



Full wwPDB EM Validation Report ⓘ

Mar 20, 2026 – 11:32 AM UTC

PDB ID : 9DIU / pdb_00009diu
EMDB ID : EMD-46919
Title : CryoEM structures of yeast cytoplasmic dynein in the presence of ATP and Lis1.
Authors : Kendrick, A.A.; Leschziner, A.E.
Deposited on : 2024-09-06
Resolution : 4.10 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.dev132
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0
Buster-report : wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

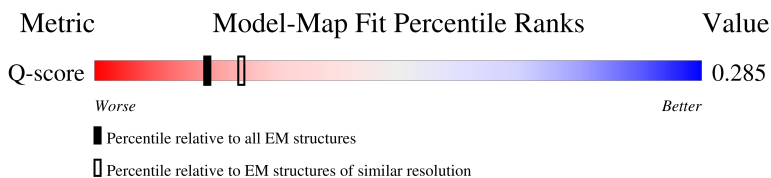
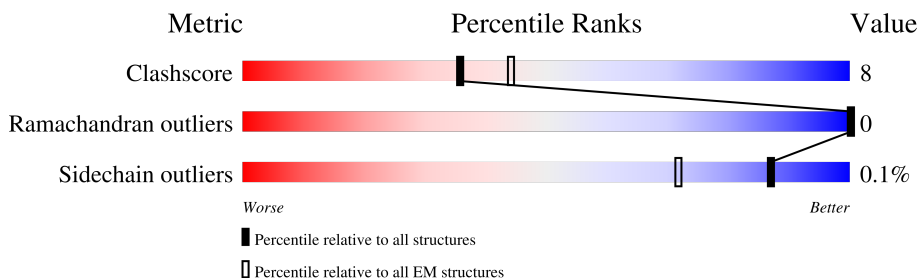
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 4.10 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)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
Q-score	-	25397	6458 (3.60 - 4.60)

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	2875	9% 65% 15% 20%

2 Entry composition

There are 3 unique types of molecules in this entry. The entry contains 17847 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.

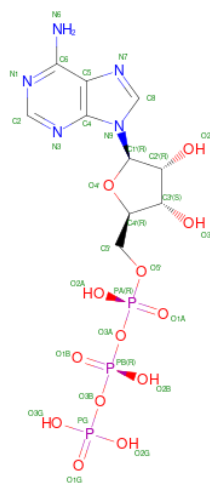
- Molecule 1 is a protein called Dynein heavy chain, cytoplasmic.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	2302	Total	C	N	O	S	0	0
			17735	11404	2956	3296	79		

There are 14 discrepancies between the modelled and reference sequences:

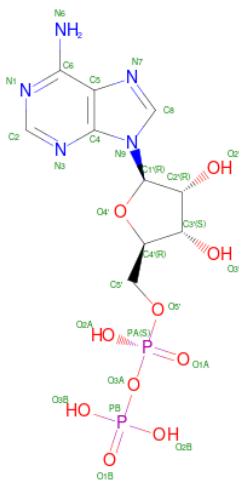
Chain	Residue	Modelled	Actual	Comment	Reference
A	1218	GLY	-	expression tag	UNP P36022
A	1575	PHE	LEU	conflict	UNP P36022
A	1578	SER	PHE	conflict	UNP P36022
A	1668	GLU	GLN	conflict	UNP P36022
A	1777	VAL	ILE	conflict	UNP P36022
A	1984	VAL	ILE	conflict	UNP P36022
A	2936	VAL	ILE	conflict	UNP P36022
A	3266	GLN	ARG	conflict	UNP P36022
A	3343	GLY	ALA	conflict	UNP P36022
A	3444	VAL	ILE	conflict	UNP P36022
A	3556	ARG	LYS	conflict	UNP P36022
A	3742	ASP	ASN	conflict	UNP P36022
A	3895	VAL	PHE	conflict	UNP P36022
A	4072	ASP	ASN	conflict	UNP P36022

- Molecule 2 is ADENOSINE-5'-TRIPHOSPHATE (CCD ID: ATP) (formula: C₁₀H₁₆N₅O₁₃P₃) (labeled as "Ligand of Interest" by depositor).



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

- Molecule 3 is ADENOSINE-5'-DIPHOSPHATE (CCD ID: ADP) (formula: $\text{C}_{10}\text{H}_{15}\text{N}_5\text{O}_{10}\text{P}_2$) (labeled as "Ligand of Interest" by depositor).



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

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



ARG	V3477	K3493	T3496	D3500	P3501	SER	GLY	ASP	T3505	F3508	L3509	R3510	S3511	R3512	V3513	R3514	F3518	N3521	K3522	E3523	S3524	I3525	L3534	F3541	K3544	R3545	E3546	D3547	L3548	I3549	K3550	L3551	N3552	T3553	E3554	Y3555	R3556	L3557	K3558	L3559	K3560	N3561	L3562	E3563	K3564	R3565	L3566	L3567	E3568	E3569		
L3570	N3571	N3572	S3573	GLN	GLY	ASN	MET	LEU	GLU	ASN	ASP	GLU	LEU	VAL	THR	LEU	ASN	ASN	L3592	E3593	A3594	M3595	N3596	I3597	E3598	K3599	K3600	L3601	S3602	E3603	S3604	E3605	E3606	F3607	F3608	P3609	L3614	V3615	E3616	H3624	F3629	Q3637	I3646	G3647	Q3648	V3656	F3657	I3658	K3659	LYS		
SER	ARG	GLU	THR	ARG	ALA	ALA	ARG	T3669	I3674	L3678	Y3679	S3687	D3691	K3692	K3693	F3694	K3695	N3696	I3697	M3702	K3707	F3708	D3709	T3737	VAL	ASP	THR	N3741	D3742	R3745	W3748	V3751	K3764	F3767	F3768	T3787	S3790	V3794	L3811	K3812	P3815											
S3818	I3839	L3840	V3851	K3852	L3855	E3860	GLU	THR	LYS	ALA	ALA	GLU	E3887	M3875	T3876	P3885	Q3890	I3900	P3901	G3902	I3903	T3906	F3916	THR	GLY	LYS	I3920	C3928	H3948	K3952	K3953	F3963	A3964	S3965	V3966	Y3967	L3968	E3969	N3970	V3971	L3972	A3973	A3983	Q3984								
V3985	I3989	V3993	N4020	L4021	V4024	P4025	G4026	V4027	R4028	I4029	L4045	L4048	L4049	S4050	N4051	T4052	P4055	A4056	D4057	S4058	D4072	Q4077	L4089	Q4090	E4091	MET																										

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	46585	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TALOS ARCTICA	Depositor
Voltage (kV)	200	Depositor
Electron dose ($e^-/\text{\AA}^2$)	54.3	Depositor
Minimum defocus (nm)	800	Depositor
Maximum defocus (nm)	2400	Depositor
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.997	Depositor
Minimum map value	-0.586	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.020	Depositor
Recommended contour level	0.14	Depositor
Map size (Å)	408.31998, 408.31998, 408.31998	wwPDB
Map dimensions	352, 352, 352	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.16, 1.16, 1.16	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, 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	0.15	0/18075	0.38	0/24503

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	17735	0	17084	272	0
2	A	31	0	12	1	0
3	A	81	0	36	1	0
All	All	17847	0	17132	272	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 8.

All (272) 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:2976:PHE:O	1:A:2980:MET:HB2	1.93	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2245:GLU:HG3	1:A:2299:ARG:HH21	1.58	0.67
1:A:3679:TYR:HB3	1:A:3702:MET:HE3	1.78	0.66
1:A:2175:ILE:HD11	1:A:2183:ARG:HB3	1.77	0.66
1:A:2003:LEU:HA	1:A:2006:LEU:HD12	1.77	0.66
1:A:2581:LEU:HD23	1:A:2633:ILE:HG22	1.77	0.66
1:A:2835:LEU:HD11	1:A:2911:ARG:HB2	1.79	0.64
1:A:1542:ASN:HA	1:A:1545:LEU:HD12	1.80	0.64
1:A:2177:THR:HA	1:A:2183:ARG:HH12	1.64	0.61
1:A:3624:HIS:NE2	1:A:3709:ASP:OD2	2.33	0.61
1:A:2585:PHE:HE1	1:A:2638:ARG:HH12	1.48	0.61
1:A:3948:HIS:HE1	1:A:4072:ASP:HB3	1.66	0.61
1:A:2642:ARG:HH21	1:A:2646:ARG:HH21	1.49	0.61
1:A:2071:ILE:HG12	1:A:2194:PHE:HB2	1.83	0.60
1:A:1687:LEU:HB2	1:A:1698:ILE:HG21	1.84	0.59
1:A:2454:ILE:HD11	1:A:2502:VAL:HG13	1.84	0.59
1:A:1769:LEU:HD21	1:A:1804:GLU:HG2	1.85	0.59
1:A:3656:VAL:HG21	1:A:3678:LEU:HD12	1.82	0.59
1:A:2414:ILE:HB	1:A:2532:VAL:HG12	1.83	0.59
1:A:1603:GLN:OE1	1:A:1605:GLN:NE2	2.35	0.59
1:A:1714:GLN:HB3	1:A:1727:LEU:HD21	1.85	0.58
1:A:2125:TRP:NE1	1:A:2127:ASP:OD1	2.36	0.58
1:A:2282:ASN:ND2	1:A:2548:GLU:OE2	2.37	0.58
1:A:2695:LEU:HD21	1:A:2712:LEU:HD22	1.85	0.58
1:A:2159:ASP:HB3	1:A:2162:TYR:HB2	1.86	0.58
1:A:2576:LYS:HE2	1:A:2589:THR:HG21	1.86	0.58
1:A:1444:ASN:ND2	1:A:1509:LEU:O	2.37	0.58
1:A:1570:GLU:HB2	1:A:1585:VAL:HA	1.86	0.58
1:A:3969:GLU:O	1:A:3973:ALA:HB2	2.03	0.58
1:A:2749:LEU:O	1:A:2812:ARG:NH2	2.37	0.57
1:A:3702:MET:HE2	1:A:3767:PHE:HE2	1.69	0.57
1:A:4024:VAL:HG23	1:A:4026:GLY:H	1.68	0.57
1:A:3404:VAL:HG23	1:A:3513:VAL:HG23	1.84	0.57
1:A:2462:THR:HG22	1:A:2475:PRO:HA	1.86	0.57
1:A:1815:ARG:NH1	1:A:1842:GLY:O	2.37	0.56
1:A:2253:ILE:HD11	1:A:2295:ILE:HG21	1.86	0.56
1:A:2708:ASN:ND2	1:A:2711:ASP:OD2	2.38	0.56
1:A:2806:CYS:SG	1:A:2884:ASN:ND2	2.78	0.56
1:A:2507:ARG:NH1	1:A:2511:GLU:OE1	2.38	0.56
1:A:1878:HIS:HB3	1:A:1885:GLU:HG2	1.88	0.56
1:A:3851:VAL:HG13	1:A:3855:LEU:HD12	1.86	0.56
1:A:3329:ILE:HD13	1:A:3349:LEU:HD13	1.86	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2099:ASN:C	1:A:2099:ASN:HD22	2.10	0.55
1:A:2369:SER:OG	1:A:2370:SER:N	2.39	0.55
1:A:2466:THR:HG22	1:A:2471:LEU:H	1.72	0.55
1:A:2713:VAL:HA	1:A:2716:ILE:HG12	1.88	0.55
1:A:2178:LEU:H	1:A:2183:ARG:HH22	1.55	0.55
1:A:1639:VAL:HG23	1:A:1642:LYS:HD3	1.89	0.54
1:A:1769:LEU:HD13	1:A:1808:ALA:HB2	1.89	0.54
1:A:2932:MET:HE3	1:A:2996:LEU:HD13	1.87	0.54
1:A:3693:LYS:HA	1:A:3696:MET:HE3	1.88	0.54
1:A:1482:GLU:HA	1:A:1485:MET:HE2	1.89	0.54
1:A:1774:LEU:HD21	1:A:1921:MET:HB2	1.89	0.54
1:A:1789:LYS:HB3	1:A:1872:LEU:HG	1.88	0.54
1:A:2761:ALA:O	1:A:2766:LYS:NZ	2.40	0.54
1:A:1441:ILE:HD12	1:A:1509:LEU:HD23	1.90	0.54
1:A:3790:SER:HB2	1:A:3794:VAL:HG23	1.91	0.53
1:A:2392:ILE:HG21	1:A:2570:ILE:HG23	1.89	0.53
1:A:4055:PRO:HG2	1:A:4058:SER:HB2	1.90	0.53
1:A:2095:ASP:HB2	1:A:2149:ARG:HH12	1.72	0.53
1:A:2549:ARG:NE	2:A:4101:ATP:O2G	2.41	0.53
1:A:3330:TYR:OH	1:A:3342:ARG:NH2	2.42	0.53
1:A:3522:LYS:HA	1:A:3525:ILE:HG12	1.91	0.52
1:A:2386:MET:HE3	1:A:2630:TYR:HD2	1.73	0.52
1:A:1536:ARG:HD3	1:A:1566:PHE:HE2	1.73	0.52
1:A:2110:THR:HG23	1:A:2113:SER:H	1.73	0.52
1:A:3811:LEU:HD11	1:A:3840:LEU:HB2	1.92	0.52
1:A:1452:TRP:HA	1:A:1455:LEU:HB2	1.91	0.52
1:A:3971:VAL:HG12	1:A:3972:LEU:HD22	1.92	0.52
1:A:1458:ILE:HG21	1:A:1546:LEU:HD13	1.91	0.51
1:A:2081:THR:HA	1:A:2084:TRP:NE1	2.26	0.51
1:A:1827:ASP:OD1	1:A:1827:ASP:N	2.43	0.51
1:A:1548:ILE:HG12	1:A:1558:VAL:HG12	1.91	0.51
1:A:3708:PHE:HE2	1:A:4089:LEU:HD21	1.75	0.51
1:A:2178:LEU:HD22	1:A:2182:GLU:HB3	1.92	0.51
1:A:2319:LYS:HE3	1:A:2346:PHE:HD2	1.76	0.51
1:A:2575:TYR:HA	1:A:2578:ILE:HG22	1.93	0.51
1:A:3852:LYS:HG2	1:A:3885:PRO:HG3	1.92	0.51
1:A:2174:LYS:HB3	1:A:2186:ILE:HB	1.92	0.51
1:A:3400:SER:OG	1:A:3403:ALA:O	2.28	0.51
1:A:3748:TRP:HA	1:A:3751:VAL:HG22	1.93	0.51
1:A:3764:LYS:O	1:A:3768:PHE:N	2.44	0.51
1:A:1572:ILE:HG22	1:A:1582:VAL:HG12	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3449:VAL:HG13	1:A:3493:LYS:HB3	1.93	0.50
1:A:2510:MET:HE1	1:A:2554:ALA:HB2	1.93	0.50
1:A:4024:VAL:HG22	1:A:4027:VAL:HG12	1.92	0.50
1:A:1543:ASP:OD1	1:A:1543:ASP:N	2.42	0.50
1:A:3687:SER:O	1:A:3695:LYS:NZ	2.43	0.50
1:A:4020:ASN:HA	1:A:4028:ARG:HH21	1.76	0.50
1:A:1559:SER:HB2	1:A:1572:ILE:HG12	1.93	0.50
1:A:2036:GLN:NE2	1:A:2040:ASP:OD1	2.44	0.50
1:A:1908:LEU:HD21	1:A:1916:PHE:HD2	1.77	0.50
1:A:2756:MET:HG2	1:A:2913:ILE:HG23	1.94	0.50
1:A:2972:PHE:CG	1:A:3349:LEU:HD12	2.47	0.50
1:A:2623:THR:HG21	3:A:4104:ADP:HI'	1.94	0.50
1:A:2617:PHE:HE1	1:A:2659:ARG:HH22	1.60	0.50
1:A:4045:LEU:HD13	1:A:4048:ILE:HD12	1.94	0.50
1:A:2169:VAL:HG22	1:A:2176:LEU:HD21	1.94	0.49
1:A:1540:LEU:O	1:A:1833:ARG:NH1	2.45	0.49
1:A:2606:ARG:NH2	1:A:2665:GLU:OE1	2.46	0.49
1:A:3969:GLU:O	1:A:3973:ALA:CB	2.60	0.49
1:A:2638:ARG:NH1	1:A:2639:GLN:O	2.46	0.49
1:A:1612:ASP:HA	1:A:1615:ILE:HG22	1.95	0.49
1:A:1917:ARG:HH11	1:A:3963:PHE:HD2	1.61	0.49
1:A:2285:GLU:OE2	1:A:2552:ARG:NH2	2.38	0.49
1:A:2759:ILE:HG12	1:A:2891:ILE:HD11	1.95	0.49
1:A:1794:PHE:HB2	1:A:1897:THR:HG22	1.94	0.49
1:A:1921:MET:SD	1:A:1921:MET:N	2.86	0.49
1:A:2795:PHE:HE2	1:A:2830:ARG:HD3	1.77	0.49
1:A:2163:VAL:HA	1:A:2166:MET:HB2	1.95	0.49
1:A:2646:ARG:HG2	1:A:2694:LEU:HD11	1.94	0.49
1:A:2108:VAL:HG13	1:A:2109:LEU:HD12	1.94	0.49
1:A:2880:GLU:O	1:A:2884:ASN:HB2	2.13	0.49
1:A:2758:LEU:HD13	1:A:2766:LYS:HB3	1.94	0.48
1:A:1726:LEU:HD22	1:A:3983:ALA:HB1	1.94	0.48
1:A:1786:LEU:HD11	1:A:1895:PHE:HZ	1.78	0.48
1:A:2409:ASN:OD1	1:A:2438:TYR:OH	2.31	0.48
1:A:2719:ARG:HD3	1:A:2775:TRP:HZ3	1.77	0.48
1:A:2784:PRO:O	1:A:2821:ASN:ND2	2.46	0.48
1:A:1444:ASN:ND2	1:A:1509:LEU:HG	2.28	0.48
1:A:3367:ILE:HG23	1:A:3371:VAL:HB	1.96	0.48
1:A:2160:PRO:HA	1:A:2163:VAL:HG12	1.96	0.48
1:A:3812:LYS:HB2	1:A:3839:ILE:HD13	1.96	0.48
1:A:2391:VAL:HG11	1:A:2430:ASN:ND2	2.29	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2361:ILE:O	1:A:2366:LEU:N	2.47	0.48
1:A:2659:ARG:HG2	1:A:2914:ILE:HB	1.94	0.48
1:A:2265:ILE:HG13	1:A:2345:TYR:HD2	1.79	0.48
1:A:3964:ALA:HB2	1:A:3993:VAL:HG11	1.95	0.48
1:A:1636:ILE:HG22	1:A:1679:LYS:HD2	1.96	0.48
1:A:1949:ILE:HD11	1:A:1994:VAL:HG21	1.95	0.48
1:A:2742:ILE:HA	1:A:2745:ILE:HG22	1.96	0.48
1:A:2099:ASN:C	1:A:2099:ASN:ND2	2.71	0.47
1:A:3657:PHE:HE1	1:A:3674:ILE:HD11	1.78	0.47
1:A:4021:LEU:HD23	1:A:4029:ILE:HB	1.96	0.47
1:A:1772:THR:HG23	1:A:1775:LEU:H	1.78	0.47
1:A:2233:SER:HB2	1:A:2292:VAL:HG11	1.94	0.47
1:A:2631:THR:O	1:A:2635:THR:OG1	2.29	0.47
1:A:3330:TYR:HA	1:A:3334:PHE:HD2	1.78	0.47
1:A:1686:LYS:O	1:A:1690:SER:OG	2.27	0.47
1:A:2229:LEU:HB3	1:A:2288:VAL:HG21	1.97	0.47
1:A:2328:GLY:O	1:A:2558:TYR:N	2.47	0.47
1:A:2490:ASN:ND2	1:A:2536:ASN:O	2.48	0.47
1:A:2934:ASP:N	1:A:2934:ASP:OD1	2.48	0.47
1:A:3952:LYS:NZ	1:A:3953:LYS:O	2.47	0.47
1:A:2420:PRO:HB3	1:A:2906:PRO:HB3	1.95	0.47
1:A:2620:ARG:HD2	1:A:2910:ASN:HA	1.97	0.47
1:A:3629:PHE:HZ	1:A:3646:ILE:HG13	1.80	0.47
1:A:3967:TYR:HE2	1:A:3985:VAL:HA	1.80	0.47
1:A:2119:LEU:HB2	1:A:2124:GLU:H	1.80	0.47
1:A:3900:ILE:HD12	1:A:3901:PRO:HD2	1.97	0.47
1:A:2119:LEU:HD12	1:A:2124:GLU:HB2	1.95	0.47
1:A:1732:GLN:OE1	1:A:1812:ASN:ND2	2.48	0.46
1:A:2218:ASP:OD2	1:A:2279:ARG:NH2	2.47	0.46
1:A:1569:ILE:HA	1:A:1584:SER:HA	1.97	0.46
1:A:3691:ASP:OD1	1:A:3691:ASP:N	2.48	0.46
1:A:1602:ILE:HD11	1:A:1607:TRP:HB3	1.97	0.46
1:A:1715:LEU:HD23	1:A:1727:LEU:HD23	1.97	0.46
1:A:2075:LYS:HE2	1:A:2075:LYS:HB3	1.76	0.46
1:A:3388:ASP:OD1	1:A:3388:ASP:N	2.48	0.46
1:A:3409:ASP:OD2	1:A:3413:HIS:N	2.48	0.46
1:A:2569:GLN:O	1:A:2572:GLU:HG3	2.15	0.46
1:A:2650:TYR:HD1	1:A:2694:LEU:HB3	1.79	0.46
1:A:2856:LEU:HB3	1:A:2873:LEU:HD22	1.98	0.46
1:A:2286:THR:HG1	1:A:2412:ARG:HE	1.63	0.46
1:A:1869:GLN:OE1	1:A:1873:GLN:NE2	2.49	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2258:ASP:OD1	1:A:2258:ASP:N	2.49	0.46
1:A:2838:ALA:HB3	1:A:2878:VAL:HG13	1.98	0.46
1:A:2072:LEU:HG	1:A:2213:LEU:HD23	1.99	0.45
1:A:2507:ARG:HB2	1:A:2550:PHE:HD1	1.81	0.45
1:A:2968:ILE:HG21	1:A:3353:LEU:HD23	1.99	0.45
1:A:2834:LEU:HB3	1:A:2840:ILE:HG13	1.97	0.45
1:A:2880:GLU:O	1:A:2884:ASN:CB	2.63	0.45
1:A:2259:MET:HA	1:A:2262:LEU:HB2	1.99	0.45
1:A:2495:ASP:OD1	1:A:2499:SER:N	2.43	0.45
1:A:1486:ILE:HA	1:A:1489:ARG:HG2	1.98	0.45
1:A:2176:LEU:O	1:A:2183:ARG:NH1	2.50	0.45
1:A:3693:LYS:HE2	1:A:4077:GLN:HE22	1.82	0.45
1:A:1536:ARG:HD3	1:A:1566:PHE:CE2	2.52	0.45
1:A:4051:ASN:OD1	1:A:4052:THR:N	2.50	0.45
1:A:1721:LYS:HB3	1:A:1725:ARG:NH1	2.32	0.45
1:A:1957:SER:HB2	1:A:1968:PHE:HB2	1.99	0.45
1:A:1394:LEU:HD21	1:A:2122:THR:HA	2.00	0.44
1:A:1529:ARG:HA	1:A:1529:ARG:HD3	1.81	0.44
1:A:1559:SER:OG	1:A:1571:SER:OG	2.26	0.44
1:A:1657:THR:HG23	1:A:1728:TRP:HH2	1.82	0.44
1:A:1995:VAL:HG23	1:A:2018:LEU:HD11	1.98	0.44
1:A:2899:SER:O	1:A:2903:ILE:HG12	2.18	0.44
1:A:3903:ILE:O	1:A:3906:THR:OG1	2.32	0.44
1:A:2220:CYS:HB2	1:A:2281:PHE:HZ	1.82	0.44
1:A:2197:ASP:OD1	1:A:2197:ASP:N	2.50	0.44
1:A:2921:ASP:O	1:A:2925:MET:HG3	2.18	0.44
1:A:1908:LEU:HD23	1:A:1913:LYS:HA	2.00	0.44
1:A:2230:LEU:HD23	1:A:2230:LEU:HA	1.88	0.44
1:A:2119:LEU:HG	1:A:2126:ARG:HH11	1.82	0.43
1:A:2697:SER:OG	1:A:2698:GLY:N	2.52	0.43
1:A:2774:ALA:HA	1:A:2779:LEU:HD12	2.00	0.43
1:A:2391:VAL:HG22	1:A:2426:MET:HE3	1.99	0.43
1:A:1559:SER:HG	1:A:1571:SER:HG	1.60	0.43
1:A:2458:LEU:HD13	1:A:2473:LEU:HD21	2.01	0.43
1:A:2842:ASP:O	1:A:2845:GLN:NE2	2.51	0.43
1:A:3405:PRO:HA	1:A:3514:ARG:HB3	2.01	0.43
1:A:2745:ILE:HG12	1:A:2749:LEU:HD23	2.01	0.43
1:A:1469:LEU:O	1:A:1473:THR:N	2.47	0.43
1:A:2664:LYS:NZ	1:A:2665:GLU:OE2	2.43	0.43
1:A:1455:LEU:HD23	1:A:1455:LEU:HA	1.89	0.43
1:A:2071:ILE:N	1:A:2211:GLY:O	2.49	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2311:LYS:HA	1:A:2314:ILE:HG12	2.01	0.43
1:A:3694:PHE:HA	1:A:3697:ILE:HD12	2.00	0.43
1:A:3787:THR:HA	1:A:3875:MET:HG2	2.01	0.43
1:A:1696:LYS:HA	1:A:1699:GLU:HG3	2.01	0.42
1:A:2968:ILE:HD13	1:A:3353:LEU:HD23	2.01	0.42
1:A:2107:LYS:NZ	1:A:2157:ASP:O	2.52	0.42
1:A:3379:TRP:HB3	1:A:3384:LEU:HD12	2.01	0.42
1:A:1631:LYS:HG2	1:A:1655:MET:HE1	2.01	0.42
1:A:3351:ARG:O	1:A:3355:LYS:HG2	2.19	0.42
1:A:1469:LEU:HB2	1:A:1472:GLU:HB3	2.02	0.42
1:A:1876:LYS:HG3	1:A:1878:HIS:H	1.85	0.42
1:A:2000:ARG:HD3	1:A:2062:TYR:HB3	2.01	0.42
1:A:2733:VAL:HG21	1:A:2928:VAL:HG23	2.00	0.42
1:A:1795:PHE:CE1	1:A:1918:GLU:HB3	2.54	0.42
1:A:1867:GLN:HE22	1:A:3818:SER:HB2	1.84	0.42
1:A:2267:THR:HA	1:A:2270:ASN:HD21	1.85	0.42
1:A:2286:THR:HG21	1:A:2555:ALA:HB2	2.00	0.42
1:A:2730:VAL:HG21	1:A:2771:ARG:HH22	1.85	0.42
1:A:2138:ASN:ND2	1:A:2185:PRO:O	2.53	0.42
1:A:1849:GLU:OE1	1:A:1899:ASN:ND2	2.52	0.42
1:A:1863:ALA:O	1:A:1867:GLN:HG2	2.20	0.42
1:A:2117:SER:O	1:A:2126:ARG:NH1	2.53	0.42
1:A:3707:LYS:HD3	1:A:3707:LYS:HA	1.84	0.42
1:A:1673:TRP:NE1	1:A:1709:ASN:OD1	2.33	0.42
1:A:3966:VAL:HA	1:A:3969:GLU:HG2	2.02	0.41
1:A:1444:ASN:CG	1:A:1513:ILE:HB	2.45	0.41
1:A:1644:ILE:HD12	1:A:1762:TYR:HE1	1.85	0.41
1:A:1846:CYS:SG	1:A:1847:PHE:N	2.93	0.41
1:A:2326:LEU:HB2	1:A:2338:PHE:CE2	2.55	0.41
1:A:3472:HIS:HA	1:A:3477:VAL:HA	2.02	0.41
1:A:3968:LEU:HD21	1:A:3989:ILE:HD11	2.01	0.41
1:A:1538:TYR:O	1:A:1833:ARG:NH1	2.53	0.41
1:A:2518:THR:HG23	1:A:2519:PRO:HD3	2.03	0.41
1:A:2758:LEU:HB3	1:A:2766:LYS:HD2	2.02	0.41
1:A:1673:TRP:CG	1:A:1716:LYS:HZ1	2.38	0.41
1:A:2428:MET:HE2	1:A:2485:PHE:CG	2.55	0.41
1:A:1477:LYS:HD3	1:A:1477:LYS:HA	1.79	0.41
1:A:1560:LYS:HD3	1:A:1560:LYS:HA	1.77	0.41
1:A:1933:ILE:HA	1:A:1936:ILE:HG22	2.03	0.41
1:A:2780:LYS:HZ2	1:A:2812:ARG:H	1.67	0.41
1:A:3928:CYS:HB3	1:A:3968:LEU:HD12	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2405:TYR:HE1	1:A:2438:TYR:HE2	1.69	0.41
1:A:2511:GLU:OE1	1:A:2553:HIS:NE2	2.54	0.41
1:A:1531:ARG:CZ	1:A:1545:LEU:HD11	2.51	0.41
1:A:2139:ASP:HB3	1:A:2141:ILE:HG12	2.03	0.41
1:A:2229:LEU:HD21	1:A:2285:GLU:HG2	2.02	0.41
1:A:2420:PRO:HB2	1:A:2620:ARG:HH22	1.85	0.41
1:A:1759:LYS:HA	1:A:1759:LYS:HD3	1.81	0.41
1:A:1956:LEU:HD23	1:A:1956:LEU:HA	1.93	0.41
1:A:2247:ASP:OD1	1:A:2247:ASP:N	2.54	0.41
1:A:3737:THR:O	1:A:3741:ASN:N	2.54	0.41
1:A:1441:ILE:HG23	1:A:1509:LEU:HD23	2.03	0.41
1:A:1624:ARG:NH2	1:A:1625:ASP:OD1	2.54	0.41
1:A:1636:ILE:O	1:A:1640:VAL:HG23	2.21	0.41
1:A:1636:ILE:HA	1:A:1639:VAL:HG12	2.02	0.41
1:A:2708:ASN:OD1	1:A:2708:ASN:N	2.53	0.41
1:A:2925:MET:HA	1:A:2928:VAL:HG12	2.03	0.40
1:A:3436:PHE:HA	1:A:3439:ARG:HG2	2.02	0.40
1:A:1807:LYS:HA	1:A:1817:VAL:HG21	2.02	0.40
1:A:2073:VAL:O	1:A:2215:PHE:N	2.48	0.40
1:A:2750:LYS:HD3	1:A:2750:LYS:HA	1.76	0.40
1:A:2925:MET:HE1	1:A:2987:ARG:NH2	2.36	0.40
1:A:2004:PRO:HG3	1:A:2059:GLN:HG2	2.03	0.40
1:A:3521:ASN:H	1:A:3524:SER:HB3	1.86	0.40
1:A:3001:LYS:O	1:A:3001:LYS:NZ	2.53	0.40
1:A:3890:GLN:H	1:A:3890:GLN:HG3	1.78	0.40

There are no symmetry-related clashes.

5.3 Torsion angles

5.3.1 Protein backbone

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	2254/2875 (78%)	2200 (98%)	54 (2%)	0	100	100

There are no Ramachandran outliers to report.

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	1854/2631 (70%)	1853 (100%)	1 (0%)	88 89

All (1) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	2099	ASN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (20) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	1492	GLN
1	A	1593	ASN
1	A	1812	ASN
1	A	2231	ASN
1	A	2264	ASN
1	A	2270	ASN
1	A	2481	ASN
1	A	2598	HIS
1	A	2753	GLN
1	A	2791	ASN
1	A	2884	ASN
1	A	2910	ASN
1	A	2985	ASN
1	A	3401	GLN
1	A	3637	GLN
1	A	3680	GLN
1	A	3741	ASN
1	A	3975	ASN
1	A	3979	ASN
1	A	4077	GLN

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 ⓘ

There are no oligosaccharides in this entry.

5.6 Ligand geometry ⓘ

4 ligands are modelled in this entry.

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	ADP	A	4104	-	28,29,29	1.39	4 (14%)	43,45,45	1.88	8 (18%)
3	ADP	A	4102	-	28,29,29	1.41	4 (14%)	43,45,45	1.86	8 (18%)
2	ATP	A	4101	-	32,33,33	0.33	0	48,52,52	0.35	0
3	ADP	A	4103	-	28,29,29	1.41	4 (14%)	43,45,45	1.85	10 (23%)

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	ADP	A	4104	-	-	2/16/32/32	0/3/3/3
3	ADP	A	4102	-	-	3/16/32/32	0/3/3/3
2	ATP	A	4101	-	-	5/22/38/38	0/3/3/3
3	ADP	A	4103	-	-	2/16/32/32	0/3/3/3

All (12) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	A	4102	ADP	C5-C4	4.70	1.47	1.39
3	A	4103	ADP	C5-C4	4.68	1.47	1.39
3	A	4104	ADP	C5-C4	4.66	1.47	1.39
3	A	4102	ADP	C5-C6	2.70	1.48	1.41
3	A	4103	ADP	C5-C6	2.69	1.48	1.41
3	A	4104	ADP	C5-C6	2.55	1.48	1.41
3	A	4103	ADP	C5-N7	-2.41	1.34	1.39
3	A	4104	ADP	C5-N7	-2.37	1.34	1.39
3	A	4102	ADP	C5-N7	-2.32	1.34	1.39
3	A	4102	ADP	C8-N7	2.28	1.36	1.31
3	A	4103	ADP	C8-N7	2.25	1.36	1.31
3	A	4104	ADP	C8-N7	2.17	1.35	1.31

All (26) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	A	4104	ADP	C5-C4-N3	-6.04	118.41	126.72
3	A	4102	ADP	C5-C4-N3	-6.02	118.42	126.72
3	A	4103	ADP	C5-C4-N3	-5.81	118.72	126.72
3	A	4104	ADP	N3-C4-N9	5.02	135.71	127.17
3	A	4102	ADP	N3-C4-N9	4.76	135.27	127.17
3	A	4103	ADP	N3-C4-N9	4.64	135.06	127.17
3	A	4102	ADP	C2-N3-C4	3.77	121.04	111.83
3	A	4104	ADP	C2-N3-C4	3.76	121.02	111.83
3	A	4103	ADP	C2-N3-C4	3.64	120.72	111.83
3	A	4103	ADP	C4-C5-N7	-3.51	106.56	110.58
3	A	4102	ADP	C4-C5-N7	-3.42	106.67	110.58
3	A	4104	ADP	N3-C2-N1	-3.29	123.61	128.58
3	A	4102	ADP	N3-C2-N1	-3.19	123.76	128.58
3	A	4103	ADP	N3-C2-N1	-3.17	123.79	128.58
3	A	4104	ADP	C4-C5-N7	-3.09	107.05	110.58
3	A	4104	ADP	C3'-C2'-C1'	2.82	106.80	101.46
3	A	4104	ADP	C4-N9-C8	2.69	108.57	105.74
3	A	4103	ADP	C4-N9-C8	2.68	108.55	105.74
3	A	4103	ADP	C5-N7-C8	2.66	107.63	103.45
3	A	4103	ADP	C3'-C2'-C1'	2.60	106.38	101.46
3	A	4102	ADP	C5-N7-C8	2.50	107.37	103.45
3	A	4102	ADP	C4-N9-C8	2.48	108.34	105.74
3	A	4102	ADP	O4'-C1'-N9	2.39	112.67	108.09
3	A	4104	ADP	C5-N7-C8	2.36	107.15	103.45
3	A	4103	ADP	C6-C5-N7	2.08	136.09	132.09
3	A	4103	ADP	N9-C8-N7	-2.05	111.03	113.94

There are no chirality outliers.

All (12) torsion outliers are listed below:

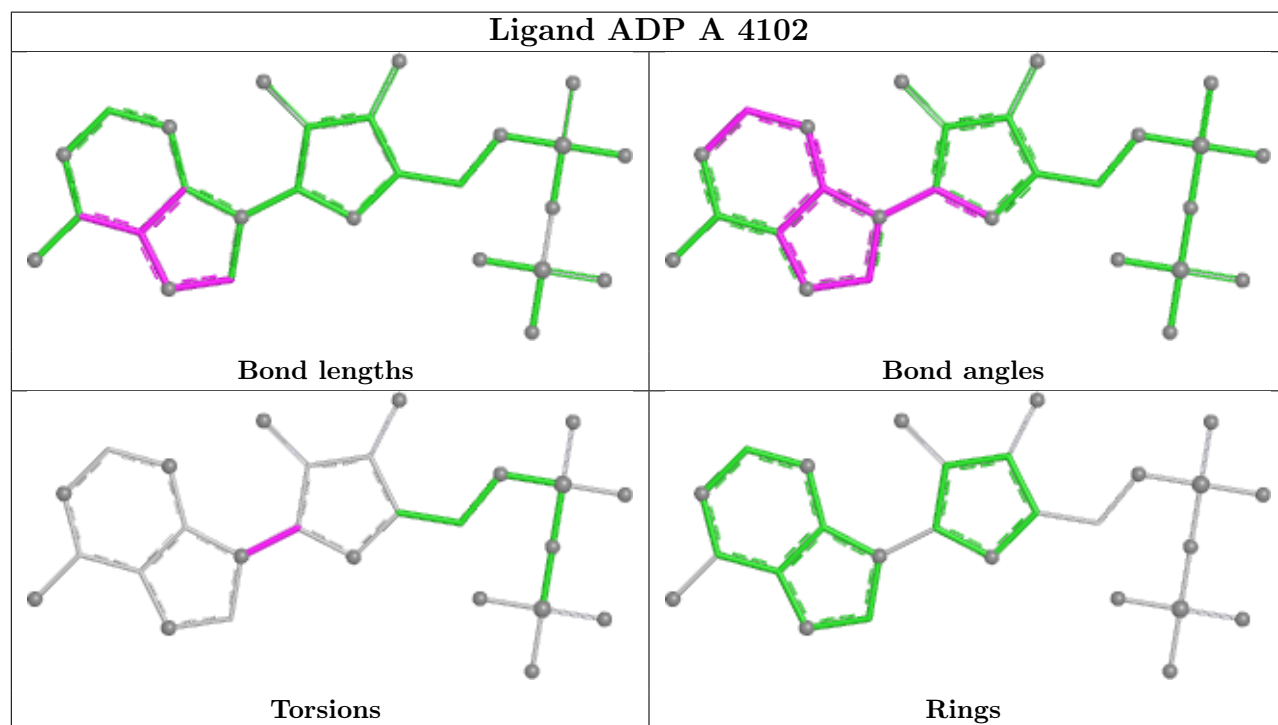
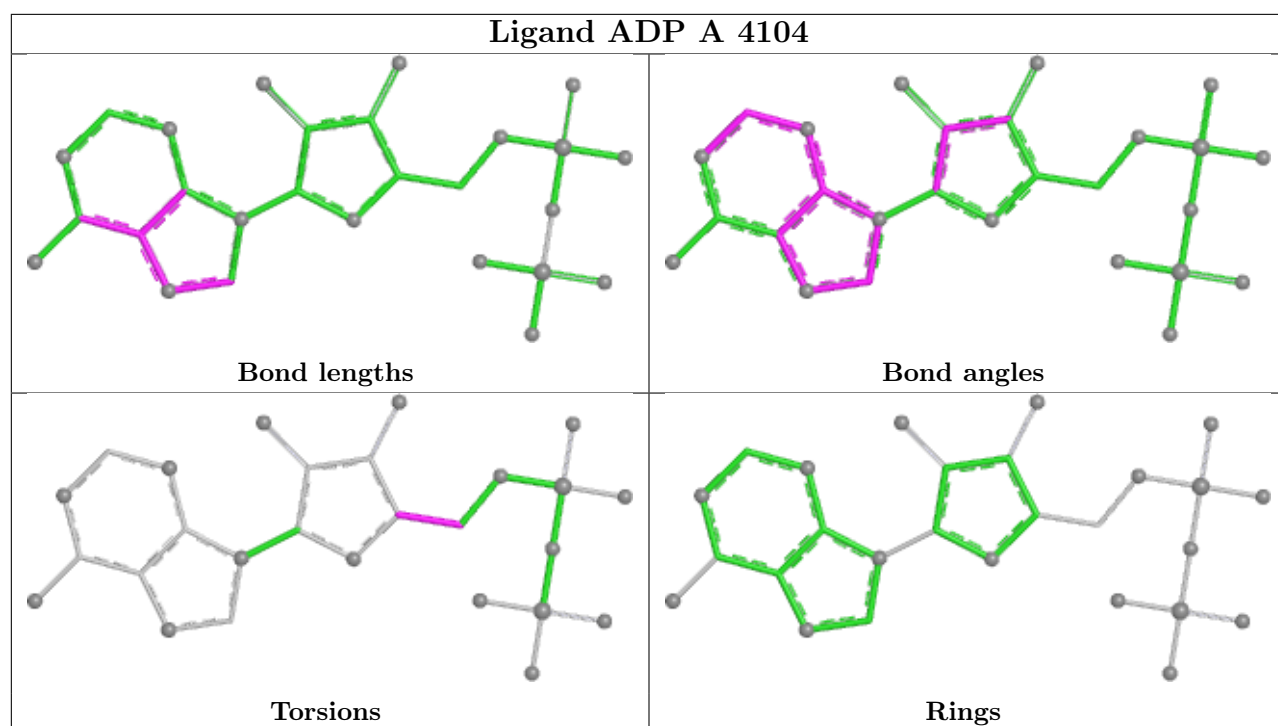
Mol	Chain	Res	Type	Atoms
3	A	4103	ADP	C5'-O5'-PA-O1A
3	A	4102	ADP	O4'-C1'-N9-C4
3	A	4102	ADP	O4'-C1'-N9-C8
3	A	4104	ADP	O4'-C4'-C5'-O5'
2	A	4101	ATP	C5'-O5'-PA-O1A
2	A	4101	ATP	C5'-O5'-PA-O2A
2	A	4101	ATP	C5'-O5'-PA-O3A
3	A	4103	ADP	O4'-C4'-C5'-O5'
2	A	4101	ATP	PG-O3B-PB-O1B
3	A	4102	ADP	C2'-C1'-N9-C8
3	A	4104	ADP	C3'-C4'-C5'-O5'
2	A	4101	ATP	PG-O3B-PB-O2B

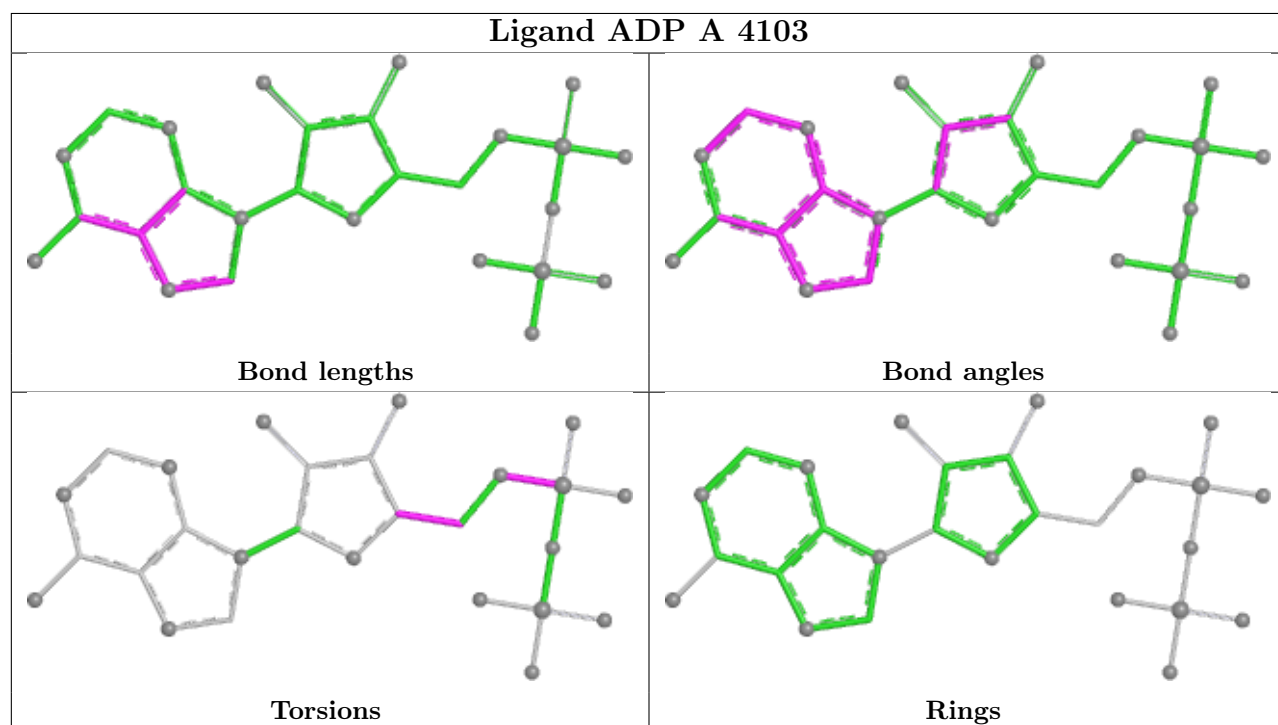
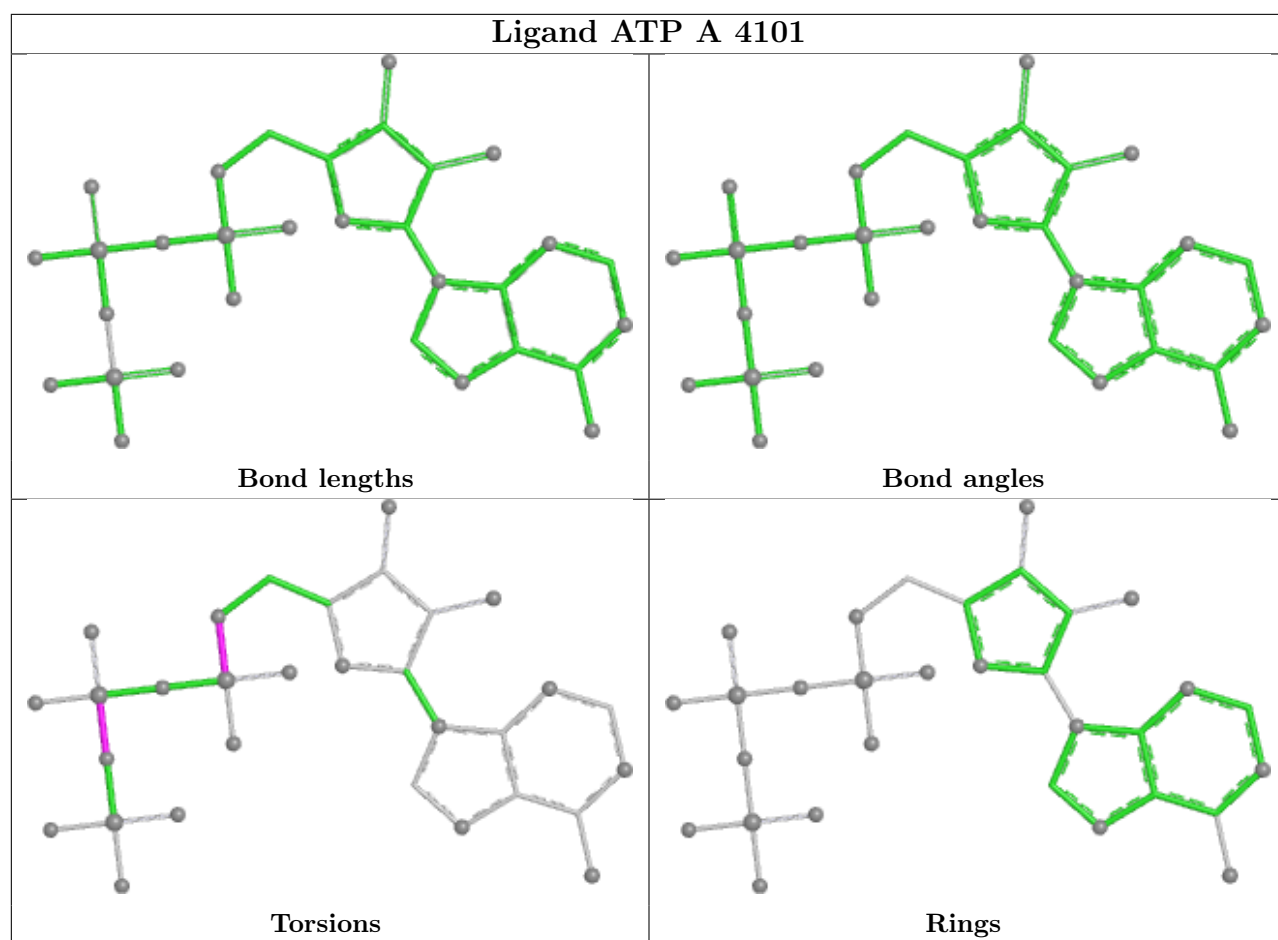
There are no ring outliers.

2 monomers are involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	A	4104	ADP	1	0
2	A	4101	ATP	1	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 [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

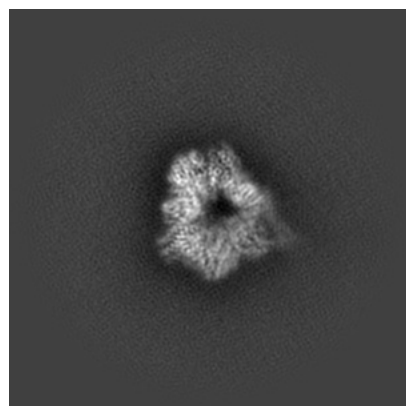
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-46919. These allow visual inspection of the internal detail of the map and identification of artifacts.

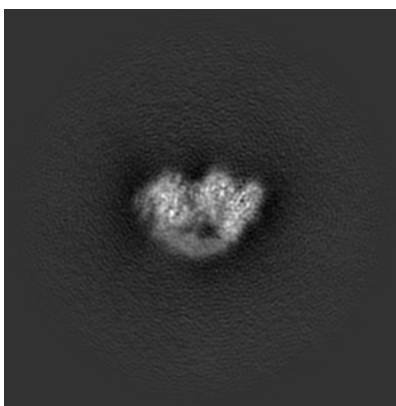
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

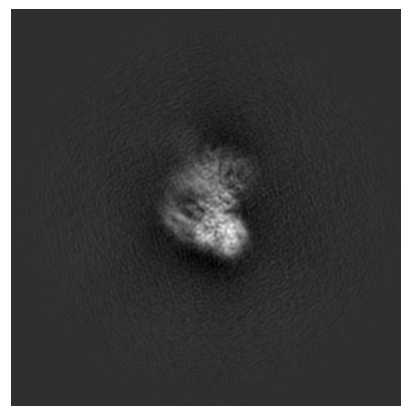
6.1.1 Primary map



X

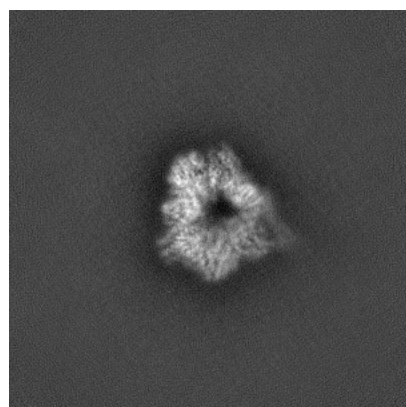


Y

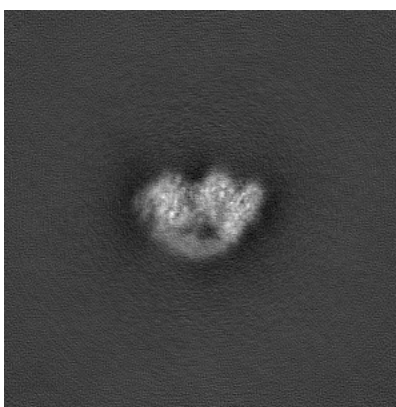


Z

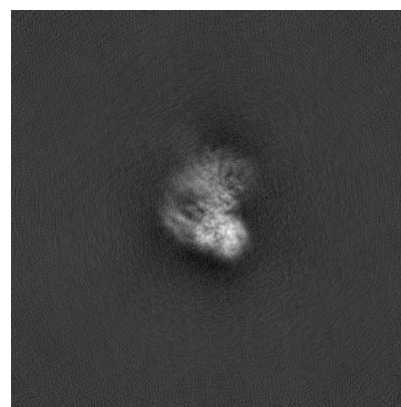
6.1.2 Raw map



X



Y

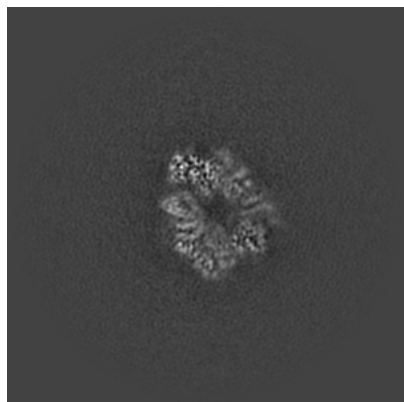


Z

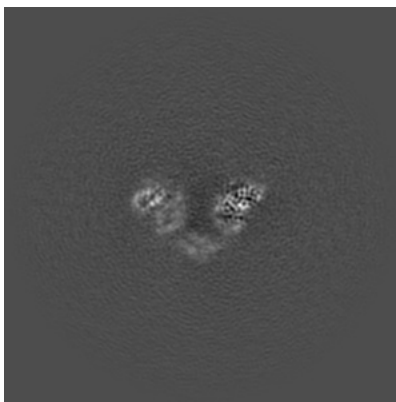
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

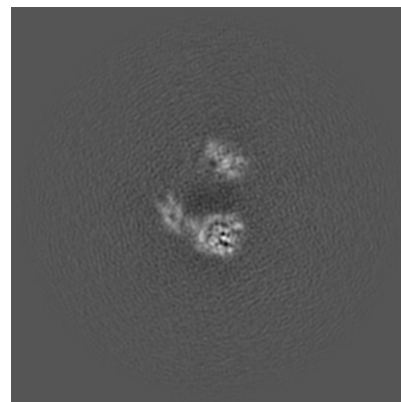
6.2.1 Primary map



X Index: 176

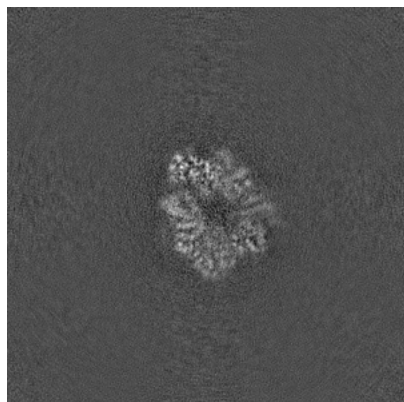


Y Index: 176

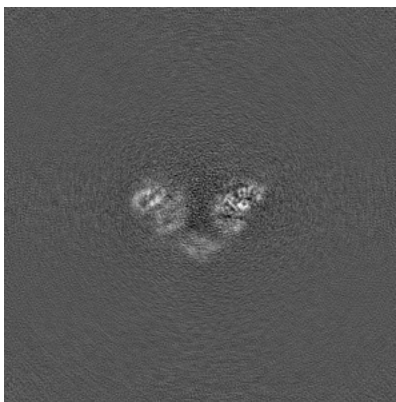


Z Index: 176

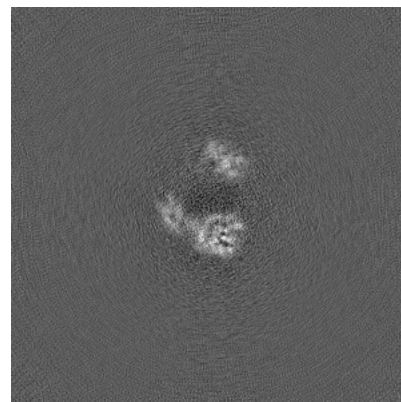
6.2.2 Raw map



X Index: 176



Y Index: 176

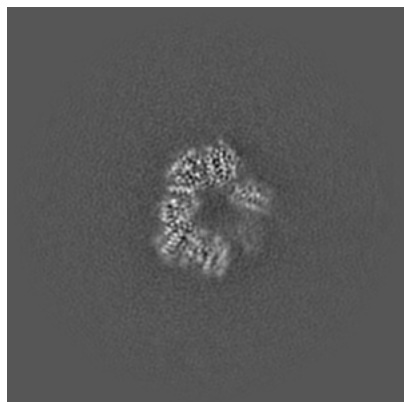


Z Index: 176

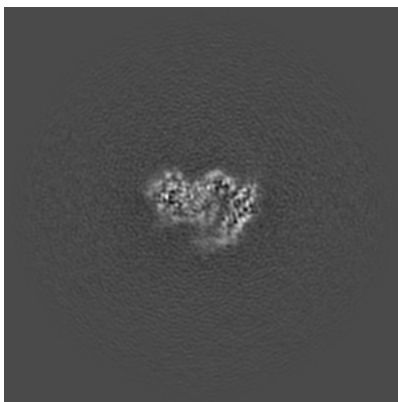
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

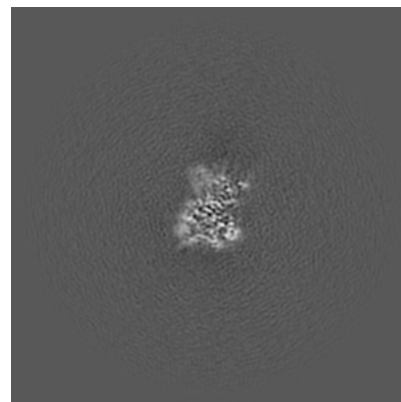
6.3.1 Primary map



X Index: 189

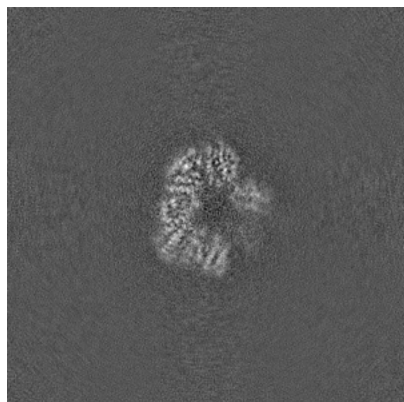


Y Index: 156

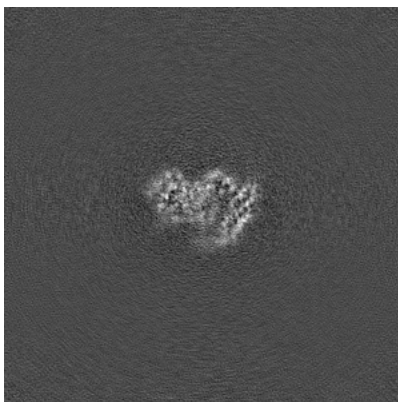


Z Index: 201

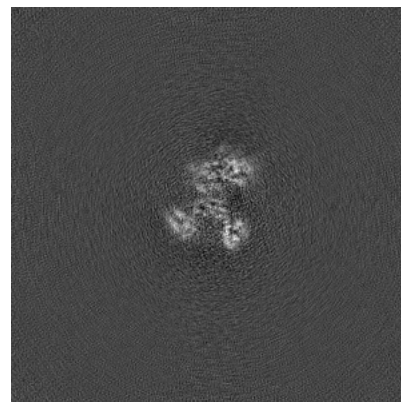
6.3.2 Raw map



X Index: 190



Y Index: 156

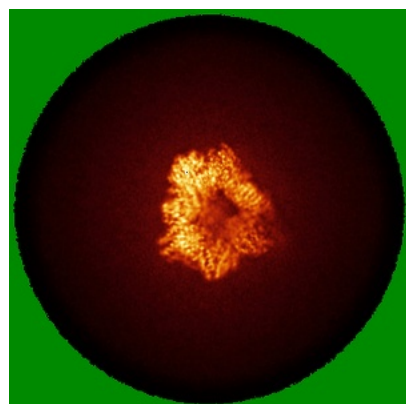


Z Index: 192

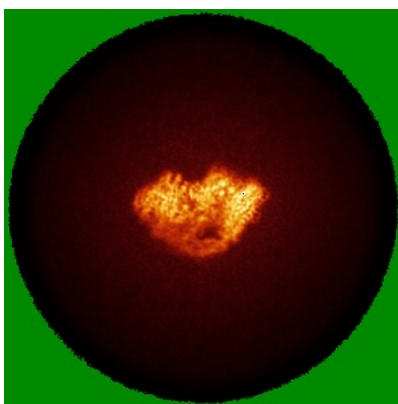
The images above show the largest variance slices of the map in three orthogonal directions.

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

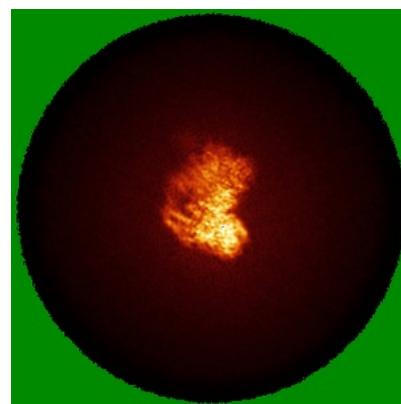
6.4.1 Primary map



X

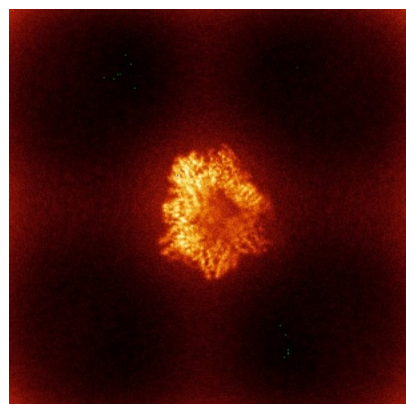


Y

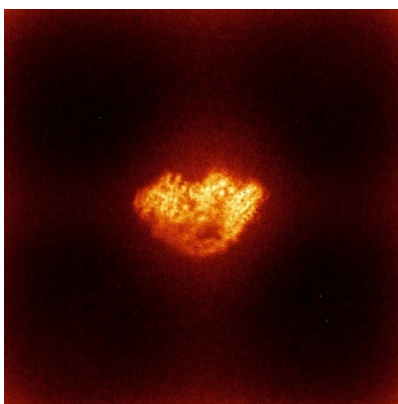


Z

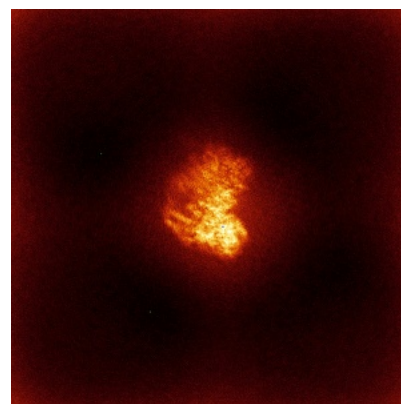
6.4.2 Raw map



X



Y

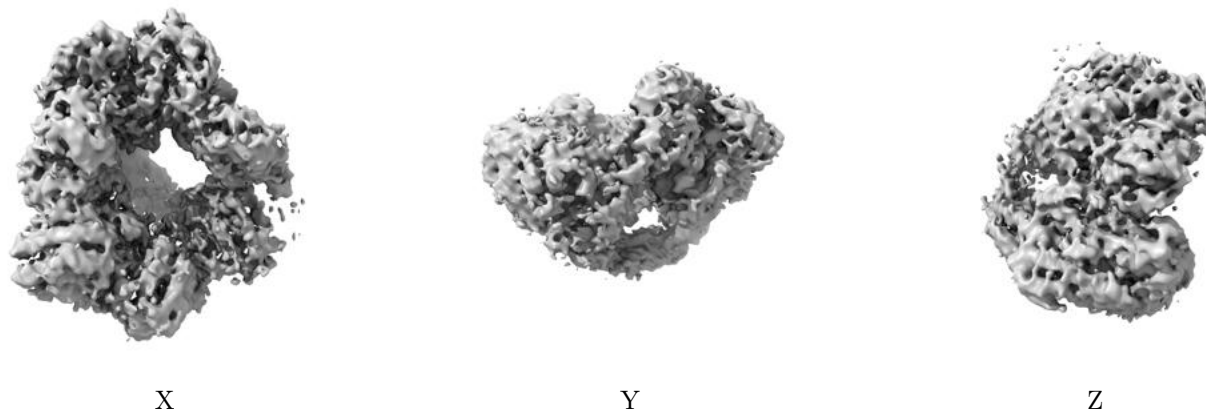


Z

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.

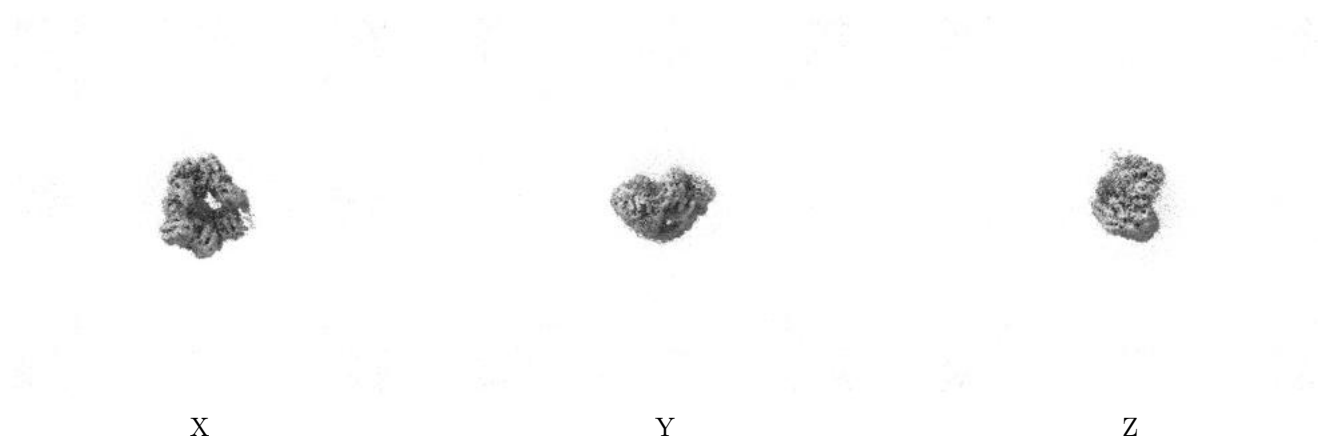
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.14. 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.

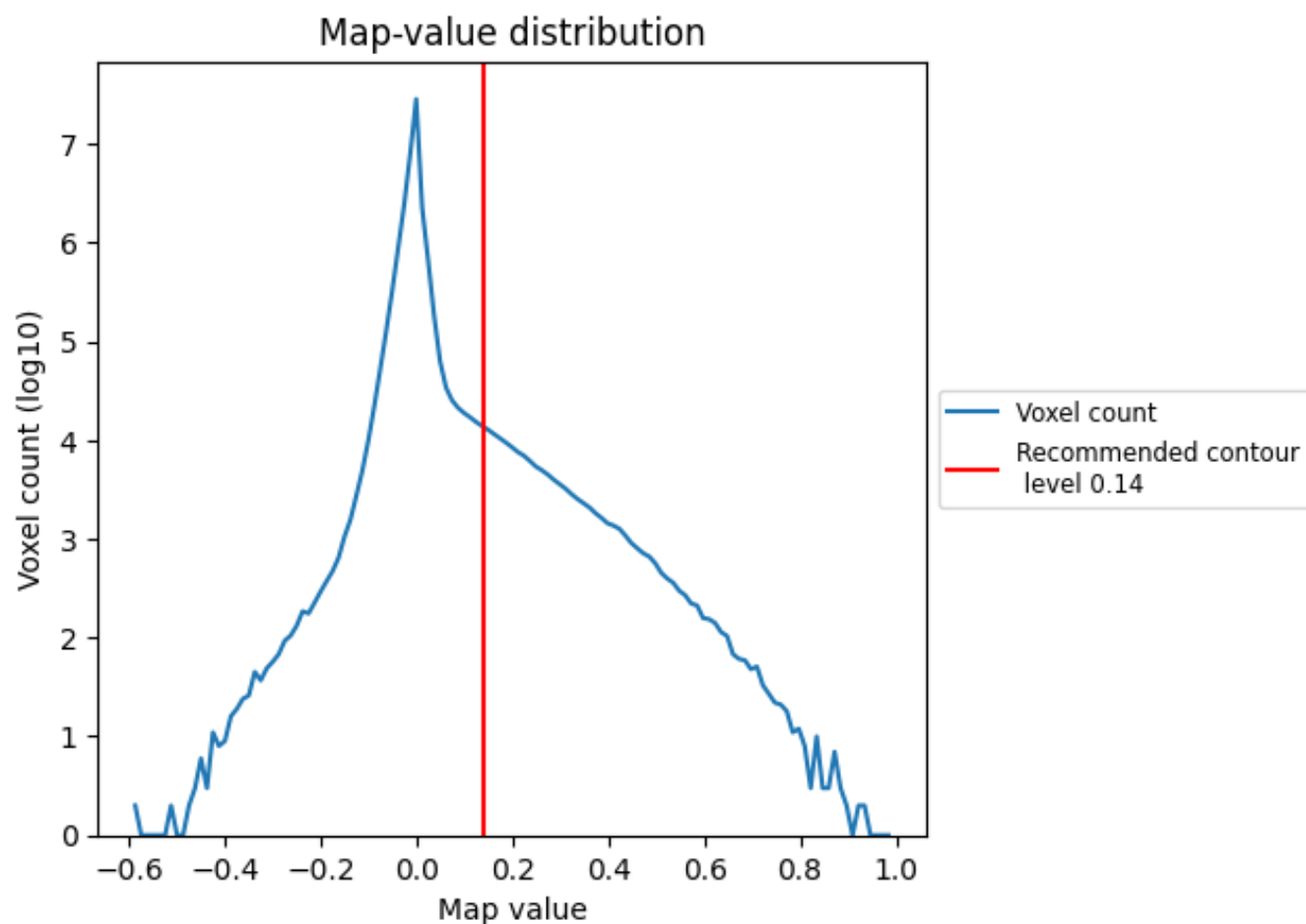
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

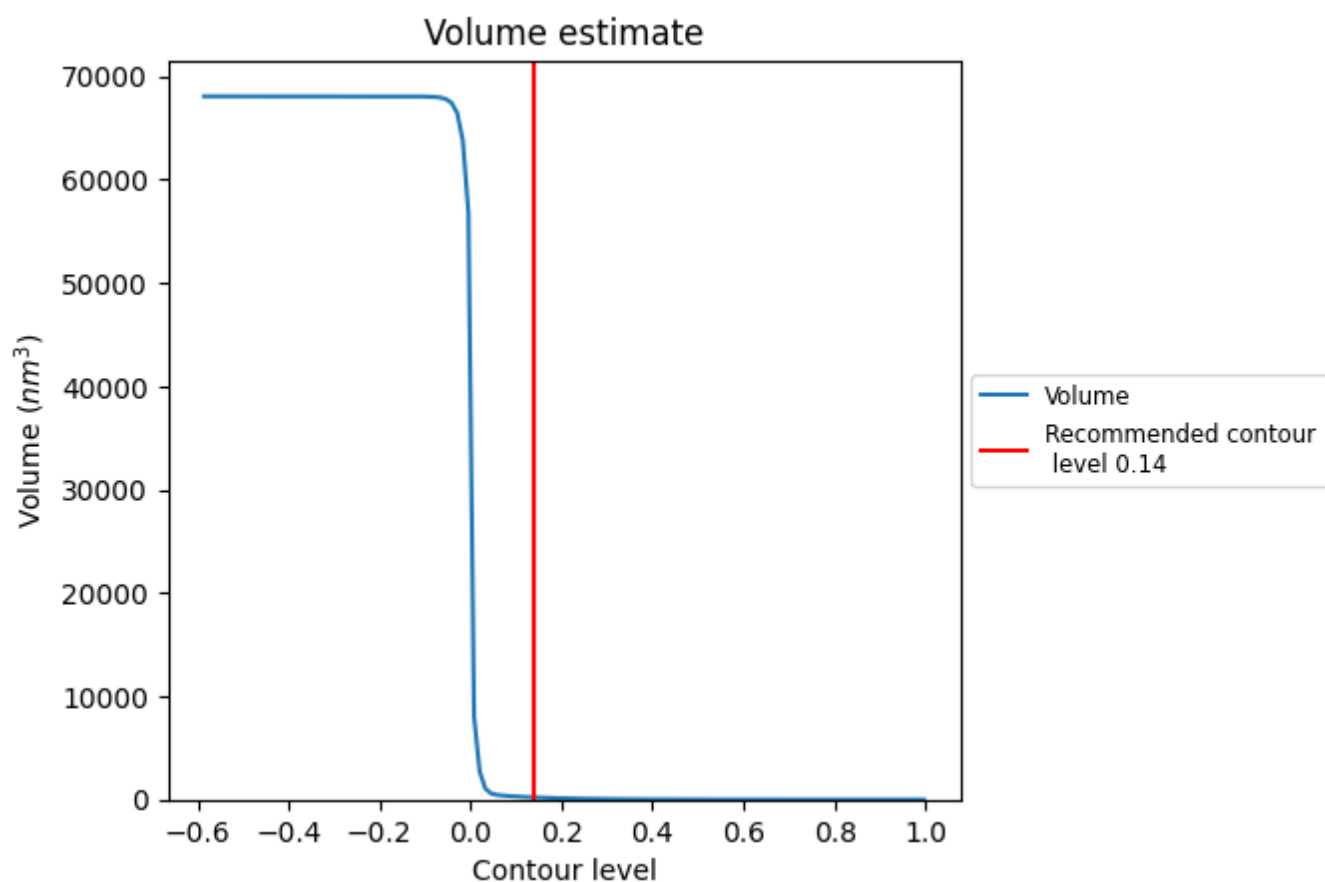
This section contains the results of statistical analysis of the map.

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.

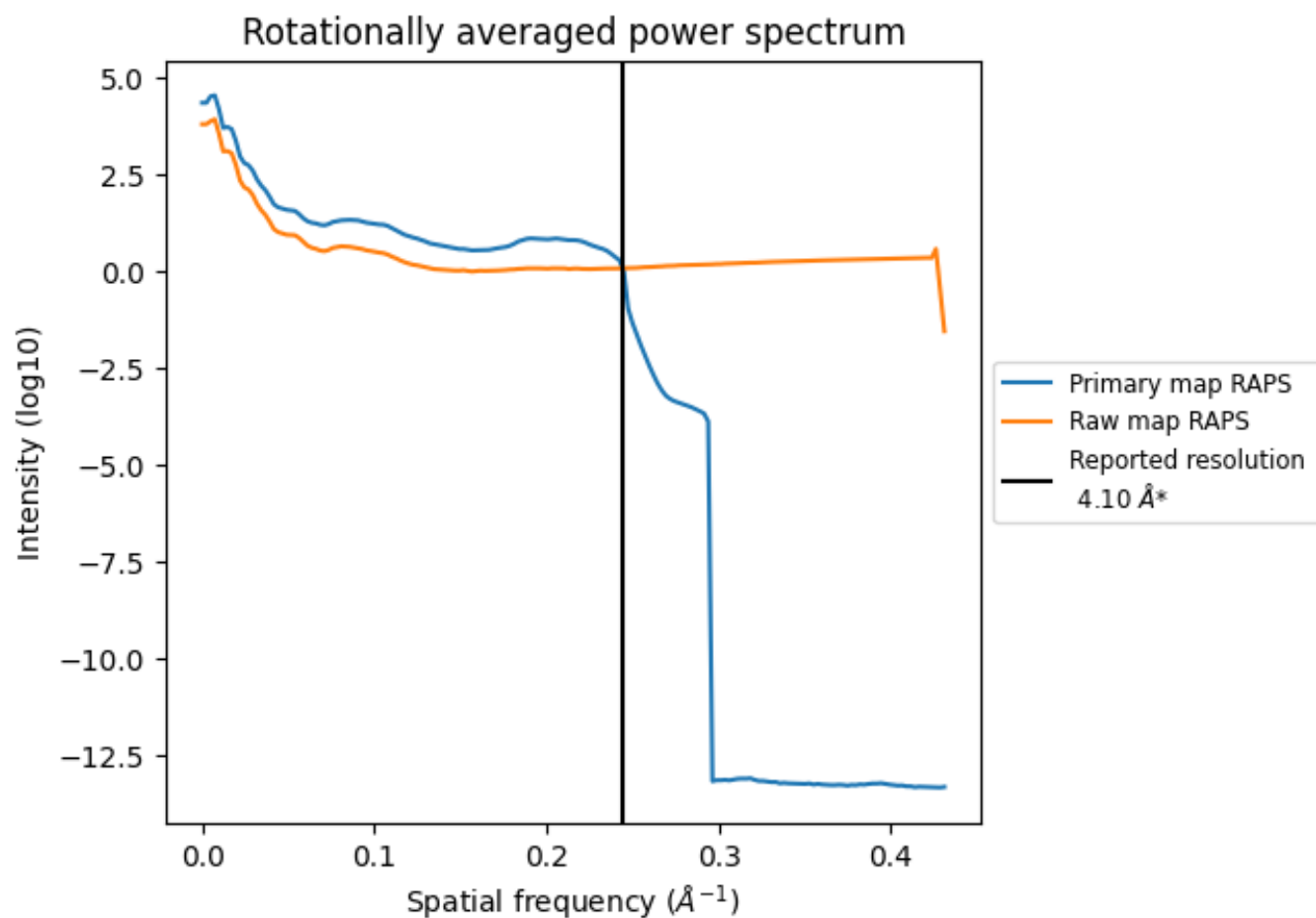
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 211 nm³; this corresponds to an approximate mass of 190 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 ⓘ

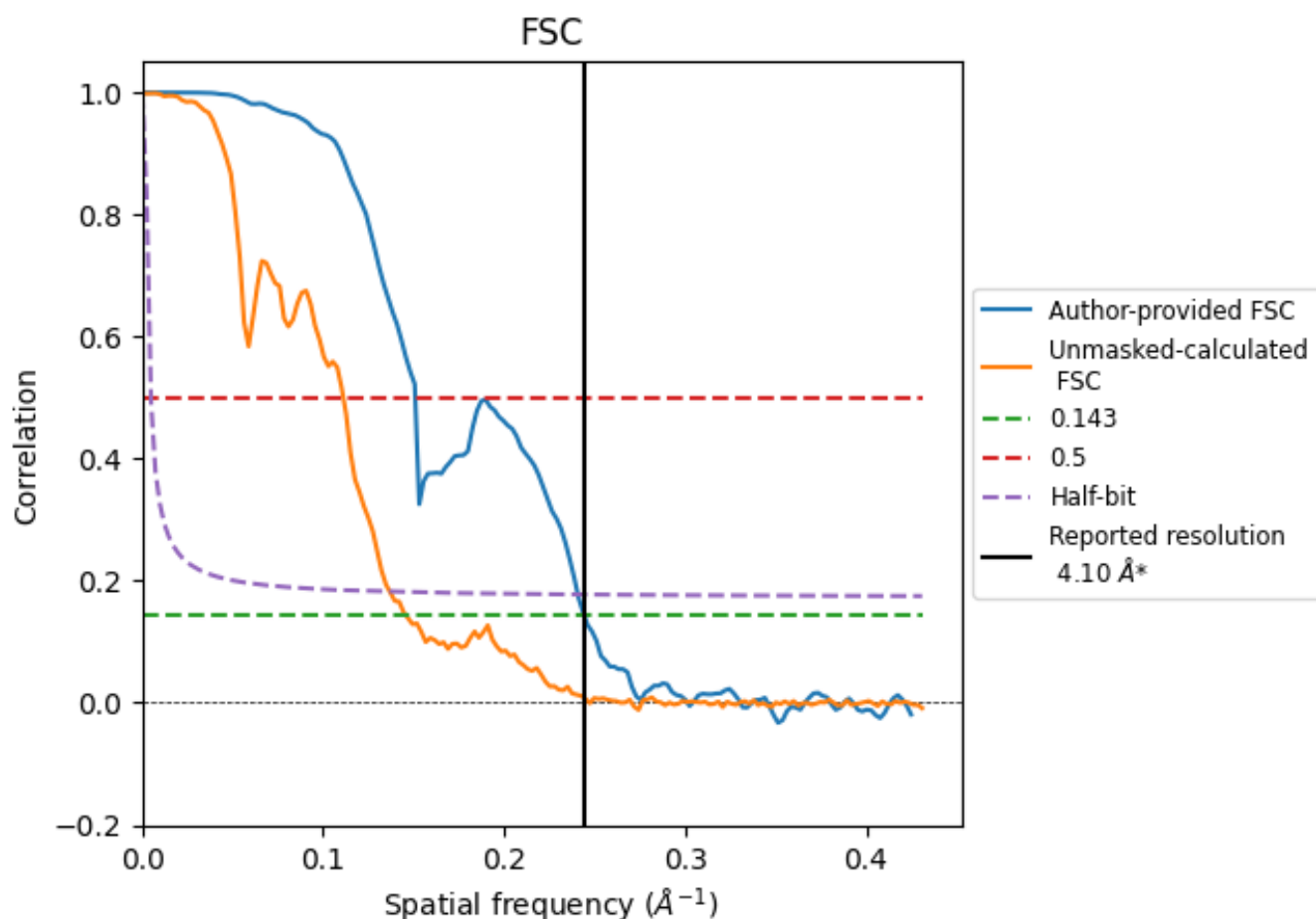


*Reported resolution corresponds to spatial frequency of 0.244 Å⁻¹

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 0.244 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

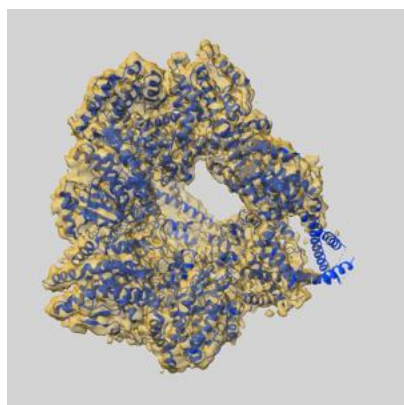
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	4.10	-	-
Author-provided FSC curve	4.09	6.63	4.15
Unmasked-calculated*	6.86	9.00	7.30

*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 6.86 differs from the reported value 4.1 by more than 10 %

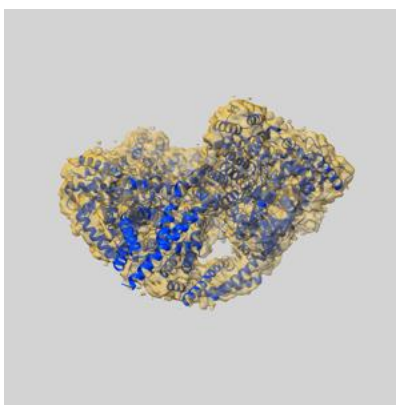
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-46919 and PDB model 9DIU. Per-residue inclusion information can be found in section [3](#) on page [6](#).

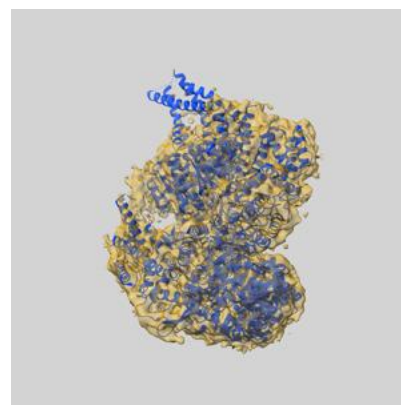
9.1 Map-model overlay [i](#)



X



Y



Z

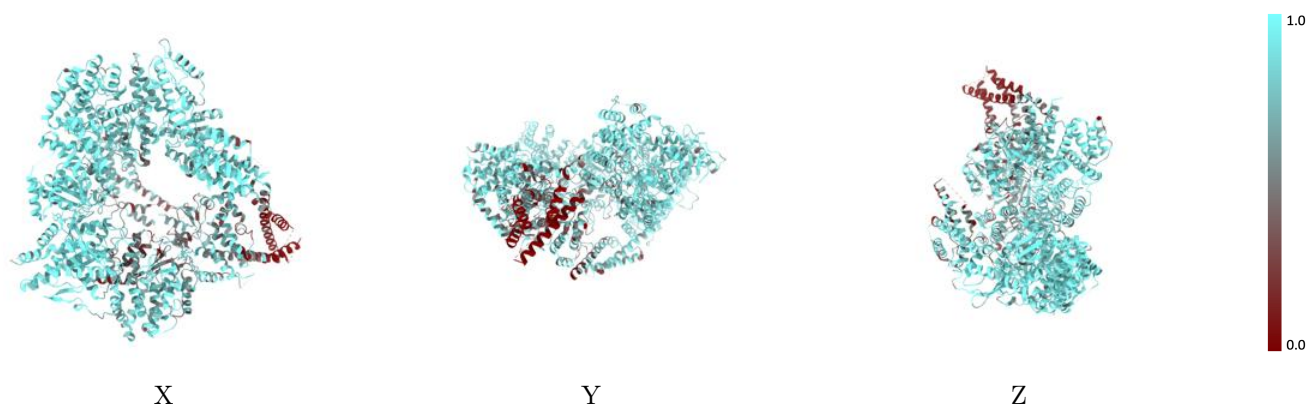
The images above show the 3D surface view of the map at the recommended contour level 0.14 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



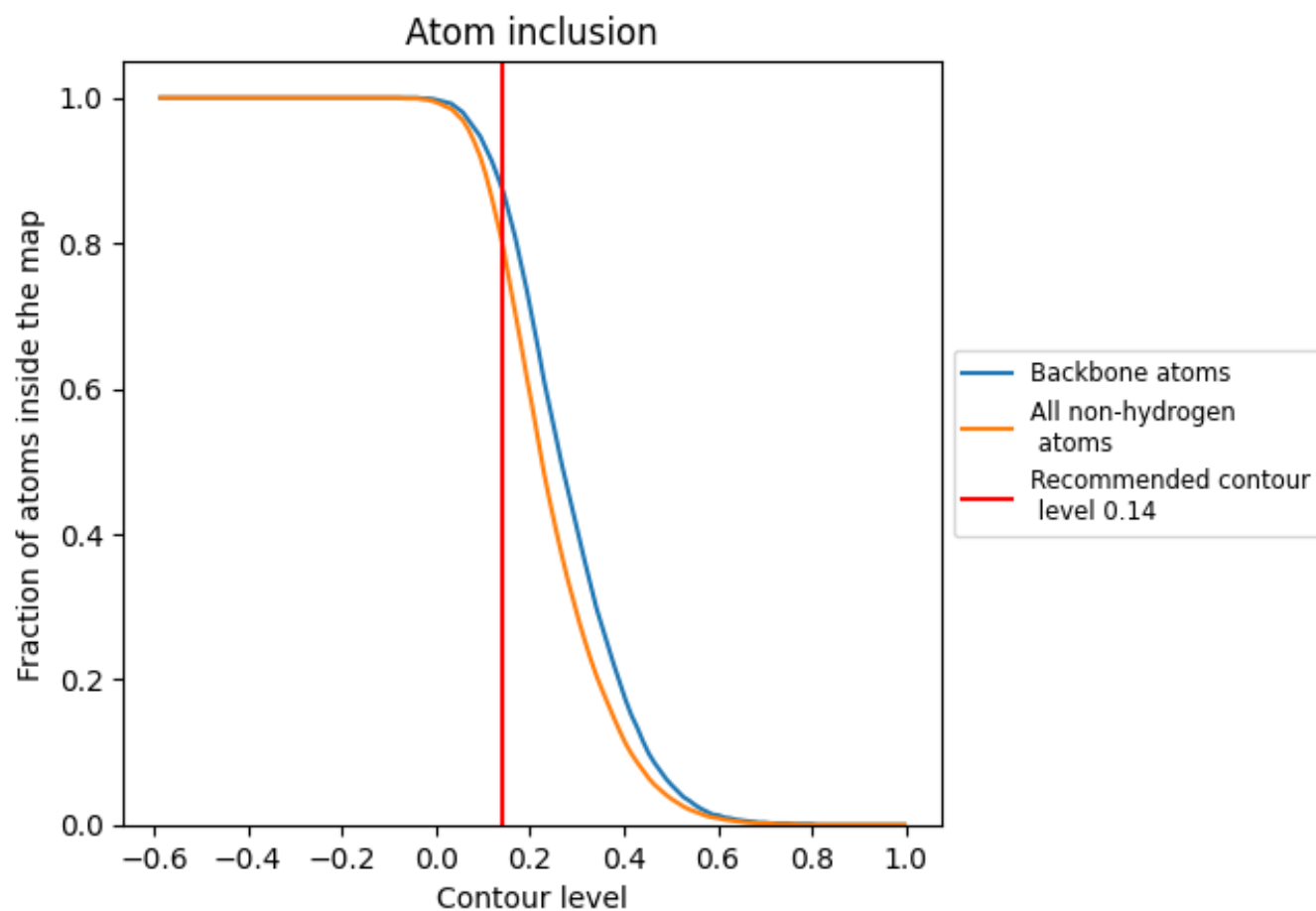
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.14).

9.4 Atom inclusion [i](#)



At the recommended contour level, 88% of all backbone atoms, 80% 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 (0.14) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8040	0.2850
A	0.8040	0.2850

