



## Full wwPDB EM Validation Report ⓘ

May 14, 2025 – 07:45 AM EDT

PDB ID : 9BM6 / pdb\_00009bm6  
EMDB ID : EMD-44689  
Title : State-7a of motor domain from full-length human dynein-1 in 5 mM ATP  
Authors : Chai, P.; Zhang, K.  
Deposited on : 2024-05-02  
Resolution : 3.22 Å(reported)

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

We welcome your comments at [validation@mail.wwpdb.org](mailto:validation@mail.wwpdb.org)

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

EMDB validation analysis : 0.0.1.dev118  
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) : 2.43.1

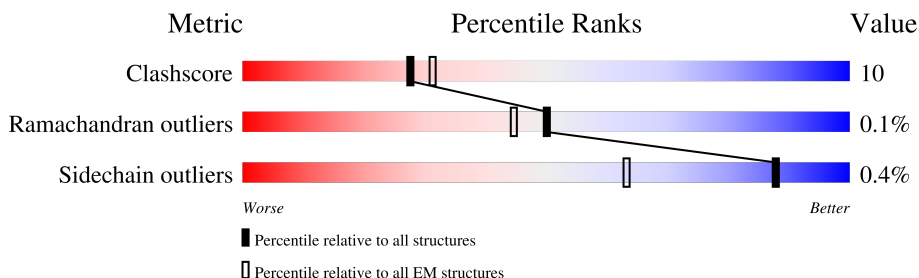
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*ELECTRON MICROSCOPY*

The reported resolution of this entry is 3.22 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  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions  $\leq 5\%$ . The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion  $< 40\%$ ). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	4646	

## 2 Entry composition [i](#)

There are 4 unique types of molecules in this entry. The entry contains 23111 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	2858	22994	14663	3967	4249	115	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

- 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 31	C 10	N 5	O 13	P 3	0
3	A	1	Total 31	C 10	N 5	O 13	P 3	0

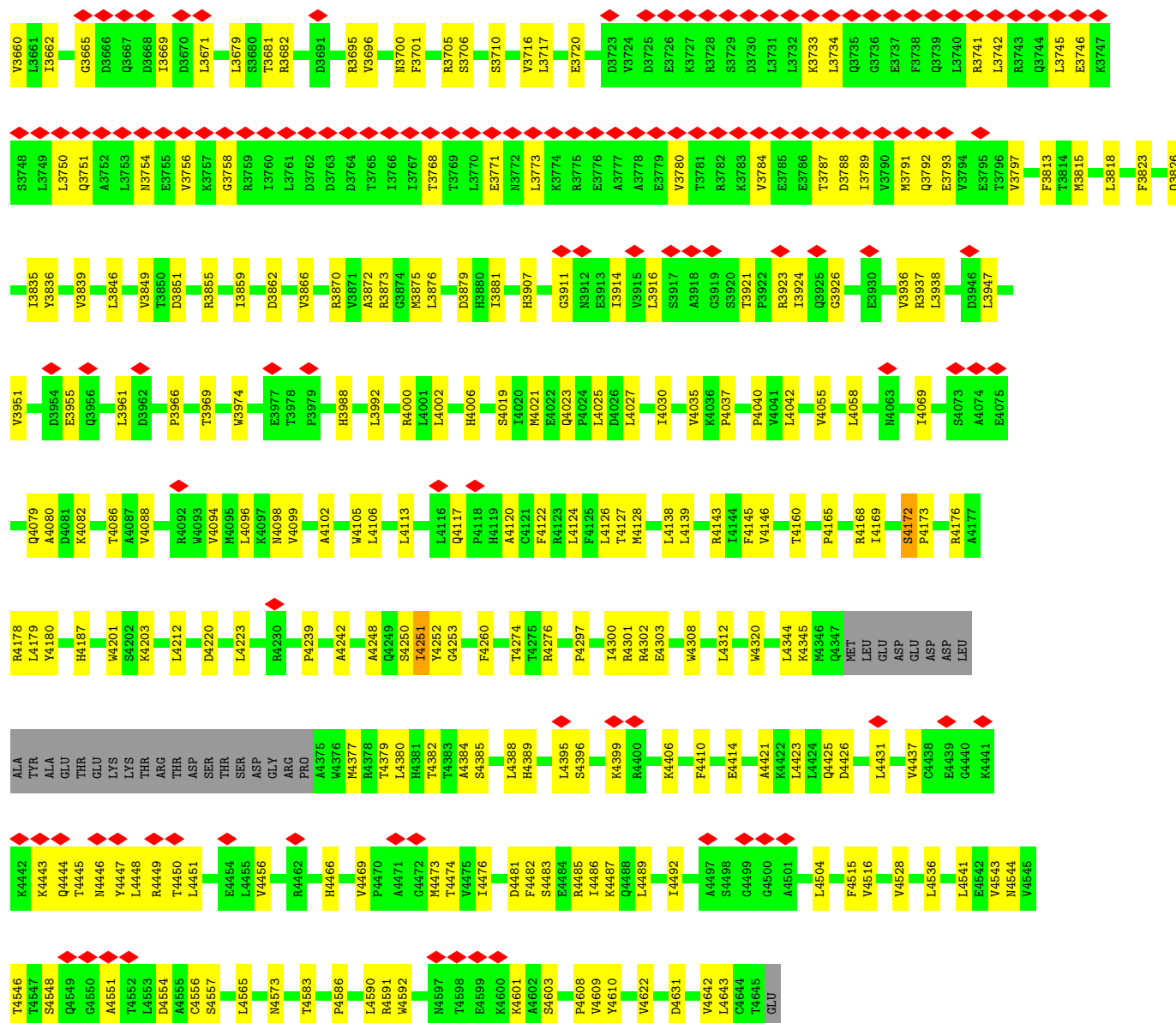
- Molecule 4 is MAGNESIUM ION (CCD ID: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms	AltConf
4	A	1	Total Mg 1 1	0



L2028	F1936	I1756	E1622	L1561	I1501	VAL	TRP	ARG	GLU	ALA	ASN	GLU	ASN	PHE
P2029	D1937	A1757	R1623	P1562	N1502	ALA	GLU	PHE	PHE	LEU	LEU	LEU	PHE	ASN
N2031	F1938	G1770	R1628	V1563	S1503	GLU	THR	PHE	THR	VAL	THR	THR	GLN	GLN
T2042	Q1939	G1771	G1633	E1564	V1504	LEU	LYS	PRO	LYS	ILE	MET	ASN	GLY	LYS
V2052	A1940	G1772	D1636	Q1566	S1505	GLN	VAL	SER	VAL	ARG	PRO	GLN	ILE	VAL
M2053	M1941	G1773	L1637	R1567	A1506	ASP	THR	TRP	THR	LYS	ASP	VAL	GLU	VAL
I1044	I1944	D1774	L1637	F1568	M1507	LEU	GLY	TYR	ASN	ARG	GLY	LEU	ILE	ASP
G1947	L1948	A1775	I1640	Q1569	K1508	LEU	VAL	TYR	LEU	GLY	VAL	LEU	GLY	LEU
L2065	V1951	L1782	I1644	S1570	L1509	VAL	TRP	ASN	ARG	ASN	LEU	ASN	ILE	ILE
A2066	F1957	L1789	K1644	I1571	P1511	MET	SER	ILE	GLU	ASP	GLU	PRO	VAL	GLU
I2069	F1957	V1796	K1645	S1572	Y1512	GLY	GLY	GLU	GLU	ASN	GLU	ILE	LEU	LYS
V2070	D1958	V1796	N1646	E1573	Y1513	LEU	ALA	GLY	HIS	ASN	SER	GLU	LEU	GLY
P2071	R1805	R1806	K1649	E1574	K1514	LYS	GLN	TRP	VAL	THR	SER	CYS	GLY	ASP
L2075	E1806	L1650	Q1651	F1575	V1515	LEU	VAL	GLY	ASP	LYS	ALA	ARG	LEU	LEU
C2076	E1964	K1807	Q1651	L1576	F1516	ILE	THR	PHE	ALA	GLU	MET	LYS	ALA	VAL
Q2079	E1965	I1812	K1652	A1577	E1517	GLU	GLU	THR	THR	PHE	GLY	THR	THR	ARG
L2080	R1966	T1813	H1653	L1578	E1518	ASP	ILE	ILE	SER	PRO	VAL	GLN	GLN	THR
M1967	K1654	E1814	F1654	M1579	D1519	GLN	GLY	GLY	GLY	ASP	VAL	VAL	LEU	GLU
L1968	L1815	L1815	K1655	K1580	Y1520	MET	GLN	MET	ASP	VAL	GLU	VAL	LEU	THR
K2094	K1656	L1816	K1656	L1581	A1520	GLU	GLY	ARG	GLY	VAL	GLU	VAL	LEU	CYS
L2097	N1667	L1825	N1667	V1582	L1521	ALA	LEU	LYS	PHE	ILE	VAL	VAL	LEU	ILE
L1981	L1826	I1826	V1672	S1583	S1522	LYS	GLN	ASP	ARG	THR	GLN	TRP	ALA	GLY
L1982	K1827	K1828	K1697	K1584	E1524	ARG	TRP	LYS	LYS	THR	LYS	VAL	ALA	THR
E1984	S1828	K1829	I1698	S1585	D1525	HIS	VAL	ASP	ASP	THR	LYS	VAL	LYS	HIS
P1988	N1699	W1838	N1699	P1586	K1526	TRP	SER	LYS	ASP	VAL	GLN	VAL	VAL	LYS
N1989	W1701	W1701	E1700	L1587	L1527	GLN	GLN	GLY	GLY	SER	GLN	LEU	LEU	PHE
Y1990	L1702	L1702	L1702	V1588	N1528	PRO	PRO	LEU	LEU	ILE	GLN	VAL	VAL	GLY
D1991	R1843	R1843	R1843	M1589	N1529	MET	ARG	CYS	CYS	ALA	ASN	VAL	VAL	GLY
K1992	V1853	V1853	W1709	D1590	T1530	LYS	LYS	ALA	ALA	ASN	ASN	ARG	ARG	PRO
T1993	L1854	L1854	R1710	V1591	M1531	ARG	LEU	VAL	VAL	LEU	CYS	ILE	ILE	THR
S1994	Q1855	Q1855	V1711	L1592	A1532	HIS	GLN	GLY	GLY	SER	LYS	TRP	TRP	ALA
A1995	Q1856	Q1856	T1712	N1593	L1533	VAL	ASN	GLY	GLY	ASP	ASP	GLN	GLN	ALA
P1996	L1713	L1713	L1714	I1594	F1534	ASN	LEU	ALA	ALA	TRP	MET	ARG	ARG	LYS
I1997	E1871	E1871	K1715	Q1595	D1535	TRP	ASP	VAL	VAL	GLY	GLY	GLN	GLN	ALA
T1998	K1878	K1878	V1721	V1596	V1536	VAL	VAL	SER	GLY	GLY	GLY	VAL	VAL	VAL
Q2005	P1904	P1904	V1724	V1597	W1537	LEU	LEU	THR	THR	THR	ASN	TYR	TYR	GLY
K2007	P1907	P1907	V1728	R1599	D1539	LYS	LYS	GLY	GLY	GLY	ARG	GLY	GLY	HIS
V2008	K1912	K1912	G1728	S1600	V1540	GLY	SER	LEU	LEU	LEU	ARG	LEU	LEU	GLY
T2017	T1913	T1913	I1739	L1601	Q1541	PHE	GLN	GLY	GLY	GLY	GLY	GLY	GLY	GLY
K2018	E1914	E1914	A1747	E1602	R1542	ILE	ILE	THR	THR	VAL	GLN	GLY	GLY	TYR
N2019	K1917	K1917	L1748	R1603	R1543	TRP	ALA	SER	SER	ALA	GLY	GLY	GLY	ASN
PRO	L1749	L1749	L1748	L1604	W1544	ASP	VAL	GLY	GLY	ASP	ASP	GLY	GLY	LEU
TYR	V1750	V1750	V1751	A1605	V1545	VAL	ASP	LEU	LEU	LEU	LEU	LEU	LEU	LYS
ALA	V1751	V1751	V1751	D1606	Y1546	LEU	ARG	GLY	GLY	ASP	ASP	GLY	GLY	ASN
GLY	N1931	N1931	Q1755	L1607	L1547	GLN	THR	LEU	LEU	LEU	LEU	LEU	LEU	PRO
ARG	C1932	C1932	Q1755	L1608	E1548	LYS	THR	GLY	GLY	VAL	VAL	GLY	GLY	ILE
SER	D1933	D1933	Q1755	K1609	G1549	GLY	GLY	SER	SER	GLY	GLY	GLY	GLY	VAL
N2027	K1610	K1610	G1610	G1610	T1550	GLY	PHE	ARG	ARG	GLY	GLY	GLY	GLY	ASN
	I1611	I1611	I1611	I1611	F1551	ILE	ILE	THR	THR	GLN	GLY	GLY	GLY	VAL
	K1612	K1612	K1612	K1612	G1553	TRP	ALA	THR	THR	GLN	GLY	GLY	GLY	THR
	A1614	A1614	A1614	A1614	S1554	ASP	ARG	ASP	THR	LEU	ASP	GLY	GLY	LYS
	E1617	E1617	E1617	E1617	A1555	LEU	VAL	LEU	LEU	LEU	LEU	LEU	LEU	ASN
	Y1618	Y1618	Y1618	Y1618	D1556	ASP	VAL	LEU	LEU	SER	ASN	GLY	GLY	PRO
	L1619	L1619	L1619	L1619	I1557	LEU	GLN	GLY	GLY	GLY	LYS	LEU	LEU	ILE
	E1620	E1620	E1620	E1620	K1558	GLY	THR	THR	THR	VAL	VAL	VAL	VAL	VAL
	R1621	R1621	R1621	R1621	H1559	GLN	TYR	ASP	ASP	THR	GLN	THR	THR	HIS

S3566	S3567	D3570	D3571	T3578	M3579	L3580	K3581	R3582	R3585	L3588	D3591	T3597	I3600	M3601	N3602	D3606	R3607	K3608	I3609	T3610	R3611	E3614	F3615	D3617	L3623	R3628	L3634	Q3636	D3637	V3638	Y3641	L3645	L3649	E3652	V3653	R3654	R3655	T3656	G3657	R3658	R3659											
GLU	ALA	K3471	V3472	N3473	R3474	S3475	T3476	A3477	L3478	L3479	K3480	S3481	L3482	S3483	A3484	E3485	R3486	E3487	R3488	M3489	F3490	T3495	F3496	K3497	N3498	Q3499	M3500	S3501	T3502	S3510	Y3516	Y3519	F3520	Q3523	M3524	D3546	L3547	A3548	E3551	Y3552	S3553	S3554	N3555	E3558	R3559	L3560	R3561	V3562				
VAL	GLU	PRO	LEU	ASN	GLU	GLN	LEU	GLU	ASP	ASP	ALA	ALA	ASP	ASN	GLN	GLN	ALA	ASN	VAL	VAL	GLU	GLU	VAL	ASN	ILE	ALA	TYR	TYR	GLU	GLU	TYR	VAL	VAL	ILE	SER	GLU	ALA	GLN	ALA	ILE	ASN	ALA	VAL	VAL	VAL	VAL						
PRO	THR	ILE	VAL	ASN	PHE	ASN	ALA	ALA	ALA	ALA	ILE	ARG	GLU	GLY	MET	LYS	LYS	ASN	TYR	MET	VAL	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN						
VAL	ILE	GLU	ALA	GLN	ASN	ALA	VAL	VAL	VAL	VAL	HIS	VAL	LYS	LYS	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN						
P3137	R3140	E3141	V3148	F3149	V3150	H3151	L3154	R3158	N3158	A3162	G3166	R3167	T3168	M3169	I3170	I3171	E3189	K3190	E3195	E3196	Q3197	Q3198	M3199	H3200	L3201	N3202	V3203	G3204	L3205	R3206	K3207	I3208	M3209	E3210	T3211	V3212	D3213	Q3214	V3215	E3216	E3217	L3218	R3219	R3220	ASP	LEU	ARG	ILE	LYS	SER	GLN	GLU
T3055	S3056	Q3057	V3058	R3059	R3060	V3064	V3065	F3066	T3067	M3068	M3069	P3070	SER	SER	GLU	LEU	LYS	ASP	ALA	ALA	THR	S3082	L3085	Y3086	N3087	R3088	L3091	F3094	Y3103	Q3104	E3108	F3109	G3113	M3114	L3115	E3116	D3124	Y3125	H3126	F3127	V3128	V3129	Y3130	D3131	K3132	L3133	P3134	Q3135	F3136			
E2903	E2904	L2905	P2908	V2915	L2920	L2925	L2933	L2934	L2935	L2936	L2946	S2947	M2953	K2962	V2963	H2964	R2965	K2966	L3085	Y2967	T2968	Q2969	E2970	D2971	F2972	D2973	E2974	D2975	L2976	R2977	N2987	R2862	R2863	E2864	K2865	A2866	M2867	S2868	R2869	P2870	L2871	L2872	Y2873	Y2881	L2889	K2898	V2899	F2900	Y2901	E2902	P3136	
E2775	F2776	R2797	E2798	R2801	W2802	L2813	E2814	T2815	L2816	P2817	V2818	E2819	G2820	L2824	W2825	A2829	E2839	D2840	R2844	W2845	T2846	D2851	T2852	H2857	F2858	L2861	D2862	R2863	E2864	K2865	A2866	M2867	S2868	R2869	P2870	L2871	L2872	Y2873	Y2881	L2889	K2898	V2899	F2900	Y2901	E2902	P3136						
V2648	E2487	R2492	Y2493	L2494	V2495	V2496	A2497	T2498	S2501	L2502	V2524	P2525	P2533	T2534	T2535	E2538	W2548	K2551	V2557	E2558	T2559	H2560	V2569	T2570	T2571	T2574	V2575	R2576	L2580	R2728	R2729	H2730	V2731	P2732	V2733	S2743	I2747	N2752	R2757	T2770	A2771	A2772	M2773	V2774								
R3332	V3339	R3340	V3345	Q3346	D3347	R3358	W3361	L3369	L3382	D3388	GLU	GLY	GLY	ASP	GLU	ALA	GLN	ARG	ARG	ARG	L3344	GLY	LYS	LYS	GLU	ASP	GLU	GLY	ALA	S2410	P2411	H2412	L2413	A2419	A2420	T2421	L2422	M2423	I2446	L2449	T2450	R2451	L2452	R2453	C2454	A2465						
E2181	T2192	Y2193	E2197	V2204	Q2209	I2213	H2218	G2219	L2220	V2223	S2226	G2227	S2231	W2234	E2242	R2243	E2244	E2245	E2248	P2270	N2271	T2272	W2275	T2276	D2277	R2285	R2292	R2298	Q2299	D2308	W2311	D2320	L2324	P2328	N2329	G2330	E2331															





## 4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	67951	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	0.933	Depositor
Minimum map value	-0.458	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	0.025	Depositor
Recommended contour level	0.13	Depositor
Map size (Å)	332.80002, 332.80002, 332.80002	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.832, 0.832, 0.832	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: ADP, ATP, MG

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	0.13	0/23487	0.30	1/31835 (0.0%)

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	3045	ASP	CB-CA-C	-5.74	109.98	116.63

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	22994	0	23054	438	0
2	A	54	0	24	1	0
3	A	62	0	24	2	0
4	A	1	0	0	0	0
All	All	23111	0	23102	438	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 10.

All (438) 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:3151:HIS:HD1	1:A:3516:TYR:HH	1.13	0.95
1:A:2498:ILE:HG23	1:A:2502:LEU:HD22	1.63	0.80
1:A:2863:ARG:HH21	1:A:2866:ALA:HB1	1.46	0.79
1:A:2816:LEU:HD11	1:A:2820:GLY:HA3	1.65	0.79
1:A:2053:MET:HE1	1:A:2094:LYS:HG2	1.64	0.79
1:A:3005:LEU:HD11	1:A:3085:LEU:HD22	1.68	0.74
1:A:2816:LEU:HD12	1:A:2817:PRO:HD2	1.70	0.73
1:A:2814:GLU:HG3	1:A:2815:THR:HG23	1.72	0.72
1:A:2138:ILE:HD13	1:A:2168:VAL:HG12	1.73	0.70
1:A:3520:PHE:HB3	1:A:3524:MET:HB3	1.73	0.69
1:A:3966:PRO:HD2	1:A:4000:ARG:HG3	1.73	0.69
1:A:2813:LEU:HD21	1:A:2816:LEU:HB2	1.74	0.69
1:A:1537:TRP:HE1	1:A:1579:MET:HE1	1.58	0.69
1:A:2889:LEU:HD21	1:A:2920:LEU:HD21	1.75	0.68
1:A:3662:ILE:HG23	1:A:3669:ILE:HG23	1.75	0.68
1:A:3128:VAL:HG21	1:A:3149:PHE:HB2	1.75	0.67
1:A:2324:LEU:HD11	1:A:2332:ARG:HB3	1.77	0.67
1:A:4447:TYR:O	1:A:4451:LEU:HD12	1.94	0.67
1:A:1964:GLU:OE2	1:A:1965:GLU:N	2.24	0.66
1:A:3113:MET:O	1:A:3140:ARG:NH2	2.28	0.66
1:A:2107:ARG:NH2	1:A:2139:GLN:OE1	2.30	0.66
1:A:2419:ALA:O	1:A:2423:MET:HG2	1.96	0.66
1:A:1571:ILE:HG23	1:A:1604:LEU:HD22	1.79	0.65
1:A:3720:GLU:OE2	1:A:3855:ARG:NH1	2.29	0.65
1:A:1938:PHE:HD2	1:A:1967:MET:HE1	1.61	0.65
1:A:3134:PRO:HG2	1:A:3137:PRO:HA	1.79	0.65
1:A:4176:ARG:NH1	1:A:4220:ASP:OD1	2.30	0.65
1:A:2936:ILE:HD11	1:A:3091:LEU:HD23	1.78	0.65
1:A:4399:LYS:HD2	1:A:4414:GLU:HG2	1.78	0.64
1:A:4469:VAL:HG13	1:A:4473:MET:HE2	1.78	0.64
1:A:3158:ASN:ND2	1:A:3169:MET:O	2.31	0.63
1:A:3638:VAL:HG11	1:A:3679:LEU:HB3	1.81	0.63
1:A:2592:VAL:HB	1:A:2733:VAL:HG12	1.81	0.63
1:A:2925:ILE:HG13	1:A:2933:LEU:HD13	1.82	0.62
1:A:2329:ASN:ND2	1:A:2331:GLU:OE2	2.33	0.62
1:A:3510:SER:HB3	1:A:3553:LEU:HD21	1.82	0.62
1:A:4410:PHE:O	1:A:4414:GLU:HG3	2.00	0.61
1:A:3132:LYS:HZ1	1:A:3141:GLU:HB3	1.65	0.61
1:A:1931:ASN:ND2	1:A:1933:ASP:OD1	2.33	0.61
1:A:2534:ILE:HD12	1:A:2534:ILE:H	1.64	0.61
1:A:3580:LEU:HD13	1:A:3600:ILE:HD13	1.82	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:4082:LYS:O	1:A:4086:THR:HG23	2.01	0.61
1:A:4172:SER:HB3	1:A:4173:PRO:HD2	1.82	0.61
1:A:1698:ILE:HD12	1:A:1701:TRP:HE1	1.66	0.61
1:A:2861:ILE:HD12	1:A:2865:LYS:HE2	1.82	0.61
1:A:2934:LEU:HD12	1:A:3066:PHE:HB3	1.83	0.61
1:A:2346:GLN:HB2	1:A:2726:ARG:HD2	1.82	0.60
1:A:2590:PRO:HB2	1:A:2731:VAL:HG12	1.82	0.60
1:A:3030:MET:HA	1:A:3030:MET:HE3	1.83	0.60
1:A:1509:LEU:O	1:A:3628:ARG:NH1	2.35	0.60
1:A:3570:ASP:OD1	1:A:3571:ASP:N	2.35	0.60
1:A:3652:GLU:OE1	1:A:3654:ARG:NH1	2.35	0.60
1:A:3835:ILE:HG12	1:A:3870:ARG:HD3	1.84	0.60
1:A:3609:ILE:HD11	1:A:3634:LEU:HB2	1.84	0.59
1:A:3873:ARG:HD3	1:A:4021:MET:HE1	1.84	0.59
1:A:1483:LYS:NZ	1:A:1548:GLU:OE2	2.35	0.59
1:A:4102:ALA:HB1	1:A:4105:TRP:HB3	1.83	0.59
1:A:2925:ILE:HG21	1:A:2933:LEU:HB2	1.83	0.59
1:A:3924:ILE:HG23	1:A:3926:GLY:H	1.67	0.59
1:A:4274:THR:HG23	1:A:4276:ARG:H	1.67	0.59
1:A:2320:ASP:HB3	1:A:2358:ARG:HD3	1.85	0.58
1:A:2245:GLU:OE1	1:A:2298:ARG:NH2	2.31	0.58
1:A:2492:ARG:HH12	1:A:2525:PRO:HB2	1.68	0.58
1:A:1941:MET:HA	1:A:1944:ILE:HB	1.86	0.58
1:A:3914:ILE:HG22	1:A:3937:ARG:HD3	1.85	0.58
1:A:2820:GLY:O	1:A:2824:ILE:HG13	2.04	0.57
1:A:2382:LEU:HD23	1:A:2420:ALA:HB2	1.87	0.57
1:A:2581:LEU:HD12	1:A:2591:LEU:HD11	1.85	0.57
1:A:4447:TYR:O	1:A:4450:THR:OG1	2.16	0.57
1:A:1507:MET:HE3	1:A:1507:MET:O	2.05	0.57
1:A:1509:LEU:HB3	1:A:3628:ARG:CZ	2.34	0.57
1:A:4476:ILE:HD12	1:A:4476:ILE:H	1.68	0.57
1:A:3043:MET:HE3	1:A:3043:MET:HA	1.86	0.57
1:A:4384:ALA:O	1:A:4388:LEU:HG	2.05	0.56
1:A:1649:LYS:O	1:A:1652:LYS:NZ	2.38	0.56
1:A:1751:VAL:O	1:A:1755:GLN:HG3	2.05	0.56
1:A:2798:GLU:OE1	1:A:2801:ARG:NH1	2.38	0.56
1:A:2935:LEU:HD22	1:A:3094:PHE:HD2	1.69	0.56
1:A:4021:MET:HE3	1:A:4021:MET:HA	1.86	0.56
1:A:3611:ARG:NH2	1:A:3636:GLN:OE1	2.39	0.56
1:A:3921:THR:OG1	1:A:3923:ARG:NE	2.38	0.56
1:A:4482:PHE:O	1:A:4486:ILE:HG12	2.05	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:4544:ASN:HA	1:A:4573:ASN:HD21	1.71	0.55
1:A:3133:LEU:HB3	1:A:3134:PRO:HD3	1.87	0.55
1:A:3597:THR:O	1:A:3601:MET:HG2	2.06	0.55
1:A:4179:LEU:HD12	1:A:4223:LEU:HD22	1.89	0.55
1:A:4069:ILE:HD13	1:A:4080:ALA:HA	1.87	0.55
1:A:4099:VAL:HG22	1:A:4128:MET:HB3	1.89	0.55
1:A:2666:ILE:HG22	1:A:2712:CYS:HB3	1.89	0.55
1:A:2946:LEU:HD12	1:A:3094:PHE:HZ	1.72	0.55
1:A:2277:ASP:O	1:A:2698:GLN:NE2	2.39	0.55
1:A:2819:GLU:HG3	1:A:2865:LYS:HD2	1.89	0.55
1:A:2743:SER:O	1:A:2747:ILE:HG22	2.06	0.55
1:A:4601:LYS:HE2	1:A:4603:SER:HB3	1.89	0.54
1:A:4385:SER:O	1:A:4389:HIS:ND1	2.40	0.54
1:A:1998:THR:HG21	1:A:2005:GLN:HE21	1.72	0.54
1:A:2775:GLU:HG3	1:A:2857:HIS:HE1	1.73	0.54
1:A:1724:VAL:HG13	1:A:1757:ALA:HB2	1.88	0.54
1:A:2963:VAL:HG21	1:A:3000:LEU:HD21	1.89	0.54
1:A:2134:GLN:O	1:A:2138:ILE:HG23	2.07	0.54
1:A:2679:VAL:O	1:A:2683:ILE:HG13	2.08	0.54
1:A:2994:MET:SD	1:A:3008:MET:HE2	2.48	0.54
1:A:1628:ARG:NH1	1:A:1871:GLU:OE2	2.41	0.53
1:A:2987:ASN:OD1	1:A:3057:GLN:NE2	2.40	0.53
1:A:3955:GLU:OE2	1:A:3955:GLU:N	2.40	0.53
1:A:1789:LEU:HD13	1:A:1815:LEU:HB3	1.90	0.53
1:A:2775:GLU:HG3	1:A:2857:HIS:CE1	2.43	0.53
1:A:2965:ARG:NH2	1:A:3641:TYR:O	2.42	0.53
1:A:1509:LEU:HB3	1:A:3628:ARG:NH2	2.23	0.53
1:A:2773:MET:HG2	1:A:2825:TRP:HE1	1.74	0.53
1:A:3115:LEU:H	1:A:3140:ARG:HH21	1.57	0.53
1:A:3494:GLU:HA	1:A:3497:LYS:HE3	1.89	0.53
1:A:3585:ARG:NH1	1:A:3696:VAL:O	2.42	0.53
1:A:1936:PHE:CE1	1:A:1941:MET:HE1	2.43	0.53
1:A:2967:TYR:OH	1:A:2975:ASP:OD2	2.27	0.53
1:A:3872:ALA:HA	1:A:3875:MET:HB3	1.91	0.53
1:A:4169:ILE:HD12	1:A:4302:ARG:HH11	1.74	0.53
1:A:1814:GLU:HB2	1:A:1878:LYS:HE3	1.90	0.52
1:A:2697:ASP:OD1	1:A:2697:ASP:N	2.42	0.52
1:A:4446:ASN:HA	1:A:4449:ARG:HH11	1.73	0.52
1:A:4541:LEU:HD11	1:A:4590:LEU:HB3	1.92	0.52
1:A:4610:TYR:HB2	1:A:4643:LEU:HD23	1.91	0.52
1:A:1640:ILE:HG23	1:A:1650:LEU:HD11	1.89	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2149:LEU:HD11	1:A:2157:LEU:HD13	1.90	0.52
1:A:2696:SER:OG	1:A:2697:ASP:OD1	2.27	0.52
1:A:2665:GLU:OE1	1:A:2720:ARG:NH1	2.33	0.52
1:A:3553:LEU:O	1:A:3582:ARG:NH1	2.43	0.52
1:A:4042:LEU:HD22	1:A:4139:LEU:HD23	1.90	0.52
1:A:4187:HIS:ND1	1:A:4252:TYR:OH	2.41	0.52
1:A:3026:TYR:O	1:A:3030:MET:HG2	2.09	0.52
1:A:3103:TYR:HB2	1:A:3129:VAL:HG21	1.92	0.52
1:A:4399:LYS:HG3	1:A:4414:GLU:HA	1.92	0.52
1:A:3947:LEU:O	1:A:3951:VAL:HG12	2.10	0.52
1:A:1646:ASN:HD21	1:A:1649:LYS:HG2	1.75	0.52
1:A:1962:ARG:HG3	1:A:1962:ARG:HH11	1.74	0.52
1:A:4444:GLN:HA	1:A:4448:LEU:HD23	1.92	0.51
1:A:1947:GLY:O	1:A:1951:VAL:HG12	2.11	0.51
1:A:3591:ASP:HB3	1:A:3701:PHE:HB2	1.93	0.51
1:A:3154:LEU:HG	1:A:3516:TYR:CD1	2.46	0.51
1:A:2277:ASP:OD1	1:A:2277:ASP:N	2.44	0.51
1:A:3055:THR:O	1:A:3059:ILE:HG23	2.10	0.51
1:A:2285:ARG:NH2	1:A:2331:GLU:OE1	2.43	0.51
1:A:3682:ARG:HH11	1:A:3682:ARG:HG3	1.75	0.51
1:A:3745:LEU:HB3	1:A:3773:LEU:HD21	1.93	0.51
1:A:3588:LEU:HD11	1:A:3638:VAL:HG21	1.93	0.50
1:A:4474:THR:HG22	1:A:4476:ILE:HD12	1.93	0.50
1:A:3614:PHE:HE2	1:A:3638:VAL:HG12	1.76	0.50
1:A:4094:VAL:HG13	1:A:4124:LEU:HG	1.92	0.50
1:A:1990:TYR:OH	1:A:1995:ALA:N	2.40	0.50
1:A:4201:TRP:O	1:A:4203:LYS:N	2.44	0.50
1:A:1711:VAL:O	1:A:1715:LYS:HG2	2.11	0.50
1:A:1747:ALA:HB2	1:A:1807:LYS:HG2	1.92	0.50
1:A:3104:GLN:O	1:A:3108:GLU:HG2	2.11	0.50
1:A:3566:SER:OG	1:A:3602:ASN:ND2	2.43	0.50
1:A:3787:THR:O	1:A:3791:MET:HG3	2.11	0.50
1:A:3789:ILE:O	1:A:3792:GLN:HG3	2.10	0.50
1:A:2776:PHE:HZ	1:A:2846:THR:HG23	1.76	0.50
1:A:4178:ARG:NH2	1:A:4297:PRO:O	2.44	0.50
1:A:1796:VAL:O	1:A:1805:ARG:NH2	2.44	0.50
1:A:1937:ASP:OD1	1:A:1937:ASP:N	2.41	0.50
1:A:3705:ARG:HA	1:A:3813:PHE:HE2	1.76	0.50
1:A:2605:LEU:HD23	1:A:2662:PHE:CE1	2.47	0.49
1:A:2192:THR:H	3:A:4702:ATP:HN61	1.59	0.49
1:A:3638:VAL:HG22	1:A:3681:THR:HB	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:4025:LEU:HG	1:A:4027:LEU:HD23	1.94	0.49
1:A:4406:LYS:H	1:A:4406:LYS:HD2	1.78	0.49
1:A:2682:PHE:O	1:A:2686:MET:HG3	2.13	0.49
1:A:2623:SER:OG	1:A:2624:SER:N	2.44	0.49
1:A:2066:ALA:HA	1:A:2069:ILE:HG22	1.95	0.49
1:A:2227:GLY:HA2	1:A:2452:LEU:HD12	1.95	0.49
1:A:2299:GLN:HB2	1:A:2339:VAL:HG22	1.94	0.49
1:A:2864:GLU:HA	1:A:2867:MET:SD	2.53	0.49
1:A:4380:LEU:HD21	1:A:4456:VAL:HG12	1.94	0.49
1:A:4482:PHE:CE1	1:A:4486:ILE:HD11	2.48	0.49
1:A:2936:ILE:O	1:A:3094:PHE:N	2.45	0.49
1:A:2970:GLU:OE2	1:A:2970:GLU:N	2.41	0.48
1:A:3189:GLU:HG2	1:A:3190:LYS:HD3	1.94	0.48
1:A:3485:GLU:OE1	1:A:3486:ARG:NH1	2.45	0.48
1:A:2865:LYS:H	1:A:2865:LYS:HD3	1.78	0.48
1:A:3523:GLN:HB2	1:A:3706:SER:OG	2.14	0.48
1:A:4096:LEU:HB2	1:A:4126:LEU:HD23	1.95	0.48
1:A:2558:GLU:OE1	1:A:2560:HIS:NE2	2.47	0.48
1:A:3756:VAL:HG23	1:A:3758:GLY:H	1.77	0.48
1:A:3974:TRP:CG	1:A:3988:HIS:HD1	2.31	0.48
1:A:1667:ASN:HB2	1:A:1672:VAL:HG22	1.95	0.48
1:A:4421:ALA:O	1:A:4425:GLN:HG2	2.13	0.48
1:A:1643:ASN:HB3	1:A:1646:ASN:OD1	2.13	0.48
1:A:2223:VAL:HG13	1:A:2345:VAL:HG23	1.95	0.48
1:A:4099:VAL:HG23	1:A:4106:LEU:HD11	1.96	0.48
1:A:2075:LEU:HD11	1:A:4536:LEU:HD22	1.96	0.48
1:A:3660:VAL:HG22	1:A:3671:LEU:HB3	1.94	0.48
1:A:4301:ARG:NH1	1:A:4303:GLU:OE1	2.46	0.48
1:A:1511:PRO:HG3	1:A:3659:ARG:NH2	2.29	0.48
1:A:2079:GLN:HB2	1:A:2160:LEU:HD11	1.96	0.47
1:A:2969:GLY:HA2	1:A:3004:PHE:HE1	1.79	0.47
1:A:3823:PHE:O	1:A:3826:GLN:NE2	2.42	0.47
1:A:4160:THR:HG23	1:A:4212:LEU:HD21	1.96	0.47
1:A:3608:LYS:HB2	1:A:3608:LYS:HE3	1.59	0.47
1:A:1518:GLU:OE1	1:A:1518:GLU:N	2.40	0.47
1:A:1623:ARG:HH11	1:A:1637:LEU:HD22	1.79	0.47
1:A:3087:ASN:O	1:A:3088:ARG:HG2	2.14	0.47
1:A:3591:ASP:N	1:A:3591:ASP:OD1	2.47	0.47
1:A:3717:LEU:HD23	1:A:3717:LEU:HA	1.74	0.47
1:A:4025:LEU:HG	1:A:4027:LEU:HB3	1.94	0.47
1:A:2422:ILE:HD13	1:A:2487:GLU:HA	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1539:ASP:OD1	1:A:1543:ARG:NE	2.48	0.47
1:A:3793:GLU:O	1:A:3797:VAL:HG23	2.15	0.47
1:A:4481:ASP:OD1	1:A:4485:ARG:NE	2.48	0.47
1:A:1936:PHE:CE1	1:A:1963:LEU:HD21	2.50	0.47
1:A:3167:ARG:HG3	1:A:3519:TYR:OH	2.14	0.47
1:A:3923:ARG:HH12	1:A:3936:VAL:HG23	1.79	0.47
1:A:3551:GLU:CD	1:A:3551:GLU:H	2.23	0.46
1:A:3519:TYR:HA	1:A:3700:ASN:HB2	1.96	0.46
1:A:3835:ILE:HG23	1:A:3866:VAL:HG12	1.97	0.46
1:A:1721:VAL:HA	1:A:1724:VAL:HG12	1.97	0.46
1:A:3135:GLN:HB2	1:A:3136:PRO:HD3	1.96	0.46
1:A:4037:PRO:HG3	1:A:4120:ALA:HA	1.97	0.46
1:A:1917:LYS:HE2	1:A:1917:LYS:HB3	1.69	0.46
1:A:2497:ALA:O	1:A:2501:SER:OG	2.20	0.46
1:A:3849:VAL:HG12	1:A:3855:ARG:HG2	1.96	0.46
1:A:2271:ASN:OD1	1:A:2272:THR:N	2.49	0.46
1:A:2495:VAL:HG21	1:A:2524:VAL:HG11	1.97	0.46
1:A:2962:LYS:HB3	1:A:3665:GLY:HA2	1.97	0.46
1:A:4546:THR:O	1:A:4586:PRO:HB2	2.15	0.46
1:A:4609:VAL:HG22	1:A:4642:VAL:HB	1.98	0.46
1:A:2898:LYS:HA	1:A:2901:TYR:CE1	2.50	0.46
1:A:2242:GLU:HG3	1:A:2248:GLU:HA	1.96	0.46
1:A:3751:GLN:HA	1:A:3754:ASN:HD21	1.81	0.46
1:A:4395:LEU:HD12	1:A:4396:SER:N	2.30	0.46
1:A:1702:LEU:HD23	1:A:1702:LEU:HA	1.78	0.46
1:A:2446:ILE:HD11	1:A:2714:PRO:HG3	1.97	0.46
1:A:1619:LEU:HD22	1:A:1637:LEU:HD23	1.97	0.46
1:A:1698:ILE:HD12	1:A:1701:TRP:NE1	2.30	0.46
1:A:2590:PRO:O	1:A:2732:PRO:HD2	2.15	0.46
1:A:2861:ILE:HB	1:A:2865:LYS:HZ1	1.81	0.46
1:A:3207:LYS:HB3	1:A:3207:LYS:HE3	1.60	0.46
1:A:3649:LEU:HB3	1:A:3695:ARG:HB3	1.98	0.46
1:A:2227:GLY:O	1:A:2369:LEU:HD23	2.15	0.46
1:A:3734:LEU:HD21	1:A:3784:VAL:HG12	1.98	0.46
1:A:4543:VAL:HG21	1:A:4622:VAL:HG12	1.98	0.46
1:A:3876:LEU:HD23	1:A:4146:VAL:HG11	1.98	0.45
1:A:3741:ARG:HH21	1:A:3742:LEU:HD13	1.81	0.45
1:A:1608:LEU:HA	1:A:1611:ILE:HG22	1.99	0.45
1:A:1980:GLU:O	1:A:1984:GLU:HG2	2.17	0.45
1:A:2053:MET:HE3	1:A:2097:LEU:HD12	1.97	0.45
1:A:2197:GLU:CD	1:A:2197:GLU:H	2.24	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2947:SER:OG	1:A:2993:ILE:HD11	2.15	0.45
1:A:1656:LYS:HE2	1:A:1656:LYS:HB3	1.86	0.45
1:A:2070:VAL:HB	1:A:2071:PRO:HD3	1.97	0.45
1:A:2863:ARG:HE	1:A:2866:ALA:HB3	1.80	0.45
1:A:3846:LEU:HD11	1:A:3859:ILE:HG13	1.97	0.45
1:A:3555:ASN:OD1	1:A:3558:GLU:HG2	2.16	0.45
1:A:4035:VAL:HG22	1:A:4143:ARG:HG3	1.99	0.45
1:A:1816:VAL:HG11	1:A:2052:VAL:HG22	1.99	0.45
1:A:2569:VAL:HB	1:A:2747:ILE:HG13	1.98	0.45
1:A:3746:GLU:O	1:A:3750:LEU:HG	2.16	0.45
1:A:4040:PRO:HD3	1:A:4113:LEU:HD21	1.98	0.45
1:A:3158:ASN:ND2	1:A:3171:ILE:HG12	2.32	0.45
1:A:4165:PRO:HD2	1:A:4168:ARG:HD3	1.99	0.45
1:A:2019:ASN:OD1	1:A:2019:ASN:C	2.60	0.45
1:A:2974:GLU:OE1	1:A:2977:ARG:NH1	2.50	0.45
1:A:4445:THR:HG23	1:A:4448:LEU:H	1.81	0.45
1:A:3839:VAL:HG23	1:A:3862:ASP:HB3	1.99	0.45
1:A:3916:LEU:HD12	1:A:3937:ARG:HA	1.99	0.45
1:A:4042:LEU:HD21	1:A:4138:LEU:HG	1.98	0.45
1:A:1518:GLU:HG2	1:A:1519:ASP:N	2.31	0.45
1:A:2181:GLU:HG3	1:A:2244:LEU:HB2	1.99	0.45
1:A:2551:LYS:HE2	1:A:2551:LYS:HB3	1.83	0.45
1:A:2851:ASP:OD2	1:A:2852:THR:N	2.50	0.44
1:A:3209:LYS:HG2	1:A:3486:ARG:HH21	1.83	0.44
1:A:3733:LYS:HB2	1:A:3733:LYS:HE2	1.73	0.44
1:A:1755:GLN:HG2	1:A:1814:GLU:OE1	2.16	0.44
1:A:2992:PHE:HB3	1:A:3064:VAL:HG13	1.99	0.44
1:A:1931:ASN:HA	1:A:1958:ASP:HB2	1.98	0.44
1:A:4631:ASP:OD1	1:A:4631:ASP:N	2.48	0.44
1:A:1477:LEU:HB3	1:A:1485:ARG:HB3	2.00	0.44
1:A:1571:ILE:HD11	1:A:1607:LEU:HB3	1.99	0.44
1:A:2413:LEU:HD23	1:A:2413:LEU:HA	1.85	0.44
1:A:2933:LEU:O	1:A:3065:VAL:HA	2.17	0.44
1:A:3553:LEU:HB2	1:A:3578:ILE:HD13	1.99	0.44
1:A:4426:ASP:OD1	1:A:4426:ASP:C	2.61	0.44
1:A:4556:CYS:HB2	1:A:4591:ARG:HG3	2.00	0.44
1:A:3628:ARG:CZ	1:A:3628:ARG:HB2	2.47	0.44
1:A:3788:ASP:OD1	1:A:3788:ASP:N	2.48	0.44
1:A:4223:LEU:HD12	1:A:4223:LEU:HA	1.76	0.44
1:A:2226:SER:HB2	1:A:2726:ARG:HG2	2.00	0.44
1:A:3653:VAL:HG13	1:A:3660:VAL:HG23	1.98	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:4250:SER:OG	1:A:4251:ILE:N	2.51	0.44
1:A:4528:VAL:HG11	1:A:4592:TRP:HB2	2.00	0.44
1:A:4260:PHE:CE2	1:A:4608:PRO:HB3	2.52	0.44
1:A:1698:ILE:HA	1:A:1701:TRP:CD1	2.53	0.44
1:A:2901:TYR:HA	1:A:2905:LEU:HB2	2.00	0.44
1:A:1907:PRO:HD2	1:A:2042:THR:HA	2.00	0.43
1:A:2873:TYR:HB3	1:A:2881:TYR:CD2	2.53	0.43
1:A:2465:ALA:HB2	1:A:2493:TYR:CD1	2.53	0.43
1:A:2576:ARG:O	1:A:2580:LEU:HG	2.17	0.43
1:A:3162:ALA:HA	1:A:3166:GLY:HA2	2.00	0.43
1:A:3502:THR:HG23	1:A:3502:THR:O	2.17	0.43
1:A:2065:LEU:HD11	1:A:2133:GLU:HB3	2.00	0.43
1:A:3682:ARG:HG3	1:A:3682:ARG:NH1	2.34	0.43
1:A:3768:THR:O	1:A:3771:GLU:HG3	2.18	0.43
1:A:4088:VAL:HG21	1:A:4117:GLN:NE2	2.33	0.43
1:A:4565:LEU:O	1:A:4583:THR:N	2.47	0.43
1:A:2452:LEU:HB3	1:A:2729:ARG:HG3	2.00	0.43
1:A:4030:ILE:HG21	1:A:4145:PHE:HZ	1.84	0.43
1:A:4399:LYS:HD3	1:A:4399:LYS:HA	1.86	0.43
1:A:4516:VAL:O	1:A:4516:VAL:HG23	2.18	0.43
1:A:1904:PRO:O	1:A:1912:LYS:HD2	2.17	0.43
1:A:2231:SER:OG	3:A:4702:ATP:O1B	2.20	0.43
1:A:2452:LEU:HD23	1:A:2452:LEU:HA	1.72	0.43
1:A:2533:PRO:HB2	1:A:2535:ILE:HG22	1.99	0.43
1:A:2557:VAL:O	1:A:2757:ARG:NH2	2.52	0.43
1:A:2802:TRP:CZ2	1:A:2829:ALA:HB2	2.53	0.43
1:A:4395:LEU:HD12	1:A:4396:SER:H	1.84	0.43
1:A:2218:HIS:HA	1:A:2340:ARG:HD2	2.01	0.43
1:A:2797:ARG:O	1:A:2801:ARG:HG3	2.18	0.43
1:A:3203:VAL:HG22	1:A:3206:ARG:HH21	1.83	0.43
1:A:2933:LEU:HB3	1:A:3065:VAL:HG12	2.00	0.43
1:A:4094:VAL:HG12	1:A:4122:PHE:HE1	1.83	0.43
1:A:4312:LEU:HD13	1:A:4320:TRP:HZ3	1.83	0.43
1:A:1990:TYR:HH	1:A:1995:ALA:N	2.17	0.42
1:A:2075:LEU:O	1:A:2079:GLN:N	2.45	0.42
1:A:2231:SER:HA	1:A:2234:TRP:NE1	2.33	0.42
1:A:3129:VAL:HG23	1:A:3148:VAL:HG21	2.01	0.42
1:A:1838:TRP:CZ2	1:A:1843:ARG:HG2	2.54	0.42
1:A:1928:LEU:HD12	1:A:1948:LEU:HD21	2.01	0.42
1:A:1962:ARG:HG3	1:A:1962:ARG:NH1	2.34	0.42
1:A:2369:LEU:O	1:A:2451:ARG:NH1	2.50	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2771:ALA:O	1:A:2774:VAL:HG22	2.20	0.42
1:A:2925:ILE:HD13	1:A:2925:ILE:HA	1.83	0.42
1:A:4179:LEU:HD23	1:A:4179:LEU:HA	1.87	0.42
1:A:4431:LEU:HD23	1:A:4431:LEU:HA	1.91	0.42
1:A:2635:PHE:CZ	1:A:2686:MET:HE1	2.54	0.42
1:A:2694:ARG:NH2	1:A:2697:ASP:OD2	2.52	0.42
1:A:2915:VAL:HG13	1:A:2946:LEU:HD11	2.01	0.42
1:A:4069:ILE:HG12	1:A:4079:GLN:HG2	2.02	0.42
1:A:4437:VAL:HG11	1:A:4448:LEU:HD21	2.02	0.42
1:A:4565:LEU:HD13	1:A:4642:VAL:HG22	2.00	0.42
1:A:2841:GLU:HA	1:A:2844:ARG:HG2	2.01	0.42
1:A:2865:LYS:HD3	1:A:2865:LYS:N	2.35	0.42
1:A:3471:LYS:HB3	1:A:3474:ARG:HG2	2.02	0.42
1:A:2308:ASP:OD1	1:A:2311:TRP:HD1	2.02	0.42
1:A:3207:LYS:HZ3	1:A:3750:LEU:HA	1.84	0.42
1:A:3659:ARG:HG2	1:A:3660:VAL:N	2.35	0.42
1:A:2571:THR:H	1:A:2574:THR:HB	1.85	0.42
1:A:3716:VAL:HB	1:A:3836:TYR:OH	2.20	0.42
1:A:3851:ASP:O	1:A:3855:ARG:HG3	2.20	0.42
1:A:4443:LYS:HA	1:A:4443:LYS:HD3	1.94	0.42
1:A:1739:ILE:HD13	1:A:1739:ILE:HA	1.95	0.42
1:A:1812:ILE:HG21	1:A:2056:SER:HA	2.01	0.42
1:A:2275:TRP:CH2	1:A:2328:PRO:HD2	2.55	0.42
1:A:2449:LEU:HA	1:A:2453:ARG:NH2	2.35	0.42
1:A:4345:LYS:HB2	1:A:4345:LYS:HE3	1.78	0.42
1:A:4481:ASP:O	1:A:4485:ARG:HG3	2.20	0.42
1:A:4504:LEU:HD23	1:A:4504:LEU:HA	1.83	0.42
1:A:4248:ALA:O	1:A:4253:GLY:HA3	2.20	0.42
1:A:4554:ASP:OD1	1:A:4557:SER:OG	2.37	0.42
1:A:3057:GLN:OE1	1:A:3060:ARG:NH2	2.44	0.41
1:A:4019:SER:O	1:A:4023:GLN:NE2	2.53	0.41
1:A:4098:ASN:N	1:A:4127:THR:O	2.53	0.41
1:A:4379:THR:HA	1:A:4382:THR:HG22	2.00	0.41
1:A:1968:LEU:HD21	1:A:2029:PRO:HG3	2.03	0.41
1:A:2453:ARG:HD3	1:A:2728:LEU:O	2.21	0.41
1:A:2752:ASN:OD1	1:A:2770:THR:OG1	2.24	0.41
1:A:2976:LEU:HD23	1:A:2976:LEU:HA	1.91	0.41
1:A:3205:LEU:HG	1:A:3489:TRP:HE3	1.85	0.41
1:A:4489:LEU:HD11	1:A:4515:PHE:HE2	1.84	0.41
1:A:2209:GLN:O	1:A:2213:ILE:HG12	2.20	0.41
1:A:2595:GLY:O	1:A:2714:PRO:HD3	2.19	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2858:PHE:O	1:A:2861:ILE:HG12	2.20	0.41
1:A:3548:ALA:HB3	1:A:3551:GLU:OE2	2.20	0.41
1:A:3562:TRP:HB3	1:A:3567:LEU:HD22	2.02	0.41
1:A:3780:VAL:O	1:A:3784:VAL:HG13	2.20	0.41
1:A:4239:PRO:HB2	1:A:4242:ALA:HB3	2.01	0.41
1:A:4344:LEU:HD23	1:A:4344:LEU:HA	1.89	0.41
1:A:4548:SER:HB3	1:A:4551:ALA:HB2	2.02	0.41
1:A:1957:PHE:O	1:A:2017:THR:HB	2.20	0.41
1:A:2361:MET:HE3	1:A:2361:MET:HB2	1.72	0.41
1:A:2901:TYR:CD2	1:A:2908:PRO:HA	2.56	0.41
1:A:3068:MET:HE3	1:A:3068:MET:HB2	1.87	0.41
1:A:3875:MET:HE2	1:A:3879:ASP:CB	2.50	0.41
1:A:3907:HIS:HA	1:A:3911:GLY:HA3	2.01	0.41
1:A:1914:GLU:HG3	2:A:4701:ADP:H3'	2.03	0.41
1:A:2292:ARG:HD2	1:A:2292:ARG:O	2.20	0.41
1:A:2648:VAL:HB	1:A:2701:VAL:HG12	2.03	0.41
1:A:2076:CYS:O	1:A:2080:LEU:HB2	2.21	0.41
1:A:3207:LYS:O	1:A:3211:THR:HG23	2.20	0.41
1:A:3705:ARG:HG2	1:A:3813:PHE:CE2	2.56	0.41
1:A:4002:LEU:HD23	1:A:4002:LEU:HA	1.92	0.41
1:A:4297:PRO:HB3	1:A:4308:TRP:CD1	2.56	0.41
1:A:4423:LEU:HD22	1:A:4466:HIS:HB2	2.03	0.41
1:A:2213:ILE:HB	1:A:2220:LEU:HD21	2.03	0.41
1:A:3005:LEU:HD12	1:A:3005:LEU:HA	1.81	0.41
1:A:3875:MET:HE2	1:A:3879:ASP:HB3	2.01	0.41
1:A:3938:LEU:HD21	1:A:3992:LEU:HD23	2.02	0.41
1:A:1645:LYS:HD3	1:A:1645:LYS:HA	1.75	0.41
1:A:1651:GLN:HA	1:A:1654:PHE:HD2	1.85	0.41
1:A:1782:LEU:HD22	1:A:1827:LYS:HE3	2.03	0.41
1:A:1982:LEU:HD12	1:A:1982:LEU:HA	1.87	0.41
1:A:2492:ARG:NH1	1:A:2525:PRO:HB2	2.35	0.41
1:A:2538:GLU:HB3	1:A:2548:TRP:CE2	2.55	0.41
1:A:2589:LYS:HB2	1:A:2589:LYS:HE2	1.84	0.41
1:A:2660:VAL:HG22	1:A:2707:GLN:HB3	2.03	0.41
1:A:2899:VAL:O	1:A:2903:GLU:HG2	2.21	0.41
1:A:2993:ILE:HD13	1:A:2993:ILE:HA	1.93	0.41
1:A:3815:MET:O	1:A:3818:LEU:HB2	2.21	0.41
1:A:4300:ILE:HD13	1:A:4300:ILE:HA	1.89	0.41
1:A:4446:ASN:OD1	1:A:4446:ASN:N	2.54	0.41
1:A:2728:LEU:HD23	1:A:2728:LEU:HA	1.91	0.41
1:A:3495:THR:O	1:A:3499:GLN:HG3	2.21	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:4055:VAL:O	1:A:4058:LEU:HG	2.21	0.41
1:A:4492:ILE:HD13	1:A:4492:ILE:HA	1.89	0.41
1:A:1713:LEU:HD12	1:A:1749:LEU:HD21	2.02	0.40
1:A:1992:LYS:HA	1:A:1992:LYS:HD2	1.90	0.40
1:A:2193:TYR:CE2	1:A:2204:VAL:HG21	2.56	0.40
1:A:2626:THR:HB	1:A:2669:PRO:HG3	2.02	0.40
1:A:3560:LEU:HD23	1:A:3560:LEU:HA	1.88	0.40
1:A:4377:MET:H	1:A:4377:MET:HG3	1.66	0.40
1:A:1789:LEU:HD12	1:A:1789:LEU:HA	1.83	0.40
1:A:2677:GLN:HB2	1:A:2680:ILE:HB	2.03	0.40
1:A:2844:ARG:HG3	1:A:2845:TRP:N	2.35	0.40
1:A:3969:THR:O	1:A:3969:THR:OG1	2.28	0.40
1:A:4168:ARG:NH2	1:A:4220:ASP:OD2	2.54	0.40
1:A:4483:SER:O	1:A:4487:LYS:HG3	2.20	0.40
1:A:2007:LYS:HE2	1:A:2008:VAL:O	2.22	0.40
1:A:2581:LEU:O	1:A:2585:LEU:HG	2.21	0.40
1:A:2585:LEU:HD22	1:A:2707:GLN:OE1	2.21	0.40
1:A:4180:TYR:OH	1:A:4220:ASP:OD2	2.39	0.40
1:A:1697:LYS:HB2	1:A:1700:GLU:HG2	2.03	0.40
1:A:1709:MET:O	1:A:1713:LEU:HD23	2.22	0.40
1:A:2410:SER:N	1:A:2411:PRO:HD2	2.37	0.40
1:A:2972:PHE:HZ	1:A:3008:MET:HG2	1.86	0.40
1:A:4172:SER:HB3	1:A:4173:PRO:CD	2.50	0.40
1:A:1853:VAL:HA	1:A:1856:GLN:HG3	2.03	0.40
1:A:2324:LEU:CD1	1:A:2332:ARG:HB3	2.48	0.40
1:A:2908:PRO:HB2	1:A:3109:PHE:HE1	1.85	0.40
1:A:3623:LEU:HD11	1:A:3645:LEU:HD21	2.03	0.40
1:A:3881:ILE:HD13	1:A:4006:HIS:ND1	2.36	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	2844/4646 (61%)	2766 (97%)	75 (3%)	3 (0%)	48 79

All (3) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	4172	SER
1	A	4251	ILE
1	A	2871	ILE

### 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	2544/4125 (62%)	2535 (100%)	9 (0%)	89 93

All (9) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	1589	MET
1	A	1854	LEU
1	A	2031	ASN
1	A	2276	THR
1	A	2454	CYS
1	A	2953	MET
1	A	3154	LEU
1	A	3710	SER
1	A	3961	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (25) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	1646	ASN
1	A	1779	HIS
1	A	1784	ASN
1	A	1867	ASN

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Mol	Chain	Res	Type
1	A	1922	GLN
1	A	1973	GLN
1	A	1974	GLN
1	A	2005	GLN
1	A	2130	ASN
1	A	2296	GLN
1	A	2677	GLN
1	A	3202	ASN
1	A	3526	GLN
1	A	3602	ASN
1	A	3622	ASN
1	A	3667	GLN
1	A	3709	GLN
1	A	3772	ASN
1	A	3822	HIS
1	A	3877	HIS
1	A	3968	GLN
1	A	4326	ASN
1	A	4444	GLN
1	A	4530	GLN
1	A	4549	GLN

### 5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

### 5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

### 5.6 Ligand geometry [i](#)

Of 5 ligands modelled in this entry, 1 is 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	4703	4	28,33,33	0.66	0	34,52,52	0.60	1 (2%)
2	ADP	A	4701	-	24,29,29	0.87	0	29,45,45	1.23	2 (6%)
3	ATP	A	4702	-	28,33,33	0.67	0	34,52,52	0.59	1 (2%)
2	ADP	A	4704	-	24,29,29	0.88	0	29,45,45	1.26	3 (10%)

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	4703	4	-	5/18/38/38	0/3/3/3
2	ADP	A	4701	-	-	3/12/32/32	0/3/3/3
3	ATP	A	4702	-	-	7/18/38/38	0/3/3/3
2	ADP	A	4704	-	-	5/12/32/32	0/3/3/3

There are no bond length outliers.

All (7) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	4704	ADP	N3-C2-N1	-3.67	123.69	128.67
2	A	4701	ADP	N3-C2-N1	-3.65	123.72	128.67
2	A	4704	ADP	C4-C5-N7	-2.65	106.53	109.34
2	A	4701	ADP	C4-C5-N7	-2.55	106.64	109.34
3	A	4703	ATP	C5-C6-N6	2.35	123.89	120.31
3	A	4702	ATP	C5-C6-N6	2.29	123.81	120.31
2	A	4704	ADP	O4'-C1'-N9	2.17	111.62	108.75

There are no chirality outliers.

All (20) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	4701	ADP	C5'-O5'-PA-O2A
2	A	4704	ADP	C5'-O5'-PA-O1A

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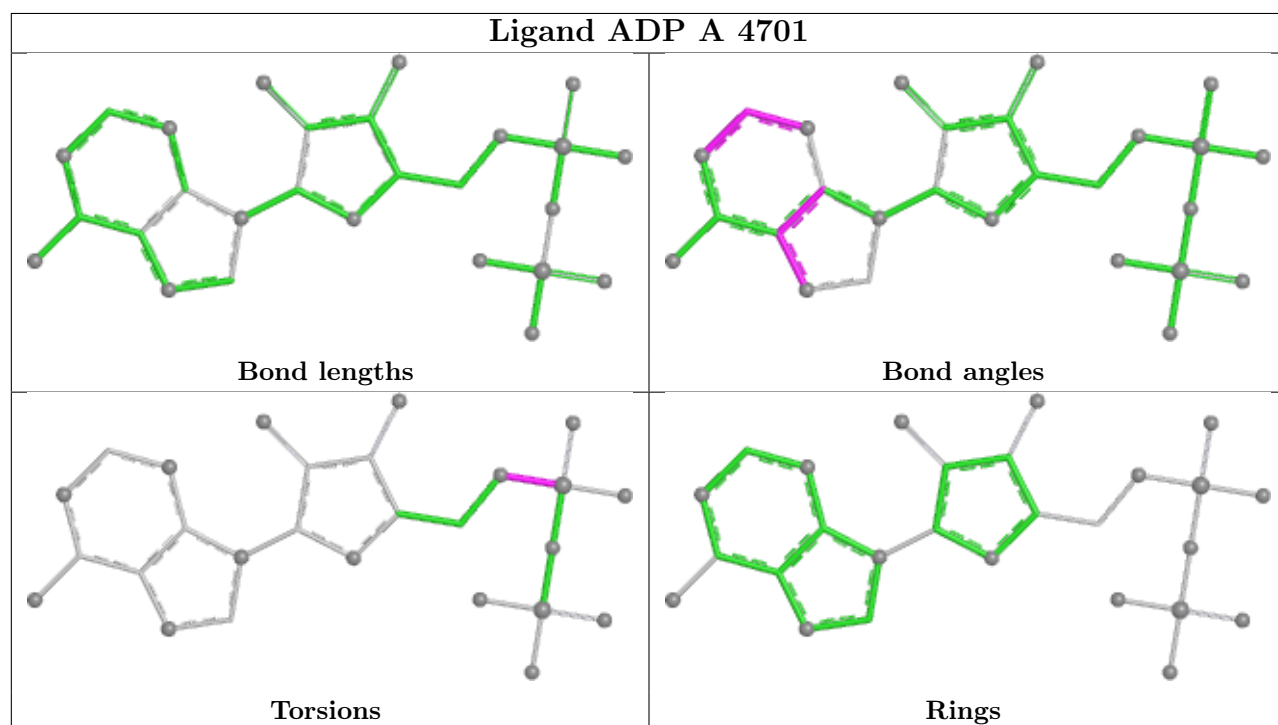
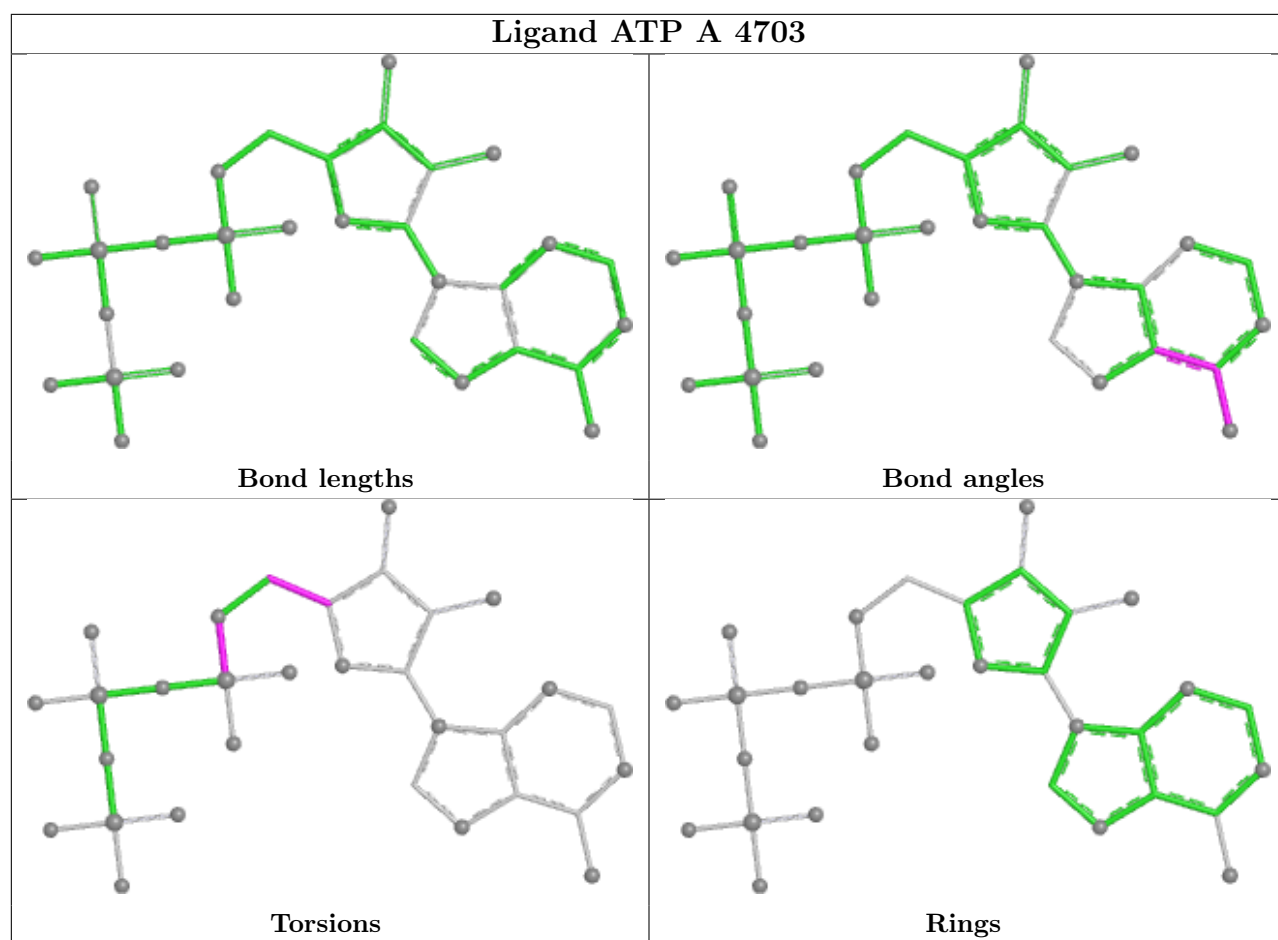
Mol	Chain	Res	Type	Atoms
2	A	4704	ADP	C5'-O5'-PA-O2A
2	A	4704	ADP	C5'-O5'-PA-O3A
2	A	4704	ADP	O4'-C4'-C5'-O5'
3	A	4702	ATP	PB-O3B-PG-O3G
3	A	4702	ATP	C5'-O5'-PA-O1A
3	A	4702	ATP	C5'-O5'-PA-O2A
3	A	4702	ATP	C5'-O5'-PA-O3A
2	A	4704	ADP	C3'-C4'-C5'-O5'
3	A	4703	ATP	O4'-C4'-C5'-O5'
3	A	4703	ATP	C3'-C4'-C5'-O5'
2	A	4701	ADP	C5'-O5'-PA-O1A
2	A	4701	ADP	C5'-O5'-PA-O3A
3	A	4703	ATP	C5'-O5'-PA-O1A
3	A	4703	ATP	C5'-O5'-PA-O2A
3	A	4703	ATP	C5'-O5'-PA-O3A
3	A	4702	ATP	PA-O3A-PB-O1B
3	A	4702	ATP	PB-O3B-PG-O1G
3	A	4702	ATP	PA-O3A-PB-O2B

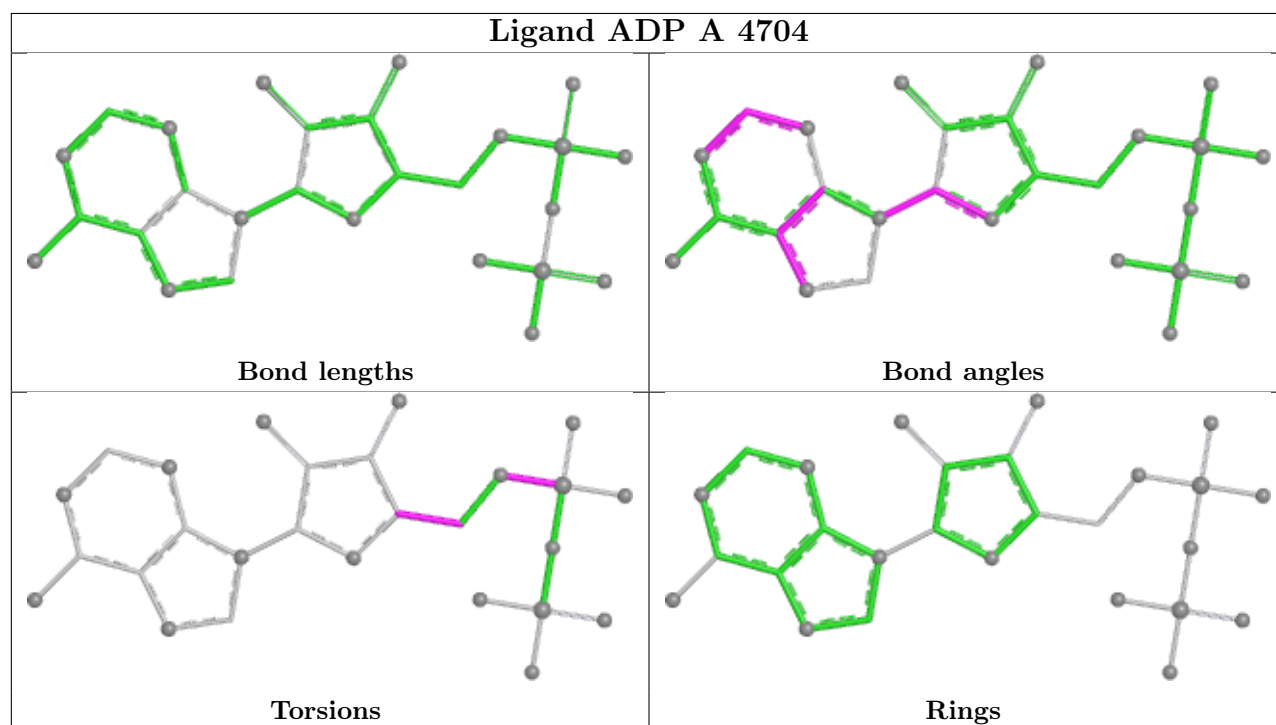
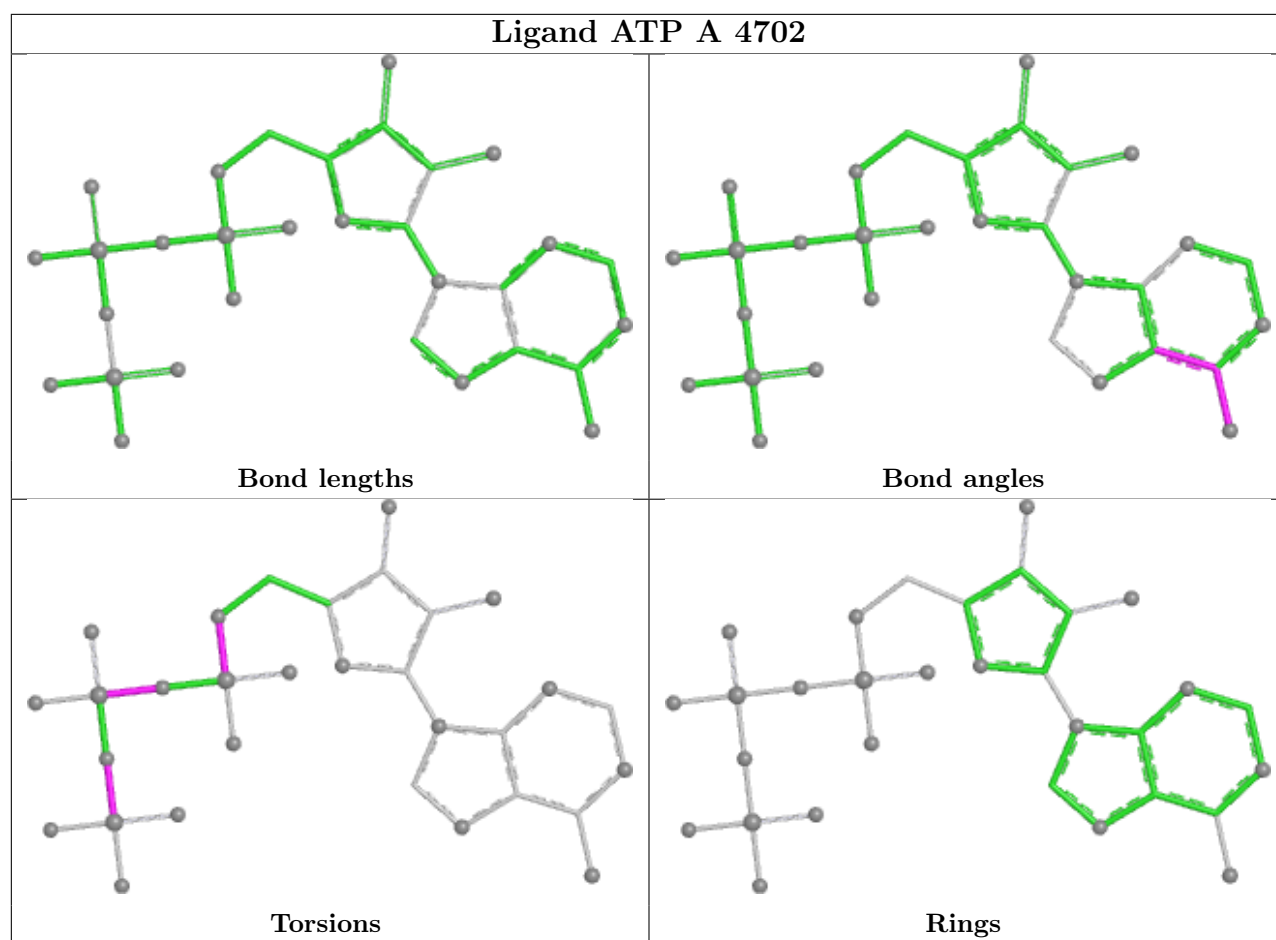
There are no ring outliers.

2 monomers are involved in 3 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	4701	ADP	1	0
3	A	4702	ATP	2	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.

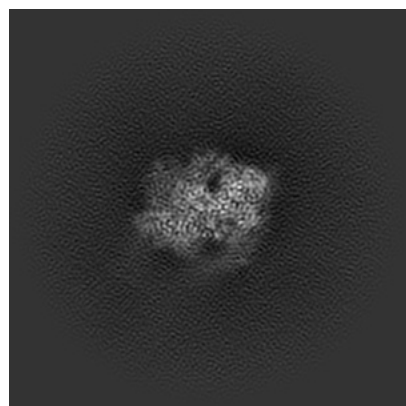
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-44689. These allow visual inspection of the internal detail of the map and identification of artifacts.

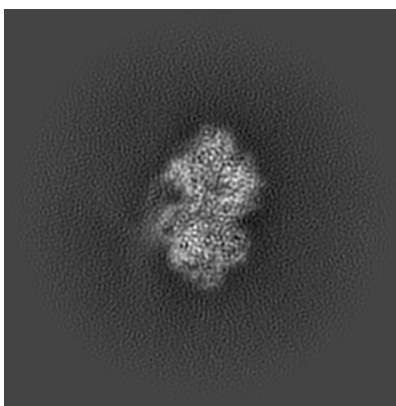
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

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

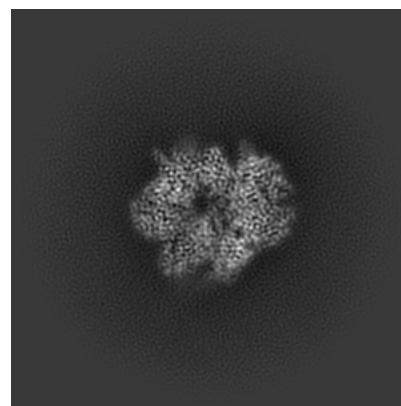
#### 6.1.1 Primary map



X

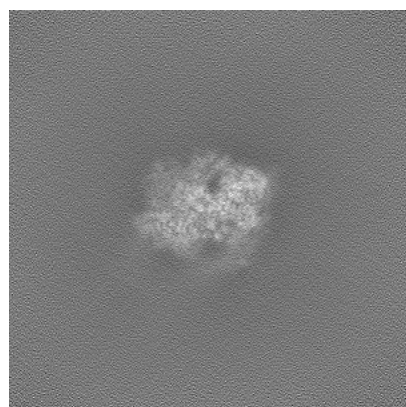


Y

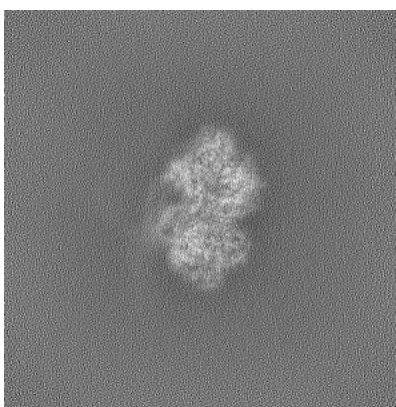


Z

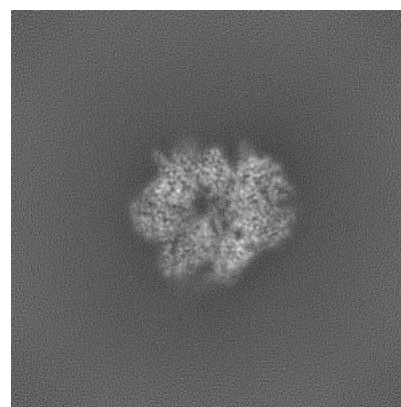
#### 6.1.2 Raw map



X



Y

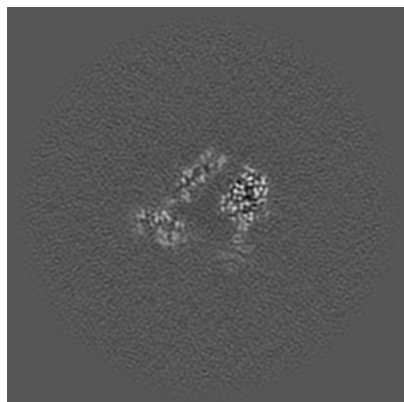


Z

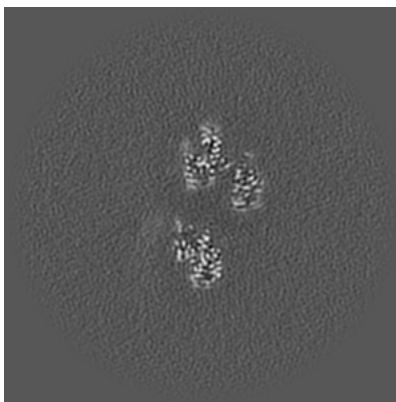
The images above show the map projected in three orthogonal directions.

## 6.2 Central slices [i](#)

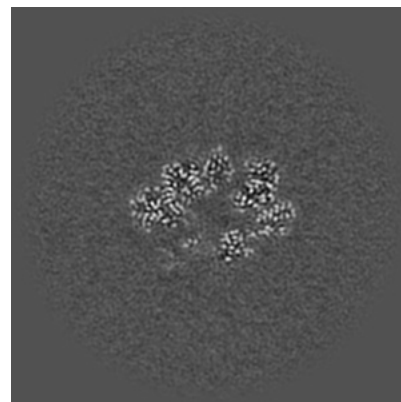
### 6.2.1 Primary map



X Index: 200

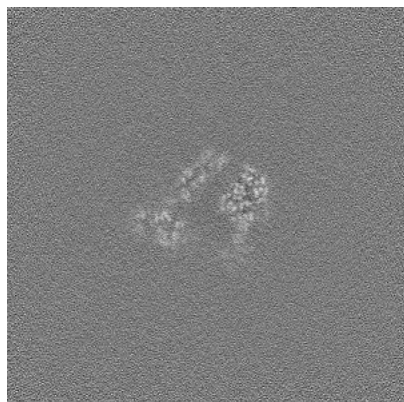


Y Index: 200

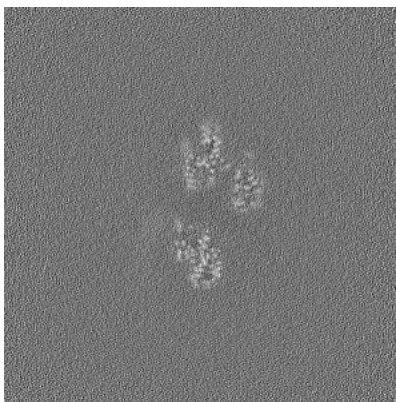


Z Index: 200

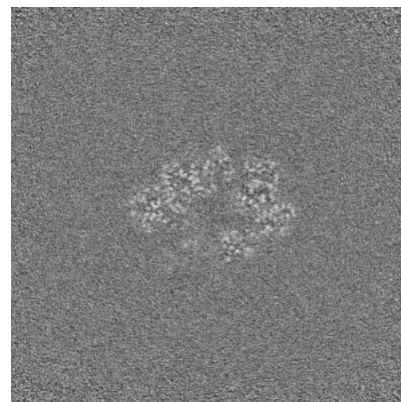
### 6.2.2 Raw map



X Index: 200



Y Index: 200



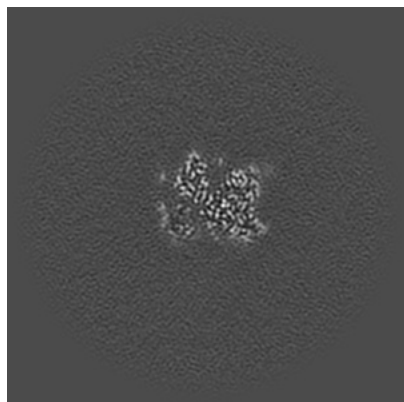
Z Index: 200

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

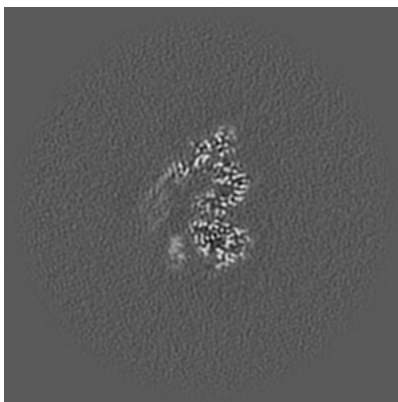


## 6.3 Largest variance slices [i](#)

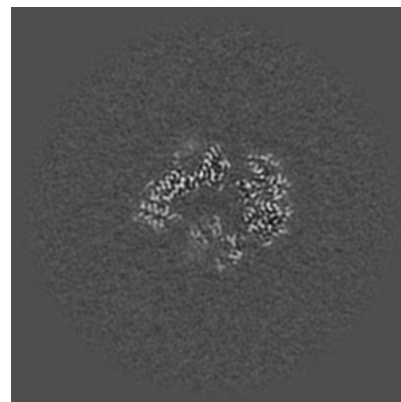
### 6.3.1 Primary map



X Index: 240

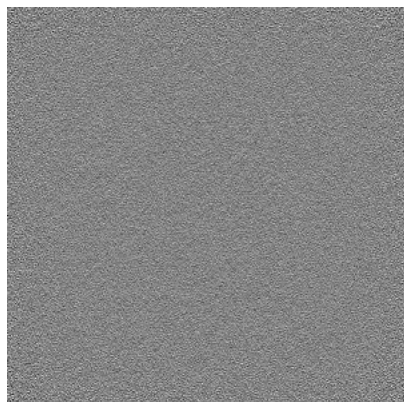


Y Index: 224

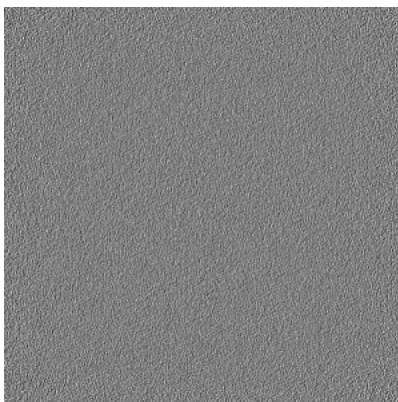


Z Index: 214

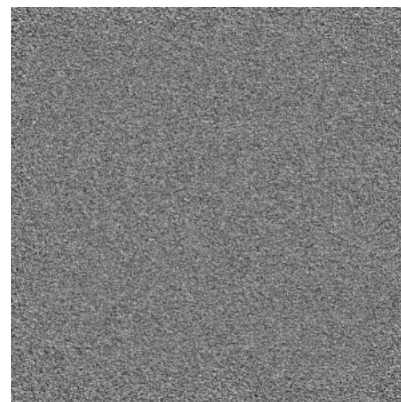
### 6.3.2 Raw map



X Index: 0



Y Index: 0

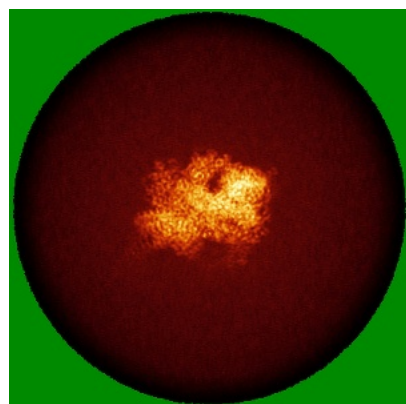


Z Index: 0

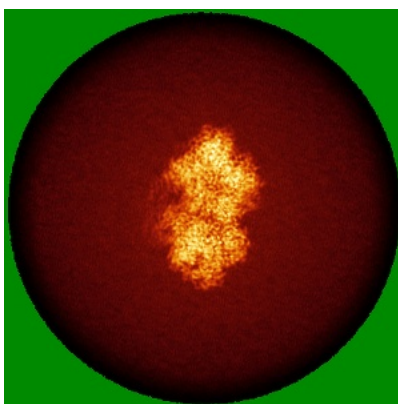
The images above show the largest variance slices of the map in three orthogonal directions.

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

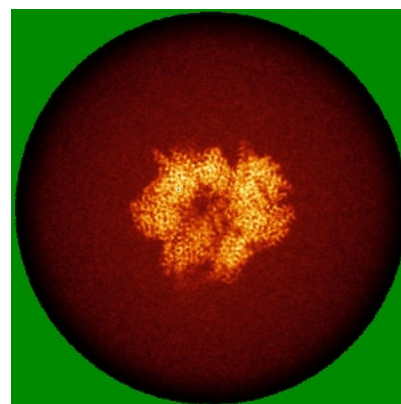
### 6.4.1 Primary map



X

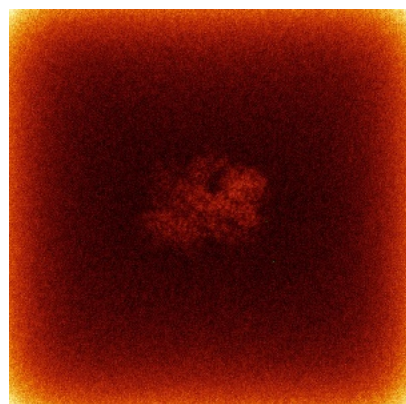


Y

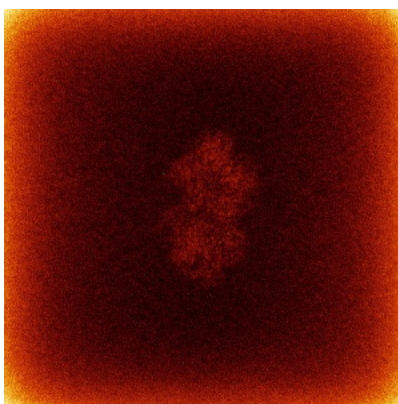


Z

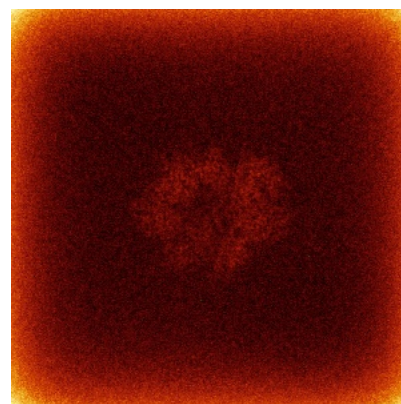
### 6.4.2 Raw map



X



Y



Z

The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.



## 6.5 Orthogonal surface views [i](#)

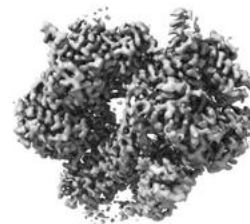
### 6.5.1 Primary map



X



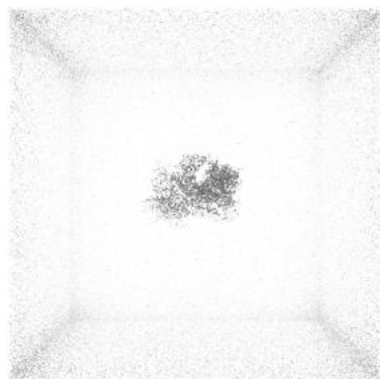
Y



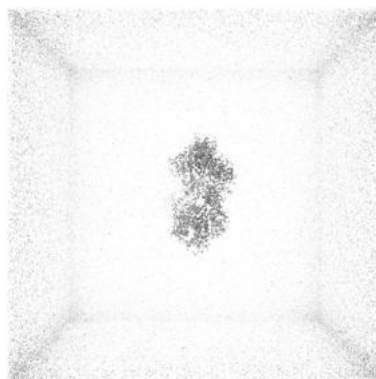
Z

The images above show the 3D surface view of the map at the recommended contour level 0.13. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

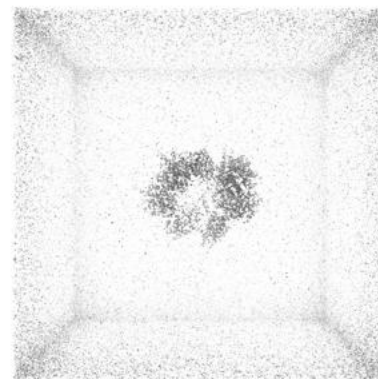
### 6.5.2 Raw map



X



Y



Z

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

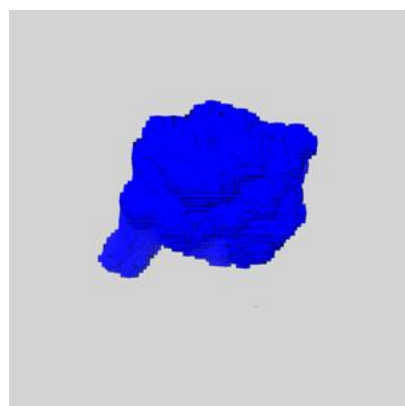
## 6.6 Mask visualisation [i](#)

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

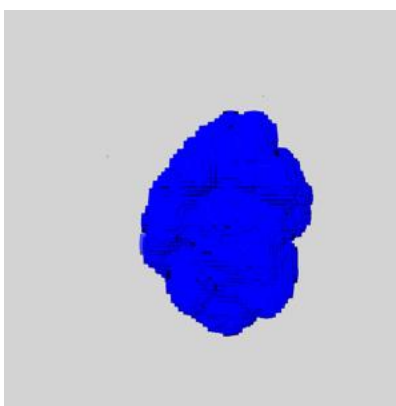
A mask typically either:

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

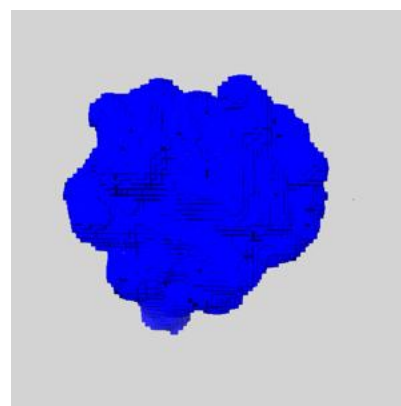
### 6.6.1 emd\_44689\_msk\_1.map [i](#)



X



Y

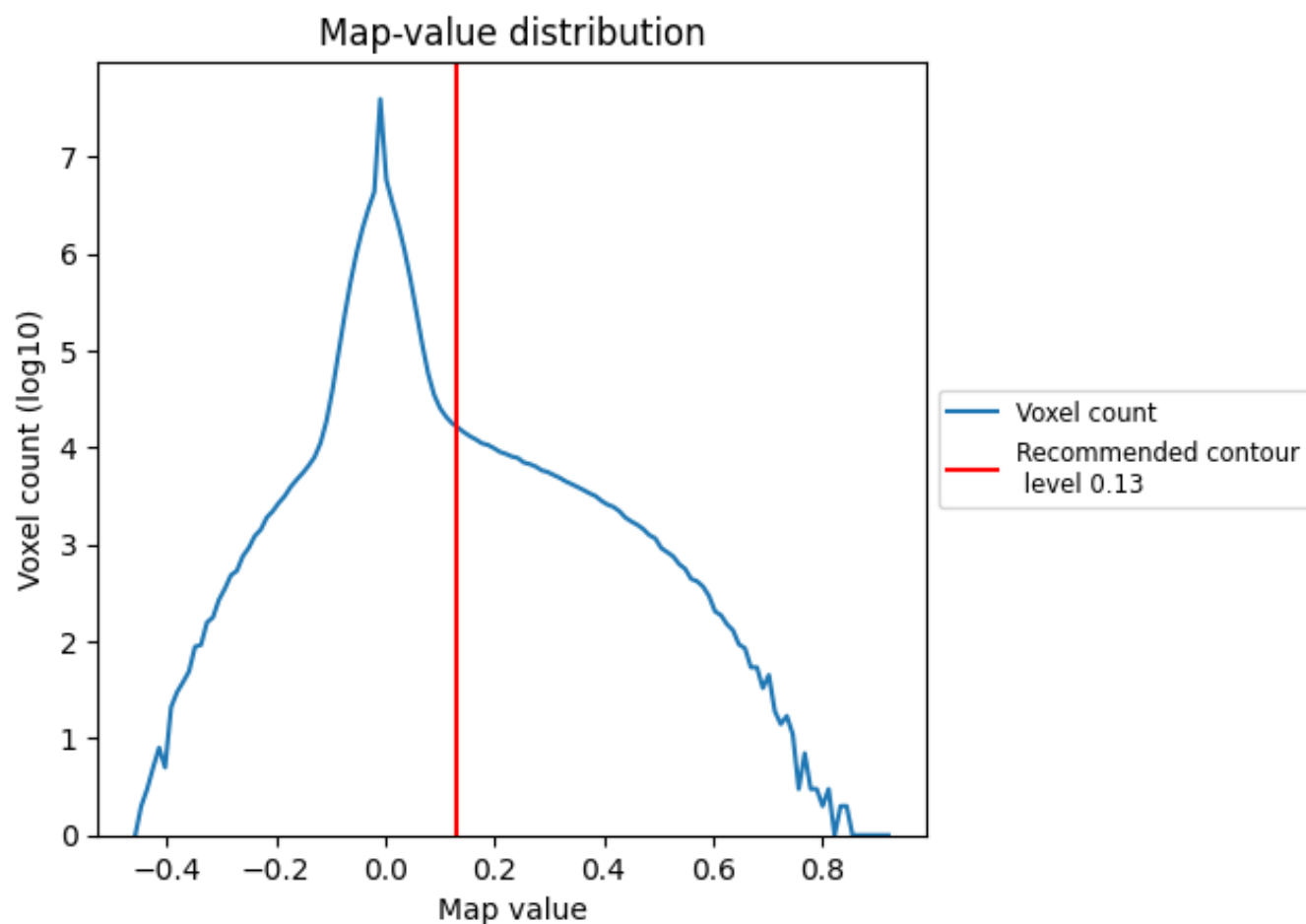


Z

## 7 Map analysis [i](#)

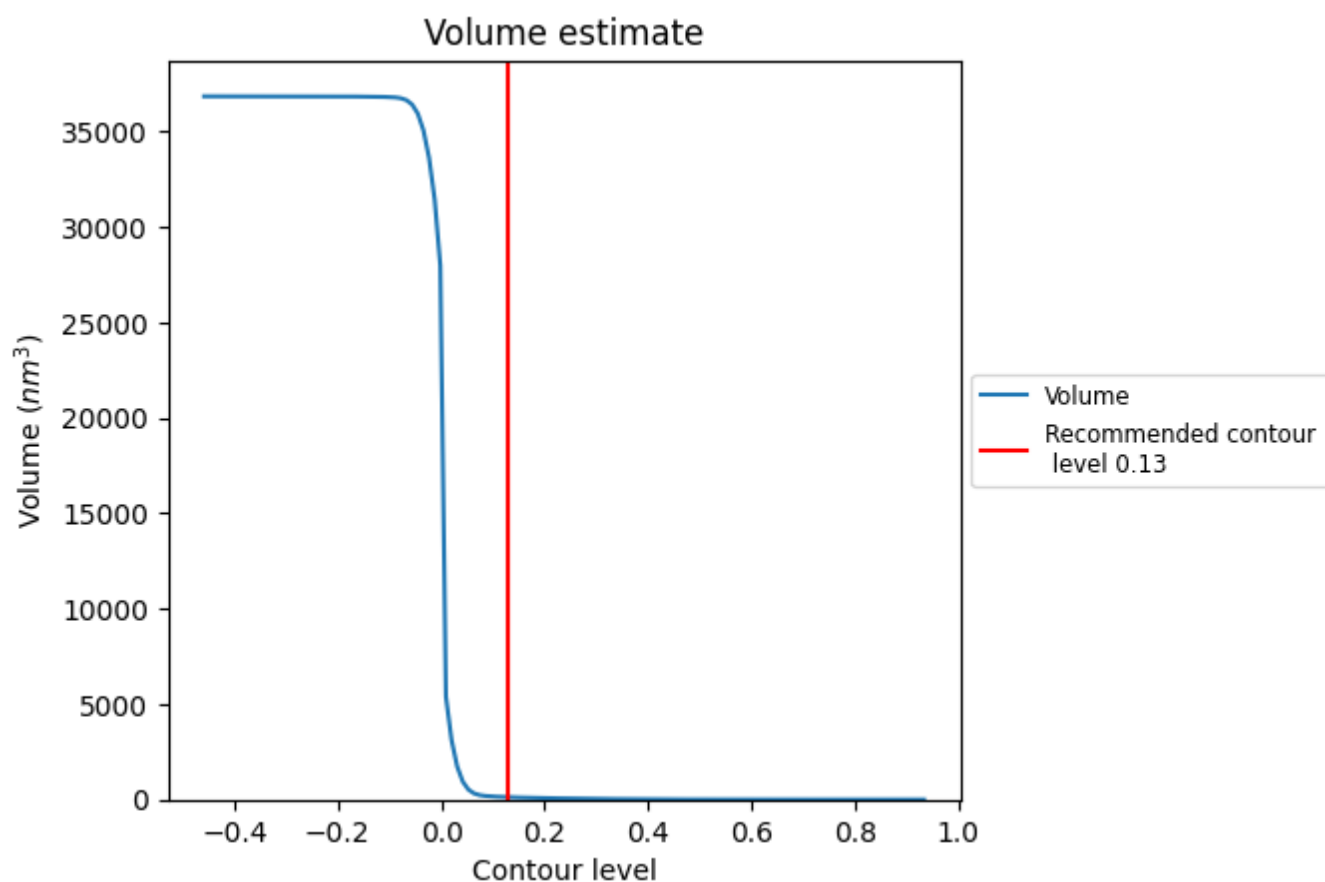
This section contains the results of statistical analysis of the map.

### 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.

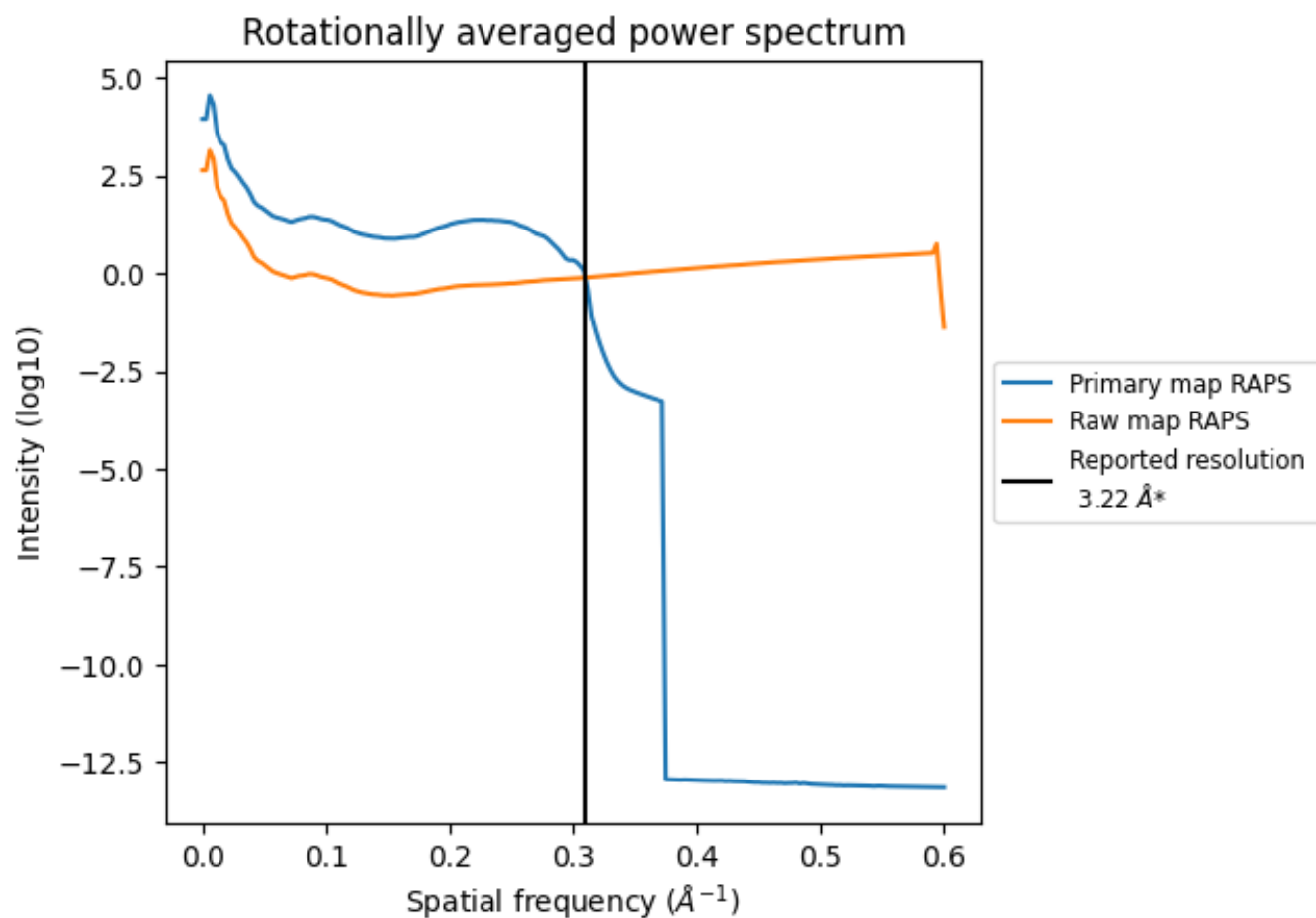
## 7.2 Volume estimate [i](#)



The volume at the recommended contour level is 124 nm<sup>3</sup>; this corresponds to an approximate mass of 112 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 ⓘ

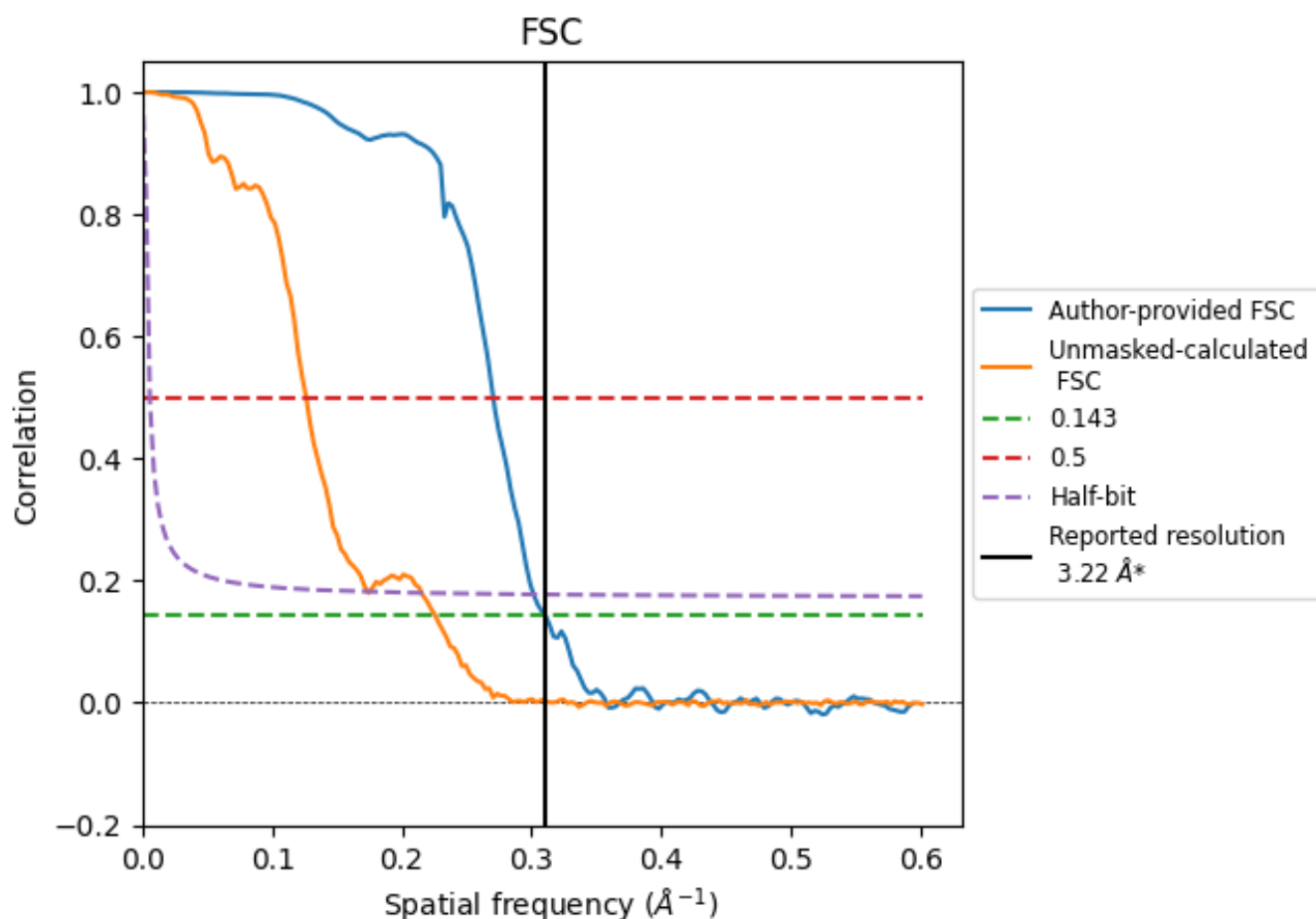


\*Reported resolution corresponds to spatial frequency of 0.311 Å<sup>-1</sup>

## 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  $0.311 \text{ \AA}^{-1}$

## 8.2 Resolution estimates [i](#)

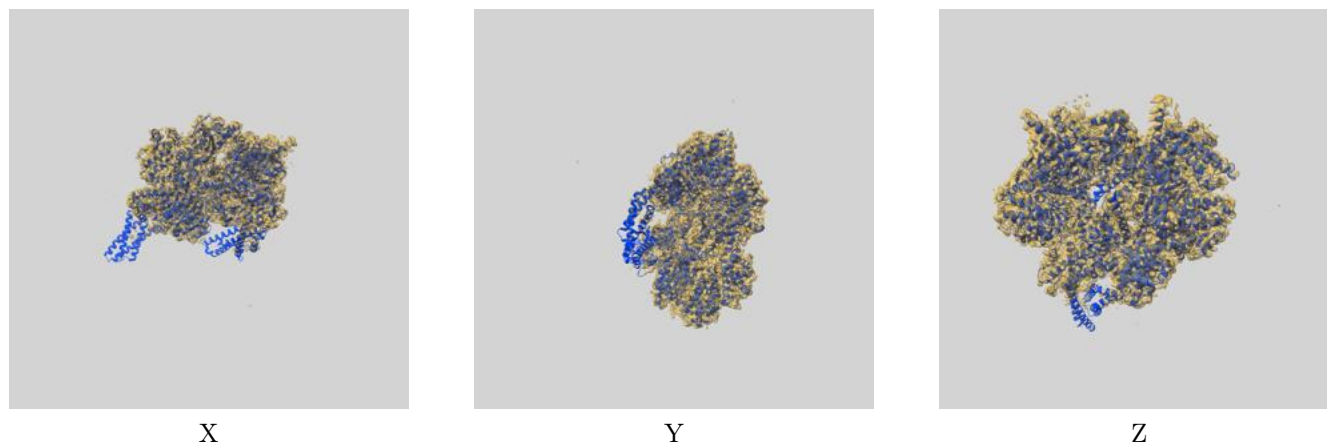
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.22	-	-
Author-provided FSC curve	3.22	3.70	3.32
Unmasked-calculated*	4.43	7.92	5.76

\*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 4.43 differs from the reported value 3.22 by more than 10 %

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

This section contains information regarding the fit between EMDB map EMD-44689 and PDB model 9BM6. 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 0.13 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.

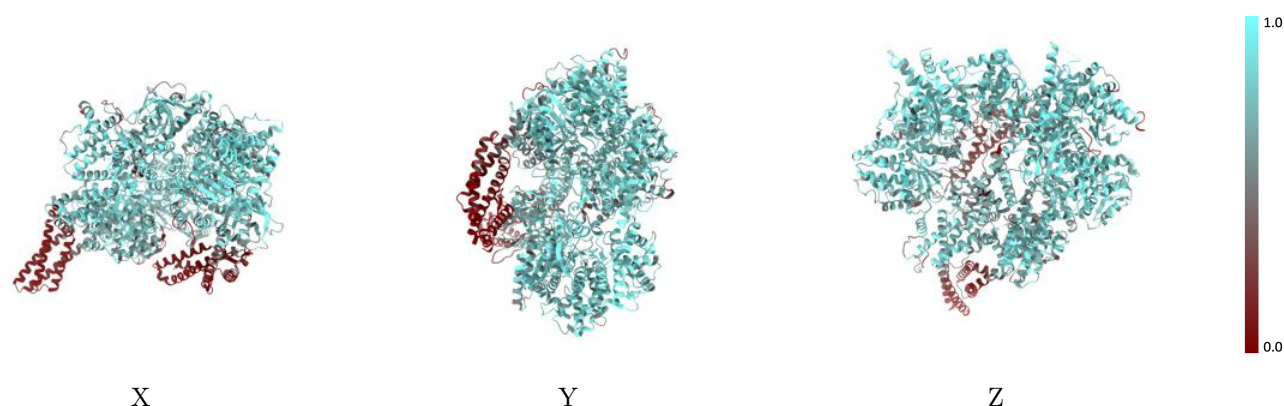


## 9.2 Q-score mapped to coordinate model [i](#)



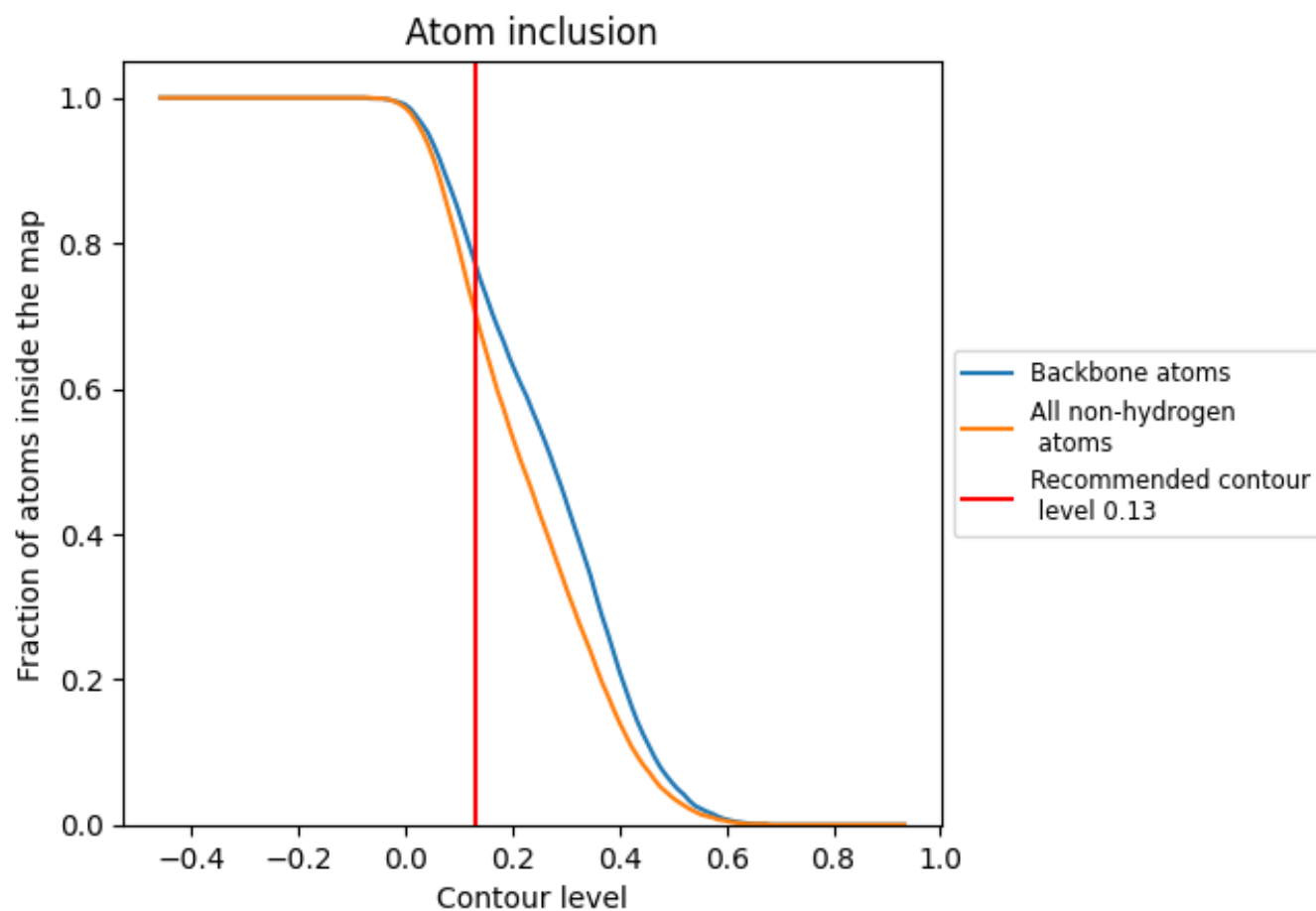
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.13).

## 9.4 Atom inclusion [i](#)



At the recommended contour level, 77% of all backbone atoms, 70% 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 (0.13) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	<div></div> 0.7040	<div></div> 0.4690
A	<div></div> 0.7050	<div></div> 0.4690

