



Full wwPDB EM Validation Report ⓘ

Aug 16, 2025 – 01:46 PM EDT

PDB ID : 9BMR / pdb_00009bmr
EMDB ID : EMD-44708
Title : State-1 of motor domain from full-length human phi dynein-1 in 5 mM ADP
Authors : Chai, P.; Zhang, K.
Deposited on : 2024-05-02
Resolution : 2.60 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.dev126
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0rc1
buster-report : 1.1.7 (2018)
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) : 2.45.1

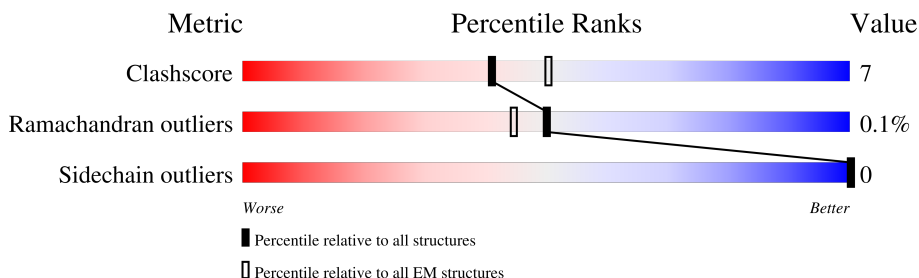
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 2.60 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	4646	

2 Entry composition [i](#)

There are 4 unique types of molecules in this entry. The entry contains 23707 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 Cytoplasmic dynein 1 heavy chain 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	2937	23593	15028	4070	4378	117	0	0

- Molecule 2 is ADENOSINE-5'-DIPHOSPHATE (CCD ID: ADP) (formula: $C_{10}H_{15}N_5O_{10}P_2$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
2	A	1	27	10	5	10	2	0
2	A	1	27	10	5	10	2	0
2	A	1	27	10	5	10	2	0

- Molecule 3 is ADENOSINE-5'-TRIPHOSPHATE (CCD ID: ATP) (formula: $C_{10}H_{16}N_5O_{13}P_3$) (labeled as "Ligand of Interest" by depositor).



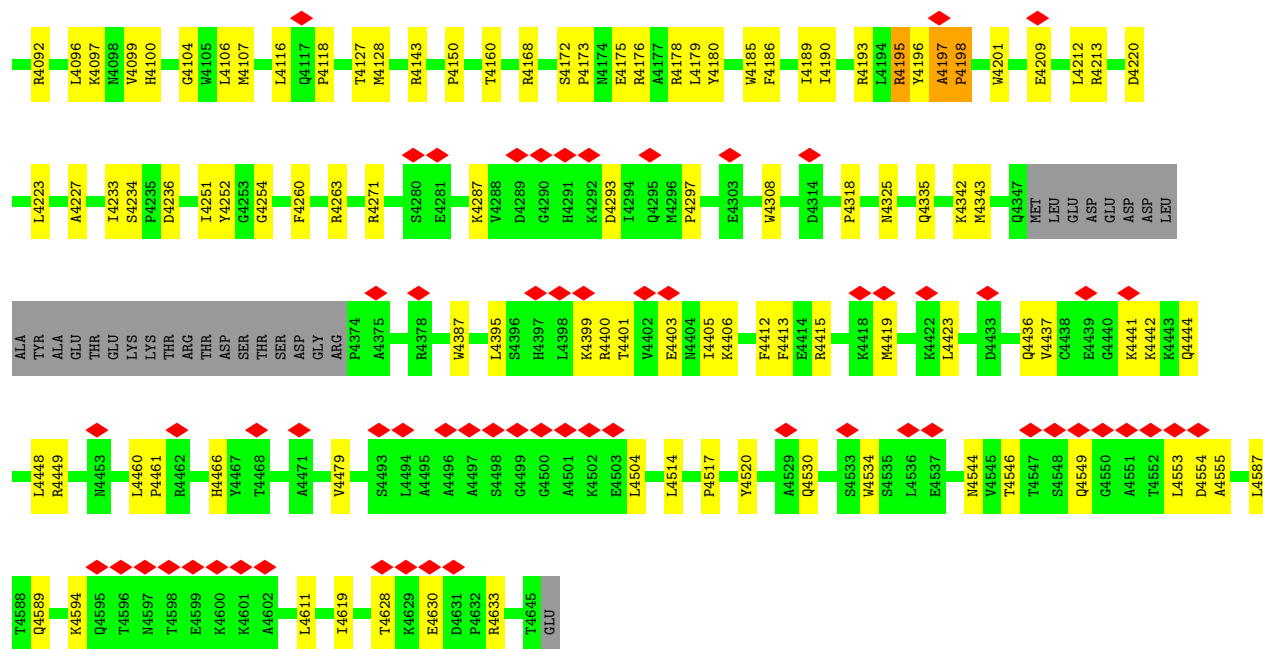
Mol	Chain	Residues	Atoms					AltConf
3	A	1	Total	C	N	O	P	0
			31	10	5	13	3	

- Molecule 4 is MAGNESIUM ION (CCD ID: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		AltConf
4	A	2	Total	Mg	0
			2	2	



F3944	K3945	K3946	L3947	K3950	V3951	Q3952	A3953	E3955	Q3956	D3962	P3966	L3973	V3974	S3975	E3976	E3977	T3978	P3979	T3983	G3984	Q3985	R3989	R3997	L4001	L4002	V4009	L4013	M4021	D4026	E4034	P4037	M4043	A4051	D4057	M4063	I4071	A4087	V4088													
M3500	S3510	K3819	Q3820	I3821	L3829	I3835	Y3836	V3839	K3847	D3862	L3863	V3866	R3870	H3880	K3891	L3892	V3896	G3897	E3898	F3908	L3909	R3910	G3911	N3912	E3913	I3914	V3915	L3916	S3917	A3918	G3919	T3921	P3922	R3923	I3924	Q3925	G3926	E3930	E3933	R3937	P3942	A3943									
L3661	D3666	Q3667	D3668	I3669	T3681	D3691	L3692	E3693	S3694	V3703	V3716	L3731	E3737	L3740	R3741	L3742	K3743	Q3744	L3745	L3750	N3754	K3757	G3758	R3759	L3760	L3761	D3762	D3763	D3764	T3765	I3766	I3767	K3774	R3775	E3776	A3777	K3782	E3785	D3788	I3789	M3791	Q3792	E3793								
M3500	S3510	I3514	A3515	Y3516	F3520	M3524	D3546	I3547	L3553	D3557	E3558	W3562	I3578	M3579	L3580	K3581	F3582	F3583	N3584	R3585	L3588	T3597	I3600	M3601	D3606	R3607	K3608	R3611	D3617	E3624	L3634	V3638	P3643	R3651	E3652	R3655	V3660														
GLN	LYS	ALA	ASN	GLU	VAL	GLN	GLU	GLU	MET	ILE	ASP	ARG	ILE	ALA	ALA	ARG	TYR	E3449	E3450	Y3451	A3452	V3453	L3454	I3455	S3456	E3457	A3458	Q3459	A3460	I3461	K3462	A3463	D3464	L3465	A3466	E3469	A3470	K3471	V3472	R3473	R3474	S3475	E3485	R3486	E3487	R3488	K3491	E3494	K3497	N3498	Q3499
LYS	LYS	ASN	TYR	MET	SER	ASN	PRO	ASN	PRO	ALA	VAL	GLU	GLN	ASN	ARG	ILE	CYS	LEU	LEU	ALA	CYS	GLY	GLU	SER	PRO	MET	VAL	LYS	TRP	ALA	ILE	ALA	GLN	GLN	GLY	GLY	PRO	GLN	GLY	GLU	ASP	GLN	GLY	GLU	ASP	GLN	GLY	GLU	ASP	GLN	
ARG	SER	MET	ALA	ASN	PRO	ALA	VAL	LEU	ALA	LEU	GLU	GLU	GLN	VAL	THR	THR	ASP	TRP	LYS	ALA	GLN	ILE	GLU	SER	ILE	ASN	ILE	ASP	MET	ARG	GLU	ASN	PHE	SER	ALA	GLN	GLU	GLU	GLN	GLU	GLU	ILE	SER	ASP	ALA	ILE	ARG	GLU	LYS	MET	
GLN	GLU	ALA	GLU	LYS	LYS	VAL	SER	GLU	GLU	GLN	GLU	GLN	GLU	VAL	ILE	ASP	GLN	GLN	GLN	GLN	GLN	VAL	GLU	LYS	VAL	GLU	VAL	ASP	LYS	VAL	GLU	GLN	GLN	GLN	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	GLN	



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	174680	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 ($e^-/\text{\AA}^2$)	40	Depositor
Minimum defocus (nm)	1200	Depositor
Maximum defocus (nm)	3000	Depositor
Magnification	105000	Depositor
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	2.973	Depositor
Minimum map value	-1.420	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	0.062	Depositor
Recommended contour level	0.38	Depositor
Map size ($\text{\AA}$)	422.40002, 422.40002, 422.40002	wwPDB
Map dimensions	384, 384, 384	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing ($\text{\AA}$)	1.1, 1.1, 1.1	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: ATP, MG, ADP

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	0.19	0/24093	0.32	0/32651

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	A	0	1

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	4195	ARG	Sidechain

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	23593	0	23657	315	0
2	A	81	0	36	3	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	A	31	0	12	4	0
4	A	2	0	0	0	0
All	All	23707	0	23705	317	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 7.

All (317) 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:2221:MET:HG2	1:A:2343:PHE:HB2	1.55	0.89
1:A:2629:GLU:OE2	1:A:2633:LYS:NZ	2.12	0.83
1:A:4271:ARG:HD3	1:A:4633:ARG:HH12	1.43	0.83
1:A:1490:TRP:HH2	1:A:1537:TRP:HD1	1.29	0.80
1:A:4088:VAL:HG11	1:A:4116:LEU:HD21	1.67	0.76
1:A:2562:VAL:O	1:A:2804:ARG:NH1	2.21	0.74
1:A:2149:LEU:HD11	1:A:2157:LEU:HD13	1.68	0.74
1:A:1571:ILE:HD13	1:A:1607:LEU:HB3	1.69	0.73
1:A:1490:TRP:CH2	1:A:1537:TRP:HD1	2.08	0.72
1:A:4037:PRO:HB2	1:A:4118:PRO:HG2	1.71	0.72
1:A:2788:THR:HG22	1:A:2789:GLN:HG2	1.72	0.72
1:A:2930:GLN:HG3	1:A:3059:ILE:HG23	1.73	0.71
1:A:4190:ILE:HD12	1:A:4201:TRP:HZ2	1.56	0.70
1:A:2581:LEU:HD11	1:A:2593:LEU:HD21	1.72	0.70
1:A:4549:GLN:HG3	1:A:4587:LEU:HB2	1.73	0.70
1:A:1466:ILE:HG12	1:A:1500:HIS:HD1	1.57	0.69
1:A:4197:ALA:HB3	1:A:4198:PRO:HD3	1.76	0.68
1:A:2775:GLU:OE1	1:A:2857:HIS:NE2	2.24	0.67
1:A:4176:ARG:NH1	1:A:4220:ASP:OD2	2.27	0.66
1:A:3661:LEU:HD12	1:A:3668:ASP:HB2	1.76	0.66
1:A:2906:ASP:OD2	1:A:3655:ARG:NH1	2.29	0.65
1:A:2444:GLU:H	1:A:2510:MET:HE3	1.61	0.65
1:A:3638:VAL:HG12	1:A:3681:THR:HB	1.79	0.64
1:A:2452:LEU:HD13	1:A:2729:ARG:HH21	1.63	0.64
1:A:2536:ASP:OD1	1:A:2576:ARG:NH1	2.31	0.64
1:A:1487:ILE:HD12	1:A:1537:TRP:NE1	2.14	0.63
1:A:1908:ALA:HB3	1:A:2353:LEU:HD22	1.81	0.63
1:A:3557:ASP:OD1	1:A:3743:ARG:NH1	2.32	0.62
1:A:2138:ILE:HD12	1:A:2161:LEU:HD22	1.79	0.62
3:A:4702:ATP:C8	3:A:4702:ATP:H5'1	2.35	0.62
1:A:4097:LYS:HA	1:A:4127:THR:HB	1.79	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2080:LEU:O	1:A:4415:ARG:NH1	2.33	0.62
3:A:4702:ATP:H5'1	3:A:4702:ATP:H8	1.64	0.62
1:A:2226:SER:HA	3:A:4702:ATP:O1G	2.00	0.61
1:A:1751:VAL:HG21	1:A:1878:LYS:HE3	1.83	0.61
1:A:2457:SER:HB2	1:A:2732:PRO:HB3	1.82	0.61
1:A:2905:LEU:HD11	1:A:3652:GLU:HB3	1.82	0.61
1:A:3761:LEU:HA	1:A:3767:ILE:HD11	1.82	0.60
1:A:4436:GLN:HG3	1:A:4441:LYS:HB2	1.84	0.60
1:A:2039:LEU:HD12	1:A:4254:GLY:HA2	1.84	0.60
1:A:2488:ARG:HG3	1:A:2492:ARG:HH12	1.65	0.60
1:A:1466:ILE:HG12	1:A:1500:HIS:ND1	2.17	0.59
1:A:3510:SER:HB3	1:A:3553:LEU:HD21	1.85	0.59
1:A:1623:ARG:HD3	1:A:1630:TYR:HA	1.84	0.59
1:A:3909:LEU:HD21	1:A:4343:MET:HE2	1.84	0.59
1:A:4318:PRO:HG2	1:A:4325:ASN:HA	1.85	0.59
1:A:2562:VAL:HG11	1:A:2755:MET:HB2	1.85	0.58
1:A:4287:LYS:H	1:A:4293:ASP:HB3	1.68	0.58
1:A:2279:LEU:HA	1:A:2698:GLN:HG3	1.86	0.58
1:A:2422:ILE:HD13	1:A:2487:GLU:HA	1.85	0.58
1:A:2356:VAL:HG13	1:A:2361:MET:HE3	1.84	0.58
1:A:2841:GLU:OE1	1:A:2844:ARG:NH1	2.36	0.58
1:A:3951:VAL:CG2	1:A:3973:LEU:HD21	2.33	0.58
1:A:4071:ILE:HD11	1:A:4096:LEU:HB3	1.86	0.57
1:A:3839:VAL:HG21	1:A:3863:LEU:HA	1.85	0.57
1:A:4544:ASN:HD22	1:A:4589:GLN:HG3	1.70	0.57
1:A:2107:ARG:NH2	1:A:2139:GLN:OE1	2.38	0.57
1:A:3597:THR:HG23	1:A:3634:LEU:HD21	1.86	0.57
1:A:4209:GLU:OE2	1:A:4213:ARG:NE	2.36	0.57
1:A:1567:ARG:O	1:A:1571:ILE:HG13	2.05	0.57
1:A:1931:ASN:HD22	1:A:2317:SER:H	1.51	0.57
1:A:3655:ARG:HG2	1:A:3660:VAL:HG22	1.86	0.56
1:A:4444:GLN:O	1:A:4449:ARG:NH1	2.38	0.56
1:A:2319:LEU:HD13	1:A:2359:CYS:SG	2.45	0.56
1:A:3891:LYS:HD2	1:A:4013:LEU:HD23	1.87	0.56
1:A:3601:MET:HG3	1:A:3611:ARG:NH2	2.21	0.56
1:A:2449:LEU:HD11	1:A:2454:CYS:SG	2.46	0.56
1:A:1490:TRP:HH2	1:A:1537:TRP:CD1	2.17	0.56
1:A:4168:ARG:NE	1:A:4220:ASP:OD1	2.30	0.56
1:A:4071:ILE:HG13	1:A:4099:VAL:HG12	1.87	0.55
1:A:3951:VAL:HG22	1:A:3973:LEU:HD21	1.87	0.55
1:A:4554:ASP:OD1	1:A:4555:ALA:N	2.37	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3172:THR:HG21	1:A:3694:SER:HB3	1.87	0.55
1:A:2433:VAL:HG22	1:A:2498:ILE:HD11	1.87	0.55
1:A:1537:TRP:CE3	1:A:1601:LEU:HD11	2.41	0.55
1:A:1985:HIS:CD2	1:A:1997:ILE:HD13	2.41	0.55
1:A:2573:ASP:OD1	1:A:2576:ARG:NH2	2.40	0.55
1:A:1998:THR:HG21	1:A:2005:GLN:HB3	1.88	0.55
1:A:2047:GLN:HA	1:A:2070:VAL:HG21	1.89	0.55
1:A:2294:GLU:OE1	1:A:2294:GLU:N	2.39	0.55
1:A:2144:THR:HG22	1:A:2145:MET:HE2	1.89	0.54
1:A:3580:LEU:HD13	1:A:3600:ILE:HD11	1.89	0.54
1:A:2694:ARG:NH1	1:A:2697:ASP:OD2	2.40	0.54
1:A:4104:GLY:HA2	1:A:4107:MET:HE3	1.88	0.54
1:A:1571:ILE:HD12	1:A:1611:ILE:HD11	1.90	0.54
1:A:2596:PRO:HB2	1:A:2738:TYR:CZ	2.43	0.54
1:A:2665:GLU:HB3	1:A:2668:LEU:HD12	1.90	0.53
1:A:3182:HIS:NE2	1:A:3582:ARG:O	2.40	0.53
1:A:1543:ARG:NH1	1:A:1612:GLN:OE1	2.41	0.53
1:A:3914:ILE:O	1:A:3937:ARG:NH1	2.42	0.53
1:A:3691:ASP:OD1	1:A:3692:LEU:N	2.42	0.53
1:A:1887:ARG:HE	1:A:2039:LEU:HD11	1.74	0.53
1:A:3916:LEU:HD11	1:A:3937:ARG:HG3	1.91	0.52
1:A:2621:ASN:OD1	1:A:3014:ASN:ND2	2.43	0.52
1:A:3750:LEU:O	1:A:3754:ASN:ND2	2.42	0.52
1:A:1832:ASN:HD21	1:A:1834:LYS:HB2	1.72	0.52
1:A:1687:LYS:HD3	1:A:1712:THR:HG23	1.91	0.52
1:A:2620:LEU:HD22	1:A:2631:LEU:HD23	1.91	0.52
1:A:3044:LEU:HD22	1:A:3049:GLU:HB3	1.90	0.52
1:A:4196:TYR:O	1:A:4197:ALA:C	2.52	0.52
1:A:1965:GLU:HG2	1:A:2026:SER:HB3	1.91	0.52
1:A:2973:ASP:OD2	1:A:3007:ARG:NH2	2.43	0.51
1:A:1487:ILE:HD12	1:A:1537:TRP:HE1	1.73	0.51
1:A:1929:VAL:H	1:A:2332:ARG:NH2	2.09	0.51
1:A:2835:ASP:HB3	1:A:3092:ASN:HD22	1.74	0.51
1:A:1467:ARG:HE	1:A:1523:TRP:HZ2	1.56	0.51
1:A:3624:GLU:HG3	1:A:3669:ILE:HD13	1.93	0.51
1:A:3194:LEU:HD23	1:A:3500:MET:SD	2.51	0.51
1:A:4179:LEU:HD12	1:A:4223:LEU:HD22	1.92	0.51
1:A:4413:PHE:HD2	1:A:4504:LEU:HD13	1.75	0.51
1:A:1860:GLN:HG2	1:A:1865:LYS:HG2	1.93	0.51
1:A:4178:ARG:NH2	1:A:4297:PRO:O	2.44	0.51
1:A:3520:PHE:HB3	1:A:3524:MET:HB3	1.91	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2224:GLY:O	1:A:2346:GLN:HA	2.12	0.50
1:A:4517:PRO:HG3	1:A:4611:LEU:HD13	1.93	0.50
1:A:3750:LEU:HG	1:A:3754:ASN:HD21	1.76	0.50
1:A:1671:SER:HB2	1:A:1693:THR:HG23	1.92	0.50
1:A:2487:GLU:O	1:A:2491:GLN:HG3	2.11	0.50
1:A:4460:LEU:HD12	1:A:4461:PRO:HD2	1.93	0.50
1:A:1929:VAL:H	1:A:2332:ARG:HH21	1.59	0.50
1:A:2807:PHE:CE2	1:A:2811:ARG:HD3	2.46	0.50
1:A:4009:VAL:HG13	1:A:4013:LEU:HD12	1.92	0.50
1:A:2638:TYR:HB3	1:A:2659:LEU:HD11	1.93	0.50
1:A:3211:THR:HG23	1:A:3761:LEU:HD11	1.93	0.50
1:A:1575:PHE:O	1:A:1579:MET:HG2	2.12	0.49
1:A:2773:MET:HB3	1:A:2799:MET:HE1	1.94	0.49
1:A:2917:ASP:OD2	1:A:2921:ARG:NH2	2.45	0.49
1:A:2773:MET:HE2	1:A:2802:TRP:CG	2.48	0.49
1:A:2374:ILE:HD13	1:A:2452:LEU:HD21	1.95	0.49
1:A:2564:ALA:HB3	1:A:2567:VAL:HG23	1.94	0.49
1:A:2538:GLU:HB3	1:A:2548:TRP:CE2	2.48	0.49
1:A:1929:VAL:HG13	1:A:1958:ASP:OD2	2.12	0.49
1:A:2994:MET:HE1	1:A:3008:MET:HG3	1.95	0.49
1:A:1914:GLU:HG2	2:A:4701:ADP:O1A	2.13	0.49
1:A:2869:ARG:HA	1:A:2869:ARG:NE	2.28	0.49
1:A:4403:GLU:HA	1:A:4406:LYS:HE2	1.95	0.49
1:A:4436:GLN:HG2	1:A:4442:LYS:HG2	1.95	0.49
1:A:3944:PHE:CE1	1:A:3974:TRP:HB3	2.48	0.49
1:A:4043:MET:HB3	1:A:4051:ALA:HB3	1.95	0.49
1:A:2174:GLU:OE1	1:A:2176:THR:OG1	2.30	0.48
1:A:4400:ARG:HE	1:A:4405:ILE:HD11	1.77	0.48
1:A:1647:VAL:HG21	1:A:1670:ASN:HB3	1.95	0.48
1:A:4387:TRP:CD1	1:A:4479:VAL:HG11	2.47	0.48
1:A:2069:ILE:HB	1:A:2137:LEU:HD21	1.96	0.48
1:A:1959:GLU:HB3	1:A:1962:ARG:HG3	1.96	0.48
1:A:4180:TYR:OH	1:A:4220:ASP:OD1	2.30	0.48
1:A:2211:TYR:O	1:A:2214:THR:OG1	2.29	0.48
1:A:2751:PHE:HB3	1:A:2803:VAL:HG11	1.96	0.48
1:A:3950:LYS:HB3	1:A:3973:LEU:CD1	2.43	0.48
1:A:4251:ILE:HG22	1:A:4252:TYR:CD2	2.49	0.48
1:A:1556:ASP:OD2	1:A:1621:ARG:NH2	2.43	0.47
1:A:2445:HIS:NE2	1:A:2449:LEU:HD22	2.28	0.47
1:A:1761:ASN:HB3	1:A:1781:VAL:HG22	1.96	0.47
1:A:2443:LEU:HD21	1:A:2513:GLU:OE1	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2850:ILE:HG22	1:A:2867:MET:HE1	1.95	0.47
1:A:3731:LEU:HD11	1:A:3790:VAL:HG12	1.97	0.47
1:A:1931:ASN:HD21	1:A:2316:ASN:HB2	1.79	0.47
1:A:3030:MET:HE2	1:A:3030:MET:HA	1.97	0.47
1:A:3175:HIS:CD2	1:A:3585:ARG:HH22	2.32	0.47
1:A:2061:THR:OG1	1:A:2133:GLU:OE1	2.28	0.47
1:A:2386:PRO:HG3	1:A:2413:LEU:HD13	1.97	0.47
1:A:1623:ARG:NH1	1:A:1632:VAL:O	2.48	0.47
1:A:2175:MET:HE3	1:A:2208:LEU:HD22	1.97	0.47
1:A:4628:THR:OG1	1:A:4630:GLU:HG2	2.15	0.47
1:A:2134:GLN:O	1:A:2138:ILE:HG12	2.15	0.47
1:A:2138:ILE:HD11	1:A:2165:PHE:CG	2.50	0.47
1:A:3703:VAL:HG21	1:A:3829:LEU:HD22	1.97	0.47
1:A:3835:ILE:HG12	1:A:3870:ARG:HD2	1.95	0.46
1:A:3966:PRO:HG3	1:A:3997:ARG:HG3	1.97	0.46
1:A:2592:VAL:HG23	1:A:2731:VAL:HG11	1.97	0.46
1:A:4423:LEU:HD13	1:A:4466:HIS:ND1	2.31	0.46
1:A:4175:GLU:OE1	1:A:4175:GLU:N	2.48	0.46
1:A:2179:ARG:NH2	1:A:2195:ASP:OD1	2.43	0.46
1:A:1623:ARG:NH1	1:A:1629:PHE:O	2.47	0.46
1:A:2445:HIS:HB3	1:A:2505:ASP:OD2	2.15	0.46
1:A:3553:LEU:HB2	1:A:3578:ILE:HD13	1.97	0.46
1:A:1931:ASN:ND2	1:A:2316:ASN:HB2	2.31	0.46
1:A:2590:PRO:O	1:A:2732:PRO:HD2	2.15	0.46
1:A:2790:PRO:HB3	1:A:3076:LYS:HG2	1.98	0.46
1:A:3175:HIS:HB3	1:A:3516:TYR:CE1	2.50	0.46
1:A:4172:SER:HB2	1:A:4173:PRO:HD3	1.98	0.45
1:A:2994:MET:HE3	1:A:3066:PHE:HE1	1.81	0.45
1:A:3110:THR:O	1:A:3140:ARG:NH1	2.49	0.45
1:A:1721:VAL:HA	1:A:1724:VAL:HG12	1.98	0.45
1:A:1937:ASP:HA	1:A:1967:MET:HG3	1.98	0.45
1:A:2688:GLU:OE1	1:A:2689:HIS:CE1	2.69	0.45
1:A:2961:ILE:HD11	1:A:2998:ASN:HB3	1.98	0.45
1:A:3117:LYS:HE2	1:A:3139:HIS:CD2	2.51	0.45
1:A:3921:THR:HG21	1:A:3933:GLU:HG2	1.98	0.45
1:A:4087:ALA:HA	1:A:4092:ARG:HB3	1.98	0.45
1:A:3217:GLU:HB2	1:A:3220:ARG:HH21	1.82	0.45
1:A:1879:LEU:HD22	2:A:4701:ADP:C4	2.51	0.45
1:A:4401:THR:O	1:A:4405:ILE:HG12	2.17	0.45
1:A:2668:LEU:HD21	1:A:2720:ARG:CZ	2.47	0.45
1:A:4412:PHE:HZ	1:A:4514:LEU:HD13	1.82	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:4190:ILE:HD12	1:A:4201:TRP:CZ2	2.45	0.45
1:A:4234:SER:OG	1:A:4236:ASP:OD1	2.31	0.45
1:A:4517:PRO:HG2	1:A:4619:ILE:HD12	1.98	0.45
1:A:2851:ASP:HA	1:A:2867:MET:HE3	1.99	0.44
1:A:2963:VAL:HG23	1:A:3643:PRO:HB2	1.99	0.44
1:A:1635:GLU:HA	1:A:1638:LEU:HD12	1.98	0.44
1:A:2290:SER:HB2	1:A:2295:LEU:HG	1.99	0.44
1:A:4100:HIS:HB3	1:A:4128:MET:HB2	1.99	0.44
1:A:1697:LYS:HB3	1:A:1700:GLU:OE1	2.18	0.44
1:A:2912:PHE:CE2	1:A:2914:GLU:HB2	2.52	0.44
1:A:3485:GLU:HG3	1:A:3488:ARG:HH22	1.83	0.44
1:A:4185:TRP:O	1:A:4189:ILE:HG12	2.18	0.44
1:A:4189:ILE:O	1:A:4193:ARG:HG3	2.17	0.44
1:A:4034:GLU:OE1	1:A:4143:ARG:NH1	2.41	0.44
1:A:4160:THR:HG23	1:A:4212:LEU:HD21	1.99	0.44
1:A:4186:PHE:O	1:A:4190:ILE:HG12	2.18	0.44
1:A:1980:GLU:OE2	1:A:1983:ARG:NH1	2.51	0.44
1:A:2548:TRP:CD1	1:A:2576:ARG:HG2	2.53	0.44
1:A:1625:SER:HB2	1:A:1699:ASN:ND2	2.33	0.44
1:A:3601:MET:HG3	1:A:3611:ARG:HH21	1.80	0.44
1:A:2776:PHE:HZ	1:A:2846:THR:HG23	1.83	0.43
1:A:1763:GLU:OE2	1:A:1838:TRP:NE1	2.37	0.43
1:A:3160:ARG:O	1:A:3163:LYS:HG2	2.17	0.43
1:A:3880:HIS:ND1	1:A:4021:MET:HG3	2.33	0.43
1:A:1666:LEU:HD23	1:A:1673:VAL:HA	2.00	0.43
1:A:1724:VAL:HG11	1:A:1753:SER:HB3	2.00	0.43
1:A:2437:LEU:HD21	1:A:2451:ARG:HG3	2.00	0.43
1:A:2557:VAL:O	1:A:2757:ARG:NH2	2.52	0.43
1:A:2994:MET:HG3	1:A:2998:ASN:HD22	1.84	0.43
1:A:3910:ARG:HE	1:A:3913:GLU:CD	2.27	0.43
1:A:4227:ALA:HB2	1:A:4233:ILE:HD12	2.01	0.43
1:A:4415:ARG:HE	1:A:4415:ARG:HB3	1.54	0.43
1:A:2028:LEU:HG	1:A:2032:LEU:HD23	1.99	0.43
1:A:2457:SER:O	1:A:2461:MET:HG3	2.18	0.43
1:A:4437:VAL:HG21	1:A:4448:LEU:HD13	2.00	0.43
1:A:3154:LEU:HG	1:A:3516:TYR:CD1	2.54	0.43
1:A:2538:GLU:HB3	1:A:2548:TRP:CZ2	2.54	0.43
1:A:3148:VAL:O	1:A:3152:GLN:HG3	2.19	0.43
1:A:3240:LEU:HD23	1:A:3240:LEU:HA	1.93	0.43
1:A:2882:ILE:HB	1:A:2883:PRO:HD2	2.01	0.43
1:A:2975:ASP:O	1:A:2979:VAL:HG23	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3514:ILE:HD11	1:A:3553:LEU:HD13	2.00	0.43
1:A:4297:PRO:HB3	1:A:4308:TRP:CD1	2.54	0.43
1:A:4415:ARG:O	1:A:4419:MET:HG2	2.19	0.43
1:A:4611:LEU:HB2	1:A:4619:ILE:HD11	2.00	0.43
1:A:1997:ILE:H	1:A:1997:ILE:HD12	1.83	0.42
1:A:2230:LYS:HG2	1:A:2364:PHE:CG	2.54	0.42
1:A:3232:LYS:HA	1:A:3232:LYS:HD3	1.76	0.42
1:A:3745:LEU:HD13	1:A:3777:ALA:HA	2.01	0.42
1:A:2825:TRP:CZ3	1:A:2854:ALA:HB2	2.55	0.42
1:A:3096:ASP:OD1	1:A:3097:TRP:N	2.50	0.42
1:A:3110:THR:O	1:A:3113:MET:HB2	2.19	0.42
1:A:4173:PRO:HD2	1:A:4176:ARG:HH21	1.84	0.42
1:A:4395:LEU:HD12	1:A:4395:LEU:HA	1.86	0.42
1:A:3558:GLU:HG2	1:A:3562:TRP:CE2	2.54	0.42
1:A:2079:GLN:HB2	1:A:2160:LEU:HD11	2.00	0.42
1:A:4196:TYR:CZ	1:A:4318:PRO:HB3	2.55	0.42
1:A:3194:LEU:HD21	1:A:3499:GLN:HB2	2.01	0.42
1:A:2784:PHE:HB3	1:A:2792:TYR:CD2	2.54	0.42
1:A:2488:ARG:CG	1:A:2492:ARG:HH12	2.32	0.42
1:A:1475:LEU:HD12	1:A:1591:VAL:HG21	2.02	0.41
1:A:1899:ARG:N	1:A:1899:ARG:HD2	2.34	0.41
1:A:2163:ASP:OD1	1:A:4530:GLN:NE2	2.53	0.41
1:A:2581:LEU:HD12	1:A:2604:THR:HG22	2.02	0.41
1:A:2961:ILE:HG13	1:A:2963:VAL:HG13	2.00	0.41
1:A:3862:ASP:OD1	1:A:3866:VAL:HG23	2.20	0.41
1:A:4412:PHE:CZ	1:A:4520:TYR:HB2	2.55	0.41
1:A:4423:LEU:HD22	1:A:4466:HIS:HB2	2.01	0.41
1:A:1526:LYS:O	1:A:1530:ILE:HG13	2.20	0.41
1:A:3741:ARG:NH2	1:A:3776:GLU:OE1	2.53	0.41
1:A:3816:GLU:OE2	1:A:3819:LYS:NZ	2.49	0.41
1:A:4546:THR:HG21	1:A:4589:GLN:HE21	1.85	0.41
1:A:1490:TRP:HZ3	1:A:1534:PHE:HB3	1.83	0.41
1:A:3209:LYS:HB2	1:A:3209:LYS:HE2	1.77	0.41
1:A:3485:GLU:OE2	1:A:3774:LYS:NZ	2.43	0.41
1:A:3908:PHE:HE1	1:A:4001:LEU:HD11	1.86	0.41
1:A:4260:PHE:HD1	1:A:4263:ARG:NH2	2.19	0.41
1:A:1623:ARG:NH2	1:A:1634:ASP:OD1	2.54	0.41
1:A:1853:VAL:HA	1:A:1856:GLN:HG3	2.01	0.41
1:A:2070:VAL:HB	1:A:2071:PRO:HD3	2.02	0.41
1:A:3115:LEU:HD13	1:A:3143:ILE:HG21	2.01	0.41
1:A:2107:ARG:HD2	1:A:2136:ILE:HG12	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3740:LEU:O	1:A:3744:GLN:HG3	2.20	0.41
1:A:1895:ALA:HB2	1:A:2037:ARG:HB2	2.02	0.41
1:A:2221:MET:HE1	1:A:2355:THR:HG22	2.02	0.41
1:A:3951:VAL:HG23	1:A:3973:LEU:HD21	2.01	0.41
1:A:2091:ARG:NH1	2:A:4701:ADP:H5'2	2.36	0.41
1:A:3584:ASN:O	1:A:3651:ARG:NH2	2.53	0.41
1:A:3955:GLU:CD	1:A:3955:GLU:H	2.28	0.41
1:A:4150:PRO:O	1:A:4195:ARG:NH2	2.53	0.41
1:A:1834:LYS:HA	1:A:1834:LYS:HD3	1.88	0.41
1:A:2226:SER:OG	1:A:2729:ARG:HD2	2.21	0.41
1:A:2912:PHE:HE2	1:A:2914:GLU:HB2	1.86	0.41
1:A:3017:VAL:HB	1:A:3020:LEU:HB2	2.03	0.41
1:A:3985:GLN:HB3	1:A:3989:ARG:NH1	2.36	0.41
1:A:4099:VAL:HG23	1:A:4106:LEU:HD11	2.02	0.41
1:A:4553:LEU:HD23	1:A:4553:LEU:HA	1.87	0.41
1:A:1738:TYR:HE2	1:A:1792:LEU:HD21	1.85	0.41
1:A:2132:PRO:HB2	1:A:2135:GLU:HB3	2.02	0.41
1:A:2582:TYR:CE2	1:A:2612:LEU:HD13	2.56	0.41
1:A:2667:ASN:OD1	1:A:2712:CYS:HB2	2.20	0.41
1:A:3588:LEU:HD21	1:A:3638:VAL:HG11	2.02	0.41
1:A:3716:VAL:HB	1:A:3836:TYR:OH	2.20	0.41
1:A:1508:LYS:HG2	1:A:1513:TYR:CZ	2.56	0.41
1:A:3157:ALA:HB1	1:A:3524:MET:HE2	2.03	0.41
1:A:1486:LEU:HD23	1:A:1579:MET:HE2	2.03	0.40
1:A:3229:LEU:HD12	1:A:3465:LEU:HD13	2.03	0.40
1:A:3912:ASN:O	1:A:3937:ARG:NH1	2.54	0.40
1:A:4002:LEU:HD11	1:A:4335:GLN:HB3	2.04	0.40
1:A:4399:LYS:HE2	1:A:4399:LYS:HB3	1.95	0.40
1:A:3001:ASP:OD1	1:A:3002:SER:N	2.54	0.40
1:A:3821:ILE:HB	1:A:4342:LYS:HG2	2.04	0.40
1:A:1744:LYS:HD3	1:A:1745:TYR:CE2	2.55	0.40
1:A:2353:LEU:C	1:A:2353:LEU:HD23	2.47	0.40
1:A:2059:PHE:CZ	1:A:2104:LYS:HD3	2.55	0.40
1:A:2290:SER:HA	1:A:2294:GLU:OE1	2.21	0.40
1:A:2995:ASP:OD1	1:A:3067:THR:OG1	2.35	0.40
1:A:3892:LEU:HD13	1:A:3983:ILE:HG21	2.03	0.40
1:A:1612:GLN:HG3	1:A:1638:LEU:HD13	2.04	0.40
1:A:2229:GLY:HA2	3:A:4702:ATP:O2A	2.21	0.40
1:A:2839:GLU:OE1	1:A:2839:GLU:HA	2.22	0.40
1:A:4534:TRP:CD2	1:A:4594:LYS:HD3	2.56	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	2929/4646 (63%)	2882 (98%)	45 (2%)	2 (0%)	48	71

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	4197	ALA
1	A	4198	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	2605/4125 (63%)	2605 (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 (43) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	1465	GLN
1	A	1569	GLN
1	A	1643	ASN
1	A	1646	ASN
1	A	1670	ASN
1	A	1855	GLN
1	A	1894	GLN

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Mol	Chain	Res	Type
1	A	1931	ASN
1	A	1974	GLN
1	A	1976	GLN
1	A	2067	ASN
1	A	2171	HIS
1	A	2296	GLN
1	A	2463	HIS
1	A	2464	GLN
1	A	2471	GLN
1	A	2475	ASN
1	A	2554	GLN
1	A	2685	GLN
1	A	2713	ASN
1	A	2930	GLN
1	A	3038	GLN
1	A	3069	ASN
1	A	3092	ASN
1	A	3200	HIS
1	A	3214	GLN
1	A	3523	GLN
1	A	3526	GLN
1	A	3602	ASN
1	A	3636	GLN
1	A	3735	GLN
1	A	3744	GLN
1	A	3754	ASN
1	A	3877	HIS
1	A	3878	GLN
1	A	3956	GLN
1	A	4054	HIS
1	A	4335	GLN
1	A	4425	GLN
1	A	4429	GLN
1	A	4453	ASN
1	A	4532	ASN
1	A	4566	GLN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 6 ligands modelled in this entry, 2 are monoatomic - leaving 4 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
3	ATP	A	4702	4	28,33,33	0.76	0	34,52,52	0.79	1 (2%)
2	ADP	A	4704	-	24,29,29	0.75	0	29,45,45	0.74	1 (3%)
2	ADP	A	4701	4	24,29,29	0.74	0	29,45,45	0.75	1 (3%)
2	ADP	A	4703	-	24,29,29	0.75	0	29,45,45	0.73	1 (3%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	ATP	A	4702	4	-	2/18/38/38	0/3/3/3
2	ADP	A	4704	-	-	2/12/32/32	0/3/3/3
2	ADP	A	4701	4	-	0/12/32/32	0/3/3/3
2	ADP	A	4703	-	-	1/12/32/32	0/3/3/3

There are no bond length outliers.

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	4701	ADP	C5-C6-N6	2.34	123.87	120.31
2	A	4704	ADP	C5-C6-N6	2.31	123.83	120.31
2	A	4703	ADP	C5-C6-N6	2.26	123.75	120.31
3	A	4702	ATP	C5-C6-N6	2.22	123.70	120.31

There are no chirality outliers.

All (5) torsion outliers are listed below:

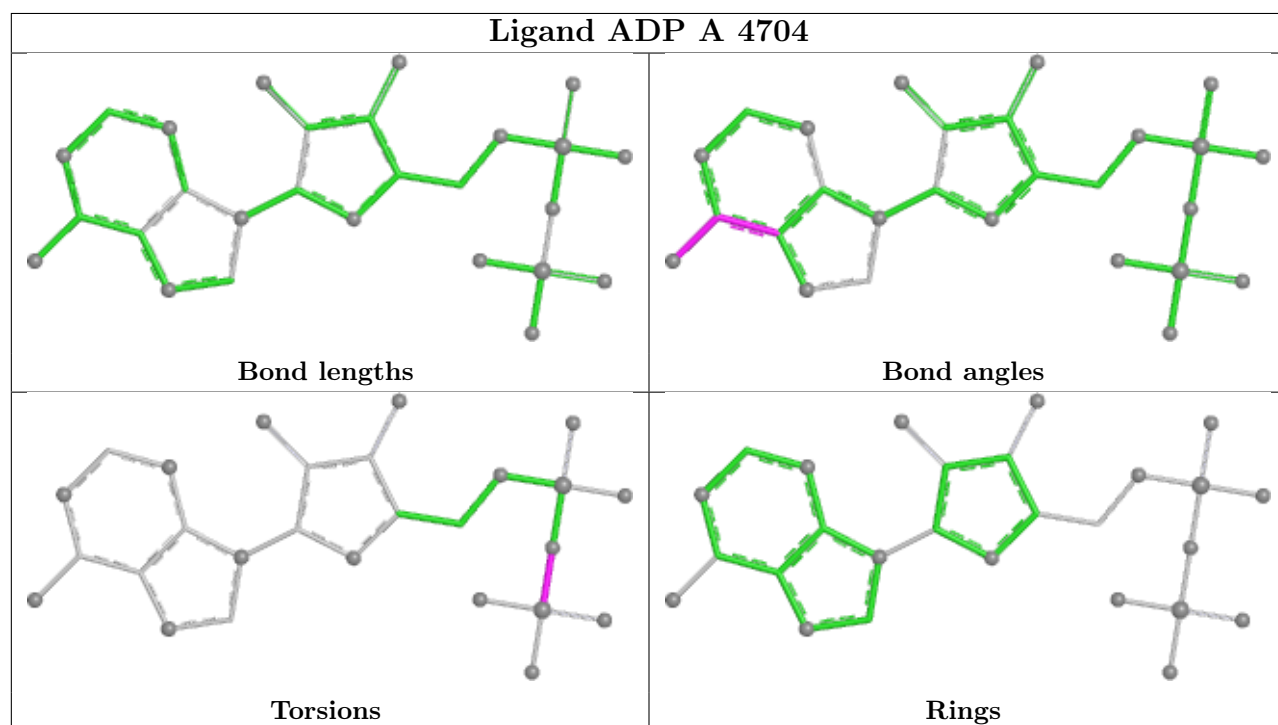
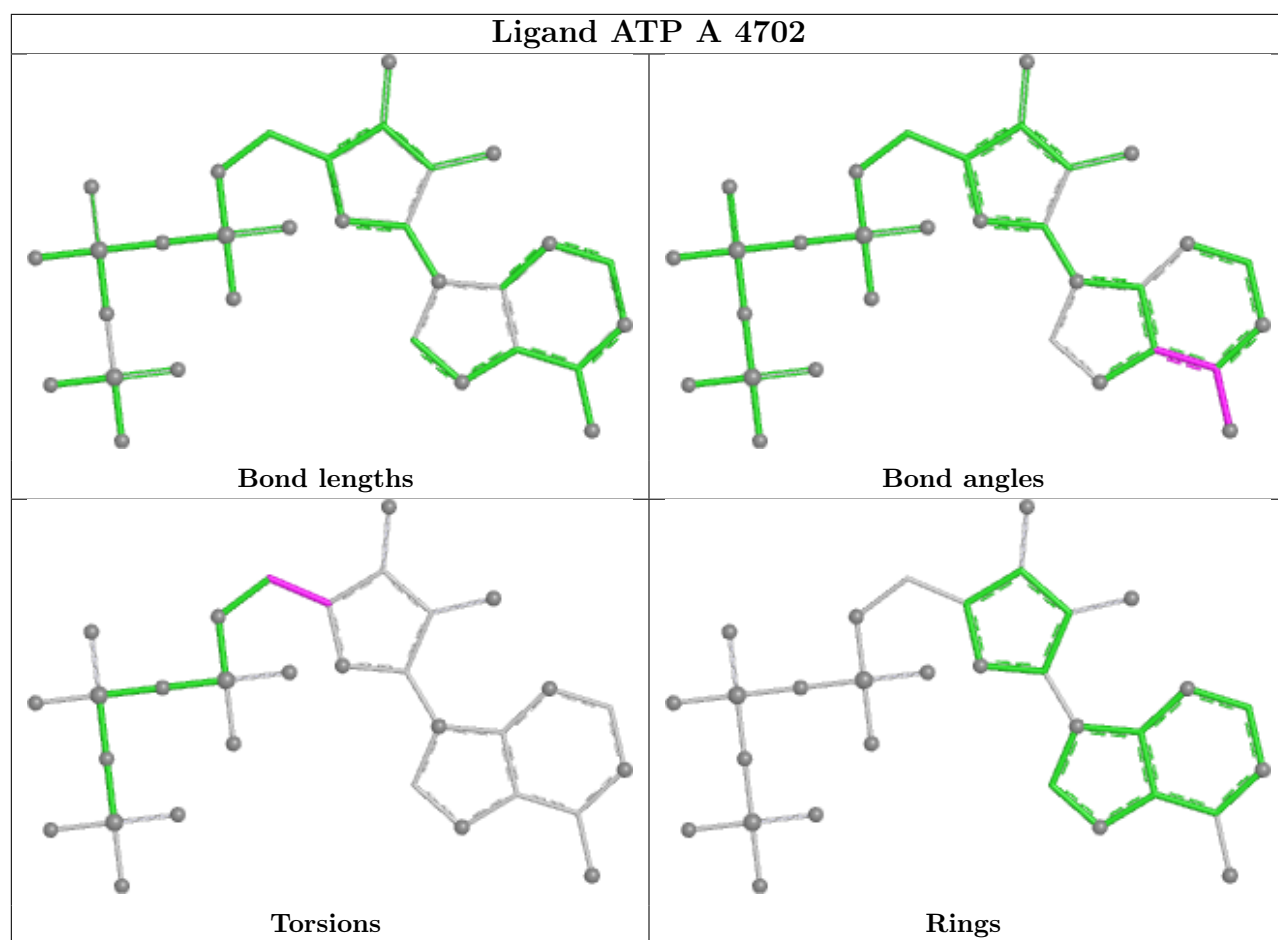
Mol	Chain	Res	Type	Atoms
2	A	4704	ADP	PA-O3A-PB-O2B
3	A	4702	ATP	O4'-C4'-C5'-O5'
2	A	4704	ADP	PA-O3A-PB-O1B
3	A	4702	ATP	C3'-C4'-C5'-O5'
2	A	4703	ADP	PA-O3A-PB-O3B

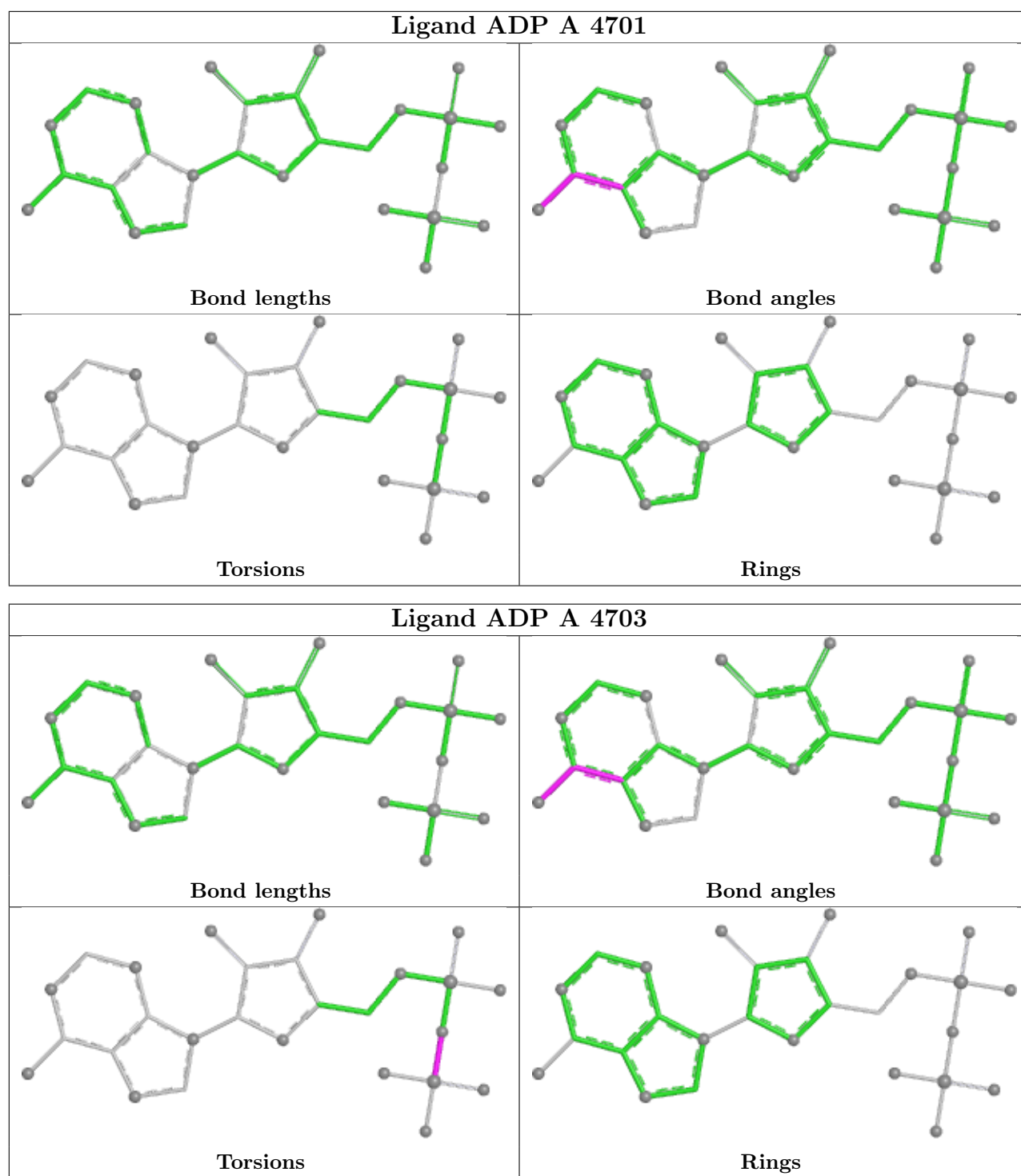
There are no ring outliers.

2 monomers are involved in 7 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	A	4702	ATP	4	0
2	A	4701	ADP	3	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.





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.

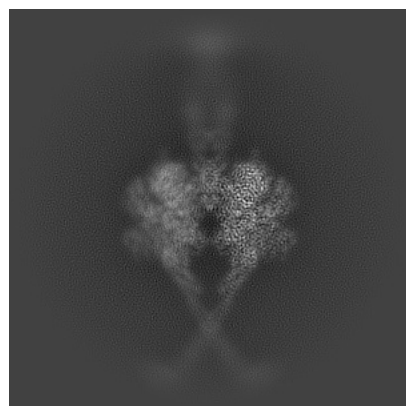
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-44708. These allow visual inspection of the internal detail of the map and identification of artifacts.

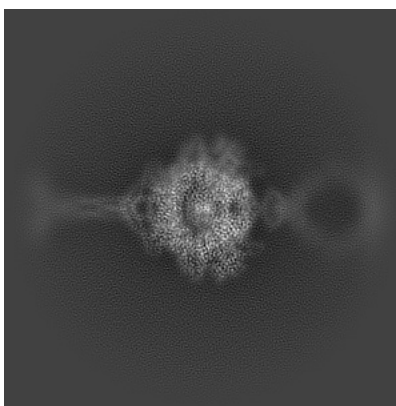
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

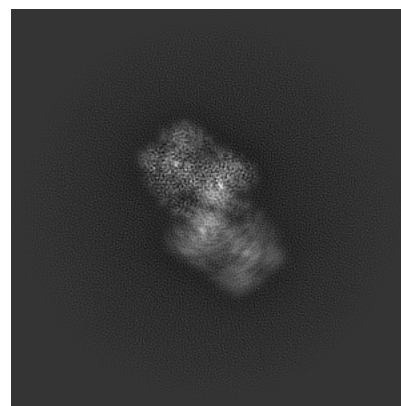
6.1.1 Primary map



X

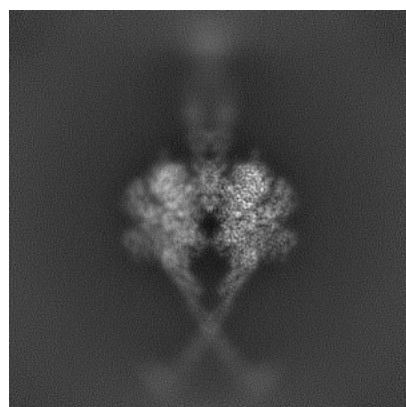


Y

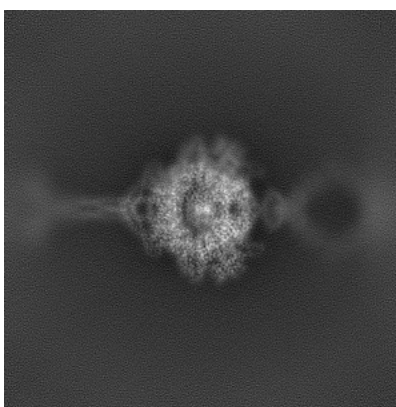


Z

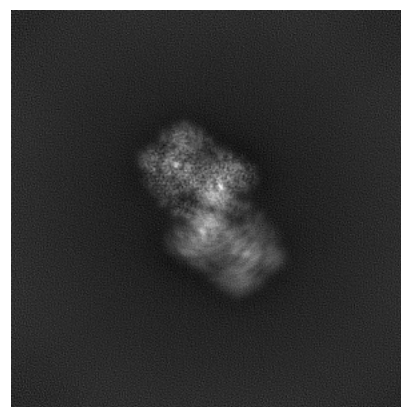
6.1.2 Raw map



X



Y

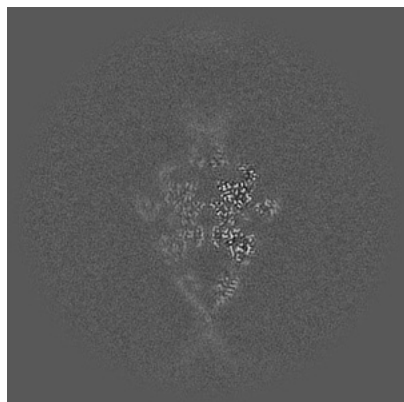


Z

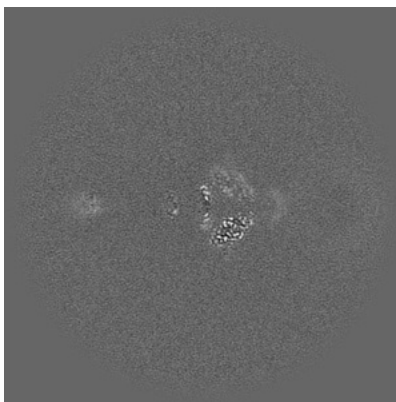
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

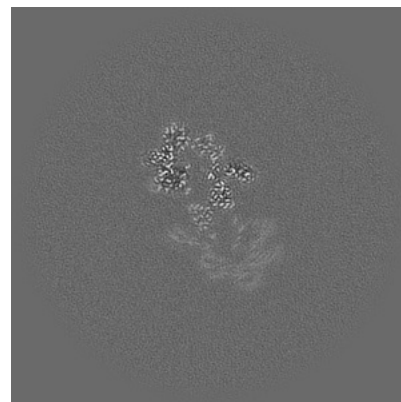
6.2.1 Primary map



X Index: 192

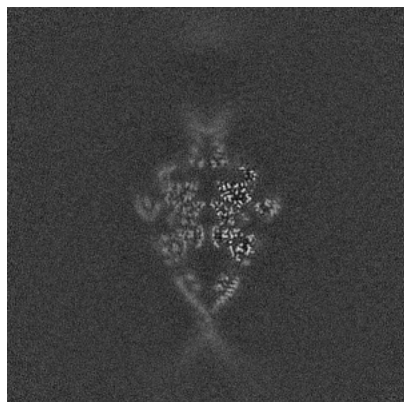


Y Index: 192

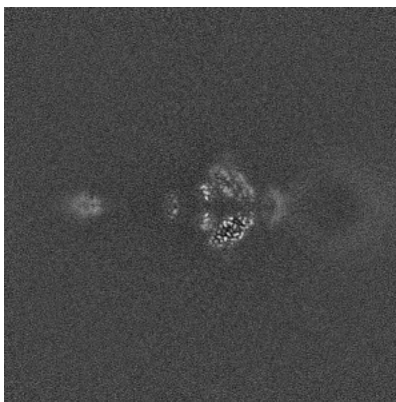


Z Index: 192

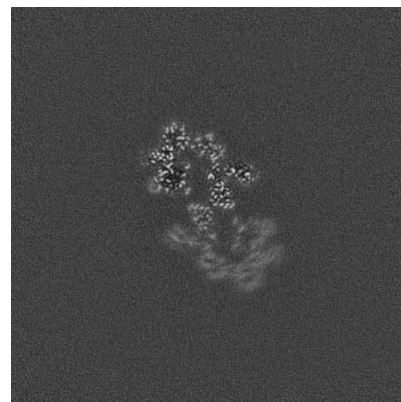
6.2.2 Raw map



X Index: 192



Y Index: 192

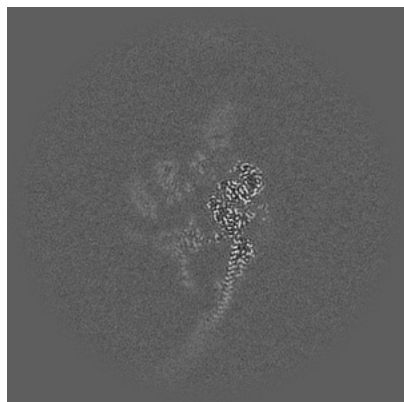


Z Index: 192

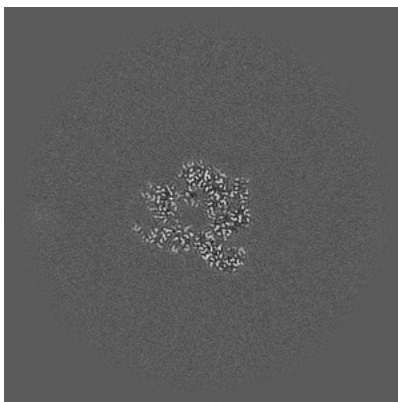
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

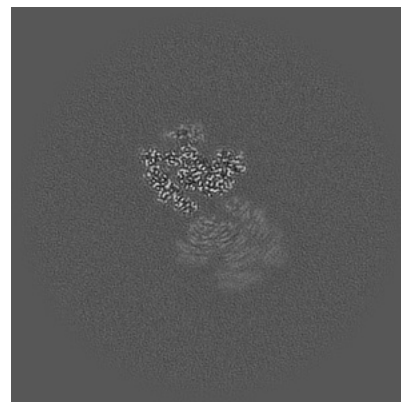
6.3.1 Primary map



X Index: 201



Y Index: 226

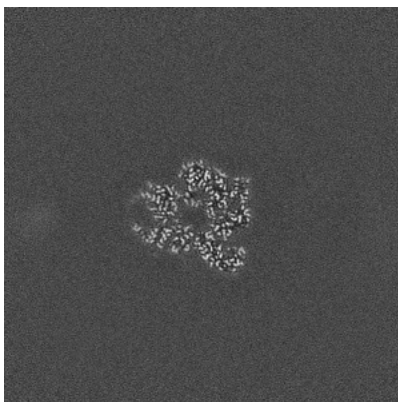


Z Index: 211

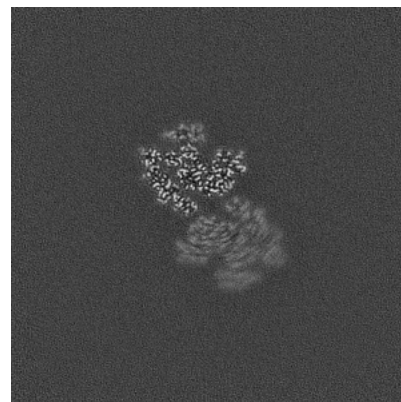
6.3.2 Raw map



X Index: 201



Y Index: 226

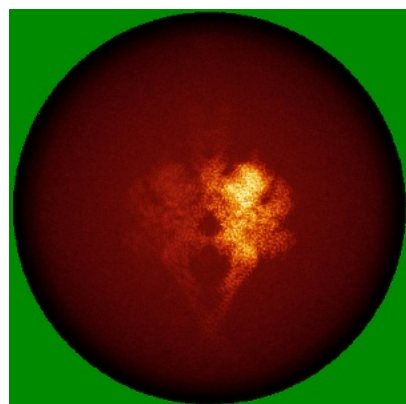


Z Index: 211

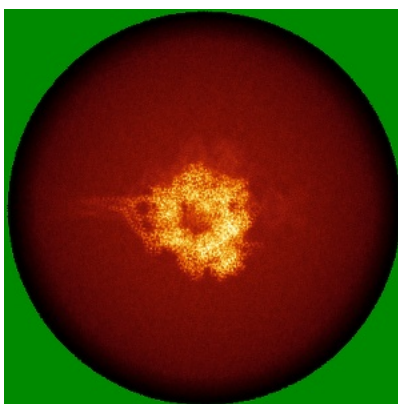
The images above show the largest variance slices of the map in three orthogonal directions.

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

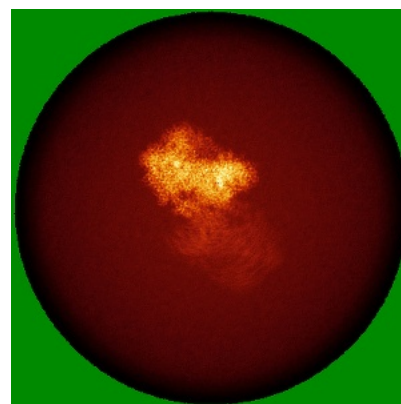
6.4.1 Primary map



X

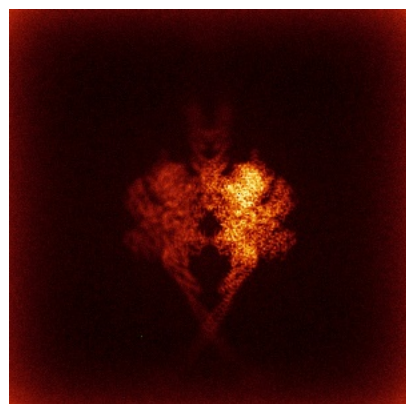


Y

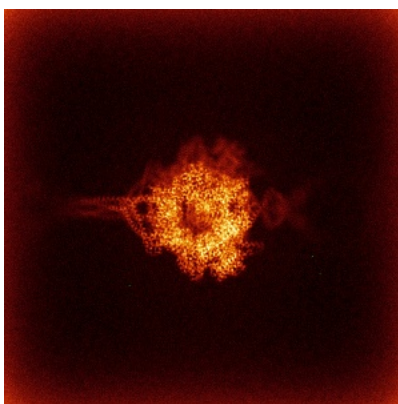


Z

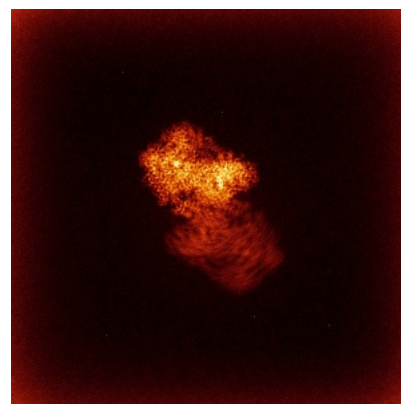
6.4.2 Raw map



X



Y

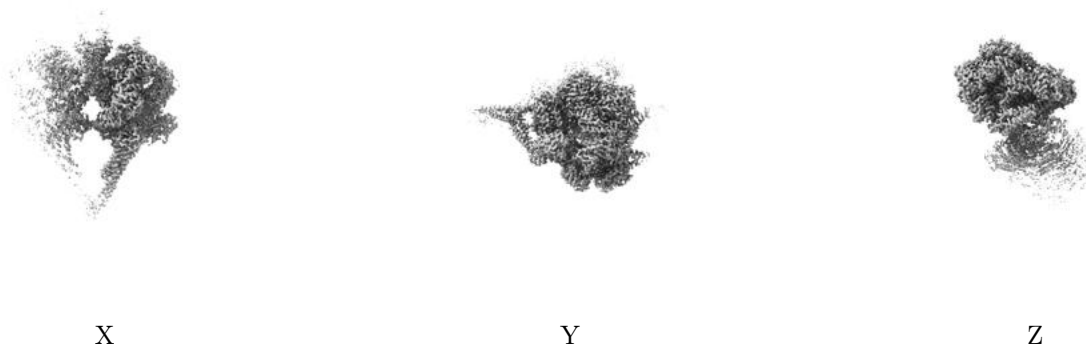


Z

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.

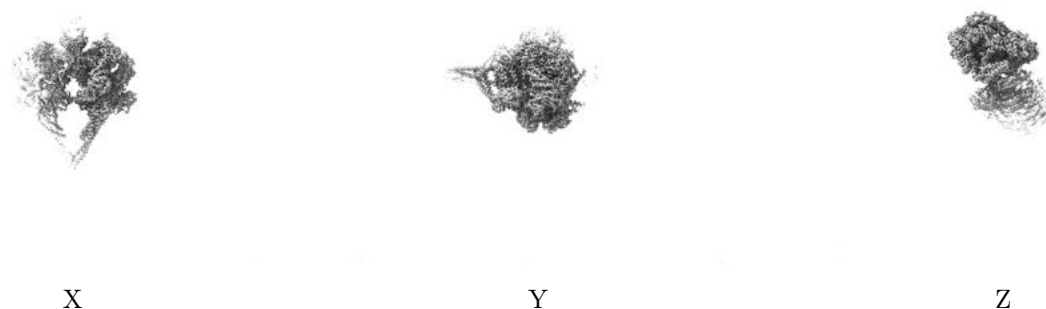
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.38. 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.

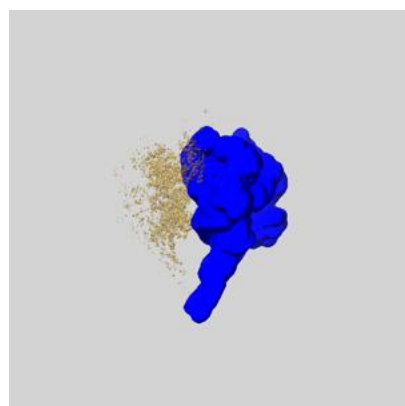
6.6 Mask visualisation [i](#)

This section shows the 3D surface view of the primary map at 50% transparency overlaid with the specified mask at 0% transparency

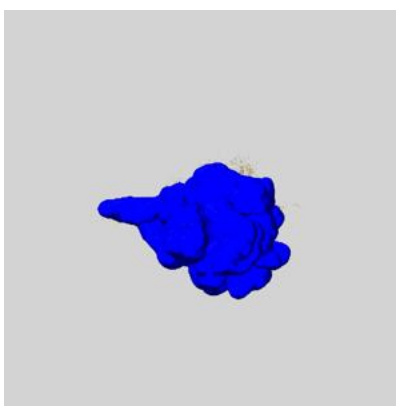
A mask typically either:

- Encompasses the whole structure
- Separates out a domain, a functional unit, a monomer or an area of interest from a larger structure

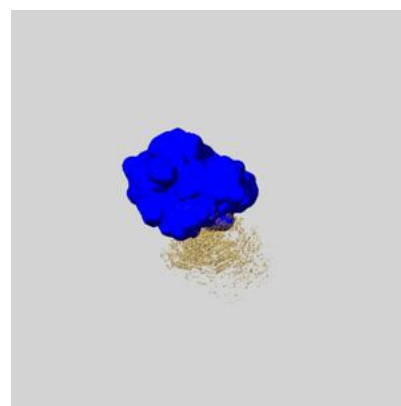
6.6.1 emd_44708_msk_1.map [i](#)



X



Y

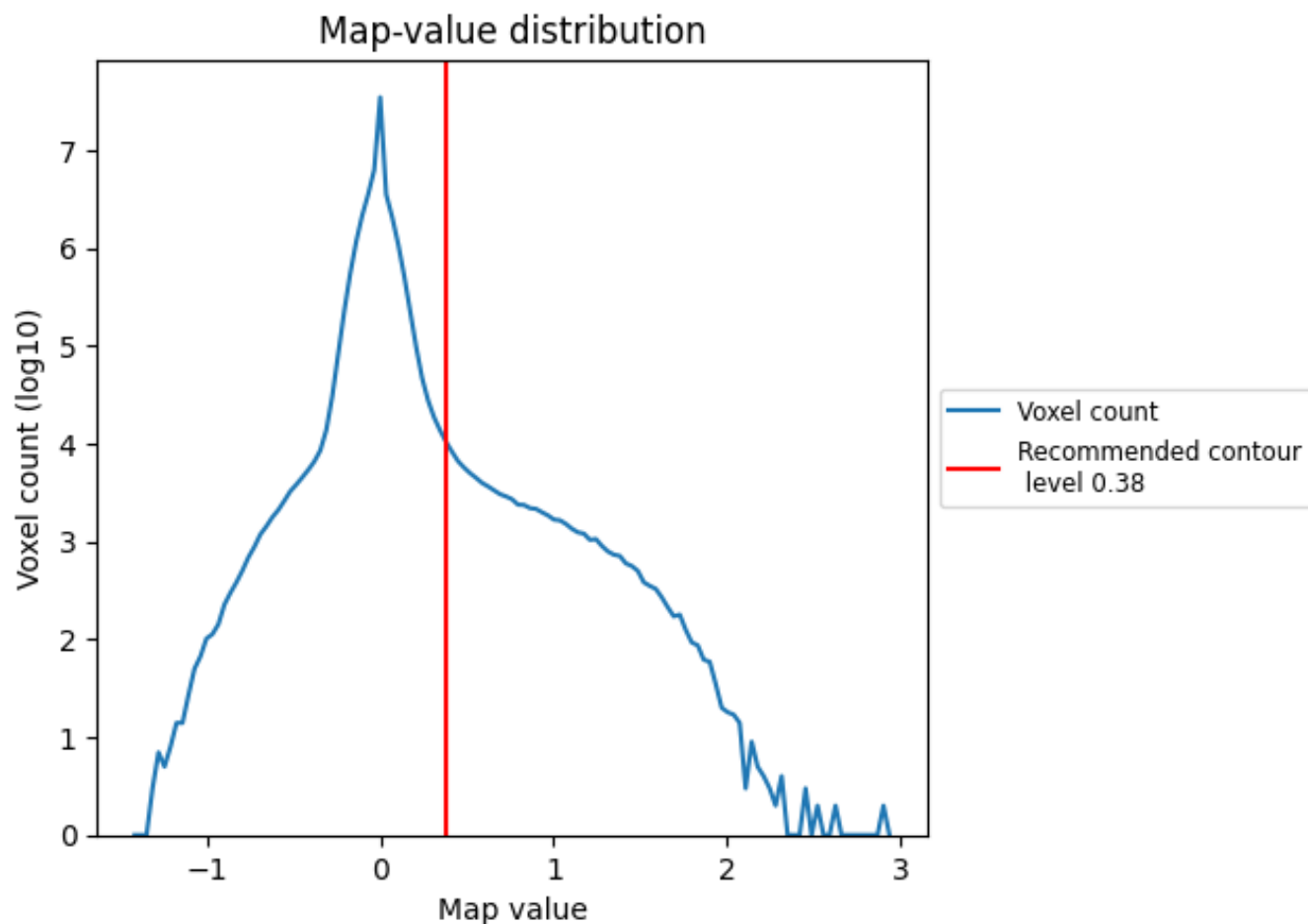


Z

7 Map analysis [i](#)

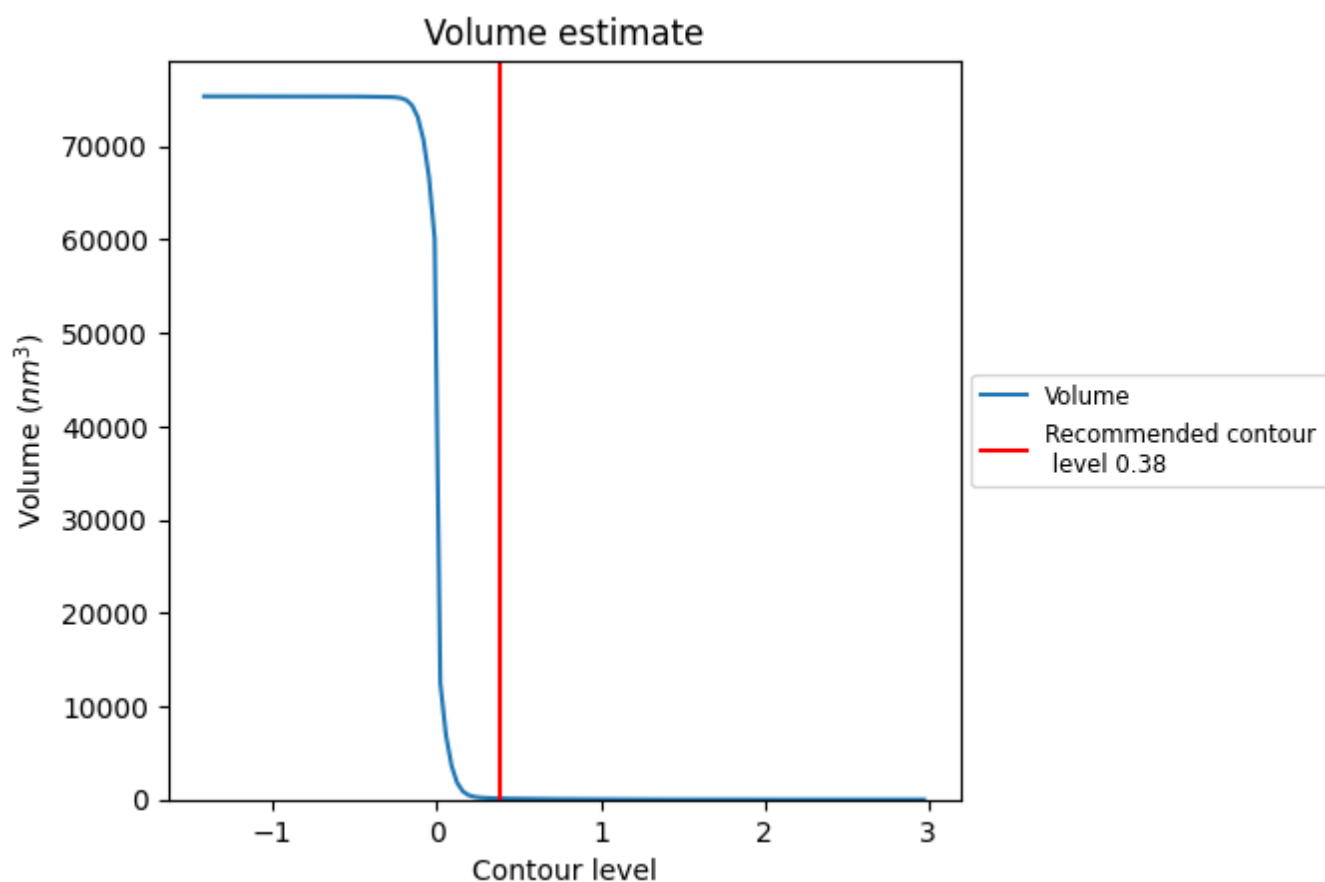
This section contains the results of statistical analysis of the map.

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.

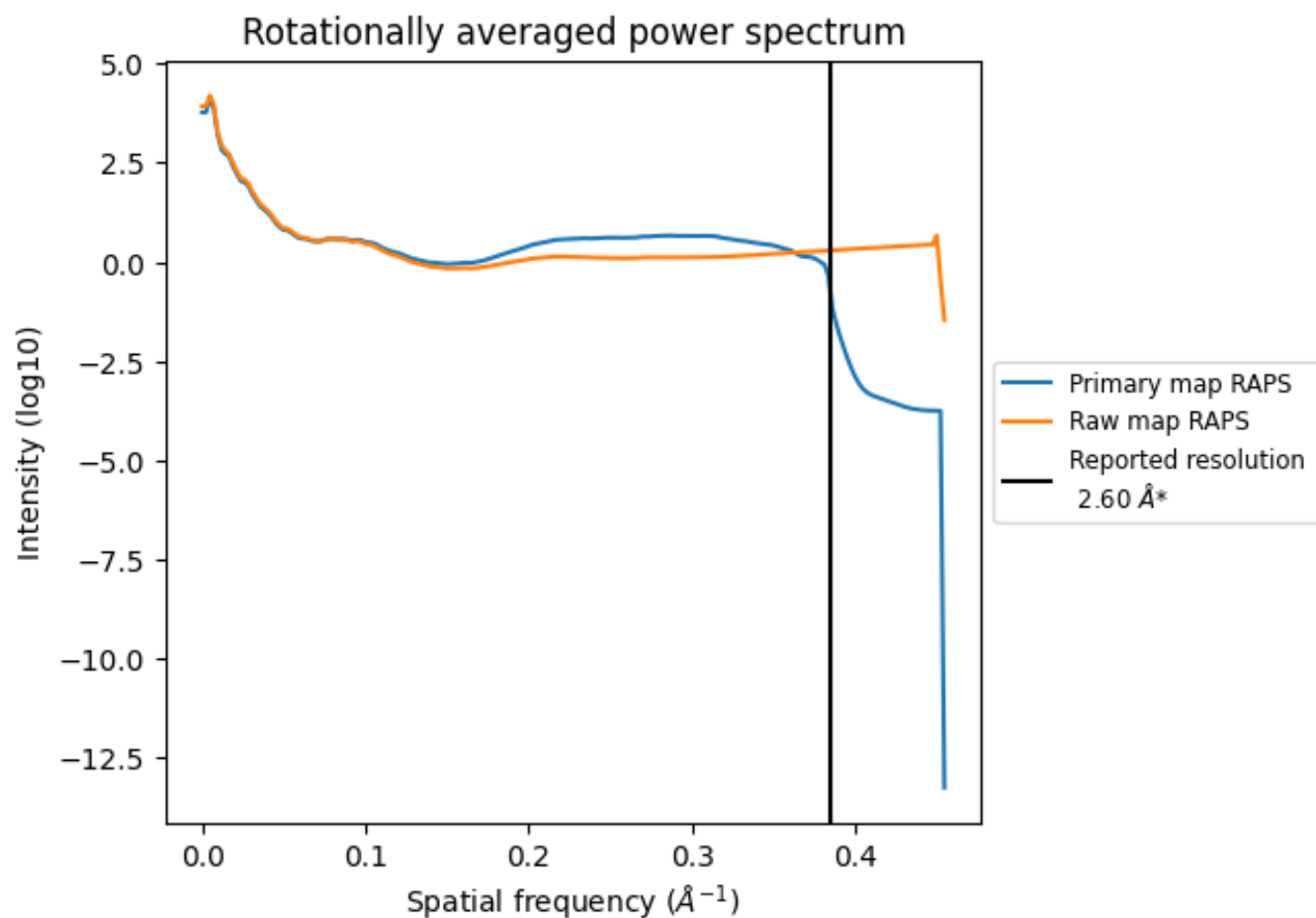
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 121 nm³; this corresponds to an approximate mass of 109 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 ⓘ

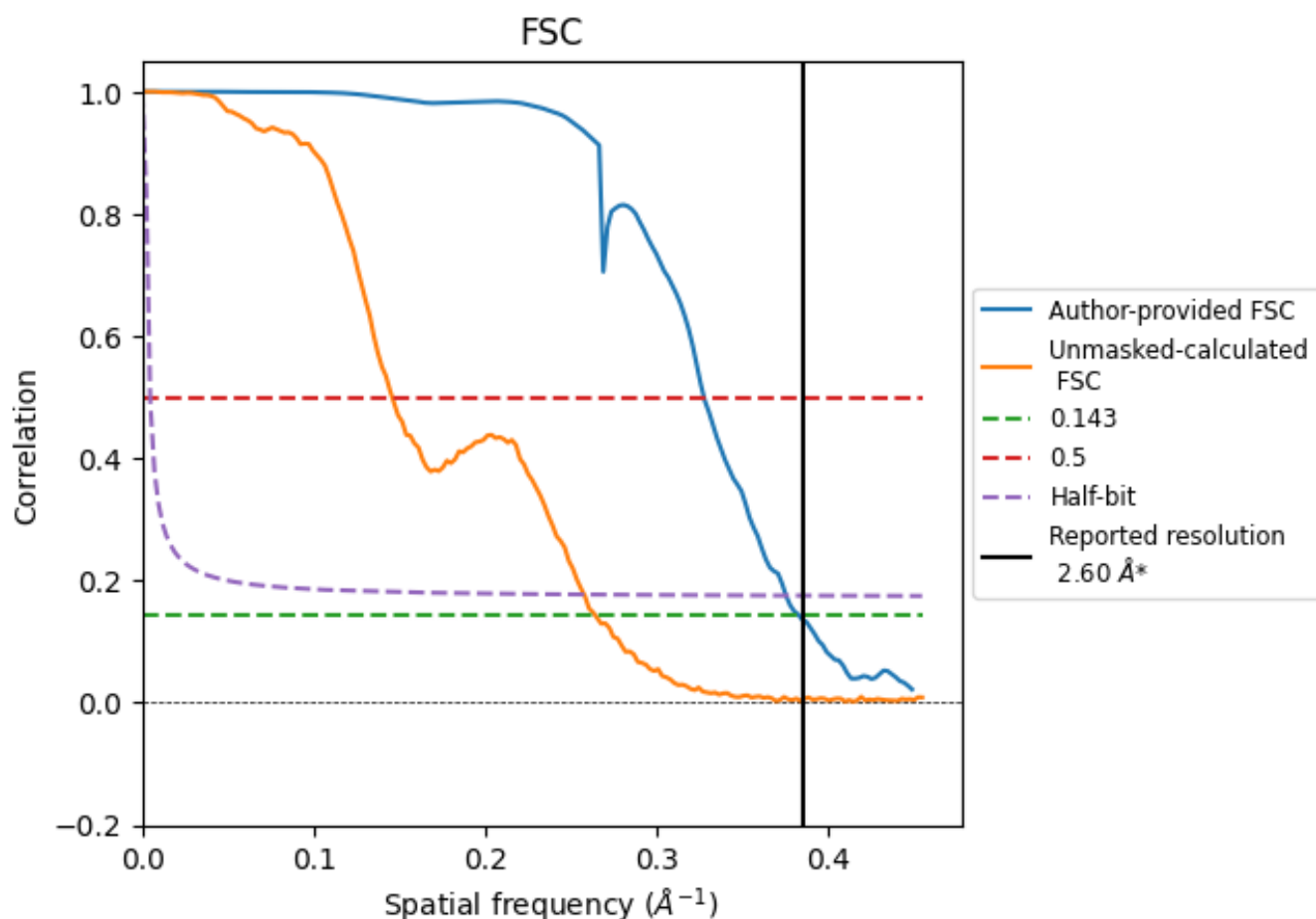


*Reported resolution corresponds to spatial frequency of 0.385 Å⁻¹

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 0.385 Å⁻¹

8.2 Resolution estimates [i](#)

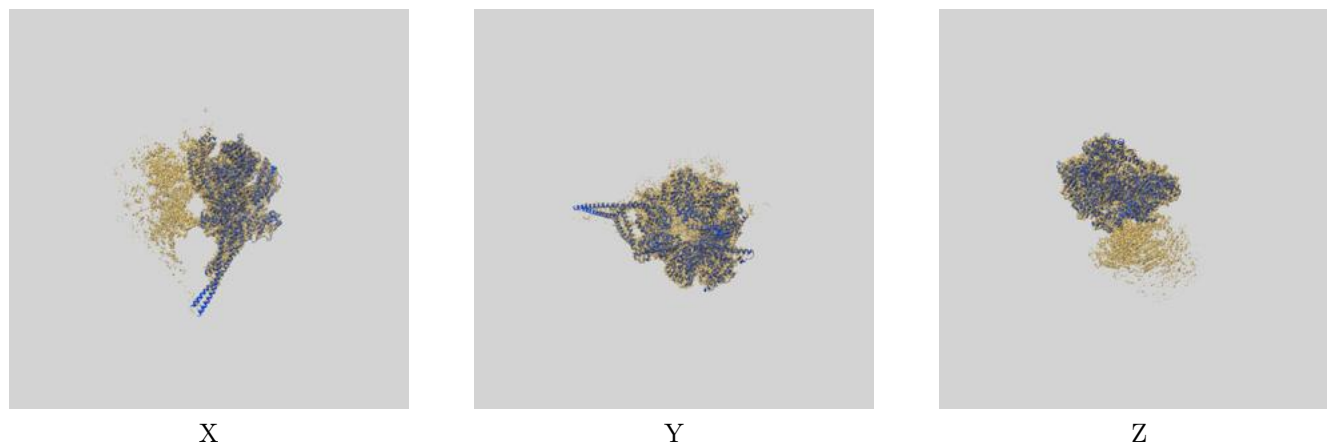
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.60	-	-
Author-provided FSC curve	2.61	3.05	2.67
Unmasked-calculated*	3.79	6.86	3.88

*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 3.79 differs from the reported value 2.6 by more than 10 %

9 Map-model fit [i](#)

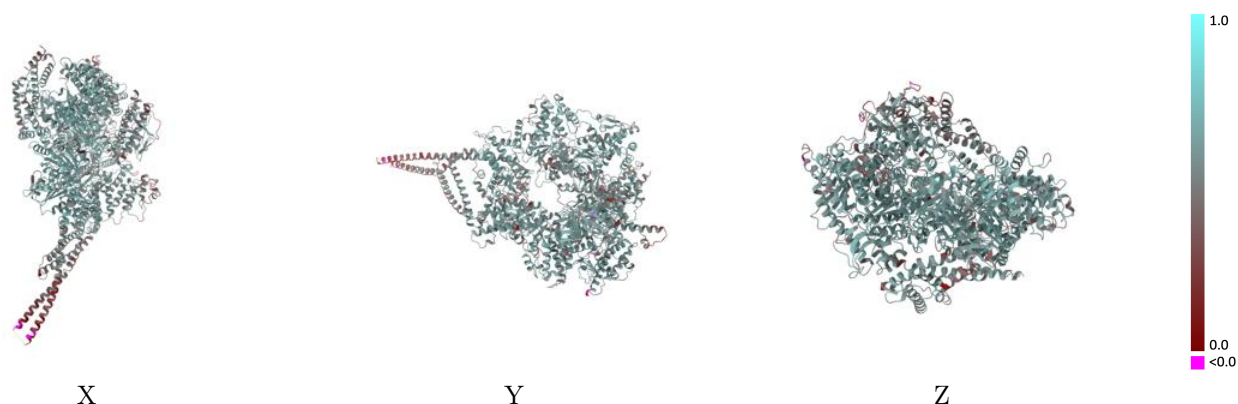
This section contains information regarding the fit between EMDB map EMD-44708 and PDB model 9BMR. Per-residue inclusion information can be found in [section 3](#) on [page 5](#).

9.1 Map-model overlay [i](#)



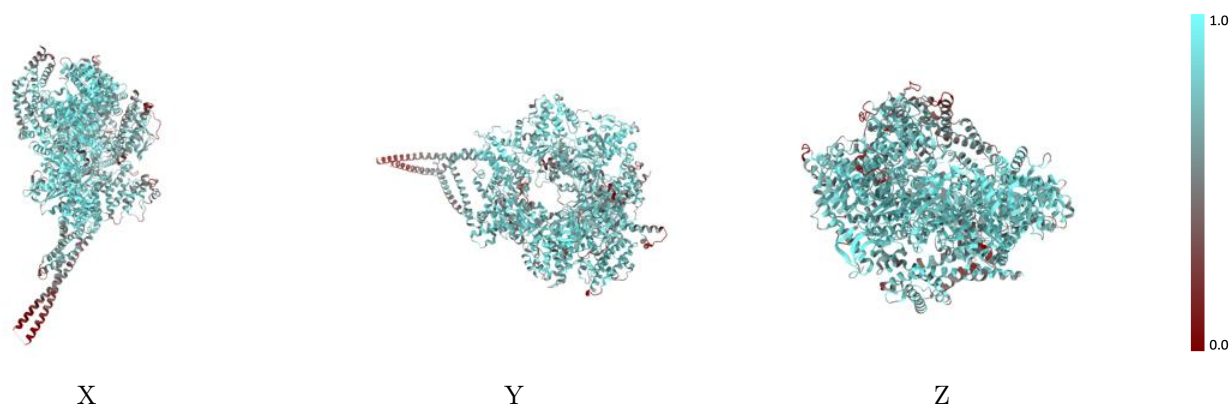
The images above show the 3D surface view of the map at the recommended contour level 0.38 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



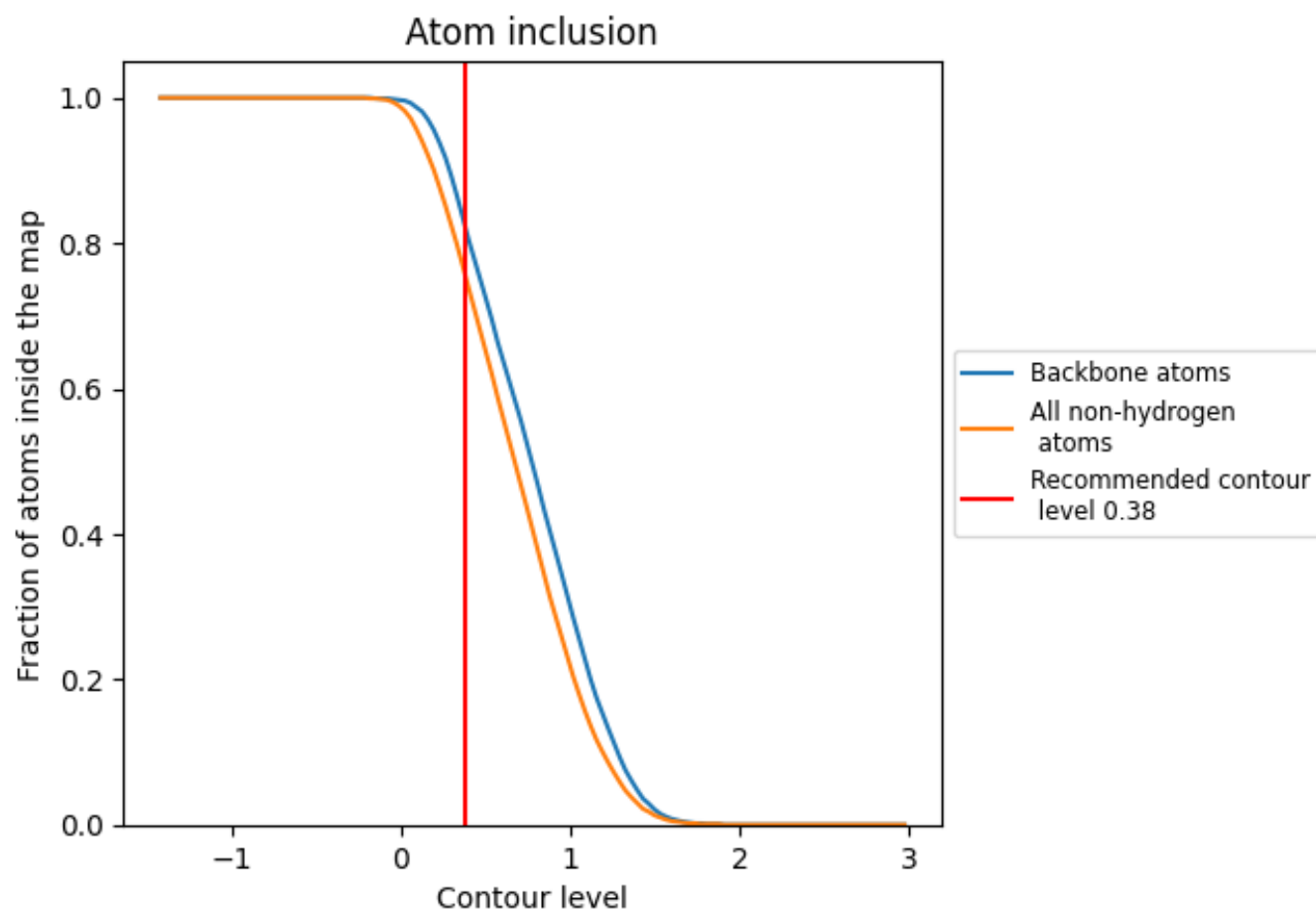
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.38).

9.4 Atom inclusion [i](#)



At the recommended contour level, 82% of all backbone atoms, 76% 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 (0.38) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.7550	0.5630
A	0.7550	0.5630

