



Full wwPDB EM Validation Report ⓘ

Aug 16, 2025 – 12:54 PM EDT

PDB ID : 9BM4 / pdb_00009bm4
EMDB ID : EMD-44687
Title : State-5b of motor domain from full-length human dynein-1 in 5 mM ATP
Authors : Chai, P.; Zhang, K.
Deposited on : 2024-05-02
Resolution : 3.48 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

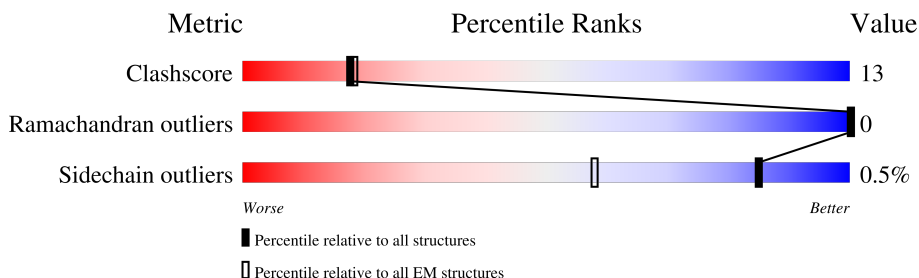
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.48 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 21801 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	2701	21684	13811	3743	4019	111	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).



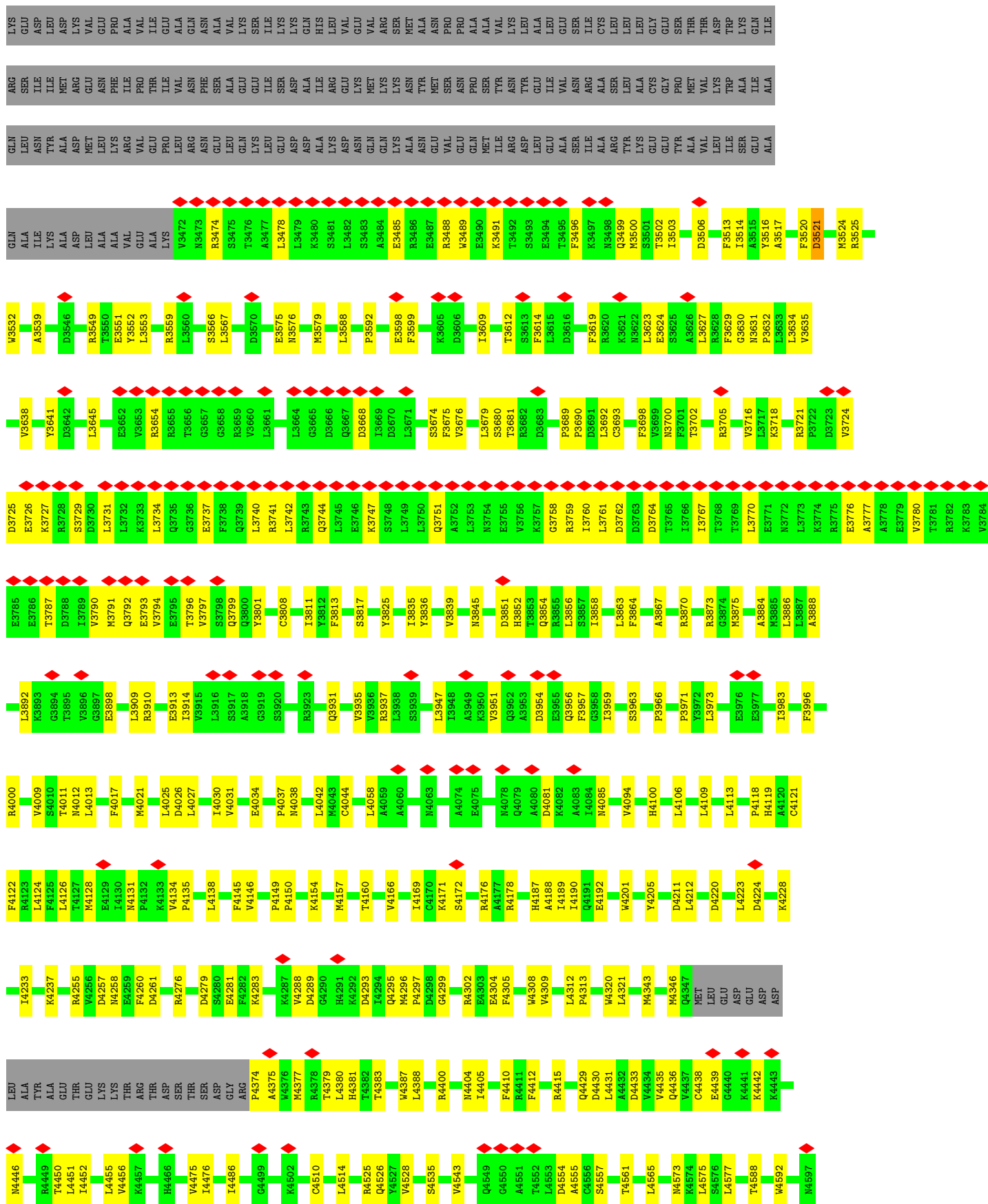
Mol	Chain	Residues	Atoms					AltConf
3	A	1	Total 31	C 10	N 5	O 13	P 3	0
3	A	1	Total 31	C 10	N 5	O 13	P 3	0

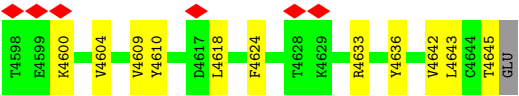
- Molecule 4 is MAGNESIUM ION (CCD ID: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

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

[illegible]

R3219	R3220	ASP	LEU	ARG	ARG	ILE	LYS	D3131	D3132	D3133	D3134	Q3135	Q3136	P3136	R3140	V3148	F3149	F3150	H3151	Q3152	T3153	L3154	N3158	T3168	I3171	H3175	A3184	K3190	R3191	E3195	E3196	Q3197	T3099	I3198	M3199	H3200	L3201	L3202	V3203	G3204	L3205	R3206	K3207	I3208	K3209	E3210	T3211	V3212	D3213	Q3214	V3215	E3216	E3217	L3218
G3041	L3042	H3043	L3044	H3047	E3048	E3049	I3059	H3063	F3066	T3067	P3070	SER	SER	GLU	GLY	LEU	LYS	ASP	ARG	ALA	ALA	ALA	T3081	L3085	F3086	N3087	R3088	L3091	F3094	G3095	D3096	V3097	S3098	T3099	E3100	A3101	L3102	X3103	Q3104	V3105	G3106	K3107	E3108	F3109	T3110	M3113	D3114	L3115	E3116	P3123				
Q2930	G2931	H2932	L2933	L2934	L2935	L2936	G2937	V2938	V2963	H2964	D2965	E2966	T2967	T2968	G2969	E2974	D2975	L2976	R2977	T2978	R2981	M2987	M2994	D2995	E2996	S2997	N2998	S3002	G3003	F3004	L3005	E3006	R3007	M3008	L3012	A3013	L3020	F3021	D3024	E3025	M3030	T3031	Q3032	E3035	K3039	E3040	P2929							
V2845	T2846	L2850	D2851	H2857	F2858	L2861	D2862	R2863	E2864	M2867	S2868	T2871	L2872	Y2873	V2876	K2879	P2883	Q2886	E2887	E2888	L2889	D2890	R2891	Y2892	E2893	K2894	A2895	R2896	L2897	E2902	E2903	D2906	V2907	P2908	L2909	V2910	L2911	L2916	D2917	H2918	V2919	L2920	F2926	R2927	Q2928	F2929								
L2758	L2759	R2763	T2770	V2774	E2775	M2779	E2782	R2783	T2784	T2785	Q2786	T2787	Q2789	T2790	H2791	Y2792	L2793	Y2794	R2797	V2802	T2803	R2804	G2805	L2806	F2807	E2808	A2809	L2810	R2811	L2816	P2817	L2821	L2822	R2823	L2824	W2825	A2826	Q2834	D2835	R2836	L2837	V2838	E2839	D2840	E2841	E2842	R2843	R2844						
Y2641	L2654	G2655	Y2657	L2658	L2659	D2664	E2665	L2666	P2669	D2670	Y2674	V2679	F2682	L2683	Q2684	M2686	V2687	E2688	H2689	F2692	Q2698	V2701	G2710	K2721	R2729	H2730	P2732	V2733	V2736	S2743	L2747	Y2748	G2749	T2750	A2754	M2755	L2756	R2757																
L2514	G2515	E2516	Y2517	L2518	L2521	T2522	L2526	F2527	T2528	M2531	L2534	L2535	E2538	W2548	V2557	E2558	T2559	A2563	D2566	V2569	L2581	V2582	T2583	H2588	K2589	P2590	L2593	M2603	T2604	L2605	F2606	R2610	P2613	D2614	M2615	S2623	T2626	L2630																
L2220	M2221	V2222	V2223	Q2227	S2228	S2231	M2232	W2234	L2244	E2245	P2256	S2260	K2261	D2262	L2263	Y2265	L2268	D2269	P2270	M2271	T2272	R2273	S2274	W2275	G2278	L2279	H2282	V2283	L2284	T2287	T2288	R2292	G2293	E2294	L2295	R2298	Q2299	F2303	D2308	P2309	E2310	W2311	V2312	E2313										
L2090	K2094	S2095	V2096	L2097	V2098	S2099	GLY	A2100	V2103	R2107	E2114	K2115	E2116	E2117	R2118	Q2119	E2120	A2121	V2122	D2123	E2126	L2127	L2137	L2138	Q2139	S2140	R2273	T2355	V2141	E2143	K2148	D2153	L2161	T2176	A2177	L2178	R2179	E2180	E2181	M2189	Y2190	L2191	T2192	K2206	Q2212	I2216								
L2014	F2015	L2016	T2017	M2018	L2019	F2020	GLY	TYR	ALA	ALA	ARG	SER	N2027	L2028	P2029	D2030	N2031	L2032	F2036	L2037	S2038	L2039	A2040	M2041	T2042	K2043	R2046	L2049	V2052	M2053	L2054	T2055	L2065	A2066	V2067	K2068	L2069	V2070	P2071	F2072	F2073	R2074	L2075	C2076	D2077	E2078	Q2079	H2085	Y2086	D2087	F2088	E2089		





4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	114327	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	0.703	Depositor
Minimum map value	-0.410	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	0.021	Depositor
Recommended contour level	0.12	Depositor
Map size ($\text{\AA}$)	332.80002, 332.80002, 332.80002	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing ($\text{\AA}$)	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, MG, ATP

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z > 5$	RMSZ	$\# Z > 5$
1	A	0.17	0/22148	0.35	0/30024

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	21684	0	21717	577	0
2	A	54	0	24	4	0
3	A	62	0	24	5	0
4	A	1	0	0	0	0
All	All	21801	0	21765	577	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 13.

All (577) 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:1659:ALA:HA	1:A:1926:PHE:HE1	1.24	1.00
1:A:1659:ALA:HA	1:A:1926:PHE:CE1	2.07	0.88
1:A:3759:ARG:HG3	1:A:3760:ILE:HG13	1.56	0.88
1:A:3030:MET:SD	1:A:3047:HIS:ND1	2.49	0.84
1:A:3845:ASN:HB3	1:A:3858:ILE:HD11	1.61	0.83
1:A:2461:MET:HG3	1:A:2583:THR:HG21	1.62	0.80
1:A:3721:ARG:HH12	1:A:3852:HIS:CE1	1.99	0.80
1:A:2325:LEU:HB3	1:A:2333:LEU:HB2	1.63	0.79
1:A:2386:PRO:HA	1:A:2416:GLN:HE22	1.48	0.78
1:A:3474:ARG:HD2	1:A:3762:ASP:HB3	1.67	0.76
1:A:1842:MET:HA	1:A:1861:MET:HB2	1.68	0.76
1:A:3721:ARG:HG3	1:A:3724:VAL:HB	1.67	0.76
1:A:4377:MET:HE3	1:A:4438:CYS:HA	1.69	0.74
1:A:2452:LEU:HD11	3:A:4702:ATP:H4'	1.70	0.74
1:A:2603:MET:HE3	3:A:4703:ATP:H2'	1.70	0.72
1:A:3796:THR:HA	1:A:3799:GLN:HG3	1.72	0.72
1:A:4027:LEU:HB3	1:A:4058:LEU:HD22	1.72	0.72
1:A:1950:GLN:HG2	1:A:2006:VAL:HG13	1.72	0.72
1:A:1655:LYS:HB3	1:A:2332:ARG:HD2	1.74	0.70
1:A:3721:ARG:O	1:A:3725:ASP:N	2.24	0.69
1:A:1859:ILE:HD12	1:A:1923:LEU:HD23	1.73	0.69
1:A:1888:CYS:HB2	1:A:2041:MET:HE1	1.73	0.69
1:A:1792:LEU:HD12	1:A:1812:ILE:HG13	1.75	0.68
1:A:2910:VAL:HG11	1:A:3105:VAL:HG13	1.76	0.68
1:A:2670:ASP:HA	1:A:2721:LYS:HE3	1.75	0.68
1:A:2918:HIS:HE1	1:A:3094:PHE:HA	1.57	0.68
1:A:4374:PRO:HG2	1:A:4377:MET:HB2	1.75	0.67
1:A:1843:ARG:HH12	1:A:1861:MET:HA	1.59	0.67
1:A:4113:LEU:HD11	1:A:4124:LEU:HD23	1.76	0.67
1:A:3013:ALA:HB2	1:A:3088:ARG:HE	1.59	0.67
1:A:3005:LEU:HD11	1:A:3085:LEU:HD22	1.78	0.66
1:A:3101:ALA:O	1:A:3105:VAL:HG23	1.96	0.65
1:A:3631:ASN:ND2	1:A:3632:PRO:O	2.28	0.65
1:A:4299:GLY:HA3	1:A:4304:GLU:HG2	1.78	0.65
1:A:2275:TRP:CH2	1:A:2328:PRO:HD2	2.32	0.65
1:A:4281:GLU:OE2	1:A:4281:GLU:N	2.30	0.65
1:A:4211:ASP:OD1	1:A:4255:ARG:NH1	2.30	0.65
1:A:2775:GLU:OE1	1:A:2857:HIS:NE2	2.29	0.65
1:A:2227:GLY:HA2	1:A:2452:LEU:HD12	1.80	0.64
1:A:2444:GLU:OE1	1:A:2507:ARG:NH1	2.28	0.64
1:A:2893:VAL:HG13	1:A:2911:LEU:HD21	1.80	0.64
1:A:1982:LEU:HD21	1:A:2012:MET:HB3	1.79	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1746:GLN:N	1:A:1746:GLN:OE1	2.31	0.64
1:A:2499:LEU:HD13	1:A:2514:LEU:HD23	1.79	0.64
1:A:2757:ARG:HA	1:A:2763:ARG:HD3	1.78	0.64
1:A:2295:LEU:O	1:A:2338:ASN:ND2	2.31	0.64
1:A:2452:LEU:HD13	1:A:2729:ARG:HE	1.63	0.63
1:A:2099:SER:OG	1:A:2140:SER:OG	2.17	0.63
1:A:2890:ARG:O	1:A:2894:LYS:HG3	1.99	0.63
1:A:1801:PRO:HD2	1:A:1804:ARG:HE	1.64	0.63
1:A:1632:VAL:HB	1:A:1636:ASP:HB2	1.81	0.62
1:A:1847:ASP:N	1:A:1856:GLN:O	2.31	0.62
1:A:1820:ASP:OD1	1:A:1823:ARG:NH2	2.33	0.62
1:A:3931:GLN:O	1:A:3935:VAL:HG23	1.99	0.62
1:A:3110:THR:HB	1:A:3113:MET:HE2	1.82	0.62
1:A:2977:ARG:HG3	1:A:3020:LEU:HB3	1.80	0.61
1:A:3116:GLU:HG2	1:A:3140:ARG:HH12	1.65	0.61
1:A:3790:VAL:HG13	1:A:3794:VAL:HB	1.82	0.61
1:A:4176:ARG:NH1	1:A:4220:ASP:OD1	2.32	0.61
1:A:3520:PHE:HB3	1:A:3524:MET:HB3	1.81	0.61
1:A:1686:PHE:HA	1:A:1712:THR:HG21	1.81	0.61
1:A:3576:ASN:ND2	1:A:3700:ASN:O	2.33	0.61
1:A:3909:LEU:HD21	1:A:4343:MET:HE2	1.82	0.61
1:A:2851:ASP:HB2	1:A:2867:MET:HE1	1.83	0.61
1:A:1762:VAL:O	1:A:1766:LEU:HD22	2.01	0.60
1:A:1912:LYS:HD3	1:A:2017:THR:HB	1.82	0.60
1:A:2221:MET:HG2	1:A:2343:PHE:HB2	1.82	0.60
1:A:2498:ILE:HG23	1:A:2502:LEU:HD22	1.83	0.60
1:A:3175:HIS:HB3	1:A:3516:TYR:HE1	1.65	0.60
1:A:1684:VAL:HG12	1:A:1746:GLN:HE21	1.66	0.60
1:A:3731:LEU:HA	1:A:3734:LEU:HD23	1.84	0.60
1:A:4257:ASP:OD2	1:A:4258:ASN:N	2.34	0.60
1:A:1880:VAL:HG21	1:A:2049:ILE:HG13	1.83	0.60
1:A:3214:GLN:HB2	1:A:3759:ARG:HH12	1.65	0.60
1:A:3099:THR:HG23	1:A:3148:VAL:HG11	1.84	0.60
1:A:2142:CYS:SG	1:A:2143:GLU:N	2.75	0.60
1:A:1960:PHE:HD2	1:A:2018:MET:HE1	1.65	0.60
1:A:2419:ALA:O	1:A:2423:MET:HG2	2.00	0.60
1:A:1812:ILE:HG21	1:A:2056:SER:HA	1.84	0.60
1:A:2245:GLU:OE2	1:A:2298:ARG:NH2	2.35	0.60
1:A:3724:VAL:HA	1:A:3727:LYS:HB3	1.82	0.60
1:A:1846:PHE:HD2	1:A:1857:LEU:HB2	1.67	0.60
1:A:2499:LEU:HD21	1:A:2518:ILE:HG21	1.81	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3808:CYS:HG	1:A:3836:TYR:HE2	1.50	0.59
1:A:2014:ILE:HG23	1:A:2036:PHE:HZ	1.66	0.59
1:A:2231:SER:OG	1:A:2344:GLU:OE2	2.20	0.59
1:A:2413:LEU:HG	1:A:2417:ARG:HE	1.68	0.59
1:A:3551:GLU:OE1	1:A:3559:ARG:NH1	2.36	0.59
1:A:4190:ILE:HD12	1:A:4201:TRP:HZ2	1.68	0.59
1:A:2191:LEU:HD21	1:A:2232:MET:HG2	1.83	0.59
1:A:2461:MET:HE3	1:A:2497:ALA:HA	1.84	0.59
1:A:3517:ALA:HA	1:A:3520:PHE:HD1	1.67	0.58
1:A:3638:VAL:HG22	1:A:3681:THR:HG22	1.85	0.58
1:A:3825:TYR:CZ	1:A:3875:MET:HG3	2.39	0.58
1:A:2968:THR:OG1	1:A:2969:GLY:N	2.37	0.58
1:A:2325:LEU:HD23	1:A:2333:LEU:HD23	1.84	0.58
1:A:2437:LEU:HD21	1:A:2451:ARG:HG3	1.84	0.58
1:A:1949:CYS:HA	1:A:2012:MET:HE2	1.86	0.58
1:A:3793:GLU:O	1:A:3797:VAL:HG23	2.03	0.58
1:A:2320:ASP:HB3	1:A:2358:ARG:HD3	1.84	0.58
1:A:3951:VAL:HG13	1:A:3957:PHE:CE2	2.40	0.57
1:A:2534:ILE:HD12	1:A:2534:ILE:H	1.68	0.57
1:A:4030:ILE:HG21	1:A:4145:PHE:HZ	1.69	0.57
1:A:3971:PRO:HG2	1:A:3973:LEU:HD11	1.84	0.57
1:A:2337:PRO:O	1:A:2340:ARG:NH1	2.37	0.57
1:A:2789:GLN:HB2	1:A:2792:TYR:CD1	2.40	0.57
1:A:2075:LEU:HD22	1:A:4526:GLN:HE21	1.68	0.57
1:A:2770:THR:O	1:A:2774:VAL:HG22	2.05	0.57
1:A:2873:TYR:CE2	1:A:2883:PRO:HD3	2.38	0.57
1:A:1710:ARG:HH11	1:A:1854:LEU:HD11	1.69	0.57
1:A:2065:LEU:HD13	1:A:2137:LEU:HD22	1.87	0.57
1:A:3521:ASP:OD1	1:A:3521:ASP:N	2.33	0.57
1:A:3096:ASP:OD2	1:A:3097:TRP:N	2.39	0.56
1:A:3623:LEU:O	1:A:3627:LEU:HG	2.05	0.56
1:A:2068:LYS:NZ	1:A:4535:SER:OG	2.39	0.56
1:A:3035:GLU:O	1:A:3039:LYS:HG3	2.05	0.56
1:A:4260:PHE:HE2	1:A:4618:LEU:HD11	1.69	0.56
1:A:4600:LYS:HB2	1:A:4604:VAL:HG11	1.87	0.56
1:A:1810:HIS:NE2	1:A:1876:GLN:O	2.39	0.56
1:A:1896:LEU:HD11	1:A:2013:ALA:HB2	1.88	0.56
1:A:2107:ARG:NH2	1:A:2139:GLN:OE1	2.38	0.56
1:A:2354:ALA:O	1:A:2358:ARG:NH1	2.38	0.56
1:A:4178:ARG:HD2	1:A:4296:MET:HE1	1.86	0.56
1:A:2775:GLU:O	1:A:2779:MET:HE3	2.05	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3787:THR:O	1:A:3790:VAL:HB	2.05	0.56
1:A:2842:GLU:O	1:A:2846:THR:HG23	2.06	0.56
1:A:4554:ASP:OD1	1:A:4555:ALA:N	2.38	0.56
1:A:2087:ASP:OD1	1:A:2357:SER:OG	2.24	0.55
1:A:3485:GLU:OE2	1:A:3489:TRP:NE1	2.30	0.55
1:A:1951:VAL:HG13	1:A:1953:ALA:H	1.71	0.55
1:A:2981:ARG:NH1	1:A:3025:GLU:OE2	2.37	0.55
1:A:2886:GLN:CD	1:A:2886:GLN:H	2.14	0.55
1:A:3002:SER:O	1:A:3006:GLU:HG2	2.07	0.55
1:A:3113:MET:HE3	1:A:3115:LEU:HD11	1.88	0.55
1:A:1687:LYS:HG2	1:A:1712:THR:HG22	1.88	0.55
1:A:3886:LEU:HD11	1:A:4346:MET:HG3	1.88	0.55
1:A:3758:GLY:O	1:A:3761:LEU:HB2	2.07	0.55
1:A:2075:LEU:HD22	1:A:4526:GLN:NE2	2.23	0.54
1:A:1888:CYS:HA	1:A:2039:LEU:HD21	1.89	0.54
1:A:4021:MET:HE3	1:A:4021:MET:HA	1.89	0.54
1:A:4293:ASP:N	1:A:4293:ASP:OD1	2.38	0.54
1:A:1860:GLN:HG2	1:A:1865:LYS:HG2	1.88	0.54
1:A:1912:LYS:O	1:A:1916:VAL:HG23	2.07	0.54
1:A:3959:ILE:O	1:A:3963:SER:OG	2.22	0.54
1:A:3151:HIS:ND1	1:A:3516:TYR:OH	2.36	0.54
1:A:3552:TYR:HB3	1:A:3553:LEU:HD12	1.90	0.54
1:A:4031:VAL:HG21	1:A:4058:LEU:HD21	1.89	0.54
1:A:1623:ARG:HH21	1:A:1637:LEU:HD22	1.72	0.54
1:A:3951:VAL:HG13	1:A:3957:PHE:HE2	1.71	0.54
1:A:3851:ASP:HB3	1:A:3854:GLN:HG2	1.89	0.54
1:A:4094:VAL:HG13	1:A:4124:LEU:HD13	1.87	0.54
1:A:4452:ILE:O	1:A:4456:VAL:HG12	2.07	0.54
1:A:2511:ARG:HB3	1:A:2535:ILE:HD12	1.90	0.54
1:A:3854:GLN:O	1:A:3858:ILE:HG22	2.08	0.54
1:A:1665:ILE:N	1:A:1675:GLY:O	2.41	0.53
1:A:1957:PHE:HB2	1:A:2016:ILE:HA	1.89	0.53
1:A:2123:ASP:HB3	1:A:2126:GLU:HG2	1.90	0.53
1:A:3113:MET:SD	1:A:3184:ALA:HA	2.48	0.53
1:A:2495:VAL:HG11	1:A:2526:LEU:HD21	1.89	0.53
1:A:4025:LEU:HD22	1:A:4027:LEU:HG	1.88	0.53
1:A:2682:PHE:CZ	1:A:2686:MET:HE1	2.43	0.53
1:A:3839:VAL:HG21	1:A:3863:LEU:HA	1.91	0.53
1:A:3892:LEU:HD13	1:A:3983:ILE:HG21	1.90	0.53
1:A:1910:THR:OG1	1:A:1912:LYS:NZ	2.37	0.53
1:A:1912:LYS:HB3	1:A:2041:MET:HG3	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2826:ALA:HA	1:A:2850:ILE:HD11	1.89	0.53
1:A:2178:LEU:HD13	1:A:2244:LEU:HD22	1.90	0.53
1:A:3123:PRO:HG3	1:A:3539:ALA:HA	1.90	0.53
1:A:4106:LEU:HD23	1:A:4135:PRO:HD2	1.89	0.53
1:A:2261:LYS:NZ	1:A:2313:GLU:OE1	2.35	0.53
1:A:2935:LEU:HD22	1:A:3094:PHE:HE1	1.73	0.53
1:A:3638:VAL:HG11	1:A:3679:LEU:HB3	1.91	0.53
1:A:3870:ARG:CZ	1:A:4034:GLU:HG3	2.39	0.53
1:A:1961:ASN:HD21	1:A:2019:ASN:HB3	1.73	0.52
1:A:1746:GLN:HG2	1:A:1872:TYR:HE1	1.74	0.52
1:A:1961:ASN:OD1	1:A:1962:ARG:NH1	2.36	0.52
1:A:4260:PHE:CE2	1:A:4618:LEU:HD11	2.44	0.52
1:A:1789:LEU:HD21	1:A:1815:LEU:HB3	1.91	0.52
1:A:2684:ARG:NH1	1:A:2688:GLU:OE2	2.40	0.52
1:A:2581:LEU:HD21	1:A:2605:LEU:HD23	1.91	0.52
1:A:2759:ILE:HG13	1:A:2759:ILE:O	2.09	0.52
1:A:2974:GLU:O	1:A:2978:THR:HG23	2.09	0.52
1:A:4042:LEU:HD13	1:A:4126:LEU:HB2	1.92	0.52
1:A:2557:VAL:HG12	1:A:2750:THR:HG22	1.92	0.52
1:A:2918:HIS:CE1	1:A:3094:PHE:HA	2.42	0.52
1:A:3133:LEU:HD12	1:A:3134:PRO:HD2	1.91	0.52
1:A:4565:LEU:HD13	1:A:4642:VAL:HG22	1.92	0.52
1:A:2260:SER:OG	1:A:2263:HIS:ND1	2.39	0.52
1:A:2666:ILE:HD12	1:A:2710:GLY:HA3	1.91	0.52
1:A:2964:HIS:CD2	1:A:2966:LYS:HB3	2.45	0.52
1:A:2279:LEU:HA	1:A:2698:GLN:HG2	1.91	0.52
1:A:2457:SER:HB2	1:A:2732:PRO:HB3	1.92	0.52
1:A:4106:LEU:HG	1:A:4138:LEU:HD22	1.92	0.52
1:A:4400:ARG:NE	1:A:4405:ILE:HD11	2.25	0.52
1:A:2079:GLN:O	1:A:4415:ARG:NH2	2.43	0.51
1:A:2053:MET:HE1	1:A:2094:LYS:HA	1.91	0.51
1:A:2278:GLY:O	1:A:2282:HIS:N	2.40	0.51
1:A:2963:VAL:HG11	1:A:2998:ASN:HA	1.91	0.51
1:A:1647:VAL:HG11	1:A:1692:ILE:HD13	1.91	0.51
1:A:2054:LEU:HG	1:A:2097:LEU:HD22	1.92	0.51
1:A:1659:ALA:HB3	1:A:1872:TYR:O	2.09	0.51
1:A:3488:ARG:O	1:A:3491:LYS:HG3	2.10	0.51
1:A:3724:VAL:HG13	1:A:3727:LYS:HD3	1.93	0.51
1:A:1688:THR:OG1	1:A:1708:GLU:OE2	2.21	0.51
1:A:4030:ILE:HG21	1:A:4145:PHE:CZ	2.45	0.51
1:A:4446:ASN:O	1:A:4450:THR:HG22	2.11	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3947:LEU:O	1:A:3951:VAL:HG23	2.11	0.51
1:A:2862:ASP:OD1	1:A:2862:ASP:N	2.41	0.51
1:A:3721:ARG:CG	1:A:3724:VAL:HB	2.39	0.51
1:A:2593:LEU:HD23	1:A:2736:VAL:HG21	1.91	0.51
1:A:3612:THR:O	1:A:3635:VAL:HA	2.11	0.50
1:A:1843:ARG:NH1	1:A:1861:MET:HA	2.23	0.50
1:A:3513:PHE:HZ	1:A:3575:GLU:HB3	1.77	0.50
1:A:3705:ARG:HG2	1:A:3813:PHE:HE1	1.76	0.50
1:A:1959:GLU:O	1:A:1959:GLU:HG3	2.12	0.50
1:A:2603:MET:CE	3:A:4703:ATP:H2'	2.39	0.50
1:A:2388:ASP:HB3	1:A:2412:MET:HE1	1.93	0.50
1:A:2688:GLU:OE1	1:A:2689:HIS:NE2	2.45	0.50
1:A:4381:HIS:NE2	1:A:4439:GLU:OE2	2.41	0.50
1:A:1846:PHE:HA	1:A:1857:LEU:HA	1.94	0.50
1:A:1880:VAL:HG22	2:A:4701:ADP:N1	2.27	0.50
1:A:1903:SER:N	1:A:2037:ARG:O	2.44	0.50
1:A:3764:ASP:O	1:A:3767:ILE:HG12	2.11	0.50
1:A:3870:ARG:NH2	1:A:4034:GLU:HG3	2.26	0.50
1:A:2935:LEU:HB2	1:A:3067:THR:HG22	1.93	0.50
1:A:2563:ALA:HB3	1:A:2804:ARG:HG2	1.93	0.50
1:A:4187:HIS:CD2	1:A:4212:LEU:HD22	2.47	0.50
1:A:2977:ARG:HG2	1:A:3021:PHE:CE1	2.47	0.49
1:A:3114:ASP:OD1	1:A:3114:ASP:N	2.45	0.49
1:A:2039:LEU:HD12	1:A:2040:ALA:H	1.77	0.49
1:A:3044:LEU:HD22	1:A:3049:GLU:HB3	1.92	0.49
1:A:3737:GLU:HG3	1:A:3741:ARG:NH2	2.27	0.49
1:A:3835:ILE:HD13	1:A:3867:ALA:HA	1.93	0.49
1:A:4430:ASP:OD1	1:A:4451:LEU:HD11	2.12	0.49
1:A:4128:MET:SD	1:A:4134:VAL:HG21	2.52	0.49
1:A:1839:LEU:O	1:A:1843:ARG:NH1	2.45	0.49
1:A:2049:ILE:HG21	1:A:2090:LEU:HD11	1.93	0.49
1:A:3873:ARG:HD2	1:A:4021:MET:HE1	1.94	0.49
1:A:4160:THR:HG23	1:A:4212:LEU:HD21	1.94	0.49
1:A:3514:ILE:HD13	1:A:3579:MET:HG2	1.95	0.49
1:A:1628:ARG:HD2	1:A:1951:VAL:HG23	1.95	0.49
1:A:1710:ARG:HG3	1:A:1870:PHE:HB3	1.94	0.49
1:A:2071:PRO:O	1:A:2075:LEU:HG	2.13	0.49
1:A:2822:ILE:HG13	1:A:2861:ILE:HD13	1.95	0.49
1:A:3103:TYR:CE2	1:A:3107:LYS:HD2	2.47	0.49
1:A:3654:ARG:NH1	1:A:3668:ASP:OD1	2.46	0.49
1:A:1747:ALA:HB2	1:A:1807:LYS:HG2	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2181:GLU:OE2	1:A:2244:LEU:HB2	2.13	0.49
1:A:3506:ASP:HB3	1:A:3552:TYR:CE2	2.48	0.49
1:A:3721:ARG:NH1	1:A:3852:HIS:CE1	2.76	0.49
1:A:2287:ILE:HG12	1:A:2299:GLN:OE1	2.13	0.49
1:A:3086:PHE:CD1	1:A:3091:LEU:HD21	2.48	0.49
1:A:3808:CYS:SG	1:A:3836:TYR:HE2	2.35	0.49
1:A:1684:VAL:HG12	1:A:1746:GLN:NE2	2.27	0.49
1:A:1843:ARG:HG3	1:A:1843:ARG:HH11	1.78	0.48
1:A:2606:PHE:O	1:A:2610:ARG:HG2	2.13	0.48
1:A:3100:GLU:OE1	1:A:3130:TYR:OH	2.20	0.48
1:A:3776:GLU:O	1:A:3780:VAL:HG23	2.13	0.48
1:A:4554:ASP:N	1:A:4557:SER:OG	2.46	0.48
1:A:1743:ASP:OD1	1:A:1804:ARG:HD3	2.13	0.48
1:A:2046:ARG:O	1:A:2049:ILE:HG22	2.13	0.48
1:A:2623:SER:N	1:A:2626:THR:OG1	2.46	0.48
1:A:2686:MET:HE2	1:A:2692:PHE:CG	2.49	0.48
1:A:3218:LEU:HD21	1:A:3760:ILE:HG23	1.95	0.48
1:A:4283:LYS:NZ	1:A:4293:ASP:OD2	2.41	0.48
1:A:2115:LYS:NZ	1:A:2126:GLU:OE2	2.47	0.48
1:A:2029:PRO:HG2	1:A:2032:LEU:HD12	1.95	0.48
1:A:2969:GLY:HA2	1:A:3004:PHE:HE1	1.78	0.48
1:A:3689:PRO:HG2	1:A:3692:LEU:HD23	1.94	0.48
1:A:2223:VAL:HG22	1:A:2345:VAL:HG23	1.95	0.48
1:A:2350:TYR:CD2	1:A:2674:TYR:HA	2.49	0.48
1:A:2822:ILE:HD11	1:A:2858:PHE:CG	2.48	0.48
1:A:3614:PHE:HZ	1:A:3645:LEU:HD11	1.78	0.48
1:A:1789:LEU:CD2	1:A:1815:LEU:HB3	2.44	0.48
1:A:3214:GLN:HB2	1:A:3759:ARG:NH1	2.27	0.48
1:A:4309:VAL:HA	1:A:4312:LEU:HG	1.95	0.48
1:A:2042:THR:HG22	1:A:2043:LYS:HE3	1.96	0.48
1:A:2284:LEU:O	1:A:2288:ILE:HG12	2.14	0.48
1:A:4038:ASN:HA	1:A:4118:PRO:HG2	1.96	0.48
1:A:3008:MET:O	1:A:3012:LEU:HG	2.14	0.47
1:A:3154:LEU:HD21	1:A:3532:TRP:HZ2	1.78	0.47
1:A:2886:GLN:OE1	1:A:2886:GLN:N	2.42	0.47
1:A:4013:LEU:HD23	1:A:4017:PHE:CZ	2.48	0.47
1:A:3888:ALA:HB1	1:A:4012:ASN:HD22	1.80	0.47
1:A:4387:TRP:HZ2	1:A:4476:ILE:HG13	1.79	0.47
1:A:2049:ILE:HD11	2:A:4701:ADP:C4	2.49	0.47
1:A:4042:LEU:HD12	1:A:4128:MET:HE3	1.96	0.47
1:A:4446:ASN:OD1	1:A:4446:ASN:N	2.47	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2077:ASP:HA	1:A:2088:PHE:HD2	1.80	0.47
1:A:2559:THR:CG2	1:A:2757:ARG:HD2	2.44	0.47
1:A:2590:PRO:O	1:A:2732:PRO:HD2	2.14	0.47
1:A:3811:ILE:HD11	1:A:3864:PHE:CE1	2.49	0.47
1:A:4435:VAL:O	1:A:4439:GLU:HG2	2.14	0.47
1:A:2086:TYR:OH	1:A:2153:ASP:OD2	2.30	0.47
1:A:3641:TYR:CD2	1:A:3692:LEU:HD21	2.49	0.47
1:A:1746:GLN:O	1:A:1750:VAL:HG12	2.14	0.47
1:A:2114:GLU:OE2	1:A:2118:ARG:NH2	2.47	0.47
1:A:2669:PRO:HG2	1:A:2679:VAL:HG21	1.97	0.47
1:A:2930:GLN:HB2	1:A:3059:ILE:HG13	1.96	0.47
1:A:3630:GLY:O	1:A:3674:SER:OG	2.26	0.47
1:A:4276:ARG:NH2	1:A:4279:ASP:HB2	2.30	0.47
1:A:4609:VAL:HG22	1:A:4642:VAL:HB	1.97	0.47
1:A:1652:LYS:HA	1:A:1655:LYS:HE3	1.96	0.47
1:A:3592:PRO:HG3	1:A:3702:THR:HG22	1.97	0.47
1:A:3619:PHE:HZ	1:A:3645:LEU:HD21	1.80	0.47
1:A:3966:PRO:HD2	1:A:4000:ARG:HG3	1.97	0.47
1:A:1676:ILE:HD11	1:A:1709:MET:HB2	1.96	0.47
1:A:1964:GLU:O	1:A:1968:LEU:N	2.35	0.47
1:A:2066:ALA:HA	1:A:2069:ILE:HG22	1.97	0.47
1:A:4289:ASP:N	1:A:4289:ASP:OD1	2.47	0.47
1:A:2896:ARG:HA	1:A:2896:ARG:HD2	1.75	0.46
1:A:3983:ILE:HD13	1:A:4011:THR:HG22	1.97	0.46
1:A:2836:ARG:HG2	1:A:2837:LEU:HD22	1.97	0.46
1:A:3690:PRO:HA	1:A:3693:CYS:SG	2.54	0.46
1:A:3767:ILE:HA	1:A:3770:LEU:HD12	1.96	0.46
1:A:4305:PHE:O	1:A:4309:VAL:HG12	2.15	0.46
1:A:1698:ILE:HA	1:A:1701:TRP:CD1	2.50	0.46
1:A:3716:VAL:HB	1:A:3836:TYR:OH	2.15	0.46
1:A:4276:ARG:HH21	1:A:4279:ASP:HB2	1.80	0.46
1:A:1741:TRP:CH2	1:A:1750:VAL:HG23	2.50	0.46
1:A:1985:HIS:NE2	1:A:2010:PRO:HB3	2.31	0.46
1:A:2994:MET:HE3	1:A:2998:ASN:HB2	1.97	0.46
1:A:2320:ASP:OD2	1:A:2322:ASN:N	2.42	0.46
1:A:2743:SER:O	1:A:2747:ILE:HG22	2.15	0.46
1:A:2928:GLN:O	1:A:3063:HIS:NE2	2.44	0.46
1:A:1626:PHE:CE2	1:A:1629:PHE:HB3	2.51	0.46
1:A:1680:GLU:OE1	1:A:1682:GLU:N	2.46	0.46
1:A:2841:GLU:OE1	1:A:2844:ARG:NH1	2.49	0.46
1:A:3791:MET:HG2	1:A:3792:GLN:HG2	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:4026:ASP:O	1:A:4030:ILE:HG12	2.15	0.46
1:A:2934:LEU:HD12	1:A:3066:PHE:CB	2.46	0.46
1:A:3024:ASP:N	1:A:3024:ASP:OD1	2.49	0.46
1:A:1717:LEU:HB2	1:A:1749:LEU:HD21	1.97	0.46
1:A:2072:PHE:HA	1:A:2075:LEU:HD12	1.97	0.46
1:A:3013:ALA:HB2	1:A:3088:ARG:NE	2.27	0.46
1:A:1941:MET:SD	1:A:1945:PHE:HD2	2.39	0.46
1:A:3158:ASN:OD1	1:A:3168:THR:HB	2.15	0.46
1:A:3566:SER:OG	1:A:3598:GLU:OE2	2.31	0.46
1:A:2228:SER:OG	1:A:2364:PHE:HB3	2.16	0.46
1:A:3499:GLN:HA	1:A:3502:THR:HG22	1.97	0.46
1:A:3517:ALA:HB1	1:A:3525:ARG:HG2	1.98	0.46
1:A:1769:MET:SD	1:A:1777:PRO:HD2	2.55	0.45
1:A:2268:LEU:HD13	1:A:2275:TRP:HE3	1.81	0.45
1:A:1635:GLU:HG3	1:A:2273:ARG:HB3	1.97	0.45
1:A:1836:PHE:HA	1:A:1839:LEU:HB2	1.97	0.45
1:A:2412:MET:O	1:A:2416:GLN:HG3	2.16	0.45
1:A:3629:PHE:CE1	1:A:3631:ASN:HB2	2.51	0.45
1:A:3817:SER:HB2	1:A:4346:MET:HE1	1.98	0.45
1:A:3884:ALA:HB1	1:A:4009:VAL:HG11	1.98	0.45
1:A:4388:LEU:HD23	1:A:4388:LEU:HA	1.81	0.45
1:A:4575:LEU:HG	1:A:4624:PHE:HB3	1.98	0.45
1:A:2148:LYS:HB2	1:A:2361:MET:HB3	1.98	0.45
1:A:2834:GLN:HA	1:A:2837:LEU:HD23	1.97	0.45
1:A:1738:TYR:HE1	1:A:1792:LEU:HD21	1.82	0.45
1:A:1832:ASN:HD21	1:A:1834:LYS:HB2	1.81	0.45
1:A:3632:PRO:HA	1:A:3676:VAL:O	2.16	0.45
1:A:4645:THR:O	1:A:4645:THR:OG1	2.29	0.45
1:A:2785:THR:HG23	1:A:2787:ASP:H	1.82	0.45
1:A:2797:ARG:HA	3:A:4703:ATP:O3'	2.16	0.45
1:A:2935:LEU:N	1:A:3066:PHE:O	2.41	0.45
1:A:2433:VAL:HG22	1:A:2498:ILE:HD11	1.99	0.45
1:A:3190:LYS:HD2	1:A:3552:TYR:HE1	1.82	0.45
1:A:3790:VAL:CG1	1:A:3794:VAL:HB	2.46	0.45
1:A:2916:LEU:O	1:A:2919:VAL:HG12	2.16	0.45
1:A:3705:ARG:HG2	1:A:3813:PHE:CE1	2.52	0.45
1:A:4610:TYR:HB2	1:A:4643:LEU:HD22	1.99	0.45
1:A:2593:LEU:HD13	1:A:2605:LEU:HD11	1.98	0.45
1:A:2809:ALA:HB1	1:A:2824:ILE:HD11	1.98	0.45
1:A:2932:HIS:ND1	1:A:3012:LEU:HD22	2.31	0.45
1:A:1716:LEU:HB3	1:A:1745:TYR:HE1	1.82	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1816:VAL:HG11	1:A:2052:VAL:HG22	1.97	0.45
1:A:2220:LEU:O	1:A:2342:MET:HA	2.16	0.45
1:A:3198:GLN:HE22	1:A:3496:PHE:HB3	1.81	0.45
1:A:3474:ARG:CD	1:A:3762:ASP:HB3	2.43	0.45
1:A:3914:ILE:HB	1:A:3937:ARG:HD3	1.99	0.45
1:A:4380:LEU:HD11	1:A:4455:LEU:HB3	1.99	0.45
1:A:3204:GLY:O	1:A:3208:ILE:HG12	2.17	0.45
1:A:1667:ASN:HB3	1:A:1674:LEU:HD11	1.99	0.44
1:A:2049:ILE:HD11	2:A:4701:ADP:C5	2.53	0.44
1:A:2557:VAL:HG13	1:A:2754:ALA:HB2	1.99	0.44
1:A:3020:LEU:H	1:A:3020:LEU:HD22	1.82	0.44
1:A:1947:GLY:O	1:A:1951:VAL:HG12	2.17	0.44
1:A:2324:LEU:HD23	1:A:2324:LEU:H	1.82	0.44
1:A:2176:THR:O	1:A:2180:GLU:HG2	2.17	0.44
1:A:2256:PRO:HG3	1:A:2303:PHE:CD1	2.53	0.44
1:A:2518:ILE:HA	1:A:2521:ILE:HG12	1.98	0.44
1:A:2688:GLU:HB2	1:A:2730:HIS:NE2	2.33	0.44
1:A:2934:LEU:HD12	1:A:3066:PHE:HB3	2.00	0.44
1:A:1896:LEU:HD13	1:A:1896:LEU:HA	1.84	0.44
1:A:2452:LEU:HD23	1:A:2452:LEU:HA	1.80	0.44
1:A:2935:LEU:HD22	1:A:3094:PHE:CE1	2.52	0.44
1:A:1743:ASP:OD2	1:A:1804:ARG:NH1	2.50	0.44
1:A:2231:SER:HA	1:A:2234:TRP:NE1	2.32	0.44
1:A:2500:TRP:NE1	1:A:2535:ILE:HG23	2.32	0.44
1:A:2755:MET:HE2	1:A:2755:MET:HB3	1.83	0.44
1:A:4081:ASP:O	1:A:4085:ASN:ND2	2.51	0.44
1:A:1629:PHE:HA	1:A:1657:MET:HE2	2.00	0.44
1:A:3641:TYR:HE1	1:A:3645:LEU:HD12	1.82	0.44
1:A:4297:PRO:HG3	1:A:4308:TRP:CG	2.52	0.44
1:A:2085:HIS:HB2	1:A:2361:MET:HG2	2.00	0.44
1:A:1746:GLN:HG2	1:A:1872:TYR:CE1	2.53	0.44
1:A:1749:LEU:HD23	1:A:1749:LEU:HA	1.70	0.44
1:A:1933:ASP:N	1:A:1933:ASP:OD1	2.50	0.44
1:A:1972:SER:HB2	1:A:2031:ASN:HD21	1.83	0.44
1:A:2816:LEU:HD23	1:A:2817:PRO:O	2.18	0.44
1:A:4233:ILE:HD11	1:A:4237:LYS:HB2	1.99	0.44
1:A:1623:ARG:HB3	1:A:1630:TYR:HD2	1.83	0.43
1:A:3957:PHE:HZ	1:A:3996:PHE:CE2	2.36	0.43
1:A:1948:LEU:HA	1:A:1951:VAL:HG12	2.00	0.43
1:A:2363:TRP:HE1	1:A:2365:SER:HB2	1.83	0.43
1:A:3154:LEU:HB3	1:A:3171:ILE:HD13	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3198:GLN:NE2	1:A:3496:PHE:HB3	2.32	0.43
1:A:3575:GLU:O	1:A:3579:MET:HG3	2.19	0.43
1:A:3588:LEU:HD11	1:A:3638:VAL:HG21	2.00	0.43
1:A:4288:VAL:HG22	1:A:4293:ASP:HA	2.00	0.43
1:A:4343:MET:HE2	1:A:4343:MET:HB3	1.80	0.43
1:A:3148:VAL:O	1:A:3152:GLN:HG2	2.17	0.43
1:A:4412:PHE:HZ	1:A:4514:LEU:HD13	1.83	0.43
1:A:1653:HIS:O	1:A:1656:LYS:N	2.52	0.43
1:A:2221:MET:HE2	1:A:2361:MET:SD	2.59	0.43
1:A:2369:LEU:HD12	1:A:2373:MET:HE2	2.01	0.43
1:A:2518:ILE:O	1:A:2522:THR:HG22	2.18	0.43
1:A:1660:GLY:O	1:A:1678:SER:HA	2.18	0.43
1:A:1702:LEU:HD23	1:A:1702:LEU:HA	1.91	0.43
1:A:3954:ASP:OD1	1:A:3956:GLN:N	2.51	0.43
1:A:4375:ALA:O	1:A:4379:THR:HG23	2.19	0.43
1:A:1880:VAL:CG2	1:A:2049:ILE:HG13	2.47	0.43
1:A:1971:VAL:O	1:A:1975:VAL:HG13	2.18	0.43
1:A:2049:ILE:HD11	2:A:4701:ADP:C2	2.53	0.43
1:A:2721:LYS:HE2	1:A:2721:LYS:HB2	1.80	0.43
1:A:3474:ARG:O	1:A:3478:LEU:HG	2.18	0.43
1:A:3793:GLU:O	1:A:3796:THR:OG1	2.32	0.43
1:A:1710:ARG:HE	1:A:1710:ARG:HB2	1.64	0.43
1:A:2784:PHE:HB2	1:A:2794:TYR:HE2	1.84	0.43
1:A:3154:LEU:HD12	1:A:3171:ILE:HD11	1.99	0.43
1:A:4171:LYS:HA	1:A:4171:LYS:HD3	1.83	0.43
1:A:2123:ASP:O	1:A:2127:ILE:HG12	2.19	0.43
1:A:3154:LEU:HG	1:A:3516:TYR:CD2	2.53	0.43
1:A:3635:VAL:O	1:A:3680:SER:OG	2.27	0.43
1:A:3744:GLN:O	1:A:3747:LYS:HG3	2.18	0.43
1:A:4157:MET:HE3	1:A:4157:MET:HB3	1.97	0.43
1:A:2212:GLN:O	1:A:2216:ILE:HG23	2.19	0.43
1:A:2481:MET:HE3	1:A:2486:LEU:HD13	2.01	0.43
1:A:2588:HIS:HE1	1:A:2658:TRP:CE2	2.36	0.43
1:A:4188:ALA:O	1:A:4192:GLU:HG2	2.18	0.43
1:A:4192:GLU:OE1	1:A:4192:GLU:HA	2.19	0.43
1:A:4436:GLN:NE2	1:A:4442:LYS:HB2	2.34	0.43
1:A:2791:HIS:HB2	1:A:3091:LEU:CD2	2.49	0.43
1:A:4436:GLN:CD	1:A:4442:LYS:HB2	2.43	0.43
1:A:4510:CYS:HG	1:A:4561:THR:HG1	1.63	0.43
1:A:4525:ARG:HD3	1:A:4592:TRP:CZ3	2.54	0.43
1:A:3801:TYR:HD1	1:A:3856:LEU:HD13	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2189:MET:HB3	1:A:2191:LEU:HD13	2.01	0.42
1:A:2615:MET:HG3	1:A:2658:TRP:O	2.19	0.42
1:A:2871:ILE:O	1:A:2872:LEU:HD23	2.19	0.42
1:A:3032:GLN:O	1:A:3035:GLU:HG2	2.19	0.42
1:A:3726:GLU:HA	1:A:3729:SER:HB3	2.01	0.42
1:A:3910:ARG:O	1:A:3913:GLU:HG2	2.18	0.42
1:A:4223:LEU:HD12	1:A:4223:LEU:HA	1.76	0.42
1:A:1631:PHE:HE2	1:A:1656:LYS:HB3	1.83	0.42
1:A:2265:TYR:OH	1:A:2311:TRP:O	2.27	0.42
1:A:2868:SER:O	1:A:2871:ILE:HG13	2.20	0.42
1:A:2897:LEU:HD23	1:A:2897:LEU:HA	1.92	0.42
1:A:4044:CYS:O	1:A:4146:VAL:HA	2.19	0.42
1:A:3614:PHE:HE2	1:A:3641:TYR:HD1	1.65	0.42
1:A:1736:ASN:O	1:A:1740:THR:OG1	2.31	0.42
1:A:3485:GLU:O	1:A:3489:TRP:HD1	2.02	0.42
1:A:3500:MET:O	1:A:3503:ILE:HG22	2.18	0.42
1:A:3787:THR:HA	1:A:3790:VAL:CG2	2.49	0.42
1:A:2747:ILE:HG23	1:A:2748:TYR:CD2	2.55	0.42
1:A:2936:ILE:O	1:A:3094:PHE:N	2.49	0.42
1:A:3588:LEU:HD23	1:A:3698:PHE:CE1	2.55	0.42
1:A:4037:PRO:HB2	1:A:4118:PRO:HB2	2.02	0.42
1:A:2231:SER:HA	1:A:2234:TRP:CD1	2.55	0.42
1:A:2308:ASP:OD2	1:A:2311:TRP:NE1	2.52	0.42
1:A:2926:PHE:HA	1:A:3063:HIS:CD2	2.54	0.42
1:A:1630:TYR:HD1	1:A:1947:GLY:HA2	1.84	0.42
1:A:1635:GLU:H	1:A:1635:GLU:CD	2.28	0.42
1:A:1714:ALA:HB1	1:A:1856:GLN:OE1	2.20	0.42
1:A:1792:LEU:HD13	1:A:1808:LEU:HD13	2.02	0.42
1:A:2908:PRO:HB2	1:A:3109:PHE:CZ	2.54	0.42
1:A:3211:THR:O	1:A:3215:VAL:HG23	2.19	0.42
1:A:4295:GLN:HA	1:A:4295:GLN:NE2	2.35	0.42
1:A:4429:GLN:NE2	1:A:4433:ASP:OD2	2.52	0.42
1:A:1698:ILE:HD12	1:A:1701:TRP:NE1	2.35	0.42
1:A:2613:PRO:O	1:A:2657:LYS:NZ	2.52	0.42
1:A:2648:VAL:HG12	1:A:2701:VAL:HG22	2.01	0.42
1:A:2893:VAL:CG1	1:A:2911:LEU:HD21	2.48	0.42
1:A:4100:HIS:HB2	1:A:4131:ASN:HD21	1.84	0.42
1:A:3935:VAL:HG22	1:A:3996:PHE:HE1	1.85	0.42
1:A:4119:HIS:HE2	1:A:4121:CYS:HG	1.64	0.42
1:A:1964:GLU:HB2	1:A:1967:MET:HB2	2.01	0.41
1:A:2569:VAL:HG11	1:A:2747:ILE:HA	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2995:ASP:OD2	1:A:2996:GLU:N	2.53	0.41
1:A:3787:THR:HA	1:A:3790:VAL:HG23	2.02	0.41
1:A:4543:VAL:HG13	1:A:4588:THR:HG23	2.01	0.41
1:A:2559:THR:HG22	1:A:2754:ALA:O	2.19	0.41
1:A:2876:TRP:HB3	1:A:2892:TYR:CE2	2.55	0.41
1:A:2888:GLU:OE1	1:A:2888:GLU:N	2.44	0.41
1:A:2911:LEU:HD12	1:A:2911:LEU:HA	1.91	0.41
1:A:3740:LEU:O	1:A:3744:GLN:HG2	2.20	0.41
1:A:4169:ILE:HD12	1:A:4302:ARG:HH11	1.84	0.41
1:A:4189:ILE:HD12	1:A:4321:LEU:HA	2.02	0.41
1:A:4313:PRO:HD2	1:A:4320:TRP:HH2	1.85	0.41
1:A:2505:ASP:HB3	1:A:2733:VAL:O	2.20	0.41
1:A:2920:LEU:HD23	1:A:2920:LEU:HA	1.80	0.41
1:A:4166:VAL:HG13	1:A:4302:ARG:NH2	2.35	0.41
1:A:4228:LYS:HE2	1:A:4228:LYS:HB2	1.89	0.41
1:A:1631:PHE:HA	1:A:1947:GLY:HA3	2.02	0.41
1:A:1739:ILE:HD11	1:A:1804:ARG:HD2	2.02	0.41
1:A:1938:PHE:O	1:A:1942:GLY:N	2.36	0.41
1:A:1954:TRP:CE3	1:A:2015:PHE:HE1	2.38	0.41
1:A:2614:ASP:OD1	1:A:2614:ASP:N	2.45	0.41
1:A:2809:ALA:CB	1:A:2824:ILE:HD11	2.50	0.41
1:A:2784:PHE:CE1	1:A:2837:LEU:HD11	2.55	0.41
1:A:2976:LEU:HD12	1:A:2976:LEU:HA	1.87	0.41
1:A:3149:PHE:O	1:A:3153:THR:HG23	2.20	0.41
1:A:3721:ARG:HD3	1:A:3797:VAL:HG13	2.02	0.41
1:A:4118:PRO:HB3	1:A:4122:PHE:CD2	2.55	0.41
1:A:4486:ILE:HD13	1:A:4486:ILE:HA	1.86	0.41
1:A:2100:ALA:O	1:A:2103:VAL:HG12	2.21	0.41
1:A:3747:LYS:O	1:A:3751:GLN:HG2	2.19	0.41
1:A:1650:LEU:HA	1:A:1653:HIS:HD2	1.86	0.41
1:A:1665:ILE:HD11	1:A:1677:SER:HB2	2.02	0.41
1:A:2938:VAL:HG12	1:A:3095:GLY:O	2.21	0.41
1:A:3624:GLU:HA	1:A:3627:LEU:HD12	2.01	0.41
1:A:3718:LYS:HA	1:A:3725:ASP:CG	2.45	0.41
1:A:4633:ARG:HA	1:A:4636:TYR:HD2	1.86	0.41
1:A:1784:ASN:O	1:A:1787:VAL:HG12	2.20	0.41
1:A:2534:ILE:HD12	1:A:2534:ILE:N	2.33	0.41
1:A:2964:HIS:NE2	1:A:2966:LYS:HD2	2.35	0.41
1:A:3191:ARG:O	1:A:3195:GLU:HB2	2.21	0.41
1:A:3567:LEU:HB2	1:A:3599:PHE:CE2	2.55	0.41
1:A:4119:HIS:CD2	1:A:4121:CYS:H	2.38	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:4171:LYS:HG3	1:A:4172:SER:H	1.86	0.41
1:A:4205:TYR:OH	1:A:4261:ASP:OD2	2.34	0.41
1:A:1717:LEU:HD11	1:A:1756:ILE:HD12	2.02	0.41
1:A:2324:LEU:HD23	1:A:2324:LEU:N	2.35	0.41
1:A:2385:ILE:HA	1:A:2386:PRO:HD3	1.96	0.41
1:A:2490:ILE:HD13	1:A:2490:ILE:HA	1.96	0.41
1:A:3099:THR:OG1	1:A:3152:GLN:NE2	2.53	0.41
1:A:3609:ILE:HD11	1:A:3634:LEU:HB2	2.03	0.41
1:A:4149:PRO:HA	1:A:4150:PRO:HD3	1.96	0.41
1:A:4154:LYS:HD2	1:A:4312:LEU:HB2	2.03	0.41
1:A:2641:TYR:CE1	1:A:2650:LEU:HD13	2.56	0.41
1:A:3549:ARG:NE	1:A:3575:GLU:OE2	2.54	0.41
1:A:1653:HIS:HA	1:A:1656:LYS:HD2	2.03	0.40
1:A:1907:PRO:O	1:A:1912:LYS:NZ	2.54	0.40
1:A:2538:GLU:HB3	1:A:2548:TRP:CE2	2.56	0.40
1:A:2626:THR:HG23	1:A:2630:LEU:HD13	2.02	0.40
1:A:4380:LEU:HA	1:A:4383:THR:HG22	2.03	0.40
1:A:4388:LEU:HG	1:A:4431:LEU:HB3	2.03	0.40
1:A:4577:LEU:HD23	1:A:4577:LEU:HA	1.84	0.40
1:A:1702:LEU:O	1:A:1706:GLU:HG3	2.21	0.40
1:A:2192:THR:HG22	3:A:4702:ATP:N1	2.36	0.40
1:A:4404:ASN:HB3	1:A:4410:PHE:CG	2.56	0.40
1:A:4528:VAL:HG11	1:A:4592:TRP:HB2	2.02	0.40
1:A:1684:VAL:O	1:A:1685:MET:HE2	2.21	0.40
1:A:2161:LEU:HD23	1:A:2161:LEU:HA	1.91	0.40
1:A:2969:GLY:HA2	1:A:3004:PHE:CE1	2.55	0.40
1:A:3742:LEU:HD22	1:A:3777:ALA:HA	2.04	0.40
1:A:3888:ALA:HB1	1:A:4012:ASN:ND2	2.36	0.40
1:A:2073:PHE:HZ	1:A:2096:VAL:HG21	1.87	0.40
1:A:2352:THR:O	1:A:2356:VAL:HG23	2.22	0.40
1:A:2419:ALA:HA	1:A:2422:ILE:HD12	2.02	0.40
1:A:2802:TRP:HE1	1:A:2806:ILE:HD11	1.86	0.40
1:A:2816:LEU:HD21	1:A:2821:LEU:N	2.36	0.40
1:A:3009:ASN:OD1	1:A:3088:ARG:HD2	2.22	0.40
1:A:3042:LEU:HD23	1:A:3042:LEU:HA	1.91	0.40
1:A:3630:GLY:HA2	1:A:3675:PHE:HB2	2.03	0.40
1:A:3801:TYR:CD1	1:A:3856:LEU:HD13	2.57	0.40
1:A:4224:ASP:OD1	1:A:4224:ASP:C	2.64	0.40
1:A:2206:LYS:HD3	1:A:2206:LYS:HA	1.86	0.40
1:A:2808:GLU:CD	1:A:2811:ARG:HH22	2.29	0.40
1:A:3135:GLN:HB3	1:A:3136:PRO:HD3	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3721:ARG:CZ	1:A:3724:VAL:HG11	2.51	0.40
1:A:3898:GLU:N	1:A:3898:GLU:CD	2.80	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	2687/4646 (58%)	2624 (98%)	63 (2%)	0	100	100

There are no Ramachandran outliers to report.

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	2400/4125 (58%)	2387 (100%)	13 (0%)	86	92

All (13) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	1657	MET
1	A	1698	ILE
1	A	1738	TYR
1	A	1839	LEU

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	A	1945	PHE
1	A	2444	GLU
1	A	2987	ASN
1	A	3087	ASN
1	A	3154	LEU
1	A	3521	ASP
1	A	4109	LEU
1	A	4475	VAL
1	A	4573	ASN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (31) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	1817	HIS
1	A	1863	ASN
1	A	1973	GLN
1	A	2005	GLN
1	A	2031	ASN
1	A	2134	GLN
1	A	2212	GLN
1	A	2414	GLN
1	A	2416	GLN
1	A	2464	GLN
1	A	2471	GLN
1	A	2482	GLN
1	A	2531	ASN
1	A	2588	HIS
1	A	2789	GLN
1	A	3069	ASN
1	A	3181	ASN
1	A	3198	GLN
1	A	3214	GLN
1	A	3535	HIS
1	A	3555	ASN
1	A	3754	ASN
1	A	3852	HIS
1	A	4098	ASN
1	A	4231	GLN
1	A	4335	GLN
1	A	4397	HIS
1	A	4490	GLN
1	A	4526	GLN

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	A	4566	GLN
1	A	4589	GLN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

5.6 Ligand geometry ⓘ

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	4702	-	28,33,33	0.73	0	34,52,52	0.61	1 (2%)
2	ADP	A	4704	-	24,29,29	0.85	0	29,45,45	1.18	2 (6%)
3	ATP	A	4703	4	28,33,33	0.71	0	34,52,52	0.83	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
3	ATP	A	4702	-	-	1/18/38/38	0/3/3/3
2	ADP	A	4704	-	-	1/12/32/32	0/3/3/3
3	ATP	A	4703	4	-	3/18/38/38	0/3/3/3
2	ADP	A	4701	-	-	2/12/32/32	0/3/3/3

There are no bond length outliers.

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	4704	ADP	N3-C2-N1	-3.56	123.84	128.67
2	A	4704	ADP	C4-C5-N7	-2.48	106.72	109.34
3	A	4702	ATP	C5-C6-N6	2.32	123.84	120.31
2	A	4701	ADP	C5-C6-N6	2.26	123.76	120.31
3	A	4703	ATP	C5-C6-N6	2.25	123.75	120.31

There are no chirality outliers.

All (7) torsion outliers are listed below:

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

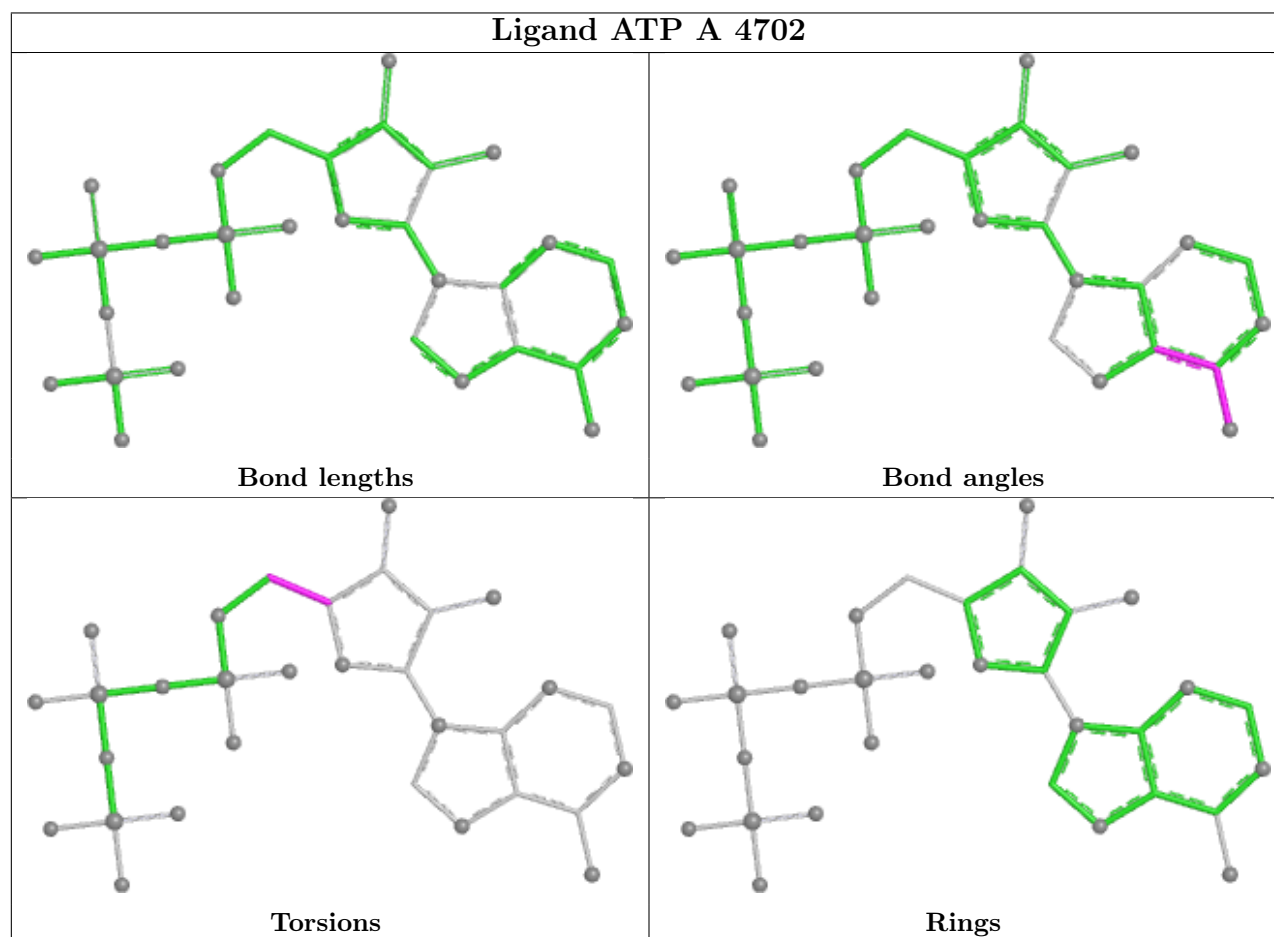
There are no ring outliers.

3 monomers are involved in 9 short contacts:

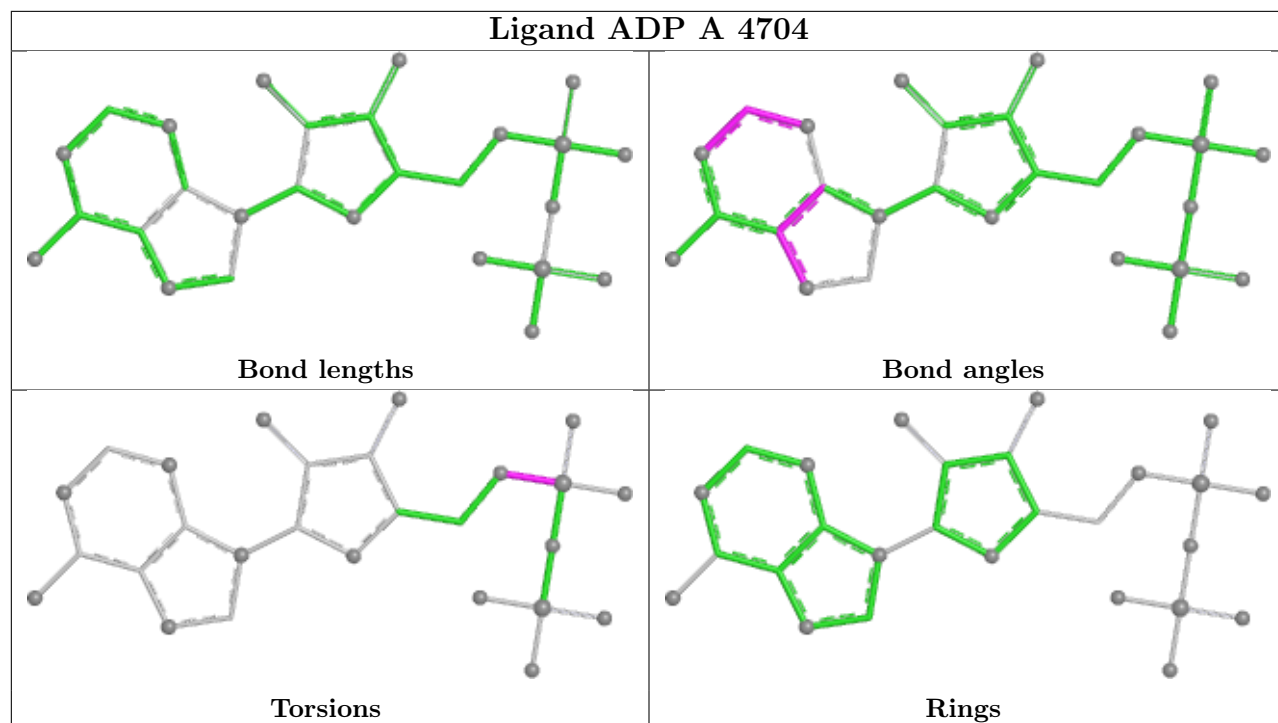
Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	A	4702	ATP	2	0
3	A	4703	ATP	3	0
2	A	4701	ADP	4	0

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

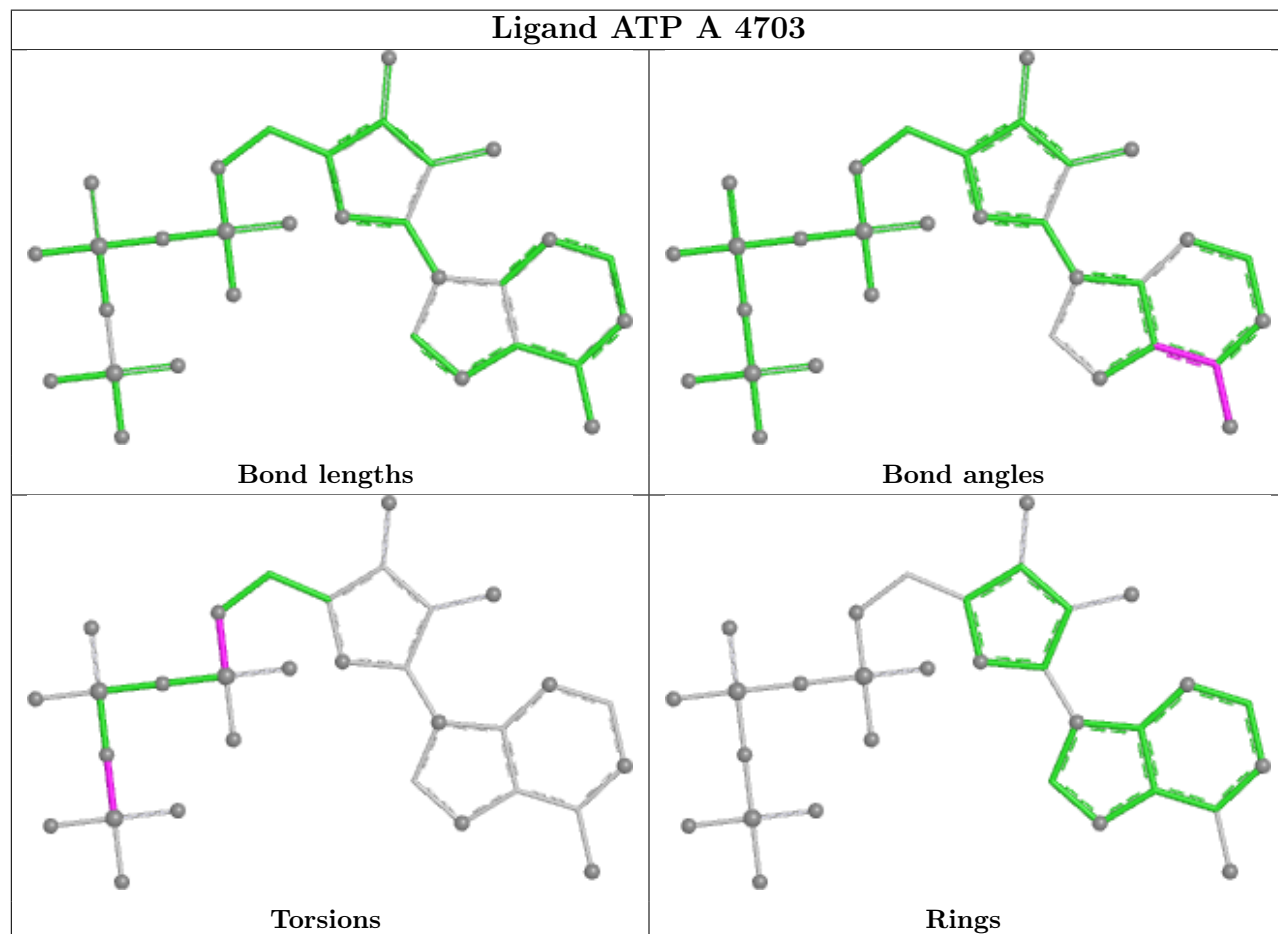
highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified 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.

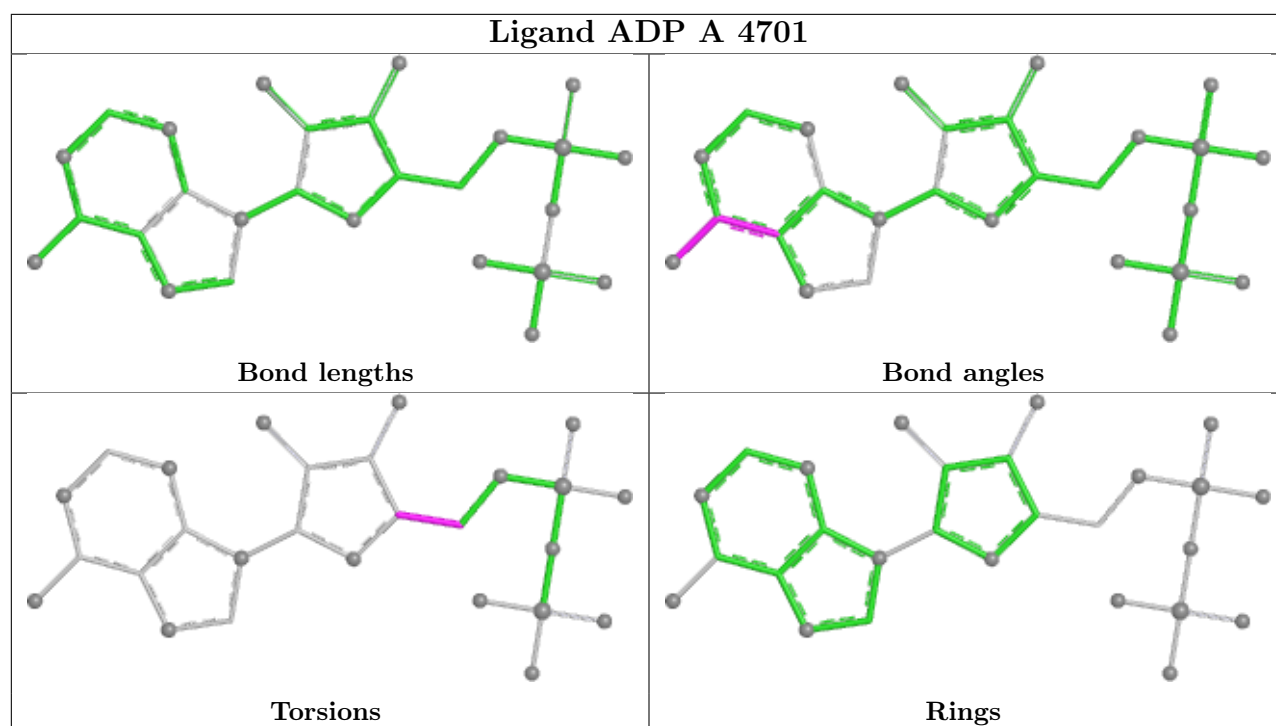


Ligand ADP A 4704



Ligand ATP A 4703





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.

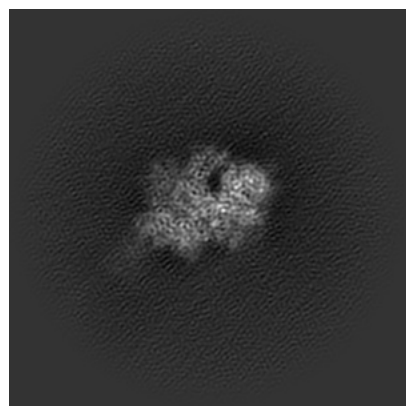
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-44687. These allow visual inspection of the internal detail of the map and identification of artifacts.

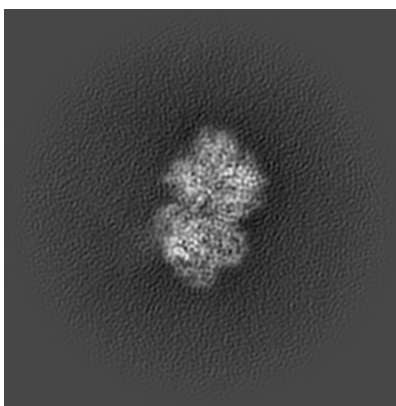
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

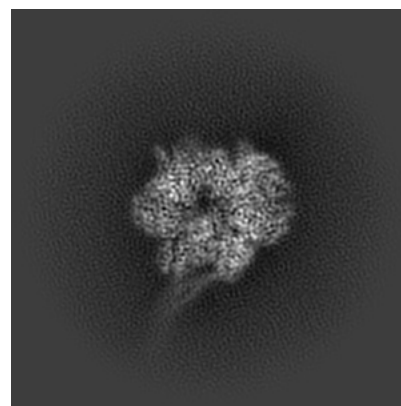
6.1.1 Primary map



X

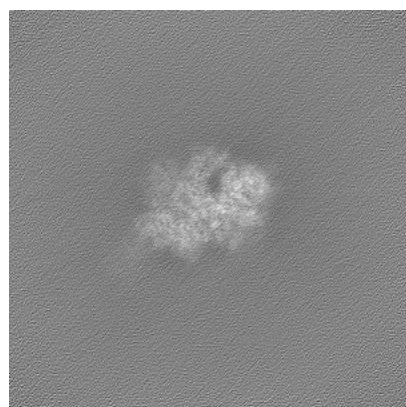


Y

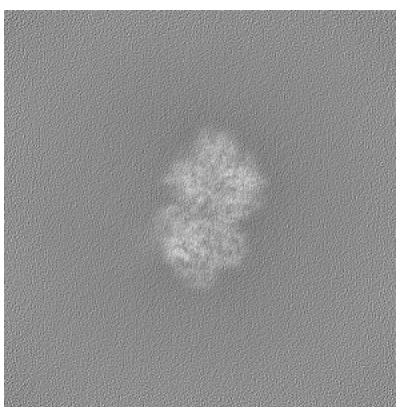


Z

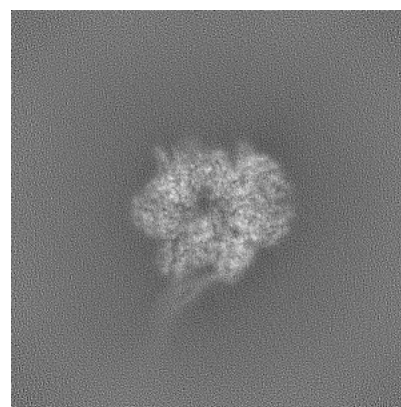
6.1.2 Raw map



X



Y

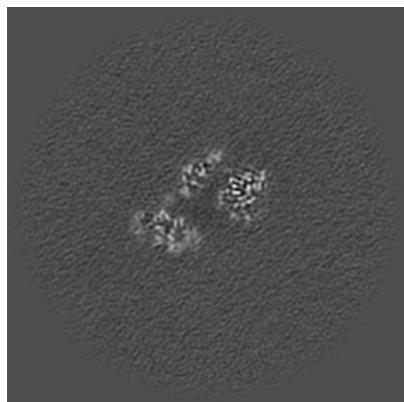


Z

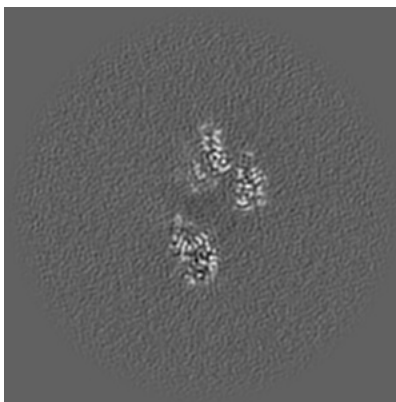
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

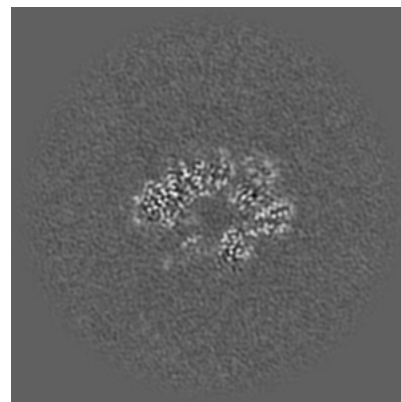
6.2.1 Primary map



X Index: 200

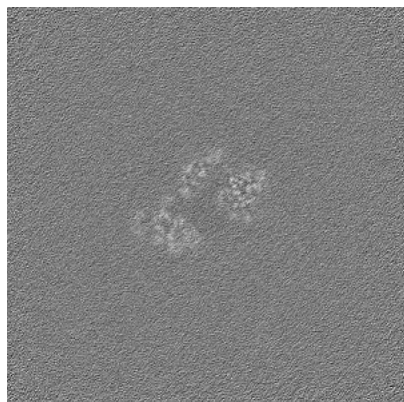


Y Index: 200

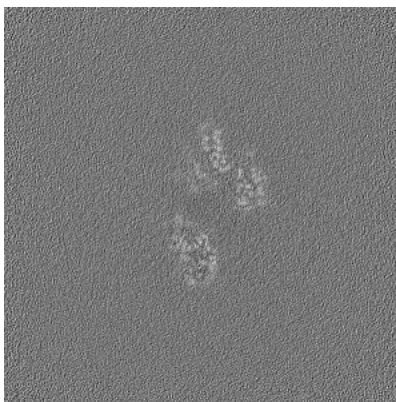


Z Index: 200

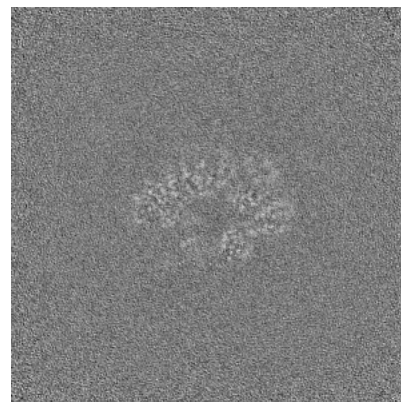
6.2.2 Raw map



X Index: 200



Y Index: 200

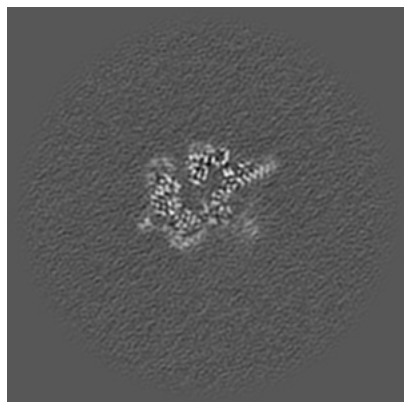


Z Index: 200

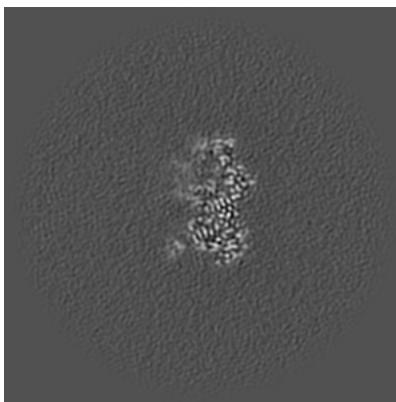
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

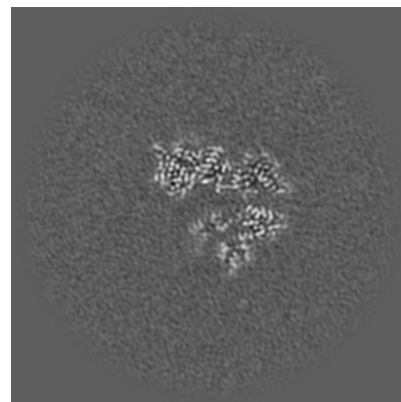
6.3.1 Primary map



X Index: 229

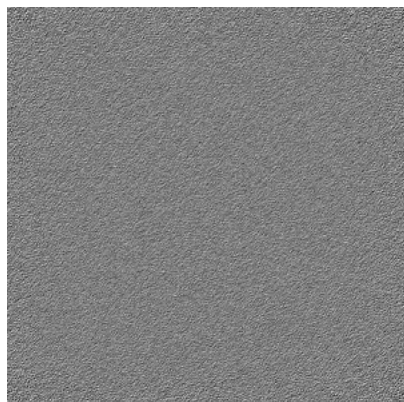


Y Index: 231

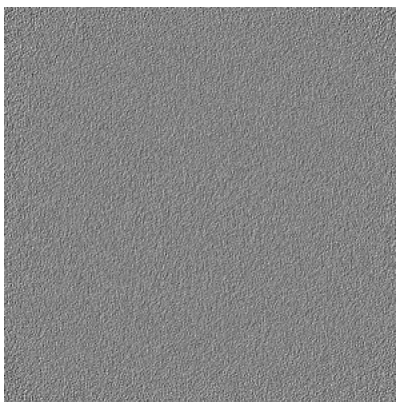


Z Index: 222

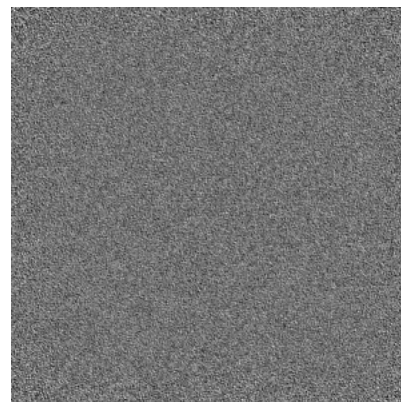
6.3.2 Raw map



X Index: 0



Y Index: 0

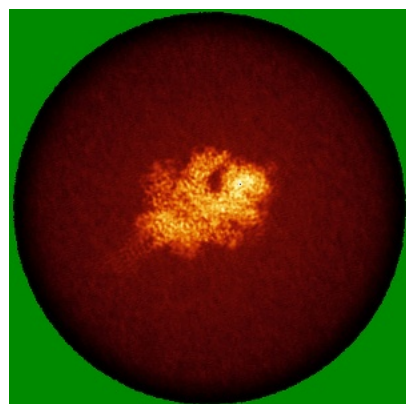


Z Index: 0

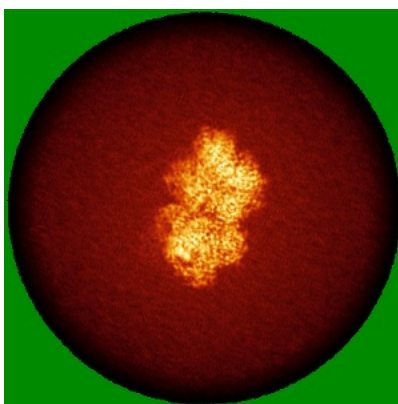
The images above show the largest variance slices of the map in three orthogonal directions.

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

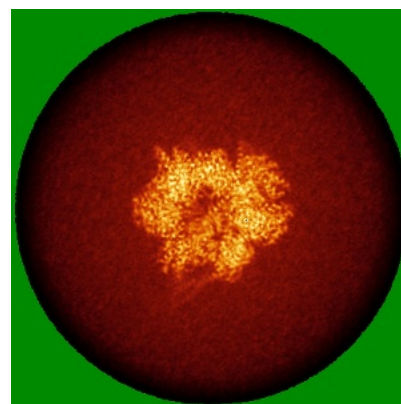
6.4.1 Primary map



X

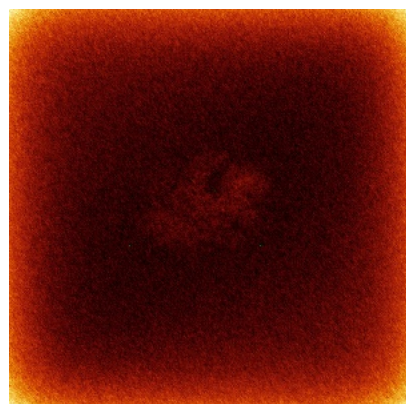


Y

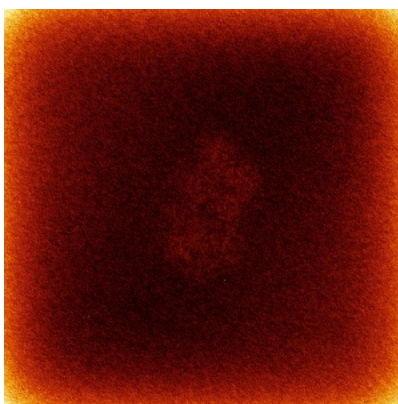


Z

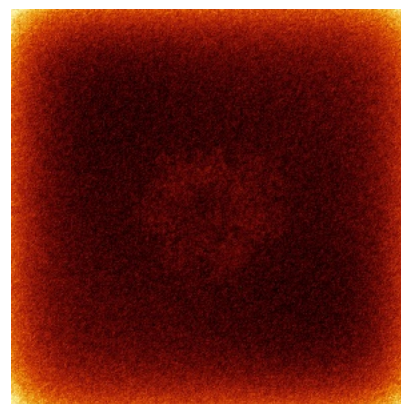
6.4.2 Raw map



X



Y

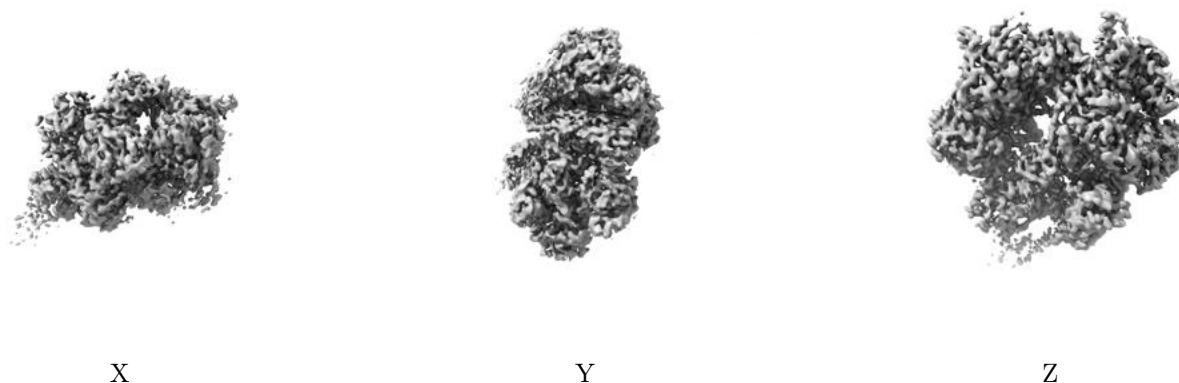


Z

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.

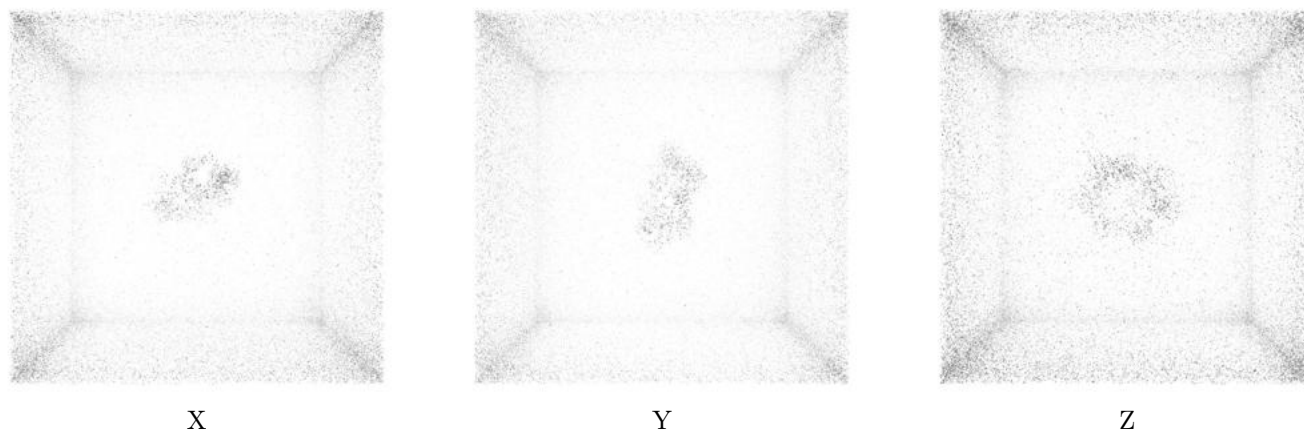
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.12. 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.

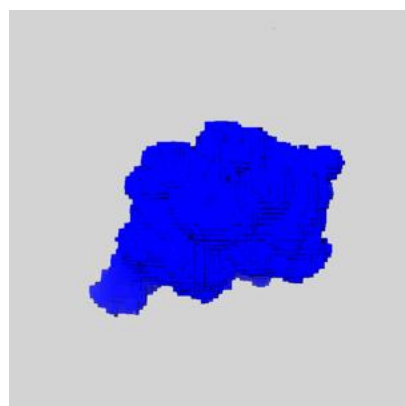
6.6 Mask visualisation [i](#)

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

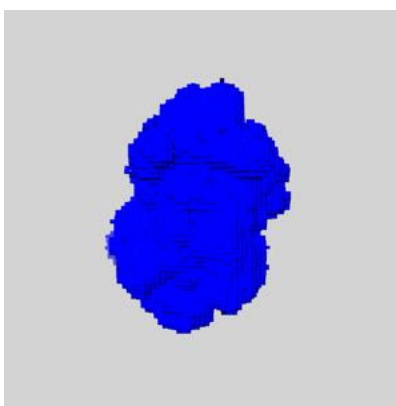
A mask typically either:

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

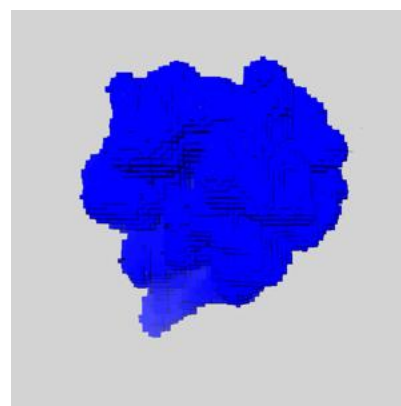
6.6.1 emd_44687_msk_1.map [i](#)



X



Y

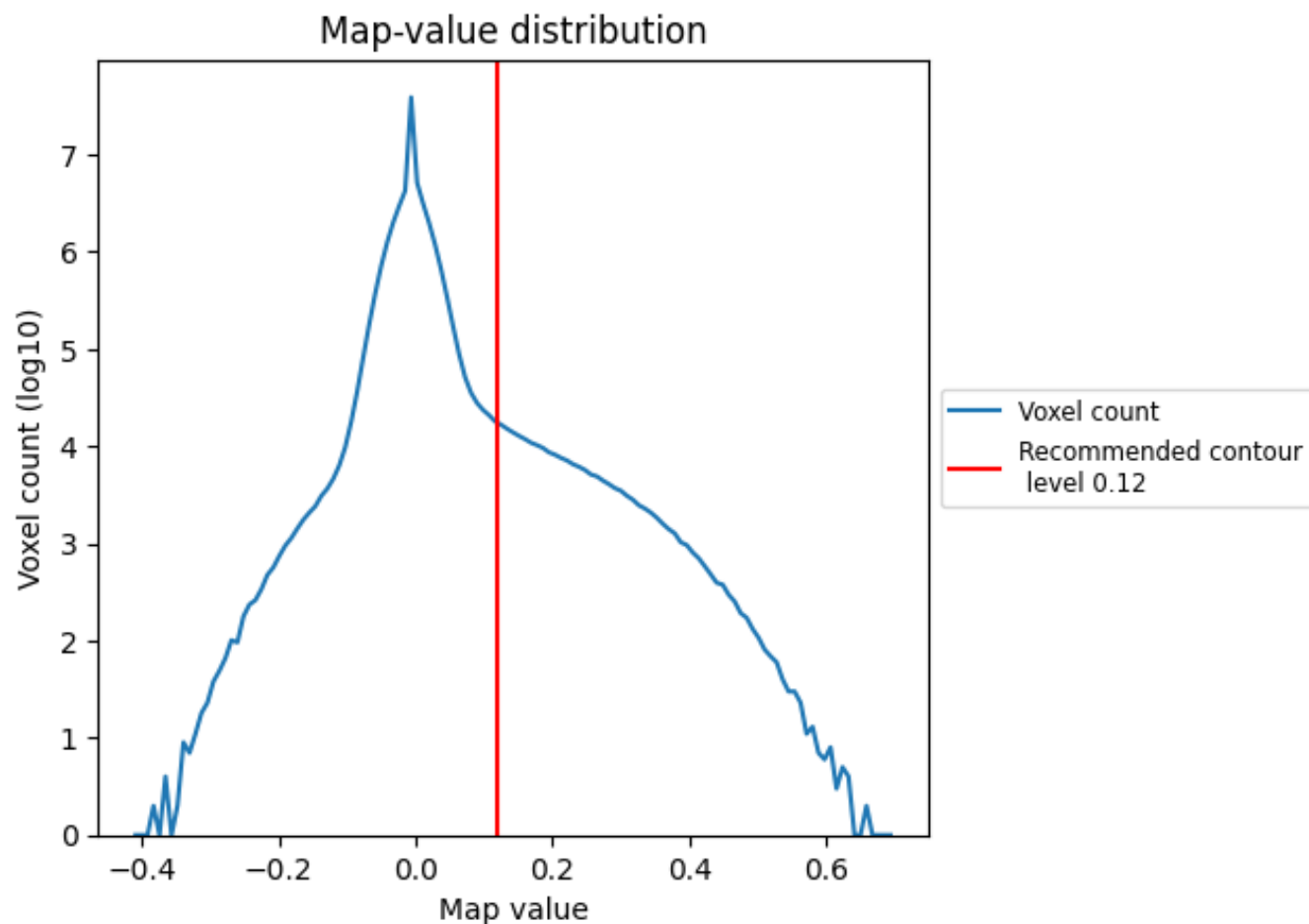


Z

7 Map analysis [i](#)

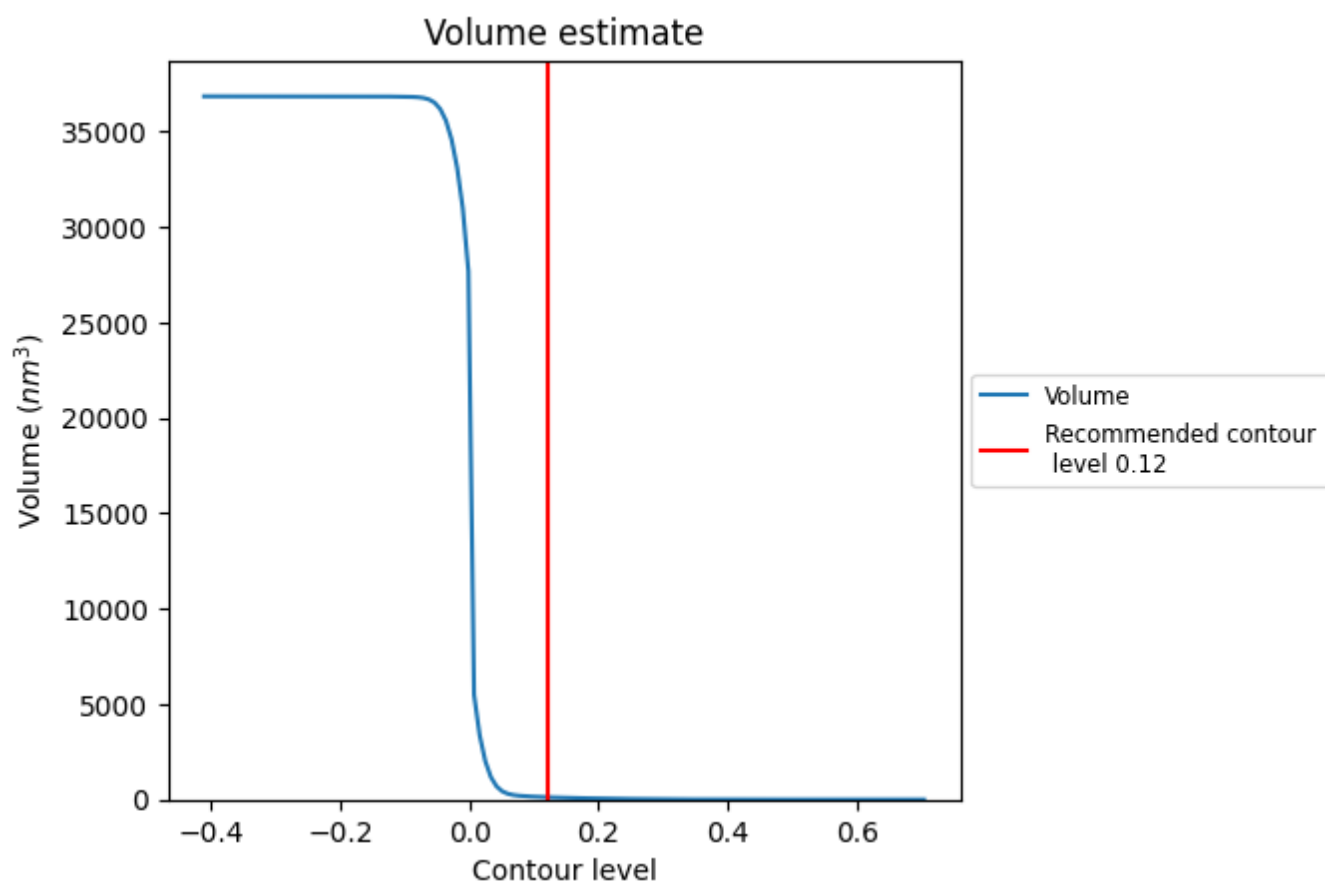
This section contains the results of statistical analysis of the map.

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.

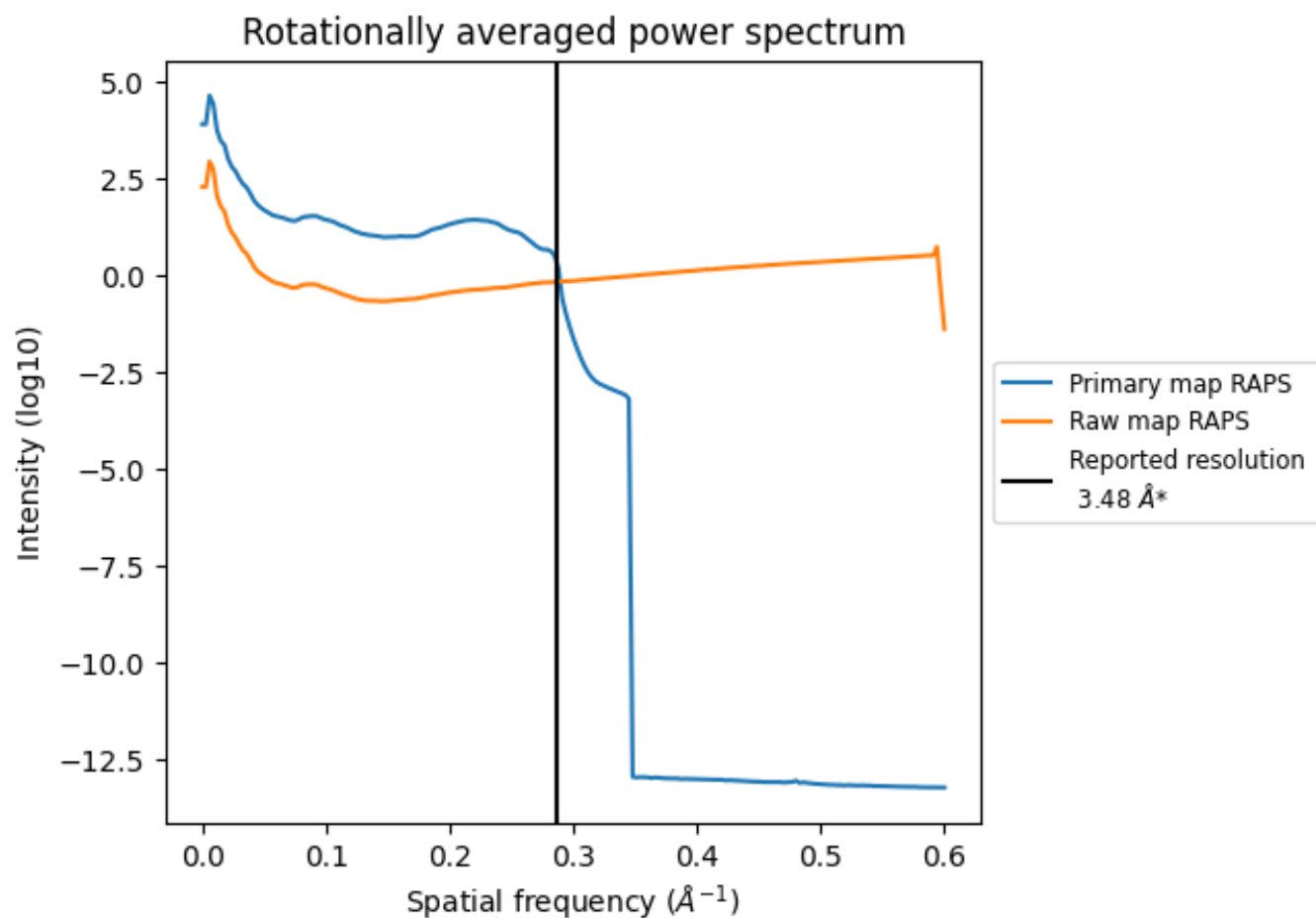
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 122 nm³; this corresponds to an approximate mass of 110 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 ⓘ

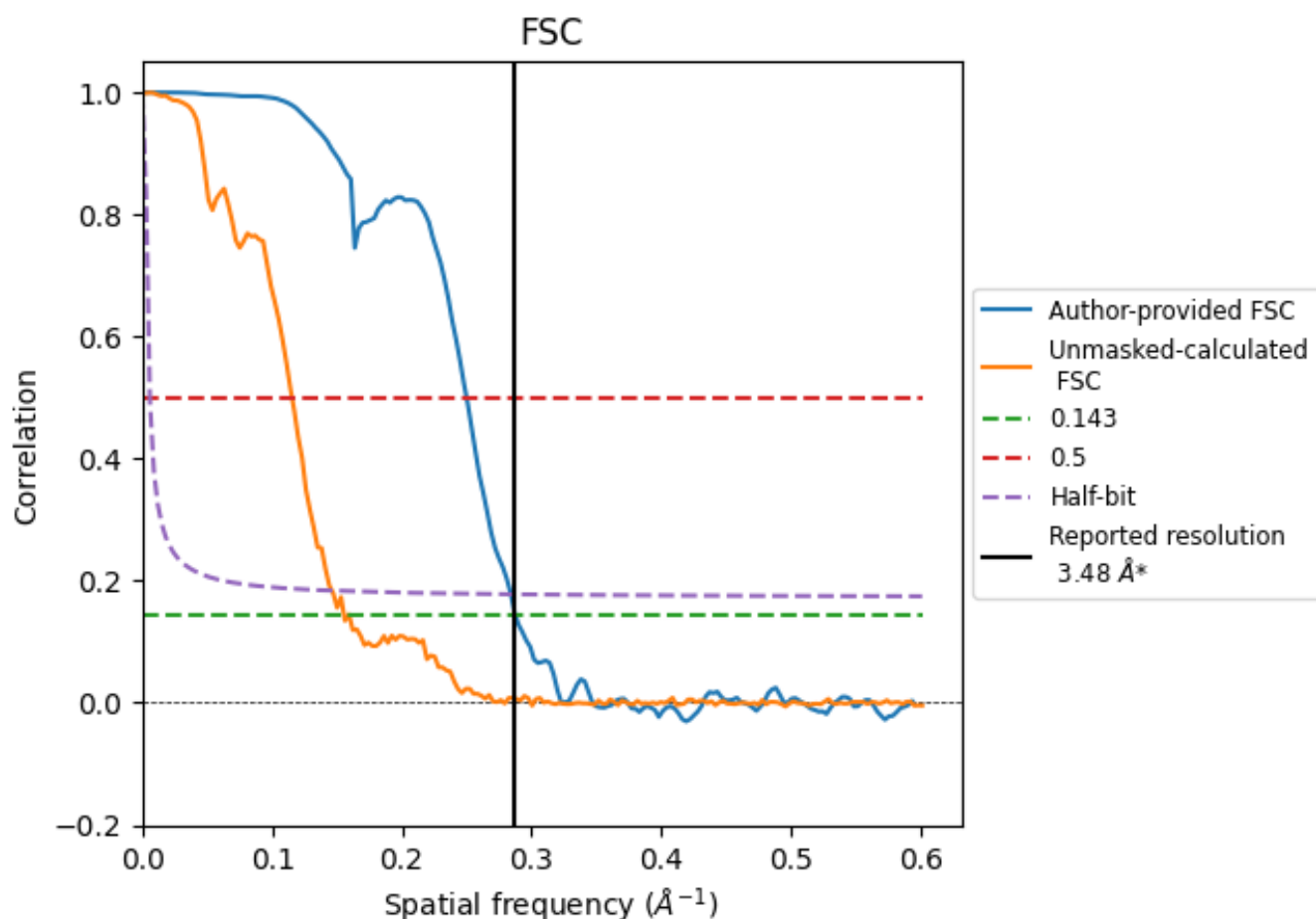


*Reported resolution corresponds to spatial frequency of 0.287 Å⁻¹

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 0.287 Å⁻¹

8.2 Resolution estimates [i](#)

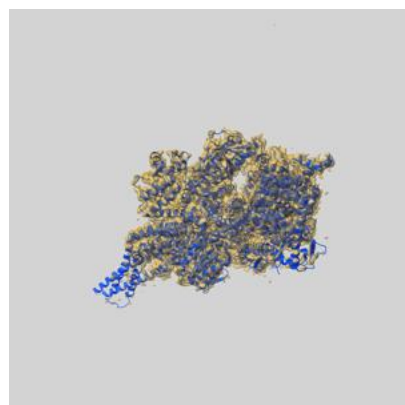
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.48	-	-
Author-provided FSC curve	3.48	4.00	3.52
Unmasked-calculated*	6.43	8.67	6.84

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 6.43 differs from the reported value 3.48 by more than 10 %

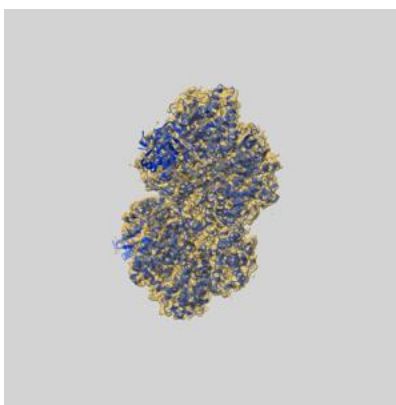
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-44687 and PDB model 9BM4. Per-residue inclusion information can be found in section [3](#) on page [5](#).

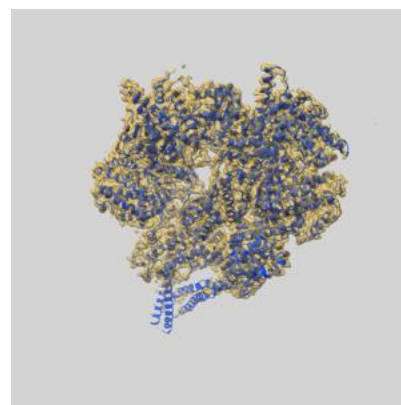
9.1 Map-model overlay [i](#)



X



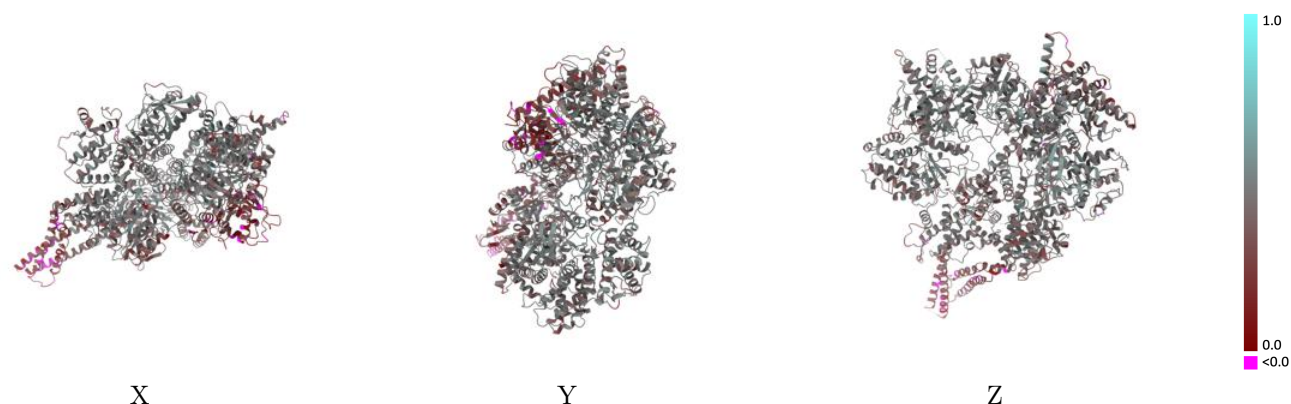
Y



Z

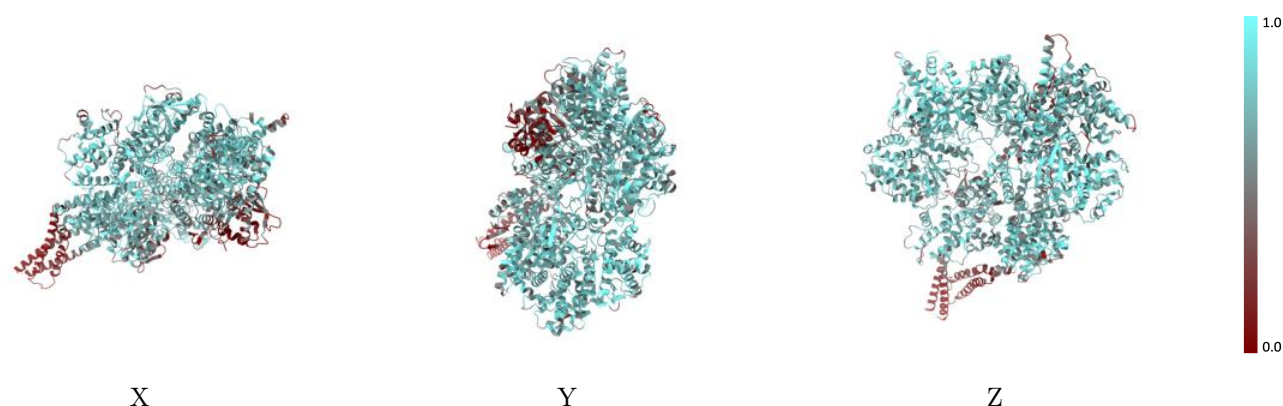
The images above show the 3D surface view of the map at the recommended contour level 0.12 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



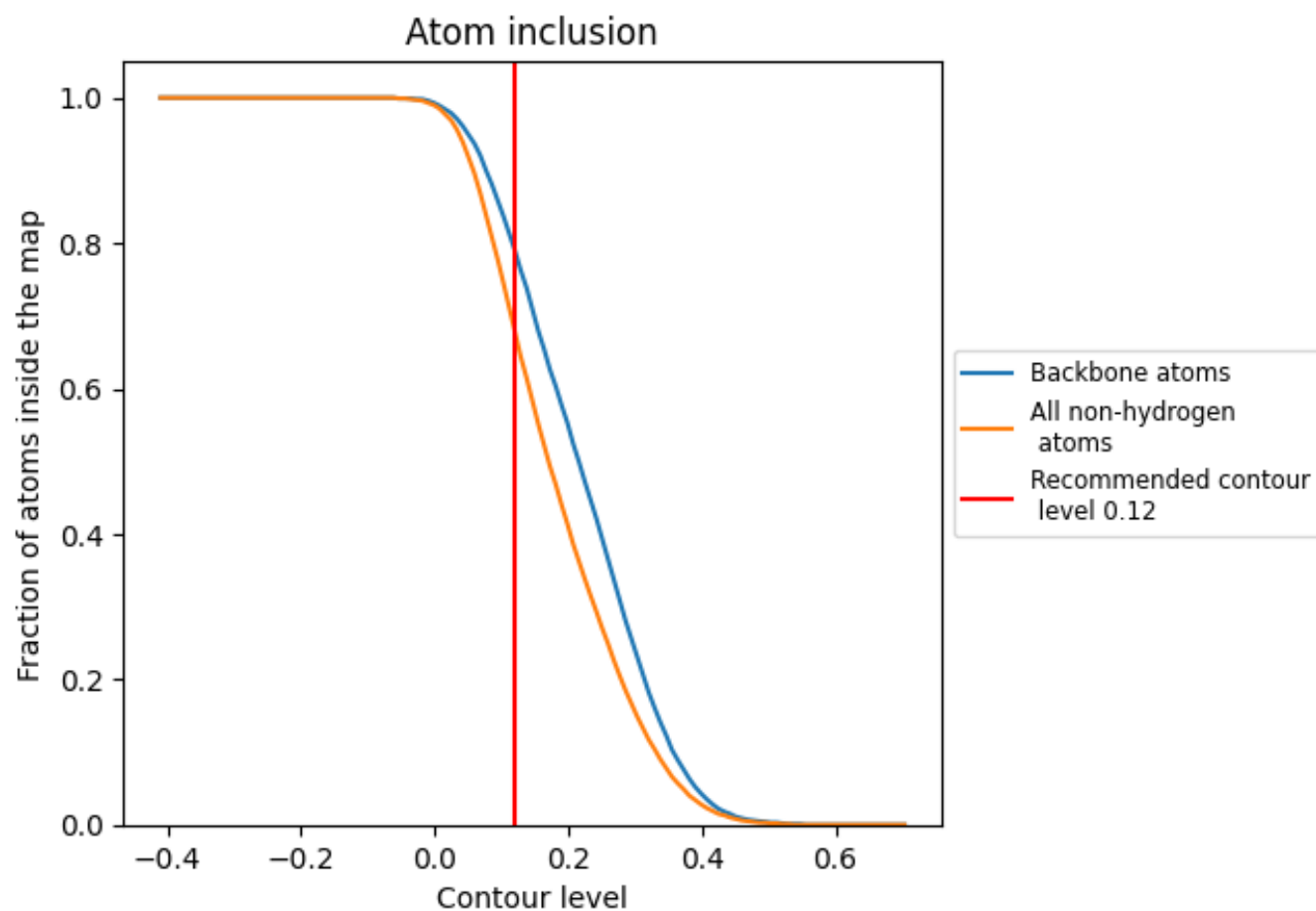
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.12).

9.4 Atom inclusion [i](#)



At the recommended contour level, 79% of all backbone atoms, 68% 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 (0.12) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.6780	0.4220
A	0.6780	0.4220

