Full wwPDB EM Validation Report

Jan 20, 2026 – 01:09 PM EST

PDB ID	:	9YNC / pdb_00009ync
EMDB ID	:	EMD-73173
Title	:	Motor domains of phi-like human dynein-1 bound to dynactin-p150glued and LIS1
Authors	:	Yang, J.; Rao, Q.; Chai, P.; Zhang, K.
Deposited on	:	2025-10-10
Resolution	:	3.93 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:

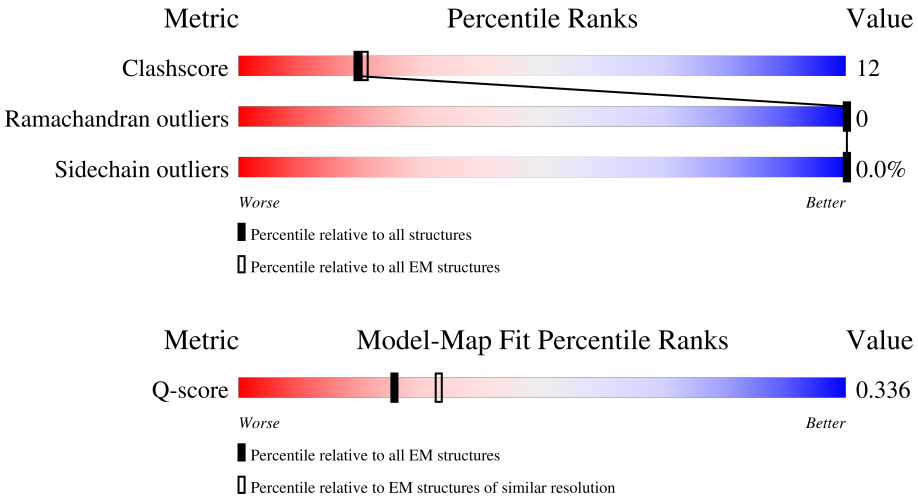
EMDB validation analysis	:	0.0.1.dev129
Mogul	:	2022.3.0, CSD as543be (2022)
MolProbity	:	4-5-2 with Phenix2.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive 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 3.93 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	7811 (3.43 - 4.43)

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	45% 21% 34%
1	B	4646	49% 17% 34%
2	C	410	54% 25% 21%
2	D	410	48% 29% 24%

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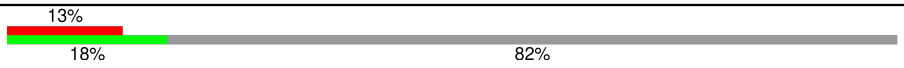
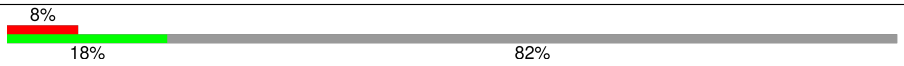
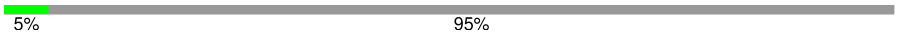
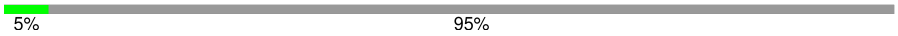
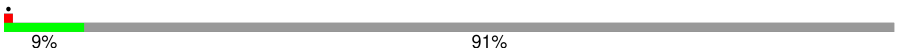
Mol	Chain	Length	Quality of chain
2	E	410	
2	F	410	
3	G	638	
3	H	638	
4	I	1281	
4	J	1281	

2 Entry composition (i)

There are 7 unique types of molecules in this entry. The entry contains 56882 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	3064	Total	C	N	O	S	0	0
			24650	15707	4259	4563	121		
1	B	3065	Total	C	N	O	S	0	0
			24658	15711	4260	4566	121		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
2	C	322	Total	C	N	O	S	0	0
			2557	1608	452	477	20		
2	D	313	Total	C	N	O	S	0	0
			2494	1571	440	463	20		
2	E	75	Total	C	N	O		0	0
			373	223	75	75			
2	F	75	Total	C	N	O		0	0
			373	223	75	75			

- Molecule 3 is a protein called Cytoplasmic dynein 1 intermediate chain 2.

Mol	Chain	Residues	Atoms				AltConf	Trace
3	G	34	Total	C	N	O	0	0
			170	102	34	34		
3	H	34	Total	C	N	O	0	0
			170	102	34	34		

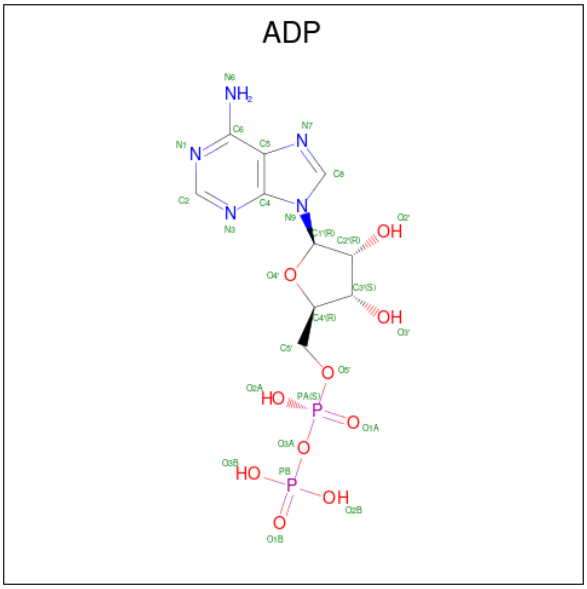
- Molecule 4 is a protein called Dynactin subunit 1.

Mol	Chain	Residues	Atoms				AltConf	Trace
4	I	122	Total	C	N	O	0	0
			607	363	122	122		
4	J	120	Total	C	N	O	1	0
			602	360	121	121		

There are 6 discrepancies between the modelled and reference sequences:

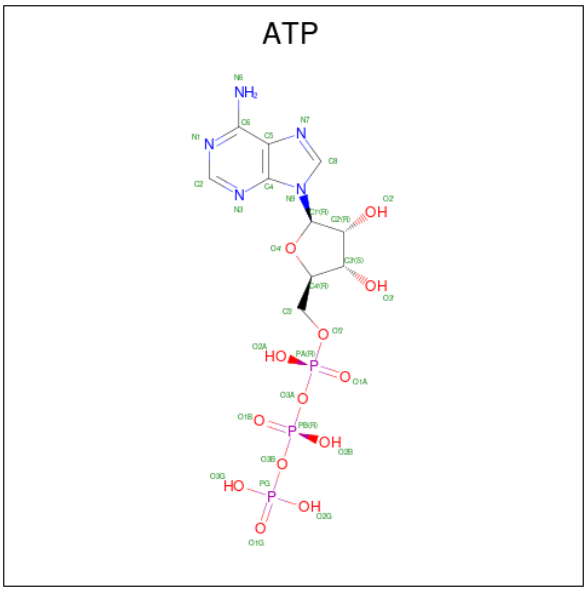
Chain	Residue	Modelled	Actual	Comment	Reference
I	1279	LEU	-	expression tag	UNP A0A287B8J2
I	1280	ILE	-	expression tag	UNP A0A287B8J2
I	1281	SER	-	expression tag	UNP A0A287B8J2
J	1279	LEU	-	expression tag	UNP A0A287B8J2
J	1280	ILE	-	expression tag	UNP A0A287B8J2
J	1281	SER	-	expression tag	UNP A0A287B8J2

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

- Molecule 6 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
6	A	1	Total	C	N	O	P	0
			31	10	5	13	3	
6	B	1	Total	C	N	O	P	0
			31	10	5	13	3	

- Molecule 7 is MAGNESIUM ION (CCD ID: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

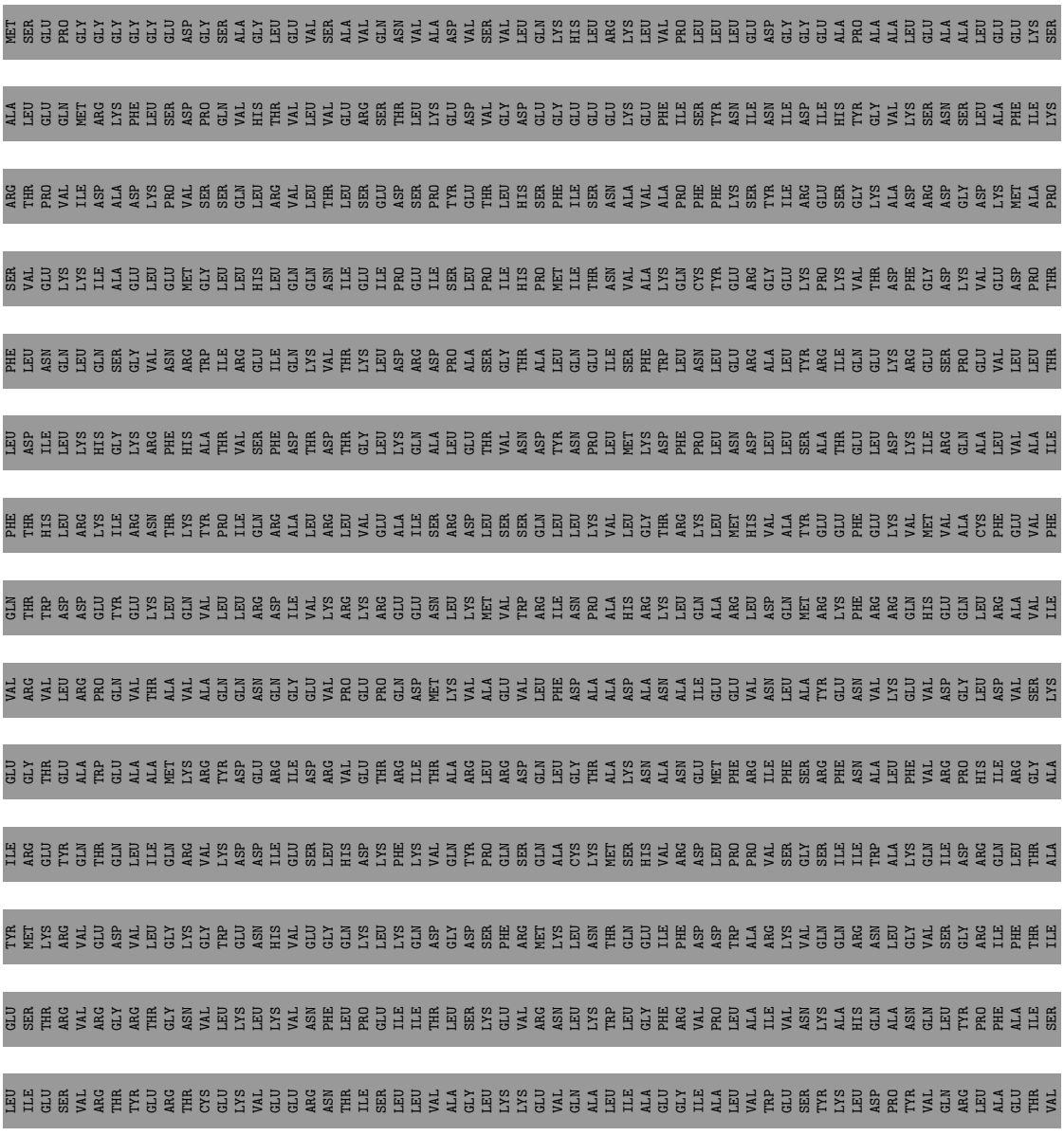
Mol	Chain	Residues	Atoms		AltConf
7	A	2	Total	Mg	0
			2	2	
7	B	2	Total	Mg	0
			2	2	

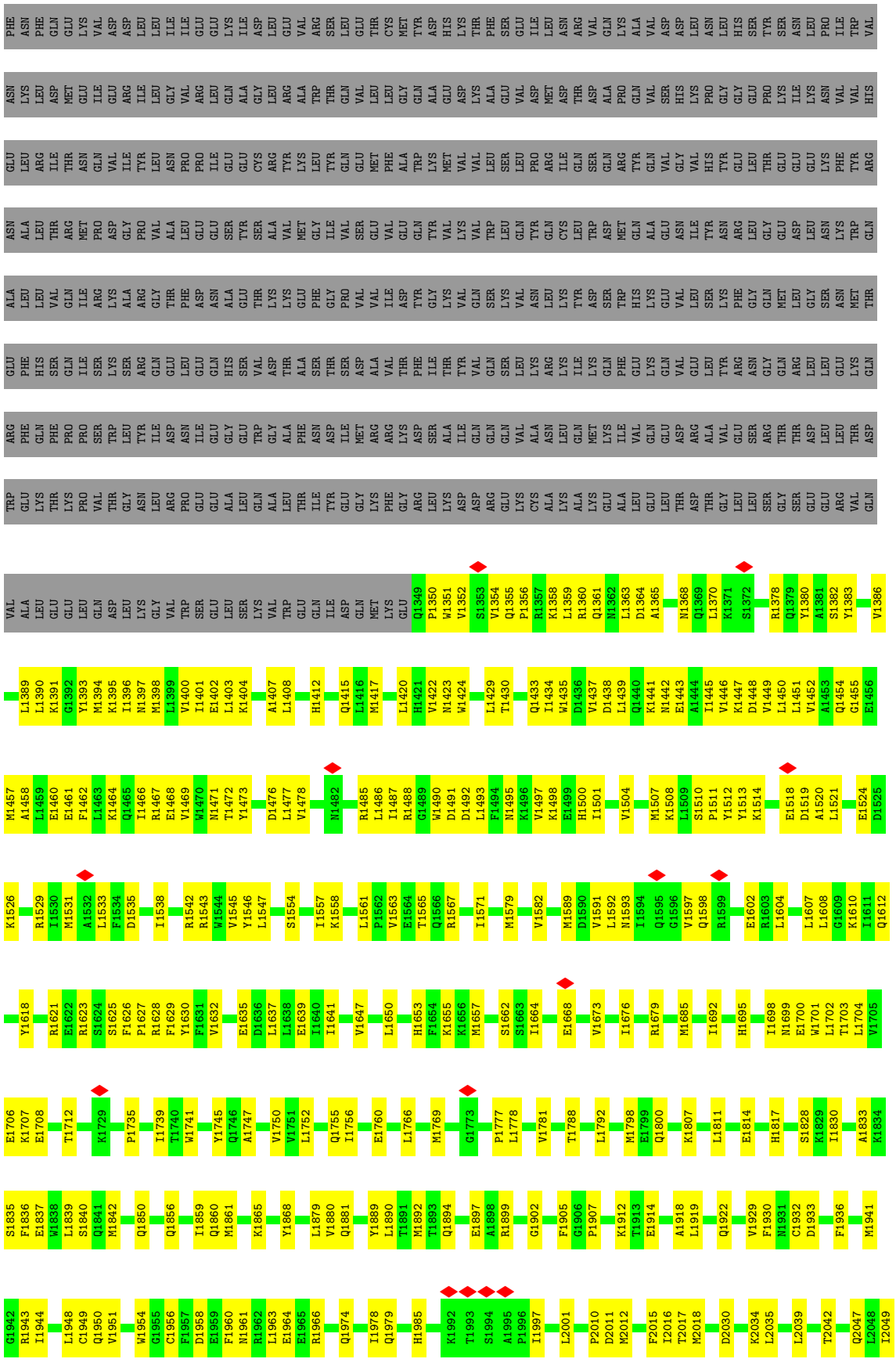
3 Residue-property plots (i)

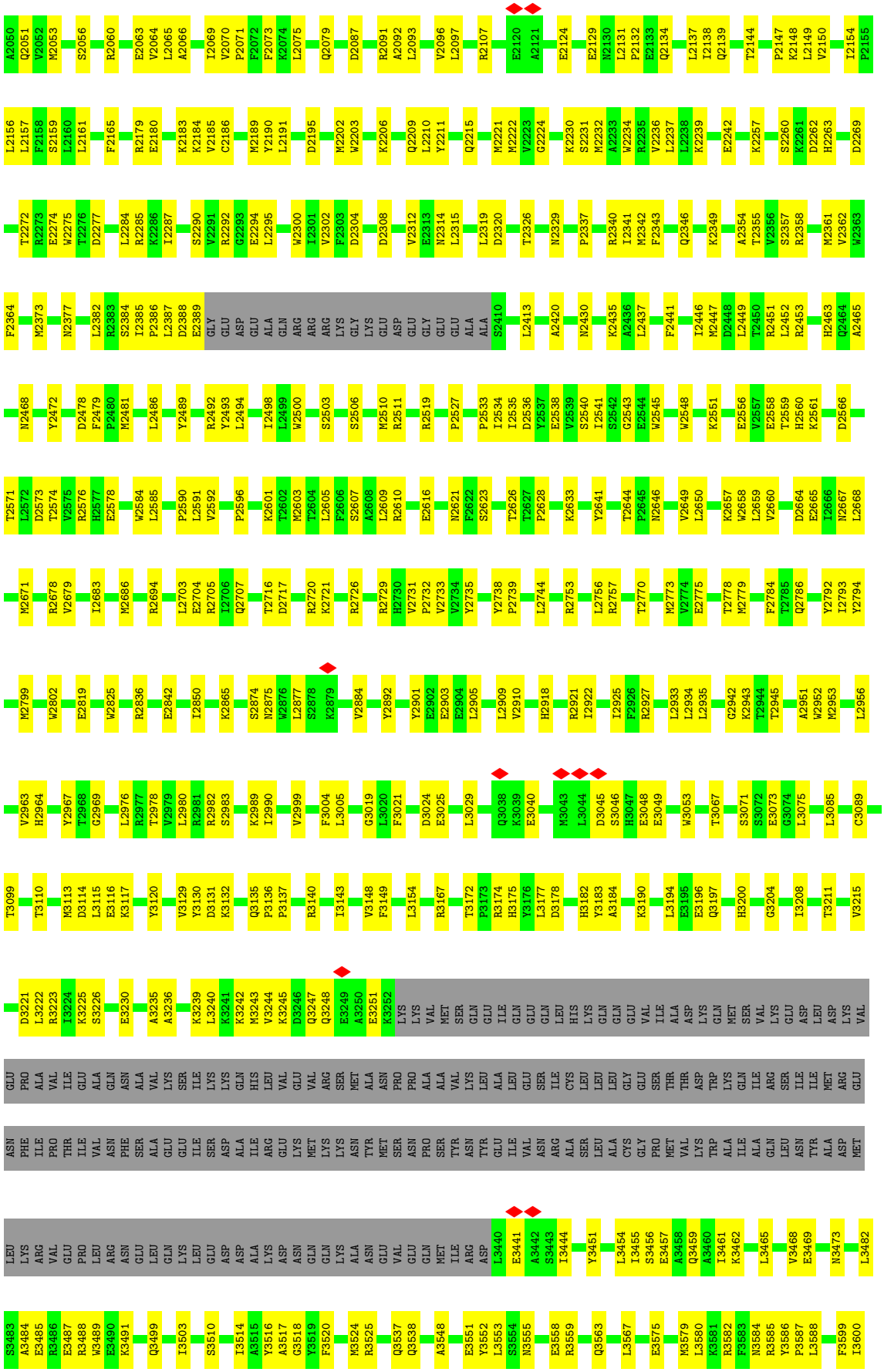
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion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

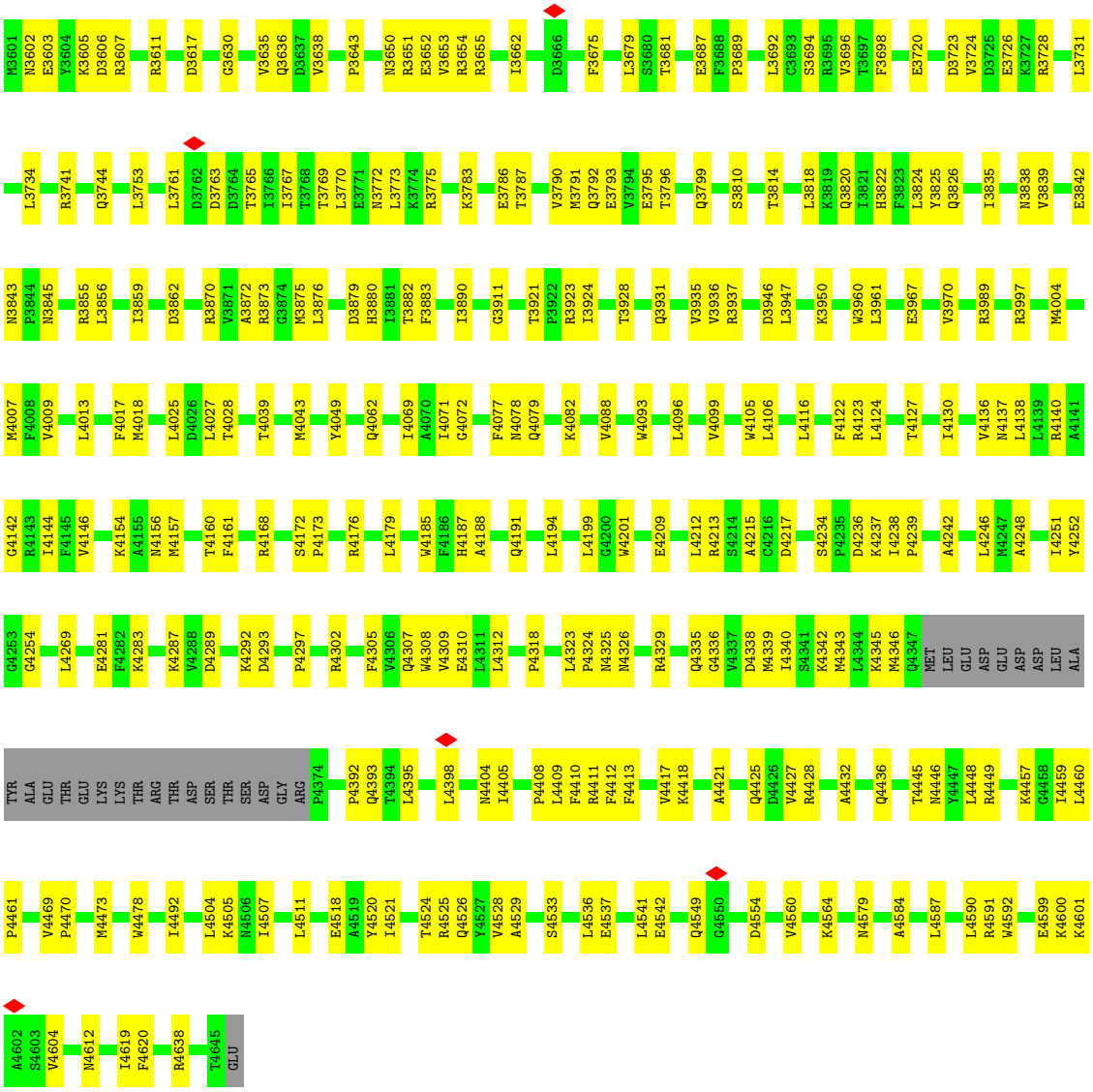
- Molecule 1: Cytoplasmic dynein 1 heavy chain 1

Chain A:



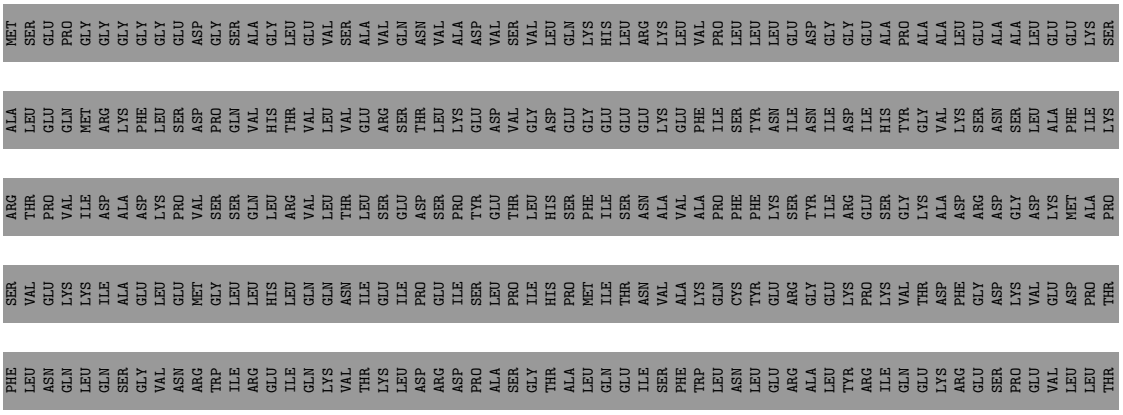


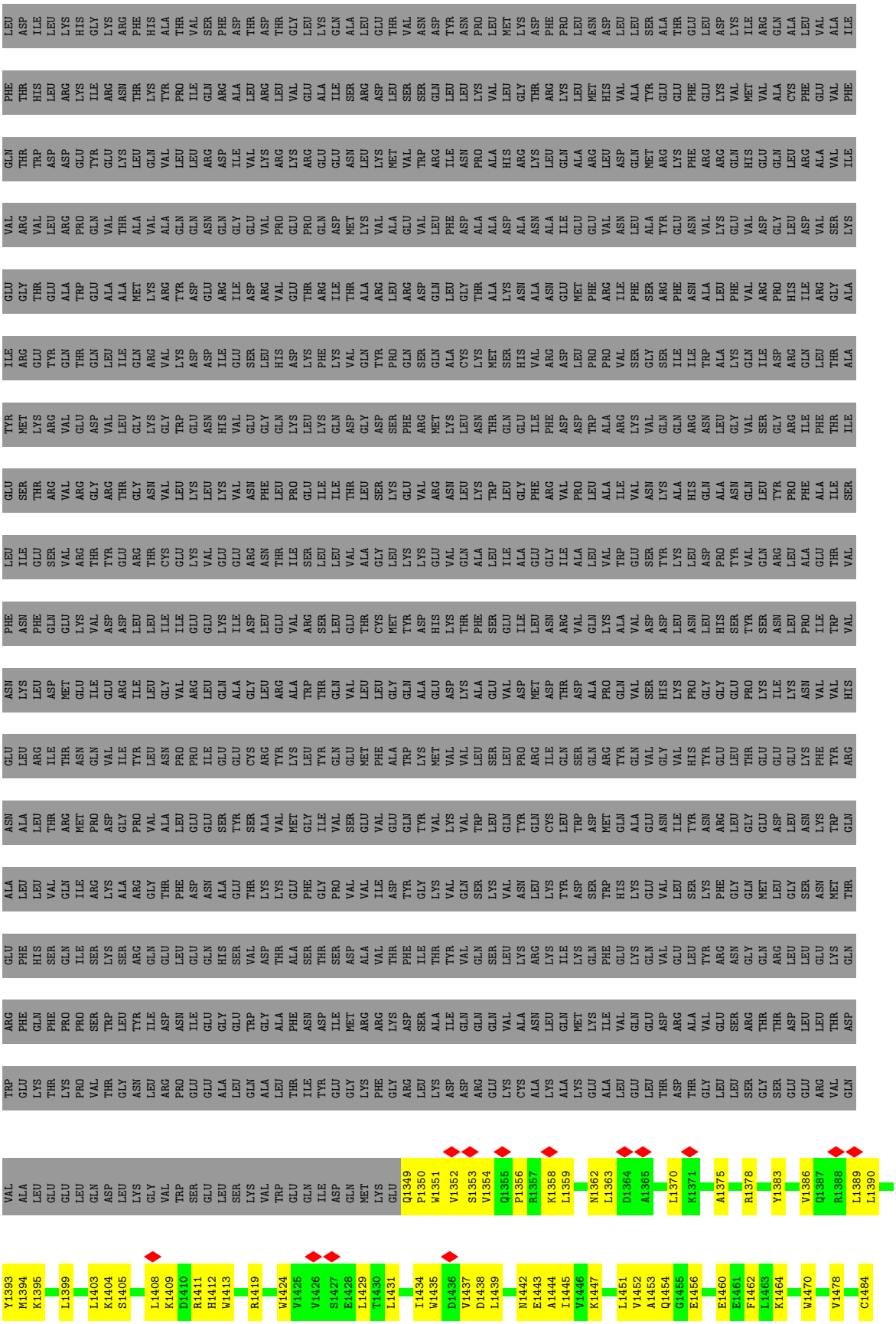

A2050 Q2051 V2052 M2053 S2056 R2060 E2063 V2064 L2065 A2066 I2069 V2070 P2071 F2072 F2073 K2074 L2075 Q2079 D2087 R2091 A2092 L2093 V2096 L2097 R2107 E2120 A2121 E2124 E2129 N2130 L2131 P2132 E2133 Q2134 L2137 I2138 Q2139 T2144 P2147 K2148 L2149 V2150 I2154 P2155
L2156 L2157 F2158 S2159 L2160 L2161 F2165 R2179 E2180 K2183 K2184 V2185 C2186 M2189 Y2190 L2191 D2195 M2202 W2203 K2206 Q2209 L2210 Y2211 Q2215 M2221 M2222 V2223 G2224 K2230 S2231 M2232 A2233 W2234 R2235 V2236 L2237 L2238 K2239 E2242 K2257 S2260 K2261 D2262 H2263 D2269
T2272 R2273 E2274 W2275 T2276 D2277 L2284 R2285 K2286 I2287 S2290 V2291 R2292 G2293 E2294 L2295 W2300 I2301 V2302 F2303 D2304 D2308 V2312 E2313 N2314 L2315 L2319 D2320 T2326 N2329 P2337 R2340 I2341 M2342 F2343 Q2346 K2349 A2354 T2355 V2356 S2357 R2358 M2361 V2362 W2363
F2364 M2373 N2377 L2382 R2383 S2384 I2385 P2386 L2387 D2388 E2389 GLY GLU ASP GLU ALA GLN ARG ARG LYS GLY LYS GLU ASP GLU GLU GLY GLU GLU GLU ALA ALA S2410 L2413 A2420 N2430 K2435 A2436 L2437 F2441 I2446 M2447 D2448 L2449 T2450 R2451 L2452 R2453 H2463 Q2464 A2465
N2468 Y2472 D2478 F2479 P2480 M2481 L2486 Y2489 R2492 Y2493 L2494 I2498 L2499 W2500 S2503 S2506 M2510 R2511 R2519 P2527 P2533 I2534 I2535 D2536 Y2537 E2538 V2539 S2540 I2541 S2542 G2543 E2544 W2545 W2548 K2551 E2556 V2557 E2558 T2559 H2560 K2561 D2566
T2571 L2572 D2573 T2574 V2575 R2576 H2577 E2578 W2584 L2585 P2590 L2591 V2592 P2596 K2601 T2602 M2603 T2604 L2605 F2606 S2607 A2608 L2609 R2610 E2616 N2621 F2622 S2623 T2626 T2627 P2628 K2633 Y2641 T2644 P2645 N2646 V2649 L2650 K2657 W2658 L2659 V2660 D2664 E2665 T2666 N2667 L2668
M2671 R2678 V2679 I2683 M2686 R2694 L2703 E2704 R2705 I2706 Q2707 T2716 D2717 R2720 K2721 R2726 R2729 H2730 V2731 P2732 V2733 V2734 Y2735 Y2738 P2739 L2744 R2753 L2756 R2757 T2770 M2773 V2774 E2775 T2778 M2779 F2784 T2785 Q2786 Y2792 I2793 Y2794
M2799 W2802 E2819 W2825 R2836 E2842 I2850 K2865 S2874 N2875 W2876 L2877 S2878 K2879 V2884 Y2892 Y2901 E2902 E2903 E2904 L2905 L2909 V2910 H2918 R2921 I2922 I2925 F2926 R2927 L2933 L2934 L2935 G2942 K2943 T2944 T2945 A2951 W2952 M2953 L2956
V2963 H2964 Y2967 T2968 G2969 L2976 R2977 T2978 V2979 L2980 R2981 R2982 S2983 K2989 I2990 V2999 F3004 L3005 G3019 L3020 F3021 D3024 E3025 L3029 Q3038 K3039 E3040 M3043 L3044 D3045 S3046 H3047 E3048 E3049 W3053 T3067 S3071 S3072 E3073 G3074 L3075 L3085 C3089
T3099 T3110 M3113 D3114 L3115 E3116 K3117 Y3120 V3129 Y3130 D3131 K3132 Q3135 P3136 P3137 R3140 I3143 V3148 F3149 L3154 R3167 T3172 P3173 R3174 H3175 Y3176 L3177 D3178 H3182 Y3183 A3184 K3190 L3194 E3195 E3196 Q3197 H3200 G3204 I3208 T3211 V3215
D3221 L3222 R3223 I3224 K3225 S3226 E3230 A3235 A3236 K3239 L3240 K3241 K3242 M3243 V3244 K3245 D3246 Q3247 Q3248 E3249 A3250 E3251 K3252 LYS LYS VAL MET SER GLN GLU ILE GLN GLU GLN LEU HIS LYS GLN GLN GLU VAL ILE ALA ASP LYS GLY 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 SER ILE LYS GLU LEU ALA LEU GLU GLU SER ILE CYS LEU LEU LEU GLY GLU SER THR THR ASP TRP LYS GLN ILE 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 ILE LEU GLU ASP ASP ALA LYS ASP ASN GLN LYS ALA ASN GLU VAL GLN GLU MET ILE ARG ASP L3440 E3441 A3442 S3443 I3444 Y3451 L3454 I3455 S3456 E3457 A3458 Q3459 A3460 I3461 K3462 L3465 V3468 E3469 N3473 L3482
S3483 A3484 E3485 R3486 E3487 R3488 W3489 E3490 K3491 Q3499 I3503 S3510 I3514 A3515 Y3516 A3517 G3518 Y3519 F3520 M3524 R3525 Q3537 Q3538 A3548 E3551 Y3552 L3553 S3554 M3555 E3558 R3559 Q3563 L3567 E3575 M3579 L3580 K3581 R3582 F3583 N3584 R3585 Y3586 P3587 L3588 F3599 I3600



• Molecule 1: Cytoplasmic dynein 1 heavy chain 1

Chain B:

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P1350
W1351
V1352
S1353
V1354
Q1355
P1356
R1357
K1358
L1359
N1362
L1363
D1364
A1365
L1370
K1371
A1375
R1378
Y1383
V1386
Q1387
R1388
L1389
L1390
Y1393
M1394
K1395
L1399
L1403
K1404
S1405
L1408
K1409
D1410
R1411
H1412
W1413
R1419
W1424
V1425
V1426
S1427
E1428
L1429
T1430
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I1434
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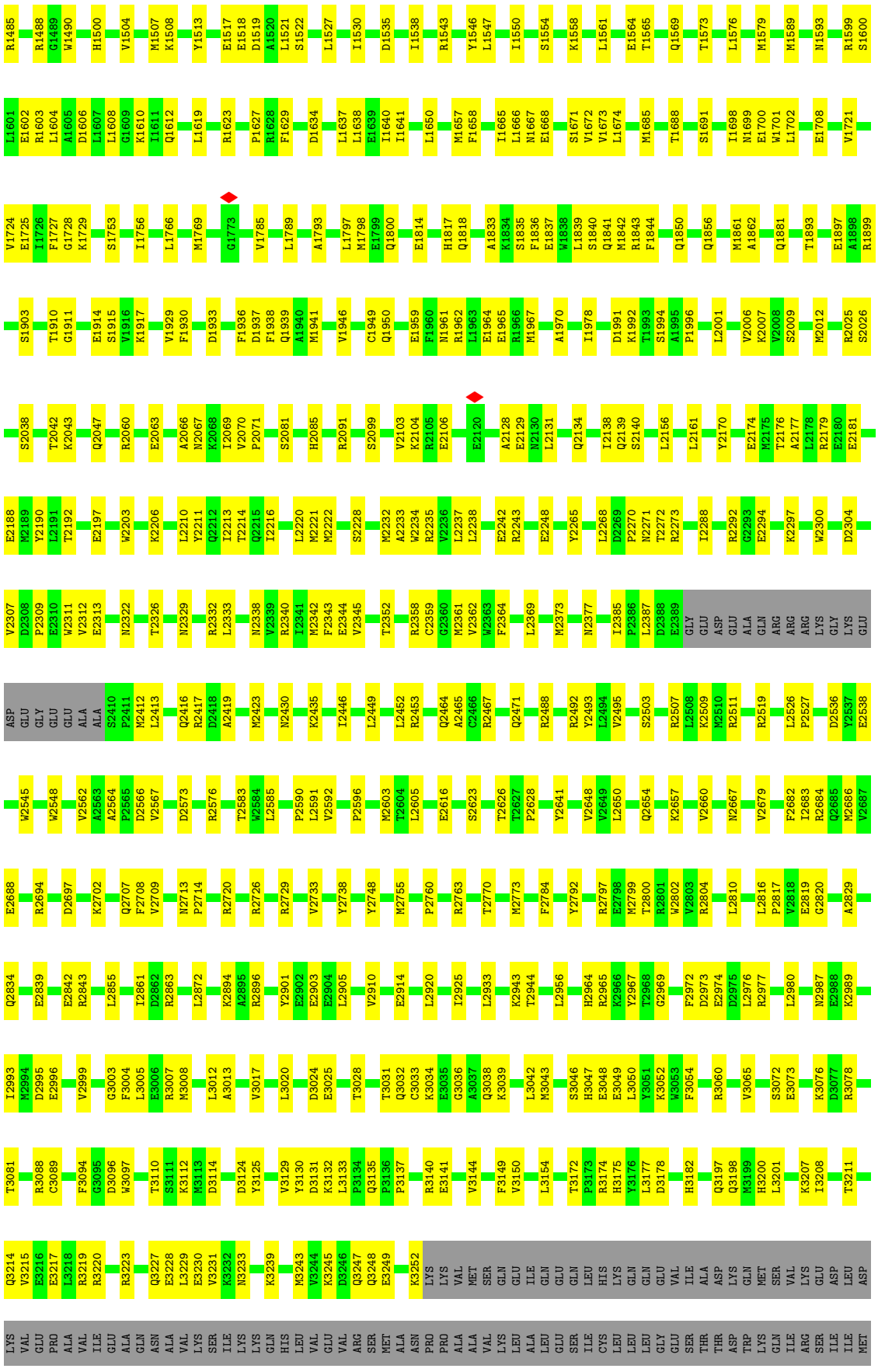
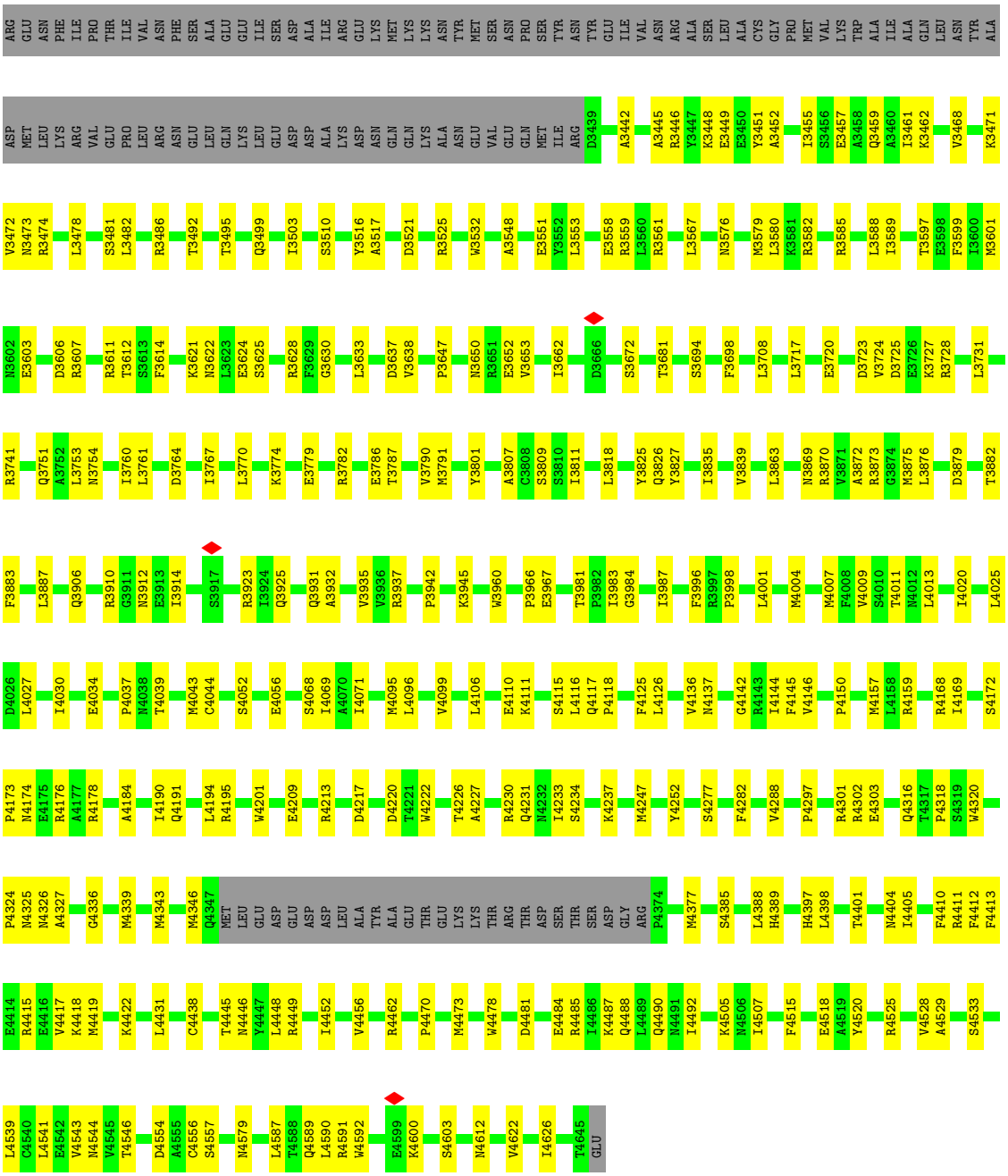
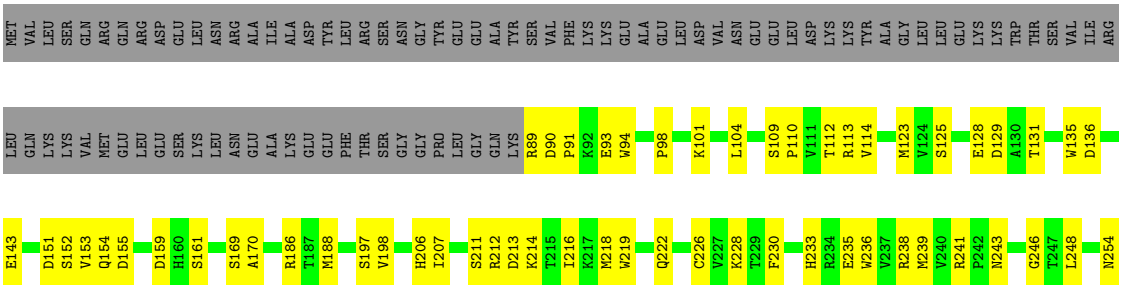
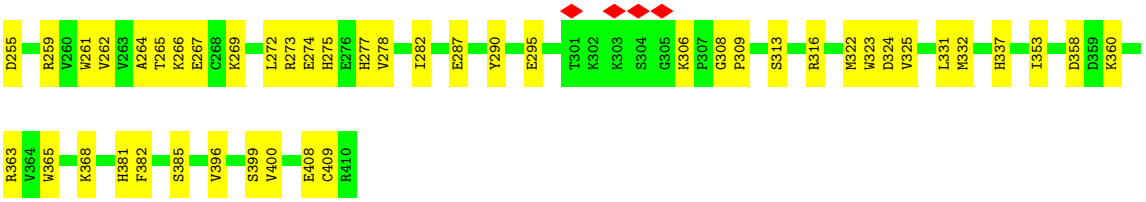




• Molecule 2: Platelet-activating factor acetylhydrolase IB subunit beta

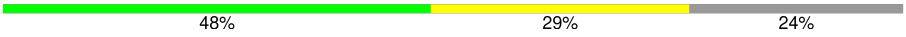
Chain C:

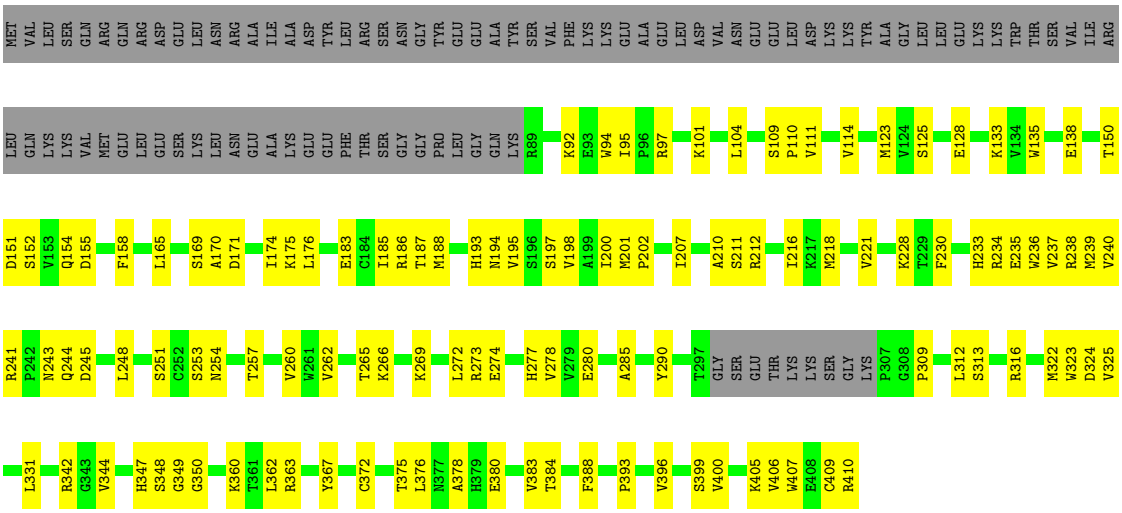




• Molecule 2: Platelet-activating factor acetylhydrolase IB subunit beta

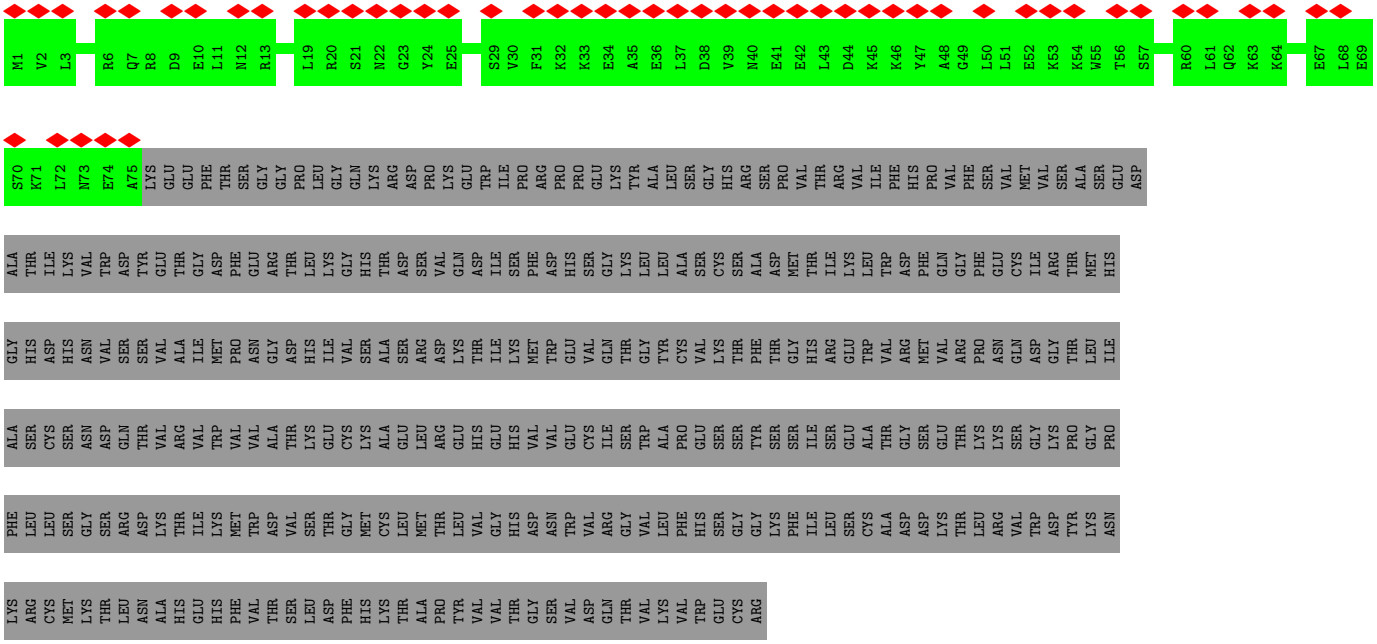
Chain D:





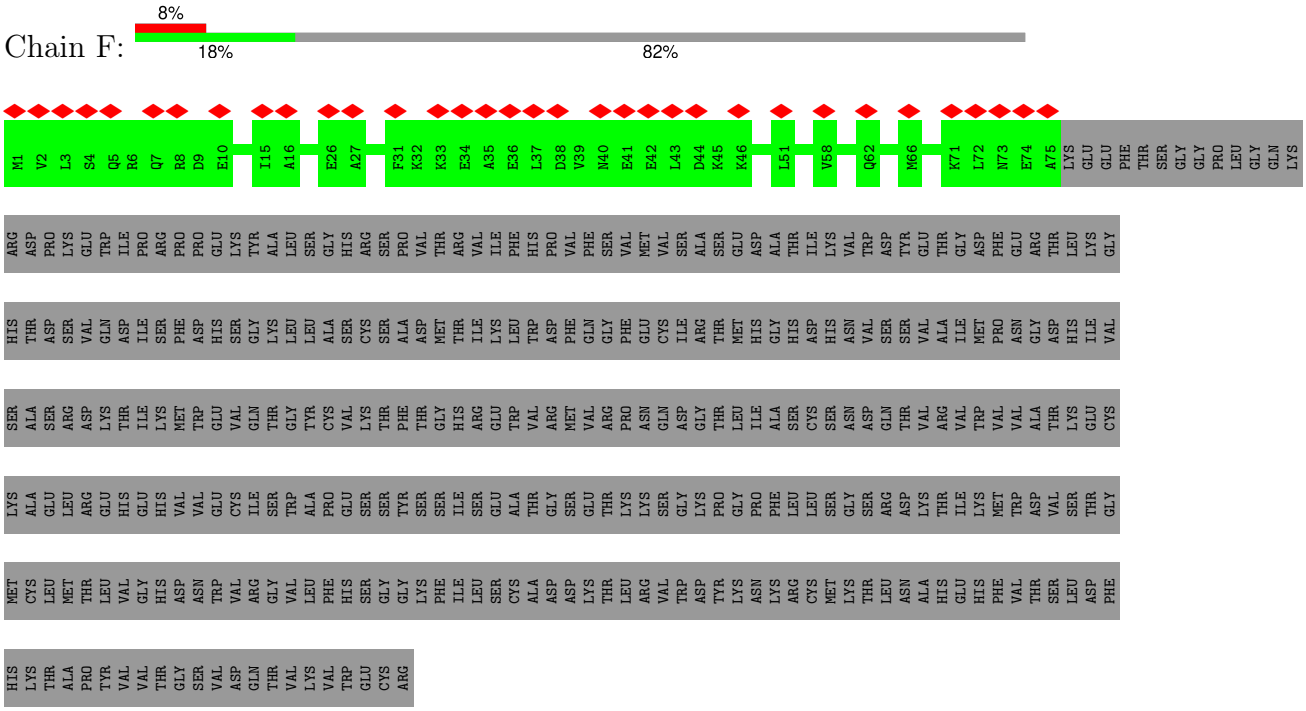
• Molecule 2: Platelet-activating factor acetylhydrolase IB subunit beta

Chain E:



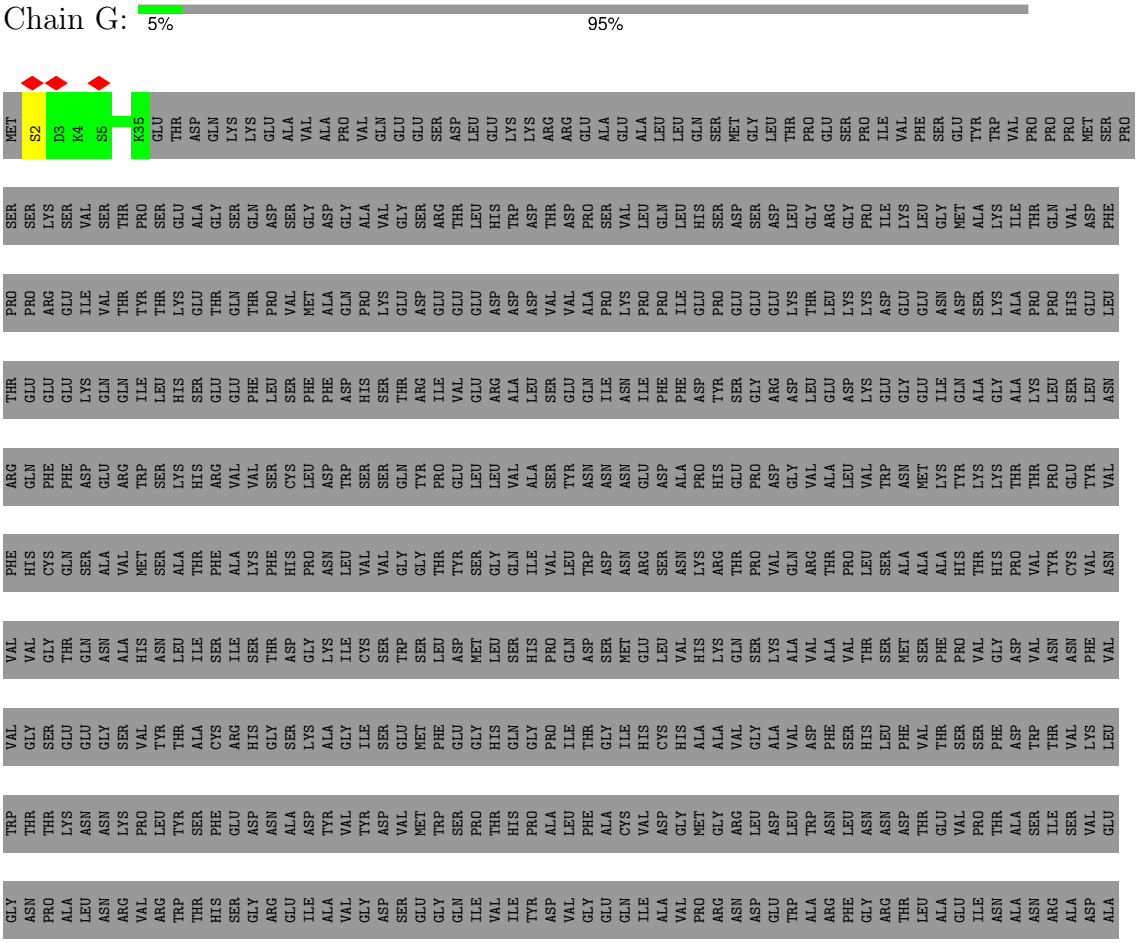
• Molecule 2: Platelet-activating factor acetylhydrolase IB subunit beta

Chain F:



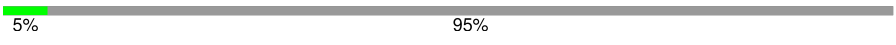
• Molecule 3: Cytoplasmic dynein 1 intermediate chain 2

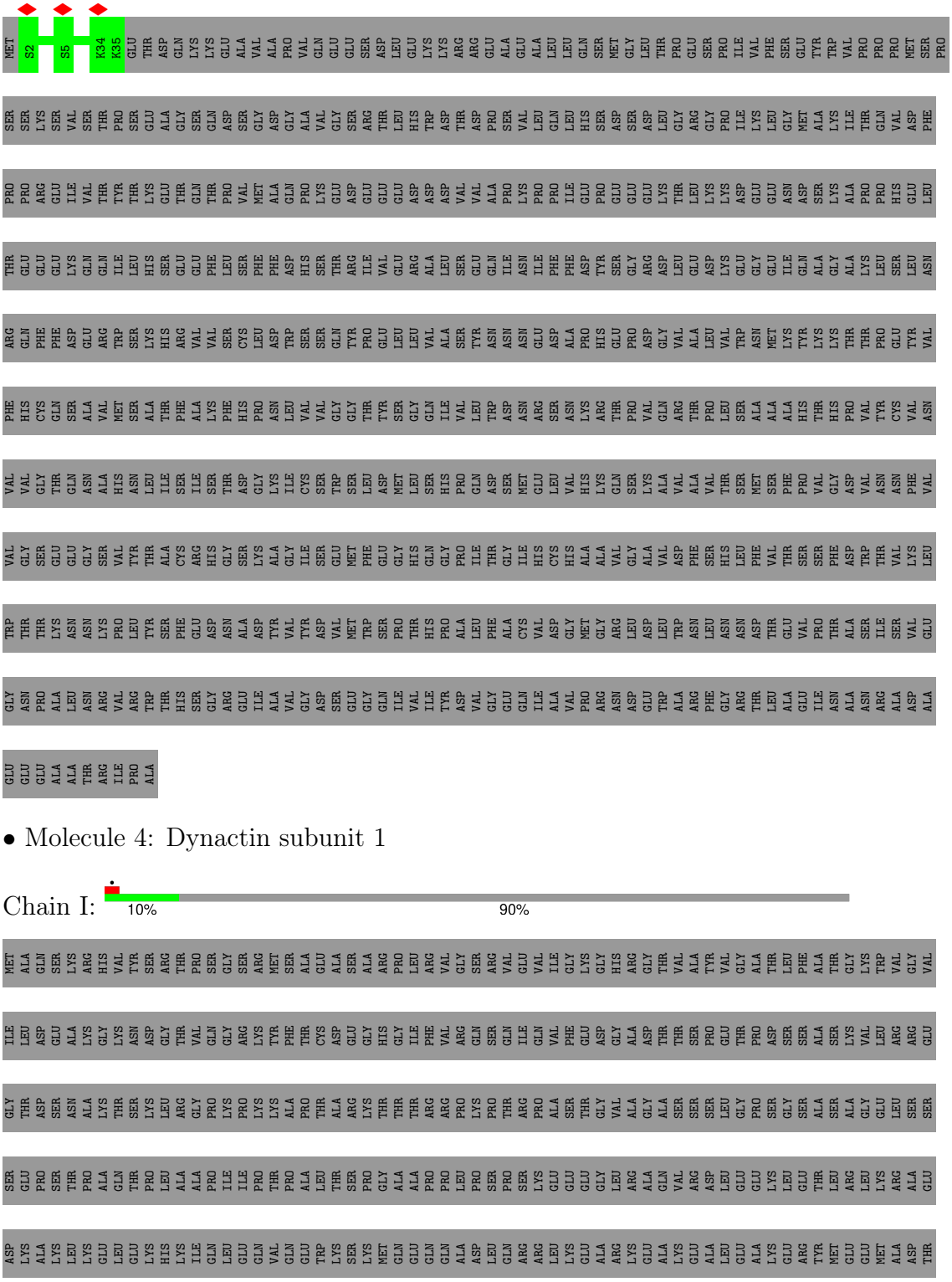
Chain G:



• Molecule 3: Cytoplasmic dynein 1 intermediate chain 2

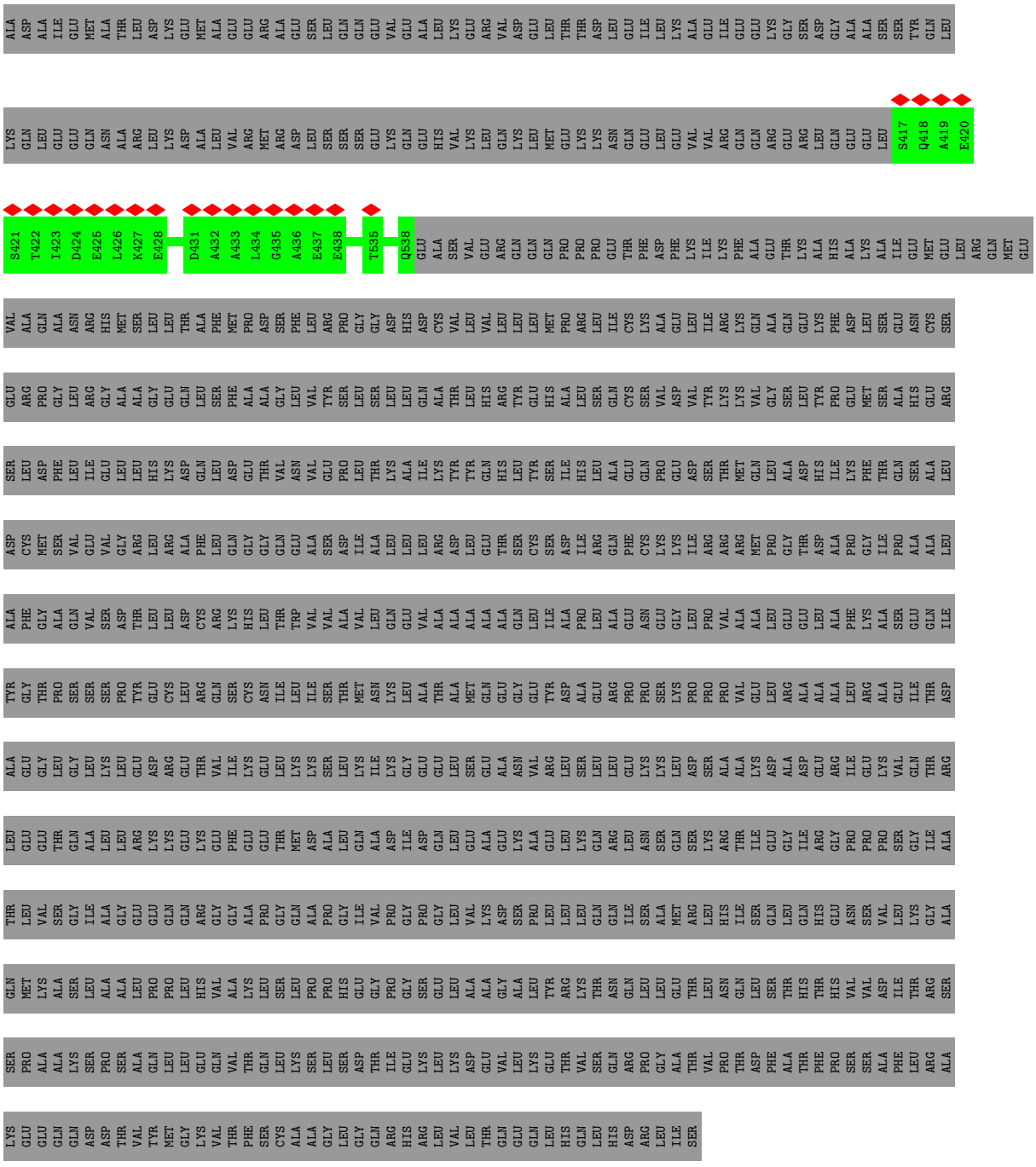
Chain H:





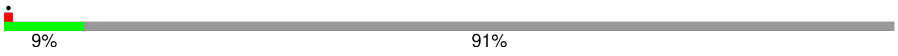
• Molecule 4: Dynactin subunit 1

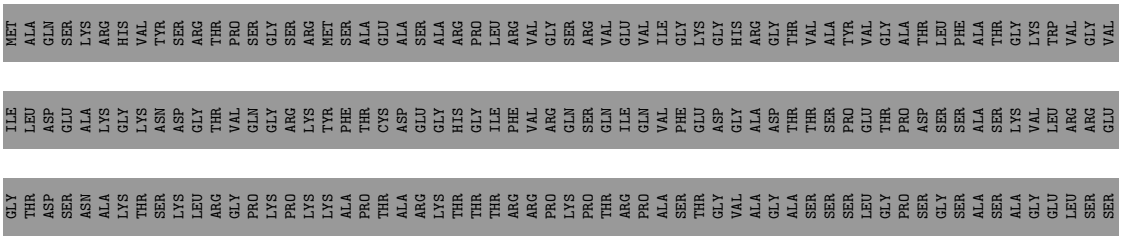
Chain I:

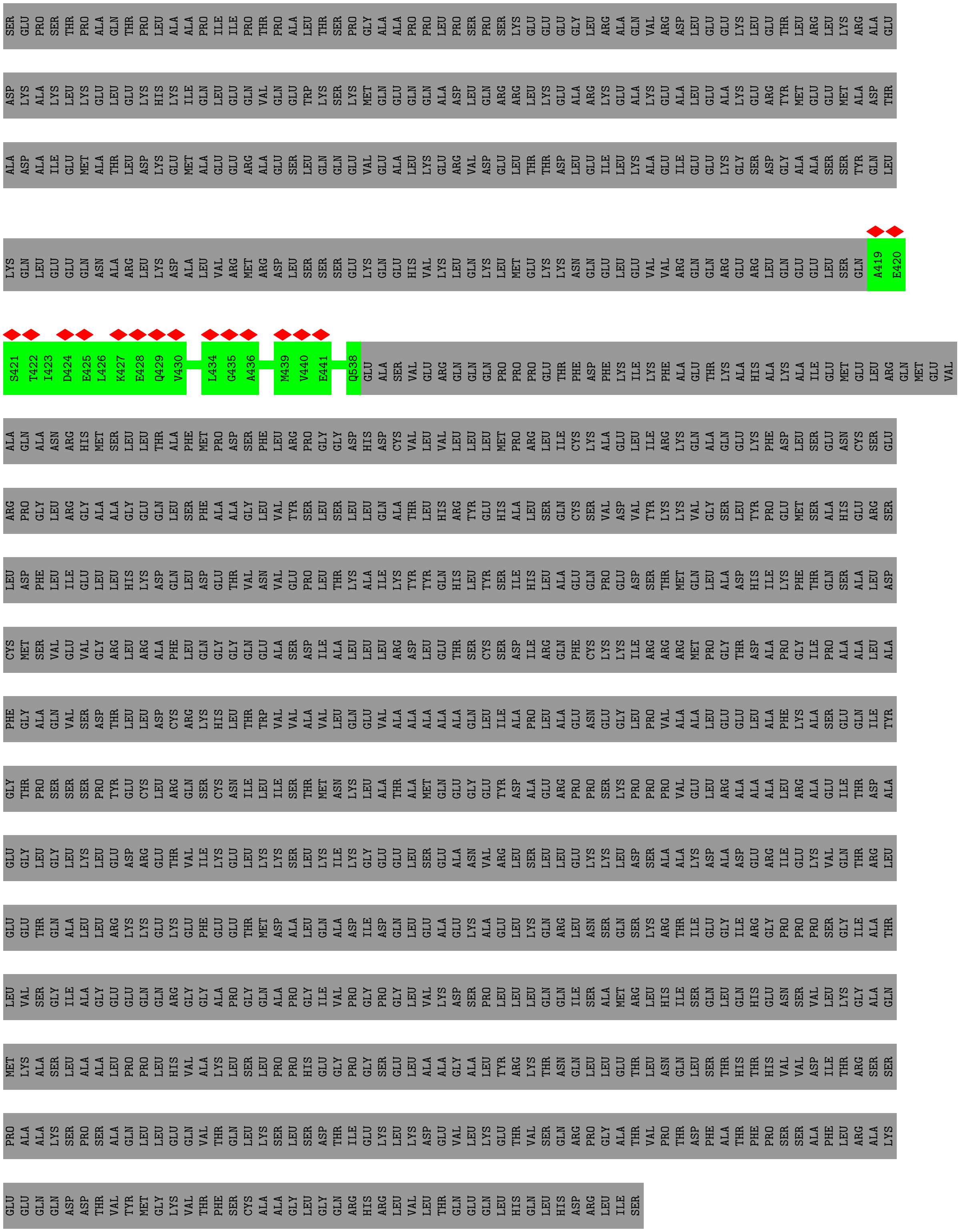


• Molecule 4: Dynactin subunit 1

Chain J:






SER GLU PRO SER THR PRO ALA GLN THR PRO LEU ALA ALA PRO ILE ILE PRO THR PRO ALA LEU THR SER PRO GLY ALA ALA PRO PRO LEU PRO SER PRO SER LYS GLU GLU GLU GLY LEU ARG ALA GLN VAL ARG ASP LEU GLU GLU LYS LEU GLU THR LEU ARG LEU LYS ARG ALA GLU
ASP LYS ALA LYS LEU LYS GLU LEU GLU LYS HIS LYS ILE GLN LEU GLU GLN VAL GLN GLU TRP LYS SER LYS MET GLN GLU GLN GLN ALA ASP LEU GLN ARG ARG LEU LYS GLU ALA ARG LYS GLU ALA LYS GLU ALA LEU GLU ALA LYS GLU ARG TYR MET GLU GLU MET ALA ASP THR
ALA ASP ALA ILE GLU MET ALA THR LEU ASP LYS GLU MET ALA GLU GLU ARG ALA GLU SER LEU GLN GLN GLU VAL GLU ALA LEU LYS GLU ARG VAL ASP GLU LEU THR THR ASP LEU GLU ILE LEU LYS ALA GLU ILE GLU GLU LYS GLY SER ASP GLY ALA ALA SER SER TYR GLN LEU
LYS GLN LEU GLU GLU GLN ASN ALA ARG LEU LYS ASP ALA LEU VAL ARG MET ARG ASP LEU SER SER SER GLU LYS GLN GLU HIS VAL LYS LEU GLN LYS LEU MET GLU LYS LYS ASN GLN GLU LEU GLU VAL VAL ARG GLN GLN ARG GLU ARG LEU GLN GLU GLU LEU SER GLN A419 E420
S421 T422 I423 D424 E425 L426 K427 E428 Q429 V430 L434 G435 A436 M439 V440 E441 Q538 GLU ALA SER VAL GLU ARG GLN GLN GLN PRO PRO PRO GLU THR PHE ASP PHE LYS ILE LYS PHE ALA GLU THR LYS ALA HIS ALA LYS ALA ILE GLU MET GLU LEU ARG GLN MET GLU VAL
ALA GLN ALA ASN ARG HIS MET SER LEU LEU THR ALA PHE MET PRO ASP SER PHE LEU ARG PRO GLY GLY ASP HIS ASP CYS VAL LEU VAL LEU LEU LEU MET PRO ARG LEU ILE CYS LYS ALA GLU LEU ILE ARG LYS GLN ALA GLN GLU LYS PHE ASP LEU SER GLU ASN CYS SER GLU
ARG PRO GLY LEU ARG GLY ALA ALA GLY GLU GLN LEU SER PHE ALA ALA GLY LEU VAL TYR SER LEU SER LEU LEU GLN ALA THR LEU HIS ARG TYR GLU HIS ALA LEU SER GLN CYS SER VAL ASP VAL TYR LYS LYS VAL GLY SER LEU TYR PRO GLU MET SER ALA HIS GLU ARG SER
LEU ASP PHE LEU ILE GLU LEU LEU HIS LYS ASP GLN LEU ASP GLU THR VAL ASN VAL GLU PRO LEU THR LYS ALA ILE LYS TYR TYR GLN HIS LEU TYR SER ILE HIS LEU ALA GLU GLN PRO GLU ASP SER THR MET GLN LEU ALA ASP HIS ILE LYS PHE THR GLN SER ALA LEU ASP
CYS MET SER VAL GLU VAL GLY ARG LEU ARG ALA PHE LEU GLN GLY GLY GLN GLU ALA SER ASP ILE ALA LEU LEU LEU ARG ASP LEU GLU THR SER CYS SER ASP ILE ARG GLN PHE CYS LYS LYS ILE ARG ARG ARG MET PRO GLY THR ASP ALA PRO GLY ILE PRO ALA ALA LEU ALA
PHE GLY ALA GLN VAL SER ASP THR LEU LEU ASP CYS ARG LYS HIS LEU THR TRP VAL VAL ALA VAL LEU GLN GLU VAL ALA ALA ALA ALA ALA GLN LEU ILE ALA PRO LEU ALA GLU ASN GLU GLY LEU PRO VAL ALA ALA LEU GLU GLU LEU ALA PHE LYS ALA SER GLU GLN ILE TYR
GLY THR PRO SER SER SER PRO TYR GLU CYS LEU ARG GLN SER CYS ASN ILE LEU ILE SER THR MET ASN LYS LEU ALA THR ALA MET GLN GLU GLY GLU TYR ASP ALA GLU ARG PRO PRO SER LYS PRO PRO PRO VAL GLU LEU ARG ALA ALA ALA LEU ARG ALA GLU ILE THR ASP ALA
GLU GLY LEU GLY LEU LYS LEU GLU ASP ARG GLU THR VAL ILE LYS GLU LEU LYS LYS SER LEU LYS ILE LYS GLY GLU GLU LEU SER GLU ALA ASN VAL ARG LEU SER LEU LEU GLU LYS LYS LEU ASP SER ALA ALA LYS ASP ALA ASP GLU ARG ILE GLU LYS VAL GLN THR ARG LEU
GLU GLU THR GLN ALA LEU LEU ARG LYS LYS GLU LYS GLU PHE GLU GLU THR MET ASP ALA LEU GLN ALA ASP ILE ASP GLN LEU GLU ALA GLU LYS ALA GLU LEU LYS GLN ARG LEU ASN SER GLN SER LYS ARG THR ILE GLU GLY ILE ARG GLY PRO PRO PRO SER GLY ILE ALA THR
LEU VAL SER GLY ILE ALA GLY GLU GLU GLN GLN ARG GLY GLY ALA PRO GLY GLN ALA PRO GLY ILE VAL PRO GLY PRO GLY LEU VAL LYS ASP SER PRO LEU LEU LEU GLN GLN ILE SER ALA MET ARG LEU HIS ILE SER GLN LEU GLN HIS GLU ASN SER VAL LEU LYS GLY ALA GLN
MET LYS ALA SER LEU ALA ALA LEU PRO PRO LEU HIS VAL ALA LYS LEU SER LEU PRO PRO HIS GLU GLY PRO GLY SER GLU LEU ALA ALA GLY ALA LEU TYR ARG LYS THR ASN GLN LEU LEU GLU THR LEU ASN GLN LEU SER THR HIS THR HIS VAL VAL ASP ILE THR ARG SER SER
PRO ALA ALA LYS SER PRO SER ALA GLN LEU LEU GLU GLN VAL THR GLN LEU LYS SER LEU SER ASP THR ILE GLU LYS LEU LYS ASP GLU VAL LEU LYS GLU THR VAL SER GLN ARG PRO GLY ALA THR VAL PRO THR ASP PHE ALA THR PHE PRO SER SER ALA PHE LEU ARG ALA LYS
GLU GLN GLN ASP ASP THR VAL TYR MET GLY LYS VAL THR PHE SER CYS ALA ALA GLY LEU GLY GLN ARG HIS ARG LEU VAL LEU THR GLN GLU GLN LEU HIS GLN LEU HIS ASP ARG LEU ILE SER

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	90591	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	0.483	Depositor
Minimum map value	-0.187	Depositor
Average map value	-0.001	Depositor
Map value standard deviation	0.019	Depositor
Recommended contour level	0.08	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	0.12	0/25169	0.32	0/34101
1	B	0.12	0/25177	0.30	0/34112
2	C	0.12	0/2624	0.39	0/3555
2	D	0.10	0/2560	0.31	0/3470
2	E	0.06	0/372	0.20	0/518
2	F	0.06	0/372	0.17	0/518
3	G	0.05	0/169	0.14	0/235
3	H	0.05	0/169	0.13	0/235
4	I	0.21	0/606	0.30	0/845
4	J	0.35	0/601	0.44	0/838
All	All	0.12	0/57819	0.32	0/78427

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	24650	0	24762	653	0
1	B	24658	0	24766	577	0
2	C	2557	0	2487	71	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	D	2494	0	2419	89	0
2	E	373	0	172	0	0
2	F	373	0	172	0	0
3	G	170	0	73	1	0
3	H	170	0	73	0	0
4	I	607	0	285	0	0
4	J	602	0	282	0	0
5	A	81	0	36	9	0
5	B	81	0	36	10	0
6	A	31	0	12	4	0
6	B	31	0	12	6	0
7	A	2	0	0	0	0
7	B	2	0	0	0	0
All	All	56882	0	55587	1380	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 12.

All (1380) 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)
2:C:275:HIS:HE2	2:C:313:SER:HG	1.16	0.93
1:A:1892:MET:HE1	1:A:1902:GLY:HA3	1.53	0.90
1:A:2096:VAL:HG22	1:A:2144:THR:HG21	1.53	0.90
1:A:2633:LYS:HZ3	1:A:3019:GLY:H	1.20	0.88
1:A:4473:MET:HE1	1:A:4478:TRP:HB2	1.58	0.84
1:A:1356:PRO:HG2	1:A:1404:LYS:HE3	1.59	0.84
1:B:4043:MET:HE1	1:B:4125:PHE:HB3	1.59	0.83
1:A:1627:PRO:HB3	1:A:1950:GLN:HB3	1.59	0.83
1:A:4157:MET:HE1	1:A:4185:TRP:HA	1.59	0.83
1:A:2644:THR:HG22	1:A:2646:ASN:H	1.42	0.83
1:A:2503:SER:HB3	1:A:2511:ARG:HG2	1.61	0.82
1:B:1437:VAL:HG12	1:B:1442:ASN:HD21	1.45	0.81
1:A:2770:THR:O	1:A:2773:MET:HB2	1.82	0.80
1:A:1464:LYS:HA	1:A:1467:ARG:HG2	1.63	0.79
1:B:2081:SER:HA	1:B:4415:ARG:HH21	1.48	0.79
1:B:3048:GLU:OE1	1:B:3052:LYS:NZ	2.16	0.78
1:A:1695:HIS:HB3	1:A:1700:GLU:HG3	1.65	0.78
1:A:3239:LYS:HA	1:A:3242:LYS:HG2	1.65	0.77
1:A:2189:MET:HG3	1:A:2191:LEU:HD23	1.68	0.76
1:B:1843:ARG:HH12	1:B:1862:ALA:H	1.31	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3810:SER:HB3	1:A:3890:ILE:HD12	1.70	0.73
1:A:4336:GLY:O	1:A:4339:MET:HB3	1.89	0.73
2:D:234:ARG:HH22	2:D:273:ARG:HH21	1.35	0.73
1:A:1612:GLN:NE2	1:A:1635:GLU:OE1	2.22	0.73
2:D:186:ARG:NH1	2:D:221:VAL:O	2.21	0.72
1:A:3113:MET:HB3	1:A:3115:LEU:HD23	1.70	0.72
1:B:4505:LYS:NZ	1:B:4554:ASP:O	2.22	0.72
1:B:2816:LEU:HD11	1:B:2820:GLY:HA3	1.71	0.72
1:A:1397:ASN:HA	1:A:1400:VAL:HB	1.71	0.72
1:A:4505:LYS:NZ	1:A:4554:ASP:O	2.23	0.72
1:B:1439:LEU:HA	1:B:1442:ASN:HB2	1.72	0.71
1:B:4326:ASN:ND2	1:B:4579:ASN:O	2.23	0.71
1:A:3110:THR:O	1:A:3140:ARG:NH1	2.23	0.71
1:B:4336:GLY:O	1:B:4339:MET:HB3	1.91	0.70
1:A:3741:ARG:NH1	1:A:3744:GLN:OE1	2.25	0.70
1:B:2503:SER:HB3	1:B:2511:ARG:HG2	1.74	0.70
1:B:3028:THR:O	1:B:3031:THR:HB	1.91	0.70
1:A:4326:ASN:ND2	1:A:4579:ASN:O	2.25	0.69
2:D:101:LYS:N	2:D:406:VAL:O	2.26	0.69
1:A:1879:LEU:HD13	1:A:1918:ALA:HB2	1.75	0.69
1:B:2047:GLN:NE2	1:B:2067:ASN:OD1	2.24	0.69
1:B:3601:MET:HE1	1:B:3611:ARG:HB2	1.73	0.69
1:B:1672:VAL:HA	1:B:1691:SER:HA	1.75	0.69
1:A:3517:ALA:HB1	1:A:3525:ARG:HG2	1.74	0.69
1:B:1627:PRO:HB3	1:B:1950:GLN:HB3	1.75	0.69
1:B:1640:ILE:HG13	1:B:1650:LEU:HD22	1.75	0.69
1:A:1930:PHE:HA	1:A:2326:THR:HG21	1.74	0.69
2:C:197:SER:HB2	2:C:239:MET:HA	1.75	0.69
1:A:1451:LEU:HD13	1:A:1454:GLN:HE21	1.57	0.68
1:A:1623:ARG:NH1	1:A:1632:VAL:O	2.25	0.68
2:D:193:HIS:HB3	2:D:212:ARG:HB3	1.74	0.68
1:A:2925:ILE:HG21	1:A:2933:LEU:HG	1.75	0.68
1:B:3032:GLN:O	1:B:3036:GLY:N	2.27	0.68
1:B:2872:LEU:HD12	1:B:2920:LEU:HD12	1.74	0.68
1:B:4099:VAL:HB	1:B:4106:LEU:HD21	1.76	0.67
1:A:3820:GLN:HB2	1:A:4346:MET:HE1	1.75	0.67
1:B:3110:THR:O	1:B:3140:ARG:NH1	2.28	0.67
1:B:3039:LYS:O	2:C:273:ARG:NH2	2.27	0.67
1:B:4543:VAL:HG11	1:B:4622:VAL:HB	1.74	0.67
1:B:2684:ARG:HD2	1:B:2726:ARG:HG2	1.76	0.67
1:B:3638:VAL:HG22	1:B:3681:THR:HB	1.75	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:4150:PRO:O	1:B:4195:ARG:NH2	2.27	0.67
1:B:4301:ARG:NH1	1:B:4303:GLU:OE2	2.27	0.67
1:B:2660:VAL:HG22	1:B:2707:GLN:HB3	1.77	0.67
1:A:1894:GLN:HG3	1:A:4246:LEU:HD11	1.76	0.67
1:B:2925:ILE:HG21	1:B:2933:LEU:HG	1.77	0.67
1:A:4323:LEU:HD12	1:A:4324:PRO:HD2	1.76	0.66
1:A:4541:LEU:HD11	1:A:4590:LEU:HD13	1.77	0.66
1:B:1399:LEU:HB2	1:B:1439:LEU:HD11	1.77	0.66
1:A:1363:LEU:HD13	1:A:1394:MET:HA	1.77	0.66
1:B:1623:ARG:NH1	1:B:1629:PHE:O	2.29	0.66
1:B:2573:ASP:OD1	1:B:2576:ARG:NH2	2.28	0.66
1:B:3914:ILE:O	1:B:3937:ARG:NH1	2.29	0.66
1:A:4099:VAL:HB	1:A:4106:LEU:HD21	1.76	0.66
1:B:3459:GLN:HG3	1:B:3462:LYS:NZ	2.11	0.66
1:A:1535:ASP:HA	1:A:2292:ARG:HH12	1.59	0.65
1:A:2566:ASP:OD1	1:A:2610:ARG:NH2	2.29	0.65
1:A:2578:GLU:OE2	1:A:2607:SER:OG	2.13	0.65
1:A:3174:ARG:NH1	1:A:3650:ASN:OD1	2.30	0.65
1:B:1839:LEU:O	1:B:1843:ARG:NH1	2.29	0.65
1:B:2060:ARG:NH1	1:B:2128:ALA:O	2.29	0.65
1:B:2222:MET:HE1	1:B:2234:TRP:CD1	2.32	0.65
1:B:1424:TRP:HE1	1:B:1429:LEU:HA	1.60	0.65
1:A:4168:ARG:NH2	1:A:4217:ASP:OD1	2.29	0.65
1:B:2452:LEU:HD13	1:B:2729:ARG:HH21	1.62	0.65
1:B:2605:LEU:HD13	1:B:2709:VAL:HG11	1.77	0.65
1:A:1943:ARG:NH1	1:A:2329:ASN:O	2.30	0.65
1:A:1966:ARG:HB2	1:A:4072:GLY:HA2	1.77	0.65
1:A:1439:LEU:HB2	1:A:1443:GLU:HB2	1.78	0.65
1:A:2221:MET:HE3	1:A:2361:MET:HE1	1.79	0.65
1:A:4395:LEU:HD23	1:A:4421:ALA:HB2	1.78	0.65
1:B:1390:LEU:HA	1:B:1394:MET:SD	2.36	0.65
1:B:2271:ASN:OD1	1:B:2272:THR:N	2.29	0.65
2:D:152:SER:O	2:D:154:GLN:NE2	2.29	0.65
1:A:2304:ASP:OD1	1:A:2726:ARG:NH1	2.30	0.64
1:A:3763:ASP:OD2	1:A:3765:THR:OG1	2.15	0.64
1:B:3036:GLY:O	1:B:3039:LYS:HB3	1.97	0.64
1:B:3481:SER:HB3	1:B:3774:LYS:HE2	1.79	0.64
1:A:1352:VAL:HG22	1:B:1353:SER:HB3	1.77	0.64
1:B:3455:ILE:HG12	1:B:3459:GLN:HE22	1.61	0.64
1:B:2770:THR:O	1:B:2773:MET:HB2	1.97	0.64
1:B:3239:LYS:HB3	1:B:3451:TYR:CD2	2.32	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:3517:ALA:HB1	1:B:3525:ARG:HG2	1.79	0.64
1:B:3981:THR:HG23	1:B:3984:GLY:H	1.63	0.64
1:A:3946:ASP:OD2	1:A:3950:LYS:NZ	2.30	0.64
1:A:4154:LYS:HE3	1:A:4310:GLU:HA	1.78	0.64
2:D:324:ASP:HB2	2:D:331:LEU:HD11	1.80	0.64
1:B:2590:PRO:HA	1:B:2708:PHE:O	1.98	0.64
1:B:1561:LEU:O	1:B:1565:THR:OG1	2.14	0.64
1:A:3247:GLN:OE1	1:B:3248:GLN:NE2	2.31	0.64
1:A:3961:LEU:O	1:A:3997:ARG:NH1	2.31	0.64
1:B:2684:ARG:NH1	1:B:2688:GLU:OE1	2.31	0.64
1:B:3835:ILE:HG12	1:B:3870:ARG:HD2	1.80	0.64
1:B:1370:LEU:HD13	1:B:1386:VAL:HB	1.80	0.63
1:B:2265:TYR:OH	1:B:2311:TRP:O	2.15	0.63
1:A:1370:LEU:HD21	1:A:1386:VAL:HG23	1.81	0.63
1:B:1409:LYS:H	1:B:1412:HIS:CE1	2.15	0.63
1:A:1628:ARG:NH1	1:A:1657:MET:O	2.27	0.63
1:B:3219:ARG:HH21	1:B:3472:VAL:HG22	1.63	0.63
1:B:1599:ARG:HH12	1:B:1603:ARG:HD2	1.63	0.63
1:B:2976:LEU:HD11	1:B:3008:MET:HE1	1.81	0.63
1:A:3611:ARG:NH1	1:A:3636:GLN:OE1	2.32	0.63
1:A:4542:GLU:OE1	1:A:4591:ARG:NH2	2.31	0.63
2:C:218:MET:HB3	2:C:228:LYS:HB2	1.81	0.63
1:A:2506:SER:HB2	1:A:2510:MET:HE2	1.81	0.63
1:B:2536:ASP:OD1	1:B:2576:ARG:NH1	2.32	0.63
1:A:2452:LEU:HD13	1:A:2729:ARG:HH21	1.63	0.62
1:A:3113:MET:HE3	1:A:3184:ALA:HA	1.80	0.62
1:B:3561:ARG:NH1	1:B:3603:GLU:OE2	2.32	0.62
1:B:4492:ILE:HG13	1:B:4507:ILE:HD13	1.81	0.62
1:A:1391:LYS:HA	1:A:1394:MET:HE2	1.81	0.62
1:A:1582:VAL:HG13	1:A:1591:VAL:HG11	1.80	0.62
1:A:1704:LEU:HD22	1:A:1707:LYS:HZ3	1.65	0.62
1:B:4099:VAL:HG11	1:B:4126:LEU:HD22	1.81	0.62
1:A:3242:LYS:HA	1:A:3245:LYS:HD2	1.82	0.62
1:B:2694:ARG:NH1	1:B:2697:ASP:OD2	2.33	0.62
2:C:89:ARG:NH2	2:C:409:CYS:O	2.31	0.62
1:A:2065:LEU:HD22	1:A:2137:LEU:HD22	1.80	0.62
1:A:2540:SER:O	1:A:2543:GLY:N	2.32	0.62
1:A:2190:TYR:O	1:A:2377:ASN:ND2	2.32	0.62
1:A:1699:ASN:OD1	1:A:1700:GLU:N	2.33	0.62
1:A:2257:LYS:NZ	1:A:2308:ASP:OD2	2.31	0.62
1:B:2507:ARG:HH21	1:B:2509:LYS:HD2	1.64	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2242:GLU:HG3	1:B:2248:GLU:HA	1.81	0.61
1:B:2903:GLU:O	2:C:212:ARG:NH2	2.33	0.61
1:B:4318:PRO:HG2	1:B:4325:ASN:HA	1.81	0.61
1:A:1462:PHE:O	1:A:1466:ILE:HD12	1.99	0.61
1:A:2536:ASP:OD1	1:A:2576:ARG:NH1	2.33	0.61
1:A:3602:ASN:HA	1:A:3605:LYS:HD2	1.82	0.61
1:B:2174:GLU:OE1	1:B:2179:ARG:NH1	2.33	0.61
1:B:2755:MET:HE1	1:B:2810:LEU:HD12	1.81	0.61
1:A:1443:GLU:OE2	1:A:1447:LYS:NZ	2.33	0.61
1:A:1664:ILE:HG22	1:A:1676:ILE:HG22	1.81	0.61
1:B:2232:MET:HA	1:B:2235:ARG:HB2	1.82	0.61
1:A:3753:LEU:HD21	1:A:3770:LEU:HD21	1.83	0.61
1:B:1558:LYS:HG3	1:B:1565:THR:HG21	1.83	0.61
2:D:174:ILE:HB	2:D:188:MET:HB2	1.83	0.61
1:A:2716:THR:O	1:A:4449:ARG:NH2	2.34	0.61
2:C:211:SER:OG	2:C:213:ASP:OD1	2.19	0.61
1:B:2307:VAL:HG23	1:B:2345:VAL:HG11	1.81	0.61
1:A:2388:ASP:OD1	1:A:2389:GLU:N	2.33	0.61
1:A:3872:ALA:HA	1:A:3875:MET:HE3	1.81	0.61
1:B:2066:ALA:HA	1:B:2069:ILE:HG22	1.83	0.61
2:C:154:GLN:HE22	2:C:170:ALA:HB2	1.65	0.61
1:A:2956:LEU:HD23	1:A:2989:LYS:HB3	1.82	0.60
1:B:2091:ARG:NH2	5:B:4701:ADP:O3A	2.34	0.60
1:B:2294:GLU:OE1	1:B:2294:GLU:N	2.33	0.60
1:A:1850:GLN:HB3	1:A:1856:GLN:HG2	1.82	0.60
1:A:3222:LEU:HD23	1:A:3223:ARG:HH12	1.65	0.60
1:A:4528:VAL:HG11	1:A:4592:TRP:HB2	1.83	0.60
1:B:4174:ASN:OD1	1:B:4231:GLN:NE2	2.32	0.60
1:A:1395:LYS:HB2	1:A:1398:MET:HE1	1.84	0.60
1:B:3017:VAL:HB	1:B:3020:LEU:HB2	1.83	0.60
1:A:1402:GLU:HB2	1:A:1450:LEU:HD21	1.82	0.60
1:B:4518:GLU:OE1	1:B:4518:GLU:N	2.33	0.60
1:B:1933:ASP:HB2	1:B:1962:ARG:HH21	1.66	0.60
1:A:1396:ILE:HG13	1:A:1435:TRP:CD1	2.37	0.60
1:B:1665:ILE:O	1:B:1674:LEU:N	2.30	0.60
1:B:3182:HIS:NE2	1:B:3582:ARG:O	2.32	0.60
1:A:1477:LEU:HA	1:A:1486:LEU:O	2.01	0.60
1:A:1662:SER:HB2	1:A:1679:ARG:HD3	1.84	0.60
1:A:2373:MET:HE3	6:A:4702:ATP:C6	2.36	0.60
1:A:4318:PRO:HG2	1:A:4325:ASN:HA	1.82	0.60
1:B:3825:TYR:CZ	1:B:3875:MET:HG3	2.37	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3130:TYR:CZ	1:A:3132:LYS:HB2	2.37	0.60
1:A:3654:ARG:NH1	1:A:3655:ARG:O	2.35	0.60
1:A:3923:ARG:NH1	1:A:3924:ILE:O	2.35	0.60
1:B:2616:GLU:N	1:B:2616:GLU:OE1	2.35	0.60
1:B:3967:GLU:HB2	1:B:4004:MET:HG2	1.84	0.60
1:A:2519:ARG:NH2	1:A:2527:PRO:O	2.34	0.60
1:B:1836:PHE:HA	1:B:1839:LEU:HB2	1.83	0.60
1:A:4004:MET:HA	1:A:4007:MET:HE3	1.84	0.59
1:B:2993:ILE:HG22	1:B:3065:VAL:HB	1.83	0.59
1:A:1625:SER:HB2	1:A:1699:ASN:HD22	1.67	0.59
1:A:4398:LEU:HG	1:A:4417:VAL:HG21	1.84	0.59
1:B:4172:SER:O	1:B:4231:GLN:NE2	2.35	0.59
2:D:151:ASP:HB2	2:D:171:ASP:HB3	1.82	0.59
1:A:1491:ASP:O	1:A:1495:ASN:ND2	2.35	0.59
1:A:3178:ASP:OD2	1:A:3585:ARG:NE	2.34	0.59
1:A:3239:LYS:HE3	1:A:3454:LEU:HD12	1.84	0.59
1:B:3178:ASP:OD2	1:B:3585:ARG:NE	2.35	0.59
1:B:3727:LYS:O	1:B:3731:LEU:HG	2.01	0.59
1:A:1647:VAL:HA	1:A:1650:LEU:HD12	1.84	0.59
1:A:1842:MET:HE1	1:A:1922:GLN:HG2	1.84	0.59
1:A:1880:VAL:HG11	1:A:2049:ILE:HA	1.84	0.59
1:A:2222:MET:HE3	1:A:2230:LYS:HB3	1.84	0.59
1:B:1623:ARG:NH2	1:B:1634:ASP:OD1	2.36	0.59
1:B:3471:LYS:NZ	1:B:3761:LEU:O	2.35	0.59
1:B:4385:SER:O	1:B:4389:HIS:ND1	2.31	0.59
2:C:113:ARG:NH1	2:C:154:GLN:O	2.35	0.59
2:C:295:GLU:OE2	2:C:368:LYS:NZ	2.35	0.59
1:A:1430:THR:HG23	1:A:1433:GLN:H	1.68	0.59
1:B:3558:GLU:HG2	1:B:3561:ARG:HH21	1.67	0.59
1:B:3779:GLU:OE2	1:B:3782:ARG:NH2	2.34	0.59
1:B:3510:SER:HB3	1:B:3553:LEU:HD21	1.83	0.59
2:C:206:HIS:HB3	2:C:218:MET:HE3	1.84	0.59
2:C:353:ILE:HB	2:C:365:TRP:HB2	1.85	0.59
2:D:109:SER:HB3	2:D:128:GLU:HB3	1.83	0.59
1:A:2386:PRO:HG3	1:A:2413:LEU:HD12	1.84	0.59
1:A:3239:LYS:HD2	1:A:3451:TYR:CD1	2.36	0.59
1:B:3442:ALA:O	1:B:3446:ARG:HG2	2.03	0.59
1:A:2573:ASP:OD1	1:A:2576:ARG:NH2	2.35	0.59
1:A:3240:LEU:HD13	1:B:3448:LYS:HZ3	1.68	0.59
1:A:4470:PRO:HG3	1:A:4612:ASN:HD22	1.67	0.59
1:B:2220:LEU:HB2	1:B:2342:MET:HG3	1.85	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1985:HIS:CD2	1:A:1997:ILE:HG13	2.38	0.59
1:A:2969:GLY:HA2	1:A:3004:PHE:HE1	1.68	0.58
1:A:2290:SER:HB2	1:A:2295:LEU:HG	1.84	0.58
1:A:2683:ILE:HA	1:A:2686:MET:SD	2.44	0.58
1:B:3033:CYS:HB3	1:B:3050:LEU:HD22	1.85	0.58
1:B:4178:ARG:NH2	1:B:4297:PRO:O	2.35	0.58
1:A:3559:ARG:O	1:A:3563:GLN:HG2	2.02	0.58
1:B:2816:LEU:HD12	1:B:2817:PRO:HD2	1.84	0.58
1:B:4037:PRO:HB2	1:B:4118:PRO:HG2	1.84	0.58
1:A:2221:MET:HG2	1:A:2343:PHE:HB2	1.84	0.58
1:A:3689:PRO:HG2	1:A:3692:LEU:HD23	1.85	0.58
1:A:4179:LEU:HD21	1:A:4238:ILE:HD13	1.85	0.58
1:B:3024:ASP:OD1	1:B:3025:GLU:N	2.36	0.58
2:D:97:ARG:HG3	2:D:410:ARG:HD2	1.86	0.58
1:A:2047:GLN:HA	1:A:2070:VAL:HG21	1.84	0.58
1:A:2138:ILE:HD12	1:A:2161:LEU:HD12	1.85	0.58
1:B:4150:PRO:HB3	1:B:4159:ARG:HE	1.69	0.58
2:C:101:LYS:NZ	2:C:408:GLU:OE2	2.29	0.58
1:A:1511:PRO:O	1:A:1514:LYS:NZ	2.33	0.58
1:A:4209:GLU:OE1	1:A:4213:ARG:NH1	2.37	0.58
1:B:1547:LEU:HD12	1:B:1608:LEU:HD22	1.86	0.58
1:B:2025:ARG:NH2	1:B:2313:GLU:OE1	2.36	0.58
1:B:3133:LEU:HD11	1:B:3141:GLU:HB3	1.86	0.58
1:A:2441:PHE:HZ	1:A:2451:ARG:HB2	1.69	0.58
1:A:4049:TYR:OH	1:A:4191:GLN:OE1	2.18	0.58
1:B:2683:ILE:HA	1:B:2686:MET:HE2	1.86	0.58
1:A:3040:GLU:OE2	1:A:3053:TRP:NE1	2.37	0.58
1:A:4408:PRO:HG3	1:A:4526:GLN:HB3	1.85	0.58
1:B:4169:ILE:HG21	1:B:4302:ARG:HD2	1.84	0.58
1:A:2302:VAL:HA	1:A:2342:MET:HB2	1.86	0.57
1:B:2232:MET:HE2	6:B:4702:ATP:H2'	1.86	0.57
1:B:3708:LEU:HD23	1:B:3809:SER:HA	1.85	0.57
1:B:4226:THR:O	1:B:4230:ARG:NH2	2.37	0.57
2:C:265:THR:OG1	2:C:267:GLU:OE1	2.22	0.57
2:D:290:TYR:HE1	2:D:309:PRO:HA	1.68	0.57
1:B:1411:ARG:HD2	1:B:1412:HIS:N	2.19	0.57
1:A:1461:GLU:HA	1:A:1464:LYS:HG2	1.85	0.57
1:B:2974:GLU:OE1	1:B:2977:ARG:NH1	2.38	0.57
1:B:3818:LEU:HA	1:B:4346:MET:HE2	1.85	0.57
1:B:3869:ASN:HD21	1:B:4020:ILE:HG13	1.69	0.57
1:A:1397:ASN:O	1:A:1401:ILE:HG23	2.04	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1912:LYS:NZ	5:A:4701:ADP:O3B	2.36	0.57
1:A:1933:ASP:OD2	1:A:2314:ASN:ND2	2.35	0.57
1:B:2800:THR:OG1	5:B:4703:ADP:O2'	2.17	0.57
1:B:3499:GLN:O	1:B:3503:ILE:HG12	2.03	0.57
1:B:4191:GLN:HA	1:B:4194:LEU:HD12	1.86	0.57
1:A:1396:ILE:HG23	1:A:1438:ASP:OD2	2.05	0.57
1:A:1985:HIS:HD2	1:A:1997:ILE:HG13	1.69	0.57
1:A:2387:LEU:HD21	1:A:2463:HIS:HB3	1.87	0.57
1:B:1353:SER:HA	1:B:1404:LYS:HD2	1.86	0.57
1:B:3807:ALA:O	1:B:3811:ILE:HG12	2.04	0.57
1:A:1948:LEU:HG	1:A:2012:MET:HE2	1.86	0.57
2:C:207:ILE:HG23	2:C:219:TRP:HB2	1.87	0.57
2:D:175:LYS:NZ	2:D:187:THR:OG1	2.34	0.57
1:A:1958:ASP:HA	1:A:2017:THR:HB	1.87	0.57
1:B:2987:ASN:OD1	1:B:3060:ARG:NH2	2.38	0.57
1:B:3474:ARG:NH1	1:B:3764:ASP:OD1	2.38	0.57
1:B:3606:ASP:OD1	1:B:3607:ARG:N	2.38	0.57
1:B:2562:VAL:HG11	1:B:2755:MET:HB3	1.87	0.56
1:B:3129:VAL:HG21	1:B:3149:PHE:HB2	1.87	0.56
1:B:4411:ARG:O	1:B:4415:ARG:HG3	2.05	0.56
1:B:1666:LEU:HD23	1:B:1673:VAL:HA	1.86	0.56
1:B:4525:ARG:NH2	1:B:4539:LEU:O	2.38	0.56
2:D:254:ASN:HA	2:D:278:VAL:HG13	1.87	0.56
1:A:1408:LEU:HD12	1:A:1412:HIS:CD2	2.40	0.56
1:A:1607:LEU:HD23	1:A:1610:LYS:HZ3	1.70	0.56
1:A:2071:PRO:HB3	1:A:4536:LEU:HD23	1.86	0.56
1:A:3588:LEU:HD11	1:A:3638:VAL:HG11	1.87	0.56
1:A:3960:TRP:HZ2	1:A:3970:VAL:HG22	1.69	0.56
1:B:2213:ILE:HA	1:B:2216:ILE:HG22	1.86	0.56
1:B:2288:ILE:HD12	1:B:2333:LEU:HD23	1.87	0.56
1:B:3130:TYR:CZ	1:B:3132:LYS:HB2	2.41	0.56
1:A:3838:ASN:ND2	1:A:3842:GLU:OE1	2.28	0.56
1:A:4457:LYS:HZ2	1:A:4459:ILE:HD13	1.70	0.56
1:B:1798:MET:SD	1:B:1800:GLN:NE2	2.79	0.56
1:B:1936:PHE:HB3	1:B:1941:MET:HE3	1.87	0.56
1:B:2623:SER:N	1:B:2626:THR:OG1	2.30	0.56
1:B:3588:LEU:HD11	1:B:3638:VAL:HG21	1.86	0.56
1:A:3441:GLU:HA	1:A:3444:ILE:HD12	1.87	0.56
1:A:4105:TRP:HE3	1:A:4106:LEU:HD22	1.69	0.56
1:B:1911:GLY:N	5:B:4701:ADP:O1A	2.31	0.56
1:B:2654:GLN:NE2	1:B:2657:LYS:O	2.36	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:3172:THR:HG21	1:B:3694:SER:HB3	1.87	0.56
1:A:3520:PHE:HB3	1:A:3524:MET:HB3	1.88	0.56
1:B:1599:ARG:HH22	1:B:1603:ARG:HD2	1.71	0.56
1:B:1964:GLU:N	1:B:1964:GLU:OE1	2.39	0.56
1:B:4528:VAL:HG11	1:B:4592:TRP:HB2	1.87	0.56
1:A:1380:TYR:HD2	1:A:1382:SER:H	1.52	0.56
1:A:2134:GLN:HE21	1:A:2165:PHE:HD2	1.53	0.56
1:A:2717:ASP:O	1:A:4446:ASN:ND2	2.33	0.56
1:A:2918:HIS:O	1:A:2922:ILE:HG12	2.06	0.56
1:B:2222:MET:HE1	1:B:2234:TRP:HD1	1.71	0.56
1:B:3983:ILE:O	1:B:3987:ILE:HD12	2.05	0.56
2:D:272:LEU:HD13	2:D:323:TRP:CD2	2.41	0.56
1:B:1766:LEU:HD13	1:B:1833:ALA:HA	1.87	0.56
1:B:2419:ALA:O	1:B:2423:MET:HG2	2.06	0.56
1:B:2488:ARG:O	1:B:2492:ARG:HG2	2.06	0.56
1:A:3073:GLU:OE1	1:A:3073:GLU:N	2.27	0.56
1:A:3875:MET:O	1:A:3880:HIS:NE2	2.39	0.56
2:C:233:HIS:CE1	2:C:259:ARG:HD2	2.41	0.56
1:A:2649:VAL:HG13	1:A:2704:GLU:OE1	2.06	0.55
1:A:3196:GLU:O	1:A:3200:HIS:ND1	2.28	0.55
1:A:4518:GLU:OE1	1:A:4518:GLU:N	2.33	0.55
1:B:2592:VAL:HB	1:B:2733:VAL:HG22	1.88	0.55
1:B:3782:ARG:NH1	1:B:3786:GLU:OE2	2.39	0.55
2:C:243:ASN:OD1	2:C:246:GLY:N	2.36	0.55
2:D:396:VAL:HG12	2:D:406:VAL:HG22	1.88	0.55
1:A:2877:LEU:HD11	1:A:2884:VAL:HG13	1.88	0.55
1:B:3825:TYR:OH	1:B:3879:ASP:OD2	2.18	0.55
2:C:112:THR:HG21	2:C:154:GLN:HA	1.87	0.55
1:A:1623:ARG:NH1	1:A:1629:PHE:O	2.35	0.55
1:A:2494:LEU:O	1:A:2498:ILE:HG12	2.06	0.55
1:A:3875:MET:SD	1:A:3879:ASP:HB2	2.45	0.55
1:B:4176:ARG:NH1	1:B:4220:ASP:OD1	2.40	0.55
2:D:378:ALA:O	2:D:405:LYS:NZ	2.32	0.55
1:A:2260:SER:OG	1:A:2262:ASP:OD1	2.19	0.55
1:A:2793:ILE:O	1:A:2836:ARG:NH1	2.39	0.55
1:A:2910:VAL:N	5:A:4704:ADP:N1	2.53	0.55
1:A:4460:LEU:HD12	1:A:4461:PRO:HD2	1.88	0.55
1:B:1404:LYS:HA	1:B:1408:LEU:HD21	1.87	0.55
1:A:3795:GLU:O	1:A:3799:GLN:HG2	2.07	0.55
1:B:2358:ARG:NH2	5:B:4701:ADP:O3B	2.23	0.55
1:A:3024:ASP:OD1	1:A:3025:GLU:N	2.39	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:350:GLY:O	2:D:367:TYR:OH	2.24	0.55
1:A:1579:MET:HE3	1:A:1579:MET:O	2.06	0.55
1:A:2211:TYR:O	1:A:2215:GLN:HG3	2.07	0.55
1:A:3997:ARG:HH21	1:A:4329:ARG:HH12	1.55	0.55
1:B:2914:GLU:OE1	1:B:2914:GLU:N	2.38	0.55
1:B:2965:ARG:NH2	1:B:3614:PHE:O	2.40	0.55
1:A:2585:LEU:HD12	1:A:2591:LEU:HD21	1.87	0.55
1:A:4412:PHE:CZ	1:A:4520:TYR:HB2	2.41	0.55
1:B:3445:ALA:O	1:B:3449:GLU:HG2	2.07	0.55
1:A:1355:GLN:HG3	1:A:1358:LYS:H	1.72	0.55
1:B:1543:ARG:HB3	1:B:1608:LEU:HD13	1.89	0.55
2:C:109:SER:HB3	2:C:128:GLU:HB2	1.89	0.55
1:A:2066:ALA:HA	1:A:2069:ILE:HG22	1.89	0.54
1:A:1521:LEU:O	1:A:1524:GLU:HB2	2.06	0.54
1:A:2660:VAL:HG22	1:A:2707:GLN:HB3	1.88	0.54
1:A:4161:PHE:O	1:A:4302:ARG:NH2	2.36	0.54
1:B:2802:TRP:CZ2	1:B:2829:ALA:HB2	2.42	0.54
1:B:3839:VAL:HG21	1:B:3863:LEU:HA	1.89	0.54
2:C:337:HIS:CE1	2:C:363:ARG:HD2	2.42	0.54
1:A:1618:TYR:HD1	1:A:1621:ARG:HH21	1.54	0.54
1:A:1861:MET:HE3	1:A:1890:LEU:HA	1.90	0.54
1:A:3135:GLN:HG3	1:A:3136:PRO:HD3	1.89	0.54
1:B:1938:PHE:HB2	1:B:1967:MET:HE1	1.89	0.54
1:B:4004:MET:HA	1:B:4007:MET:HG3	1.89	0.54
1:A:1408:LEU:HD12	1:A:1412:HIS:HD2	1.73	0.54
1:A:2087:ASP:O	1:A:2148:LYS:NZ	2.41	0.54
1:A:3045:ASP:OD1	1:A:3046:SER:N	2.41	0.54
1:A:3825:TYR:OH	1:A:3879:ASP:OD2	2.19	0.54
2:C:123:MET:SD	2:C:135:TRP:HB2	2.47	0.54
1:A:2943:LYS:N	5:A:4704:ADP:O1B	2.36	0.54
2:D:362:LEU:HD21	2:D:383:VAL:HG11	1.90	0.54
1:A:1454:GLN:HA	1:A:1457:MET:HG2	1.90	0.54
1:A:2180:GLU:O	1:A:2184:LYS:HG2	2.08	0.54
1:A:2650:LEU:HG	1:A:2703:LEU:HA	1.89	0.54
1:A:3517:ALA:O	1:A:3525:ARG:NE	2.41	0.54
1:B:3459:GLN:HG3	1:B:3462:LYS:HZ1	1.73	0.54
1:B:3882:THR:HA	1:B:4339:MET:HE1	1.89	0.54
2:D:94:TRP:O	2:D:347:HIS:NE2	2.35	0.54
1:A:1836:PHE:HA	1:A:1839:LEU:HB2	1.90	0.54
1:A:1889:TYR:CD1	1:A:1919:LEU:HD12	2.43	0.54
1:A:1932:CYS:HB3	1:A:1963:LEU:HD11	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2091:ARG:HG2	5:A:4701:ADP:H4'	1.90	0.54
1:A:2978:THR:O	1:A:2982:ARG:HG3	2.07	0.54
1:A:3499:GLN:O	1:A:3503:ILE:HG12	2.08	0.54
1:B:1569:GLN:O	1:B:1573:THR:HG23	2.08	0.54
1:B:4339:MET:HG3	1:B:4343:MET:HE1	1.89	0.54
1:A:3875:MET:HE1	1:A:3880:HIS:HA	1.89	0.53
1:B:2373:MET:HE1	6:B:4702:ATP:C5	2.43	0.53
2:C:219:TRP:HA	2:C:226:CYS:HA	1.90	0.53
1:A:1860:GLN:OE1	1:A:1865:LYS:NZ	2.34	0.53
1:A:2377:ASN:HB2	6:A:4702:ATP:H2	1.74	0.53
1:A:2556:GLU:OE2	1:A:2753:ARG:NH1	2.41	0.53
1:B:2232:MET:SD	1:B:2232:MET:N	2.81	0.53
1:B:4377:MET:HE1	1:B:4438:CYS:HA	1.89	0.53
1:A:1766:LEU:HD13	1:A:1833:ALA:HA	1.89	0.53
1:A:4525:ARG:NH2	1:A:4536:LEU:O	2.41	0.53
1:B:2999:VAL:HG11	1:B:3005:LEU:HG	1.91	0.53
1:A:1529:ARG:HE	1:A:1592:LEU:HD11	1.73	0.53
1:A:2073:PHE:HE2	1:A:2093:LEU:HA	1.72	0.53
1:A:2091:ARG:HD2	1:A:2357:SER:HB2	1.91	0.53
1:A:3129:VAL:HG21	1:A:3149:PHE:HB2	1.89	0.53
1:A:4409:LEU:HB3	1:A:4504:LEU:HD21	1.90	0.53
2:D:372:CYS:SG	2:D:375:THR:OG1	2.66	0.53
1:A:1554:SER:O	1:A:1558:LYS:NZ	2.39	0.53
1:A:2262:ASP:OD1	1:A:2263:HIS:N	2.41	0.53
1:A:4338:ASP:OD1	1:A:4342:LYS:HE3	2.08	0.53
2:C:153:VAL:HG22	2:C:169:SER:HB2	1.89	0.53
1:B:2307:VAL:HG13	1:B:2312:VAL:HG11	1.90	0.53
1:A:2179:ARG:NH2	1:A:2195:ASP:OD1	2.42	0.53
1:A:2538:GLU:OE2	1:A:2551:LYS:NZ	2.32	0.53
1:A:3820:GLN:HB3	1:A:4345:LYS:NZ	2.23	0.53
1:A:3825:TYR:CZ	1:A:3875:MET:HG2	2.44	0.53
1:A:4173:PRO:HG2	1:A:4176:ARG:HH21	1.73	0.53
1:A:4392:PRO:O	1:A:4428:ARG:NH1	2.42	0.53
1:B:2221:MET:HB2	1:B:2361:MET:SD	2.49	0.53
1:A:1476:ASP:HB3	1:A:1488:ARG:NH1	2.24	0.53
1:A:2775:GLU:HG2	1:A:2779:MET:HE1	1.91	0.53
1:B:3612:THR:HG23	1:B:3633:LEU:HD11	1.91	0.53
1:A:1365:ALA:HA	1:A:1368:ASN:HD21	1.73	0.53
1:A:1547:LEU:HD12	1:A:1608:LEU:HD22	1.90	0.53
1:A:2016:ILE:HB	1:A:2018:MET:HE3	1.91	0.53
1:A:2786:GLN:HG3	1:A:2793:ILE:HD11	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3548:ALA:HB3	1:A:3551:GLU:HG2	1.91	0.53
1:B:3135:GLN:O	1:B:3137:PRO:HD3	2.09	0.53
2:C:306:LYS:HD2	2:C:308:GLY:H	1.74	0.53
2:D:197:SER:HB3	2:D:210:ALA:HB3	1.91	0.53
1:A:1543:ARG:HA	1:A:1546:TYR:CE2	2.44	0.52
1:A:3485:GLU:CD	1:A:3488:ARG:HH12	2.17	0.52
1:A:4297:PRO:HG3	1:A:4308:TRP:CD2	2.44	0.52
1:B:4157:MET:HE2	1:B:4157:MET:HA	1.91	0.52
2:D:169:SER:OG	2:D:170:ALA:N	2.42	0.52
1:B:1351:TRP:NE1	1:B:1354:VAL:O	2.43	0.52
1:B:1959:GLU:OE1	1:B:2025:ARG:NH1	2.41	0.52
2:C:228:LYS:HD2	2:C:266:LYS:HG3	1.90	0.52
1:A:1639:GLU:OE1	1:A:1653:HIS:NE2	2.41	0.52
1:B:2839:GLU:OE1	1:B:2839:GLU:N	2.35	0.52
1:A:1936:PHE:HB3	1:A:1941:MET:HE3	1.91	0.52
1:A:4009:VAL:HG13	1:A:4013:LEU:HD12	1.91	0.52
1:A:4492:ILE:HD13	1:A:4507:ILE:HG21	1.92	0.52
1:B:4030:ILE:HG21	1:B:4145:PHE:HZ	1.74	0.52
2:D:280:GLU:OE2	2:D:316:ARG:NH2	2.39	0.52
1:A:1664:ILE:HA	1:A:1676:ILE:HA	1.90	0.52
1:A:2147:PRO:HG3	1:A:2209:GLN:HB3	1.92	0.52
1:A:2284:LEU:HD12	1:A:2287:ILE:HD11	1.92	0.52
1:A:3603:GLU:O	1:A:3607:ARG:NH2	2.41	0.52
1:B:1657:MET:HG3	1:B:1658:PHE:CD1	2.45	0.52
1:B:4541:LEU:HD11	1:B:4590:LEU:HB2	1.91	0.52
1:A:1914:GLU:HG3	5:A:4701:ADP:H2'	1.91	0.52
1:A:4287:LYS:H	1:A:4293:ASP:HB3	1.75	0.52
1:B:1599:ARG:HA	1:B:1602:GLU:CD	2.35	0.52
1:B:3005:LEU:HD13	1:B:3081:THR:HG21	1.91	0.52
2:C:309:PRO:HG2	2:C:325:VAL:HB	1.90	0.52
2:C:278:VAL:HB	2:C:316:ARG:HD2	1.91	0.52
1:A:1473:TYR:CZ	1:A:1493:LEU:HD13	2.45	0.52
1:A:1558:LYS:HG3	1:A:1565:THR:HG21	1.91	0.52
1:A:3876:LEU:HD23	1:A:4146:VAL:HG11	1.92	0.52
1:B:1897:GLU:O	1:B:1899:ARG:NH1	2.43	0.52
1:B:2562:VAL:O	1:B:2804:ARG:NH1	2.43	0.52
1:B:3230:GLU:HA	1:B:3233:ASN:HD21	1.74	0.52
1:B:3998:PRO:HA	1:B:4001:LEU:HG	1.90	0.52
2:D:240:VAL:O	2:D:241:ARG:NH1	2.43	0.52
1:A:1351:TRP:HZ2	1:A:1356:PRO:HG3	1.74	0.52
1:A:1458:ALA:HA	1:A:1461:GLU:CD	2.34	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2621:ASN:HA	1:A:2664:ASP:HB3	1.92	0.52
1:B:1438:ASP:O	1:B:1442:ASN:ND2	2.43	0.52
1:A:1892:MET:HE2	1:A:2015:PHE:CE2	2.45	0.52
1:A:2275:TRP:NE1	1:A:2277:ASP:OD1	2.40	0.52
1:A:2964:HIS:H	1:A:2967:TYR:HB2	1.75	0.52
1:B:2211:TYR:HB2	1:B:2237:LEU:HD11	1.92	0.52
1:B:3217:GLU:O	1:B:3220:ARG:HG2	2.09	0.52
1:B:4485:ARG:HD3	1:B:4515:PHE:HE1	1.74	0.52
1:A:2148:LYS:HB2	1:A:2361:MET:HB2	1.92	0.51
1:A:2560:HIS:CD2	1:A:2561:LYS:HG2	2.45	0.51
1:A:2784:PHE:HB2	1:A:2794:TYR:HE2	1.75	0.51
1:A:4427:VAL:HG21	1:A:4478:TRP:HH2	1.75	0.51
1:B:2465:ALA:HB2	1:B:2493:TYR:CD2	2.44	0.51
1:A:2481:MET:HE1	1:A:2486:LEU:HD13	1.92	0.51
1:A:3182:HIS:NE2	1:A:3582:ARG:O	2.43	0.51
1:B:2944:THR:N	5:B:4704:ADP:O1B	2.42	0.51
1:B:4413:PHE:CD1	1:B:4492:ILE:HG21	2.45	0.51
2:C:233:HIS:ND1	2:C:255:ASP:OD2	2.25	0.51
1:A:1401:ILE:HA	1:A:1404:LYS:NZ	2.25	0.51
1:A:1452:VAL:HA	1:A:1512:TYR:CE2	2.46	0.51
1:A:2590:PRO:HB2	1:A:2731:VAL:HG22	1.92	0.51
1:A:3845:ASN:ND2	1:A:3862:ASP:OD2	2.38	0.51
1:B:1411:ARG:NH2	1:B:1452:VAL:HG12	2.25	0.51
1:B:1937:ASP:CG	1:B:2273:ARG:HH22	2.18	0.51
1:B:1939:GLN:HB2	1:B:2273:ARG:NH2	2.25	0.51
1:B:2190:TYR:O	1:B:2377:ASN:ND2	2.39	0.51
1:B:3717:LEU:HD12	1:B:3801:TYR:HD2	1.75	0.51
1:A:1360:ARG:HD2	1:A:1363:LEU:HD12	1.92	0.51
1:A:2211:TYR:HB2	1:A:2237:LEU:HD11	1.92	0.51
1:B:1508:LYS:HG2	1:B:1513:TYR:CZ	2.46	0.51
2:C:207:ILE:CG2	2:C:219:TRP:HB2	2.41	0.51
1:A:1954:TRP:NE1	1:A:2011:ASP:O	2.43	0.51
1:A:2202:MET:HE2	1:A:2202:MET:HA	1.93	0.51
1:A:3731:LEU:HD23	1:A:3787:THR:HG23	1.92	0.51
1:A:3835:ILE:HG12	1:A:3870:ARG:HD2	1.93	0.51
1:A:4511:LEU:HD23	1:A:4560:VAL:HG13	1.91	0.51
1:B:1393:TYR:CD1	1:B:1435:TRP:HB2	2.45	0.51
1:B:1667:ASN:ND2	1:B:1671:SER:OG	2.27	0.51
1:B:1667:ASN:ND2	1:B:1672:VAL:HG12	2.24	0.51
2:D:277:HIS:HB3	2:D:316:ARG:HB2	1.92	0.51
1:B:1836:PHE:O	1:B:1840:SER:N	2.42	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1861:MET:HG3	1:B:1893:THR:HG21	1.91	0.51
1:B:2063:GLU:O	1:B:2067:ASN:ND2	2.44	0.51
1:B:2591:LEU:HG	1:B:2709:VAL:HG22	1.92	0.51
1:B:3207:LYS:HB3	1:B:3760:ILE:HD11	1.92	0.51
2:D:133:LYS:HB3	2:D:135:TRP:HE1	1.76	0.51
1:A:1897:GLU:O	1:A:1899:ARG:NH1	2.43	0.51
1:A:2191:LEU:HD12	6:A:4702:ATP:C6	2.44	0.51
1:A:3510:SER:HB3	1:A:3553:LEU:HD21	1.91	0.51
1:B:4030:ILE:HG23	1:B:4034:GLU:HB2	1.93	0.51
1:B:4157:MET:HE1	1:B:4184:ALA:C	2.36	0.51
1:B:4398:LEU:HG	1:B:4417:VAL:HG11	1.91	0.51
2:C:212:ARG:HA	2:C:236:TRP:CD1	2.46	0.51
1:A:1478:VAL:HG23	1:A:1488:ARG:NH1	2.26	0.51
1:B:2134:GLN:O	1:B:2138:ILE:HG12	2.11	0.51
1:B:2156:LEU:HD22	1:B:4411:ARG:HD2	1.92	0.51
1:B:3983:ILE:HG13	1:B:4011:THR:HG22	1.92	0.51
1:A:3469:GLU:OE2	1:A:3473:ASN:ND2	2.43	0.51
1:A:4339:MET:HE3	1:A:4343:MET:HE1	1.92	0.51
1:A:1769:MET:SD	1:A:1777:PRO:HD2	2.51	0.51
1:A:2773:MET:HB3	1:A:2799:MET:HE1	1.91	0.51
1:B:1408:LEU:HA	1:B:1412:HIS:HE1	1.76	0.51
1:B:2682:PHE:CD2	1:B:2686:MET:HE1	2.46	0.51
1:A:1964:GLU:OE1	1:A:1966:ARG:HG2	2.10	0.50
1:A:4039:THR:HG23	1:A:4142:GLY:HA2	1.92	0.50
1:A:4069:ILE:HD13	1:A:4079:GLN:HG3	1.92	0.50
1:B:2304:ASP:OD1	1:B:2684:ARG:NH2	2.45	0.50
1:B:3457:GLU:O	1:B:3461:ILE:HG12	2.11	0.50
2:D:348:SER:H	2:D:388:PHE:HE2	1.59	0.50
1:A:1974:GLN:O	1:A:1978:ILE:HG12	2.11	0.50
1:B:1349:GLN:HE21	1:B:1351:TRP:H	1.57	0.50
1:B:1453:ALA:O	1:B:1456:GLU:HG2	2.11	0.50
1:B:3725:ASP:OD1	1:B:3728:ARG:NH2	2.33	0.50
1:A:1571:ILE:HG12	1:A:1607:LEU:HD13	1.94	0.50
1:B:1589:MET:SD	1:B:1589:MET:N	2.84	0.50
1:B:1589:MET:O	1:B:1593:ASN:N	2.39	0.50
1:B:1835:SER:OG	1:B:1837:GLU:OE1	2.30	0.50
1:B:2449:LEU:HA	1:B:2453:ARG:HH21	1.76	0.50
2:C:90:ASP:HB3	2:C:93:GLU:HB3	1.93	0.50
1:A:3731:LEU:HB2	1:A:3791:MET:HE3	1.93	0.50
1:B:4487:LYS:O	1:B:4490:GLN:HG2	2.11	0.50
2:D:278:VAL:HB	2:D:316:ARG:HD2	1.92	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1390:LEU:HD23	1:A:1393:TYR:HD2	1.77	0.50
1:A:2441:PHE:HA	1:A:2449:LEU:HD23	1.94	0.50
1:B:1917:LYS:NZ	1:B:2322:ASN:OD1	2.31	0.50
1:B:2648:VAL:HG11	1:B:2694:ARG:NH2	2.27	0.50
2:C:136:ASP:N	2:C:143:GLU:OE1	2.45	0.50
2:C:243:ASN:HD22	2:C:248:LEU:HB2	1.77	0.50
2:D:155:ASP:HB3	2:D:198:VAL:HG12	1.93	0.50
1:A:3928:THR:H	1:A:3931:GLN:HE21	1.58	0.50
1:B:4168:ARG:NH2	1:B:4217:ASP:OD1	2.44	0.50
1:A:1519:ASP:OD1	1:A:1520:ALA:N	2.44	0.50
1:B:1785:VAL:O	1:B:1789:LEU:HG	2.11	0.50
1:B:2495:VAL:HG11	1:B:2526:LEU:HD21	1.94	0.50
1:B:2566:ASP:OD1	1:B:2567:VAL:N	2.44	0.50
1:B:4419:MET:HA	1:B:4422:LYS:HG2	1.92	0.50
2:C:110:PRO:HB3	2:C:400:VAL:HA	1.93	0.50
1:B:2387:LEU:HB2	1:B:2412:MET:HE2	1.94	0.50
1:B:3229:LEU:O	1:B:3233:ASN:ND2	2.45	0.50
1:A:2909:LEU:HD21	1:A:2945:THR:HG21	1.93	0.50
1:B:1674:LEU:HB3	1:B:1685:MET:HE1	1.93	0.50
1:B:4544:ASN:OD1	1:B:4589:GLN:HB2	2.12	0.50
2:C:153:VAL:HA	2:C:169:SER:HA	1.92	0.50
1:A:1798:MET:SD	1:A:1800:GLN:NE2	2.85	0.49
1:A:1860:GLN:HB3	1:A:1865:LYS:NZ	2.27	0.49
1:A:2060:ARG:HH22	1:A:2129:GLU:HA	1.76	0.49
1:A:3131:ASP:OD1	1:A:3132:LYS:N	2.45	0.49
1:A:3793:GLU:HA	1:A:3796:THR:HG22	1.92	0.49
1:A:4018:MET:SD	1:A:4018:MET:N	2.84	0.49
1:B:3175:HIS:CE1	1:B:3585:ARG:HH12	2.30	0.49
2:C:91:PRO:HA	2:C:94:TRP:CZ3	2.47	0.49
2:D:257:THR:HA	2:D:272:LEU:O	2.12	0.49
1:A:2149:LEU:HD11	1:A:2157:LEU:HD22	1.94	0.49
1:A:3099:THR:HG23	1:A:3148:VAL:HG11	1.94	0.49
1:B:1911:GLY:O	1:B:1915:SER:N	2.34	0.49
1:B:2176:THR:O	1:B:2179:ARG:N	2.45	0.49
1:B:4488:GLN:O	1:B:4492:ILE:HD12	2.11	0.49
1:B:4554:ASP:OD2	1:B:4557:SER:OG	2.27	0.49
1:A:2159:SER:OG	1:A:4411:ARG:NH1	2.45	0.49
1:A:3175:HIS:CE1	1:A:3585:ARG:HH12	2.30	0.49
1:B:1688:THR:OG1	1:B:1708:GLU:OE1	2.30	0.49
2:C:198:VAL:HG22	2:C:207:ILE:HD11	1.93	0.49
1:A:1457:MET:HA	1:A:1460:GLU:CD	2.37	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1755:GLN:NE2	1:A:1814:GLU:OE2	2.32	0.49
1:B:1992:LYS:O	1:B:1992:LYS:NZ	2.31	0.49
1:B:2564:ALA:HB3	1:B:2567:VAL:HG22	1.93	0.49
1:B:2085:HIS:HB2	1:B:2361:MET:HE2	1.94	0.49
1:B:3839:VAL:HG11	1:B:3863:LEU:HB2	1.94	0.49
2:D:274:GLU:HB2	2:D:323:TRP:HH2	1.77	0.49
1:A:4088:VAL:HG11	1:A:4116:LEU:HD21	1.95	0.49
1:A:4308:TRP:CH2	1:A:4312:LEU:HD21	2.48	0.49
1:B:1978:ILE:HD11	1:B:2001:LEU:HD11	1.94	0.49
1:B:2060:ARG:NH2	1:B:2129:GLU:O	2.46	0.49
1:B:2641:TYR:CE1	1:B:2650:LEU:HD13	2.47	0.49
1:B:4405:ILE:O	1:B:4411:ARG:NH1	2.45	0.49
1:A:1507:MET:O	1:A:1510:SER:OG	2.23	0.49
1:A:1563:VAL:O	1:A:1567:ARG:HG2	2.13	0.49
1:A:2628:PRO:HG3	1:A:2679:VAL:HA	1.95	0.49
1:B:2009:SER:O	1:B:2012:MET:HG3	2.13	0.49
1:A:1415:GLN:NE2	1:A:1449:VAL:HG13	2.28	0.49
1:A:1495:ASN:HA	1:A:1498:LYS:HE3	1.95	0.49
1:A:2641:TYR:CE2	1:A:2694:ARG:HD3	2.48	0.49
1:A:4136:VAL:O	1:A:4140:ARG:HG3	2.12	0.49
1:B:1991:ASP:O	1:B:1994:SER:OG	2.29	0.49
1:A:1454:GLN:HA	1:A:1457:MET:HE3	1.94	0.49
1:A:1960:PHE:HB3	1:A:2018:MET:HE1	1.95	0.49
1:A:2478:ASP:OD1	1:A:2479:PHE:N	2.45	0.49
1:A:2903:GLU:OE1	1:A:2952:TRP:NE1	2.46	0.49
1:A:4093:TRP:CD1	1:A:4123:ARG:HB2	2.48	0.49
1:B:1399:LEU:HD23	1:B:1403:LEU:HB2	1.93	0.49
1:A:1518:GLU:OE1	1:A:1518:GLU:N	2.37	0.49
1:A:1627:PRO:HB2	1:A:1951:VAL:HG23	1.95	0.49
1:A:1929:VAL:HG12	1:A:1956:CYS:HB3	1.95	0.49
1:A:3822:HIS:HE1	1:A:4130:ILE:HD11	1.77	0.49
1:A:3856:LEU:O	1:A:3859:ILE:HG22	2.13	0.49
1:A:3935:VAL:HG13	1:A:3947:LEU:HD23	1.95	0.49
1:B:3931:GLN:NE2	1:B:3996:PHE:O	2.40	0.49
1:B:4009:VAL:HG13	1:B:4013:LEU:HD12	1.94	0.49
1:A:2053:MET:O	1:A:2056:SER:OG	2.23	0.48
1:A:4335:GLN:O	1:A:4339:MET:N	2.35	0.48
1:B:1698:ILE:HD12	1:B:1701:TRP:HE1	1.78	0.48
1:B:3219:ARG:CZ	1:B:3472:VAL:HG13	2.42	0.48
2:C:186:ARG:HG2	2:C:188:MET:SD	2.53	0.48
1:A:1451:LEU:HD13	1:A:1454:GLN:NE2	2.25	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2047:GLN:NE2	1:A:2051:GLN:OE1	2.44	0.48
1:A:2935:LEU:HB2	1:A:3067:THR:HG22	1.96	0.48
1:A:2963:VAL:HG13	1:A:3643:PRO:HG2	1.95	0.48
1:B:1490:TRP:CG	1:B:1538:ILE:HD12	2.48	0.48
1:B:2139:GLN:HG3	1:B:2170:TYR:CE1	2.48	0.48
1:B:3548:ALA:HB3	1:B:3551:GLU:HG2	1.95	0.48
1:B:4069:ILE:O	1:B:4096:LEU:HA	2.13	0.48
2:D:197:SER:HB2	2:D:239:MET:HA	1.94	0.48
1:A:2107:ARG:NH2	1:A:2139:GLN:OE1	2.40	0.48
1:A:2449:LEU:HA	1:A:2453:ARG:HH21	1.77	0.48
1:B:1484:CYS:SG	1:B:1485:ARG:N	2.86	0.48
1:B:1600:SER:O	1:B:1603:ARG:HG2	2.14	0.48
1:B:3622:ASN:O	1:B:3625:SER:OG	2.24	0.48
2:D:92:LYS:HG3	2:D:349:GLY:HA3	1.96	0.48
2:D:309:PRO:HG2	2:D:325:VAL:HB	1.95	0.48
1:A:1407:ALA:HB2	1:A:1457:MET:HE1	1.95	0.48
1:A:2092:ALA:O	1:A:2096:VAL:HG23	2.13	0.48
1:A:2384:SER:HB2	1:A:2385:ILE:HD12	1.95	0.48
1:B:2210:LEU:HD13	1:B:2362:VAL:HG21	1.95	0.48
1:B:2213:ILE:HG22	1:B:2220:LEU:HD21	1.93	0.48
1:B:3239:LYS:HB3	1:B:3451:TYR:CE2	2.48	0.48
1:B:4052:SER:O	1:B:4056:GLU:HG2	2.13	0.48
2:C:216:ILE:HB	2:C:230:PHE:HB2	1.96	0.48
2:C:254:ASN:HD22	2:C:278:VAL:HG21	1.78	0.48
1:A:1417:MET:HE1	1:A:1423:ASN:HA	1.95	0.48
1:A:2430:ASN:O	1:A:2435:LYS:NZ	2.46	0.48
1:A:3172:THR:HG21	1:A:3694:SER:HB3	1.94	0.48
1:A:3761:LEU:HA	1:A:3767:ILE:HD11	1.95	0.48
2:D:200:ILE:HG12	2:D:207:ILE:HG12	1.95	0.48
2:D:201:MET:SD	2:D:201:MET:N	2.85	0.48
1:A:1668:GLU:N	1:A:1668:GLU:OE1	2.44	0.48
1:A:2239:LYS:O	1:A:2242:GLU:HB3	2.14	0.48
1:A:2337:PRO:O	1:A:2340:ARG:NH1	2.38	0.48
1:A:4393:GLN:HG3	1:A:4428:ARG:CZ	2.43	0.48
1:A:4525:ARG:HH21	1:A:4537:GLU:HA	1.78	0.48
1:A:4529:ALA:O	1:A:4533:SER:N	2.47	0.48
1:B:1413:TRP:HZ2	1:B:1424:TRP:CE2	2.31	0.48
1:B:2047:GLN:HA	1:B:2070:VAL:HG21	1.95	0.48
1:B:3459:GLN:HG3	1:B:3462:LYS:HZ3	1.78	0.48
1:B:4397:HIS:CE1	1:B:4418:LYS:HG3	2.49	0.48
2:C:91:PRO:HA	2:C:94:TRP:HZ3	1.79	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1859:ILE:HD11	1:A:1868:TYR:HD1	1.79	0.48
1:A:2230:LYS:HG2	1:A:2364:PHE:CG	2.49	0.48
1:A:2232:MET:HE3	1:A:2232:MET:H	1.77	0.48
1:A:4156:ASN:ND2	1:A:4188:ALA:HA	2.29	0.48
1:B:4190:ILE:HD12	1:B:4201:TRP:HZ2	1.79	0.48
1:A:1491:ASP:OD1	1:A:1492:ASP:N	2.47	0.48
1:A:2134:GLN:O	1:A:2138:ILE:HG12	2.14	0.48
1:A:3243:MET:HE1	1:A:3444:ILE:HG23	1.95	0.48
1:B:1437:VAL:HG12	1:B:1442:ASN:ND2	2.23	0.48
1:B:1850:GLN:HB3	1:B:1856:GLN:HG2	1.96	0.48
1:B:1929:VAL:H	1:B:2332:ARG:HH21	1.60	0.48
1:B:2956:LEU:HD13	1:B:2989:LYS:HB3	1.95	0.48
1:B:3073:GLU:OE1	1:B:3073:GLU:N	2.45	0.48
1:B:4110:GLU:OE1	1:B:4137:ASN:ND2	2.47	0.48
1:A:1364:ASP:O	1:A:1368:ASN:ND2	2.47	0.48
1:A:2156:LEU:O	1:A:2159:SER:OG	2.27	0.48
1:A:2277:ASP:OD2	1:A:2285:ARG:NE	2.44	0.48
1:A:2534:ILE:HD12	1:A:2534:ILE:H	1.79	0.48
1:A:3826:GLN:HG3	1:A:4136:VAL:HG13	1.96	0.48
1:A:3989:ARG:HB3	1:A:4004:MET:HE1	1.96	0.48
1:B:1375:ALA:HA	1:B:1378:ARG:HB2	1.96	0.48
1:B:1451:LEU:HD13	1:B:1454:GLN:NE2	2.28	0.48
1:A:2533:PRO:HB2	1:A:2535:ILE:HG22	1.95	0.48
1:B:2488:ARG:HG2	1:B:2492:ARG:HH12	1.79	0.48
1:B:3154:LEU:HD11	1:B:3516:TYR:HB3	1.95	0.48
1:B:3872:ALA:HA	1:B:3875:MET:HB3	1.96	0.48
2:C:358:ASP:C	2:C:360:LYS:H	2.21	0.48
1:A:1492:ASP:OD1	1:A:1493:LEU:N	2.47	0.47
1:A:2224:GLY:O	1:A:2346:GLN:HA	2.14	0.47
1:A:4078:ASN:HB3	1:A:4082:LYS:NZ	2.29	0.47
1:A:4289:ASP:OD1	1:A:4292:LYS:N	2.45	0.47
1:A:4525:ARG:HE	1:A:4536:LEU:HG	1.79	0.47
1:B:1363:LEU:HB2	1:B:1394:MET:HG2	1.96	0.47
1:B:4446:ASN:OD1	1:B:4449:ARG:NH1	2.43	0.47
2:C:159:ASP:OD2	2:C:161:SER:OG	2.32	0.47
1:A:1415:GLN:HE21	1:A:1449:VAL:HG13	1.78	0.47
1:A:1817:HIS:CE1	1:A:1881:GLN:HG2	2.49	0.47
1:A:4525:ARG:NH2	1:A:4537:GLU:HA	2.29	0.47
1:B:2995:ASP:OD1	1:B:2996:GLU:N	2.47	0.47
1:B:3124:ASP:OD1	1:B:3125:TYR:N	2.45	0.47
1:B:3597:THR:O	1:B:3601:MET:HG2	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:183:GLU:OE1	2:D:183:GLU:N	2.47	0.47
1:A:1448:ASP:OD1	1:A:1449:VAL:N	2.48	0.47
1:A:3967:GLU:HB2	1:A:4004:MET:SD	2.54	0.47
1:B:1358:LYS:O	1:B:1362:ASN:ND2	2.47	0.47
1:B:1443:GLU:HG2	1:B:1447:LYS:NZ	2.28	0.47
1:B:1698:ILE:HD12	1:B:1701:TRP:NE1	2.29	0.47
1:B:2654:GLN:OE1	1:B:2657:LYS:HB2	2.14	0.47
1:B:3517:ALA:O	1:B:3525:ARG:NE	2.48	0.47
1:B:3826:GLN:HG3	1:B:4136:VAL:HG13	1.96	0.47
1:B:3942:PRO:O	1:B:3945:LYS:NZ	2.40	0.47
2:D:262:VAL:HB	2:D:265:THR:OG1	2.14	0.47
1:A:3459:GLN:O	1:A:3462:LYS:HG2	2.15	0.47
1:A:3731:LEU:HG	1:A:3734:LEU:HD12	1.96	0.47
1:A:3820:GLN:HB3	1:A:4345:LYS:HZ2	1.77	0.47
1:B:2042:THR:HG22	1:B:2043:LYS:HG3	1.95	0.47
1:B:3072:SER:O	1:B:3076:LYS:HG3	2.14	0.47
1:A:1836:PHE:O	1:A:1840:SER:N	2.47	0.47
1:A:1892:MET:HE2	1:A:2015:PHE:HE2	1.80	0.47
1:A:3244:VAL:O	1:A:3248:GLN:HG3	2.15	0.47
1:B:1964:GLU:HB2	1:B:1967:MET:HB2	1.96	0.47
2:D:123:MET:SD	2:D:135:TRP:HB2	2.54	0.47
1:B:1409:LYS:O	1:B:1412:HIS:ND1	2.47	0.47
1:B:1910:THR:N	5:B:4701:ADP:O1A	2.47	0.47
1:B:3459:GLN:HA	1:B:3462:LYS:HZ3	1.80	0.47
1:B:3786:GLU:O	1:B:3790:VAL:HG23	2.15	0.47
1:B:4277:SER:HA	1:B:4282:PHE:CD2	2.49	0.47
1:A:1441:LYS:HE3	1:A:1442:ASN:HD22	1.80	0.47
1:A:1526:LYS:HD2	1:A:1529:ARG:HH22	1.79	0.47
1:A:2603:MET:HE3	5:A:4703:ADP:H5'1	1.96	0.47
1:A:2934:LEU:HD13	1:A:3085:LEU:HD11	1.96	0.47
1:A:4305:PHE:O	1:A:4309:VAL:HG23	2.15	0.47
1:B:2138:ILE:HD12	1:B:2161:LEU:HD12	1.97	0.47
1:B:2270:PRO:HA	1:B:2273:ARG:HH11	1.80	0.47
1:B:2465:ALA:HB2	1:B:2493:TYR:CE2	2.50	0.47
1:B:2596:PRO:HB2	1:B:2738:TYR:CZ	2.49	0.47
1:B:3150:VAL:HG22	1:B:3532:TRP:CD1	2.50	0.47
1:B:3647:PRO:HA	1:B:3652:GLU:OE2	2.14	0.47
1:B:3876:LEU:HD23	1:B:4146:VAL:HG11	1.96	0.47
2:C:287:GLU:HA	2:C:290:TYR:CE2	2.50	0.47
2:C:381:HIS:CG	2:C:382:PHE:H	2.33	0.47
2:D:218:MET:HE3	2:D:228:LYS:HB2	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1360:ARG:HH12	1:A:1364:ASP:HB3	1.80	0.47
1:A:1455:GLY:HA3	1:A:1512:TYR:HD2	1.79	0.47
1:A:2601:LYS:N	5:A:4703:ADP:O1B	2.48	0.47
1:B:2969:GLY:HA2	1:B:3004:PHE:HE1	1.80	0.47
1:A:1350:PRO:HA	1:A:1429:LEU:O	2.15	0.47
1:A:3635:VAL:HB	1:A:3679:LEU:HD13	1.95	0.47
1:A:4619:ILE:HG22	1:A:4620:PHE:HD1	1.80	0.47
1:B:1451:LEU:O	1:B:1454:GLN:HG2	2.15	0.47
1:B:1518:GLU:HG2	1:B:1519:ASP:N	2.29	0.47
1:B:3249:GLU:HA	1:B:3252:LYS:HD2	1.96	0.47
1:A:2628:PRO:HG2	1:A:2678:ARG:HG2	1.97	0.47
1:A:3236:ALA:HA	1:A:3239:LYS:NZ	2.30	0.47
1:A:4248:ALA:HB2	1:A:4269:LEU:HD12	1.96	0.47
1:B:3003:GLY:O	1:B:3007:ARG:HG2	2.14	0.47
1:B:4462:ARG:NE	1:B:4462:ARG:HA	2.30	0.47
2:D:94:TRP:CE2	2:D:393:PRO:HB3	2.50	0.47
2:D:313:SER:OG	2:D:323:TRP:NE1	2.40	0.47
1:A:1359:LEU:O	1:A:1363:LEU:HG	2.15	0.46
1:A:1497:VAL:HG21	1:A:1531:MET:HE3	1.95	0.46
1:A:2210:LEU:HD12	1:A:2362:VAL:HG11	1.97	0.46
1:A:3154:LEU:HD11	1:A:3516:TYR:HB3	1.97	0.46
1:B:2238:LEU:HD13	1:B:2300:TRP:CE3	2.51	0.46
1:B:2446:ILE:HD11	1:B:2714:PRO:HB3	1.98	0.46
2:D:257:THR:HG22	2:D:273:ARG:HG2	1.97	0.46
1:A:1626:PHE:HB3	1:A:1629:PHE:CE2	2.50	0.46
1:A:1750:VAL:HG12	1:A:1811:LEU:HD21	1.96	0.46
1:A:2447:MET:HE3	1:A:2447:MET:HA	1.97	0.46
1:A:3617:ASP:OD1	2:C:226:CYS:HB3	2.15	0.46
1:B:4404:ASN:HB3	1:B:4410:PHE:CD2	2.51	0.46
1:A:2574:THR:O	1:A:2578:GLU:HG2	2.16	0.46
1:A:2633:LYS:NZ	1:A:3019:GLY:H	2.03	0.46
1:A:2671:MET:HB2	1:A:2721:LYS:HG2	1.97	0.46
1:A:4239:PRO:HB2	1:A:4242:ALA:HB3	1.97	0.46
1:B:3753:LEU:HD21	1:B:3770:LEU:HD21	1.97	0.46
1:B:4044:CYS:SG	1:B:4144:ILE:HG23	2.56	0.46
1:A:1471:ASN:HA	1:A:1589:MET:HE1	1.97	0.46
1:A:1561:LEU:O	1:A:1565:THR:OG1	2.22	0.46
1:A:1698:ILE:HD12	1:A:1701:TRP:NE1	2.31	0.46
1:A:2269:ASP:HB3	1:A:2274:GLU:H	1.80	0.46
1:A:2315:LEU:HB3	1:A:2319:LEU:HD13	1.97	0.46
1:A:3451:TYR:O	1:A:3455:ILE:HG23	2.14	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:4599:GLU:HG3	1:A:4600:LYS:H	1.80	0.46
1:B:1390:LEU:O	1:B:1395:LYS:HB3	2.15	0.46
1:B:1996:PRO:HB3	1:B:2007:LYS:HD3	1.98	0.46
1:B:2855:LEU:HD21	1:B:2863:ARG:HG3	1.96	0.46
1:A:3456:SER:HB2	1:B:3459:GLN:NE2	2.31	0.46
1:A:3484:ALA:HA	1:A:3487:GLU:OE1	2.15	0.46
1:A:3769:THR:O	1:A:3773:LEU:HG	2.15	0.46
1:B:1399:LEU:HD11	1:B:1434:ILE:HG12	1.97	0.46
1:B:1478:VAL:HG11	1:B:1488:ARG:HH21	1.80	0.46
1:B:2943:LYS:HG2	1:B:3094:PHE:CD2	2.49	0.46
1:A:1745:TYR:O	1:A:1807:LYS:NZ	2.43	0.46
1:A:1860:GLN:CD	1:A:1865:LYS:HZ3	2.18	0.46
1:A:3518:GLY:O	1:A:3525:ARG:NH2	2.49	0.46
1:A:3537:GLN:NE2	1:A:3538:GLN:HG3	2.31	0.46
1:A:3606:ASP:OD1	1:A:3607:ARG:N	2.48	0.46
1:A:4445:THR:H	1:A:4448:LEU:HB2	1.81	0.46
1:B:1424:TRP:HH2	1:B:1434:ILE:HB	1.81	0.46
1:B:1470:TRP:HE1	1:B:1527:LEU:HD21	1.79	0.46
1:B:2430:ASN:O	1:B:2435:LYS:NZ	2.49	0.46
1:B:2628:PRO:HB3	1:B:2682:PHE:CD2	2.51	0.46
1:A:1466:ILE:HG13	1:A:1500:HIS:ND1	2.30	0.46
1:A:2616:GLU:HG3	1:A:2659:LEU:HD12	1.98	0.46
1:A:2658:TRP:CE2	1:A:2705:ARG:HA	2.51	0.46
1:A:3251:GLU:OE2	1:B:3248:GLN:HG2	2.16	0.46
1:B:1903:SER:HB3	1:B:2038:SER:HA	1.98	0.46
1:B:1949:CYS:HA	1:B:2012:MET:SD	2.56	0.46
1:B:3174:ARG:HA	1:B:3177:LEU:HD12	1.98	0.46
1:B:3960:TRP:O	1:B:3966:PRO:HB3	2.16	0.46
1:A:1438:ASP:CG	1:A:1439:LEU:H	2.24	0.46
1:A:1637:LEU:O	1:A:1641:ILE:HG12	2.16	0.46
1:A:1673:VAL:HG23	1:A:1692:ILE:HD11	1.98	0.46
1:A:1685:MET:O	1:A:1712:THR:HG21	2.16	0.46
1:A:1985:HIS:CE1	1:A:2010:PRO:HB3	2.50	0.46
1:A:2492:ARG:HG2	1:A:2545:TRP:CE2	2.51	0.46
1:B:2177:ALA:O	1:B:2181:GLU:HG2	2.16	0.46
1:B:2369:LEU:HD21	6:B:4702:ATP:C8	2.51	0.46
1:B:2464:GLN:HG2	1:B:2583:THR:HG23	1.98	0.46
2:D:233:HIS:NE2	2:D:251:SER:OG	2.45	0.46
1:A:3021:PHE:CD2	1:A:3029:LEU:HD22	2.51	0.46
1:A:3638:VAL:HG12	1:A:3681:THR:HB	1.98	0.46
1:B:1965:GLU:HG2	1:B:2026:SER:HB3	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:239:MET:SD	2:C:241:ARG:HG2	2.56	0.46
1:A:2596:PRO:HB2	1:A:2738:TYR:CZ	2.51	0.46
1:A:3221:ASP:O	1:A:3225:LYS:HG2	2.16	0.46
1:A:3692:LEU:O	1:A:3696:VAL:HG22	2.16	0.46
1:A:4469:VAL:HG21	1:A:4473:MET:HE2	1.97	0.46
1:B:1451:LEU:HD13	1:B:1454:GLN:HE21	1.81	0.46
1:B:2221:MET:HE2	1:B:2361:MET:SD	2.55	0.46
1:B:2519:ARG:NH2	1:B:2527:PRO:O	2.45	0.46
1:B:2538:GLU:HB3	1:B:2548:TRP:CE2	2.51	0.46
1:B:2964:HIS:H	1:B:2967:TYR:HB2	1.80	0.46
1:A:2063:GLU:HG2	1:A:2064:VAL:N	2.30	0.45
1:A:2269:ASP:OD2	1:A:2272:THR:OG1	2.30	0.45
1:A:2548:TRP:CE2	1:A:2576:ARG:HG2	2.50	0.45
1:A:2657:LYS:O	1:A:2705:ARG:NH1	2.44	0.45
1:A:3489:TRP:HH2	1:A:3753:LEU:HD12	1.80	0.45
1:A:4194:LEU:HA	1:A:4201:TRP:HD1	1.81	0.45
1:B:1351:TRP:CD2	1:B:1354:VAL:HB	2.51	0.45
1:B:1478:VAL:HG11	1:B:1488:ARG:HE	1.80	0.45
1:B:2667:ASN:ND2	1:B:2713:ASN:O	2.48	0.45
1:B:2784:PHE:HB3	1:B:2792:TYR:CD2	2.51	0.45
2:C:98:PRO:HG2	3:G:2:SER:HA	1.98	0.45
1:A:1526:LYS:HB3	1:A:1526:LYS:HE2	1.70	0.45
1:A:2592:VAL:HB	1:A:2733:VAL:HG22	1.99	0.45
1:A:3222:LEU:HD13	1:A:3468:VAL:HG12	1.97	0.45
1:A:4307:GLN:HA	1:A:4310:GLU:CD	2.41	0.45
1:A:4518:GLU:HA	1:A:4521:ILE:HG22	1.98	0.45
1:B:1393:TYR:CE2	1:B:1431:LEU:HD13	2.52	0.45
1:B:1519:ASP:O	1:B:1522:SER:OG	2.17	0.45
1:B:1606:ASP:HB3	1:B:1610:LYS:NZ	2.31	0.45
1:B:2221:MET:HE1	1:B:2359:CYS:HB2	1.98	0.45
1:B:3211:THR:O	1:B:3215:VAL:HG23	2.16	0.45
1:B:4412:PHE:CZ	1:B:4520:TYR:HB2	2.51	0.45
2:D:138:GLU:N	2:D:138:GLU:OE1	2.48	0.45
2:D:360:LYS:HE3	2:D:380:GLU:HA	1.99	0.45
1:A:1393:TYR:CD1	1:A:1435:TRP:HD1	2.35	0.45
1:A:1598:GLN:NE2	1:A:1602:GLU:OE2	2.41	0.45
1:A:3135:GLN:O	1:A:3137:PRO:HD3	2.17	0.45
1:A:3235:ALA:O	1:A:3239:LYS:HG2	2.16	0.45
1:A:3873:ARG:HD2	1:A:4025:LEU:HD13	1.98	0.45
1:A:4028:THR:HG23	1:A:4062:GLN:HE21	1.81	0.45
1:B:1637:LEU:HA	1:B:1640:ILE:HG22	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1946:VAL:HG22	1:B:2006:VAL:HG21	1.99	0.45
1:B:3883:PHE:O	1:B:3887:LEU:HD23	2.16	0.45
2:D:312:LEU:HD13	2:D:344:VAL:HG12	1.98	0.45
1:A:2131:LEU:HD12	1:A:2132:PRO:HD2	1.98	0.45
1:B:1554:SER:O	1:B:1558:LYS:NZ	2.37	0.45
1:B:3215:VAL:HG13	1:B:3219:ARG:HH12	1.81	0.45
1:A:1420:LEU:HD23	1:A:1445:ILE:HD11	1.98	0.45
1:A:3882:THR:HG21	1:A:4342:LYS:HB3	1.98	0.45
1:A:4043:MET:HB2	1:A:4127:THR:HA	1.97	0.45
1:B:1462:PHE:HB2	1:B:1507:MET:HE2	1.99	0.45
1:B:1561:LEU:HB3	1:B:1564:GLU:CD	2.41	0.45
1:B:2385:ILE:O	1:B:2416:GLN:NE2	2.38	0.45
1:B:2980:LEU:HB3	1:B:3054:PHE:HZ	1.81	0.45
1:B:2104:LYS:HG3	1:B:2131:LEU:HD21	1.98	0.45
2:C:151:ASP:OD1	2:C:152:SER:N	2.42	0.45
1:A:2603:MET:HE1	5:A:4703:ADP:N9	2.31	0.45
1:A:3792:GLN:O	1:A:3795:GLU:HG3	2.16	0.45
1:B:2377:ASN:HB2	6:B:4702:ATP:H2	1.80	0.45
1:A:1741:TRP:CH2	1:A:1750:VAL:HG13	2.52	0.45
1:A:3630:GLY:HA2	1:A:3675:PHE:HB2	1.99	0.45
1:B:4470:PRO:HG3	1:B:4612:ASN:HD22	1.82	0.45
1:A:4172:SER:OG	1:A:4173:PRO:HD3	2.17	0.45
1:B:1490:TRP:CD1	1:B:1538:ILE:HD12	2.52	0.45
1:A:1476:ASP:HB3	1:A:1488:ARG:CZ	2.46	0.45
1:A:1835:SER:OG	1:A:1837:GLU:OE1	2.35	0.45
1:A:2590:PRO:O	1:A:2732:PRO:HD2	2.17	0.45
1:A:2739:PRO:HB2	1:A:2744:LEU:HG	1.98	0.45
1:A:3167:ARG:HH22	1:A:3687:GLU:HA	1.83	0.45
2:C:239:MET:HE1	2:C:282:ILE:H	1.82	0.45
1:A:2382:LEU:HD23	1:A:2420:ALA:HB2	1.99	0.44
1:A:3117:LYS:HB3	1:A:3120:TYR:HB2	1.99	0.44
1:A:4297:PRO:HG3	1:A:4308:TRP:CE2	2.52	0.44
1:B:2232:MET:HE1	6:B:4702:ATP:H5'1	2.00	0.44
1:B:3621:LYS:O	1:B:3621:LYS:NZ	2.46	0.44
1:A:1365:ALA:HA	1:A:1368:ASN:ND2	2.32	0.44
1:A:1756:ILE:O	1:A:1760:GLU:HG2	2.16	0.44
1:A:3071:SER:O	1:A:3075:LEU:N	2.46	0.44
1:A:4549:GLN:OE1	1:A:4587:LEU:HB2	2.17	0.44
1:B:2300:TRP:CD1	1:B:2340:ARG:HB2	2.53	0.44
1:B:3078:ARG:HD3	1:B:3078:ARG:HA	1.73	0.44
1:A:1455:GLY:HA3	1:A:1512:TYR:CD2	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1547:LEU:HD23	1:B:1547:LEU:HA	1.82	0.44
1:B:1576:LEU:HA	1:B:1579:MET:HG3	1.98	0.44
1:B:1599:ARG:HH12	1:B:1603:ARG:CD	2.30	0.44
1:B:2309:PRO:HB3	1:B:2352:THR:HG23	1.99	0.44
1:A:1604:LEU:HD23	1:A:1604:LEU:HA	1.85	0.44
1:A:2354:ALA:HB1	1:A:2358:ARG:NH1	2.32	0.44
1:B:1814:GLU:OE2	1:B:1818:GLN:NE2	2.50	0.44
1:B:3468:VAL:O	1:B:3472:VAL:HG23	2.16	0.44
1:B:4117:GLN:O	1:B:4117:GLN:HG2	2.17	0.44
2:C:262:VAL:HG23	2:C:269:LYS:HB2	1.98	0.44
2:D:237:VAL:HA	2:D:253:SER:HA	1.99	0.44
1:A:1458:ALA:HA	1:A:1461:GLU:OE2	2.18	0.44
1:A:1978:ILE:HD11	1:A:2001:LEU:HD11	1.99	0.44
1:A:2091:ARG:NH1	1:A:2320:ASP:OD1	2.50	0.44
1:A:3588:LEU:HD23	1:A:3698:PHE:CE1	2.53	0.44
1:A:3814:THR:O	1:A:3818:LEU:HG	2.17	0.44
1:B:1444:ALA:HA	1:B:1447:LYS:HG2	2.00	0.44
1:B:2894:LYS:HE3	1:B:2894:LYS:HB2	1.84	0.44
1:B:3818:LEU:HD23	1:B:3827:TYR:HE2	1.81	0.44
2:D:228:LYS:HB3	2:D:266:LYS:NZ	2.32	0.44
1:A:2185:VAL:HG13	1:A:2239:LYS:HD2	1.99	0.44
1:A:2472:TYR:CD2	1:A:2481:MET:HB2	2.52	0.44
1:B:1363:LEU:HD13	1:B:1395:LYS:HB2	1.99	0.44
1:B:1442:ASN:HA	1:B:1445:ILE:HD13	1.99	0.44
1:B:2713:ASN:HB2	1:B:2720:ARG:HE	1.82	0.44
1:B:3131:ASP:OD1	1:B:3132:LYS:N	2.51	0.44
1:A:2437:LEU:HD21	1:A:2451:ARG:HG3	2.00	0.44
1:A:4445:THR:O	1:A:4449:ARG:N	2.37	0.44
1:A:4601:LYS:HB2	1:A:4604:VAL:HG23	1.99	0.44
1:B:1518:GLU:O	1:B:1521:LEU:HG	2.18	0.44
1:B:1527:LEU:HA	1:B:1530:ILE:HD12	1.99	0.44
1:B:3239:LYS:HD3	1:B:3451:TYR:CE1	2.53	0.44
1:B:4227:ALA:HA	1:B:4230:ARG:HH21	1.83	0.44
1:B:4603:SER:O	1:B:4626:ILE:HG12	2.18	0.44
1:A:1378:ARG:HG3	1:A:1383:TYR:CE2	2.53	0.44
1:A:2312:VAL:HG13	1:A:2355:THR:HG21	1.99	0.44
1:A:2584:TRP:HE3	1:A:2591:LEU:HD22	1.83	0.44
1:A:2874:SER:HB3	1:A:2884:VAL:HG21	1.99	0.44
1:A:2976:LEU:O	1:A:2980:LEU:HD23	2.17	0.44
2:D:158:PHE:CE1	2:D:165:LEU:HD13	2.53	0.44
1:A:1702:LEU:HD23	1:A:1702:LEU:HA	1.91	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2012:MET:HE2	1:B:2012:MET:HB3	1.82	0.44
1:B:3872:ALA:HA	1:B:3875:MET:HE2	2.00	0.44
1:B:4247:MET:HE1	1:B:4252:TYR:CD1	2.53	0.44
1:A:3790:VAL:O	1:A:3793:GLU:HG2	2.19	0.43
1:B:1817:HIS:CD2	1:B:1881:GLN:HG2	2.52	0.43
1:B:2773:MET:HE1	1:B:2802:TRP:CG	2.53	0.43
1:B:2976:LEU:O	1:B:2980:LEU:HD23	2.18	0.43
1:B:3198:GLN:HG2	2:D:150:THR:OG1	2.19	0.43
1:B:3223:ARG:O	1:B:3227:GLN:HG2	2.17	0.43
1:B:4529:ALA:O	1:B:4533:SER:N	2.51	0.43
2:D:110:PRO:HB3	2:D:400:VAL:HA	2.00	0.43
2:D:312:LEU:HD23	2:D:322:MET:HB3	2.00	0.43
1:A:1508:LYS:HG3	1:A:1513:TYR:CE2	2.53	0.43
1:A:1567:ARG:HG3	1:A:1567:ARG:HH11	1.84	0.43
1:A:2232:MET:HE2	6:A:4702:ATP:H2'	1.99	0.43
1:A:2905:LEU:HD11	1:A:3652:GLU:HB2	1.99	0.43
1:A:3580:LEU:HD13	1:A:3600:ILE:HD11	1.99	0.43
1:B:1350:PRO:HB2	1:B:1352:VAL:HG23	2.00	0.43
1:B:1411:ARG:HH21	1:B:1456:GLU:CD	2.26	0.43
1:B:1793:ALA:O	1:B:1797:LEU:HG	2.18	0.43
1:B:3478:LEU:HD13	1:B:3767:ILE:HG23	2.00	0.43
2:C:104:LEU:HD12	2:C:135:TRP:CZ3	2.53	0.43
2:D:383:VAL:HA	2:D:399:SER:HB2	2.00	0.43
1:A:2901:TYR:HA	1:A:2905:LEU:O	2.17	0.43
1:A:3115:LEU:HD12	1:A:3143:ILE:HG13	1.99	0.43
1:A:3211:THR:O	1:A:3215:VAL:HG23	2.19	0.43
1:A:3247:GLN:HE22	1:B:3247:GLN:HB2	1.82	0.43
1:A:3728:ARG:HA	1:A:3791:MET:HE1	2.00	0.43
1:B:3034:LYS:HA	1:B:3034:LYS:HD3	1.70	0.43
1:B:4007:MET:O	1:B:4011:THR:N	2.47	0.43
1:B:4377:MET:CE	1:B:4438:CYS:HA	2.47	0.43
1:B:4452:ILE:O	1:B:4456:VAL:HG23	2.18	0.43
1:B:4541:LEU:HB2	1:B:4592:TRP:CZ3	2.54	0.43
2:D:238:ARG:HA	2:D:238:ARG:HD3	1.87	0.43
2:D:239:MET:SD	2:D:241:ARG:HG2	2.58	0.43
2:D:245:ASP:OD1	2:D:245:ASP:N	2.50	0.43
1:A:1447:LYS:O	1:A:1451:LEU:HD23	2.18	0.43
1:A:3921:THR:HA	1:A:3936:VAL:HG21	1.99	0.43
1:A:4137:ASN:OD1	1:A:4138:LEU:N	2.50	0.43
1:B:1431:LEU:O	1:B:1434:ILE:HG22	2.19	0.43
1:B:1484:CYS:SG	1:B:1579:MET:HE3	2.58	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:3912:ASN:O	1:B:3937:ARG:NH1	2.51	0.43
1:B:4025:LEU:HG	1:B:4027:LEU:HD22	2.01	0.43
1:B:4190:ILE:HG23	1:B:4201:TRP:HZ2	1.84	0.43
1:B:4481:ASP:O	1:B:4484:GLU:HG3	2.19	0.43
2:D:260:VAL:HG13	2:D:269:LYS:HB3	2.00	0.43
1:A:1490:TRP:CD2	1:A:1538:ILE:HD12	2.54	0.43
1:A:1879:LEU:HD11	1:A:1914:GLU:HB3	2.01	0.43
1:A:2075:LEU:O	1:A:2079:GLN:HB2	2.18	0.43
1:A:2206:LYS:HA	1:A:2206:LYS:HD3	1.79	0.43
1:A:3226:SER:O	1:A:3230:GLU:HG2	2.19	0.43
1:A:3839:VAL:O	1:A:3843:ASN:HB2	2.18	0.43
1:B:2726:ARG:O	1:B:2729:ARG:HG2	2.19	0.43
1:B:2972:PHE:CZ	1:B:3008:MET:HE3	2.54	0.43
2:D:187:THR:O	2:D:188:MET:HE2	2.19	0.43
1:A:1351:TRP:HZ3	1:A:1435:TRP:HH2	1.65	0.43
1:A:1490:TRP:CG	1:A:1538:ILE:HD12	2.53	0.43
1:A:1747:ALA:HB2	1:A:1807:LYS:HG2	2.01	0.43
1:A:1949:CYS:SG	1:A:2012:MET:HE1	2.58	0.43
1:A:2186:CYS:HA	1:A:2191:LEU:HB2	2.00	0.43
1:A:2792:TYR:OH	1:A:2842:GLU:OE1	2.29	0.43
1:A:3457:GLU:O	1:A:3461:ILE:HG13	2.18	0.43
1:A:3772:ASN:OD1	1:A:3775:ARG:NH1	2.52	0.43
1:A:4413:PHE:CE1	1:A:4492:ILE:HG12	2.54	0.43
1:B:1543:ARG:HA	1:B:1546:TYR:CE2	2.54	0.43
1:B:1721:VAL:O	1:B:1725:GLU:HG2	2.18	0.43
1:B:1817:HIS:NE2	1:B:1881:GLN:HG2	2.33	0.43
2:C:259:ARG:HD3	2:C:261:TRP:CZ2	2.54	0.43
2:D:216:ILE:HB	2:D:230:PHE:HB2	2.00	0.43
2:D:243:ASN:HD22	2:D:248:LEU:HB2	1.84	0.43
1:A:1361:GLN:HA	1:A:1364:ASP:OD2	2.19	0.43
1:A:1469:VAL:O	1:A:1473:TYR:HB2	2.18	0.43
1:A:1907:PRO:HD2	1:A:2042:THR:HA	2.00	0.43
1:A:2819:GLU:HB3	1:A:2865:LYS:HD2	2.01	0.43
1:A:3555:ASN:OD1	1:A:3558:GLU:HG2	2.19	0.43
1:A:3839:VAL:HG22	1:A:3859:ILE:HD12	2.01	0.43
1:B:2070:VAL:HB	1:B:2071:PRO:HD3	2.01	0.43
1:B:2228:SER:HB2	1:B:2364:PHE:HB3	2.00	0.43
1:B:2726:ARG:NE	6:B:4702:ATP:O1G	2.51	0.43
2:D:241:ARG:HD3	2:D:241:ARG:HA	1.83	0.43
2:D:363:ARG:HG2	2:D:375:THR:HG23	2.01	0.43
1:A:1798:MET:HB2	1:A:2124:GLU:HG3	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2773:MET:HE1	1:A:2802:TRP:CE2	2.54	0.43
1:A:3048:GLU:HG2	1:A:3049:GLU:N	2.33	0.43
1:A:3174:ARG:HA	1:A:3177:LEU:HD12	2.00	0.43
1:A:3825:TYR:CE1	1:A:3875:MET:HG2	2.54	0.43
1:A:4199:LEU:HB3	1:A:4323:LEU:HD11	2.00	0.43
1:B:1724:VAL:HG23	1:B:1727:PHE:HD2	1.84	0.43
1:B:2188:GLU:OE1	1:B:2243:ARG:NH2	2.38	0.43
1:B:2834:GLN:NE2	1:B:2843:ARG:HB3	2.33	0.43
1:B:4234:SER:HB3	1:B:4237:LYS:HG2	1.99	0.43
2:D:193:HIS:CD2	2:D:212:ARG:HH21	2.36	0.43
1:A:1396:ILE:HG22	1:A:1400:VAL:HG23	1.99	0.43
1:A:2030:ASP:O	1:A:2034:LYS:HG2	2.19	0.43
1:A:2446:ILE:HG13	1:A:2735:TYR:CD1	2.54	0.43
1:A:2605:LEU:O	1:A:2609:LEU:HD23	2.18	0.43
1:A:3772:ASN:O	1:A:3775:ARG:HG2	2.17	0.43
1:A:4017:PHE:HB3	1:A:4018:MET:SD	2.58	0.43
1:B:1939:GLN:HB2	1:B:2273:ARG:CZ	2.49	0.43
1:B:3580:LEU:HD11	1:B:3589:ILE:HD11	2.01	0.43
1:B:3652:GLU:OE1	1:B:3652:GLU:N	2.38	0.43
2:C:272:LEU:HD13	2:C:323:TRP:CD2	2.53	0.43
2:C:277:HIS:ND1	2:C:316:ARG:HB2	2.33	0.43
2:D:384:THR:H	2:D:399:SER:HA	1.84	0.43
1:A:2150:VAL:O	1:A:2154:ILE:HG13	2.18	0.43
1:A:2465:ALA:HB2	1:A:2493:TYR:CE1	2.54	0.43
1:A:3575:GLU:O	1:A:3579:MET:HG2	2.19	0.43
1:A:4187:HIS:ND1	1:A:4252:TYR:OH	2.36	0.43
1:B:1699:ASN:OD1	1:B:1700:GLU:N	2.51	0.43
1:B:1842:MET:HG3	1:B:1844:PHE:CE1	2.54	0.43
1:B:3112:LYS:HE3	1:B:3112:LYS:HA	2.01	0.43
1:A:1778:LEU:HA	1:A:1781:VAL:HG12	2.01	0.42
1:A:1979:GLN:HE22	1:A:2035:LEU:HB3	1.84	0.42
1:A:3997:ARG:NH2	1:A:4329:ARG:HH12	2.16	0.42
1:A:4418:LYS:HA	1:A:4418:LYS:HD3	1.74	0.42
1:B:1930:PHE:HA	1:B:2326:THR:HG21	2.00	0.42
1:B:2702:LYS:HE2	1:B:2702:LYS:HB2	1.92	0.42
1:B:2819:GLU:HG3	1:B:2861:ILE:HG12	2.00	0.42
1:B:3473:ASN:OD1	1:B:3474:ARG:N	2.52	0.42
1:A:1360:ARG:NH2	1:A:1394:MET:SD	2.92	0.42
1:A:1443:GLU:O	1:A:1446:VAL:HG22	2.20	0.42
1:A:1477:LEU:HB3	1:A:1485:ARG:HB3	2.01	0.42
1:A:2300:TRP:CD1	1:A:2340:ARG:HB2	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:4004:MET:O	1:A:4007:MET:HG2	2.19	0.42
1:B:2973:ASP:OD2	1:B:3007:ARG:NH2	2.49	0.42
1:B:3038:GLN:NE2	1:B:3043:MET:HE1	2.34	0.42
1:B:3567:LEU:HB2	1:B:3599:PHE:CD1	2.54	0.42
1:B:4388:LEU:HG	1:B:4431:LEU:HB3	2.01	0.42
2:D:133:LYS:HB3	2:D:135:TRP:NE1	2.35	0.42
2:D:202:PRO:HG2	2:D:244:GLN:O	2.19	0.42
2:D:236:TRP:HD1	2:D:237:VAL:N	2.17	0.42
2:D:236:TRP:O	2:D:254:ASN:N	2.38	0.42
1:A:2290:SER:HA	1:A:2294:GLU:HB2	2.01	0.42
1:A:3584:ASN:O	1:A:3651:ARG:NH1	2.53	0.42
1:A:3753:LEU:HD23	1:A:3753:LEU:HA	1.84	0.42
1:B:1470:TRP:NE1	1:B:1527:LEU:HD21	2.33	0.42
1:B:1967:MET:HE3	1:B:1970:ALA:HB3	2.01	0.42
1:B:2896:ARG:HD3	1:B:2896:ARG:HA	1.82	0.42
1:B:3492:THR:HA	1:B:3495:THR:HG22	2.00	0.42
1:B:3741:ARG:HA	1:B:3741:ARG:HD2	1.88	0.42
2:D:94:TRP:CD2	2:D:393:PRO:HB3	2.54	0.42
2:D:234:ARG:NH2	2:D:273:ARG:HH21	2.09	0.42
1:A:1424:TRP:HH2	1:A:1434:ILE:HA	1.84	0.42
1:A:1708:GLU:OE2	1:A:1712:THR:OG1	2.38	0.42
1:A:3114:ASP:O	1:A:3116:GLU:HG2	2.20	0.42
1:A:4324:PRO:HB3	1:A:4638:ARG:NH2	2.34	0.42
1:A:4432:ALA:O	1:A:4436:GLN:HG2	2.18	0.42
1:B:1513:TYR:CE2	1:B:1517:GLU:HG2	2.54	0.42
1:B:3751:GLN:O	1:B:3754:ASN:N	2.47	0.42
1:B:4445:THR:H	1:B:4448:LEU:HB2	1.84	0.42
2:C:113:ARG:HH11	2:C:155:ASP:HA	1.84	0.42
2:D:195:VAL:HA	2:D:211:SER:HA	1.99	0.42
1:A:1655:LYS:HB2	1:A:1679:ARG:NH2	2.34	0.42
1:A:2584:TRP:CH2	1:A:2732:PRO:HB2	2.54	0.42
1:A:3046:SER:OG	1:A:3048:GLU:OE1	2.33	0.42
1:B:1370:LEU:HD11	1:B:1383:TYR:HA	2.01	0.42
1:B:1386:VAL:HA	1:B:1389:LEU:HD13	2.02	0.42
1:B:1550:ILE:HG12	1:B:1641:ILE:HG22	2.02	0.42
1:B:1728:GLY:O	1:B:1729:LYS:HG3	2.19	0.42
1:B:2103:VAL:HA	1:B:2106:GLU:HG3	2.01	0.42
1:B:3906:GLN:HG2	1:B:3910:ARG:NH1	2.35	0.42
2:C:238:ARG:HH11	2:C:254:ASN:HD21	1.68	0.42
1:A:1542:ARG:O	1:A:1545:VAL:HB	2.18	0.42
1:A:3175:HIS:HB3	1:A:3516:TYR:CE1	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3222:LEU:HD12	1:A:3465:LEU:HD12	2.01	0.42
1:B:1460:GLU:HG3	1:B:1464:LYS:NZ	2.35	0.42
1:B:1698:ILE:O	1:B:1702:LEU:HD23	2.20	0.42
1:B:2773:MET:HE1	1:B:2802:TRP:CD2	2.54	0.42
2:C:114:VAL:HG12	2:C:125:SER:HB2	2.01	0.42
2:C:123:MET:HE3	2:C:396:VAL:HG21	2.00	0.42
2:D:95:ILE:HB	2:D:97:ARG:HH12	1.83	0.42
2:D:114:VAL:HG12	2:D:125:SER:HA	2.01	0.42
1:A:2538:GLU:HB3	1:A:2548:TRP:CZ2	2.55	0.42
1:A:4404:ASN:HB3	1:A:4410:PHE:CD2	2.54	0.42
1:B:1356:PRO:O	1:B:1359:LEU:HB2	2.19	0.42
1:B:1961:ASN:OD1	1:B:1961:ASN:N	2.53	0.42
1:B:2999:VAL:HG13	1:B:3004:PHE:HB2	2.01	0.42
1:B:3551:GLU:HA	1:B:3559:ARG:NH1	2.35	0.42
1:B:4039:THR:HG23	1:B:4142:GLY:HA2	2.02	0.42
2:D:155:ASP:HB2	2:D:197:SER:HA	2.01	0.42
1:A:1497:VAL:O	1:A:1501:ILE:HG12	2.19	0.42
1:A:1497:VAL:HG11	1:A:1531:MET:HE3	2.01	0.42
1:A:1518:GLU:O	1:A:1521:LEU:HG	2.20	0.42
1:A:1703:THR:HA	1:A:1706:GLU:HG2	2.02	0.42
1:A:1905:PHE:HB3	1:A:2018:MET:HB2	2.02	0.42
1:A:3783:LYS:O	1:A:3786:GLU:HG2	2.19	0.42
1:B:2760:PRO:HB3	1:B:2763:ARG:HH21	1.84	0.42
1:B:3873:ARG:HD3	1:B:3873:ARG:HA	1.91	0.42
1:A:1828:SER:HB2	1:A:1830:ILE:HG12	2.02	0.42
1:A:2983:SER:HB2	1:A:2990:ILE:HD12	2.02	0.42
1:A:3824:LEU:HD21	1:A:4144:ILE:HG21	2.02	0.42
1:A:3873:ARG:HD3	1:A:3873:ARG:HA	1.80	0.42
1:B:1668:GLU:OE1	1:B:1668:GLU:N	2.46	0.42
1:B:1721:VAL:HA	1:B:1724:VAL:HG12	2.02	0.42
1:B:3228:GLU:HA	1:B:3231:VAL:HG12	2.01	0.42
1:B:3588:LEU:HD23	1:B:3698:PHE:CE1	2.55	0.42
1:B:4071:ILE:HG13	1:B:4099:VAL:HG12	2.02	0.42
1:B:4173:PRO:HG2	1:B:4176:ARG:HH21	1.85	0.42
1:B:4401:THR:O	1:B:4405:ILE:HG12	2.20	0.42
2:C:151:ASP:CG	2:C:152:SER:H	2.24	0.42
1:A:1930:PHE:CZ	1:A:1944:ILE:HD11	2.55	0.42
1:A:2935:LEU:HB3	1:A:2943:LYS:HD2	2.02	0.42
1:A:3586:TYR:HA	1:A:3587:PRO:HD3	1.90	0.42
1:A:3911:GLY:O	1:A:3937:ARG:HD3	2.20	0.42
1:B:1378:ARG:HA	1:B:1383:TYR:HB2	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1600:SER:O	1:B:1604:LEU:HD23	2.20	0.42
1:B:2099:SER:OG	1:B:2140:SER:HB3	2.20	0.42
1:B:2519:ARG:HG3	1:B:2526:LEU:HD12	2.02	0.42
1:B:3096:ASP:OD1	1:B:3097:TRP:N	2.53	0.42
1:B:3114:ASP:O	1:B:3140:ARG:NH2	2.53	0.42
1:B:3624:GLU:O	1:B:3628:ARG:HG2	2.20	0.42
1:B:4288:VAL:HB	1:B:4320:TRP:CD1	2.55	0.42
2:C:113:ARG:HA	2:C:385:SER:OG	2.20	0.42
2:D:176:LEU:O	2:D:185:ILE:HG22	2.20	0.42
2:D:210:ALA:HB2	2:D:240:VAL:HB	2.02	0.42
1:A:2231:SER:HA	1:A:2234:TRP:CD1	2.54	0.41
1:A:2290:SER:OG	1:A:2294:GLU:N	2.53	0.41
1:A:2559:THR:OG1	1:A:2757:ARG:HD2	2.20	0.41
1:A:2665:GLU:HB3	1:A:2668:LEU:HD12	2.02	0.41
1:A:3005:LEU:HD23	1:A:3005:LEU:HA	1.88	0.41
1:A:3510:SER:O	1:A:3514:ILE:HG12	2.20	0.41
1:A:3653:VAL:HG12	1:A:3662:ILE:HD13	2.02	0.41
1:A:3723:ASP:OD1	1:A:3724:VAL:N	2.50	0.41
1:A:4071:ILE:HG23	1:A:4077:PHE:CE1	2.55	0.41
1:A:4105:TRP:CE3	1:A:4106:LEU:HD22	2.54	0.41
1:B:1619:LEU:HD22	1:B:1637:LEU:HG	2.01	0.41
1:B:2197:GLU:N	1:B:2197:GLU:OE1	2.53	0.41
1:B:2413:LEU:O	1:B:2417:ARG:HG3	2.19	0.41
1:B:2467:ARG:O	1:B:2471:GLN:HG2	2.20	0.41
1:B:3208:ILE:HG21	1:B:3486:ARG:HD3	2.02	0.41
1:B:4485:ARG:HH11	1:B:4515:PHE:HD1	1.68	0.41
1:A:1589:MET:O	1:A:1593:ASN:N	2.51	0.41
1:A:2070:VAL:HB	1:A:2071:PRO:HD3	2.02	0.41
1:A:2341:ILE:O	1:A:2342:MET:HE2	2.20	0.41
1:A:2825:TRP:CZ3	1:A:2850:ILE:HG23	2.56	0.41
1:A:4078:ASN:HB3	1:A:4082:LYS:HZ3	1.85	0.41
1:A:4421:ALA:HB1	1:A:4425:GLN:HE22	1.85	0.41
1:B:1513:TYR:O	1:B:1517:GLU:HG3	2.20	0.41
1:B:1914:GLU:HG3	5:B:4701:ADP:H2'	2.02	0.41
1:B:2527:PRO:HD3	1:B:2545:TRP:CE2	2.54	0.41
1:B:2797:ARG:HG2	5:B:4703:ADP:H4'	2.02	0.41
1:B:3200:HIS:HD2	1:B:3754:ASN:OD1	2.02	0.41
1:B:4546:THR:OG1	1:B:4587:LEU:HB3	2.21	0.41
2:C:382:PHE:O	2:C:399:SER:OG	2.31	0.41
1:A:1400:VAL:HA	1:A:1403:LEU:HB3	2.03	0.41
1:A:2039:LEU:HD12	1:A:4254:GLY:HA2	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2541:ILE:C	1:A:2543:GLY:H	2.27	0.41
1:A:2775:GLU:O	1:A:2778:THR:HB	2.21	0.41
1:A:3085:LEU:O	1:A:3089:CYS:HB2	2.20	0.41
1:A:3856:LEU:HA	1:A:3859:ILE:HG22	2.02	0.41
1:B:1527:LEU:HD23	1:B:1530:ILE:HD12	2.02	0.41
1:B:2222:MET:HE3	1:B:2344:GLU:HG3	2.01	0.41
1:B:2628:PRO:HG3	1:B:2679:VAL:HA	2.02	0.41
1:B:2792:TYR:OH	1:B:2842:GLU:OE1	2.38	0.41
1:B:2910:VAL:HG22	5:B:4704:ADP:N1	2.35	0.41
1:B:3197:GLN:O	1:B:3201:LEU:HG	2.21	0.41
1:B:3630:GLY:H	1:B:3672:SER:HB3	1.85	0.41
1:B:3720:GLU:OE1	1:B:3801:TYR:OH	2.33	0.41
2:D:376:LEU:HD21	2:D:407:TRP:CZ3	2.55	0.41
1:A:1623:ARG:HD3	1:A:1630:TYR:HA	2.03	0.41
1:A:1752:LEU:HD12	1:A:1752:LEU:HA	1.94	0.41
1:A:3194:LEU:HD12	1:A:3194:LEU:HA	1.89	0.41
1:A:3194:LEU:O	1:A:3197:GLN:HG3	2.20	0.41
1:A:3567:LEU:HB2	1:A:3599:PHE:CD1	2.55	0.41
1:B:3046:SER:OG	1:B:3047:HIS:N	2.53	0.41
1:B:3219:ARG:NH2	1:B:3472:VAL:HG22	2.31	0.41
1:B:3452:ALA:O	1:B:3455:ILE:HG22	2.20	0.41
1:B:3923:ARG:HH12	1:B:3925:GLN:HA	1.84	0.41
1:B:4106:LEU:HD23	1:B:4106:LEU:HA	1.86	0.41
1:B:4209:GLU:O	1:B:4213:ARG:HG2	2.20	0.41
1:B:4316:GLN:HA	1:B:4320:TRP:CE2	2.56	0.41
2:D:150:THR:HG23	2:D:171:ASP:HB2	2.03	0.41
1:A:2183:LYS:HB3	1:A:2184:LYS:HZ2	1.85	0.41
1:A:4234:SER:OG	1:A:4236:ASP:OD1	2.33	0.41
1:B:1350:PRO:O	1:B:1429:LEU:HB3	2.20	0.41
1:B:3013:ALA:HA	1:B:3088:ARG:HG3	2.02	0.41
2:C:236:TRP:HB3	2:C:254:ASN:OD1	2.21	0.41
2:C:274:GLU:HB2	2:C:323:TRP:CH2	2.55	0.41
2:D:274:GLU:HB2	2:D:323:TRP:CH2	2.55	0.41
1:A:1434:ILE:O	1:A:1438:ASP:HB2	2.21	0.41
1:A:2222:MET:HE1	1:A:2234:TRP:HD1	1.86	0.41
1:A:2468:ASN:ND2	1:A:2489:TYR:OH	2.54	0.41
1:A:2500:TRP:CE2	1:A:2535:ILE:HD11	2.55	0.41
1:A:2756:LEU:HD23	1:A:2756:LEU:HA	1.81	0.41
1:A:3204:GLY:O	1:A:3208:ILE:HG12	2.20	0.41
1:A:3243:MET:HE1	1:A:3444:ILE:HA	2.03	0.41
1:A:3970:VAL:HB	1:A:3989:ARG:HG3	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:4541:LEU:HB2	1:A:4592:TRP:CZ3	2.55	0.41
1:B:3012:LEU:HD13	1:B:3089:CYS:SG	2.60	0.41
1:B:3214:GLN:NE2	1:B:3761:LEU:HB2	2.36	0.41
1:B:3243:MET:O	1:B:3247:GLN:HG3	2.19	0.41
1:B:3521:ASP:OD1	1:B:3521:ASP:N	2.54	0.41
2:C:129:ASP:OD1	2:C:131:THR:OG1	2.28	0.41
2:C:233:HIS:NE2	2:C:259:ARG:HB2	2.35	0.41
1:A:1408:LEU:HA	1:A:1412:HIS:CD2	2.56	0.41
1:A:1735:PRO:O	1:A:1739:ILE:HG12	2.21	0.41
1:A:1788:THR:O	1:A:1792:LEU:HD23	2.20	0.41
1:A:2093:LEU:O	1:A:2097:LEU:HG	2.21	0.41
1:A:2571:THR:H	1:A:2574:THR:HB	1.85	0.41
1:A:2623:SER:N	1:A:2626:THR:OG1	2.27	0.41
1:A:2942:GLY:N	5:A:4704:ADP:O1B	2.54	0.41
1:A:4027:LEU:HD11	1:A:4043:MET:HE1	2.02	0.41
1:A:4236:ASP:OD1	1:A:4237:LYS:N	2.54	0.41
1:B:1405:SER:O	1:B:1408:LEU:HG	2.20	0.41
1:B:2192:THR:HB	1:B:2373:MET:SD	2.61	0.41
1:B:2221:MET:HG3	1:B:2343:PHE:HB2	2.03	0.41
1:B:2901:TYR:HA	1:B:2905:LEU:O	2.20	0.41
1:B:3049:GLU:HA	1:B:3052:LYS:HG2	2.03	0.41
1:B:3230:GLU:HA	1:B:3233:ASN:ND2	2.36	0.41
1:B:3551:GLU:HA	1:B:3559:ARG:HH12	1.84	0.41
1:B:4324:PRO:HG2	1:B:4327:ALA:HB2	2.02	0.41
1:B:4473:MET:HE1	1:B:4478:TRP:HB2	2.03	0.41
2:D:393:PRO:O	2:D:409:CYS:N	2.51	0.41
1:A:1507:MET:O	1:A:1513:TYR:HB2	2.21	0.41
1:A:2951:ALA:HB1	1:A:2956:LEU:HB2	2.02	0.41
1:A:3482:LEU:HD11	1:A:3770:LEU:HD23	2.03	0.41
1:A:3720:GLU:OE1	1:A:3855:ARG:NE	2.53	0.41
1:A:4122:PHE:CZ	1:A:4124:LEU:HB2	2.56	0.41
1:A:4160:THR:HG23	1:A:4212:LEU:HD21	2.03	0.41
1:A:4215:ALA:HB2	1:A:4251:ILE:HG21	2.02	0.41
1:A:4564:LYS:HD3	1:A:4584:ALA:HA	2.02	0.41
1:B:2562:VAL:HG21	1:B:2755:MET:HB3	2.01	0.41
1:B:3576:ASN:HA	1:B:3579:MET:HE3	2.02	0.41
2:C:262:VAL:HG12	2:C:264:ALA:H	1.86	0.41
2:C:322:MET:HE2	2:C:332:MET:HG3	2.03	0.41
2:D:243:ASN:HB2	2:D:248:LEU:HB2	2.03	0.41
1:A:1422:VAL:HG21	1:A:1437:VAL:HG11	2.03	0.41
1:A:1468:GLU:O	1:A:1472:THR:OG1	2.23	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1766:LEU:HD23	1:A:1766:LEU:HA	1.88	0.41
1:A:2060:ARG:HH12	1:A:2129:GLU:HA	1.86	0.41
1:A:2232:MET:SD	1:A:2232:MET:N	2.93	0.41
1:A:2921:ARG:O	1:A:2925:ILE:HG12	2.21	0.41
1:A:3113:MET:HE1	1:A:3183:TYR:CD2	2.55	0.41
1:A:3190:LYS:HE3	1:A:3552:TYR:CZ	2.56	0.41
1:A:3488:ARG:HA	1:A:3491:LYS:HE2	2.03	0.41
1:A:3818:LEU:HD11	1:A:3883:PHE:CE1	2.56	0.41
1:A:4405:ILE:O	1:A:4411:ARG:NH1	2.54	0.41
1:B:1419:ARG:HD3	1:B:1445:ILE:HG23	2.02	0.41
1:B:1546:TYR:OH	1:B:1612:GLN:OE1	2.19	0.41
1:B:1862:ALA:HB1	1:B:4222:TRP:HZ2	1.85	0.41
1:B:2748:TYR:CZ	1:B:2799:MET:HG3	2.56	0.41
1:B:3042:LEU:O	1:B:3043:MET:HE2	2.21	0.41
1:B:4227:ALA:HB2	1:B:4233:ILE:HD12	2.02	0.41
2:D:111:VAL:O	2:D:384:THR:OG1	2.33	0.41
2:D:194:ASN:O	2:D:212:ARG:N	2.36	0.41
1:A:1354:VAL:HG11	1:A:1359:LEU:HD12	2.03	0.41
1:A:1557:ILE:HG23	1:A:1558:LYS:HD3	2.03	0.41
1:A:2186:CYS:HB3	1:A:2191:LEU:O	2.21	0.41
1:A:2892:TYR:HE2	1:A:2953:MET:HE1	1.86	0.41
1:A:4521:ILE:O	1:A:4524:THR:OG1	2.34	0.41
1:B:1535:ASP:OD1	1:B:2292:ARG:NH2	2.31	0.41
1:B:1841:GLN:O	1:B:1843:ARG:HG3	2.21	0.41
1:B:2203:TRP:HE1	1:B:2233:ALA:HB2	1.86	0.41
1:B:2268:LEU:HD13	1:B:2329:ASN:HB3	2.02	0.41
1:B:2297:LYS:O	1:B:2338:ASN:ND2	2.42	0.41
1:B:2603:MET:HE1	5:B:4703:ADP:C4	2.56	0.41
1:B:3723:ASP:OD1	1:B:3724:VAL:N	2.52	0.41
1:B:3932:ALA:HA	1:B:3935:VAL:HG22	2.03	0.41
2:C:324:ASP:HB2	2:C:331:LEU:HD21	2.03	0.41
2:D:104:LEU:HB3	2:D:135:TRP:CZ3	2.56	0.41
2:D:342:ARG:HB3	2:D:384:THR:O	2.21	0.41
1:A:1504:VAL:HA	1:A:1507:MET:HG3	2.02	0.40
1:A:1533:LEU:HD11	1:A:1597:VAL:HG22	2.02	0.40
1:A:2667:ASN:ND2	1:A:2720:ARG:HD2	2.36	0.40
1:B:1411:ARG:HH22	1:B:1452:VAL:C	2.29	0.40
1:B:1500:HIS:O	1:B:1504:VAL:HG23	2.21	0.40
1:B:1543:ARG:HD2	1:B:1608:LEU:HB3	2.03	0.40
1:B:1769:MET:HA	1:B:1769:MET:HE3	2.02	0.40
1:B:2206:LYS:HA	1:B:2206:LYS:HD3	1.88	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:3140:ARG:O	1:B:3144:VAL:HG23	2.21	0.40
1:B:3154:LEU:HG	1:B:3516:TYR:CD1	2.56	0.40
1:B:3653:VAL:HG12	1:B:3662:ILE:HD13	2.03	0.40
1:B:4030:ILE:HA	1:B:4034:GLU:HG3	2.03	0.40
1:B:4068:SER:HA	1:B:4095:MET:HG3	2.03	0.40
1:B:4485:ARG:HD3	1:B:4515:PHE:CE1	2.55	0.40
1:B:4600:LYS:HE3	1:B:4600:LYS:HA	2.03	0.40
1:A:1360:ARG:HA	1:A:1363:LEU:HD12	2.03	0.40
1:A:2203:TRP:CH2	1:A:2236:VAL:HG11	2.57	0.40
1:A:2875:ASN:HD21	1:A:2927:ARG:HD3	1.86	0.40
1:A:4096:LEU:HD13	1:A:4105:TRP:HH2	1.87	0.40
1:B:1518:GLU:HA	1:B:1521:LEU:HG	2.03	0.40
1:B:2211:TYR:O	1:B:2214:THR:OG1	2.29	0.40
1:B:2748:TYR:CD2	1:B:2799:MET:HE2	2.57	0.40
1:B:3576:ASN:O	1:B:3580:LEU:HD23	2.22	0.40
2:D:235:GLU:HB3	2:D:254:ASN:HB2	2.03	0.40
2:D:244:GLN:NE2	2:D:285:ALA:O	2.54	0.40
1:A:1355:GLN:HB3	1:A:1358:LYS:HB3	2.04	0.40
1:A:2349:LYS:HB3	1:A:2349:LYS:HE2	1.95	0.40
1:B:1411:ARG:HH22	1:B:1452:VAL:HG12	1.86	0.40
1:B:1619:LEU:HD21	1:B:1638:LEU:HD23	2.02	0.40
1:B:2585:LEU:HD23	1:B:2707:GLN:OE1	2.21	0.40
1:B:3245:LYS:HA	1:B:3248:GLN:OE1	2.22	0.40
1:B:3478:LEU:HD13	1:B:3767:ILE:HD12	2.04	0.40
1:B:3478:LEU:O	1:B:3482:LEU:HG	2.22	0.40
1:B:4115:SER:O	1:B:4116:LEU:HD12	2.21	0.40
1:B:4556:CYS:O	1:B:4591:ARG:HA	2.22	0.40
2:C:273:ARG:HG3	2:C:273:ARG:O	2.21	0.40
1:A:1389:LEU:HG	1:A:1393:TYR:CE2	2.56	0.40
1:A:2221:MET:HB2	1:A:2361:MET:HE1	2.03	0.40
1:A:2558:GLU:HG3	1:A:2560:HIS:CE1	2.57	0.40
1:B:1445:ILE:HD12	1:B:1445:ILE:H	1.87	0.40
1:B:1753:SER:HA	1:B:1756:ILE:HG22	2.03	0.40
1:B:3211:THR:OG1	1:B:3760:ILE:HD13	2.22	0.40
1:B:4556:CYS:SG	1:B:4591:ARG:NH2	2.94	0.40
2:D:212:ARG:HA	2:D:236:TRP:CD1	2.56	0.40
1:A:1477:LEU:HD23	1:A:1487:ILE:HG13	2.03	0.40
1:A:1961:ASN:N	1:A:1961:ASN:OD1	2.53	0.40
1:A:2999:VAL:HG11	1:A:3005:LEU:HG	2.03	0.40
1:A:3723:ASP:HA	1:A:3726:GLU:OE2	2.22	0.40
1:A:4281:GLU:O	1:A:4283:LYS:NZ	2.51	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:4340:ILE:HA	1:A:4343:MET:SD	2.61	0.40
1:B:2413:LEU:HD12	1:B:2413:LEU:HA	1.93	0.40
1:B:3174:ARG:NH1	1:B:3650:ASN:OD1	2.54	0.40
1:B:3215:VAL:HG13	1:B:3219:ARG:NH1	2.37	0.40
1:B:3637:ASP:OD1	1:B:4111:LYS:HE3	2.22	0.40
1:B:3787:THR:O	1:B:3791:MET:HG2	2.22	0.40
2:C:214:LYS:HG2	2:C:235:GLU:C	2.46	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	3056/4646 (66%)	2984 (98%)	72 (2%)	0	100	100
1	B	3057/4646 (66%)	2974 (97%)	83 (3%)	0	100	100
2	C	320/410 (78%)	301 (94%)	19 (6%)	0	100	100
2	D	309/410 (75%)	294 (95%)	15 (5%)	0	100	100
2	E	73/410 (18%)	73 (100%)	0	0	100	100
2	F	73/410 (18%)	73 (100%)	0	0	100	100
3	G	32/638 (5%)	32 (100%)	0	0	100	100
3	H	32/638 (5%)	32 (100%)	0	0	100	100
4	I	120/1281 (9%)	120 (100%)	0	0	100	100
4	J	119/1281 (9%)	119 (100%)	0	0	100	100
All	All	7191/14770 (49%)	7002 (97%)	189 (3%)	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	2720/4125 (66%)	2720 (100%)	0	100 100
1	B	2721/4125 (66%)	2721 (100%)	0	100 100
2	C	287/364 (79%)	286 (100%)	1 (0%)	91 91
2	D	280/364 (77%)	280 (100%)	0	100 100
All	All	6008/8978 (67%)	6007 (100%)	1 (0%)	100 100

All (1) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	C	222	GLN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (71) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	1361	GLN
1	A	1368	ASN
1	A	1412	HIS
1	A	1415	GLN
1	A	1440	GLN
1	A	1442	ASN
1	A	1454	GLN
1	A	1541	GLN
1	A	1646	ASN
1	A	1818	GLN
1	A	1950	GLN
1	A	1974	GLN
1	A	1985	HIS
1	A	1987	ASN
1	A	2005	GLN
1	A	2134	GLN
1	A	2430	ASN
1	A	2439	HIS

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Mol	Chain	Res	Type
1	A	2476	HIS
1	A	2485	GLN
1	A	2549	GLN
1	A	2560	HIS
1	A	2588	HIS
1	A	2685	GLN
1	A	2707	GLN
1	A	3152	GLN
1	A	3459	GLN
1	A	3499	GLN
1	A	3526	GLN
1	A	3754	ASN
1	A	3952	GLN
1	A	3968	GLN
1	A	4098	ASN
1	A	4100	HIS
1	A	4156	ASN
1	A	4490	GLN
1	A	4549	GLN
1	A	4566	GLN
1	B	1349	GLN
1	B	1362	ASN
1	B	1387	GLN
1	B	1412	HIS
1	B	1423	ASN
1	B	1433	GLN
1	B	1442	ASN
1	B	1471	ASN
1	B	1541	GLN
1	B	1559	HIS
1	B	1569	GLN
1	B	1818	GLN
1	B	1867	ASN
1	B	1939	GLN
1	B	2047	GLN
1	B	2067	ASN
1	B	2296	GLN
1	B	2468	ASN
1	B	2482	GLN
1	B	2549	GLN
1	B	2685	GLN
1	B	3061	ASN

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Mol	Chain	Res	Type
1	B	3119	ASN
1	B	3200	HIS
1	B	3227	GLN
1	B	3459	GLN
1	B	3820	GLN
1	B	3877	HIS
1	B	4098	ASN
1	B	4386	ASN
1	B	4566	GLN
2	C	206	HIS
2	D	277	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

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	$\#\|Z\| > 2$
6	ATP	A	4702	7	28,33,33	0.63	0	34,52,52	0.60	1 (2%)
5	ADP	B	4703	-	24,29,29	0.90	1 (4%)	29,45,45	1.22	2 (6%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
5	ADP	B	4701	7	24,29,29	0.89	0	29,45,45	1.23	3 (10%)
5	ADP	A	4704	-	24,29,29	0.89	0	29,45,45	1.19	2 (6%)
6	ATP	B	4702	7	28,33,33	0.70	0	34,52,52	0.60	1 (2%)
5	ADP	A	4701	7	24,29,29	0.93	1 (4%)	29,45,45	1.17	3 (10%)
5	ADP	A	4703	-	24,29,29	0.88	0	29,45,45	1.27	3 (10%)
5	ADP	B	4704	-	24,29,29	0.88	0	29,45,45	1.19	2 (6%)

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
6	ATP	A	4702	7	-	7/18/38/38	0/3/3/3
5	ADP	B	4703	-	-	0/12/32/32	0/3/3/3
5	ADP	B	4701	7	-	2/12/32/32	0/3/3/3
5	ADP	A	4704	-	-	1/12/32/32	0/3/3/3
6	ATP	B	4702	7	-	5/18/38/38	0/3/3/3
5	ADP	A	4701	7	-	0/12/32/32	0/3/3/3
5	ADP	A	4703	-	-	0/12/32/32	0/3/3/3
5	ADP	B	4704	-	-	2/12/32/32	0/3/3/3

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	A	4701	ADP	C2-N3	2.18	1.35	1.32
5	B	4703	ADP	O4'-C1'	2.13	1.43	1.40

All (17) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
5	B	4704	ADP	N3-C2-N1	-3.71	123.63	128.67
5	B	4703	ADP	N3-C2-N1	-3.68	123.67	128.67
5	A	4704	ADP	N3-C2-N1	-3.67	123.70	128.67
5	A	4703	ADP	N3-C2-N1	-3.64	123.74	128.67
5	B	4701	ADP	N3-C2-N1	-3.51	123.90	128.67
5	A	4701	ADP	N3-C2-N1	-3.00	124.60	128.67
5	A	4703	ADP	C4'-O4'-C1'	2.61	112.32	109.92
5	A	4704	ADP	C4-C5-N7	-2.55	106.64	109.34
5	B	4704	ADP	C4-C5-N7	-2.54	106.65	109.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
5	B	4701	ADP	C4-C5-N7	-2.50	106.69	109.34
5	A	4703	ADP	C4-C5-N7	-2.46	106.74	109.34
6	A	4702	ATP	C5-C6-N6	2.35	123.89	120.31
6	B	4702	ATP	C5-C6-N6	2.34	123.88	120.31
5	B	4703	ADP	C4-C5-N7	-2.34	106.87	109.34
5	A	4701	ADP	C4-C5-N7	-2.21	107.00	109.34
5	B	4701	ADP	C4'-O4'-C1'	2.06	111.82	109.92
5	A	4701	ADP	C4'-O4'-C1'	-2.01	108.08	109.92

There are no chirality outliers.

All (17) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	B	4701	ADP	C5'-O5'-PA-O2A
5	B	4701	ADP	C5'-O5'-PA-O3A
6	A	4702	ATP	C5'-O5'-PA-O1A
6	A	4702	ATP	C5'-O5'-PA-O2A
6	A	4702	ATP	C5'-O5'-PA-O3A
6	B	4702	ATP	PB-O3B-PG-O2G
6	A	4702	ATP	O4'-C4'-C5'-O5'
6	A	4702	ATP	C3'-C4'-C5'-O5'
5	B	4704	ADP	C3'-C4'-C5'-O5'
5	B	4704	ADP	O4'-C4'-C5'-O5'
6	B	4702	ATP	PB-O3B-PG-O3G
6	A	4702	ATP	PG-O3B-PB-O2B
5	A	4704	ADP	C5'-O5'-PA-O1A
6	A	4702	ATP	PG-O3B-PB-O1B
6	B	4702	ATP	PA-O3A-PB-O2B
6	B	4702	ATP	PB-O3B-PG-O1G
6	B	4702	ATP	PA-O3A-PB-O1B

There are no ring outliers.

8 monomers are involved in 29 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
6	A	4702	ATP	4	0
5	B	4703	ADP	3	0
5	B	4701	ADP	5	0
5	A	4704	ADP	3	0
6	B	4702	ATP	6	0
5	A	4701	ADP	3	0

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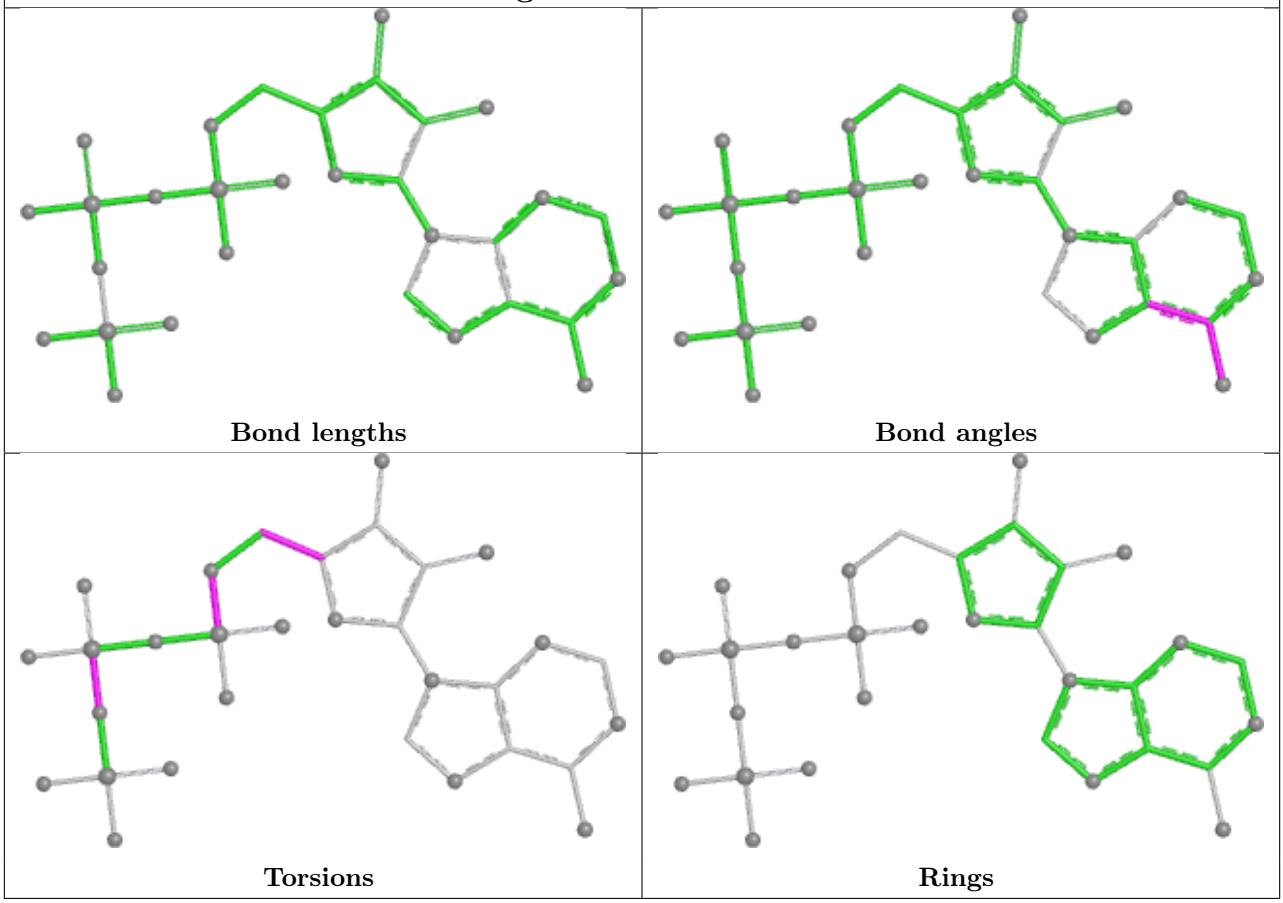
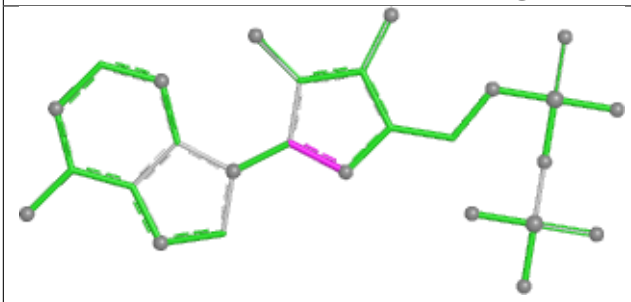
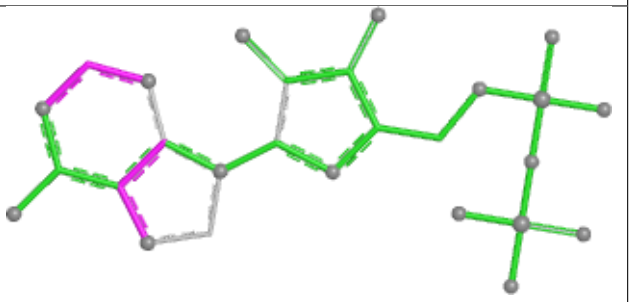
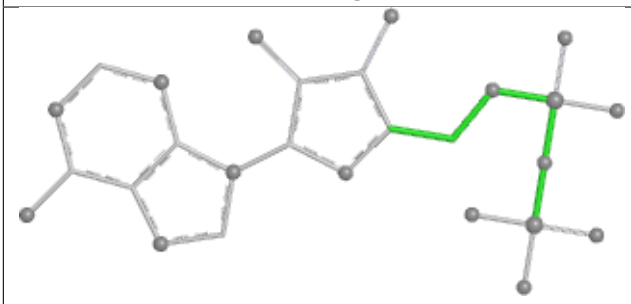
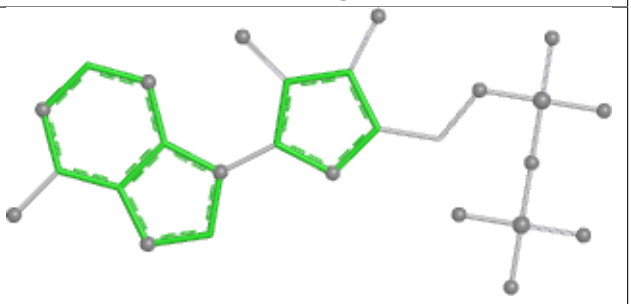
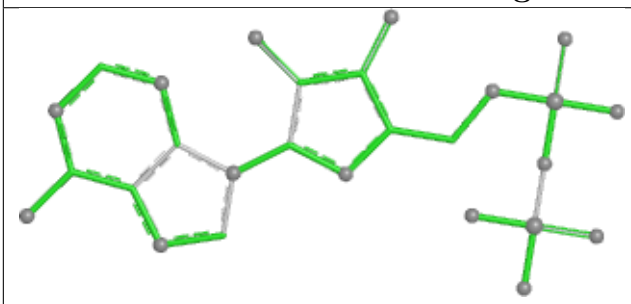
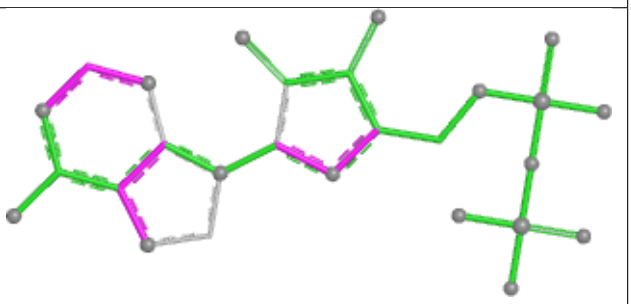
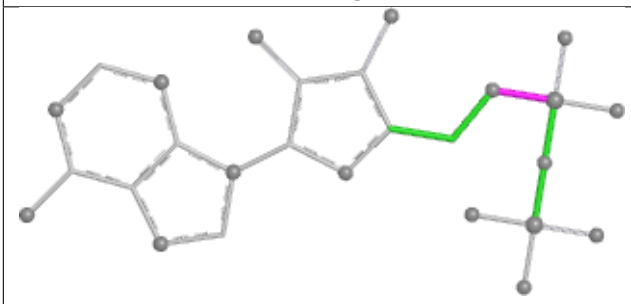
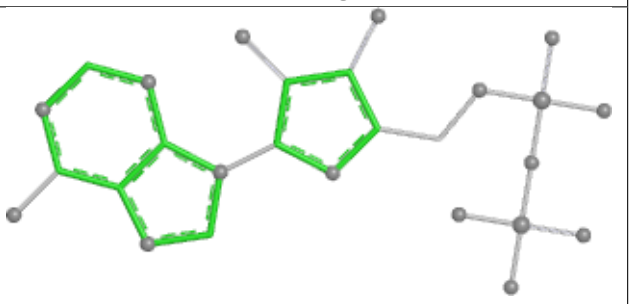
Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	A	4703	ADP	3	0
5	B	4704	ADP	2	0

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.

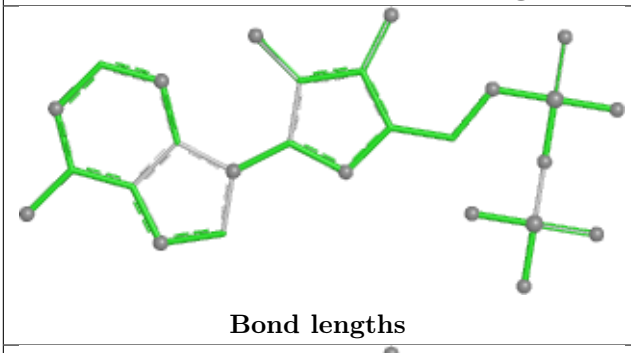
Ligand ATP A 4702



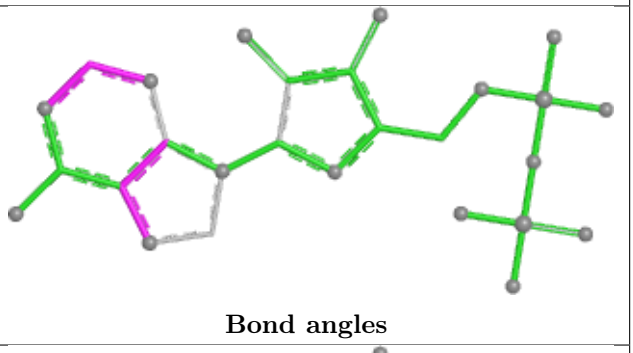
Ligand ADP B 4703	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand ADP B 4701	
 Bond lengths	 Bond angles
 Torsions	 Rings

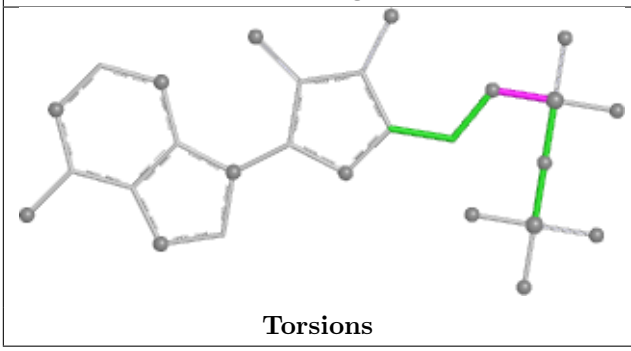
Ligand ADP A 4704



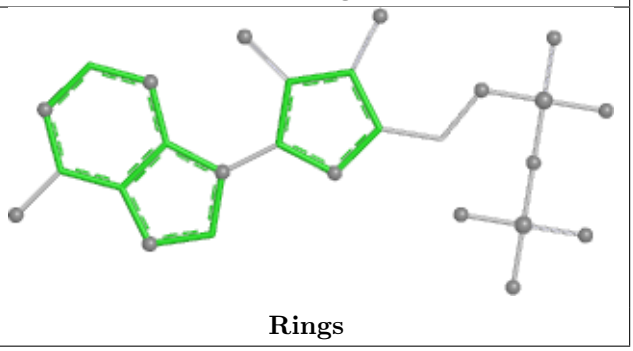
Bond lengths



Bond angles

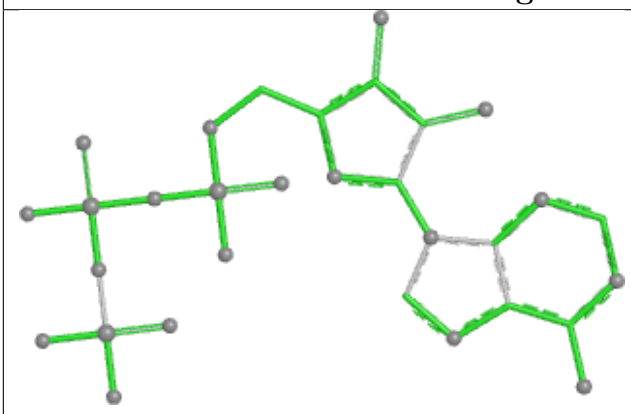


Torsions

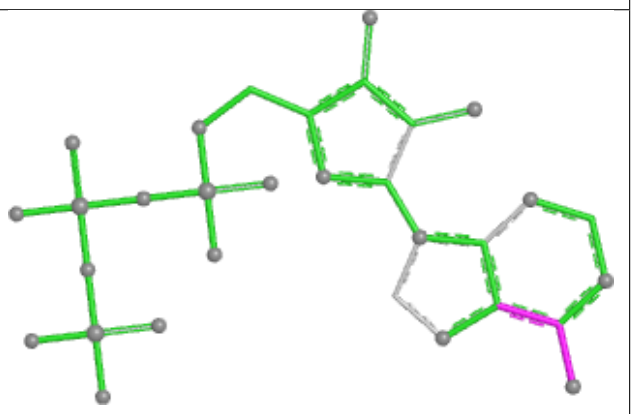


Rings

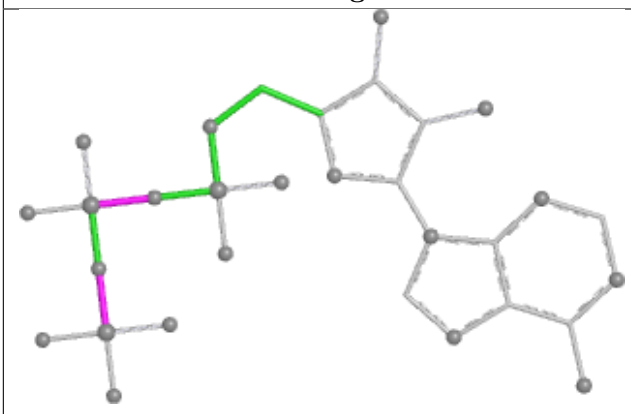
Ligand ATP B 4702



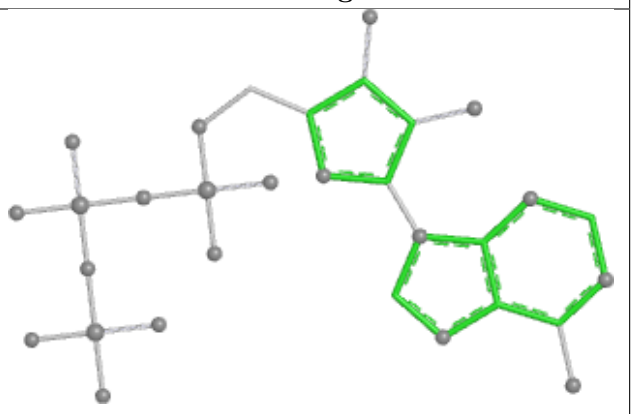
Bond lengths



Bond angles

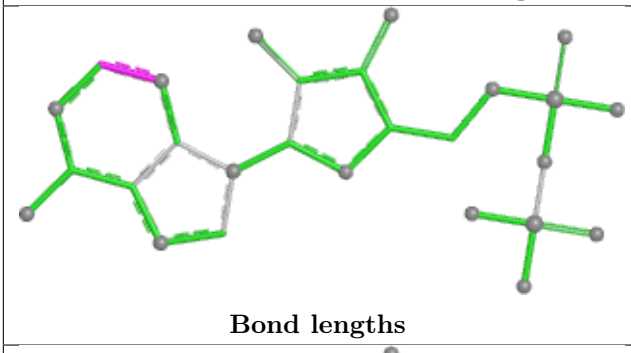


Torsions

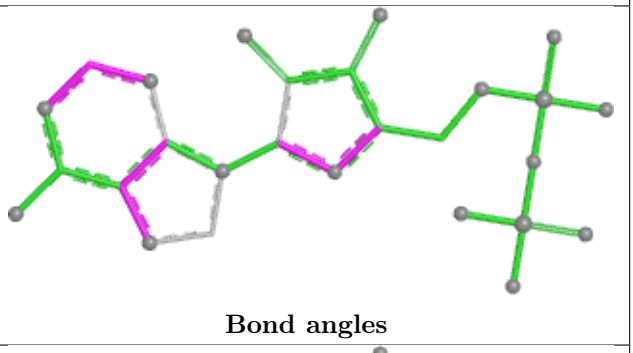


Rings

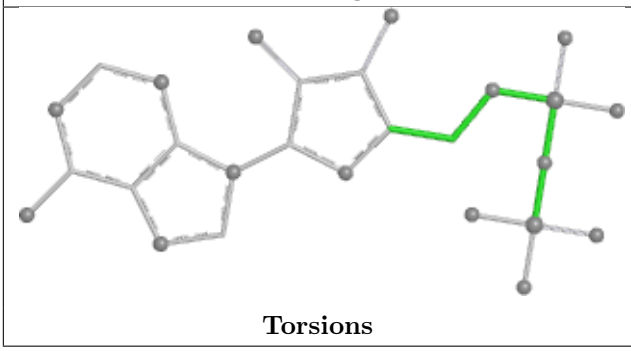
Ligand ADP A 4701



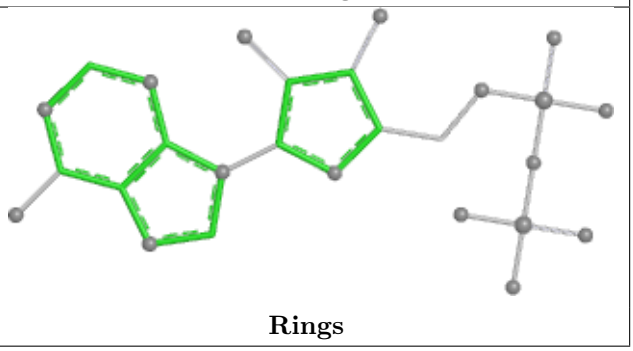
Bond lengths



Bond angles

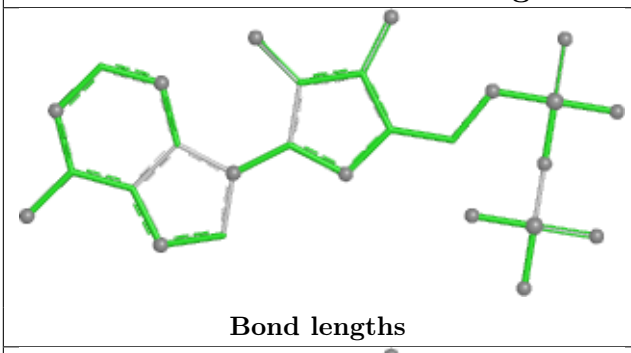


Torsions

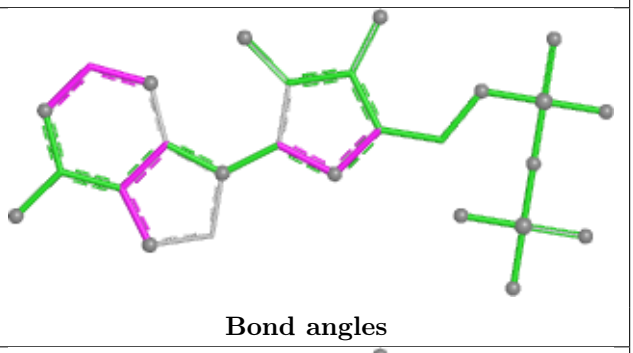


Rings

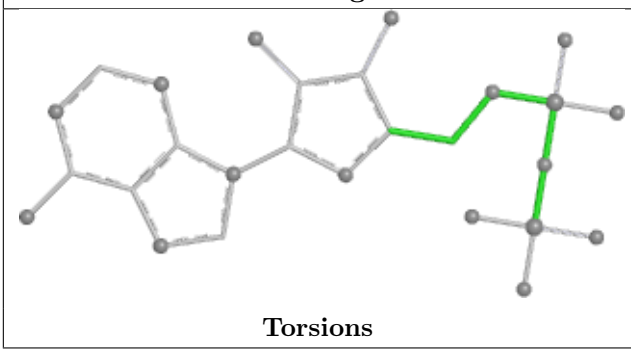
Ligand ADP A 4703



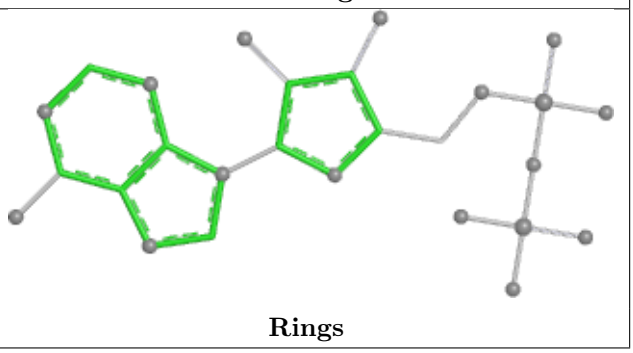
Bond lengths



Bond angles

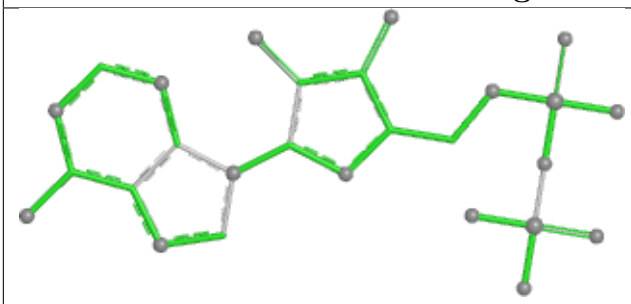


Torsions

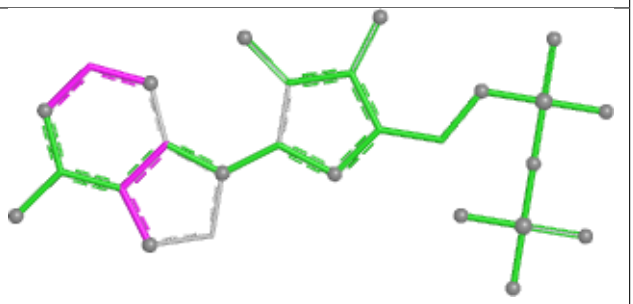


Rings

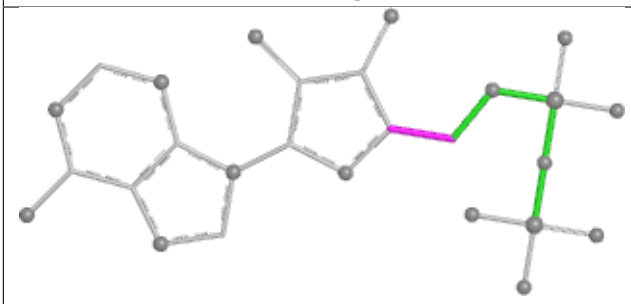
Ligand ADP B 4704



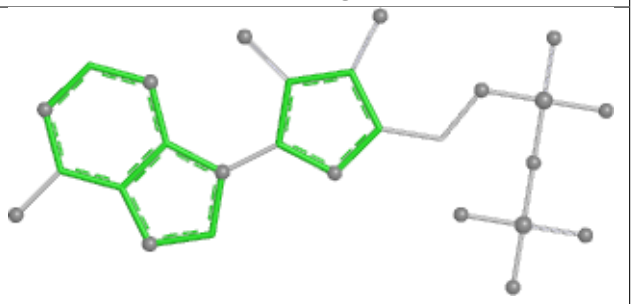
Bond lengths



Bond angles



Torsions



Rings

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

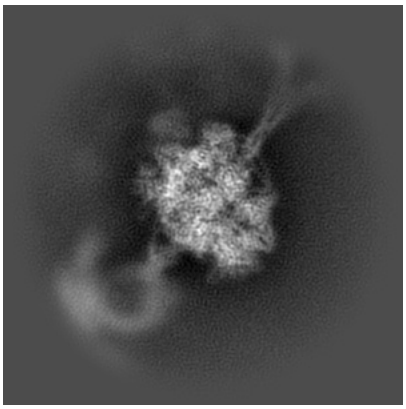
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-73173. These allow visual inspection of the internal detail of the map and identification of artifacts.

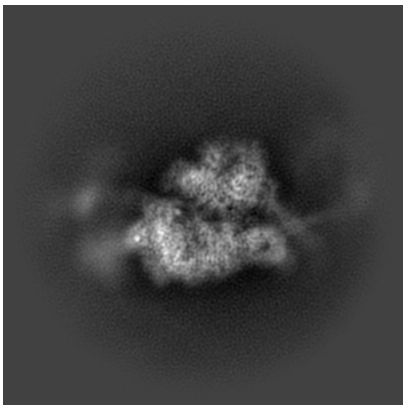
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

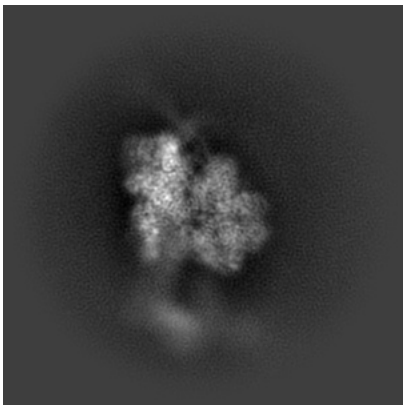
6.1.1 Primary map



X

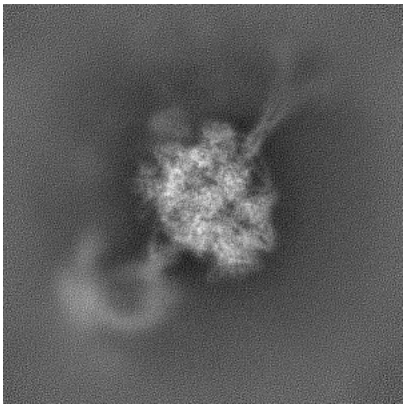


Y

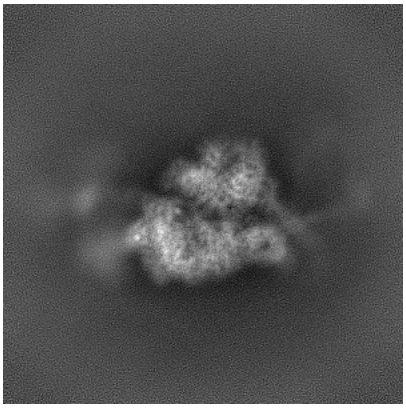


Z

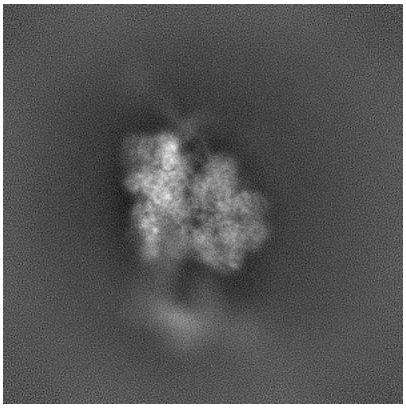
6.1.2 Raw map



X



Y

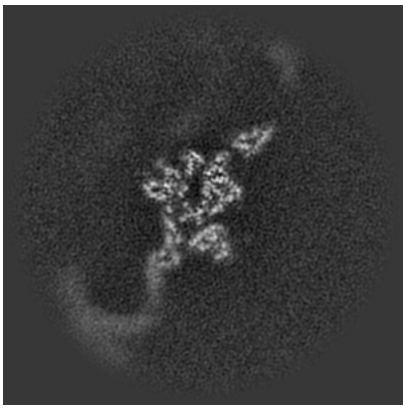


Z

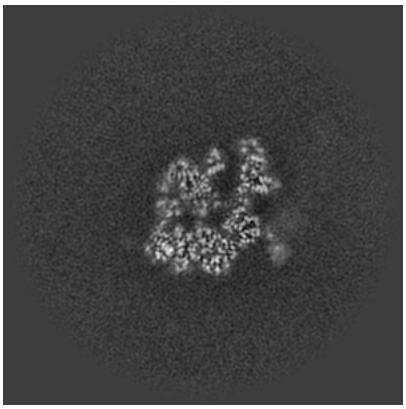
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

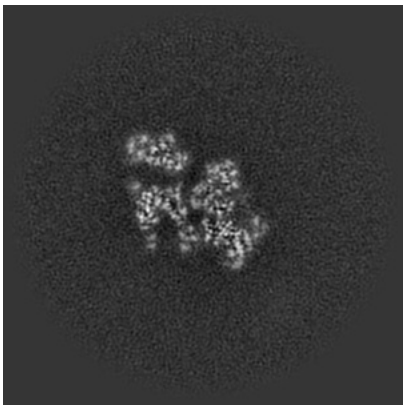
6.2.1 Primary map



X Index: 192

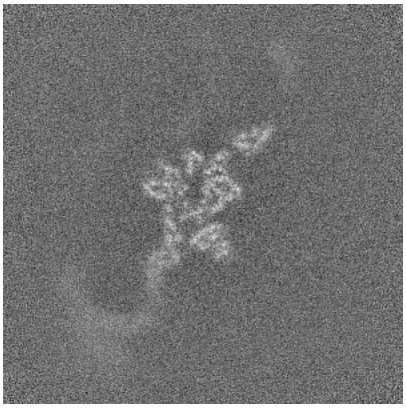


Y Index: 192

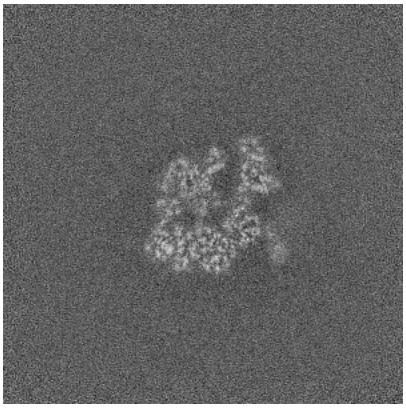


Z Index: 192

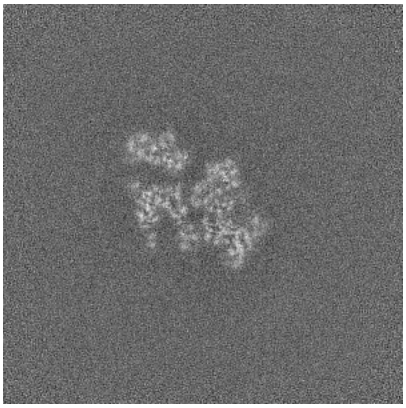
6.2.2 Raw map



X Index: 192



Y Index: 192

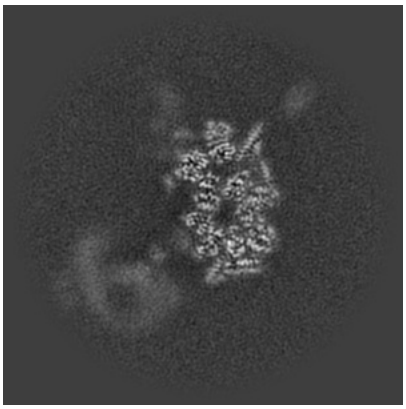


Z Index: 192

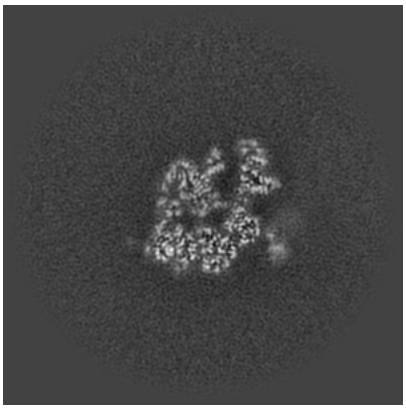
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

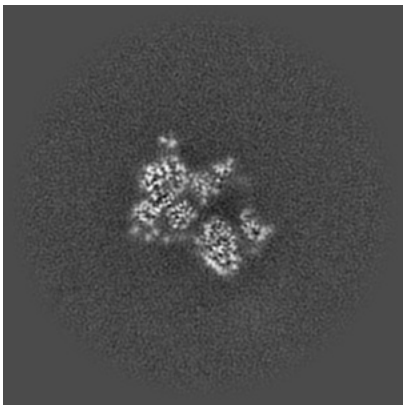
6.3.1 Primary map



X Index: 157

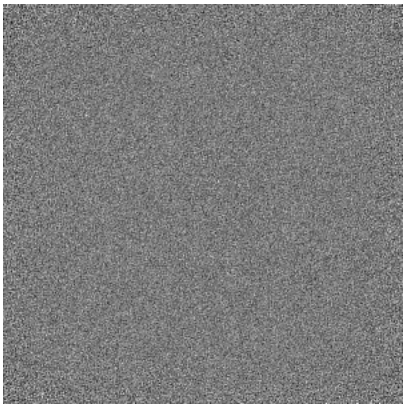


Y Index: 193

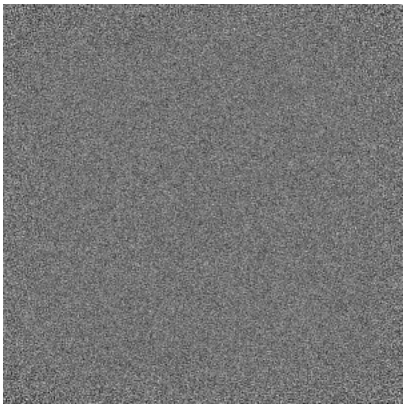


Z Index: 214

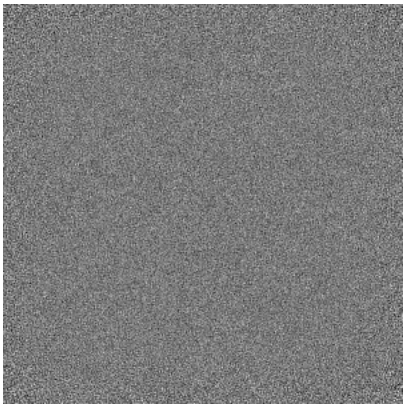
6.3.2 Raw map



X Index: 0



Y Index: 0

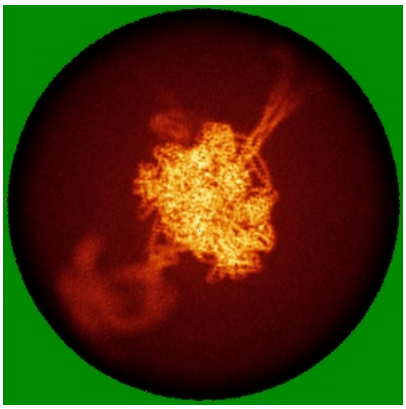


Z Index: 0

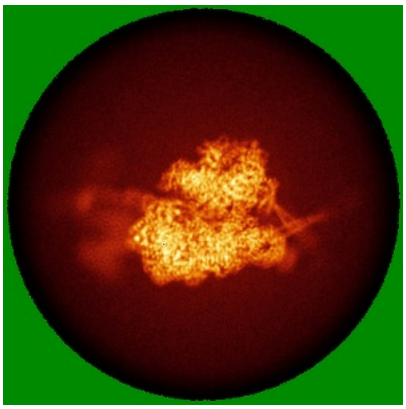
The images above show the largest variance slices of the map in three orthogonal directions.

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

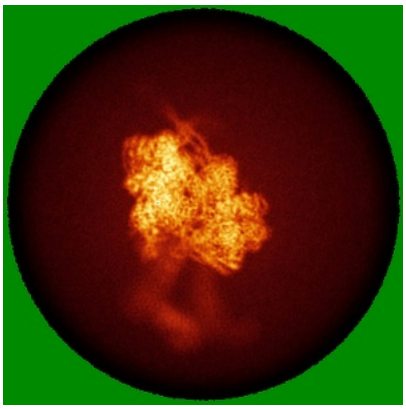
6.4.1 Primary map



X

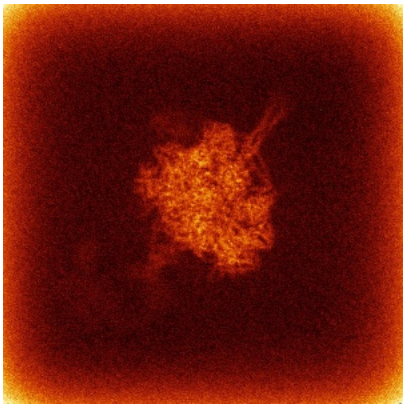


Y

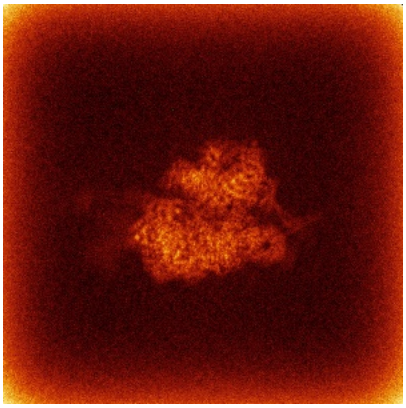


Z

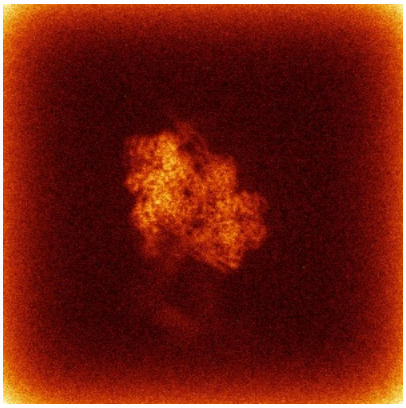
6.4.2 Raw map



X



Y



Z

The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views (i)

6.5.1 Primary map

X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.08. 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.

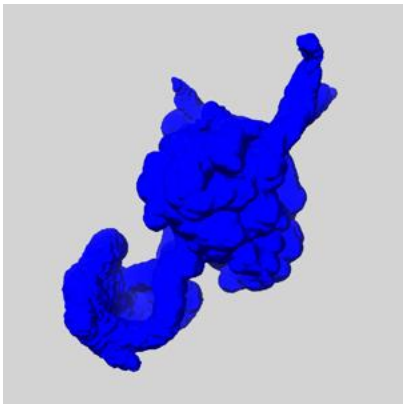
6.6 Mask visualisation (i)

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

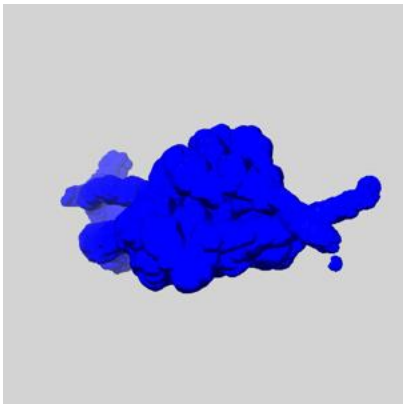
A mask typically either:

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

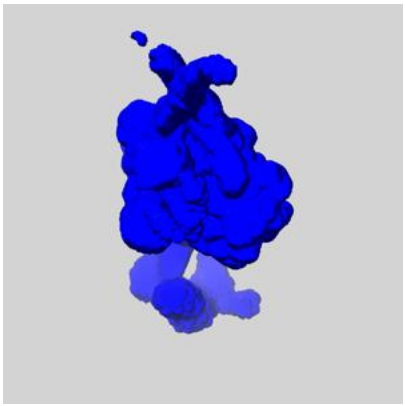
6.6.1 emd_73173_msk_1.map (i)



X



Y

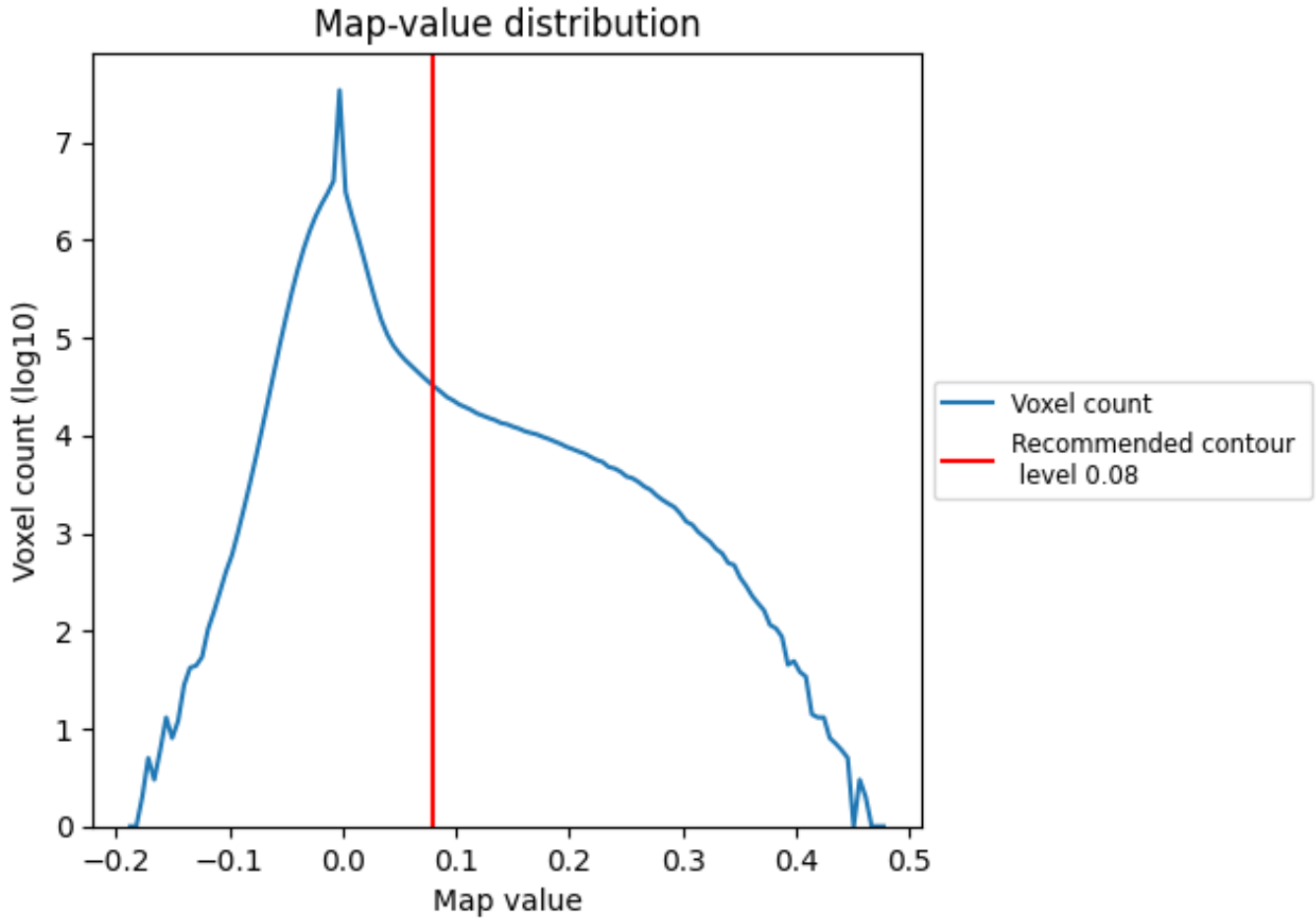


Z

7 Map analysis

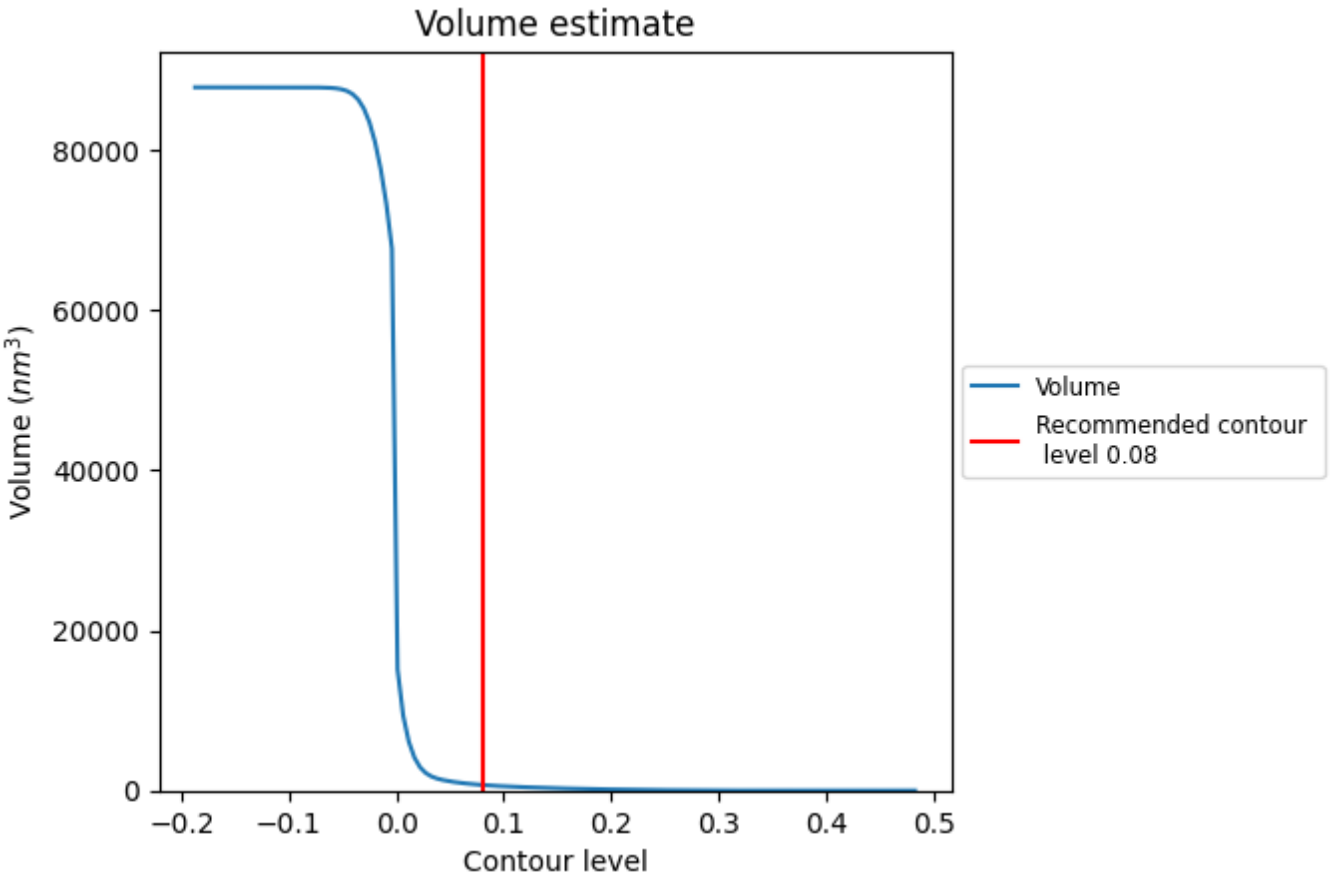
This section contains the results of statistical analysis of the map.

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.

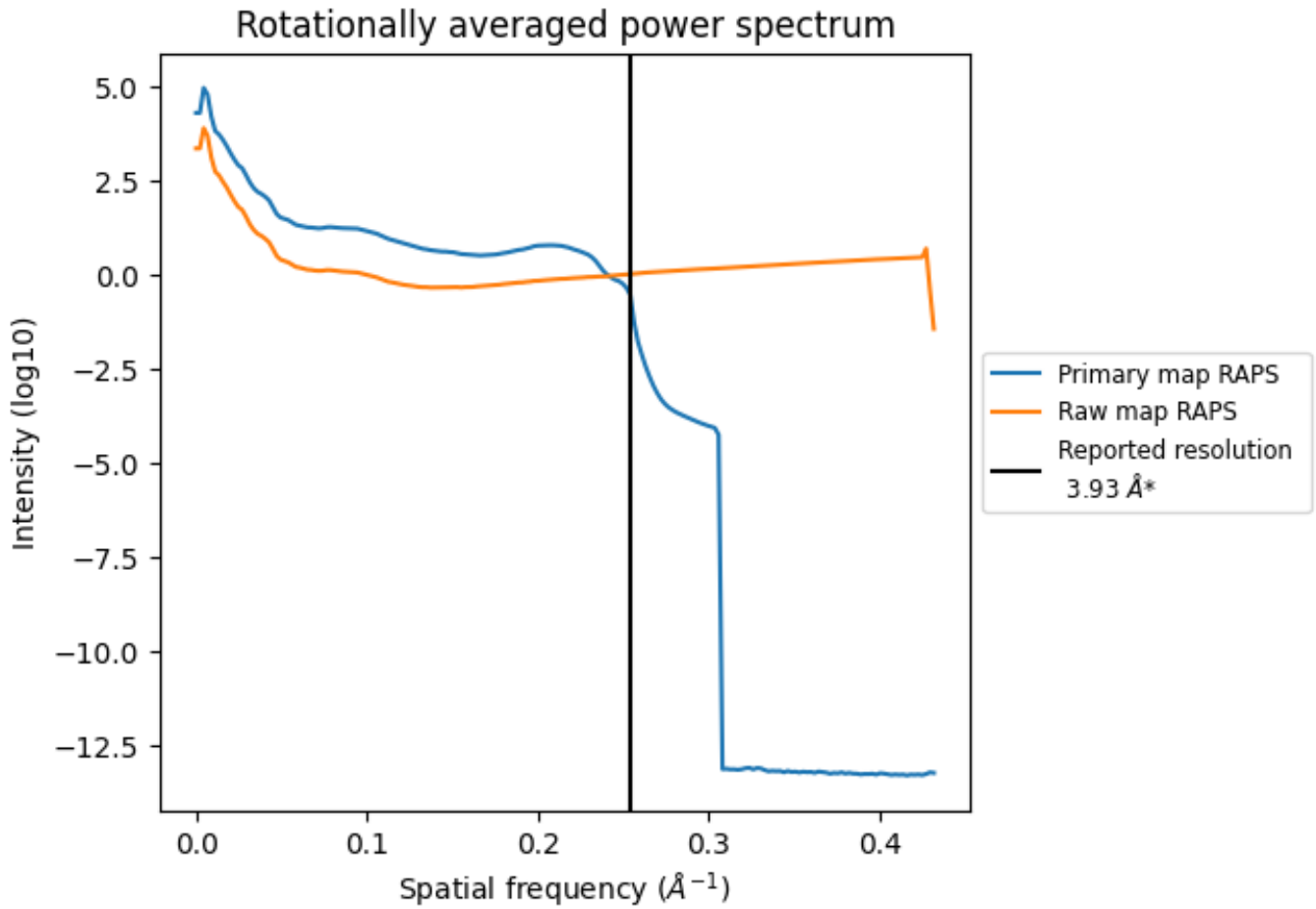
7.2 Volume estimate



The volume at the recommended contour level is 698 nm^3; this corresponds to an approximate mass of 631 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)

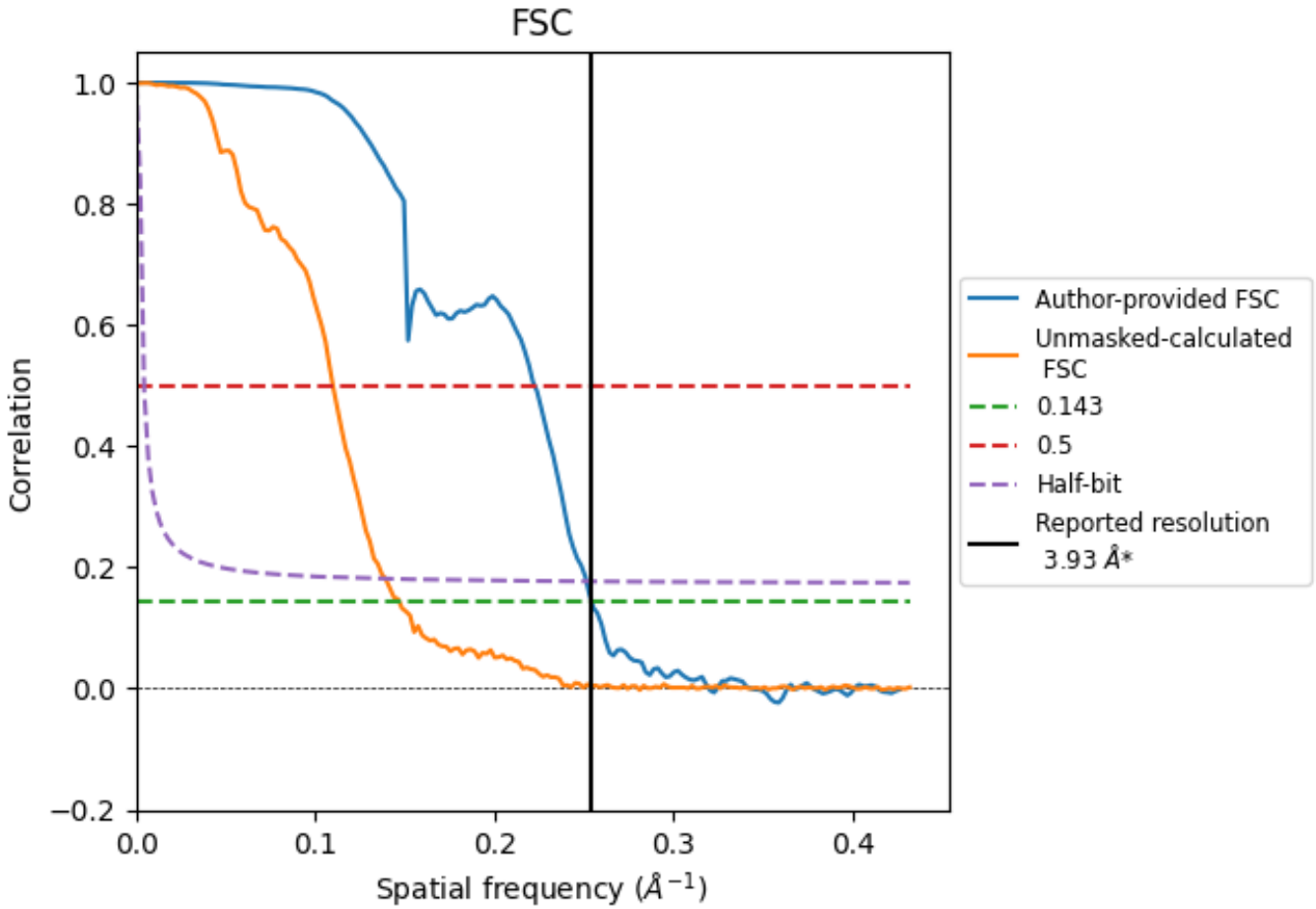


*Reported resolution corresponds to spatial frequency of 0.254 $Å^{-1}$

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 0.254 Å^{-1}

8.2 Resolution estimates (i)

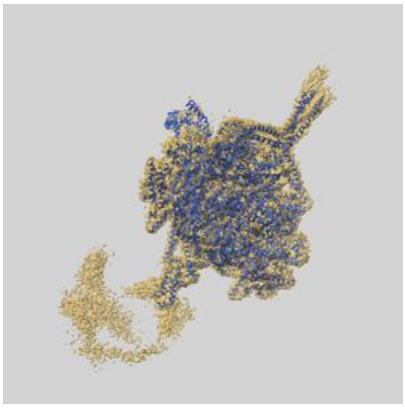
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.93	-	-
Author-provided FSC curve	3.93	4.49	3.98
Unmasked-calculated*	6.81	9.10	7.18

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 6.81 differs from the reported value 3.93 by more than 10 %

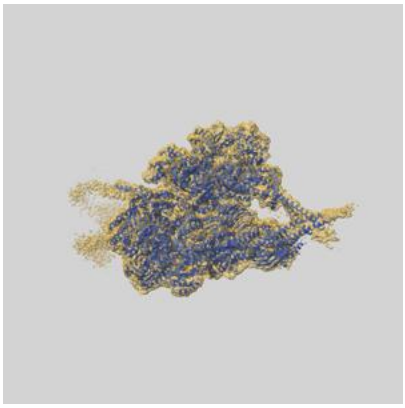
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-73173 and PDB model 9YNC. Per-residue inclusion information can be found in section 3 on page 7.

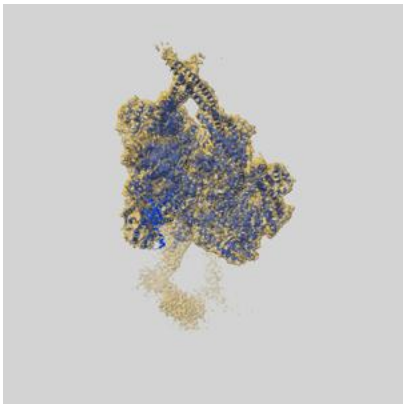
9.1 Map-model overlay



X



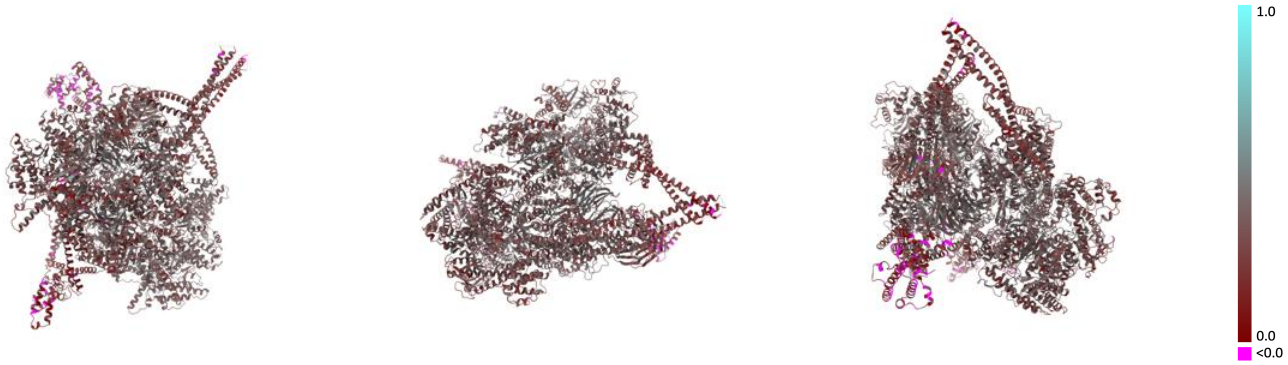
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.08 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.

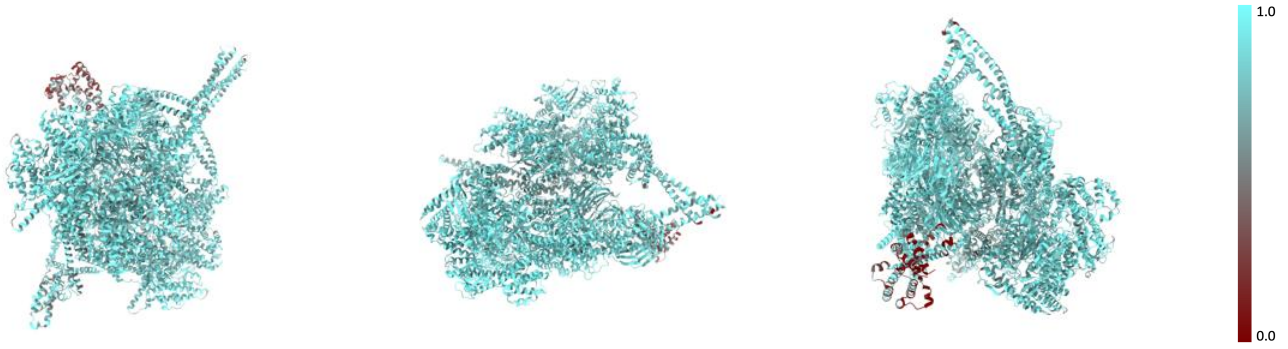
9.2 Q-score mapped to coordinate model (i)



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.

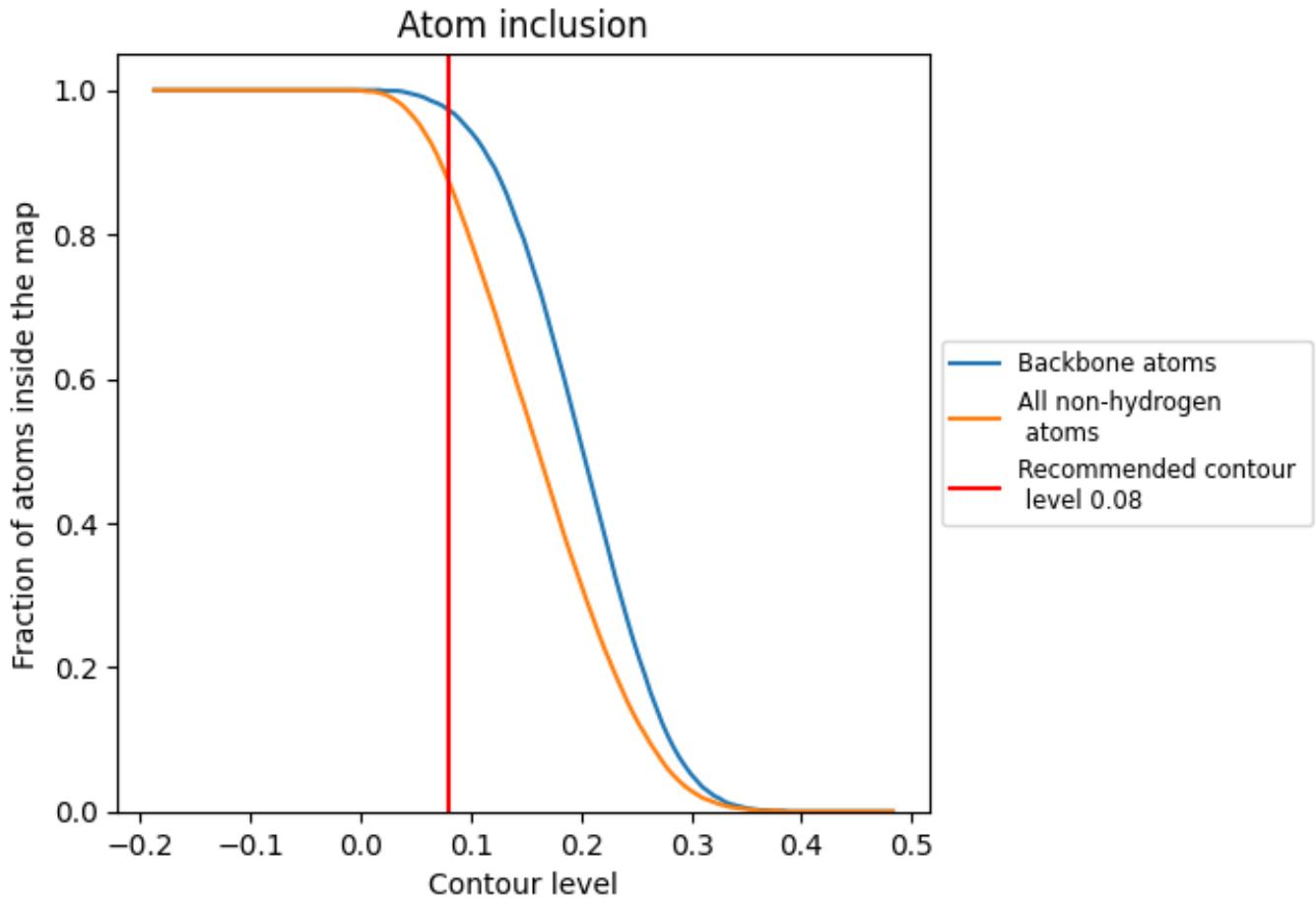
9.3 Atom inclusion mapped to coordinate model (i)



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 (0.08).

9.4 Atom inclusion (i)



At the recommended contour level, 97% of all backbone atoms, 87% 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 (0.08) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8730	0.3360
A	0.8620	0.3330
B	0.8990	0.3430
C	0.8750	0.3970
D	0.9010	0.3220
E	0.3240	0.1010
F	0.5500	0.1330
G	0.8760	0.2920
H	0.8470	0.3090
I	0.7760	0.2370
J	0.8280	0.2870