Full wwPDB EM Validation Report ⓘ

Aug 4, 2025 – 05:50 PM EDT

PDB ID	:	9E11 / pdb_00009e11
EMDB ID	:	EMD-47380
Title	:	Dimeric motor domains from phi-like dynein-1 bound to a Lis1 dimer under Lis1 condition
Authors	:	Yang, J.; Zhang, K.
Deposited on	:	2024-10-21
Resolution	:	2.86 Å(reported)

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

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/EMValidationReportHelp
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

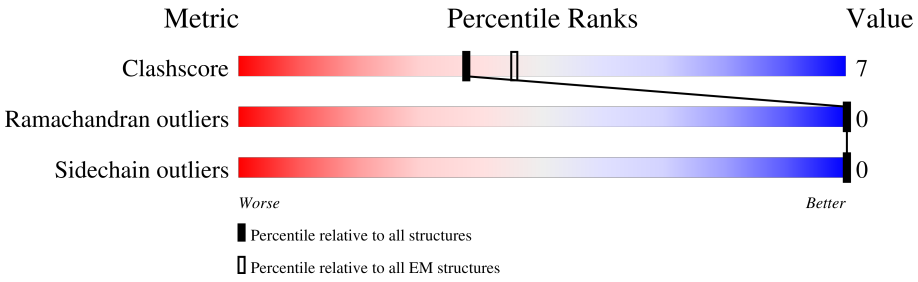
EMDB validation analysis	:	0.0.1.dev126
Mogul	:	2022.3.0, CSD as543be (2022)
MolProbity	:	4-5-2 with Phenix2.0rc1
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal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

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
ELECTRON MICROSCOPY

The reported resolution of this entry is 2.86 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	7% 51% 12% 37%
1	B	4646	52% 11% 37%
2	C	410	61% 18% 21%
2	D	410	22% 52% 26% 22%

2 Entry composition

There are 5 unique types of molecules in this entry. The entry contains 52502 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.

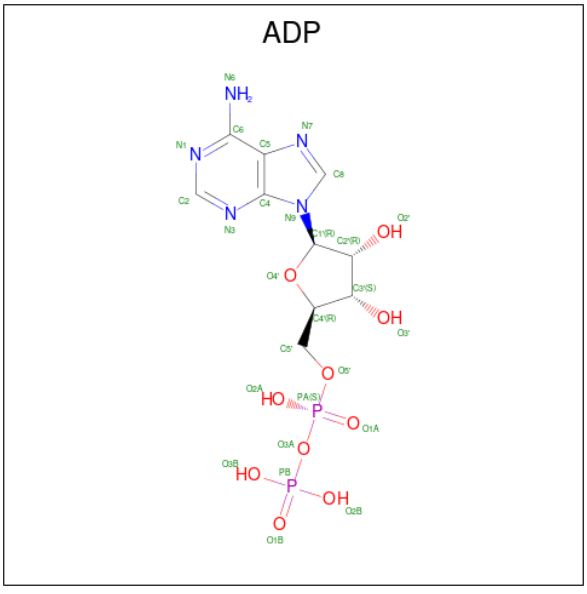
- Molecule 1 is a protein called Cytoplasmic dynein 1 heavy chain 1.

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

- Molecule 2 is a protein called Platelet-activating factor acetylhydrolase IB subunit beta.

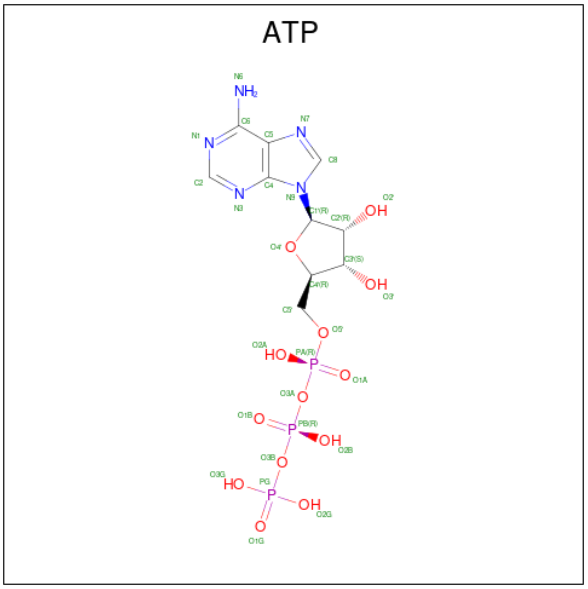
Mol	Chain	Residues	Atoms					AltConf	Trace
2	C	322	Total 2557	C 1608	N 452	O 477	S 20	0	0
2	D	319	Total 2531	C 1593	N 446	O 472	S 20	0	0

- Molecule 3 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
3	A	1	Total	C	N	O	P	0
			27	10	5	10	2	
3	A	1	Total	C	N	O	P	0
			27	10	5	10	2	
3	A	1	Total	C	N	O	P	0
			27	10	5	10	2	
3	B	1	Total	C	N	O	P	0
			27	10	5	10	2	
3	B	1	Total	C	N	O	P	0
			27	10	5	10	2	
3	B	1	Total	C	N	O	P	0
			27	10	5	10	2	

- Molecule 4 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
4	A	1	Total	C	N	O	P	0
			31	10	5	13	3	
4	B	1	Total	C	N	O	P	0
			31	10	5	13	3	

- Molecule 5 is MAGNESIUM ION (CCD ID: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		AltConf
5	A	2	Total	Mg	0
			2	2	

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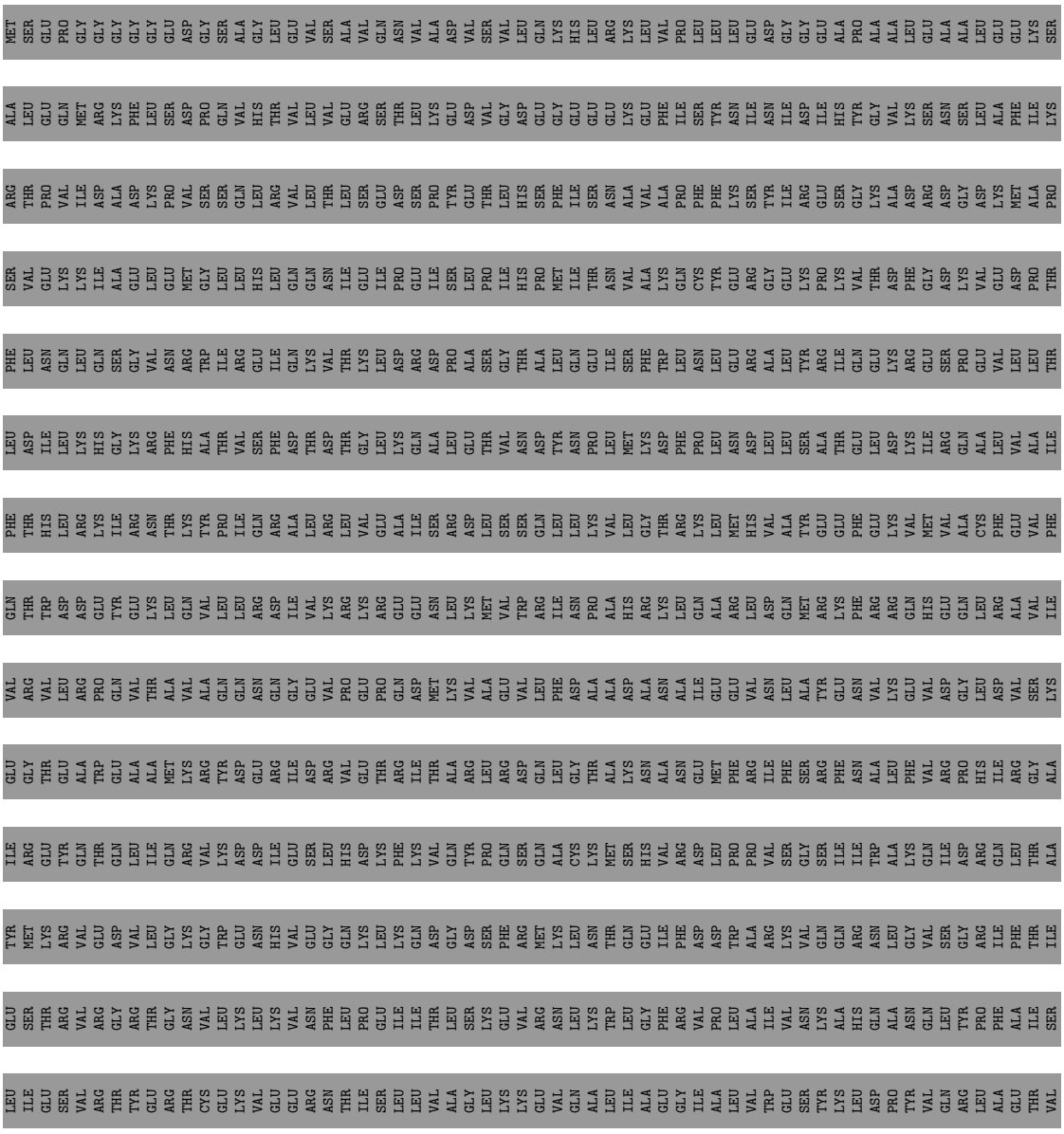
Mol	Chain	Residues	Atoms		AltConf
			Total	Mg	
5	B	2	2	2	0

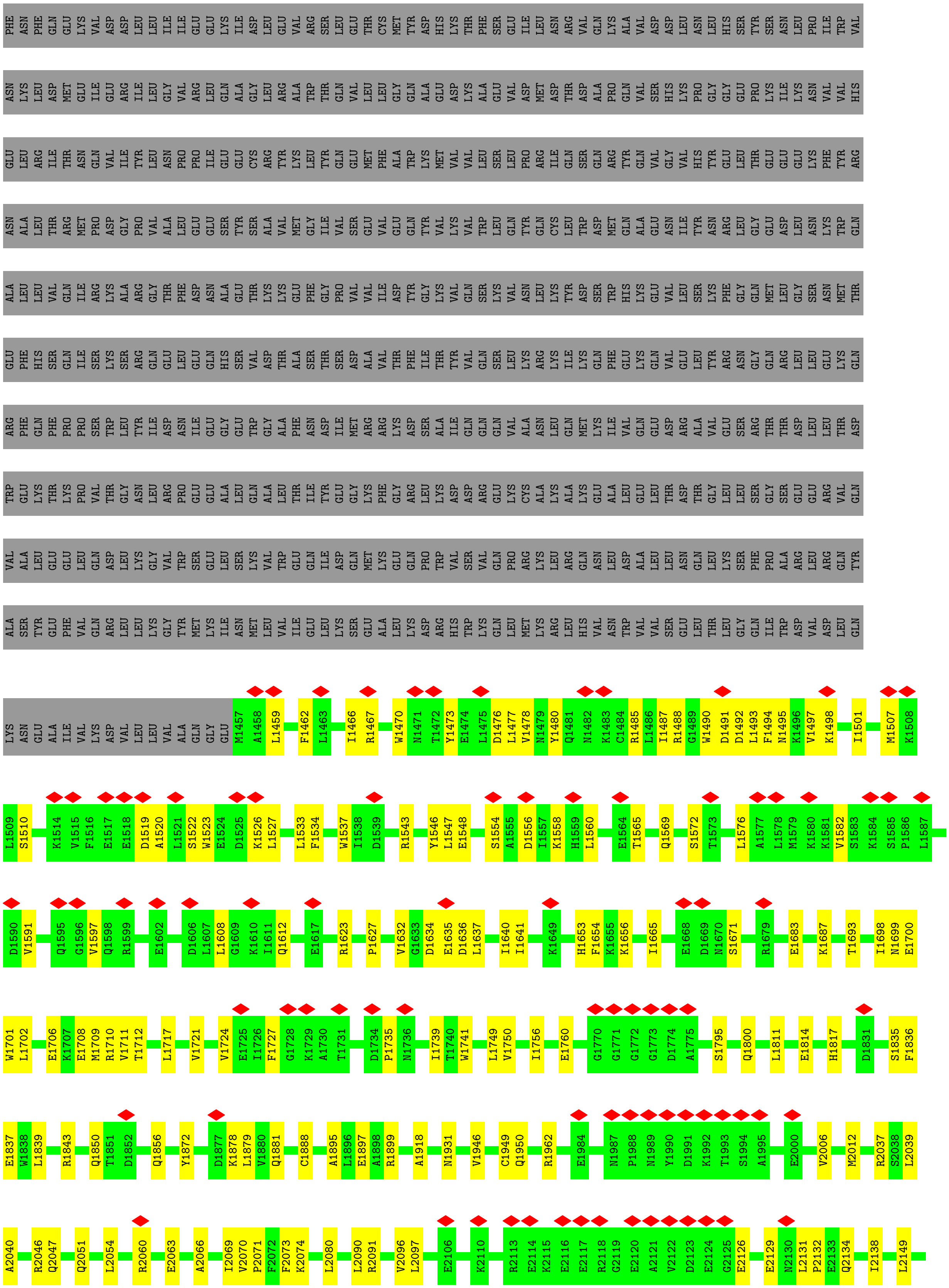
3 Residue-property plots (i)

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:

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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 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 L1459 F1462 L1463 I1466 R1467 W1470 N1471 T1472 Y1473 E1474 L1475 D1476 L1477 V1478 N1479 Y1480 Q1481 N1482 K1483 C1484 R1485 L1486 I1487 R1488 G1489 W1490 D1491 D1492 L1493 F1494 N1495 K1496 V1497 K1498 I1501 M1507 K1508
L1509 S1510 K1514 V1515 F1516 E1517 E1518 D1519 A1520 L1521 S1522 W1523 E1524 D1525 K1526 L1527 L1533 F1534 W1537 I1538 D1539 R1543 Y1546 L1547 E1548 S1554 A1555 D1556 I1557 K1558 H1559 L1560 E1564 T1565 Q1569 S1572 T1573 L1576 A1577 L1578 M1579 K1580 K1581 V1582 S1583 K1584 S1585 P1586 L1587
D1590 V1591 Q1595 G1596 V1597 Q1598 R1599 E1602 D1606 L1607 L1608 G1609 K1610 I1611 Q1612 E1617 R1623 P1627 V1632 G1633 D1634 E1635 D1636 L1637 I1640 I1641 K1649 H1653 F1654 K1655 K1656 I1665 E1668 D1669 N1670 S1671 R1679 E1683 K1687 T1693 I1698 N1699 E1700
W1701 L1702 E1706 K1707 E1708 M1709 R1710 V1711 T1712 L1717 V1721 V1724 E1725 I1726 F1727 G1728 K1729 A1730 T1731 D1734 P1735 N1736 I1739 T1740 W1741 L1749 V1750 I1756 E1760 G1770 G1771 G1772 G1773 D1774 A1775 S1795 Q1800 L1811 E1814 H1817 D1831 S1835 F1836
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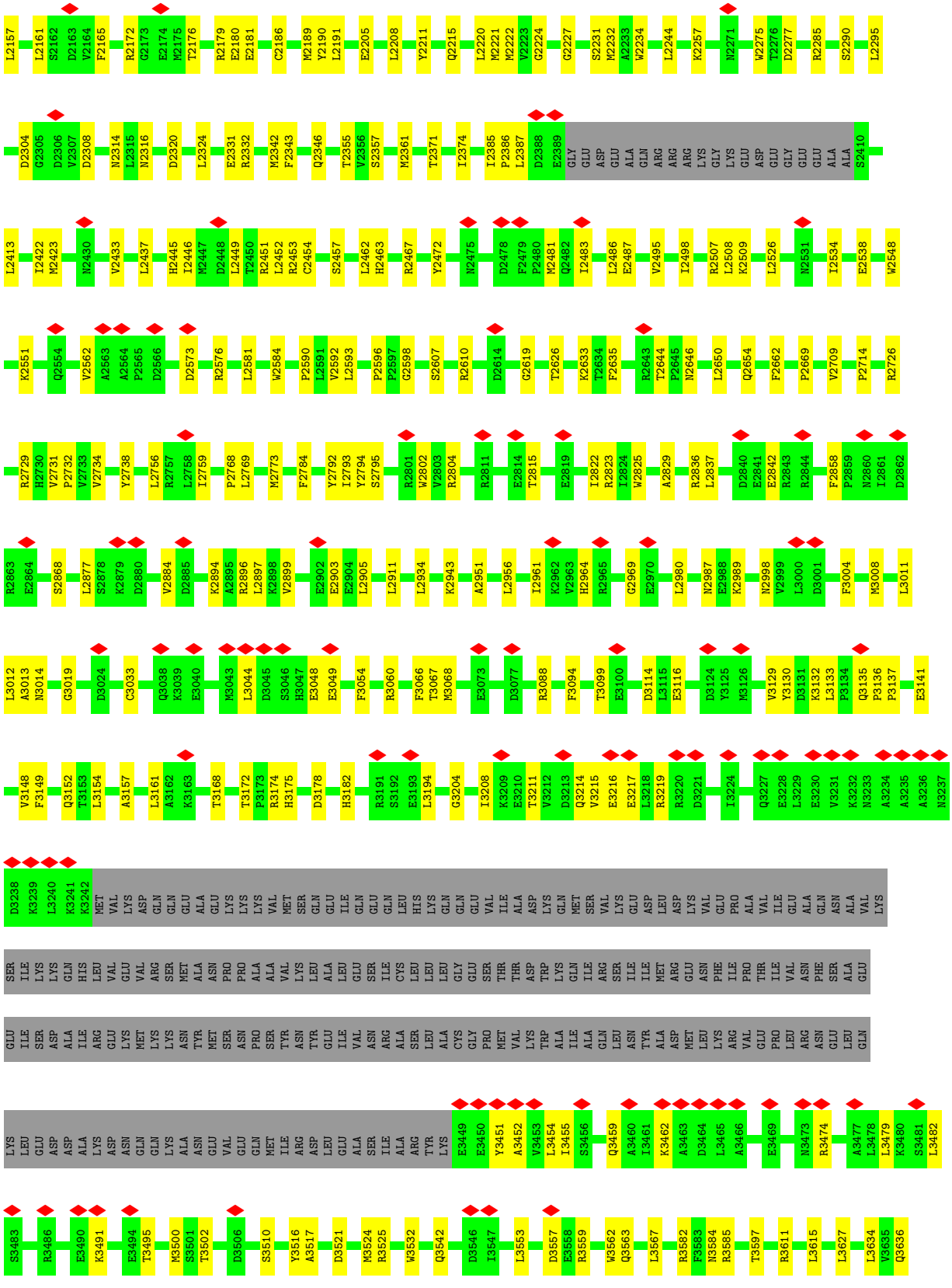
A2040 R2046 Q2047 Q2051 L2054 R2060 E2063 A2066 I2069 V2070 P2071 F2072 F2073 K2074 L2080 L2090 R2091 V2096 L2097 E2106 K2110 R2113 E2114 K2115 E2116 E2117 R2118 G2119 E2120 A2121 V2122 D2123 E2124 G2125 E2126 E2129 N2130 L2131 P2132 E2133 Q2134 I2138 L2149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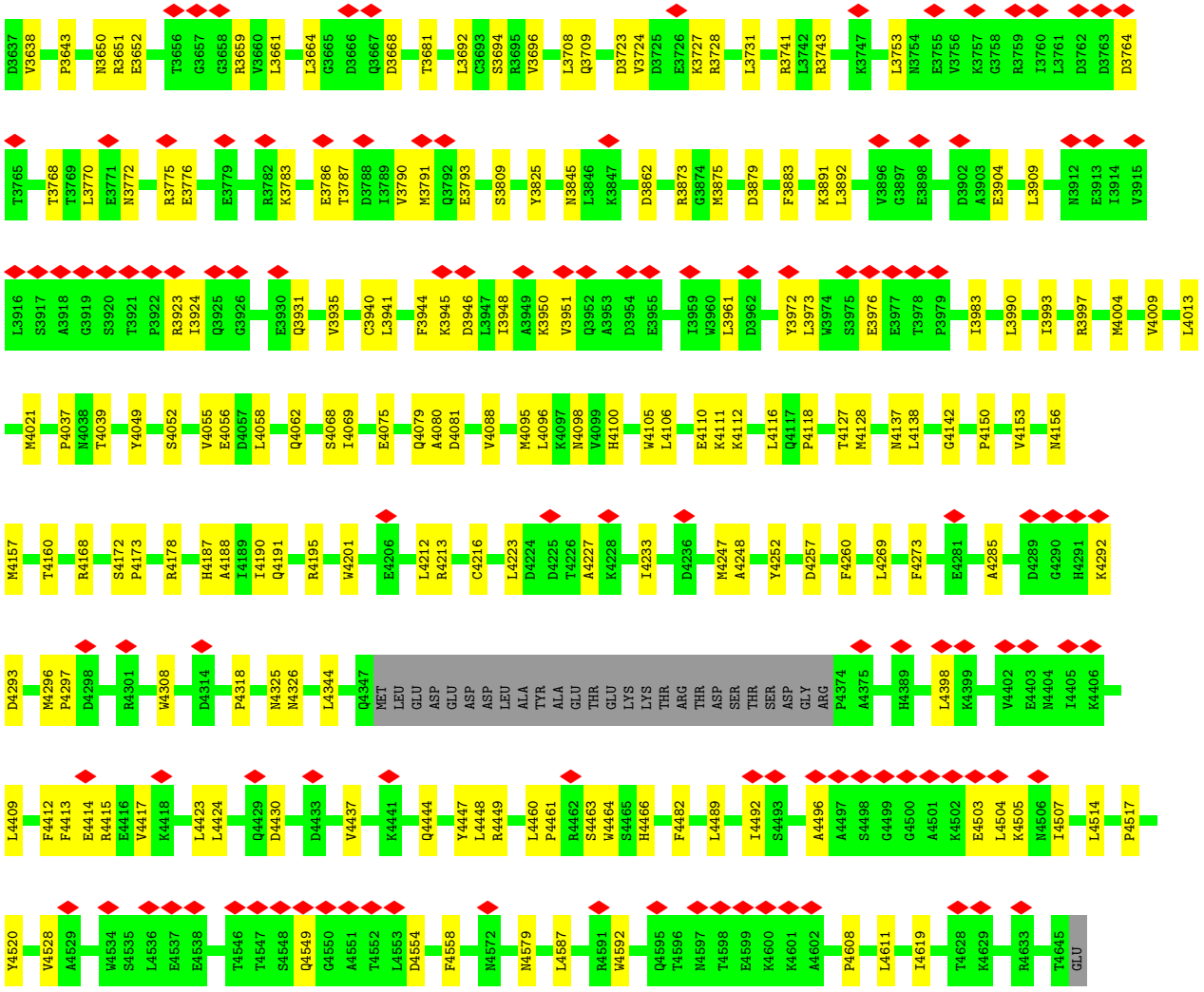
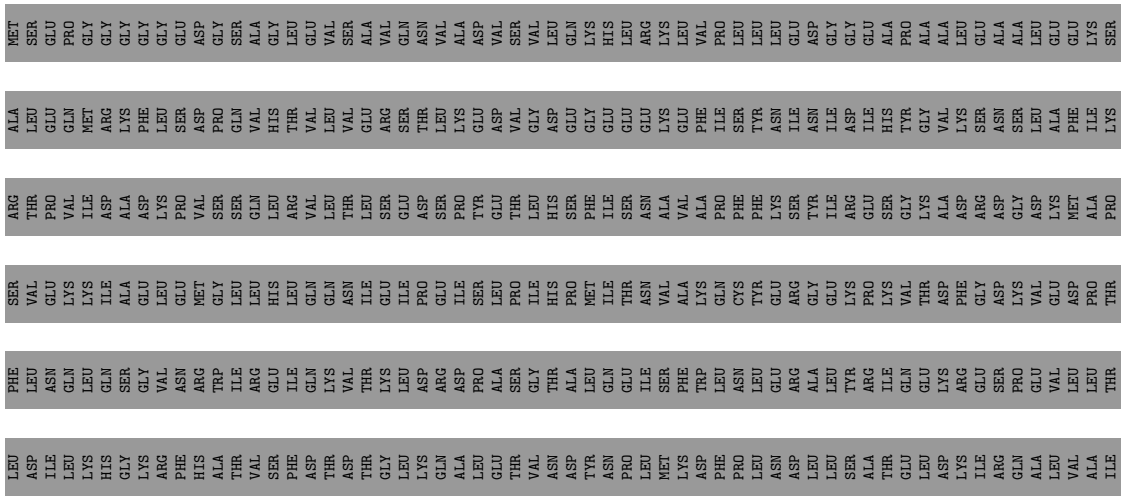
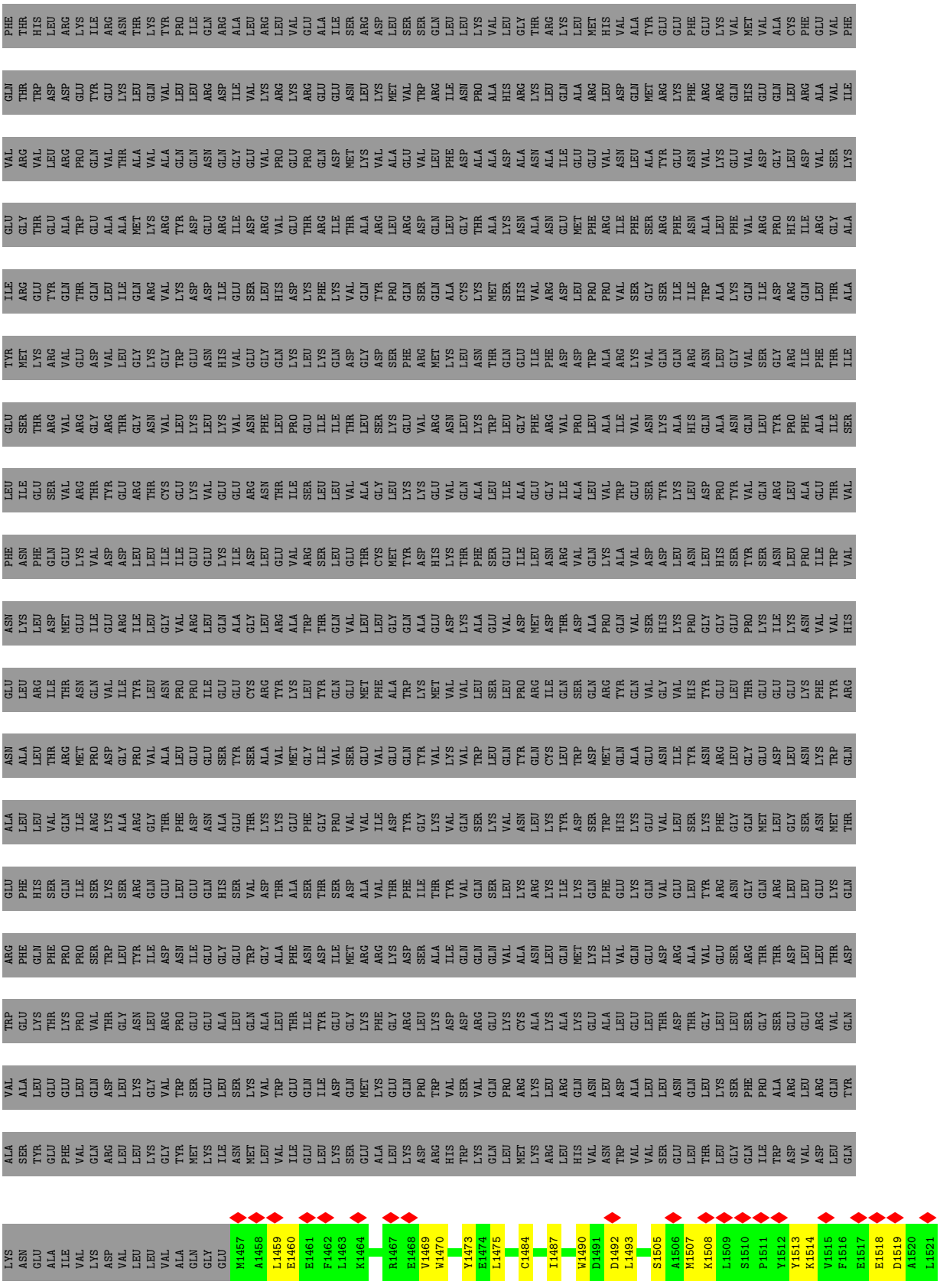
D2304 G2305 D2306 V2307 D2308 N2314 L2315 N2316 D2320 L2324 E2331 R2332 M2342 F2343 Q2346 T2355 V2356 S2357 M2361 T2371 I2374 I2385 P2386 L2387 D2388 E2389 GLY GLU ASP GLU ALA GLN ARG ARG ARG LYS GLY LYS GLU ASP GLU GLY GLU GLU ALA ALA S2410
L2413 I2422 M2423 N2430 V2433 L2437 H2445 I2446 M2447 D2448 L2449 T2450 R2451 L2452 R2453 C2454 S2457 L2462 H2463 R2467 Y2472 N2475 D2478 F2479 P2480 M2481 Q2482 I2483 L2486 E2487 V2495 I2498 R2507 L2508 K2509 L2526 N2531 I2534 E2538 W2548
K2551 Q2554 V2562 A2563 A2564 P2565 D2566 D2573 R2576 L2581 W2584 P2590 L2591 V2592 L2593 P2596 P2597 G2598 S2607 R2610 D2614 G2619 T2626 K2633 T2634 F2635 R2643 T2644 P2645 N2646 L2650 Q2654 F2662 P2669 V2709 P2714 R2726
R2729 H2730 V2731 P2732 V2733 V2734 Y2738 L2756 R2757 L2758 I2759 P2768 L2769 M2773 F2784 Y2792 I2793 Y2794 S2795 R2801 W2802 V2803 R2804 R2811 E2814 T2815 E2819 I2822 R2823 I2824 W2825 A2829 R2836 L2837 D2840 E2841 E2842 R2843 R2844 F2858 P2859 N2860 I2861 D2862
R2863 E2864 S2868 L2877 S2878 K2879 D2880 V2884 D2885 K2894 A2895 R2896 L2897 K2898 V2899 E2902 E2903 E2904 L2905 L2911 L2934 K2943 A2951 L2956 I2961 K2962 V2963 H2964 R2965 G2969 E2970 L2980 N2987 E2988 K2989 N2998 V2999 L3000 D3001 F3004 M3008 L3011
L3012 A3013 N3014 G3019 D3024 C3033 Q3038 K3039 E3040 M3043 L3044 D3045 S3046 H3047 E3048 E3049 F3054 R3060 F3066 T3067 M3068 E3073 D3077 R3088 F3094 T3099 E3100 D3114 L3115 E3116 D3124 Y3125 M3126 V3129 Y3130 D3131 K3132 L3133 P3134 Q3135 P3136 P3137 E3141
V3148 F3149 Q3152 T3153 L3154 A3157 L3161 A3162 K3163 T3168 T3172 P3173 R3174 H3175 D3178 H3182 R3191 S3192 E3193 L3194 G3204 I3208 K3209 E3210 T3211 V3212 D3213 Q3214 V3215 E3216 E3217 L3218 R3219 R3220 D3221 I3224 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 ALA ASP LYS VAL GLU ALA GLU VAL ILE GLU ALA GLN ASN ALA VAL LYS
SER ILE LYS LYS GLN HIS 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 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 LYS ASN TYR MET SER ASN PRO SER TYR ASN TYR GLU ILE VAL ASN SER ARG ALA 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 ALA 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 Q3459 A3460 I3461 K3462 A3463 D3464 L3465 A3466 E3469 N3473 R3474 A3477 L3478 L3479 K3480 S3481 L3482
S3483 R3486 E3490 K3491 E3494 T3495 M3500 S3501 T3502 D3506 S3510 Y3516 A3517 D3521 M3524 R3525 W3532 Q3542 D3546 I3547 L3553 D3557 E3558 R3559 W3562 Q3563 L3567 R3582 F3583 N3584 R3585 T3597 R3611 L3615 L3627 L3634 Y3635 Q3636



• Molecule 1: Cytoplasmic dynein 1 heavy chain 1

Chain B:

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L1493
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K1508
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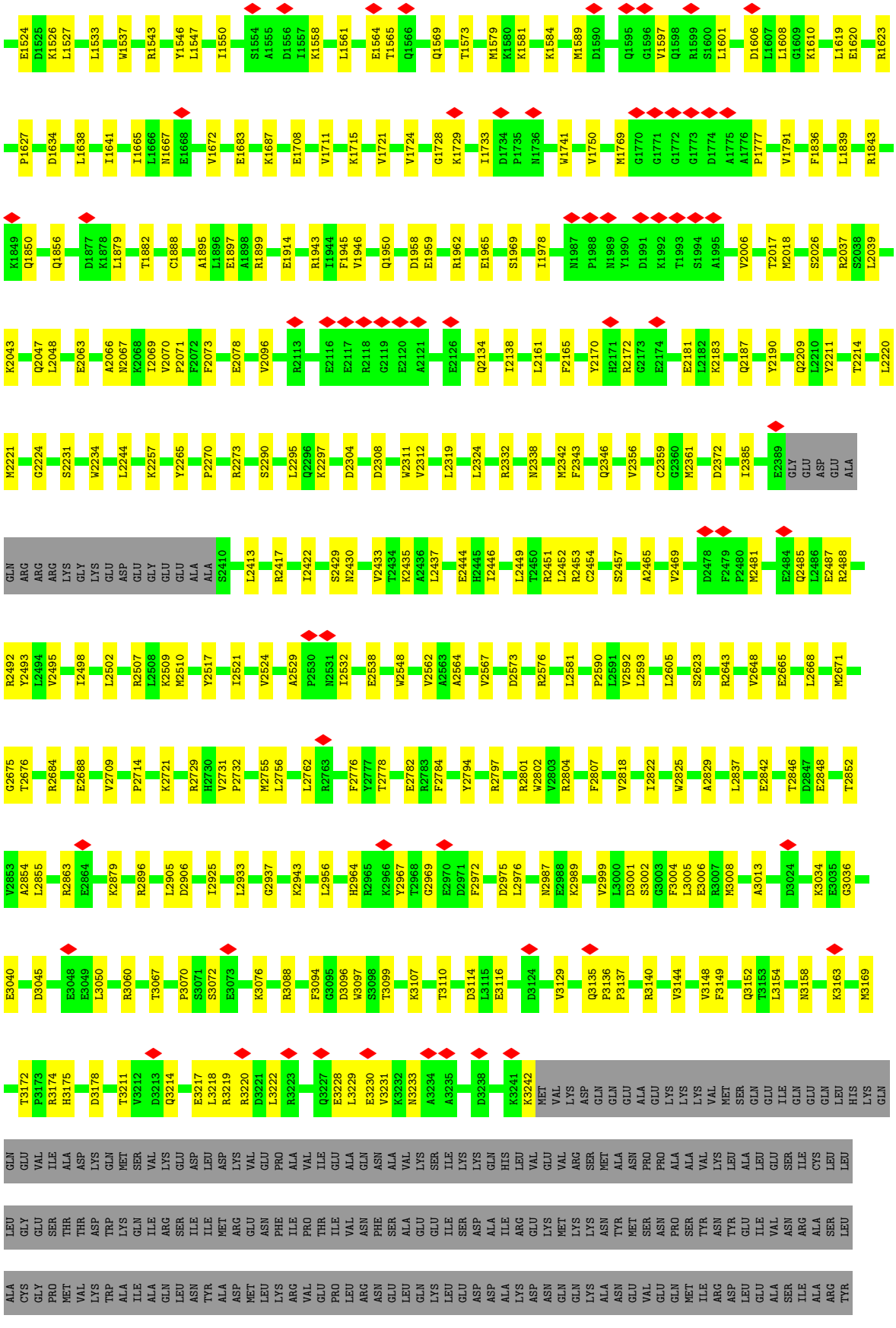
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P1627 D1634 L1638 I1641 I1665 L1666 N1667 E1668 V1672 E1683 K1687 E1708 V1711 K1715 V1721 V1724 G1728 K1729 I1733 D1734 P1735 N1736 W1741 V1750 M1769 G1770 G1771 G1772 G1773 D1774 A1775 A1776 P1777 V1791 F1836 L1839 R1843
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GLN ARG ARG ARG LYS GLY LYS GLU ASP GLU GLY GLU GLU GLU ALA ALA S2410 L2413 R2417 I2422 S2429 N2430 V2433 T2434 K2435 A2436 L2437 E2444 H2445 I2446 L2449 T2450 R2451 L2452 R2453 C2454 S2457 A2465 V2469 D2478 P2479 P2480 M2481 E2484 Q2485 L2486 E2487 R2488
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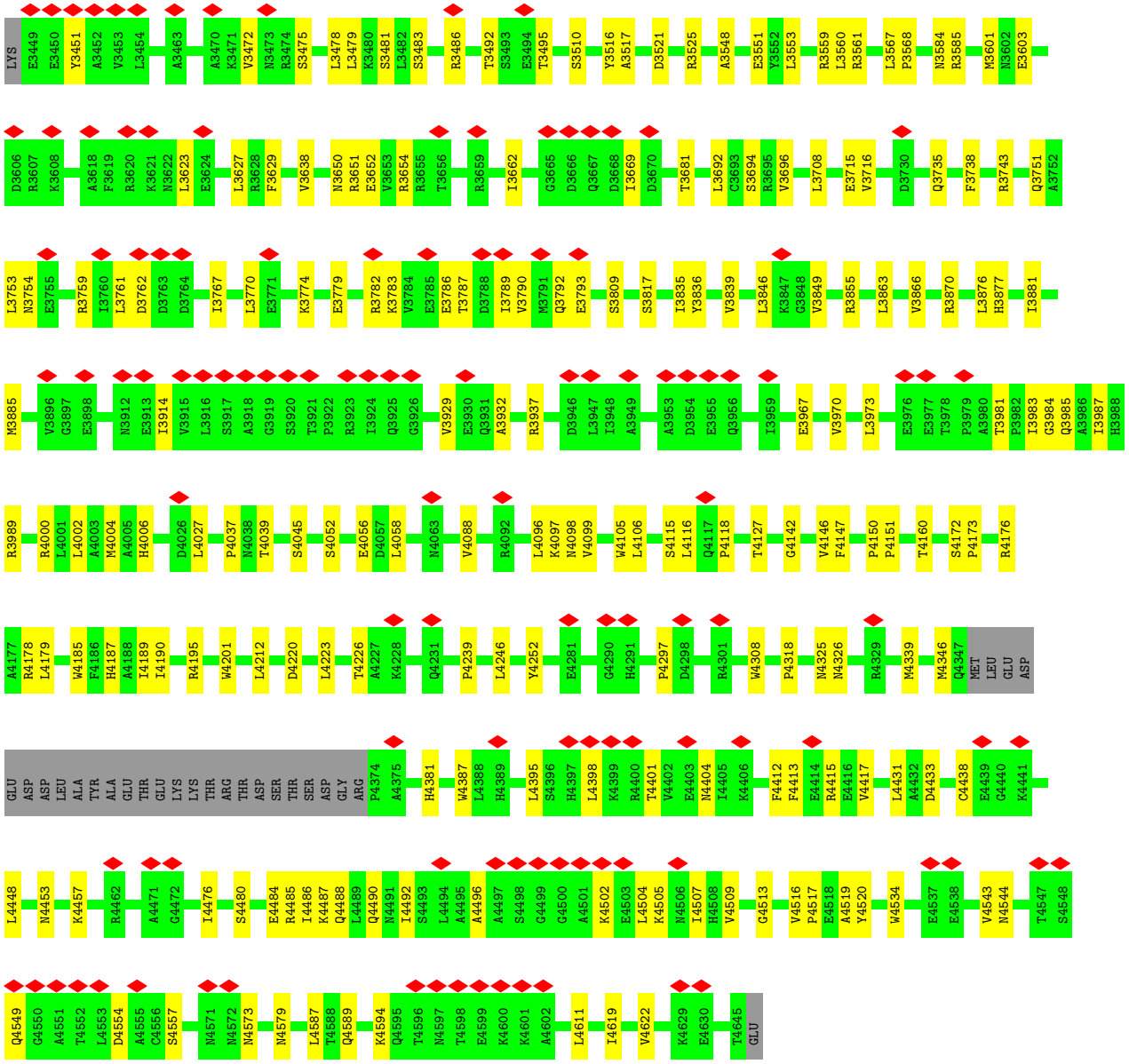
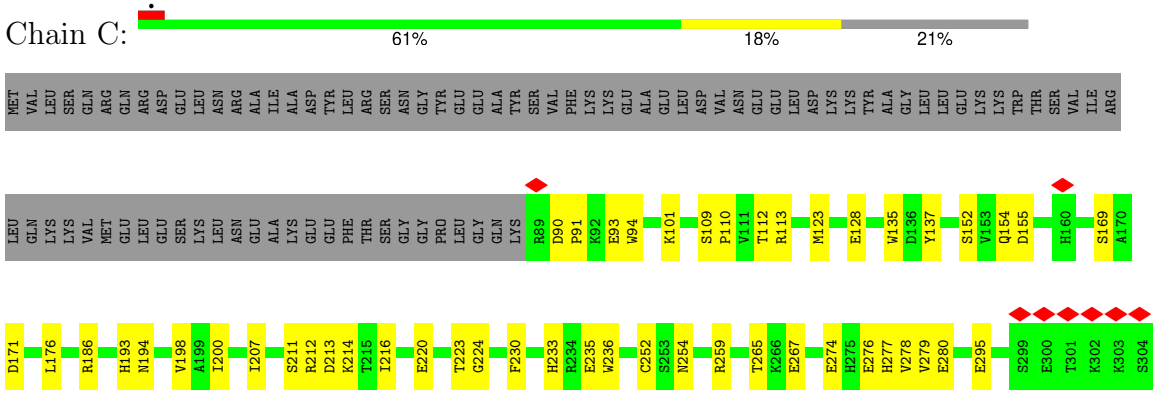
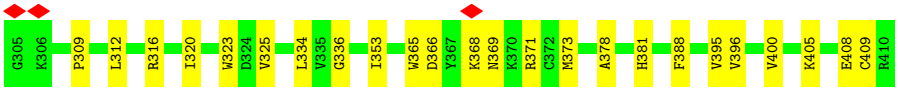
E3040 D3045 E3048 E3049 L3050 R3060 T3067 P3070 S3071 S3072 E3073 K3076 R3088 F3094 G3095 D3096 W3097 S3098 T3099 K3107 T3110 D3114 L3115 E3116 D3124 V3129 Q3135 P3136 P3137 R3140 V3144 V3148 F3149 Q3152 T3153 L3154 N3158 K3163 M3169
T3172 P3173 R3174 H3175 D3178 T3211 V3212 D3213 Q3214 E3217 L3218 R3219 R3220 D3221 L3222 R3223 Q3227 E3228 L3229 E3230 V3231 K3232 N3233 A3234 A3235 D3238 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 VAL GLU VAL ARG SER MET ALA ASN PRO PRO ALA ALA VAL LYS LEU ALA LEU GLU SER ILE CYS LEU LEU
LEU GLY GLU SER THR THR ASP TRP LYS GLN ILE ILE ALA 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 ASN ARG GLU LEU GLN LYS LEU GLU ASP ASP ALA ALA LYS ASP ASN GLN GLN LYS ALA ASN GLU VAL GLU GLN MET ILE ARG ASP LEU LEU GLU GLU ALA SER ILE ALA ARG TYR



• Molecule 2: Platelet-activating factor acetylhydrolase IB subunit beta

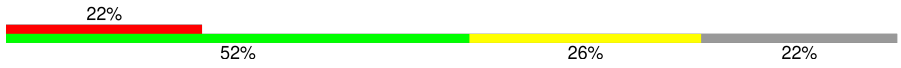
Chain C:

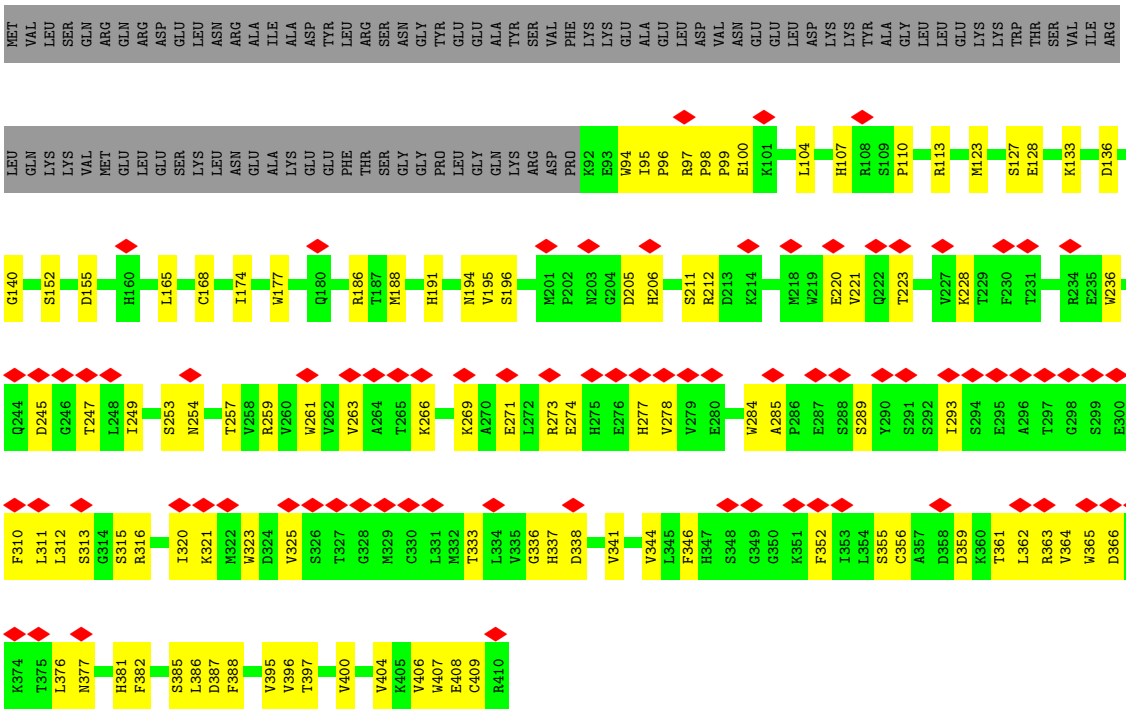




• Molecule 2: Platelet-activating factor acetylhydrolase IB subunit beta

Chain D:





4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	215049	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)	2600	Depositor
Magnification	45000	Depositor
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	2.214	Depositor
Minimum map value	-1.179	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	0.053	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: ATP, ADP, 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	0.11	0/24093	0.27	0/32651
1	B	0.12	0/24093	0.27	0/32651
2	C	0.13	0/2624	0.31	0/3555
2	D	0.13	0/2597	0.34	0/3518
All	All	0.12	0/53407	0.28	0/72375

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	23659	340	0
1	B	23593	0	23657	305	0
2	C	2557	0	2487	48	0
2	D	2531	0	2463	77	0
3	A	81	0	36	0	0
3	B	81	0	36	2	0
4	A	31	0	12	2	0
4	B	31	0	12	0	0
5	A	2	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
5	B	2	0	0	0	0
All	All	52502	0	52362	767	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 (767) 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:4296:MET:HE3	1:A:4297:PRO:HD2	1.53	0.91
1:B:1490:TRP:HH2	1:B:1537:TRP:HD1	1.24	0.86
1:A:1565:THR:HG22	1:A:1569:GLN:HE22	1.43	0.84
1:A:2221:MET:HG3	1:A:2343:PHE:HB2	1.59	0.84
1:B:2495:VAL:HG21	1:B:2524:VAL:HG21	1.65	0.79
1:A:2644:THR:HG22	1:A:2646:ASN:H	1.49	0.78
1:A:2633:LYS:HD2	1:A:3019:GLY:HA3	1.65	0.78
1:A:2956:LEU:HD23	1:A:2989:LYS:HB3	1.66	0.77
1:A:4055:VAL:HB	1:A:4095:MET:HE1	1.68	0.76
1:B:3989:ARG:HG3	1:B:4004:MET:HE2	1.68	0.74
2:D:257:THR:HG22	2:D:273:ARG:HB3	1.68	0.74
1:A:2452:LEU:HD13	1:A:2729:ARG:HH21	1.52	0.74
1:B:3242:LYS:NZ	1:B:3451:TYR:OH	2.20	0.73
1:B:2221:MET:HG2	1:B:2343:PHE:HB2	1.72	0.71
1:B:2257:LYS:NZ	1:B:2308:ASP:OD2	2.24	0.70
1:B:2671:MET:HE3	1:B:2675:GLY:HA2	1.74	0.69
1:A:1565:THR:O	1:A:1569:GLN:NE2	2.25	0.69
2:C:91:PRO:HA	2:C:94:TRP:HZ3	1.57	0.69
1:B:4398:LEU:HG	1:B:4417:VAL:HG11	1.73	0.69
1:A:2961:ILE:HD11	1:A:2998:ASN:HB3	1.72	0.69
1:B:4505:LYS:NZ	1:B:4554:ASP:O	2.21	0.69
1:A:3873:ARG:HD3	1:A:4021:MET:HE1	1.75	0.69
1:B:1490:TRP:CH2	1:B:1537:TRP:HD1	2.10	0.68
1:B:2047:GLN:NE2	1:B:2067:ASN:OD1	2.26	0.68
1:B:3178:ASP:OD2	1:B:3585:ARG:NE	2.27	0.68
1:A:3584:ASN:O	1:A:3651:ARG:NH1	2.26	0.67
2:D:396:VAL:HG12	2:D:406:VAL:HG22	1.75	0.67
1:B:2078:GLU:O	1:B:4415:ARG:NH1	2.27	0.67
1:B:2181:GLU:HG3	1:B:2244:LEU:HB2	1.77	0.67
2:D:95:ILE:HD11	2:D:352:PHE:HD2	1.60	0.67
1:A:2304:ASP:OD1	1:A:2726:ARG:NH1	2.25	0.66
1:A:2773:MET:HG2	1:A:2825:TRP:HE1	1.58	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2976:LEU:HD21	1:B:3008:MET:HE1	1.76	0.66
1:B:1623:ARG:NH2	1:B:1634:ASP:OD1	2.29	0.66
1:B:4178:ARG:NH2	1:B:4297:PRO:O	2.29	0.66
1:B:1769:MET:HE3	1:B:1777:PRO:HD2	1.77	0.66
1:B:2573:ASP:OD1	1:B:2576:ARG:NH2	2.28	0.65
1:A:4088:VAL:HG11	1:A:4116:LEU:HD21	1.79	0.65
1:B:1965:GLU:HG2	1:B:2026:SER:HB3	1.79	0.65
1:B:4150:PRO:O	1:B:4195:ARG:NH2	2.29	0.65
1:A:4081:ASP:OD1	1:A:4112:LYS:NZ	2.26	0.65
1:A:3611:ARG:NH1	1:A:3636:GLN:OE1	2.29	0.65
1:A:2562:VAL:O	1:A:2804:ARG:NH1	2.30	0.65
2:D:243:ASN:HB3	2:D:284:TRP:HZ3	1.61	0.65
1:A:1612:GLN:NE2	1:A:1635:GLU:OE1	2.26	0.65
1:B:3638:VAL:HG12	1:B:3681:THR:HB	1.78	0.64
2:D:243:ASN:ND2	2:D:245:ASP:OD1	2.30	0.64
1:A:2126:GLU:OE1	1:A:2126:GLU:N	2.29	0.64
1:A:2607:SER:HA	1:A:2610:ARG:HE	1.62	0.64
1:B:2444:GLU:HG2	1:B:2510:MET:HE3	1.79	0.64
1:A:2573:ASP:OD1	1:A:2576:ARG:NH2	2.29	0.64
1:B:3914:ILE:O	1:B:3937:ARG:NH1	2.31	0.64
1:A:4505:LYS:NZ	1:A:4554:ASP:O	2.30	0.64
1:A:2433:VAL:HG22	1:A:2498:ILE:HD11	1.80	0.64
1:A:3517:ALA:HB1	1:A:3525:ARG:HG2	1.81	0.63
2:D:243:ASN:ND2	2:D:247:THR:OG1	2.31	0.63
1:A:1554:SER:O	1:A:1558:LYS:NZ	2.30	0.63
1:B:2452:LEU:HD13	1:B:2729:ARG:HH21	1.64	0.63
1:A:3178:ASP:OD2	1:A:3585:ARG:NE	2.31	0.63
2:C:90:ASP:HB3	2:C:93:GLU:HB3	1.80	0.63
2:C:91:PRO:HA	2:C:94:TRP:CZ3	2.32	0.63
1:A:1750:VAL:HG12	1:A:1811:LEU:HD21	1.80	0.63
2:C:278:VAL:HB	2:C:316:ARG:HD2	1.80	0.63
1:B:3510:SER:HB3	1:B:3553:LEU:HD21	1.80	0.63
1:A:1636:ASP:OD2	1:A:1656:LYS:NZ	2.32	0.62
1:A:4492:ILE:HG22	1:A:4507:ILE:HD13	1.82	0.62
1:A:4398:LEU:HG	1:A:4417:VAL:HG21	1.80	0.62
1:B:3229:LEU:O	1:B:3233:ASN:ND2	2.31	0.62
1:B:4326:ASN:ND2	1:B:4579:ASN:O	2.31	0.62
1:A:4068:SER:HA	1:A:4095:MET:HB3	1.81	0.62
1:A:2784:PHE:HB2	1:A:2794:TYR:HE2	1.65	0.62
1:A:3174:ARG:NH1	1:A:3650:ASN:OD1	2.33	0.62
1:A:3661:LEU:HD12	1:A:3668:ASP:HB3	1.82	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1491:ASP:O	1:A:1495:ASN:ND2	2.33	0.62
1:A:3129:VAL:HG21	1:A:3149:PHE:HB2	1.80	0.62
1:B:3481:SER:HB3	1:B:3774:LYS:HE2	1.82	0.62
1:A:3946:ASP:OD2	1:A:3950:LYS:NZ	2.33	0.61
2:C:295:GLU:OE2	2:C:368:LYS:NZ	2.33	0.61
2:D:123:MET:HG3	2:D:396:VAL:HG11	1.81	0.61
1:A:4049:TYR:OH	1:A:4191:GLN:OE1	2.18	0.61
1:A:1623:ARG:NH2	1:A:1634:ASP:OD1	2.33	0.61
1:B:3230:GLU:HA	1:B:3233:ASN:HD21	1.65	0.61
2:D:174:ILE:HD11	2:D:195:VAL:HG11	1.81	0.61
1:B:4492:ILE:HG13	1:B:4507:ILE:HD13	1.82	0.61
1:A:1558:LYS:HG3	1:A:1565:THR:HG21	1.83	0.60
1:A:2138:ILE:HD12	1:A:2161:LEU:HD22	1.82	0.60
2:D:277:HIS:CG	2:D:278:VAL:H	2.18	0.60
1:B:3983:ILE:O	1:B:3987:ILE:HD12	2.01	0.60
1:B:4037:PRO:HB2	1:B:4118:PRO:HG2	1.82	0.60
1:A:2969:GLY:HA2	1:A:3004:PHE:HE1	1.65	0.60
1:A:3972:TYR:OH	1:A:3976:GLU:OE2	2.18	0.60
1:B:3561:ARG:NH1	1:B:3603:GLU:OE2	2.34	0.60
1:A:4075:GLU:O	1:A:4079:GLN:HG3	2.02	0.60
2:C:101:LYS:NZ	2:C:408:GLU:OE2	2.26	0.60
1:A:2457:SER:HB2	1:A:2732:PRO:HB3	1.83	0.60
1:A:1699:ASN:OD1	1:A:1700:GLU:N	2.35	0.60
1:B:2457:SER:HB3	1:B:2732:PRO:HB3	1.83	0.60
1:B:3219:ARG:HH21	1:B:3472:VAL:HG22	1.65	0.60
2:C:312:LEU:HD21	2:C:353:ILE:HD13	1.83	0.60
1:B:2592:VAL:HG23	1:B:2731:VAL:HG11	1.85	0.59
1:B:4611:LEU:HB2	1:B:4619:ILE:HD11	1.84	0.59
1:B:2138:ILE:HD12	1:B:2161:LEU:HD22	1.83	0.59
2:D:336:GLY:O	2:D:363:ARG:NH1	2.36	0.59
1:A:3708:LEU:HD23	1:A:3809:SER:HA	1.84	0.59
1:B:1537:TRP:CE3	1:B:1601:LEU:HD21	2.38	0.59
1:B:4496:ALA:HB2	1:B:4504:LEU:HD21	1.83	0.59
1:A:1897:GLU:O	1:A:1899:ARG:NH1	2.36	0.59
1:B:2987:ASN:OD1	1:B:3060:ARG:NH2	2.35	0.59
2:D:228:LYS:NZ	2:D:263:VAL:O	2.36	0.59
1:A:4517:PRO:HG2	1:A:4619:ILE:HD12	1.85	0.59
1:A:2386:PRO:HG3	1:A:2413:LEU:HD12	1.85	0.59
1:A:4227:ALA:HB2	1:A:4233:ILE:HD12	1.85	0.58
1:B:1959:GLU:HB3	1:B:1962:ARG:HD3	1.85	0.58
1:A:2581:LEU:HD11	1:A:2593:LEU:HD21	1.84	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3638:VAL:HG12	1:A:3681:THR:HB	1.85	0.58
1:A:3892:LEU:HD11	1:A:3983:ILE:HG21	1.85	0.58
1:B:1537:TRP:HE3	1:B:1601:LEU:HD11	1.68	0.58
1:B:1484:CYS:SG	1:B:1579:MET:HG2	2.43	0.58
1:A:4110:GLU:OE1	1:A:4137:ASN:ND2	2.36	0.58
1:B:3779:GLU:OE2	1:B:3782:ARG:NH2	2.35	0.58
1:A:1717:LEU:HB2	1:A:1749:LEU:HD22	1.85	0.58
1:B:2905:LEU:HD11	1:B:3652:GLU:HB3	1.85	0.58
1:B:2925:ILE:HG21	1:B:2933:LEU:HG	1.86	0.58
1:A:2987:ASN:OD1	1:A:3060:ARG:NH2	2.31	0.58
1:B:3839:VAL:HG21	1:B:3863:LEU:HA	1.85	0.58
1:A:4178:ARG:NH2	1:A:4297:PRO:O	2.37	0.57
1:B:3219:ARG:NH2	1:B:3472:VAL:HG13	2.18	0.57
2:D:277:HIS:HD2	2:D:316:ARG:HB2	1.70	0.57
1:A:3557:ASP:OD1	1:A:3743:ARG:NH1	2.38	0.57
1:A:4096:LEU:HD13	1:A:4105:TRP:HH2	1.68	0.57
1:B:3789:ILE:HA	1:B:3792:GLN:OE1	2.05	0.57
2:D:269:LYS:NZ	2:D:325:VAL:O	2.37	0.57
1:A:1709:MET:HE3	1:A:1872:TYR:H	1.69	0.57
1:B:2488:ARG:O	1:B:2492:ARG:HG2	2.05	0.57
1:B:4176:ARG:NH1	1:B:4220:ASP:OD1	2.36	0.57
1:B:4226:THR:HG21	1:B:4239:PRO:HD3	1.86	0.57
2:C:123:MET:SD	2:C:396:VAL:HG21	2.44	0.57
1:A:1494:PHE:O	1:A:1498:LYS:HG2	2.04	0.57
1:A:1888:CYS:HA	1:A:2039:LEU:HD22	1.87	0.57
1:A:3157:ALA:HB1	1:A:3524:MET:HE2	1.86	0.57
1:B:1620:GLU:OE2	1:B:1943:ARG:NH1	2.37	0.57
1:B:2449:LEU:HA	1:B:2453:ARG:HH21	1.69	0.57
2:C:265:THR:HG23	2:C:267:GLU:HG2	1.86	0.57
1:A:2446:ILE:HD11	1:A:2714:PRO:HB3	1.86	0.57
1:A:1879:LEU:HD13	1:A:1918:ALA:HB2	1.86	0.57
1:A:4326:ASN:ND2	1:A:4579:ASN:O	2.37	0.57
1:B:4096:LEU:HD13	1:B:4105:TRP:HH2	1.69	0.57
1:B:1897:GLU:O	1:B:1899:ARG:NH1	2.38	0.56
2:D:196:SER:OG	2:D:236:TRP:NE1	2.34	0.56
2:D:366:ASP:HB2	2:D:372:CYS:HB2	1.86	0.56
1:A:2275:TRP:NE1	1:A:2277:ASP:OD1	2.37	0.56
1:A:2472:TYR:HD2	1:A:2481:MET:HE3	1.70	0.56
1:A:3825:TYR:CZ	1:A:3875:MET:HG3	2.39	0.56
1:B:1490:TRP:HH2	1:B:1537:TRP:CD1	2.14	0.56
2:D:236:TRP:HB3	2:D:254:ASN:ND2	2.20	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2581:LEU:HD21	1:B:2593:LEU:HD21	1.88	0.56
1:A:1492:ASP:OD1	1:A:1493:LEU:N	2.39	0.56
1:A:3909:LEU:HB3	1:A:4344:LEU:HD13	1.88	0.56
1:B:2430:ASN:O	1:B:2435:LYS:NZ	2.39	0.56
1:B:3782:ARG:NH1	1:B:3786:GLU:OE2	2.39	0.56
1:B:4387:TRP:HE3	1:B:4431:LEU:HD11	1.70	0.56
2:C:110:PRO:HB3	2:C:400:VAL:HA	1.86	0.56
2:C:388:PHE:HD1	2:C:395:VAL:HG22	1.70	0.56
1:A:2934:LEU:HD11	1:A:3068:MET:HE2	1.87	0.56
1:A:1487:ILE:HD12	1:A:1537:TRP:HE1	1.70	0.56
1:A:2047:GLN:HA	1:A:2070:VAL:HG21	1.87	0.56
1:A:2538:GLU:OE2	1:A:2551:LYS:NZ	2.29	0.56
1:A:3940:CYS:O	1:A:3945:LYS:NZ	2.39	0.56
1:B:4190:ILE:HD12	1:B:4201:TRP:HZ2	1.71	0.56
2:C:353:ILE:HB	2:C:365:TRP:HB2	1.88	0.56
1:A:1839:LEU:O	1:A:1843:ARG:NH1	2.39	0.56
2:D:362:LEU:HD11	2:D:397:THR:HG21	1.88	0.56
1:A:4021:MET:HE3	1:A:4021:MET:HA	1.89	0.55
1:B:3708:LEU:HD23	1:B:3809:SER:HA	1.88	0.55
1:B:4413:PHE:CD2	1:B:4492:ILE:HG21	2.41	0.55
2:D:212:ARG:HD3	2:D:236:TRP:CG	2.41	0.55
1:B:3601:MET:HE2	1:B:3601:MET:HA	1.87	0.55
1:A:2371:THR:HG22	1:A:2451:ARG:HD2	1.89	0.55
1:A:2324:LEU:HD22	1:A:2332:ARG:HB3	1.87	0.55
1:A:4100:HIS:HB3	1:A:4128:MET:HB2	1.87	0.55
1:B:2372:ASP:OD2	1:B:2429:SER:OG	2.24	0.55
1:B:2778:THR:O	1:B:2782:GLU:HG3	2.06	0.55
1:B:2356:VAL:HG13	1:B:2361:MET:HE3	1.89	0.55
1:B:4502:LYS:H	1:B:4502:LYS:HD2	1.71	0.55
1:A:2596:PRO:HB2	1:A:2738:TYR:CE1	2.42	0.55
2:D:359:ASP:OD1	2:D:361:THR:OG1	2.17	0.55
1:B:3096:ASP:OD1	1:B:3097:TRP:N	2.40	0.55
2:C:320:ILE:HB	2:C:334:LEU:HB2	1.89	0.55
1:A:2220:LEU:HB2	1:A:2342:MET:HG2	1.88	0.54
1:B:1839:LEU:O	1:B:1843:ARG:NH1	2.40	0.54
1:A:3891:LYS:HD2	1:A:4013:LEU:HD23	1.88	0.54
2:D:94:TRP:HB3	2:D:409:CYS:HB3	1.89	0.54
1:A:1623:ARG:NH1	1:A:1632:VAL:O	2.37	0.54
1:A:2181:GLU:HG3	1:A:2244:LEU:HB2	1.89	0.54
1:A:3154:LEU:HG	1:A:3516:TYR:CD1	2.42	0.54
1:B:3715:GLU:HB3	1:B:3836:TYR:HE2	1.72	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3845:ASN:ND2	1:A:3862:ASP:OD2	2.33	0.54
2:C:128:GLU:HA	2:C:152:SER:HB2	1.90	0.54
1:B:2066:ALA:HA	1:B:2069:ILE:HG22	1.90	0.54
2:C:186:ARG:HD3	2:C:224:GLY:HA3	1.90	0.54
1:A:1627:PRO:HB3	1:A:1950:GLN:HB3	1.90	0.54
1:B:4549:GLN:HG3	1:B:4587:LEU:HB2	1.90	0.54
1:B:3099:THR:HG23	1:B:3148:VAL:HG11	1.90	0.53
2:C:216:ILE:HB	2:C:230:PHE:HB2	1.90	0.53
1:B:3214:GLN:OE1	1:B:3759:ARG:HD2	2.08	0.53
1:A:2538:GLU:HB3	1:A:2548:TRP:CE2	2.43	0.53
1:A:2051:GLN:HE21	1:A:2063:GLU:HG2	1.74	0.53
1:B:2684:ARG:NH1	1:B:2688:GLU:OE1	2.42	0.53
1:B:3584:ASN:O	1:B:3651:ARG:NH2	2.41	0.53
2:D:356:CYS:SG	2:D:386:LEU:HD22	2.48	0.53
1:A:3597:THR:HG23	1:A:3634:LEU:HD21	1.90	0.53
1:B:2855:LEU:HD21	1:B:2863:ARG:HG3	1.88	0.53
2:D:311:LEU:HB3	2:D:323:TRP:HB2	1.91	0.53
2:C:211:SER:OG	2:C:213:ASP:OD1	2.27	0.53
2:D:110:PRO:HB3	2:D:400:VAL:HA	1.90	0.53
1:B:3517:ALA:HB1	1:B:3525:ARG:HG2	1.91	0.53
2:C:280:GLU:OE2	2:C:316:ARG:NE	2.37	0.53
2:D:104:LEU:N	2:D:404:VAL:O	2.41	0.53
1:A:3731:LEU:HD21	1:A:3790:VAL:HG13	1.91	0.53
1:A:3013:ALA:HA	1:A:3088:ARG:HG3	1.91	0.53
1:B:1914:GLU:HG3	3:B:4701:ADP:H2'	1.91	0.53
1:B:3001:ASP:OD1	1:B:3002:SER:N	2.41	0.53
1:A:2257:LYS:NZ	1:A:2308:ASP:OD2	2.42	0.52
1:B:3174:ARG:NH1	1:B:3650:ASN:OD1	2.42	0.52
1:A:1487:ILE:HD12	1:A:1537:TRP:NE1	2.25	0.52
1:A:4153:VAL:O	1:A:4157:MET:HG3	2.09	0.52
1:B:4413:PHE:HZ	1:B:4509:VAL:HG11	1.74	0.52
1:B:4488:GLN:O	1:B:4492:ILE:HD12	2.09	0.52
2:C:123:MET:N	2:C:135:TRP:O	2.37	0.52
1:A:1470:TRP:HE1	1:A:1527:LEU:HD21	1.73	0.52
2:D:205:ASP:O	2:D:206:HIS:ND1	2.40	0.52
1:A:1467:ARG:HE	1:A:1523:TRP:HZ2	1.58	0.52
1:A:3559:ARG:O	1:A:3563:GLN:HG2	2.09	0.52
2:D:278:VAL:HB	2:D:316:ARG:HD2	1.92	0.52
1:B:1667:ASN:ND2	1:B:1672:VAL:HG12	2.24	0.52
1:B:3114:ASP:O	1:B:3140:ARG:NH2	2.43	0.52
1:A:2066:ALA:HA	1:A:2069:ILE:HG22	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3008:MET:HA	1:A:3008:MET:HE2	1.92	0.52
1:B:2943:LYS:N	3:B:4704:ADP:O1B	2.41	0.52
1:B:3154:LEU:HG	1:B:3516:TYR:CD1	2.45	0.52
1:A:4039:THR:HG23	1:A:4142:GLY:HA2	1.90	0.52
1:A:4160:THR:HG23	1:A:4212:LEU:HD21	1.92	0.52
1:A:2449:LEU:HA	1:A:2453:ARG:HH21	1.74	0.52
1:A:2449:LEU:HD11	1:A:2454:CYS:SG	2.50	0.52
1:B:3835:ILE:HG12	1:B:3870:ARG:HD2	1.92	0.52
1:A:2768:PRO:HB2	1:A:2858:PHE:HE1	1.74	0.52
1:A:4213:ARG:HB2	1:A:4213:ARG:NH1	2.24	0.52
1:B:3735:GLN:HG3	1:B:3787:THR:HG21	1.92	0.52
1:A:4496:ALA:HB2	1:A:4504:LEU:HD21	1.92	0.51
1:B:2433:VAL:HG22	1:B:2498:ILE:HD11	1.91	0.51
1:B:2797:ARG:O	1:B:2801:ARG:HG3	2.10	0.51
1:A:2131:LEU:HD12	1:A:2132:PRO:HD2	1.92	0.51
1:A:4412:PHE:CZ	1:A:4520:TYR:HB2	2.46	0.51
1:B:3492:THR:HA	1:B:3495:THR:HG22	1.91	0.51
1:B:3560:LEU:HD11	1:B:3743:ARG:HH22	1.75	0.51
1:B:1946:VAL:HG22	1:B:2006:VAL:HG21	1.92	0.51
2:D:95:ILE:HD11	2:D:352:PHE:CD2	2.44	0.51
1:B:2481:MET:HE3	1:B:2485:GLN:HG2	1.92	0.51
1:A:1709:MET:CE	1:A:1872:TYR:H	2.24	0.51
1:A:2290:SER:HB2	1:A:2295:LEU:HG	1.92	0.51
1:A:3172:THR:HG21	1:A:3694:SER:HB3	1.93	0.51
1:B:1561:LEU:HB3	1:B:1564:GLU:HB2	1.92	0.51
1:B:3548:ALA:HB3	1:B:3551:GLU:HG2	1.93	0.51
1:B:3623:LEU:O	1:B:3627:LEU:HG	2.10	0.51
1:A:2626:THR:HB	1:A:2669:PRO:HG3	1.92	0.51
1:A:3459:GLN:O	1:A:3462:LYS:HG2	2.10	0.51
2:D:361:THR:HA	2:D:377:ASN:HA	1.92	0.51
2:C:220:GLU:OE1	2:C:223:THR:OG1	2.27	0.51
1:B:1958:ASP:HA	1:B:2017:THR:HB	1.92	0.51
1:A:3825:TYR:OH	1:A:3879:ASP:OD2	2.19	0.51
1:A:4463:SER:HG	1:A:4464:TRP:CD1	2.29	0.51
2:D:127:SER:OG	2:D:128:GLU:N	2.44	0.51
1:A:2172:ARG:HH22	1:A:2205:GLU:HG3	1.75	0.50
1:B:2231:SER:HA	1:B:2234:TRP:CD1	2.46	0.50
1:B:2967:TYR:OH	1:B:2975:ASP:OD2	2.28	0.50
1:B:3876:LEU:HD23	1:B:4146:VAL:HG11	1.93	0.50
1:A:1721:VAL:HA	1:A:1724:VAL:HG12	1.93	0.50
1:A:3135:GLN:O	1:A:3137:PRO:HD3	2.11	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:3970:VAL:HB	1:B:3989:ARG:HH11	1.76	0.50
1:B:3072:SER:O	1:B:3076:LYS:HG3	2.12	0.50
1:B:4039:THR:HG23	1:B:4142:GLY:HA2	1.93	0.50
1:B:3817:SER:OG	1:B:4346:MET:HB3	2.11	0.50
2:D:274:GLU:HG3	2:D:323:TRP:CH2	2.47	0.50
1:A:4528:VAL:HG11	1:A:4592:TRP:HB2	1.93	0.50
1:B:4544:ASN:HB2	1:B:4573:ASN:HD21	1.77	0.50
2:D:257:THR:OG1	2:D:259:ARG:NH1	2.44	0.50
1:B:1460:GLU:OE2	1:B:1460:GLU:N	2.30	0.50
1:B:4318:PRO:HG2	1:B:4325:ASN:HA	1.94	0.50
2:C:274:GLU:HB2	2:C:323:TRP:HH2	1.77	0.50
1:A:2964:HIS:HA	1:A:3643:PRO:HD2	1.93	0.50
1:A:3990:LEU:HA	1:A:4004:MET:HG2	1.93	0.50
1:B:2290:SER:HB2	1:B:2295:LEU:HG	1.93	0.50
1:B:2879:LYS:HE2	2:C:336:GLY:HA2	1.94	0.50
1:A:1533:LEU:HD11	1:A:1597:VAL:HG22	1.94	0.49
1:A:2138:ILE:HD11	1:A:2165:PHE:CG	2.47	0.49
1:A:2422:ILE:HD13	1:A:2487:GLU:HA	1.94	0.49
2:C:90:ASP:OD1	2:C:91:PRO:HD2	2.12	0.49
1:A:1565:THR:HG22	1:A:1569:GLN:NE2	2.20	0.49
1:A:3510:SER:HB3	1:A:3553:LEU:HD21	1.94	0.49
1:B:4387:TRP:HE1	1:B:4476:ILE:HD12	1.77	0.49
2:D:277:HIS:CD2	2:D:278:VAL:H	2.30	0.49
1:B:1569:GLN:O	1:B:1573:THR:HG23	2.12	0.49
2:C:254:ASN:HD22	2:C:278:VAL:HG21	1.77	0.49
1:A:1836:PHE:HA	1:A:1839:LEU:HB2	1.95	0.49
1:A:2877:LEU:HD11	1:A:2884:VAL:HG23	1.93	0.49
2:D:165:LEU:HB3	2:D:177:TRP:HB2	1.94	0.49
1:A:2051:GLN:NE2	1:A:2063:GLU:HG2	2.28	0.49
1:B:4187:HIS:ND1	1:B:4252:TYR:OH	2.41	0.49
1:B:1508:LYS:HG2	1:B:1513:TYR:CZ	2.47	0.49
1:B:3110:THR:O	1:B:3140:ARG:NH1	2.45	0.49
1:B:3551:GLU:HA	1:B:3559:ARG:HH12	1.77	0.49
1:B:3981:THR:HG23	1:B:3984:GLY:H	1.76	0.49
2:C:112:THR:HG21	2:C:154:GLN:HA	1.94	0.49
2:D:321:LYS:HG2	2:D:333:THR:HG22	1.94	0.49
1:B:1543:ARG:HA	1:B:1546:TYR:CE1	2.47	0.49
1:B:1619:LEU:HD11	1:B:1638:LEU:HG	1.94	0.49
1:B:4297:PRO:HG3	1:B:4308:TRP:CD2	2.47	0.49
1:B:4381:HIS:HB2	1:B:4438:CYS:HB3	1.94	0.49
1:A:2231:SER:HA	1:A:2234:TRP:CD1	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1533:LEU:HD11	1:B:1597:VAL:HG22	1.93	0.49
1:B:3228:GLU:HA	1:B:3231:VAL:HG12	1.94	0.49
1:B:3985:GLN:O	1:B:3989:ARG:HG2	2.12	0.49
2:C:193:HIS:HD1	2:C:194:ASN:H	1.59	0.49
1:A:2822:ILE:HD11	1:A:2858:PHE:CD2	2.48	0.49
1:B:2257:LYS:HE3	1:B:2676:THR:HG21	1.94	0.49
1:B:1850:GLN:HB3	1:B:1856:GLN:HG2	1.94	0.49
2:D:206:HIS:CE1	2:D:220:GLU:HG2	2.48	0.49
2:D:243:ASN:HD21	2:D:247:THR:H	1.61	0.49
1:A:2080:LEU:O	1:A:4415:ARG:NH1	2.46	0.48
1:A:1547:LEU:HD12	1:A:1608:LEU:HD22	1.95	0.48
1:A:1795:SER:O	1:A:1800:GLN:NE2	2.30	0.48
1:A:1706:GLU:O	1:A:1710:ARG:HG3	2.14	0.48
1:A:1949:CYS:SG	1:A:2012:MET:HE3	2.53	0.48
2:C:277:HIS:ND1	2:C:316:ARG:HB2	2.28	0.48
1:A:1462:PHE:O	1:A:1466:ILE:HG12	2.13	0.48
1:A:2073:PHE:HZ	1:A:2096:VAL:HG21	1.79	0.48
1:A:4297:PRO:HG3	1:A:4308:TRP:CG	2.48	0.48
1:A:2186:CYS:HA	1:A:2191:LEU:HB2	1.96	0.48
1:A:2483:ILE:O	1:A:2486:LEU:N	2.46	0.48
1:B:1627:PRO:HB3	1:B:1950:GLN:HB3	1.94	0.48
1:B:3013:ALA:HA	1:B:3088:ARG:HG3	1.94	0.48
1:B:4027:LEU:HB3	1:B:4058:LEU:HD22	1.96	0.48
1:B:4045:SER:HB3	1:B:4147:PHE:HB2	1.96	0.48
2:C:123:MET:HE2	2:C:137:TYR:HB3	1.95	0.48
1:A:1477:LEU:HB3	1:A:1485:ARG:HB3	1.96	0.48
1:A:2592:VAL:HG23	1:A:2731:VAL:HG11	1.96	0.48
1:A:2070:VAL:HB	1:A:2071:PRO:HD3	1.96	0.48
1:A:2227:GLY:HA3	1:A:2452:LEU:HD12	1.95	0.48
1:B:3551:GLU:HA	1:B:3559:ARG:NH1	2.29	0.48
1:A:1850:GLN:HB3	1:A:1856:GLN:HG2	1.95	0.48
1:A:4409:LEU:HD11	1:A:4558:PHE:HE2	1.77	0.48
1:B:4543:VAL:HG11	1:B:4622:VAL:HB	1.94	0.48
1:B:2564:ALA:HB3	1:B:2567:VAL:HG23	1.95	0.48
1:B:4517:PRO:HG2	1:B:4619:ILE:HD12	1.95	0.48
1:A:2046:ARG:HG2	1:A:2090:LEU:HD13	1.96	0.47
1:A:3961:LEU:O	1:A:3997:ARG:NH1	2.46	0.47
1:B:3835:ILE:HG23	1:B:3866:VAL:HG12	1.96	0.47
1:B:3967:GLU:OE1	1:B:4000:ARG:NE	2.41	0.47
2:D:95:ILE:HG22	2:D:97:ARG:HH12	1.79	0.47
1:B:1708:GLU:HA	1:B:1711:VAL:HG22	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2943:LYS:HG2	1:B:3094:PHE:CD2	2.48	0.47
1:A:2374:ILE:HD13	1:A:2452:LEU:HD21	1.95	0.47
1:B:2863:ARG:HH11	1:B:2863:ARG:HG2	1.78	0.47
1:B:3129:VAL:HG21	1:B:3149:PHE:HB2	1.96	0.47
1:A:1480:TYR:OH	1:A:1548:GLU:OE2	2.23	0.47
1:A:1507:MET:O	1:A:1510:SER:OG	2.25	0.47
1:A:1582:VAL:HG13	1:A:1591:VAL:HG11	1.96	0.47
1:A:2232:MET:HG3	4:A:4702:ATP:C8	2.48	0.47
1:B:2454:CYS:HB3	1:B:2502:LEU:HD12	1.97	0.47
1:B:4052:SER:O	1:B:4056:GLU:HG2	2.14	0.47
1:B:4088:VAL:HG11	1:B:4116:LEU:HD23	1.97	0.47
1:B:4412:PHE:CZ	1:B:4520:TYR:HB2	2.50	0.47
1:A:4412:PHE:HZ	1:A:4514:LEU:HD13	1.80	0.47
1:B:4554:ASP:OD2	1:B:4557:SER:OG	2.29	0.47
1:A:2837:LEU:HD13	1:A:2842:GLU:HB3	1.97	0.47
1:A:2943:LYS:HE2	1:A:3067:THR:HB	1.97	0.47
1:B:2507:ARG:HH21	1:B:2509:LYS:HE3	1.79	0.47
1:B:3135:GLN:O	1:B:3137:PRO:HD3	2.14	0.47
2:D:277:HIS:CG	2:D:278:VAL:N	2.83	0.47
2:D:338:ASP:HB3	2:D:359:ASP:HB3	1.96	0.47
1:A:2423:MET:HE2	1:A:2462:LEU:HD22	1.96	0.47
1:A:2508:LEU:HD11	1:A:2576:ARG:HH22	1.79	0.47
1:A:3597:THR:HG21	1:A:3611:ARG:HH12	1.80	0.47
1:B:1459:LEU:HG	1:B:1507:MET:HG3	1.95	0.47
1:B:1475:LEU:HD13	1:B:1487:ILE:HD13	1.97	0.47
1:B:2529:ALA:HB1	1:B:2532:ILE:HD12	1.97	0.47
1:B:3738:PHE:CE1	1:B:3783:LYS:HB3	2.50	0.47
2:D:243:ASN:HB3	2:D:284:TRP:CZ3	2.47	0.47
1:A:1476:ASP:O	1:A:1487:ILE:HA	2.15	0.47
1:A:2179:ARG:HH11	1:A:2208:LEU:HD11	1.80	0.47
1:A:4037:PRO:HB2	1:A:4118:PRO:HG2	1.95	0.47
2:C:369:ASN:HB2	2:C:371:ARG:HG2	1.96	0.47
1:A:2759:ILE:HD12	1:A:2815:THR:HA	1.97	0.47
1:A:4190:ILE:HD12	1:A:4201:TRP:HZ2	1.79	0.47
1:B:2538:GLU:HB3	1:B:2548:TRP:CE2	2.49	0.47
1:B:2964:HIS:H	1:B:2967:TYR:HB2	1.80	0.47
1:A:2211:TYR:O	1:A:2215:GLN:HG3	2.15	0.46
1:A:3214:GLN:O	1:A:3217:GLU:HG3	2.15	0.46
1:B:3230:GLU:HA	1:B:3233:ASN:ND2	2.30	0.46
1:A:1687:LYS:HD3	1:A:1712:THR:HG23	1.96	0.46
1:B:3753:LEU:HD21	1:B:3770:LEU:HD21	1.96	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2285:ARG:NH1	1:A:2331:GLU:OE2	2.39	0.46
1:A:4156:ASN:ND2	1:A:4188:ALA:HA	2.30	0.46
1:A:4318:PRO:HG2	1:A:4325:ASN:HA	1.98	0.46
1:B:3211:THR:HG22	1:B:3479:LEU:HD21	1.97	0.46
1:B:4160:THR:HG23	1:B:4212:LEU:HD21	1.97	0.46
1:A:3521:ASP:OD1	1:A:3521:ASP:N	2.45	0.46
1:B:2784:PHE:HB2	1:B:2794:TYR:HE2	1.81	0.46
1:B:3175:HIS:HB3	1:B:3516:TYR:CE1	2.50	0.46
2:C:169:SER:HB3	2:C:171:ASP:OD1	2.15	0.46
1:A:2074:LYS:HE3	1:A:2074:LYS:HB3	1.77	0.46
1:A:2437:LEU:HD21	1:A:2451:ARG:HG3	1.98	0.46
1:A:3175:HIS:HB3	1:A:3516:TYR:CE1	2.50	0.46
1:A:4247:MET:HE1	1:A:4273:PHE:CZ	2.50	0.46
1:B:2070:VAL:HB	1:B:2071:PRO:HD3	1.96	0.46
1:B:3214:GLN:HG2	1:B:3761:LEU:HD12	1.98	0.46
2:C:274:GLU:HB2	2:C:323:TRP:CH2	2.51	0.46
1:A:1476:ASP:HB3	1:A:1488:ARG:CZ	2.46	0.46
1:A:2897:LEU:HD11	1:A:2911:LEU:HD21	1.98	0.46
1:A:4150:PRO:O	1:A:4195:ARG:NH2	2.49	0.46
1:B:2665:GLU:HB3	1:B:2668:LEU:HD12	1.98	0.46
2:D:312:LEU:HD23	2:D:313:SER:N	2.31	0.46
1:A:3211:THR:HG22	1:A:3479:LEU:HD11	1.98	0.46
1:B:3759:ARG:NH2	1:B:3762:ASP:OD1	2.30	0.46
2:C:366:ASP:HB2	2:C:373:MET:HG3	1.97	0.46
2:D:381:HIS:CD2	2:D:382:PHE:CD2	3.04	0.46
1:B:3135:GLN:HB2	1:B:3136:PRO:HD3	1.97	0.46
2:D:136:ASP:O	2:D:140:GLY:N	2.49	0.46
2:D:289:SER:O	2:D:293:ILE:HG12	2.15	0.46
1:A:1708:GLU:HA	1:A:1711:VAL:HG22	1.98	0.46
1:A:3154:LEU:HD21	1:A:3532:TRP:HZ2	1.81	0.46
1:A:3615:LEU:HD11	1:A:4111:LYS:HD3	1.97	0.46
1:A:4489:LEU:HD23	1:A:4492:ILE:HD11	1.98	0.46
1:B:1728:GLY:O	1:B:1729:LYS:HG3	2.16	0.46
2:D:315:SER:O	2:D:341:VAL:HG22	2.16	0.46
1:A:1671:SER:HB2	1:A:1693:THR:HG23	1.98	0.45
1:A:2091:ARG:NH1	1:A:2320:ASP:OD1	2.49	0.45
1:A:1665:ILE:HD11	1:A:1683:GLU:HB2	1.98	0.45
1:A:2905:LEU:HD11	1:A:3652:GLU:HB3	1.98	0.45
1:A:2943:LYS:HG2	1:A:3094:PHE:CD2	2.52	0.45
1:A:2190:TYR:CE2	1:A:2385:ILE:HD11	2.51	0.45
1:B:1601:LEU:HA	1:B:1601:LEU:HD23	1.72	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:4544:ASN:OD1	1:B:4589:GLN:HB2	2.17	0.45
1:A:1459:LEU:HG	1:A:1507:MET:SD	2.57	0.45
1:B:2308:ASP:O	1:B:2312:VAL:HG12	2.16	0.45
1:B:2211:TYR:O	1:B:2214:THR:OG1	2.32	0.45
1:B:2270:PRO:HA	1:B:2273:ARG:HH11	1.82	0.45
1:B:3475:SER:O	1:B:3479:LEU:HD23	2.16	0.45
1:A:3787:THR:HA	1:A:3790:VAL:HG12	1.99	0.45
1:A:4052:SER:O	1:A:4056:GLU:HG3	2.17	0.45
1:B:1505:SER:HA	1:B:1508:LYS:HZ3	1.82	0.45
1:B:3662:ILE:HG23	1:B:3669:ILE:HB	1.97	0.45
1:B:4487:LYS:O	1:B:4490:GLN:HG2	2.16	0.45
2:C:252:CYS:HB2	2:C:279:VAL:HB	1.98	0.45
1:A:2189:MET:HB2	1:A:2191:LEU:HD23	1.99	0.45
1:A:4414:GLU:HA	1:A:4417:VAL:HG22	1.98	0.45
1:B:2969:GLY:HA2	1:B:3004:PHE:HE1	1.82	0.45
2:D:113:ARG:HA	2:D:385:SER:HB3	1.99	0.45
1:A:3182:HIS:NE2	1:A:3582:ARG:O	2.48	0.45
1:A:3452:ALA:HA	1:A:3455:ILE:HG12	1.98	0.45
1:A:3790:VAL:O	1:A:3793:GLU:HG2	2.17	0.45
1:A:3904:GLU:HG3	1:A:3941:LEU:HD21	1.99	0.45
2:C:200:ILE:HG12	2:C:207:ILE:HG12	1.99	0.45
1:B:2562:VAL:O	1:B:2804:ARG:NH1	2.40	0.45
1:A:2060:ARG:NH2	1:A:2129:GLU:HA	2.32	0.45
1:A:2793:ILE:O	1:A:2836:ARG:NH1	2.50	0.45
1:B:1508:LYS:NZ	1:B:1524:GLU:OE2	2.50	0.45
2:D:220:GLU:OE1	2:D:223:THR:OG1	2.25	0.45
2:D:249:ILE:O	2:D:261:TRP:N	2.34	0.45
2:D:320:ILE:HD11	2:D:337:HIS:CD2	2.52	0.45
1:A:2222:MET:HE1	1:A:2234:TRP:HB3	1.98	0.44
1:A:3194:LEU:HD12	1:A:3194:LEU:HA	1.85	0.44
1:A:4260:PHE:CE2	1:A:4608:PRO:HB3	2.52	0.44
1:B:1526:LYS:HE2	1:B:1589:MET:HE1	1.98	0.44
1:B:2138:ILE:HG22	1:B:2170:TYR:HB2	1.99	0.44
1:B:3881:ILE:O	1:B:3885:MET:HG2	2.16	0.44
1:A:2507:ARG:NH2	1:A:2509:LYS:HD2	2.32	0.44
1:B:2304:ASP:OD1	1:B:2684:ARG:NH2	2.51	0.44
2:D:253:SER:OG	2:D:254:ASN:N	2.49	0.44
2:D:344:VAL:HG23	2:D:355:SER:OG	2.17	0.44
1:A:3012:LEU:HD11	1:A:3066:PHE:HE2	1.82	0.44
1:A:4611:LEU:HB2	1:A:4619:ILE:HD11	1.99	0.44
1:B:1550:ILE:HG13	1:B:1641:ILE:HG22	1.98	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3741:ARG:NH2	1:A:3776:GLU:OE1	2.50	0.44
1:B:2906:ASP:HB2	1:B:3654:ARG:HA	1.99	0.44
1:B:3716:VAL:HB	1:B:3836:TYR:OH	2.17	0.44
2:C:309:PRO:HG2	2:C:325:VAL:HB	1.98	0.44
2:C:381:HIS:ND1	2:C:400:VAL:HB	2.32	0.44
2:D:381:HIS:CD2	2:D:382:PHE:HD2	2.35	0.44
1:A:1756:ILE:O	1:A:1760:GLU:HG2	2.18	0.44
1:A:2802:TRP:CZ2	1:A:2829:ALA:HB2	2.53	0.44
1:A:2899:VAL:O	1:A:2903:GLU:HG3	2.17	0.44
1:A:4009:VAL:HG13	1:A:4013:LEU:HD12	1.99	0.44
1:B:3929:VAL:O	1:B:3932:ALA:N	2.51	0.44
1:B:4534:TRP:CD2	1:B:4594:LYS:HD3	2.52	0.44
1:B:2756:LEU:HD13	1:B:2762:LEU:O	2.18	0.44
1:B:3158:ASN:ND2	1:B:3169:MET:O	2.50	0.44
1:B:3751:GLN:O	1:B:3754:ASN:N	2.50	0.44
1:B:4401:THR:HB	1:B:4404:ASN:HB2	1.98	0.44
2:D:307:PRO:HB2	2:D:310:PHE:CZ	2.52	0.44
1:A:1476:ASP:HB3	1:A:1488:ARG:NH1	2.32	0.44
1:A:1543:ARG:HA	1:A:1546:TYR:CE2	2.53	0.44
1:A:1637:LEU:O	1:A:1641:ILE:HG12	2.18	0.44
1:A:2590:PRO:O	1:A:2732:PRO:HD2	2.18	0.44
1:A:2792:TYR:OH	1:A:2842:GLU:OE1	2.32	0.44
1:A:2894:LYS:HG2	1:A:2911:LEU:HD12	2.00	0.44
1:A:3099:THR:HG23	1:A:3148:VAL:HG11	1.99	0.44
1:B:2446:ILE:HD11	1:B:2714:PRO:HB3	1.99	0.44
1:A:1478:VAL:HG23	1:A:1488:ARG:NH1	2.32	0.44
1:A:1543:ARG:HB3	1:A:1608:LEU:HD13	1.99	0.44
1:A:1895:ALA:HB2	1:A:2037:ARG:HB2	1.99	0.44
1:A:3204:GLY:O	1:A:3208:ILE:HG12	2.18	0.44
1:A:3211:THR:O	1:A:3215:VAL:HG23	2.18	0.44
1:B:1606:ASP:O	1:B:1610:LYS:HG2	2.17	0.44
1:B:4179:LEU:HD12	1:B:4223:LEU:HD22	1.98	0.44
2:C:155:ASP:HB3	2:C:198:VAL:HG12	1.99	0.44
1:A:2445:HIS:NE2	1:A:2449:LEU:HD22	2.33	0.44
1:A:3194:LEU:HD23	1:A:3500:MET:SD	2.58	0.44
1:A:4058:LEU:HD11	1:A:4062:GLN:HE21	1.83	0.44
1:A:4168:ARG:HH21	1:A:4216:CYS:HB3	1.81	0.44
1:B:2138:ILE:HD11	1:B:2165:PHE:CG	2.53	0.44
1:B:2802:TRP:CZ2	1:B:2829:ALA:HB2	2.52	0.44
2:D:186:ARG:NH1	2:D:221:VAL:O	2.51	0.44
1:A:1814:GLU:HB2	1:A:1878:LYS:HE2	1.98	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1817:HIS:CE1	1:A:1881:GLN:HG2	2.53	0.43
1:A:4423:LEU:HD12	1:A:4466:HIS:ND1	2.33	0.43
1:B:1558:LYS:HD2	1:B:1565:THR:HG21	2.00	0.43
1:B:2257:LYS:CE	1:B:2676:THR:HG21	2.48	0.43
1:A:2224:GLY:O	1:A:2346:GLN:HA	2.18	0.43
1:A:3923:ARG:NH1	1:A:3924:ILE:O	2.51	0.43
1:B:1665:ILE:HD11	1:B:1683:GLU:HG2	2.00	0.43
1:B:1969:SER:OG	1:B:4098:ASN:ND2	2.47	0.43
1:B:2605:LEU:HD13	1:B:2709:VAL:HG11	2.00	0.43
1:A:1497:VAL:O	1:A:1501:ILE:HG12	2.18	0.43
1:A:2191:LEU:HD12	4:A:4702:ATP:C6	2.53	0.43
1:A:2654:GLN:NE2	1:A:3048:GLU:HG2	2.33	0.43
1:A:2495:VAL:HG11	1:A:2526:LEU:HD21	2.00	0.43
1:A:3562:TRP:HB3	1:A:3567:LEU:HD22	2.01	0.43
1:A:3948:ILE:HA	1:A:3951:VAL:HG12	2.00	0.43
1:B:1879:LEU:HD21	1:B:1914:GLU:HB3	2.01	0.43
1:B:2063:GLU:O	1:B:2067:ASN:ND2	2.51	0.43
1:B:2134:GLN:O	1:B:2138:ILE:HG12	2.18	0.43
1:B:3172:THR:HG21	1:B:3694:SER:HB3	2.00	0.43
1:B:3521:ASP:N	1:B:3521:ASP:OD1	2.49	0.43
2:D:191:HIS:CD2	2:D:211:SER:HB3	2.54	0.43
1:A:3764:ASP:O	1:A:3768:THR:HG23	2.18	0.43
1:B:2755:MET:HE2	1:B:2807:PHE:HB2	2.00	0.43
1:B:2825:TRP:CZ3	1:B:2854:ALA:HB2	2.54	0.43
1:B:3163:LYS:HE2	1:B:3163:LYS:HB3	1.92	0.43
1:B:4485:ARG:HG2	1:B:4513:GLY:HA2	2.01	0.43
1:A:1654:PHE:HE1	1:A:1702:LEU:HD21	1.84	0.43
1:A:3133:LEU:HD11	1:A:3141:GLU:HB3	2.01	0.43
1:A:3875:MET:HE1	1:A:3883:PHE:HB2	2.00	0.43
1:B:1687:LYS:HG3	1:B:1715:LYS:HD2	2.00	0.43
1:B:2972:PHE:HZ	1:B:3008:MET:HE3	1.83	0.43
1:B:4002:LEU:O	1:B:4006:HIS:ND1	2.34	0.43
1:B:4387:TRP:HE1	1:B:4476:ILE:CD1	2.32	0.43
1:A:2980:LEU:HD21	1:A:3011:LEU:HD11	2.01	0.43
1:A:4430:ASP:OD2	1:A:4447:TYR:OH	2.36	0.43
1:B:2943:LYS:HE2	1:B:3067:THR:HB	2.01	0.43
1:B:4395:LEU:HD12	1:B:4486:ILE:HG23	1.99	0.43
1:B:4516:VAL:HG12	1:B:4519:ALA:H	1.84	0.43
2:C:378:ALA:O	2:C:405:LYS:NZ	2.35	0.43
1:A:1565:THR:C	1:A:1569:GLN:HE22	2.26	0.43
1:A:3753:LEU:HD21	1:A:3770:LEU:HD21	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:4098:ASN:N	1:A:4127:THR:O	2.51	0.43
1:B:1470:TRP:NE1	1:B:1527:LEU:HD21	2.34	0.43
1:B:1492:ASP:OD1	1:B:1493:LEU:N	2.51	0.43
2:C:214:LYS:HG2	2:C:235:GLU:C	2.43	0.43
2:D:98:PRO:N	2:D:99:PRO:HD2	2.34	0.43
2:D:259:ARG:HG2	2:D:271:GLU:HG3	2.01	0.43
1:A:1835:SER:OG	1:A:1837:GLU:OE1	2.37	0.43
1:A:3482:LEU:HD11	1:A:3770:LEU:HD23	2.00	0.43
1:B:3790:VAL:HA	1:B:3793:GLU:HG3	2.00	0.43
1:A:2773:MET:HG2	1:A:2825:TRP:NE1	2.29	0.43
1:A:3130:TYR:CZ	1:A:3132:LYS:HB2	2.53	0.43
1:A:3491:LYS:O	1:A:3495:THR:HG23	2.19	0.43
1:A:3502:THR:HG22	1:A:3542:GLN:HB3	2.00	0.43
1:B:1741:TRP:CH2	1:B:1750:VAL:HG13	2.54	0.43
1:B:2273:ARG:HA	1:B:2273:ARG:HD2	1.81	0.43
1:B:2469:VAL:HG13	1:B:2481:MET:SD	2.59	0.43
1:B:3849:VAL:HG12	1:B:3855:ARG:HG2	2.01	0.43
2:C:236:TRP:HB3	2:C:254:ASN:OD1	2.19	0.43
1:A:2149:LEU:HD11	1:A:2157:LEU:HD22	2.00	0.42
1:A:3049:GLU:H	1:A:3049:GLU:CD	2.26	0.42
1:B:1518:GLU:HG2	1:B:1519:ASP:N	2.34	0.42
1:B:2413:LEU:O	1:B:2417:ARG:HG3	2.19	0.42
1:B:2623:SER:OG	1:B:3006:GLU:OE1	2.36	0.42
1:B:2956:LEU:HD22	1:B:2989:LYS:HB3	2.00	0.42
1:B:3114:ASP:O	1:B:3116:GLU:HG2	2.19	0.42
1:B:4246:LEU:HD23	1:B:4246:LEU:HA	1.82	0.42
1:A:2584:TRP:HZ3	1:A:2734:VAL:HB	1.84	0.42
1:A:4460:LEU:HD12	1:A:4461:PRO:HD2	2.01	0.42
1:B:2190:TYR:CE2	1:B:2385:ILE:HD11	2.53	0.42
1:A:1698:ILE:HD12	1:A:1701:TRP:NE1	2.34	0.42
1:A:2823:ARG:HH22	1:A:2868:SER:HB3	1.84	0.42
1:A:3973:LEU:HD23	1:A:3973:LEU:O	2.19	0.42
2:C:176:LEU:HD13	2:C:207:ILE:HD11	2.01	0.42
2:D:387:ASP:OD1	2:D:388:PHE:N	2.52	0.42
1:A:2040:ALA:HB1	1:A:4257:ASP:HB3	2.02	0.42
1:A:2534:ILE:HD12	1:A:2534:ILE:H	1.83	0.42
1:A:3451:TYR:HA	1:A:3454:LEU:HG	2.02	0.42
1:A:3627:LEU:HD12	1:A:3664:LEU:HD22	2.01	0.42
1:B:2043:LYS:HE2	1:B:2043:LYS:HB2	1.71	0.42
1:B:2837:LEU:HD13	1:B:2842:GLU:HB3	2.00	0.42
1:B:3148:VAL:O	1:B:3152:GLN:HG3	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:212:ARG:HG3	2:C:236:TRP:CG	2.55	0.42
1:A:1702:LEU:HD23	1:A:1702:LEU:HA	1.92	0.42
1:A:2387:LEU:HD23	1:A:2467:ARG:CZ	2.49	0.42
1:B:1888:CYS:HA	1:B:2039:LEU:HD22	2.01	0.42
1:B:2643:ARG:HH11	1:B:2648:VAL:HG23	1.84	0.42
1:B:3483:SER:O	1:B:3486:ARG:HG2	2.18	0.42
1:B:3877:HIS:CE1	1:B:4151:PRO:HB3	2.55	0.42
2:C:193:HIS:HB3	2:C:212:ARG:HB3	2.01	0.42
1:A:1490:TRP:HH2	1:A:1537:TRP:CD1	2.38	0.42
1:A:2221:MET:SD	1:A:2361:MET:HE1	2.60	0.42
1:A:2607:SER:HA	1:A:2610:ARG:NE	2.32	0.42
1:A:3216:GLU:HA	1:A:3219:ARG:NH1	2.35	0.42
1:B:3567:LEU:HD12	1:B:3568:PRO:HD2	2.02	0.42
2:D:100:GLU:HB3	2:D:407:TRP:CZ3	2.55	0.42
2:D:243:ASN:ND2	2:D:247:THR:H	2.17	0.42
1:A:1534:PHE:HA	1:A:1537:TRP:HB3	2.02	0.42
1:A:3727:LYS:O	1:A:3731:LEU:HD13	2.19	0.42
1:B:1581:LYS:HA	1:B:1584:LYS:HE3	2.01	0.42
1:B:2224:GLY:O	1:B:2346:GLN:HA	2.20	0.42
1:B:3222:LEU:HD22	1:B:3472:VAL:HG21	2.01	0.42
1:A:1572:SER:O	1:A:1576:LEU:HG	2.20	0.42
1:B:2073:PHE:HZ	1:B:2096:VAL:HG21	1.85	0.42
1:B:2319:LEU:HD13	1:B:2359:CYS:SG	2.60	0.42
1:B:2324:LEU:HD22	1:B:2332:ARG:HB3	2.01	0.42
1:B:2989:LYS:NZ	2:C:276:GLU:O	2.42	0.42
1:B:4097:LYS:HA	1:B:4127:THR:HB	2.01	0.42
1:B:4099:VAL:HB	1:B:4106:LEU:HD21	2.01	0.42
2:D:365:TRP:HD1	2:D:373:MET:HA	1.84	0.42
1:B:1514:LYS:H	1:B:1514:LYS:HG2	1.62	0.42
1:B:2517:TYR:CE2	1:B:2521:ILE:HD13	2.55	0.42
1:B:4115:SER:O	1:B:4116:LEU:HD12	2.20	0.42
2:D:228:LYS:HB2	2:D:266:LYS:HE2	2.02	0.42
1:A:1931:ASN:HD21	1:A:2316:ASN:HB2	1.84	0.42
1:A:3161:LEU:HD23	1:A:3168:THR:HG22	2.01	0.42
1:A:4187:HIS:ND1	1:A:4252:TYR:OH	2.49	0.42
1:B:2437:LEU:HD21	1:B:2451:ARG:HG3	2.01	0.42
1:B:2999:VAL:HG11	1:B:3005:LEU:HG	2.02	0.42
1:B:3970:VAL:HB	1:B:3989:ARG:NH1	2.35	0.42
2:C:109:SER:HB3	2:C:128:GLU:HB2	2.01	0.42
1:A:2221:MET:HE1	1:A:2355:THR:HG22	2.02	0.41
1:A:4248:ALA:HB2	1:A:4269:LEU:HD12	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:4285:ALA:O	1:A:4293:ASP:HB2	2.20	0.41
1:B:1469:VAL:O	1:B:1473:TYR:HB2	2.20	0.41
1:B:2590:PRO:O	1:B:2732:PRO:HD2	2.20	0.41
2:D:155:ASP:HB3	2:D:168:CYS:SG	2.60	0.41
1:A:1640:ILE:HD11	1:A:1653:HIS:HB3	2.01	0.41
1:A:2060:ARG:HH21	1:A:2129:GLU:HA	1.84	0.41
1:A:2598:GLY:HA3	1:A:2795:SER:HB2	2.00	0.41
1:A:2662:PHE:HD1	1:A:2709:VAL:HG13	1.85	0.41
1:A:4223:LEU:HD12	1:A:4223:LEU:HA	1.92	0.41
1:A:4444:GLN:HG2	1:A:4449:ARG:HG3	2.01	0.41
1:B:2756:LEU:HD23	1:B:2756:LEU:HA	1.85	0.41
1:B:2848:GLU:O	1:B:2852:THR:HG23	2.21	0.41
1:B:3846:LEU:HD22	1:B:3855:ARG:HD2	2.01	0.41
1:B:3973:LEU:O	1:B:3973:LEU:HD23	2.20	0.41
1:B:4185:TRP:O	1:B:4189:ILE:HG12	2.20	0.41
1:B:4339:MET:HE2	1:B:4339:MET:HB3	1.87	0.41
1:B:4453:ASN:O	1:B:4457:LYS:HG3	2.20	0.41
2:D:95:ILE:HD12	2:D:364:VAL:HG11	2.03	0.41
2:D:128:GLU:HA	2:D:152:SER:HB2	2.02	0.41
2:D:285:ALA:HA	2:D:346:PHE:CD2	2.54	0.41
1:A:1741:TRP:CH2	1:A:1750:VAL:HG13	2.54	0.41
1:A:3659:ARG:NH2	1:B:3629:PHE:O	2.52	0.41
1:B:2172:ARG:HH22	1:B:2209:GLN:HG3	1.85	0.41
1:B:2265:TYR:OH	1:B:2311:TRP:O	2.24	0.41
1:B:3036:GLY:O	1:B:3040:GLU:HG2	2.20	0.41
2:D:194:ASN:C	2:D:211:SER:HG	2.24	0.41
2:D:381:HIS:CD2	2:D:382:PHE:H	2.39	0.41
1:A:1522:SER:O	1:A:1526:LYS:HG2	2.19	0.41
1:A:1962:ARG:NH2	1:A:2314:ASN:OD1	2.54	0.41
1:A:2172:ARG:NH2	1:A:2205:GLU:HG3	2.35	0.41
1:A:3135:GLN:HB2	1:A:3136:PRO:HD3	2.01	0.41
1:A:4413:PHE:CD1	1:A:4492:ILE:HD12	2.55	0.41
1:B:2896:ARG:HA	1:B:2896:ARG:HD3	1.81	0.41
1:B:3214:GLN:O	1:B:3218:LEU:HD23	2.20	0.41
1:B:4480:SER:O	1:B:4484:GLU:HG3	2.20	0.41
2:D:96:PRO:HA	2:D:408:GLU:O	2.21	0.41
2:D:362:LEU:N	2:D:376:LEU:O	2.33	0.41
1:A:1724:VAL:HG23	1:A:1727:PHE:HD2	1.86	0.41
1:A:2054:LEU:HD21	1:A:2097:LEU:HD22	2.02	0.41
1:A:2769:LEU:O	1:A:2773:MET:HG3	2.20	0.41
1:A:3772:ASN:OD1	1:A:3775:ARG:NH1	2.53	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:4190:ILE:HD12	1:A:4201:TRP:CZ2	2.55	0.41
1:B:1882:THR:HA	1:B:2048:LEU:HD23	2.01	0.41
2:C:233:HIS:CE1	2:C:259:ARG:HD2	2.55	0.41
2:D:211:SER:OG	2:D:212:ARG:N	2.54	0.41
1:A:2091:ARG:HD2	1:A:2357:SER:HB2	2.02	0.41
1:A:3044:LEU:HD22	1:A:3049:GLU:CG	2.51	0.41
1:A:3692:LEU:O	1:A:3696:VAL:HG22	2.20	0.41
1:A:3993:ILE:HD13	1:A:3993:ILE:HA	1.98	0.41
1:A:4069:ILE:HD13	1:A:4080:ALA:HA	2.02	0.41
1:B:2465:ALA:HB2	1:B:2493:TYR:CD1	2.56	0.41
1:B:3478:LEU:HD12	1:B:3767:ILE:HG23	2.00	0.41
2:C:395:VAL:HG23	2:C:409:CYS:SG	2.61	0.41
1:A:2176:THR:O	1:A:2180:GLU:HG2	2.21	0.41
1:A:2896:ARG:HA	1:A:2896:ARG:HD2	1.83	0.41
1:A:3723:ASP:OD1	1:A:3724:VAL:N	2.52	0.41
1:A:4106:LEU:HD13	1:A:4138:LEU:HD22	2.02	0.41
1:B:1487:ILE:HD12	1:B:1537:TRP:NE1	2.36	0.41
1:B:1836:PHE:HA	1:B:1839:LEU:HB2	2.03	0.41
2:C:113:ARG:HD2	2:C:155:ASP:HA	2.01	0.41
2:D:395:VAL:HG23	2:D:407:TRP:HD1	1.86	0.41
1:A:1556:ASP:O	1:A:1560:LEU:HG	2.21	0.41
1:A:1735:PRO:O	1:A:1739:ILE:HG12	2.21	0.41
1:A:3709:GLN:HG3	1:A:3809:SER:HB3	2.03	0.41
1:A:3728:ARG:HG3	1:A:3791:MET:HE1	2.02	0.41
1:A:4549:GLN:HG3	1:A:4587:LEU:HB2	2.02	0.41
1:B:2183:LYS:O	1:B:2187:GLN:HG2	2.21	0.41
1:B:2452:LEU:HD23	1:B:2452:LEU:HA	1.93	0.41
1:B:4433:ASP:HB3	1:B:4448:LEU:HD21	2.02	0.41
2:D:107:HIS:CE1	2:D:133:LYS:HG3	2.56	0.41
1:A:1946:VAL:HG22	1:A:2006:VAL:HG21	2.02	0.41
1:A:2951:ALA:HB1	1:A:2956:LEU:HB2	2.02	0.41
1:A:3114:ASP:O	1:A:3116:GLU:HG2	2.20	0.41
1:A:3931:GLN:O	1:A:3935:VAL:HG23	2.21	0.41
1:A:4424:LEU:HA	1:A:4482:PHE:HZ	1.86	0.41
1:A:4503:GLU:H	1:A:4503:GLU:HG2	1.73	0.41
1:B:1721:VAL:HA	1:B:1724:VAL:HG12	2.03	0.41
1:B:1733:ILE:HB	1:B:1791:VAL:HG21	2.03	0.41
1:B:2818:VAL:O	1:B:2822:ILE:HG12	2.21	0.41
1:B:3214:GLN:HE22	1:B:3759:ARG:NH1	2.19	0.41
1:B:3779:GLU:HG3	1:B:3783:LYS:HE3	2.03	0.41
1:B:3790:VAL:O	1:B:3793:GLU:HG3	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:4172:SER:HB2	1:B:4173:PRO:HD3	2.02	0.41
2:D:239:MET:HE3	2:D:239:MET:HB2	1.90	0.41
2:D:269:LYS:NZ	2:D:325:VAL:HG12	2.36	0.41
1:A:1470:TRP:CE3	1:A:1470:TRP:HA	2.55	0.41
1:A:1519:ASP:OD1	1:A:1520:ALA:N	2.54	0.41
1:A:2134:GLN:O	1:A:2138:ILE:HG12	2.21	0.41
1:A:2387:LEU:HD21	1:A:2463:HIS:HB3	2.03	0.41
1:A:3941:LEU:HD23	1:A:3944:PHE:CD2	2.56	0.41
1:A:4437:VAL:HG21	1:A:4448:LEU:HD13	2.03	0.41
1:B:1547:LEU:HD12	1:B:1608:LEU:HD22	2.03	0.41
1:B:2018:MET:HE3	1:B:2018:MET:HB2	1.80	0.41
1:A:1473:TYR:OH	1:A:1493:LEU:HB2	2.21	0.40
1:A:4292:LYS:HG3	1:A:4293:ASP:N	2.35	0.40
1:B:1895:ALA:HB2	1:B:2037:ARG:HB2	2.03	0.40
1:B:2422:ILE:HD13	1:B:2487:GLU:HA	2.03	0.40
2:D:236:TRP:HB3	2:D:254:ASN:HD22	1.83	0.40
1:A:2619:GLY:O	1:A:3014:ASN:ND2	2.55	0.40
1:B:2937:GLY:C	1:B:3070:PRO:HD3	2.46	0.40
1:B:3045:ASP:OD1	1:B:3045:ASP:N	2.53	0.40
1:A:2756:LEU:HD23	1:A:2756:LEU:HA	1.84	0.40
1:A:3148:VAL:O	1:A:3152:GLN:HG3	2.20	0.40
1:B:2220:LEU:HB2	1:B:2342:MET:HG2	2.03	0.40
1:B:2776:PHE:HZ	1:B:2846:THR:HG23	1.86	0.40
1:B:3692:LEU:O	1:B:3696:VAL:HG22	2.21	0.40
1:A:1547:LEU:HD23	1:A:1547:LEU:HA	1.90	0.40
1:A:2635:PHE:HB3	1:A:2650:LEU:HD21	2.03	0.40
1:A:3033:CYS:SG	1:A:3054:PHE:HB2	2.61	0.40
1:A:3783:LYS:O	1:A:3786:GLU:HG2	2.21	0.40
1:A:4172:SER:HB2	1:A:4173:PRO:HD3	2.02	0.40
1:B:1945:PHE:HB3	1:B:1978:ILE:HD11	2.03	0.40
1:B:2804:ARG:HA	1:B:2804:ARG:HD2	1.83	0.40
1:B:3107:LYS:HD2	1:B:3144:VAL:HG21	2.03	0.40
2:D:188:MET:HE3	2:D:188:MET:HB2	1.96	0.40
1:A:3474:ARG:HH22	1:A:3768:THR:HG22	1.86	0.40
1:B:2297:LYS:O	1:B:2338:ASN:ND2	2.39	0.40
1:B:2721:LYS:HE2	1:B:2721:LYS:HB2	1.94	0.40
1:B:3034:LYS:HE3	1:B:3050:LEU:HD11	2.04	0.40
1:B:3217:GLU:O	1:B:3220:ARG:HG2	2.21	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%)	2879 (98%)	50 (2%)	0	100	100
1	B	2929/4646 (63%)	2868 (98%)	61 (2%)	0	100	100
2	C	320/410 (78%)	310 (97%)	10 (3%)	0	100	100
2	D	317/410 (77%)	305 (96%)	12 (4%)	0	100	100
All	All	6495/10112 (64%)	6362 (98%)	133 (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
2	C	287/364 (79%)	287 (100%)	0	100	100
2	D	284/364 (78%)	284 (100%)	0	100	100
All	All	5781/8978 (64%)	5781 (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 (72) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	1495	ASN
1	A	1569	GLN
1	A	1779	HIS
1	A	1850	GLN
1	A	1950	GLN
1	A	1974	GLN
1	A	1979	GLN
1	A	2067	ASN
1	A	2212	GLN
1	A	2485	GLN
1	A	2549	GLN
1	A	2577	HIS
1	A	2588	HIS
1	A	2707	GLN
1	A	2781	GLN
1	A	2786	GLN
1	A	3061	ASN
1	A	3158	ASN
1	A	3198	GLN
1	A	3499	GLN
1	A	3526	GLN
1	A	3538	GLN
1	A	3709	GLN
1	A	3820	GLN
1	A	3952	GLN
1	A	4012	ASN
1	A	4062	GLN
1	A	4100	HIS
1	A	4114	HIS
1	A	4174	ASN
1	A	4490	GLN
1	A	4506	ASN
1	A	4530	GLN
1	A	4566	GLN
1	B	1495	ASN
1	B	1559	HIS
1	B	1569	GLN
1	B	1643	ASN
1	B	1755	GLN
1	B	1841	GLN
1	B	1950	GLN
1	B	1973	GLN
1	B	1976	GLN

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Mol	Chain	Res	Type
1	B	1979	GLN
1	B	2047	GLN
1	B	2067	ASN
1	B	2217	ASN
1	B	2263	HIS
1	B	2464	GLN
1	B	2485	GLN
1	B	2637	HIS
1	B	2654	GLN
1	B	2752	ASN
1	B	2960	GLN
1	B	3063	HIS
1	B	3119	ASN
1	B	3233	ASN
1	B	3526	GLN
1	B	3735	GLN
1	B	3744	GLN
1	B	3820	GLN
1	B	3877	HIS
1	B	4012	ASN
1	B	4098	ASN
1	B	4156	ASN
1	B	4191	GLN
1	B	4249	GLN
1	B	4258	ASN
2	C	206	HIS
2	D	222	GLN
2	D	277	HIS
2	D	381	HIS

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 (i)

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	$\#\|Z\| > 2$
3	ADP	B	4701	5	24,29,29	0.88	0	29,45,45	1.24	2 (6%)
4	ATP	B	4702	5	28,33,33	0.70	0	34,52,52	0.59	1 (2%)
3	ADP	A	4703	-	24,29,29	0.88	0	29,45,45	1.22	2 (6%)
3	ADP	A	4704	-	24,29,29	0.87	0	29,45,45	1.19	2 (6%)
3	ADP	B	4703	-	24,29,29	0.88	0	29,45,45	1.23	2 (6%)
3	ADP	A	4701	5	24,29,29	0.86	0	29,45,45	1.26	2 (6%)
3	ADP	B	4704	-	24,29,29	0.89	0	29,45,45	1.19	2 (6%)
4	ATP	A	4702	5	28,33,33	0.69	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
3	ADP	B	4701	5	-	4/12/32/32	0/3/3/3
4	ATP	B	4702	5	-	4/18/38/38	0/3/3/3
3	ADP	A	4703	-	-	2/12/32/32	0/3/3/3
3	ADP	A	4704	-	-	3/12/32/32	0/3/3/3
3	ADP	B	4703	-	-	1/12/32/32	0/3/3/3
3	ADP	A	4701	5	-	2/12/32/32	0/3/3/3
3	ADP	B	4704	-	-	1/12/32/32	0/3/3/3
4	ATP	A	4702	5	-	3/18/38/38	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})
3	B	4703	ADP	N3-C2-N1	-3.75	123.58	128.67
3	A	4701	ADP	N3-C2-N1	-3.75	123.58	128.67
3	B	4704	ADP	N3-C2-N1	-3.73	123.60	128.67
3	A	4703	ADP	N3-C2-N1	-3.71	123.64	128.67
3	B	4701	ADP	N3-C2-N1	-3.68	123.68	128.67
3	A	4704	ADP	N3-C2-N1	-3.68	123.68	128.67
3	A	4701	ADP	C4-C5-N7	-2.66	106.52	109.34
3	B	4701	ADP	C4-C5-N7	-2.56	106.63	109.34
3	B	4704	ADP	C4-C5-N7	-2.52	106.67	109.34
3	A	4704	ADP	C4-C5-N7	-2.51	106.68	109.34
3	A	4703	ADP	C4-C5-N7	-2.51	106.69	109.34
3	B	4703	ADP	C4-C5-N7	-2.48	106.71	109.34
4	B	4702	ATP	C5-C6-N6	2.34	123.87	120.31
4	A	4702	ATP	C5-C6-N6	2.26	123.75	120.31

There are no chirality outliers.

All (20) torsion outliers are listed below:

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

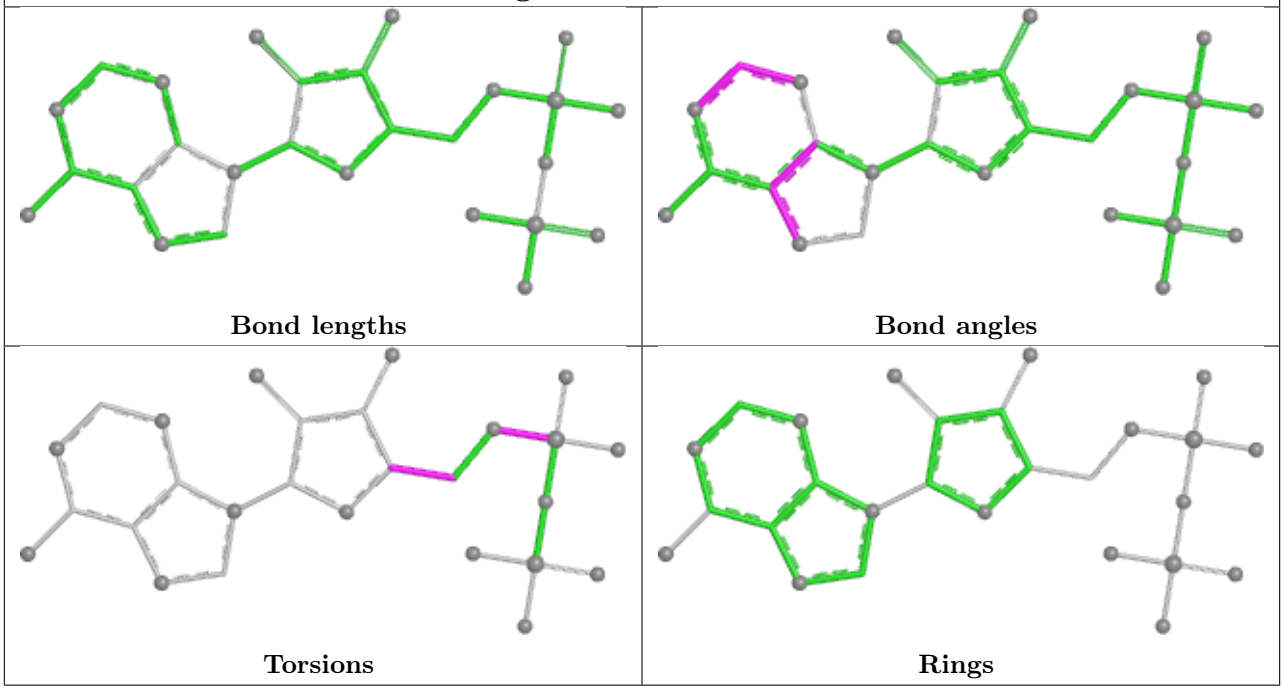
There are no ring outliers.

3 monomers are involved in 4 short contacts:

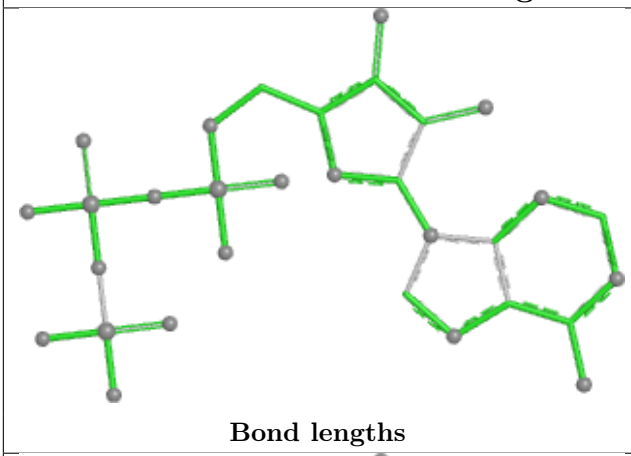
Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	B	4701	ADP	1	0
3	B	4704	ADP	1	0
4	A	4702	ATP	2	0

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.

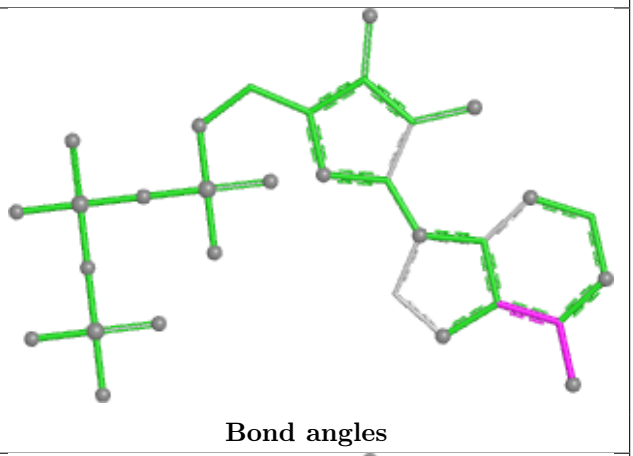
Ligand ADP B 4701



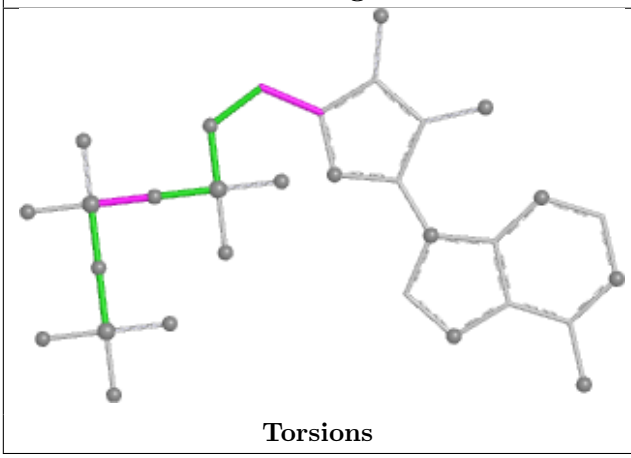
Ligand ATP B 4702



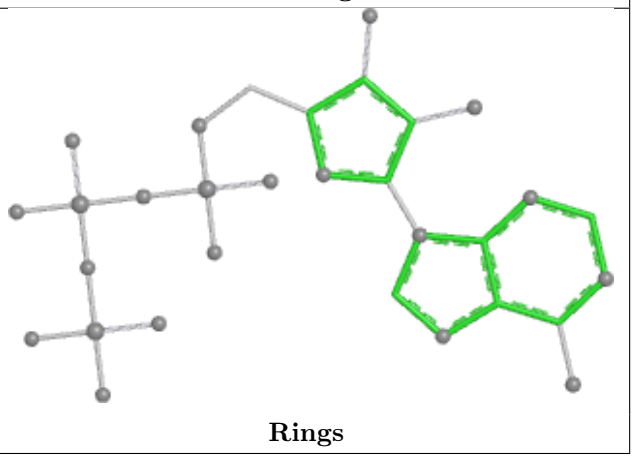
Bond lengths



Bond angles

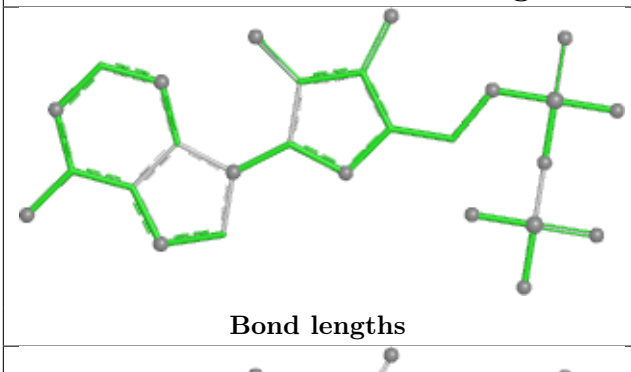


Torsions

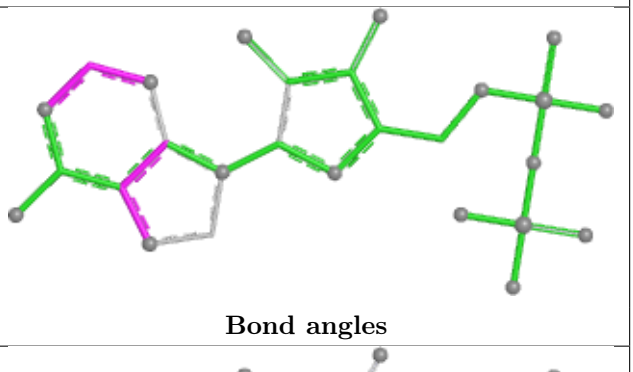


Rings

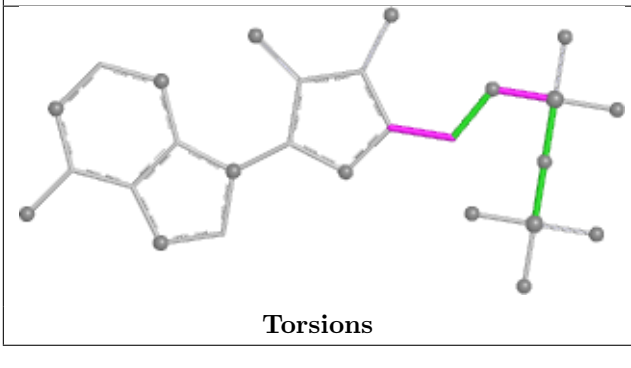
Ligand ADP A 4703



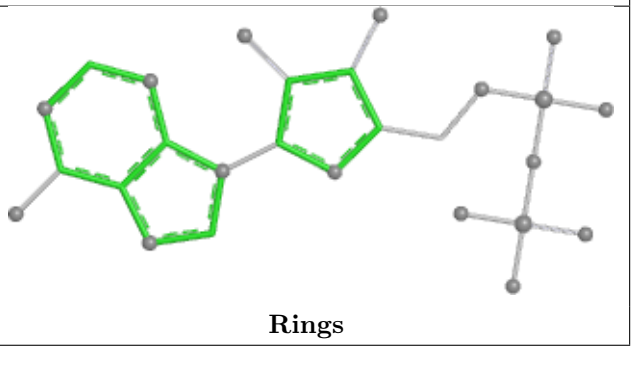
Bond lengths



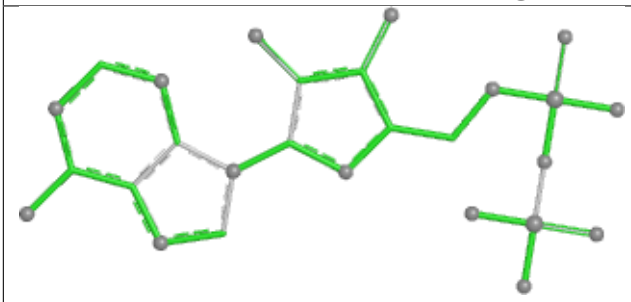
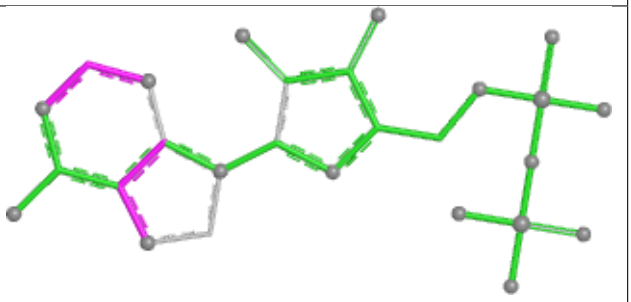
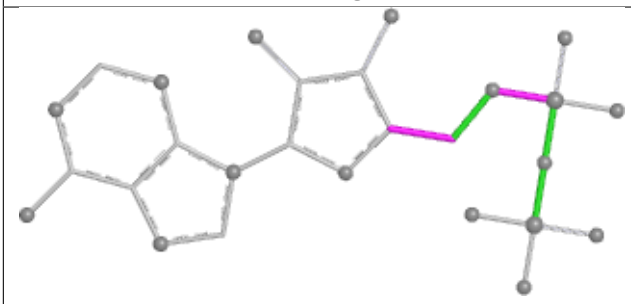
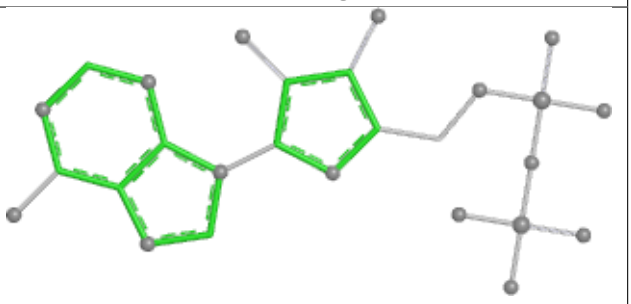
Bond angles

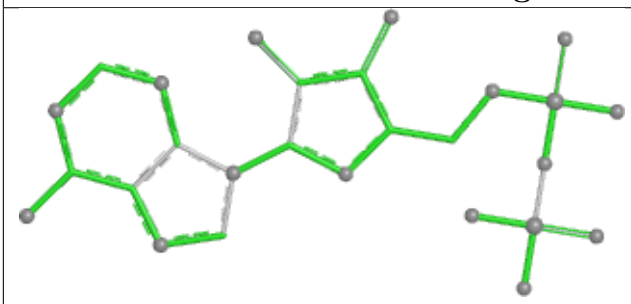
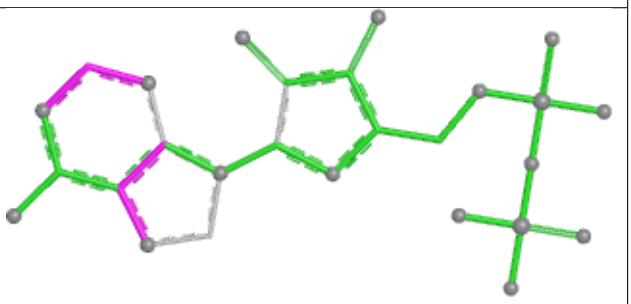
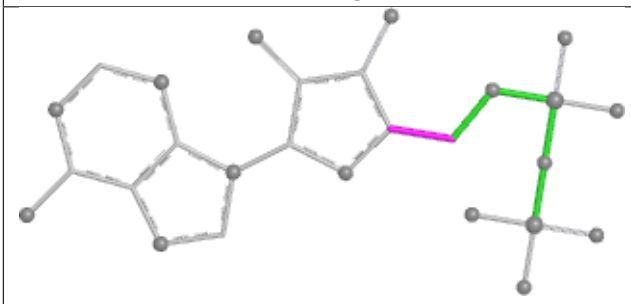
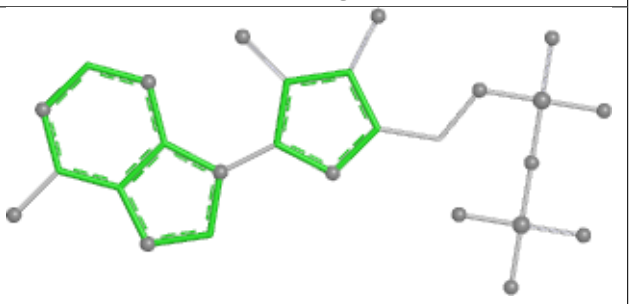


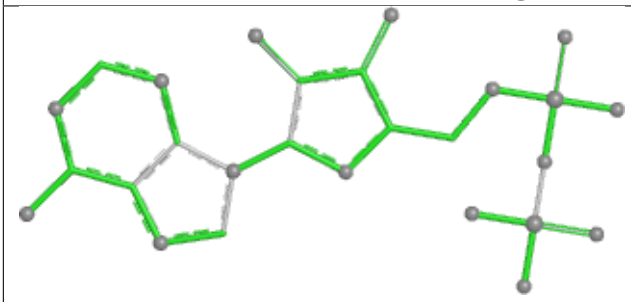
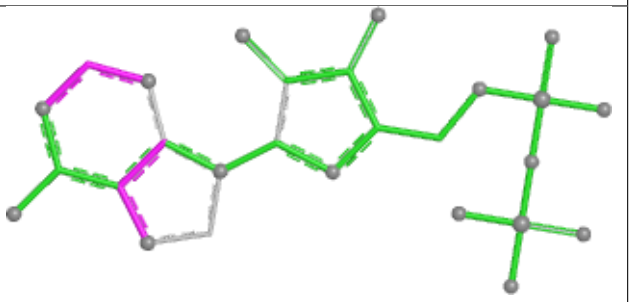
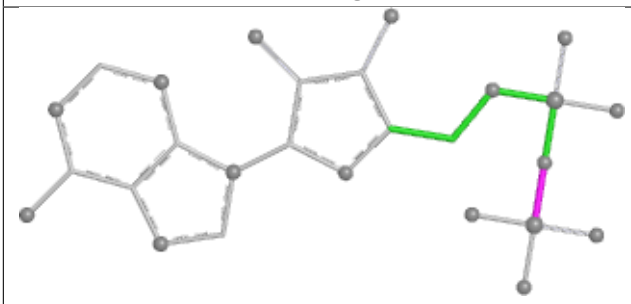
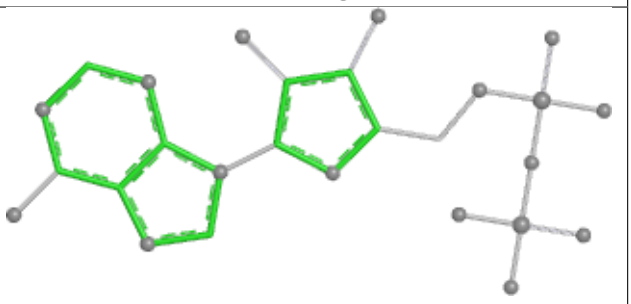
Torsions

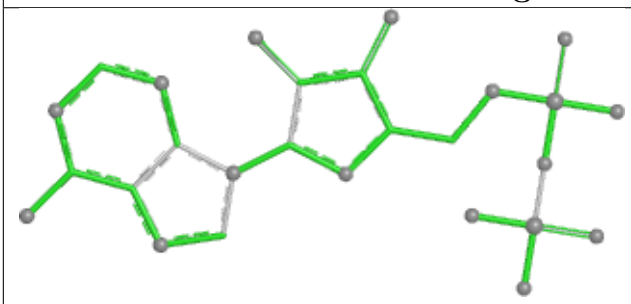
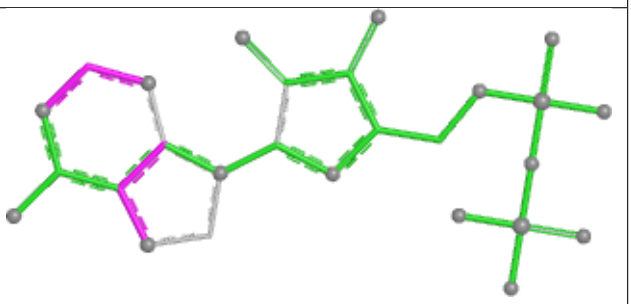
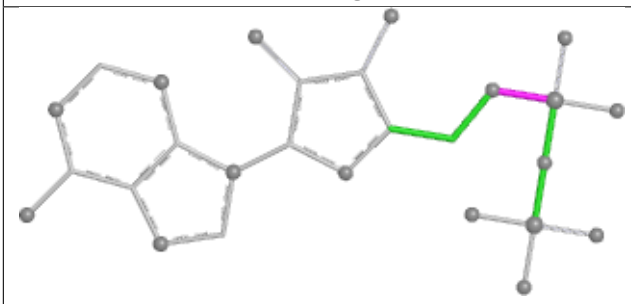
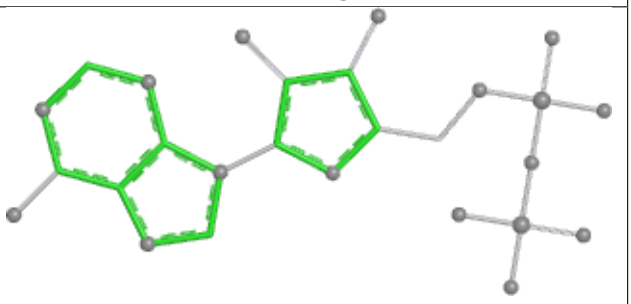


Rings

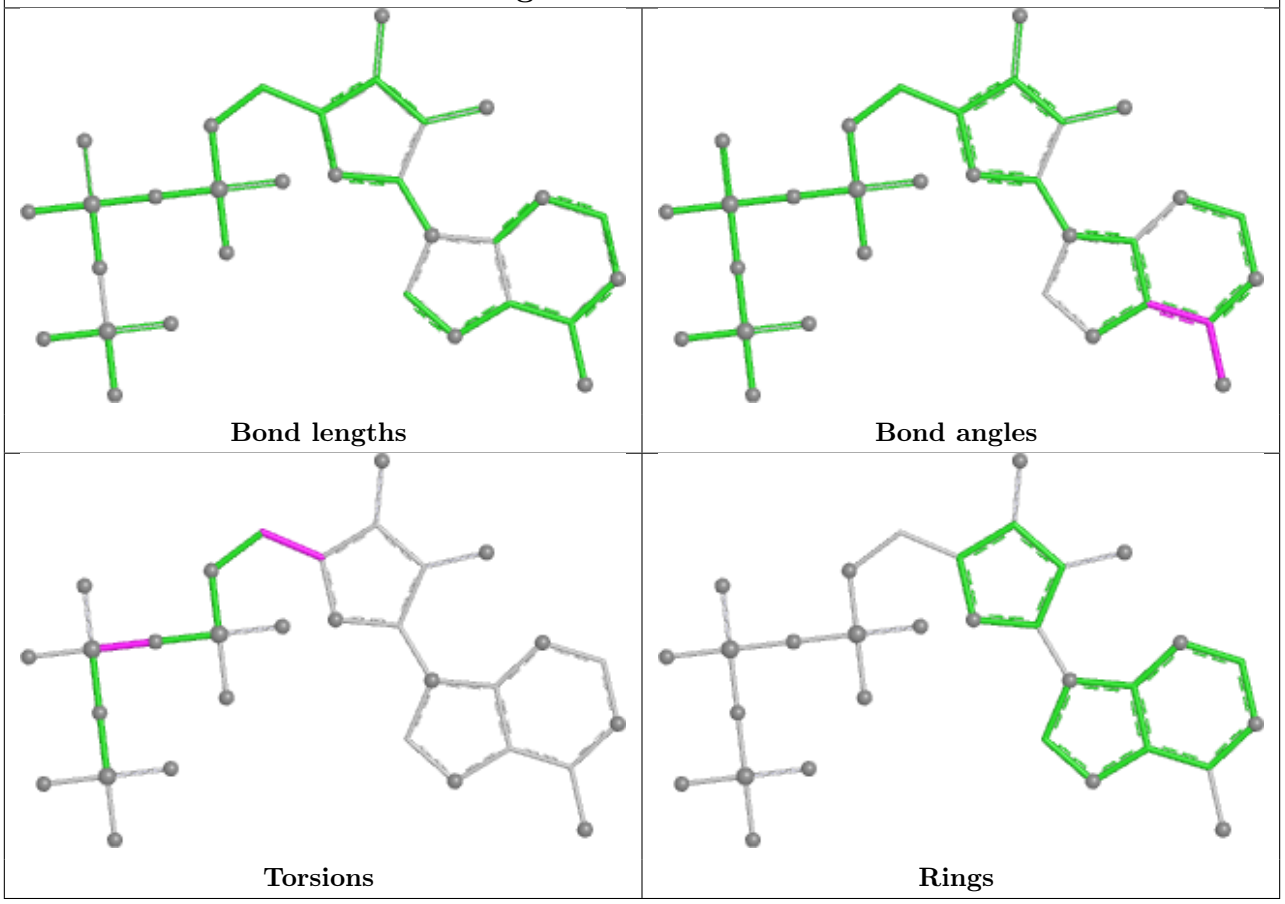
Ligand ADP A 4704	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand ADP B 4703	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand ADP A 4701	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand ADP B 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.

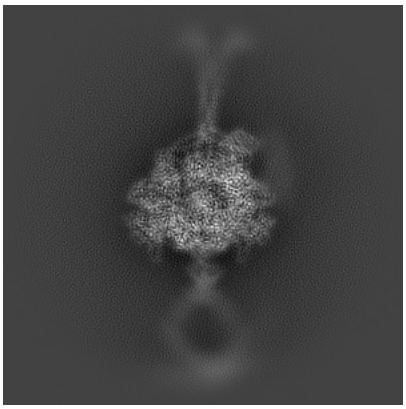
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-47380. These allow visual inspection of the internal detail of the map and identification of artifacts.

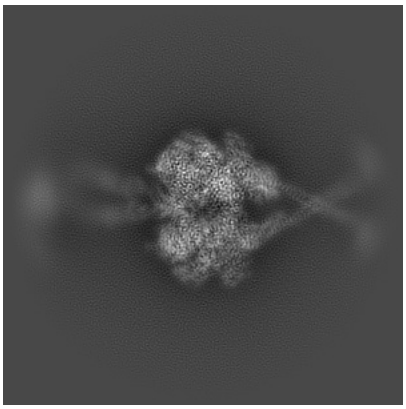
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

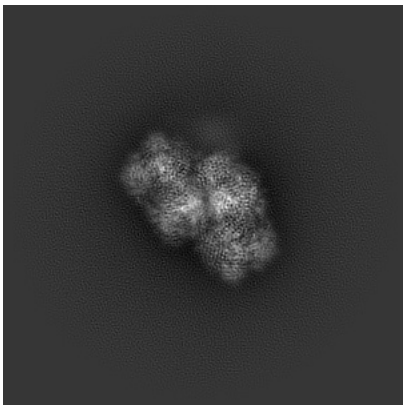
6.1.1 Primary map



X

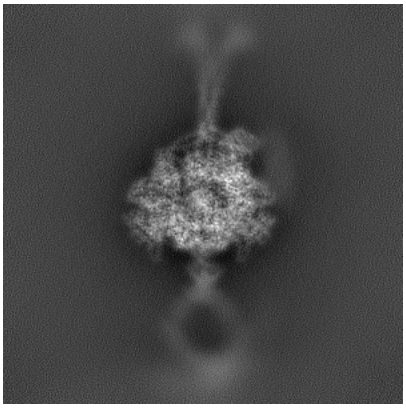


Y

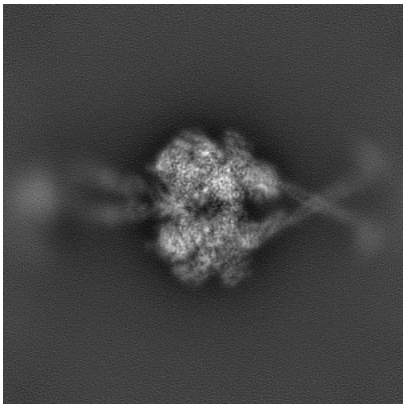


Z

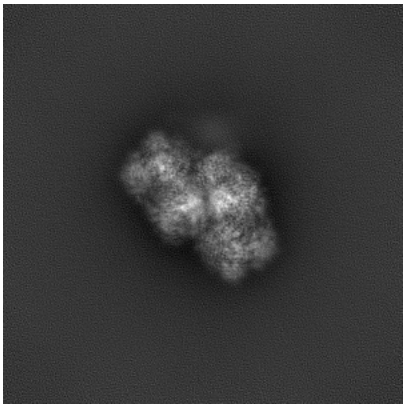
6.1.2 Raw map



X



Y



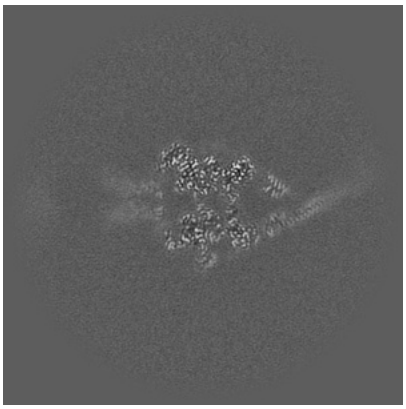
Z

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

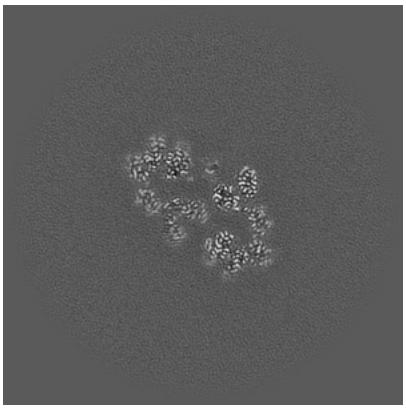
6.2 Central slices (i)

6.2.1 Primary map

X Index: 192



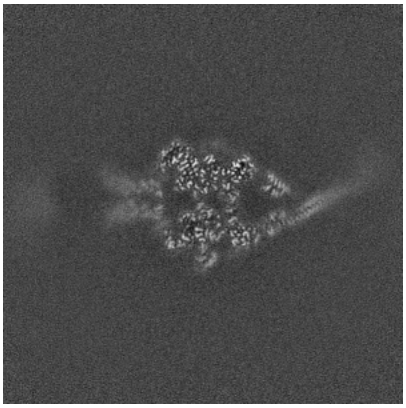
Y Index: 192



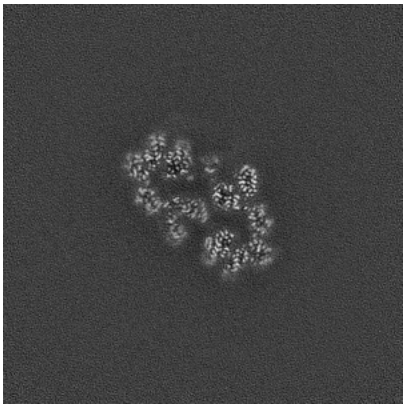
Z Index: 192

6.2.2 Raw map

X Index: 192



Y Index: 192

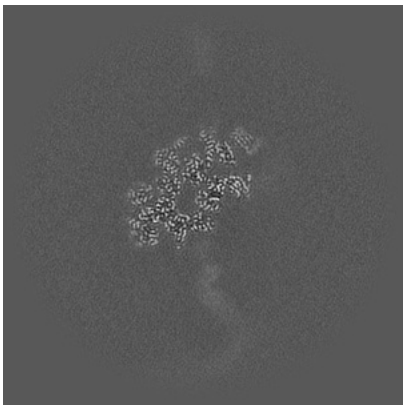


Z Index: 192

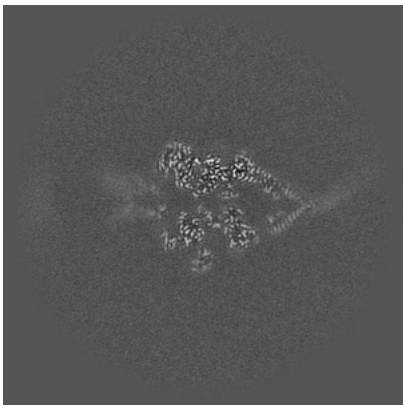
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

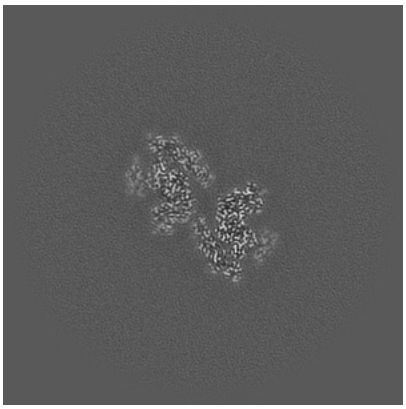
6.3.1 Primary map



X Index: 215

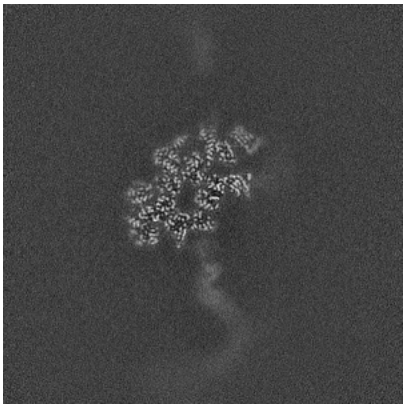


Y Index: 196

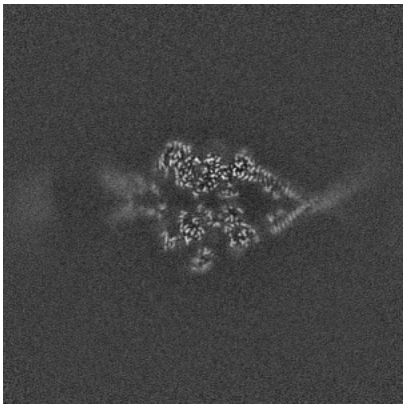


Z Index: 173

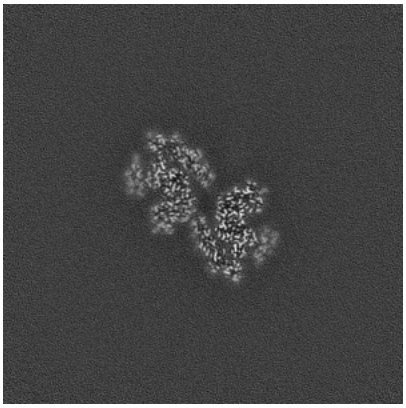
6.3.2 Raw map



X Index: 215



Y Index: 196

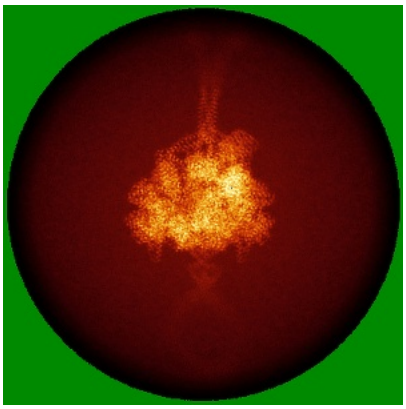


Z Index: 173

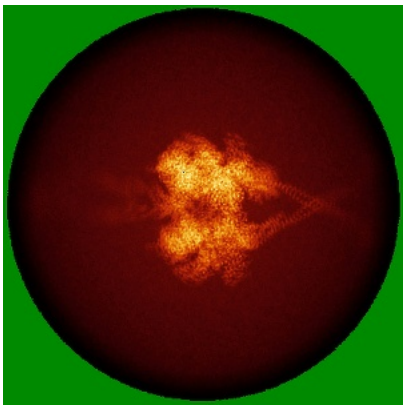
The images above show the largest variance slices of the map in three orthogonal directions.

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

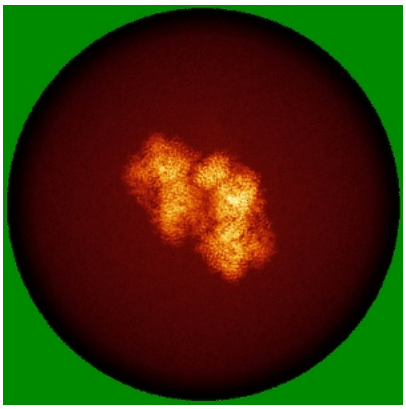
6.4.1 Primary map



X

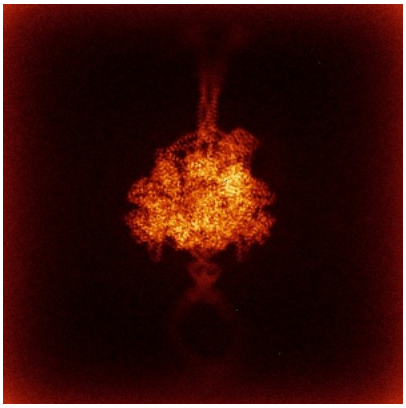


Y

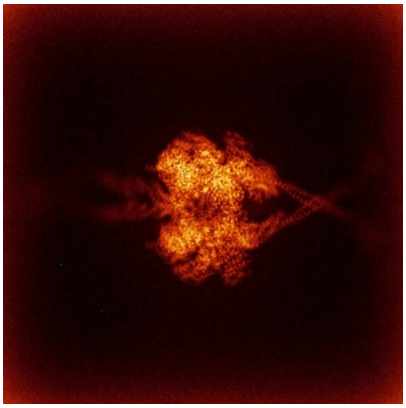


Z

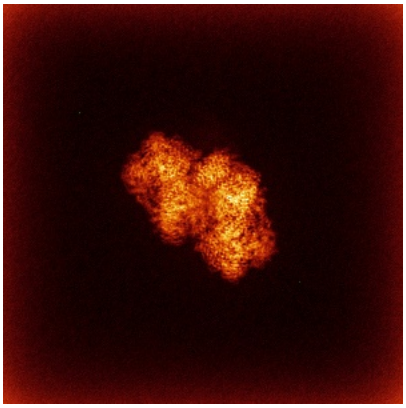
6.4.2 Raw map



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.

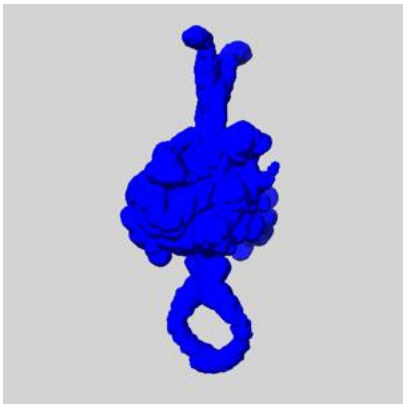
6.6 Mask visualisation (i)

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

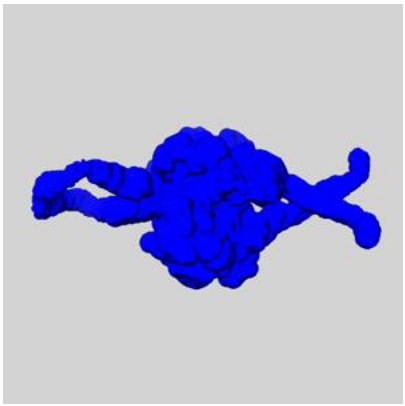
A mask typically either:

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

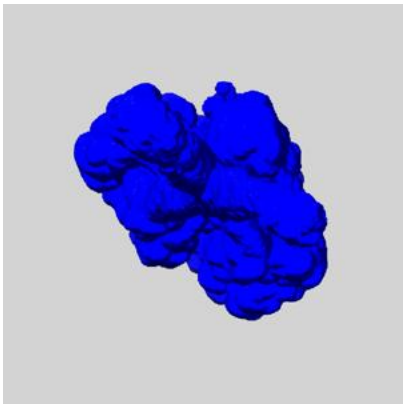
6.6.1 emd_47380_msk_1.map (i)



X



Y

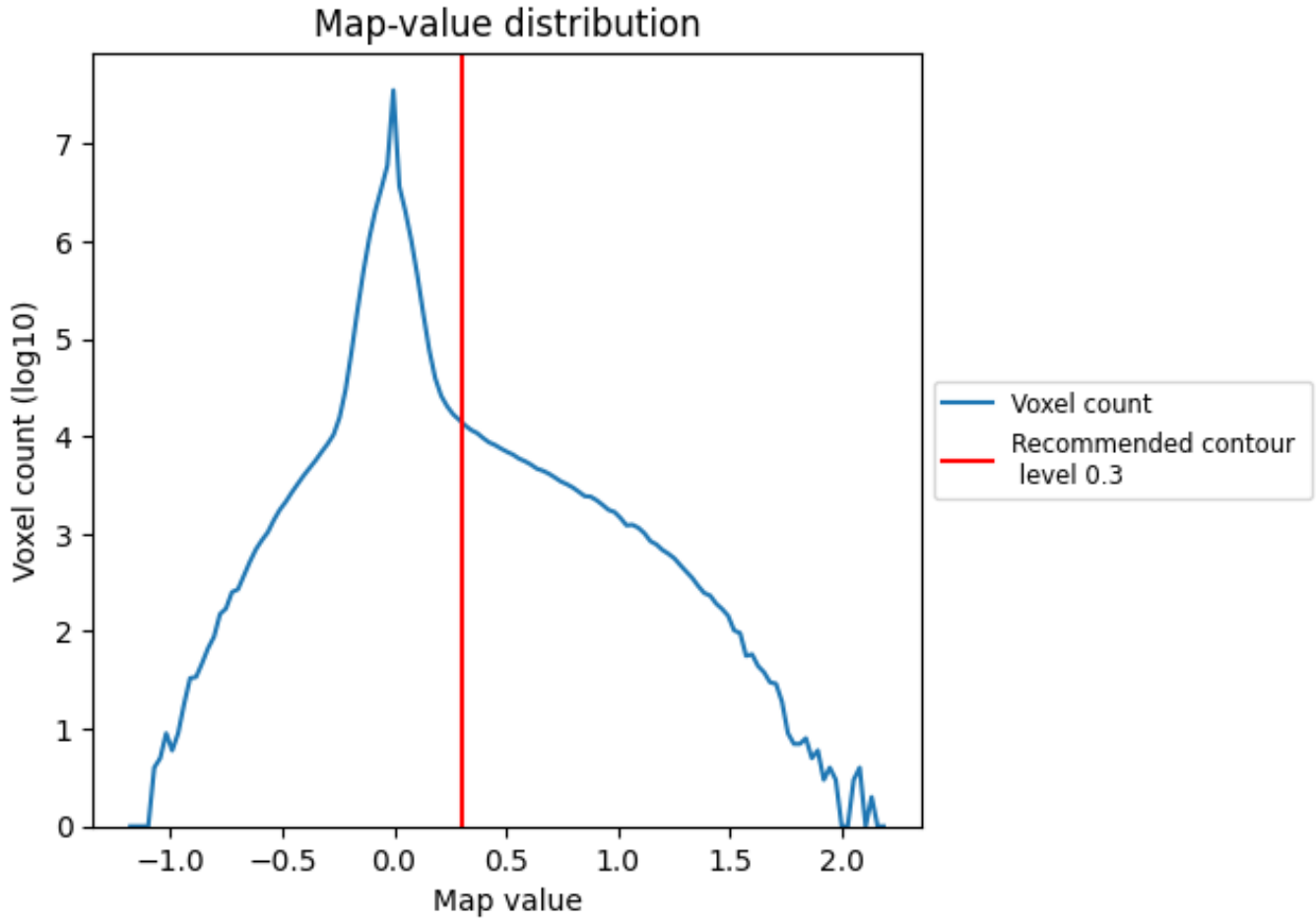


Z

7 Map analysis

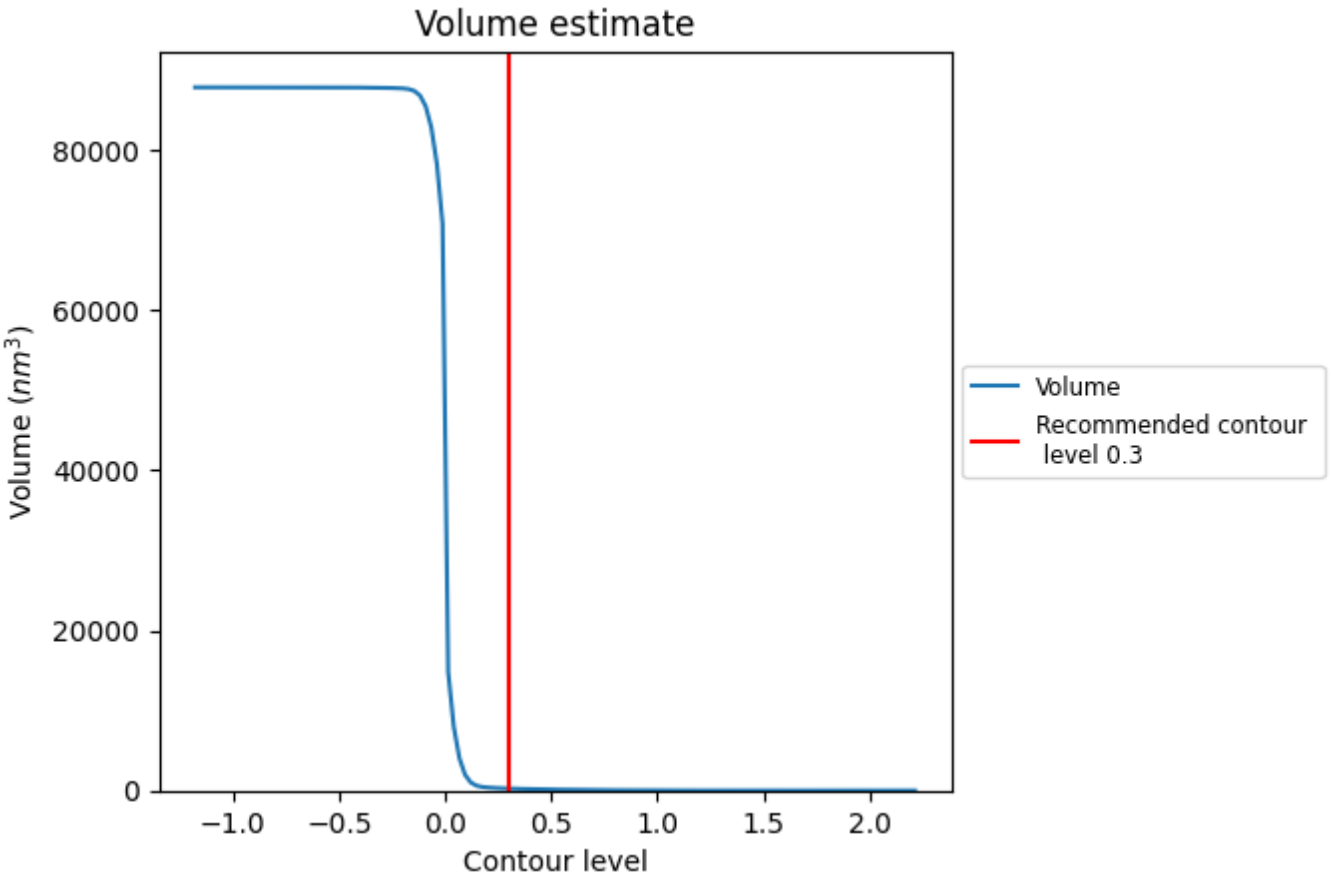
This section contains the results of statistical analysis of the map.

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.

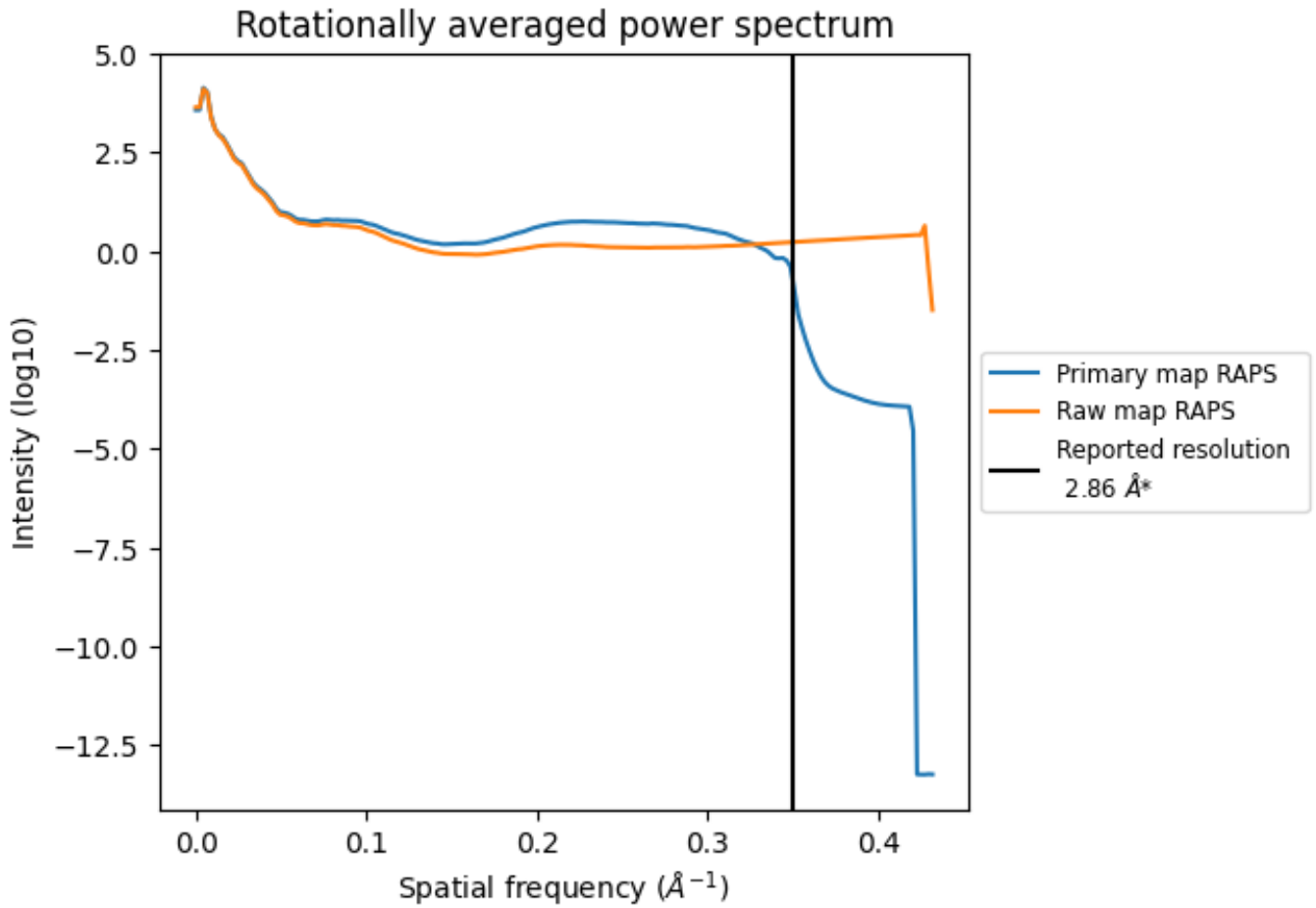
7.2 Volume estimate



The volume at the recommended contour level is 253 nm^3; this corresponds to an approximate mass of 228 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)

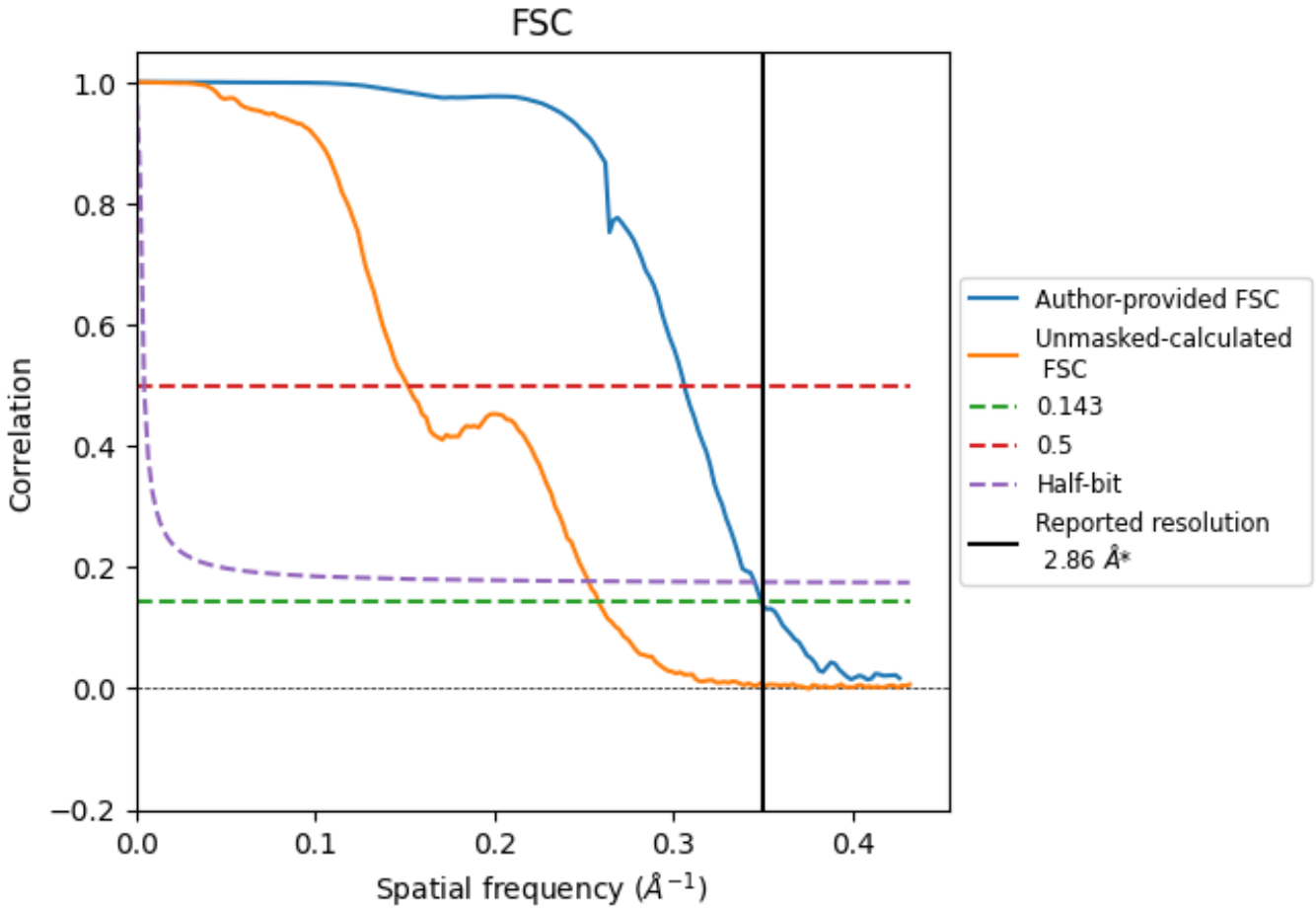


*Reported resolution corresponds to spatial frequency of 0.350 Å^{-1}

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 0.350 Å^{-1}

8.2 Resolution estimates (i)

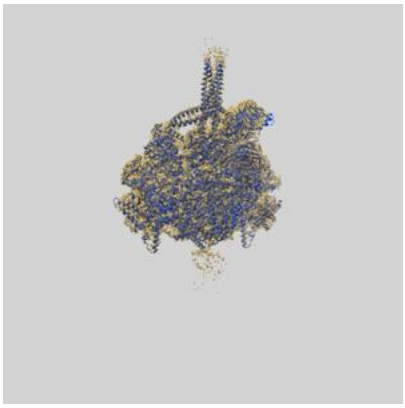
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.86	-	-
Author-provided FSC curve	2.86	3.27	2.89
Unmasked-calculated*	3.87	6.60	3.96

*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 3.87 differs from the reported value 2.86 by more than 10 %

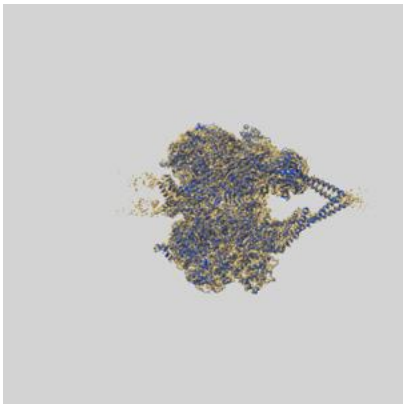
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-47380 and PDB model 9E11. Per-residue inclusion information can be found in section 3 on page 6.

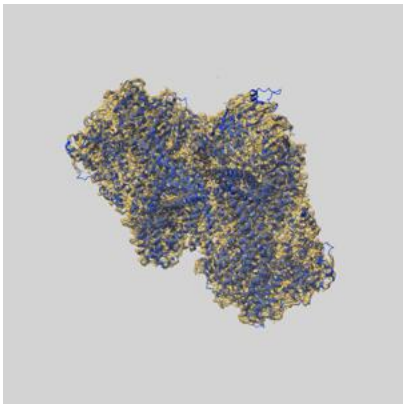
9.1 Map-model overlay



X



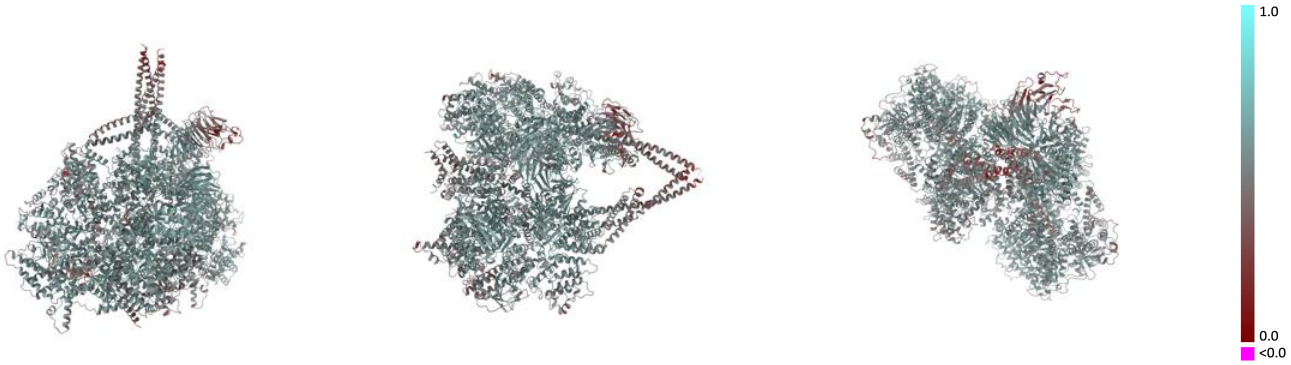
Y



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.

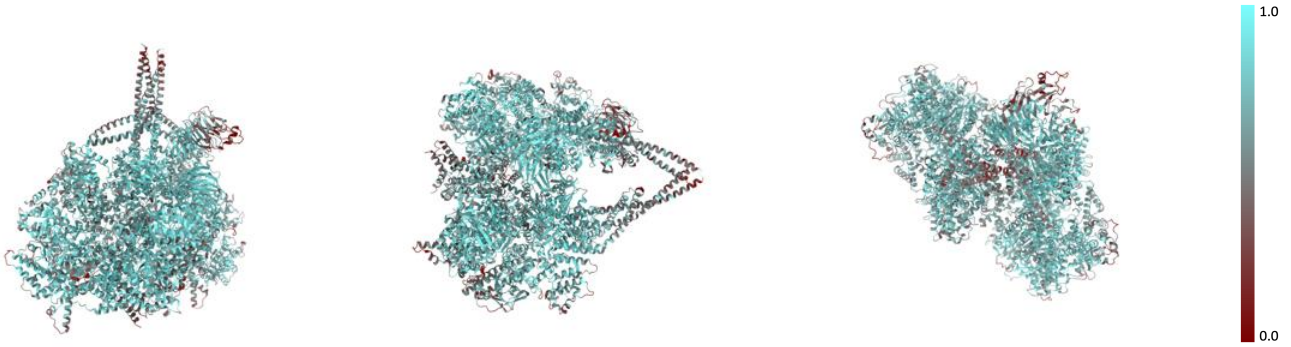
9.2 Q-score mapped to coordinate model (i)



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.

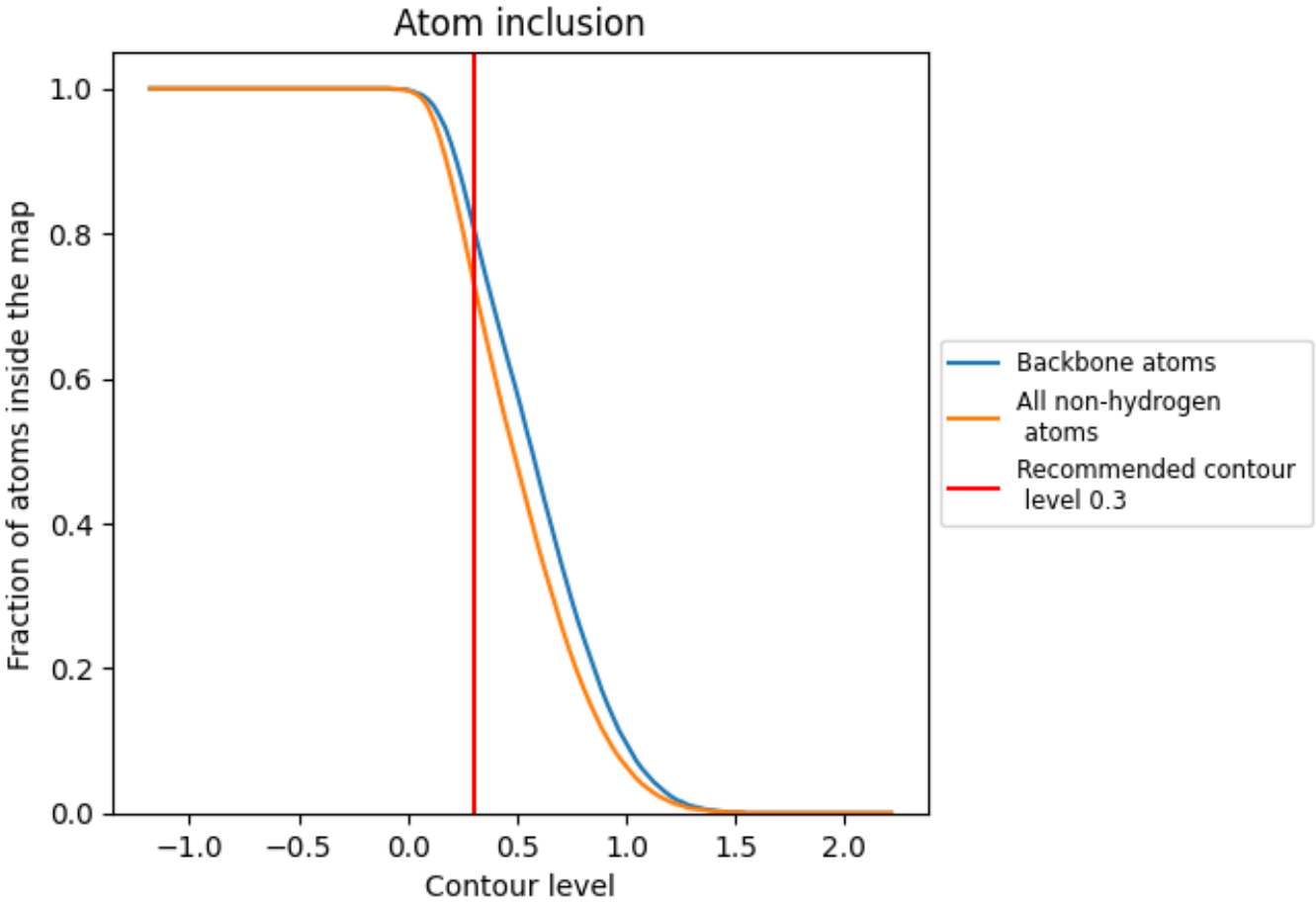
9.3 Atom inclusion mapped to coordinate model (i)



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, 81% of all backbone atoms, 74% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.3) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.7360	0.5430
A	0.7130	0.5370
B	0.7660	0.5550
C	0.8490	0.5900
D	0.5620	0.4470