Full wwPDB EM Validation Report

Feb 5, 2026 – 09:21 AM EST

PDB ID	:	9E10 / pdb_00009e10
EMDB ID	:	EMD-47379
Title	:	Dimeric motor domains from phi dynein-1 under Lis1 condition
Authors	:	Yang, J.; Zhang, K.
Deposited on	:	2024-10-21
Resolution	:	2.71 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:

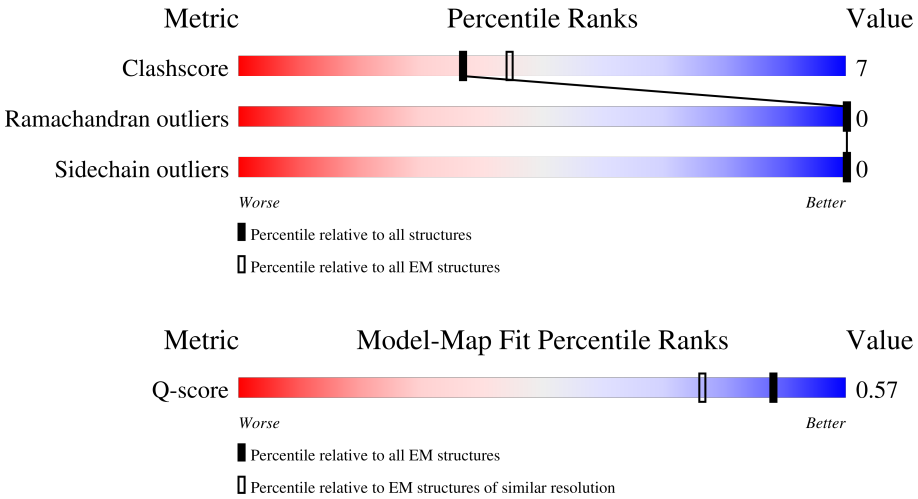
EMDB validation analysis	:	0.0.1.dev129
Mogul	:	2022.3.0, CSD as543be (2022)
MolProbity	:	4-5-2 with Phenix2.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.47

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 2.71 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
Q-score	-	25397	10297 (2.21 - 3.21)

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	51% 12% 37%
1	B	4646	51% 12% 37%

2 Entry composition

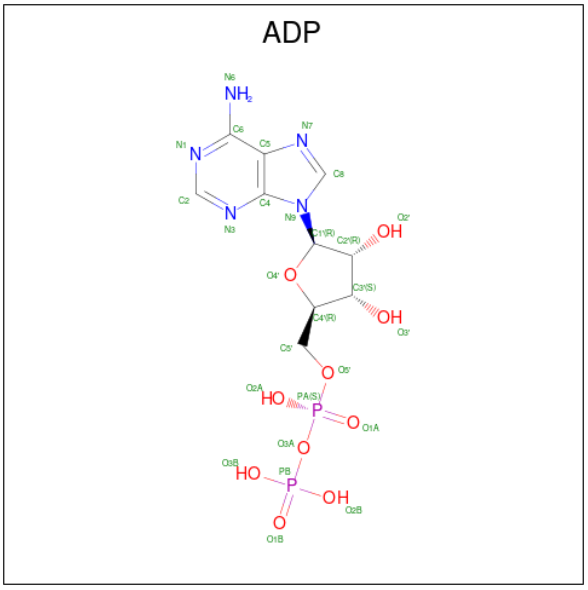
There are 4 unique types of molecules in this entry. The entry contains 47414 atoms, of which 0 are hydrogens and 0 are deuteriums.

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
1	A	2937	Total	C	N	O	S	0	0
			23593	15028	4070	4378	117		
1	B	2937	Total	C	N	O	S	0	0
			23593	15028	4070	4378	117		

- 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).



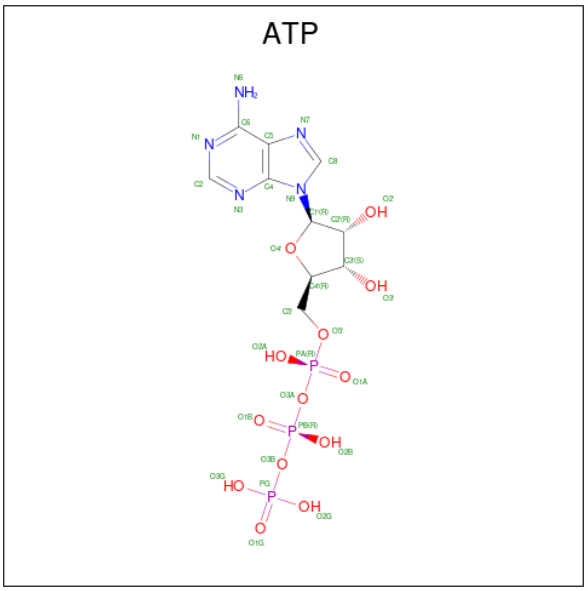
Mol	Chain	Residues	Atoms					AltConf
2	A	1	Total	C	N	O	P	0
			27	10	5	10	2	
2	A	1	Total	C	N	O	P	0
			27	10	5	10	2	
2	A	1	Total	C	N	O	P	0
			27	10	5	10	2	
2	B	1	Total	C	N	O	P	0
			27	10	5	10	2	

Continued on next page...

Continued from previous page...

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

- 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	B	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).

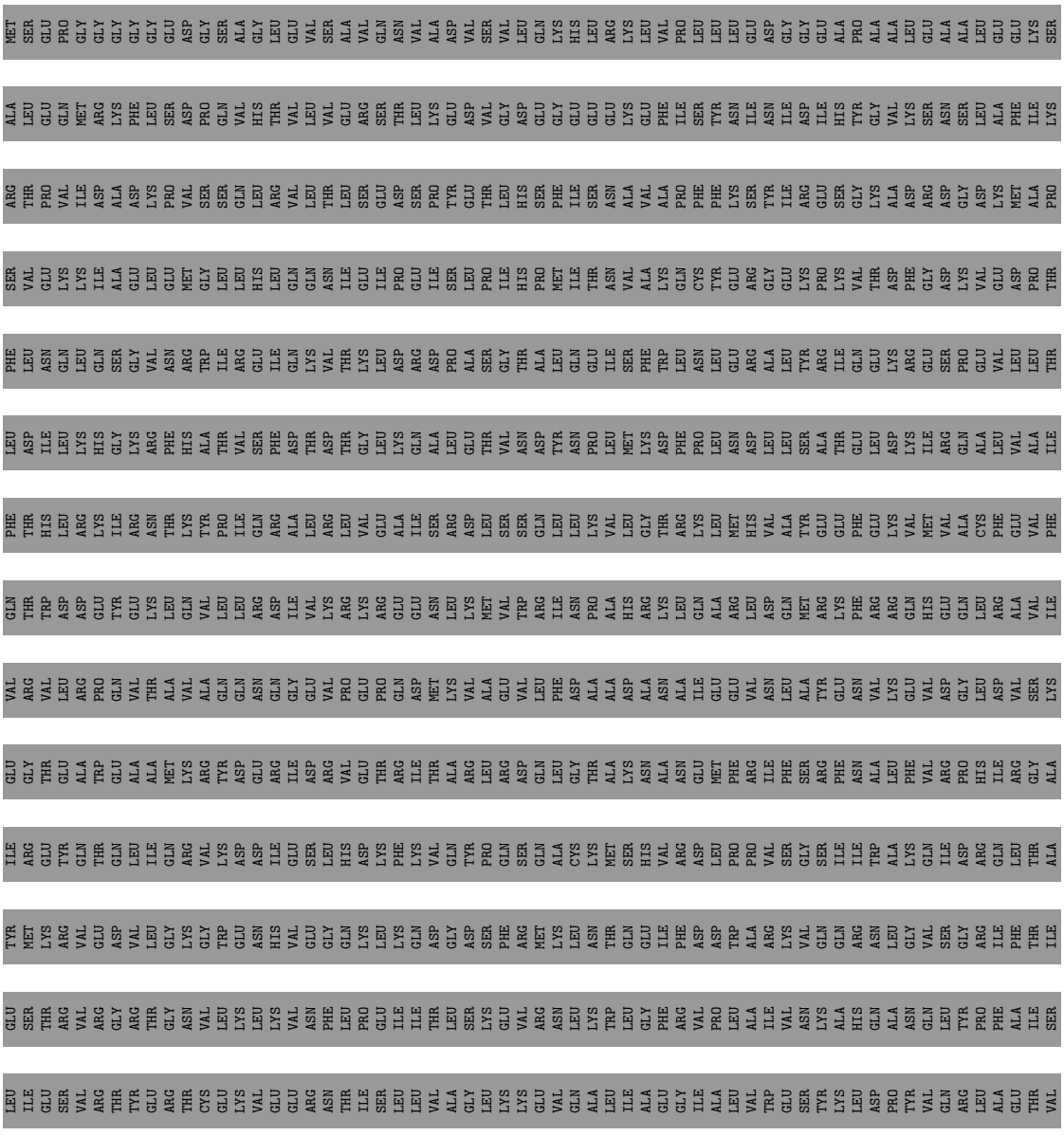
Mol	Chain	Residues	Atoms		AltConf
4	A	2	Total	Mg	0
			2	2	
4	B	2	Total	Mg	0
			2	2	

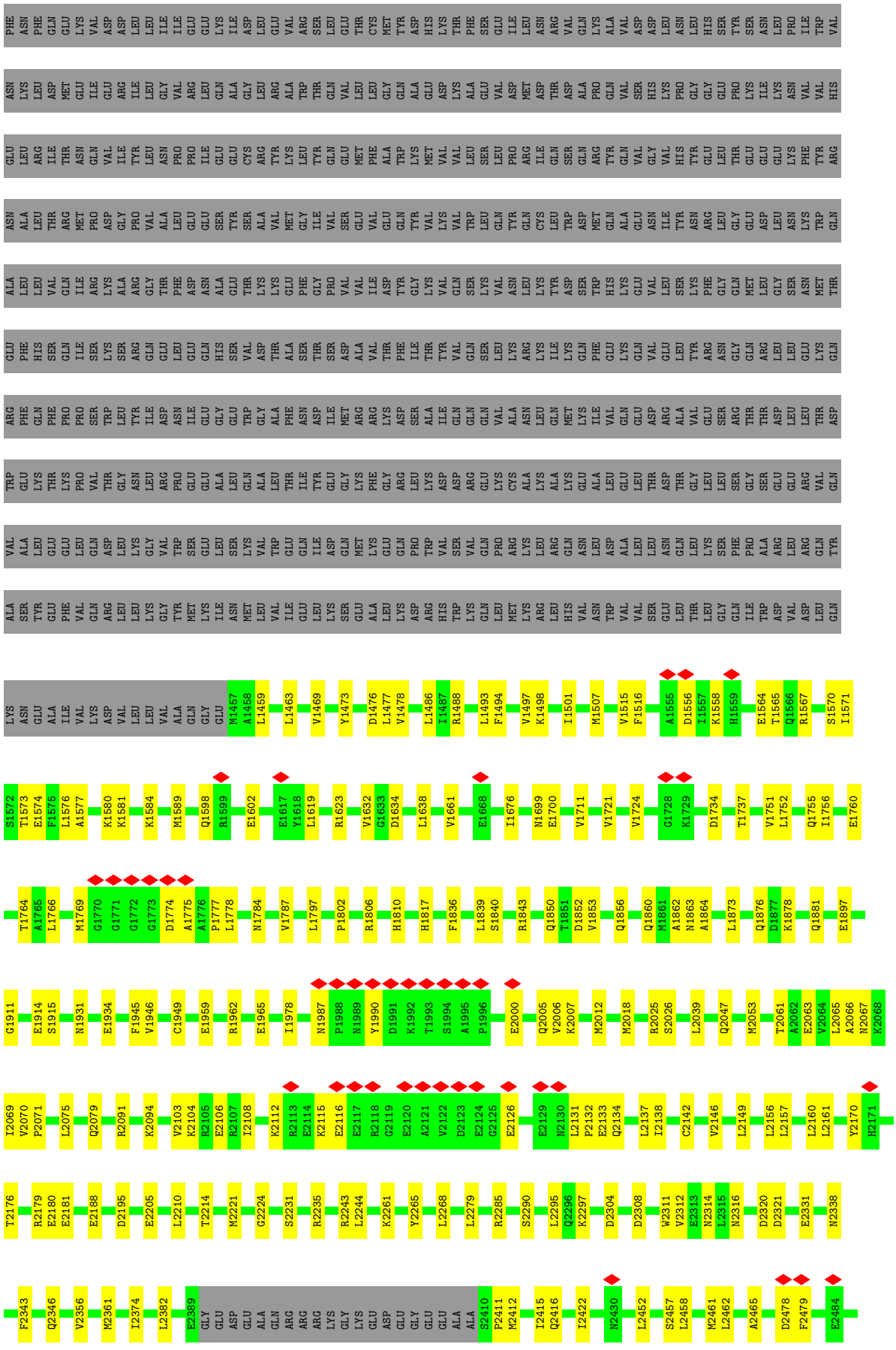
3 Residue-property plots (i)

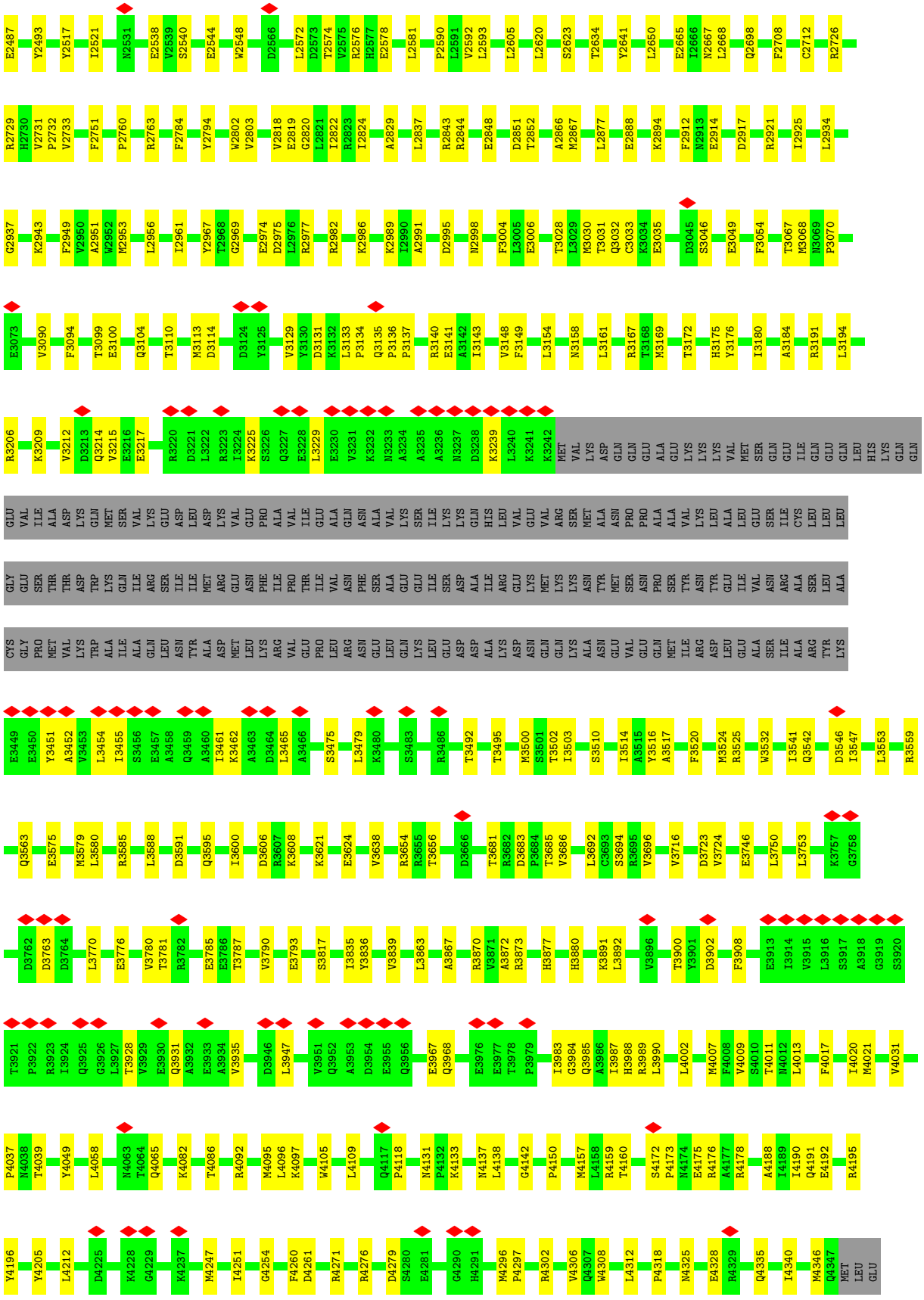
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion 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.

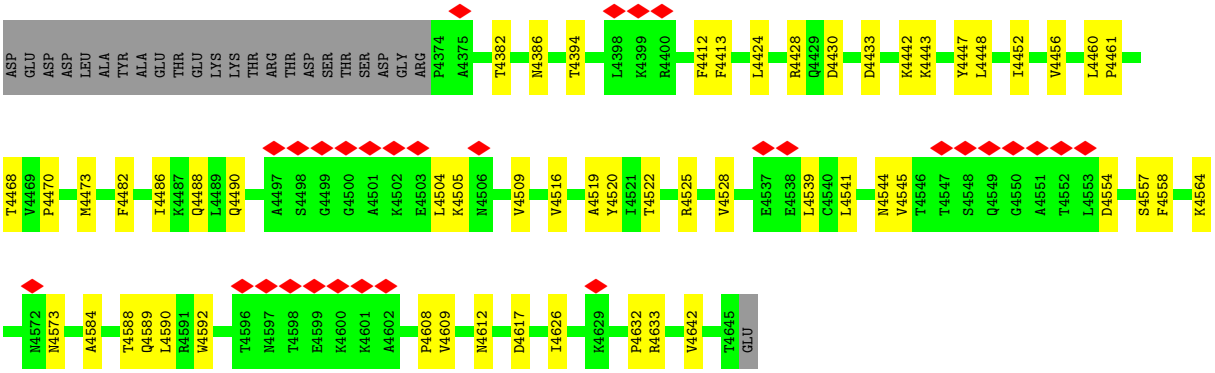
- Molecule 1: Cytoplasmic dynein 1 heavy chain 1

Chain A:



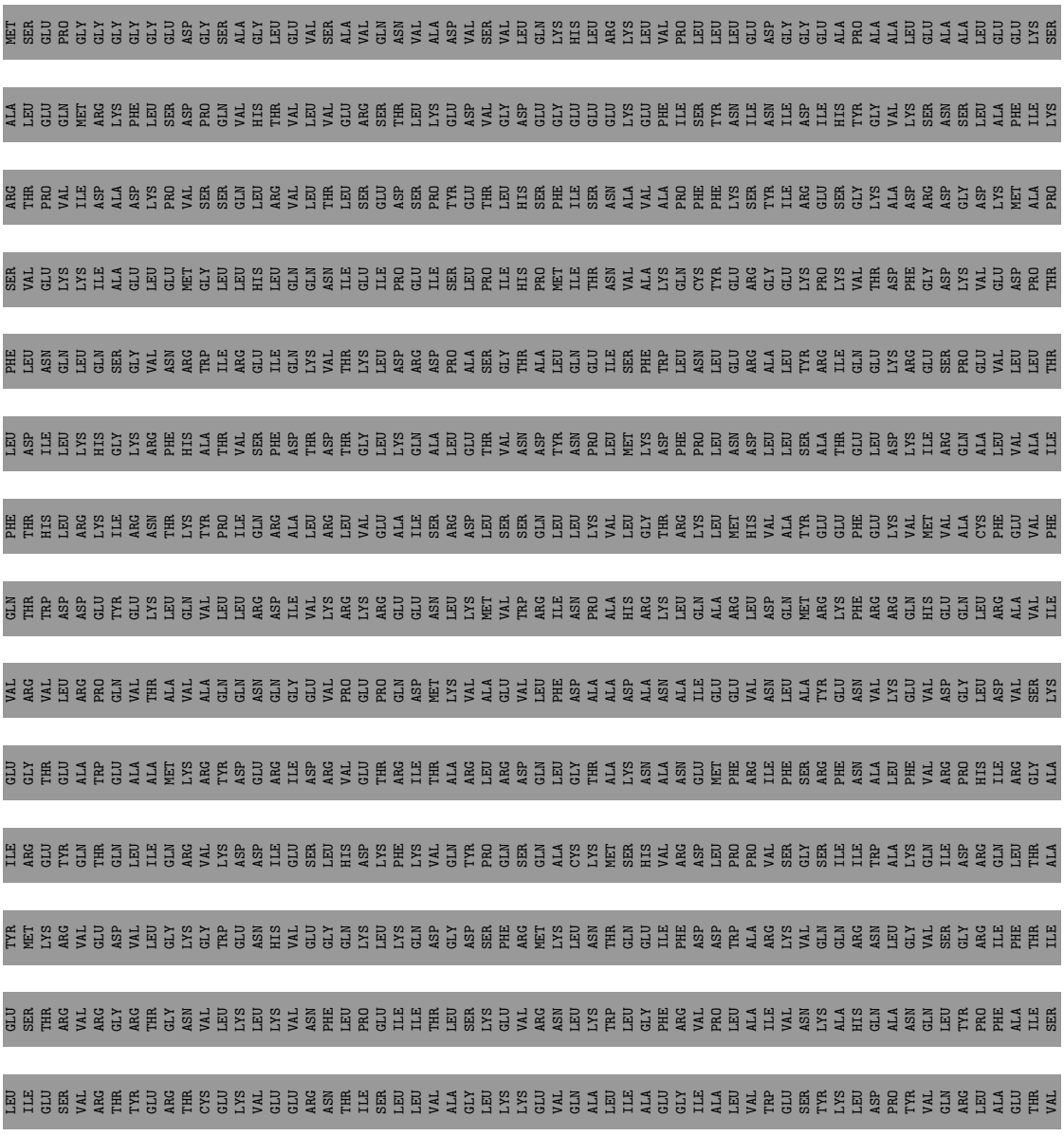

PHE ASN PHE GLN GLU LYS VAL ASP ASP LEU LEU ILE ILE GLU GLU LYS ILE ASP LEU GLU VAL ARG SER LEU GLU THR CYS MET TYR ASP HIS LYS THR PHE SER GLU ILE LEU ASN ARG VAL GLN LYS ALA VAL ASP ASP LEU ASN LEU LEU HIS SER TYR SER ASN LEU PRO ILE TRP VAL
ASN LYS LEU ASP MET GLU ILE GLU ARG ILE LEU GLY VAL ARG LEU GLN ALA GLY LEU ARG ARG ALA TRP THR GLN VAL LEU LEU GLY GLN ALA GLU ASP LYS ALA GLU GLU VAL ASP MET ASP THR ASP ALA PRO GLN VAL SER HIS LYS PRO GLY GLY GLU PRO LYS ILE LYS ASN VAL VAL HIS
GLU LEU ARG ILE THR ASN GLN VAL ILE TYR LEU ASN PRO PRO ILE GLU GLU CYS ARG TYR LYS LEU TYR GLN GLU MET PHE ALA TRP LYS MET VAL SER LEU PRO ARG ILE GLN SER GLN ARG TYR GLN VAL GLY VAL HIS TYR GLU LEU THR GLU GLU GLU LYS PHE TYR ARG
ASN ALA LEU THR ARG MET PRO ASP GLY PRO VAL ALA LEU GLU VAL SER GLU VAL GLU ASN SER TYR SER ALA VAL MET GLY ILE VAL SER GLU VAL GLN LEU TRP ASP MET GLN ALA ASN ILE TYR ASN ARG LEU GLY GLU ASP LEU ASN LYS TRP GLN
ALA LEU LEU VAL GLN ILE ARG LYS ALA ARG GLY THR PHE ASP ASN ALA GLU THR LYS LYS GLU PHE GLY PRO VAL ALA ILE ASP TYR GLY LYS VAL GLN SER LYS VAL ASN LEU GLN LYS TYR ASP SER TRP HIS LYS GLU VAL LEU SER LYS PHE GLY GLN MET LEU GLY SER ASN MET THR
GLU PHE HIS SER GLN ILE SER LYS SER ARG GLN GLU LEU GLU GLN HIS SER VAL ASP THR ALA SER THR THR SER ASP ALA VAL ASP THR ALA LYS VAL ASP PHE GLY PRO VAL ALA ILE ASP TYR GLY LYS VAL GLN LYS TYR ASP SER TRP HIS LYS GLU VAL GLU LEU TYR ARG ASN GLY GLN GLN LEU LEU GLU LEU GLU ASN GLN ILE LYS GLN PHE GLU LYS GLN VAL GLU LEU SER LYS PHE GLY GLN ARG LEU LEU GLU LYS GLN
ARG PHE GLN PHE PRO PRO SER TRP LEU TYR ILE ASP ILE MET ARG ARG LYS ASP SER ALA ILE GLN ASN LEU GLN MET LYS ILE VAL LYS ALA ASN LEU GLN GLU ASP ARG ALA VAL GLU SER ARG THR THR ASP LEU LEU LEU THR ASP
TRP GLU LYS THR PRO VAL THR GLY ASN LEU ARG PRO GLU GLU ALA LEU GLN ALA LEU THR ILE TYR GLU GLY LYS PHE GLY ARG LEU LYS ASP ASP ARG GLU LYS CYS ALA LYS ALA LYS GLU ALA LEU GLU LEU THR ASP THR GLY LEU LEU SER GLY SER GLU GLU ARG VAL GLN
VAL ALA LEU GLU GLN ASP LEU LYS GLY VAL TRP SER GLU LEU SER LYS VAL TRP GLU GLN ILE ASP GLN MET LYS GLU GLN PRO TRP VAL SER VAL GLN PRO ARG LYS LEU ARG GLN ASN LEU ASP ALA LEU LEU ASN GLN LEU LEU LYS SER PHE PRO ALA ARG LEU ARG GLN TYR
ALA SER TYR GLU PHE VAL GLN ARG LEU LEU LYS GLY TYR MET LYS ILE ASN MET LEU VAL ILE GLU LEU LYS SER GLU ALA LEU LYS ASP ARG HIS TRP LYS GLN LEU MET LYS ARG LEU HIS VAL ASN TRP VAL VAL SER GLU LEU THR LEU GLY GLN ILE TRP ASP VAL ASP LEU GLN
LYS ASN GLU ALA ILE VAL LYS ASP VAL LEU LEU LEU VAL ALA GLN GLY GLU M1457 A1458 L1459 L1463 V1469 Y1473 D1476 L1477 V1478 L1486 I1487 R1488 L1493 F1494 V1497 K1498 I1501 M1507 V1515 F1516 A1555 D1556 I1557 K1558 H1559 E1564 T1565 Q1566 R1567 S1570 I1571
S1572 T1573 E1574 F1575 I1576 A1577 K1580 K1581 K1584 M1589 Q1598 R1599 E1602 E1617 Y1618 L1619 R1623 V1632 G1633 D1634 L1638 V1661 E1668 I1676 N1699 E1700 V1711 V1721 V1724 G1728 K1729 D1734 T1737 V1751 L1752 Q1755 I1756 E1760
T1764 A1765 L1766 M1769 G1770 G1771 G1772 G1773 D1774 A1775 A1776 P1777 L1778 N1784 V1787 L1797 P1802 R1806 H1810 H1817 F1836 L1839 S1840 R1843 Q1850 T1851 D1852 V1853 Q1856 Q1860 M1861 A1862 N1863 A1864 L1873 Q1876 D1877 K1878 Q1881 E1897
G1911 E1914 S1915 N1931 E1934 F1945 V1946 C1949 E1959 R1962 E1965 I1978 N1987 P1988 N1989 Y1990 D1991 K1992 T1993 S1994 A1995 P1996 E2000 Q2005 V2006 K2007 M2012 M2018 R2025 S2026 L2039 Q2047 M2053 T2061 A2062 E2063 V2064 L2065 A2066 N2067 K2068
I2069 V2070 P2071 L2075 Q2079 R2091 K2094 V2103 K2104 R2105 E2106 R2107 I2108 K2112 R2113 E2114 K2115 E2116 E2117 R2118 G2119 E2120 A2121 V2122 D2123 E2124 G2125 E2126 E2129 N2130 L2131 P2132 E2133 Q2134 L2137 I2138 C2142 V2146 L2149 L2156 L2157 L2160 L2161 Y2170 H2171
T2176 R2179 E2180 E2181 E2188 D2195 E2205 L2210 T2214 M2221 G2224 S2231 R2235 R2243 L2244 K2261 Y2265 L2268 L2279 R2285 S2290 L2295 Q2296 K2297 D2304 D2308 W2311 V2312 E2313 N2314 L2315 N2316 D2320 D2321 E2331 N2338
F2343 Q2346 V2356 M2361 I2374 L2382 E2389 GLY GLU ASP GLU ALA GLN ARG ARG LYS GLY LYS GLU ASP GLU GLY GLU GLU GLU ALA ALA S2410 P2411 M2412 I2415 Q2416 I2422 N2430 L2452 S2457 L2458 M2461 L2462 A2465 D2478 F2479 E2484

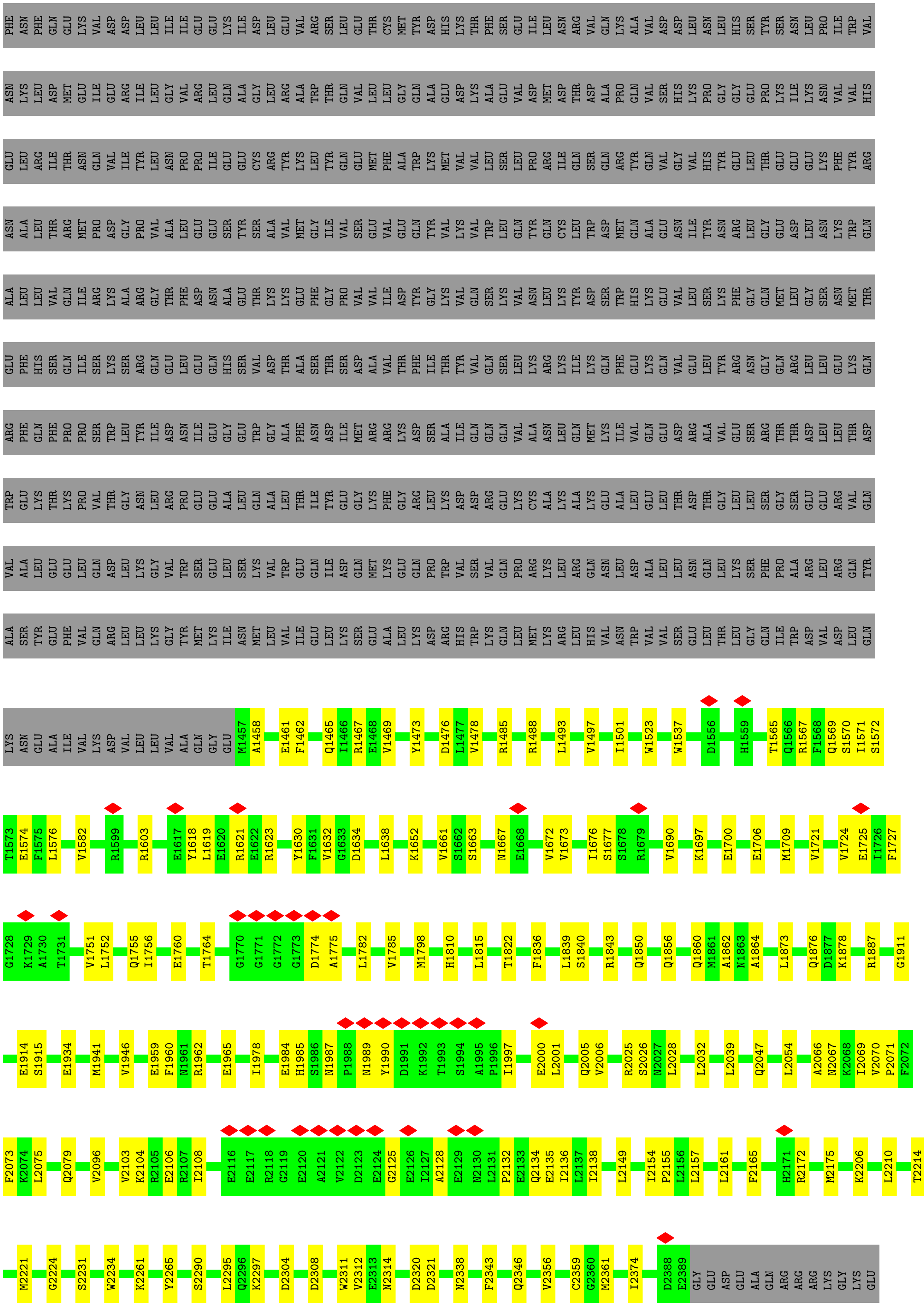


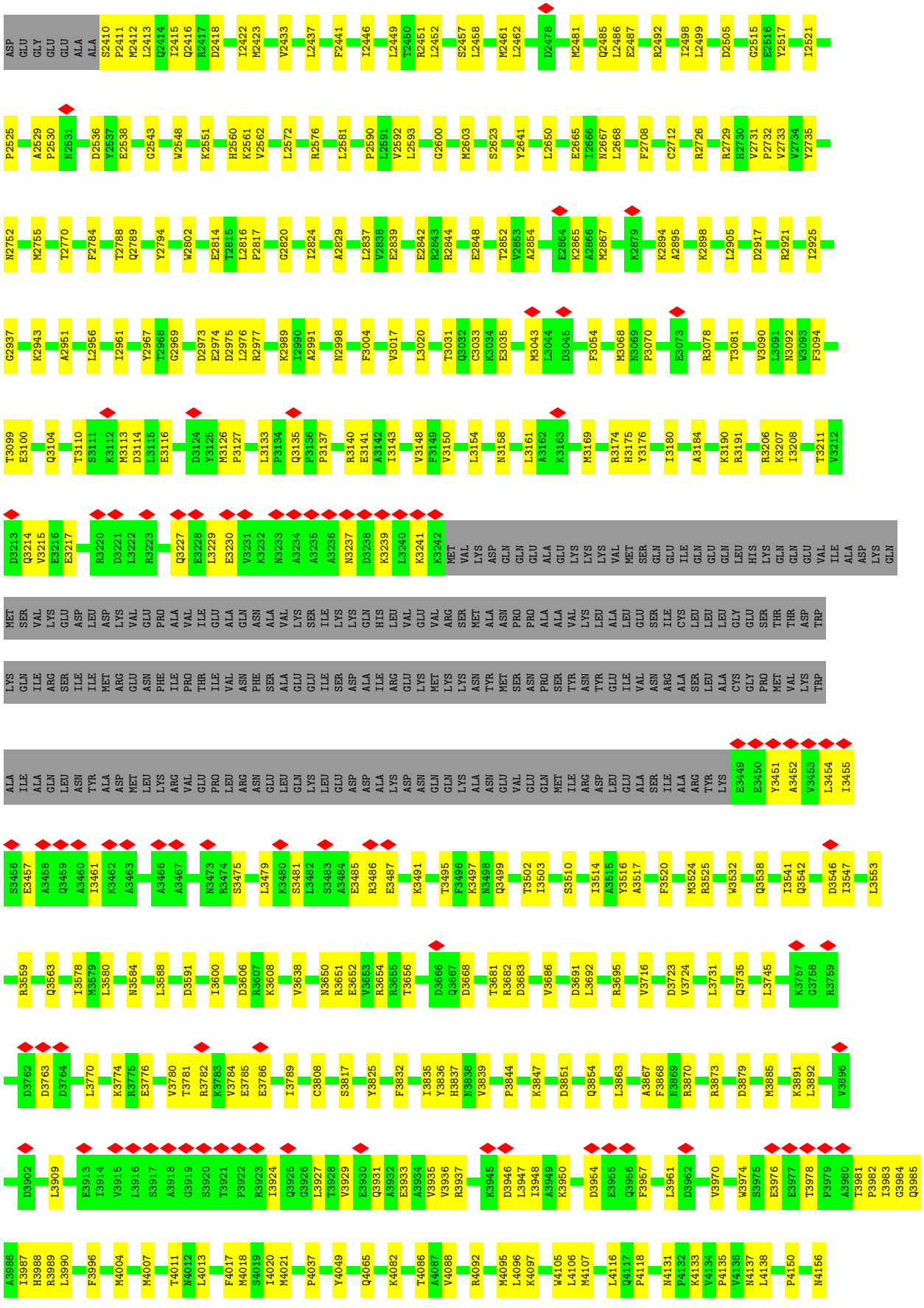


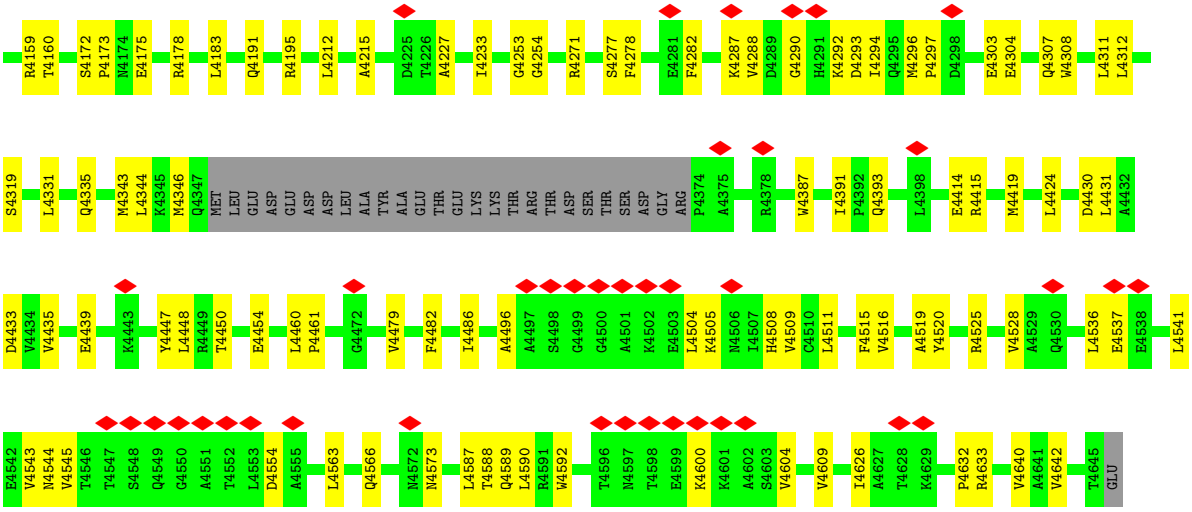
• Molecule 1: Cytoplasmic dynein 1 heavy chain 1

Chain B:




PHE ASN PHE GLN GLU LYS VAL ASP ASP LEU LEU ILE ILE GLU GLU LYS ILE ASP LEU GLU VAL ARG SER LEU GLU THR CYS MET TYR ASP HIS LYS THR PHE SER GLU ILE LEU ASN ARG VAL GLN LYS ALA VAL ASP ASP LEU ASN LEU HIS SER TYR SER ASN LEU PRO ILE TRP VAL
ASN LYS LEU ASP MET GLU ILE GLU ARG ILE LEU GLY VAL ARG LEU GLN ALA GLY LEU ARG ALA TRP THR GLN VAL LEU LEU GLY GLN ALA GLU ASP LYS ALA GLU VAL ASP MET ASP THR ASP ALA PRO GLN VAL SER HIS LYS PRO GLY GLY GLU PRO LYS ILE LYS ASN VAL VAL HIS
GLU LEU ARG ILE THR ASN GLN VAL ILE TYR LEU ASN PRO PRO ILE GLU GLU CYS ARG TYR LYS LEU TYR GLN GLU MET PHE ALA TRP LYS MET VAL VAL LEU SER LEU PRO ARG ILE GLN SER GLN ARG TYR GLN VAL GLY VAL HIS TYR GLU LEU THR GLU GLU GLU LYS PHE TYR ARG
ASN ALA LEU THR ARG MET PRO ASP GLY PRO VAL ALA LEU GLU GLU SER TYR SER ALA VAL MET GLY ILE VAL SER GLU VAL GLU GLN TYR VAL LYS VAL TRP LEU GLN TYR GLN CYS LEU TRP ASP MET GLN ALA GLU ASN ILE TYR ASN ARG LEU GLY GLU ASP LEU ASN LYS TRP GLN
ALA LEU LEU VAL GLN ILE ARG LYS ALA ARG GLY THR PHE ASP ASN ALA GLU THR LYS LYS GLU PHE GLY PRO VAL VAL ILE ASP TYR GLY LYS VAL GLN SER LYS VAL ASN LEU LYS TYR ASP SER TRP HIS LYS GLU VAL LEU SER LYS PHE GLY GLN MET LEU GLY SER ASN MET THR
GLU PHE HIS SER GLN ILE SER LYS SER ARG GLN GLU LEU GLU GLN HIS SER VAL ASP THR ALA SER THR SER ASP ALA VAL THR PHE ILE THR TYR VAL GLN SER LEU LYS ARG LYS ILE LYS GLN PHE GLU LYS GLN VAL GLU LEU TYR ARG ASN GLY GLN ARG LEU LEU GLU LYS GLN
ARG PHE GLN PHE PRO PRO SER TRP LEU TYR ILE ASP ASN ILE GLU GLY GLU TRP GLY ALA PHE ASN ASP ILE MET ARG ARG LYS ASP SER ALA ILE GLN GLN GLN VAL ALA ASN LEU GLN MET LYS ILE VAL GLN GLU ASP ARG ALA VAL GLU SER ARG THR THR ASP LEU LEU THR ASP
TRP GLU LYS THR LYS PRO VAL THR GLY ASN LEU ARG PRO GLU GLU ALA LEU GLN ALA LEU THR ILE TYR GLU GLY LYS PHE GLY ARG LEU LYS ASP ASP ARG GLU LYS CYS ALA LYS ALA LYS GLU ALA LEU GLU LEU THR ASP THR GLY LEU LEU SER GLY SER GLU GLU ARG VAL GLN
VAL ALA LEU GLU GLU LEU GLN ASP LEU LYS GLY VAL TRP SER GLU LEU SER LYS VAL TRP GLU GLN ILE ASP GLN MET LYS GLU GLN PRO TRP VAL SER VAL GLN PRO ARG LYS LEU ARG GLN ASN LEU ASP ALA LEU LEU ASN GLN LEU LYS SER PHE PRO ALA ARG LEU ARG GLN TYR
ALA SER TYR GLU PHE VAL GLN ARG LEU LEU LYS GLY TYR MET LYS ILE ASN MET LEU VAL ILE GLU LEU LYS SER GLU ALA LEU LYS ASP ARG HIS TRP LYS GLN LEU MET LYS ARG LEU HIS VAL ASN TRP VAL VAL SER GLU LEU THR LEU GLY GLN ILE TRP ASP VAL ASP LEU GLN
LYS ASN GLU ALA ILE VAL LYS ASP VAL LEU LEU VAL ALA GLN GLY GLU
M1457 A1458 E1461 F1462 Q1465 I1466 R1467 E1468 V1469 Y1473 D1476 L1477 V1478 R1485 R1488 L1493 V1497 I1501 W1523 W1537 D1556 H1559 T1565 Q1566 R1567 F1568 Q1569 S1570 I1571 S1572
T1573 E1574 F1575 L1576 V1582 R1599 R1603 E1617 Y1618 L1619 E1620 R1621 E1622 R1623 Y1630 F1631 V1632 G1633 D1634 L1638 K1652 V1661 S1662 S1663 N1667 E1668 V1672 V1673 I1676 S1677 S1678 R1679 V1690 K1697 E1700 E1706 M1709 V1721 V1724 E1725 I1726 F1727
G1728 K1729 A1730 T1731 V1751 L1752 Q1755 I1756 E1760 T1764 G1770 G1771 G1772 G1773 D1774 A1775 L1782 V1785 M1798 H1810 L1815 T1822 F1836 L1839 S1840 R1843 Q1850 Q1856 Q1860 M1861 A1862 N1863 A1864 L1873 Q1876 D1877 K1878 R1887 G1911
E1914 S1915 E1934 M1941 V1946 E1959 F1960 N1961 R1962 E1965 I1978 E1984 H1985 S1986 N1987 P1988 N1989 Y1990 D1991 K1992 T1993 S1994 A1995 P1996 I1997 E2000 L2001 Q2005 V2006 R2025 S2026 N2027 L2028 L2032 L2039 Q2047 L2054 A2066 N2067 K2068 I2069 V2070 P2071 F2072
F2073 K2074 L2075 Q2079 V2096 V2103 K2104 R2105 E2106 R2107 I2108 E2116 E2117 R2118 G2119 E2120 A2121 V2122 D2123 E2124 G2125 E2126 I2127 A2128 E2129 N2130 L2131 P2132 E2133 Q2134 E2135 I2136 L2137 I2138 L2149 I2154 P2155 L2156 L2157 L2161 F2165 H2171 R2172 M2175 K2206 L2210 T2214
M2221 G2224 S2231 W2234 K2261 Y2265 S2290 L2295 Q2296 K2297 D2304 D2308 W2311 V2312 E2313 N2314 D2320 D2321 N2338 F2343 Q2346 V2356 C2359 G2360 M2361 I2374 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 Q2414 I2415 Q2416 R2417 D2418 I2422 M2423 V2433 L2437 F2441 I2446 L2449 T2450 R2451 L2452 S2457 L2458 M2461 L2462 D2478 M2481 Q2485 L2486 E2487 R2492 I2498 L2499 D2505 G2515 E2516 Y2517 I2521
P2525 A2529 P2530 N2531 D2536 Y2537 E2538 G2543 W2548 K2551 H2560 K2561 V2562 L2572 R2576 L2581 P2590 L2591 V2592 L2593 G2600 M2603 S2623 Y2641 L2650 E2665 I2666 N2667 L2668 F2708 C2712 R2726 R2729 H2730 V2731 P2732 V2733 V2734 Y2735
N2752 M2755 T2770 F2784 T2788 Q2789 Y2794 W2802 E2814 T2815 L2816 P2817 G2820 I2824 A2829 L2837 V2838 E2839 E2842 R2843 R2844 E2848 T2852 Y2853 A2854 E2864 K2865 A2866 M2867 K2879 K2894 A2895 K2898 L2905 D2917 R2921 I2925
G2937 K2943 A2951 L2956 I2961 Y2967 T2968 G2969 D2973 E2974 D2975 L2976 R2977 K2989 I2990 A2991 N2998 F3004 V3017 L3020 T3031 Q3032 C3033 K3034 E3035 M3043 L3044 D3045 F3054 M3068 N3069 P3070 E3073 R3078 T3081 V3090 L3091 N3092 W3093 F3094
T3099 E3100 Q3104 T3110 S3111 K3112 M3113 D3114 L3115 E3116 D3124 Y3125 M3126 P3127 L3133 P3134 Q3135 P3136 P3137 R3140 E3141 A3142 I3143 V3148 F3149 V3150 L3154 N3158 L3161 A3162 K3163 M3169 R3174 H3175 Y3176 I3180 A3184 K3190 R3191 R3206 K3207 I3208 T3211 V3212
D3213 Q3214 V3215 E3216 E3217 R3220 D3221 L3222 R3223 Q3227 E3228 L3229 E3230 V3231 K3232 N3233 A3234 A3235 A3236 N3237 D3238 K3239 L3240 K3241 K3242 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 ILE ALA ASP LYS GLN
MET SER VAL LYS GLU ASP LEU ASP LYS VAL GLU PRO ALA VAL ILE GLU ALA GLN ASN ALA VAL LYS SER ILE LYS LYS GLN HIS LEU LEU VAL GLU VAL ARG SER MET ALA ASN PRO PRO ALA ALA VAL LYS LEU ALA LEU GLU SER ILE CYS LEU LEU LEU ALA LEU LEU GLY GLU SER THR THR ASP TRP
LYS GLN ILE ARG SER ILE ILE MET ARG GLU ASN PHE ILE PRO THR ILE VAL ASN PHE SER ALA GLU GLU ILE SER ASP ALA ILE ARG GLU LYS MET LYS LYS ASN TYR MET SER ASN PRO SER TYR ASN TYR GLU ILE VAL ASN ARG ALA SER LEU ALA CYS GLY PRO MET VAL LYS TRP
ALA ILE ALA GLN LEU ASN TYR ALA ASP MET LEU LYS ARG VAL GLU PRO LEU ARG ASN GLU LEU GLN LYS LEU GLU ASP ASP ALA LYS ASP ASN GLN GLN LYS ALA ASN GLU VAL GLU GLN MET ILE ARG ASP LEU GLU ALA SER ILE ALA ARG TYR LYS E3449 E3450 Y3451 A3452 V3453 L3454 I3455
S3456 E3457 A3458 Q3459 A3460 I3461 K3462 A3463 A3466 A3467 N3473 R3474 S3475 L3479 K3480 S3481 L3482 S3483 A3484 E3485 R3486 E3487 K3491 T3495 F3496 K3497 N3498 Q3499 T3502 I3503 S3510 I3514 A3515 Y3516 A3517 F3520 M3524 R3525 W3532 Q3538 I3541 Q3542 D3546 I3547 L3553
R3559 Q3563 I3578 M3579 L3580 N3584 L3588 D3591 I3600 D3606 R3607 K3608 V3638 N3650 R3651 E3652 V3653 R3654 R3655 T3656 D3666 Q3667 D3668 T3681 R3682 D3683 V3686 D3691 L3692 R3695 V3716 D3723 V3724 L3731 Q3735 L3745 K3757 G3758 R3759
D3762 D3763 D3764 L3770 K3774 R3775 E3776 V3780 T3781 R3782 K3783 V3784 E3785 E3786 I3789 C3808 S3817 Y3825 F3832 I3835 Y3836 H3837 N3838 V3839 P3844 K3847 D3851 Q3854 L3863 A3867 F3868 N3869 R3870 B3873 D3879 M3885 K3891 L3892 V3896
D3902 L3909 E3913 I3914 V3915 L3916 S3917 A3918 G3919 S3920 T3921 P3922 R3923 I3924 Q3925 G3926 L3927 T3928 V3929 E3930 Q3931 A3932 E3933 A3934 V3935 V3936 R3937 K3945 D3946 L3947 I3948 A3949 K3950 D3954 E3955 Q3956 F3957 L3961 D3962 V3970 W3974 S3975 E3976 E3977 T3978 P3979 A3980 T3981 P3982 I3983 G3984 Q3985
A3986 I3987 H3988 R3989 L3990 F3996 M4004 M4007 T4011 N4012 L4013 F4017 M4018 S4019 I4020 M4021 P4037 Y4049 Q4065 K4082 T4086 A4087 V4088 R4092 M4095 L4096 K4097 W4105 L4106 M4107 L4116 Q4117 P4118 N4131 P4132 K4133 V4134 P4135 V4136 N4137 L4138 P4150 N4156


R4159 T4160 S4172 P4173 N4174 E4175 R4178 L4183 Q4191 R4195 L4212 A4215 D4225 T4226 A4227 I4233 G4253 G4254 R4271 S4277 F4278 E4281 F4282 K4287 V4288 D4289 G4290 H4291 K4292 D4293 I4294 Q4295 M4296 P4297 D4298 E4303 E4304 Q4307 W4308 L4311 L4312
S4319 L4331 Q4335 M4343 L4344 K4345 M4346 Q4347 MET LEU GLU ASP GLU ASP ASP LEU ALA TYR ALA GLU THR GLU LYS LYS THR ARG THR ASP SER THR SER ASP GLY ARG P4374 A4375 R4378 W4387 I4391 P4392 Q4393 L4398 E4414 R4415 M4419 L4424 D4430 L4431 A4432
D4433 V4434 V4435 E4439 K4443 Y4447 L4448 R4449 T4450 E4454 L4460 P4461 G4472 V4479 F4482 I4486 A4496 A4497 S4498 G4499 G4500 A4501 K4502 E4503 L4504 K4505 N4506 I4507 H4508 V4509 C4510 L4511 F4515 V4516 A4519 Y4520 R4525 V4528 A4529 Q4530 L4536 E4537 E4538 L4541
E4542 V4543 N4544 V4545 T4546 T4547 S4548 Q4549 G4550 A4551 T4552 L4553 D4554 A4555 L4563 Q4566 N4572 N4573 L4587 T4588 Q4589 L4590 R4591 W4592 T4596 N4597 T4598 E4599 K4600 K4601 A4602 S4603 V4604 V4609 I4626 A4627 T4628 K4629 P4632 R4633 V4640 A4641 V4642 T4645 GLU

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	160539	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS GLACIOS	Depositor
Voltage (kV)	200	Depositor
Electron dose ($e^-/Å^2$)	40	Depositor
Minimum defocus (nm)	1200	Depositor
Maximum defocus (nm)	3000	Depositor
Magnification	45000	Depositor
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	2.763	Depositor
Minimum map value	-1.378	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	0.058	Depositor
Recommended contour level	0.3	Depositor
Map size (Å)	444.4032, 444.4032, 444.4032	wwPDB
Map dimensions	384, 384, 384	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.1573, 1.1573, 1.1573	Depositor

5 Model quality

5.1 Standard geometry

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

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\#\|Z\| > 5$	RMSZ	$\#\|Z\| > 5$
1	A	0.13	0/24093	0.29	0/32651
1	B	0.13	0/24093	0.30	0/32651
All	All	0.13	0/48186	0.29	0/65302

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

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	23593	0	23658	333	0
1	B	23593	0	23657	368	0
2	A	81	0	36	3	0
2	B	81	0	36	2	0
3	A	31	0	12	0	0
3	B	31	0	12	1	0
4	A	2	0	0	0	0
4	B	2	0	0	0	0
All	All	47414	0	47411	700	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 7.

All (700) 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:2320:ASP:OD1	1:A:2321:ASP:N	2.12	0.83
1:B:2320:ASP:OD1	1:B:2321:ASP:N	2.13	0.80
1:B:3970:VAL:HB	1:B:3989:ARG:HD3	1.65	0.78
1:B:2452:LEU:HD13	1:B:2729:ARG:HH21	1.52	0.73
1:B:2492:ARG:HE	1:B:2525:PRO:HG2	1.54	0.73
1:A:2221:MET:HG2	1:A:2343:PHE:HB2	1.70	0.72
1:A:4544:ASN:HA	1:A:4573:ASN:HD21	1.55	0.71
1:A:2452:LEU:HD13	1:A:2729:ARG:HH21	1.54	0.71
1:A:2138:ILE:HD12	1:A:2161:LEU:HD22	1.72	0.71
1:B:2600:GLY:HA3	1:B:2603:MET:HE2	1.72	0.70
1:A:4488:GLN:HE22	1:A:4509:VAL:HG23	1.56	0.70
1:B:2221:MET:HG2	1:B:2343:PHE:HB2	1.74	0.70
1:B:4541:LEU:HD11	1:B:4590:LEU:HB3	1.72	0.69
1:B:3114:ASP:O	1:B:3140:ARG:NH2	2.26	0.69
1:A:2149:LEU:HD11	1:A:2157:LEU:HD13	1.75	0.69
1:A:3133:LEU:HD11	1:A:3141:GLU:HB3	1.74	0.68
1:B:1478:VAL:HG12	1:B:1488:ARG:HH21	1.58	0.68
1:A:4541:LEU:HD11	1:A:4590:LEU:HB3	1.76	0.68
1:A:1959:GLU:HB3	1:A:1962:ARG:HD3	1.74	0.67
1:B:3485:GLU:N	1:B:3485:GLU:OE1	2.27	0.67
1:A:4037:PRO:HB2	1:A:4118:PRO:HG2	1.76	0.67
1:A:3114:ASP:O	1:A:3140:ARG:NH2	2.28	0.67
1:A:4150:PRO:O	1:A:4195:ARG:NH2	2.27	0.67
1:B:4037:PRO:HB2	1:B:4118:PRO:HG2	1.77	0.67
1:B:2481:MET:HE2	1:B:2486:LEU:HA	1.77	0.66
1:B:2921:ARG:HH11	1:B:3092:ASN:HD21	1.41	0.66
1:A:1623:ARG:NH2	1:A:1634:ASP:OD1	2.29	0.66
1:A:2956:LEU:HD23	1:A:2989:LYS:HB3	1.77	0.66
1:B:1623:ARG:NH2	1:B:1634:ASP:OD1	2.28	0.66
1:B:4150:PRO:O	1:B:4195:ARG:NH2	2.26	0.66
1:B:2623:SER:OG	1:B:3081:THR:O	2.14	0.65
1:A:3835:ILE:HG12	1:A:3870:ARG:HD2	1.77	0.65
1:A:2934:LEU:HD11	1:A:3068:MET:HE3	1.77	0.65
1:B:4544:ASN:HA	1:B:4573:ASN:HD21	1.61	0.65
1:A:3580:LEU:HD13	1:A:3600:ILE:HD11	1.77	0.65
1:B:3835:ILE:HG12	1:B:3870:ARG:HD2	1.79	0.65
1:A:2091:ARG:NH2	2:A:4701:ADP:O2A	2.29	0.65
1:B:3502:THR:HG22	1:B:3542:GLN:HB3	1.78	0.65
1:B:3981:THR:HG23	1:B:3984:GLY:H	1.61	0.65
1:B:2481:MET:HE3	1:B:2485:GLN:HG2	1.79	0.65

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3638:VAL:HG12	1:A:3681:THR:HB	1.78	0.65
1:A:2356:VAL:HG13	1:A:2361:MET:HE3	1.78	0.65
1:B:3580:LEU:HD13	1:B:3600:ILE:HD11	1.77	0.65
1:B:1962:ARG:NH2	1:B:2314:ASN:OD1	2.30	0.64
1:B:2974:GLU:OE1	1:B:2977:ARG:NH1	2.30	0.64
1:A:3839:VAL:HG21	1:A:3863:LEU:HA	1.79	0.64
1:B:3745:LEU:HD11	1:B:3776:GLU:HG2	1.78	0.64
1:B:4020:ILE:HG23	1:B:4021:MET:HE2	1.78	0.64
1:B:3839:VAL:HG21	1:B:3863:LEU:HA	1.80	0.64
1:B:3510:SER:HB3	1:B:3553:LEU:HD21	1.80	0.64
1:A:1567:ARG:O	1:A:1571:ILE:HG13	1.97	0.64
1:B:3638:VAL:HG12	1:B:3681:THR:HB	1.80	0.64
1:B:2969:GLY:HA2	1:B:3004:PHE:HE1	1.63	0.64
1:B:2961:ILE:HD11	1:B:2998:ASN:HB3	1.79	0.63
1:B:4271:ARG:HG3	1:B:4633:ARG:HH21	1.63	0.63
1:A:2969:GLY:HA2	1:A:3004:PHE:HE1	1.64	0.63
1:A:2115:LYS:NZ	1:A:2126:GLU:OE2	2.32	0.63
1:B:3983:ILE:O	1:B:3987:ILE:HD12	1.99	0.62
1:A:3510:SER:HB3	1:A:3553:LEU:HD21	1.81	0.62
1:B:1810:HIS:NE2	1:B:1876:GLN:O	2.32	0.62
1:B:1959:GLU:HB3	1:B:1962:ARG:HD3	1.81	0.62
1:B:2816:LEU:HD11	1:B:2820:GLY:HA3	1.81	0.62
1:A:3983:ILE:O	1:A:3987:ILE:HD12	1.99	0.62
1:B:4304:GLU:OE1	1:B:4304:GLU:N	2.29	0.62
1:B:1721:VAL:HA	1:B:1724:VAL:HG12	1.82	0.62
1:B:3017:VAL:HB	1:B:3020:LEU:HB2	1.81	0.62
1:A:2188:GLU:OE2	1:A:2243:ARG:NH2	2.32	0.61
1:A:2382:LEU:O	1:A:2416:GLN:NE2	2.32	0.61
1:A:1810:HIS:NE2	1:A:1876:GLN:O	2.33	0.61
1:A:3985:GLN:OE1	1:A:3989:ARG:NH1	2.32	0.61
1:B:1756:ILE:O	1:B:1760:GLU:HG2	2.00	0.61
1:B:2956:LEU:HD23	1:B:2989:LYS:HB3	1.83	0.61
1:B:2149:LEU:HD11	1:B:2157:LEU:HD22	1.83	0.61
1:A:3984:GLY:O	1:A:3988:HIS:ND1	2.34	0.61
1:A:2961:ILE:HD11	1:A:2998:ASN:HB3	1.83	0.61
1:A:2974:GLU:OE1	1:A:2977:ARG:NH1	2.34	0.61
1:B:4393:GLN:N	1:B:4393:GLN:OE1	2.34	0.61
1:A:1478:VAL:HG21	1:A:1488:ARG:HE	1.65	0.61
1:B:2138:ILE:HD12	1:B:2161:LEU:HD22	1.83	0.61
1:B:4287:LYS:HD2	1:B:4290:GLY:HA2	1.82	0.61
1:A:1515:VAL:HG13	1:A:1516:PHE:HD1	1.67	0.60

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2967:TYR:OH	1:A:2975:ASP:OD2	2.19	0.60
1:B:4391:ILE:HD11	1:B:4479:VAL:HG13	1.83	0.60
1:B:4419:MET:HE2	1:B:4515:PHE:HD2	1.65	0.60
1:A:1623:ARG:NH1	1:A:1632:VAL:O	2.34	0.60
1:A:1751:VAL:HG11	1:A:1878:LYS:HE3	1.83	0.60
1:A:2179:ARG:NH2	1:A:2205:GLU:OE2	2.34	0.60
1:B:3985:GLN:OE1	1:B:3989:ARG:NH2	2.35	0.60
1:B:4065:GLN:HB3	1:B:4092:ARG:HD2	1.83	0.60
1:A:4433:ASP:HB3	1:A:4448:LEU:HD21	1.83	0.60
1:B:3974:TRP:NE1	1:B:3976:GLU:OE2	2.32	0.59
1:B:2837:LEU:HD13	1:B:2842:GLU:HB3	1.84	0.59
1:A:1567:ARG:HH12	1:B:3043:MET:HB2	1.67	0.59
1:A:1962:ARG:NH2	1:A:2314:ASN:OD1	2.35	0.59
1:B:4505:LYS:NZ	1:B:4554:ASP:O	2.35	0.59
1:B:2492:ARG:NH1	1:B:2543:GLY:O	2.36	0.59
1:A:4031:VAL:HG21	1:A:4058:LEU:HD21	1.84	0.58
1:B:3239:LYS:HG2	1:B:3451:TYR:CZ	2.38	0.58
1:B:4430:ASP:OD2	1:B:4447:TYR:OH	2.21	0.58
1:A:3451:TYR:HA	1:A:3454:LEU:HG	1.85	0.58
1:B:2590:PRO:HA	1:B:2708:PHE:O	2.02	0.58
1:A:2590:PRO:HA	1:A:2708:PHE:O	2.04	0.58
1:A:4296:MET:HE3	1:A:4297:PRO:HD2	1.85	0.58
1:B:2290:SER:HB2	1:B:2295:LEU:HG	1.85	0.58
1:B:4096:LEU:HD13	1:B:4105:TRP:HH2	1.68	0.58
1:A:2290:SER:HB2	1:A:2295:LEU:HG	1.86	0.58
1:A:1570:SER:O	1:A:1574:GLU:HG3	2.04	0.58
1:A:3985:GLN:O	1:A:3989:ARG:HG3	2.04	0.58
1:B:4227:ALA:HB2	1:B:4233:ILE:HD12	1.85	0.58
1:A:3880:HIS:HD2	1:A:4021:MET:HG3	1.68	0.58
1:B:2562:VAL:HG11	1:B:2755:MET:HB3	1.86	0.58
1:B:3191:ARG:HG2	1:B:3503:ILE:HD13	1.85	0.58
1:B:2784:PHE:HB2	1:B:2794:TYR:HE2	1.68	0.57
1:A:4382:THR:O	1:A:4386:ASN:ND2	2.31	0.57
1:B:4508:HIS:CE1	1:B:4587:LEU:HD11	2.40	0.57
1:A:2784:PHE:HB2	1:A:2794:TYR:HE2	1.69	0.57
1:A:3031:THR:O	1:A:3035:GLU:HG3	2.04	0.57
1:A:4505:LYS:NZ	1:A:4557:SER:O	2.31	0.57
1:B:3451:TYR:HA	1:B:3454:LEU:HG	1.87	0.57
1:A:3873:ARG:HD3	1:A:4021:MET:HE1	1.85	0.57
1:A:1515:VAL:HG13	1:A:1516:PHE:CD1	2.40	0.57
1:A:2000:GLU:OE1	1:A:2005:GLN:NE2	2.37	0.57

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2181:GLU:HG3	1:A:2244:LEU:HB2	1.87	0.56
1:A:1577:ALA:O	1:A:1581:LYS:HG3	2.05	0.56
1:A:3191:ARG:HG2	1:A:3503:ILE:HD13	1.87	0.56
1:A:4096:LEU:HD13	1:A:4105:TRP:HH2	1.70	0.56
1:B:4292:LYS:HD2	1:B:4293:ASP:H	1.71	0.56
1:B:1623:ARG:NH1	1:B:1632:VAL:O	2.38	0.56
1:B:2967:TYR:OH	1:B:2975:ASP:OD2	2.20	0.56
1:B:2848:GLU:O	1:B:2852:THR:HG23	2.05	0.56
1:B:1959:GLU:OE1	1:B:2025:ARG:NH1	2.38	0.56
1:B:4150:PRO:HG3	1:B:4159:ARG:NH1	2.20	0.56
1:A:3194:LEU:HD23	1:A:3500:MET:HG2	1.86	0.56
1:A:4137:ASN:OD1	1:A:4138:LEU:N	2.38	0.56
1:A:3559:ARG:O	1:A:3563:GLN:HG2	2.03	0.56
1:A:3753:LEU:HD21	1:A:3770:LEU:HD21	1.87	0.56
1:B:1850:GLN:HB3	1:B:1856:GLN:HG2	1.88	0.56
1:B:3723:ASP:OD1	1:B:3724:VAL:N	2.39	0.56
1:A:3129:VAL:HG21	1:A:3149:PHE:HB2	1.88	0.56
1:B:3215:VAL:HG21	1:B:3479:LEU:HD11	1.88	0.56
1:B:4387:TRP:O	1:B:4391:ILE:HG12	2.06	0.56
1:A:2837:LEU:O	1:A:2843:ARG:NH2	2.39	0.55
1:A:3585:ARG:NH1	1:A:3694:SER:O	2.36	0.55
1:A:3502:THR:HG22	1:A:3542:GLN:HB3	1.88	0.55
1:A:3723:ASP:OD1	1:A:3724:VAL:N	2.39	0.55
1:A:3935:VAL:HG13	1:A:3947:LEU:HD23	1.87	0.55
1:A:2285:ARG:NH1	1:A:2331:GLU:OE2	2.27	0.55
1:B:3929:VAL:O	1:B:3933:GLU:HG3	2.07	0.55
1:A:3239:LYS:HG2	1:A:3451:TYR:CZ	2.42	0.55
1:A:4021:MET:HE3	1:A:4021:MET:HA	1.88	0.55
1:A:4049:TYR:OH	1:A:4191:GLN:NE2	2.40	0.55
1:A:2063:GLU:O	1:A:2067:ASN:ND2	2.40	0.55
1:A:1946:VAL:HG22	1:A:2006:VAL:HG21	1.88	0.55
1:A:4412:PHE:HE1	1:A:4516:VAL:HG23	1.72	0.55
1:A:4413:PHE:HD2	1:A:4504:LEU:HD11	1.71	0.55
1:B:2437:LEU:HD21	1:B:2451:ARG:HG3	1.88	0.55
1:B:3935:VAL:HG13	1:B:3947:LEU:HD23	1.89	0.55
1:B:4137:ASN:OD1	1:B:4138:LEU:N	2.40	0.55
1:B:2581:LEU:HD11	1:B:2593:LEU:HD21	1.89	0.54
1:A:2949:PHE:CZ	1:A:2953:MET:HE3	2.41	0.54
1:A:3154:LEU:HG	1:A:3516:TYR:CD1	2.42	0.54
1:A:3225:LYS:HD2	1:A:3461:ILE:HG13	1.89	0.54
1:B:1873:LEU:O	1:B:1876:GLN:NE2	2.41	0.54

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3872:ALA:HB1	1:A:3880:HIS:CD2	2.42	0.54
1:A:2066:ALA:HA	1:A:2069:ILE:HG22	1.89	0.54
1:A:2304:ASP:OD1	1:A:2726:ARG:NH2	2.40	0.54
1:B:2000:GLU:OE1	1:B:2005:GLN:NE2	2.41	0.54
1:A:1965:GLU:HG2	1:A:2026:SER:HB3	1.88	0.54
1:A:2848:GLU:O	1:A:2852:THR:HG23	2.08	0.54
1:B:2844:ARG:O	1:B:2848:GLU:HG3	2.08	0.54
1:B:3487:GLU:O	1:B:3491:LYS:HG3	2.07	0.54
1:A:3835:ILE:HD13	1:A:3867:ALA:HA	1.90	0.54
1:B:3984:GLY:O	1:B:3988:HIS:ND1	2.38	0.54
1:A:1817:HIS:CE1	1:A:1881:GLN:HG2	2.43	0.54
1:B:2752:ASN:ND2	1:B:2755:MET:HE2	2.22	0.54
1:A:1959:GLU:OE1	1:A:2025:ARG:NH1	2.41	0.53
1:B:2603:MET:HE1	2:B:4703:ADP:N7	2.22	0.53
1:A:4609:VAL:HG22	1:A:4642:VAL:HB	1.90	0.53
1:B:3110:THR:O	1:B:3140:ARG:NH1	2.41	0.53
1:A:1810:HIS:CD2	1:A:1878:LYS:HB2	2.42	0.53
1:A:3790:VAL:O	1:A:3793:GLU:HG3	2.08	0.53
1:B:3892:LEU:HD13	1:B:3983:ILE:HG21	1.91	0.53
1:A:1463:LEU:CD2	1:A:1507:MET:HE1	2.39	0.53
1:A:2422:ILE:HD13	1:A:2487:GLU:HA	1.89	0.53
1:B:3559:ARG:O	1:B:3563:GLN:HG3	2.08	0.53
1:A:1459:LEU:HD22	1:A:1507:MET:HE3	1.89	0.53
1:A:3654:ARG:HG2	1:A:3656:THR:HG23	1.90	0.53
1:B:2134:GLN:O	1:B:2138:ILE:HG12	2.09	0.53
1:B:3127:PRO:HG3	1:B:3538:GLN:HB3	1.91	0.53
1:A:4276:ARG:HH21	1:A:4279:ASP:HB3	1.74	0.53
1:B:1570:SER:O	1:B:1574:GLU:HG3	2.09	0.53
1:B:1914:GLU:HG3	2:B:4701:ADP:H2'	1.91	0.53
1:B:2304:ASP:OD1	1:B:2726:ARG:NH2	2.41	0.53
1:A:1476:ASP:OD2	1:A:1488:ARG:NH1	2.42	0.53
1:B:2231:SER:OG	3:B:4702:ATP:O1A	2.26	0.53
1:A:2457:SER:O	1:A:2461:MET:HG2	2.10	0.52
1:B:1946:VAL:HG22	1:B:2006:VAL:HG21	1.90	0.52
1:B:3546:ASP:OD1	1:B:3547:ILE:N	2.43	0.52
1:A:2112:LYS:O	1:A:2116:GLU:HG2	2.09	0.52
1:A:2179:ARG:NH1	1:A:2195:ASP:OD1	2.40	0.52
1:A:4002:LEU:HD11	1:A:4335:GLN:HB3	1.91	0.52
1:B:2047:GLN:OE1	1:B:2067:ASN:ND2	2.42	0.52
1:A:3131:ASP:N	1:A:3131:ASP:OD1	2.41	0.52
1:A:3135:GLN:O	1:A:3137:PRO:HD3	2.09	0.52

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:4277:SER:HA	1:B:4282:PHE:CD2	2.44	0.52
1:A:1564:GLU:OE1	1:A:1564:GLU:N	2.34	0.52
1:A:4394:THR:O	1:A:4490:GLN:NE2	2.36	0.52
1:B:3924:ILE:HD12	1:B:3948:ILE:HG23	1.92	0.52
1:A:1914:GLU:HG3	2:A:4701:ADP:H2'	1.92	0.52
1:B:1934:GLU:OE2	1:B:2261:LYS:NZ	2.36	0.52
1:B:3933:GLU:O	1:B:3937:ARG:HG3	2.09	0.52
1:B:3584:ASN:O	1:B:3651:ARG:NH2	2.43	0.51
1:B:4095:MET:HE3	1:B:4097:LYS:HE2	1.92	0.51
1:A:1734:ASP:HB3	1:A:1737:THR:HG22	1.92	0.51
1:B:3935:VAL:HG22	1:B:3996:PHE:HE2	1.75	0.51
1:A:1806:ARG:O	1:A:1810:HIS:ND1	2.26	0.51
1:B:2231:SER:HA	1:B:2234:TRP:CD1	2.46	0.51
1:B:2752:ASN:HD22	1:B:2755:MET:HE2	1.76	0.51
1:A:1769:MET:HE1	1:A:1778:LEU:HG	1.93	0.51
1:A:2412:MET:O	1:A:2416:GLN:HG3	2.11	0.51
1:A:4175:GLU:OE1	1:A:4175:GLU:N	2.44	0.51
1:B:3454:LEU:HA	1:B:3457:GLU:HG2	1.93	0.51
1:A:1661:VAL:HG22	1:A:1676:ILE:HD12	1.93	0.51
1:B:2066:ALA:HA	1:B:2069:ILE:HG22	1.93	0.51
1:B:2788:THR:HG22	1:B:2789:GLN:HG2	1.93	0.51
1:B:3691:ASP:O	1:B:3695:ARG:HG3	2.10	0.51
1:B:3154:LEU:HG	1:B:3516:TYR:CD1	2.46	0.51
1:A:1619:LEU:HD11	1:A:1638:LEU:HG	1.93	0.51
1:A:2917:ASP:O	1:A:2921:ARG:HG3	2.11	0.51
1:A:3877:HIS:HA	1:A:3880:HIS:ND1	2.25	0.51
1:A:3928:THR:HG22	1:A:3931:GLN:HG3	1.92	0.51
1:B:1619:LEU:HD21	1:B:1638:LEU:HD23	1.92	0.51
1:B:3161:LEU:HD21	1:B:3524:MET:HE3	1.92	0.51
1:A:1840:SER:HA	1:A:1862:ALA:HB2	1.93	0.51
1:A:2819:GLU:HG3	1:A:2866:ALA:HB2	1.93	0.51
1:A:3225:LYS:HG3	1:A:3465:LEU:HD12	1.92	0.51
1:B:4545:VAL:HG22	1:B:4588:THR:HG22	1.93	0.51
1:A:1699:ASN:OD1	1:A:1700:GLU:N	2.44	0.50
1:A:3514:ILE:HD11	1:A:3553:LEU:HD22	1.93	0.50
1:A:4626:ILE:HD13	1:A:4632:PRO:HD3	1.93	0.50
1:B:2665:GLU:HB3	1:B:2668:LEU:HD12	1.91	0.50
1:B:4609:VAL:HG22	1:B:4642:VAL:HB	1.93	0.50
1:A:1873:LEU:O	1:A:1876:GLN:NE2	2.43	0.50
1:B:1478:VAL:O	1:B:1485:ARG:HA	2.11	0.50
1:B:1567:ARG:O	1:B:1571:ILE:HG13	2.11	0.50

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:3851:ASP:HB3	1:B:3854:GLN:HG2	1.94	0.50
1:B:4307:GLN:O	1:B:4311:LEU:HG	2.10	0.50
1:B:4626:ILE:HD13	1:B:4632:PRO:HD3	1.93	0.50
1:A:1619:LEU:HD21	1:A:1638:LEU:HD23	1.93	0.50
1:A:3161:LEU:HD21	1:A:3524:MET:HE3	1.93	0.50
1:A:4505:LYS:NZ	1:A:4554:ASP:O	2.44	0.50
1:B:1574:GLU:OE1	1:B:1603:ARG:NH2	2.27	0.50
1:A:1850:GLN:HB3	1:A:1856:GLN:HG2	1.92	0.50
1:A:3588:LEU:HD21	1:A:3638:VAL:HG11	1.93	0.50
1:A:4271:ARG:HD3	1:A:4633:ARG:NH1	2.26	0.50
1:B:1785:VAL:HG13	1:B:1815:LEU:HD12	1.93	0.50
1:B:3481:SER:O	1:B:3774:LYS:NZ	2.45	0.50
1:B:3514:ILE:HD11	1:B:3553:LEU:HD22	1.94	0.50
1:B:3591:ASP:O	1:B:3682:ARG:HA	2.12	0.50
1:B:4566:GLN:O	1:B:4640:VAL:HA	2.12	0.50
1:A:2070:VAL:HB	1:A:2071:PRO:HD3	1.94	0.50
1:A:2374:ILE:HD13	1:A:2452:LEU:HD21	1.93	0.50
1:A:3900:THR:OG1	1:A:3902:ASP:OD2	2.19	0.50
1:A:4541:LEU:HB2	1:A:4592:TRP:CZ3	2.47	0.50
1:B:1760:GLU:O	1:B:1764:THR:HG23	2.11	0.50
1:A:2665:GLU:HB3	1:A:2668:LEU:HD12	1.94	0.49
1:B:3731:LEU:O	1:B:3735:GLN:HG3	2.13	0.49
1:B:3825:TYR:OH	1:B:3879:ASP:OD2	2.26	0.49
1:A:3133:LEU:HD12	1:A:3134:PRO:HD2	1.93	0.49
1:B:3135:GLN:O	1:B:3137:PRO:HD3	2.11	0.49
1:B:3208:ILE:HG21	1:B:3486:ARG:HD3	1.94	0.49
1:A:1839:LEU:O	1:A:1843:ARG:NH1	2.45	0.49
1:B:2070:VAL:HB	1:B:2071:PRO:HD3	1.95	0.49
1:B:4544:ASN:HD22	1:B:4589:GLN:HE21	1.60	0.49
1:A:1556:ASP:OD2	1:A:1556:ASP:N	2.44	0.49
1:A:1721:VAL:HA	1:A:1724:VAL:HG12	1.94	0.49
1:A:2623:SER:OG	1:A:3006:GLU:OE1	2.25	0.49
1:A:3575:GLU:O	1:A:3579:MET:HG3	2.13	0.49
1:B:1839:LEU:O	1:B:1843:ARG:NH1	2.46	0.49
1:B:2104:LYS:HA	1:B:2136:ILE:HD13	1.94	0.49
1:B:2412:MET:O	1:B:2416:GLN:HG3	2.13	0.49
1:B:2433:VAL:HG22	1:B:2498:ILE:HD11	1.95	0.49
1:A:1843:ARG:HH12	1:A:1862:ALA:H	1.61	0.49
1:A:2581:LEU:HD11	1:A:2593:LEU:HD21	1.94	0.49
1:B:3946:ASP:OD1	1:B:3950:LYS:NZ	2.45	0.49
1:A:1494:PHE:O	1:A:1498:LYS:HG3	2.13	0.49

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2540:SER:OG	1:A:2544:GLU:O	2.28	0.49
1:A:1934:GLU:OE2	1:A:2261:LYS:NZ	2.37	0.49
1:B:1721:VAL:O	1:B:1725:GLU:HG2	2.12	0.49
1:A:2156:LEU:O	1:A:2160:LEU:HG	2.12	0.49
1:A:4190:ILE:HG13	1:A:4191:GLN:N	2.28	0.49
1:B:2538:GLU:OE2	1:B:2551:LYS:NZ	2.35	0.49
1:B:3654:ARG:NH2	1:B:3668:ASP:OD1	2.45	0.49
1:A:4413:PHE:CD2	1:A:4504:LEU:HD11	2.48	0.49
1:B:2590:PRO:HB2	1:B:2731:VAL:HG12	1.95	0.49
1:B:3143:ILE:HD13	1:B:3541:ILE:HD13	1.95	0.49
1:B:2125:GLY:O	1:B:2128:ALA:N	2.45	0.49
1:A:2103:VAL:HA	1:A:2106:GLU:HG2	1.95	0.48
1:A:2210:LEU:O	1:A:2214:THR:HG23	2.13	0.48
1:B:1706:GLU:O	1:B:1709:MET:HG2	2.13	0.48
1:B:3475:SER:O	1:B:3479:LEU:HG	2.13	0.48
1:A:2592:VAL:HB	1:A:2733:VAL:HG22	1.95	0.48
1:A:2949:PHE:CE2	1:A:2953:MET:HE3	2.48	0.48
1:B:3933:GLU:HA	1:B:3936:VAL:HG22	1.93	0.48
1:B:4082:LYS:O	1:B:4086:THR:HG23	2.14	0.48
1:B:1462:PHE:O	1:B:1465:GLN:HG2	2.14	0.48
1:B:3099:THR:HG23	1:B:3148:VAL:HG11	1.95	0.48
1:B:3451:TYR:CD1	1:B:3454:LEU:HD21	2.48	0.48
1:A:1914:GLU:HG2	2:A:4701:ADP:O1A	2.14	0.48
1:A:2851:ASP:HA	1:A:2867:MET:HE1	1.96	0.48
1:A:3099:THR:HG23	1:A:3148:VAL:HG11	1.94	0.48
1:B:1661:VAL:HG22	1:B:1676:ILE:HD12	1.94	0.48
1:B:1965:GLU:HG2	1:B:2026:SER:HB3	1.94	0.48
1:A:2538:GLU:HB3	1:A:2548:TRP:CE2	2.48	0.48
1:B:1774:ASP:OD1	1:B:1775:ALA:N	2.43	0.48
1:B:1810:HIS:CD2	1:B:1878:LYS:HB2	2.49	0.48
1:B:1836:PHE:HA	1:B:1839:LEU:HB2	1.95	0.48
1:B:2210:LEU:O	1:B:2214:THR:HG23	2.14	0.48
1:B:2422:ILE:HD13	1:B:2487:GLU:HA	1.95	0.48
1:B:3654:ARG:HG2	1:B:3656:THR:HG23	1.96	0.48
1:A:1752:LEU:O	1:A:1756:ILE:HG13	2.14	0.48
1:A:3621:LYS:HA	1:A:3624:GLU:HG2	1.96	0.48
1:B:2075:LEU:O	1:B:2079:GLN:HB2	2.14	0.48
1:B:2752:ASN:OD1	1:B:2770:THR:OG1	2.17	0.48
1:A:3817:SER:OG	1:A:4346:MET:HB2	2.14	0.48
1:A:4452:ILE:O	1:A:4456:VAL:HG13	2.14	0.48
1:B:4175:GLU:N	1:B:4175:GLU:OE1	2.45	0.48

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1782:LEU:HD13	1:B:1822:THR:HB	1.96	0.47
1:A:1497:VAL:O	1:A:1501:ILE:HG13	2.13	0.47
1:A:4082:LYS:O	1:A:4086:THR:HG23	2.14	0.47
1:B:1497:VAL:O	1:B:1501:ILE:HG13	2.14	0.47
1:B:3683:ASP:HB3	1:B:3686:VAL:HG13	1.96	0.47
1:B:3770:LEU:O	1:B:3774:LYS:HG2	2.14	0.47
1:A:2590:PRO:HB2	1:A:2731:VAL:HG12	1.96	0.47
1:A:2925:ILE:HD12	1:A:3090:VAL:HG21	1.96	0.47
1:A:3206:ARG:HG2	1:A:3206:ARG:HH11	1.78	0.47
1:A:3517:ALA:HB1	1:A:3525:ARG:HG2	1.96	0.47
1:B:3491:LYS:HE3	1:B:3491:LYS:HB3	1.68	0.47
1:A:2478:ASP:OD1	1:A:2479:PHE:N	2.47	0.47
1:A:3110:THR:O	1:A:3140:ARG:NH1	2.47	0.47
1:B:1476:ASP:OD1	1:B:1488:ARG:HD2	2.13	0.47
1:B:2905:LEU:HD11	1:B:3652:GLU:HB3	1.96	0.47
1:A:2224:GLY:O	1:A:2346:GLN:HA	2.15	0.47
1:A:3787:THR:HA	1:A:3790:VAL:HG12	1.97	0.47
1:A:4172:SER:OG	1:A:4173:PRO:HD3	2.15	0.47
1:A:4308:TRP:CH2	1:A:4312:LEU:HD21	2.50	0.47
1:B:2359:CYS:HB2	1:B:2361:MET:HE2	1.96	0.47
1:A:2053:MET:HE1	1:A:2094:LYS:HG3	1.96	0.47
1:A:4065:GLN:HB3	1:A:4092:ARG:HD2	1.95	0.47
1:B:1978:ILE:HD11	1:B:2001:LEU:HD11	1.96	0.47
1:B:2854:ALA:HB3	1:B:2867:MET:HE1	1.96	0.47
1:B:2917:ASP:O	1:B:2921:ARG:HG3	2.15	0.47
1:A:1558:LYS:HD3	1:A:1565:THR:HG21	1.97	0.47
1:A:1860:GLN:HA	1:A:1864:ALA:O	2.15	0.47
1:A:2982:ARG:HA	1:A:2986:LYS:HE2	1.96	0.47
1:A:3143:ILE:HD13	1:A:3541:ILE:HD13	1.97	0.47
1:A:3892:LEU:HD13	1:A:3983:ILE:HG21	1.96	0.47
1:A:4013:LEU:HD13	1:A:4017:PHE:CE2	2.49	0.47
1:B:3031:THR:O	1:B:3035:GLU:HG3	2.14	0.47
1:B:3517:ALA:HB1	1:B:3525:ARG:HG2	1.96	0.47
1:B:4296:MET:HE3	1:B:4297:PRO:HD2	1.97	0.47
1:B:4331:LEU:O	1:B:4335:GLN:HG3	2.14	0.47
1:B:4435:VAL:O	1:B:4439:GLU:HG3	2.14	0.47
1:A:4424:LEU:HD12	1:A:4428:ARG:HG3	1.97	0.47
1:B:1840:SER:HA	1:B:1862:ALA:HB2	1.97	0.47
1:B:1987:ASN:OD1	1:B:1990:TYR:HB3	2.15	0.47
1:B:2039:LEU:HD12	1:B:4254:GLY:HA2	1.97	0.47
1:B:2538:GLU:HB3	1:B:2548:TRP:CE2	2.50	0.47

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2075:LEU:O	1:A:2079:GLN:HB2	2.14	0.47
1:A:3606:ASP:OD1	1:A:3606:ASP:N	2.47	0.47
1:B:3835:ILE:HD13	1:B:3867:ALA:HA	1.97	0.47
1:B:4528:VAL:HG11	1:B:4592:TRP:HB2	1.96	0.47
1:B:4178:ARG:NH2	1:B:4297:PRO:O	2.48	0.47
1:B:2132:PRO:HB2	1:B:2135:GLU:HB2	1.96	0.46
1:A:3475:SER:O	1:A:3479:LEU:HG	2.14	0.46
1:A:4039:THR:HG23	1:A:4142:GLY:HA2	1.98	0.46
1:B:4007:MET:O	1:B:4011:THR:HG23	2.14	0.46
1:B:4433:ASP:HB3	1:B:4448:LEU:HD21	1.97	0.46
1:A:2176:THR:O	1:A:2180:GLU:HG2	2.15	0.46
1:A:2620:LEU:HD21	1:A:2634:THR:OG1	2.15	0.46
1:A:3451:TYR:CD1	1:A:3454:LEU:HD21	2.50	0.46
1:B:3237:ASN:O	1:B:3241:LYS:HG2	2.14	0.46
1:A:1987:ASN:OD1	1:A:1990:TYR:HB3	2.14	0.46
1:A:2951:ALA:HB1	1:A:2956:LEU:HB2	1.97	0.46
1:A:4528:VAL:HG11	1:A:4592:TRP:HB2	1.97	0.46
1:B:2103:VAL:HA	1:B:2106:GLU:HG2	1.96	0.46
1:B:4013:LEU:HD13	1:B:4017:PHE:CE2	2.51	0.46
1:A:4095:MET:HE3	1:A:4097:LYS:HE2	1.97	0.46
1:B:3154:LEU:HD21	1:B:3532:TRP:HZ2	1.81	0.46
1:A:1598:GLN:O	1:A:1602:GLU:HG3	2.15	0.46
1:B:2410:SER:HB3	1:B:2413:LEU:HB2	1.98	0.46
1:B:2446:ILE:HG12	1:B:2505:ASP:O	2.16	0.46
1:B:3133:LEU:HD11	1:B:3141:GLU:HB3	1.98	0.46
1:B:3954:ASP:OD1	1:B:3957:PHE:N	2.49	0.46
1:B:1860:GLN:HA	1:B:1864:ALA:O	2.15	0.46
1:B:2138:ILE:HD11	1:B:2165:PHE:CG	2.51	0.46
1:A:3880:HIS:CD2	1:A:4021:MET:HG3	2.48	0.46
1:B:1989:ASN:OD1	1:B:1990:TYR:N	2.48	0.46
1:A:2138:ILE:HG22	1:A:2170:TYR:HB2	1.98	0.46
1:A:4318:PRO:HG2	1:A:4325:ASN:HA	1.97	0.46
1:B:1469:VAL:O	1:B:1473:TYR:HB2	2.15	0.46
1:B:2820:GLY:O	1:B:2824:ILE:HG13	2.16	0.46
1:B:3763:ASP:OD1	1:B:3763:ASP:N	2.49	0.46
1:B:4509:VAL:HG11	1:B:4520:TYR:CZ	2.51	0.46
1:A:1751:VAL:O	1:A:1755:GLN:HG3	2.17	0.45
1:A:3967:GLU:OE2	1:A:3968:GLN:NE2	2.49	0.45
1:B:1843:ARG:HH12	1:B:1862:ALA:H	1.64	0.45
1:B:2104:LYS:O	1:B:2108:ILE:HG12	2.16	0.45
1:B:2895:ALA:O	1:B:2898:LYS:HG2	2.15	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:4160:THR:HG23	1:A:4212:LEU:HD21	1.98	0.45
1:A:4460:LEU:HD12	1:A:4461:PRO:HD2	1.98	0.45
1:A:4564:LYS:HD3	1:A:4584:ALA:HA	1.98	0.45
1:B:1572:SER:O	1:B:1576:LEU:HG	2.16	0.45
1:B:2374:ILE:HD13	1:B:2452:LEU:HD21	1.97	0.45
1:B:3113:MET:SD	1:B:3184:ALA:HA	2.57	0.45
1:A:1850:GLN:HG3	1:A:1852:ASP:H	1.82	0.45
1:A:2065:LEU:HD22	1:A:2137:LEU:HD12	1.97	0.45
1:A:2995:ASP:OD2	1:A:3067:THR:OG1	2.34	0.45
1:A:4482:PHE:O	1:A:4486:ILE:HG12	2.17	0.45
1:B:3608:LYS:HE3	1:B:3608:LYS:HB2	1.69	0.45
1:A:3030:MET:HE2	1:A:3030:MET:HA	1.98	0.45
1:B:1565:THR:O	1:B:1569:GLN:HG2	2.16	0.45
1:B:1798:MET:HE2	1:B:1798:MET:HB3	1.86	0.45
1:B:2308:ASP:O	1:B:2312:VAL:HG12	2.17	0.45
1:B:2572:LEU:O	1:B:2576:ARG:HG3	2.16	0.45
1:B:3691:ASP:OD1	1:B:3692:LEU:N	2.48	0.45
1:A:1836:PHE:HA	1:A:1839:LEU:HB2	1.98	0.45
1:A:1863:ASN:HD22	1:A:1897:GLU:HG2	1.81	0.45
1:B:2297:LYS:O	1:B:2338:ASN:ND2	2.46	0.45
1:A:1477:LEU:HA	1:A:1486:LEU:O	2.17	0.45
1:A:2065:LEU:HB3	1:A:2137:LEU:HD11	1.99	0.45
1:A:2572:LEU:O	1:A:2576:ARG:HG3	2.16	0.45
1:B:4450:THR:O	1:B:4454:GLU:HG3	2.16	0.45
1:A:1580:LYS:O	1:A:1584:LYS:HG2	2.17	0.45
1:B:1663:SER:HG	1:B:1677:SER:HG	1.60	0.45
1:B:4516:VAL:HG12	1:B:4519:ALA:H	1.82	0.45
1:A:3452:ALA:HA	1:A:3455:ILE:HG22	1.99	0.45
1:B:2073:PHE:HZ	1:B:2096:VAL:HG21	1.81	0.45
1:B:3786:GLU:O	1:B:3789:ILE:HG12	2.17	0.45
1:A:4430:ASP:OD2	1:A:4447:TYR:OH	2.32	0.45
1:B:1478:VAL:HG12	1:B:1488:ARG:NH2	2.28	0.45
1:B:1752:LEU:O	1:B:1756:ILE:HG13	2.16	0.45
1:B:2224:GLY:O	1:B:2346:GLN:HA	2.17	0.45
1:B:4107:MET:HE2	1:B:4135:PRO:HG3	1.99	0.45
1:A:1802:PRO:O	1:A:1806:ARG:HG3	2.17	0.45
1:A:2760:PRO:HA	1:A:2763:ARG:HG3	1.99	0.45
1:B:1537:TRP:CH2	1:B:1582:VAL:HG21	2.52	0.45
1:B:2894:LYS:HE3	1:B:2894:LYS:HB2	1.79	0.45
1:B:3868:PHE:CZ	1:B:4018:MET:HG2	2.51	0.45
1:A:4297:PRO:HG3	1:A:4308:TRP:CD2	2.52	0.44

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1945:PHE:HB3	1:A:1978:ILE:HD11	1.98	0.44
1:A:2265:TYR:OH	1:A:2311:TRP:O	2.23	0.44
1:A:3492:THR:HA	1:A:3495:THR:HG22	1.99	0.44
1:A:4007:MET:O	1:A:4011:THR:HG23	2.17	0.44
1:B:2943:LYS:HG2	1:B:3094:PHE:CD2	2.52	0.44
1:B:3206:ARG:HH22	1:B:3207:LYS:HE3	1.82	0.44
1:B:3909:LEU:HB3	1:B:4344:LEU:HD21	1.99	0.44
1:B:4156:ASN:C	1:B:4156:ASN:HD22	2.25	0.44
1:A:1949:CYS:SG	1:A:2012:MET:HE3	2.57	0.44
1:A:2039:LEU:HD12	1:A:4254:GLY:HA2	2.00	0.44
1:A:2820:GLY:O	1:A:2824:ILE:HG13	2.17	0.44
1:A:2894:LYS:HE3	1:A:2894:LYS:HB2	1.81	0.44
1:B:1458:ALA:HA	1:B:1461:GLU:HG2	1.98	0.44
1:B:4288:VAL:HG11	1:B:4294:ILE:HG13	2.00	0.44
1:A:3028:THR:O	1:A:3032:GLN:HG3	2.17	0.44
1:A:3520:PHE:HB3	1:A:3524:MET:HB3	2.00	0.44
1:B:3100:GLU:O	1:B:3104:GLN:HG3	2.17	0.44
1:B:4172:SER:OG	1:B:4173:PRO:HD3	2.16	0.44
1:A:4470:PRO:HG3	1:A:4612:ASN:HD22	1.83	0.44
1:B:3606:ASP:OD1	1:B:3606:ASP:N	2.49	0.44
1:B:3817:SER:O	1:B:4346:MET:HG2	2.16	0.44
1:A:1760:GLU:O	1:A:1764:THR:HG23	2.17	0.44
1:A:3608:LYS:HE3	1:A:3608:LYS:HB2	1.81	0.44
1:A:4173:PRO:HG2	1:A:4176:ARG:HH21	1.82	0.44
1:B:1724:VAL:HG23	1:B:1727:PHE:HD2	1.82	0.44
1:B:3588:LEU:HD21	1:B:3638:VAL:HG11	2.00	0.44
1:B:3780:VAL:O	1:B:3784:VAL:HG23	2.18	0.44
1:A:2937:GLY:C	1:A:3070:PRO:HD3	2.43	0.44
1:A:2061:THR:OG1	1:A:2133:GLU:OE1	2.32	0.44
1:B:2356:VAL:HG13	1:B:2361:MET:HE3	2.00	0.44
1:B:2592:VAL:HB	1:B:2733:VAL:HG22	2.00	0.44
1:B:2641:TYR:CZ	1:B:2650:LEU:HD13	2.53	0.44
1:A:2279:LEU:HA	1:A:2698:GLN:HG2	2.00	0.43
1:A:2308:ASP:O	1:A:2312:VAL:HG12	2.18	0.43
1:A:2956:LEU:HD13	1:A:2991:ALA:HB2	2.00	0.43
1:A:4065:GLN:OE1	1:A:4092:ARG:NH1	2.49	0.43
1:B:2154:ILE:HB	1:B:2155:PRO:HD3	2.00	0.43
1:B:3781:THR:O	1:B:3785:GLU:OE1	2.36	0.43
1:B:3931:GLN:O	1:B:3935:VAL:HG23	2.17	0.43
1:A:2593:LEU:HD11	1:A:2605:LEU:HB2	1.99	0.43
1:A:4302:ARG:HG2	1:A:4302:ARG:HH11	1.84	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2411:PRO:O	1:B:2415:ILE:HG13	2.19	0.43
1:B:3190:LYS:HB3	1:B:3503:ILE:HD11	2.00	0.43
1:A:4443:LYS:HB3	1:A:4443:LYS:HE3	1.71	0.43
1:A:4519:ALA:HA	1:A:4522:THR:HG22	2.00	0.43
1:B:2206:LYS:HD3	1:B:2206:LYS:HA	1.76	0.43
1:A:3175:HIS:HB3	1:A:3516:TYR:CE1	2.54	0.43
1:A:2297:LYS:O	1:A:2338:ASN:ND2	2.45	0.43
1:A:4260:PHE:CE2	1:A:4608:PRO:HB3	2.54	0.43
1:B:2423:MET:HE3	1:B:2423:MET:HB2	1.86	0.43
1:B:4131:ASN:OD1	1:B:4133:LYS:HG2	2.18	0.43
1:A:2047:GLN:HA	1:A:2070:VAL:HG21	2.01	0.43
1:B:1537:TRP:HH2	1:B:1582:VAL:HG21	1.84	0.43
1:B:1618:TYR:HD1	1:B:1621:ARG:NH2	2.16	0.43
1:B:2937:GLY:C	1:B:3070:PRO:HD3	2.43	0.43
1:B:3781:THR:O	1:B:3784:VAL:HB	2.18	0.43
1:B:4288:VAL:O	1:B:4319:SER:OG	2.29	0.43
1:B:4343:MET:HE2	1:B:4343:MET:HB3	1.88	0.43
1:B:4424:LEU:HA	1:B:4482:PHE:HZ	1.84	0.43
1:B:4508:HIS:ND1	1:B:4587:LEU:HD11	2.34	0.43
1:A:3154:LEU:HD21	1:A:3532:TRP:HZ2	1.84	0.43
1:B:1697:LYS:HB2	1:B:1700:GLU:OE2	2.18	0.43
1:B:2802:TRP:CZ2	1:B:2829:ALA:HB2	2.54	0.43
1:B:3591:ASP:O	1:B:3591:ASP:OD1	2.37	0.43
1:B:4600:LYS:HD3	1:B:4604:VAL:HB	2.00	0.43
1:A:4131:ASN:OD1	1:A:4133:LYS:HG2	2.19	0.43
1:B:4511:LEU:HD12	1:B:4563:LEU:HD21	2.00	0.43
1:A:3908:PHE:CZ	1:A:4340:ILE:HD11	2.54	0.43
1:B:2517:TYR:CE2	1:B:2521:ILE:HD13	2.54	0.43
1:B:3452:ALA:HA	1:B:3455:ILE:HG22	2.01	0.43
1:B:3520:PHE:HB3	1:B:3524:MET:HB3	2.01	0.43
1:A:1797:LEU:HD23	1:A:1797:LEU:HA	1.89	0.43
1:A:3100:GLU:O	1:A:3104:GLN:HG3	2.19	0.43
1:A:3176:TYR:O	1:A:3180:ILE:HG12	2.19	0.43
1:B:2865:LYS:HA	1:B:2865:LYS:HD2	1.91	0.43
1:B:3158:ASN:ND2	1:B:3169:MET:O	2.48	0.43
1:B:3497:LYS:HA	1:B:3497:LYS:HD3	1.66	0.43
1:B:3924:ILE:HG23	1:B:3927:LEU:HB2	2.01	0.43
1:A:2104:LYS:O	1:A:2108:ILE:HG12	2.19	0.42
1:A:3209:LYS:O	1:A:3212:VAL:HG12	2.19	0.42
1:B:1467:ARG:HG2	1:B:1523:TRP:HZ2	1.84	0.42
1:B:1985:HIS:CD2	1:B:1997:ILE:HG13	2.53	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:3808:CYS:HB3	1:B:3832:PHE:HZ	1.85	0.42
1:B:4297:PRO:HG3	1:B:4308:TRP:CD2	2.54	0.42
1:B:4297:PRO:HG3	1:B:4308:TRP:CG	2.54	0.42
1:A:1711:VAL:HG13	1:A:1853:VAL:HG21	2.01	0.42
1:A:2134:GLN:O	1:A:2138:ILE:HG12	2.19	0.42
1:A:2877:LEU:HD13	1:A:2888:GLU:HG2	2.01	0.42
1:A:4545:VAL:HG22	1:A:4588:THR:HG22	2.01	0.42
1:B:2446:ILE:HD13	1:B:2735:TYR:CD1	2.54	0.42
1:A:2517:TYR:CE2	1:A:2521:ILE:HD13	2.55	0.42
1:A:2912:PHE:CE2	1:A:2914:GLU:HB2	2.55	0.42
1:A:4247:MET:HG2	1:A:4251:ILE:HD12	2.01	0.42
1:B:3207:LYS:HA	1:B:3207:LYS:HD3	1.84	0.42
1:A:3113:MET:SD	1:A:3184:ALA:HA	2.59	0.42
1:A:3212:VAL:O	1:A:3215:VAL:HG12	2.20	0.42
1:B:2418:ASP:O	1:B:2422:ILE:HG13	2.19	0.42
1:B:2499:LEU:HD23	1:B:2499:LEU:HA	1.91	0.42
1:B:2816:LEU:HD12	1:B:2817:PRO:HD2	2.01	0.42
1:B:3176:TYR:O	1:B:3180:ILE:HG12	2.18	0.42
1:B:4106:LEU:HD23	1:B:4106:LEU:HA	1.92	0.42
1:B:4460:LEU:HD12	1:B:4461:PRO:HD2	2.01	0.42
1:A:1931:ASN:HD21	1:A:2316:ASN:HB2	1.84	0.42
1:A:2590:PRO:O	1:A:2732:PRO:HD2	2.19	0.42
1:A:3763:ASP:OD1	1:A:3763:ASP:N	2.50	0.42
1:A:3908:PHE:CZ	1:A:3990:LEU:HD21	2.54	0.42
1:A:4302:ARG:NH1	1:A:4306:VAL:HG21	2.35	0.42
1:B:1478:VAL:HG12	1:B:1488:ARG:HE	1.84	0.42
1:B:2839:GLU:HB2	1:B:2842:GLU:OE1	2.19	0.42
1:B:3174:ARG:NH1	1:B:3650:ASN:OD1	2.53	0.42
1:B:4107:MET:HG2	1:B:4137:ASN:HD21	1.83	0.42
1:A:2465:ALA:HB2	1:A:2493:TYR:CD1	2.54	0.42
1:A:4509:VAL:HG11	1:A:4520:TYR:CZ	2.54	0.42
1:A:4525:ARG:NH2	1:A:4539:LEU:O	2.36	0.42
1:B:1623:ARG:HD3	1:B:1630:TYR:HA	2.00	0.42
1:B:3229:LEU:HD12	1:B:3461:ILE:HG23	2.02	0.42
1:B:4088:VAL:HG11	1:B:4116:LEU:HD21	2.00	0.42
1:B:4303:GLU:OE1	1:B:4303:GLU:N	2.50	0.42
1:A:2641:TYR:CZ	1:A:2650:LEU:HD13	2.55	0.42
1:A:2844:ARG:O	1:A:2848:GLU:HG2	2.20	0.42
1:A:4205:TYR:OH	1:A:4261:ASP:OD2	2.32	0.42
1:B:3873:ARG:HD3	1:B:3873:ARG:HA	1.82	0.42
1:B:4082:LYS:HB2	1:B:4082:LYS:HE2	1.85	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:4308:TRP:CH2	1:B:4312:LEU:HD21	2.55	0.42
1:A:1576:LEU:O	1:A:1580:LYS:HG3	2.20	0.42
1:B:2590:PRO:O	1:B:2732:PRO:HD2	2.19	0.42
1:B:3650:ASN:HD21	1:B:3695:ARG:HH11	1.68	0.42
1:B:4183:LEU:HD11	1:B:4215:ALA:HB1	2.01	0.42
1:B:4525:ARG:HD3	1:B:4536:LEU:HB3	2.01	0.42
1:A:1769:MET:SD	1:A:1777:PRO:HD2	2.59	0.42
1:A:2667:ASN:ND2	1:A:2712:CYS:HB2	2.34	0.42
1:A:3716:VAL:HB	1:A:3836:TYR:OH	2.19	0.42
1:A:4468:THR:HG21	1:A:4617:ASP:OD2	2.20	0.42
1:B:1493:LEU:O	1:B:1497:VAL:HG23	2.19	0.42
1:B:2925:ILE:HD12	1:B:3090:VAL:HG21	2.02	0.42
1:B:3175:HIS:HB3	1:B:3516:TYR:CE1	2.55	0.42
1:B:4160:THR:HG23	1:B:4212:LEU:HD21	2.02	0.42
1:B:1667:ASN:ND2	1:B:1672:VAL:HB	2.35	0.42
1:B:3033:CYS:SG	1:B:3054:PHE:HB2	2.60	0.42
1:B:3150:VAL:O	1:B:3154:LEU:HD23	2.18	0.42
1:B:3782:ARG:HA	1:B:3785:GLU:CD	2.45	0.42
1:B:4525:ARG:NH1	1:B:4536:LEU:O	2.53	0.42
1:A:2018:MET:HE2	1:A:2018:MET:HB3	1.90	0.41
1:A:2751:PHE:HB3	1:A:2803:VAL:HG11	2.02	0.41
1:A:4009:VAL:HG13	1:A:4013:LEU:HD12	2.01	0.41
1:A:4558:PHE:O	1:A:4589:GLN:HA	2.20	0.41
1:B:1619:LEU:HD11	1:B:1638:LEU:HG	2.01	0.41
1:A:3158:ASN:ND2	1:A:3169:MET:O	2.49	0.41
1:A:3172:THR:HG21	1:A:3694:SER:HB3	2.02	0.41
1:B:1652:LYS:HB2	1:B:1652:LYS:HE2	1.83	0.41
1:B:1673:VAL:N	1:B:1690:VAL:O	2.44	0.41
1:B:2956:LEU:CD2	1:B:2989:LYS:HB3	2.49	0.41
1:B:3068:MET:HE1	1:B:3078:ARG:HG3	2.02	0.41
1:B:3976:GLU:HB3	1:B:3978:THR:O	2.20	0.41
1:B:2529:ALA:HA	1:B:2530:PRO:HD3	1.94	0.41
1:B:2667:ASN:ND2	1:B:2712:CYS:HB2	2.35	0.41
1:B:3844:PRO:HA	1:B:3847:LYS:HE3	2.02	0.41
1:A:3520:PHE:CD1	1:A:3524:MET:HG2	2.56	0.41
1:B:3891:LYS:HD2	1:B:4013:LEU:HD23	2.03	0.41
1:A:1766:LEU:HD23	1:A:1766:LEU:HA	1.93	0.41
1:A:3033:CYS:SG	1:A:3054:PHE:HB2	2.60	0.41
1:A:4020:ILE:HD12	1:A:4020:ILE:H	1.85	0.41
1:A:4157:MET:HE2	1:A:4157:MET:HB3	1.96	0.41
1:B:1467:ARG:HG2	1:B:1523:TRP:CZ2	2.56	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:3227:GLN:HA	1:B:3230:GLU:HG2	2.03	0.41
1:B:3495:THR:O	1:B:3499:GLN:HG3	2.20	0.41
1:B:4431:LEU:HD23	1:B:4431:LEU:HA	1.92	0.41
1:A:4105:TRP:CH2	1:A:4109:LEU:HD22	2.56	0.41
1:A:4196:TYR:HE1	1:A:4328:GLU:HB3	1.85	0.41
1:A:4442:LYS:HE3	1:A:4442:LYS:HB2	1.81	0.41
1:B:3126:MET:HA	1:B:3127:PRO:HD3	1.96	0.41
1:B:3211:THR:O	1:B:3215:VAL:HG23	2.20	0.41
1:B:4175:GLU:HG3	1:B:4278:PHE:CE2	2.55	0.41
1:A:1469:VAL:O	1:A:1473:TYR:HB2	2.21	0.41
1:A:1589:MET:HE3	1:A:1589:MET:HA	2.03	0.41
1:A:3046:SER:HB3	1:A:3049:GLU:HG2	2.02	0.41
1:B:2973:ASP:O	1:B:2977:ARG:HG3	2.21	0.41
1:B:2976:LEU:HB3	1:B:3020:LEU:HD21	2.02	0.41
1:A:3683:ASP:HB3	1:A:3686:VAL:HG13	2.01	0.41
1:B:3931:GLN:HE22	1:B:3961:LEU:HD11	1.86	0.41
1:B:3982:PRO:HA	1:B:3985:GLN:HE21	1.84	0.41
1:B:3990:LEU:HA	1:B:4004:MET:HG2	2.02	0.41
1:B:4496:ALA:HB2	1:B:4504:LEU:HD12	2.02	0.41
1:B:4543:VAL:HG12	1:B:4590:LEU:HD22	2.01	0.41
1:A:2142:CYS:HA	1:A:2146:VAL:HG23	2.02	0.41
1:A:2411:PRO:O	1:A:2415:ILE:HG13	2.21	0.41
1:A:2458:LEU:O	1:A:2462:LEU:HG	2.21	0.41
1:A:3214:GLN:O	1:A:3217:GLU:HG3	2.20	0.41
1:A:3239:LYS:HG2	1:A:3451:TYR:OH	2.21	0.41
1:A:3546:ASP:OD1	1:A:3547:ILE:N	2.54	0.41
1:A:3781:THR:O	1:A:3785:GLU:OE1	2.38	0.41
1:A:3891:LYS:HD2	1:A:4013:LEU:HD23	2.02	0.41
1:A:4412:PHE:CE2	1:A:4520:TYR:HB2	2.56	0.41
1:B:1984:GLU:OE1	1:B:1997:ILE:HG23	2.20	0.41
1:B:2560:HIS:CE1	1:B:2561:LYS:HG3	2.56	0.41
1:B:2951:ALA:HB1	1:B:2956:LEU:HB2	2.02	0.41
1:B:3520:PHE:CD1	1:B:3524:MET:HG2	2.56	0.41
1:B:3885:MET:HE1	1:B:3990:LEU:HD21	2.03	0.41
1:A:2231:SER:O	1:A:2235:ARG:HG3	2.21	0.41
1:A:2802:TRP:CZ2	1:A:2829:ALA:HB2	2.56	0.41
1:A:3873:ARG:HD3	1:A:3873:ARG:HA	1.80	0.41
1:A:4188:ALA:O	1:A:4192:GLU:HG2	2.21	0.41
1:B:1911:GLY:O	1:B:1915:SER:OG	2.32	0.41
1:B:3214:GLN:O	1:B:3217:GLU:HG3	2.21	0.41
1:B:3837:HIS:ND1	1:B:3837:HIS:C	2.78	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:3982:PRO:HA	1:B:3985:GLN:HG2	2.03	0.41
1:A:1774:ASP:OD1	1:A:1775:ALA:N	2.47	0.40
1:A:3229:LEU:HD11	1:A:3462:LYS:HB2	2.03	0.40
1:A:3591:ASP:OD2	1:A:3595:GLN:N	2.54	0.40
1:B:1751:VAL:O	1:B:1755:GLN:HG3	2.21	0.40
1:B:2054:LEU:HD23	1:B:2054:LEU:HA	1.94	0.40
1:B:2172:ARG:HE	1:B:2175:MET:HE1	1.87	0.40
1:B:2457:SER:O	1:B:2461:MET:HG3	2.21	0.40
1:B:3716:VAL:HB	1:B:3836:TYR:OH	2.21	0.40
1:B:4414:GLU:HG3	1:B:4415:ARG:N	2.35	0.40
1:A:2007:LYS:HE3	1:A:2007:LYS:HB3	1.94	0.40
1:A:2131:LEU:HD12	1:A:2132:PRO:HD2	2.03	0.40
1:A:2943:LYS:HG2	1:A:3094:PHE:CD2	2.56	0.40
1:B:1887:ARG:NH2	1:B:4253:GLY:O	2.54	0.40
1:A:1493:LEU:O	1:A:1497:VAL:HG23	2.21	0.40
1:A:1570:SER:O	1:A:1573:THR:OG1	2.32	0.40
1:A:1784:ASN:O	1:A:1787:VAL:HG22	2.20	0.40
1:A:4470:PRO:HD2	1:A:4473:MET:HE3	2.03	0.40
1:B:1478:VAL:CG1	1:B:1488:ARG:HE	2.34	0.40
1:B:1941:MET:HE2	1:B:1960:PHE:HE1	1.85	0.40
1:B:2458:LEU:O	1:B:2462:LEU:HG	2.22	0.40
1:B:2499:LEU:HD21	1:B:2515:GLY:HA2	2.02	0.40
1:B:2536:ASP:OD1	1:B:2572:LEU:HD21	2.22	0.40
1:B:4482:PHE:O	1:B:4486:ILE:HG12	2.21	0.40
1:A:1911:GLY:O	1:A:1915:SER:OG	2.28	0.40
1:A:2268:LEU:HD12	1:A:2268:LEU:HA	1.96	0.40
1:A:3135:GLN:HB2	1:A:3136:PRO:HD3	2.03	0.40
1:A:3167:ARG:NH1	1:A:3685:THR:HA	2.37	0.40
1:A:3746:GLU:OE2	1:A:3750:LEU:HG	2.21	0.40
1:A:3776:GLU:O	1:A:3780:VAL:HG22	2.21	0.40
1:A:4159:ARG:HE	1:A:4159:ARG:HB2	1.79	0.40
1:B:2067:ASN:ND2	1:B:4537:GLU:OE1	2.51	0.40
1:B:2075:LEU:HD21	1:B:4536:LEU:HD21	2.03	0.40
1:B:2265:TYR:OH	1:B:2311:TRP:O	2.28	0.40
1:B:2441:PHE:CD1	1:B:2449:LEU:HD23	2.56	0.40
1:B:3553:LEU:HB2	1:B:3578:ILE:HD13	2.03	0.40
1:A:2574:THR:O	1:A:2578:GLU:HG3	2.21	0.40
1:A:2818:VAL:O	1:A:2822:ILE:HG12	2.21	0.40
1:A:3692:LEU:O	1:A:3696:VAL:HG22	2.21	0.40
1:A:4178:ARG:NH2	1:A:4297:PRO:O	2.55	0.40
1:B:2028:LEU:HG	1:B:2032:LEU:HD23	2.04	0.40

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2814:GLU:OE1	1:B:2814:GLU:HA	2.22	0.40
1:B:2956:LEU:HD13	1:B:2991:ALA:HB2	2.02	0.40
1:B:3114:ASP:O	1:B:3116:GLU:HG2	2.22	0.40
1:B:4049:TYR:OH	1:B:4191:GLN:OE1	2.36	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	2929/4646 (63%)	2881 (98%)	48 (2%)	0	100	100
1	B	2929/4646 (63%)	2889 (99%)	40 (1%)	0	100	100
All	All	5858/9292 (63%)	5770 (98%)	88 (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	2605/4125 (63%)	2605 (100%)	0	100	100
1	B	2605/4125 (63%)	2605 (100%)	0	100	100
All	All	5210/8250 (63%)	5210 (100%)	0	100	100

There are no protein residues with a non-rotameric sidechain to report.

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (46) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	1817	HIS
1	A	2130	ASN
1	A	2215	GLN
1	A	2217	ASN
1	A	2476	HIS
1	A	2485	GLN
1	A	2588	HIS
1	A	2689	HIS
1	A	2730	HIS
1	A	3032	GLN
1	A	3522	GLN
1	A	3912	ASN
1	A	4114	HIS
1	A	4191	GLN
1	A	4335	GLN
1	A	4347	GLN
1	A	4429	GLN
1	A	4488	GLN
1	A	4544	ASN
1	A	4566	GLN
1	A	4571	ASN
1	B	1779	HIS
1	B	1939	GLN
1	B	2067	ASN
1	B	2109	GLN
1	B	2130	ASN
1	B	2215	GLN
1	B	2217	ASN
1	B	2430	ASN
1	B	2464	GLN
1	B	2689	HIS
1	B	2752	ASN
1	B	2834	GLN
1	B	3063	HIS
1	B	3092	ASN
1	B	3499	GLN
1	B	3522	GLN
1	B	3535	HIS
1	B	3985	GLN

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	B	4029	HIS
1	B	4114	HIS
1	B	4232	ASN
1	B	4249	GLN
1	B	4335	GLN
1	B	4506	ASN
1	B	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 12 ligands modelled in this entry, 4 are monoatomic - leaving 8 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
2	ADP	A	4703	-	24,29,29	0.88	0	29,45,45	1.23	2 (6%)
3	ATP	B	4702	4	28,33,33	0.68	0	34,52,52	0.59	1 (2%)
2	ADP	B	4704	-	24,29,29	0.88	0	29,45,45	1.19	2 (6%)
2	ADP	A	4701	4	24,29,29	0.88	0	29,45,45	1.23	2 (6%)
2	ADP	A	4704	-	24,29,29	0.88	0	29,45,45	1.19	2 (6%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
2	ADP	B	4703	-	24,29,29	0.87	0	29,45,45	1.23	2 (6%)
2	ADP	B	4701	4	24,29,29	0.89	0	29,45,45	1.22	2 (6%)
3	ATP	A	4702	4	28,33,33	0.68	0	34,52,52	0.59	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	4703	-	-	0/12/32/32	0/3/3/3
3	ATP	B	4702	4	-	4/18/38/38	0/3/3/3
2	ADP	B	4704	-	-	3/12/32/32	0/3/3/3
2	ADP	A	4701	4	-	3/12/32/32	0/3/3/3
2	ADP	A	4704	-	-	3/12/32/32	0/3/3/3
2	ADP	B	4703	-	-	1/12/32/32	0/3/3/3
2	ADP	B	4701	4	-	4/12/32/32	0/3/3/3
3	ATP	A	4702	4	-	4/18/38/38	0/3/3/3

There are no bond length outliers.

All (14) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	4703	ADP	N3-C2-N1	-3.79	123.52	128.67
2	A	4703	ADP	N3-C2-N1	-3.78	123.54	128.67
2	A	4701	ADP	N3-C2-N1	-3.76	123.57	128.67
2	B	4701	ADP	N3-C2-N1	-3.74	123.59	128.67
2	A	4704	ADP	N3-C2-N1	-3.65	123.72	128.67
2	B	4704	ADP	N3-C2-N1	-3.63	123.74	128.67
2	A	4704	ADP	C4-C5-N7	-2.57	106.62	109.34
2	B	4704	ADP	C4-C5-N7	-2.55	106.65	109.34
2	B	4703	ADP	C4-C5-N7	-2.52	106.67	109.34
2	A	4701	ADP	C4-C5-N7	-2.50	106.70	109.34
2	B	4701	ADP	C4-C5-N7	-2.50	106.70	109.34
2	A	4703	ADP	C4-C5-N7	-2.49	106.71	109.34
3	A	4702	ATP	C5-C6-N6	2.35	123.89	120.31
3	B	4702	ATP	C5-C6-N6	2.33	123.86	120.31

There are no chirality outliers.

All (22) torsion outliers are listed below:

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

There are no ring outliers.

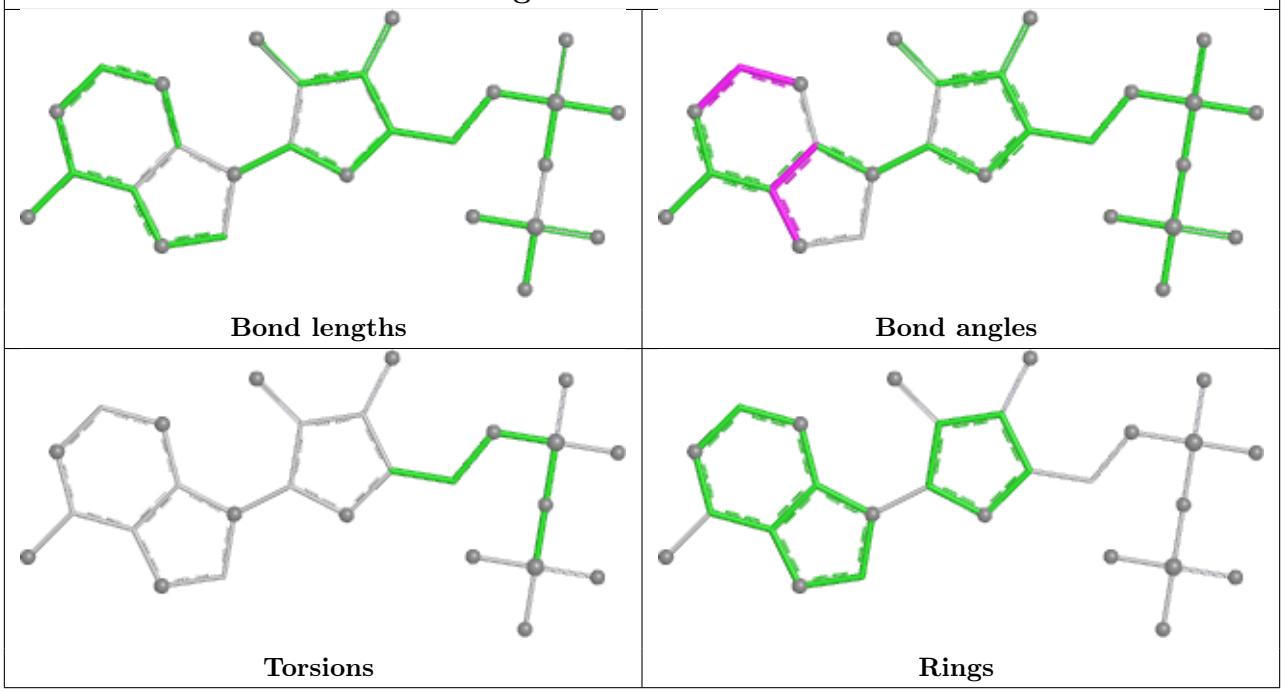
4 monomers are involved in 6 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	B	4702	ATP	1	0
2	A	4701	ADP	3	0
2	B	4703	ADP	1	0
2	B	4701	ADP	1	0

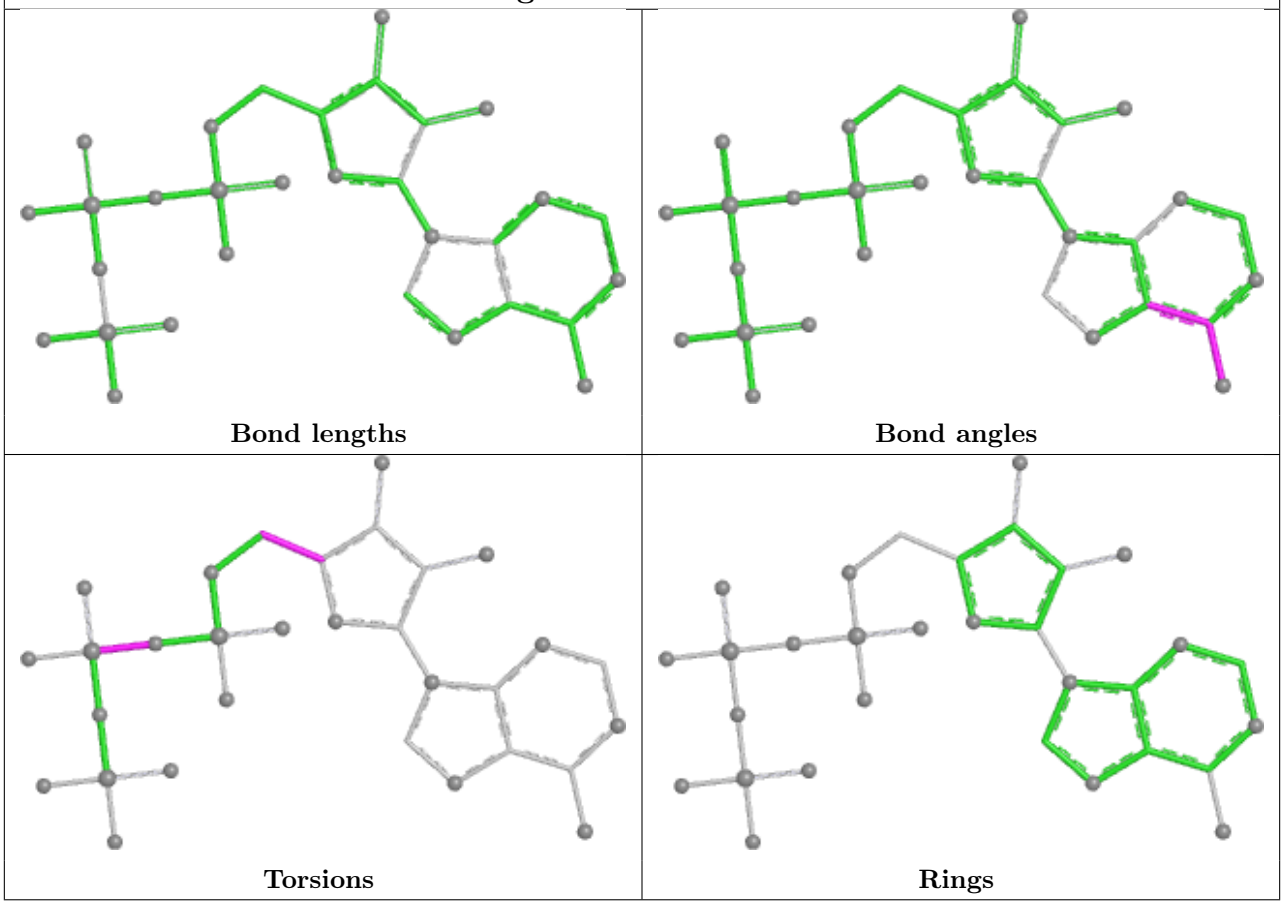
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included.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

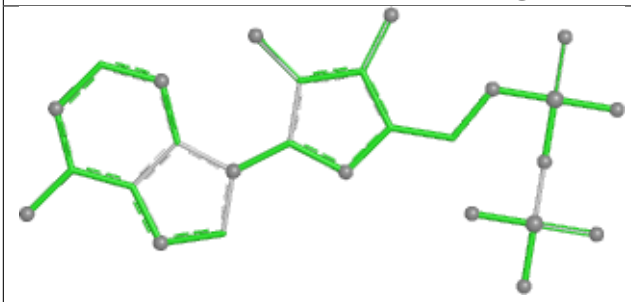
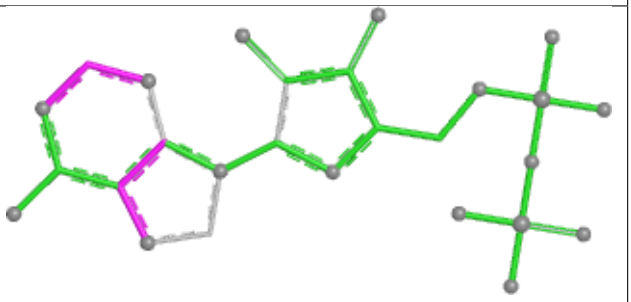
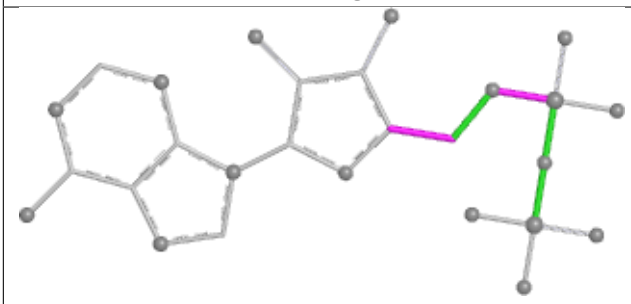
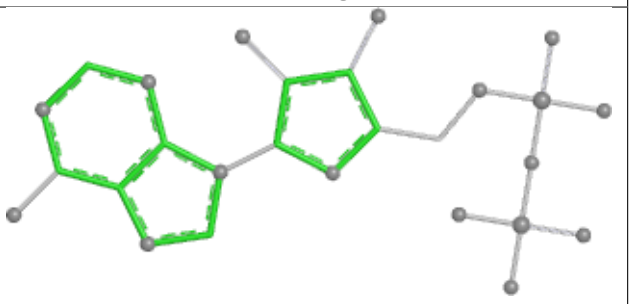
The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

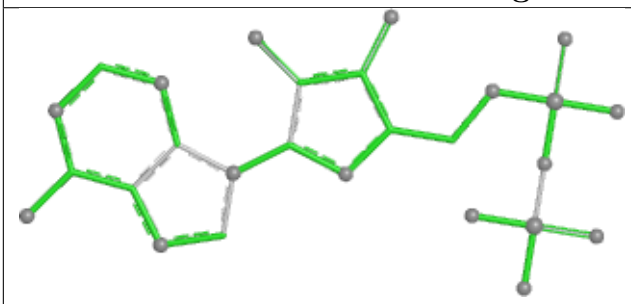
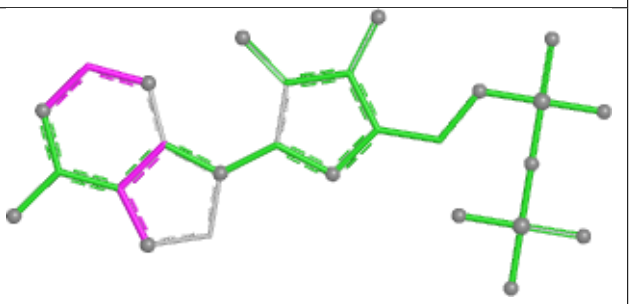
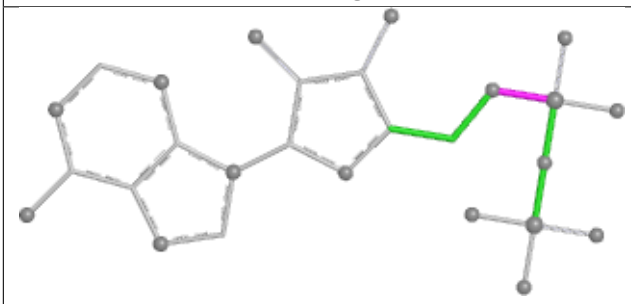
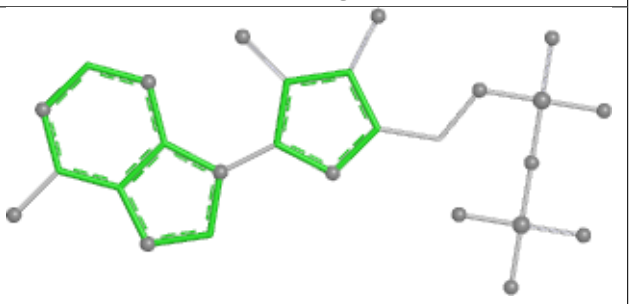
Ligand ADP A 4703

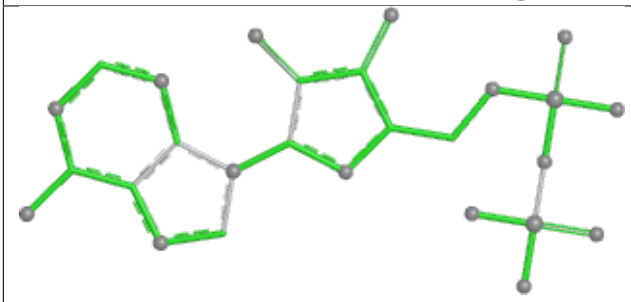
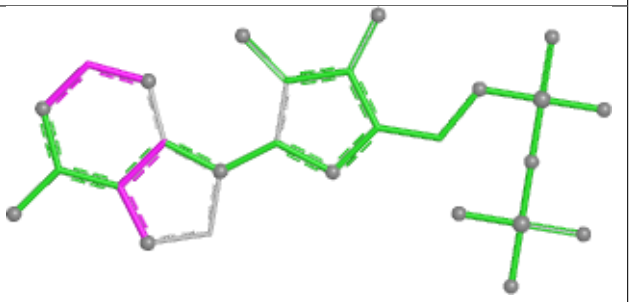
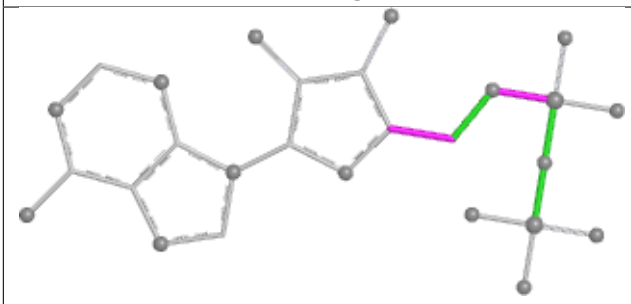
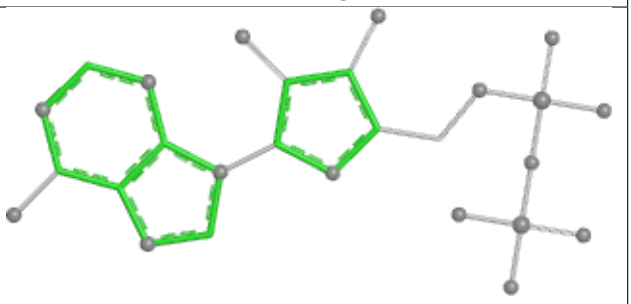


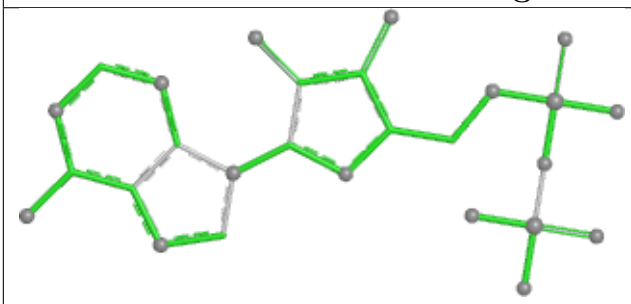
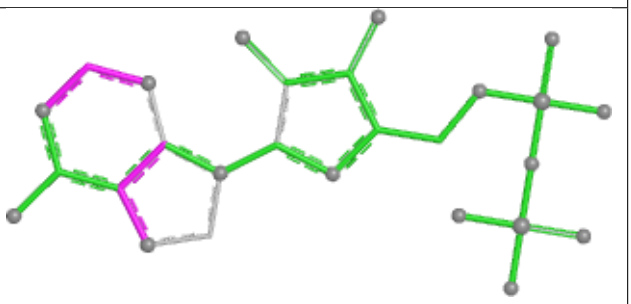
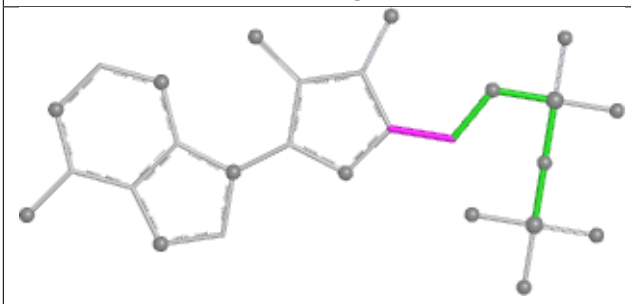
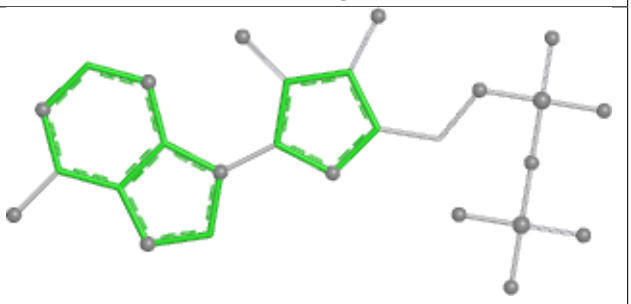
Ligand ATP B 4702



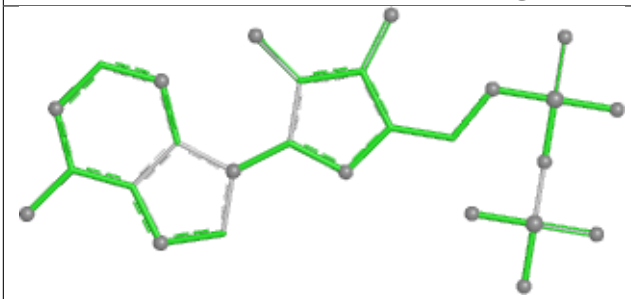
Ligand ADP B 4704	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand ADP A 4701	
 Bond lengths	 Bond angles
 Torsions	 Rings

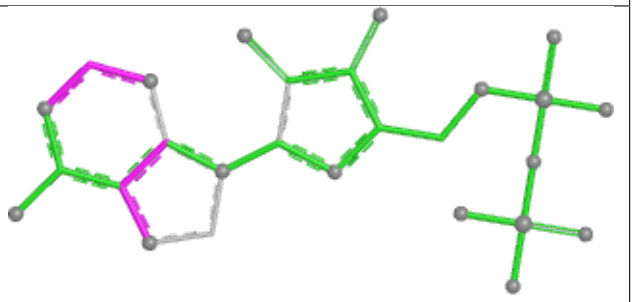
Ligand ADP A 4704	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand ADP B 4703	
 Bond lengths	 Bond angles
 Torsions	 Rings

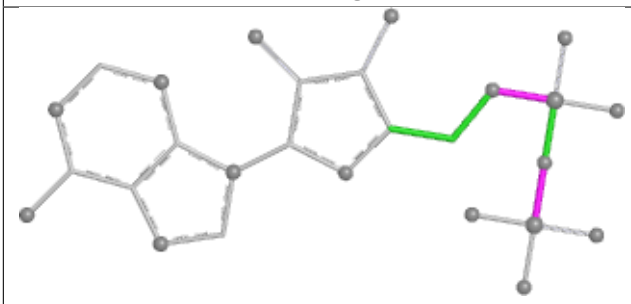
Ligand ADP B 4701



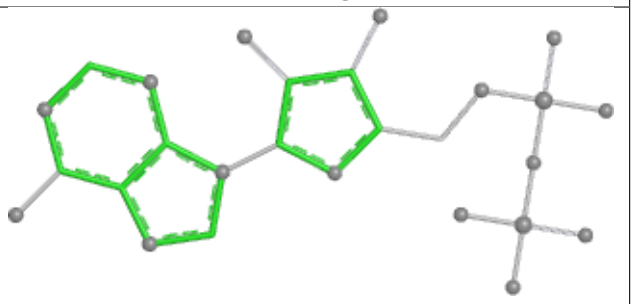
Bond lengths



Bond angles

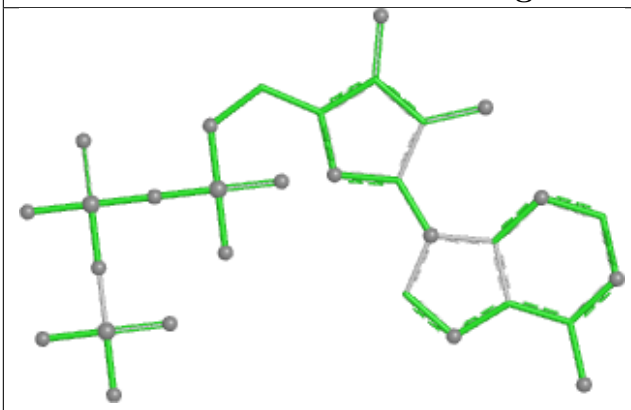


Torsions

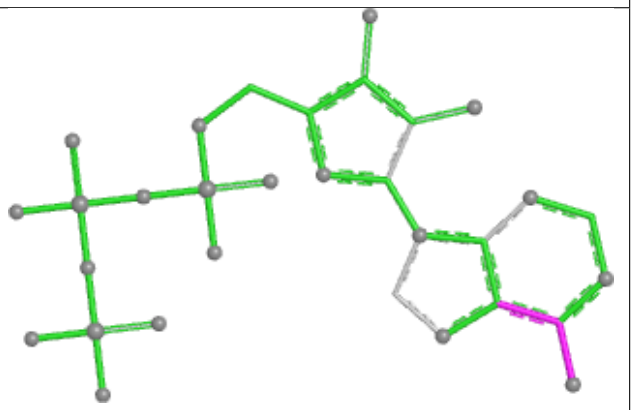


Rings

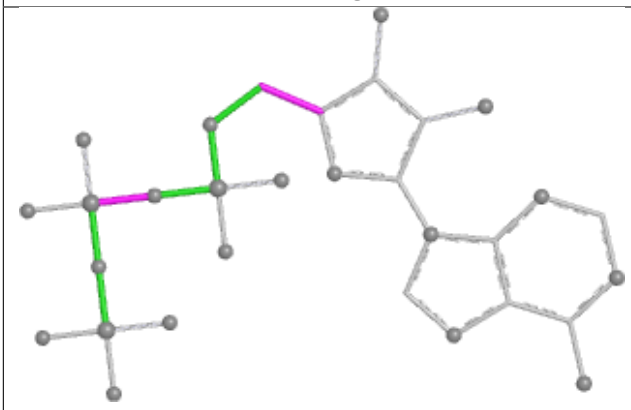
Ligand ATP A 4702



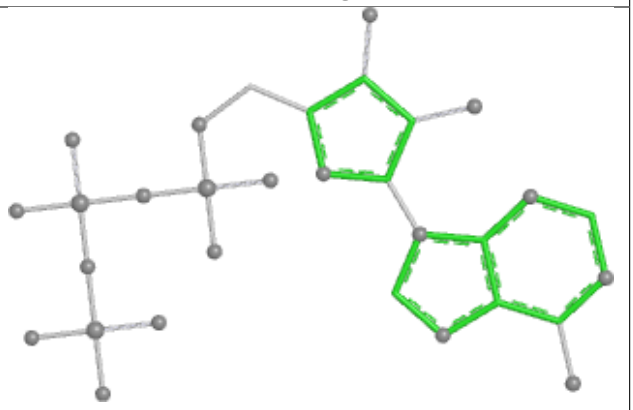
Bond lengths



Bond angles



Torsions



Rings

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.

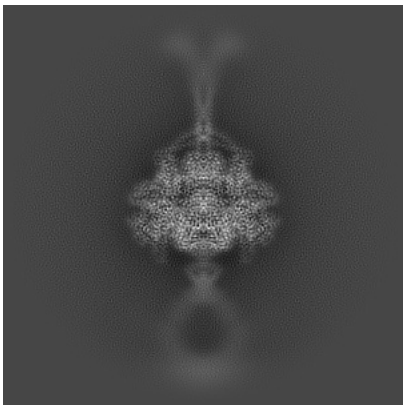
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-47379. These allow visual inspection of the internal detail of the map and identification of artifacts.

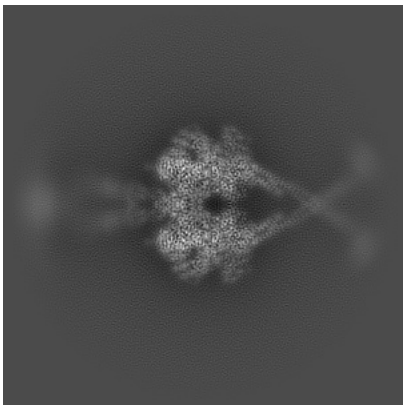
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

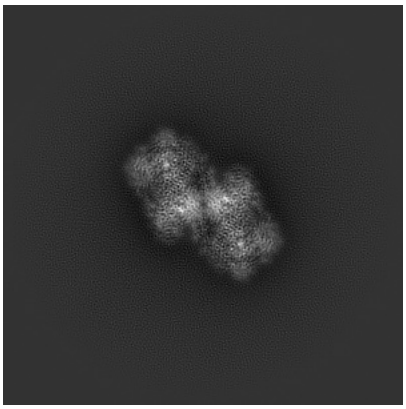
6.1.1 Primary map



X

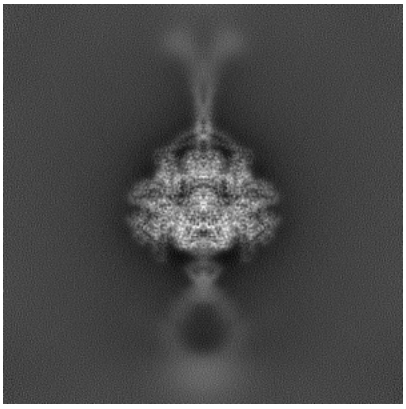


Y

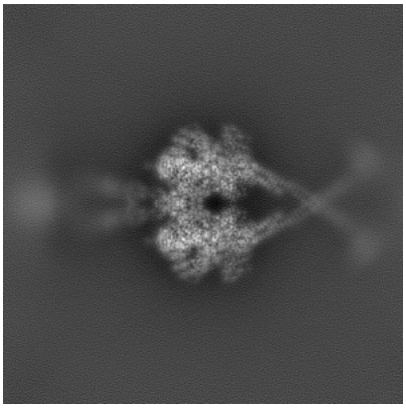


Z

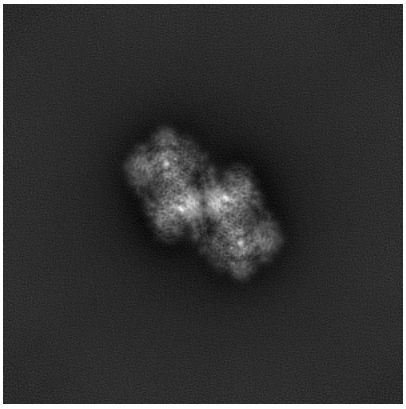
6.1.2 Raw map



X



Y

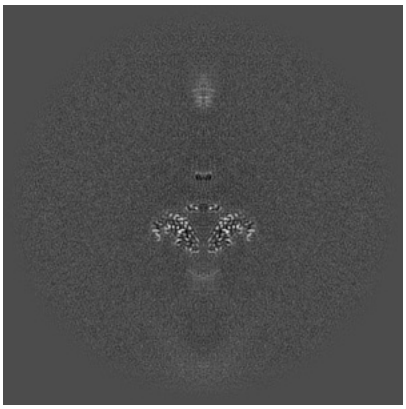


Z

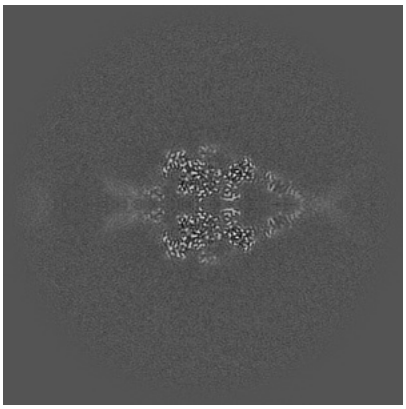
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

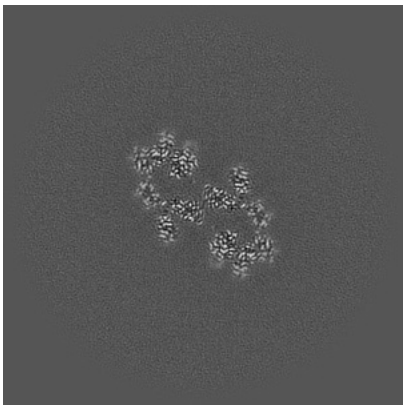
6.2.1 Primary map



X Index: 192

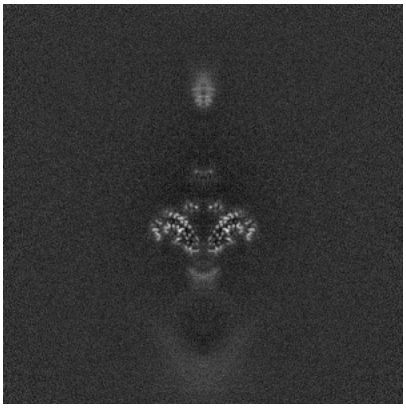


Y Index: 192

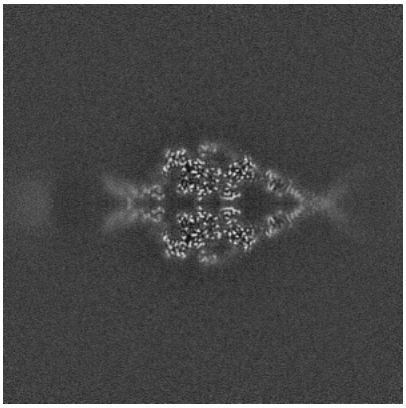


Z Index: 192

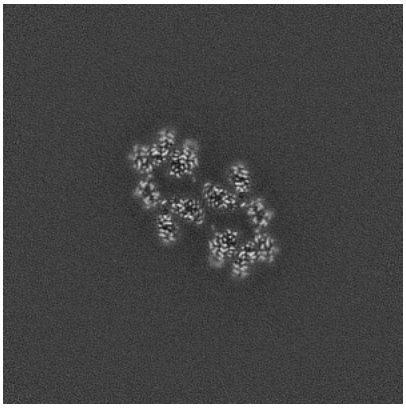
6.2.2 Raw map



X Index: 192



Y Index: 192

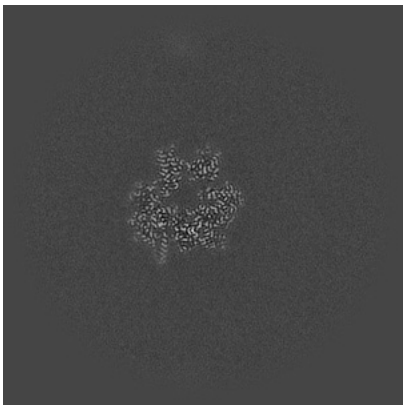


Z Index: 192

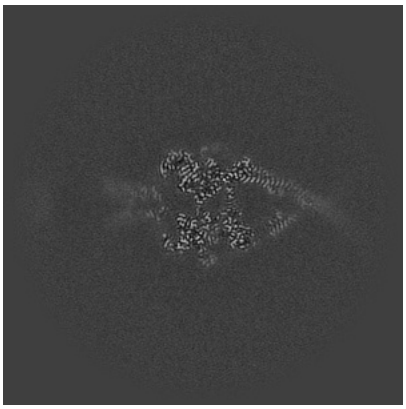
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

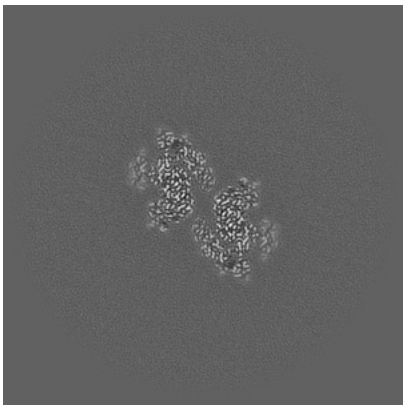
6.3.1 Primary map



X Index: 227

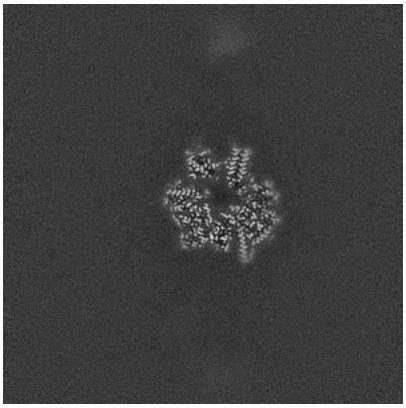


Y Index: 195

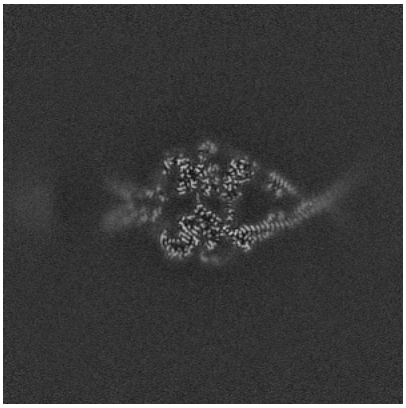


Z Index: 173

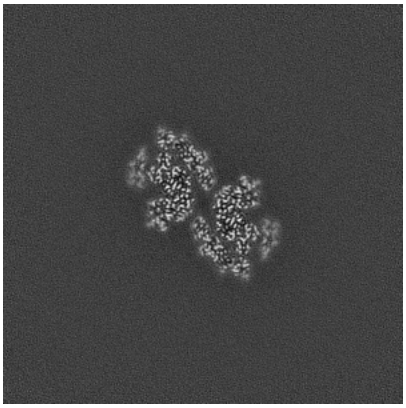
6.3.2 Raw map



X Index: 156



Y Index: 189

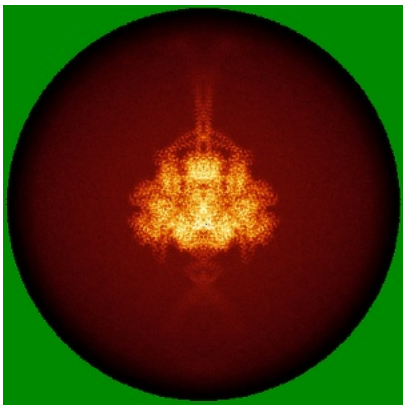


Z Index: 172

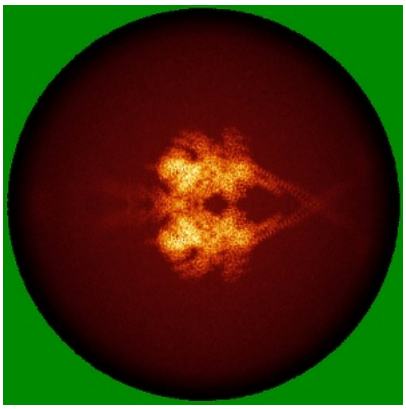
The images above show the largest variance slices of the map in three orthogonal directions.

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

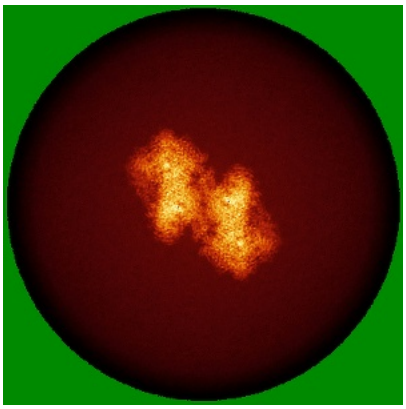
6.4.1 Primary map



X

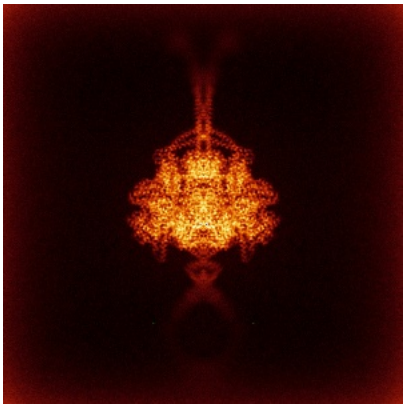


Y

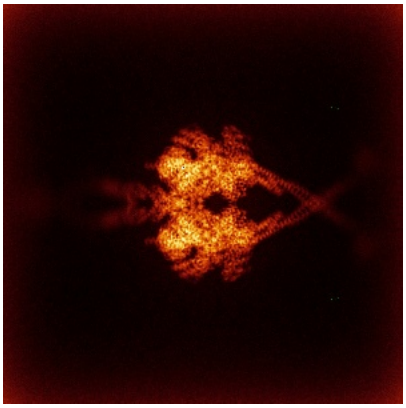


Z

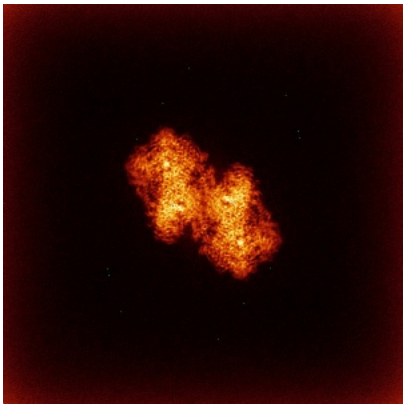
6.4.2 Raw map



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 0.3. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map

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.

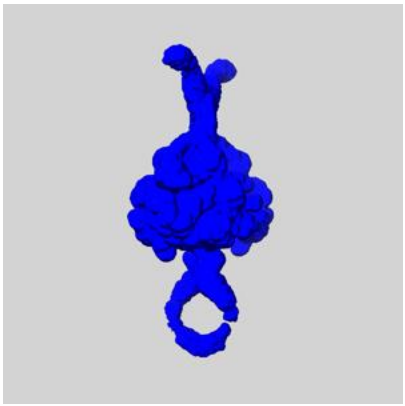
6.6 Mask visualisation (i)

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

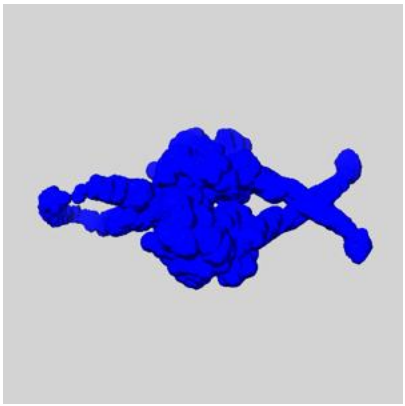
A mask typically either:

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

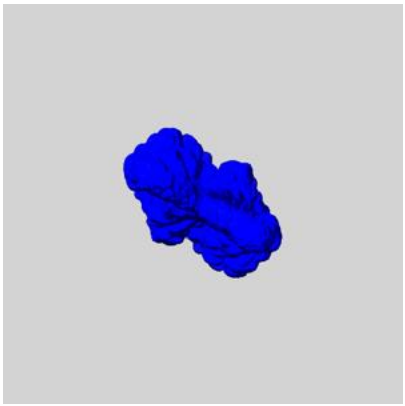
6.6.1 emd_47379_msk_1.map (i)



X



Y

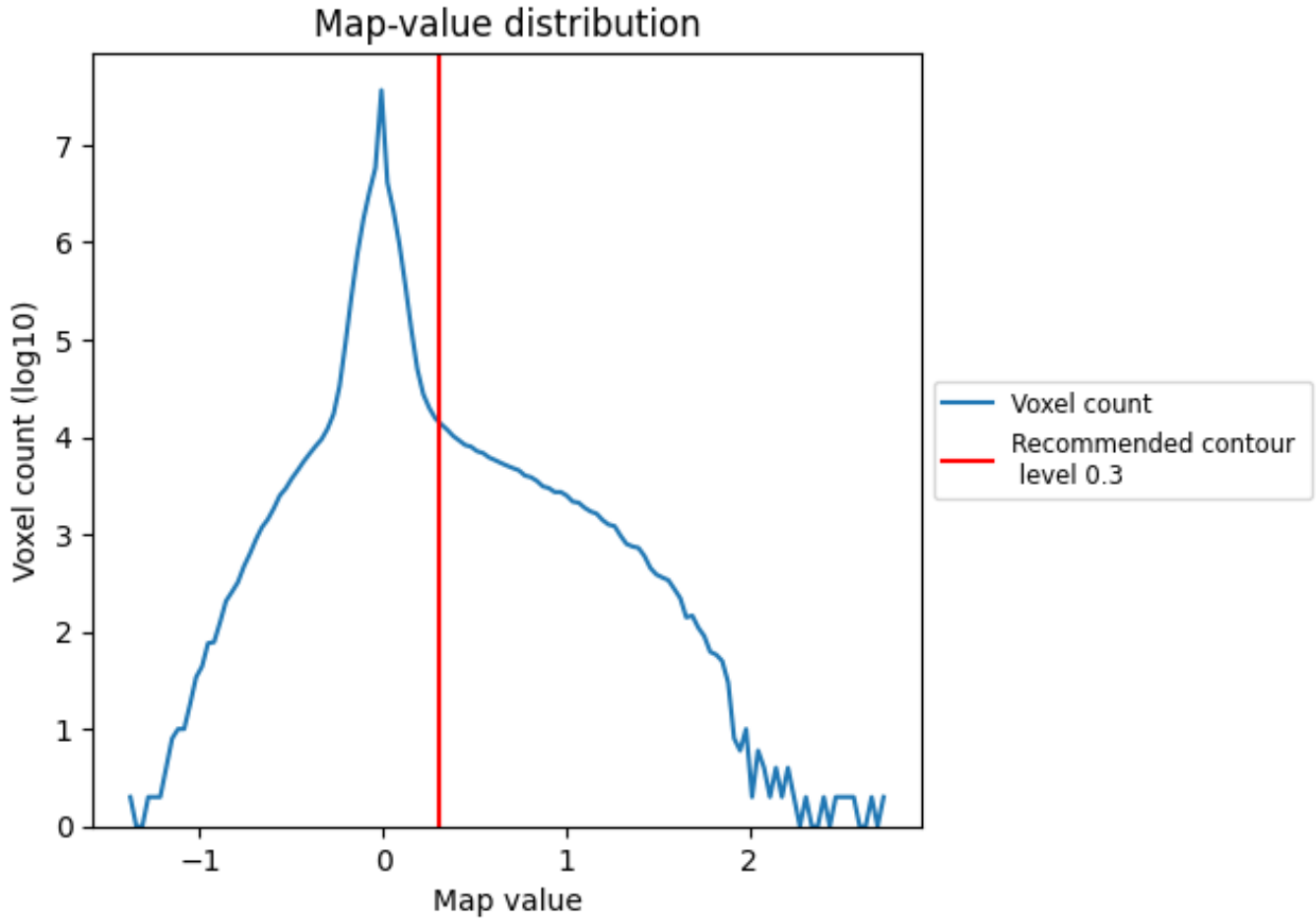


Z

7 Map analysis

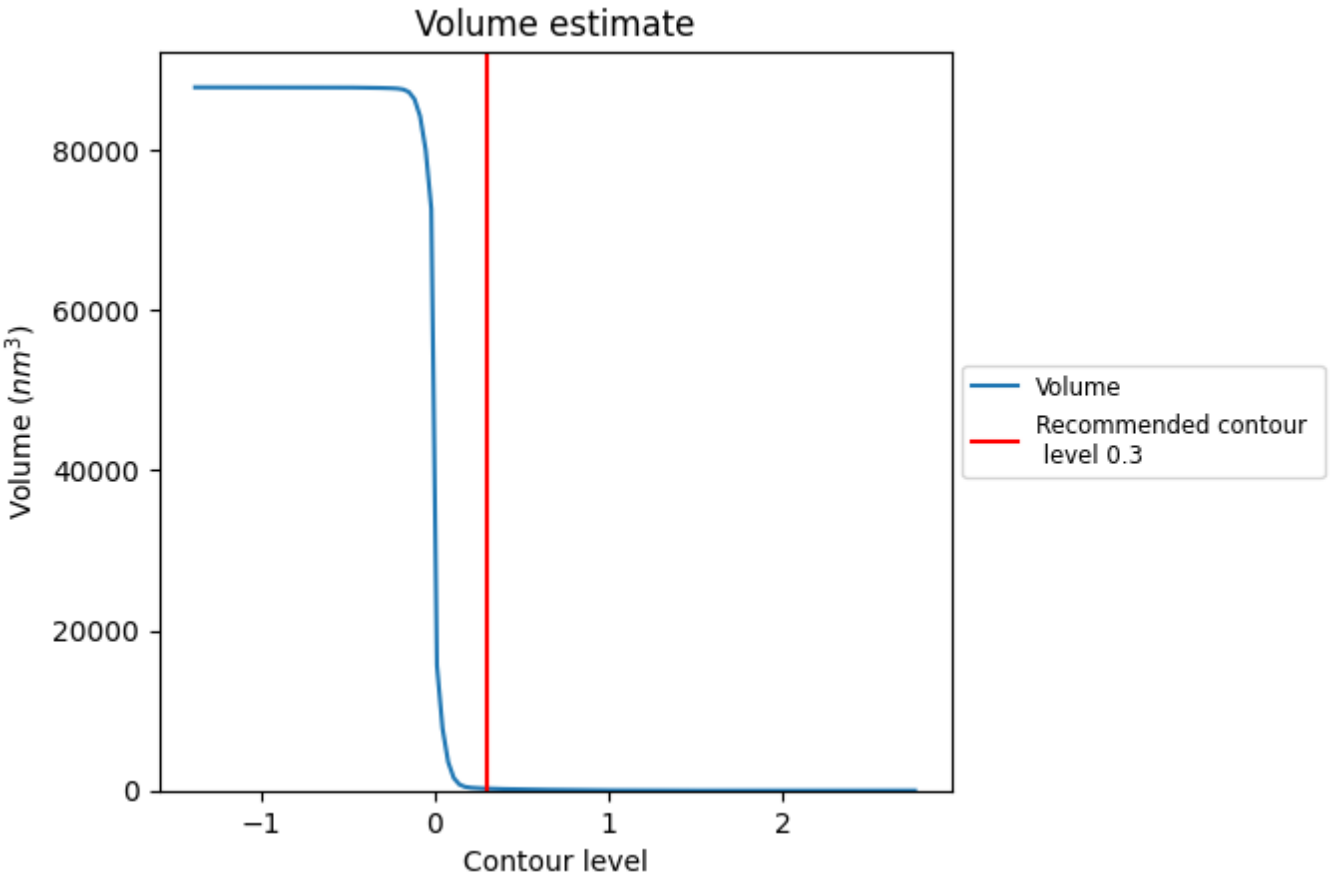
This section contains the results of statistical analysis of the map.

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.

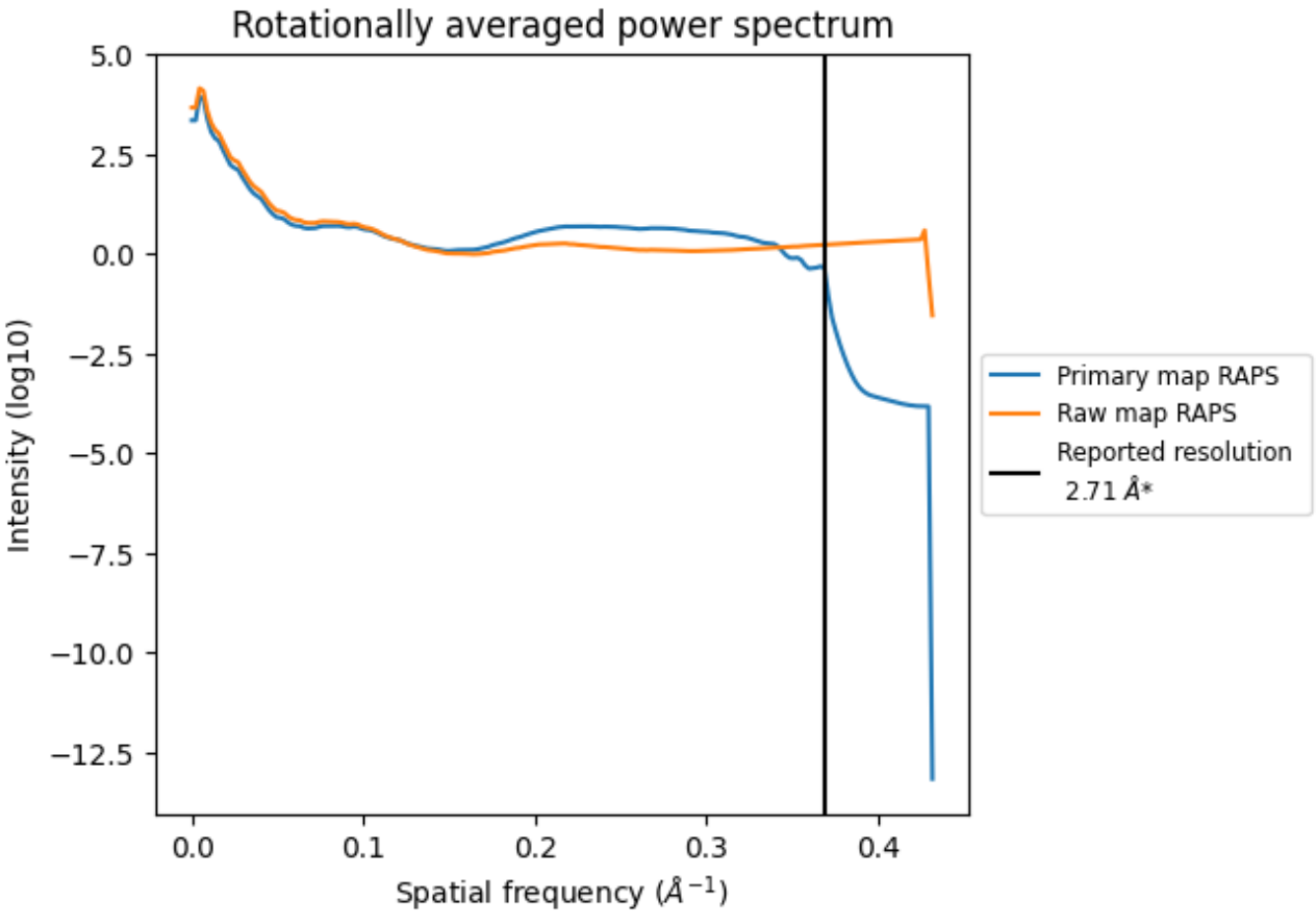
7.2 Volume estimate



The volume at the recommended contour level is 249 nm^3; this corresponds to an approximate mass of 225 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)

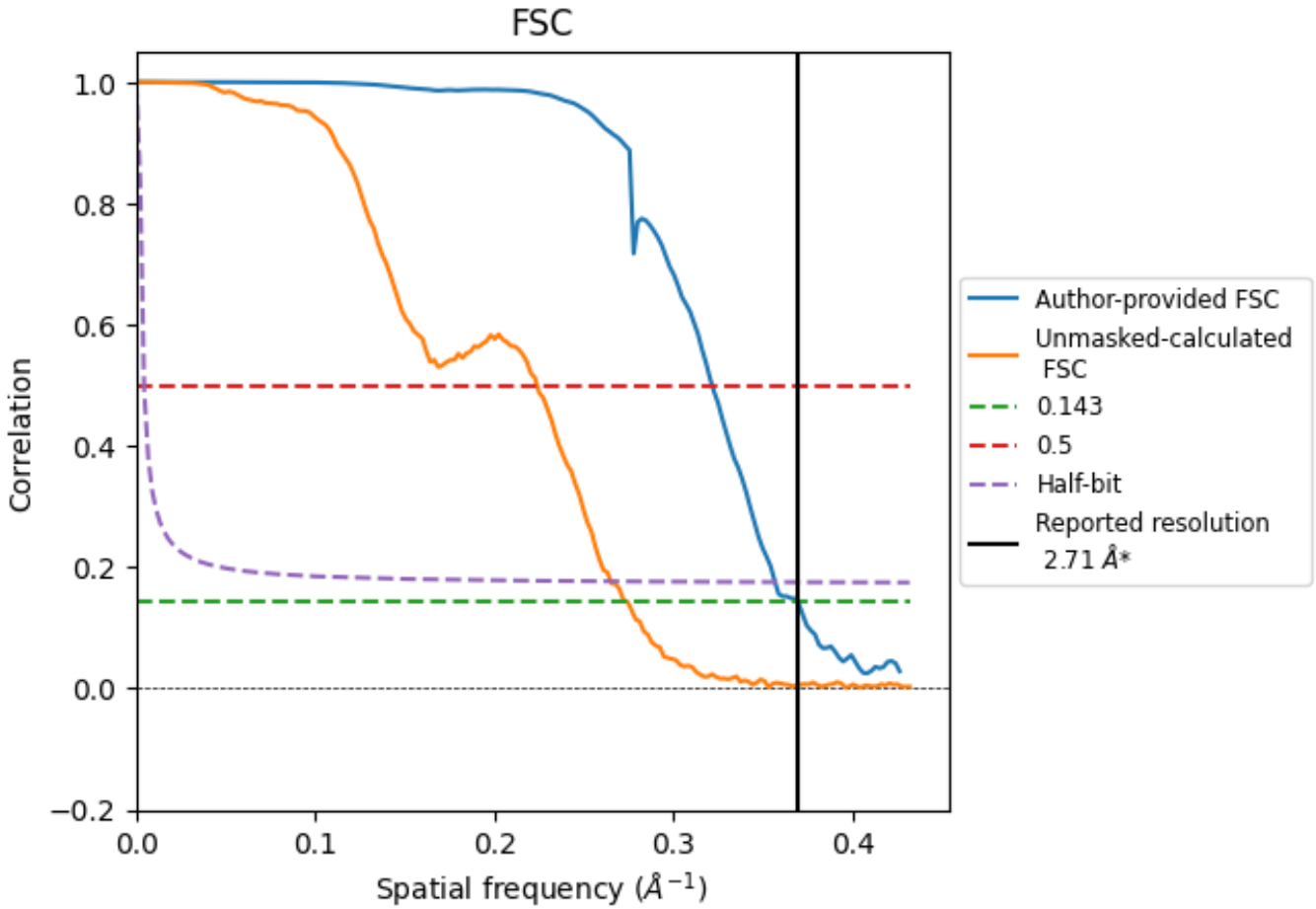


*Reported resolution corresponds to spatial frequency of 0.369 $Å^{-1}$

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 0.369 Å^{-1}

8.2 Resolution estimates (i)

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.71	-	-
Author-provided FSC curve	2.71	3.11	2.80
Unmasked-calculated*	3.65	4.47	3.77

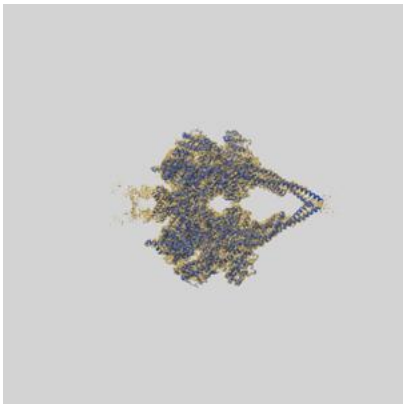
*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.65 differs from the reported value 2.71 by more than 10 %

9 Map-model fit

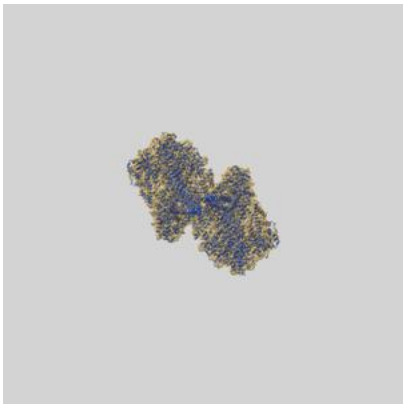
This section contains information regarding the fit between EMDB map EMD-47379 and PDB model 9E10. Per-residue inclusion information can be found in section 3 on page 5.

9.1 Map-model overlay

X



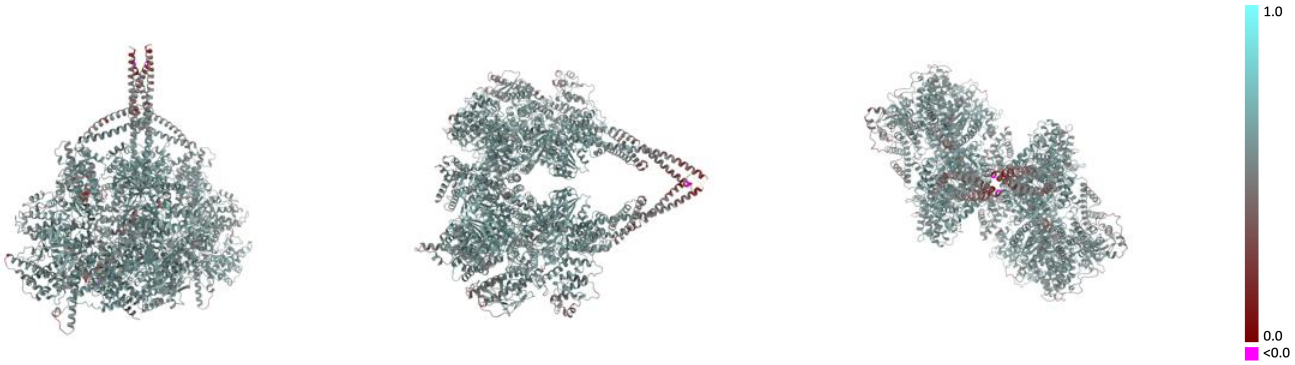
Y



Z

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

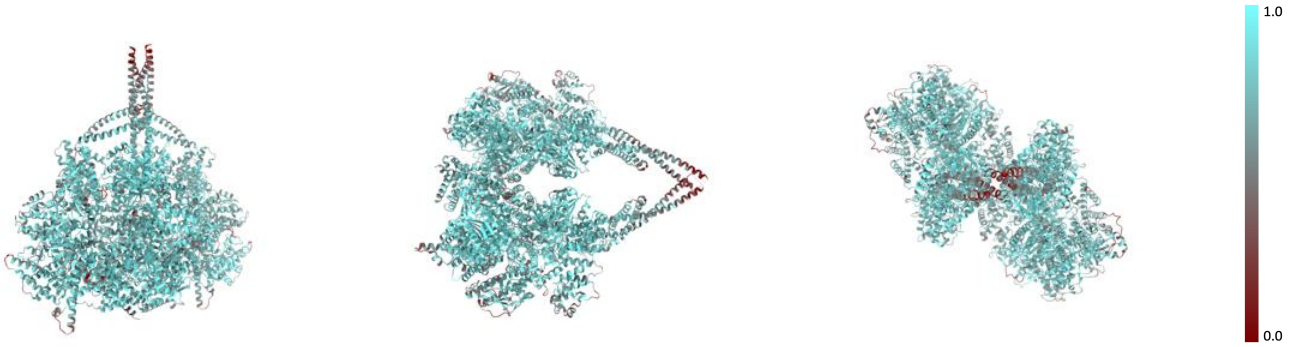
9.2 Q-score mapped to coordinate model (i)



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.

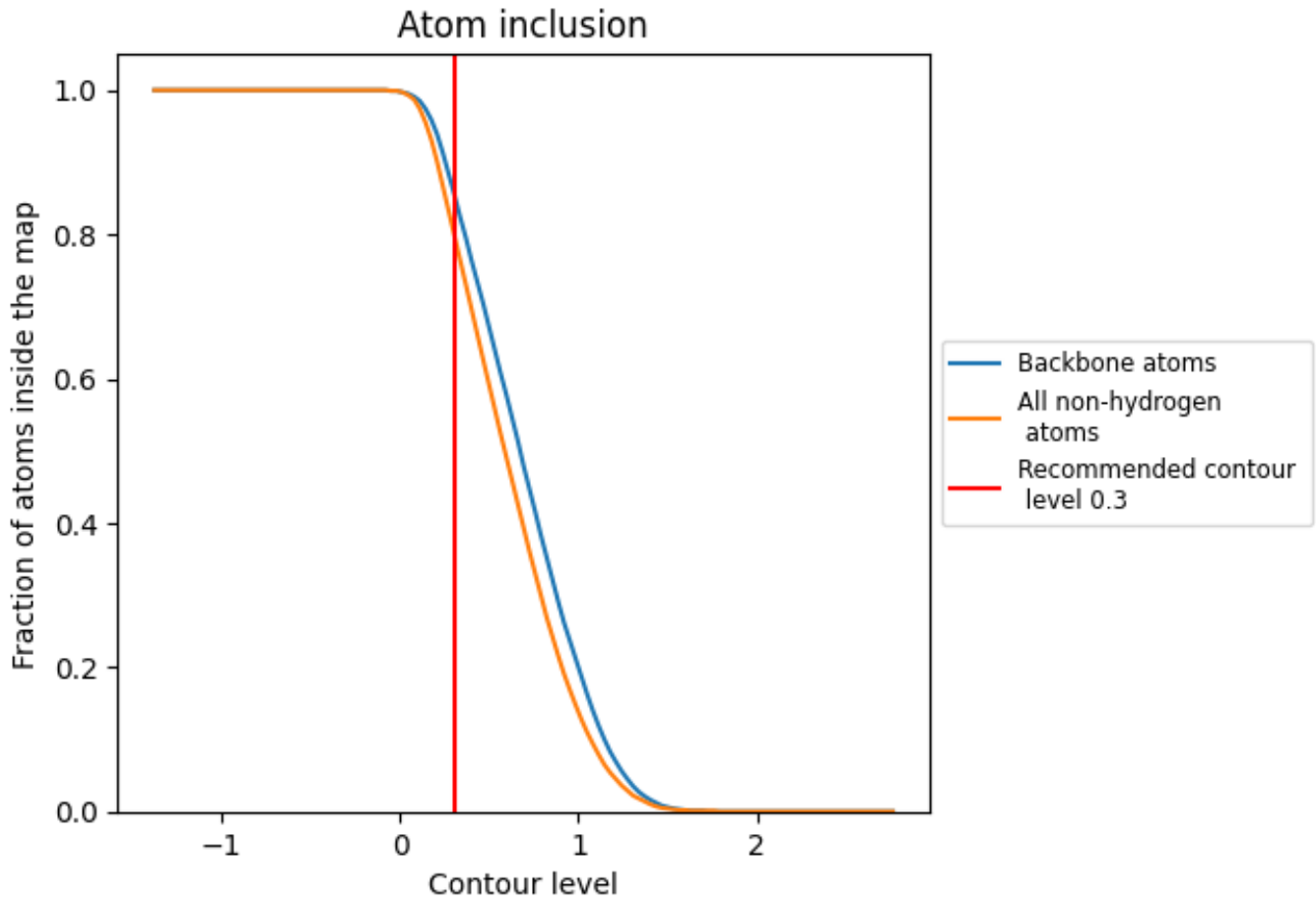
9.3 Atom inclusion mapped to coordinate model (i)



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 (0.3).

9.4 Atom inclusion (i)



At the recommended contour level, 86% of all backbone atoms, 80% 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 (0.3) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8040	0.5700
A	0.8050	0.5710
B	0.8040	0.5700