Full wwPDB EM Validation Report ⓘ

Apr 24, 2025 – 12:28 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:

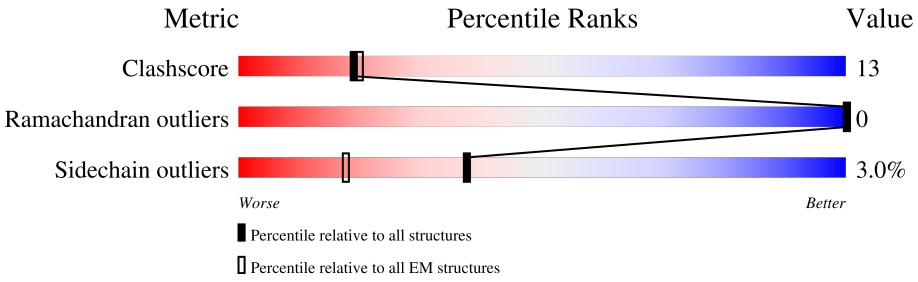
EMDB validation analysis	:	0.0.1.dev117
Mogul	:	2022.3.0, CSD as543be (2022)
MolProbity	:	4.02b-467
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.42

1 Overall quality at a glance (i)

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 <=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	8% 41% 17% • 42%

2 Entry composition

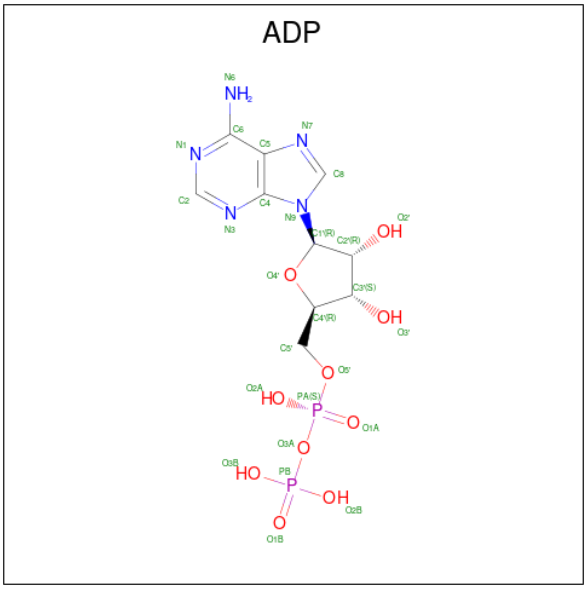
There are 4 unique types of molecules in this entry. The entry contains 21801 atoms, of which 0 are hydrogens and 0 are deuteriums.

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.

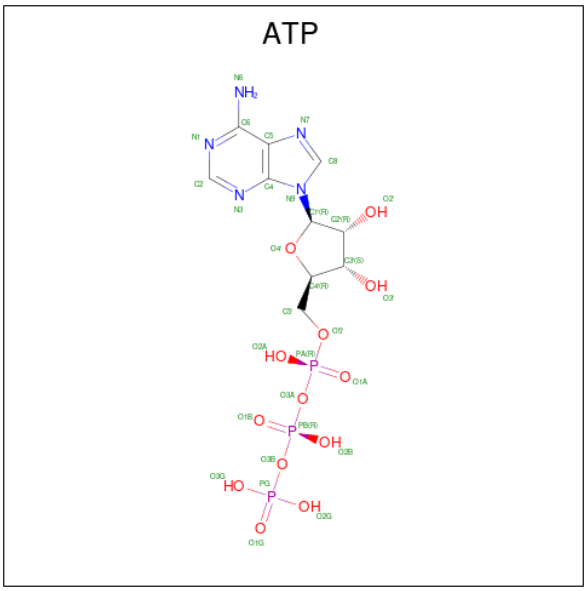
Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	2701	21684	13811	3743	4019	111	0	0

- 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
			Total	C	N	O	P	
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	
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).

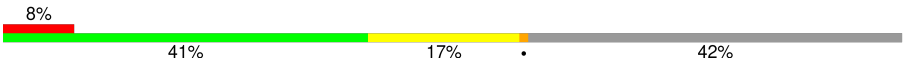
Mol	Chain	Residues	Atoms		AltConf
4	A	1	Total	Mg	0
			1	1	

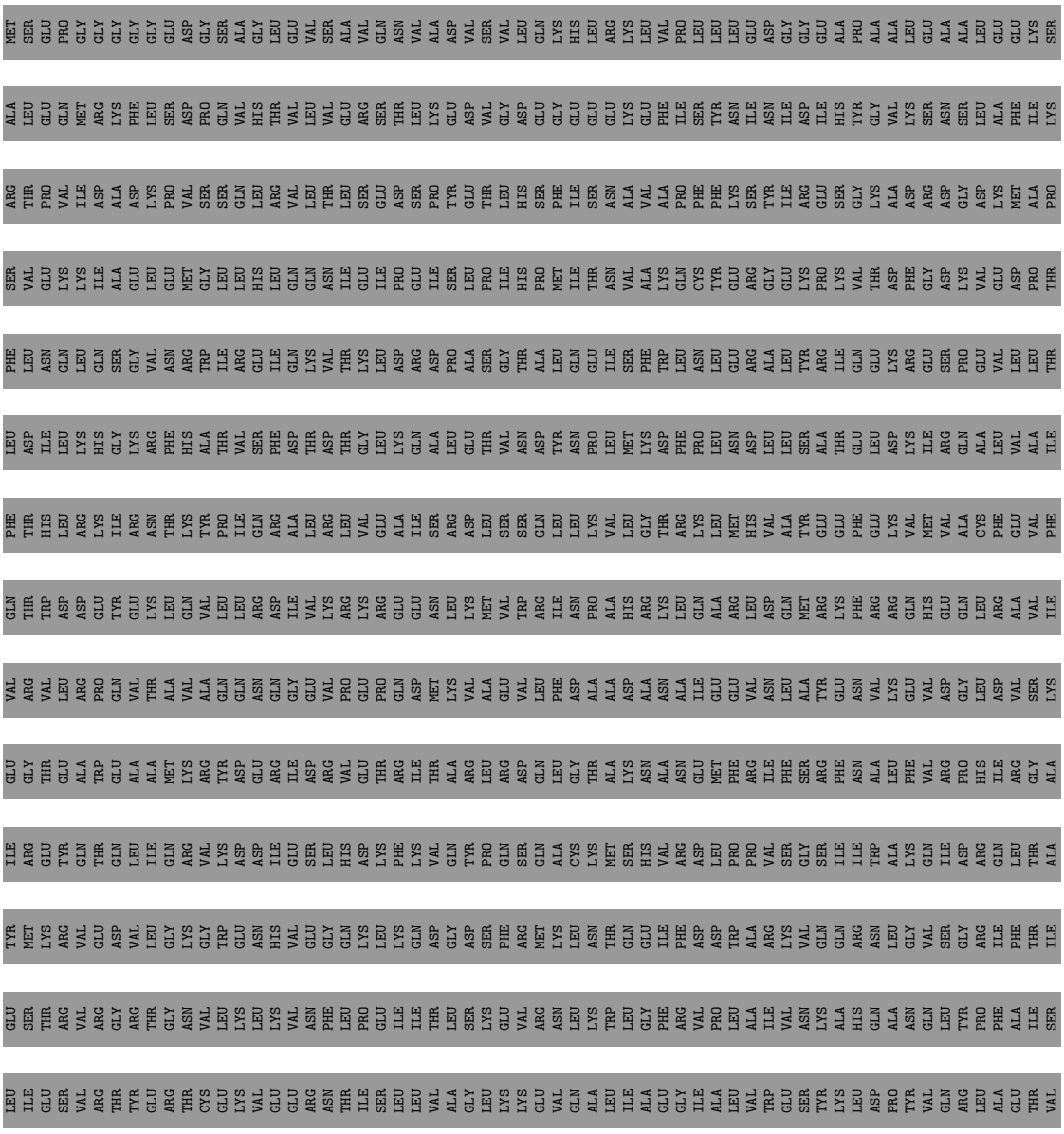
3 Residue-property plots (i)

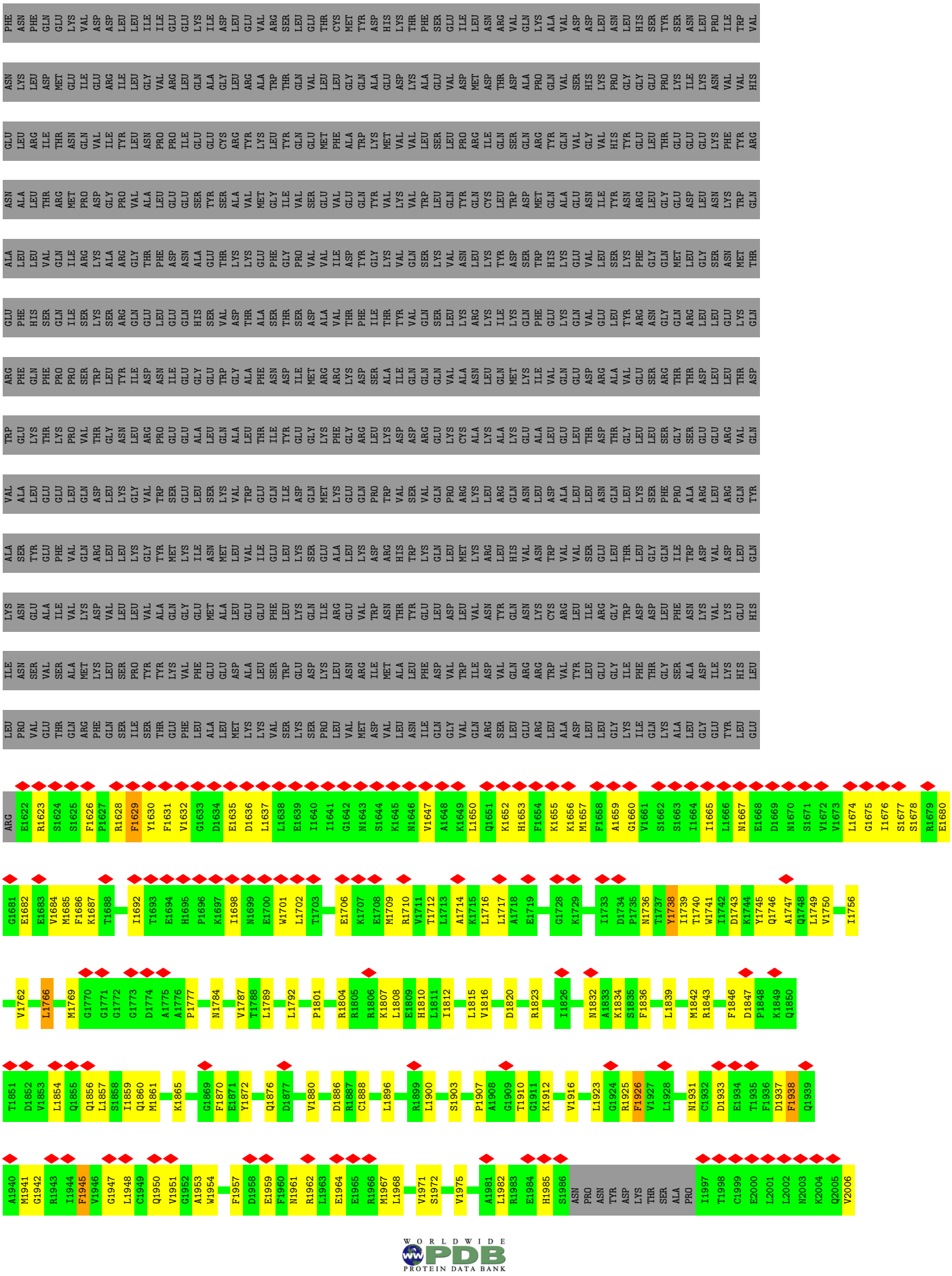
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

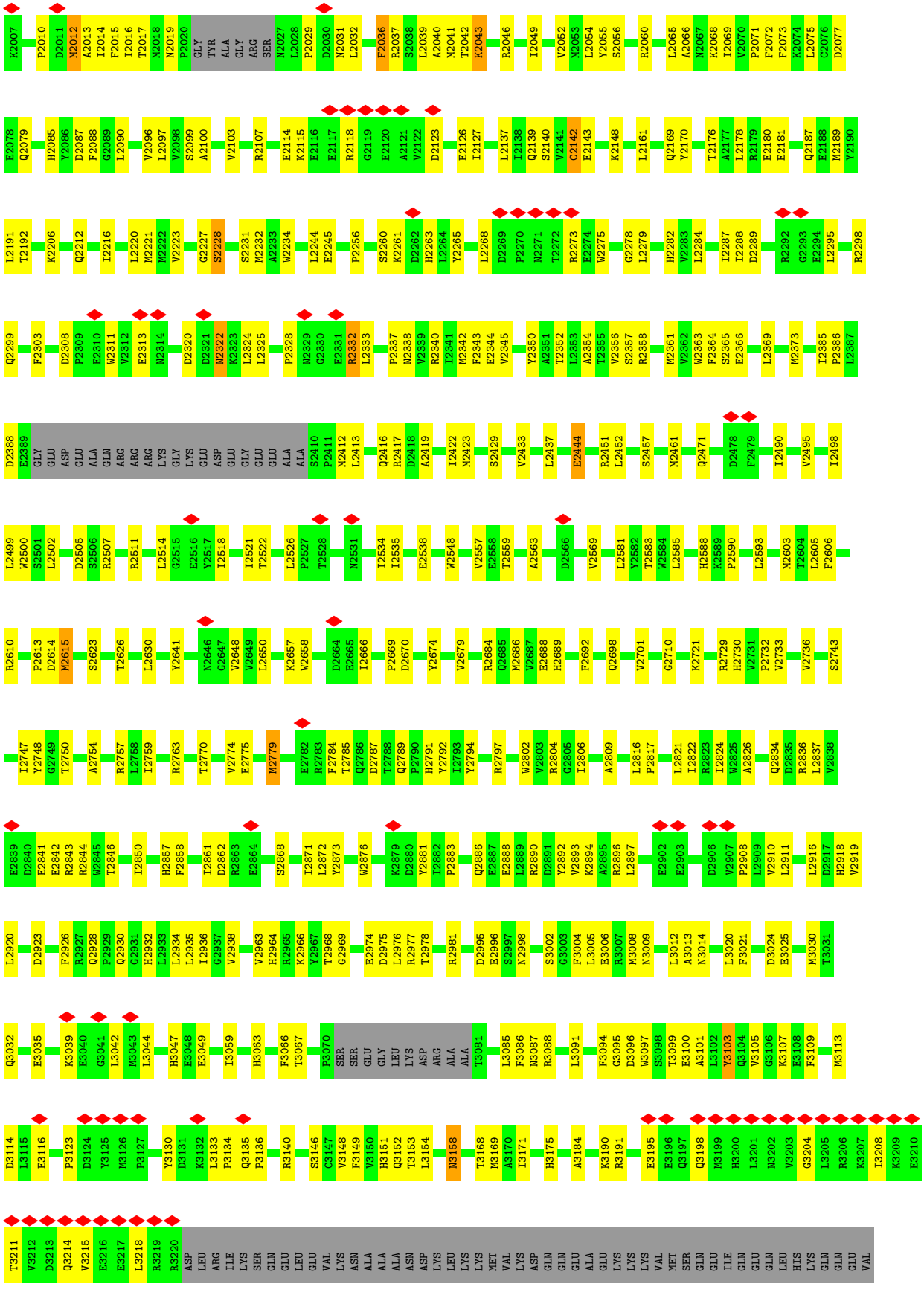
- Molecule 1: Cytoplasmic dynein 1 heavy chain 1

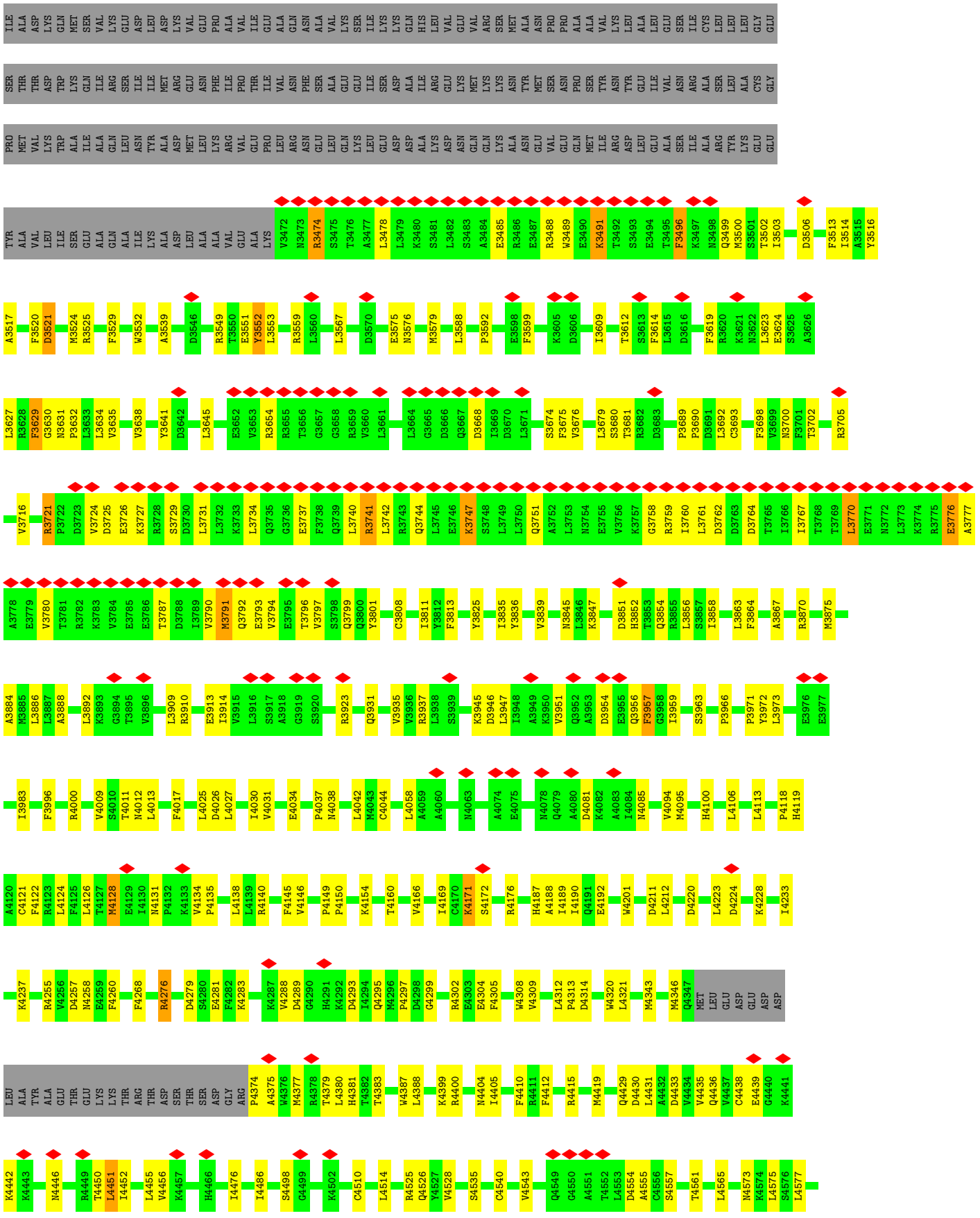
Chain A:

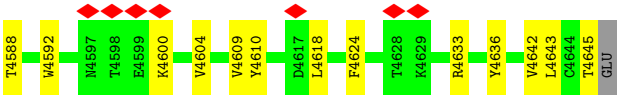







K2007 P2010 D2011 M2012 A2013 I2014 F2015 I2016 T2017 M2018 N2019 P2020 GLY TYR ALA GLY ARG SER N2027 L2028 P2029 D2030 N2031 L2032 F2036 R2037 S2038 L2039 A2040 M2041 T2042 K2043 R2046 I2049 V2052 M2053 L2054 Y2055 S2056 R2060 L2065 A2066 N2067 K2068 I2069 V2070 P2071 F2072 F2073 K2074 L2075 C2076 D2077
E2078 Q2079 H2085 Y2086 D2087 F2088 G2089 L2090 V2096 L2097 V2098 S2099 A2100 V2103 R2107 E2114 K2115 E2116 E2117 R2118 G2119 E2120 A2121 V2122 D2123 E2126 I2127 L2137 I2138 Q2139 S2140 V2141 C2142 E2143 K2148 L2161 Q2169 Y2170 T2176 A2177 L2178 R2179 E2180 E2181 Q2187 E2188 M2189 Y2190
L2191 T2192 K2206 Q2212 I2216 L2220 M2221 W2222 V2223 G2227 S2228 S2231 M2232 A2233 W2234 L2244 E2245 P2256 S2260 K2261 D2262 H2263 L2264 Y2265 L2268 D2269 P2270 W2271 T2272 R2273 E2274 W2275 G2278 L2279 H2282 V2283 L2284 I2287 I2288 D2289 R2292 G2293 E2294 L2295 R2298
Q2299 F2303 D2308 P2309 E2310 W2311 V2312 E2313 N2314 D2320 D2321 N2322 K2323 L2324 L2325 P2328 N2329 G2330 E2331 R2332 L2333 P2337 N2338 V2339 R2340 I2341 M2342 F2343 E2344 V2345 Y2350 A2351 T2352 L2353 A2354 T2355 V2356 S2357 R2358 M2361 V2362 W2363 F2364 S2365 E2366 L2369 M2373 I2385 P2386 L2387
D2388 E2389 GLY GLU ASP GLU ALA GLN ARG ARG ARG LYS GLY LYS GLU ASP GLU GLY GLU GLU ALA ALA S2410 P2411 M2412 L2413 Q2416 R2417 D2418 A2419 I2422 M2423 S2429 V2433 L2437 E2444 R2451 L2452 S2457 M2461 Q2471 D2478 F2479 I2490 V2495 I2498
L2499 W2500 S2501 L2502 D2505 S2506 R2507 R2511 L2514 G2515 E2516 Y2517 I2518 I2521 T2522 L2526 P2527 T2528 N2531 I2534 I2535 E2538 W2548 V2557 E2558 T2559 A2563 D2566 V2569 L2581 Y2582 T2583 W2584 L2585 H2588 K2589 P2590 L2593 M2603 T2604 L2605 F2606
R2610 P2613 D2614 M2615 S2623 T2626 L2630 Y2641 N2646 G2647 V2648 V2649 L2650 K2657 W2658 D2664 E2665 I2666 P2669 D2670 Y2674 V2679 R2684 Q2685 M2686 V2687 E2688 H2689 F2692 Q2698 V2701 G2710 K2721 R2729 H2730 V2731 P2732 V2733 V2736 S2743
I2747 Y2748 G2749 T2750 A2754 R2757 L2758 I2759 R2763 T2770 V2774 E2775 M2779 E2782 R2783 F2784 T2785 Q2786 D2787 T2788 Q2789 P2790 H2791 Y2792 I2793 Y2794 R2797 W2802 V2803 R2804 G2805 I2806 A2809 L2816 P2817 L2821 I2822 R2823 I2824 W2825 A2826 Q2834 D2835 R2836 L2837 V2838
E2839 D2840 E2841 E2842 R2843 R2844 W2845 T2846 I2850 H2857 F2858 I2861 D2862 R2863 E2864 S2868 I2871 L2872 Y2873 W2876 K2879 D2880 Y2881 I2882 P2883 Q2886 E2887 E2888 L2889 R2890 D2891 Y2892 V2893 K2894 A2895 R2896 L2897 E2902 E2903 D2906 V2907 P2908 L2909 V2910 L2911 L2916 D2917 H2918 V2919
L2920 D2923 F2926 R2927 Q2928 P2929 Q2930 G2931 H2932 L2933 L2934 L2935 I2936 G2937 V2938 V2963 H2964 R2965 K2966 Y2967 T2968 G2969 E2974 D2975 L2976 R2977 T2978 R2981 D2995 E2996 S2997 N2998 S3002 G3003 F3004 L3005 E3006 R3007 M3008 N3009 L3012 A3013 N3014 L3020 F3021 D3024 E3025 M3030 T3031
Q3032 E3035 K3039 E3040 G3041 L3042 M3043 L3044 H3047 E3048 E3049 I3059 H3063 F3066 T3067 P3070 SER SER GLU GLY LEU LYS ASP ARG ALA ALA T3081 L3085 P3086 N3087 R3088 L3091 F3094 G3095 D3096 W3097 S3098 T3099 E3100 A3101 L3102 Y3103 Q3104 V3105 G3106 K3107 E3108 F3109 M3113
D3114 L3115 E3116 P3123 D3124 Y3125 M3126 P3127 Y3130 D3131 K3132 L3133 P3134 Q3135 P3136 R3140 S3146 C3147 V3148 F3149 V3150 H3151 Q3152 T3153 L3154 N3158 T3168 M3169 A3170 I3171 H3175 A3184 K3190 R3191 E3195 E3196 Q3197 Q3198 M3199 H3200 L3201 N3202 Y3203 G3204 L3205 R3206 K3207 I3208 K3209 E3210
T3211 V3212 D3213 Q3214 V3215 E3216 E3217 L3218 R3219 R3220 ASP LEU ARG ILE LYS SER GLN GLU LEU GLU VAL LYS ASN ALA ALA ALA ASN ASP LYS LEU LYS LYS MET VAL LYS ASP GLN GLN GLU ALA GLU LYS LYS LYS VAL MET SER GLN GLU ILE GLN GLU GLN LEU HIS LYS GLN GLN GLU VAL




T4588
W4592
N4597
T4598
E4599
K4600
V4604
V4609
Y4610
D4617
L4618
F4624
T4628
K4629
R4633
Y4636
V4642
L4643
C4644
T4645
GLU

4 Experimental information (i)

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 ($e^-/Å^2$)	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 (Å)	332.80002, 332.80002, 332.80002	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.832, 0.832, 0.832	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: ATP, MG, ADP

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\#\|Z\| > 5$	RMSZ	$\#\|Z\| > 5$
1	A	0.27	0/22148	0.51	3/30024 (0.0%)

There are no bond length outliers.

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	1766	LEU	CA-CB-CG	6.52	130.29	115.30
1	A	4451	LEU	CA-CB-CG	5.96	129.01	115.30
1	A	4224	ASP	CB-CG-OD1	5.18	122.97	118.30

There are no chirality outliers.

There are no planarity outliers.

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	21684	0	21717	549	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	549	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 (549) 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:2452:LEU:HD11	3:A:4702:ATP:H4'	1.70	0.74
1:A:3796:THR:HA	1:A:3799:GLN:HG3	1.72	0.72
1:A:4377:MET:HE2	1:A:4438:CYS:HA	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: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: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: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: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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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: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: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:2686:MET:HE2	1:A:2692:PHE:HB3	1.87	0.56
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: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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3002:SER:O	1:A:3006:GLU:HG2	2.07	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: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: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:2388:ASP:HB3	1:A:2412:MET:HE1	1.90	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:2759:ILE:HG13	1:A:2759:ILE:O	2.09	0.53
1:A:4025:LEU:HD22	1:A:4027:LEU:HG	1.88	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:1912:LYS:HB3	1:A:2041:MET:HG3	1.91	0.53
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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: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:2278:GLY:O	1:A:2282:HIS:N	2.40	0.51
1:A:2603:MET:CE	3:A:4703:ATP:H2'	2.39	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: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
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:2886:GLN:H	1:A:2886:GLN:CD	2.14	0.50
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:1959:GLU:O	1:A:1959:GLU:HG3	2.12	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: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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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:2775:GLU:O	1:A:2779:MET:HE3	2.12	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: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
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: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:2087:ASP:OD1	1:A:2357:SER:OG	2.24	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2623:SER:N	1:A:2626:THR:OG1	2.46	0.48
1:A:3218:LEU:HD21	1:A:3760:ILE:HG23	1.95	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:4283:LYS:NZ	1:A:4293:ASP:OD2	2.41	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:4446:ASN:OD1	1:A:4446:ASN:N	2.47	0.47
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: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:2603:MET:HE3	3:A:4703:ATP:H2'	1.96	0.47
1:A:3592:PRO:HG3	1:A:3702:THR:HG22	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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: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
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: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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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:2585:LEU:HD13	1:A:2615:MET:HE1	1.98	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
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:2369:LEU:HD12	1:A:2373:MET:HE2	1.99	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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:2221:MET:HE2	1:A:2361:MET:SD	2.58	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:4081:ASP:O	1:A:4085:ASN:ND2	2.51	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
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: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: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:3151:HIS:ND1	1:A:3516:TYR:OH	2.36	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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:1910:THR:OG1	1:A:1912:LYS:NZ	2.37	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:2212:GLN:O	1:A:2216:ILE:HG23	2.19	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: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
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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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: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
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:3113:MET:HE2	1:A:3113:MET:HB2	1.87	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:4510:CYS:HG	1:A:4561:THR:HG1	1.65	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
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:3100:GLU:OE1	1:A:3130:TYR:OH	2.20	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: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
1:A:4171:LYS:HG3	1:A:4172:SER:H	1.86	0.41
1:A:1684:VAL:O	1:A:1685:MET:HE2	2.21	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

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:4528:VAL:HG11	1:A:4592:TRP:HB2	2.02	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:2206:LYS:HD3	1:A:2206:LYS:HA	1.86	0.40
1:A:3135:GLN:HB3	1:A:3136:PRO:HD3	2.03	0.40
1:A:3721:ARG:CZ	1:A:3724:VAL:HG11	2.51	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%)	2329 (97%)	71 (3%)	36 63

All (71) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	1629	PHE
1	A	1657	MET
1	A	1738	TYR
1	A	1886	ASP
1	A	1900	LEU
1	A	1925	ARG
1	A	1926	PHE
1	A	1931	ASN
1	A	1937	ASP
1	A	1938	PHE
1	A	1945	PHE
1	A	2012	MET
1	A	2036	PHE
1	A	2043	LYS
1	A	2055	TYR
1	A	2060	ARG
1	A	2142	CYS
1	A	2169	GLN
1	A	2170	TYR
1	A	2187	GLN
1	A	2228	SER
1	A	2289	ASP
1	A	2322	ASN
1	A	2332	ARG
1	A	2366	GLU
1	A	2429	SER
1	A	2444	GLU
1	A	2471	GLN
1	A	2615	MET
1	A	2779	MET
1	A	2843	ARG
1	A	2881	TYR
1	A	2923	ASP
1	A	2975	ASP
1	A	3014	ASN

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Mol	Chain	Res	Type
1	A	3087	ASN
1	A	3103	TYR
1	A	3146	SER
1	A	3158	ASN
1	A	3169	MET
1	A	3474	ARG
1	A	3491	LYS
1	A	3496	PHE
1	A	3521	ASP
1	A	3529	PHE
1	A	3552	TYR
1	A	3629	PHE
1	A	3721	ARG
1	A	3741	ARG
1	A	3747	LYS
1	A	3770	LEU
1	A	3776	GLU
1	A	3791	MET
1	A	3847	LYS
1	A	3923	ARG
1	A	3945	LYS
1	A	3946	ASP
1	A	3957	PHE
1	A	3972	TYR
1	A	4095	MET
1	A	4128	MET
1	A	4140	ARG
1	A	4171	LYS
1	A	4268	PHE
1	A	4276	ARG
1	A	4314	ASP
1	A	4399	LYS
1	A	4419	MET
1	A	4498	SER
1	A	4540	CYS
1	A	4573	ASN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (7) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	1653	HIS
1	A	2416	GLN

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Mol	Chain	Res	Type
1	A	2588	HIS
1	A	3198	GLN
1	A	3631	ASN
1	A	3852	HIS
1	A	4526	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	$\#\|Z\| > 2$
2	ADP	A	4701	-	24,29,29	0.73	0	29,45,45	0.74	1 (3%)
3	ATP	A	4703	4	28,33,33	0.71	0	34,52,52	0.83	1 (2%)
2	ADP	A	4704	-	24,29,29	0.85	0	29,45,45	1.18	2 (6%)
3	ATP	A	4702	-	28,33,33	0.73	0	34,52,52	0.61	1 (2%)

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	4701	-	-	2/12/32/32	0/3/3/3
3	ATP	A	4703	4	-	3/18/38/38	0/3/3/3
2	ADP	A	4704	-	-	1/12/32/32	0/3/3/3
3	ATP	A	4702	-	-	1/18/38/38	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(^{o})	Ideal(^{o})
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.

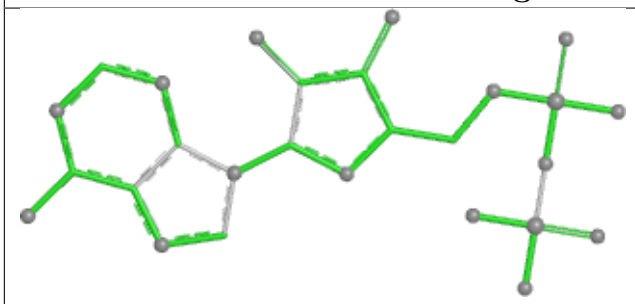
3 monomers are involved in 9 short contacts:

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

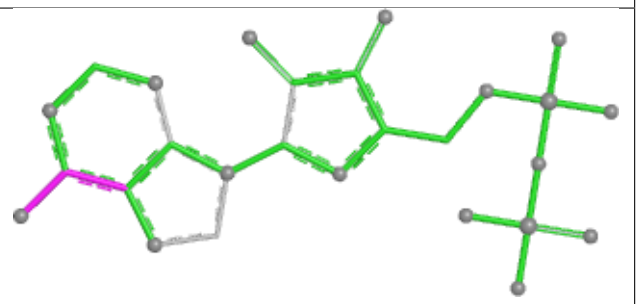
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 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.

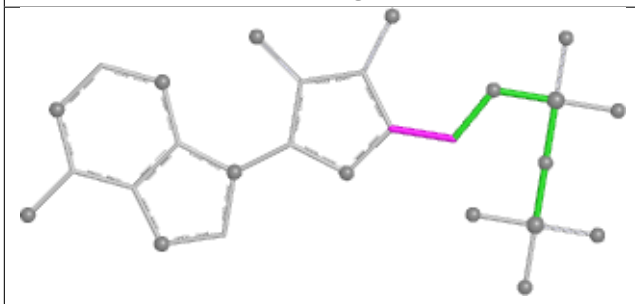
Ligand ADP A 4701



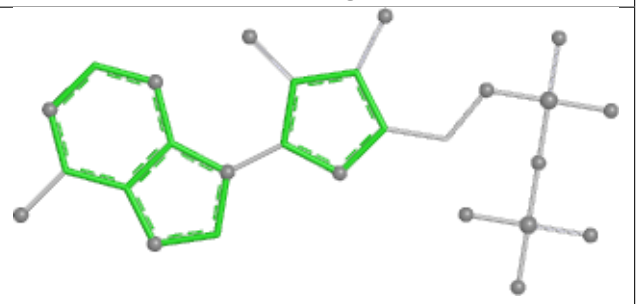
Bond lengths



Bond angles

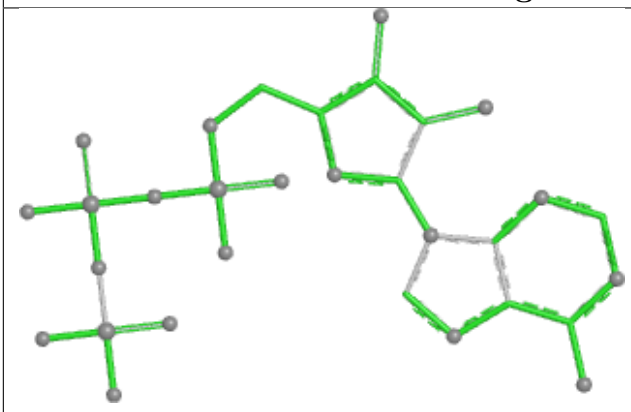


Torsions

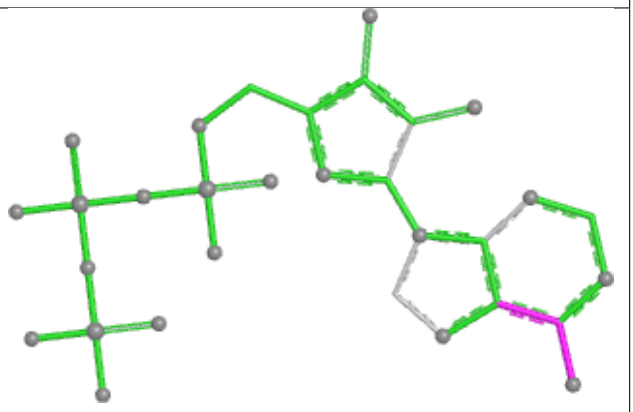


Rings

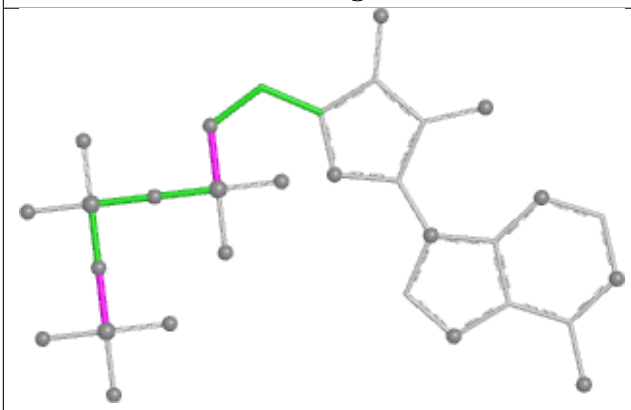
Ligand ATP A 4703



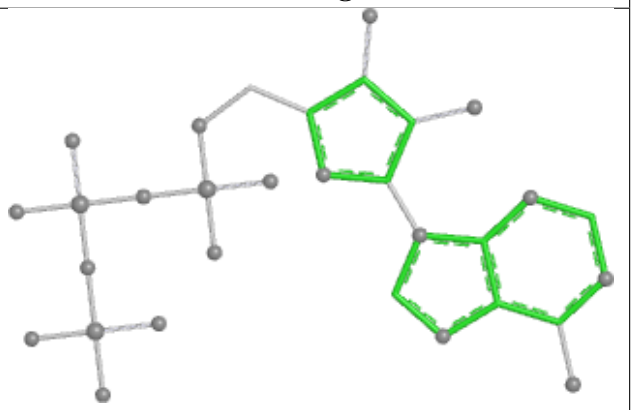
Bond lengths



Bond angles

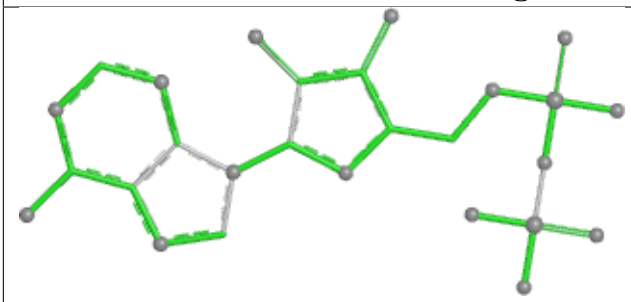


Torsions

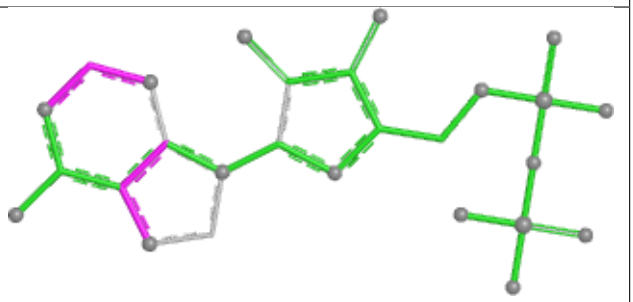


Rings

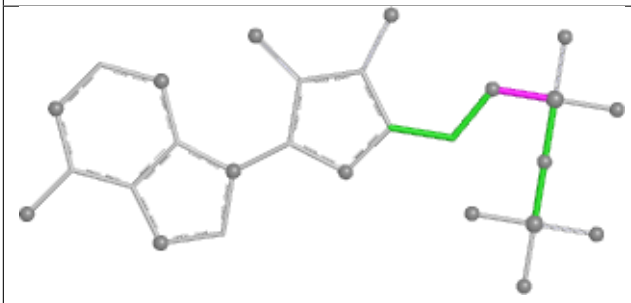
Ligand ADP A 4704



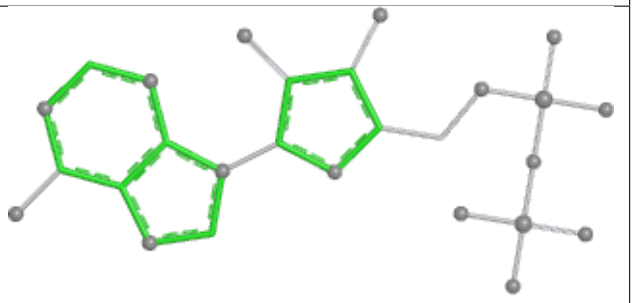
Bond lengths



Bond angles

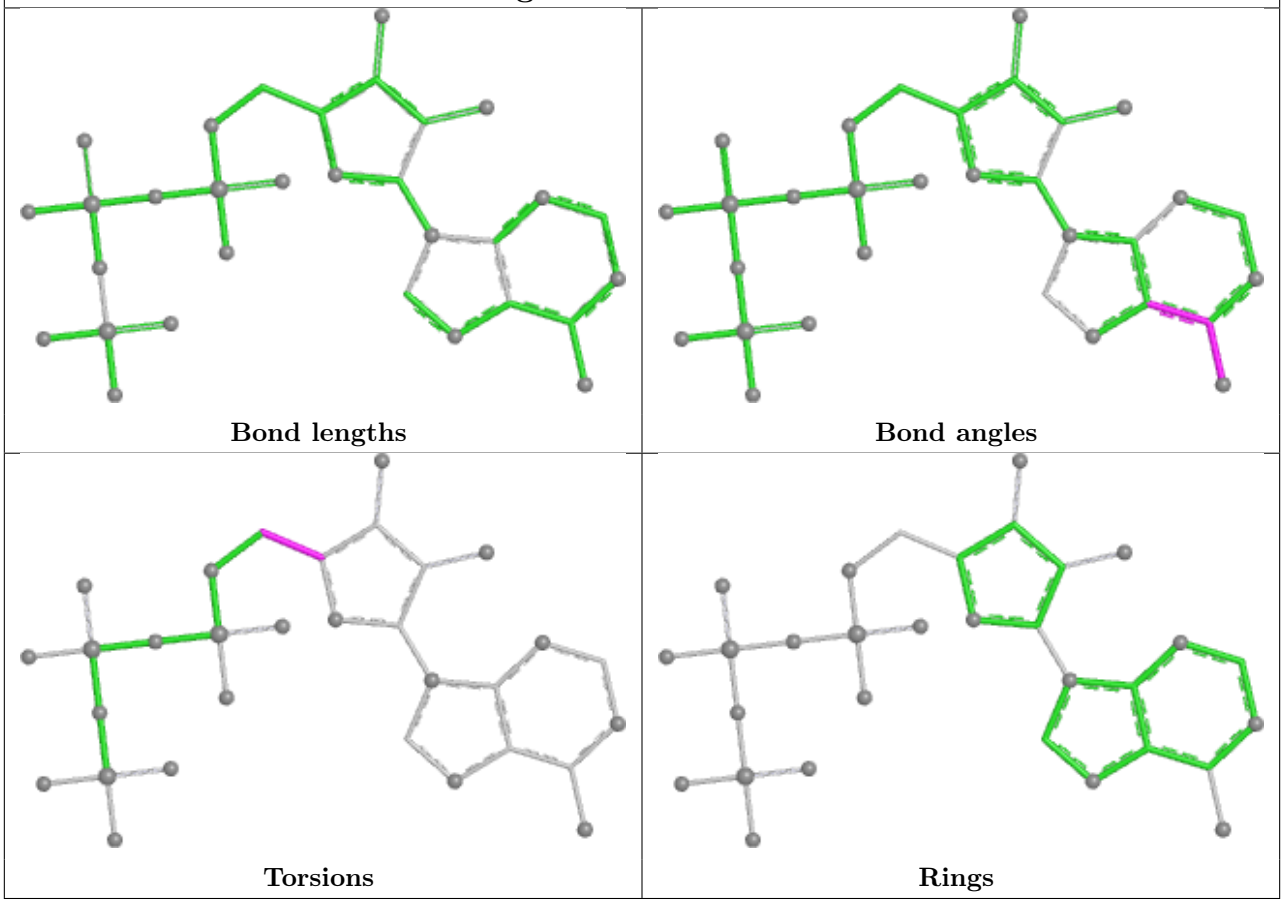


Torsions



Rings

Ligand ATP A 4702



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.

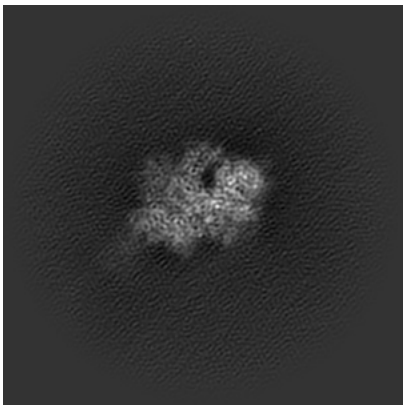
6 Map visualisation

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.

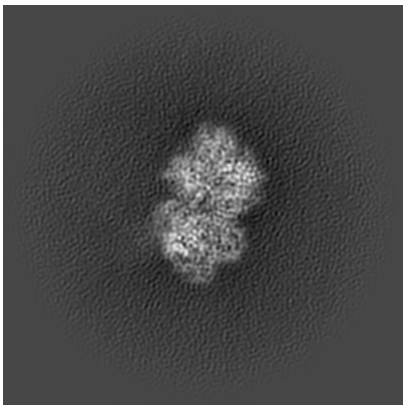
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

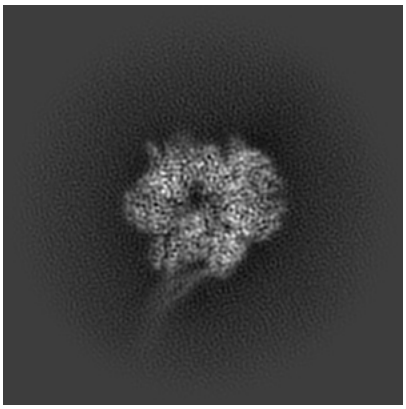
6.1.1 Primary map



X

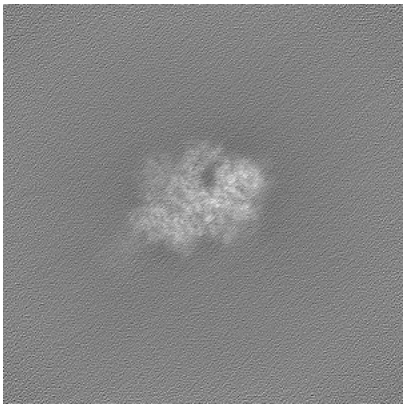


Y

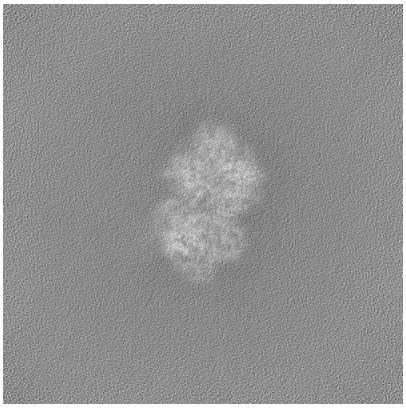


Z

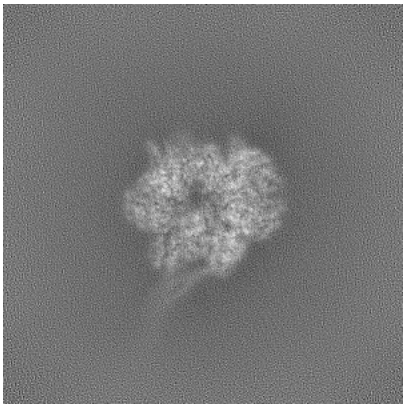
6.1.2 Raw map



X



Y

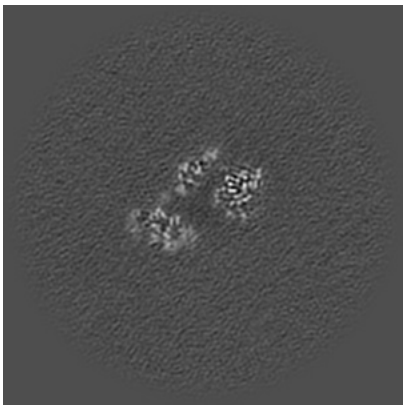


Z

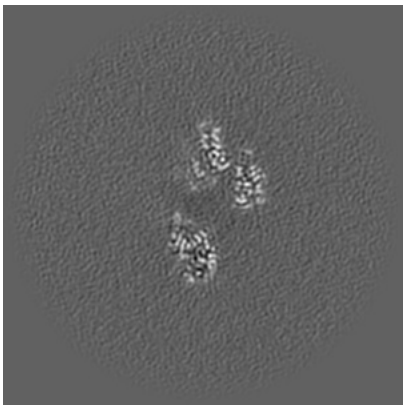
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

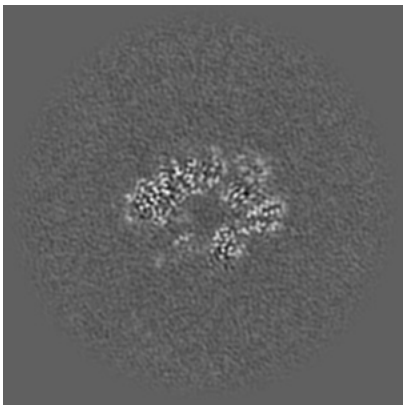
6.2.1 Primary map



X Index: 200

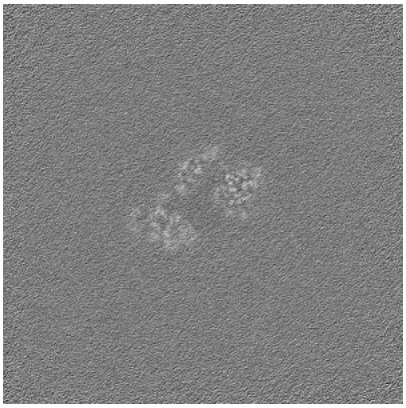


Y Index: 200

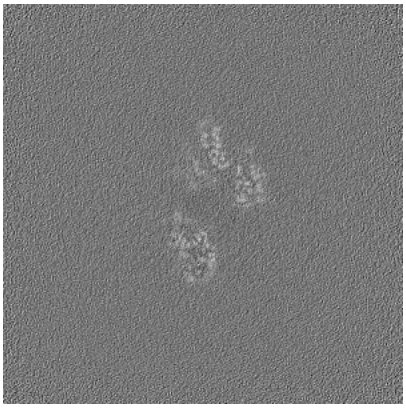


Z Index: 200

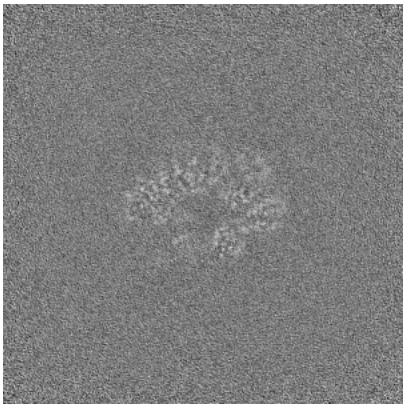
6.2.2 Raw map



X Index: 200



Y Index: 200

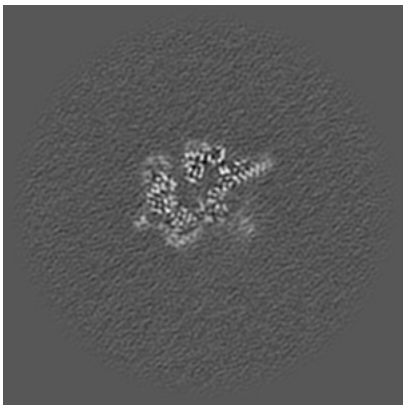


Z Index: 200

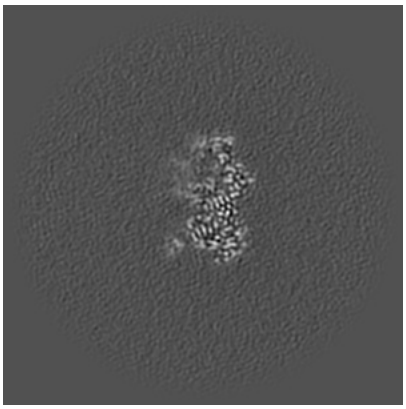
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

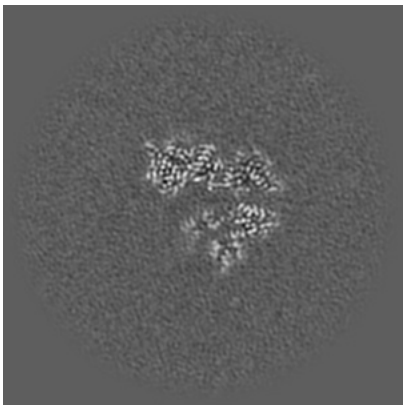
6.3.1 Primary map



X Index: 229

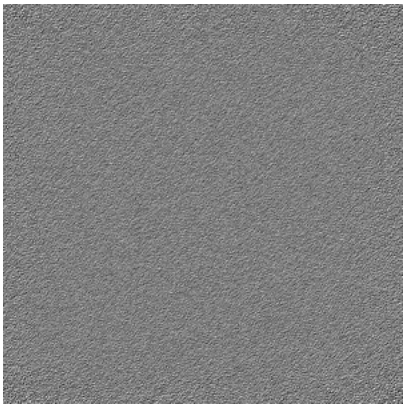


Y Index: 231

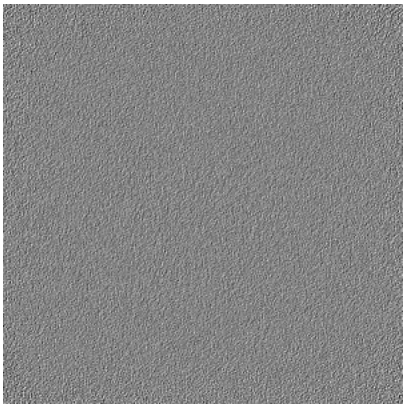


Z Index: 222

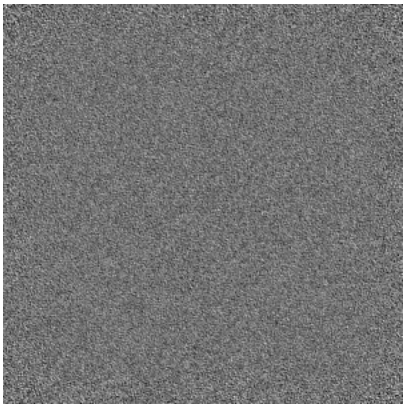
6.3.2 Raw map



X Index: 0



Y Index: 0

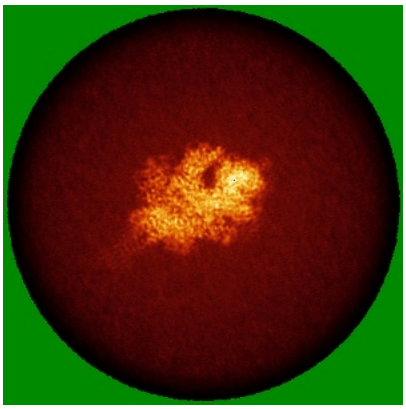


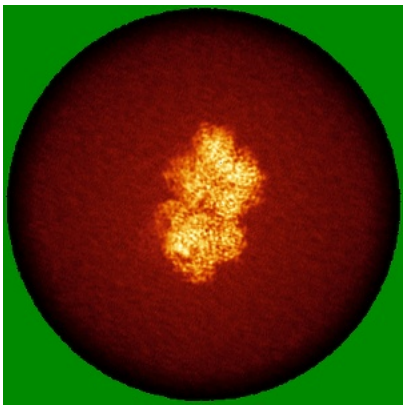
Z Index: 0

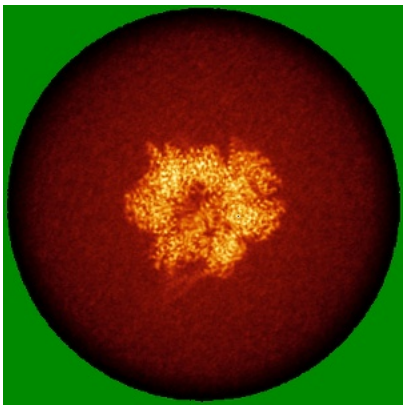
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) (i)

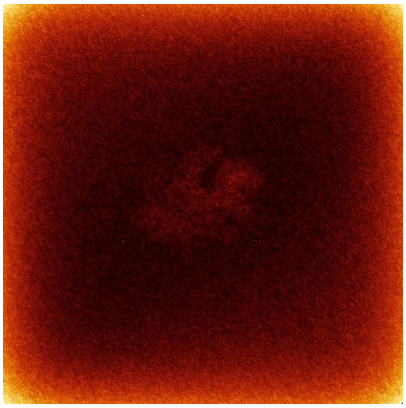
6.4.1 Primary map

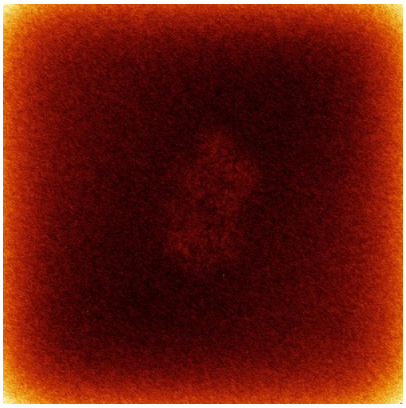

X

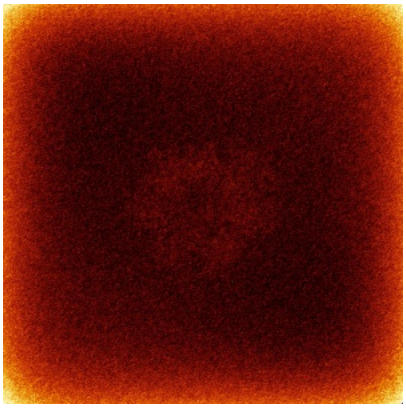

Y


Z

6.4.2 Raw map


X

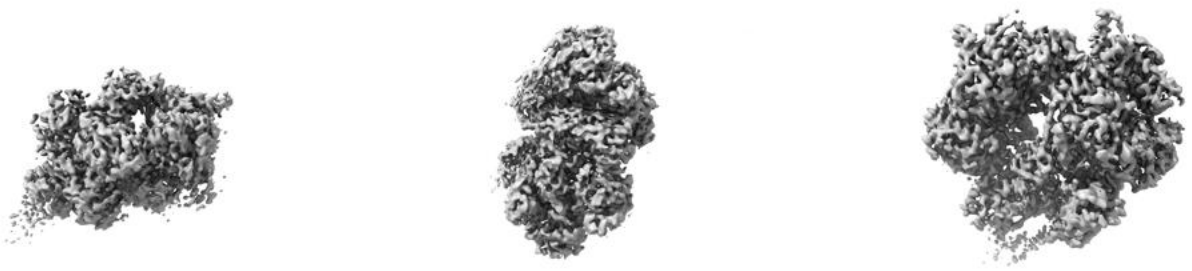

Y


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)

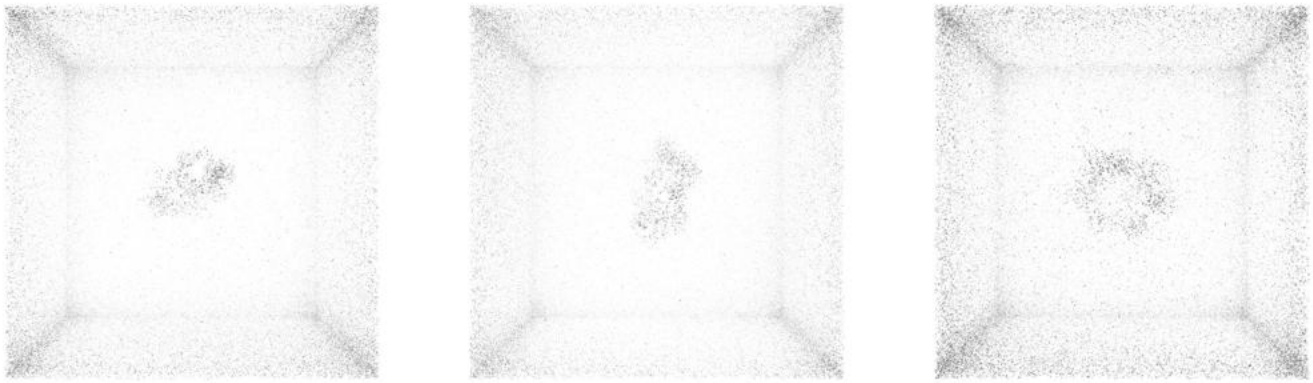
6.5.1 Primary map



X Y Z

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



X Y Z

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

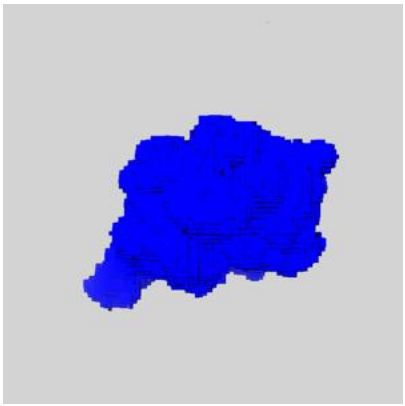
6.6 Mask visualisation (i)

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

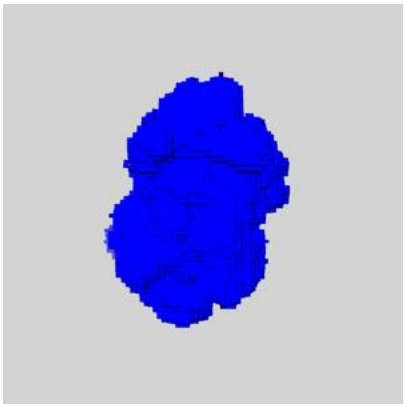
A mask typically either:

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

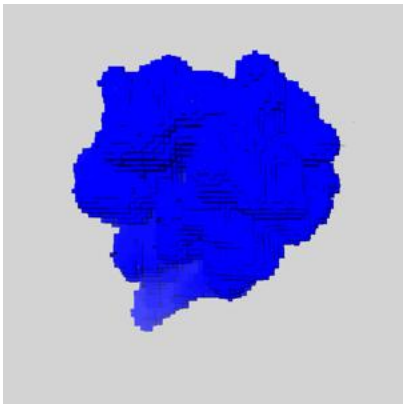
6.6.1 emd_44687_msk_1.map (i)



X



Y

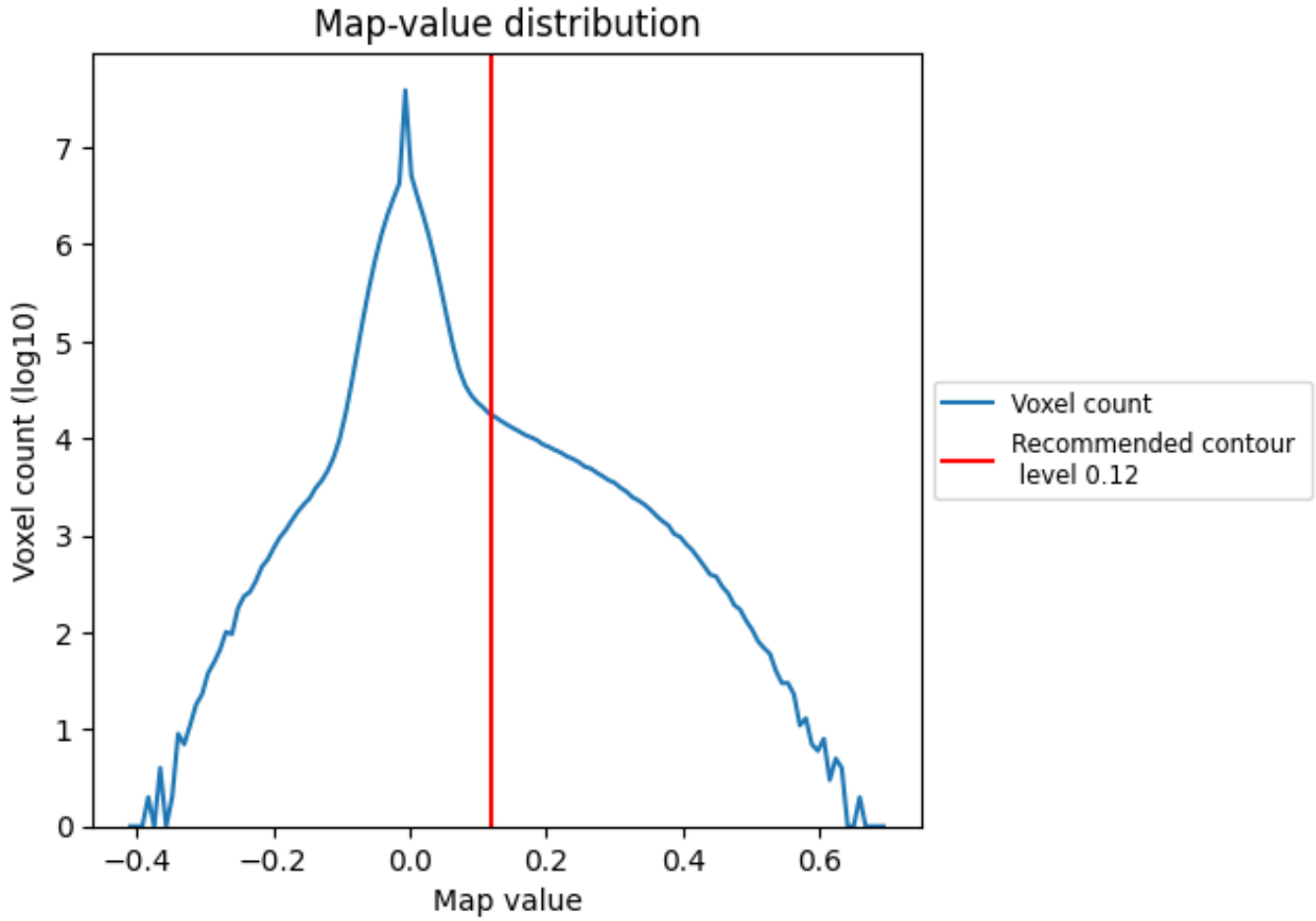


Z

7 Map analysis

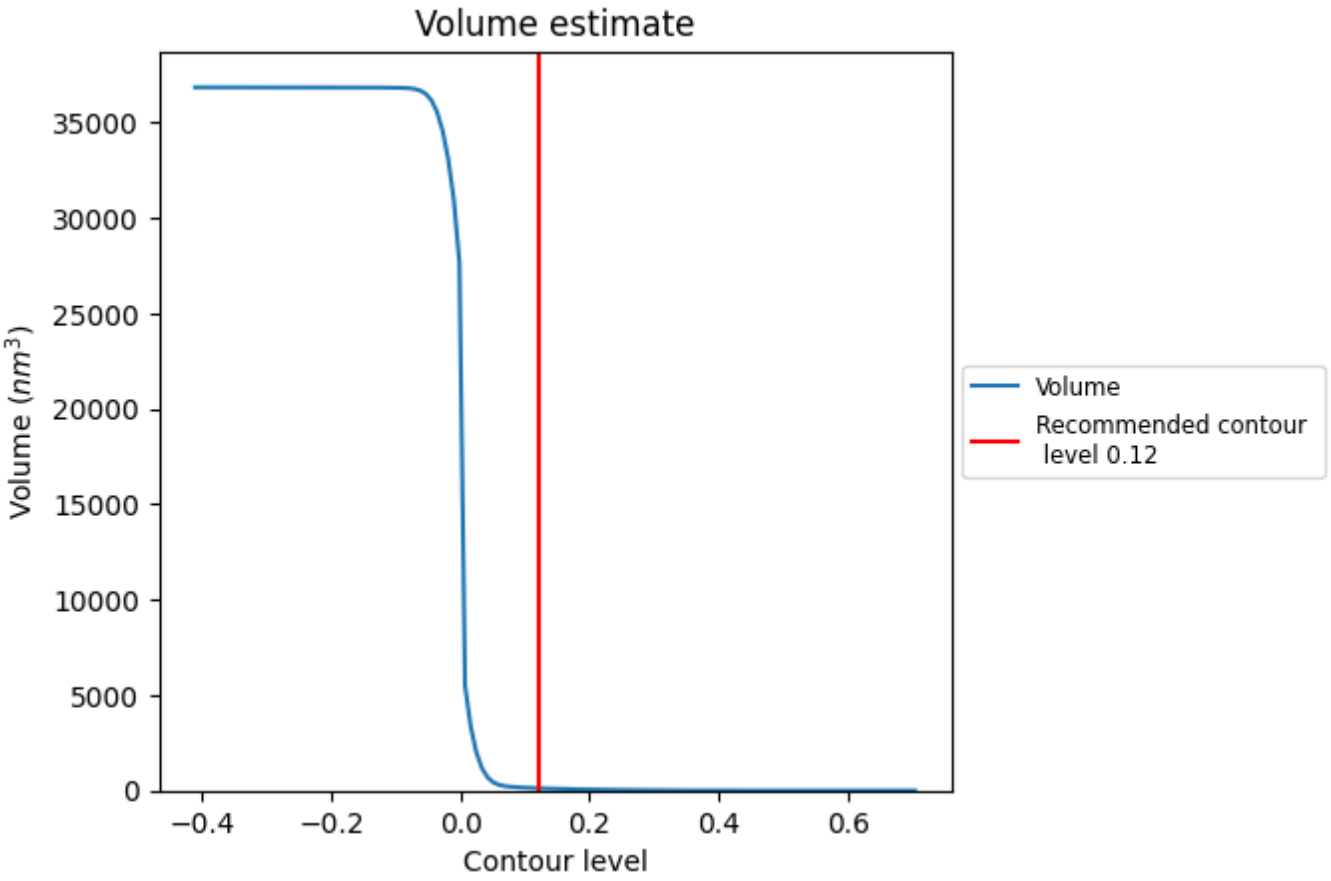
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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.

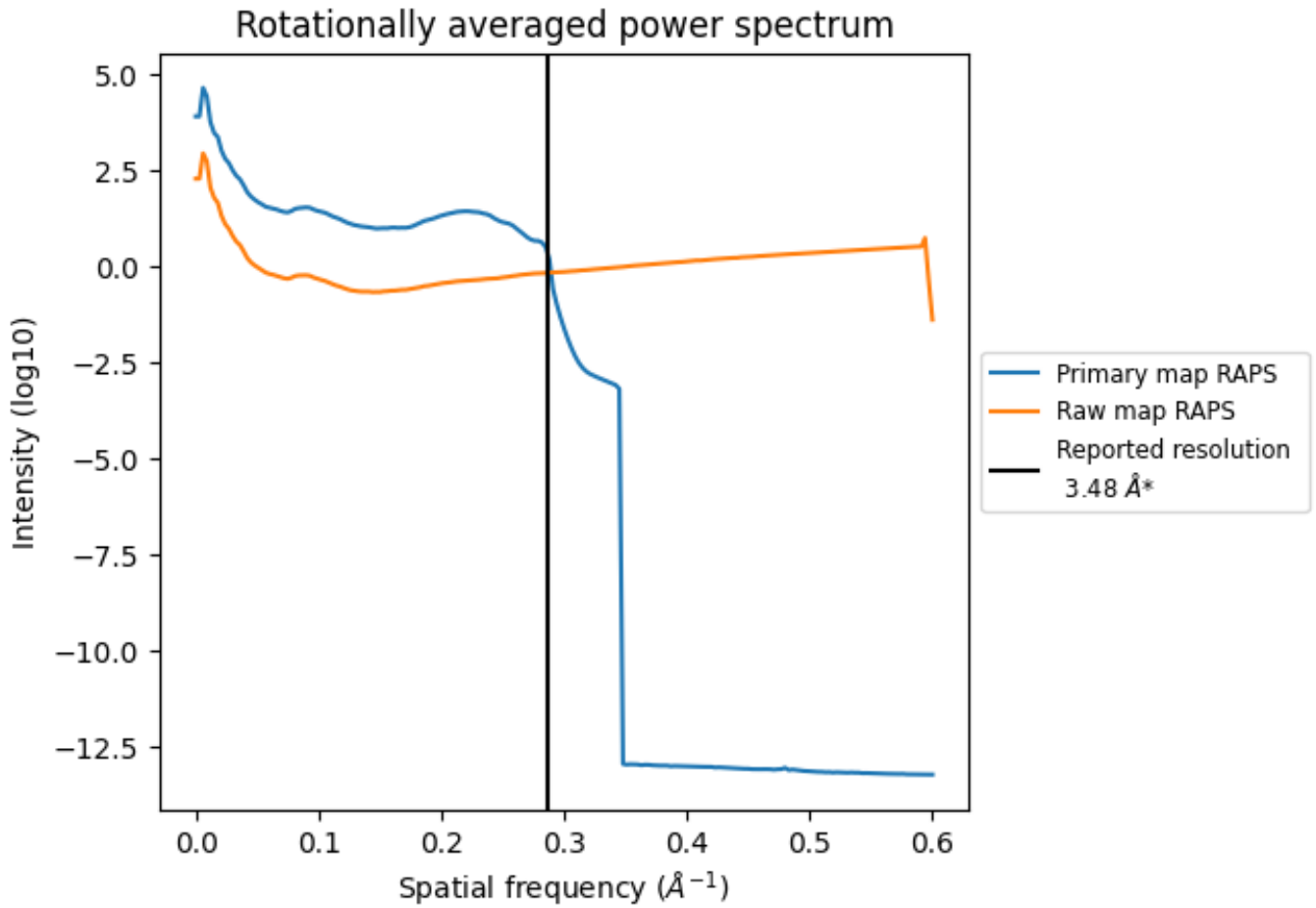
7.2 Volume estimate



The volume at the recommended contour level is 122 nm^3; 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 (i)

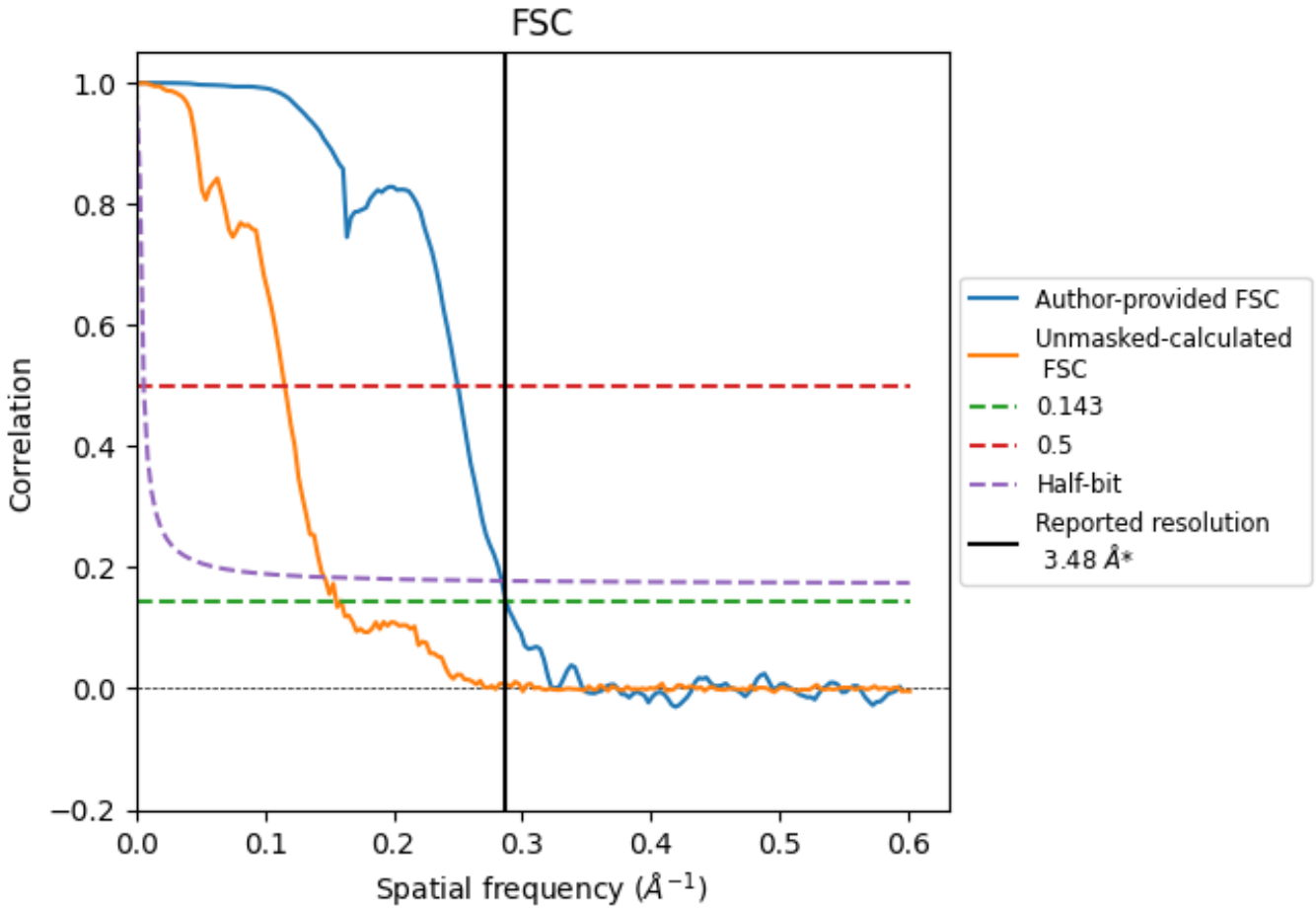


*Reported resolution corresponds to spatial frequency of 0.287 $Å^{-1}$

8 Fourier-Shell correlation

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



*Reported resolution corresponds to spatial frequency of 0.287 Å^{-1}

8.2 Resolution estimates (i)

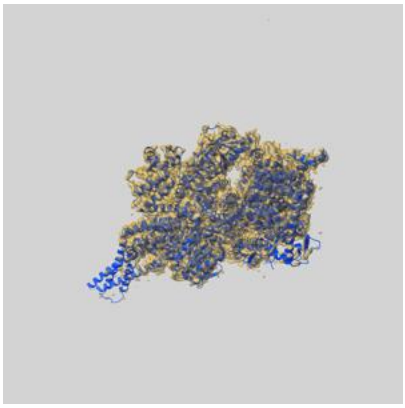
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.48	-	-
Author-provided FSC curve	3.48	4.00	3.52
Unmasked-calculated*	6.43	8.67	6.84

*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 %

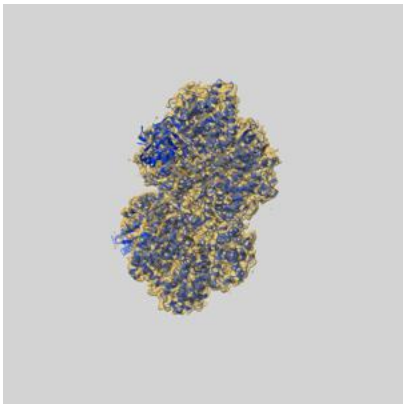
9 Map-model fit

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.

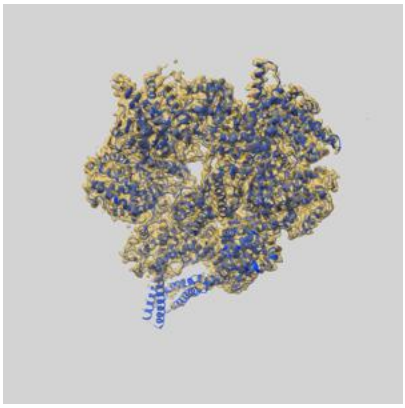
9.1 Map-model overlay



X



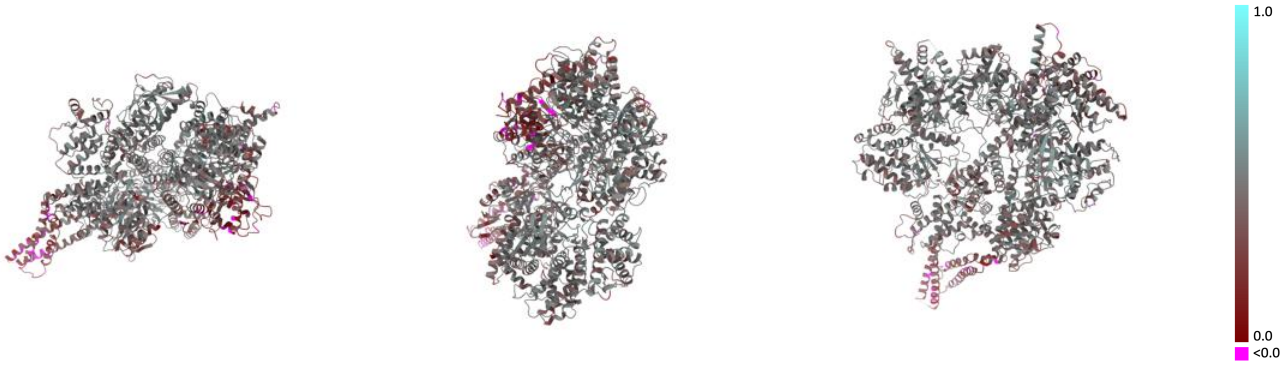
Y



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.

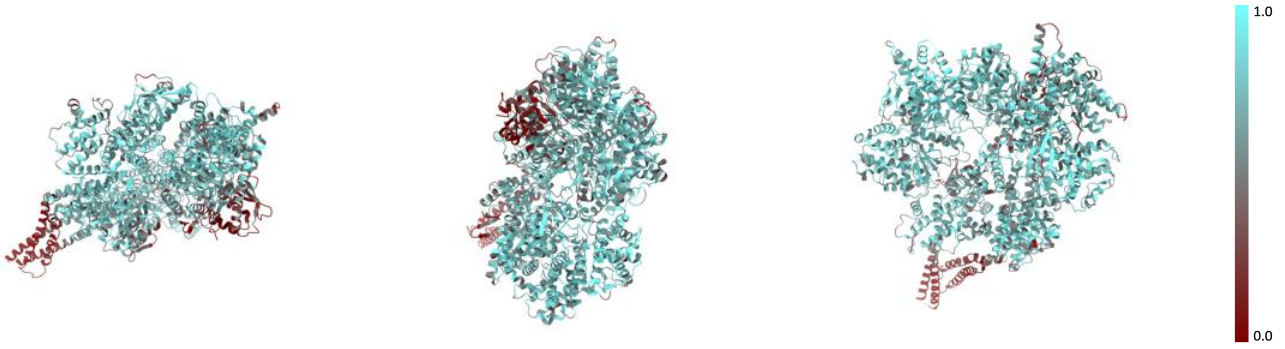
9.2 Q-score mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according 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.

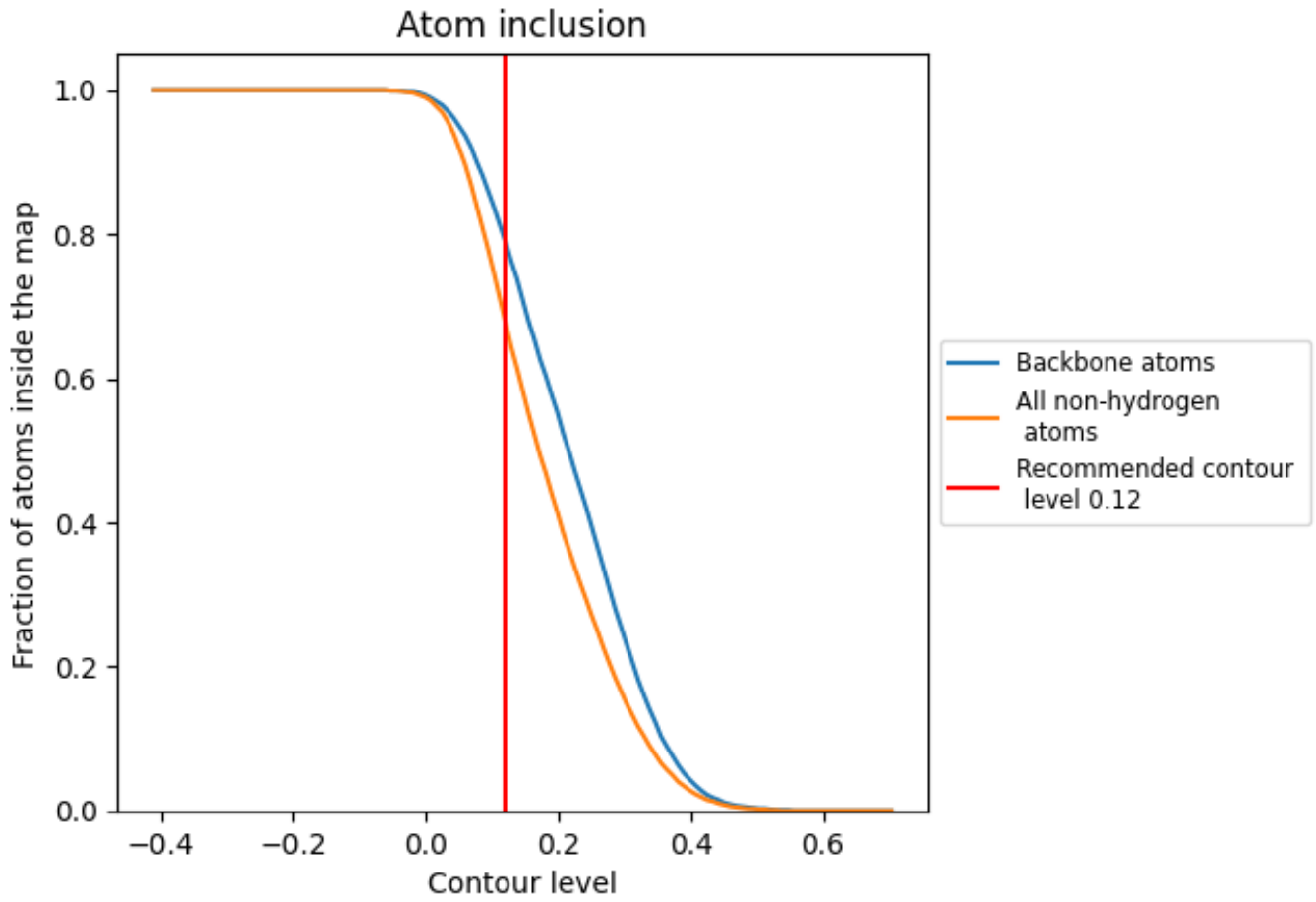
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

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 (i)

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