



Full wwPDB EM Validation Report ⓘ

Jun 26, 2025 – 08:31 PM JST

PDB ID : 8IO4 / pdb_00008io4
EMDB ID : EMD-35607
Title : Herg1a-herg1b open state
Authors : Zhang, M.F.
Deposited on : 2023-03-10
Resolution : 3.50 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.dev118
MolProbity : 4-5-2 with Phenix2.0rc1
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.44

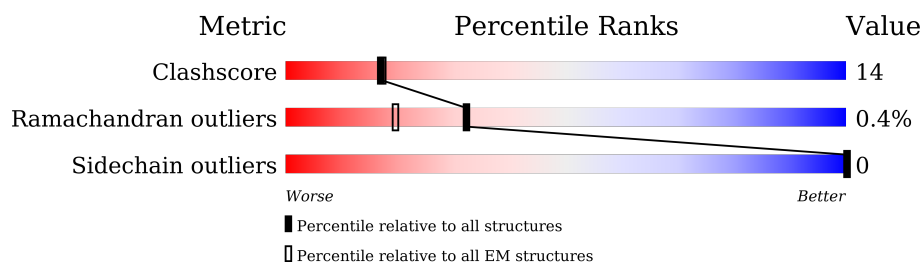
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.50 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. 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	1159	30% 26% 11% 63%
1	B	1159	30% 26% 11% 63%
1	C	1159	30% 27% 10% 63%
1	D	1159	30% 26% 11% 63%

2 Entry composition

There is only 1 type of molecule in this entry. The entry contains 13736 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 voltage-gated channel subfamily H member 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	431	Total	C	N	O	S	0	0
			3434	2252	581	584	17		
1	C	431	Total	C	N	O	S	0	0
			3434	2252	581	584	17		
1	D	431	Total	C	N	O	S	0	0
			3434	2252	581	584	17		
1	B	431	Total	C	N	O	S	0	0
			3434	2252	581	584	17		



PRO	PRO	CYS	LEU	THR	R836	L775	A715	I655	G546	P486	T421	PRO	ARG	GLN
ALA	ALA	PRO	VAL	ASP	D836	L776	V716	F656	A547	G487	A422	LYS	ARG	ARG
THR	THR	PRO	PHE	ASP	D837	I777	L717	G657	A548	R488	V423	ILE	PRO	PRO
ALA	ALA	THR	SER	THR	L838	A778	K718	N658	V549	I489	F424	GLU	GLY	THR
VAL	VAL	SER	PRO	GLU	L839	L779	G719	V659	L550	A490	T425	ARG	GLY	CYS
THR	THR	LEU	ARG	GLN	E840	F781	F721	S660	F551	V491	L432	THR	GLY	ASP
GLY	GLY	PRO	GLY	PRO	L842	I782	E722	A661	L552	H492	LEU	ASN	ALA	PHE
PRO	PRO	ILE	VAL	VAL	D843	S783	C723	I662	L553	Y493	GLI	LYS	HIS	LEU
PRO	PRO	PRO	SER	SER	W844	R784	C724	I663	M554	F494	THR	ARG	ARG	GLY
PRO	PRO	SER	PRO	ALA	Y845	G785	Q725	Q664	F557	K495	GLU	LYS	THR	ARG
THR	THR	SER	GLY	LEU	P846	S786	A726	R665	G496	G496	VAL	VAL	VAL	THR
THR	THR	GLY	GLY	GLY	E847	I787	D727	L666	H497	V497	THR	THR	VAL	GLN
ARG	ARG	GLY	GLY	ARG	F848	E788	D728	Y667	F498	VAL	ASN	VAL	ASP	ARG
PRO	PRO	ARG	ALA	ALA	S849	I789	C729	Q669	I567	S500	THR	SER	ASP	ALA
LEU	LEU	ARG	LEU	GLY	D850	L790	L730	T670	W568	D501	GLU	LEU	THR	ALA
LEU	LEU	ARG	MET	ALA	H851	R791	H731	A671	Y569	M502	CYS	GLY	ASP	ALA
PRO	PRO	GLY	ASP	GLY	F852	G792	L732	R672	N573	F503	TYR	GLY	SER	ALA
SER	SER	VAL	GLU	SER	W853	D793	N733	Y673	M574	A504	ALA	VAL	VAL	GLN
SER	SER	SER	SER	ARG	S854	V794	R734	H674	E575	A505	PRO	ARG	SER	ALA
PRO	PRO	ARG	SER	GLY	S855	W795	S735	T675	Q576	I506	TYR	TYR	GLU	LEU
THR	THR	LEU	ASP	GLY	L856	V796	L736	Q676	P507	P451	ARG	ARG	GLY	ALA
THR	THR	ASP	THR	PRO	E857	A797	L737	M677	F508	L452	THR	THR	ALA	GLY
LEU	LEU	ALA	CYS	GLY	I798	L798	Q738	L678	D509	A453	GLN	THR	GLU	GLU
ASP	ASP	GLN	ASN	GLY	T859	L799	H739	R679	LEU	V454	ALA	LEU	ARG	PRO
SER	SER	ARG	PRO	TRP	F860	G800	C740	V680	ARG	V455	PRO	PRO	SER	ASN
LEU	LEU	GLN	GLY	GLY	R861	X801	K741	R681	I583	D456	GLU	GLU	LYS	HIS
GLN	GLN	ASN	GLY	GLY	L862	N802	P742	E682	N588	L457	THR	THR	ALA	ALA
VAL	VAL	ARG	PHE	PRO	R863	D803	F743	F683	GLY	I458	LEU	THR	GLY	PHE
SER	SER	LEU	SER	SER	ASP	THR	R744	I684	D591	V459	ASN	MET	ARG	THR
GLN	GLN	THR	GLY	GLY	THR	F805	G745	R685	Q592	D460	VAL	ASP	ASN	ARG
PHE	PHE	MET	VAL	GLY	ASN	G806	A746	F686	GLY	I461	LYS	THR	ALA	ALA
LEU	LEU	LEU	ASN	SER	ILE	E807	T747	H687	LEU	M462	ASP	VAL	PHE	GLY
ALA	ALA	CYS	ILE	SER	PRO	B808	K748	Q688	ASN	F463	LYS	VAL	ARG	GLY
GLU	GLU	ASP	PHE	PRO	GLY	L809	G749	I689	SER	I521	ALA	GLU	LEU	LEU
ASP	ASP	MET	SER	GLU	SER	N810	C750	G522	SER	G522	GLY	ARG	LEU	ASP
LEU	LEU	THR	PHE	SER	PRO	L811	R751	P690	GLY	L523	ASP	PRO	GLY	CYS
PRO	PRO	THR	THR	SER	GLY	L812	L752	N691	GLY	L524	P405	LEU	LEU	PHE
GLY	GLY	VAL	ASP	ASP	SER	Y812	R752	P692	LEU	K525	F406	GLU	ALA	ALA
ALA	ALA	LEU	THR	THR	THR	A813	A753	L693	G603	L468	K407	GLU	VAL	VAL
PRO	PRO	GLN	GLY	GLY	GLU	B814	L754	R694	K608	I469	A408	ARG	LEU	ASP
GLU	GLU	LEU	ARG	GLY	LEU	P815	A755	Q695	D609	N470	V409	PRO	ALA	VAL
LEU	LEU	LEU	GLY	GLY	GLY	G816	W756	Q696	K610	F471	W410	VAL	LEU	VAL
GLN	GLN	ARG	ARG	ARG	GLY	K817	K757	L697	F619	R472	D411	VAL	VAL	VAL
GLN	GLN	PHE	SER	SER	PHE	S818	F758	E698	V644	T473	W412	ARG	GLY	LYS
SER	SER	ARG	SER	SER	ARG	N819	K759	E699	W645	T474	L413	ASN	GLY	ASN
PRO	PRO	GLN	PRO	PRO	GLN	G820	T760	Y700	L646	Y475	I414	GLU	PRO	GLU
LEU	LEU	ARG	LEU	LEU	ARG	B821	T761	F701	I647	V476	L415	ILE	SER	ILE
LYS	LYS	LYS	LYS	LYS	LYS	B822	H762	Q702	R535	N477	L416	ARG	ARG	ARG
ARG	ARG	ARG	ARG	ARG	ARG	W823	A763	H703	A536	A478	L417	GLY	GLY	GLY
LEU	LEU	LEU	LEU	LEU	LEU	A824	P764	A704	R537	N479	V418	PRO	PRO	PRO
LEU	LEU	PHE	SER	SER	PHE	L825	P765	W705	K538	E480	I419	PRO	GLY	GLY
ARG	ARG	ARG	ARG	ARG	ARG	T826	G766	S706	A653	V482	VAL	PRO	GLY	GLY
ARG	ARG	ARG	ARG	ARG	ARG	Y827	D767	T707	S654	V483	ALA	PRO	SER	SER
ARG	ARG	ARG	ARG	ARG	ARG	C828	T768	T708		V484	L418	PRO	PRO	PRO
ARG	ARG	ARG	ARG	ARG	ARG	B829	L769	W709		S484	L419	PRO	PRO	PRO
ARG	ARG	ARG	ARG	ARG	ARG	L830	W770	G710		V485	VAL	PRO	PRO	PRO
ARG	ARG	ARG	ARG	ARG	ARG	H831	H771	I711		S485	VAL	PRO	PRO	PRO
ARG	ARG	ARG	ARG	ARG	ARG	B832	A772	D712				PRO	PRO	PRO
ARG	ARG	ARG	ARG	ARG	ARG	B833	G773	W713				PRO	PRO	PRO
ARG	ARG	ARG	ARG	ARG	ARG	H834	D774	N714				PRO	PRO	PRO

ARG
LEU
SER
LEU
PRO
GLY
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GLY
ALA
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THR
SER
GLN
PRO
LEU
HIS
ARG
HIS
GLY
SER
ASP
PRO
GLY
SER

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	41000	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	60	Depositor
Minimum defocus (nm)	1200	Depositor
Maximum defocus (nm)	1500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.943	Depositor
Minimum map value	-0.562	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.014	Depositor
Recommended contour level	0.22	Depositor
Map size ($\text{\AA}$)	339.59998, 339.59998, 339.59998	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing ($\text{\AA}$)	0.8489999, 0.8489999, 0.8489999	Depositor

5 Model quality [i](#)

5.1 Standard geometry [i](#)

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z > 5$	RMSZ	$\# Z > 5$
1	A	0.17	0/3524	0.44	0/4788
1	B	0.16	0/3524	0.43	0/4788
1	C	0.17	0/3524	0.44	0/4788
1	D	0.16	0/3524	0.44	0/4788
All	All	0.16	0/14096	0.44	0/19152

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	3434	0	3453	97	0
1	B	3434	0	3453	105	0
1	C	3434	0	3453	94	0
1	D	3434	0	3453	102	0
All	All	13736	0	13812	375	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 14.

All (375) 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:D:417:LEU:HD11	1:D:459:VAL:HG22	1.58	0.85
1:A:417:LEU:HD11	1:A:459:VAL:HG22	1.58	0.84
1:B:720:PHE:HB3	1:B:724:LEU:HB3	1.61	0.83
1:D:720:PHE:HB3	1:D:724:LEU:HB3	1.61	0.83
1:C:417:LEU:HD11	1:C:459:VAL:HG22	1.58	0.83
1:B:417:LEU:HD11	1:B:459:VAL:HG22	1.59	0.82
1:B:684:ILE:HA	1:B:689:ILE:HD12	1.66	0.76
1:D:684:ILE:HA	1:D:689:ILE:HD12	1.66	0.75
1:B:761:THR:OG1	1:B:832:LYS:NZ	2.19	0.74
1:B:553:LEU:HD13	1:B:655:ILE:HG23	1.73	0.71
1:D:761:THR:HG1	1:D:832:LYS:HZ2	1.40	0.70
1:A:553:LEU:HD13	1:A:655:ILE:HG23	1.73	0.70
1:A:684:ILE:HA	1:A:689:ILE:HD12	1.74	0.69
1:C:553:LEU:HD13	1:C:655:ILE:HG23	1.73	0.69
1:C:684:ILE:HA	1:C:689:ILE:HD12	1.74	0.69
1:D:761:THR:OG1	1:D:832:LYS:NZ	2.19	0.69
1:D:553:LEU:HD13	1:D:655:ILE:HG23	1.73	0.68
1:C:761:THR:OG1	1:C:832:LYS:NZ	2.21	0.67
1:D:450:GLN:HB2	1:D:451:PRO:HD2	1.77	0.67
1:A:450:GLN:HB2	1:A:451:PRO:HD2	1.77	0.66
1:C:763:ALA:HB3	1:C:828:CYS:HB2	1.77	0.66
1:A:763:ALA:HB3	1:A:828:CYS:HB2	1.77	0.66
1:C:450:GLN:HB2	1:C:451:PRO:HD2	1.77	0.66
1:B:786:SER:HA	1:B:800:GLY:HA2	1.78	0.66
1:D:534:ARG:HH21	1:D:538:LYS:HZ1	1.44	0.65
1:D:786:SER:HA	1:D:800:GLY:HA2	1.78	0.65
1:A:786:SER:HA	1:A:800:GLY:HA2	1.80	0.64
1:C:534:ARG:HH21	1:C:538:LYS:HZ1	1.45	0.64
1:A:720:PHE:HB3	1:A:724:LEU:HB3	1.79	0.64
1:C:720:PHE:HB3	1:C:724:LEU:HB3	1.79	0.64
1:B:504:ALA:HB1	1:B:531:ARG:HE	1.63	0.63
1:B:534:ARG:HH21	1:B:538:LYS:HZ1	1.47	0.63
1:A:761:THR:OG1	1:A:832:LYS:NZ	2.21	0.63
1:C:786:SER:HA	1:C:800:GLY:HA2	1.80	0.62
1:A:504:ALA:HB1	1:A:531:ARG:HE	1.63	0.62
1:D:664:GLN:O	1:D:668:SER:HB3	2.00	0.62
1:B:763:ALA:HB3	1:B:828:CYS:HB2	1.82	0.62
1:A:534:ARG:HH21	1:A:538:LYS:HZ1	1.47	0.62
1:D:763:ALA:HB3	1:D:828:CYS:HB2	1.82	0.62
1:A:569:TYR:HE1	1:A:610:LYS:HD2	1.65	0.61
1:B:569:TYR:HE1	1:B:610:LYS:HD2	1.65	0.61
1:B:708:THR:HG23	1:B:710:GLY:H	1.65	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:504:ALA:HB1	1:C:531:ARG:HE	1.63	0.61
1:D:504:ALA:HB1	1:D:531:ARG:HE	1.63	0.61
1:B:664:GLN:O	1:B:668:SER:HB3	2.00	0.61
1:D:708:THR:HG23	1:D:710:GLY:H	1.65	0.60
1:B:722:GLU:CD	1:B:723:CYS:H	2.09	0.60
1:C:664:GLN:O	1:C:668:SER:HB3	2.01	0.60
1:C:569:TYR:HE1	1:C:610:LYS:HD2	1.65	0.60
1:D:569:TYR:HE1	1:D:610:LYS:HD2	1.65	0.60
1:D:722:GLU:CD	1:D:723:CYS:H	2.09	0.60
1:D:765:PRO:HA	1:D:824:ALA:HB1	1.84	0.60
1:A:664:GLN:O	1:A:668:SER:HB3	2.01	0.60
1:A:700:TYR:HA	1:A:703:HIS:HD1	1.67	0.60
1:B:765:PRO:HA	1:B:824:ALA:HB1	1.84	0.60
1:B:809:LEU:HD21	1:B:838:LEU:HD23	1.84	0.60
1:D:826:THR:HG22	1:D:827:TYR:H	1.66	0.59
1:A:722:GLU:CD	1:A:723:CYS:H	2.10	0.59
1:B:772:ALA:HB1	1:B:817:LYS:HG3	1.84	0.59
1:B:826:THR:HG22	1:B:827:TYR:H	1.66	0.59
1:A:826:THR:HG22	1:A:827:TYR:H	1.66	0.59
1:C:700:TYR:HA	1:C:703:HIS:HD1	1.67	0.59
1:A:708:THR:HG23	1:A:710:GLY:H	1.68	0.59
1:A:731:HIS:CE1	1:B:689:ILE:HA	2.38	0.59
1:D:809:LEU:HD21	1:D:838:LEU:HD23	1.83	0.59
1:C:722:GLU:CD	1:C:723:CYS:H	2.10	0.59
1:D:772:ALA:HB1	1:D:817:LYS:HG3	1.84	0.58
1:C:726:ALA:HB3	1:C:752:ARG:HD3	1.85	0.58
1:C:826:THR:HG22	1:C:827:TYR:H	1.67	0.58
1:D:410:TRP:NE1	1:D:466:ASP:OD1	2.29	0.58
1:C:731:HIS:CE1	1:D:689:ILE:HA	2.38	0.58
1:B:781:PHE:O	1:B:830:LEU:HB2	2.03	0.58
1:C:708:THR:HG23	1:C:710:GLY:H	1.68	0.58
1:A:726:ALA:HB3	1:A:752:ARG:HD3	1.85	0.58
1:A:809:LEU:HD21	1:A:838:LEU:HD23	1.86	0.58
1:D:781:PHE:O	1:D:830:LEU:HB2	2.03	0.58
1:C:781:PHE:O	1:C:830:LEU:HB2	2.04	0.57
1:A:765:PRO:HA	1:A:824:ALA:HB1	1.85	0.57
1:B:700:TYR:HA	1:B:703:HIS:HD1	1.69	0.57
1:B:678:LEU:HA	1:B:681:ARG:HG2	1.86	0.57
1:C:765:PRO:HA	1:C:824:ALA:HB1	1.85	0.57
1:C:809:LEU:HD21	1:C:838:LEU:HD23	1.86	0.57
1:C:466:ASP:OD2	1:C:534:ARG:NH1	2.38	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:466:ASP:OD2	1:A:534:ARG:NH1	2.38	0.57
1:D:678:LEU:HA	1:D:681:ARG:HG2	1.86	0.57
1:D:700:TYR:HA	1:D:703:HIS:HD1	1.69	0.56
1:A:720:PHE:HD2	1:A:728:ILE:HD11	1.70	0.56
1:D:466:ASP:OD2	1:D:534:ARG:NH1	2.39	0.56
1:A:781:PHE:O	1:A:830:LEU:HB2	2.04	0.56
1:C:720:PHE:HD2	1:C:728:ILE:HD11	1.70	0.56
1:B:693:LEU:HA	1:B:696:ARG:HD3	1.87	0.56
1:A:410:TRP:NE1	1:A:466:ASP:OD1	2.27	0.56
1:A:769:LEU:HB2	1:A:822:VAL:HG21	1.86	0.56
1:C:700:TYR:CD1	1:C:703:HIS:HE1	2.23	0.56
1:D:693:LEU:HA	1:D:696:ARG:HD3	1.87	0.56
1:A:700:TYR:CD1	1:A:703:HIS:HE1	2.23	0.55
1:D:717:LEU:O	1:D:725:GLN:NE2	2.39	0.55
1:B:717:LEU:O	1:B:725:GLN:NE2	2.39	0.55
1:A:689:ILE:HA	1:D:731:HIS:CE1	2.42	0.55
1:C:769:LEU:HB2	1:C:822:VAL:HG21	1.87	0.55
1:B:726:ALA:HB3	1:B:752:ARG:HD3	1.88	0.55
1:D:726:ALA:HB3	1:D:752:ARG:HD3	1.88	0.55
1:C:410:TRP:NE1	1:C:466:ASP:OD1	2.27	0.55
1:B:466:ASP:OD2	1:B:534:ARG:NH1	2.39	0.55
1:C:689:ILE:HA	1:B:731:HIS:CE1	2.42	0.54
1:A:689:ILE:HG22	1:A:694:ARG:HB2	1.90	0.54
1:A:799:LEU:HD11	1:A:860:PHE:HD2	1.73	0.54
1:C:689:ILE:HG22	1:C:694:ARG:HB2	1.90	0.54
1:D:658:ASN:O	1:D:662:ILE:HD12	2.08	0.54
1:D:664:GLN:O	1:D:668:SER:CB	2.55	0.54
1:B:658:ASN:O	1:B:662:ILE:HD12	2.08	0.54
1:D:733:ASN:HD21	1:D:751:LEU:HG	1.72	0.54
1:B:664:GLN:O	1:B:668:SER:CB	2.55	0.54
1:A:658:ASN:O	1:A:662:ILE:HD12	2.08	0.54
1:C:799:LEU:HD11	1:C:860:PHE:HD2	1.73	0.54
1:D:700:TYR:CD1	1:D:703:HIS:HE1	2.26	0.54
1:B:817:LYS:O	1:B:863:ARG:NH1	2.41	0.54
1:B:799:LEU:HD11	1:B:860:PHE:HD2	1.73	0.53
1:C:658:ASN:O	1:C:662:ILE:HD12	2.08	0.53
1:B:700:TYR:CD1	1:B:703:HIS:HE1	2.26	0.53
1:B:678:LEU:HD23	1:B:681:ARG:HH11	1.74	0.53
1:B:668:SER:HA	1:B:671:ALA:HB3	1.90	0.53
1:B:733:ASN:HD21	1:B:751:LEU:HG	1.72	0.53
1:C:703:HIS:O	1:C:706:SER:OG	2.23	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:817:LYS:O	1:D:863:ARG:NH1	2.41	0.53
1:C:664:GLN:O	1:C:668:SER:CB	2.58	0.53
1:C:693:LEU:HA	1:C:696:ARG:HD3	1.91	0.52
1:D:684:ILE:HG23	1:D:689:ILE:HB	1.91	0.52
1:D:799:LEU:HD11	1:D:860:PHE:HD2	1.73	0.52
1:D:678:LEU:HD23	1:D:681:ARG:HH11	1.74	0.52
1:D:668:SER:HA	1:D:671:ALA:HB3	1.90	0.52
1:A:693:LEU:HA	1:A:696:ARG:HD3	1.91	0.52
1:C:733:ASN:ND2	1:C:755:ALA:HB2	2.25	0.52
1:B:684:ILE:HG23	1:B:689:ILE:HB	1.91	0.52
1:C:717:LEU:O	1:C:725:GLN:NE2	2.43	0.52
1:A:717:LEU:O	1:A:725:GLN:NE2	2.43	0.52
1:A:833:ILE:HG12	1:A:838:LEU:HD13	1.92	0.52
1:A:664:GLN:O	1:A:668:SER:CB	2.58	0.52
1:D:550:LEU:HD21	1:D:659:VAL:HG13	1.92	0.52
1:D:783:SER:HG	1:D:829:ASP:C	2.17	0.52
1:B:410:TRP:NE1	1:B:466:ASP:OD1	2.28	0.52
1:A:772:ALA:HB1	1:A:817:LYS:HB2	1.92	0.51
1:A:733:ASN:ND2	1:A:755:ALA:HB2	2.25	0.51
1:A:668:SER:HA	1:A:671:ALA:HB3	1.92	0.51
1:C:550:LEU:HD21	1:C:659:VAL:HG13	1.93	0.51
1:B:550:LEU:HD21	1:B:659:VAL:HG13	1.92	0.51
1:C:668:SER:HA	1:C:671:ALA:HB3	1.92	0.51
1:C:772:ALA:HB1	1:C:817:LYS:HB2	1.92	0.51
1:C:833:ILE:HG12	1:C:838:LEU:HD13	1.92	0.51
1:B:760:THR:HG22	1:B:762:HIS:CE1	2.46	0.51
1:B:833:ILE:HG12	1:B:838:LEU:HD13	1.93	0.50
1:A:550:LEU:HD21	1:A:659:VAL:HG13	1.93	0.50
1:A:739:HIS:CE1	1:A:802:ASN:HB2	2.47	0.50
1:D:689:ILE:HG22	1:D:694:ARG:HB2	1.94	0.50
1:A:593:ILE:HD12	1:D:583:ILE:HD11	1.94	0.50
1:D:760:THR:HG22	1:D:762:HIS:CE1	2.46	0.50
1:D:833:ILE:HG12	1:D:838:LEU:HD13	1.93	0.50
1:D:733:ASN:ND2	1:D:751:LEU:HG	2.27	0.49
1:B:739:HIS:CE1	1:B:802:ASN:HB2	2.47	0.49
1:B:689:ILE:HG22	1:B:694:ARG:HB2	1.94	0.49
1:B:733:ASN:ND2	1:B:751:LEU:HG	2.27	0.49
1:A:583:ILE:HD11	1:B:593:ILE:HD12	1.94	0.49
1:D:833:ILE:HG21	1:D:838:LEU:HD22	1.93	0.49
1:B:450:GLN:CG	1:B:451:PRO:HD2	2.43	0.49
1:B:783:SER:HG	1:B:829:ASP:C	2.18	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:506:ILE:O	1:C:506:ILE:HG13	2.13	0.49
1:C:583:ILE:HD11	1:D:593:ILE:HD12	1.94	0.49
1:D:506:ILE:HG13	1:D:506:ILE:O	2.13	0.49
1:D:739:HIS:CE1	1:D:802:ASN:HB2	2.47	0.49
1:B:790:LEU:HD21	1:B:793:ASP:H	1.78	0.49
1:B:833:ILE:HG21	1:B:838:LEU:HD22	1.93	0.49
1:A:783:SER:HG	1:A:829:ASP:C	2.19	0.49
1:C:739:HIS:CE1	1:C:802:ASN:HB2	2.46	0.49
1:C:833:ILE:HG21	1:C:838:LEU:HD22	1.94	0.49
1:C:684:ILE:HG23	1:C:689:ILE:HB	1.95	0.48
1:A:415:LEU:O	1:A:419:ILE:HG12	2.14	0.48
1:A:790:LEU:HD21	1:A:793:ASP:H	1.78	0.48
1:C:593:ILE:HD12	1:B:583:ILE:HD11	1.94	0.48
1:D:748:LYS:O	1:D:752:ARG:HG3	2.13	0.48
1:A:506:ILE:O	1:A:506:ILE:HG13	2.13	0.48
1:A:833:ILE:HG21	1:A:838:LEU:HD22	1.94	0.48
1:D:790:LEU:HD21	1:D:793:ASP:H	1.78	0.48
1:A:700:TYR:HA	1:A:703:HIS:ND1	2.29	0.48
1:B:415:LEU:O	1:B:419:ILE:HG12	2.14	0.48
1:B:486:PRO:HA	1:B:489:ILE:HG22	1.96	0.48
1:A:486:PRO:HA	1:A:489:ILE:HG22	1.96	0.48
1:C:415:LEU:O	1:C:419:ILE:HG12	2.14	0.48
1:A:761:THR:HG1	1:A:832:LYS:HZ2	1.52	0.48
1:C:486:PRO:HA	1:C:489:ILE:HG22	1.96	0.48
1:D:486:PRO:HA	1:D:489:ILE:HG22	1.96	0.48
1:B:506:ILE:O	1:B:506:ILE:HG13	2.13	0.48
1:A:684:ILE:HG23	1:A:689:ILE:HB	1.95	0.47
1:D:415:LEU:HD12	1:D:535:VAL:HG22	1.96	0.47
1:D:415:LEU:O	1:D:419:ILE:HG12	2.14	0.47
1:B:748:LYS:O	1:B:752:ARG:HG3	2.14	0.47
1:C:700:TYR:HA	1:C:703:HIS:ND1	2.29	0.47
1:B:450:GLN:HG3	1:B:451:PRO:HD2	1.96	0.47
1:D:724:LEU:HA	1:D:727:ASP:OD2	2.15	0.47
1:C:790:LEU:HD21	1:C:793:ASP:H	1.78	0.47
1:B:726:ALA:HB3	1:B:752:ARG:HH11	1.79	0.47
1:D:733:ASN:ND2	1:D:755:ALA:HB2	2.29	0.47
1:B:733:ASN:ND2	1:B:755:ALA:HB2	2.29	0.47
1:B:785:GLY:HA3	1:B:827:TYR:O	2.15	0.47
1:D:785:GLY:HA3	1:D:827:TYR:O	2.15	0.47
1:C:783:SER:HG	1:C:829:ASP:C	2.20	0.46
1:B:728:ILE:HA	1:B:731:HIS:HD2	1.80	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:415:LEU:HD12	1:A:535:VAL:HG22	1.97	0.46
1:D:760:THR:CG2	1:D:762:HIS:HE1	2.29	0.46
1:B:415:LEU:HD12	1:B:535:VAL:HG22	1.96	0.46
1:A:797:ALA:HB2	1:A:862:LEU:HD11	1.97	0.46
1:C:415:LEU:HD12	1:C:535:VAL:HG22	1.97	0.46
1:C:727:ASP:OD1	1:C:752:ARG:NH1	2.48	0.46
1:C:619:PHE:CE1	1:B:646:LEU:HD11	2.51	0.46
1:D:791:ARG:HB3	1:D:819:ASN:HB3	1.98	0.46
1:B:724:LEU:HA	1:B:727:ASP:OD2	2.15	0.46
1:B:760:THR:CG2	1:B:762:HIS:HE1	2.29	0.46
1:A:757:LYS:HD3	1:A:757:LYS:N	2.31	0.46
1:D:728:ILE:HA	1:D:731:HIS:HD2	1.80	0.46
1:C:646:LEU:HD11	1:D:619:PHE:CE1	2.51	0.46
1:B:791:ARG:HB3	1:B:819:ASN:HB3	1.98	0.46
1:B:844:MET:HE2	1:B:844:MET:HA	1.98	0.46
1:A:449:CYS:O	1:A:450:GLN:HG2	2.16	0.46
1:A:783:SER:H	1:A:830:LEU:HA	1.81	0.46
1:B:700:TYR:HA	1:B:703:HIS:ND1	2.31	0.46
1:A:522:GLY:O	1:A:525:LYS:HD2	2.16	0.46
1:A:619:PHE:CE1	1:D:646:LEU:HD11	2.51	0.46
1:A:646:LEU:HD11	1:B:619:PHE:CE1	2.51	0.46
1:A:703:HIS:O	1:A:706:SER:OG	2.23	0.46
1:D:726:ALA:HB3	1:D:752:ARG:HH11	1.79	0.46
1:C:522:GLY:O	1:C:525:LYS:HD2	2.16	0.45
1:C:783:SER:H	1:C:830:LEU:HA	1.81	0.45
1:D:522:GLY:O	1:D:525:LYS:HD2	2.16	0.45
1:A:463:PHE:O	1:A:467:ILE:HG12	2.17	0.45
1:C:757:LYS:HD3	1:C:757:LYS:N	2.31	0.45
1:B:522:GLY:O	1:B:525:LYS:HD2	2.16	0.45
1:A:727:ASP:OD1	1:A:752:ARG:NH1	2.48	0.45
1:D:700:TYR:HA	1:D:703:HIS:ND1	2.31	0.45
1:B:695:GLN:NE2	1:B:696:ARG:HG3	2.32	0.45
1:B:797:ALA:HB2	1:B:862:LEU:HD11	1.98	0.45
1:A:783:SER:C	1:A:784:ARG:HD2	2.42	0.45
1:D:695:GLN:NE2	1:D:696:ARG:HG3	2.32	0.45
1:D:411:ASP:HB3	1:D:541:ARG:NH2	2.32	0.45
1:D:449:CYS:O	1:D:450:GLN:HG2	2.16	0.45
1:A:844:MET:HA	1:A:844:MET:HE2	1.98	0.45
1:B:463:PHE:O	1:B:467:ILE:HG12	2.16	0.45
1:B:783:SER:C	1:B:784:ARG:HD2	2.42	0.45
1:C:463:PHE:O	1:C:467:ILE:HG12	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:537:ARG:HG3	1:C:538:LYS:HD3	1.99	0.45
1:C:797:ALA:HB2	1:C:862:LEU:HD11	1.97	0.45
1:D:463:PHE:O	1:D:467:ILE:HG12	2.17	0.45
1:D:783:SER:C	1:D:784:ARG:HD2	2.42	0.45
1:B:411:ASP:HB3	1:B:541:ARG:NH2	2.32	0.45
1:B:799:LEU:HD13	1:B:803:ASP:HB3	1.98	0.45
1:C:844:MET:HE2	1:C:844:MET:HA	1.98	0.45
1:B:537:ARG:HG3	1:B:538:LYS:HD3	1.99	0.45
1:A:537:ARG:HG3	1:A:538:LYS:HD3	1.99	0.44
1:D:844:MET:HE2	1:D:844:MET:HA	1.98	0.44
1:A:455:VAL:O	1:A:459:VAL:HG23	2.17	0.44
1:D:783:SER:H	1:D:830:LEU:HA	1.82	0.44
1:C:449:CYS:O	1:C:450:GLN:HG2	2.16	0.44
1:B:783:SER:H	1:B:830:LEU:HA	1.82	0.44
1:A:731:HIS:CE1	1:B:689:ILE:HG12	2.53	0.44
1:C:689:ILE:HG12	1:B:731:HIS:CE1	2.53	0.44
1:D:797:ALA:HB2	1:D:862:LEU:HD11	1.98	0.44
1:B:782:ILE:HG12	1:B:787:ILE:HG13	1.99	0.44
1:A:833:ILE:HG13	1:A:834:HIS:H	1.83	0.44
1:C:455:VAL:O	1:C:459:VAL:HG23	2.17	0.44
1:D:782:ILE:HG12	1:D:787:ILE:HG13	1.99	0.44
1:A:791:ARG:HG3	1:A:794:VAL:HB	1.99	0.44
1:C:731:HIS:CE1	1:D:689:ILE:HG12	2.53	0.44
1:B:466:ASP:HA	1:B:469:ILE:HG22	1.99	0.44
1:A:799:LEU:HD13	1:A:803:ASP:HB3	2.00	0.44
1:C:782:ILE:HG12	1:C:787:ILE:HG13	2.00	0.44
1:C:783:SER:C	1:C:784:ARG:HD2	2.42	0.44
1:C:791:ARG:HA	1:C:820:GLY:HA3	1.98	0.44
1:D:537:ARG:HG3	1:D:538:LYS:HD3	1.99	0.44
1:D:799:LEU:HD13	1:D:803:ASP:HB3	1.98	0.44
1:B:509:ASP:OD1	1:B:510:LEU:N	2.51	0.44
1:B:534:ARG:NH2	1:B:538:LYS:HZ1	2.15	0.44
1:C:661:ALA:O	1:C:664:GLN:HG3	2.18	0.44
1:B:845:TYR:HB2	1:B:849:SER:H	1.83	0.44
1:A:842:LEU:HD11	1:A:852:PHE:CD1	2.53	0.43
1:A:509:ASP:OD1	1:A:510:LEU:N	2.51	0.43
1:A:731:HIS:NE2	1:B:693:LEU:HD11	2.34	0.43
1:C:733:ASN:HD22	1:C:755:ALA:HB2	1.83	0.43
1:A:733:ASN:HD22	1:A:755:ALA:HB2	1.83	0.43
1:A:791:ARG:HA	1:A:820:GLY:HA3	1.98	0.43
1:D:455:VAL:O	1:D:459:VAL:HG23	2.17	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:817:LYS:H	1:B:863:ARG:HH12	1.66	0.43
1:B:842:LEU:HD11	1:B:852:PHE:CD1	2.54	0.43
1:C:693:LEU:HD11	1:B:731:HIS:NE2	2.33	0.43
1:C:842:LEU:HD11	1:C:852:PHE:CD1	2.53	0.43
1:D:466:ASP:HA	1:D:469:ILE:HG22	2.00	0.43
1:D:534:ARG:NH2	1:D:538:LYS:HZ1	2.13	0.43
1:D:791:ARG:HG3	1:D:794:VAL:HB	2.00	0.43
1:B:455:VAL:O	1:B:459:VAL:HG23	2.18	0.43
1:A:689:ILE:HG12	1:D:731:HIS:CE1	2.53	0.43
1:A:466:ASP:HA	1:A:469:ILE:HG22	2.00	0.43
1:C:704:ALA:O	1:C:708:THR:HG22	2.18	0.43
1:C:791:ARG:HG3	1:C:794:VAL:HB	1.99	0.43
1:C:785:GLY:HA3	1:C:827:TYR:O	2.19	0.43
1:C:799:LEU:HD13	1:C:803:ASP:HB3	2.00	0.43
1:D:842:LEU:HD11	1:D:852:PHE:CD1	2.54	0.43
1:C:509:ASP:OD1	1:C:510:LEU:N	2.51	0.43
1:C:563:TRP:O	1:C:567:ILE:HG13	2.19	0.43
1:C:791:ARG:HB3	1:C:819:ASN:HB3	2.00	0.43
1:A:782:ILE:HG12	1:A:787:ILE:HG13	2.00	0.43
1:A:842:LEU:HD11	1:A:852:PHE:HD1	1.84	0.43
1:D:414:ILE:O	1:D:418:VAL:HG23	2.19	0.43
1:A:704:ALA:O	1:A:708:THR:HG22	2.18	0.42
1:D:676:GLN:HA	1:D:676:GLN:OE1	2.19	0.42
1:D:817:LYS:H	1:D:863:ARG:HH12	1.66	0.42
1:B:791:ARG:HG3	1:B:794:VAL:HB	2.00	0.42
1:A:414:ILE:O	1:A:418:VAL:HG23	2.19	0.42
1:A:693:LEU:HD11	1:D:731:HIS:NE2	2.33	0.42
1:C:414:ILE:O	1:C:418:VAL:HG23	2.19	0.42
1:D:563:TRP:O	1:D:567:ILE:HG13	2.19	0.42
1:B:563:TRP:O	1:B:567:ILE:HG13	2.19	0.42
1:A:661:ALA:O	1:A:664:GLN:HG3	2.18	0.42
1:A:775:LEU:HD21	1:D:844:MET:SD	2.60	0.42
1:A:785:GLY:HA3	1:A:827:TYR:O	2.19	0.42
1:C:775:LEU:HD21	1:B:844:MET:SD	2.59	0.42
1:C:833:ILE:HG13	1:C:834:HIS:H	1.83	0.42
1:D:845:TYR:HB2	1:D:849:SER:H	1.83	0.42
1:B:414:ILE:O	1:B:418:VAL:HG23	2.19	0.42
1:A:791:ARG:HB3	1:A:819:ASN:HB3	2.00	0.42
1:C:731:HIS:NE2	1:D:693:LEU:HD11	2.34	0.42
1:B:727:ASP:OD1	1:B:752:ARG:NH1	2.52	0.42
1:A:563:TRP:O	1:A:567:ILE:HG13	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:504:ALA:O	1:A:531:ARG:NH2	2.53	0.42
1:C:466:ASP:HA	1:C:469:ILE:HG22	2.00	0.42
1:B:411:ASP:OD2	1:B:541:ARG:NH2	2.46	0.42
1:B:833:ILE:HG13	1:B:834:HIS:H	1.85	0.42
1:A:472:ARG:HH12	1:A:486:PRO:HG3	1.85	0.42
1:C:472:ARG:HH12	1:C:486:PRO:HG3	1.85	0.42
1:C:676:GLN:OE1	1:C:676:GLN:HA	2.20	0.42
1:C:724:LEU:HA	1:C:727:ASP:OD2	2.20	0.42
1:B:414:ILE:HG23	1:B:463:PHE:HE1	1.85	0.42
1:C:553:LEU:HD23	1:C:553:LEU:HA	1.87	0.41
1:D:472:ARG:HH12	1:D:486:PRO:HG3	1.85	0.41
1:D:727:ASP:OD1	1:D:752:ARG:NH1	2.52	0.41
1:B:472:ARG:HH12	1:B:486:PRO:HG3	1.85	0.41
1:C:414:ILE:HG23	1:C:463:PHE:HE1	1.86	0.41
1:C:842:LEU:HD11	1:C:852:PHE:HD1	1.84	0.41
1:D:414:ILE:HG23	1:D:463:PHE:HE1	1.85	0.41
1:A:534:ARG:NH2	1:A:538:LYS:HZ1	2.16	0.41
1:B:676:GLN:HA	1:B:676:GLN:OE1	2.19	0.41
1:A:564:LEU:HD13	1:A:644:VAL:HG13	2.03	0.41
1:C:817:LYS:O	1:C:863:ARG:NH1	2.53	0.41
1:D:509:ASP:OD1	1:D:510:LEU:N	2.51	0.41
1:D:842:LEU:HD11	1:D:852:PHE:HD1	1.85	0.41
1:D:714:ASN:HA	1:D:717:LEU:HD12	2.01	0.41
1:B:842:LEU:HD11	1:B:852:PHE:HD1	1.85	0.41
1:A:676:GLN:OE1	1:A:676:GLN:HA	2.20	0.41
1:A:817:LYS:O	1:A:863:ARG:NH1	2.54	0.41
1:B:450:GLN:O	1:B:454:VAL:HG23	2.21	0.41
1:A:571:ILE:HA	1:A:574:MET:HG2	2.03	0.41
1:A:724:LEU:HA	1:A:727:ASP:OD2	2.20	0.41
1:A:863:ARG:C	1:A:863:ARG:HD3	2.46	0.41
1:C:504:ALA:O	1:C:531:ARG:NH2	2.53	0.41
1:C:845:TYR:HB2	1:C:849:SER:H	1.85	0.41
1:B:714:ASN:HA	1:B:717:LEU:HD12	2.01	0.41
1:D:833:ILE:HG13	1:D:834:HIS:H	1.85	0.41
1:D:571:ILE:HA	1:D:574:MET:HG2	2.03	0.41
1:B:564:LEU:HD13	1:B:644:VAL:HG13	2.03	0.41
1:D:553:LEU:HD23	1:D:553:LEU:HA	1.88	0.40
1:B:504:ALA:O	1:B:531:ARG:NH2	2.52	0.40
1:C:564:LEU:HD13	1:C:644:VAL:HG13	2.03	0.40
1:D:564:LEU:HD13	1:D:644:VAL:HG13	2.03	0.40
1:B:786:SER:OG	1:B:788:GLU:OE2	2.33	0.40

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:704:ALA:O	1:D:708:THR:HG22	2.22	0.40
1:B:845:TYR:O	1:B:849:SER:OG	2.31	0.40
1:A:728:ILE:HG23	1:B:683:PHE:HZ	1.86	0.40
1:A:845:TYR:HB2	1:A:849:SER:H	1.85	0.40
1:B:708:THR:OG1	1:B:711:ILE:O	2.39	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	421/1159 (36%)	396 (94%)	23 (6%)	2 (0%)	25	59
1	B	421/1159 (36%)	396 (94%)	24 (6%)	1 (0%)	44	75
1	C	421/1159 (36%)	396 (94%)	23 (6%)	2 (0%)	25	59
1	D	421/1159 (36%)	396 (94%)	23 (6%)	2 (0%)	25	59
All	All	1684/4636 (36%)	1584 (94%)	93 (6%)	7 (0%)	32	64

All (7) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	688	GLN
1	C	688	GLN
1	D	688	GLN
1	B	688	GLN
1	A	450	GLN
1	C	450	GLN
1	D	450	GLN

5.3.2 Protein sidechains ⓘ

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	364/973 (37%)	364 (100%)	0	100	100
1	B	364/973 (37%)	364 (100%)	0	100	100
1	C	364/973 (37%)	364 (100%)	0	100	100
1	D	364/973 (37%)	364 (100%)	0	100	100
All	All	1456/3892 (37%)	1456 (100%)	0	100	100

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

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (12) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	470	ASN
1	A	731	HIS
1	C	470	ASN
1	C	731	HIS
1	D	470	ASN
1	D	731	HIS
1	D	733	ASN
1	D	762	HIS
1	B	470	ASN
1	B	731	HIS
1	B	733	ASN
1	B	762	HIS

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

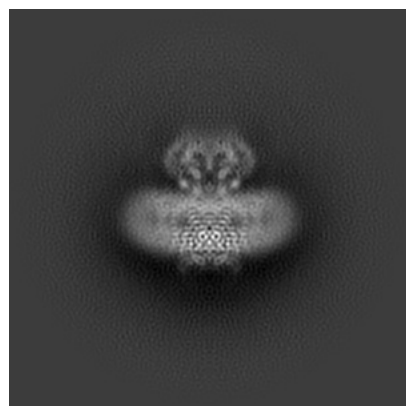
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-35607. These allow visual inspection of the internal detail of the map and identification of artifacts.

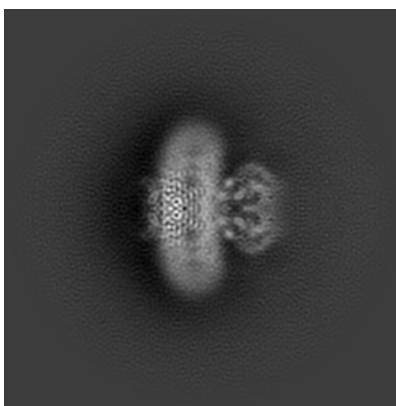
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

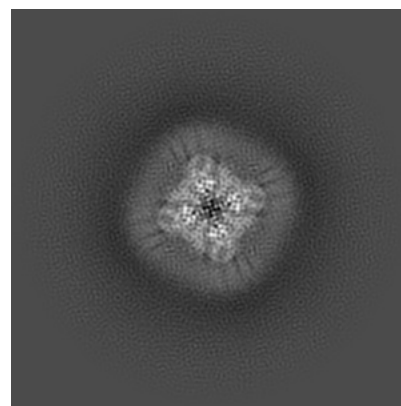
6.1.1 Primary map



X

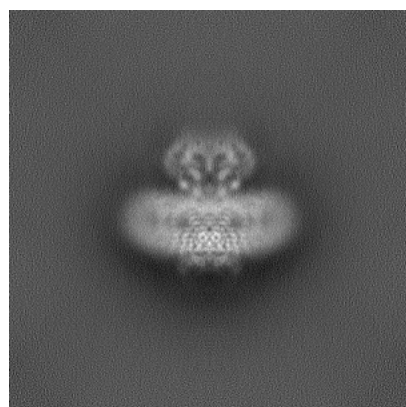


Y

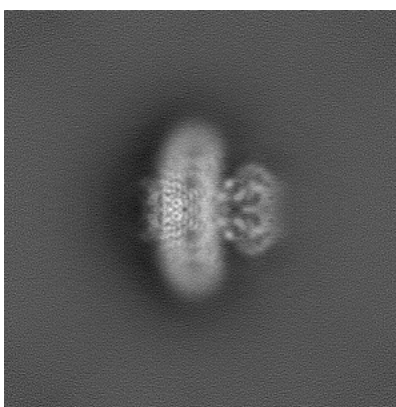


Z

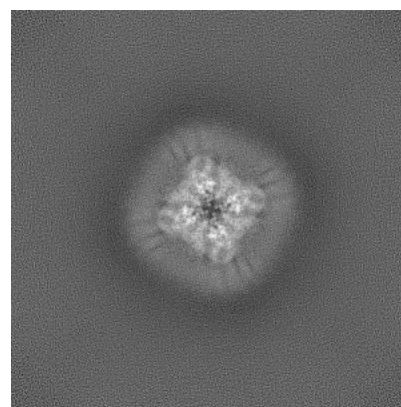
6.1.2 Raw map



X



Y

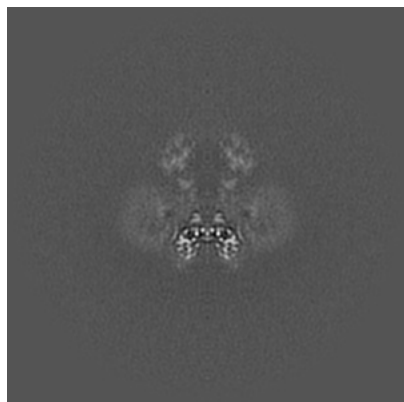


Z

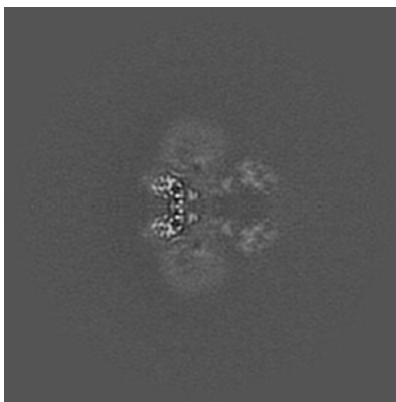
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

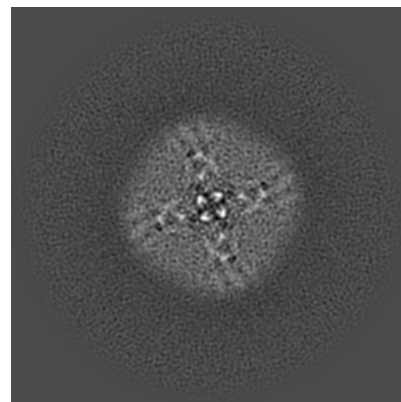
6.2.1 Primary map



X Index: 200

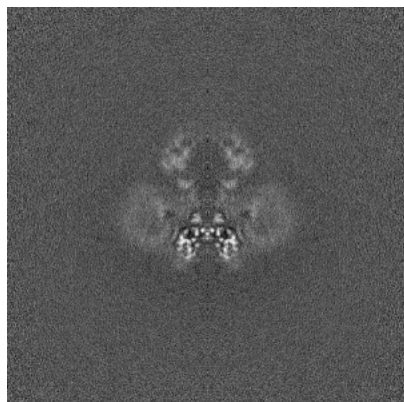


Y Index: 200

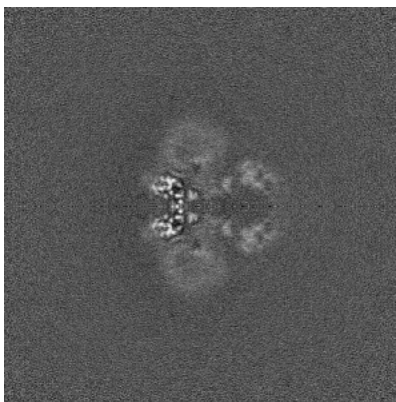


Z Index: 200

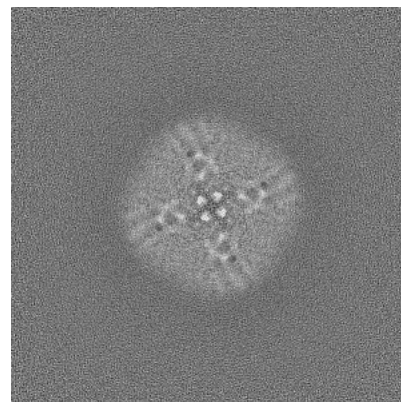
6.2.2 Raw map



X Index: 200



Y Index: 200

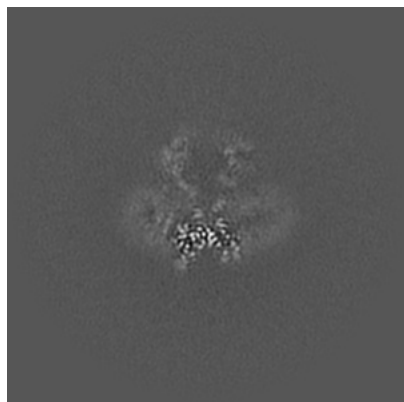


Z Index: 200

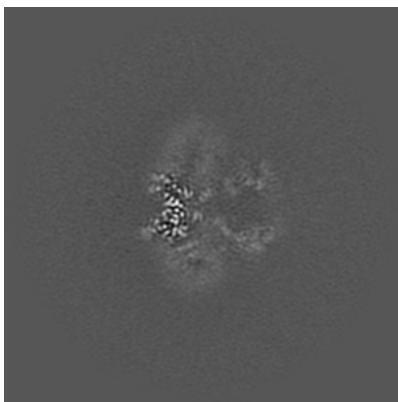
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

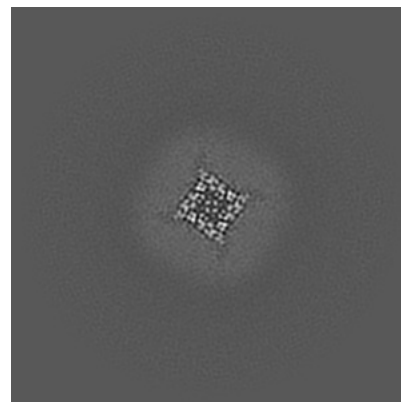
6.3.1 Primary map



X Index: 204

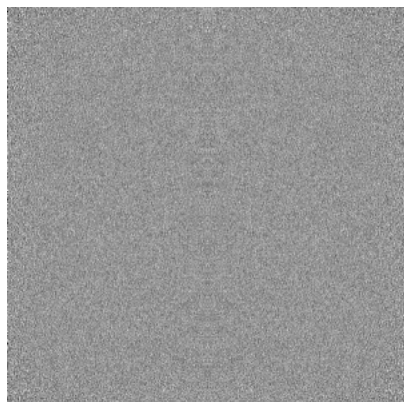


Y Index: 196

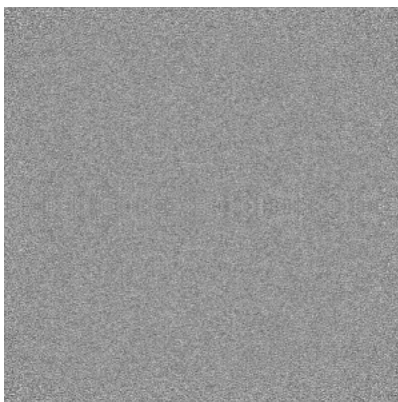


Z Index: 164

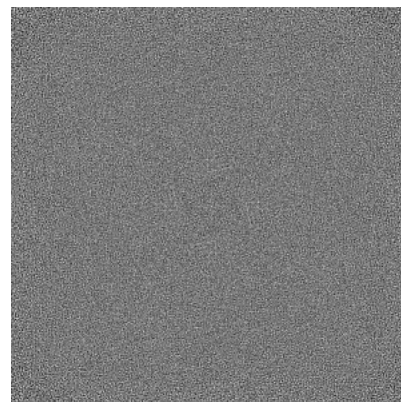
6.3.2 Raw map



X Index: 0



Y Index: 0

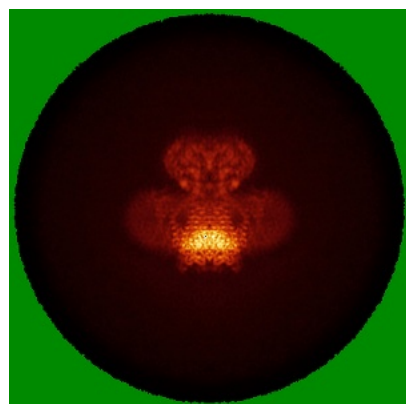


Z Index: 399

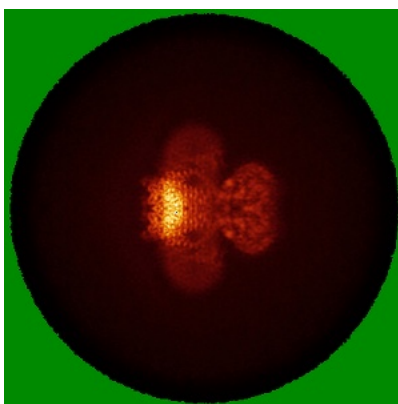
The images above show the largest variance slices of the map in three orthogonal directions.

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

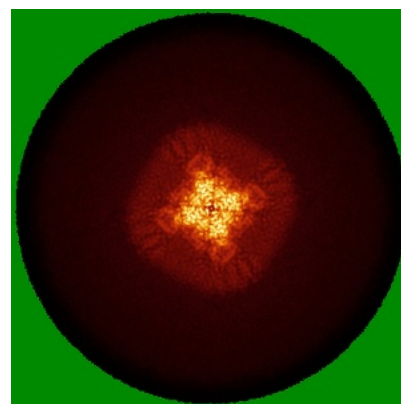
6.4.1 Primary map



X

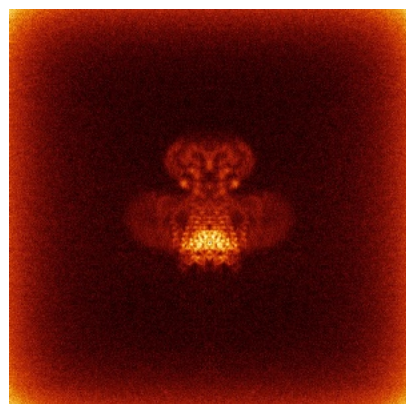


Y

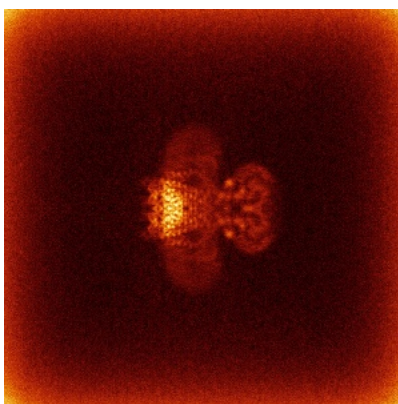


Z

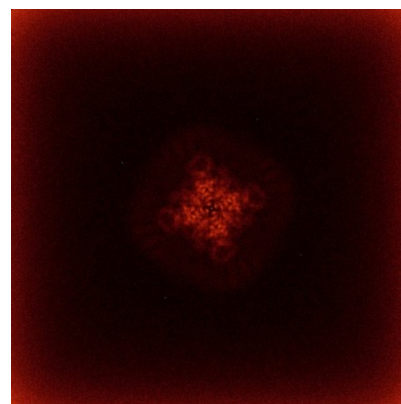
6.4.2 Raw map



X



Y

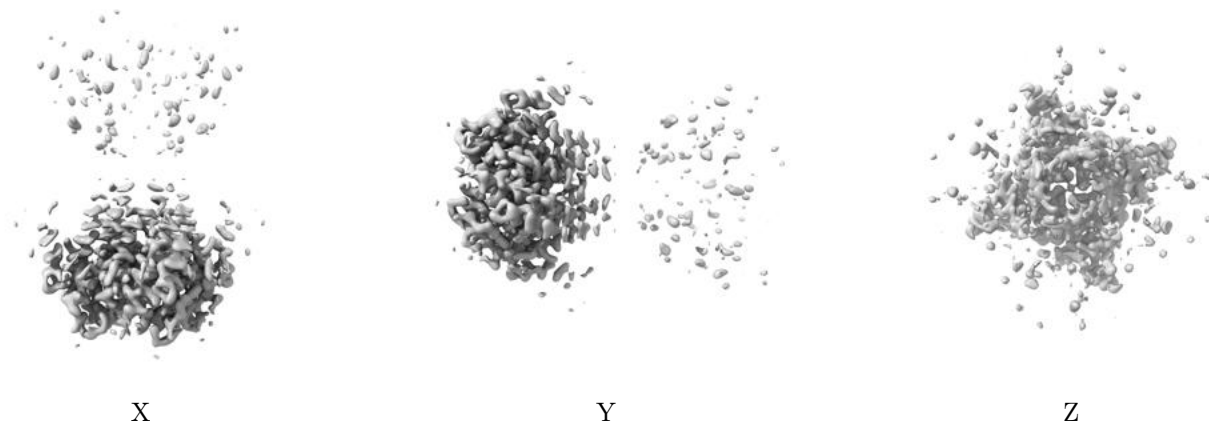


Z

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.

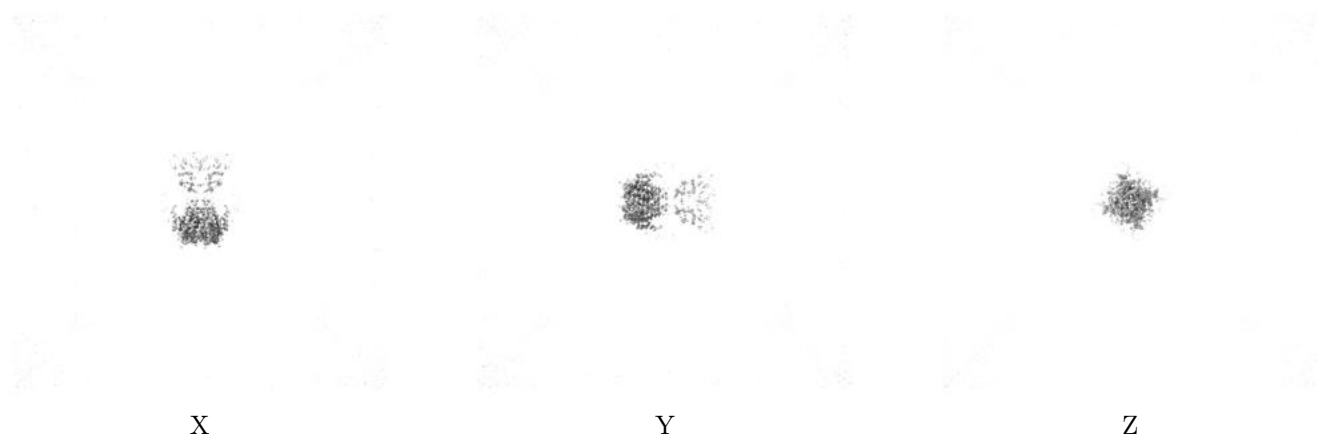
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.22. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



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.

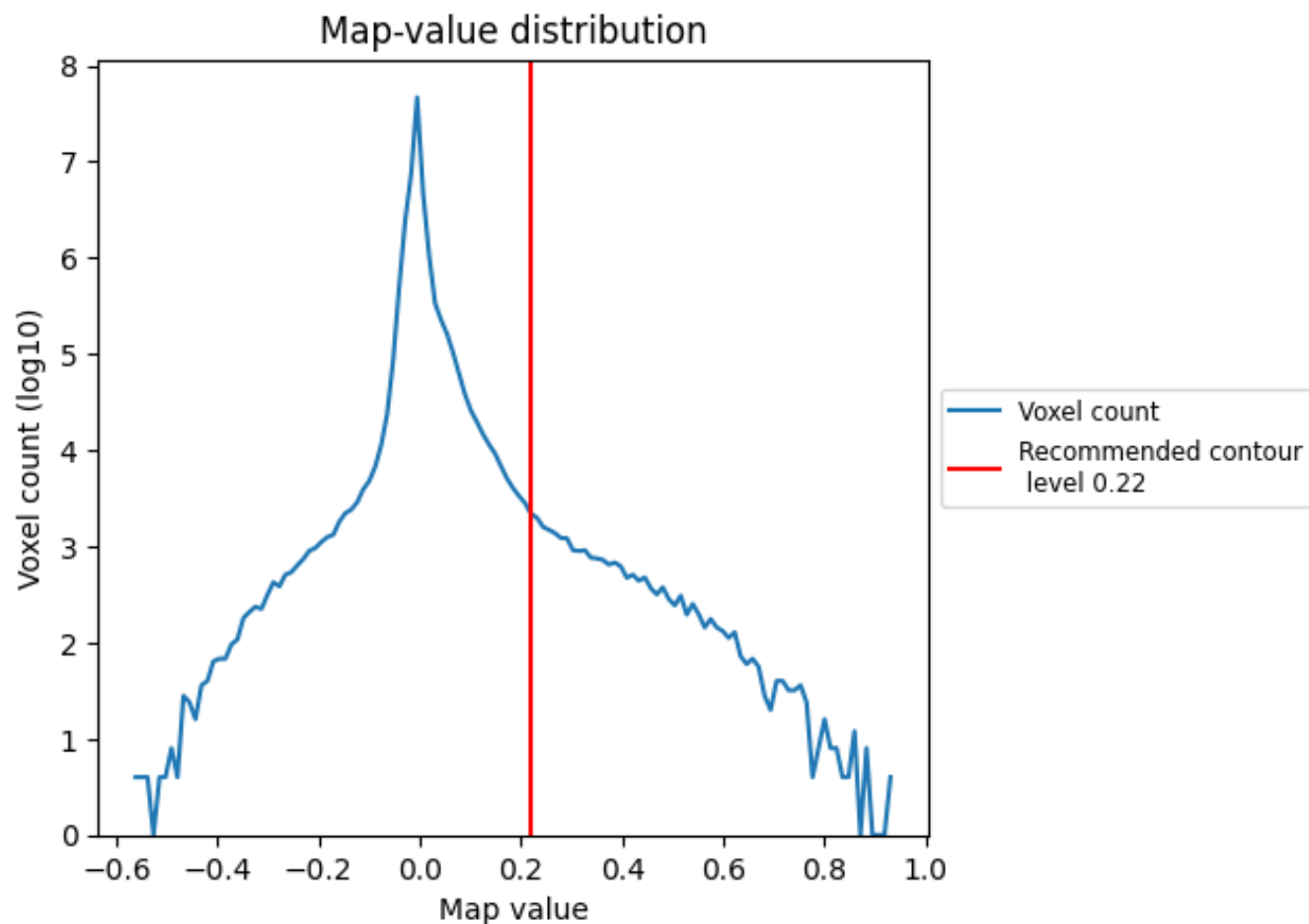
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

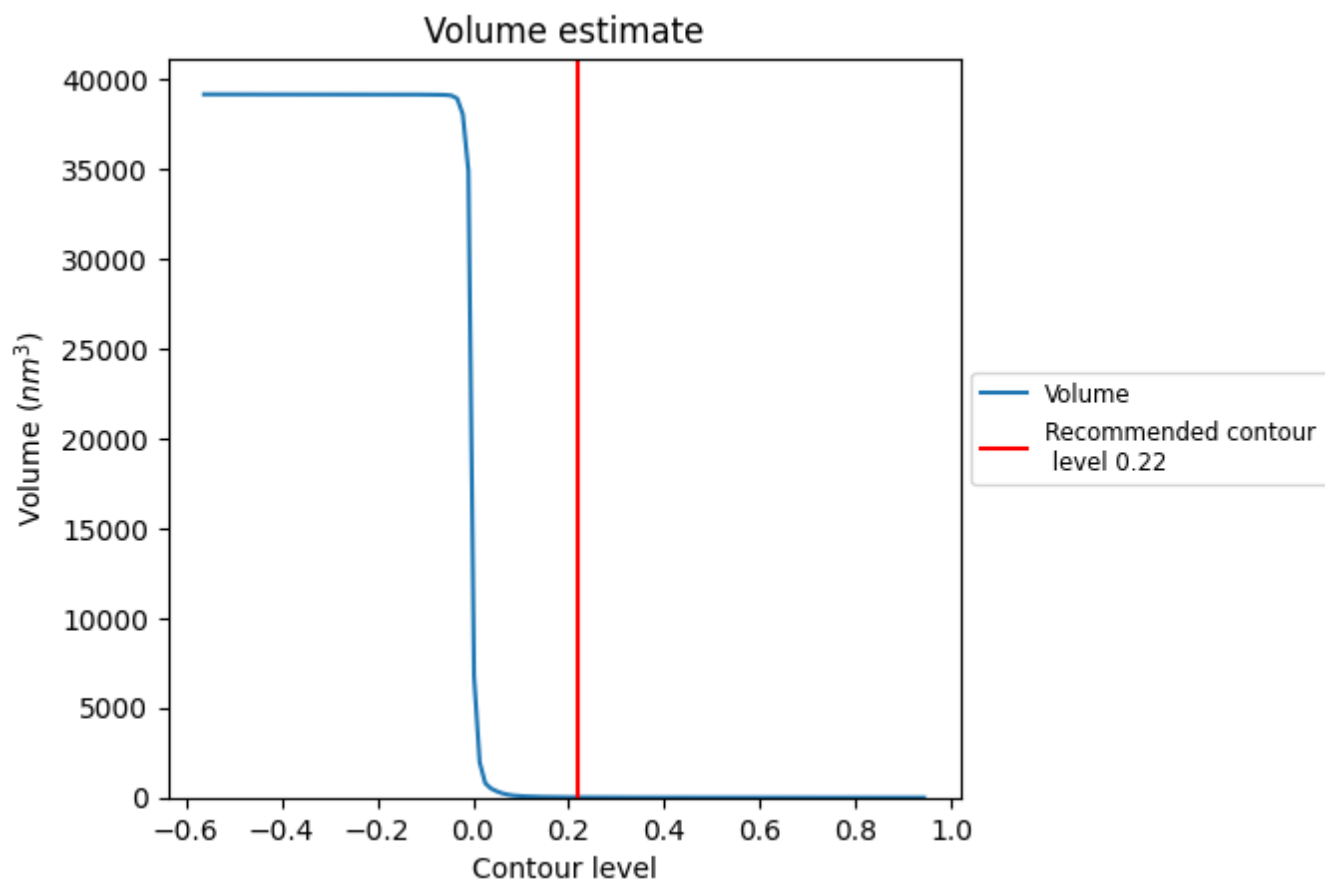
This section contains the results of statistical analysis of the map.

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.

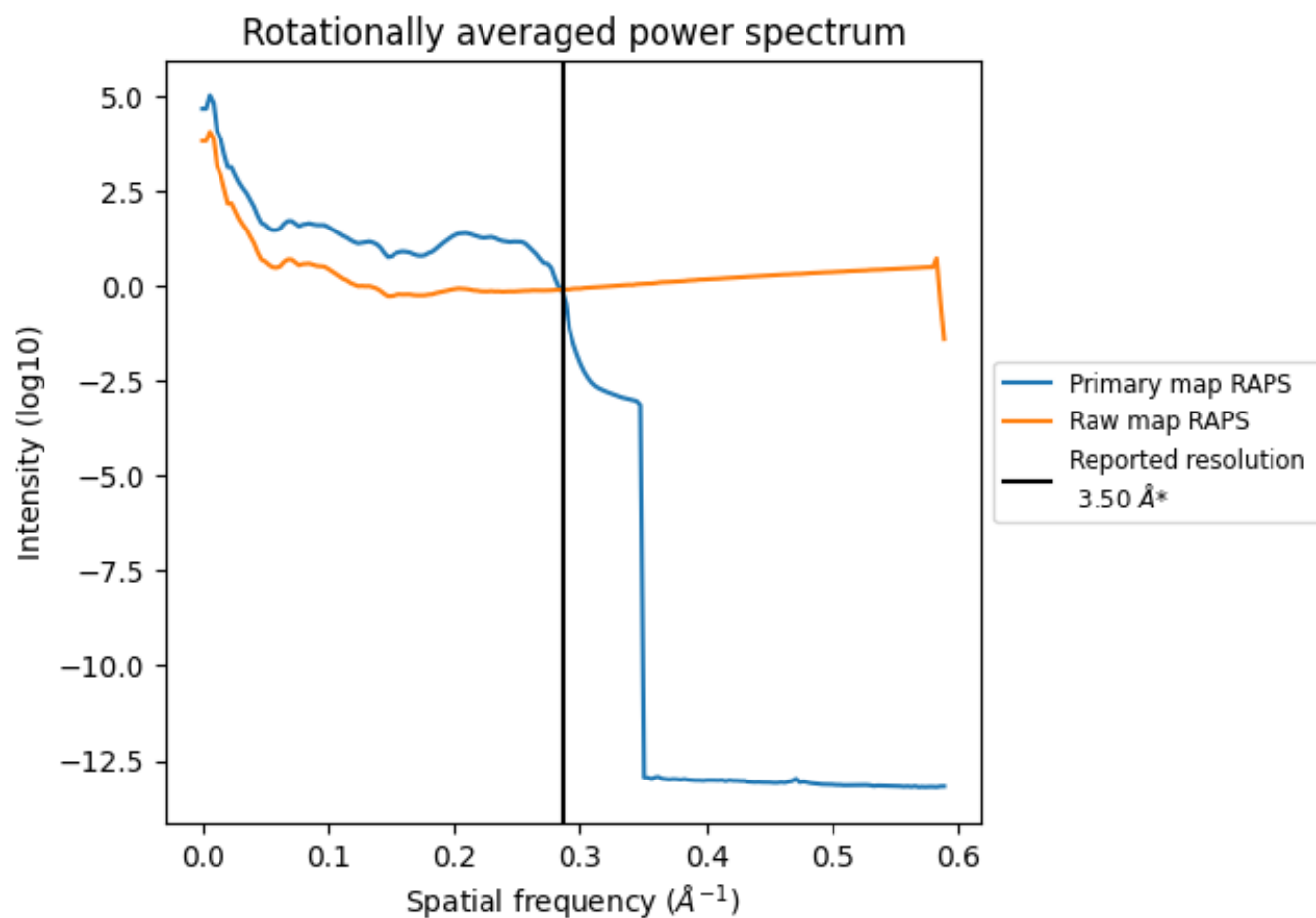
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 15 nm³; this corresponds to an approximate mass of 13 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 ⓘ

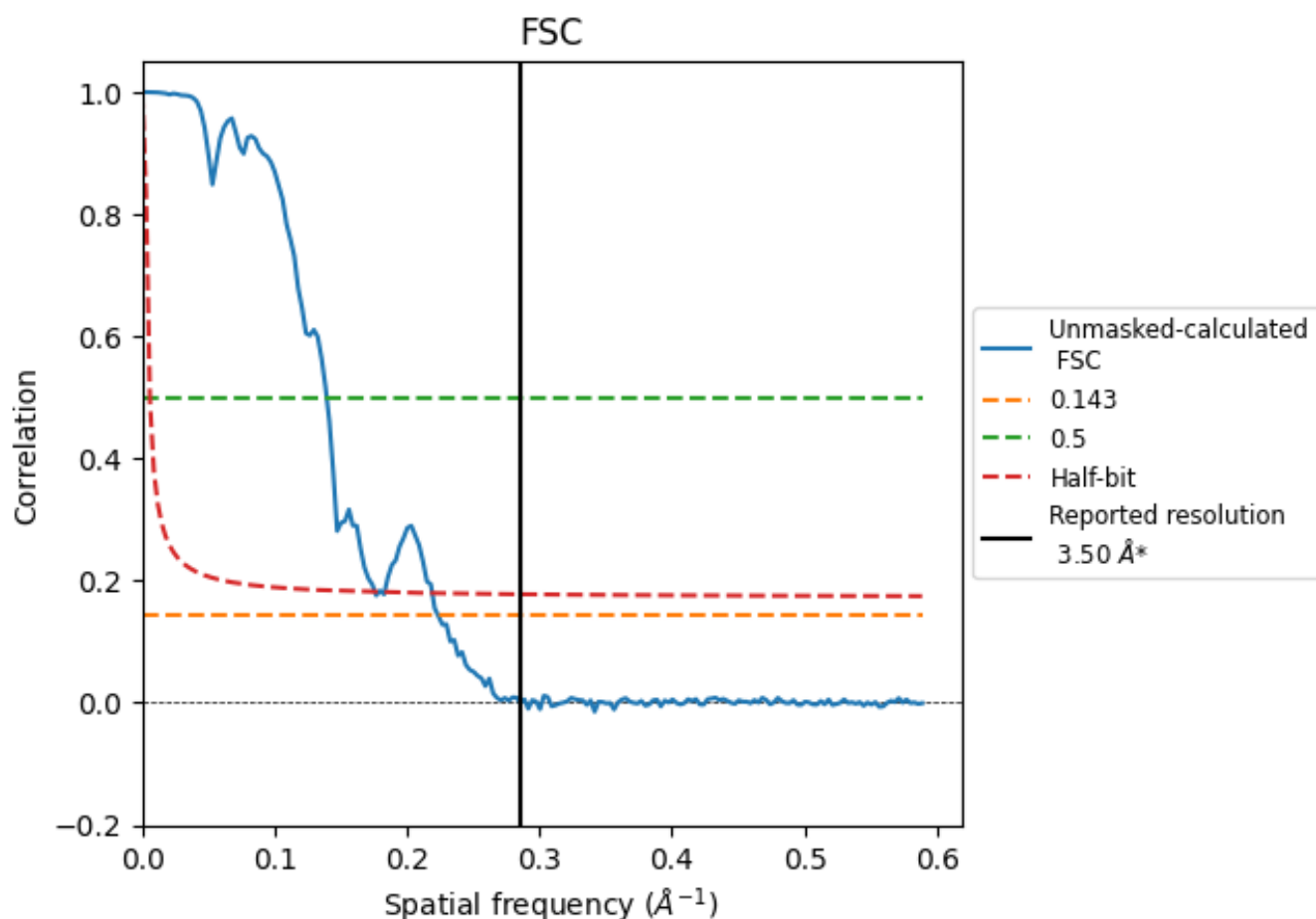


*Reported resolution corresponds to spatial frequency of 0.286 Å⁻¹

8 Fourier-Shell correlation [i](#)

Fourier-Shell Correlation (FSC) is the most commonly used method to estimate the resolution of single-particle and subtomogram-averaged maps. The shape of the curve depends on the imposed symmetry, mask and whether or not the two 3D reconstructions used were processed from a common reference. The reported resolution is shown as a black line. A curve is displayed for the half-bit criterion in addition to lines showing the 0.143 gold standard cut-off and 0.5 cut-off.

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.286 Å⁻¹

8.2 Resolution estimates [i](#)

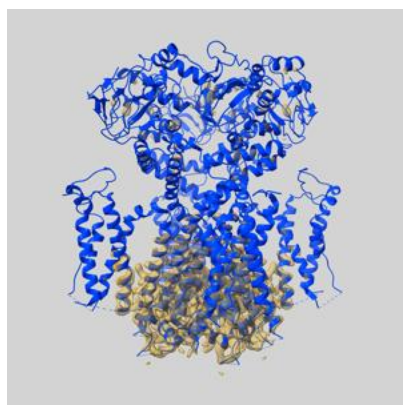
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.50	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	4.47	7.18	5.69

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 4.47 differs from the reported value 3.5 by more than 10 %

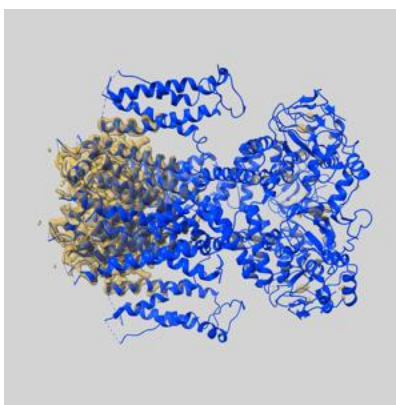
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-35607 and PDB model 8IO4. Per-residue inclusion information can be found in section 3 on page 4.

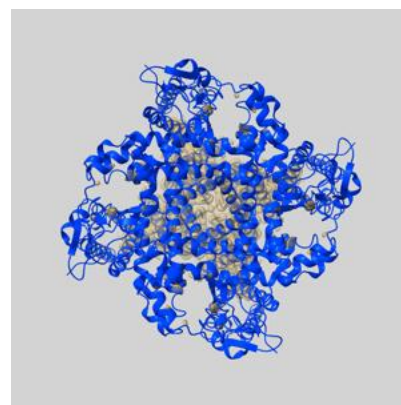
9.1 Map-model overlay [i](#)



X



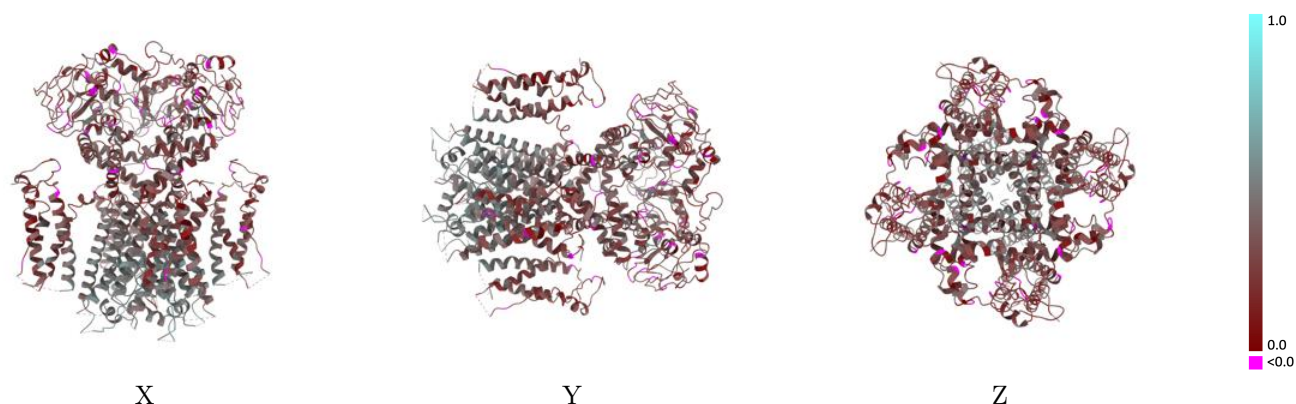
Y



Z

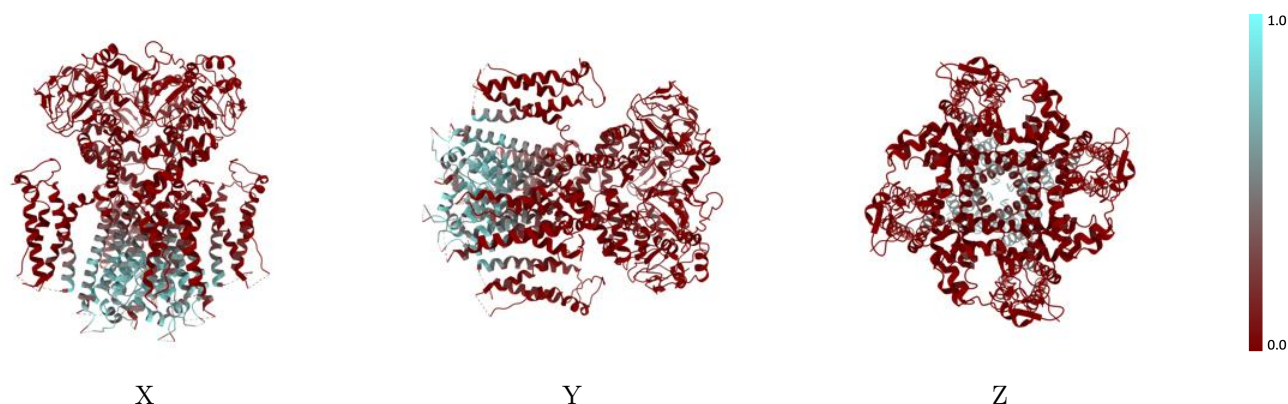
The images above show the 3D surface view of the map at the recommended contour level 0.22 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



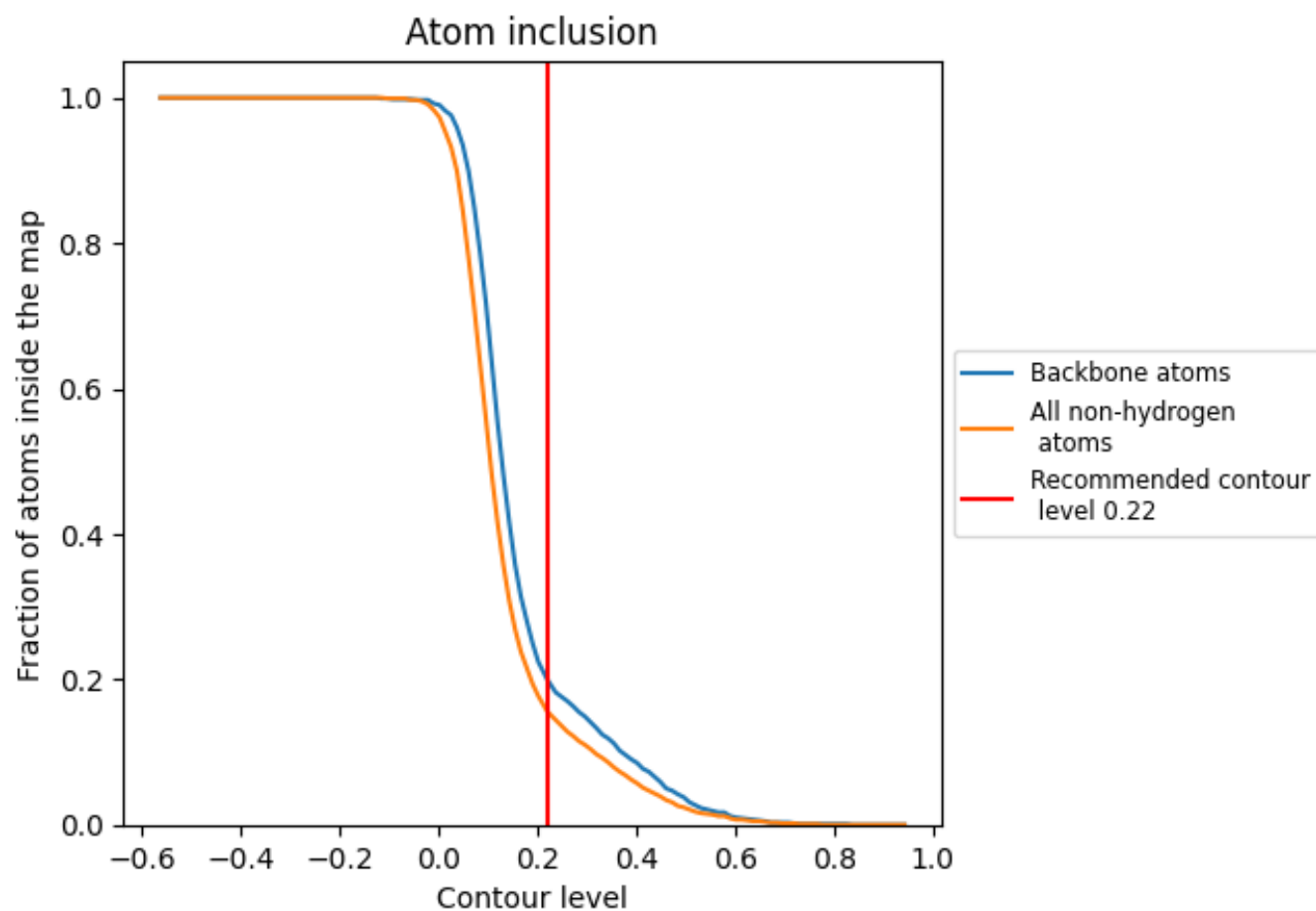
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.22).

9.4 Atom inclusion [i](#)



At the recommended contour level, 20% of all backbone atoms, 16% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary ⓘ

The table lists the average atom inclusion at the recommended contour level (0.22) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.1560	0.3250
A	0.1560	0.3240
B	0.1570	0.3240
C	0.1560	0.3250
D	0.1570	0.3260

