:581:THR:HG21	1:A:1034:ALA:HB1	1.75	0.67
1:B:913:PRO:HB2	1:B:1173:HIS:HB2	1.76	0.67
1:C:581:THR:HG21	1:C:1034:ALA:HB1	1.75	0.67
1:D:531:THR:HA	1:D:974:MET:HE3	1.76	0.67
1:D:1012:ILE:CD1	1:D:1190:LEU:HD22	2.24	0.67
1:D:315:VAL:HG13	1:D:317:TYR:CE1	2.25	0.67
1:D:581:THR:HG21	1:D:1034:ALA:HB1	1.75	0.66
1:C:913:PRO:HB2	1:C:1173:HIS:HB2	1.75	0.66
1:A:495:GLU:OE1	1:A:812:ASN:ND2	2.28	0.66
1:B:317:TYR:OH	1:C:311:THR:OG1	2.10	0.65
1:B:1012:ILE:CD1	1:B:1190:LEU:HD22	2.26	0.65
1:D:495:GLU:OE1	1:D:812:ASN:ND2	2.28	0.65
1:D:379:SER:OG	1:D:458:SER:OG	2.14	0.65
1:A:913:PRO:HB2	1:A:1173:HIS:HB2	1.77	0.65
1:D:355:GLU:OE1	1:D:355:GLU:N	2.29	0.65
1:A:379:SER:OG	1:A:458:SER:OG	2.12	0.65
1:B:495:GLU:OE1	1:B:812:ASN:ND2	2.28	0.65
1:D:913:PRO:HB2	1:D:1173:HIS:HB2	1.78	0.65
1:B:220:LEU:HG	1:B:221:PRO:HD3	1.78	0.65
1:D:220:LEU:HG	1:D:221:PRO:HD3	1.76	0.65
1:A:867:ASP:OD1	1:A:1156:ARG:NH1	2.30	0.64
1:A:1042:ARG:NH2	1:A:1189:ARG:O	2.30	0.64
1:D:411:GLU:OE1	1:D:411:GLU:N	2.29	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:145:CYS:C	1:C:146:TRP:O	2.26	0.64
1:C:188:PHE:HB2	1:C:219:THR:HG21	1.80	0.64
1:D:412:MET:SD	1:D:417:ARG:HD3	2.31	0.64
1:A:315:VAL:HG12	1:A:317:TYR:CD1	2.32	0.64
1:B:231:LEU:HD22	1:B:234:LEU:HD12	1.80	0.64
1:C:1042:ARG:NH2	1:C:1189:ARG:O	2.30	0.64
1:B:116:ARG:NH2	1:B:255:ASP:OD2	2.31	0.64
1:A:172:ARG:NH1	1:A:232:ARG:O	2.31	0.64
1:C:566:MET:CE	1:C:616:LEU:CD1	2.73	0.63
1:D:627:ILE:HG22	1:D:628:THR:HG23	1.80	0.63
1:C:495:GLU:OE1	1:C:812:ASN:ND2	2.28	0.63
1:C:794:LYS:CE	1:C:1162:LEU:HD23	2.28	0.63
1:B:561:VAL:O	1:B:985:LYS:NZ	2.32	0.62
1:B:236:ILE:CA	1:B:237:PRO:HG2	2.27	0.62
1:C:1159:HIS:HE1	1:D:844:HIS:NE2	1.97	0.62
1:A:1012:ILE:CD1	1:A:1190:LEU:HD22	2.30	0.62
1:D:1042:ARG:NH2	1:D:1189:ARG:O	2.33	0.62
1:B:412:MET:CE	1:B:431:TYR:CB	2.78	0.62
1:B:1042:ARG:NH2	1:B:1189:ARG:O	2.31	0.62
1:A:116:ARG:NH2	1:A:255:ASP:OD2	2.32	0.62
1:C:235:PHE:CE2	1:C:291:HIS:CD2	2.88	0.62
1:D:116:ARG:NH2	1:D:255:ASP:OD2	2.33	0.62
1:D:763:SER:OG	1:D:998:LEU:O	2.12	0.61
1:B:566:MET:CE	1:B:616:LEU:CD1	2.74	0.61
1:B:910:ARG:O	1:B:1146:ARG:NH2	2.33	0.61
1:C:513:LYS:HB2	1:C:972:ILE:HD11	1.82	0.61
1:D:561:VAL:O	1:D:985:LYS:NZ	2.32	0.61
1:C:116:ARG:NH2	1:C:255:ASP:OD2	2.33	0.61
1:A:111:SER:HA	1:A:114:ARG:HD3	1.82	0.61
1:A:315:VAL:HG13	1:A:317:TYR:CE1	2.33	0.61
1:A:129:LEU:HD21	1:A:179:ILE:HG23	1.81	0.61
1:B:149:PRO:O	1:B:151:GLN:NE2	2.31	0.61
1:C:910:ARG:O	1:C:1146:ARG:NH2	2.33	0.60
1:A:910:ARG:O	1:A:1146:ARG:NH2	2.34	0.60
1:D:235:PHE:CE2	1:D:237:PRO:HD2	2.36	0.60
1:B:111:SER:HA	1:B:114:ARG:HD3	1.83	0.60
1:D:566:MET:SD	1:D:616:LEU:HD22	2.41	0.60
1:A:545:SER:OG	1:A:550:GLN:OE1	2.16	0.60
1:C:1012:ILE:CD1	1:C:1190:LEU:HD22	2.31	0.60
1:B:627:ILE:HG22	1:B:628:THR:HG23	1.82	0.60
1:A:423:PRO:HD2	1:A:424:LEU:N	2.17	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:930:MET:HG3	1:B:931:GLN:HG3	1.84	0.59
1:B:545:SER:OG	1:B:550:GLN:OE1	2.16	0.59
1:C:216:MET:HB2	1:C:220:LEU:HD23	1.84	0.59
1:C:413:ASP:OD2	1:C:414:VAL:N	2.35	0.59
1:D:566:MET:HE3	1:D:616:LEU:CD1	2.27	0.59
1:B:763:SER:OG	1:B:998:LEU:O	2.11	0.59
1:A:281:LEU:O	1:A:334:MET:CE	2.51	0.59
1:D:941:ALA:HA	1:D:944:LYS:HZ3	1.66	0.59
1:A:216:MET:HB2	1:A:220:LEU:HD23	1.85	0.59
1:C:472:ILE:HD11	1:C:496:ASN:HB3	1.85	0.59
1:A:561:VAL:O	1:A:985:LYS:NZ	2.34	0.59
1:D:472:ILE:HD11	1:D:496:ASN:HB3	1.84	0.59
1:A:281:LEU:O	1:A:334:MET:HE1	2.03	0.58
1:A:472:ILE:HD11	1:A:496:ASN:HB3	1.85	0.58
1:C:111:SER:HA	1:C:114:ARG:HD3	1.84	0.58
1:D:146:TRP:O	1:D:146:TRP:CD2	2.55	0.58
1:C:243:TRP:HZ3	1:C:284:THR:HG1	1.51	0.58
1:C:561:VAL:O	1:C:985:LYS:NZ	2.32	0.58
1:C:763:SER:OG	1:C:998:LEU:O	2.13	0.58
1:A:376:LEU:HD12	1:A:454:PHE:HB2	1.85	0.58
1:B:472:ILE:HD11	1:B:496:ASN:HB3	1.84	0.58
1:D:910:ARG:O	1:D:1146:ARG:NH2	2.37	0.58
1:C:545:SER:OG	1:C:550:GLN:OE1	2.16	0.58
1:C:145:CYS:O	1:C:146:TRP:O	2.22	0.58
1:D:545:SER:OG	1:D:550:GLN:OE1	2.15	0.57
1:D:111:SER:HA	1:D:114:ARG:HD3	1.85	0.57
1:B:566:MET:HE3	1:B:616:LEU:CD1	2.28	0.57
1:B:782:ASP:HB3	1:B:783:LYS:HD2	1.86	0.57
1:D:531:THR:OG1	1:D:974:MET:SD	2.59	0.57
1:D:941:ALA:HA	1:D:944:LYS:HZ1	1.69	0.57
1:D:167:ILE:HD12	1:D:168:LEU:N	2.20	0.56
1:D:234:LEU:HD12	1:D:235:PHE:H	1.70	0.56
1:B:167:ILE:HD12	1:B:168:LEU:N	2.20	0.56
1:B:235:PHE:CE1	1:B:291:HIS:CE1	2.80	0.56
1:C:978:LEU:HD11	1:C:988:MET:HG3	1.86	0.56
1:A:978:LEU:HD11	1:A:988:MET:HG3	1.86	0.56
1:A:188:PHE:HB2	1:A:219:THR:HG21	1.87	0.56
1:C:381:LEU:HD12	1:C:385:LEU:HD23	1.87	0.56
1:D:234:LEU:HD12	1:D:235:PHE:N	2.20	0.56
1:A:289:ILE:HG21	1:A:307:PHE:CD2	2.40	0.56
1:C:376:LEU:HD12	1:C:454:PHE:HB2	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:282:VAL:O	1:C:286:THR:HG23	2.06	0.55
1:A:292:LEU:HD22	1:A:330:LEU:HD12	1.88	0.55
1:A:305:PHE:CE1	1:B:332:VAL:HG11	2.42	0.55
1:D:216:MET:HB2	1:D:220:LEU:HD23	1.89	0.55
1:B:216:MET:HB2	1:B:220:LEU:HD23	1.88	0.55
1:C:405:VAL:HG13	1:C:432:LEU:HD13	1.87	0.55
1:C:309:ILE:O	1:C:313:SER:OG	2.23	0.55
1:B:376:LEU:HD12	1:B:454:PHE:HB2	1.89	0.55
1:C:544:GLU:OE2	1:C:544:GLU:N	2.34	0.55
1:D:566:MET:HE1	1:D:616:LEU:HD13	1.79	0.55
1:A:956:LEU:HB3	1:A:959:MET:HE3	1.87	0.55
1:C:562:TYR:CD1	1:C:629:LYS:HG2	2.41	0.55
1:A:509:GLU:HG3	1:A:972:ILE:HG12	1.87	0.55
1:C:423:PRO:HD2	1:C:424:LEU:N	2.22	0.55
1:D:531:THR:HA	1:D:974:MET:CE	2.36	0.55
1:A:267:MET:HA	1:A:352:LEU:HD13	1.89	0.54
1:A:562:TYR:CD1	1:A:629:LYS:HG2	2.41	0.54
1:C:794:LYS:HE3	1:C:1162:LEU:HD23	1.89	0.54
1:C:956:LEU:HB3	1:C:959:MET:HE3	1.87	0.54
1:A:511:GLU:OE1	1:A:993:ARG:NH2	2.40	0.54
1:A:531:THR:HA	1:A:974:MET:HE3	1.88	0.54
1:D:1035:GLU:HG2	1:D:1200:ARG:HG3	1.90	0.54
1:C:184:ALA:HB1	1:C:219:THR:HG23	1.90	0.54
1:C:511:GLU:OE1	1:C:993:ARG:NH2	2.40	0.54
1:A:277:THR:HG21	1:A:345:GLN:HG3	1.88	0.54
1:B:383:ILE:HD11	1:B:419:VAL:HG21	1.90	0.54
1:D:423:PRO:HD2	1:D:424:LEU:N	2.22	0.54
1:D:231:LEU:HD11	1:D:234:LEU:HD22	1.89	0.54
1:D:376:LEU:HD12	1:D:454:PHE:HB2	1.90	0.54
1:B:277:THR:HG21	1:B:345:GLN:HG3	1.89	0.54
1:B:511:GLU:OE1	1:B:993:ARG:NH2	2.41	0.54
1:B:626:ASN:ND2	1:B:628:THR:O	2.35	0.54
1:D:383:ILE:HD11	1:D:419:VAL:HG21	1.89	0.54
1:A:570:LYS:N	1:A:630:GLU:OE2	2.36	0.54
1:C:166:PRO:O	1:C:294:ARG:NH2	2.40	0.54
1:C:626:ASN:ND2	1:C:628:THR:O	2.36	0.54
1:B:180:GLN:HE22	1:B:238:VAL:HG21	1.73	0.53
1:C:123:LYS:HD2	1:C:241:ASN:ND2	2.22	0.53
1:C:172:ARG:NH1	1:C:232:ARG:O	2.41	0.53
1:B:289:ILE:HG21	1:B:307:PHE:CD2	2.43	0.53
1:C:239:PHE:HE1	1:C:284:THR:CG2	2.20	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:783:LYS:HD2	1:A:783:LYS:N	2.23	0.53
1:B:566:MET:SD	1:B:616:LEU:HB3	2.49	0.53
1:C:986:ASP:N	1:C:986:ASP:OD1	2.42	0.53
1:D:239:PHE:HD1	1:D:284:THR:HG23	1.74	0.53
1:A:332:VAL:HG11	1:D:305:PHE:CE1	2.44	0.53
1:B:172:ARG:NH1	1:B:232:ARG:O	2.41	0.53
1:C:133:ARG:CZ	1:C:170:VAL:HG11	2.38	0.53
1:C:355:GLU:HA	1:C:358:LYS:HE3	1.89	0.53
1:B:123:LYS:HE2	1:B:241:ASN:HD21	1.73	0.53
1:B:169:TRP:O	1:B:294:ARG:NH2	2.41	0.53
1:D:292:LEU:HD12	1:D:330:LEU:HD22	1.91	0.53
1:A:627:ILE:HG22	1:A:628:THR:HG23	1.89	0.53
1:B:513:LYS:HB2	1:B:972:ILE:HD11	1.89	0.53
1:A:940:LEU:HD23	1:B:483:PRO:HB3	1.90	0.53
1:B:289:ILE:HG21	1:B:307:PHE:HD2	1.75	0.52
1:C:289:ILE:HG21	1:C:307:PHE:CD2	2.44	0.52
1:D:282:VAL:O	1:D:286:THR:HG23	2.09	0.52
1:B:562:TYR:CD1	1:B:629:LYS:HG2	2.44	0.52
1:D:902:ILE:HD11	1:D:926:ASN:HB3	1.91	0.52
1:D:184:ALA:HB1	1:D:219:THR:HG23	1.90	0.52
1:B:412:MET:HE3	1:B:431:TYR:CG	2.44	0.52
1:C:841:LYS:NZ	1:C:858:TYR:OH	2.43	0.52
1:D:626:ASN:ND2	1:D:628:THR:O	2.35	0.52
1:C:783:LYS:HD2	1:C:783:LYS:N	2.24	0.52
1:D:214:LEU:HB3	1:D:244:LEU:HD21	1.91	0.52
1:D:511:GLU:OE1	1:D:993:ARG:NH2	2.42	0.52
1:D:513:LYS:HB2	1:D:972:ILE:HD11	1.89	0.52
1:D:841:LYS:NZ	1:D:858:TYR:OH	2.42	0.52
1:C:383:ILE:HD11	1:C:419:VAL:HG21	1.91	0.52
1:D:930:MET:HG3	1:D:931:GLN:HG3	1.92	0.52
1:A:902:ILE:HD11	1:A:926:ASN:HB3	1.92	0.52
1:B:776:PHE:HZ	1:B:848:GLU:HG3	1.75	0.52
1:A:122:LEU:HD13	1:A:187:SER:OG	2.10	0.51
1:B:844:HIS:CE1	1:B:845:HIS:CE1	2.98	0.51
1:B:317:TYR:HH	1:C:311:THR:HG1	1.40	0.51
1:C:277:THR:HG21	1:C:345:GLN:HG3	1.91	0.51
1:B:166:PRO:O	1:B:294:ARG:NH2	2.40	0.51
1:D:345:GLN:N	1:D:345:GLN:OE1	2.44	0.51
1:D:172:ARG:HG3	1:D:233:ASN:HA	1.92	0.51
1:A:282:VAL:O	1:A:286:THR:HG23	2.11	0.51
1:B:286:THR:HG22	1:B:305:PHE:HA	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:355:GLU:HA	1:D:358:LYS:HE3	1.92	0.51
1:D:876:TYR:CD1	1:D:876:TYR:O	2.63	0.51
1:D:1035:GLU:OE1	1:D:1200:ARG:NE	2.41	0.51
1:C:940:LEU:HD23	1:D:483:PRO:HB3	1.91	0.51
1:C:627:ILE:HG22	1:C:628:THR:HG23	1.92	0.51
1:B:986:ASP:OD1	1:B:986:ASP:N	2.43	0.51
1:B:1035:GLU:HG2	1:B:1200:ARG:HG3	1.92	0.51
1:C:1012:ILE:HD11	1:C:1196:VAL:CG2	2.41	0.51
1:B:783:LYS:HD2	1:B:783:LYS:N	2.25	0.51
1:A:286:THR:HG22	1:A:305:PHE:HA	1.93	0.50
1:B:379:SER:OG	1:B:458:SER:OG	2.14	0.50
1:C:435:SER:HB2	1:C:438:LYS:HG3	1.92	0.50
1:B:566:MET:HE1	1:B:616:LEU:HB3	1.93	0.50
1:A:332:VAL:HG13	1:D:309:ILE:HG21	1.93	0.50
1:A:355:GLU:HA	1:A:358:LYS:HE3	1.92	0.50
1:A:383:ILE:HD11	1:A:419:VAL:HG21	1.93	0.50
1:B:184:ALA:HB1	1:B:219:THR:HG23	1.93	0.50
1:A:626:ASN:ND2	1:A:628:THR:O	2.37	0.50
1:A:531:THR:OG1	1:A:974:MET:SD	2.59	0.50
1:B:1029:LEU:O	1:B:1034:ALA:N	2.44	0.50
1:D:776:PHE:HZ	1:D:848:GLU:HG3	1.77	0.50
1:A:1012:ILE:HD11	1:A:1196:VAL:CG2	2.41	0.50
1:B:902:ILE:HD11	1:B:926:ASN:HB3	1.93	0.50
1:D:562:TYR:CD1	1:D:629:LYS:HG2	2.46	0.50
1:A:325:TRP:CG	1:A:326:PRO:HD3	2.47	0.50
1:B:978:LEU:HD11	1:B:988:MET:HG3	1.91	0.50
1:A:1140:LEU:HD12	1:A:1143:ARG:HD3	1.93	0.50
1:B:355:GLU:HA	1:B:358:LYS:HE3	1.93	0.50
1:B:799:LYS:HD2	1:B:799:LYS:N	2.26	0.50
1:C:529:LEU:HD12	1:C:1182:ILE:HG12	1.94	0.50
1:A:529:LEU:HD12	1:A:1182:ILE:HG12	1.94	0.49
1:B:1035:GLU:OE1	1:B:1200:ARG:NE	2.45	0.49
1:C:286:THR:HG22	1:C:305:PHE:HA	1.93	0.49
1:D:286:THR:HG22	1:D:305:PHE:HA	1.94	0.49
1:D:289:ILE:HG21	1:D:307:PHE:HD2	1.77	0.49
1:A:582:TYR:CE2	1:A:715:GLU:HG3	2.47	0.49
1:C:570:LYS:N	1:C:630:GLU:OE2	2.37	0.49
1:A:113:LEU:HD21	1:A:252:MET:CE	2.42	0.49
1:C:413:ASP:OD2	1:C:415:GLN:N	2.41	0.49
1:C:902:ILE:HD11	1:C:926:ASN:HB3	1.92	0.49
1:C:609:ASN:ND2	1:C:1199:ILE:O	2.41	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:986:ASP:OD1	1:D:986:ASP:N	2.44	0.49
1:C:133:ARG:C	1:C:133:ARG:HD2	2.32	0.49
1:D:289:ILE:HG21	1:D:307:PHE:CD2	2.47	0.49
1:D:423:PRO:HD2	1:D:424:LEU:H	1.78	0.49
1:D:529:LEU:HD12	1:D:1182:ILE:HG12	1.94	0.49
1:A:113:LEU:CG	1:A:252:MET:SD	2.94	0.49
1:C:239:PHE:HD1	1:C:284:THR:CG2	2.08	0.49
1:D:570:LYS:N	1:D:630:GLU:OE2	2.39	0.49
1:A:225:THR:HG22	1:A:231:LEU:HD12	1.93	0.49
1:A:986:ASP:N	1:A:986:ASP:OD1	2.42	0.49
1:C:582:TYR:CE2	1:C:715:GLU:HG3	2.48	0.49
1:A:119:ASN:O	1:A:123:LYS:HG2	2.13	0.49
1:C:1012:ILE:HD11	1:C:1196:VAL:HG21	1.95	0.49
1:D:1029:LEU:O	1:D:1034:ALA:N	2.44	0.49
1:A:413:ASP:OD1	1:A:414:VAL:N	2.46	0.49
1:A:1029:LEU:O	1:A:1034:ALA:N	2.45	0.49
1:A:930:MET:HG3	1:A:931:GLN:HG3	1.95	0.48
1:C:267:MET:SD	1:C:356:ARG:NH1	2.86	0.48
1:C:119:ASN:O	1:C:123:LYS:HG2	2.13	0.48
1:B:282:VAL:O	1:B:286:THR:HG23	2.13	0.48
1:B:292:LEU:HD23	1:B:326:PRO:HB2	1.94	0.48
1:A:289:ILE:HG21	1:A:307:PHE:HD2	1.78	0.48
1:A:1014:GLU:HA	1:A:1017:LEU:HD23	1.95	0.48
1:B:412:MET:CE	1:B:431:TYR:HB3	2.43	0.48
1:A:1140:LEU:HG	1:B:764:PRO:HG3	1.95	0.48
1:C:566:MET:SD	1:C:616:LEU:HB3	2.54	0.48
1:C:794:LYS:HE2	1:C:1162:LEU:HD23	1.96	0.48
1:C:930:MET:HG3	1:C:931:GLN:HG3	1.95	0.48
1:A:859:MET:HG3	1:A:860:GLU:N	2.28	0.48
1:C:322:PRO:HG2	1:C:331:VAL:HG21	1.95	0.48
1:A:307:PHE:CZ	1:A:322:PRO:HD3	2.49	0.48
1:C:1029:LEU:O	1:C:1034:ALA:N	2.45	0.48
1:D:950:ARG:HG3	1:D:957:ALA:HB1	1.95	0.48
1:A:531:THR:HA	1:A:974:MET:CE	2.44	0.48
1:C:794:LYS:HE3	1:C:1162:LEU:CD2	2.43	0.48
1:D:1012:ILE:HD11	1:D:1196:VAL:CG2	2.44	0.48
1:A:763:SER:OG	1:A:998:LEU:O	2.12	0.48
1:C:169:TRP:O	1:C:294:ARG:NH2	2.47	0.48
1:D:387:MET:SD	1:D:419:VAL:HG11	2.53	0.48
1:D:605:SER:HB2	1:D:1001:THR:HG21	1.95	0.48
1:A:120:PHE:CE1	1:A:245:ALA:O	2.67	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:307:PHE:CZ	1:B:322:PRO:HD3	2.49	0.47
1:C:566:MET:HE3	1:C:616:LEU:CD1	2.34	0.47
1:D:123:LYS:HE3	1:D:187:SER:HB3	1.96	0.47
1:C:214:LEU:HB3	1:C:244:LEU:HD11	1.96	0.47
1:B:582:TYR:CE2	1:B:715:GLU:HG3	2.49	0.47
1:B:605:SER:HB2	1:B:1001:THR:HG21	1.95	0.47
1:B:1012:ILE:HD11	1:B:1196:VAL:CG2	2.44	0.47
1:D:971:SER:O	1:D:974:MET:HG2	2.14	0.47
1:A:605:SER:HB2	1:A:1001:THR:HG21	1.96	0.47
1:B:412:MET:CE	1:B:431:TYR:CG	2.98	0.47
1:A:225:THR:HG22	1:A:231:LEU:CD1	2.44	0.47
1:D:880:LEU:HD23	1:D:917:ILE:HG12	1.95	0.47
1:A:1012:ILE:HD11	1:A:1196:VAL:HG21	1.96	0.47
1:B:529:LEU:HD12	1:B:1182:ILE:HG12	1.95	0.47
1:C:170:VAL:CG2	1:C:291:HIS:CE1	2.97	0.47
1:C:324:ILE:CD1	1:C:326:PRO:HD2	2.42	0.47
1:D:609:ASN:ND2	1:D:1199:ILE:O	2.41	0.47
1:D:773:LYS:HB3	1:D:773:LYS:HE3	1.72	0.47
1:A:541:GLU:OE2	1:A:954:SER:OG	2.33	0.47
1:A:609:ASN:ND2	1:A:1199:ILE:O	2.42	0.47
1:A:1006:TYR:CZ	1:A:1200:ARG:HD2	2.44	0.47
1:C:605:SER:HB2	1:C:1001:THR:HG21	1.96	0.47
1:C:880:LEU:HD23	1:C:917:ILE:HG12	1.97	0.47
1:D:113:LEU:HD11	1:D:252:MET:HG3	1.96	0.47
1:B:566:MET:SD	1:B:616:LEU:HD22	2.54	0.47
1:D:435:SER:HB2	1:D:438:LYS:HG3	1.97	0.47
1:A:585:PHE:CZ	1:A:1027:GLN:HB2	2.50	0.47
1:B:305:PHE:CE1	1:C:332:VAL:HG11	2.50	0.47
1:D:413:ASP:O	1:D:417:ARG:HG2	2.14	0.47
1:D:900:LYS:HZ3	1:D:904:ASN:HD21	1.62	0.47
1:C:305:PHE:CE1	1:D:332:VAL:HG11	2.49	0.47
1:A:978:LEU:HD12	1:A:988:MET:HG3	1.94	0.46
1:B:866:LEU:HD23	1:B:1156:ARG:HG3	1.97	0.46
1:D:541:GLU:OE2	1:D:954:SER:OG	2.34	0.46
1:C:235:PHE:CD2	1:C:291:HIS:CD2	3.02	0.46
1:C:423:PRO:HD2	1:C:424:LEU:H	1.80	0.46
1:D:566:MET:HE1	1:D:616:LEU:CD1	2.39	0.46
1:A:408:CYS:SG	1:A:410:THR:OG1	2.72	0.46
1:B:930:MET:HG2	1:B:963:PRO:HB3	1.96	0.46
1:C:866:LEU:HB3	1:C:1156:ARG:NH1	2.31	0.46
1:A:373:HIS:HB3	1:A:403:TYR:CE1	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:408:CYS:SG	1:D:410:THR:OG1	2.73	0.46
1:A:576:GLU:OE2	1:A:576:GLU:HA	2.15	0.46
1:A:880:LEU:HD23	1:A:917:ILE:HG12	1.98	0.46
1:B:378:VAL:HG11	1:B:385:LEU:HD21	1.97	0.46
1:C:576:GLU:OE1	1:C:577:GLY:N	2.49	0.46
1:D:291:HIS:O	1:D:294:ARG:HB3	2.16	0.46
1:A:866:LEU:HD23	1:A:1156:ARG:HG3	1.96	0.46
1:A:1010:MET:HE3	1:A:1198:LEU:HD11	1.96	0.46
1:B:385:LEU:HD11	1:B:456:LEU:HD13	1.97	0.46
1:C:519:LEU:O	1:C:523:CYS:N	2.47	0.46
1:D:793:ALA:CB	1:D:876:TYR:OH	2.59	0.46
1:B:423:PRO:HD2	1:B:424:LEU:H	1.80	0.46
1:B:844:HIS:HE1	1:B:845:HIS:CE1	2.34	0.46
1:B:940:LEU:HD23	1:C:483:PRO:HB3	1.97	0.46
1:C:636:ILE:O	1:C:640:GLU:N	2.46	0.46
1:D:866:LEU:HD23	1:D:1156:ARG:HG3	1.98	0.46
1:A:221:PRO:HA	1:A:224:ILE:HG22	1.98	0.46
1:C:541:GLU:OE2	1:C:954:SER:OG	2.33	0.46
1:D:149:PRO:O	1:D:151:GLN:HG3	2.16	0.46
1:D:221:PRO:HA	1:D:224:ILE:HG22	1.98	0.46
1:D:786:LYS:H	1:D:786:LYS:CD	2.24	0.46
1:C:782:ASP:OD2	1:C:859:MET:HG2	2.16	0.46
1:D:993:ARG:HB3	1:D:998:LEU:HB2	1.98	0.46
1:B:880:LEU:HD23	1:B:917:ILE:HG12	1.98	0.45
1:D:582:TYR:CE2	1:D:715:GLU:HG3	2.51	0.45
1:D:1012:ILE:HD11	1:D:1196:VAL:HG21	1.98	0.45
1:C:221:PRO:HA	1:C:224:ILE:HG22	1.97	0.45
1:C:373:HIS:HB3	1:C:403:TYR:CE1	2.51	0.45
1:B:570:LYS:N	1:B:630:GLU:OE2	2.40	0.45
1:D:133:ARG:CZ	1:D:170:VAL:HG11	2.46	0.45
1:D:946:GLU:O	1:D:950:ARG:HG3	2.16	0.45
1:B:307:PHE:HZ	1:B:322:PRO:HD3	1.81	0.45
1:C:786:LYS:H	1:C:786:LYS:CD	2.25	0.45
1:B:373:HIS:HB3	1:B:403:TYR:CE1	2.52	0.45
1:B:993:ARG:HB3	1:B:998:LEU:HB2	1.98	0.45
1:D:578:LYS:HE2	1:D:715:GLU:HG2	1.97	0.45
1:D:1038:ILE:HD11	1:D:1199:ILE:HD11	1.98	0.45
1:A:552:MET:HG2	1:A:1181:LEU:HD22	1.99	0.45
1:B:609:ASN:ND2	1:B:1199:ILE:O	2.43	0.45
1:B:935:LYS:HE2	1:B:935:LYS:HB2	1.70	0.45
1:B:519:LEU:O	1:B:523:CYS:N	2.48	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:789:SER:O	1:B:789:SER:OG	2.34	0.45
1:C:408:CYS:SG	1:C:410:THR:OG1	2.75	0.45
1:C:562:TYR:CE1	1:C:629:LYS:HG3	2.52	0.45
1:B:329:LEU:O	1:B:333:ILE:HG22	2.16	0.45
1:C:978:LEU:HD12	1:C:988:MET:HG3	1.94	0.45
1:D:301:LEU:HD23	1:D:301:LEU:HA	1.80	0.45
1:D:512:CYS:O	1:D:516:MET:HG3	2.17	0.45
1:D:978:LEU:HD11	1:D:988:MET:HG3	1.94	0.45
1:B:773:LYS:HB3	1:B:773:LYS:HE3	1.63	0.45
1:B:1012:ILE:HD11	1:B:1196:VAL:HG21	1.98	0.45
1:C:789:SER:O	1:C:789:SER:OG	2.35	0.45
1:D:373:HIS:HB3	1:D:403:TYR:CE1	2.52	0.45
1:A:317:TYR:OH	1:B:311:THR:HG23	2.16	0.45
1:B:423:PRO:HD2	1:B:424:LEU:N	2.31	0.45
1:C:978:LEU:CD1	1:C:988:MET:CG	2.91	0.45
1:C:1180:VAL:HG13	1:C:1197:TYR:HE2	1.82	0.44
1:A:789:SER:O	1:A:789:SER:OG	2.36	0.44
1:A:1180:VAL:HG13	1:A:1197:TYR:HE2	1.82	0.44
1:C:552:MET:HG2	1:C:1181:LEU:HD22	1.99	0.44
1:A:578:LYS:HE2	1:A:715:GLU:HG2	1.99	0.44
1:C:629:LYS:HB2	1:C:632:ASN:HB2	1.99	0.44
1:A:278:LEU:HD23	1:A:278:LEU:HA	1.80	0.44
1:B:387:MET:SD	1:B:419:VAL:HG11	2.57	0.44
1:D:549:TRP:CE2	1:D:550:GLN:HG3	2.53	0.44
1:A:519:LEU:O	1:A:523:CYS:N	2.47	0.44
1:B:439:ASP:O	1:B:443:MET:HG3	2.18	0.44
1:B:512:CYS:HB2	1:B:975:LEU:HD21	2.00	0.44
1:B:541:GLU:OE2	1:B:954:SER:OG	2.34	0.44
1:C:566:MET:SD	1:C:616:LEU:HD22	2.57	0.44
1:C:1014:GLU:HA	1:C:1017:LEU:HD23	1.99	0.44
1:D:307:PHE:CZ	1:D:322:PRO:HD3	2.53	0.44
1:D:281:LEU:HD11	1:D:338:ALA:HA	2.00	0.44
1:B:435:SER:HB2	1:B:438:LYS:HG3	2.00	0.44
1:B:900:LYS:HZ3	1:B:904:ASN:HD21	1.64	0.44
1:A:282:VAL:HA	1:A:312:PHE:HE2	1.83	0.43
1:A:562:TYR:CE1	1:A:629:LYS:HG3	2.51	0.43
1:C:1010:MET:HE3	1:C:1198:LEU:HD11	2.00	0.43
1:B:524:PRO:O	1:B:1197:TYR:OH	2.26	0.43
1:D:439:ASP:O	1:D:443:MET:HG3	2.18	0.43
1:D:827:SER:HB3	1:D:830:GLU:HB2	2.00	0.43
1:A:292:LEU:HD23	1:A:327:SER:HA	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:978:LEU:HD12	1:A:988:MET:CG	2.47	0.43
1:C:946:GLU:O	1:C:950:ARG:HG3	2.18	0.43
1:C:1038:ILE:HD11	1:C:1199:ILE:HD11	2.00	0.43
1:D:566:MET:SD	1:D:616:LEU:HB3	2.59	0.43
1:B:239:PHE:CE1	1:B:284:THR:HG23	2.52	0.43
1:B:552:MET:HG2	1:B:1181:LEU:HD22	2.00	0.43
1:C:978:LEU:HD12	1:C:988:MET:CG	2.48	0.43
1:B:841:LYS:NZ	1:B:858:TYR:OH	2.52	0.43
1:A:798:PHE:CD2	1:A:802:LEU:HD11	2.54	0.43
1:B:1038:ILE:HD11	1:B:1199:ILE:HD11	1.99	0.43
1:C:236:ILE:HA	1:C:237:PRO:CG	2.48	0.43
1:D:978:LEU:HD12	1:D:988:MET:HG3	1.98	0.43
1:A:549:TRP:CE2	1:A:550:GLN:HG3	2.54	0.43
1:B:214:LEU:HB3	1:B:244:LEU:HD11	2.01	0.43
1:B:221:PRO:HA	1:B:224:ILE:HG22	2.01	0.43
1:B:123:LYS:HD2	1:B:241:ASN:OD1	2.19	0.43
1:B:1180:VAL:HG13	1:B:1197:TYR:HE2	1.84	0.43
1:C:229:PRO:N	1:C:230:PRO:HD2	2.34	0.43
1:C:549:TRP:CE2	1:C:550:GLN:HG3	2.54	0.43
1:C:782:ASP:OD2	1:C:859:MET:CG	2.67	0.43
1:A:325:TRP:HB2	1:D:302:LEU:HD21	2.01	0.43
1:B:798:PHE:CD2	1:B:802:LEU:HD11	2.54	0.43
1:B:972:ILE:HD13	1:B:972:ILE:HA	1.91	0.43
1:D:220:LEU:HA	1:D:223:ILE:HG13	2.00	0.43
1:D:790:TYR:N	1:D:790:TYR:CD1	2.87	0.43
1:D:814:LEU:HD23	1:D:814:LEU:HA	1.81	0.43
1:D:1041:TYR:HB3	1:D:1195:ILE:HB	2.00	0.43
1:B:549:TRP:CE2	1:B:550:GLN:HG3	2.54	0.42
1:B:944:LYS:HD3	1:B:944:LYS:N	2.34	0.42
1:C:237:PRO:HB2	1:C:240:LEU:HD12	2.00	0.42
1:C:446:LYS:HE2	1:C:446:LYS:HB2	1.68	0.42
1:A:398:ARG:HG2	1:A:398:ARG:HH11	1.84	0.42
1:B:181:VAL:HG22	1:B:222:PHE:HB3	2.00	0.42
1:B:355:GLU:N	1:B:355:GLU:OE1	2.52	0.42
1:B:982:SER:HA	1:B:985:LYS:O	2.19	0.42
1:C:531:THR:HA	1:C:974:MET:HG3	2.01	0.42
1:A:110:ARG:CZ	1:A:114:ARG:HD2	2.49	0.42
1:A:282:VAL:HA	1:A:312:PHE:CE2	2.54	0.42
1:C:1159:HIS:CD2	1:C:1159:HIS:C	2.92	0.42
1:B:282:VAL:HA	1:B:312:PHE:HE2	1.83	0.42
1:C:814:LEU:HD23	1:C:814:LEU:HA	1.82	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:1014:GLU:HA	1:C:1014:GLU:OE2	2.20	0.42
1:D:241:ASN:HA	1:D:244:LEU:HD23	2.01	0.42
1:A:841:LYS:NZ	1:A:858:TYR:OH	2.52	0.42
1:A:1154:LYS:HA	1:A:1157:MET:HE2	2.01	0.42
1:B:978:LEU:CD1	1:B:988:MET:CG	2.94	0.42
1:C:220:LEU:HA	1:C:223:ILE:HG13	2.00	0.42
1:C:221:PRO:HB2	1:C:236:ILE:HG21	2.02	0.42
1:C:221:PRO:O	1:C:225:THR:HG23	2.19	0.42
1:C:982:SER:HA	1:C:985:LYS:O	2.20	0.42
1:D:982:SER:HA	1:D:985:LYS:O	2.19	0.42
1:A:790:TYR:N	1:A:790:TYR:CD1	2.87	0.42
1:B:113:LEU:HD11	1:B:252:MET:HG3	2.02	0.42
1:B:636:ILE:O	1:B:640:GLU:N	2.46	0.42
1:A:304:SER:HA	1:A:307:PHE:HB3	2.02	0.42
1:B:220:LEU:HA	1:B:223:ILE:HG13	2.01	0.42
1:D:552:MET:HG2	1:D:1181:LEU:HD22	2.01	0.42
1:D:1143:ARG:NH2	1:D:1148:GLU:HG2	2.35	0.42
1:A:376:LEU:HD11	1:A:456:LEU:HD11	2.02	0.42
1:A:398:ARG:HG2	1:A:398:ARG:NH1	2.34	0.42
1:A:781:LEU:HD23	1:A:859:MET:HE2	2.00	0.42
1:A:839:ASP:OD1	1:A:862:SER:OG	2.25	0.42
1:B:1158:LYS:HB3	1:B:1158:LYS:HE3	1.70	0.42
1:C:324:ILE:HD12	1:C:327:SER:HB2	2.02	0.42
1:A:307:PHE:HZ	1:A:322:PRO:HD3	1.84	0.42
1:A:524:PRO:O	1:A:1197:TYR:OH	2.26	0.42
1:B:517:LEU:HD22	1:B:881:VAL:HG13	2.02	0.42
1:C:798:PHE:CD2	1:C:802:LEU:HD11	2.54	0.42
1:A:446:LYS:HB2	1:A:446:LYS:HE2	1.69	0.42
1:B:1192:PRO:O	1:B:1193:SER:OG	2.37	0.42
1:C:790:TYR:N	1:C:790:TYR:CD1	2.87	0.42
1:D:519:LEU:O	1:D:523:CYS:N	2.50	0.42
1:D:1180:VAL:HG13	1:D:1197:TYR:HE2	1.84	0.42
1:A:423:PRO:CD	1:A:424:LEU:N	2.83	0.41
1:A:629:LYS:HB2	1:A:632:ASN:HB2	2.02	0.41
1:A:866:LEU:HB3	1:A:1156:ARG:NH1	2.35	0.41
1:B:292:LEU:HD13	1:B:330:LEU:HD22	2.02	0.41
1:B:299:LEU:HD23	1:B:299:LEU:HA	1.82	0.41
1:B:376:LEU:HD11	1:B:456:LEU:HD11	2.00	0.41
1:B:837:LEU:HD13	1:B:872:CYS:SG	2.60	0.41
1:C:993:ARG:HB3	1:C:998:LEU:HB2	2.01	0.41
1:D:173:LYS:HD2	1:D:173:LYS:HA	1.87	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:144:GLY:HA3	1:A:150:LYS:HA	2.02	0.41
1:A:1014:GLU:HA	1:A:1014:GLU:OE2	2.20	0.41
1:B:978:LEU:HD12	1:B:988:MET:HG3	1.96	0.41
1:C:163:ASN:OD1	1:C:163:ASN:N	2.53	0.41
1:A:214:LEU:HB3	1:A:244:LEU:HD11	2.02	0.41
1:A:490:GLN:HE22	1:A:976:ASP:HA	1.86	0.41
1:A:993:ARG:HB3	1:A:998:LEU:HB2	2.02	0.41
1:C:222:PHE:O	1:C:225:THR:OG1	2.38	0.41
1:D:163:ASN:OD1	1:D:163:ASN:N	2.53	0.41
1:D:278:LEU:HD23	1:D:278:LEU:HA	1.84	0.41
1:D:798:PHE:CD2	1:D:802:LEU:HD11	2.54	0.41
1:A:220:LEU:HA	1:A:223:ILE:HG13	2.03	0.41
1:A:311:THR:HG23	1:D:317:TYR:OH	2.21	0.41
1:A:595:LEU:HD11	1:A:622:CYS:HB3	2.03	0.41
1:A:947:LYS:NZ	1:B:481:PHE:CD1	2.68	0.41
1:C:110:ARG:CZ	1:C:114:ARG:HD2	2.50	0.41
1:C:786:LYS:HD2	1:C:786:LYS:N	2.26	0.41
1:C:935:LYS:HE3	1:D:502:PHE:HB2	2.01	0.41
1:D:935:LYS:HB2	1:D:935:LYS:HE2	1.75	0.41
1:A:946:GLU:O	1:A:950:ARG:HG3	2.19	0.41
1:B:562:TYR:CE1	1:B:629:LYS:HG3	2.56	0.41
1:C:536:THR:HA	1:C:560:GLU:OE2	2.20	0.41
1:A:299:LEU:HD23	1:A:299:LEU:HA	1.87	0.41
1:B:436:ALA:HB3	1:B:474:ARG:HG2	2.01	0.41
1:C:130:TYR:HE2	1:C:287:CYS:HB3	1.84	0.41
1:C:376:LEU:HD11	1:C:456:LEU:HD11	2.01	0.41
1:C:538:ARG:HA	1:C:538:ARG:HD3	1.94	0.41
1:C:1035:GLU:HG2	1:C:1200:ARG:HG3	2.02	0.41
1:D:238:VAL:O	1:D:241:ASN:HB3	2.20	0.41
1:D:412:MET:HB3	1:D:417:ARG:HD3	2.01	0.41
1:A:423:PRO:HD2	1:A:424:LEU:H	1.82	0.41
1:A:898:ASP:HB3	1:A:921:LEU:HD22	2.02	0.41
1:C:490:GLN:HE22	1:C:976:ASP:HA	1.85	0.41
1:D:381:LEU:HD12	1:D:385:LEU:HD22	2.02	0.41
1:A:122:LEU:HD12	1:A:123:LYS:N	2.36	0.41
1:A:982:SER:HA	1:A:985:LYS:O	2.20	0.41
1:A:1154:LYS:O	1:A:1158:LYS:HG3	2.20	0.41
1:B:110:ARG:CZ	1:B:114:ARG:HD2	2.51	0.41
1:B:981:GLN:OE1	1:B:988:MET:CE	2.69	0.41
1:C:981:GLN:OE1	1:C:988:MET:CE	2.69	0.41
1:D:239:PHE:CD1	1:D:284:THR:HG23	2.52	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:560:GLU:HB2	1:D:562:TYR:CZ	2.56	0.41
1:D:976:ASP:N	1:D:976:ASP:OD1	2.54	0.41
1:D:981:GLN:OE1	1:D:988:MET:CE	2.69	0.41
1:D:1154:LYS:HA	1:D:1157:MET:HE2	2.03	0.41
1:B:497:LYS:HE3	1:B:497:LYS:HB3	1.81	0.41
1:B:978:LEU:HD12	1:B:988:MET:CG	2.50	0.41
1:B:989:ILE:O	1:B:993:ARG:HG3	2.21	0.41
1:B:1041:TYR:HB3	1:B:1195:ILE:HB	2.03	0.41
1:C:146:TRP:HA	1:C:146:TRP:CE3	2.55	0.41
1:C:595:LEU:HD11	1:C:622:CYS:HB3	2.03	0.41
1:C:633:SER:O	1:C:636:ILE:HG22	2.21	0.41
1:C:794:LYS:CE	1:C:1162:LEU:CD2	2.97	0.41
1:D:110:ARG:CZ	1:D:114:ARG:HD2	2.50	0.41
1:D:436:ALA:HB3	1:D:474:ARG:HG2	2.02	0.41
1:D:490:GLN:HE22	1:D:976:ASP:HA	1.85	0.41
1:D:989:ILE:O	1:D:993:ARG:HG3	2.21	0.41
1:A:636:ILE:O	1:A:640:GLU:N	2.45	0.41
1:B:408:CYS:SG	1:B:410:THR:OG1	2.75	0.41
1:B:412:MET:HE3	1:B:431:TYR:CB	2.51	0.41
1:B:466:ALA:O	1:B:470:GLN:HG3	2.21	0.41
1:B:1014:GLU:HA	1:B:1017:LEU:HD23	2.02	0.41
1:C:894:ASP:OD2	1:C:894:ASP:N	2.53	0.41
1:C:976:ASP:OD1	1:C:976:ASP:N	2.54	0.41
1:D:129:LEU:HD23	1:D:129:LEU:HA	1.87	0.41
1:D:898:ASP:HB3	1:D:921:LEU:HD22	2.02	0.41
1:A:301:LEU:HD12	1:A:301:LEU:HA	1.83	0.40
1:A:566:MET:HB2	1:A:622:CYS:SG	2.61	0.40
1:A:1038:ILE:HD11	1:A:1199:ILE:HD11	2.02	0.40
1:A:1041:TYR:HB3	1:A:1195:ILE:HB	2.03	0.40
1:A:1140:LEU:HD12	1:A:1140:LEU:HA	1.81	0.40
1:B:827:SER:HB3	1:B:830:GLU:HG3	2.02	0.40
1:C:307:PHE:CD1	1:C:320:VAL:HG23	2.56	0.40
1:C:517:LEU:HD22	1:C:881:VAL:HG13	2.03	0.40
1:D:299:LEU:HD23	1:D:299:LEU:HA	1.81	0.40
1:A:271:VAL:HG23	1:A:349:LEU:HD21	2.03	0.40
1:A:401:ASP:OD1	1:A:401:ASP:N	2.53	0.40
1:B:237:PRO:HB2	1:B:240:LEU:HD12	2.03	0.40
1:C:292:LEU:HD13	1:C:330:LEU:HD22	2.04	0.40
1:C:989:ILE:O	1:C:993:ARG:HG3	2.21	0.40
1:D:633:SER:O	1:D:636:ILE:HG22	2.22	0.40
1:D:636:ILE:O	1:D:640:GLU:N	2.46	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:1143:ARG:HH21	1:D:1148:GLU:HG2	1.85	0.40
1:A:509:GLU:HA	1:A:975:LEU:HD12	2.02	0.40
1:B:123:LYS:HE3	1:B:187:SER:HB3	2.03	0.40
1:B:1014:GLU:HA	1:B:1014:GLU:OE2	2.22	0.40
1:C:122:LEU:HD22	1:C:183:VAL:HG13	2.02	0.40
1:C:466:ALA:O	1:C:470:GLN:HG3	2.21	0.40
1:D:376:LEU:HD11	1:D:456:LEU:HD11	2.02	0.40
1:A:566:MET:SD	1:A:616:LEU:HD13	2.61	0.40
1:B:229:PRO:N	1:B:230:PRO:HD2	2.36	0.40
1:C:387:MET:HE3	1:C:387:MET:HA	2.02	0.40
1:C:1017:LEU:HA	1:C:1017:LEU:HD13	1.91	0.40
1:D:525:ALA:HA	1:D:967:GLY:HA3	2.04	0.40
1:D:560:GLU:O	1:D:625:ILE:HA	2.21	0.40
1:B:536:THR:HA	1:B:560:GLU:OE2	2.22	0.40
1:C:866:LEU:HD23	1:C:1156:ARG:HG3	2.03	0.40
1:D:229:PRO:N	1:D:230:PRO:HD2	2.36	0.40
1:D:387:MET:HA	1:D:387:MET:CE	2.52	0.40
1:D:497:LYS:HE3	1:D:497:LYS:HB3	1.81	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	883/1235 (72%)	865 (98%)	17 (2%)	1 (0%)	51	75
1	B	883/1235 (72%)	863 (98%)	19 (2%)	1 (0%)	51	75
1	C	883/1235 (72%)	862 (98%)	20 (2%)	1 (0%)	51	75
1	D	883/1235 (72%)	864 (98%)	18 (2%)	1 (0%)	51	75
All	All	3532/4940 (72%)	3454 (98%)	74 (2%)	4 (0%)	54	75

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	149	PRO
1	B	149	PRO
1	C	149	PRO
1	D	149	PRO

### 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	786/1086 (72%)	778 (99%)	8 (1%)	76	88
1	B	786/1086 (72%)	777 (99%)	9 (1%)	73	86
1	C	786/1086 (72%)	776 (99%)	10 (1%)	69	84
1	D	786/1086 (72%)	779 (99%)	7 (1%)	78	89
All	All	3144/4344 (72%)	3110 (99%)	34 (1%)	74	86

All (34) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	174	MET
1	A	267	MET
1	A	294	ARG
1	A	354	MET
1	A	544	GLU
1	A	892	GLU
1	A	1026	PHE
1	A	1162	LEU
1	B	270	GLN
1	B	602	ASP
1	B	789	SER
1	B	974	MET
1	B	976	ASP
1	B	1010	MET
1	B	1026	PHE
1	B	1162	LEU
1	B	1176	THR
1	C	163	ASN

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Mol	Chain	Res	Type
1	C	243	TRP
1	C	306	TYR
1	C	458	SER
1	C	632	ASN
1	C	789	SER
1	C	848	GLU
1	C	974	MET
1	C	1010	MET
1	C	1026	PHE
1	D	174	MET
1	D	241	ASN
1	D	281	LEU
1	D	947	LYS
1	D	1026	PHE
1	D	1162	LEU
1	D	1176	THR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (42) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	156	ASN
1	A	218	ASN
1	A	490	GLN
1	A	535	HIS
1	A	632	ASN
1	A	844	HIS
1	A	845	HIS
1	A	904	ASN
1	A	1159	HIS
1	B	218	ASN
1	B	270	GLN
1	B	490	GLN
1	B	505	HIS
1	B	535	HIS
1	B	614	HIS
1	B	632	ASN
1	B	844	HIS
1	B	845	HIS
1	B	904	ASN
1	B	1159	HIS
1	C	156	ASN
1	C	218	ASN

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Mol	Chain	Res	Type
1	C	241	ASN
1	C	291	HIS
1	C	415	GLN
1	C	490	GLN
1	C	535	HIS
1	C	632	ASN
1	C	844	HIS
1	C	845	HIS
1	C	904	ASN
1	C	1159	HIS
1	D	156	ASN
1	D	218	ASN
1	D	241	ASN
1	D	291	HIS
1	D	490	GLN
1	D	535	HIS
1	D	632	ASN
1	D	845	HIS
1	D	904	ASN
1	D	1159	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 23 ligands modelled in this entry, 23 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.

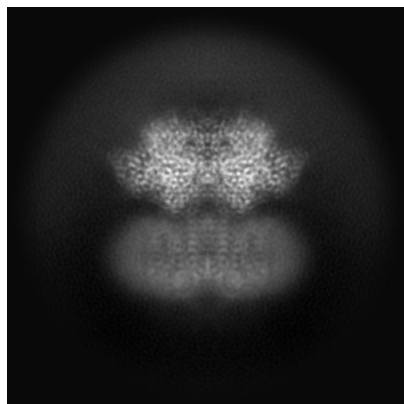
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-34853. These allow visual inspection of the internal detail of the map and identification of artifacts.

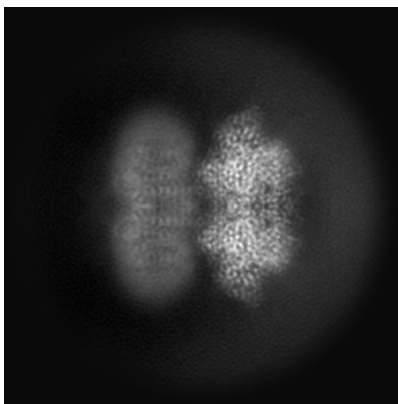
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

### 6.1 Orthogonal projections [i](#)

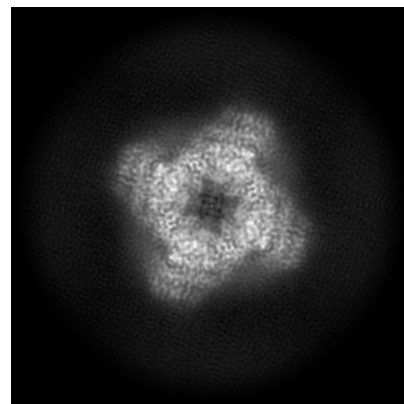
#### 6.1.1 Primary map



X

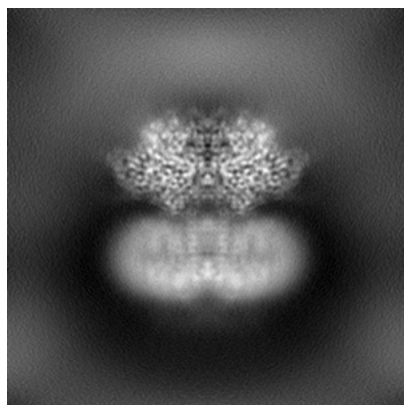


Y

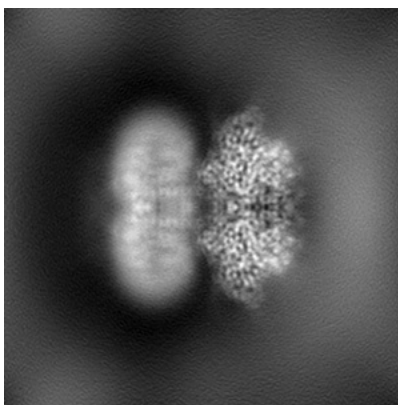


Z

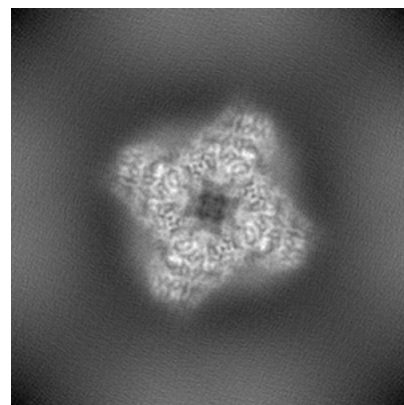
#### 6.1.2 Raw map



X



Y

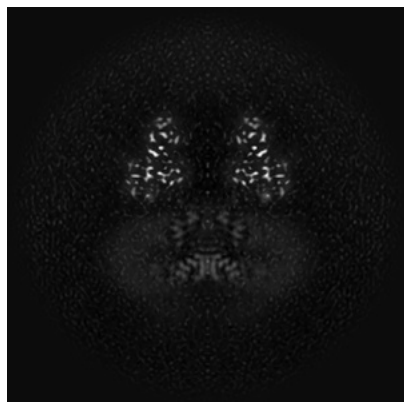


Z

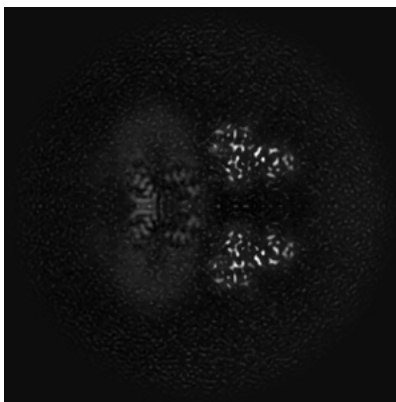
The images above show the map projected in three orthogonal directions.

## 6.2 Central slices [i](#)

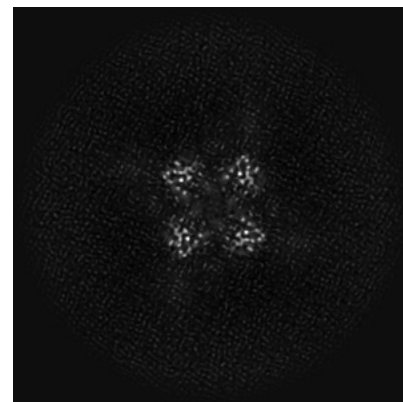
### 6.2.1 Primary map



X Index: 128

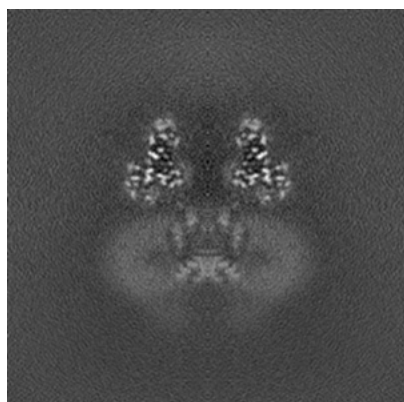


Y Index: 128

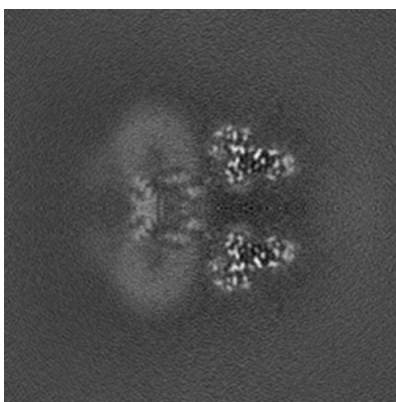


Z Index: 128

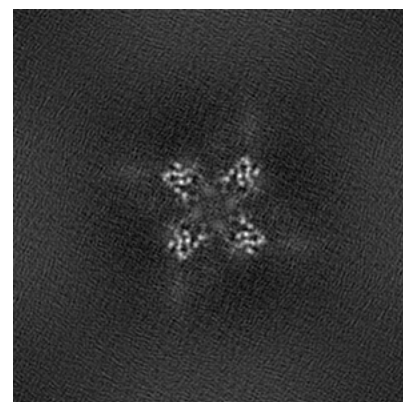
### 6.2.2 Raw map



X Index: 128



Y Index: 128

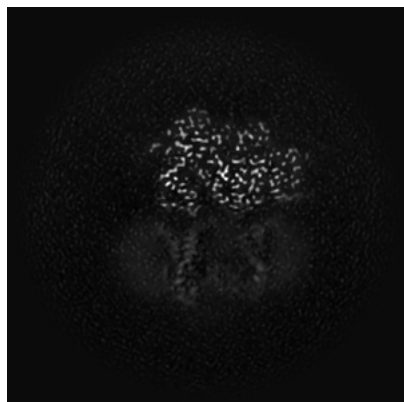


Z Index: 128

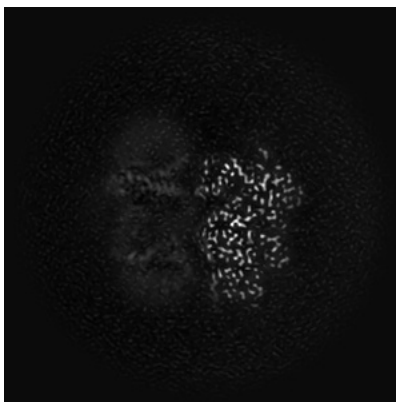
The images above show central slices of the map in three orthogonal directions.

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

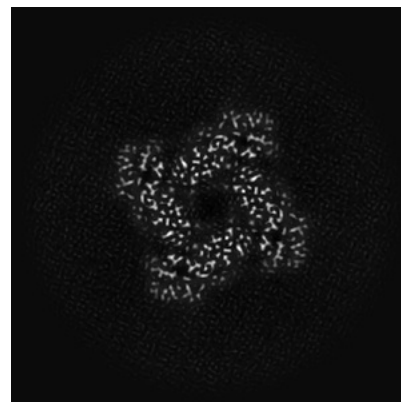
### 6.3.1 Primary map



X Index: 152

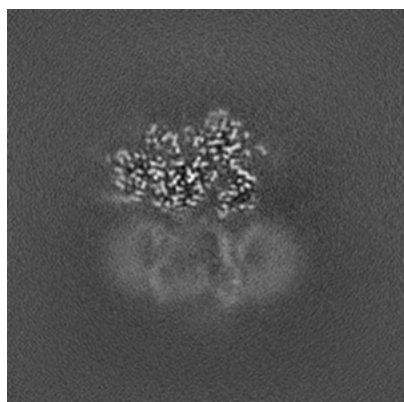


Y Index: 152

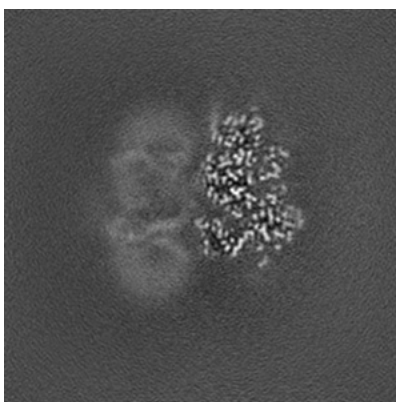


Z Index: 152

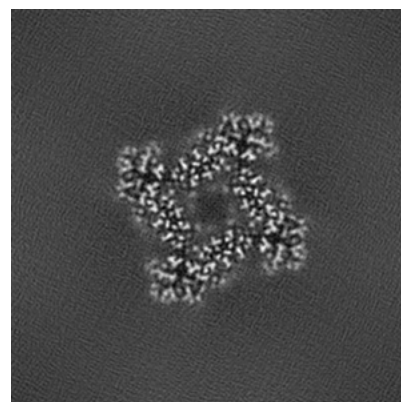
### 6.3.2 Raw map



X Index: 104



Y Index: 104

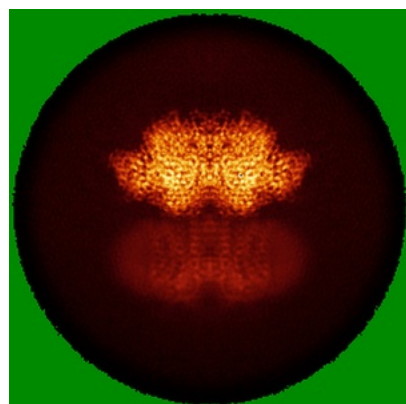


Z Index: 152

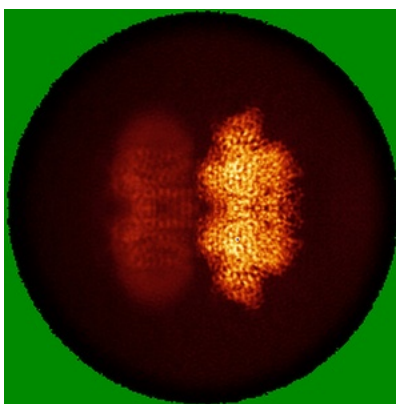
The images above show the largest variance slices of the map in three orthogonal directions.

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

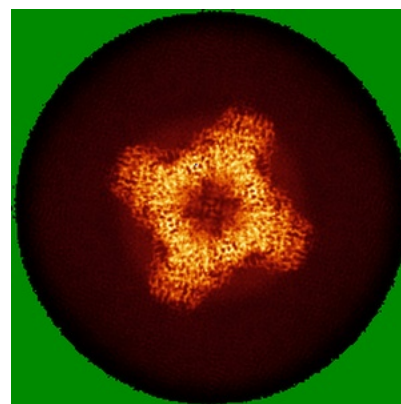
### 6.4.1 Primary map



X

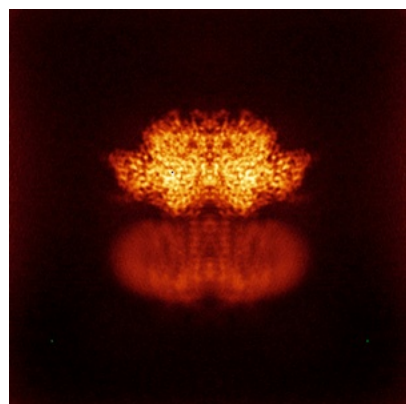


Y

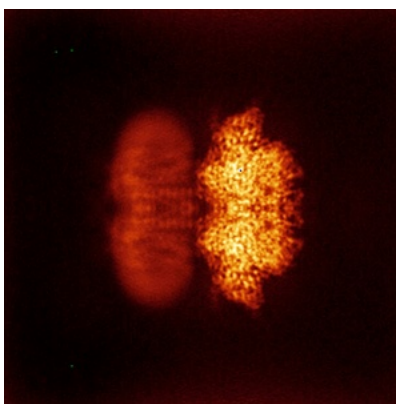


Z

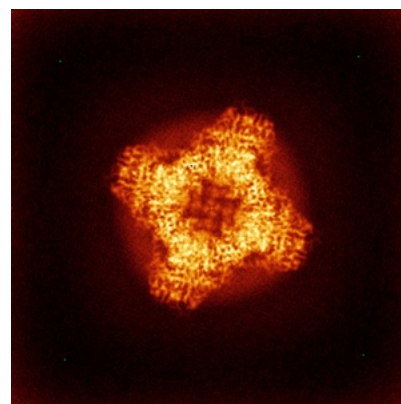
### 6.4.2 Raw map



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](#)

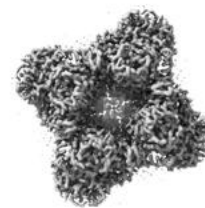
### 6.5.1 Primary map



X



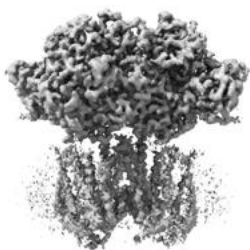
Y



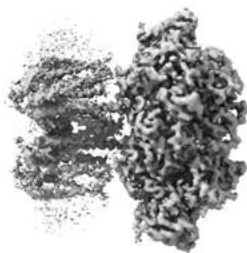
Z

The images above show the 3D surface view of the map at the recommended contour level 0.641. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

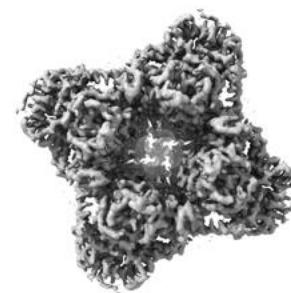
### 6.5.2 Raw map



X



Y



Z

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

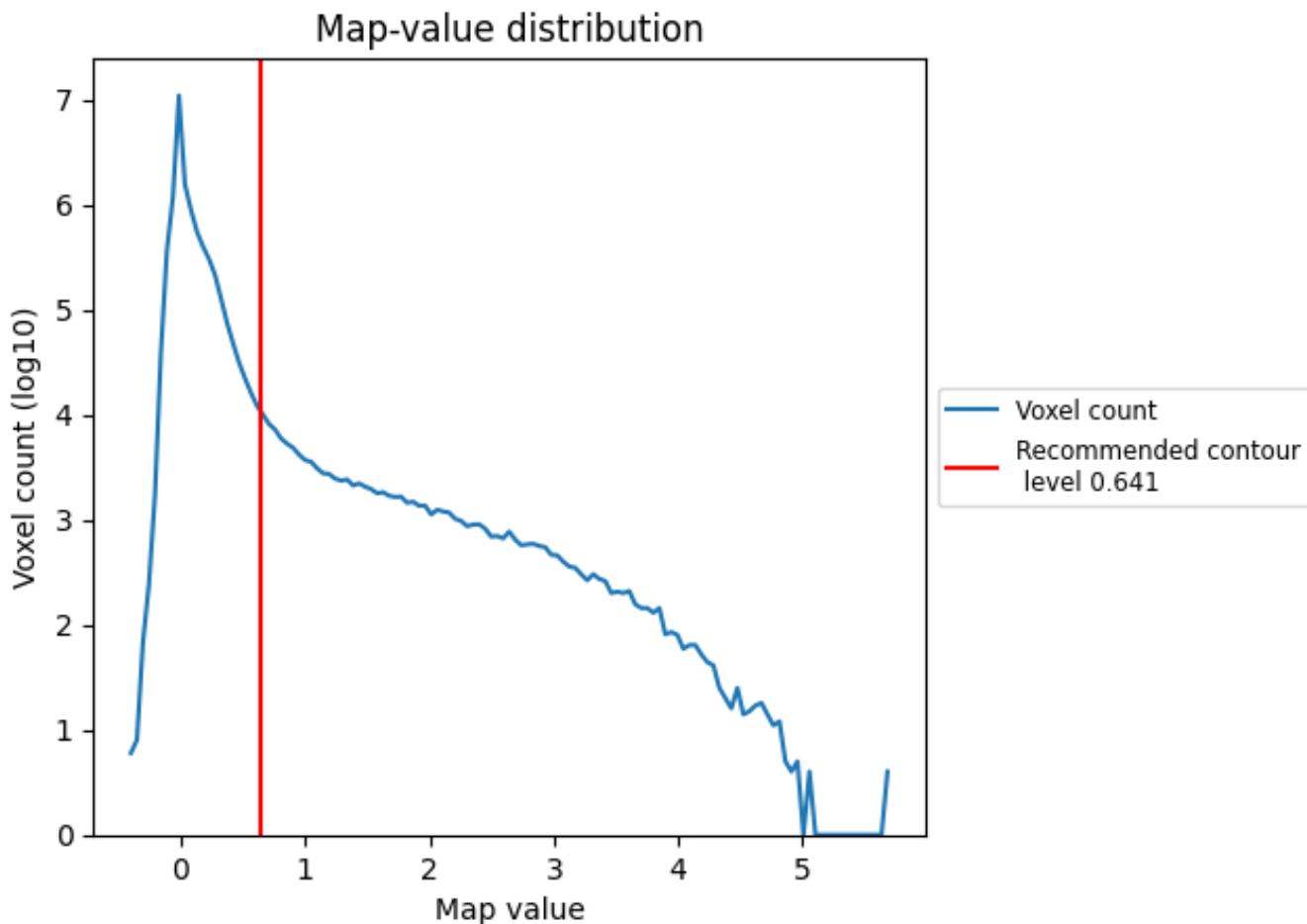
## 6.6 Mask visualisation [i](#)

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

## 7 Map analysis [i](#)

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

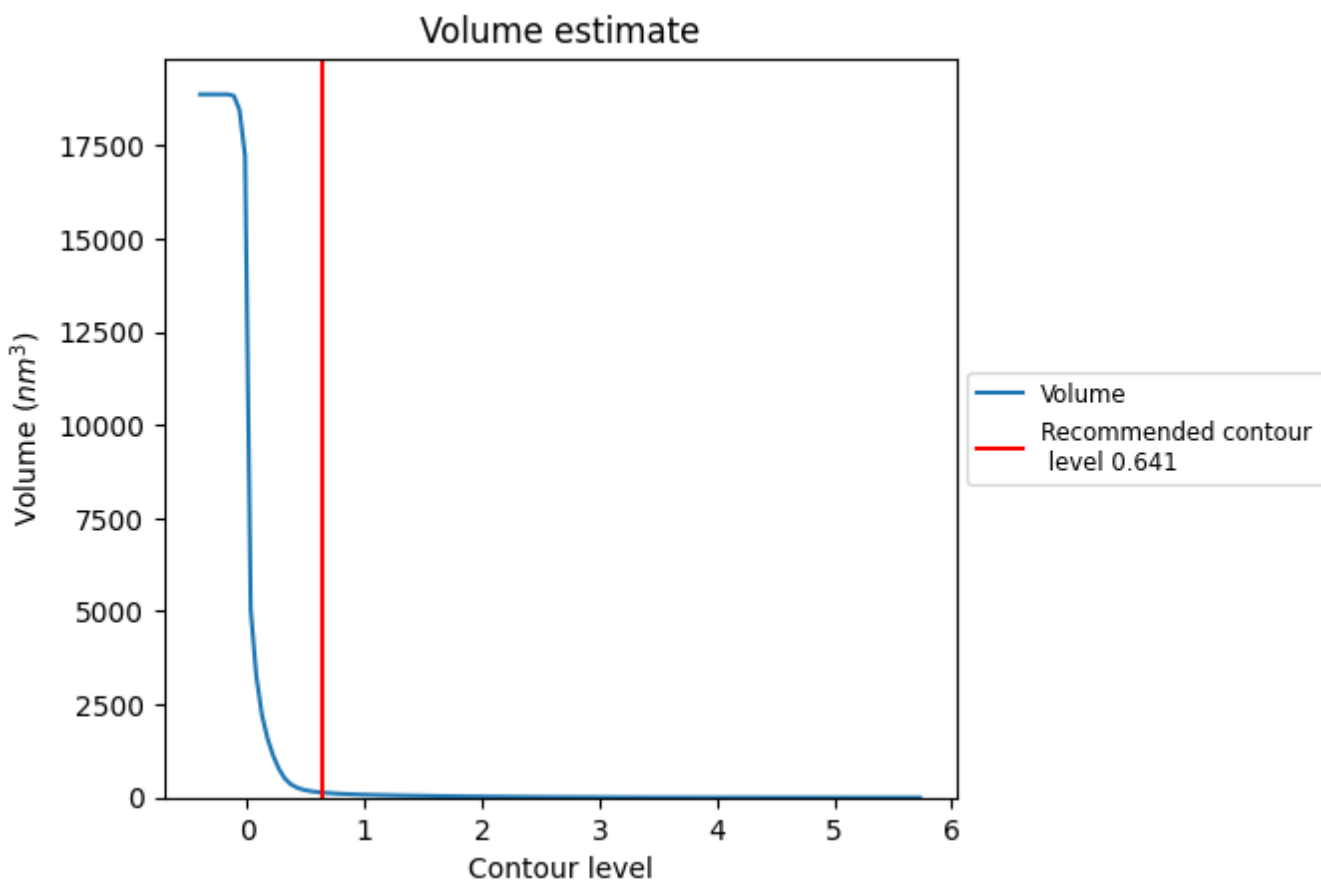
### 7.1 Map-value distribution [i](#)



The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.



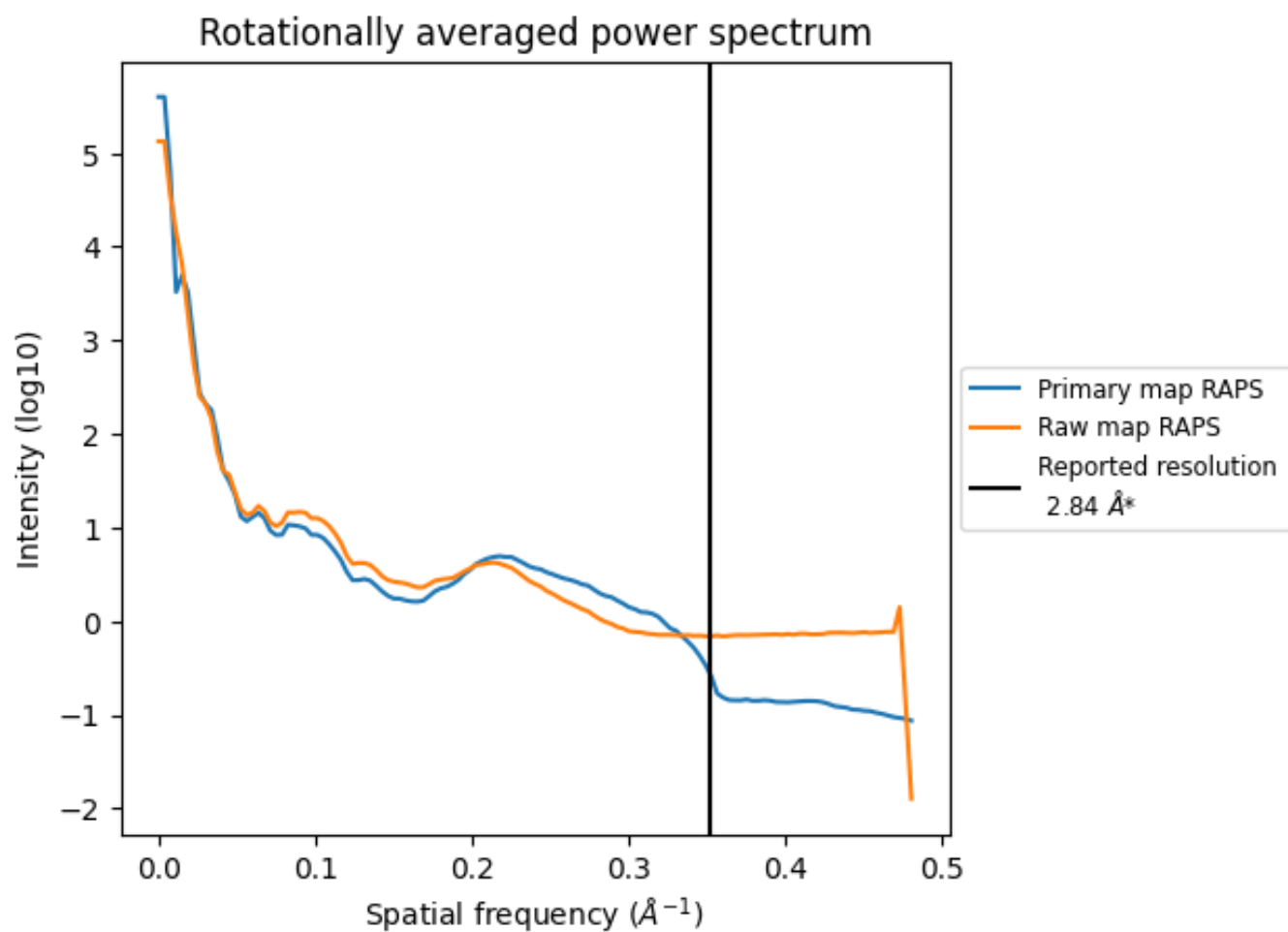
## 7.2 Volume estimate [i](#)



The volume at the recommended contour level is 133  $\text{nm}^3$ ; this corresponds to an approximate mass of 120 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

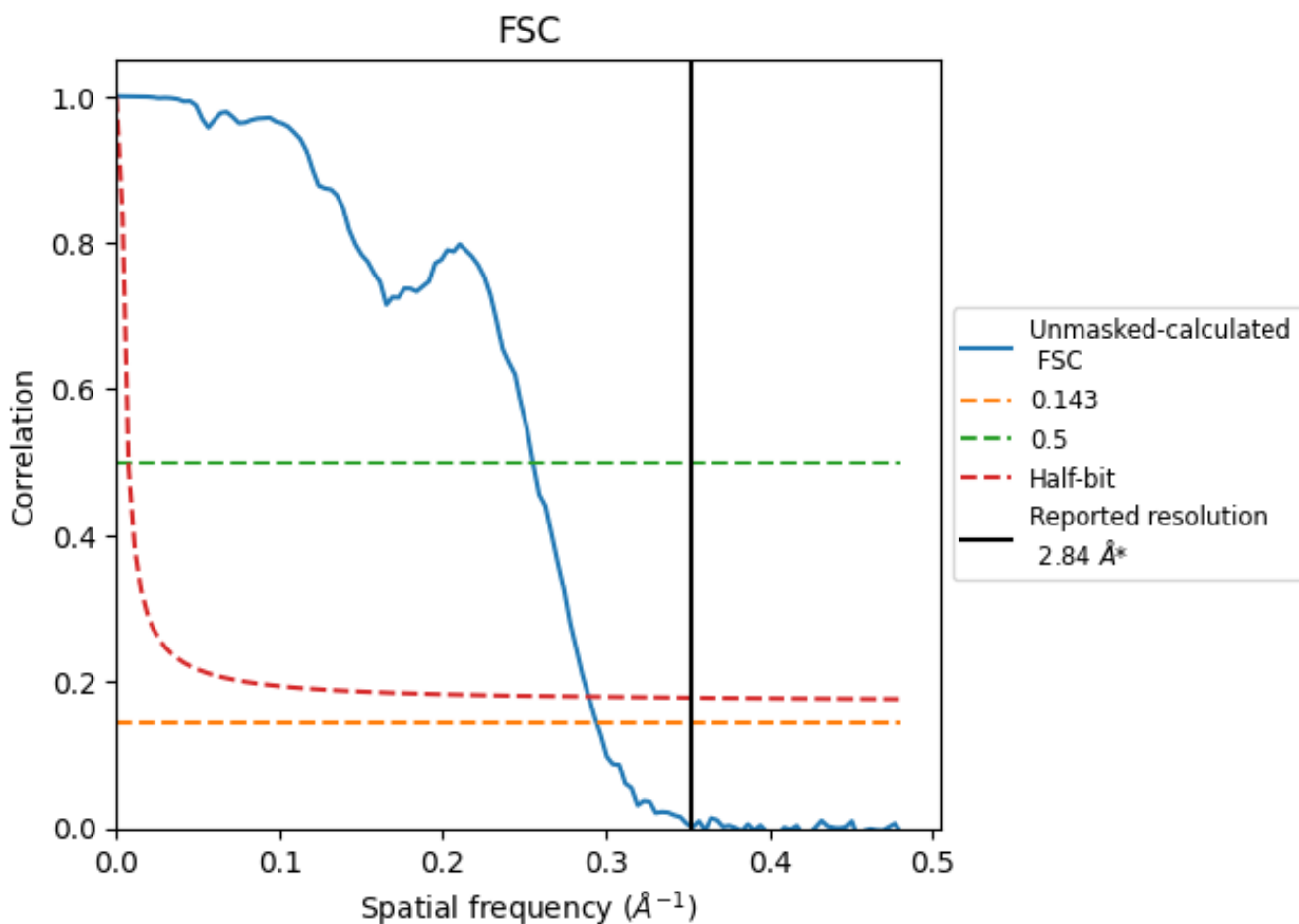


\*Reported resolution corresponds to spatial frequency of  $0.352 \text{ \AA}^{-1}$

## 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 0.352 Å<sup>-1</sup>

## 8.2 Resolution estimates [i](#)

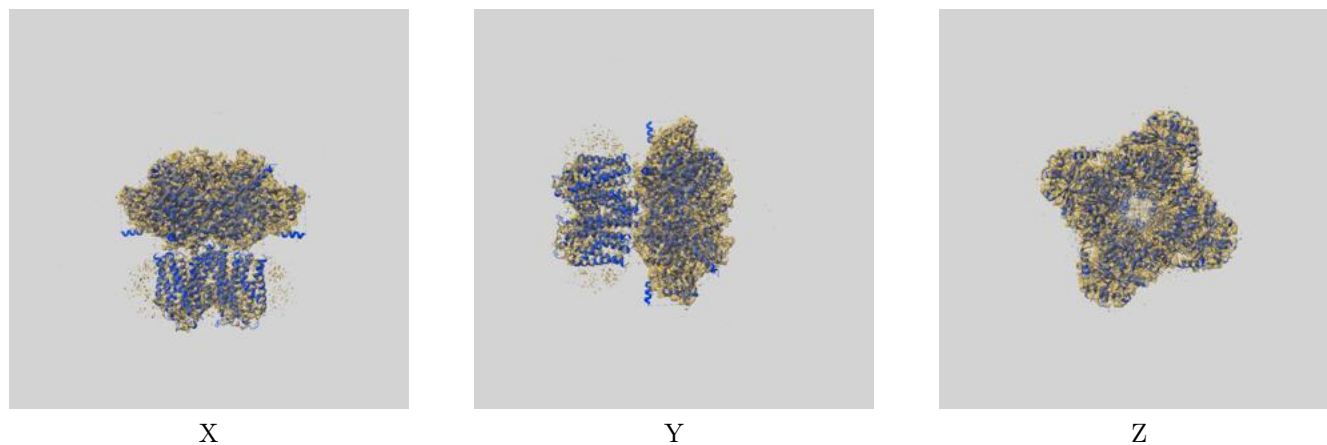
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.84	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	3.40	3.92	3.46

\*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 3.40 differs from the reported value 2.84 by more than 10 %

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

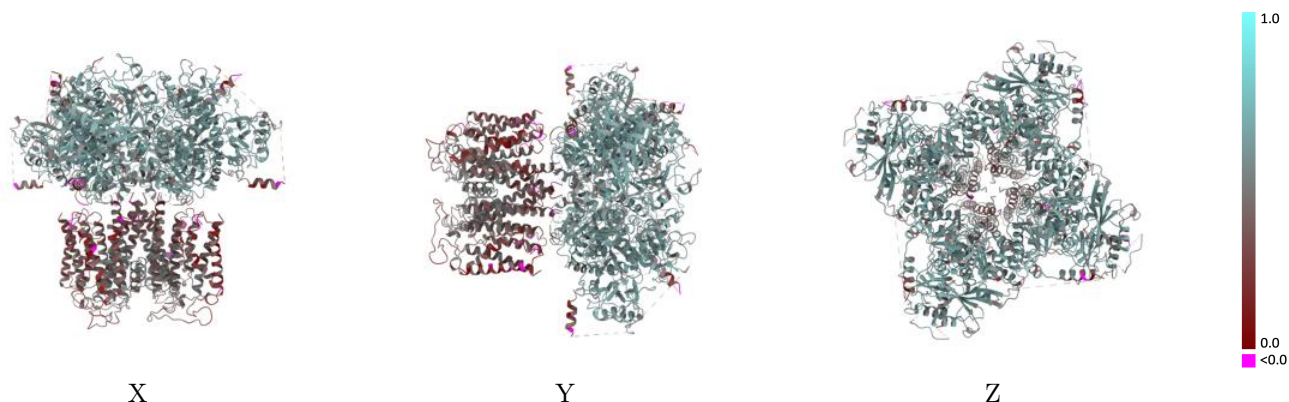
This section contains information regarding the fit between EMDB map EMD-34853 and PDB model 8HKK. Per-residue inclusion information can be found in section [3](#) on page [5](#).

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



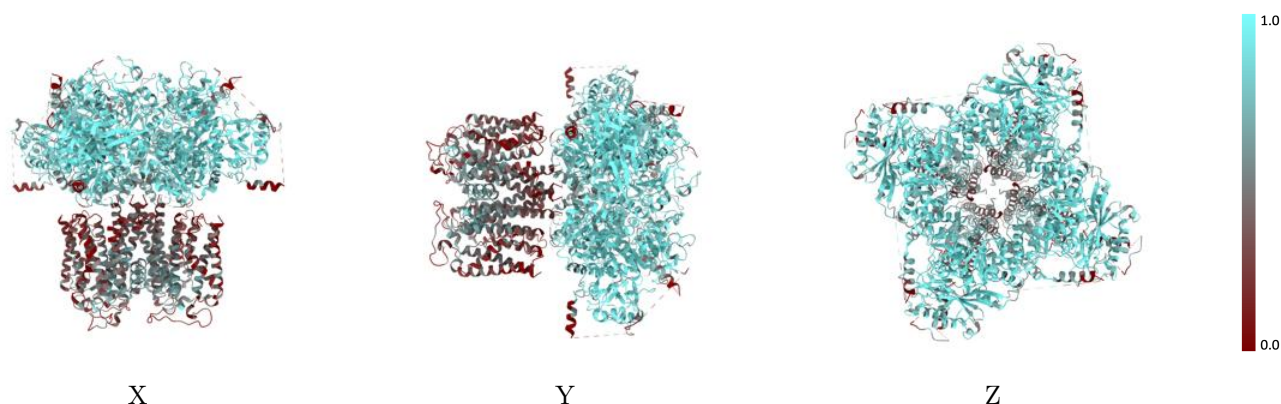
The images above show the 3D surface view of the map at the recommended contour level 0.641 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



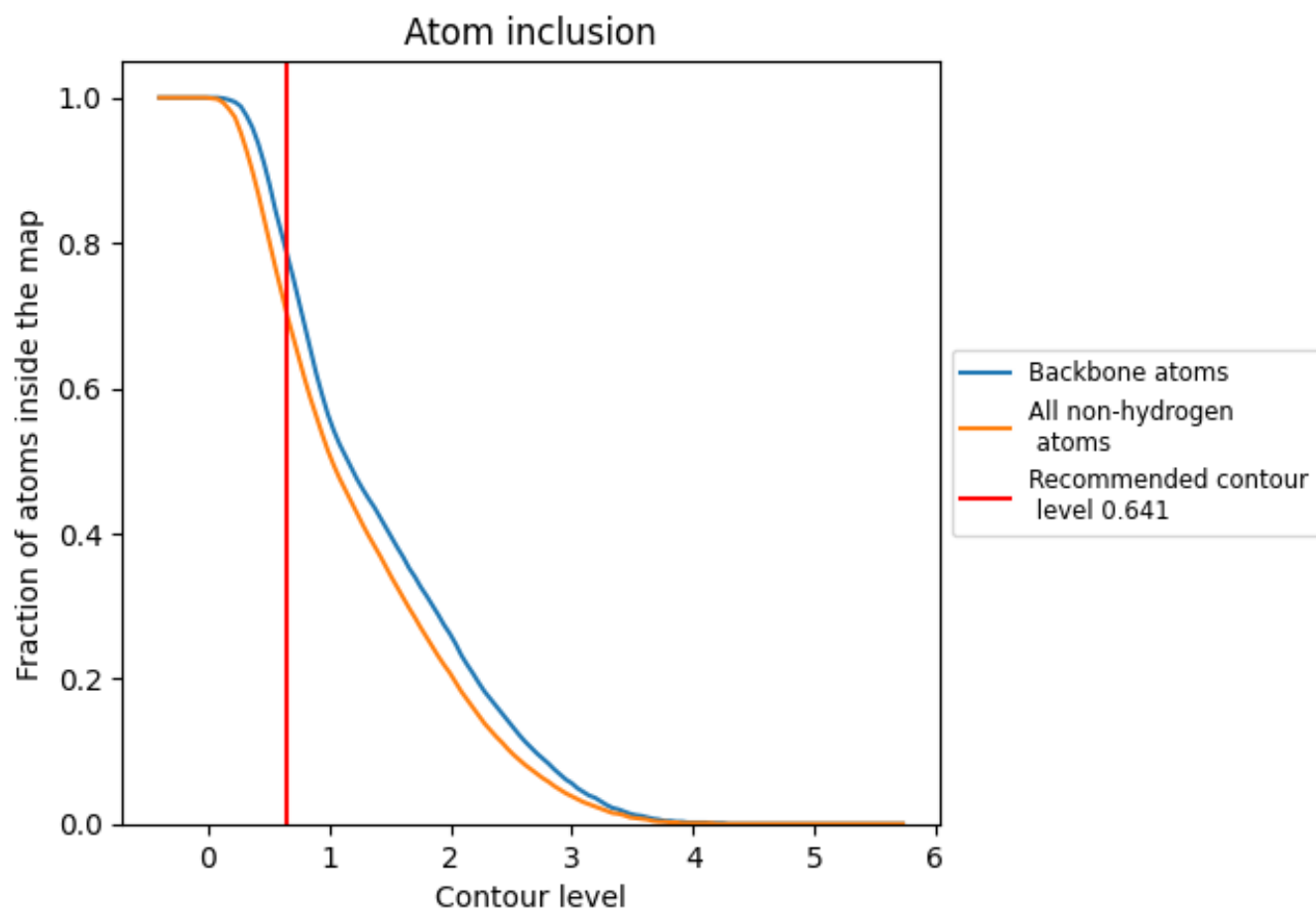
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.641).











## 9.4 Atom inclusion [i](#)



At the recommended contour level, 79% of all backbone atoms, 71% 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 (0.641) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.7090	 0.5090
A	 0.7030	 0.5050
B	 0.7130	 0.5100
C	 0.7160	 0.5120
D	 0.7040	 0.5070

