



Full wwPDB EM Validation Report ⓘ

Aug 16, 2025 – 12:45 PM EDT

PDB ID : 9BML / pdb_00009bml
EMDB ID : EMD-44702
Title : State-2 of the motor domain from full-length human dynein-1 in 5mM AMPPNP
Authors : Chai, P.; Zhang, K.
Deposited on : 2024-05-02
Resolution : 3.30 Å(reported)

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

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

EMDB validation analysis : 0.0.1.dev126
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0rc1
buster-report : 1.1.7 (2018)
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.45.1

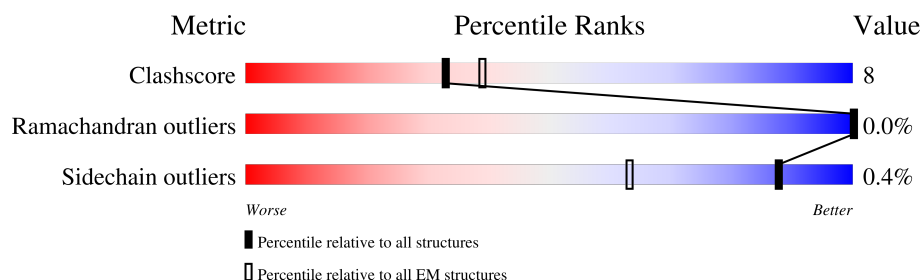
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.30 Å.

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



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

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

Mol	Chain	Length	Quality of chain
1	A	4646	

2 Entry composition [i](#)

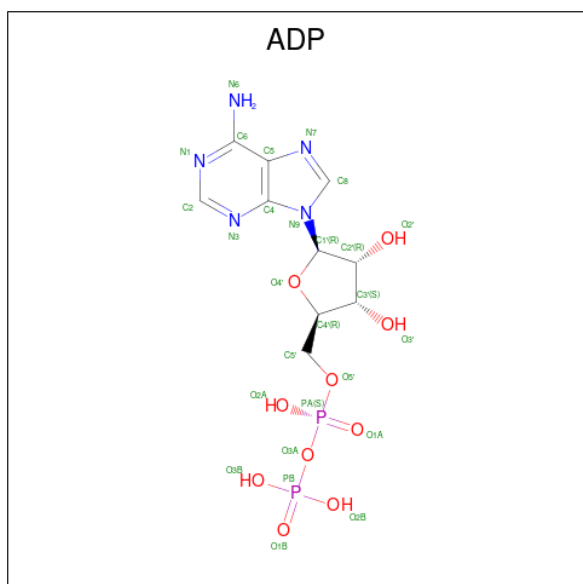
There are 4 unique types of molecules in this entry. The entry contains 23706 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called Cytoplasmic dynein 1 heavy chain 1.

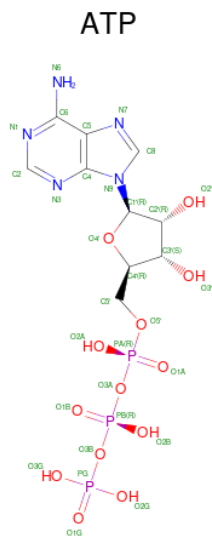
Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	2937	23593	15028	4070	4378	117	0	0

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



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

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



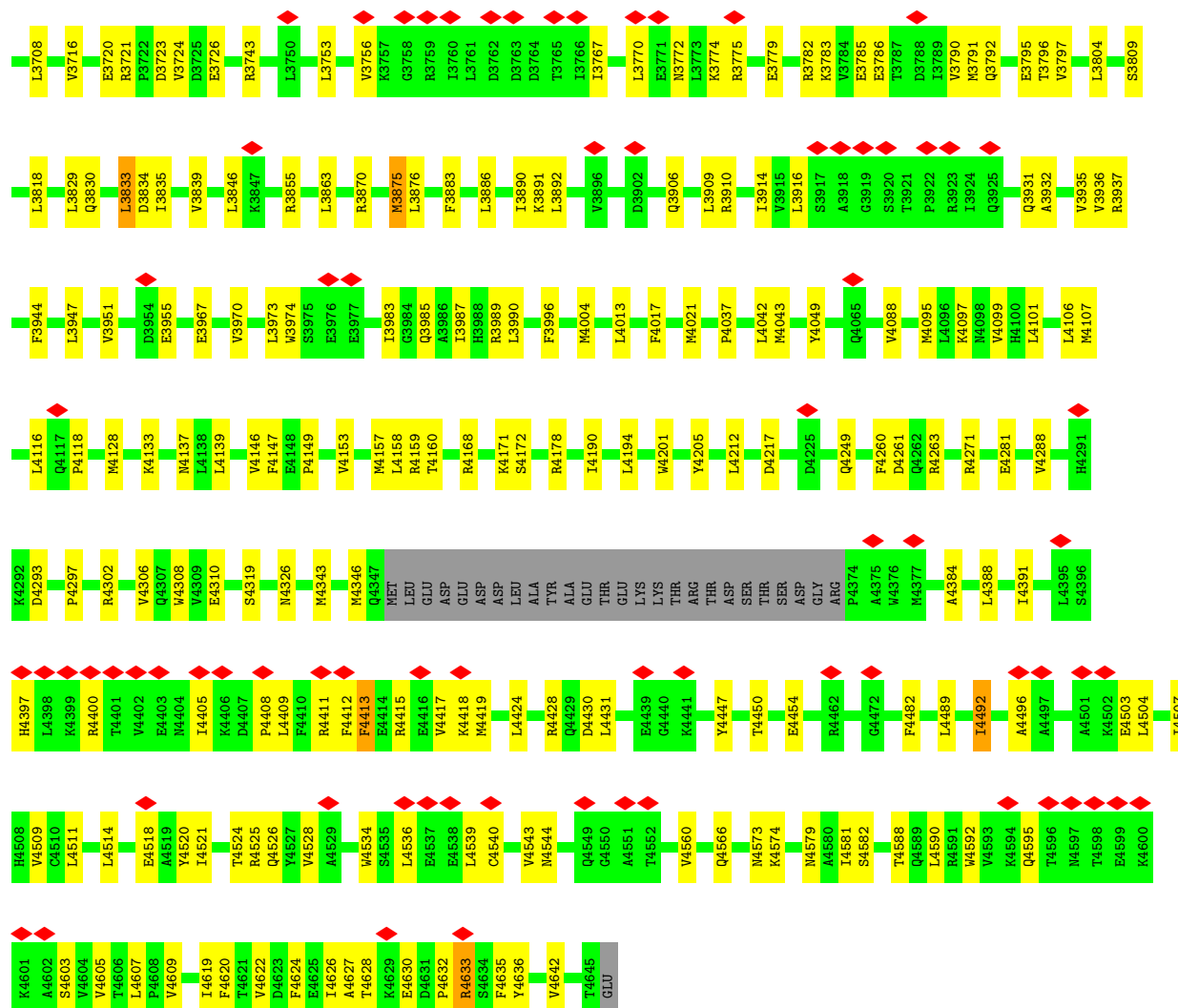
Mol	Chain	Residues	Atoms					AltConf
3	A	1	Total	C	N	O	P	0
			31	10	5	13	3	

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

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

V1971	Q1818	L1638	Q1566	LYS	VAL	TRP	ARG	GLU	ALA	ASN	GLU	ASN	PHE
E1980	R1819	E1639	Q1567	ASN	ALA	GLU	PHE	PHE	ALA	LEU	LEU	LEU	PHE
H1984	D1820	I1640	F1568	ALA	GLU	LYS	THR	THR	VAL	VAL	ILE	ARG	GLN
H1985	D1831	K1645	Q1569	ILE	VAL	PRO	PRO	GLN	ILE	ILE	THR	GLY	LYS
S1986	L1839	N1646	S1570	VAL	GLN	VAL	SER	SER	ARG	PRO	ASN	GLN	GLY
N1987	K1652	K1653	I1571	LYS	ASP	THR	TRP	LYS	LYS	ASP	VAL	ILE	VAL
F1988	H1653	H1653	S1572	ASP	GLN	THR	TRP	THR	LEU	GLY	VAL	GLU	ASP
N1989	K1654	I1664	T1573	LEU	VAL	VAL	ARG	LEU	LYS	VAL	GLY	LEU	LEU
Y1990	K1849	Q1850	L1576	VAL	GLY	TRP	ASN	GLU	GLY	ASN	GLU	ILE	ILE
D1991	T1851	E1668	A1577	ALA	TYR	SER	ILE	GLU	ASP	LEU	PRO	VAL	VAL
K1992	D1852	L1578	L1578	GLN	MET	SER	GLU	GLU	GLY	ASN	PRO	ARG	GLU
T1993	V1853	S1671	K1579	GLY	LYS	GLY	GLY	ALA	GLY	GLY	ILE	LEU	GLY
S1994	L1854	K1580	K1580	ASN	ASN	SER	LEU	SER	LEU	TYR	GLY	ALA	ILE
A1995	Q1855	I1676	K1581	LEU	MET	VAL	ALA	GLY	GLY	ALA	VAL	ARG	LEU
	Q1856		V1582	LEU	LEU	TRP	LEU	GLY	GLY	VAL	ARG	LEU	LEU
L2001	N1867	R1679	S1583	VAL	VAL	TRP	LEU	ALA	ALA	VAL	TYR	ARG	GLU
L2002	E1680	E1680	K1584	ILE	ILE	GLU	THR	ALA	GLY	ALA	LYS	LYS	VAL
K1992	G1681	G1681	S1585	GLU	GLU	GLN	ILE	ASP	ASN	PHE	GLY	THR	THR
T1993	E1682	E1682	S1586	LYS	LYS	ASP	GLY	ASP	ILE	THR	VAL	GLY	ASP
S1994	Y1872	Y1872	P1586	ASP	ASP	GLY	GLY	GLY	GLY	VAL	VAL	VAL	ASP
A1995	L1873	L1873	L1587	GLN	GLN	TRP	VAL	VAL	VAL	VAL	LYS	LYS	VAL
L2001	D1877	I1692	V1588	SER	SER	TRP	ASP	ASP	ILE	THR	LYS	LYS	VAL
L2002	K1878	T1693	V1588	GLU	GLU	TRP	ASP	ASP	ILE	THR	LYS	LYS	VAL
I2016	L1879	E1706	M1589	ALA	ALA	LYS	GLY	GLY	VAL	VAL	VAL	VAL	VAL
R2025	K1878	E1706	D1590	LYS	LYS	GLN	GLY	GLY	GLY	GLY	GLY	GLY	GLY
D2030	R1887	M1709	V1591	ASP	ASP	PRO	LEU	LEU	ASP	ASP	ASP	ASP	ASP
N2031	C1888	L1713	L1592	ARG	ARG	TRP	LYS	LYS	ALA	ALA	ALA	ALA	ALA
L2032	S1903	L1713	N1593	HIS	HIS	VAL	ASP	ASP	ILE	ILE	ILE	ILE	ILE
M2041	P1907	L1717	I1594	TRP	TRP	SER	VAL	VAL	GLN	GLN	GLN	GLN	GLN
D2045	T1910	K1729	Q1595	LYS	LYS	GLN	VAL	VAL	GLN	GLN	GLN	GLN	GLN
R2046	G1911	A1730	G1596	MET	MET	LEU	PRO	PRO	ARG	ARG	ARG	ARG	ARG
Q2047	K1912	A1730	V1597	LYS	LYS	LEU	ARG	ARG	CYS	CYS	CYS	CYS	CYS
L2048	T1913	T1731	Q1598	ALA	ALA	LYS	LYS	LYS	ALA	ALA	ALA	ALA	ALA
I2049	E1914	S1732	R1599	ARG	ARG	LYS	ARG	ARG	LYS	LYS	LYS	LYS	LYS
E2063	H1921	L1749	S1600	HIS	HIS	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN
A2066	R1925	M1769	L1601	ASN	ASN	VAL	ASN	ASN	ILE	ILE	ILE	ILE	ILE
N2067	F1930	G1770	E1602	TRP	TRP	VAL	TRP	TRP	VAL	VAL	VAL	VAL	VAL
K2068	F1930	G1771	R1603	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL
L2069	D1933	G1772	D1606	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL
V2070	E1934	G1773	L1607	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL
P2071	T1935	G1773	L1608	GLU	GLU	SER	SER	SER	GLY	GLY	GLY	GLY	GLY
L2075	M1941	D1774	G1609	LEU	LEU	THR	THR	THR	THR	THR	THR	THR	THR
L2080	Q1950	P1777	K1610	THR	THR	THR	THR	THR	THR	THR	THR	THR	THR
Q2083	E1959	L1792	K1611	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY	GLY
A2092	F1960	A1793	I1611	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU	LEU
K2104	R1966	D1794	Q1612	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE	PHE
E2117	L1811	L1811	Q1613	ILE	ILE	ILE	ILE	ILE	ILE	ILE	ILE	ILE	ILE
R2118	E1814	L1815	E1617	TRP	TRP	TRP	TRP	TRP	TRP	TRP	TRP	TRP	TRP
G2119	E1814	L1815	Y1618	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA	ALA
E2120	E1814	L1815	L1619	ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP	ASP
A2121	E1814	L1815	E1620	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL	VAL
	E1814	L1815	R1621	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG	ARG
	E1814	L1815	E1622	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN	GLN
	E1814	L1815	P1627	LYS	LYS	LYS	LYS	LYS	LYS	LYS	LYS	LYS	LYS
	E1814	L1815	D1634	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN	ASN
	E1814	L1815	E1635	PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO	PRO
	E1814	L1815	L1637	ILE	ILE	ILE	ILE	ILE	ILE	ILE	ILE	ILE	ILE
	E1814	L1815		THR	THR	THR	THR	THR	THR	THR	THR	THR	THR

D3557	I3455	TRP	GLN	V3215	M3068	L2933	D2697	A2529	M2423	V2291	V2122
E3558	S3456	ALA	LYS	E3216	R3069	L2933	D2697	A2529	M2423	V2291	V2122
R3559	S3457	ILE	GLN	E3217	P3070	G2937	V2701	P2530	V2433	R2292	D2123
L3560	A3458	ALA	ILE	L3218	E3073	L2961	Q2707	Y2537	E2444	K2297	E2126
Q3459	SER	ASN	SER	R3219	D3077	R2962	F2708	E2538	L2449	D2308	N2130
A3460	ILE	LEU	ASP	R3220	T3081	R2965	R2726	T2541	L2449	D2308	N2130
I3461	ASP	ILE	ASP	D3221	T3081	R2966	R2729	T2450	L2451	E2313	L2131
K3462	ASP	ASP	LYS	L3222	D3096	Y2967	H2730	W2545	R2452	E2313	Q2134
A3463	ARG	GLU	VAL	R3223	W3097	T2968	V2731	W2548	R2453	N2316	Q2134
D3464	VAL	GLU	VAL	L3224	Q2969	Q2969	P2732	W2548	C2454	N2316	Q2134
L3465	PHE	PRO	ALA	K3225	F3109	E2970	P2732	W2548	C2454	N2316	Q2134
A3466	ILE	ALA	ALA	S3226	F3109	E2974	L2758	D2566	S2457	T2326	Q2139
A3466	THR	VAL	THR	S3227	M3113	D2975	L2758	T2571	M2461	N2338	M2145
A3467	ILE	GLU	ILE	Q3227	D3114	D2975	M2773	T2571	L2462	F2343	L2149
V3468	VAL	ALA	ALA	E3228	D3114	L2976	V2774	V2575	R2463	E2344	V2150
E3469	LEU	GLN	GLN	L3229	Y3125	R2977	E2775	R2576	Q2464	V2345	L2156
A3470	ASN	ASN	ASN	E3230	Y3125	L2980	L2793	L2581	A2465	Q2346	L2156
GLU	SER	ALA	ALA	E3230	V3129	L2980	L2793	L2581	C2466	D2347	L2157
LEU	ALA	ALA	VAL	V3231	V3129	L2980	W2802	P2590	R2467	L2348	F2158
GLN	LYS	LYS	LYS	K3232	L3133	D2985	W2802	P2590	Y2472	V2356	L2160
GLU	GLU	SER	SER	N3233	P3134	E2996	R2811	L2593	Y2472	V2356	L2160
LEU	ILE	ILE	ILE	S2997	Q3135	S2997	R2811	L2593	N2475	L2369	L2161
ASP	ASP	LYS	LYS	A3234	Q3135	M2998	L2816	F2606	N2475	L2369	F2165
ASP	ALA	ASP	ALA	A3235	P3136	D3001	P2817	F2606	N2475	L2369	F2165
ASP	ALA	ASP	GLN	A3236	P3137	S3002	V2818	L2612	D2478	N2377	Y2170
ALA	ILE	ILE	HIS	N3237	R3140	S3002	V2818	L2612	F2479	L2382	Y2170
LYS	ARG	VAL	VAL	D3238	E3141	E3006	L2822	M2615	Q2485	D2388	R2172
ASN	GLU	LYS	GLU	K3239	A3142	R3007	W2825	E2616	R2488	E2389	Q2173
GLN	VAL	VAL	VAL	L3240	I3143	R3007	W2825	E2616	Y2489	E2389	G2174
GLN	ARG	LYS	ARG	K3241	V3144	K3008	A2829	L2620	Y2489	E2389	E2174
LYS	SER	SER	SER	K3242	V3148	N3009	A2829	L2620	Y2489	E2389	E2174
ALA	ASN	ASN	MET	K3242	F3149	V3017	D2847	L2620	Y2490	GLY	A2177
ASN	TYR	GLU	ALA	MET	F3149	V3017	D2847	L2620	Y2490	GLY	A2177
GLU	MET	ASN	ASN	VAL	T3153	L3020	H2857	S2623	Y2493	GLU	E2181
VAL	TRP	SER	PRO	VAL	L3154	L3020	H2857	S2624	L2494	ALA	E2181
GLU	ASN	PRO	PRO	ASP	ALA	L3020	H2857	S2624	V2495	GLN	K2184
GLN	PRO	ALA	ALA	GLN	GLN	G3023	E2864	R2643	Y2496	ARG	K2184
ILE	SER	ALA	ALA	GLN	GLN	D3024	E2864	R2643	A2497	ARG	E2188
TYR	TYR	TYR	VAL	VAL	VAL	E3025	R2869	T2644	I2498	ARG	M2189
ASN	ASN	ASN	LYS	ALA	LYS	E3025	R2869	T2644	I2498	LYS	Y2190
ASP	TYR	TYR	LEU	ALA	GLU	Y3026	L2872	C2647	L2502	GLY	E2205
LEU	GLU	GLU	LEU	ALA	LYS	Y3026	L2872	C2647	L2502	LYS	E2205
LEU	ILE	ILE	LEU	LYS	LYS	N3030	R2890	Q2654	R2507	GLU	E2205
VAL	VAL	VAL	GLU	LYS	LYS	G3036	R2890	Q2654	R2507	GLU	E2205
SER	ASN	ASN	ILE	LYS	LYS	G3036	R2890	Q2654	R2507	GLU	E2205
ARG	ARG	ILE	ILE	VAL	MET	G3036	R2890	Q2654	R2507	GLU	E2205
ALA	ALA	CYS	SER	ALA	GLN	K3039	K2894	E2665	K2809	GLY	Q2209
ALA	ALA	LEU	LEU	GLN	GLN	E3040	K2894	E2665	K2809	GLY	Q2209
TYR	TYR	LEU	LEU	GLN	GLN	E3040	K2894	E2665	K2809	GLY	Q2209
LEU	LEU	LEU	LEU	ILE	ILE	M3043	L2905	L2668	Y2517	GLU	Q2209
ALA	ALA	ALA	ALA	ILE	ILE	L3044	L2905	L2668	Y2517	GLU	Q2209
CYS	CYS	GLY	GLY	GLN	GLN	L3044	L2909	M2671	R2520	ALA	S2231
GLY	GLY	GLY	GLY	GLN	GLN	L3044	L2909	M2671	R2520	ALA	S2231
GLU	GLU	GLU	GLU	GLU	GLU	D3045	L2909	T2676	T2521	ALA	W2234
PRO	PRO	SER	SER	GLN	GLN	S3046	L2920	T2676	T2522	ALA	W2234
THR	THR	THR	THR	LEU	LEU	R3047	L2920	T2676	T2522	ALA	W2234
VAL	VAL	VAL	VAL	HIS	HIS	H3047	L2920	T2676	T2522	ALA	W2234
LYS	LYS	LYS	ASP	LYS	LYS	E3048	L2925	R2694	P2527	GLU	V2247
				GLN	GLN	D3213	L2925	R2694	P2527	GLU	V2247
				GLU	GLU	Q3214	L2925	R2694	P2527	GLU	V2247
				VAL	VAL		L2925	R2694	P2527	GLU	V2247
				ILE	ILE		L2925	R2694	P2527	GLU	V2247
				ALA	ALA		L2925	R2694	P2527	GLU	V2247
				ASP	ASP		L2925	R2694	P2527	GLU	V2247
				LYS	LYS		L2925	R2694	P2527	GLU	V2247
				GLN	GLN		L2925	R2694	P2527	GLU	V2247
				VAL	VAL		L2925	R2694	P2527	GLU	V2247
				VAL	VAL		L2925	R2694	P2527	GLU	V2247
				VAL	VAL		L2925	R2694	P2527	GLU	V2247
				VAL	VAL		L2925	R2694	P2527	GLU	V2247
				VAL	VAL		L2925	R2694	P2527	GLU	V2247
				VAL	VAL		L2925	R2694	P2527	GLU	V2247
				VAL	VAL		L2925	R2694	P2527	GLU	V2247
				VAL	VAL		L2925	R2694	P2527	GLU	V2247
				VAL	VAL		L2925	R2694	P2527	GLU	V2247
				VAL	VAL		L2925	R2694	P2527	GLU	V2247
				VAL	VAL		L2925	R2694	P2527	GLU	V2247
				VAL	VAL		L2925	R2694	P2527	GLU	V2247
				VAL	VAL		L2925	R2694	P2527	GLU	V2247
				VAL	VAL		L2925	R2694	P2527	GLU	V2247
				VAL	VAL		L2925	R2694	P2527	GLU	V2247
				VAL	VAL		L2925	R2694	P2527	GLU	V2247
				VAL	VAL		L2925	R2694	P2527	GLU	V2247
				VAL	VAL		L2925	R2694	P2527	GLU	V2247
				VAL	VAL		L2925	R2694	P2527	GLU	V2247
				VAL	VAL		L2925	R2694	P2527	GLU	V2247
				VAL	VAL		L2925	R2694	P2527	GLU	V2247
				VAL	VAL		L2925	R2694	P2527	GLU	V2247
				VAL	VAL		L2925	R2694	P2527	GLU	V2247
				VAL	VAL		L2925	R2694	P2527	GLU	V2247
				VAL	VAL		L2925	R2694	P2527	GLU	V2247
				VAL	VAL		L2925	R2694	P2527	GLU	V2247
				VAL	VAL		L2925	R2694	P2527	GLU	V2247
				VAL	VAL		L2925	R2694	P2527	GLU	V2247
				VAL	VAL		L2925	R2694	P2527	GLU	V2247
				VAL	VAL		L2925	R2694	P2527	GLU	V2247
				VAL	VAL		L2925	R2694	P2527	GLU	V2247
				VAL	VAL		L2925	R2694	P2527	GLU	V2247
				VAL	VAL		L2925	R2694	P2527	GLU	V2247
				VAL	VAL		L2925	R2694	P2527	GLU	V2247
				VAL	VAL		L2925	R2694	P2527	GLU	V2247
				VAL	VAL		L2925	R2694	P2527	GLU	V2247
				VAL	VAL		L2925	R2694	P2527	GLU	V2247
				VAL	VAL		L2925	R2694	P2527	GLU	V2247
				VAL	VAL		L2925	R2694	P2527	GLU	V2247



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	40850	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS GLACIOS	Depositor
Voltage (kV)	200	Depositor
Electron dose ($e^-/\text{\AA}^2$)	40	Depositor
Minimum defocus (nm)	1200	Depositor
Maximum defocus (nm)	3000	Depositor
Magnification	45000	Depositor
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	1.898	Depositor
Minimum map value	-1.110	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	0.058	Depositor
Recommended contour level	0.3	Depositor
Map size ($\text{\AA}$)	333.312, 333.312, 333.312	wwPDB
Map dimensions	256, 256, 256	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing ($\text{\AA}$)	1.302, 1.302, 1.302	Depositor

5 Model quality

5.1 Standard geometry

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	0.15	0/24093	0.31	1/32651 (0.0%)

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

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

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	4628	THR	CB-CA-C	-5.07	110.71	116.54

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	4633	ARG	Sidechain

5.2 Too-close contacts

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	23593	0	23658	387	0
2	A	81	0	36	3	0
3	A	31	0	12	0	0
4	A	1	0	0	0	0
All	All	23706	0	23706	387	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 (387) 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:4574:LYS:HB3	1:A:4627:ALA:HB2	1.46	0.98
1:A:1480:TYR:HB2	1:A:1486:LEU:HD11	1.57	0.85
1:A:1526:LYS:HA	1:A:1529:ARG:HD3	1.62	0.82
1:A:2092:ALA:HB1	1:A:2145:MET:HE1	1.63	0.78
1:A:2221:MET:HG2	1:A:2343:PHE:HB2	1.66	0.77
1:A:4260:PHE:HD1	1:A:4263:ARG:HH21	1.31	0.77
1:A:1523:TRP:HA	1:A:1526:LYS:HE3	1.70	0.74
1:A:1543:ARG:HA	1:A:1546:TYR:CE2	2.22	0.74
1:A:3502:THR:HG21	1:A:3544:ARG:HG3	1.70	0.71
1:A:4630:GLU:HB3	1:A:4635:PHE:HE1	1.55	0.71
1:A:3487:GLU:OE2	1:A:3491:LYS:NZ	2.22	0.71
1:A:2205:GLU:OE1	1:A:2209:GLN:NE2	2.24	0.71
1:A:1486:LEU:HA	1:A:1579:MET:HE1	1.73	0.70
1:A:3909:LEU:HD21	1:A:4343:MET:HE2	1.73	0.70
1:A:2075:LEU:HD13	1:A:2160:LEU:HD11	1.74	0.70
1:A:1497:VAL:HG13	1:A:1527:LEU:HD22	1.73	0.69
1:A:3481:SER:O	1:A:3774:LYS:NZ	2.26	0.68
1:A:3557:ASP:OD2	1:A:3743:ARG:NH1	2.26	0.68
1:A:2257:LYS:HE3	1:A:2676:THR:HG21	1.76	0.68
1:A:4326:ASN:ND2	1:A:4579:ASN:O	2.27	0.68
1:A:2181:GLU:HG3	1:A:2244:LEU:HB2	1.76	0.67
1:A:1652:LYS:HG3	1:A:1653:HIS:HD2	1.60	0.67
1:A:1930:PHE:HA	1:A:2326:THR:HG21	1.76	0.67
1:A:2080:LEU:HD23	1:A:2156:LEU:HD22	1.75	0.67
1:A:2775:GLU:OE1	1:A:2857:HIS:NE2	2.25	0.66
1:A:2149:LEU:HD11	1:A:2157:LEU:HD13	1.79	0.65
1:A:1477:LEU:HB3	1:A:1485:ARG:HB3	1.79	0.65
1:A:1546:TYR:CE1	1:A:1638:LEU:HB3	2.32	0.64
1:A:2615:MET:SD	1:A:2707:GLN:NE2	2.70	0.64
1:A:4619:ILE:HG22	1:A:4620:PHE:HD1	1.61	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3520:PHE:HB3	1:A:3524:MET:HB3	1.77	0.64
1:A:4088:VAL:HG11	1:A:4116:LEU:HD21	1.79	0.64
1:A:3931:GLN:O	1:A:3935:VAL:HG23	1.98	0.64
1:A:4525:ARG:HD3	1:A:4536:LEU:HD23	1.80	0.64
1:A:2083:GLN:HE21	1:A:2150:VAL:HG11	1.63	0.63
1:A:2313:GLU:OE1	1:A:2316:ASN:ND2	2.29	0.63
1:A:3517:ALA:HB1	1:A:3525:ARG:HG2	1.80	0.63
1:A:1587:LEU:HB3	1:A:1590:ASP:HB2	1.81	0.63
1:A:4409:LEU:O	1:A:4413:PHE:HB2	1.98	0.63
1:A:3129:VAL:HG21	1:A:3149:PHE:HB2	1.79	0.62
1:A:2847:ASP:OD1	1:A:2869:ARG:NH1	2.32	0.62
1:A:4518:GLU:OE2	1:A:4518:GLU:N	2.31	0.62
1:A:2581:LEU:HD11	1:A:2593:LEU:HD21	1.82	0.62
1:A:2433:VAL:HG22	1:A:2498:ILE:HD11	1.80	0.62
1:A:3830:GLN:NE2	1:A:3834:ASP:OD2	2.33	0.61
1:A:4168:ARG:NH2	1:A:4217:ASP:OD1	2.33	0.61
1:A:2075:LEU:HB3	1:A:2160:LEU:HD21	1.83	0.61
1:A:2864:GLU:OE2	1:A:2864:GLU:N	2.34	0.61
1:A:4605:VAL:HG23	1:A:4636:TYR:HE1	1.66	0.61
1:A:1497:VAL:HG11	1:A:1531:MET:HG2	1.83	0.61
1:A:1535:ASP:O	1:A:2292:ARG:NH2	2.34	0.61
1:A:3839:VAL:HG21	1:A:3863:LEU:HA	1.81	0.60
1:A:3172:THR:HG21	1:A:3694:SER:HB3	1.84	0.60
1:A:3178:ASP:OD2	1:A:3585:ARG:NE	2.33	0.60
1:A:3510:SER:HB3	1:A:3553:LEU:HD21	1.83	0.60
1:A:3655:ARG:HG2	1:A:3660:VAL:HG22	1.82	0.60
1:A:3597:THR:HG23	1:A:3634:LEU:HD21	1.83	0.60
1:A:2925:ILE:HG21	1:A:2933:LEU:HG	1.83	0.59
1:A:2995:ASP:OD1	1:A:2996:GLU:N	2.35	0.59
1:A:3970:VAL:HB	1:A:3989:ARG:HD3	1.83	0.59
1:A:2624:SER:HB3	1:A:3081:THR:HA	1.85	0.59
1:A:2654:GLN:NE2	1:A:3048:GLU:OE2	2.35	0.59
1:A:3935:VAL:HG22	1:A:3996:PHE:HE1	1.67	0.59
1:A:1543:ARG:HA	1:A:1546:TYR:HE2	1.64	0.59
1:A:1627:PRO:HB3	1:A:1950:GLN:HB3	1.84	0.59
1:A:2517:TYR:HA	1:A:2520:ARG:HD3	1.86	0.58
1:A:4525:ARG:HG3	1:A:4592:TRP:CZ3	2.38	0.58
1:A:3611:ARG:NH1	1:A:3636:GLN:OE1	2.33	0.58
1:A:3792:GLN:O	1:A:3796:THR:HG23	2.03	0.58
1:A:2257:LYS:NZ	1:A:2308:ASP:OD2	2.36	0.58
1:A:1546:TYR:HE1	1:A:1638:LEU:HB3	1.67	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:4607:LEU:HD13	1:A:4624:PHE:HD2	1.69	0.58
1:A:4178:ARG:NH2	1:A:4297:PRO:O	2.37	0.58
1:A:4525:ARG:NH2	1:A:4536:LEU:O	2.32	0.57
1:A:3207:LYS:NZ	1:A:3756:VAL:O	2.38	0.57
1:A:3581:LYS:HE3	1:A:3582:ARG:HG3	1.85	0.57
1:A:3721:ARG:HE	1:A:3724:VAL:HG21	1.69	0.57
1:A:3491:LYS:O	1:A:3495:THR:HG23	2.05	0.57
1:A:2495:VAL:HG21	1:A:2524:VAL:HG21	1.85	0.56
1:A:3967:GLU:HB2	1:A:4004:MET:HE2	1.87	0.56
1:A:2138:ILE:HD12	1:A:2161:LEU:HD22	1.88	0.56
1:A:3487:GLU:O	1:A:3491:LYS:HG2	2.05	0.56
1:A:4413:PHE:HE1	1:A:4492:ILE:HG23	1.70	0.55
1:A:1713:LEU:HD11	1:A:1872:TYR:HB2	1.88	0.55
1:A:1959:GLU:OE2	1:A:2025:ARG:NH1	2.40	0.55
1:A:4190:ILE:HD12	1:A:4201:TRP:HZ2	1.72	0.55
1:A:1539:ASP:OD2	1:A:1543:ARG:NH2	2.39	0.55
1:A:1589:MET:SD	1:A:1589:MET:N	2.80	0.55
1:A:1619:LEU:HD11	1:A:1638:LEU:HD13	1.89	0.55
1:A:2498:ILE:HG23	1:A:2502:LEU:HD22	1.89	0.55
1:A:2138:ILE:HD11	1:A:2165:PHE:CG	2.42	0.54
1:A:3990:LEU:HA	1:A:4004:MET:HG2	1.89	0.54
1:A:4503:GLU:O	1:A:4507:ILE:HG23	2.08	0.54
1:A:1792:LEU:HD21	1:A:1811:LEU:HB3	1.88	0.54
1:A:1914:GLU:HG3	2:A:4701:ADP:H2'	1.88	0.54
1:A:3951:VAL:HG12	1:A:3973:LEU:HD21	1.87	0.54
1:A:3779:GLU:O	1:A:3783:LYS:HG2	2.07	0.54
1:A:2517:TYR:CE2	1:A:2521:ILE:HD13	2.42	0.54
1:A:4107:MET:HG3	1:A:4137:ASN:HD21	1.72	0.54
1:A:3947:LEU:O	1:A:3951:VAL:HG13	2.08	0.54
1:A:2773:MET:HG2	1:A:2825:TRP:HE1	1.73	0.54
1:A:2159:SER:OG	1:A:4411:ARG:NH1	2.42	0.53
1:A:2968:THR:OG1	1:A:2969:GLY:N	2.40	0.53
1:A:1985:HIS:O	1:A:1985:HIS:ND1	2.40	0.53
1:A:4544:ASN:HA	1:A:4573:ASN:HD21	1.74	0.53
1:A:2047:GLN:HA	1:A:2070:VAL:HG21	1.89	0.53
1:A:2449:LEU:HA	1:A:2453:ARG:HH21	1.73	0.53
1:A:2156:LEU:HG	1:A:4411:ARG:HD2	1.90	0.53
1:A:2623:SER:OG	1:A:3006:GLU:OE1	2.23	0.53
1:A:3045:ASP:OD1	1:A:3046:SER:N	2.42	0.53
1:A:3030:MET:HA	1:A:3030:MET:HE3	1.91	0.53
1:A:2066:ALA:HA	1:A:2069:ILE:HG22	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:4293:ASP:N	1:A:4293:ASP:OD1	2.40	0.52
1:A:3791:MET:O	1:A:3795:GLU:HG3	2.09	0.52
1:A:4400:ARG:HD2	1:A:4405:ILE:HD11	1.92	0.52
1:A:4560:VAL:HB	1:A:4588:THR:HB	1.92	0.52
1:A:1501:ILE:HG13	1:A:1527:LEU:HD13	1.91	0.52
1:A:2291:VAL:HG13	1:A:2292:ARG:HG3	1.92	0.52
1:A:3459:GLN:HA	1:A:3462:LYS:HD2	1.91	0.52
1:A:2461:MET:HE2	1:A:2497:ALA:HA	1.91	0.52
1:A:3782:ARG:HA	1:A:3785:GLU:OE2	2.08	0.52
1:A:2485:GLN:OE1	1:A:2488:ARG:NH2	2.42	0.52
1:A:2231:SER:HA	1:A:2234:TRP:CD1	2.45	0.52
1:A:4412:PHE:HZ	1:A:4514:LEU:HD13	1.75	0.52
1:A:1671:SER:HA	1:A:1692:ILE:HG12	1.92	0.52
1:A:3914:ILE:O	1:A:3937:ARG:NH1	2.43	0.52
1:A:1912:LYS:HG3	2:A:4701:ADP:O3B	2.09	0.51
1:A:1987:ASN:OD1	1:A:1989:ASN:ND2	2.44	0.51
1:A:2080:LEU:O	1:A:4415:ARG:NH1	2.43	0.51
1:A:3916:LEU:HD11	1:A:3937:ARG:HG3	1.91	0.51
1:A:3875:MET:HE1	1:A:3883:PHE:HB2	1.92	0.51
1:A:3559:ARG:O	1:A:3563:GLN:HG2	2.09	0.51
1:A:1543:ARG:O	1:A:1547:LEU:HB2	2.11	0.51
1:A:2644:THR:OG1	1:A:2647:GLY:O	2.28	0.51
1:A:1550:ILE:O	1:A:1554:SER:OG	2.27	0.51
1:A:3723:ASP:O	1:A:3726:GLU:HG2	2.11	0.51
1:A:1467:ARG:HB2	1:A:1523:TRP:HH2	1.75	0.51
1:A:1504:VAL:HG11	1:A:1524:GLU:HG3	1.92	0.51
1:A:1475:LEU:HG	1:A:1487:ILE:HG23	1.92	0.50
1:A:3135:GLN:O	1:A:3137:PRO:HD3	2.12	0.50
1:A:4153:VAL:O	1:A:4157:MET:HG3	2.11	0.50
1:A:1542:ARG:O	1:A:1546:TYR:HD2	1.94	0.50
1:A:4099:VAL:HG23	1:A:4106:LEU:HD11	1.93	0.50
1:A:4412:PHE:CZ	1:A:4514:LEU:HD13	2.47	0.50
1:A:1490:TRP:HZ3	1:A:1534:PHE:HD2	1.59	0.50
1:A:2463:HIS:O	1:A:2467:ARG:HG3	2.11	0.50
1:A:3154:LEU:HD21	1:A:3532:TRP:HZ2	1.75	0.50
1:A:3786:GLU:O	1:A:3790:VAL:HG23	2.12	0.50
1:A:4288:VAL:O	1:A:4319:SER:OG	2.28	0.50
1:A:4566:GLN:OE1	1:A:4582:SER:OG	2.27	0.50
1:A:2974:GLU:OE1	1:A:2977:ARG:NH1	2.44	0.50
1:A:4496:ALA:HB2	1:A:4504:LEU:HD21	1.94	0.50
1:A:2348:LEU:HD13	1:A:2356:VAL:HG22	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2620:LEU:HD11	1:A:2661:LEU:HD23	1.93	0.50
1:A:3008:MET:HE3	1:A:3008:MET:HA	1.93	0.50
1:A:4540:CYS:HB3	1:A:4595:GLN:HG2	1.93	0.50
1:A:1879:LEU:HB3	2:A:4701:ADP:C6	2.46	0.50
1:A:2172:ARG:NH1	1:A:2205:GLU:OE2	2.44	0.50
1:A:2461:MET:CE	1:A:2497:ALA:HA	2.42	0.50
1:A:2694:ARG:HG3	1:A:2701:VAL:HG21	1.94	0.50
1:A:3036:GLY:O	1:A:3040:GLU:HG2	2.12	0.50
1:A:3708:LEU:HD23	1:A:3809:SER:HA	1.93	0.50
1:A:1903:SER:HA	1:A:2016:ILE:O	2.12	0.49
1:A:1652:LYS:HG3	1:A:1653:HIS:CD2	2.45	0.49
1:A:3144:VAL:O	1:A:3148:VAL:HG23	2.11	0.49
1:A:4388:LEU:HD21	1:A:4431:LEU:HB3	1.94	0.49
1:A:2454:CYS:HB3	1:A:2502:LEU:HD12	1.95	0.49
1:A:2996:GLU:HG2	1:A:3068:MET:HA	1.94	0.49
1:A:1706:GLU:O	1:A:1709:MET:HG2	2.12	0.49
1:A:4509:VAL:HG11	1:A:4514:LEU:HD11	1.94	0.49
1:A:3114:ASP:O	1:A:3140:ARG:NH2	2.45	0.49
1:A:2961:ILE:HD11	1:A:2998:ASN:HB3	1.95	0.49
1:A:2818:VAL:O	1:A:2822:ILE:HG12	2.13	0.49
1:A:3932:ALA:O	1:A:3936:VAL:HG13	2.13	0.49
1:A:2495:VAL:CG2	1:A:2524:VAL:HG21	2.43	0.48
1:A:3499:GLN:O	1:A:3503:ILE:HG13	2.13	0.48
1:A:4171:LYS:HG3	1:A:4172:SER:H	1.77	0.48
1:A:2521:ILE:HG13	1:A:2522:THR:N	2.28	0.48
1:A:3154:LEU:HD11	1:A:3516:TYR:HB3	1.94	0.48
1:A:3775:ARG:O	1:A:3779:GLU:HG2	2.13	0.48
1:A:4397:HIS:CE1	1:A:4418:LYS:HG3	2.48	0.48
1:A:4520:TYR:O	1:A:4524:THR:HG23	2.13	0.48
1:A:3149:PHE:O	1:A:3153:THR:HG22	2.13	0.48
1:A:2045:ASP:O	1:A:2049:ILE:HG13	2.13	0.48
1:A:2418:ASP:O	1:A:2422:ILE:HG12	2.14	0.48
1:A:3211:THR:O	1:A:3215:VAL:HG13	2.13	0.48
1:A:3974:TRP:HZ2	1:A:3985:GLN:HG2	1.79	0.48
1:A:4042:LEU:HD22	1:A:4128:MET:HE1	1.95	0.48
1:A:4413:PHE:CE1	1:A:4492:ILE:HG23	2.48	0.48
1:A:3502:THR:HG23	1:A:3543:PHE:HA	1.95	0.48
1:A:2901:TYR:OH	1:A:2909:LEU:N	2.47	0.48
1:A:1980:GLU:O	1:A:1984:GLU:HG2	2.14	0.48
1:A:4397:HIS:NE2	1:A:4418:LYS:HA	2.29	0.47
1:A:3113:MET:SD	1:A:3184:ALA:HA	2.55	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3724:VAL:HG21	1:A:3797:VAL:HG11	1.97	0.47
1:A:4037:PRO:HB2	1:A:4118:PRO:HG2	1.96	0.47
1:A:3154:LEU:HB3	1:A:3171:ILE:HD13	1.96	0.47
1:A:4450:THR:HG22	1:A:4454:GLU:OE2	2.14	0.47
1:A:4511:LEU:HD11	1:A:4521:ILE:HD11	1.96	0.47
1:A:1709:MET:HE2	1:A:1872:TYR:H	1.80	0.47
1:A:1853:VAL:HA	1:A:1856:GLN:HG3	1.97	0.47
1:A:1526:LYS:O	1:A:1530:ILE:HG13	2.15	0.47
1:A:1985:HIS:HD1	1:A:1985:HIS:C	2.22	0.47
1:A:2606:PHE:HE1	1:A:2617:VAL:HG21	1.80	0.47
1:A:2527:PRO:HD3	1:A:2545:TRP:CE2	2.50	0.47
1:A:3585:ARG:NH1	1:A:3694:SER:O	2.38	0.47
1:A:3779:GLU:O	1:A:3782:ARG:HG2	2.14	0.47
1:A:4415:ARG:HB3	1:A:4419:MET:HE3	1.96	0.47
1:A:1466:ILE:HB	1:A:1523:TRP:HZ3	1.80	0.47
1:A:1619:LEU:HD21	1:A:1638:LEU:HD12	1.97	0.47
1:A:4302:ARG:O	1:A:4306:VAL:HG23	2.14	0.47
1:A:4626:ILE:HD12	1:A:4630:GLU:O	2.15	0.47
1:A:1477:LEU:HA	1:A:1486:LEU:O	2.16	0.46
1:A:3225:LYS:HZ1	1:A:3464:ASP:HB3	1.79	0.46
1:A:2571:THR:O	1:A:2575:VAL:HG22	2.15	0.46
1:A:4525:ARG:HH21	1:A:4536:LEU:C	2.20	0.46
1:A:2967:TYR:OH	1:A:2975:ASP:OD2	2.27	0.46
1:A:2070:VAL:HB	1:A:2071:PRO:HD3	1.97	0.46
1:A:2816:LEU:HD23	1:A:2817:PRO:O	2.16	0.46
1:A:4049:TYR:OH	1:A:4149:PRO:HG3	2.15	0.46
1:A:3653:VAL:HG12	1:A:3662:ILE:HB	1.97	0.46
1:A:2457:SER:OG	1:A:2732:PRO:HB3	2.14	0.46
1:A:3650:ASN:HD21	1:A:3695:ARG:HH11	1.63	0.46
1:A:4408:PRO:HG3	1:A:4526:GLN:HB3	1.98	0.46
1:A:3753:LEU:HD21	1:A:3770:LEU:HD21	1.97	0.46
1:A:2063:GLU:O	1:A:2067:ASN:ND2	2.48	0.46
1:A:3039:LYS:HB3	1:A:3039:LYS:HE3	1.75	0.46
1:A:4384:ALA:O	1:A:4388:LEU:HG	2.16	0.46
1:A:4205:TYR:OH	1:A:4261:ASP:OD2	2.25	0.46
1:A:2612:LEU:HB3	1:A:2615:MET:HG3	1.98	0.45
1:A:2905:LEU:HD11	1:A:3652:GLU:HB3	1.98	0.45
1:A:4489:LEU:HA	1:A:4492:ILE:HB	1.98	0.45
1:A:2548:TRP:CD1	1:A:2576:ARG:HG2	2.51	0.45
1:A:3154:LEU:HB3	1:A:3171:ILE:CD1	2.46	0.45
1:A:1839:LEU:O	1:A:1843:ARG:NH1	2.50	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1599:ARG:O	1:A:1603:ARG:HG2	2.17	0.45
1:A:1645:LYS:HD2	1:A:1645:LYS:HA	1.76	0.45
1:A:3229:LEU:HD11	1:A:3462:LYS:HG3	1.99	0.45
1:A:2423:MET:HG2	1:A:2494:LEU:HD13	1.98	0.45
1:A:4194:LEU:HD21	1:A:4205:TYR:O	2.16	0.45
1:A:4391:ILE:O	1:A:4428:ARG:NH1	2.50	0.45
1:A:1486:LEU:HD12	1:A:1486:LEU:H	1.82	0.45
1:A:2665:GLU:HB3	1:A:2668:LEU:HD12	1.98	0.45
1:A:3143:ILE:HD13	1:A:3541:ILE:HD13	1.99	0.45
1:A:2419:ALA:O	1:A:2423:MET:HE2	2.17	0.45
1:A:2802:TRP:CZ2	1:A:2829:ALA:HB2	2.52	0.44
1:A:3558:GLU:HG3	1:A:3561:ARG:HH12	1.82	0.44
1:A:3720:GLU:OE1	1:A:3855:ARG:NE	2.47	0.44
1:A:4412:PHE:CZ	1:A:4520:TYR:HB2	2.52	0.44
1:A:4413:PHE:O	1:A:4417:VAL:HG23	2.17	0.44
1:A:2423:MET:HE3	1:A:2423:MET:HB2	1.86	0.44
1:A:2297:LYS:O	1:A:2338:ASN:ND2	2.47	0.44
1:A:2872:LEU:HD22	1:A:2920:LEU:HD12	1.99	0.44
1:A:1814:GLU:O	1:A:1818:GLN:HG3	2.17	0.44
1:A:4430:ASP:OD2	1:A:4447:TYR:OH	2.34	0.44
1:A:4574:LYS:HB3	1:A:4627:ALA:CB	2.33	0.44
1:A:1581:LYS:HE3	1:A:1594:ILE:HD13	2.00	0.44
1:A:1640:ILE:HD11	1:A:1653:HIS:HB3	2.00	0.44
1:A:2472:TYR:HB2	1:A:2541:ILE:HG12	1.99	0.44
1:A:1527:LEU:HD23	1:A:1530:ILE:HD12	2.00	0.44
1:A:1888:CYS:HB2	1:A:2041:MET:HE3	2.00	0.44
1:A:3457:GLU:O	1:A:3461:ILE:HG12	2.18	0.44
1:A:3575:GLU:O	1:A:3579:MET:HG3	2.18	0.44
1:A:4528:VAL:HG21	1:A:4592:TRP:CD1	2.53	0.44
1:A:3478:LEU:HD22	1:A:3767:ILE:HG23	1.99	0.43
1:A:4408:PRO:HB3	1:A:4411:ARG:HH21	1.83	0.43
1:A:1769:MET:HG2	1:A:1777:PRO:HD2	2.00	0.43
1:A:1960:PHE:HE2	1:A:2032:LEU:HD21	1.83	0.43
1:A:2369:LEU:O	1:A:2451:ARG:NH1	2.47	0.43
1:A:1664:ILE:HG22	1:A:1676:ILE:HG22	2.01	0.43
1:A:2177:ALA:O	1:A:2181:GLU:HG2	2.18	0.43
1:A:2444:GLU:HB2	1:A:2510:MET:HE3	2.00	0.43
1:A:4581:ILE:HD13	1:A:4581:ILE:HA	1.90	0.43
1:A:2495:VAL:HG21	1:A:2524:VAL:CG2	2.49	0.43
1:A:2623:SER:HB3	1:A:3009:ASN:HD22	1.82	0.43
1:A:4021:MET:HA	1:A:4021:MET:HE2	1.99	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1462:PHE:HB2	1:A:1507:MET:HE1	2.01	0.43
1:A:1850:GLN:HB3	1:A:1856:GLN:HG2	2.00	0.43
1:A:2184:LYS:O	1:A:2188:GLU:HG3	2.18	0.43
1:A:1457:MET:HE3	1:A:1457:MET:HA	1.99	0.43
1:A:3891:LYS:HD2	1:A:4013:LEU:HD23	2.00	0.43
1:A:3944:PHE:HD1	1:A:3947:LEU:HD13	1.84	0.43
1:A:1487:ILE:HB	1:A:1490:TRP:CZ2	2.54	0.43
1:A:3818:LEU:HA	1:A:4346:MET:HE3	2.00	0.43
1:A:3829:LEU:HG	1:A:3833:LEU:HD23	2.01	0.43
1:A:4159:ARG:HE	1:A:4159:ARG:HB2	1.64	0.43
1:A:1933:ASP:OD1	1:A:1935:THR:HG22	2.19	0.43
1:A:3109:PHE:HB3	1:A:3180:ILE:HG21	2.00	0.43
1:A:3570:ASP:OD2	1:A:3571:ASP:N	2.52	0.43
1:A:3846:LEU:HD22	1:A:3855:ARG:HG2	2.00	0.43
1:A:4603:SER:O	1:A:4626:ILE:HG12	2.18	0.43
1:A:3835:ILE:HG12	1:A:3870:ARG:HD2	2.01	0.43
1:A:4281:GLU:OE2	1:A:4281:GLU:N	2.52	0.43
1:A:2344:GLU:HG2	1:A:2726:ARG:HH22	1.84	0.43
1:A:2530:PRO:HG2	1:A:2531:ASN:H	1.84	0.42
1:A:4042:LEU:HD13	1:A:4139:LEU:HD23	2.00	0.42
1:A:1671:SER:HB2	1:A:1693:THR:HG23	2.02	0.42
1:A:2465:ALA:HB2	1:A:2493:TYR:CD1	2.54	0.42
1:A:2590:PRO:O	1:A:2732:PRO:HD2	2.19	0.42
1:A:1572:SER:O	1:A:1576:LEU:HG	2.19	0.42
1:A:2970:GLU:OE1	1:A:2970:GLU:N	2.51	0.42
1:A:3133:LEU:HD11	1:A:3141:GLU:HB3	2.01	0.42
1:A:4543:VAL:HG21	1:A:4622:VAL:HG12	2.01	0.42
1:A:1467:ARG:HB2	1:A:1523:TRP:CH2	2.53	0.42
1:A:2538:GLU:HB3	1:A:2548:TRP:CE2	2.55	0.42
1:A:2590:PRO:HB2	1:A:2731:VAL:HG12	2.01	0.42
1:A:2758:LEU:HD13	1:A:2811:ARG:HA	2.00	0.42
1:A:3077:ASP:O	1:A:3081:THR:HG22	2.20	0.42
1:A:3580:LEU:HD13	1:A:3600:ILE:HD11	2.01	0.42
1:A:3716:VAL:HG21	1:A:3804:LEU:HD23	2.00	0.42
1:A:3833:LEU:HD13	1:A:3833:LEU:HA	1.91	0.42
1:A:1493:LEU:O	1:A:1497:VAL:HG23	2.20	0.42
1:A:1873:LEU:HD13	1:A:1921:HIS:HB3	2.01	0.42
1:A:2104:LYS:HG3	1:A:2131:LEU:HD21	2.02	0.42
1:A:2134:GLN:O	1:A:2138:ILE:HG12	2.19	0.42
1:A:2452:LEU:HD23	1:A:2452:LEU:HA	1.76	0.42
1:A:2686:MET:HE3	1:A:2708:PHE:CZ	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3017:VAL:HB	1:A:3020:LEU:HB2	2.02	0.42
1:A:3026:TYR:O	1:A:3030:MET:HG2	2.18	0.42
1:A:4424:LEU:HA	1:A:4482:PHE:HZ	1.85	0.42
1:A:4609:VAL:HG22	1:A:4642:VAL:HB	2.00	0.42
1:A:4626:ILE:CD1	1:A:4632:PRO:HD3	2.50	0.42
1:A:3886:LEU:O	1:A:3890:ILE:HG12	2.19	0.42
1:A:4534:TRP:HE3	1:A:4539:LEU:HD21	1.84	0.42
1:A:1792:LEU:HD22	1:A:1815:LEU:HD22	2.02	0.42
1:A:3772:ASN:HA	1:A:3775:ARG:HH11	1.85	0.42
1:A:2190:TYR:O	1:A:2377:ASN:ND2	2.34	0.42
1:A:3876:LEU:HD23	1:A:4146:VAL:HG11	2.01	0.42
1:A:2002:LEU:HD23	1:A:2002:LEU:HA	1.85	0.42
1:A:2980:LEU:HB3	1:A:3054:PHE:HZ	1.85	0.42
1:A:3487:GLU:C	1:A:3491:LYS:HZ3	2.28	0.42
1:A:4160:THR:HG23	1:A:4212:LEU:HD21	2.02	0.42
1:A:3207:LYS:HD3	1:A:3207:LYS:HA	1.86	0.42
1:A:3454:LEU:O	1:A:3457:GLU:HG2	2.19	0.42
1:A:3906:GLN:NE2	1:A:3910:ARG:HD2	2.35	0.42
1:A:4297:PRO:HG3	1:A:4308:TRP:CD2	2.54	0.42
1:A:3691:ASP:OD1	1:A:3692:LEU:N	2.52	0.41
1:A:2697:ASP:OD1	1:A:2697:ASP:N	2.51	0.41
1:A:3753:LEU:HD23	1:A:3753:LEU:HA	1.81	0.41
1:A:4619:ILE:HD13	1:A:4619:ILE:HA	1.93	0.41
1:A:1466:ILE:HG23	1:A:1500:HIS:CE1	2.55	0.41
1:A:1985:HIS:ND1	1:A:1985:HIS:C	2.78	0.41
1:A:2382:LEU:HG	1:A:2420:ALA:HB2	2.02	0.41
1:A:3983:ILE:O	1:A:3987:ILE:HG13	2.19	0.41
1:A:1547:LEU:HD23	1:A:1547:LEU:HA	1.79	0.41
1:A:1887:ARG:HD2	1:A:4249:GLN:HG2	2.02	0.41
1:A:2529:ALA:HB2	1:A:2537:TYR:OH	2.20	0.41
1:A:3692:LEU:O	1:A:3696:VAL:HG22	2.20	0.41
1:A:1907:PRO:HG2	1:A:1910:THR:HG21	2.03	0.41
1:A:4095:MET:HE3	1:A:4097:LYS:HG2	2.02	0.41
1:A:2452:LEU:HD13	1:A:2729:ARG:HE	1.85	0.41
1:A:3955:GLU:OE2	1:A:3955:GLU:N	2.50	0.41
1:A:4590:LEU:HD12	1:A:4590:LEU:O	2.20	0.41
1:A:1546:TYR:CD1	1:A:1638:LEU:HB3	2.55	0.41
1:A:1831:ASP:OD1	1:A:1831:ASP:N	2.52	0.41
1:A:1854:LEU:H	1:A:1854:LEU:HD12	1.86	0.41
1:A:2507:ARG:HH22	1:A:2510:MET:HE2	1.85	0.41
1:A:1544:TRP:CZ2	1:A:1576:LEU:HD21	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1717:LEU:HB2	1:A:1749:LEU:HD22	2.02	0.41
1:A:3892:LEU:HD13	1:A:3983:ILE:HG21	2.02	0.41
1:A:1500:HIS:HB3	1:A:1527:LEU:HD11	2.03	0.41
1:A:1547:LEU:HD12	1:A:1608:LEU:HD22	2.02	0.41
1:A:1564:GLU:HA	1:A:1567:ARG:HB2	2.03	0.41
1:A:1966:ARG:HA	1:A:4101:LEU:HD13	2.02	0.41
1:A:2490:ILE:HD13	1:A:2490:ILE:HA	1.90	0.41
1:A:2509:LYS:HE3	1:A:2509:LYS:HB3	1.75	0.41
1:A:2937:GLY:C	1:A:3070:PRO:HD3	2.46	0.41
1:A:1527:LEU:HD23	1:A:1527:LEU:HA	1.86	0.40
1:A:2793:ILE:O	1:A:2793:ILE:HG13	2.21	0.40
1:A:3003:GLY:O	1:A:3007:ARG:HG3	2.21	0.40
1:A:3588:LEU:HD11	1:A:3638:VAL:HG11	2.03	0.40
1:A:2139:GLN:HG3	1:A:2170:TYR:CE1	2.56	0.40
1:A:2224:GLY:O	1:A:2346:GLN:HA	2.21	0.40
1:A:4013:LEU:HD13	1:A:4017:PHE:CZ	2.56	0.40
1:A:1471:ASN:HA	1:A:1589:MET:HE1	2.03	0.40
1:A:1941:MET:HE3	1:A:1971:VAL:HG11	2.01	0.40
1:A:4271:ARG:HD3	1:A:4633:ARG:HH12	1.87	0.40
1:A:1513:TYR:HE1	1:A:1520:ALA:HB3	1.87	0.40
1:A:1867:ASN:O	1:A:1925:ARG:NH1	2.44	0.40
1:A:3045:ASP:OD1	1:A:3045:ASP:C	2.64	0.40
1:A:4043:MET:HE2	1:A:4147:PHE:CE1	2.57	0.40
1:A:4158:LEU:HD21	1:A:4310:GLU:HG3	2.04	0.40
1:A:1606:ASP:OD1	1:A:1610:LYS:HE3	2.21	0.40
1:A:2890:ARG:O	1:A:2894:LYS:HG3	2.21	0.40
1:A:3096:ASP:OD2	1:A:3097:TRP:N	2.54	0.40
1:A:4133:LYS:HB2	1:A:4133:LYS:HE2	1.82	0.40
1:A:4418:LYS:HE3	1:A:4418:LYS:HB2	1.82	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	2929/4646 (63%)	2888 (99%)	40 (1%)	1 (0%)	100	100

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	2530	PRO

5.3.2 Protein sidechains [i](#)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	2605/4125 (63%)	2595 (100%)	10 (0%)	89	93

All (10) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	1634	ASP
1	A	1709	MET
1	A	2001	LEU
1	A	2247	VAL
1	A	2522	THR
1	A	2671	MET
1	A	3833	LEU
1	A	3875	MET
1	A	4413	PHE
1	A	4492	ILE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (27) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	1465	GLN
1	A	1643	ASN
1	A	1653	HIS
1	A	1755	GLN
1	A	1922	GLN

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Mol	Chain	Res	Type
1	A	1979	GLN
1	A	1989	ASN
1	A	2067	ASN
1	A	2217	ASN
1	A	2263	HIS
1	A	2677	GLN
1	A	2960	GLN
1	A	3069	ASN
1	A	3200	HIS
1	A	3233	ASN
1	A	3237	ASN
1	A	3526	GLN
1	A	3744	GLN
1	A	3820	GLN
1	A	3838	ASN
1	A	3968	GLN
1	A	4029	HIS
1	A	4114	HIS
1	A	4156	ASN
1	A	4191	GLN
1	A	4307	GLN
1	A	4444	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
2	ADP	A	4703	-	24,29,29	0.89	0	29,45,45	1.21	2 (6%)
2	ADP	A	4704	-	24,29,29	0.89	0	29,45,45	1.18	2 (6%)
3	ATP	A	4702	4	28,33,33	0.68	0	34,52,52	0.60	1 (2%)
2	ADP	A	4701	-	24,29,29	0.73	0	29,45,45	0.74	1 (3%)

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

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

There are no bond length outliers.

All (6) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	4703	ADP	N3-C2-N1	-3.70	123.65	128.67
2	A	4704	ADP	N3-C2-N1	-3.62	123.76	128.67
2	A	4704	ADP	C4-C5-N7	-2.50	106.69	109.34
2	A	4703	ADP	C4-C5-N7	-2.44	106.76	109.34
3	A	4702	ATP	C5-C6-N6	2.33	123.86	120.31
2	A	4701	ADP	C5-C6-N6	2.23	123.71	120.31

There are no chirality outliers.

All (9) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	A	4702	ATP	O4'-C4'-C5'-O5'
2	A	4701	ADP	O4'-C4'-C5'-O5'
3	A	4702	ATP	C3'-C4'-C5'-O5'

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

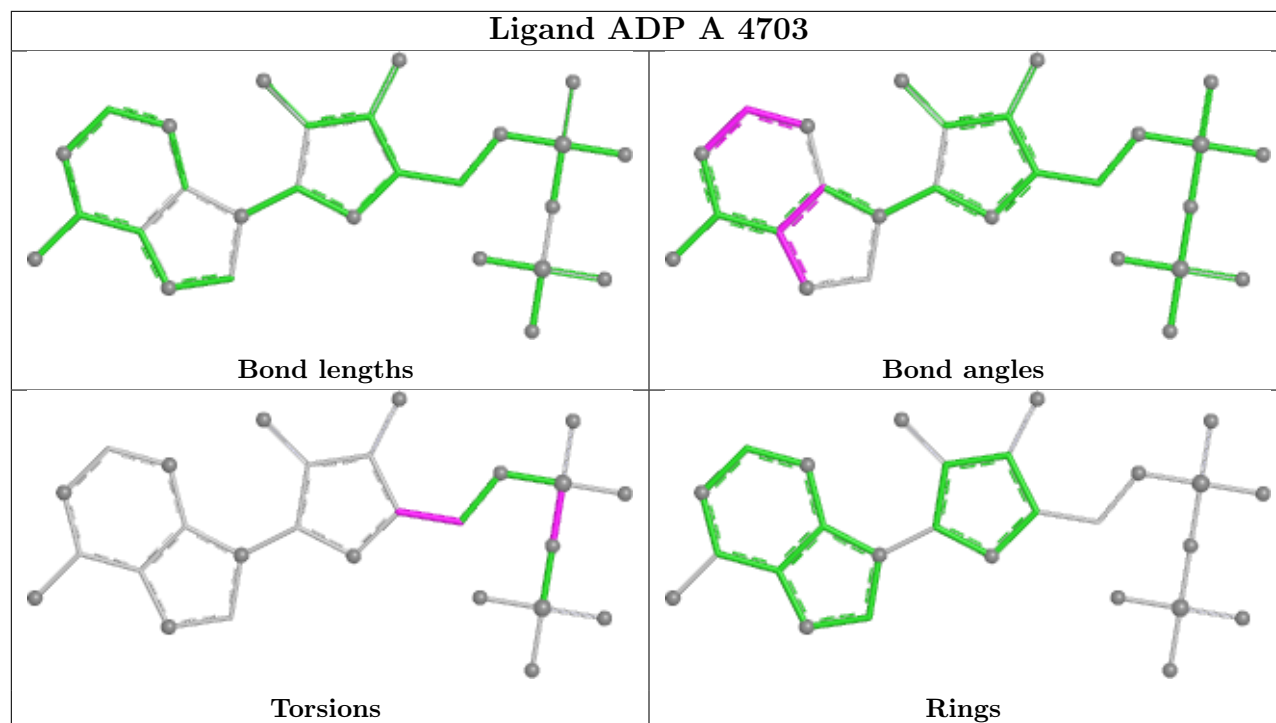
There are no ring outliers.

1 monomer is involved in 3 short contacts:

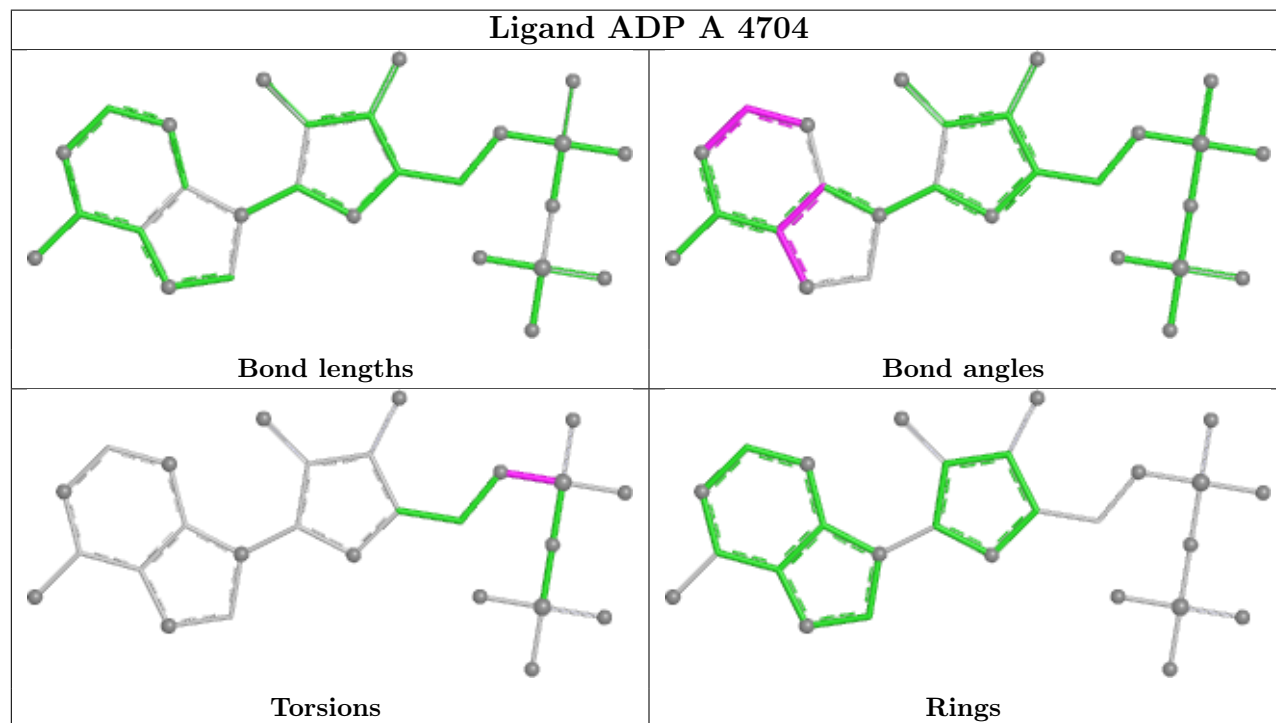
Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	4701	ADP	3	0

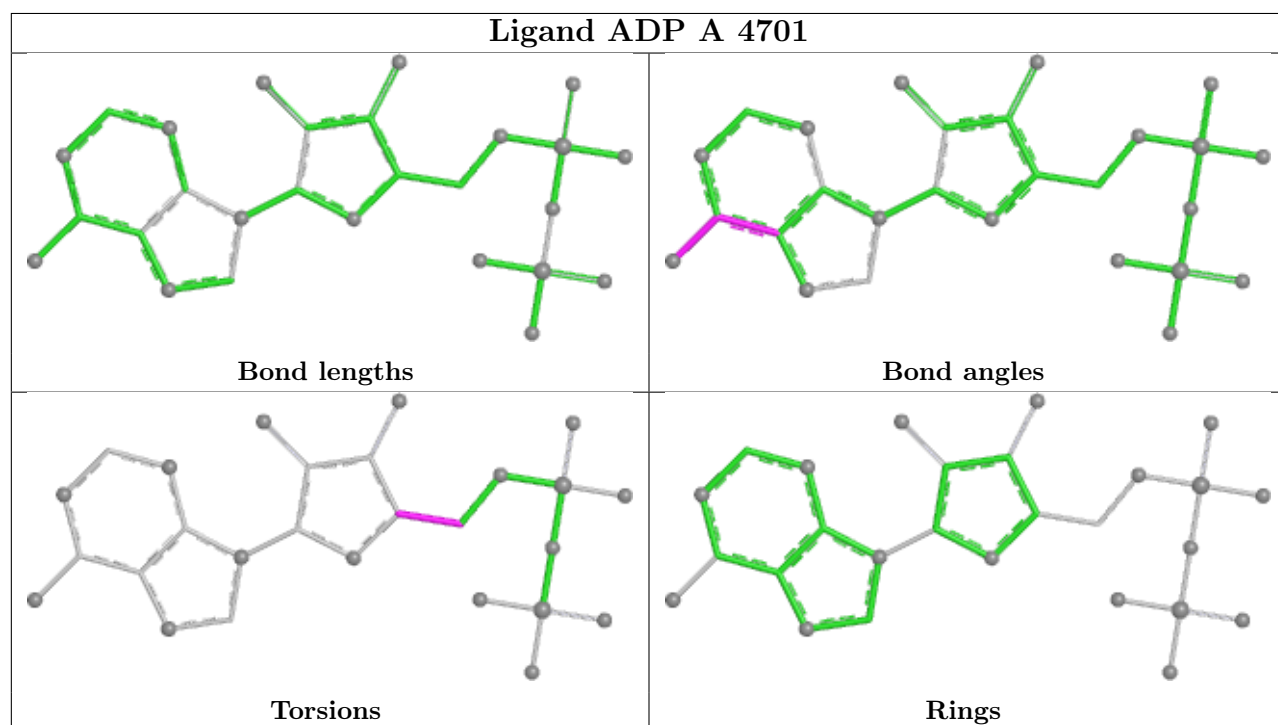
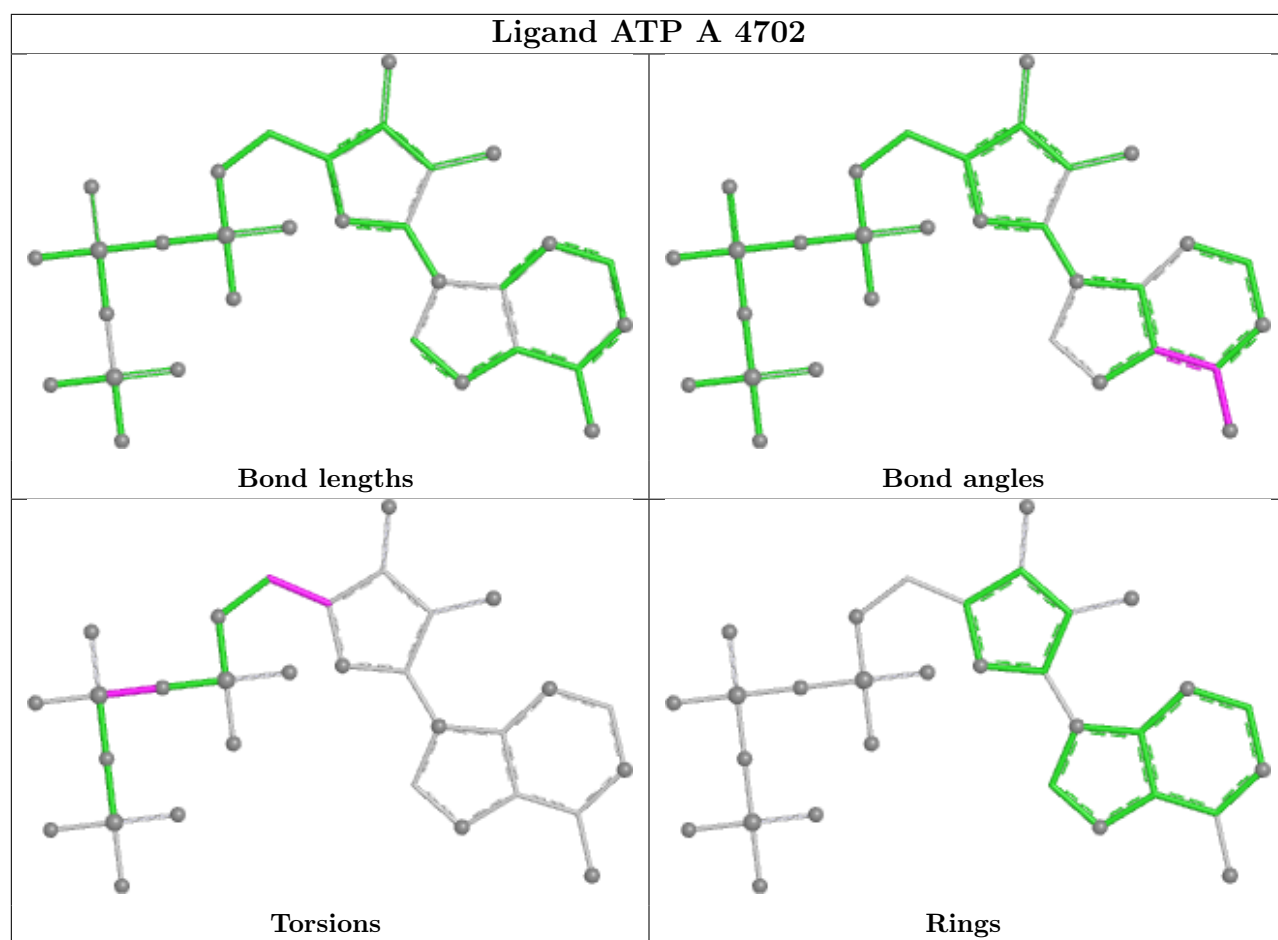
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

Ligand ADP A 4703



Ligand ADP A 4704





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.

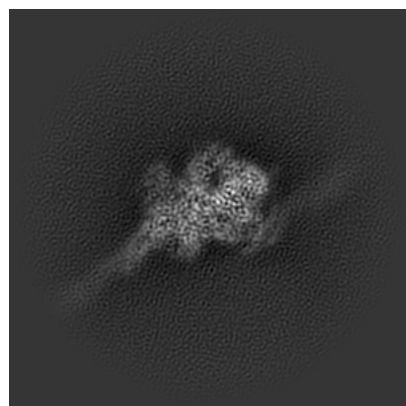
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-44702. These allow visual inspection of the internal detail of the map and identification of artifacts.

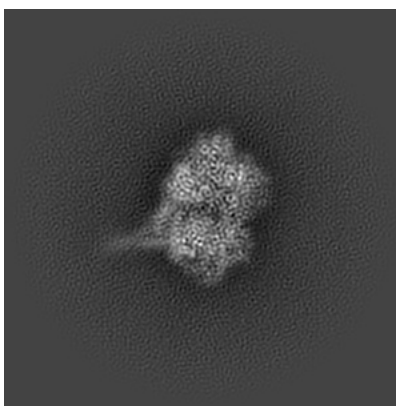
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

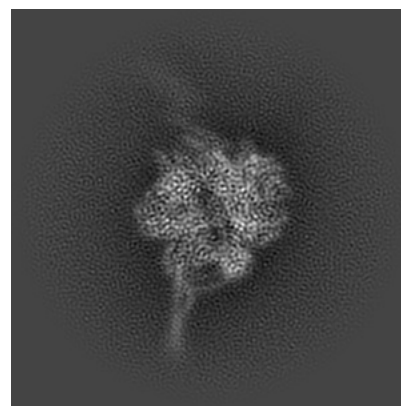
6.1.1 Primary map



X

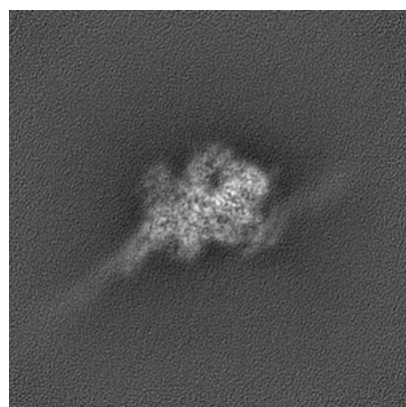


Y

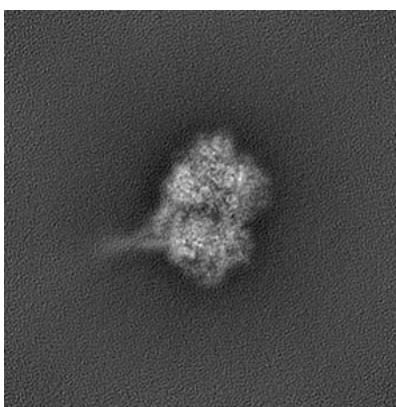


Z

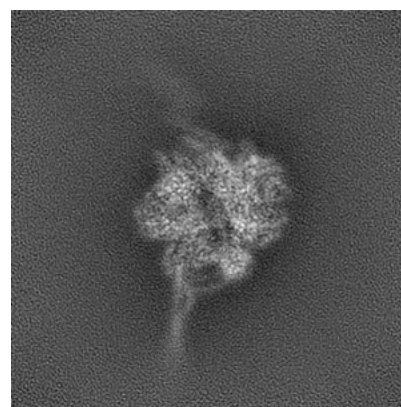
6.1.2 Raw map



X



Y

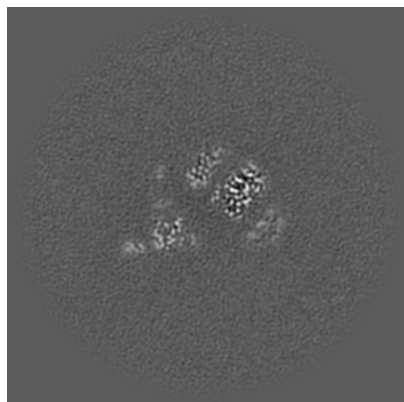


Z

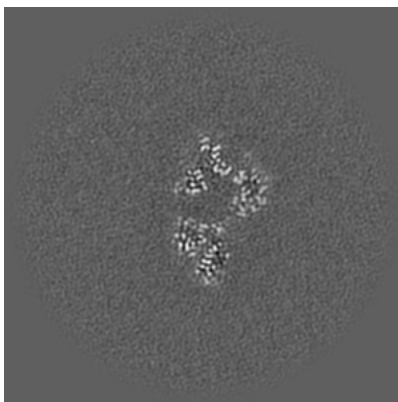
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

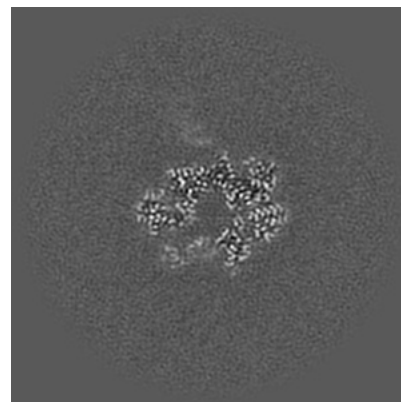
6.2.1 Primary map



X Index: 128

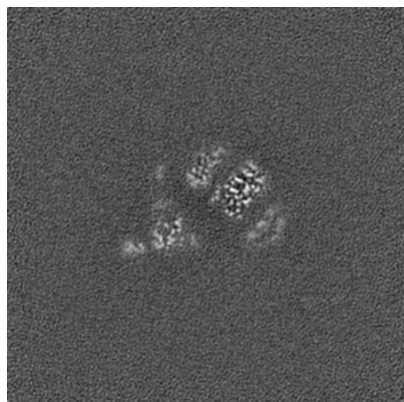


Y Index: 128

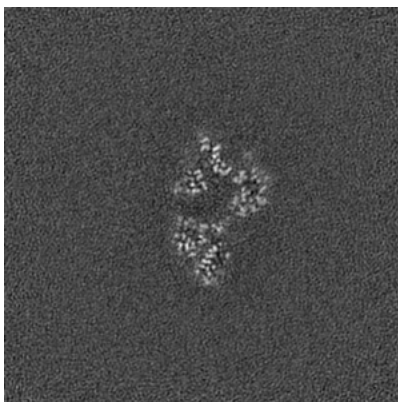


Z Index: 128

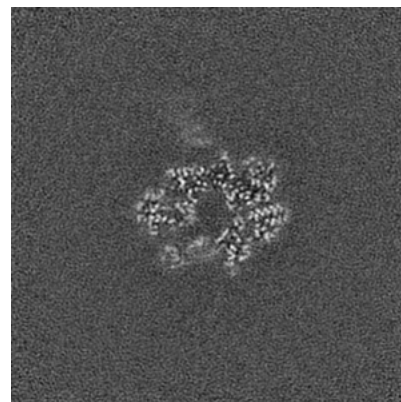
6.2.2 Raw map



X Index: 128



Y Index: 128

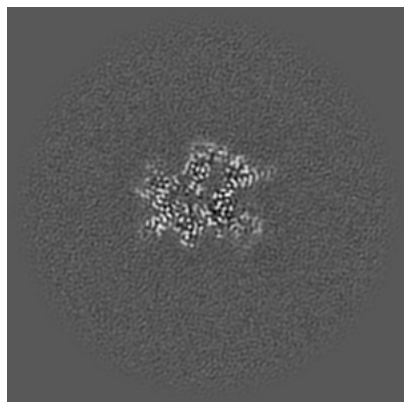


Z Index: 128

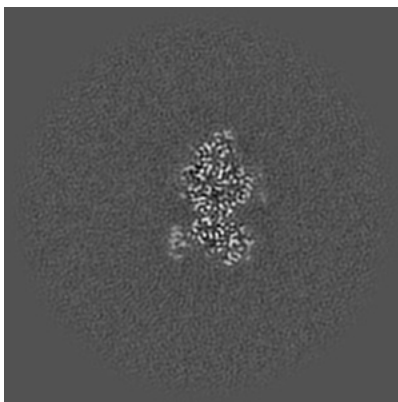
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

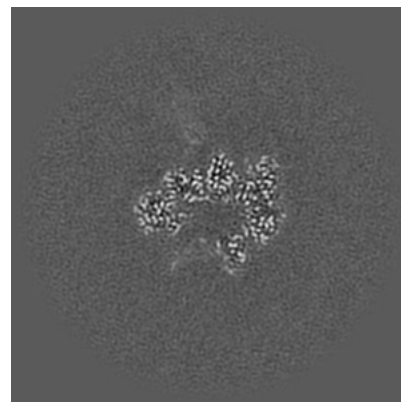
6.3.1 Primary map



X Index: 146

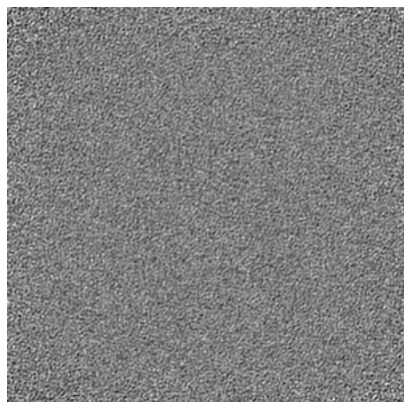


Y Index: 143

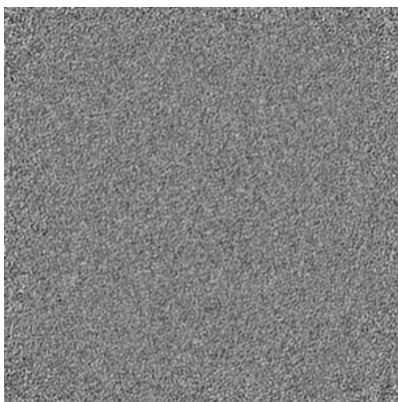


Z Index: 131

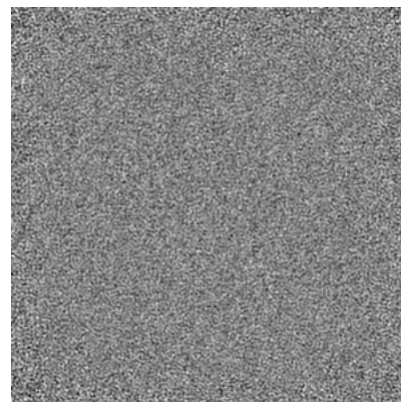
6.3.2 Raw map



X Index: 0



Y Index: 0

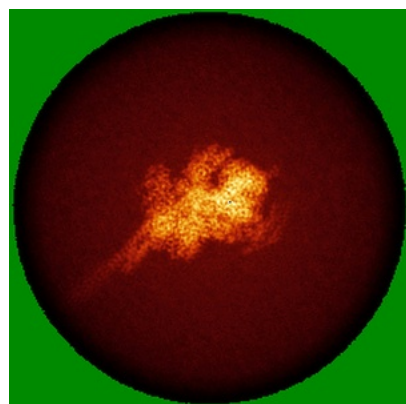


Z Index: 0

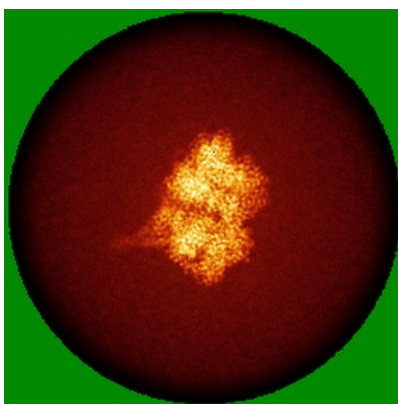
The images above show the largest variance slices of the map in three orthogonal directions.

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

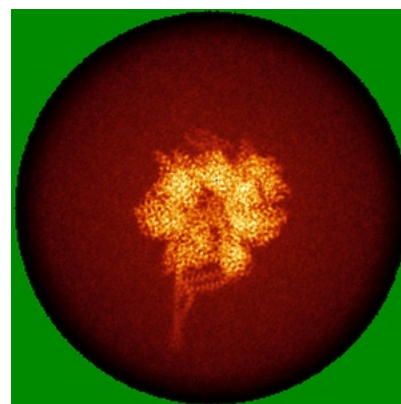
6.4.1 Primary map



X

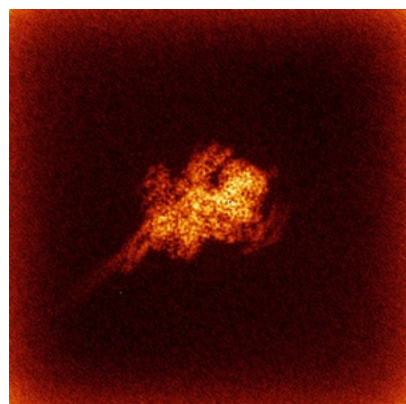


Y

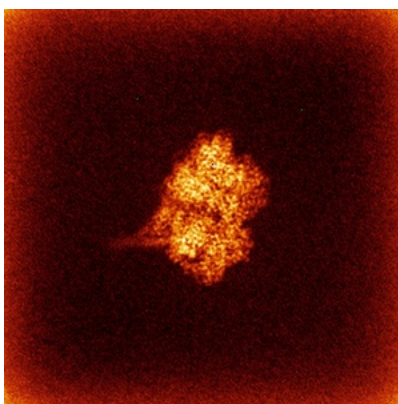


Z

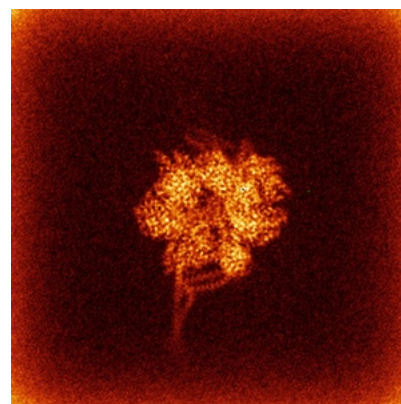
6.4.2 Raw map



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.

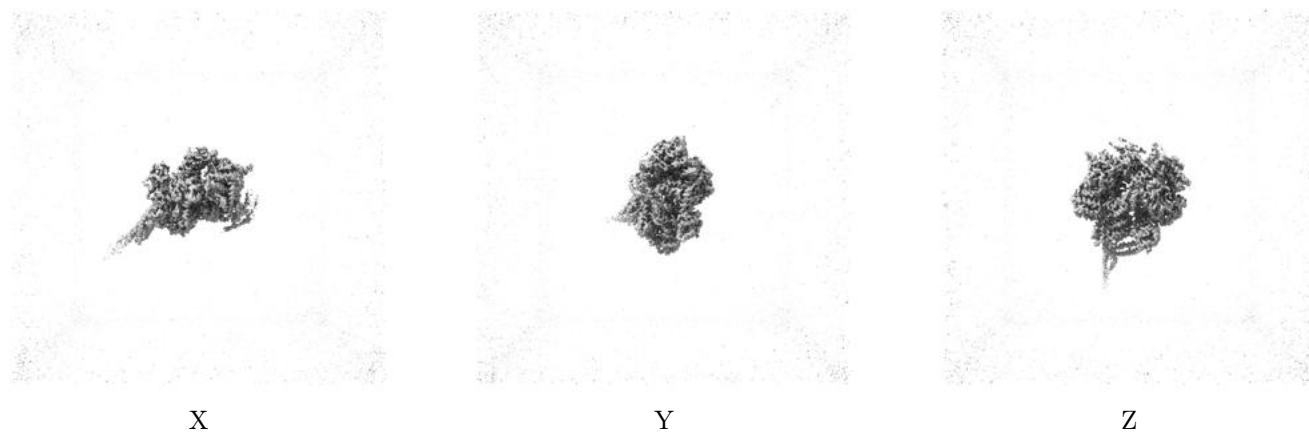
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.3. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



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

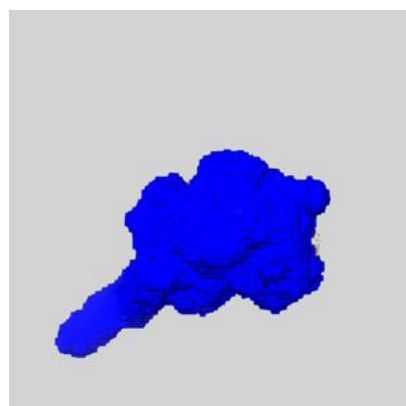
6.6 Mask visualisation [i](#)

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

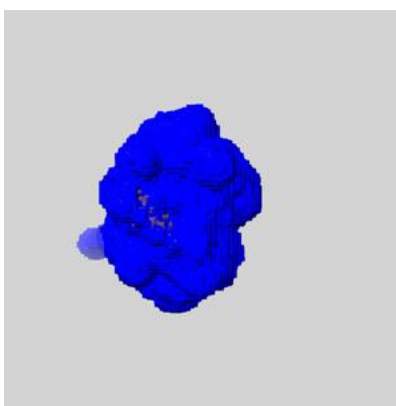
A mask typically either:

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

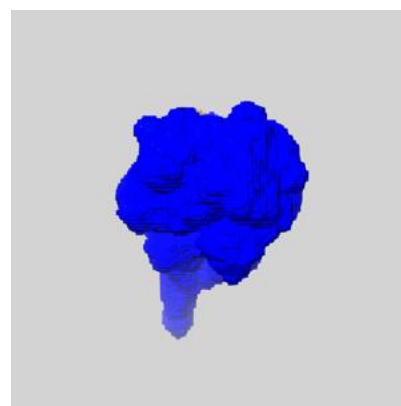
6.6.1 emd_44702_msk_1.map [i](#)



X



Y

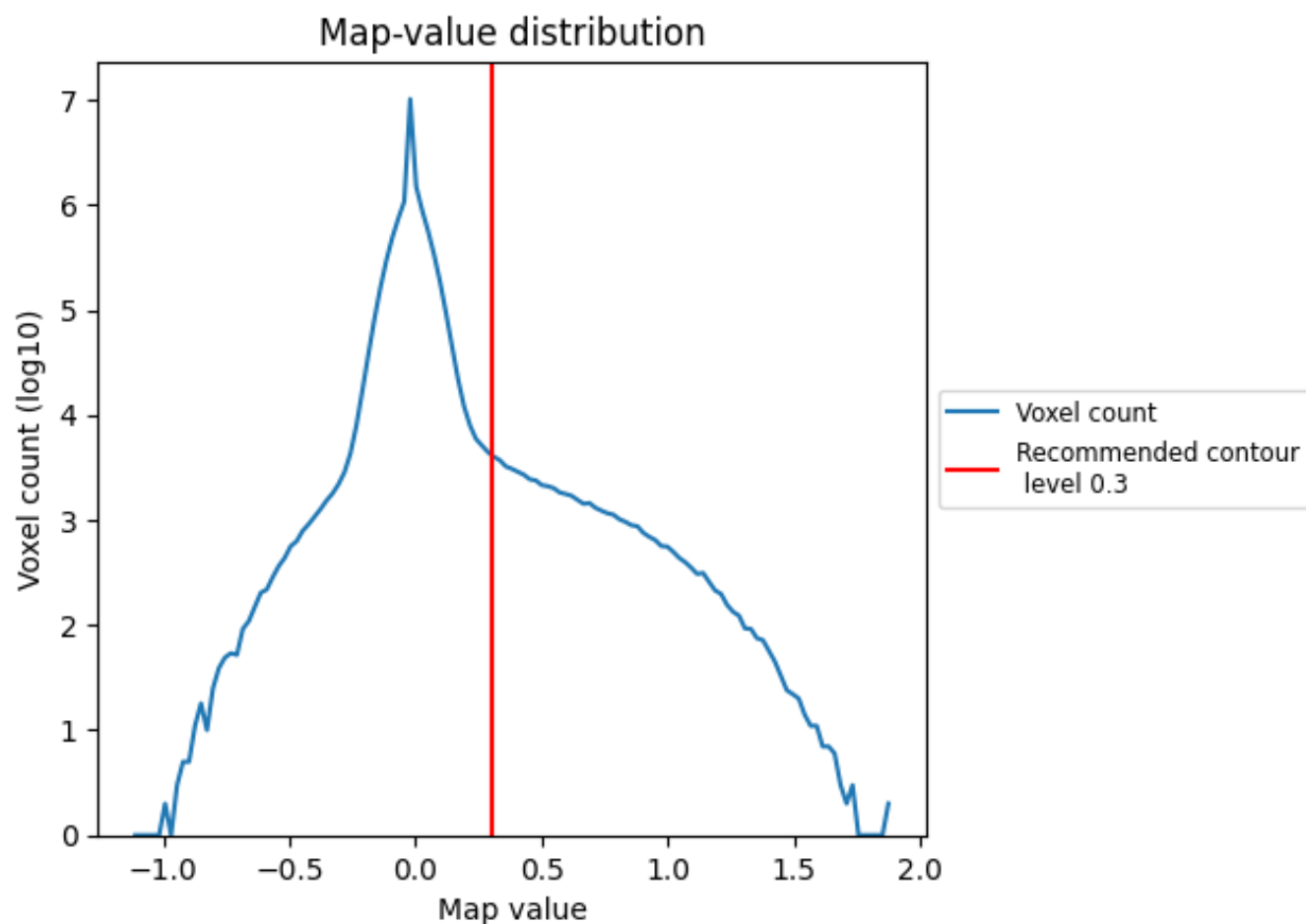


Z

7 Map analysis [i](#)

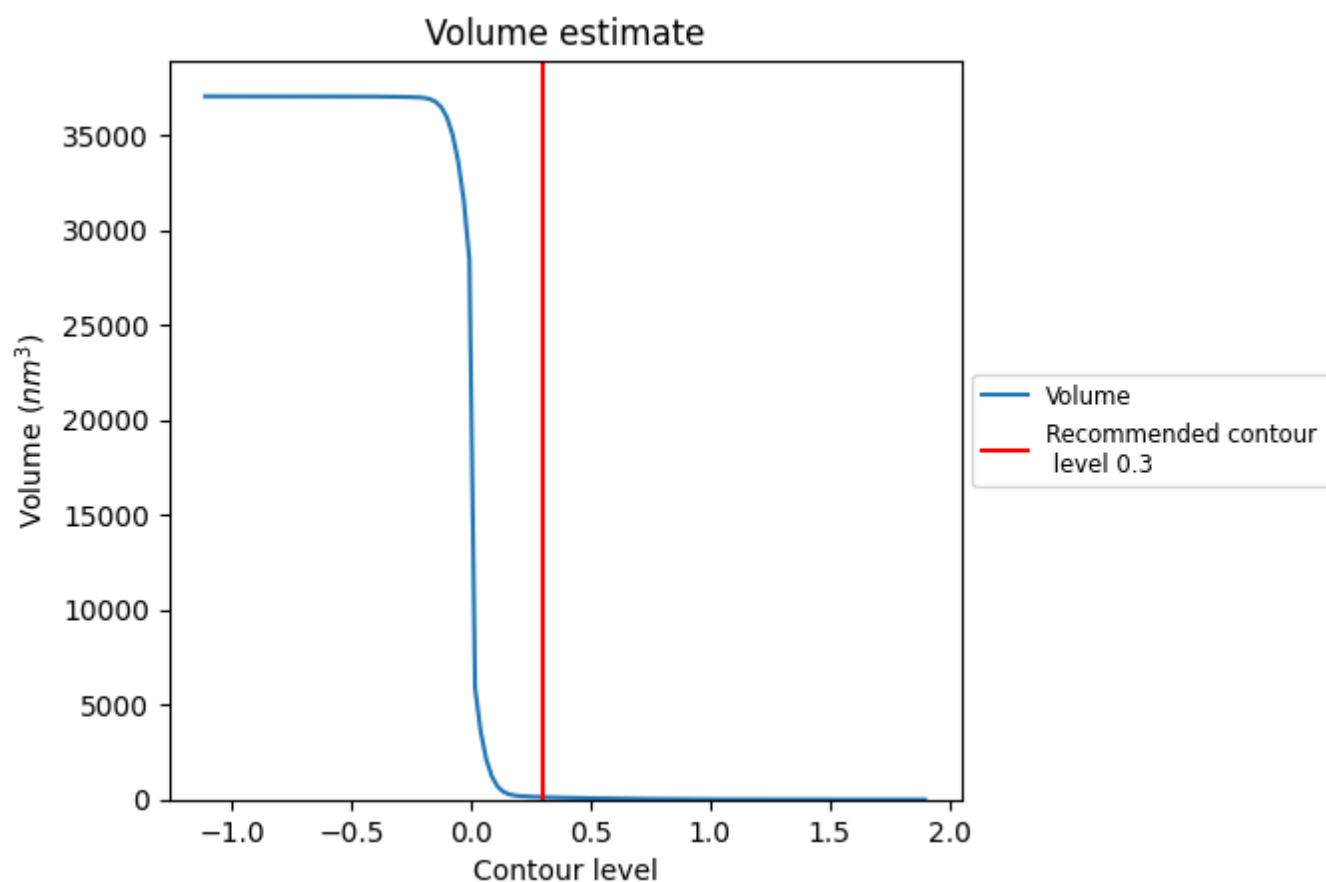
This section contains the results of statistical analysis of the map.

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.

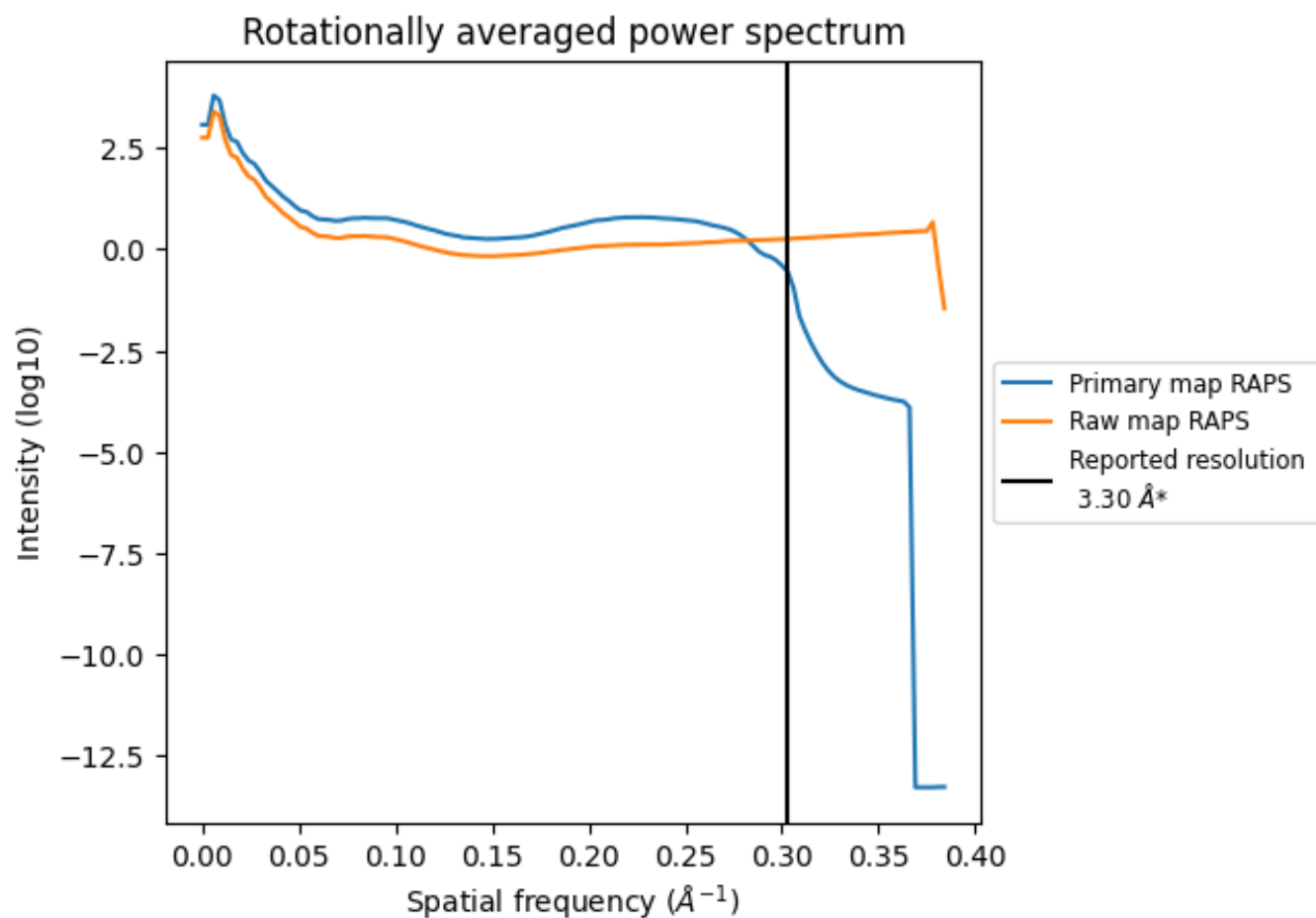
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 128 nm³; this corresponds to an approximate mass of 116 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 ⓘ

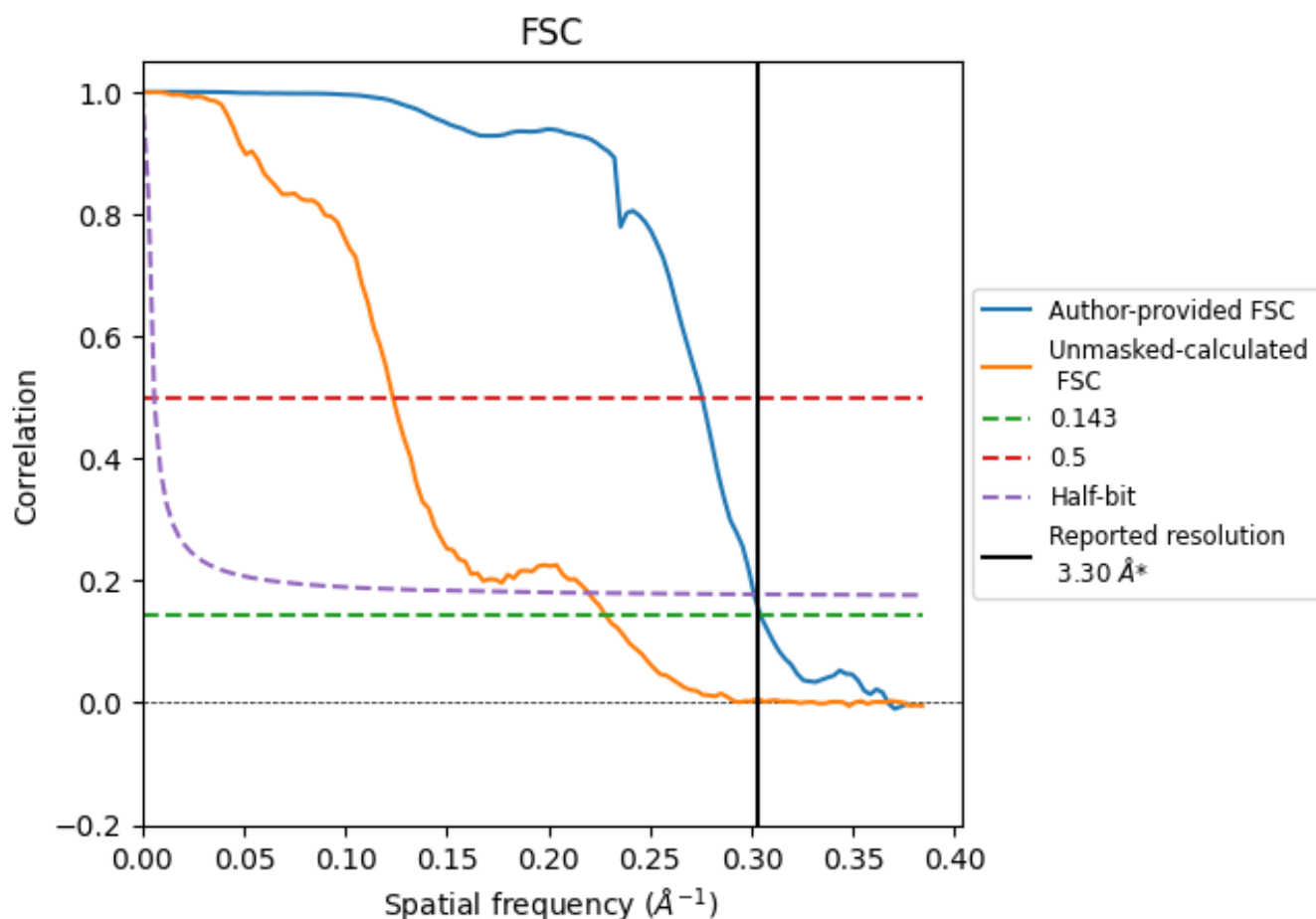


*Reported resolution corresponds to spatial frequency of 0.303 Å⁻¹

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 0.303 Å⁻¹

8.2 Resolution estimates [i](#)

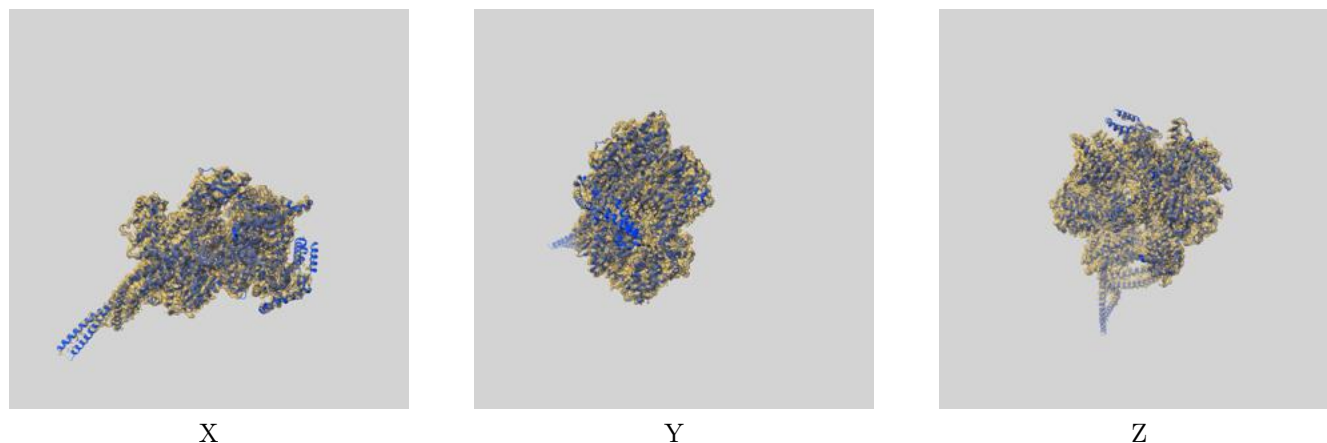
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.30	-	-
Author-provided FSC curve	3.29	3.63	3.32
Unmasked-calculated*	4.38	8.10	4.55

*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 4.38 differs from the reported value 3.3 by more than 10 %

9 Map-model fit [i](#)

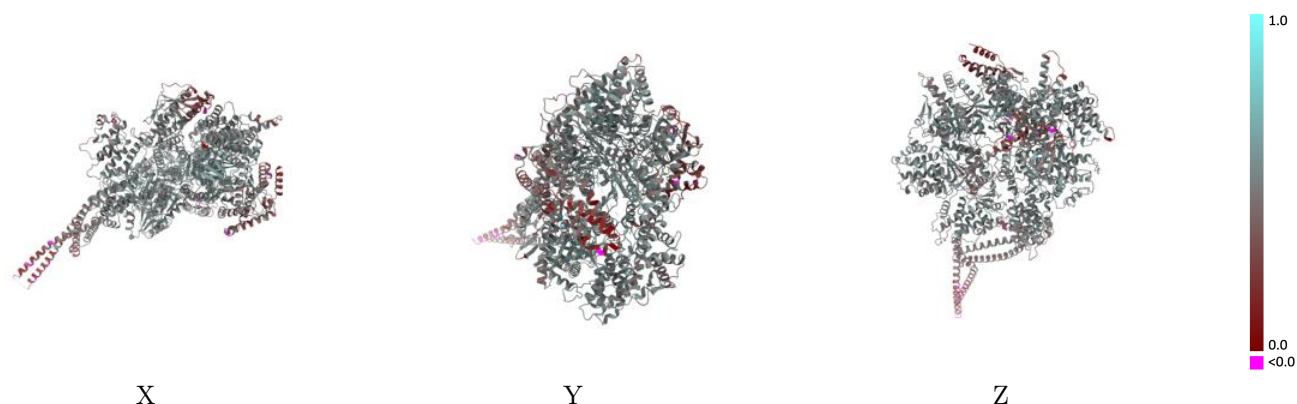
This section contains information regarding the fit between EMDB map EMD-44702 and PDB model 9BML. Per-residue inclusion information can be found in [section 3](#) on [page 5](#).

9.1 Map-model overlay [i](#)



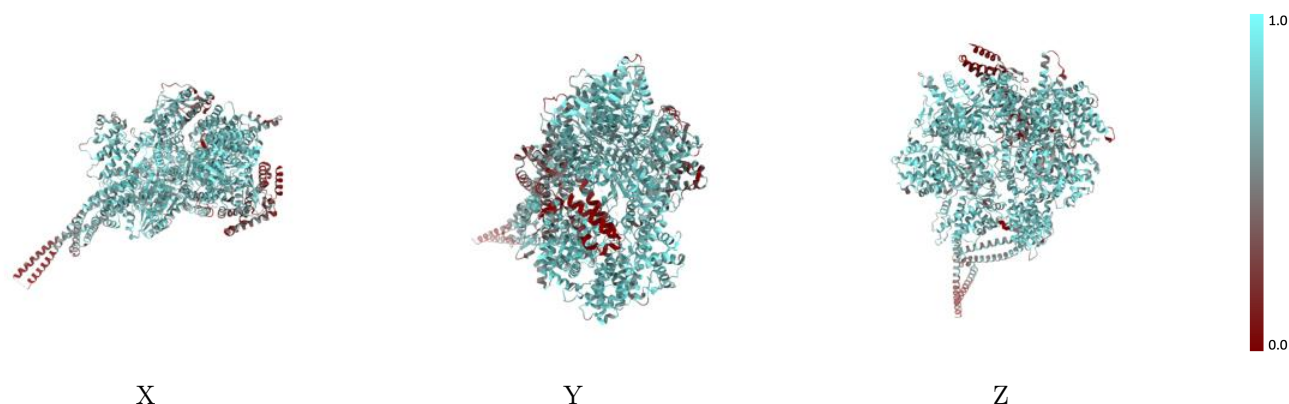
The images above show the 3D surface view of the map at the recommended contour level 0.3 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



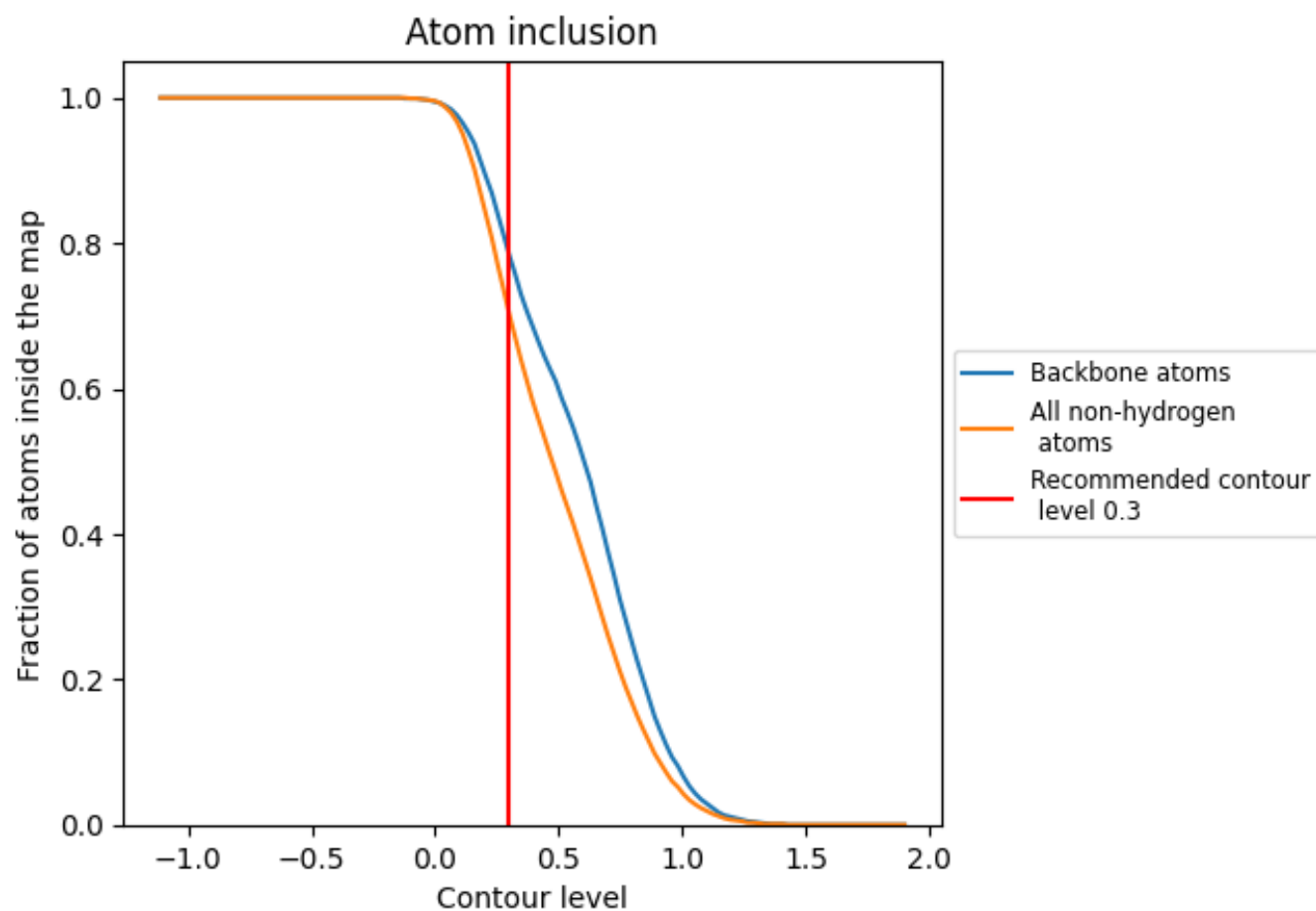
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.3).

9.4 Atom inclusion [i](#)



At the recommended contour level, 78% 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 (0.3) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.7020	0.4800
A	0.7020	0.4800

