Full wwPDB EM Validation Report

Feb 5, 2026 – 08:42 AM EST

PDB ID	:	9E13 / pdb_00009e13
EMDB ID	:	EMD-47382
Title	:	Full-length human dynein-1 in phi-like comformation bound to a Lis1 dimer under Lis1 condition
Authors	:	Yang, J.; Zhang, K.
Deposited on	:	2024-10-21
Resolution	:	4.50 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:

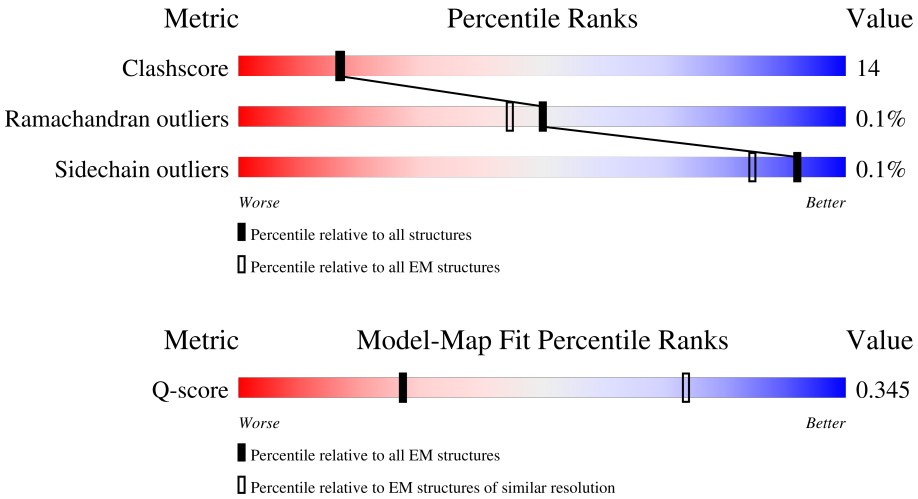
EMDB validation analysis	:	0.0.1.dev129
Mogul	:	2022.3.0, CSD as543be (2022)
MolProbity	:	4-5-2 with Phenix2.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive 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 4.50 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	2937 (4.00 - 5.00)

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	6% 74% 23%
1	B	4646	70% 27%
2	C	638	57% 38%
2	D	638	33% 29% 38%

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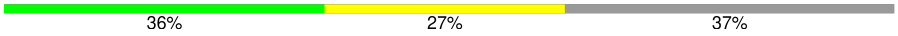
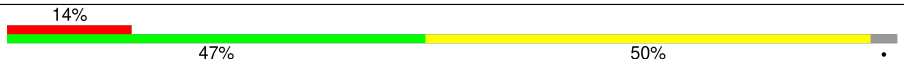
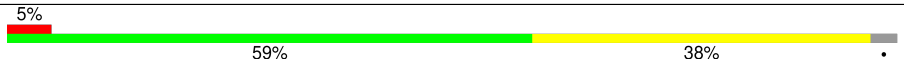
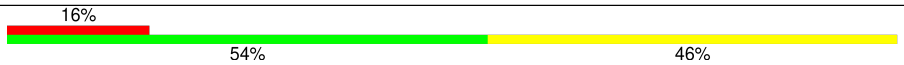
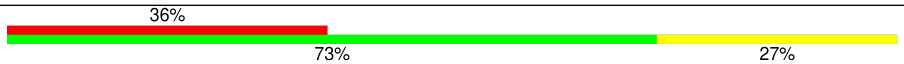
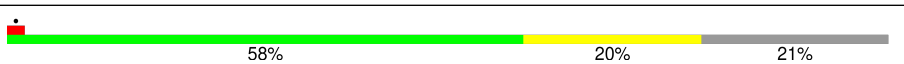
Mol	Chain	Length	Quality of chain
3	E	492	
3	F	492	
4	G	96	
4	H	96	
5	I	89	
5	J	89	
6	K	113	
6	L	113	
7	O	410	
7	P	410	

2 Entry composition (i)

There are 10 unique types of molecules in this entry. The entry contains 94479 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	4542	Total 36692	C 23323	N 6381	O 6822	S 166	0	0
1	B	4521	Total 36527	C 23221	N 6349	O 6791	S 166	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
2	C	394	Total 3112	C 1962	N 541	O 594	S 15	0	0
2	D	394	Total 3112	C 1962	N 541	O 594	S 15	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
3	E	311	Total 2518	C 1614	N 425	O 468	S 11	0	0
3	F	311	Total 2518	C 1614	N 425	O 468	S 11	0	0

- Molecule 4 is a protein called Dynein light chain roadblock-type 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	G	93	Total 742	C 468	N 128	O 143	S 3	0	0
4	H	93	Total 742	C 468	N 128	O 143	S 3	0	0

- Molecule 5 is a protein called Dynein light chain 1, cytoplasmic.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	I	89	Total	C	N	O	S	0	0
			728	465	122	135	6		
5	J	89	Total	C	N	O	S	0	0
			728	465	122	135	6		

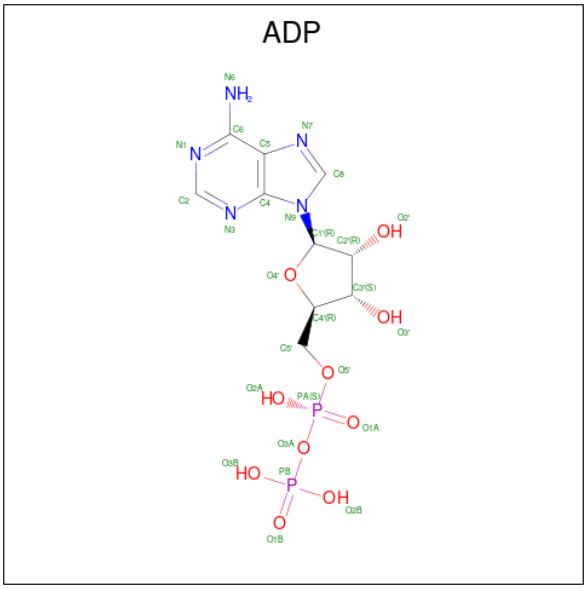
- Molecule 6 is a protein called Dynein light chain Tctex-type 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	K	113	Total	C	N	O	S	0	0
			872	548	142	175	7		
6	L	113	Total	C	N	O	S	0	0
			872	548	142	175	7		

- Molecule 7 is a protein called Platelet-activating factor acetylhydrolase IB subunit beta.

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

- Molecule 8 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
8	A	1	Total	C	N	O	P	0
			27	10	5	10	2	

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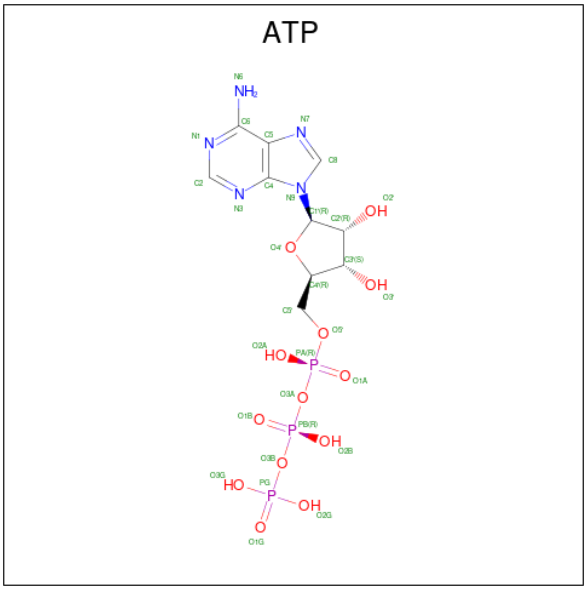
Mol	Chain	Residues	Atoms					AltConf
8	A	1	Total	C	N	O	P	0
			27	10	5	10	2	
8	A	1	Total	C	N	O	P	0
			27	10	5	10	2	
8	B	1	Total	C	N	O	P	0
			27	10	5	10	2	
8	B	1	Total	C	N	O	P	0
			27	10	5	10	2	
8	B	1	Total	C	N	O	P	0
			27	10	5	10	2	

- Molecule 9 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
9	A	1	Total	C	N	O	P	0
			31	10	5	13	3	
9	B	1	Total	C	N	O	P	0
			31	10	5	13	3	

- Molecule 10 is MAGNESIUM ION (CCD ID: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

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

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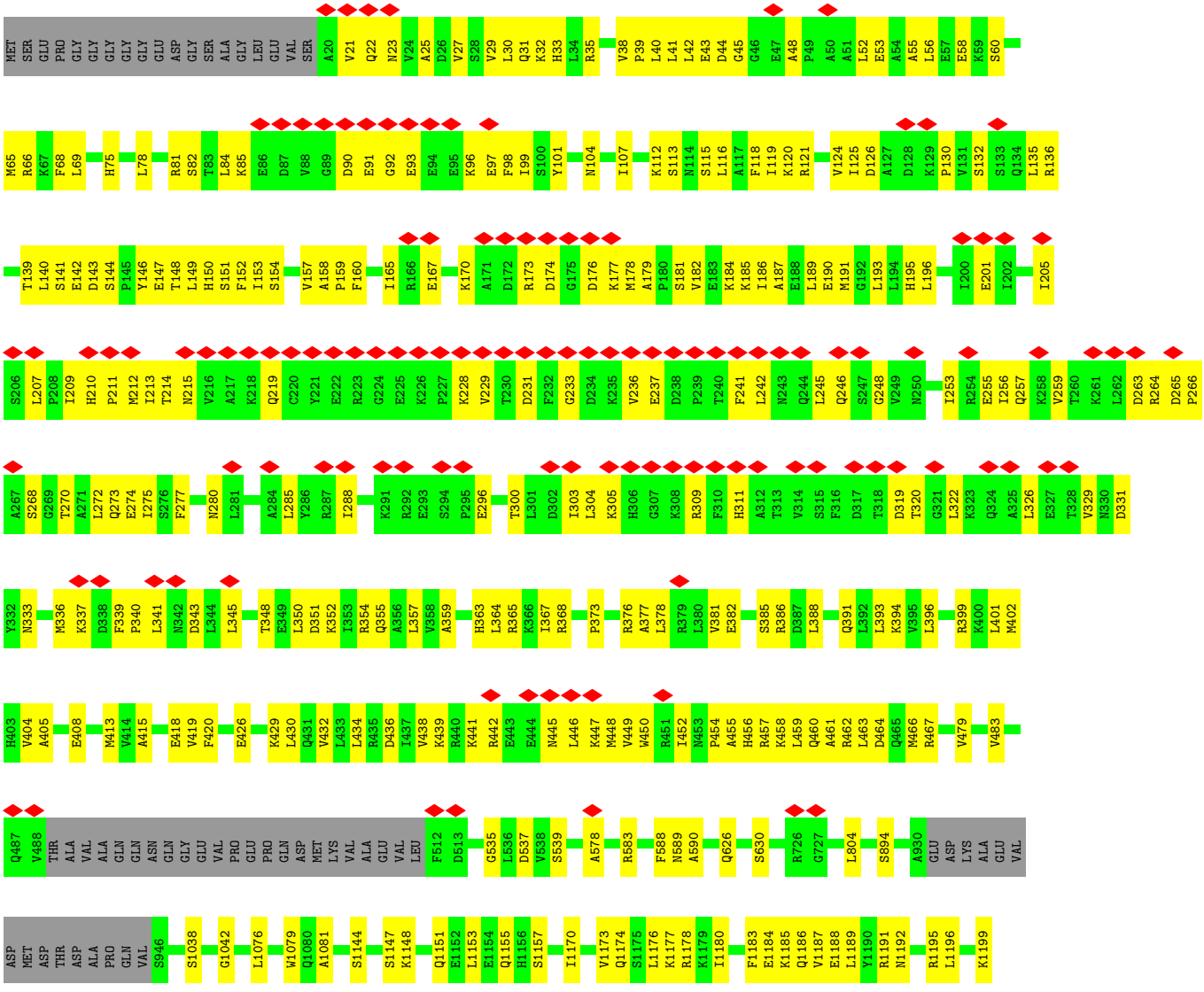
Mol	Chain	Residues	Atoms		AltConf
10	B	2	Total 2	Mg 2	0

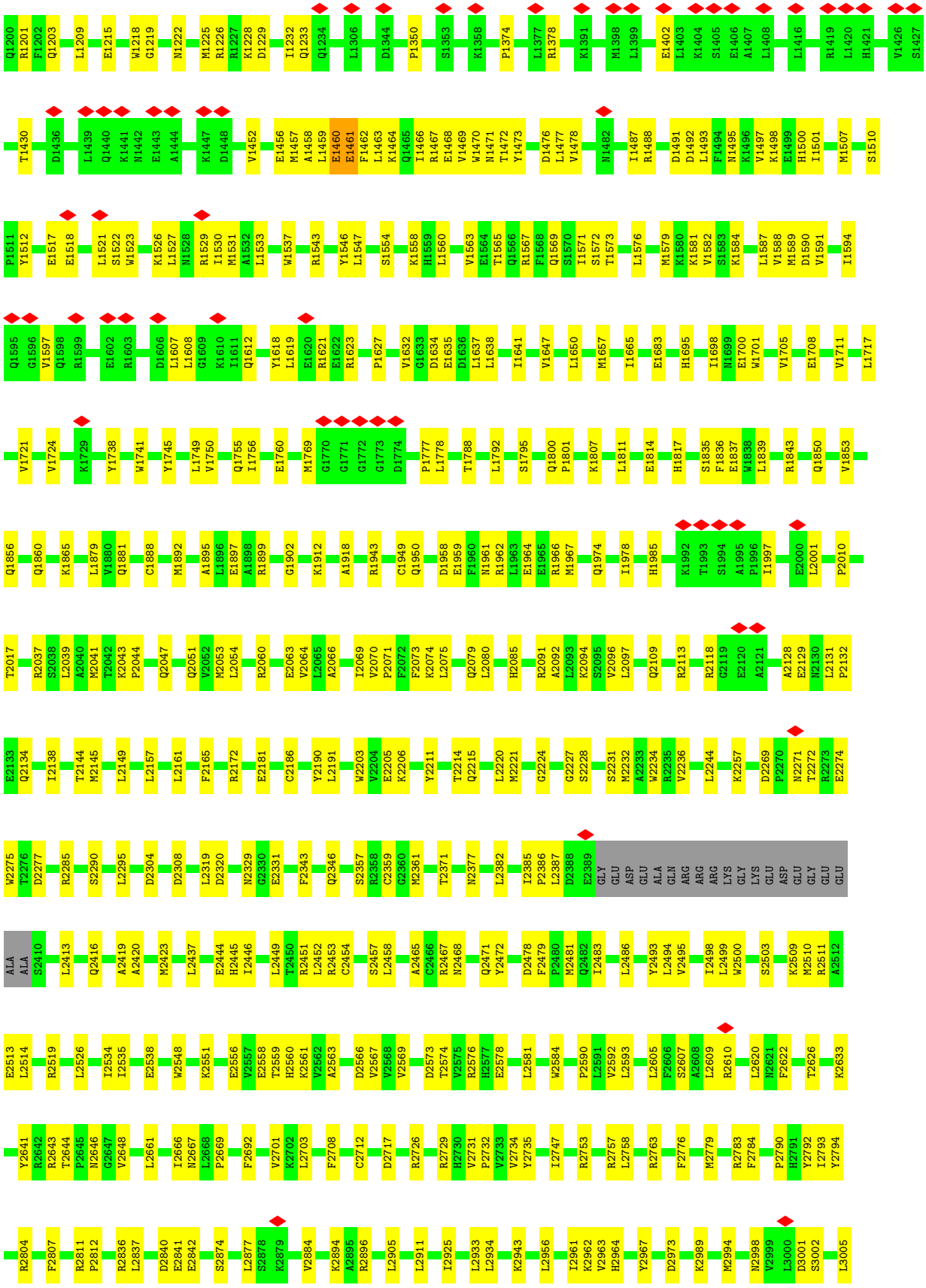
3 Residue-property plots (i)

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

• Molecule 1: Cytoplasmic dynein 1 heavy chain 1

Chain A:

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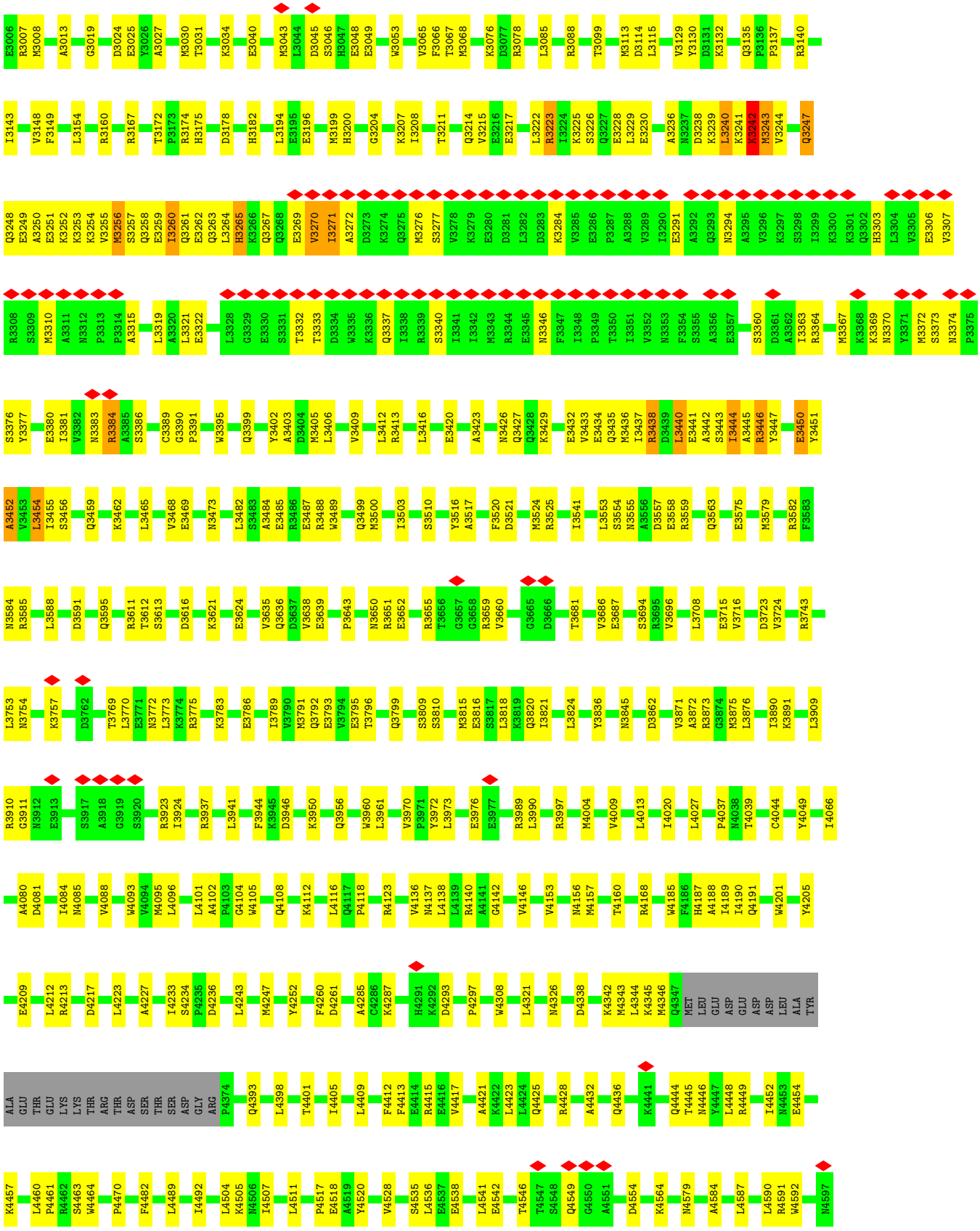
T1430 D1436 L1439 Q1440 K1441 N1442 E1443 A1444 K1447 D1448 V1452 E1456 M1457 A1458 L1459 E1460 E1461 F1462 L1463 K1464 Q1465 I1466 R1467 E1468 V1469 W1470 N1471 T1472 Y1473 D1476 L1477 V1478 N1482 I1487 R1488 D1491 D1492 L1493 F1494 N1495 K1496 V1497 K1498 E1499 H1500 I1501 M1507 S1510
P1511 Y1512 E1517 E1518 L1521 S1522 W1523 K1526 L1527 M1528 R1529 I1530 M1531 A1532 L1533 W1537 R1543 Y1546 L1547 S1554 K1558 H1559 L1560 V1563 E1564 T1565 Q1566 R1567 F1568 Q1569 S1570 I1571 S1572 T1573 L1576 M1579 K1580 K1581 V1582 S1583 K1584 L1587 V1588 M1589 D1590 V1591 I1594
Q1595 G1596 V1597 Q1598 R1599 E1602 R1603 D1606 L1607 L1608 G1609 K1610 I1611 Q1612 Y1618 L1619 E1620 R1621 E1622 R1623 P1627 V1632 G1633 D1634 E1635 D1636 L1637 L1638 I1641 V1647 L1650 M1657 I1665 E1683 H1695 I1698 N1699 E1700 W1701 V1705 E1708 V1711 L1717
V1721 V1724 K1729 Y1738 W1741 Y1745 L1749 V1750 Q1755 I1756 E1760 M1769 G1770 G1771 G1772 G1773 D1774 P1777 L1778 T1788 L1792 S1795 Q1800 P1801 K1807 L1811 E1814 H1817 S1835 F1836 E1837 W1838 L1839 R1843 Q1850 V1853
Q1856 Q1860 K1865 L1879 V1880 Q1881 C1888 M1892 A1895 L1896 E1897 A1898 R1899 G1902 K1912 A1918 R1943 C1949 Q1950 D1958 E1959 F1960 N1961 R1962 L1963 E1964 E1965 R1966 M1967 Q1974 I1978 H1985 K1992 T1993 S1994 A1995 P1996 I1997 E2000 L2001 P2010
T2017 R2037 S2038 L2039 A2040 M2041 T2042 K2043 P2044 Q2047 Q2051 W2052 M2053 L2054 R2060 E2063 V2064 L2065 A2066 I2069 V2070 P2071 F2072 F2073 K2074 L2075 Q2079 L2080 H2085 R2091 A2092 L2093 K2094 S2095 V2096 L2097 Q2109 R2113 R2118 G2119 E2120 A2121 A2128 E2129 N2130 L2131 P2132
E2133 Q2134 I2138 T2144 M2145 L2149 L2157 L2161 F2165 R2172 E2181 C2186 Y2190 L2191 W2203 W2204 E2205 K2206 Y2211 T2214 Q2215 L2220 M2221 G2224 G2227 S2228 S2231 M2232 A2233 W2234 R2235 V2236 L2244 K2257 D2269 P2270 N2271 T2272 R2273 E2274
W2275 T2276 D2277 R2285 S2290 L2295 D2304 D2308 L2319 D2320 N2329 G2330 E2331 F2343 Q2346 S2357 R2358 C2359 G2360 M2361 T2371 N2377 L2382 I2385 P2386 L2387 D2388 E2389 GLY GLU ASP GLU ALA GLN ARG ARG ARG LYS GLY LYS GLU ASP GLU GLY GLU GLU
ALA ALA S2410 L2413 Q2416 A2419 A2420 M2423 L2437 E2444 H2445 I2446 L2449 T2450 R2451 L2452 R2453 C2454 S2457 L2458 A2465 C2466 R2467 N2468 Q2471 Y2472 D2478 F2479 P2480 M2481 Q2482 I2483 L2486 Y2493 L2494 V2495 I2498 L2499 W2500 S2503 K2509 M2510 R2511 A2512
E2513 L2514 R2519 L2526 I2534 I2535 E2538 W2548 K2551 E2556 Y2557 E2558 T2559 H2560 K2561 V2562 A2563 D2566 V2567 V2568 V2569 D2573 T2574 Y2575 R2576 H2577 E2578 L2581 W2584 P2590 L2591 V2592 L2593 L2605 F2606 S2607 A2608 L2609 R2610 L2620 N2621 F2622 T2626 K2633
Y2641 R2642 R2643 T2644 P2645 N2646 G2647 V2648 L2661 I2666 N2667 L2668 P2669 F2692 V2701 K2702 L2703 F2708 C2712 D2717 R2726 R2729 H2730 V2731 P2732 V2733 V2734 Y2735 I2747 R2753 R2757 L2758 R2763 F2776 M2779 R2783 F2784 P2790 H2791 Y2792 I2793 Y2794
R2804 F2807 R2811 P2812 R2836 L2837 D2840 E2841 E2842 S2874 L2877 S2878 K2879 V2884 K2894 A2895 R2896 L2905 L2911 I2925 L2933 L2934 K2943 L2956 I2961 K2962 V2963 H2964 Y2967 D2973 K2989 M2994 N2998 V2999 L3000 D3001 S3002 L3005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I3143 V3148 F3149 L3154 R3160 R3167 T3172 P3173 R3174 H3175 D3178 H3182 L3194 E3195 E3196 M3199 H3200 G3204 K3207 I3208 T3211 Q3214 V3215 E3216 E3217 L3222 R3223 I3224 K3225 S3226 Q3227 E3228 L3229 E3230 A3236 N3237 D3238 K3239 L3240 K3241 K3242 M3243 V3244 Q3247
Q3248 E3249 A3250 E3251 K3252 K3253 K3254 V3255 M3256 S3257 Q3258 E3259 I3260 Q3261 E3262 Q3263 L3264 H3265 K3266 Q3267 Q3268 E3269 V3270 I3271 A3272 D3273 K3274 Q3275 M3276 S3277 V3278 K3279 E3280 D3281 L3282 D3283 K3284 V3285 E3286 P3287 A3288 V3289 I3290 E3291 A3292 Q3293 N3294 A3295 V3296 K3297 S3298 I3299 K3300 K3301 Q3302 H3303 L3304 V3305 E3306 V3307
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S3376 Y3377 E3380 I3381 V3382 N3383 R3384 A3385 S3386 C3389 G3390 P3391 W3395 Q3399 Y3402 A3403 D3404 M3405 L3406 V3409 L3412 R3413 L3416 E3420 A3423 N3426 Q3427 Q3428 K3429 E3432 V3433 E3434 Q3435 M3436 I3437 R3438 D3439 L3440 E3441 A3442 S3443 I3444 A3445 R3446 Y3447 E3450 Y3451
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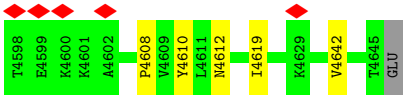
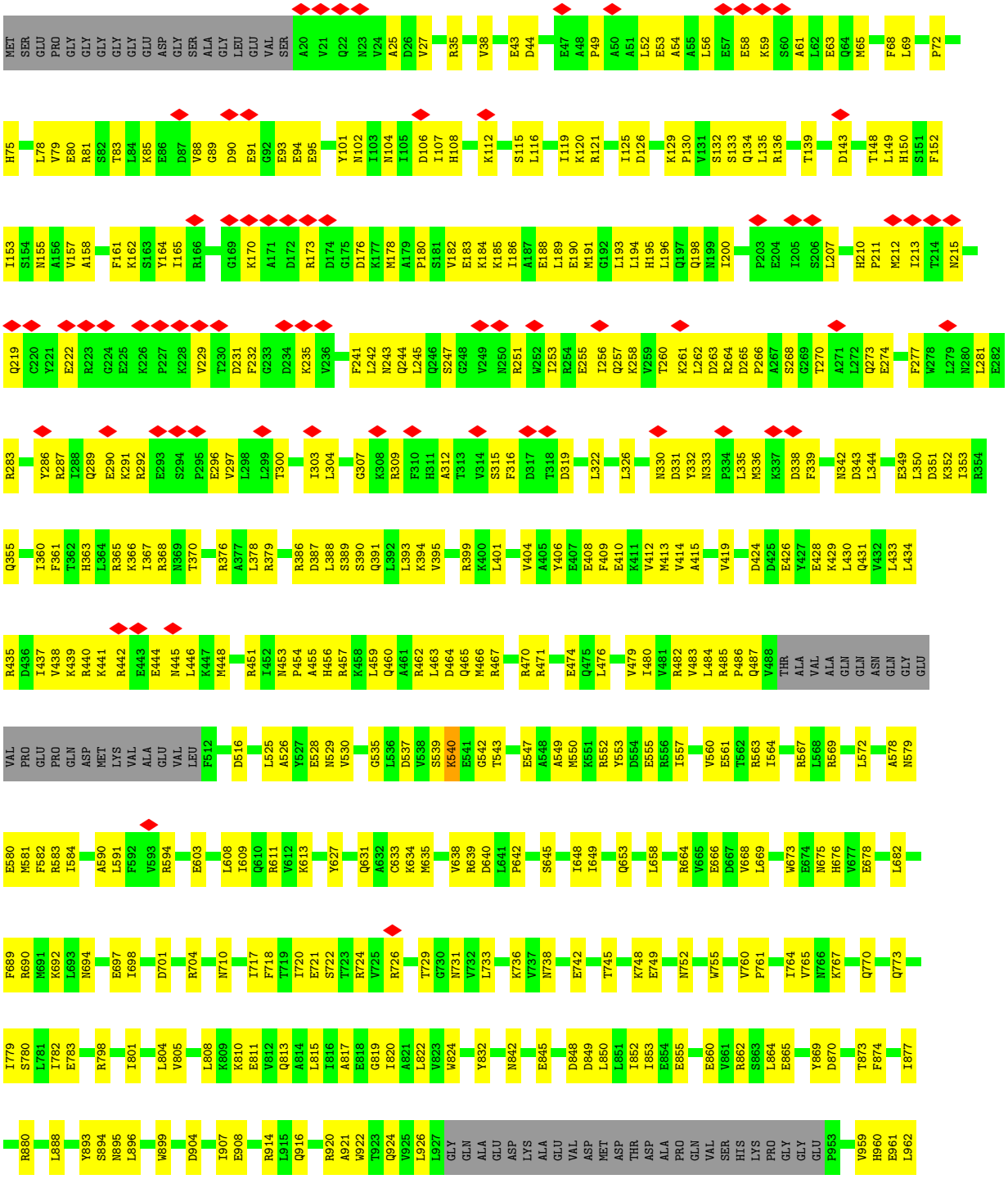
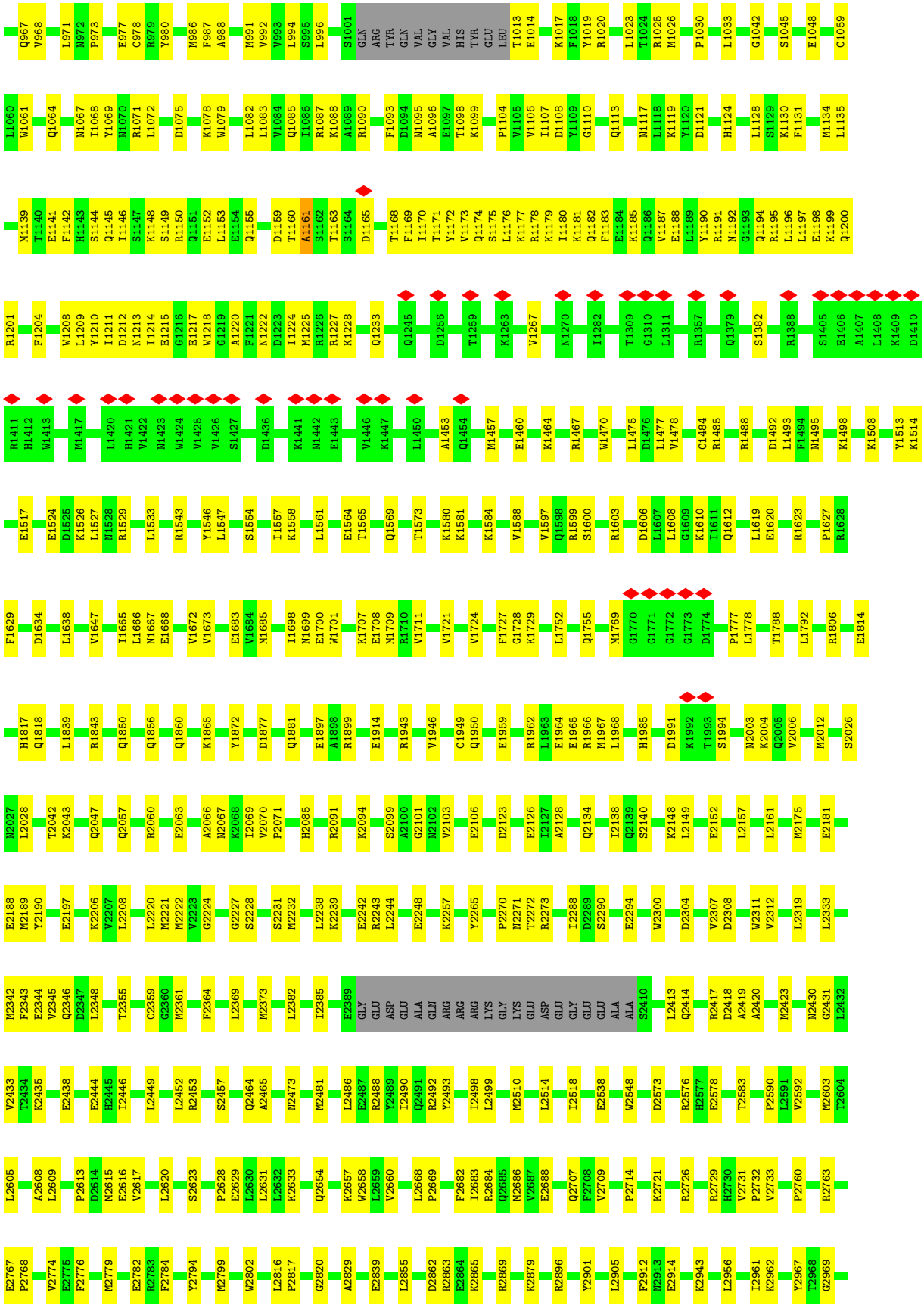
A4080 D4081 I4084 N4085 V4088 W4093 V4094 M4095 L4096 L4101 A4102 P4103 G4104 W4105 Q4108 K4112 L4116 Q4117 P4118 R4123 V4136 N4137 L4138 L4139 R4140 A4141 G4142 V4146 V4153 M4156 M4157 T4160 R4168 W4185 F4186 H4187 A4188 I4189 I4190 Q4191 W4201 Y4205
E4209 L4212 R4213 D4217 L4223 A4227 I4233 S4234 P4235 D4236 L4243 M4247 Y4252 F4260 D4261 A4285 C4286 K4287 H4291 K4292 D4293 P4297 W4308 L4321 N4326 D4338 K4342 M4343 L4344 K4345 M4346 Q4347 MET LEU GLU ASP GLU ASP ASP LEU ALA TYR
ALA GLU THR GLU LYS LYS THR ARG THR ASP SER THR SER ASP GLY ARG P4374 Q4393 L4398 T4401 I4405 L4409 F4412 F4413 E4414 R4415 E4416 V4417 A4421 K4422 L4423 L4424 Q4425 R4428 A4432 Q4436 K4441 Q4444 T4445 N4446 Y4447 L4448 R4449 I4452 N4453 E4454
K4457 L4460 P4461 R4462 S4463 W4464 P4470 F4482 L4489 I4492 L4504 K4505 N4506 I4507 L4511 P4517 E4518 A4519 Y4520 V4528 S4535 L4536 E4537 E4538 L4541 E4542 T4546 T4547 S4548 Q4549 G4550 A4551 D4554 K4564 N4579 A4584 L4587 L4590 R4591 W4592 N4597



• Molecule 1: Cytoplasmic dynein 1 heavy chain 1

Chain B:

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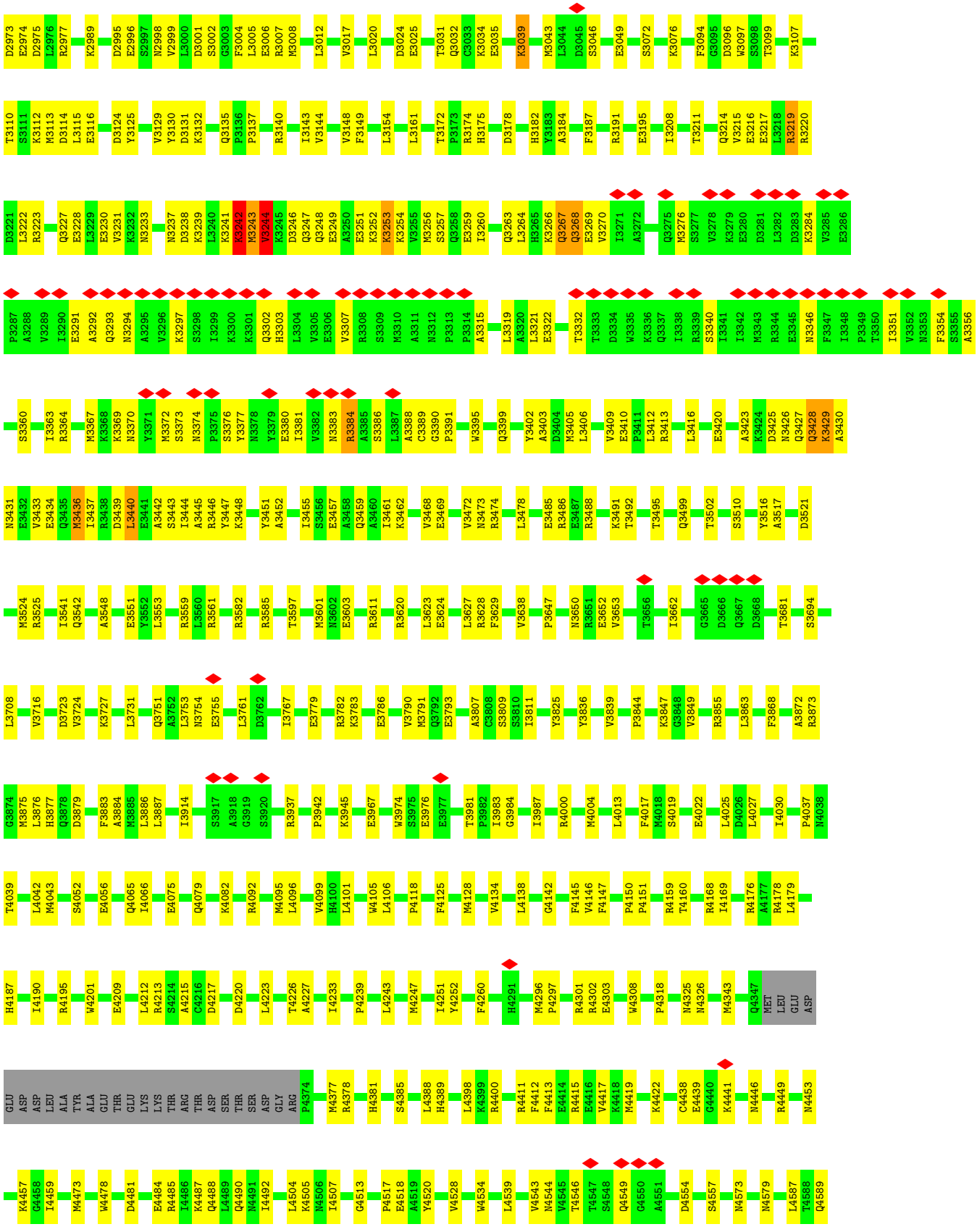
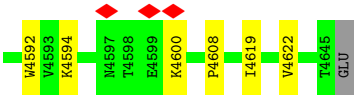
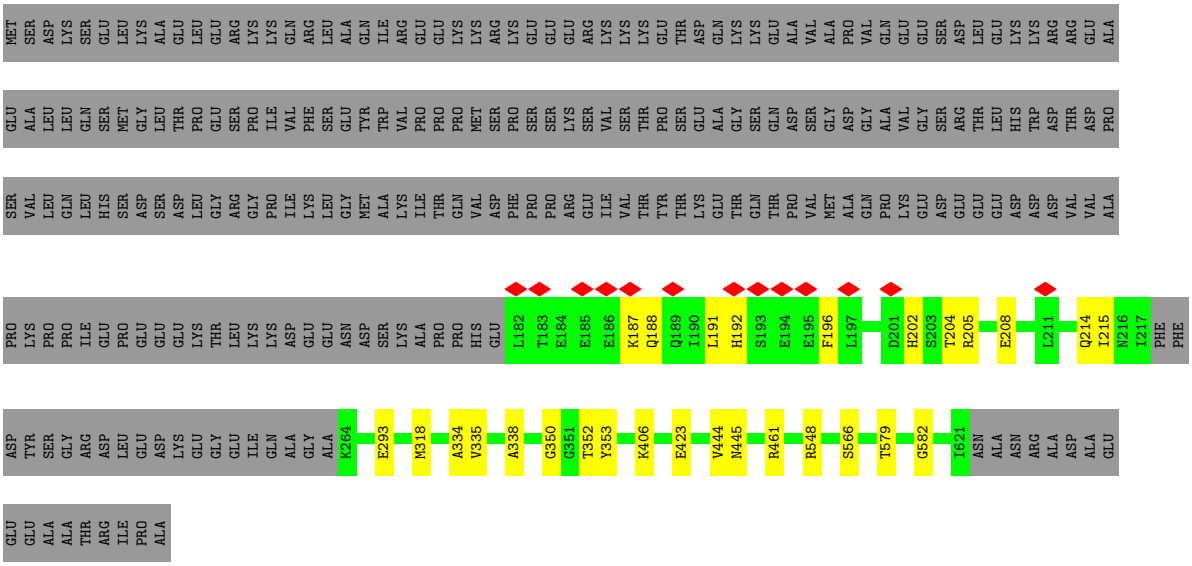
L1060 W1061 Q1064 N1067 I1068 Y1069 N1070 R1071 L1072 D1075 K1078 W1079 L1082 L1083 V1084 Q1085 I1086 R1087 K1088 A1089 R1090 F1093 D1094 N1095 A1096 E1097 T1098 K1099 P1104 V1105 V1106 I1107 D1108 Y1109 G1110 Q1113 N1117 L1118 K1119 Y1120 D1121 H1124 L1128 S1129 K1130 F1131 M1134 L1135
M1139 T1140 E1141 F1142 H1143 S1144 Q1145 I1146 S1147 K1148 S1149 R1150 Q1151 E1152 L1153 E1154 Q1155 D1159 T1160 A1161 S1162 T1163 S1164 D1165 T1168 F1169 I1170 T1171 Y1172 V1173 Q1174 S1175 L1176 K1177 R1178 K1179 I1180 K1181 Q1182 F1183 E1184 K1185 Q1186 V1187 E1188 L1189 Y1190 R1191 N1192 G1193 Q1194 R1195 L1196 L1197 E1198 K1199 Q1200
R1201 F1204 W1208 L1209 Y1210 I1211 D1212 N1213 I1214 E1215 G1216 E1217 W1218 G1219 A1220 F1221 N1222 D1223 I1224 M1225 R1226 R1227 K1228 Q1233 Q1245 D1256 T1259 K1263 V1267 N1270 I1282 T1309 G1310 L1311 R1367 Q1379 S1382 R1388 S1405 E1406 A1407 L1408 K1409 D1410
R1411 H1412 W1413 M1417 L1420 H1421 V1422 N1423 W1424 Y1425 V1426 S1427 D1436 K1441 N1442 E1443 Y1446 K1447 L1450 A1453 Q1454 M1457 E1460 K1464 R1467 W1470 L1475 D1476 L1477 V1478 C1484 R1485 R1488 D1492 L1493 F1494 N1495 K1498 K1508 Y1513 K1514
E1517 E1524 D1525 K1526 L1527 N1528 R1529 L1533 R1543 Y1546 L1547 S1554 I1557 K1558 L1561 E1564 T1565 Q1569 T1573 K1580 K1581 K1584 V1588 V1597 Q1598 R1599 S1600 R1603 D1606 L1607 L1608 G1609 K1610 I1611 Q1612 L1619 E1620 R1623 P1627 R1628
F1629 D1634 L1638 V1647 I1665 L1666 N1667 E1668 V1672 V1673 E1683 V1684 M1685 I1698 N1699 E1700 W1701 K1707 E1708 M1709 R1710 V1711 V1721 V1724 F1727 G1728 K1729 L1752 Q1755 M1769 G1770 G1771 G1772 G1773 D1774 P1777 L1778 T1788 L1792 R1806 E1814
H1817 Q1818 L1839 R1843 Q1850 Q1856 Q1860 K1865 Y1872 D1877 Q1881 E1897 A1898 R1899 E1914 R1943 V1946 C1949 Q1950 E1959 R1962 L1963 E1964 E1965 R1966 M1967 L1968 H1985 D1991 K1992 T1993 S1994 N2003 K2004 Q2005 V2006 M2012 S2026
N2027 L2028 T2042 K2043 Q2047 Q2057 R2060 E2063 A2066 N2067 K2068 I2069 V2070 P2071 H2085 R2091 K2094 S2099 A2100 G2101 N2102 V2103 E2106 D2123 E2126 I2127 A2128 Q2134 I2138 Q2139 S2140 K2148 L2149 E2152 L2157 L2161 M2175 E2181
E2188 M2189 Y2190 E2197 K2206 V2207 L2208 L2220 M2221 M2222 V2223 G2224 G2227 S2228 S2231 M2232 L2238 K2239 E2242 R2243 L2244 E2248 K2257 Y2265 P2270 N2271 T2272 R2273 I2288 D2289 S2290 E2294 W2300 D2304 V2307 D2308 W2311 V2312 L2319 L2333
W2342 F2343 E2344 V2345 Q2346 D2347 L2348 T2355 C2359 G2360 M2361 F2364 L2369 M2373 L2382 I2385 E2389 GLY GLU ASP GLU ALA GLN ARG ARG ARG LYS GLY LYS GLU ASP GLU GLY GLU GLU ALA ALA S2410 L2413 Q2414 R2417 D2418 A2419 A2420 M2423 N2430 G2431 L2432
V2433 T2434 K2435 E2438 E2444 H2445 I2446 L2449 L2452 R2453 S2457 Q2464 A2465 N2473 M2481 L2486 E2487 R2488 Y2489 I2490 Q2491 R2492 Y2493 I2498 L2499 M2510 L2514 I2518 E2538 W2548 D2573 R2576 H2577 E2578 T2583 P2590 L2591 V2592 M2603 T2604
L2605 A2608 L2609 P2613 D2614 M2615 E2616 V2617 L2620 S2623 P2628 E2629 L2630 L2631 L2632 K2633 Q2654 K2657 W2658 L2659 V2660 L2668 P2669 F2682 I2683 R2684 Q2685 M2686 V2687 E2688 Q2707 F2708 V2709 P2714 K2721 R2726 R2729 H2730 V2731 P2732 V2733 P2760 R2763
E2767 P2768 V2774 E2775 F2776 M2779 E2782 R2783 F2784 Y2794 M2799 W2802 L2816 P2817 G2820 A2829 E2839 L2855 D2862 R2863 E2864 K2865 R2869 K2879 R2896 Y2901 L2905 F2912 N2913 E2914 K2943 L2956 I2961 K2962 Y2967 T2968 G2969





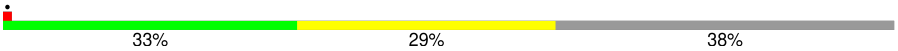
• Molecule 2: Cytoplasmic dynein 1 intermediate chain 2

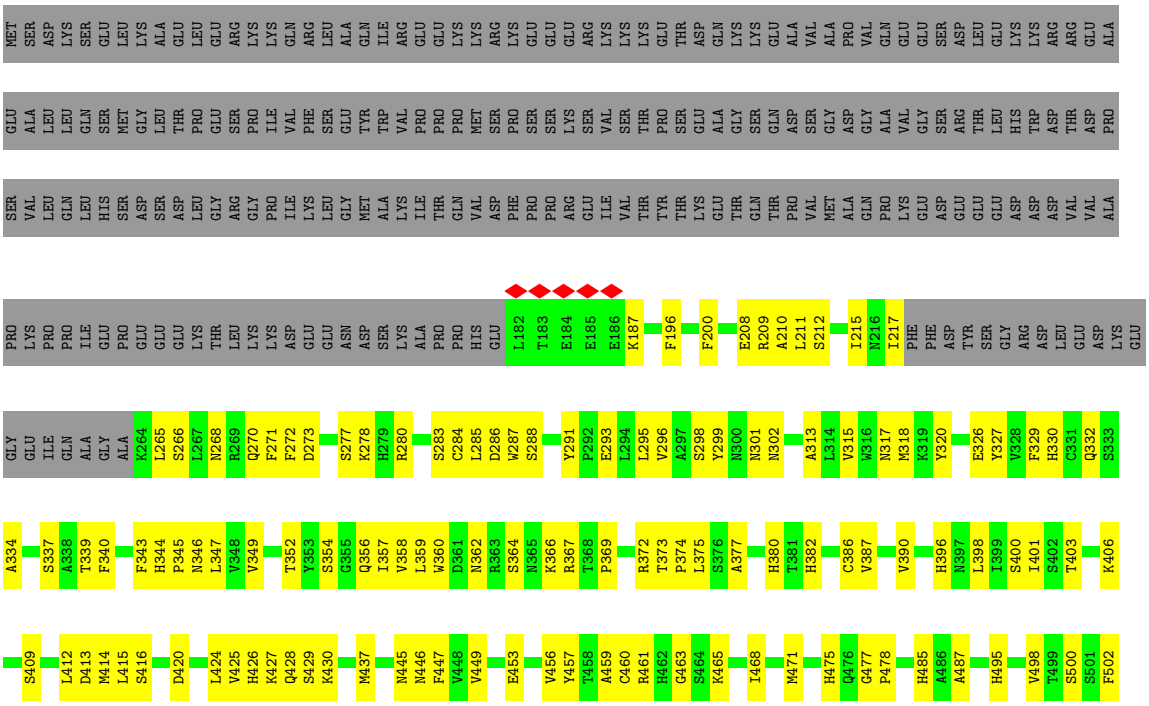
Chain C:

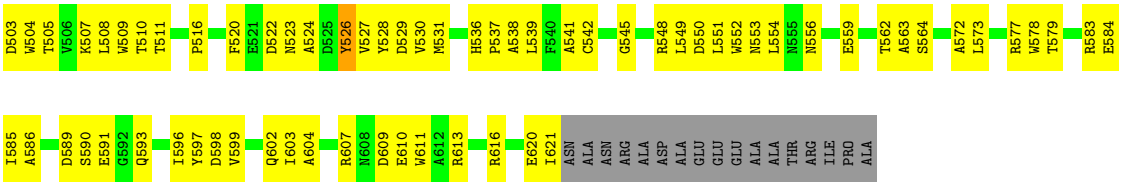


• Molecule 2: Cytoplasmic dynein 1 intermediate chain 2

Chain D:

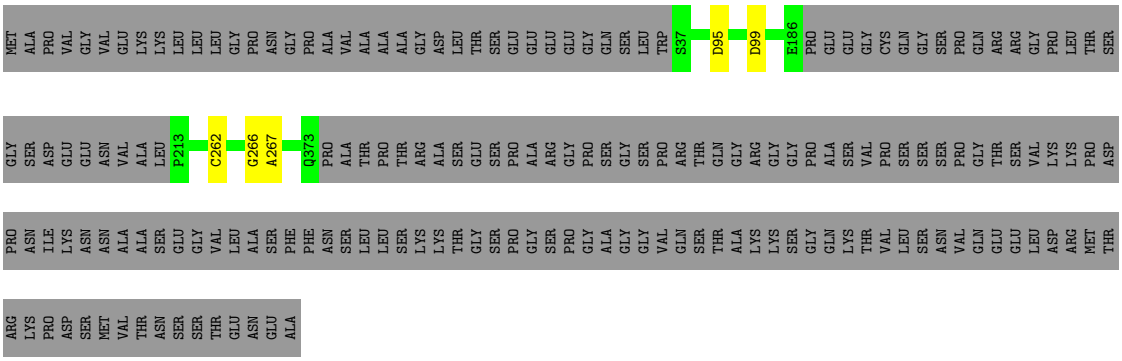






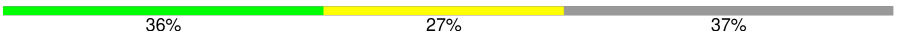
• Molecule 3: Cytoplasmic dynein 1 light intermediate chain 2

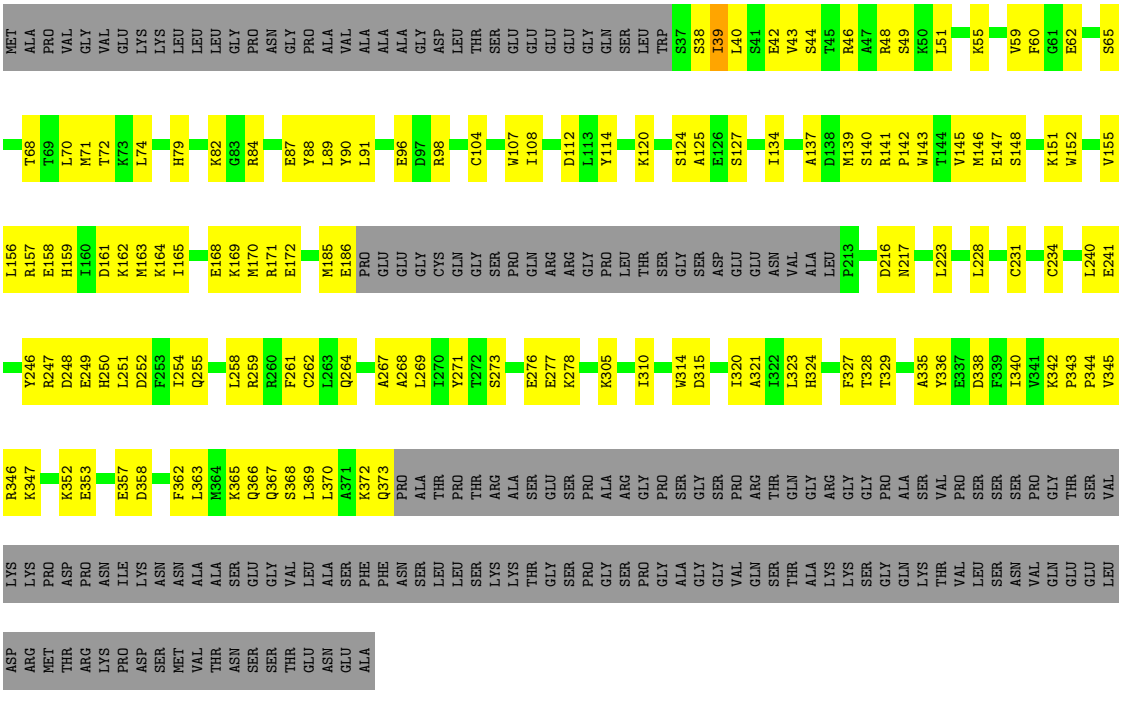
Chain E:



• Molecule 3: Cytoplasmic dynein 1 light intermediate chain 2

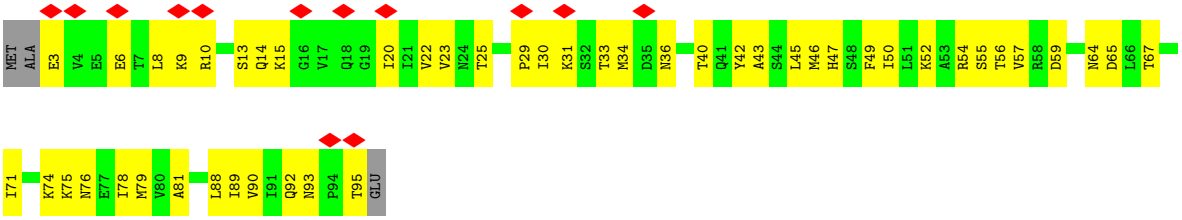
Chain F:





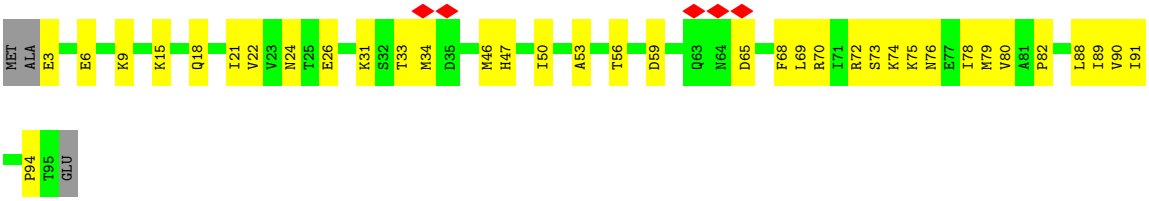
• Molecule 4: Dynein light chain roadblock-type 1

Chain G:



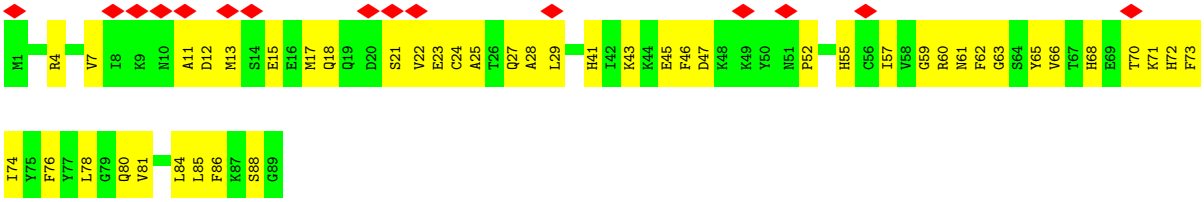
• Molecule 4: Dynein light chain roadblock-type 1

Chain H:



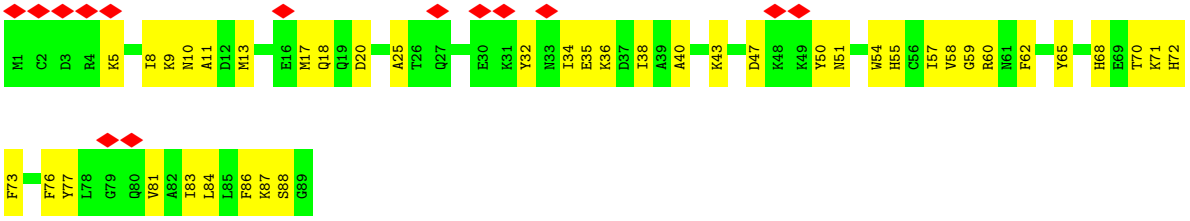
• Molecule 5: Dynein light chain 1, cytoplasmic

Chain I:



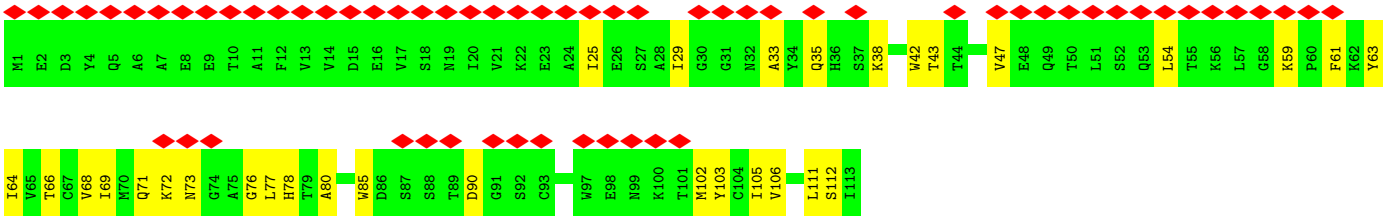
• Molecule 5: Dynein light chain 1, cytoplasmic

Chain J:



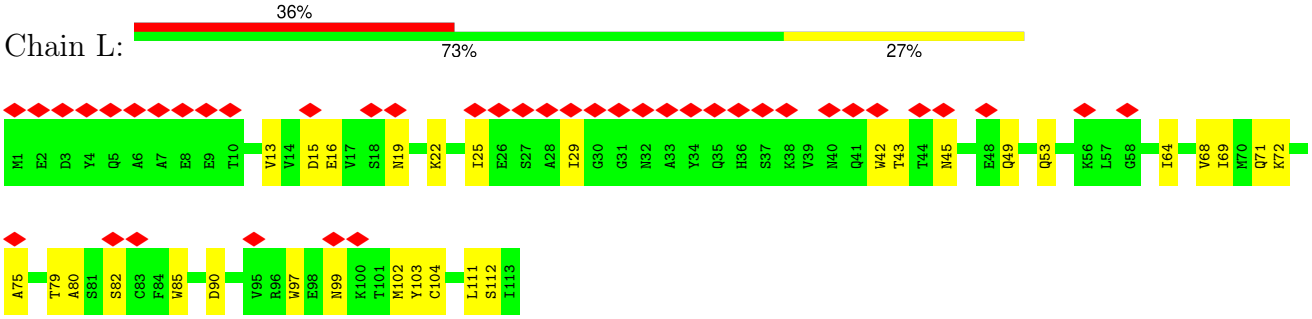
• Molecule 6: Dynein light chain Tctex-type 1

Chain K:



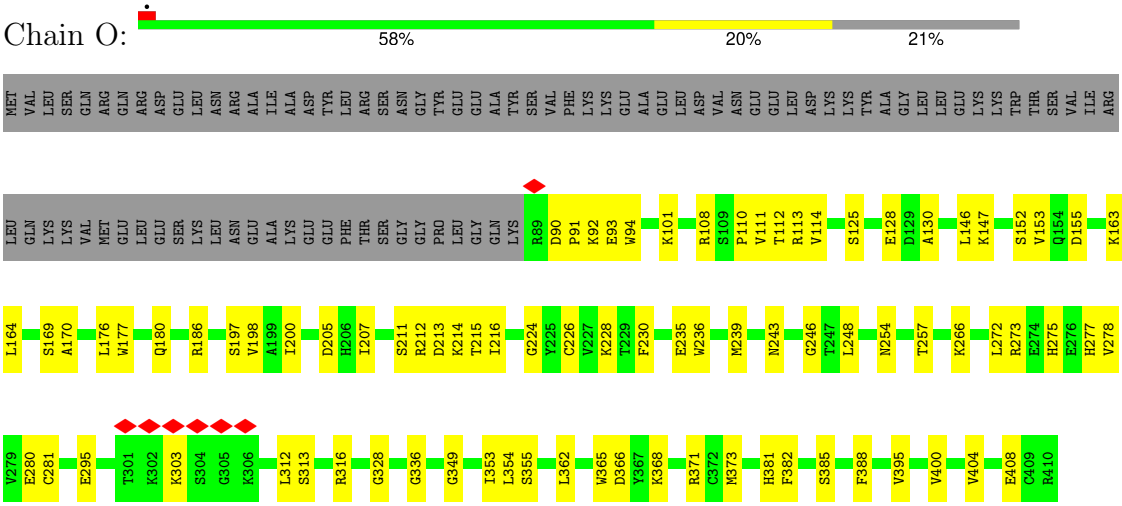
• Molecule 6: Dynein light chain Tctex-type 1

Chain L:



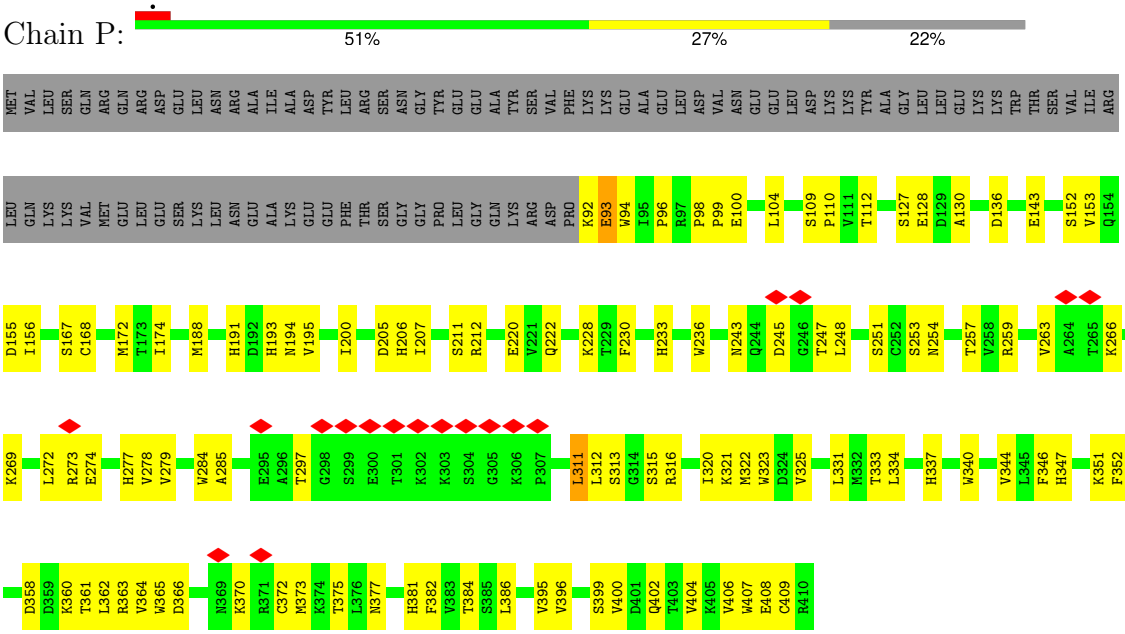
• Molecule 7: Platelet-activating factor acetylhydrolase IB subunit beta

Chain O:



• Molecule 7: Platelet-activating factor acetylhydrolase IB subunit beta

Chain P:



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	127963	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	4.743	Depositor
Minimum map value	0.000	Depositor
Average map value	0.002	Depositor
Map value standard deviation	0.017	Depositor
Recommended contour level	0.15	Depositor
Map size (Å)	729.12, 729.12, 729.12	wwPDB
Map dimensions	420, 420, 420	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.736, 1.736, 1.736	Depositor

5 Model quality

5.1 Standard geometry

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

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#$\|Z\|$ >5	RMSZ	#$\|Z\|$ >5
1	A	0.21	2/37419 (0.0%)	0.43	15/50625 (0.0%)
1	B	0.20	1/37248 (0.0%)	0.41	3/50392 (0.0%)
2	C	0.23	0/3195	0.46	1/4351 (0.0%)
2	D	0.20	0/3195	0.46	0/4351
3	E	0.20	0/2573	0.42	0/3473
3	F	0.18	0/2573	0.38	0/3473
4	G	0.17	0/752	0.44	0/1017
4	H	0.16	0/752	0.40	0/1017
5	I	0.35	0/744	0.78	0/997
5	J	0.21	0/744	0.48	0/997
6	K	0.17	0/888	0.46	0/1203
6	L	0.12	0/888	0.33	0/1203
7	O	0.17	0/2624	0.42	0/3555
7	P	0.16	0/2597	0.42	1/3518 (0.0%)
All	All	0.20	3/96192 (0.0%)	0.42	20/130172 (0.0%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand.A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	4
1	B	0	2
2	D	0	1
All	All	0	7

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	3242	LYS	C-O	-9.86	1.11	1.24

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	3242	LYS	C-O	-7.30	1.15	1.24
1	A	1801	PRO	CA-C	6.87	1.55	1.51

All (20) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	3242	LYS	O-C-N	-11.27	110.47	122.07
1	A	3242	LYS	O-C-N	-8.21	111.42	122.43
1	A	3262	GLU	N-CA-C	-7.84	102.73	111.28
1	A	3438	ARG	N-CA-C	-6.66	102.90	111.02
1	A	3250	ALA	N-CA-C	-6.52	104.25	111.82
1	A	1402	GLU	N-CA-C	-6.32	106.79	114.75
1	A	3259	GLU	N-CA-C	-6.29	104.50	111.36
1	A	3265	HIS	N-CA-C	-6.06	104.75	111.36
1	B	3039	LYS	CA-CB-CG	6.00	126.10	114.10
1	A	3256	MET	N-CA-C	-5.90	104.85	111.28
1	A	3260	ILE	CA-C-O	-5.87	114.29	120.57
2	C	444	VAL	N-CA-C	-5.85	108.15	113.71
1	B	3244	VAL	N-CA-C	-5.79	104.87	110.72
1	A	1461	GLU	N-CA-CB	5.73	119.16	110.28
1	A	3452	ALA	N-CA-C	-5.62	105.24	111.36
1	A	1460	GLU	CA-C-N	-5.56	111.86	120.31
1	A	1460	GLU	C-N-CA	-5.56	111.86	120.31
1	A	1801	PRO	O-C-N	5.34	123.77	121.31
7	P	311	LEU	CA-CB-CG	5.14	134.28	116.30
1	A	3240	LEU	N-CA-C	-5.10	105.90	111.82

There are no chirality outliers.

All (7) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	1076	LEU	Peptide
1	A	3223	ARG	Sidechain
1	A	3242	LYS	Mainchain
1	A	3446	ARG	Sidechain
1	B	3219	ARG	Sidechain
1	B	3242	LYS	Mainchain
2	D	526	TYR	Peptide

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	36692	0	36962	814	0
1	B	36527	0	36805	994	0
2	C	3112	0	2964	20	0
2	D	3112	0	2964	163	0
3	E	2518	0	2525	3	0
3	F	2518	0	2525	114	0
4	G	742	0	768	48	0
4	H	742	0	768	33	0
5	I	728	0	714	56	0
5	J	728	0	714	46	0
6	K	872	0	846	29	0
6	L	872	0	846	25	0
7	O	2557	0	2487	66	0
7	P	2531	0	2463	89	0
8	A	81	0	36	2	0
8	B	81	0	36	6	0
9	A	31	0	12	2	0
9	B	31	0	12	2	0
10	A	2	0	0	0	0
10	B	2	0	0	0	0
All	All	94479	0	94447	2368	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 14.

All (2368) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:3426:ASN:HA	1:B:3429:LYS:CE	1.28	1.56
1:B:3426:ASN:CA	1:B:3429:LYS:HE3	1.09	1.34
1:B:3426:ASN:HA	1:B:3429:LYS:CD	1.78	1.13
1:B:3426:ASN:N	1:B:3429:LYS:HE3	1.67	1.07
1:B:3256:MET:HG2	1:B:3433:VAL:HG21	1.42	1.01
1:A:3239:LYS:HA	1:A:3242:LYS:HG2	1.44	0.99
1:B:3426:ASN:CA	1:B:3429:LYS:CE	2.01	0.97

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:3428:GLN:H	1:B:3428:GLN:CD	1.75	0.95
1:B:3035:GLU:O	1:B:3039:LYS:HB3	1.68	0.93
1:B:3039:LYS:O	7:O:273:ARG:NH2	2.02	0.92
1:B:3253:LYS:HB3	1:B:3437:ILE:HG12	1.51	0.89
1:A:185:LYS:HE3	1:B:189:LEU:HD13	1.54	0.88
1:B:3423:ALA:O	1:B:3427:GLN:HG3	1.73	0.87
1:B:484:LEU:HD13	1:B:564:ILE:HG12	1.58	0.85
1:B:853:ILE:HG21	1:B:888:LEU:HD21	1.58	0.85
2:D:208:GLU:HA	2:D:211:LEU:HD23	1.59	0.84
2:D:550:ASP:OD1	2:D:552:TRP:NE1	2.10	0.84
1:A:441:LYS:HD2	1:A:448:MET:HE1	1.58	0.84
1:B:526:ALA:O	1:B:553:TYR:OH	1.95	0.83
3:F:259:ARG:HH11	3:F:323:LEU:HD22	1.43	0.82
1:B:466:MET:HE2	1:B:470:ARG:HG3	1.62	0.82
1:A:115:SER:H	1:A:140:LEU:HB3	1.46	0.81
1:A:402:MET:HA	1:A:535:GLY:HA3	1.62	0.81
1:A:3270:VAL:O	1:A:3272:ALA:N	2.13	0.81
1:A:2644:THR:HG22	1:A:2646:ASN:H	1.45	0.81
3:F:62:GLU:HG3	3:F:65:SER:HB2	1.62	0.80
1:A:3247:GLN:HG3	1:A:3444:ILE:HD13	1.64	0.80
1:B:483:VAL:O	1:B:567:ARG:NH1	2.16	0.79
1:A:3244:VAL:HG13	1:B:3247:GLN:HB3	1.65	0.79
1:B:801:ILE:HD11	1:B:850:LEU:HB3	1.65	0.79
1:A:3257:SER:HB3	1:A:3433:VAL:HG11	1.65	0.79
1:B:438:VAL:HG13	1:B:448:MET:HE1	1.65	0.79
1:A:182:VAL:HA	1:A:185:LYS:HG2	1.64	0.78
1:A:4049:TYR:OH	1:A:4191:GLN:NE2	2.17	0.78
1:B:3253:LYS:HE2	1:B:3440:LEU:HB2	1.64	0.78
1:A:147:GLU:HA	1:A:196:LEU:HD13	1.66	0.77
1:B:2816:LEU:HD11	1:B:2820:GLY:HA3	1.65	0.77
1:B:78:LEU:HD11	1:B:115:SER:HB2	1.65	0.77
1:A:2096:VAL:HG22	1:A:2144:THR:HG21	1.64	0.77
1:B:798:ARG:HH12	1:B:855:GLU:HB3	1.47	0.77
1:B:3369:LYS:HA	1:B:3372:MET:HE2	1.66	0.77
1:B:3239:LYS:HB3	1:B:3451:TYR:CD2	2.20	0.77
1:B:482:ARG:O	1:B:487:GLN:NE2	2.18	0.77
1:B:2452:LEU:HD13	1:B:2729:ARG:HH21	1.50	0.76
1:B:2683:ILE:HA	1:B:2686:MET:HE3	1.65	0.76
1:B:399:ARG:NH2	1:B:408:GLU:OE1	2.18	0.76
1:A:3249:GLU:HA	1:A:3252:LYS:HD2	1.65	0.76
1:B:150:HIS:HB2	1:B:193:LEU:HB3	1.66	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:551:LEU:HB2	2:D:563:ALA:HB3	1.68	0.76
1:A:1195:ARG:NH2	3:F:96:GLU:O	2.19	0.76
1:B:669:LEU:HD22	1:B:673:TRP:HB3	1.68	0.76
3:F:72:THR:HG21	3:F:79:HIS:HA	1.67	0.76
1:A:3263:GLN:HB3	1:A:3426:ASN:ND2	2.01	0.76
2:D:553:ASN:ND2	2:D:556:ASN:OD1	2.19	0.75
1:B:874:PHE:HB3	1:B:996:LEU:HD21	1.67	0.75
1:B:2684:ARG:NH1	1:B:2688:GLU:OE1	2.20	0.75
5:I:13:MET:SD	5:I:74:ILE:HB	2.26	0.75
1:A:201:GLU:HA	1:A:280:ASN:HD21	1.52	0.74
1:B:516:ASP:HA	1:B:563:ARG:HH12	1.51	0.74
1:B:2221:MET:HG2	1:B:2343:PHE:HB2	1.70	0.74
1:A:246:GLN:HB2	1:A:309:ARG:HD3	1.67	0.74
1:A:1229:ASP:O	1:A:1233:GLN:NE2	2.21	0.74
1:B:379:ARG:NH2	1:B:451:ARG:O	2.20	0.74
1:B:3363:ILE:HG22	1:B:3367:MET:HE1	1.68	0.74
1:A:1191:ARG:HH22	1:A:1215:GLU:HB2	1.51	0.73
1:B:413:MET:HE1	1:B:463:LEU:HB3	1.68	0.73
1:B:4301:ARG:NH1	1:B:4303:GLU:OE2	2.20	0.73
1:B:352:LYS:HA	1:B:355:GLN:HG3	1.69	0.73
1:A:193:LEU:HD13	1:B:182:VAL:HG11	1.70	0.73
1:B:350:LEU:HA	1:B:353:ILE:HD12	1.70	0.73
2:D:583:ARG:NH1	2:D:599:VAL:O	2.17	0.73
1:A:81:ARG:HD3	1:A:99:ILE:HG13	1.71	0.73
1:B:2654:GLN:HE22	1:B:2657:LYS:HB3	1.53	0.73
1:A:1170:ILE:HD11	1:A:1232:ILE:HG12	1.70	0.73
1:B:289:GLN:HE22	1:B:326:LEU:HD13	1.52	0.73
1:B:649:ILE:O	1:B:653:GLN:HG2	1.88	0.73
7:O:381:HIS:HD2	7:O:400:VAL:HB	1.51	0.73
1:A:1464:LYS:HB3	1:A:1467:ARG:HH21	1.53	0.73
1:B:130:PRO:HB2	1:B:133:SER:HB2	1.70	0.73
1:B:3263:GLN:CD	1:B:3426:ASN:HB3	2.14	0.73
1:B:3267:GLN:O	1:B:3269:GLU:N	2.20	0.72
5:I:57:ILE:HD12	5:I:84:LEU:HD23	1.71	0.72
6:L:49:GLN:O	6:L:53:GLN:NE2	2.23	0.72
1:A:1695:HIS:HB3	1:A:1700:GLU:HG3	1.70	0.72
1:A:2452:LEU:HD13	1:A:2729:ARG:HH21	1.53	0.72
1:A:3810:SER:HB3	1:A:3890:ILE:HD12	1.69	0.72
5:I:28:ALA:HB2	5:I:41:HIS:ND1	2.04	0.72
1:A:84:LEU:HB3	1:A:98:PHE:HB3	1.70	0.72
2:D:187:LYS:HE3	4:H:24:ASN:H	1.54	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2123:ASP:HB3	1:B:2126:GLU:HG2	1.72	0.72
1:B:3260:ILE:CD1	1:B:3430:ALA:HA	2.19	0.72
1:B:3425:ASP:O	1:B:3429:LYS:HG3	1.90	0.72
1:B:456:HIS:HA	1:B:459:LEU:HB2	1.72	0.71
1:B:1099:LYS:NZ	1:B:1108:ASP:OD1	2.23	0.71
1:B:1213:ASN:HD22	5:J:10:ASN:C	1.99	0.71
1:B:2855:LEU:HD21	1:B:2863:ARG:HG3	1.72	0.71
2:C:188:GLN:O	2:C:192:HIS:ND1	2.21	0.71
1:B:3428:GLN:OE1	1:B:3428:GLN:N	2.21	0.71
1:A:44:ASP:HB2	1:B:130:PRO:HB3	1.72	0.71
1:B:4398:LEU:HG	1:B:4417:VAL:HG11	1.73	0.71
1:B:266:PRO:HB3	1:B:376:ARG:HG3	1.71	0.70
3:F:87:GLU:HB2	3:F:108:ILE:HG23	1.73	0.70
1:A:3363:ILE:HG22	1:A:3367:MET:HE1	1.73	0.70
1:A:336:MET:HB3	1:A:363:HIS:HD2	1.57	0.70
1:A:2961:ILE:HD11	1:A:2998:ASN:HB3	1.73	0.70
1:B:266:PRO:HB2	1:B:379:ARG:HB2	1.71	0.70
2:D:315:VAL:HB	2:D:327:TYR:HB2	1.73	0.70
5:J:13:MET:HE2	5:J:17:MET:HE2	1.72	0.70
3:F:344:PRO:O	3:F:346:ARG:NH1	2.25	0.70
5:I:24:CYS:O	5:I:27:GLN:HB2	1.92	0.70
1:B:322:LEU:O	1:B:326:LEU:N	2.20	0.70
1:B:3253:LYS:HD2	1:B:3437:ILE:HA	1.73	0.70
1:B:3260:ILE:HD11	1:B:3430:ALA:HA	1.73	0.69
7:P:92:LYS:HG2	7:P:93:GLU:N	2.06	0.69
1:A:359:ALA:O	1:A:363:HIS:ND1	2.26	0.69
1:B:3256:MET:HB3	1:B:3433:VAL:HG11	1.74	0.69
1:A:182:VAL:HG21	1:B:196:LEU:HD11	1.75	0.69
1:B:2573:ASP:OD1	1:B:2576:ARG:NH2	2.26	0.69
1:A:3247:GLN:HB3	1:B:3248:GLN:HE21	1.58	0.69
1:A:438:VAL:HG12	1:A:442:ARG:HH11	1.57	0.69
1:B:1914:GLU:HG3	8:B:4701:ADP:H2'	1.73	0.69
1:B:3253:LYS:HD3	1:B:3440:LEU:HD23	1.73	0.69
5:J:8:ILE:HG23	5:J:76:PHE:HB3	1.74	0.69
1:A:1964:GLU:HB2	1:A:1967:MET:HG2	1.75	0.69
7:O:295:GLU:OE2	7:O:368:LYS:NZ	2.26	0.69
1:A:2578:GLU:OE2	1:A:2607:SER:OG	2.11	0.69
1:A:4541:LEU:HD11	1:A:4590:LEU:HD13	1.75	0.69
1:B:4377:MET:HE3	1:B:4378:ARG:HD2	1.74	0.69
7:O:92:LYS:O	7:O:92:LYS:HD2	1.93	0.69
1:A:1888:CYS:O	1:A:1892:MET:HG2	1.93	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:569:ARG:NH1	1:B:603:GLU:OE1	2.26	0.68
1:A:3372:MET:SD	1:A:3373:SER:OG	2.52	0.68
7:P:243:ASN:ND2	7:P:245:ASP:OD1	2.26	0.68
1:A:462:ARG:NH1	1:A:537:ASP:O	2.26	0.68
7:P:312:LEU:HD21	7:P:320:ILE:HG23	1.76	0.68
1:B:1173:VAL:HG22	1:B:1177:LYS:HE3	1.76	0.68
2:D:401:ILE:HB	2:D:437:MET:HE1	1.75	0.68
7:O:275:HIS:HE2	7:O:313:SER:HG	1.40	0.68
1:B:718:PHE:HA	1:B:738:ASN:H	1.58	0.68
1:B:578:ALA:HB1	1:B:582:PHE:HE2	1.59	0.68
7:O:280:GLU:OE2	7:O:316:ARG:NE	2.27	0.68
1:A:3261:GLN:HA	1:A:3264:LEU:HG	1.75	0.68
3:F:60:PHE:HE2	3:F:148:SER:HB2	1.59	0.68
4:G:46:MET:HE1	4:G:89:ILE:HG21	1.75	0.68
1:A:2962:LYS:HA	1:A:2962:LYS:HE3	1.76	0.67
1:A:1201:ARG:NH2	1:B:967:GLN:O	2.27	0.67
1:B:2629:GLU:O	1:B:2633:LYS:HG2	1.94	0.67
7:P:174:ILE:HD11	7:P:195:VAL:HG11	1.76	0.67
7:P:243:ASN:ND2	7:P:247:THR:OG1	2.26	0.67
1:A:1563:VAL:O	1:A:1567:ARG:HG2	1.94	0.67
1:A:3441:GLU:O	1:A:3444:ILE:HB	1.93	0.67
1:A:4326:ASN:ND2	1:A:4579:ASN:O	2.27	0.67
1:B:3267:GLN:O	1:B:3270:VAL:N	2.23	0.67
2:D:445:ASN:OD1	2:D:461:ARG:N	2.27	0.67
1:A:132:SER:O	1:A:136:ARG:NH2	2.26	0.67
1:B:333:ASN:HA	1:B:336:MET:HE2	1.77	0.67
1:B:1090:ARG:HH21	1:B:1121:ASP:HA	1.58	0.67
1:B:1213:ASN:HD21	5:J:8:ILE:HG22	1.59	0.67
1:A:4518:GLU:N	1:A:4518:GLU:OE2	2.27	0.67
1:B:119:ILE:O	1:B:136:ARG:HB3	1.93	0.67
1:B:242:LEU:HB3	1:B:309:ARG:HE	1.59	0.67
1:B:987:PHE:HE2	3:F:87:GLU:HG2	1.57	0.67
1:B:441:LYS:O	1:B:445:ASN:N	2.28	0.67
1:B:4326:ASN:ND2	1:B:4579:ASN:O	2.27	0.67
1:B:3243:MET:HG2	1:B:3448:LYS:HB2	1.77	0.67
1:B:2271:ASN:OD1	1:B:2272:THR:N	2.27	0.67
1:A:1612:GLN:NE2	1:A:1635:GLU:OE1	2.28	0.66
1:B:721:GLU:OE2	1:B:736:LYS:NZ	2.27	0.66
1:A:3364:ARG:HA	1:A:3367:MET:HE2	1.78	0.66
1:B:1965:GLU:HG2	1:B:2026:SER:HB3	1.77	0.66
1:A:1985:HIS:HD2	1:A:1997:ILE:HG13	1.59	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3160:ARG:HH22	1:A:3524:MET:HE1	1.59	0.66
1:B:399:ARG:HH22	1:B:404:VAL:HG11	1.60	0.66
1:B:1477:LEU:HB3	1:B:1485:ARG:HG3	1.77	0.66
1:A:343:ASP:O	1:A:352:LYS:NZ	2.28	0.66
1:B:3264:LEU:O	1:B:3267:GLN:HB2	1.96	0.66
1:B:1090:ARG:HH22	1:B:1124:HIS:HB3	1.61	0.66
1:B:960:HIS:ND1	1:B:978:CYS:SG	2.69	0.66
1:B:4518:GLU:OE1	1:B:4518:GLU:N	2.28	0.66
1:A:3267:GLN:HG2	1:A:3423:ALA:CB	2.25	0.66
1:B:3779:GLU:OE2	1:B:3782:ARG:NH2	2.29	0.66
1:B:195:HIS:O	1:B:198:GLN:NE2	2.28	0.66
1:B:4095:MET:HG3	1:B:4125:PHE:HB2	1.77	0.66
1:A:3257:SER:HA	1:A:3260:ILE:HD12	1.78	0.66
1:B:170:LYS:NZ	1:B:176:ASP:O	2.29	0.66
1:B:864:LEU:HB2	1:B:877:ILE:HG21	1.78	0.66
1:B:1561:LEU:O	1:B:1565:THR:OG1	2.11	0.65
3:F:251:LEU:HA	3:F:254:ILE:HG12	1.77	0.65
1:A:350:LEU:HB3	1:A:419:VAL:HG21	1.78	0.65
1:A:1860:GLN:OE1	1:A:1865:LYS:NZ	2.28	0.65
1:B:315:SER:O	1:B:319:ASP:N	2.21	0.65
1:B:1196:LEU:HD23	1:B:1199:LYS:HE2	1.77	0.65
1:A:2757:ARG:HB3	1:A:2763:ARG:HH22	1.61	0.65
1:B:264:ARG:HD3	1:B:274:GLU:HG2	1.79	0.65
1:A:2073:PHE:HZ	1:A:2096:VAL:HG21	1.60	0.65
1:B:4505:LYS:NZ	1:B:4554:ASP:O	2.28	0.65
4:H:80:VAL:HA	4:H:88:LEU:HB3	1.78	0.65
7:P:334:LEU:HD23	7:P:365:TRP:HE3	1.61	0.65
1:B:648:ILE:HD11	1:B:698:ILE:HB	1.77	0.65
1:B:2294:GLU:OE2	1:B:2294:GLU:N	2.26	0.65
1:B:635:MET:HE1	2:D:526:TYR:CE2	2.32	0.65
1:A:42:LEU:HB3	1:A:81:ARG:HH21	1.60	0.65
5:J:13:MET:HG2	5:J:18:GLN:HG3	1.79	0.65
5:J:60:ARG:HH21	5:J:81:VAL:HG13	1.62	0.65
1:B:386:ARG:NH2	1:B:453:ASN:O	2.30	0.65
1:B:3178:ASP:OD2	1:B:3585:ARG:NE	2.29	0.65
1:A:119:ILE:HD12	1:B:155:ASN:HB2	1.78	0.65
1:A:336:MET:HB3	1:A:363:HIS:CD2	2.31	0.65
1:A:2494:LEU:O	1:A:2498:ILE:HG12	1.97	0.65
1:A:1153:LEU:HD11	1:A:1228:LYS:HG3	1.78	0.64
1:A:3248:GLN:HE22	1:B:3254:LYS:NZ	1.96	0.64
2:D:313:ALA:HB3	2:D:329:PHE:HB3	1.79	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:I:13:MET:CE	5:I:17:MET:HG2	2.27	0.64
1:A:4088:VAL:HG11	1:A:4116:LEU:HD21	1.77	0.64
1:B:1623:ARG:NH2	1:B:1634:ASP:OD1	2.29	0.64
1:B:1709:MET:HE2	1:B:1872:TYR:H	1.62	0.64
1:A:189:LEU:HD21	1:B:185:LYS:HB3	1.78	0.64
1:B:270:THR:HG23	1:B:273:GLN:H	1.62	0.64
1:B:4187:HIS:ND1	1:B:4252:TYR:OH	2.28	0.64
3:F:145:VAL:HG11	3:F:258:LEU:HD21	1.79	0.64
1:A:3611:ARG:NH1	1:A:3636:GLN:OE1	2.30	0.64
1:B:361:PHE:HE2	1:B:429:LYS:HG3	1.61	0.64
1:B:701:ASP:OD1	1:B:704:ARG:NH2	2.30	0.64
1:B:2220:LEU:HB2	1:B:2342:MET:HG2	1.79	0.64
1:B:3426:ASN:HA	1:B:3429:LYS:HE3	0.70	0.64
2:D:332:GLN:OE1	2:D:372:ARG:NH1	2.30	0.64
2:D:424:LEU:HD21	2:D:468:ILE:HD11	1.79	0.64
1:A:207:LEU:HG	1:A:209:ILE:HG12	1.80	0.64
1:A:365:ARG:NH2	1:A:429:LYS:O	2.31	0.64
4:H:21:ILE:HG12	4:H:89:ILE:HD11	1.78	0.64
1:A:2573:ASP:OD1	1:A:2576:ARG:NH2	2.31	0.64
6:L:85:TRP:CD1	6:L:90:ASP:HB2	2.33	0.64
1:A:3263:GLN:HB3	1:A:3426:ASN:HD22	1.60	0.64
1:B:80:GLU:HB3	1:B:102:ASN:HB2	1.80	0.64
1:B:2684:ARG:HD2	1:B:2726:ARG:HG2	1.79	0.64
3:F:91:LEU:HB2	3:F:104:CYS:HB3	1.80	0.64
1:A:1623:ARG:NH1	1:A:1632:VAL:O	2.30	0.64
1:A:3517:ALA:HB1	1:A:3525:ARG:HG2	1.80	0.64
2:D:485:HIS:NE2	2:D:487:ALA:O	2.29	0.64
4:G:43:ALA:HA	4:G:46:MET:HE2	1.79	0.64
1:B:869:TYR:HB2	1:B:914:ARG:HH21	1.63	0.64
1:B:3782:ARG:NH1	1:B:3786:GLU:OE2	2.31	0.64
2:D:215:ILE:HG13	2:D:217:ILE:H	1.62	0.64
5:I:24:CYS:HA	5:I:27:GLN:CD	2.22	0.64
1:A:1985:HIS:CD2	1:A:1997:ILE:HG13	2.33	0.63
2:D:347:LEU:HD23	2:D:359:LEU:HD11	1.80	0.63
1:A:3005:LEU:HD11	1:A:3078:ARG:HE	1.63	0.63
1:A:4398:LEU:HG	1:A:4417:VAL:HG21	1.79	0.63
1:B:1214:ILE:HA	1:B:1217:GLU:HG2	1.80	0.63
3:F:120:LYS:HA	3:F:159:HIS:CE1	2.34	0.63
4:H:70:ARG:HG2	4:H:79:MET:HE1	1.79	0.63
5:J:70:THR:O	5:J:72:HIS:ND1	2.28	0.63
1:A:2047:GLN:HA	1:A:2070:VAL:HG21	1.80	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:464:ASP:HA	1:B:467:ARG:HG2	1.80	0.63
1:A:2538:GLU:OE2	1:A:2551:LYS:NZ	2.28	0.63
1:B:4178:ARG:NH2	1:B:4297:PRO:O	2.31	0.63
1:A:1554:SER:O	1:A:1558:LYS:NZ	2.31	0.63
1:A:3267:GLN:HG2	1:A:3423:ALA:HB1	1.79	0.63
2:D:358:VAL:HG13	2:D:369:PRO:HB3	1.80	0.63
5:J:50:TYR:HB2	5:J:54:TRP:CH2	2.34	0.63
1:A:1491:ASP:O	1:A:1495:ASN:ND2	2.31	0.63
1:A:1623:ARG:NH2	1:A:1634:ASP:OD2	2.32	0.63
1:A:3113:MET:HE2	1:A:3115:LEU:HD11	1.81	0.63
1:A:3263:GLN:O	1:A:3267:GLN:HG3	1.99	0.63
1:B:2047:GLN:NE2	1:B:2067:ASN:OD1	2.32	0.63
1:B:3807:ALA:O	1:B:3811:ILE:HG12	1.99	0.63
2:D:528:TYR:HD1	2:D:529:ASP:HB3	1.62	0.63
1:A:170:LYS:HG2	1:A:179:ALA:HB3	1.80	0.63
1:A:460:GLN:HA	1:A:463:LEU:HD12	1.81	0.63
1:A:3174:ARG:NH1	1:A:3650:ASN:OD1	2.32	0.63
5:I:13:MET:HE3	5:I:17:MET:HG2	1.80	0.63
1:A:3946:ASP:OD2	1:A:3950:LYS:NZ	2.32	0.62
1:A:1225:MET:HE3	1:A:1226:ARG:HE	1.64	0.62
1:A:1558:LYS:HG3	1:A:1565:THR:HG21	1.79	0.62
1:B:3510:SER:HB3	1:B:3553:LEU:HD21	1.81	0.62
2:D:349:VAL:HG21	2:D:398:LEU:HD11	1.80	0.62
1:A:205:ILE:HD13	1:A:255:GLU:HG2	1.79	0.62
1:A:3845:ASN:ND2	1:A:3862:ASP:OD2	2.31	0.62
1:B:1627:PRO:HB3	1:B:1950:GLN:HB3	1.82	0.62
1:B:4492:ILE:HG13	1:B:4507:ILE:HD13	1.79	0.62
3:F:59:VAL:HG12	3:F:108:ILE:HA	1.80	0.62
1:A:1155:GLN:HE22	1:A:1157:SER:HB2	1.65	0.62
1:B:1211:ILE:HG13	1:B:1212:ASP:N	2.15	0.62
5:I:88:SER:OG	5:J:88:SER:O	2.16	0.62
7:P:174:ILE:HB	7:P:188:MET:HG3	1.80	0.62
1:B:530:VAL:HG12	1:B:549:ALA:HB1	1.82	0.62
1:A:479:VAL:O	1:A:483:VAL:N	2.29	0.62
1:B:2816:LEU:HD12	1:B:2817:PRO:HD2	1.82	0.62
1:A:2071:PRO:HB3	1:A:4536:LEU:HD23	1.82	0.62
1:A:3638:VAL:HG12	1:A:3681:THR:HB	1.81	0.62
1:B:1087:ARG:HH21	1:B:1200:GLN:HE22	1.45	0.62
4:G:64:ASN:ND2	4:H:76:ASN:OD1	2.32	0.62
1:A:365:ARG:HH22	1:A:432:VAL:HB	1.65	0.62
1:A:1457:MET:HA	1:A:1460:GLU:CD	2.25	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1627:PRO:HB3	1:A:1950:GLN:HB3	1.81	0.62
1:B:1599:ARG:HH12	1:B:1603:ARG:HD2	1.65	0.62
1:B:2914:GLU:OE1	1:B:2914:GLU:N	2.31	0.62
5:I:62:PHE:HB3	5:J:62:PHE:CZ	2.35	0.62
1:A:3248:GLN:HG2	1:B:3251:GLU:HB2	1.81	0.62
1:B:88:VAL:HB	1:B:95:GLU:HA	1.82	0.62
1:B:3253:LYS:HE2	1:B:3440:LEU:CB	2.30	0.62
1:B:4150:PRO:HB3	1:B:4159:ARG:HE	1.64	0.62
3:F:259:ARG:HD3	3:F:320:ILE:HG22	1.81	0.62
1:B:1170:ILE:O	1:B:1174:GLN:NE2	2.32	0.61
1:B:3624:GLU:O	1:B:3628:ARG:HG2	1.99	0.61
1:A:2085:HIS:HB2	1:A:2361:MET:SD	2.41	0.61
6:K:111:LEU:HD11	6:L:64:ILE:HD11	1.81	0.61
7:P:92:LYS:CG	7:P:93:GLU:N	2.63	0.61
1:A:1456:GLU:HA	1:A:1459:LEU:HD13	1.81	0.61
1:B:150:HIS:CE1	1:B:194:LEU:HB3	2.35	0.61
1:B:1150:ARG:O	1:B:1153:LEU:HG	2.00	0.61
4:G:76:ASN:ND2	4:G:93:ASN:OD1	2.30	0.61
7:P:321:LYS:HG2	7:P:333:THR:HG22	1.81	0.61
7:P:363:ARG:NH1	7:P:375:THR:OG1	2.33	0.61
1:B:255:GLU:HA	1:B:258:LYS:HE3	1.82	0.61
7:O:101:LYS:NZ	7:O:408:GLU:OE2	2.26	0.61
1:A:236:VAL:HG23	1:A:303:ILE:HB	1.81	0.61
1:A:3040:GLU:OE1	1:A:3053:TRP:NE1	2.33	0.61
1:A:3820:GLN:O	1:A:4345:LYS:NZ	2.32	0.61
1:B:2654:GLN:NE2	1:B:2657:LYS:HB3	2.16	0.61
1:B:2839:GLU:OE1	1:B:2839:GLU:N	2.31	0.61
1:A:1462:PHE:O	1:A:1466:ILE:HD12	2.00	0.61
1:B:1964:GLU:HB2	1:B:1967:MET:HG2	1.82	0.61
1:B:3263:GLN:HA	1:B:3266:LYS:HD2	1.82	0.61
1:B:3638:VAL:HG12	1:B:3681:THR:HB	1.82	0.61
1:A:181:SER:HA	1:A:184:LYS:HD2	1.81	0.61
1:A:1174:GLN:HA	1:A:1177:LYS:HG2	1.83	0.61
1:A:2956:LEU:HD23	1:A:2989:LYS:HB3	1.81	0.61
2:D:445:ASN:OD1	2:D:446:ASN:N	2.32	0.61
5:I:24:CYS:HG	5:I:41:HIS:CE1	2.19	0.61
6:L:19:ASN:HA	6:L:22:LYS:HE3	1.80	0.61
1:B:4544:ASN:OD1	1:B:4589:GLN:HB2	2.01	0.61
2:D:268:ASN:OD1	2:D:598:ASP:N	2.32	0.61
3:F:38:SER:O	3:F:40:LEU:N	2.33	0.61
1:A:160:PHE:HB2	1:B:107:ILE:HD12	1.83	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1508:LYS:NZ	1:B:1524:GLU:OE1	2.34	0.60
6:L:25:ILE:HG23	6:L:29:ILE:HD12	1.82	0.60
7:O:92:LYS:HG2	7:O:349:GLY:HA3	1.83	0.60
1:A:1860:GLN:CD	1:A:1865:LYS:HZ3	2.10	0.60
1:B:264:ARG:NH2	1:B:268:SER:O	2.34	0.60
1:B:1769:MET:HE2	1:B:1777:PRO:HD2	1.82	0.60
1:B:3517:ALA:HB1	1:B:3525:ARG:HG2	1.82	0.60
2:D:293:GLU:HB2	2:D:318:MET:HB2	1.82	0.60
2:D:427:LYS:O	2:D:430:LYS:HG3	2.01	0.60
2:D:456:VAL:HG21	2:D:509:TRP:HZ2	1.64	0.60
5:I:24:CYS:SG	5:I:41:HIS:NE2	2.74	0.60
1:A:96:LYS:NZ	1:A:97:GLU:O	2.35	0.60
1:A:456:HIS:HA	1:A:459:LEU:HD13	1.83	0.60
1:A:1495:ASN:HA	1:A:1498:LYS:HE3	1.83	0.60
1:A:3584:ASN:O	1:A:3651:ARG:NH1	2.31	0.60
1:B:987:PHE:CE2	3:F:87:GLU:HG2	2.36	0.60
1:B:1176:LEU:HA	1:B:1179:LYS:HD3	1.83	0.60
1:B:2242:GLU:HG3	1:B:2248:GLU:HA	1.83	0.60
1:B:3220:ARG:HB2	1:B:3223:ARG:HH21	1.64	0.60
1:A:2271:ASN:OD1	1:A:2272:THR:N	2.35	0.60
1:A:2444:GLU:HG2	1:A:2510:MET:HE2	1.83	0.60
1:B:4600:LYS:HE3	1:B:4600:LYS:HA	1.82	0.60
2:C:335:VAL:HA	2:C:352:THR:HA	1.81	0.60
5:I:28:ALA:HB2	5:I:41:HIS:CG	2.36	0.60
6:K:73:ASN:HD21	6:L:75:ALA:HB2	1.67	0.60
7:O:278:VAL:HB	7:O:316:ARG:HD2	1.84	0.60
1:A:4505:LYS:NZ	1:A:4554:ASP:O	2.35	0.60
1:A:4549:GLN:HG3	1:A:4587:LEU:HB2	1.82	0.60
1:B:3914:ILE:O	1:B:3937:ARG:NH1	2.34	0.60
5:I:74:ILE:CG2	5:I:85:LEU:HB3	2.31	0.60
1:A:43:GLU:HG3	1:A:81:ARG:HH22	1.66	0.60
1:A:2257:LYS:NZ	1:A:2308:ASP:OD2	2.35	0.60
1:B:365:ARG:NH2	1:B:429:LYS:O	2.35	0.60
1:B:722:SER:HB3	1:B:731:ASN:HD21	1.67	0.60
1:B:1964:GLU:OE1	1:B:1964:GLU:N	2.33	0.60
1:B:3727:LYS:O	1:B:3731:LEU:HG	2.02	0.60
2:D:498:VAL:HG12	2:D:508:LEU:HD23	1.84	0.60
6:L:13:VAL:HG12	6:L:16:GLU:H	1.67	0.60
7:P:92:LYS:O	7:P:347:HIS:CE1	2.54	0.60
1:B:717:ILE:HA	1:B:824:TRP:HE3	1.65	0.60
1:B:755:TRP:CG	2:D:453:GLU:HG3	2.36	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2369:LEU:HD12	1:B:2373:MET:HE2	1.82	0.60
1:A:40:LEU:O	1:B:132:SER:OG	2.14	0.60
1:B:635:MET:O	1:B:639:ARG:HG2	2.01	0.60
1:A:1769:MET:SD	1:A:1777:PRO:HD2	2.42	0.60
1:A:2091:ARG:NH1	1:A:2320:ASP:OD1	2.35	0.60
1:A:3129:VAL:HG21	1:A:3149:PHE:HB2	1.84	0.60
1:A:4542:GLU:OE1	1:A:4591:ARG:NH2	2.35	0.60
1:B:121:ARG:NH1	1:B:133:SER:O	2.35	0.60
1:B:1168:THR:O	1:B:1171:THR:OG1	2.18	0.60
1:B:2138:ILE:HD12	1:B:2161:LEU:HD22	1.84	0.60
1:B:3942:PRO:O	1:B:3945:LYS:NZ	2.33	0.60
4:G:23:VAL:HA	4:G:29:PRO:HA	1.83	0.60
7:O:91:PRO:HA	7:O:94:TRP:HZ3	1.66	0.60
7:P:92:LYS:C	7:P:94:TRP:H	2.09	0.60
1:B:153:ILE:O	1:B:157:VAL:HG12	2.02	0.59
1:B:582:PHE:CE1	1:B:668:VAL:HG11	2.36	0.59
3:F:59:VAL:HG23	3:F:134:ILE:HG23	1.84	0.59
1:B:399:ARG:HE	1:B:412:VAL:HG11	1.67	0.59
1:A:236:VAL:HG13	1:A:237:GLU:HG2	1.84	0.59
1:A:1897:GLU:O	1:A:1899:ARG:NH1	2.35	0.59
1:A:2304:ASP:OD1	1:A:2726:ARG:NH1	2.28	0.59
1:B:3249:GLU:HA	1:B:3252:LYS:HD2	1.84	0.59
2:D:457:TYR:CE1	2:D:471:MET:HG2	2.37	0.59
2:D:620:GLU:HG3	2:D:621:ILE:HG12	1.83	0.59
5:J:58:VAL:HG12	5:J:83:ILE:HG12	1.83	0.59
7:O:388:PHE:HD1	7:O:395:VAL:HG22	1.66	0.59
1:A:1879:LEU:HD13	1:A:1918:ALA:HB2	1.83	0.59
1:A:4243:LEU:O	1:A:4247:MET:HG3	2.01	0.59
1:B:260:THR:HG23	1:B:261:LYS:HD3	1.84	0.59
1:B:2682:PHE:CD2	1:B:2686:MET:HE2	2.38	0.59
1:B:3967:GLU:OE2	1:B:4000:ARG:NH2	2.31	0.59
7:P:205:ASP:HB2	7:P:222:GLN:HE22	1.67	0.59
1:A:38:VAL:HG21	1:A:52:LEU:HD22	1.84	0.59
1:B:68:PHE:O	1:B:120:LYS:NZ	2.34	0.59
1:B:977:GLU:HA	3:F:90:TYR:OH	2.02	0.59
1:B:3428:GLN:CD	1:B:3428:GLN:N	2.54	0.59
1:B:3825:TYR:CZ	1:B:3875:MET:HG3	2.37	0.59
2:D:526:TYR:HH	2:D:528:TYR:HD2	1.50	0.59
1:B:83:THR:O	1:B:112:LYS:NZ	2.36	0.59
1:B:361:PHE:CE2	1:B:429:LYS:HG3	2.36	0.59
1:B:3243:MET:HE2	1:B:3447:TYR:HB2	1.85	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:187:LYS:HB3	4:G:30:ILE:HG13	1.83	0.59
1:A:113:SER:H	1:A:142:GLU:HG3	1.67	0.59
1:B:232:PHE:HB3	1:B:235:LYS:HB2	1.83	0.59
1:B:658:LEU:HG	1:B:690:ARG:HH21	1.68	0.59
1:B:3751:GLN:O	1:B:3754:ASN:N	2.35	0.59
1:B:530:VAL:HG13	1:B:553:TYR:CZ	2.38	0.59
1:B:1075:ASP:HB3	1:B:1078:LYS:HB3	1.85	0.59
1:B:1188:GLU:O	1:B:1191:ARG:HG2	2.02	0.59
1:B:3174:ARG:NH1	1:B:3650:ASN:OD1	2.36	0.59
2:D:377:ALA:O	2:D:406:LYS:NZ	2.33	0.59
1:A:2481:MET:HE1	1:A:2486:LEU:HD13	1.85	0.59
1:A:3257:SER:CB	1:A:3433:VAL:HG11	2.32	0.59
1:B:2488:ARG:O	1:B:2492:ARG:HG2	2.03	0.59
5:I:59:GLY:HA3	5:J:62:PHE:CE1	2.38	0.59
1:A:1978:ILE:HD11	1:A:2001:LEU:HD11	1.84	0.58
1:A:391:GLN:O	1:A:394:LYS:HG3	2.04	0.58
1:A:3386:SER:OG	1:A:3389:CYS:SG	2.61	0.58
1:A:4096:LEU:HD13	1:A:4105:TRP:HH2	1.68	0.58
1:B:2499:LEU:HD23	1:B:2514:LEU:HD23	1.84	0.58
1:B:4457:LYS:HE2	1:B:4459:ILE:HD12	1.84	0.58
7:P:212:ARG:HD3	7:P:236:TRP:CG	2.39	0.58
7:P:228:LYS:NZ	7:P:263:VAL:O	2.36	0.58
7:P:277:HIS:HE1	7:P:316:ARG:HD2	1.68	0.58
1:B:193:LEU:HA	1:B:196:LEU:HD12	1.85	0.58
1:B:442:ARG:O	1:B:445:ASN:ND2	2.36	0.58
1:B:1059:CYS:SG	3:F:44:SER:HB2	2.44	0.58
1:B:1170:ILE:O	1:B:1173:VAL:HG12	2.03	0.58
1:A:2793:ILE:O	1:A:2836:ARG:NH1	2.36	0.58
1:B:3112:LYS:HA	1:B:3112:LYS:HE3	1.84	0.58
1:B:4549:GLN:HG3	1:B:4587:LEU:HB2	1.85	0.58
3:F:262:CYS:HB2	3:F:267:ALA:HB3	1.85	0.58
5:I:43:LYS:NZ	5:I:47:ASP:OD2	2.36	0.58
1:A:253:ILE:HD12	1:A:256:ILE:HD11	1.85	0.58
1:A:3708:LEU:HD23	1:A:3809:SER:HA	1.84	0.58
1:B:2188:GLU:OE1	1:B:2243:ARG:NH2	2.29	0.58
1:B:2449:LEU:HA	1:B:2453:ARG:HH21	1.68	0.58
1:B:3110:THR:HA	1:B:3113:MET:HG3	1.84	0.58
1:B:3263:GLN:HG2	1:B:3426:ASN:ND2	2.18	0.58
7:P:172:MET:HE2	7:P:193:HIS:HA	1.85	0.58
1:A:4492:ILE:HG22	1:A:4507:ILE:HD13	1.84	0.58
1:B:3983:ILE:O	1:B:3987:ILE:HD12	2.02	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:F:51:LEU:HB3	3:F:98:ARG:HE	1.67	0.58
7:O:216:ILE:HB	7:O:230:PHE:HB2	1.84	0.58
1:A:3240:LEU:O	1:A:3244:VAL:HG23	2.04	0.58
1:B:58:GLU:HG3	1:B:61:ALA:H	1.69	0.58
1:B:89:GLY:HA2	1:B:244:GLN:HG2	1.86	0.58
1:B:264:ARG:NH1	1:B:265:ASP:O	2.37	0.58
3:F:120:LYS:HA	3:F:159:HIS:HE1	1.66	0.58
3:F:250:HIS:HD2	3:F:340:ILE:HG22	1.68	0.58
7:P:94:TRP:HB3	7:P:409:CYS:HB3	1.85	0.58
1:B:1569:GLN:O	1:B:1573:THR:HG23	2.04	0.58
2:D:500:SER:HB3	2:D:529:ASP:HA	1.85	0.58
7:P:236:TRP:HB3	7:P:254:ASN:ND2	2.19	0.58
1:A:401:LEU:HA	1:A:404:VAL:HB	1.86	0.58
1:B:35:ARG:HD2	1:B:56:LEU:HD11	1.86	0.58
1:B:68:PHE:HZ	1:B:135:LEU:HD11	1.69	0.58
1:B:185:LYS:O	1:B:189:LEU:HD23	2.04	0.58
1:B:694:ASN:ND2	1:B:697:GLU:OE1	2.37	0.58
1:B:1042:GLY:O	1:B:1045:SER:OG	2.20	0.58
1:B:3364:ARG:HA	1:B:3367:MET:HE2	1.83	0.58
1:B:3381:ILE:HD12	1:B:3390:GLY:HA2	1.86	0.58
3:F:262:CYS:O	3:F:267:ALA:N	2.35	0.58
6:K:68:VAL:HG22	6:L:79:THR:HG22	1.86	0.58
1:A:1464:LYS:HA	1:A:1467:ARG:HE	1.68	0.58
1:A:1497:VAL:HG11	1:A:1531:MET:HE3	1.86	0.58
1:B:391:GLN:HA	1:B:394:LYS:HD2	1.85	0.58
1:B:2615:MET:HE2	1:B:2707:GLN:HE22	1.68	0.58
1:B:3017:VAL:HB	1:B:3020:LEU:HB2	1.85	0.58
1:B:3260:ILE:HA	1:B:3263:GLN:OE1	2.04	0.58
7:P:110:PRO:HB3	7:P:400:VAL:HA	1.86	0.58
1:A:55:ALA:HB3	1:A:101:TYR:HD2	1.68	0.57
1:A:116:LEU:HD22	1:A:139:THR:HG22	1.85	0.57
1:A:2172:ARG:NH2	1:A:2205:GLU:OE1	2.31	0.57
1:B:231:ASP:OD1	1:B:232:PHE:N	2.37	0.57
1:B:3172:THR:HG21	1:B:3694:SER:HB3	1.84	0.57
5:I:7:VAL:O	5:I:76:PHE:HB2	2.04	0.57
5:I:65:TYR:CE1	5:J:40:ALA:HB2	2.39	0.57
5:J:43:LYS:NZ	5:J:47:ASP:OD2	2.36	0.57
1:A:357:LEU:HD21	1:A:388:LEU:HD21	1.86	0.57
1:A:405:ALA:HB3	1:A:408:GLU:HG2	1.86	0.57
1:B:742:GLU:O	1:B:745:THR:HB	2.04	0.57
1:B:2616:GLU:N	1:B:2616:GLU:OE2	2.37	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:446:ASN:HA	2:D:460:CYS:HA	1.86	0.57
2:D:573:LEU:HA	2:D:589:ASP:HA	1.86	0.57
2:D:613:ARG:HA	2:D:616:ARG:HG2	1.86	0.57
3:F:250:HIS:CD2	3:F:340:ILE:HG22	2.39	0.57
1:A:2066:ALA:HA	1:A:2069:ILE:HG22	1.86	0.57
1:A:4517:PRO:HG2	1:A:4619:ILE:HD12	1.87	0.57
1:B:251:ARG:NH1	1:B:251:ARG:O	2.37	0.57
1:B:583:ARG:HD2	2:D:559:GLU:CD	2.30	0.57
7:P:243:ASN:HB3	7:P:284:TRP:CZ3	2.40	0.57
1:A:187:ALA:O	1:A:191:MET:HG3	2.04	0.57
1:A:209:ILE:HA	1:A:248:GLY:HA3	1.86	0.57
1:A:2592:VAL:HG23	1:A:2731:VAL:HG11	1.86	0.57
5:I:70:THR:O	5:I:72:HIS:ND1	2.37	0.57
6:K:47:VAL:HG11	6:L:82:SER:H	1.69	0.57
6:L:72:LYS:HE2	6:L:103:TYR:CZ	2.40	0.57
7:P:257:THR:HG22	7:P:273:ARG:HB2	1.85	0.57
1:A:1892:MET:HE1	1:A:1902:GLY:HA3	1.86	0.57
3:F:71:MET:HA	3:F:71:MET:HE3	1.85	0.57
5:I:23:GLU:O	5:I:27:GLN:HG3	2.04	0.57
1:A:1533:LEU:HD11	1:A:1597:VAL:HG22	1.85	0.57
1:A:3222:LEU:HD23	1:A:3223:ARG:HH12	1.69	0.57
1:A:3340:SER:O	1:A:3346:ASN:ND2	2.38	0.57
1:B:212:MET:HA	1:B:215:ASN:ND2	2.20	0.57
1:B:1191:ARG:O	1:B:1194:GLN:NE2	2.37	0.57
1:B:3561:ARG:NH1	1:B:3603:GLU:OE2	2.36	0.57
2:D:387:VAL:HG12	2:D:400:SER:HB2	1.85	0.57
5:I:59:GLY:HA3	5:J:62:PHE:CD1	2.40	0.57
1:A:1487:ILE:HD11	1:A:1579:MET:HE1	1.85	0.57
1:B:335:LEU:HA	1:B:366:LYS:HE2	1.86	0.57
1:B:1478:VAL:HG11	1:B:1488:ARG:HH21	1.69	0.57
1:B:2430:ASN:O	1:B:2435:LYS:NZ	2.37	0.57
4:G:42:TYR:O	4:G:46:MET:HG3	2.05	0.57
4:G:54:ARG:NH2	4:G:64:ASN:O	2.36	0.57
1:A:3239:LYS:HB2	1:A:3451:TYR:CE2	2.40	0.57
1:B:613:LYS:HE2	1:B:682:LEU:HB2	1.87	0.57
1:B:1267:VAL:O	1:B:1382:SER:N	2.38	0.57
1:B:1554:SER:O	1:B:1558:LYS:NZ	2.34	0.57
1:B:3386:SER:OG	1:B:3389:CYS:SG	2.63	0.57
1:A:242:LEU:HB3	1:A:309:ARG:HE	1.70	0.57
1:A:2138:ILE:HD12	1:A:2161:LEU:HD22	1.85	0.57
1:A:3659:ARG:NH1	1:B:3629:PHE:O	2.36	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2181:GLU:HG3	1:B:2244:LEU:HB2	1.87	0.57
1:B:3459:GLN:HA	1:B:3462:LYS:HZ3	1.69	0.57
1:B:4042:LEU:HD21	1:B:4138:LEU:HG	1.86	0.57
4:G:74:LYS:NZ	4:H:65:ASP:OD1	2.36	0.57
1:A:1491:ASP:OD1	1:A:1492:ASP:N	2.38	0.57
1:A:3167:ARG:HH12	1:A:3687:GLU:HG3	1.70	0.57
1:A:3178:ASP:OD2	1:A:3585:ARG:NE	2.37	0.57
1:B:330:ASN:HA	1:B:333:ASN:HB2	1.87	0.57
1:B:3502:THR:HG22	1:B:3542:GLN:HB3	1.87	0.57
1:B:3731:LEU:HB2	1:B:3791:MET:HE1	1.85	0.57
1:B:4411:ARG:O	1:B:4415:ARG:HG3	2.04	0.57
6:L:69:ILE:HG23	6:L:102:MET:HE2	1.86	0.57
7:P:269:LYS:NZ	7:P:325:VAL:O	2.37	0.57
1:A:368:ARG:NH1	1:A:436:ASP:O	2.38	0.56
1:B:38:VAL:HB	1:B:52:LEU:HD21	1.87	0.56
1:B:1546:TYR:OH	1:B:1612:GLN:OE1	2.17	0.56
1:B:3839:VAL:HG21	1:B:3863:LEU:HA	1.87	0.56
3:F:158:GLU:OE1	3:F:162:LYS:NZ	2.37	0.56
6:L:45:ASN:OD1	6:L:49:GLN:NE2	2.38	0.56
1:A:3043:MET:HA	1:A:3043:MET:HE3	1.86	0.56
1:A:3520:PHE:HB3	1:A:3524:MET:HB3	1.87	0.56
1:A:270:THR:HG23	1:A:273:GLN:H	1.70	0.56
1:A:3459:GLN:O	1:A:3462:LYS:HG2	2.06	0.56
1:B:88:VAL:HG22	1:B:90:ASP:H	1.70	0.56
1:B:264:ARG:O	1:B:376:ARG:NH1	2.37	0.56
1:B:552:ARG:O	1:B:555:GLU:HG2	2.05	0.56
1:B:2590:PRO:HB2	1:B:2731:VAL:HG12	1.87	0.56
1:B:4176:ARG:NH1	1:B:4220:ASP:OD1	2.38	0.56
2:D:457:TYR:HB3	2:D:468:ILE:HD12	1.85	0.56
4:G:15:LYS:HE3	4:G:95:THR:HG23	1.87	0.56
1:B:4037:PRO:HB2	1:B:4118:PRO:HG2	1.88	0.56
6:K:77:LEU:HD11	6:K:105:ILE:HD12	1.87	0.56
7:P:92:LYS:CG	7:P:93:GLU:H	2.18	0.56
1:A:179:ALA:HA	1:A:182:VAL:HG22	1.87	0.56
1:A:578:ALA:O	1:A:583:ARG:N	2.30	0.56
1:A:3239:LYS:HE2	1:A:3454:LEU:HD22	1.87	0.56
1:A:3524:MET:HE2	1:A:3524:MET:HA	1.87	0.56
1:B:180:PRO:O	1:B:184:LYS:NZ	2.39	0.56
1:B:342:ASN:OD1	1:B:343:ASP:N	2.38	0.56
1:B:783:GLU:HG2	2:D:375:LEU:HD22	1.86	0.56
1:B:1085:GLN:HA	1:B:1088:LYS:HE3	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1153:LEU:HB3	1:B:1225:MET:HE1	1.87	0.56
1:B:1685:MET:HA	1:B:1685:MET:HE3	1.88	0.56
1:B:4544:ASN:HB2	1:B:4573:ASN:HD21	1.71	0.56
2:D:578:TRP:HA	2:D:585:ILE:HD12	1.88	0.56
7:P:277:HIS:CE1	7:P:316:ARG:HD2	2.40	0.56
1:A:25:ALA:O	1:A:66:ARG:NH1	2.34	0.56
1:A:458:LYS:O	1:A:461:ALA:HB3	2.06	0.56
2:D:265:LEU:HD22	2:D:597:TYR:HE2	1.70	0.56
1:A:1750:VAL:HG12	1:A:1811:LEU:HD21	1.87	0.56
1:B:1484:CYS:SG	1:B:1485:ARG:N	2.78	0.56
2:D:538:ALA:HB1	2:D:554:LEU:HB2	1.88	0.56
1:A:189:LEU:HD22	1:B:185:LYS:HE2	1.87	0.56
1:B:80:GLU:O	1:B:102:ASN:N	2.38	0.56
1:B:413:MET:HE2	1:B:467:ARG:HD2	1.87	0.56
1:B:2995:ASP:OD1	1:B:2996:GLU:N	2.37	0.56
5:I:71:LYS:HA	5:I:71:LYS:HE3	1.88	0.56
7:O:147:LYS:NZ	7:P:136:ASP:OD2	2.39	0.56
1:A:2275:TRP:NE1	1:A:2277:ASP:OD1	2.37	0.56
1:A:3024:ASP:OD1	1:A:3025:GLU:N	2.39	0.56
2:D:272:PHE:HB2	2:D:593:GLN:HG3	1.87	0.56
2:D:437:MET:HB3	2:D:449:VAL:HG12	1.86	0.56
2:D:526:TYR:CE2	2:D:545:GLY:HA3	2.41	0.56
3:F:241:GLU:HA	3:F:246:TYR:H	1.71	0.56
5:J:71:LYS:O	5:J:71:LYS:HG2	2.06	0.56
1:A:1518:GLU:OE1	1:A:1518:GLU:N	2.32	0.56
1:B:1495:ASN:HA	1:B:1498:LYS:HZ2	1.70	0.56
2:D:270:GLN:HE21	2:D:593:GLN:HG3	1.71	0.56
1:A:2191:LEU:HD11	1:A:2232:MET:HG2	1.87	0.55
1:B:1079:TRP:HZ3	1:B:1134:MET:HG2	1.71	0.55
1:B:3257:SER:HA	1:B:3260:ILE:HD12	1.86	0.55
4:G:54:ARG:HH12	4:G:65:ASP:HA	1.71	0.55
4:G:74:LYS:HG3	4:G:75:LYS:HD2	1.86	0.55
1:A:3008:MET:HA	1:A:3008:MET:HE3	1.87	0.55
1:A:4460:LEU:HD12	1:A:4461:PRO:HD2	1.86	0.55
1:B:431:GLN:O	1:B:435:ARG:HG2	2.06	0.55
1:B:1082:LEU:HD21	3:F:39:ILE:HG21	1.87	0.55
1:B:1814:GLU:OE2	1:B:1818:GLN:NE2	2.39	0.55
1:B:2433:VAL:HG22	1:B:2498:ILE:HD11	1.87	0.55
1:B:2956:LEU:HD13	1:B:2989:LYS:HB3	1.87	0.55
1:A:439:LYS:HA	1:A:442:ARG:CZ	2.36	0.55
1:A:2457:SER:HB2	1:A:2732:PRO:HB3	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:25:ALA:HB3	1:B:69:LEU:HD21	1.87	0.55
1:B:129:LYS:HD2	1:B:130:PRO:HD2	1.87	0.55
1:B:4413:PHE:CD2	1:B:4492:ILE:HG21	2.41	0.55
1:A:2131:LEU:HD12	1:A:2132:PRO:HD2	1.89	0.55
1:A:3559:ARG:O	1:A:3563:GLN:HG2	2.05	0.55
1:A:3910:ARG:HH11	1:A:4344:LEU:HD11	1.70	0.55
1:B:257:GLN:NE2	1:B:319:ASP:OD1	2.40	0.55
1:B:480:ILE:HD12	1:B:564:ILE:HD13	1.88	0.55
1:B:2623:SER:OG	1:B:3006:GLU:OE1	2.23	0.55
1:B:3130:TYR:CZ	1:B:3132:LYS:HB2	2.42	0.55
1:B:3468:VAL:O	1:B:3472:VAL:HG23	2.06	0.55
5:I:46:PHE:CE2	5:I:85:LEU:HD21	2.42	0.55
5:I:66:VAL:HG21	5:I:86:PHE:CD1	2.41	0.55
6:K:85:TRP:CD1	6:K:90:ASP:HB2	2.41	0.55
6:K:111:LEU:HD22	6:L:111:LEU:HD13	1.88	0.55
7:P:243:ASN:HB3	7:P:284:TRP:HZ3	1.71	0.55
1:A:195:HIS:HB2	1:B:178:MET:HE1	1.87	0.55
1:A:2118:ARG:NH1	1:A:2118:ARG:O	2.39	0.55
1:A:274:GLU:OE1	1:A:376:ARG:NH2	2.40	0.55
1:A:1350:PRO:HA	1:A:1430:THR:HA	1.88	0.55
1:B:85:LYS:HE3	1:B:95:GLU:HB2	1.87	0.55
1:B:808:LEU:O	1:B:811:GLU:HG2	2.06	0.55
1:B:3182:HIS:NE2	1:B:3582:ARG:O	2.39	0.55
1:B:3708:LEU:HD23	1:B:3809:SER:HA	1.89	0.55
1:A:3001:ASP:OD1	1:A:3002:SER:N	2.39	0.55
1:A:3172:THR:HG21	1:A:3694:SER:HB3	1.89	0.55
1:B:1667:ASN:ND2	1:B:1672:VAL:HG12	2.20	0.55
3:F:59:VAL:HG11	3:F:108:ILE:HG13	1.89	0.55
5:I:18:GLN:O	5:I:21:SER:HB2	2.07	0.55
1:B:1144:SER:O	1:B:1148:LYS:HG2	2.06	0.55
1:A:3409:VAL:HA	1:A:3412:LEU:HD12	1.88	0.55
1:B:4039:THR:HG23	1:B:4142:GLY:HA2	1.89	0.55
1:A:68:PHE:O	1:A:120:LYS:NZ	2.26	0.55
1:A:2877:LEU:HD11	1:A:2884:VAL:HG13	1.89	0.55
1:B:78:LEU:HB3	1:B:104:ASN:HB2	1.88	0.55
1:B:91:GLU:HA	1:B:243:ASN:HB3	1.88	0.55
1:B:148:THR:HG23	1:B:152:PHE:CE2	2.42	0.55
1:B:666:GLU:OE1	1:B:673:TRP:NE1	2.39	0.55
1:B:2499:LEU:HG	1:B:2518:ILE:HD12	1.89	0.55
3:F:321:ALA:HA	3:F:324:HIS:CE1	2.41	0.55
7:P:257:THR:OG1	7:P:259:ARG:NH1	2.40	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:85:LYS:HB2	1:A:112:LYS:HE3	1.89	0.54
1:A:3239:LYS:HB2	1:A:3451:TYR:CZ	2.42	0.54
1:A:3447:TYR:HB3	1:A:3451:TYR:CZ	2.41	0.54
1:A:4528:VAL:HG11	1:A:4592:TRP:HB2	1.89	0.54
1:B:2066:ALA:HA	1:B:2069:ILE:HG22	1.88	0.54
1:B:3260:ILE:HA	1:B:3263:GLN:CD	2.32	0.54
5:I:23:GLU:HB3	5:I:27:GLN:NE2	2.23	0.54
7:O:90:ASP:HB3	7:O:93:GLU:HB3	1.89	0.54
1:A:578:ALA:C	1:A:583:ARG:H	2.13	0.54
1:A:1452:VAL:HA	1:A:1512:TYR:CZ	2.42	0.54
1:A:1492:ASP:OD1	1:A:1493:LEU:N	2.40	0.54
1:A:2231:SER:HA	1:A:2234:TRP:CD1	2.42	0.54
1:A:2509:LYS:NZ	1:A:2513:GLU:HB2	2.22	0.54
1:A:3655:ARG:HG2	1:A:3660:VAL:HG22	1.89	0.54
1:B:378:LEU:HG	1:B:379:ARG:HH21	1.72	0.54
1:B:1558:LYS:HG3	1:B:1565:THR:HG21	1.88	0.54
2:D:374:PRO:HD3	2:D:416:SER:HA	1.88	0.54
1:A:3046:SER:OG	1:A:3048:GLU:OE1	2.25	0.54
1:A:3270:VAL:C	1:A:3272:ALA:H	2.10	0.54
1:B:2419:ALA:O	1:B:2423:MET:HG2	2.07	0.54
1:B:4385:SER:O	1:B:4389:HIS:ND1	2.32	0.54
1:A:1374:PRO:O	1:A:1378:ARG:N	2.37	0.54
1:A:3451:TYR:O	1:A:3455:ILE:HG23	2.07	0.54
1:A:4412:PHE:CZ	1:A:4520:TYR:HB2	2.42	0.54
1:B:689:PHE:HA	1:B:692:LYS:HE3	1.89	0.54
1:B:2767:GLU:HG2	1:B:2768:PRO:HD3	1.89	0.54
2:D:286:ASP:OD2	2:D:339:THR:OG1	2.16	0.54
1:A:3557:ASP:OD1	1:A:3743:ARG:NH1	2.40	0.54
1:B:399:ARG:O	1:B:399:ARG:NH1	2.36	0.54
1:B:761:PRO:HD2	1:B:764:ILE:HD12	1.89	0.54
1:B:1172:TYR:O	1:B:1175:SER:OG	2.23	0.54
1:B:1209:LEU:HD12	1:B:1210:TYR:H	1.73	0.54
1:B:361:PHE:HE1	1:B:430:LEU:HD13	1.73	0.54
1:B:609:ILE:HG21	1:B:678:GLU:HB3	1.89	0.54
1:A:29:VAL:O	1:A:33:HIS:ND1	2.41	0.54
1:B:561:GLU:OE1	1:B:594:ARG:NH1	2.41	0.54
1:B:1098:THR:HG23	1:B:1099:LYS:HG2	1.89	0.54
1:B:1187:VAL:O	1:B:1191:ARG:N	2.29	0.54
1:B:1194:GLN:CD	1:B:1211:ILE:HD13	2.33	0.54
1:B:1508:LYS:HG2	1:B:1513:TYR:CZ	2.43	0.54
1:B:3294:ASN:HB3	1:B:3391:PRO:HB3	1.88	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:3363:ILE:HD13	1:B:3403:ALA:HB1	1.90	0.54
2:D:459:ALA:HB2	2:D:468:ILE:HD13	1.88	0.54
7:O:243:ASN:HD22	7:O:248:LEU:HB2	1.72	0.54
1:A:588:PHE:O	1:A:590:ALA:N	2.41	0.54
1:A:1543:ARG:HG2	1:A:1608:LEU:HB3	1.89	0.54
1:A:3263:GLN:CB	1:A:3426:ASN:ND2	2.70	0.54
1:B:212:MET:HA	1:B:215:ASN:HD21	1.73	0.54
1:B:3321:LEU:HD22	1:B:3332:THR:HA	1.90	0.54
1:A:167:GLU:OE2	1:B:108:HIS:NE2	2.40	0.54
1:A:2290:SER:HB2	1:A:2295:LEU:HG	1.89	0.54
1:A:4168:ARG:NH2	1:A:4217:ASP:OD1	2.41	0.54
1:B:35:ARG:NH2	1:B:53:GLU:OE2	2.41	0.54
1:B:2905:LEU:HD11	1:B:3652:GLU:HB2	1.89	0.54
1:B:2943:LYS:N	8:B:4704:ADP:O1B	2.40	0.54
4:G:14:GLN:NE2	4:G:92:GLN:OE1	2.41	0.54
1:A:3499:GLN:O	1:A:3503:ILE:HG12	2.08	0.54
1:A:3791:MET:HA	1:A:3791:MET:HE3	1.89	0.54
1:B:1161:ALA:C	1:B:1163:THR:H	2.15	0.54
2:D:475:HIS:CE1	2:D:477:GLY:H	2.26	0.54
1:A:3130:TYR:CZ	1:A:3132:LYS:HB2	2.43	0.53
1:A:3270:VAL:C	1:A:3272:ALA:N	2.66	0.53
1:A:3322:GLU:OE2	1:A:3377:TYR:OH	2.25	0.53
1:A:4287:LYS:H	1:A:4293:ASP:HB3	1.73	0.53
1:B:485:ARG:O	1:B:487:GLN:NE2	2.41	0.53
1:B:487:GLN:H	1:B:567:ARG:HH22	1.55	0.53
1:B:1213:ASN:HD22	5:J:11:ALA:N	2.04	0.53
1:B:2603:MET:HE1	8:B:4703:ADP:N7	2.23	0.53
1:B:3110:THR:O	1:B:3140:ARG:NH1	2.41	0.53
2:D:536:HIS:HB3	2:D:539:LEU:HB3	1.88	0.53
5:J:34:ILE:O	5:J:38:ILE:HG12	2.09	0.53
1:A:78:LEU:HD22	1:A:107:ILE:HA	1.89	0.53
1:A:1497:VAL:HG13	1:A:1527:LEU:HD22	1.91	0.53
1:B:3217:GLU:O	1:B:3220:ARG:HG2	2.08	0.53
2:D:504:TRP:CD1	2:D:523:ASN:H	2.27	0.53
1:A:3456:SER:O	1:B:3459:GLN:NE2	2.38	0.53
1:A:4470:PRO:HG3	1:A:4612:ASN:HD22	1.73	0.53
1:B:3253:LYS:NZ	1:B:3437:ILE:HA	2.23	0.53
1:A:91:GLU:OE2	1:A:219:GLN:NE2	2.41	0.53
1:A:151:SER:O	1:A:154:SER:OG	2.22	0.53
1:B:3263:GLN:OE1	1:B:3426:ASN:HB3	2.07	0.53
1:B:3825:TYR:OH	1:B:3879:ASP:OD2	2.26	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:526:TYR:HE2	2:D:545:GLY:HA3	1.72	0.53
2:D:607:ARG:HG2	2:D:610:GLU:HG2	1.90	0.53
7:P:277:HIS:CG	7:P:278:VAL:H	2.26	0.53
1:A:296:GLU:OE2	1:A:300:THR:OG1	2.25	0.53
1:A:4009:VAL:HG13	1:A:4013:LEU:HD12	1.91	0.53
1:B:1218:TRP:NE1	1:B:1222:ASN:HD21	2.06	0.53
1:B:4488:GLN:O	1:B:4492:ILE:HD12	2.08	0.53
2:D:531:MET:HE2	2:D:578:TRP:HB2	1.90	0.53
4:H:33:THR:O	4:H:34:MET:HE2	2.09	0.53
1:B:312:ALA:O	1:B:315:SER:OG	2.18	0.53
1:B:633:CYS:SG	1:B:634:LYS:N	2.82	0.53
1:B:3242:LYS:NZ	1:B:3447:TYR:HB3	2.24	0.53
1:B:4096:LEU:HD13	1:B:4105:TRP:HH2	1.74	0.53
7:P:316:ARG:HG3	7:P:340:TRP:CG	2.44	0.53
1:A:1618:TYR:HD1	1:A:1621:ARG:HH21	1.57	0.53
1:A:3360:SER:HA	1:A:3363:ILE:HD12	1.90	0.53
1:A:3753:LEU:HD21	1:A:3770:LEU:HD21	1.91	0.53
1:B:158:ALA:O	1:B:162:LYS:HE2	2.09	0.53
1:B:1196:LEU:O	1:B:1200:GLN:N	2.39	0.53
1:B:3340:SER:O	1:B:3346:ASN:ND2	2.41	0.53
1:B:3731:LEU:HD11	1:B:3790:VAL:HG12	1.91	0.53
6:K:33:ALA:O	6:K:42:TRP:HH2	1.92	0.53
7:O:200:ILE:HG12	7:O:207:ILE:HG12	1.91	0.53
1:A:118:PHE:HB3	1:A:135:LEU:HD21	1.91	0.53
1:A:4039:THR:HG23	1:A:4142:GLY:HA2	1.89	0.53
1:A:185:LYS:HE3	1:B:189:LEU:HA	1.91	0.53
1:B:3230:GLU:HA	1:B:3233:ASN:HD21	1.74	0.53
1:B:4160:THR:HG23	1:B:4212:LEU:HD21	1.91	0.53
4:H:46:MET:O	4:H:50:ILE:HG12	2.09	0.53
5:I:18:GLN:OE1	5:I:74:ILE:HG13	2.08	0.53
7:O:254:ASN:HD22	7:O:278:VAL:HG21	1.74	0.53
7:O:277:HIS:ND1	7:O:316:ARG:HB2	2.23	0.53
1:B:387:ASP:OD1	1:B:388:LEU:N	2.42	0.53
1:B:1128:LEU:HD21	1:B:1200:GLN:HG3	1.90	0.53
1:A:42:LEU:HB3	1:A:81:ARG:NH2	2.24	0.52
1:A:256:ILE:HA	1:A:259:VAL:HG12	1.90	0.52
1:A:447:LYS:HD3	1:A:449:VAL:HG12	1.91	0.52
1:A:4227:ALA:HB2	1:A:4233:ILE:HD12	1.91	0.52
1:B:1152:GLU:HA	1:B:1155:GLN:OE1	2.09	0.52
1:B:1721:VAL:HA	1:B:1724:VAL:HG12	1.90	0.52
1:B:1959:GLU:HB3	1:B:1962:ARG:HD3	1.90	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:K:61:PHE:CD1	6:K:112:SER:HA	2.44	0.52
6:L:97:TRP:HE3	6:L:104:CYS:HB3	1.73	0.52
1:A:285:LEU:HA	1:A:288:ILE:HG12	1.91	0.52
1:A:2661:LEU:HD22	1:A:2708:PHE:HE1	1.74	0.52
1:A:3270:VAL:HG12	1:A:3271:ILE:H	1.73	0.52
1:A:3575:GLU:O	1:A:3579:MET:HG3	2.08	0.52
1:B:819:GLY:HA3	1:B:832:TYR:CZ	2.45	0.52
1:B:862:ARG:HA	1:B:865:GLU:HG3	1.90	0.52
1:B:4226:THR:HG21	1:B:4239:PRO:HD3	1.90	0.52
2:D:586:ALA:HA	2:D:596:ILE:HG22	1.91	0.52
3:F:324:HIS:HB2	3:F:327:PHE:CE2	2.43	0.52
5:J:8:ILE:HA	5:J:76:PHE:HA	1.91	0.52
5:J:17:MET:HA	5:J:20:ASP:HB2	1.92	0.52
1:A:35:ARG:HD3	1:A:53:GLU:HG2	1.90	0.52
1:A:626:GLN:O	1:A:630:SER:N	2.43	0.52
1:A:1478:VAL:HG23	1:A:1488:ARG:NH1	2.25	0.52
1:A:2934:LEU:HD11	1:A:3068:MET:HE2	1.91	0.52
1:A:3444:ILE:HG22	1:A:3445:ALA:N	2.25	0.52
2:D:211:LEU:HD13	4:H:15:LYS:HE3	1.90	0.52
2:D:359:LEU:HB2	2:D:415:LEU:HD22	1.91	0.52
3:F:39:ILE:HA	3:F:42:GLU:HG2	1.91	0.52
7:O:239:MET:HE2	7:O:281:CYS:HA	1.91	0.52
1:A:1177:LYS:HE3	1:A:1225:MET:SD	2.49	0.52
1:B:3253:LYS:HG2	1:B:3436:MET:SD	2.49	0.52
1:B:3426:ASN:HA	1:B:3429:LYS:CG	2.36	0.52
3:F:336:TYR:CZ	3:F:340:ILE:HD11	2.44	0.52
4:G:45:LEU:HD21	4:H:56:THR:HA	1.91	0.52
1:A:1476:ASP:HB3	1:A:1488:ARG:NH1	2.24	0.52
1:A:1567:ARG:HH11	1:A:1567:ARG:HG3	1.74	0.52
1:B:581:MET:HG2	1:B:611:ARG:HH21	1.75	0.52
1:B:2265:TYR:OH	1:B:2311:TRP:O	2.19	0.52
5:I:57:ILE:HD13	5:J:57:ILE:HD12	1.90	0.52
6:L:99:ASN:OD1	6:L:102:MET:HB2	2.09	0.52
7:P:257:THR:HA	7:P:272:LEU:O	2.09	0.52
1:A:1522:SER:O	1:A:1526:LYS:HG2	2.09	0.52
1:A:3099:THR:HG23	1:A:3148:VAL:HG11	1.92	0.52
1:A:3772:ASN:OD1	1:A:3775:ARG:NH1	2.43	0.52
1:A:4137:ASN:OD1	1:A:4138:LEU:N	2.43	0.52
1:B:210:HIS:CD2	1:B:244:GLN:HB3	2.45	0.52
1:B:516:ASP:HA	1:B:563:ARG:NH1	2.24	0.52
6:K:29:ILE:HG21	6:K:102:MET:HE1	1.92	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:413:MET:HE1	1:A:464:ASP:HA	1.92	0.52
1:A:438:VAL:HA	1:A:441:LYS:HB2	1.92	0.52
1:A:1839:LEU:O	1:A:1843:ARG:NH1	2.43	0.52
1:B:4318:PRO:HG2	1:B:4325:ASN:HA	1.91	0.52
2:D:549:LEU:HD22	2:D:597:TYR:OH	2.10	0.52
4:G:46:MET:CE	4:G:89:ILE:HG21	2.38	0.52
5:I:41:HIS:O	5:I:45:GLU:HG2	2.10	0.52
1:A:78:LEU:HD13	1:A:107:ILE:HG22	1.92	0.52
1:A:189:LEU:O	1:A:193:LEU:HD23	2.10	0.52
1:A:2149:LEU:HD11	1:A:2157:LEU:HD22	1.90	0.52
1:B:182:VAL:HA	1:B:185:LYS:HD3	1.91	0.52
1:B:3124:ASP:OD1	1:B:3125:TYR:N	2.42	0.52
1:B:3409:VAL:HG12	1:B:3413:ARG:HG3	1.92	0.52
1:B:3548:ALA:HB3	1:B:3551:GLU:HG2	1.90	0.52
2:D:357:ILE:HD11	2:D:380:HIS:HD2	1.74	0.52
2:D:445:ASN:HD21	2:D:463:GLY:H	1.58	0.52
3:F:88:TYR:HD1	3:F:107:TRP:CD1	2.26	0.52
7:P:130:ALA:HA	7:P:153:VAL:HG23	1.91	0.52
1:A:3175:HIS:HB3	1:A:3516:TYR:CE1	2.45	0.52
1:B:186:ILE:O	1:B:190:GLU:HG2	2.10	0.52
1:B:640:ASP:OD1	1:B:748:LYS:NZ	2.34	0.52
1:B:1211:ILE:O	1:B:1214:ILE:HG12	2.10	0.52
3:F:139:MET:SD	3:F:231:CYS:HB3	2.50	0.52
1:A:4156:ASN:ND2	1:A:4188:ALA:HA	2.25	0.52
1:B:1090:ARG:NH2	1:B:1121:ASP:HA	2.25	0.52
1:B:1708:GLU:HA	1:B:1711:VAL:HG22	1.92	0.52
1:B:3373:SER:O	1:B:3376:SER:OG	2.26	0.52
2:D:317:ASN:ND2	2:D:326:GLU:OE2	2.43	0.52
5:I:68:HIS:CD2	5:I:73:PHE:HB2	2.45	0.52
1:A:215:ASN:OD1	1:A:219:GLN:NE2	2.41	0.51
1:A:1203:GLN:HB3	1:B:1064:GLN:HE22	1.74	0.51
1:A:3294:ASN:HB3	1:A:3391:PRO:HB3	1.92	0.51
1:A:3510:SER:HB3	1:A:3553:LEU:HD21	1.91	0.51
1:B:1620:GLU:OE2	1:B:1943:ARG:NH1	2.43	0.51
1:B:3135:GLN:O	1:B:3137:PRO:HD3	2.11	0.51
1:B:4419:MET:HA	1:B:4422:LYS:HG2	1.93	0.51
2:D:505:THR:HG22	2:D:507:LYS:HG3	1.92	0.51
1:A:266:PRO:HB3	1:A:376:ARG:HG3	1.93	0.51
1:A:2221:MET:HG3	1:A:2343:PHE:HB2	1.92	0.51
1:A:2584:TRP:HZ3	1:A:2734:VAL:HB	1.75	0.51
1:A:3310:MET:N	1:A:3310:MET:SD	2.83	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1547:LEU:HD12	1:B:1608:LEU:HD22	1.91	0.51
3:F:258:LEU:HB3	3:F:269:LEU:HD11	1.91	0.51
1:B:3129:VAL:HG21	1:B:3149:PHE:HB2	1.91	0.51
3:F:143:TRP:CD1	3:F:342:LYS:HB2	2.45	0.51
3:F:168:GLU:HB2	3:F:171:ARG:HH21	1.75	0.51
5:J:50:TYR:HB2	5:J:54:TRP:HH2	1.75	0.51
7:O:381:HIS:CD2	7:O:382:PHE:H	2.27	0.51
1:A:3442:ALA:O	1:A:3446:ARG:HG3	2.11	0.51
1:B:158:ALA:HA	1:B:162:LYS:NZ	2.25	0.51
1:B:530:VAL:HG22	1:B:553:TYR:OH	2.09	0.51
1:B:1769:MET:HE3	1:B:1778:LEU:HG	1.92	0.51
1:B:2221:MET:SD	1:B:2361:MET:HE1	2.51	0.51
1:B:2488:ARG:HG2	1:B:2492:ARG:HH12	1.75	0.51
7:O:273:ARG:HG3	7:O:273:ARG:O	2.10	0.51
1:A:148:THR:O	1:A:152:PHE:HD1	1.93	0.51
1:A:354:ARG:HB3	1:A:419:VAL:HG13	1.93	0.51
1:A:447:LYS:O	1:A:448:MET:HE2	2.10	0.51
1:A:2905:LEU:HD11	1:A:3652:GLU:HB3	1.93	0.51
1:A:2943:LYS:HE2	1:A:3067:THR:HB	1.92	0.51
1:A:3253:LYS:NZ	1:A:3440:LEU:HG	2.26	0.51
1:B:613:LYS:HG3	1:B:682:LEU:HD12	1.93	0.51
1:B:3039:LYS:HZ2	7:O:273:ARG:HD3	1.76	0.51
3:F:248:ASP:OD1	3:F:249:GLU:N	2.43	0.51
1:A:3260:ILE:O	1:A:3264:LEU:HG	2.11	0.51
1:B:848:ASP:OD1	1:B:849:ASP:N	2.44	0.51
1:B:1453:ALA:O	1:B:1457:MET:HG2	2.10	0.51
1:B:2631:LEU:HD13	1:B:2686:MET:HE1	1.92	0.51
2:D:528:TYR:CD1	2:D:529:ASP:HB3	2.45	0.51
7:O:186:ARG:HD3	7:O:224:GLY:HA3	1.92	0.51
1:A:92:GLY:H	1:A:215:ASN:ND2	2.09	0.51
1:A:210:HIS:CD2	1:A:212:MET:HB3	2.45	0.51
1:A:339:PHE:HB2	1:A:340:PRO:HD3	1.92	0.51
1:A:1745:TYR:O	1:A:1807:LYS:NZ	2.38	0.51
1:A:3261:GLN:HA	1:A:3264:LEU:CG	2.40	0.51
1:B:3154:LEU:HG	1:B:3516:TYR:CD1	2.45	0.51
1:B:3191:ARG:HG2	1:B:3195:GLU:OE1	2.09	0.51
1:B:3409:VAL:HA	1:B:3412:LEU:HD12	1.93	0.51
1:B:4209:GLU:HG3	1:B:4213:ARG:HD3	1.93	0.51
2:D:359:LEU:HD22	2:D:415:LEU:HD13	1.93	0.51
7:O:236:TRP:HB3	7:O:254:ASN:OD1	2.11	0.51
7:P:156:ILE:HG22	7:P:167:SER:HB2	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3795:GLU:O	1:A:3799:GLN:HG2	2.10	0.51
1:B:581:MET:HE1	1:B:608:LEU:HD12	1.93	0.51
1:B:1227:ARG:HH21	1:B:1228:LYS:HZ1	1.58	0.51
1:B:3114:ASP:O	1:B:3116:GLU:HG2	2.11	0.51
5:I:68:HIS:CG	5:I:73:PHE:HB2	2.46	0.51
1:A:457:ARG:O	1:A:461:ALA:N	2.35	0.51
1:A:3376:SER:HA	1:A:3380:GLU:OE1	2.11	0.51
1:B:870:ASP:HB3	1:B:873:THR:HG22	1.93	0.51
1:B:1707:LYS:HA	1:B:1707:LYS:HE2	1.93	0.51
1:B:2457:SER:HB3	1:B:2732:PRO:HB3	1.92	0.51
1:B:3113:MET:HE1	1:B:3187:PHE:HB3	1.92	0.51
1:B:3260:ILE:O	1:B:3264:LEU:HG	2.10	0.51
1:B:4128:MET:HE1	1:B:4134:VAL:HG11	1.92	0.51
2:D:296:VAL:HG13	2:D:340:PHE:CZ	2.45	0.51
2:D:523:ASN:CG	2:D:524:ALA:H	2.18	0.51
3:F:140:SER:HA	3:F:240:LEU:HD11	1.92	0.51
4:G:33:THR:OG1	4:G:34:MET:SD	2.65	0.51
7:O:113:ARG:HD2	7:O:155:ASP:HA	1.93	0.51
1:A:1547:LEU:HD12	1:A:1608:LEU:HD22	1.93	0.51
1:B:526:ALA:C	1:B:553:TYR:HH	2.06	0.51
1:A:186:ILE:O	1:A:190:GLU:HG2	2.11	0.50
1:A:3214:GLN:O	1:A:3217:GLU:HG3	2.11	0.50
1:A:3253:LYS:HD3	1:A:3436:MET:HG3	1.93	0.50
1:B:530:VAL:HG13	1:B:553:TYR:CE1	2.46	0.50
1:B:1083:LEU:HD21	1:B:1131:PHE:HE2	1.76	0.50
1:B:3442:ALA:O	1:B:3446:ARG:HG2	2.11	0.50
1:B:4052:SER:O	1:B:4056:GLU:HG2	2.11	0.50
1:B:4168:ARG:NH2	1:B:4217:ASP:OD1	2.44	0.50
1:B:4554:ASP:OD2	1:B:4557:SER:OG	2.23	0.50
1:A:136:ARG:HG3	1:B:152:PHE:CZ	2.46	0.50
1:A:165:ILE:HG23	1:A:170:LYS:HB3	1.92	0.50
1:A:2053:MET:HE1	1:A:2094:LYS:HD2	1.93	0.50
1:A:2574:THR:O	1:A:2578:GLU:HG2	2.11	0.50
1:A:3135:GLN:O	1:A:3137:PRO:HD3	2.11	0.50
1:A:3363:ILE:HD13	1:A:3403:ALA:HB1	1.92	0.50
1:A:3450:GLU:O	1:A:3454:LEU:HD12	2.11	0.50
1:B:3243:MET:O	1:B:3247:GLN:HG3	2.11	0.50
1:B:3376:SER:HA	1:B:3380:GLU:OE1	2.10	0.50
1:B:4446:ASN:OD1	1:B:4449:ARG:NH1	2.38	0.50
7:O:366:ASP:HB2	7:O:373:MET:HG3	1.92	0.50
1:A:2063:GLU:HG2	1:A:2064:VAL:N	2.27	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3442:ALA:O	1:A:3443:SER:C	2.54	0.50
1:B:2175:MET:HE2	1:B:2208:LEU:HD22	1.93	0.50
2:D:545:GLY:O	2:D:572:ALA:HA	2.12	0.50
2:D:599:VAL:HG13	2:D:604:ALA:HB2	1.94	0.50
1:A:121:ARG:HD2	1:A:136:ARG:HG2	1.92	0.50
1:B:804:LEU:O	1:B:894:SER:OG	2.27	0.50
1:B:1470:TRP:NE1	1:B:1527:LEU:HD21	2.27	0.50
1:B:3291:GLU:HB3	1:B:3395:TRP:CD1	2.47	0.50
2:D:273:ASP:O	2:D:277:SER:OG	2.20	0.50
1:A:354:ARG:HD2	1:A:419:VAL:HG22	1.94	0.50
1:A:2964:HIS:HA	1:A:3643:PRO:HD2	1.93	0.50
1:A:3482:LEU:HD11	1:A:3770:LEU:HD23	1.93	0.50
1:A:3757:LYS:HA	1:A:3757:LYS:HE2	1.94	0.50
1:B:72:PRO:O	1:B:75:HIS:NE2	2.44	0.50
1:B:1211:ILE:O	1:B:1215:GLU:HG3	2.11	0.50
2:D:409:SER:HB2	2:D:420:ASP:HB3	1.93	0.50
2:D:579:THR:HG21	2:D:584:GLU:CD	2.36	0.50
4:G:49:PHE:HA	4:G:52:LYS:HG2	1.93	0.50
7:O:108:ARG:HH12	7:P:143:GLU:CD	2.19	0.50
1:A:3370:ASN:O	1:A:3374:ASN:N	2.44	0.50
1:A:4081:ASP:OD1	1:A:4112:LYS:NZ	2.37	0.50
1:A:4136:VAL:O	1:A:4140:ARG:HG3	2.11	0.50
1:B:1192:ASN:O	1:B:1195:ARG:HB2	2.12	0.50
1:B:3790:VAL:O	1:B:3793:GLU:HG3	2.12	0.50
1:B:3981:THR:HG23	1:B:3984:GLY:H	1.76	0.50
1:B:4075:GLU:OE2	1:B:4075:GLU:N	2.25	0.50
2:D:504:TRP:CD1	2:D:522:ASP:H	2.30	0.50
3:F:369:LEU:HA	3:F:372:LYS:HG2	1.94	0.50
7:P:279:VAL:HA	7:P:315:SER:HA	1.92	0.50
7:P:362:LEU:HD11	7:P:386:LEU:HD13	1.94	0.50
1:A:153:ILE:O	1:A:157:VAL:HG22	2.12	0.50
1:A:382:GLU:OE1	1:A:385:SER:OG	2.29	0.50
1:A:1229:ASP:CG	1:A:1233:GLN:HE22	2.20	0.50
1:A:1943:ARG:NH1	1:A:2329:ASN:O	2.45	0.50
1:A:2109:GLN:OE1	1:A:2113:ARG:NH1	2.45	0.50
1:A:4160:THR:HG23	1:A:4212:LEU:HD21	1.93	0.50
1:B:130:PRO:O	1:B:134:GLN:N	2.45	0.50
1:B:1083:LEU:HD21	1:B:1131:PHE:CE2	2.47	0.50
1:B:4297:PRO:HG3	1:B:4308:TRP:CD2	2.46	0.50
7:O:197:SER:HB2	7:O:239:MET:HA	1.93	0.50
1:A:39:PRO:HG3	1:A:48:ALA:H	1.77	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:241:PHE:O	1:A:245:LEU:HG	2.12	0.50
1:A:364:LEU:O	1:A:367:ILE:HG22	2.12	0.50
1:A:2211:TYR:O	1:A:2215:GLN:HG3	2.12	0.50
1:A:3585:ARG:NH1	1:A:3694:SER:O	2.33	0.50
1:A:3960:TRP:HZ2	1:A:3970:VAL:HG22	1.77	0.50
1:B:1533:LEU:HD11	1:B:1597:VAL:HG22	1.94	0.50
2:D:291:TYR:HE2	2:D:345:PRO:HB2	1.77	0.50
2:D:528:TYR:HD1	2:D:529:ASP:CB	2.25	0.50
3:F:71:MET:HG2	3:F:108:ILE:HD12	1.93	0.50
1:A:3321:LEU:HD22	1:A:3332:THR:HA	1.93	0.50
1:B:485:ARG:NH1	1:B:486:PRO:O	2.45	0.50
1:B:666:GLU:HA	1:B:673:TRP:CD1	2.47	0.50
1:B:1213:ASN:ND2	5:J:10:ASN:C	2.69	0.50
1:B:1492:ASP:OD1	1:B:1493:LEU:N	2.45	0.50
2:D:284:CYS:SG	2:D:285:LEU:N	2.85	0.50
5:I:63:GLY:N	5:J:35:GLU:HG3	2.27	0.50
7:P:381:HIS:CG	7:P:382:PHE:H	2.30	0.50
1:A:1756:ILE:O	1:A:1760:GLU:HG2	2.11	0.49
1:B:852:ILE:HA	1:B:855:GLU:CD	2.37	0.49
1:B:904:ASP:HA	1:B:907:ILE:HG22	1.94	0.49
1:B:2609:LEU:HD13	1:B:2617:VAL:HB	1.94	0.49
1:B:2628:PRO:HB3	1:B:2682:PHE:CD2	2.47	0.49
1:B:3322:GLU:OE2	1:B:3377:TYR:OH	2.25	0.49
2:D:607:ARG:NH1	2:D:610:GLU:OE2	2.45	0.49
3:F:185:MET:HA	3:F:185:MET:HE2	1.94	0.49
4:H:70:ARG:HG2	4:H:79:MET:CE	2.42	0.49
5:I:74:ILE:HG22	5:I:85:LEU:O	2.12	0.49
7:O:243:ASN:OD1	7:O:246:GLY:N	2.42	0.49
7:O:381:HIS:CG	7:O:382:PHE:H	2.30	0.49
7:P:351:LYS:HG3	7:P:352:PHE:CD2	2.46	0.49
1:A:195:HIS:HE1	1:A:264:ARG:HE	1.60	0.49
1:B:116:LEU:HD23	1:B:139:THR:HB	1.93	0.49
1:B:1165:ASP:O	1:B:1168:THR:HB	2.12	0.49
1:B:3131:ASP:OD1	1:B:3132:LYS:N	2.45	0.49
1:B:3716:VAL:HB	1:B:3836:TYR:OH	2.12	0.49
2:C:293:GLU:O	2:C:318:MET:N	2.45	0.49
2:D:266:SER:O	2:D:597:TYR:HB2	2.11	0.49
3:F:345:VAL:HG22	3:F:347:LYS:H	1.77	0.49
1:A:159:PRO:HD2	1:B:107:ILE:HD11	1.94	0.49
1:A:1176:LEU:O	1:A:1180:ILE:HG13	2.12	0.49
1:A:1721:VAL:HA	1:A:1724:VAL:HG12	1.93	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3253:LYS:HZ1	1:A:3440:LEU:HG	1.77	0.49
1:B:1134:MET:SD	1:B:1135:LEU:HD23	2.52	0.49
1:B:4043:MET:HE2	1:B:4147:PHE:HE2	1.76	0.49
2:D:607:ARG:HG3	2:D:609:ASP:HB3	1.94	0.49
3:F:48:ARG:HD2	3:F:49:SER:HB2	1.94	0.49
5:I:12:ASP:OD1	5:I:73:PHE:HB3	2.13	0.49
6:K:77:LEU:HD21	6:K:105:ILE:HD11	1.94	0.49
1:A:1466:ILE:HG13	1:A:1500:HIS:ND1	2.27	0.49
1:A:3455:ILE:O	1:A:3459:GLN:HG2	2.12	0.49
1:B:1142:PHE:O	1:B:1146:ILE:HG22	2.12	0.49
7:P:396:VAL:HG12	7:P:406:VAL:HG22	1.95	0.49
1:A:193:LEU:HB2	1:B:178:MET:HE2	1.93	0.49
1:A:2228:SER:N	9:A:4702:ATP:O1B	2.46	0.49
1:B:2270:PRO:HA	1:B:2273:ARG:HH11	1.77	0.49
1:B:3253:LYS:HD2	1:B:3437:ILE:CA	2.41	0.49
3:F:343:PRO:HB2	3:F:346:ARG:NH1	2.28	0.49
7:O:212:ARG:HG3	7:O:236:TRP:CG	2.47	0.49
1:A:242:LEU:HG	1:A:304:LEU:HA	1.94	0.49
1:A:1543:ARG:HA	1:A:1546:TYR:CE2	2.48	0.49
1:A:3247:GLN:HG3	1:A:3444:ILE:CD1	2.39	0.49
1:A:3399:GLN:HA	1:A:3402:TYR:HD2	1.77	0.49
1:B:386:ARG:HH11	1:B:455:ALA:HB2	1.77	0.49
1:B:1968:LEU:HD13	1:B:2028:LEU:HG	1.94	0.49
1:B:3844:PRO:HA	1:B:3847:LYS:NZ	2.28	0.49
1:B:4487:LYS:O	1:B:4490:GLN:HG2	2.12	0.49
4:G:46:MET:SD	4:G:89:ILE:HG21	2.53	0.49
1:A:378:LEU:HD11	1:A:452:ILE:HB	1.95	0.49
1:B:406:TYR:CD2	1:B:474:GLU:HG2	2.47	0.49
1:B:2103:VAL:HA	1:B:2106:GLU:HG3	1.95	0.49
1:B:2465:ALA:HB2	1:B:2493:TYR:CE2	2.48	0.49
1:B:3096:ASP:OD1	1:B:3097:TRP:N	2.45	0.49
1:B:3723:ASP:OD1	1:B:3724:VAL:N	2.45	0.49
2:D:602:GLN:HG2	2:D:603:ILE:HG23	1.93	0.49
4:H:69:LEU:HB3	4:H:80:VAL:CG1	2.43	0.49
5:I:65:TYR:CD1	5:J:40:ALA:HB2	2.48	0.49
5:J:68:HIS:CG	5:J:73:PHE:HB2	2.48	0.49
1:A:136:ARG:HG3	1:B:152:PHE:CE2	2.48	0.49
1:A:149:LEU:O	1:A:153:ILE:HG12	2.12	0.49
1:A:228:LYS:N	1:A:231:ASP:OD2	2.37	0.49
1:A:3196:GLU:O	1:A:3199:MET:HG3	2.12	0.49
1:A:3911:GLY:O	1:A:3937:ARG:HD3	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3961:LEU:O	1:A:3997:ARG:NH1	2.45	0.49
1:B:3597:THR:OG1	1:B:3611:ARG:NH2	2.46	0.49
1:B:4381:HIS:HB2	1:B:4438:CYS:HB3	1.95	0.49
2:C:548:ARG:HA	2:C:566:SER:HA	1.94	0.49
1:A:1458:ALA:HA	1:A:1461:GLU:CD	2.38	0.49
1:A:3238:ASP:HA	1:A:3241:LYS:HD2	1.94	0.49
1:A:3260:ILE:HD11	1:A:3429:LYS:HB3	1.94	0.49
1:B:860:GLU:OE2	1:B:880:ARG:HB2	2.13	0.49
1:B:1897:GLU:O	1:B:1899:ARG:NH1	2.45	0.49
1:B:3354:PHE:CE2	1:B:3356:ALA:HB3	2.48	0.49
2:D:301:ASN:OD1	2:D:302:ASN:N	2.45	0.49
3:F:216:ASP:OD1	3:F:217:ASN:N	2.46	0.49
4:G:10:ARG:O	4:G:13:SER:OG	2.24	0.49
5:I:15:GLU:O	5:I:18:GLN:HB2	2.12	0.49
7:P:274:GLU:HG3	7:P:323:TRP:CH2	2.48	0.49
7:P:279:VAL:HG22	7:P:315:SER:HB2	1.95	0.49
1:B:1061:TRP:HB2	1:B:1119:LYS:NZ	2.28	0.49
1:B:2760:PRO:HB3	1:B:2763:ARG:HH21	1.76	0.49
1:B:3243:MET:HE3	1:B:3444:ILE:HA	1.94	0.49
2:D:530:VAL:HA	2:D:541:ALA:O	2.13	0.49
5:J:60:ARG:NH2	5:J:81:VAL:HG13	2.26	0.49
7:P:112:THR:OG1	7:P:128:GLU:OE2	2.30	0.49
1:A:1189:LEU:O	1:A:1192:ASN:HB3	2.13	0.48
1:A:1581:LYS:O	1:A:1584:LYS:HG3	2.13	0.48
1:A:2538:GLU:HB3	1:A:2548:TRP:CE2	2.47	0.48
1:A:2943:LYS:N	8:A:4704:ADP:O1B	2.44	0.48
1:A:3248:GLN:HE22	1:B:3254:LYS:HZ1	1.59	0.48
1:B:390:SER:O	1:B:394:LYS:HD2	2.13	0.48
1:B:582:PHE:CD1	1:B:668:VAL:HG11	2.47	0.48
1:B:631:GLN:O	1:B:635:MET:HG3	2.13	0.48
2:D:390:VAL:HG11	2:D:447:PHE:HZ	1.76	0.48
3:F:255:GLN:OE1	3:F:323:LEU:HD21	2.13	0.48
7:O:112:THR:HG22	7:O:113:ARG:HG3	1.94	0.48
1:A:3244:VAL:HG22	1:B:3247:GLN:CD	2.38	0.48
1:A:3452:ALA:O	1:A:3455:ILE:HG12	2.12	0.48
1:A:4338:ASP:OD2	1:A:4342:LYS:HE3	2.12	0.48
1:B:820:ILE:HD11	3:F:370:LEU:HD12	1.95	0.48
1:B:1023:LEU:HD12	1:B:1033:LEU:HD22	1.95	0.48
1:B:1709:MET:CE	1:B:1872:TYR:H	2.25	0.48
1:B:2538:GLU:HB3	1:B:2548:TRP:CE2	2.48	0.48
1:B:3433:VAL:HA	1:B:3436:MET:HG3	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:4025:LEU:HG	1:B:4027:LEU:HD22	1.94	0.48
1:B:4150:PRO:O	1:B:4195:ARG:NH2	2.45	0.48
3:F:370:LEU:HA	3:F:373:GLN:HG2	1.95	0.48
5:J:57:ILE:HG22	5:J:84:LEU:HB3	1.94	0.48
6:K:43:THR:HG23	6:K:69:ILE:HD12	1.96	0.48
7:P:236:TRP:HB3	7:P:254:ASN:HD22	1.78	0.48
1:A:1219:GLY:HA2	1:A:1222:ASN:HD21	1.77	0.48
1:A:2499:LEU:HD12	1:A:2514:LEU:HD23	1.95	0.48
1:A:3555:ASN:OD1	1:A:3558:GLU:HG2	2.14	0.48
1:A:3821:ILE:HB	1:A:4342:LYS:HG2	1.95	0.48
1:B:480:ILE:HG23	1:B:484:LEU:HB2	1.95	0.48
1:B:1131:PHE:O	1:B:1135:LEU:HG	2.13	0.48
1:B:2776:PHE:HA	1:B:2779:MET:HE2	1.95	0.48
1:B:4439:GLU:HB3	1:B:4441:LYS:NZ	2.27	0.48
2:D:343:PHE:HD2	2:D:412:LEU:HD23	1.78	0.48
3:F:142:PRO:HA	3:F:145:VAL:HG23	1.94	0.48
4:G:22:VAL:HG22	4:G:88:LEU:HD23	1.95	0.48
4:G:43:ALA:HA	4:G:46:MET:HG3	1.95	0.48
1:A:31:GLN:HE21	1:A:56:LEU:HG	1.78	0.48
1:A:388:LEU:O	1:A:391:GLN:HG3	2.13	0.48
1:A:2449:LEU:HA	1:A:2453:ARG:HH21	1.79	0.48
1:A:2620:LEU:HD11	1:A:2661:LEU:HD23	1.95	0.48
1:A:2792:TYR:OH	1:A:2842:GLU:OE1	2.30	0.48
1:A:3236:ALA:HA	1:A:3239:LYS:NZ	2.27	0.48
1:B:338:ASP:OD1	1:B:339:PHE:N	2.47	0.48
1:B:352:LYS:HA	1:B:355:GLN:CG	2.41	0.48
1:B:526:ALA:O	1:B:529:ASN:N	2.46	0.48
1:B:717:ILE:HG22	1:B:718:PHE:CD2	2.48	0.48
1:B:3260:ILE:HG12	1:B:3430:ALA:HB2	1.95	0.48
2:D:386:CYS:SG	2:D:437:MET:HE3	2.53	0.48
3:F:70:LEU:O	3:F:74:LEU:HD23	2.13	0.48
1:A:1487:ILE:HD13	1:A:1537:TRP:CH2	2.48	0.48
1:A:1895:ALA:HB2	1:A:2037:ARG:HB2	1.96	0.48
1:A:2138:ILE:HD11	1:A:2165:PHE:CG	2.49	0.48
1:A:2203:TRP:HH2	1:A:2236:VAL:HG21	1.78	0.48
1:B:344:LEU:HD11	1:B:360:ILE:HG21	1.96	0.48
1:B:1142:PHE:CE2	1:B:1214:ILE:HD12	2.49	0.48
1:B:1170:ILE:HG23	1:B:1233:GLN:HE21	1.78	0.48
5:I:25:ALA:O	5:I:28:ALA:HB3	2.12	0.48
6:L:43:THR:HG23	6:L:69:ILE:HD12	1.95	0.48
7:O:169:SER:OG	7:O:170:ALA:N	2.47	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3383:ASN:O	1:A:3384:ARG:HB3	2.13	0.48
1:A:3872:ALA:HA	1:A:3875:MET:HE3	1.95	0.48
1:B:94:GLU:HB3	1:B:251:ARG:HB2	1.96	0.48
1:B:312:ALA:HB1	1:B:316:PHE:HE2	1.79	0.48
1:B:409:PHE:CD2	1:B:470:ARG:HD2	2.48	0.48
1:B:724:ARG:HD2	1:B:726:ARG:HH21	1.77	0.48
1:B:3244:VAL:HA	1:B:3247:GLN:CD	2.38	0.48
1:B:3383:ASN:O	1:B:3384:ARG:HB3	2.13	0.48
2:C:334:ALA:O	2:C:353:TYR:N	2.45	0.48
3:F:156:LEU:HD22	3:F:223:LEU:HD12	1.95	0.48
6:K:25:ILE:HG23	6:K:29:ILE:HD12	1.95	0.48
1:A:2134:GLN:HE21	1:A:2165:PHE:HD2	1.60	0.48
1:B:1161:ALA:HA	1:B:1163:THR:HG23	1.95	0.48
1:B:2152:GLU:OE1	1:B:4400:ARG:NH1	2.46	0.48
1:B:2473:ASN:OD1	1:B:2481:MET:N	2.47	0.48
1:A:3910:ARG:HG2	1:A:4344:LEU:HD11	1.93	0.48
1:B:804:LEU:HD11	1:B:899:TRP:CD1	2.49	0.48
1:B:1174:GLN:O	1:B:1178:ARG:NH1	2.46	0.48
1:B:1666:LEU:HD23	1:B:1673:VAL:HA	1.96	0.48
2:C:202:HIS:CE1	4:G:81:ALA:HB1	2.49	0.48
2:D:317:ASN:O	2:D:318:MET:HE2	2.12	0.48
2:D:382:HIS:HB3	2:D:403:THR:HG22	1.95	0.48
2:D:553:ASN:OD1	2:D:554:LEU:N	2.47	0.48
7:P:312:LEU:HD23	7:P:313:SER:N	2.29	0.48
1:A:3972:TYR:OH	1:A:3976:GLU:OE2	2.28	0.48
1:B:331:ASP:OD1	1:B:332:TYR:N	2.46	0.48
1:B:720:ILE:HG23	3:F:367:GLN:HG2	1.96	0.48
1:B:813:GLN:NE2	3:F:357:GLU:OE1	2.46	0.48
1:B:1087:ARG:HH21	1:B:1200:GLN:NE2	2.11	0.48
1:B:2149:LEU:HD11	1:B:2157:LEU:HD22	1.96	0.48
1:B:2613:PRO:O	1:B:2657:LYS:HE3	2.14	0.48
1:B:3443:SER:O	1:B:3444:ILE:C	2.57	0.48
1:B:3473:ASN:OD1	1:B:3474:ARG:N	2.47	0.48
4:G:3:GLU:HG3	4:G:6:GLU:H	1.78	0.48
4:H:69:LEU:HB3	4:H:80:VAL:HG13	1.95	0.48
5:I:13:MET:HE2	5:I:18:GLN:N	2.28	0.48
1:A:348:THR:O	1:A:399:ARG:NH2	2.39	0.48
1:A:1698:ILE:HD12	1:A:1701:TRP:NE1	2.29	0.48
1:A:2478:ASP:OD1	1:A:2479:PHE:N	2.47	0.48
1:A:3723:ASP:OD1	1:A:3724:VAL:N	2.45	0.48
1:A:4020:ILE:H	1:A:4020:ILE:HD12	1.79	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:3620:ARG:HH11	1:B:3620:ARG:HA	1.79	0.48
2:D:283:SER:HB2	2:D:298:SER:HB2	1.94	0.48
1:A:55:ALA:HB3	1:A:101:TYR:CD2	2.49	0.47
1:A:331:ASP:N	1:A:331:ASP:OD1	2.47	0.47
1:A:4463:SER:HG	1:A:4464:TRP:CD1	2.32	0.47
1:B:257:GLN:HA	1:B:260:THR:HG22	1.96	0.47
1:B:486:PRO:HA	1:B:567:ARG:NH2	2.28	0.47
1:B:572:LEU:HD11	1:B:581:MET:HE2	1.95	0.47
1:B:645:SER:HB2	1:B:752:ASN:ND2	2.29	0.47
1:B:1580:LYS:HE2	1:B:1580:LYS:HA	1.96	0.47
1:B:2042:THR:HG22	1:B:2043:LYS:HG3	1.96	0.47
1:B:3779:GLU:HG3	1:B:3783:LYS:HE3	1.94	0.47
1:B:3883:PHE:O	1:B:3887:LEU:HD23	2.14	0.47
2:D:296:VAL:HG12	2:D:315:VAL:HG22	1.96	0.47
1:A:1632:VAL:HG21	1:A:1657:MET:HE3	1.96	0.47
1:A:3876:LEU:HD23	1:A:4146:VAL:HG11	1.95	0.47
1:B:126:ASP:H	1:B:134:GLN:NE2	2.11	0.47
1:B:207:LEU:HD12	1:B:291:LYS:HG3	1.97	0.47
1:B:1177:LYS:O	1:B:1180:ILE:HB	2.14	0.47
1:B:1218:TRP:CD1	1:B:1222:ASN:HD21	2.31	0.47
1:B:1475:LEU:HD22	1:B:1588:VAL:HG22	1.95	0.47
1:B:2232:MET:HG3	9:B:4702:ATP:C8	2.49	0.47
1:B:2413:LEU:O	1:B:2417:ARG:HG3	2.14	0.47
1:B:3008:MET:O	1:B:3012:LEU:HD13	2.13	0.47
4:G:25:THR:O	4:G:47:HIS:NE2	2.47	0.47
7:O:272:LEU:HD21	7:O:328:GLY:HA2	1.95	0.47
7:P:395:VAL:HG23	7:P:407:TRP:HD1	1.79	0.47
1:A:264:ARG:O	1:A:376:ARG:NH1	2.28	0.47
1:A:1222:ASN:HB2	1:A:1226:ARG:HH12	1.78	0.47
1:A:2387:LEU:HD23	1:A:2467:ARG:CZ	2.43	0.47
1:B:161:PHE:O	1:B:165:ILE:HG12	2.14	0.47
1:B:1149:SER:HA	1:B:1152:GLU:HB2	1.95	0.47
1:B:1198:GLU:O	1:B:1201:ARG:NH1	2.47	0.47
1:B:415:ALA:O	1:B:419:VAL:HG23	2.15	0.47
1:B:801:ILE:O	1:B:805:VAL:HG23	2.15	0.47
1:B:991:MET:HE2	1:B:991:MET:HA	1.97	0.47
2:D:277:SER:HA	2:D:280:ARG:HD2	1.95	0.47
3:F:59:VAL:HA	3:F:134:ILE:O	2.13	0.47
4:G:6:GLU:O	4:G:9:LYS:HG3	2.14	0.47
5:I:65:TYR:CZ	5:J:36:LYS:HB3	2.49	0.47
7:O:355:SER:O	7:O:362:LEU:HD12	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:55:ALA:HA	1:A:58:GLU:HB2	1.96	0.47
1:A:65:MET:O	1:A:69:LEU:HG	2.13	0.47
1:A:354:ARG:NH1	1:A:355:GLN:HG2	2.30	0.47
1:A:1912:LYS:HA	1:A:2041:MET:HE1	1.97	0.47
1:A:2070:VAL:HB	1:A:2071:PRO:HD3	1.97	0.47
1:A:2382:LEU:O	1:A:2416:GLN:NE2	2.47	0.47
1:A:2717:ASP:O	1:A:4446:ASN:ND2	2.39	0.47
1:A:3114:ASP:O	1:A:3140:ARG:NH2	2.46	0.47
1:A:3225:LYS:O	1:A:3228:GLU:HG2	2.14	0.47
1:A:3891:LYS:HD2	1:A:4013:LEU:HD23	1.97	0.47
1:A:4297:PRO:HG3	1:A:4308:TRP:CG	2.50	0.47
1:A:4409:LEU:HB3	1:A:4504:LEU:HD21	1.96	0.47
1:B:200:ILE:HG21	1:B:262:LEU:HD13	1.95	0.47
1:B:3113:MET:CE	1:B:3184:ALA:HA	2.45	0.47
1:B:3426:ASN:N	1:B:3429:LYS:CE	2.53	0.47
3:F:55:LYS:HB2	3:F:104:CYS:SG	2.54	0.47
1:A:177:LYS:HD3	1:A:177:LYS:HA	1.69	0.47
1:A:1147:SER:O	1:A:1151:GLN:HG2	2.15	0.47
1:A:1587:LEU:HB3	1:A:1590:ASP:OD2	2.15	0.47
1:A:3243:MET:SD	1:A:3451:TYR:HE2	2.37	0.47
1:A:3432:GLU:O	1:A:3436:MET:HG2	2.14	0.47
1:A:3485:GLU:CD	1:A:3488:ARG:HH12	2.22	0.47
1:B:185:LYS:O	1:B:188:GLU:HG3	2.15	0.47
1:B:2134:GLN:O	1:B:2138:ILE:HG12	2.15	0.47
2:C:215:ILE:O	2:D:209:ARG:NH1	2.48	0.47
2:D:390:VAL:O	2:D:396:HIS:HA	2.15	0.47
5:J:55:HIS:HB2	5:J:86:PHE:CE1	2.49	0.47
7:P:92:LYS:C	7:P:94:TRP:N	2.73	0.47
1:A:75:HIS:HD2	1:A:120:LYS:HB2	1.79	0.47
1:A:143:ASP:OD1	1:A:144:SER:N	2.45	0.47
1:A:263:ASP:HA	1:A:277:PHE:CZ	2.49	0.47
1:A:285:LEU:HD21	1:A:329:VAL:HG11	1.95	0.47
1:A:2214:THR:HA	1:A:2220:LEU:HD21	1.96	0.47
1:A:2437:LEU:HD21	1:A:2451:ARG:HG3	1.97	0.47
1:A:2519:ARG:HG3	1:A:2526:LEU:HD12	1.96	0.47
1:A:3154:LEU:HG	1:A:3516:TYR:CD1	2.50	0.47
1:A:3182:HIS:NE2	1:A:3582:ARG:O	2.47	0.47
1:A:3315:ALA:O	1:A:3319:LEU:HG	2.14	0.47
1:A:4066:ILE:HD11	1:A:4095:MET:HE3	1.96	0.47
1:B:253:ILE:HA	1:B:256:ILE:HG12	1.97	0.47
1:B:335:LEU:HD13	1:B:367:ILE:HD12	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:401:LEU:HB2	1:B:409:PHE:CE1	2.49	0.47
1:B:444:GLU:HB3	1:B:446:LEU:HD22	1.97	0.47
1:B:770:GLN:HG2	1:B:773:GLN:HE21	1.80	0.47
1:B:1068:ILE:O	1:B:1072:LEU:HG	2.15	0.47
1:B:1514:LYS:HA	1:B:1517:GLU:HG3	1.97	0.47
1:B:1619:LEU:HD21	1:B:1638:LEU:HD23	1.96	0.47
1:B:2222:MET:HG2	1:B:2364:PHE:CE1	2.50	0.47
1:B:2414:GLN:NE2	1:B:2418:ASP:OD2	2.38	0.47
1:B:3228:GLU:O	1:B:3231:VAL:HG12	2.15	0.47
1:B:3377:TYR:O	1:B:3381:ILE:HG12	2.14	0.47
7:O:155:ASP:HB3	7:O:198:VAL:HG12	1.97	0.47
7:P:96:PRO:HA	7:P:408:GLU:O	2.15	0.47
1:A:272:LEU:HD11	1:A:345:LEU:HD21	1.96	0.47
1:A:1621:ARG:NH1	7:O:303:LYS:HE3	2.30	0.47
1:A:1836:PHE:HA	1:A:1839:LEU:HB2	1.96	0.47
1:A:2556:GLU:OE2	1:A:2753:ARG:NH1	2.48	0.47
1:B:286:TYR:O	1:B:290:GLU:HG2	2.14	0.47
1:B:842:ASN:O	1:B:845:GLU:HG3	2.15	0.47
1:B:908:GLU:HB2	1:B:1019:TYR:CZ	2.50	0.47
1:B:3360:SER:HA	1:B:3363:ILE:HD12	1.96	0.47
2:D:287:TRP:CE2	2:D:295:LEU:HD12	2.50	0.47
2:D:352:THR:HG23	2:D:354:SER:H	1.80	0.47
7:O:91:PRO:HA	7:O:94:TRP:CZ3	2.49	0.47
7:O:312:LEU:HD21	7:O:353:ILE:HD13	1.97	0.47
1:A:30:LEU:HD21	1:A:69:LEU:HD11	1.97	0.47
1:A:136:ARG:NE	1:B:139:THR:HG23	2.29	0.47
1:A:415:ALA:O	1:A:418:GLU:HG3	2.15	0.47
1:A:1637:LEU:O	1:A:1641:ILE:HG12	2.15	0.47
1:A:4209:GLU:OE1	1:A:4213:ARG:NH1	2.48	0.47
1:A:4260:PHE:CE2	1:A:4608:PRO:HB3	2.50	0.47
1:A:4535:SER:HB3	1:A:4538:GLU:CD	2.40	0.47
1:B:241:PHE:O	1:B:245:LEU:HG	2.14	0.47
1:B:627:TYR:O	1:B:633:CYS:HB3	2.14	0.47
1:B:1788:THR:O	1:B:1792:LEU:HD23	2.15	0.47
1:B:2446:ILE:HD11	1:B:2714:PRO:HB3	1.95	0.47
1:B:3113:MET:HE1	1:B:3184:ALA:HA	1.97	0.47
2:D:504:TRP:HA	2:D:527:VAL:HG12	1.97	0.47
2:D:589:ASP:OD1	2:D:590:SER:N	2.47	0.47
7:P:320:ILE:HB	7:P:334:LEU:HB2	1.97	0.47
1:A:309:ARG:HG3	1:A:311:HIS:CE1	2.49	0.47
1:A:1888:CYS:HA	1:A:2039:LEU:HD22	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3818:LEU:HD23	1:A:4346:MET:HE1	1.97	0.47
1:B:336:MET:HA	1:B:339:PHE:HE2	1.80	0.47
1:B:642:PRO:HB2	1:B:749:GLU:OE2	2.15	0.47
1:B:717:ILE:HG22	1:B:718:PHE:HD2	1.80	0.47
1:B:779:ILE:HA	1:B:782:ILE:HG22	1.97	0.47
1:B:967:GLN:HG2	1:B:1061:TRP:CD2	2.50	0.47
1:B:1013:THR:OG1	1:B:1014:GLU:N	2.41	0.47
1:B:1187:VAL:HA	1:B:1190:TYR:HB3	1.97	0.47
1:B:2197:GLU:OE2	1:B:2197:GLU:N	2.48	0.47
1:B:3219:ARG:CZ	1:B:3472:VAL:HG13	2.45	0.47
7:P:191:HIS:CD2	7:P:211:SER:HB3	2.50	0.47
1:A:1476:ASP:HB3	1:A:1488:ARG:CZ	2.45	0.46
1:A:1795:SER:O	1:A:1800:GLN:NE2	2.32	0.46
1:B:1668:GLU:OE1	1:B:1668:GLU:N	2.42	0.46
1:B:2578:GLU:OE2	1:B:2608:ALA:HA	2.15	0.46
1:B:3886:LEU:HD23	1:B:4343:MET:HE3	1.97	0.46
2:C:214:GLN:C	2:D:209:ARG:HH12	2.24	0.46
2:D:278:LYS:O	2:D:280:ARG:HG3	2.15	0.46
2:D:286:ASP:OD1	2:D:287:TRP:N	2.49	0.46
1:A:1958:ASP:HA	1:A:2017:THR:HB	1.96	0.46
1:A:2776:PHE:HA	1:A:2779:MET:SD	2.55	0.46
1:B:3427:GLN:O	1:B:3430:ALA:HB3	2.15	0.46
3:F:357:GLU:OE1	3:F:362:PHE:HB2	2.15	0.46
4:G:54:ARG:HA	4:G:57:VAL:HG12	1.98	0.46
1:A:1473:TYR:CE2	1:A:1493:LEU:HD13	2.51	0.46
1:A:1507:MET:O	1:A:1510:SER:OG	2.21	0.46
1:A:2190:TYR:CE2	1:A:2385:ILE:HD11	2.50	0.46
1:A:2994:MET:O	1:A:3066:PHE:HA	2.15	0.46
1:A:3409:VAL:HG12	1:A:3413:ARG:HG3	1.96	0.46
1:A:3443:SER:O	1:A:3444:ILE:C	2.58	0.46
1:A:4423:LEU:HD22	1:A:4482:PHE:CE1	2.50	0.46
1:B:43:GLU:OE2	1:B:81:ARG:NH2	2.38	0.46
1:B:1817:HIS:CD2	1:B:1881:GLN:HG2	2.51	0.46
1:B:2444:GLU:HG2	1:B:2510:MET:HE2	1.96	0.46
2:D:278:LYS:HG2	2:D:280:ARG:NH1	2.30	0.46
4:H:73:SER:HB2	4:H:76:ASN:OD1	2.16	0.46
4:H:80:VAL:HG22	4:H:82:PRO:HD3	1.98	0.46
5:J:72:HIS:HB3	5:J:87:LYS:HB3	1.97	0.46
6:K:59:LYS:HD2	6:K:61:PHE:HD2	1.80	0.46
7:P:112:THR:HA	7:P:384:THR:HG21	1.97	0.46
1:A:146:TYR:OH	1:B:165:ILE:HG23	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1860:GLN:HB3	1:A:1865:LYS:NZ	2.31	0.46
1:A:2419:ALA:O	1:A:2423:MET:HG3	2.16	0.46
1:A:2445:HIS:NE2	1:A:2449:LEU:HD22	2.30	0.46
1:B:264:ARG:NH1	1:B:274:GLU:OE2	2.48	0.46
1:B:388:LEU:O	1:B:391:GLN:HG3	2.15	0.46
1:B:1728:GLY:O	1:B:1729:LYS:HG3	2.15	0.46
1:B:2070:VAL:HB	1:B:2071:PRO:HD3	1.96	0.46
1:B:2094:LYS:HD2	8:B:4701:ADP:H1'	1.98	0.46
1:B:3259:GLU:O	1:B:3263:GLN:HG3	2.16	0.46
2:D:330:HIS:HB3	2:D:367:ARG:HG3	1.96	0.46
1:A:253:ILE:HG12	1:A:319:ASP:HB3	1.98	0.46
1:A:1817:HIS:CE1	1:A:1881:GLN:HG2	2.51	0.46
1:A:1892:MET:CE	1:A:1902:GLY:HA3	2.45	0.46
1:A:2047:GLN:NE2	1:A:2051:GLN:OE1	2.43	0.46
1:A:2080:LEU:O	1:A:4415:ARG:NH1	2.48	0.46
1:A:4093:TRP:CD1	1:A:4123:ARG:HB2	2.51	0.46
1:B:962:LEU:HD23	1:B:971:LEU:HG	1.96	0.46
1:B:3099:THR:HG23	1:B:3148:VAL:HG11	1.96	0.46
1:B:3143:ILE:HD13	1:B:3541:ILE:HD13	1.96	0.46
1:B:3175:HIS:HB3	1:B:3516:TYR:CE1	2.50	0.46
2:D:413:ASP:OD1	2:D:414:MET:N	2.48	0.46
4:G:46:MET:HE1	4:G:89:ILE:HD13	1.97	0.46
6:K:64:ILE:HD11	6:L:111:LEU:HD11	1.97	0.46
1:A:1985:HIS:CE1	1:A:2010:PRO:HB3	2.50	0.46
1:A:2925:ILE:HG21	1:A:2933:LEU:HG	1.97	0.46
1:A:3244:VAL:O	1:A:3248:GLN:HG3	2.15	0.46
1:B:283:ARG:HG3	1:B:287:ARG:HH12	1.80	0.46
1:B:581:MET:HG2	1:B:611:ARG:NH2	2.31	0.46
1:B:1095:ASN:OD1	1:B:1096:ALA:N	2.49	0.46
1:B:1946:VAL:HG22	1:B:2006:VAL:HG21	1.96	0.46
1:B:1949:CYS:SG	1:B:2012:MET:HE1	2.56	0.46
1:B:3072:SER:O	1:B:3076:LYS:HG3	2.16	0.46
1:B:3237:ASN:O	1:B:3241:LYS:HD3	2.16	0.46
1:B:3492:THR:HA	1:B:3495:THR:HG22	1.98	0.46
2:D:287:TRP:HD1	2:D:577:ARG:HG3	1.80	0.46
2:D:291:TYR:CE2	2:D:345:PRO:HB2	2.50	0.46
2:D:475:HIS:CE1	2:D:503:ASP:HB2	2.50	0.46
3:F:164:LYS:O	3:F:164:LYS:HD3	2.16	0.46
5:I:65:TYR:OH	5:J:36:LYS:HB3	2.16	0.46
7:O:388:PHE:CD1	7:O:395:VAL:HG22	2.50	0.46
1:A:1741:TRP:CH2	1:A:1750:VAL:HG13	2.51	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2894:LYS:HG2	1:A:2911:LEU:HD12	1.97	0.46
1:B:908:GLU:HG3	1:B:1025:ARG:HG2	1.97	0.46
1:B:994:LEU:HD11	1:B:1020:ARG:HA	1.96	0.46
1:B:1093:PHE:HE2	1:B:1117:ASN:HB2	1.79	0.46
1:B:1991:ASP:O	1:B:1994:SER:OG	2.27	0.46
1:B:2605:LEU:HD13	1:B:2709:VAL:HG11	1.97	0.46
1:B:3001:ASP:OD1	1:B:3002:SER:N	2.49	0.46
7:O:163:LYS:HG2	7:O:180:GLN:NE2	2.31	0.46
7:O:371:ARG:NH1	7:O:373:MET:HG2	2.31	0.46
1:A:214:THR:HA	1:A:296:GLU:OE1	2.16	0.46
1:A:2092:ALA:O	1:A:2096:VAL:HG23	2.16	0.46
1:A:2191:LEU:HD12	9:A:4702:ATP:C6	2.50	0.46
1:A:2560:HIS:CD2	1:A:2561:LYS:HG3	2.51	0.46
1:A:2963:VAL:HG13	1:A:3643:PRO:HG2	1.96	0.46
1:A:3442:ALA:HB1	1:A:3446:ARG:HE	1.80	0.46
1:B:336:MET:HA	1:B:339:PHE:CE2	2.51	0.46
1:B:580:GLU:O	1:B:584:ILE:HG13	2.16	0.46
1:B:717:ILE:HG13	1:B:822:LEU:HB2	1.98	0.46
1:B:895:ASN:OD1	3:F:353:GLU:HB2	2.15	0.46
1:B:1139:MET:SD	1:B:1209:LEU:HB3	2.56	0.46
1:B:2862:ASP:HB3	1:B:2865:LYS:HB3	1.97	0.46
1:B:3551:GLU:HA	1:B:3559:ARG:HH12	1.81	0.46
1:B:3877:HIS:CE1	1:B:4151:PRO:HB3	2.50	0.46
2:C:202:HIS:HE2	4:G:67:THR:HB	1.81	0.46
2:D:284:CYS:HB2	2:D:337:SER:HA	1.98	0.46
2:D:299:TYR:OH	2:D:302:ASN:HA	2.16	0.46
2:D:478:PRO:HD2	2:D:502:PHE:HB3	1.98	0.46
6:L:15:ASP:OD2	6:L:19:ASN:ND2	2.47	0.46
7:O:114:VAL:HG12	7:O:125:SER:HB2	1.98	0.46
7:P:297:THR:HG21	7:P:331:LEU:HD13	1.97	0.46
1:A:264:ARG:HG3	1:A:376:ARG:HH22	1.81	0.46
1:A:1497:VAL:O	1:A:1501:ILE:HG12	2.16	0.46
1:A:1850:GLN:HB3	1:A:1856:GLN:HG2	1.98	0.46
1:A:2190:TYR:O	1:A:2377:ASN:ND2	2.48	0.46
1:A:4104:GLY:O	1:A:4108:GLN:HG3	2.15	0.46
1:B:960:HIS:O	1:B:1107:ILE:HA	2.16	0.46
1:B:1093:PHE:CE2	1:B:1117:ASN:HB2	2.51	0.46
1:B:2221:MET:HE1	1:B:2355:THR:HG22	1.98	0.46
1:B:2300:TRP:CD2	1:B:2342:MET:HE1	2.51	0.46
1:B:4004:MET:O	1:B:4004:MET:HE3	2.15	0.46
2:D:426:HIS:HD2	2:D:468:ILE:HG21	1.81	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:456:VAL:HG21	2:D:509:TRP:CZ2	2.48	0.46
3:F:152:TRP:HA	3:F:155:VAL:HB	1.98	0.46
3:F:231:CYS:HB2	3:F:271:TYR:CD1	2.51	0.46
3:F:247:ARG:HH22	3:F:329:THR:HB	1.81	0.46
1:A:40:LEU:HD23	1:A:45:GLY:HA2	1.98	0.46
1:A:446:LEU:HD23	1:A:446:LEU:H	1.81	0.46
1:A:2472:TYR:CE2	1:A:2481:MET:HB2	2.51	0.46
1:A:3303:HIS:O	1:A:3307:VAL:HG23	2.16	0.46
1:B:980:TYR:HB2	3:F:88:TYR:CE2	2.50	0.46
1:B:4215:ALA:HA	1:B:4251:ILE:HD13	1.97	0.46
2:D:210:ALA:HA	4:H:70:ARG:NH2	2.31	0.46
2:D:288:SER:HB3	2:D:291:TYR:O	2.16	0.46
2:D:504:TRP:HE1	2:D:522:ASP:HB3	1.81	0.46
1:A:253:ILE:HA	1:A:256:ILE:HG12	1.98	0.45
1:A:1201:ARG:CZ	1:B:968:VAL:HG22	2.46	0.45
1:A:2060:ARG:HH12	1:A:2129:GLU:HA	1.81	0.45
1:A:2458:LEU:HD13	1:A:2498:ILE:HD13	1.98	0.45
1:A:3194:LEU:HD22	1:A:3503:ILE:HD11	1.96	0.45
1:B:126:ASP:H	1:B:134:GLN:HE22	1.64	0.45
1:B:1174:GLN:HA	1:B:1177:LYS:HG2	1.99	0.45
1:B:2999:VAL:HG11	1:B:3005:LEU:HG	1.97	0.45
1:B:3253:LYS:HZ3	1:B:3437:ILE:HA	1.81	0.45
1:B:3428:GLN:HA	1:B:3431:ASN:ND2	2.32	0.45
3:F:43:VAL:O	3:F:46:ARG:HG2	2.16	0.45
5:J:32:TYR:HB2	5:J:38:ILE:HD13	1.98	0.45
7:P:100:GLU:HB3	7:P:407:TRP:CZ3	2.51	0.45
1:A:178:MET:HE3	1:B:196:LEU:HG	1.98	0.45
1:A:195:HIS:CE1	1:A:264:ARG:HE	2.34	0.45
1:A:213:ILE:HD12	1:A:303:ILE:HD11	1.97	0.45
1:A:3267:GLN:HE22	1:A:3427:GLN:HG3	1.81	0.45
1:A:3429:LYS:O	1:A:3433:VAL:HG23	2.17	0.45
1:A:3437:ILE:O	1:A:3438:ARG:C	2.57	0.45
1:A:3588:LEU:HD13	1:A:3696:VAL:HG21	1.97	0.45
1:B:1093:PHE:CZ	1:B:1113:GLN:HG3	2.51	0.45
1:B:1211:ILE:HG13	1:B:1212:ASP:H	1.79	0.45
1:B:2435:LYS:O	1:B:2438:GLU:HG3	2.15	0.45
1:B:3876:LEU:HD23	1:B:4146:VAL:HG11	1.98	0.45
2:C:187:LYS:HD2	4:G:30:ILE:HA	1.99	0.45
2:C:338:ALA:HA	2:C:350:GLY:HA2	1.99	0.45
1:A:1526:LYS:HB3	1:A:1526:LYS:HE2	1.72	0.45
1:A:2472:TYR:CD2	1:A:2481:MET:HB2	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:27:VAL:HA	1:B:65:MET:HE1	1.98	0.45
1:B:579:ASN:O	1:B:583:ARG:HG3	2.17	0.45
1:B:960:HIS:CE1	1:B:1107:ILE:HG22	2.51	0.45
1:B:2060:ARG:NH1	1:B:2128:ALA:O	2.49	0.45
1:B:4297:PRO:HG3	1:B:4308:TRP:CG	2.51	0.45
5:I:24:CYS:SG	5:I:41:HIS:CE1	3.10	0.45
1:A:1185:LYS:HA	1:A:1188:GLU:CD	2.41	0.45
1:A:1835:SER:OG	1:A:1837:GLU:OE1	2.34	0.45
1:A:2964:HIS:H	1:A:2967:TYR:HB2	1.80	0.45
1:A:3243:MET:O	1:A:3247:GLN:NE2	2.48	0.45
1:A:3251:GLU:HA	1:A:3254:LYS:HD2	1.99	0.45
1:B:368:ARG:HA	1:B:368:ARG:HD2	1.80	0.45
1:B:3457:GLU:O	1:B:3461:ILE:HG12	2.16	0.45
1:B:4481:ASP:O	1:B:4484:GLU:HG3	2.16	0.45
1:B:4534:TRP:CD2	1:B:4594:LYS:HD3	2.52	0.45
3:E:262:CYS:O	3:E:267:ALA:N	2.39	0.45
4:H:78:ILE:O	4:H:79:MET:HE2	2.16	0.45
7:P:340:TRP:HB2	7:P:358:ASP:OD2	2.17	0.45
1:A:2054:LEU:HD21	1:A:2097:LEU:HD22	1.98	0.45
1:A:3369:LYS:HA	1:A:3372:MET:HG3	1.97	0.45
1:B:525:LEU:HA	1:B:528:GLU:OE2	2.16	0.45
1:B:893:TYR:HB2	1:B:896:LEU:HD21	1.98	0.45
1:B:3238:ASP:HA	1:B:3241:LYS:HB2	1.99	0.45
1:B:3267:GLN:C	1:B:3269:GLU:N	2.73	0.45
2:D:504:TRP:CD1	2:D:504:TRP:O	2.70	0.45
3:F:90:TYR:O	3:F:91:LEU:HD23	2.15	0.45
4:G:8:LEU:HA	4:G:20:ILE:HG22	1.98	0.45
5:I:11:ALA:HA	5:I:73:PHE:O	2.16	0.45
5:J:25:ALA:HB1	5:J:83:ILE:HD13	1.99	0.45
7:O:128:GLU:HA	7:O:152:SER:HB2	1.99	0.45
1:A:1717:LEU:HB2	1:A:1749:LEU:HD22	1.99	0.45
1:A:1958:ASP:OD1	1:A:1959:GLU:N	2.50	0.45
1:A:2784:PHE:HB2	1:A:2794:TYR:HE2	1.82	0.45
1:A:3244:VAL:HG22	1:B:3247:GLN:CG	2.46	0.45
1:A:3247:GLN:HE21	1:A:3444:ILE:HG12	1.81	0.45
1:B:676:HIS:CD2	1:B:678:GLU:HB2	2.52	0.45
1:B:1698:ILE:HD12	1:B:1701:TRP:NE1	2.32	0.45
1:B:2288:ILE:HD12	1:B:2333:LEU:HD23	1.98	0.45
1:B:4099:VAL:HB	1:B:4106:LEU:HD21	1.98	0.45
1:B:4412:PHE:CZ	1:B:4520:TYR:HB2	2.51	0.45
2:D:495:HIS:HB2	2:D:511:THR:HG22	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:O:214:LYS:HG2	7:O:235:GLU:C	2.41	0.45
1:A:82:SER:HA	1:A:113:SER:HB2	1.98	0.45
1:A:242:LEU:HB3	1:A:309:ARG:NE	2.31	0.45
1:A:1079:TRP:C	1:A:1081:ALA:H	2.23	0.45
1:A:1738:TYR:HE1	1:A:1792:LEU:HD21	1.80	0.45
1:A:1974:GLN:O	1:A:1978:ILE:HG12	2.16	0.45
1:A:2534:ILE:H	1:A:2534:ILE:HD12	1.82	0.45
1:A:2874:SER:HB3	1:A:2884:VAL:HG21	1.99	0.45
1:A:3222:LEU:HD12	1:A:3465:LEU:HD12	1.99	0.45
1:A:3377:TYR:O	1:A:3381:ILE:HG12	2.16	0.45
1:A:3783:LYS:O	1:A:3786:GLU:HG2	2.17	0.45
1:A:3923:ARG:NH1	1:A:3924:ILE:O	2.50	0.45
1:A:4297:PRO:HG3	1:A:4308:TRP:CD2	2.50	0.45
1:B:161:PHE:HE2	1:B:183:GLU:HG3	1.82	0.45
1:B:213:ILE:HG13	1:B:232:PHE:CE1	2.51	0.45
1:B:1159:ASP:O	1:B:1160:THR:OG1	2.35	0.45
1:B:2962:LYS:HA	1:B:2962:LYS:HE3	1.99	0.45
1:B:3653:VAL:HG12	1:B:3662:ILE:HD13	1.98	0.45
4:G:49:PHE:CZ	4:H:53:ALA:HB2	2.51	0.45
1:A:393:LEU:O	1:A:396:LEU:HG	2.16	0.45
1:A:1184:GLU:O	1:A:1187:VAL:HB	2.16	0.45
1:A:1469:VAL:O	1:A:1473:TYR:HB2	2.16	0.45
1:A:3248:GLN:CG	1:B:3251:GLU:HB2	2.45	0.45
1:B:424:ASP:O	1:B:428:GLU:HG2	2.17	0.45
1:B:479:VAL:HG11	1:B:590:ALA:CB	2.47	0.45
1:B:991:MET:HE1	1:B:994:LEU:HD23	1.99	0.45
1:B:1220:ALA:O	1:B:1224:ILE:HG12	2.17	0.45
1:B:2590:PRO:O	1:B:2732:PRO:HD2	2.17	0.45
1:B:2969:GLY:HA2	1:B:3004:PHE:HE1	1.81	0.45
1:B:3208:ILE:HG21	1:B:3486:ARG:HD3	1.99	0.45
1:B:4030:ILE:HG21	1:B:4145:PHE:HZ	1.82	0.45
1:B:4066:ILE:HD11	1:B:4095:MET:HB2	1.98	0.45
2:D:287:TRP:CD1	2:D:579:THR:HA	2.52	0.45
2:D:356:GLN:CD	2:D:372:ARG:HE	2.25	0.45
2:D:364:SER:HB2	2:D:366:LYS:HE3	1.98	0.45
2:D:425:VAL:HG11	2:D:429:SER:HA	1.98	0.45
4:H:22:VAL:H	4:H:31:LYS:HZ3	1.65	0.45
7:P:355:SER:O	7:P:362:LEU:HD12	2.17	0.45
1:A:53:GLU:HA	1:A:56:LEU:HB3	1.98	0.45
1:A:130:PRO:HB3	1:B:44:ASP:HB2	1.99	0.45
1:A:434:LEU:HD11	1:A:450:TRP:CE2	2.51	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1949:CYS:SG	1:A:1978:ILE:HD12	2.57	0.45
1:A:3715:GLU:HB3	1:A:3836:TYR:HE2	1.81	0.45
1:B:296:GLU:O	1:B:300:THR:HG23	2.17	0.45
1:B:675:ASN:OD1	1:B:676:HIS:N	2.49	0.45
1:B:755:TRP:CE2	2:D:453:GLU:HA	2.52	0.45
1:B:1174:GLN:OE1	1:B:1233:GLN:NE2	2.49	0.45
1:B:2802:TRP:CZ2	1:B:2829:ALA:HB2	2.52	0.45
1:B:2943:LYS:HG2	1:B:3094:PHE:CD2	2.51	0.45
1:B:2973:ASP:OD2	1:B:3007:ARG:NH2	2.48	0.45
1:B:4019:SER:O	1:B:4022:GLU:HG3	2.16	0.45
3:F:234:CYS:SG	3:F:271:TYR:HB3	2.57	0.45
3:F:252:ASP:HB3	3:F:327:PHE:HE1	1.81	0.45
6:K:72:LYS:NZ	6:K:103:TYR:OH	2.49	0.45
7:O:113:ARG:HA	7:O:385:SER:OG	2.17	0.45
7:P:365:TRP:CD1	7:P:373:MET:HA	2.52	0.45
1:A:1467:ARG:HG2	1:A:1523:TRP:CZ2	2.52	0.45
1:A:2060:ARG:HH12	1:A:2128:ALA:C	2.25	0.45
1:A:3027:ALA:O	1:A:3031:THR:HG23	2.17	0.45
1:A:3226:SER:O	1:A:3230:GLU:HG2	2.17	0.45
1:A:3434:GLU:HB3	1:A:3438:ARG:HH21	1.81	0.45
1:B:79:VAL:HB	1:B:101:TYR:HE1	1.82	0.45
1:B:988:ALA:O	1:B:992:VAL:HG23	2.17	0.45
1:B:1210:TYR:HB2	1:B:1213:ASN:OD1	2.16	0.45
1:B:1699:ASN:OD1	1:B:1700:GLU:N	2.50	0.45
1:B:3107:LYS:HD2	1:B:3144:VAL:HG21	1.98	0.45
1:B:3315:ALA:O	1:B:3319:LEU:HG	2.17	0.45
2:D:196:PHE:HB3	2:D:200:PHE:CD1	2.52	0.45
1:A:1209:LEU:HD23	1:A:1209:LEU:H	1.82	0.44
1:A:1225:MET:CE	1:A:1226:ARG:HE	2.29	0.44
1:A:2091:ARG:HD2	1:A:2357:SER:HB2	1.98	0.44
1:B:961:GLU:HA	1:B:1108:ASP:HB3	1.98	0.44
1:B:1839:LEU:O	1:B:1843:ARG:NH1	2.50	0.44
1:B:1860:GLN:HG2	1:B:1865:LYS:HG2	1.99	0.44
1:B:3222:LEU:HD11	1:B:3469:GLU:OE2	2.17	0.44
1:B:4543:VAL:HG11	1:B:4622:VAL:HB	1.98	0.44
4:G:78:ILE:HD12	4:G:90:VAL:O	2.17	0.44
5:J:54:TRP:NE1	5:J:87:LYS:HB2	2.31	0.44
6:K:76:GLY:H	6:L:71:GLN:HE22	1.65	0.44
7:P:128:GLU:HA	7:P:152:SER:HB2	1.99	0.44
7:P:206:HIS:CE1	7:P:220:GLU:HG2	2.52	0.44
1:A:233:GLY:O	1:A:236:VAL:HG12	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1174:GLN:O	1:A:1178:ARG:NH1	2.40	0.44
1:A:1222:ASN:O	1:A:1226:ARG:HG2	2.17	0.44
1:A:1461:GLU:HA	1:A:1464:LYS:HG2	1.98	0.44
1:A:2109:GLN:O	1:A:2113:ARG:HG2	2.17	0.44
1:A:2186:CYS:HA	1:A:2191:LEU:HB2	2.00	0.44
1:A:2446:ILE:HG13	1:A:2735:TYR:CD1	2.53	0.44
1:A:2790:PRO:HD3	1:A:3076:LYS:HZ3	1.82	0.44
1:A:2933:LEU:HB2	1:A:3065:VAL:HG22	1.99	0.44
1:A:4187:HIS:ND1	1:A:4252:TYR:OH	2.33	0.44
1:B:921:ALA:O	1:B:924:GLN:HG3	2.16	0.44
1:B:973:PRO:HB2	1:B:977:GLU:HB3	1.99	0.44
1:B:1045:SER:O	1:B:1048:GLU:HG3	2.18	0.44
1:B:1194:GLN:HA	1:B:1197:LEU:HB2	2.00	0.44
1:B:3216:GLU:HG3	1:B:3220:ARG:HH21	1.82	0.44
1:B:3440:LEU:O	1:B:3444:ILE:HG13	2.16	0.44
3:F:185:MET:SD	3:F:186:GLU:N	2.90	0.44
7:P:104:LEU:N	7:P:404:VAL:O	2.47	0.44
1:A:29:VAL:HA	1:A:32:LYS:HE2	1.99	0.44
1:A:2043:LYS:HA	1:A:2043:LYS:HE2	1.99	0.44
1:A:2382:LEU:HD23	1:A:2420:ALA:HB2	1.98	0.44
1:A:2661:LEU:HD22	1:A:2708:PHE:CE1	2.52	0.44
1:A:2692:PHE:HE1	1:A:2703:LEU:HD21	1.83	0.44
1:A:3167:ARG:HH22	1:A:3687:GLU:HA	1.82	0.44
1:A:3489:TRP:HH2	1:A:3753:LEU:HD12	1.83	0.44
1:A:3990:LEU:HA	1:A:4004:MET:HG2	1.99	0.44
1:B:365:ARG:HA	1:B:433:LEU:HD22	2.00	0.44
1:B:578:ALA:HB1	1:B:582:PHE:CE2	2.45	0.44
1:B:1204:PHE:H	5:J:5:LYS:HE3	1.82	0.44
1:B:2307:VAL:HG23	1:B:2345:VAL:HG11	1.99	0.44
1:B:3032:GLN:HA	1:B:3035:GLU:CD	2.42	0.44
1:B:3351:ILE:HA	1:B:3395:TRP:CH2	2.53	0.44
1:B:3399:GLN:HA	1:B:3402:TYR:HD2	1.83	0.44
1:B:3452:ALA:O	1:B:3455:ILE:HG22	2.17	0.44
2:D:539:LEU:HA	2:D:552:TRP:O	2.18	0.44
5:I:47:ASP:O	5:I:52:PRO:HD3	2.17	0.44
6:K:54:LEU:HD13	6:K:63:TYR:CD1	2.52	0.44
7:O:197:SER:CB	7:O:239:MET:HA	2.48	0.44
1:A:373:PRO:HB2	1:A:376:ARG:HB3	1.99	0.44
1:A:3447:TYR:N	1:A:3447:TYR:CD1	2.84	0.44
1:B:456:HIS:CE1	1:B:460:GLN:HB2	2.52	0.44
1:B:464:ASP:OD1	1:B:465:GLN:N	2.51	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:718:PHE:HB2	1:B:736:LYS:O	2.18	0.44
1:B:2189:MET:SD	1:B:2239:LYS:NZ	2.76	0.44
1:B:3039:LYS:HZ2	7:O:273:ARG:CD	2.31	0.44
4:H:72:ARG:NE	4:H:94:PRO:O	2.40	0.44
5:I:61:ASN:C	5:J:62:PHE:HZ	2.25	0.44
1:A:21:VAL:HA	1:A:124:VAL:HB	2.00	0.44
1:A:2371:THR:HG22	1:A:2451:ARG:HD2	2.00	0.44
1:A:2626:THR:HB	1:A:2669:PRO:HG3	1.98	0.44
1:A:3194:LEU:HD23	1:A:3500:MET:SD	2.58	0.44
1:A:3260:ILE:CD1	1:A:3429:LYS:HB3	2.48	0.44
1:B:454:PRO:HG2	1:B:457:ARG:HG2	2.00	0.44
1:B:1213:ASN:HD21	5:J:8:ILE:CG2	2.27	0.44
1:B:2228:SER:N	9:B:4702:ATP:O1B	2.48	0.44
1:B:2974:GLU:OE1	1:B:2977:ARG:NH1	2.51	0.44
1:B:3291:GLU:O	1:B:3395:TRP:NE1	2.48	0.44
1:B:3434:GLU:O	1:B:3437:ILE:HB	2.17	0.44
1:B:3436:MET:HA	1:B:3439:ASP:HB2	2.00	0.44
1:B:3755:GLU:H	1:B:3755:GLU:CD	2.26	0.44
1:B:3873:ARG:HD3	1:B:3873:ARG:HA	1.88	0.44
1:B:4190:ILE:HD12	1:B:4201:TRP:HZ2	1.82	0.44
2:D:584:GLU:HA	2:D:598:ASP:HA	1.99	0.44
3:F:87:GLU:HB2	3:F:108:ILE:CG2	2.46	0.44
3:F:273:SER:O	3:F:277:GLU:N	2.50	0.44
4:H:70:ARG:HG2	4:H:79:MET:SD	2.58	0.44
1:A:170:LYS:HZ2	1:A:179:ALA:HB3	1.83	0.44
1:A:2094:LYS:NZ	8:A:4701:ADP:O2'	2.27	0.44
1:A:2590:PRO:O	1:A:2732:PRO:HD2	2.17	0.44
1:A:2779:MET:O	1:A:2783:ARG:N	2.49	0.44
1:A:3621:LYS:HD2	1:A:3624:GLU:OE1	2.17	0.44
1:A:4432:ALA:O	1:A:4436:GLN:HG2	2.18	0.44
1:B:229:VAL:HG12	1:B:303:ILE:HG22	1.99	0.44
1:B:580:GLU:HA	1:B:583:ARG:NH2	2.32	0.44
1:B:2603:MET:HE1	8:B:4703:ADP:C5	2.52	0.44
1:B:4169:ILE:HG21	1:B:4302:ARG:HD2	2.00	0.44
1:B:4528:VAL:HG11	1:B:4592:TRP:HB2	1.98	0.44
2:D:265:LEU:HD21	2:D:551:LEU:HD12	1.99	0.44
6:L:68:VAL:O	6:L:104:CYS:HA	2.17	0.44
1:A:377:ALA:O	1:A:381:VAL:HG23	2.18	0.44
1:A:1229:ASP:O	1:A:1232:ILE:HG22	2.18	0.44
1:A:3267:GLN:HG2	1:A:3423:ALA:HB2	2.00	0.44
1:A:3816:GLU:OE1	1:A:3816:GLU:HA	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3989:ARG:HB3	1:A:4004:MET:CE	2.48	0.44
1:B:162:LYS:HA	1:B:165:ILE:HG12	2.00	0.44
1:B:350:LEU:O	1:B:353:ILE:HB	2.18	0.44
1:B:2304:ASP:OD1	1:B:2684:ARG:NH2	2.50	0.44
1:B:2660:VAL:HG22	1:B:2707:GLN:HB3	2.00	0.44
1:B:3222:LEU:HD22	1:B:3472:VAL:HG21	1.99	0.44
1:B:3260:ILE:HG12	1:B:3430:ALA:CB	2.48	0.44
1:B:3652:GLU:OE2	1:B:3652:GLU:N	2.42	0.44
2:D:329:PHE:CE2	2:D:360:TRP:HB2	2.52	0.44
7:O:211:SER:OG	7:O:213:ASP:OD1	2.35	0.44
7:P:360:LYS:HE2	7:P:382:PHE:CD2	2.53	0.44
7:P:361:THR:HG22	7:P:377:ASN:HA	1.99	0.44
1:A:1473:TYR:CZ	1:A:1493:LEU:HD13	2.53	0.44
1:A:1647:VAL:HA	1:A:1650:LEU:HD12	1.99	0.44
1:A:2269:ASP:HB3	1:A:2274:GLU:H	1.81	0.44
1:A:3270:VAL:HG12	1:A:3271:ILE:N	2.32	0.44
1:A:4080:ALA:O	1:A:4084:ILE:HD12	2.17	0.44
1:A:4157:MET:HE3	1:A:4157:MET:HB3	1.84	0.44
1:B:332:TYR:CE1	1:B:335:LEU:HD22	2.53	0.44
1:B:363:HIS:HA	1:B:366:LYS:HD3	2.00	0.44
1:B:916:GLN:HG3	1:B:920:ARG:HH21	1.83	0.44
1:B:3452:ALA:HA	1:B:3455:ILE:HG22	2.00	0.44
1:B:3485:GLU:HG3	1:B:3488:ARG:HH22	1.83	0.44
2:C:202:HIS:NE2	4:G:67:THR:HB	2.33	0.44
3:F:241:GLU:HA	3:F:246:TYR:HB2	2.00	0.44
6:L:29:ILE:HG23	6:L:42:TRP:CZ3	2.53	0.44
1:A:121:ARG:NH1	1:B:143:ASP:OD2	2.48	0.44
1:A:1222:ASN:HB2	1:A:1226:ARG:NH1	2.32	0.44
1:A:1571:ILE:HD13	1:A:1607:LEU:HB3	2.00	0.44
1:B:414:VAL:HG22	1:B:467:ARG:HH22	1.82	0.44
1:B:2961:ILE:HD11	1:B:2998:ASN:HB3	2.00	0.44
1:B:3478:LEU:HD13	1:B:3767:ILE:HG23	1.99	0.44
1:B:4043:MET:HE2	1:B:4147:PHE:CE2	2.53	0.44
1:B:4227:ALA:HB2	1:B:4233:ILE:HD12	2.00	0.44
2:C:204:THR:HA	4:G:10:ARG:NH1	2.33	0.44
3:E:95:ASP:O	3:E:99:ASP:N	2.50	0.44
6:K:76:GLY:H	6:L:71:GLN:NE2	2.16	0.44
7:O:354:LEU:HD12	7:O:362:LEU:HD11	2.00	0.44
7:P:110:PRO:C	7:P:127:SER:HG	2.24	0.44
1:A:1183:PHE:CE2	1:A:1218:TRP:CD1	3.06	0.43
1:A:3244:VAL:HG22	1:B:3247:GLN:HG2	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3484:ALA:HA	1:A:3487:GLU:CD	2.43	0.43
1:A:3909:LEU:HD21	1:A:4343:MET:HE3	2.00	0.43
1:A:3956:GLN:N	1:A:3956:GLN:OE1	2.51	0.43
1:B:59:LYS:HZ1	1:B:63:GLU:HB2	1.83	0.43
1:B:537:ASP:HB3	1:B:542:GLY:C	2.42	0.43
1:B:1204:PHE:HD2	1:B:1208:TRP:NE1	2.16	0.43
1:B:2148:LYS:HB2	1:B:2361:MET:HB2	2.00	0.43
1:B:2896:ARG:HA	1:B:2896:ARG:HD3	1.85	0.43
1:B:3214:GLN:NE2	1:B:3761:LEU:HB2	2.32	0.43
1:B:3974:TRP:NE1	1:B:3976:GLU:OE1	2.43	0.43
5:I:74:ILE:HG23	5:I:85:LEU:HB3	1.99	0.43
1:A:1191:ARG:NH2	1:A:1215:GLU:HB2	2.25	0.43
1:A:1959:GLU:HB3	1:A:1962:ARG:HD3	2.00	0.43
1:A:4205:TYR:OH	1:A:4261:ASP:OD2	2.33	0.43
1:B:1557:ILE:HG13	1:B:1561:LEU:HD12	2.00	0.43
1:B:2231:SER:OG	1:B:2344:GLU:OE2	2.35	0.43
1:B:2901:TYR:HA	1:B:2905:LEU:O	2.18	0.43
1:B:3406:LEU:O	1:B:3410:GLU:N	2.51	0.43
1:B:3753:LEU:HD23	1:B:3753:LEU:HA	1.80	0.43
1:B:3755:GLU:OE1	1:B:3755:GLU:N	2.46	0.43
1:B:4485:ARG:HG2	1:B:4513:GLY:HA2	2.00	0.43
2:D:346:ASN:ND2	2:D:362:ASN:HB3	2.32	0.43
7:P:243:ASN:CG	7:P:248:LEU:H	2.26	0.43
1:A:1618:TYR:HD2	1:A:1619:LEU:HD22	1.83	0.43
1:A:1788:THR:O	1:A:1792:LEU:HD23	2.17	0.43
1:A:2559:THR:OG1	1:A:2757:ARG:HD2	2.18	0.43
1:A:3211:THR:O	1:A:3215:VAL:HG23	2.18	0.43
1:A:3941:LEU:HD23	1:A:3944:PHE:CD2	2.53	0.43
1:B:543:THR:O	1:B:547:GLU:OE1	2.37	0.43
1:B:2227:GLY:HA3	1:B:2452:LEU:HD12	1.99	0.43
1:B:2879:LYS:HE2	7:O:336:GLY:HA2	2.00	0.43
1:B:3034:LYS:HA	1:B:3034:LYS:HD3	1.82	0.43
1:B:3211:THR:O	1:B:3215:VAL:HG23	2.17	0.43
1:B:3267:GLN:O	1:B:3268:GLN:C	2.60	0.43
2:C:191:LEU:HD23	2:C:196:PHE:CZ	2.53	0.43
3:F:228:LEU:CD2	3:F:268:ALA:HB3	2.48	0.43
4:G:79:MET:HG2	4:G:90:VAL:HB	2.00	0.43
6:K:90:ASP:OD1	6:K:112:SER:N	2.46	0.43
1:A:1701:TRP:O	1:A:1705:VAL:HG23	2.19	0.43
1:A:2973:ASP:OD2	1:A:3007:ARG:NH2	2.46	0.43
1:A:4153:VAL:O	1:A:4157:MET:HG2	2.17	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:335:LEU:HG	1:B:366:LYS:NZ	2.33	0.43
1:B:467:ARG:O	1:B:471:ARG:HG2	2.18	0.43
1:B:815:LEU:HD12	1:B:815:LEU:HA	1.78	0.43
1:B:1169:PHE:O	1:B:1172:TYR:HB3	2.19	0.43
1:B:2057:GLN:OE1	1:B:2101:GLY:HA3	2.18	0.43
1:B:2190:TYR:CE2	1:B:2385:ILE:HD11	2.54	0.43
1:B:3319:LEU:HD22	1:B:3377:TYR:CD1	2.54	0.43
2:D:291:TYR:C	2:D:293:GLU:H	2.25	0.43
2:D:429:SER:O	2:D:429:SER:OG	2.36	0.43
3:F:249:GLU:CD	3:F:328:THR:H	2.27	0.43
3:F:259:ARG:NE	3:F:315:ASP:OD2	2.50	0.43
4:G:22:VAL:O	4:G:30:ILE:N	2.52	0.43
4:G:52:LYS:O	4:G:55:SER:OG	2.25	0.43
1:A:41:LEU:HA	1:B:132:SER:HB2	1.99	0.43
1:A:78:LEU:HB3	1:A:104:ASN:HB2	2.01	0.43
1:A:386:ARG:NH1	1:A:455:ALA:HB3	2.34	0.43
1:B:180:PRO:O	1:B:184:LYS:HG2	2.18	0.43
1:B:1623:ARG:NH1	1:B:1629:PHE:O	2.51	0.43
1:B:1698:ILE:HD12	1:B:1701:TRP:HE1	1.83	0.43
1:B:2615:MET:HA	1:B:2658:TRP:O	2.18	0.43
1:B:3161:LEU:HD21	1:B:3524:MET:HE3	2.01	0.43
1:B:3303:HIS:O	1:B:3307:VAL:HG23	2.19	0.43
1:B:4473:MET:HE2	1:B:4478:TRP:HB2	2.00	0.43
3:F:124:SER:N	3:F:127:SER:OG	2.45	0.43
3:F:146:MET:N	3:F:146:MET:SD	2.91	0.43
3:F:310:ILE:HG23	3:F:314:TRP:HE3	1.84	0.43
6:L:72:LYS:HG2	6:L:103:TYR:CE2	2.53	0.43
7:O:275:HIS:NE2	7:O:313:SER:OG	2.34	0.43
1:A:27:VAL:O	1:A:31:GLN:HB2	2.17	0.43
1:A:173:ARG:HD2	1:B:283:ARG:NH2	2.33	0.43
1:A:2581:LEU:HD11	1:A:2593:LEU:HD21	1.99	0.43
1:A:3381:ILE:HD12	1:A:3390:GLY:HA2	2.01	0.43
1:A:3437:ILE:O	1:A:3441:GLU:HB2	2.18	0.43
1:A:4445:THR:O	1:A:4449:ARG:N	2.41	0.43
1:B:361:PHE:CE2	1:B:429:LYS:HE2	2.54	0.43
1:B:1067:ASN:C	1:B:1067:ASN:HD22	2.27	0.43
1:B:1079:TRP:O	1:B:1083:LEU:HD23	2.18	0.43
1:B:1752:LEU:HA	1:B:1755:GLN:HE21	1.83	0.43
1:B:3263:GLN:HB3	1:B:3426:ASN:HD22	1.84	0.43
1:B:3445:ALA:O	1:B:3446:ARG:C	2.62	0.43
1:B:4260:PHE:CZ	1:B:4608:PRO:HB3	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:E:262:CYS:O	3:E:266:GLY:N	2.51	0.43
3:F:62:GLU:CD	3:F:141:ARG:HH12	2.26	0.43
3:F:157:ARG:NH1	3:F:161:ASP:OD1	2.41	0.43
4:G:78:ILE:HD12	4:G:90:VAL:C	2.43	0.43
6:K:71:GLN:OE1	6:K:71:GLN:N	2.52	0.43
7:P:285:ALA:HA	7:P:346:PHE:CD2	2.53	0.43
1:A:90:ASP:N	1:A:90:ASP:OD1	2.51	0.43
1:A:118:PHE:HB3	1:A:135:LEU:HD11	2.00	0.43
1:A:2386:PRO:HA	1:A:2416:GLN:OE1	2.19	0.43
1:A:4610:TYR:N	1:A:4642:VAL:O	2.50	0.43
1:B:292:ARG:HH22	1:B:322:LEU:HD23	1.83	0.43
1:B:296:GLU:OE2	1:B:297:VAL:HG23	2.19	0.43
1:B:487:GLN:H	1:B:567:ARG:NH2	2.15	0.43
1:B:2091:ARG:NH2	8:B:4701:ADP:O3A	2.52	0.43
1:B:2779:MET:O	1:B:2782:GLU:HG3	2.18	0.43
2:D:465:LYS:HB3	2:D:465:LYS:HE3	1.82	0.43
2:D:548:ARG:HH22	2:D:564:SER:HB3	1.83	0.43
2:D:585:ILE:O	2:D:596:ILE:HA	2.18	0.43
3:F:352:LYS:NZ	3:F:353:GLU:O	2.45	0.43
6:K:78:HIS:CE1	6:K:80:ALA:HB2	2.53	0.43
7:O:366:ASP:OD1	7:O:368:LYS:HB2	2.19	0.43
7:P:284:TRP:NE1	7:P:311:LEU:HD13	2.34	0.43
1:A:146:TYR:OH	1:B:164:TYR:HB3	2.19	0.43
1:A:174:ASP:HA	1:A:177:LYS:HE2	2.01	0.43
1:A:275:ILE:HD13	1:A:341:LEU:HD23	2.01	0.43
1:A:420:PHE:CE2	1:A:460:GLN:HG2	2.54	0.43
1:A:426:GLU:O	1:A:430:LEU:HG	2.19	0.43
1:A:1452:VAL:HA	1:A:1512:TYR:CE2	2.54	0.43
1:A:1665:ILE:HD11	1:A:1683:GLU:HB2	1.99	0.43
1:A:2227:GLY:HA3	1:A:2452:LEU:HD12	2.01	0.43
1:A:2569:VAL:HG11	1:A:2747:ILE:HA	2.01	0.43
1:A:3160:ARG:NH2	1:A:3524:MET:HE1	2.29	0.43
1:A:3251:GLU:O	1:A:3255:VAL:HG23	2.19	0.43
1:A:3591:ASP:OD2	1:A:3595:GLN:N	2.51	0.43
1:A:4027:LEU:HA	1:A:4027:LEU:HD23	1.89	0.43
1:B:389:SER:O	1:B:393:LEU:HG	2.19	0.43
1:B:724:ARG:HH11	1:B:726:ARG:HE	1.66	0.43
1:B:810:LYS:HD3	1:B:810:LYS:HA	1.69	0.43
1:B:2257:LYS:NZ	1:B:2308:ASP:OD2	2.38	0.43
1:B:2912:PHE:CE2	1:B:2914:GLU:HB2	2.54	0.43
1:B:4128:MET:HE3	1:B:4134:VAL:HG21	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:F:169:LYS:O	3:F:172:GLU:HG3	2.19	0.43
4:G:64:ASN:HA	4:H:75:LYS:HD3	2.01	0.43
7:O:257:THR:HG22	7:O:273:ARG:HB3	2.01	0.43
7:P:92:LYS:HG2	7:P:93:GLU:H	1.78	0.43
7:P:155:ASP:HB3	7:P:168:CYS:SG	2.59	0.43
1:A:189:LEU:HD13	1:B:185:LYS:HE2	2.01	0.43
1:A:1184:GLU:O	1:A:1188:GLU:OE1	2.37	0.43
1:A:1229:ASP:OD2	1:A:1233:GLN:NE2	2.51	0.43
1:A:1755:GLN:NE2	1:A:1814:GLU:OE1	2.36	0.43
1:B:75:HIS:O	1:B:119:ILE:HA	2.18	0.43
1:B:210:HIS:HB3	1:B:213:ILE:HG22	2.01	0.43
1:B:635:MET:HE1	2:D:526:TYR:CZ	2.54	0.43
1:B:922:TRP:CH2	1:B:986:MET:HB2	2.54	0.43
1:B:1068:ILE:HD13	3:F:43:VAL:HG11	2.00	0.43
1:B:1204:PHE:HD1	5:J:5:LYS:NZ	2.16	0.43
1:B:1224:ILE:HD12	1:B:1228:LYS:NZ	2.34	0.43
1:B:1460:GLU:HG3	1:B:1464:LYS:NZ	2.33	0.43
1:B:2382:LEU:HD23	1:B:2420:ALA:HB2	2.00	0.43
2:D:211:LEU:HA	4:H:15:LYS:HE3	2.00	0.43
2:D:291:TYR:O	2:D:293:GLU:N	2.48	0.43
4:H:78:ILE:C	4:H:79:MET:HE2	2.44	0.43
6:K:69:ILE:HG23	6:K:102:MET:SD	2.59	0.43
1:A:58:GLU:HG2	1:A:60:SER:H	1.84	0.43
1:A:441:LYS:HD3	1:A:446:LEU:HD21	2.01	0.43
1:A:1471:ASN:HA	1:A:1589:MET:HE1	2.01	0.43
1:A:2465:ALA:HB2	1:A:2493:TYR:CE1	2.54	0.43
1:A:3254:LYS:O	1:A:3258:GLN:HG3	2.19	0.43
1:A:3257:SER:O	1:A:3260:ILE:HB	2.19	0.43
1:A:3873:ARG:HD3	1:A:3873:ARG:HA	1.78	0.43
1:A:4546:THR:OG1	1:A:4587:LEU:HB3	2.19	0.43
1:B:537:ASP:O	1:B:543:THR:OG1	2.25	0.43
1:B:1176:LEU:HD13	1:B:1179:LYS:HD3	1.99	0.43
1:B:1561:LEU:HD22	1:B:1564:GLU:OE1	2.18	0.43
1:B:3433:VAL:HA	1:B:3436:MET:CG	2.49	0.43
1:B:4388:LEU:HD23	1:B:4388:LEU:HA	1.92	0.43
1:B:4453:ASN:O	1:B:4457:LYS:HG2	2.19	0.43
2:D:217:ILE:HB	4:H:74:LYS:NZ	2.34	0.43
3:F:125:ALA:HA	3:F:163:MET:HE1	2.01	0.43
4:H:9:LYS:HE2	4:H:9:LYS:HA	2.01	0.43
5:J:59:GLY:HA3	5:J:62:PHE:CE2	2.53	0.43
7:P:243:ASN:HD21	7:P:247:THR:H	1.67	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:429:LYS:HB3	1:A:429:LYS:HE3	1.90	0.42
1:A:1569:GLN:O	1:A:1573:THR:HG23	2.19	0.42
1:A:2667:ASN:ND2	1:A:2712:CYS:HB2	2.34	0.42
1:A:2896:ARG:HA	1:A:2896:ARG:HD2	1.84	0.42
1:A:3247:GLN:NE2	1:A:3444:ILE:HG12	2.34	0.42
1:A:3769:THR:O	1:A:3773:LEU:HG	2.19	0.42
1:A:3815:MET:HA	1:A:3818:LEU:HD12	2.00	0.42
1:A:4285:ALA:O	1:A:4293:ASP:HB2	2.19	0.42
1:B:52:LEU:O	1:B:56:LEU:HG	2.19	0.42
1:B:54:ALA:O	1:B:58:GLU:N	2.52	0.42
1:B:733:LEU:O	3:F:363:LEU:HD13	2.19	0.42
1:B:1194:GLN:NE2	1:B:1195:ARG:HG3	2.33	0.42
1:B:2816:LEU:HD12	1:B:2817:PRO:CD	2.47	0.42
1:B:3263:GLN:CG	1:B:3426:ASN:HB3	2.48	0.42
1:B:3416:LEU:O	1:B:3420:GLU:HG3	2.19	0.42
2:C:406:LYS:HA	2:C:423:GLU:HA	2.01	0.42
4:G:36:ASN:O	4:G:40:THR:HG23	2.19	0.42
5:I:43:LYS:HD2	5:J:65:TYR:O	2.18	0.42
1:A:1497:VAL:HG21	1:A:1531:MET:HE3	2.00	0.42
1:A:1526:LYS:HD2	1:A:1529:ARG:HH21	1.83	0.42
1:A:3013:ALA:HA	1:A:3088:ARG:HG3	1.99	0.42
1:A:3175:HIS:HB3	1:A:3516:TYR:HE1	1.84	0.42
1:B:173:ARG:NH2	1:B:176:ASP:OD1	2.51	0.42
1:B:361:PHE:HE2	1:B:429:LYS:HE2	1.84	0.42
1:B:710:ASN:OD1	1:B:767:LYS:NZ	2.51	0.42
1:B:1581:LYS:HA	1:B:1584:LYS:NZ	2.34	0.42
1:B:1600:SER:O	1:B:1603:ARG:HG2	2.19	0.42
1:B:2224:GLY:O	1:B:2346:GLN:HA	2.19	0.42
1:B:2464:GLN:HG2	1:B:2583:THR:HG23	2.01	0.42
1:B:2721:LYS:HE2	1:B:2721:LYS:HB2	1.92	0.42
1:B:3495:THR:O	1:B:3499:GLN:HG3	2.19	0.42
1:B:4243:LEU:O	1:B:4247:MET:HG2	2.20	0.42
1:B:4517:PRO:HG2	1:B:4619:ILE:HD12	2.01	0.42
3:F:276:GLU:HG3	3:F:278:LYS:HG3	2.00	0.42
1:A:333:ASN:HB3	1:A:337:LYS:HZ3	1.84	0.42
1:A:1186:GLN:HA	1:A:1189:LEU:HG	2.01	0.42
1:A:1457:MET:O	1:A:1461:GLU:OE1	2.38	0.42
1:A:1582:VAL:HG13	1:A:1591:VAL:HG11	2.01	0.42
1:A:1769:MET:HE1	1:A:1778:LEU:HG	2.01	0.42
1:A:2319:LEU:HD13	1:A:2359:CYS:SG	2.59	0.42
1:A:3222:LEU:HD13	1:A:3468:VAL:HG12	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:484:LEU:HD11	1:B:563:ARG:NH1	2.35	0.42
1:B:817:ALA:HA	3:F:366:GLN:HE21	1.84	0.42
1:B:1169:PHE:HA	1:B:1172:TYR:HB3	2.01	0.42
1:B:1985:HIS:O	1:B:1985:HIS:ND1	2.49	0.42
1:B:4106:LEU:HD23	1:B:4106:LEU:HA	1.86	0.42
2:D:299:TYR:HE2	2:D:302:ASN:HB2	1.84	0.42
5:I:46:PHE:CD2	5:I:85:LEU:HD21	2.55	0.42
5:I:60:ARG:HD3	5:I:80:GLN:HG3	2.01	0.42
7:P:200:ILE:HG12	7:P:207:ILE:HG12	2.01	0.42
1:A:150:HIS:CE1	1:A:190:GLU:HA	2.54	0.42
1:A:2285:ARG:NH1	1:A:2331:GLU:OE2	2.39	0.42
1:A:2566:ASP:OD1	1:A:2567:VAL:N	2.52	0.42
1:A:3989:ARG:HB3	1:A:4004:MET:HE3	2.01	0.42
1:B:439:LYS:O	1:B:442:ARG:HD3	2.19	0.42
1:B:540:LYS:H	1:B:540:LYS:HD3	1.84	0.42
1:B:1966:ARG:HA	1:B:4101:LEU:HD13	2.01	0.42
1:B:2273:ARG:HA	1:B:2273:ARG:HD2	1.82	0.42
1:B:3872:ALA:HA	1:B:3875:MET:HE2	2.00	0.42
3:F:335:ALA:HB3	3:F:338:ASP:HB2	2.01	0.42
3:F:365:LYS:O	3:F:368:SER:OG	2.28	0.42
1:A:210:HIS:HA	1:A:211:PRO:HD3	1.92	0.42
1:A:1463:LEU:HD23	1:A:1463:LEU:HA	1.79	0.42
1:B:78:LEU:N	1:B:104:ASN:O	2.50	0.42
1:B:277:PHE:CE2	1:B:281:LEU:HD11	2.54	0.42
1:B:331:ASP:O	1:B:370:THR:HG22	2.19	0.42
1:B:363:HIS:O	1:B:366:LYS:HG2	2.18	0.42
1:B:560:VAL:O	1:B:564:ILE:HG13	2.19	0.42
1:B:1135:LEU:HD22	1:B:1190:TYR:CD1	2.53	0.42
1:B:3370:ASN:O	1:B:3374:ASN:N	2.51	0.42
1:B:4178:ARG:HH21	1:B:4296:MET:HG3	1.83	0.42
1:B:4504:LEU:O	1:B:4507:ILE:HG22	2.19	0.42
3:F:88:TYR:O	3:F:89:LEU:HD12	2.19	0.42
4:H:18:GLN:HB2	4:H:91:ILE:HG23	2.02	0.42
7:O:111:VAL:HG11	7:O:404:VAL:HG22	2.02	0.42
7:P:322:MET:HE1	7:P:331:LEU:HD12	2.02	0.42
1:A:265:ASP:OD2	1:A:268:SER:OG	2.38	0.42
1:A:3239:LYS:HZ3	1:A:3451:TYR:HA	1.84	0.42
1:A:3243:MET:CE	1:A:3447:TYR:HB2	2.49	0.42
1:B:210:HIS:ND1	1:B:211:PRO:HD2	2.34	0.42
1:B:476:LEU:HD22	1:B:591:LEU:HD11	2.01	0.42
1:B:3230:GLU:HA	1:B:3233:ASN:ND2	2.35	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:3253:LYS:HB3	1:B:3437:ILE:CG1	2.34	0.42
1:B:3260:ILE:CG1	1:B:3430:ALA:HA	2.50	0.42
2:D:427:LYS:HG3	2:D:428:GLN:OE1	2.18	0.42
3:F:248:ASP:O	3:F:251:LEU:HG	2.20	0.42
7:O:108:ARG:NH1	7:P:143:GLU:OE2	2.40	0.42
7:P:92:LYS:O	7:P:94:TRP:N	2.47	0.42
7:P:109:SER:C	7:P:402:GLN:HG2	2.44	0.42
1:A:1170:ILE:HA	1:A:1173:VAL:HG22	2.02	0.42
1:A:1547:LEU:HD23	1:A:1547:LEU:HA	1.89	0.42
1:A:1588:VAL:HG13	1:A:1589:MET:SD	2.60	0.42
1:A:1621:ARG:HD2	1:A:1621:ARG:C	2.45	0.42
1:A:2134:GLN:O	1:A:2138:ILE:HG12	2.19	0.42
1:A:2221:MET:HB3	1:A:2361:MET:HE2	2.00	0.42
1:A:2563:ALA:O	1:A:2804:ARG:HD3	2.19	0.42
1:A:3200:HIS:HD2	1:A:3754:ASN:ND2	2.18	0.42
1:A:3239:LYS:HA	1:A:3242:LYS:CG	2.31	0.42
1:A:3521:ASP:OD1	1:A:3521:ASP:N	2.46	0.42
1:A:3554:SER:O	1:A:3559:ARG:NH1	2.53	0.42
1:A:3793:GLU:O	1:A:3796:THR:HG22	2.20	0.42
1:A:4037:PRO:HB2	1:A:4118:PRO:HG2	2.01	0.42
1:A:4511:LEU:HD23	1:A:4511:LEU:HA	1.91	0.42
1:B:106:ASP:OD1	1:B:107:ILE:N	2.42	0.42
1:B:1013:THR:O	1:B:1017:LYS:N	2.43	0.42
1:B:3024:ASP:OD1	1:B:3025:GLU:N	2.53	0.42
1:B:3647:PRO:HA	1:B:3652:GLU:OE1	2.19	0.42
2:C:579:THR:O	2:C:582:GLY:N	2.52	0.42
6:K:59:LYS:HB3	6:K:59:LYS:HE3	1.83	0.42
1:A:2811:ARG:HH22	1:A:2812:PRO:HB3	1.85	0.42
1:A:4085:ASN:HB3	7:O:205:ASP:OD2	2.19	0.42
1:A:4190:ILE:HG23	1:A:4201:TRP:HZ2	1.85	0.42
1:A:4421:ALA:O	1:A:4425:GLN:NE2	2.53	0.42
1:A:4448:LEU:O	1:A:4452:ILE:HG12	2.20	0.42
1:B:462:ARG:HH22	1:B:535:GLY:C	2.28	0.42
1:B:1141:GLU:O	1:B:1145:GLN:HG2	2.20	0.42
1:B:1470:TRP:HE1	1:B:1527:LEU:HD21	1.83	0.42
1:B:1850:GLN:HB3	1:B:1856:GLN:HG2	2.02	0.42
1:B:2085:HIS:HB3	1:B:2348:LEU:HD12	2.02	0.42
1:B:3491:LYS:HD3	1:B:3491:LYS:HA	1.90	0.42
3:F:38:SER:OG	3:F:39:ILE:N	2.52	0.42
4:G:71:ILE:HD13	4:H:69:LEU:HD13	2.01	0.42
1:A:22:GLN:HE21	1:A:125:ILE:HA	1.83	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1196:LEU:HA	1:A:1199:LYS:HG2	2.01	0.42
1:A:1560:LEU:HD12	1:A:1621:ARG:HH22	1.85	0.42
1:A:2558:GLU:OE2	1:A:2561:LYS:HD2	2.19	0.42
1:A:2633:LYS:HE2	1:A:2633:LYS:HB2	1.68	0.42
1:A:3048:GLU:HG2	1:A:3049:GLU:N	2.35	0.42
1:A:3247:GLN:HG2	1:B:3248:GLN:NE2	2.35	0.42
1:A:3284:LYS:HB3	1:A:3402:TYR:CE1	2.55	0.42
1:A:4393:GLN:HG3	1:A:4428:ARG:CZ	2.50	0.42
1:B:916:GLN:HB2	1:B:1026:MET:HE1	2.01	0.42
1:B:1030:PRO:HG3	3:F:114:TYR:CE2	2.55	0.42
1:B:2481:MET:HG2	1:B:2486:LEU:HD13	2.02	0.42
1:B:3303:HIS:CE1	1:B:3388:ALA:HB1	2.55	0.42
1:B:3597:THR:O	1:B:3601:MET:HG2	2.20	0.42
3:F:305:LYS:HD3	3:F:305:LYS:HA	1.83	0.42
5:I:18:GLN:O	5:I:22:VAL:HG23	2.18	0.42
5:I:61:ASN:H	5:J:62:PHE:HZ	1.68	0.42
5:I:68:HIS:HB3	5:I:86:PHE:HB2	2.01	0.42
7:P:194:ASN:C	7:P:211:SER:HG	2.21	0.42
7:P:211:SER:OG	7:P:212:ARG:N	2.52	0.42
7:P:344:VAL:HG23	7:P:355:SER:OG	2.20	0.42
1:A:462:ARG:O	1:A:463:LEU:C	2.63	0.42
1:A:2449:LEU:HD11	1:A:2454:CYS:SG	2.60	0.42
1:A:2503:SER:HB3	1:A:2511:ARG:HG2	2.02	0.42
1:A:3204:GLY:O	1:A:3208:ILE:HG12	2.19	0.42
1:B:399:ARG:HA	1:B:399:ARG:HD2	1.80	0.42
1:B:438:VAL:HA	1:B:441:LYS:HB2	2.01	0.42
1:B:1464:LYS:HA	1:B:1467:ARG:NH1	2.35	0.42
1:B:1543:ARG:HD2	1:B:1608:LEU:HB3	2.00	0.42
1:B:1647:VAL:HG11	1:B:1666:LEU:HD11	2.02	0.42
1:B:2784:PHE:HB2	1:B:2794:TYR:HE2	1.85	0.42
1:B:3624:GLU:OE1	1:B:3628:ARG:HD3	2.20	0.42
1:B:4013:LEU:HD13	1:B:4017:PHE:CE2	2.55	0.42
2:D:553:ASN:HB2	2:D:562:THR:HG21	2.02	0.42
3:F:147:GLU:O	3:F:151:LYS:HG2	2.20	0.42
6:L:90:ASP:OD1	6:L:112:SER:N	2.29	0.42
7:O:228:LYS:HD2	7:O:266:LYS:HG3	2.01	0.42
7:P:98:PRO:N	7:P:99:PRO:HD2	2.35	0.42
1:A:1470:TRP:HE1	1:A:1527:LEU:HD21	1.84	0.41
1:A:3194:LEU:HD12	1:A:3194:LEU:HA	1.86	0.41
1:A:3253:LYS:NZ	1:A:3436:MET:HB2	2.35	0.41
1:A:3267:GLN:NE2	1:A:3427:GLN:HG3	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3469:GLU:OE2	1:A:3473:ASN:ND2	2.53	0.41
1:A:3789:ILE:O	1:A:3792:GLN:HB3	2.21	0.41
1:A:4444:GLN:HG2	1:A:4449:ARG:HG3	2.01	0.41
1:B:121:ARG:HD3	1:B:133:SER:O	2.20	0.41
1:B:149:LEU:O	1:B:153:ILE:HG12	2.20	0.41
1:B:349:GLU:OE1	1:B:349:GLU:N	2.53	0.41
1:B:410:GLU:O	1:B:414:VAL:HG23	2.20	0.41
1:B:780:SER:O	1:B:783:GLU:HG3	2.20	0.41
1:B:3222:LEU:HD13	1:B:3468:VAL:HG12	2.01	0.41
1:B:3246:ASP:HB3	1:B:3444:ILE:HG12	2.02	0.41
1:B:4546:THR:OG1	1:B:4587:LEU:HB3	2.20	0.41
2:D:551:LEU:HA	2:D:551:LEU:HD23	1.79	0.41
3:F:48:ARG:HD2	3:F:49:SER:N	2.35	0.41
3:F:157:ARG:HD2	3:F:157:ARG:HA	1.91	0.41
3:F:366:GLN:OE1	3:F:366:GLN:HA	2.20	0.41
4:H:26:GLU:HB3	4:H:47:HIS:NE2	2.34	0.41
1:A:1457:MET:HA	1:A:1460:GLU:OE2	2.20	0.41
1:A:2468:ASN:O	1:A:2471:GLN:HG3	2.21	0.41
1:A:3154:LEU:HD11	1:A:3516:TYR:HB3	2.01	0.41
1:A:3265:HIS:O	1:A:3269:GLU:HG3	2.19	0.41
1:A:3824:LEU:HD11	1:A:4044:CYS:SG	2.60	0.41
1:A:4223:LEU:HD12	1:A:4223:LEU:HA	1.94	0.41
1:A:4234:SER:OG	1:A:4236:ASP:OD1	2.35	0.41
1:B:634:LYS:O	1:B:638:VAL:HG23	2.19	0.41
1:B:1183:PHE:O	1:B:1187:VAL:HG23	2.20	0.41
1:B:1543:ARG:HB3	1:B:1608:LEU:HD13	2.02	0.41
1:B:2099:SER:OG	1:B:2140:SER:HB3	2.19	0.41
1:B:2290:SER:HA	1:B:2294:GLU:OE2	2.20	0.41
1:B:2319:LEU:HD13	1:B:2359:CYS:SG	2.59	0.41
1:B:2869:ARG:NE	1:B:2869:ARG:HA	2.35	0.41
1:B:3256:MET:CB	1:B:3433:VAL:HG11	2.47	0.41
1:B:3440:LEU:HD13	1:B:3440:LEU:HA	1.80	0.41
2:D:504:TRP:NE1	2:D:523:ASN:H	2.18	0.41
2:D:529:ASP:O	2:D:542:CYS:HA	2.20	0.41
3:F:137:ALA:HB1	3:F:145:VAL:HG22	2.02	0.41
3:F:165:ILE:HD13	3:F:170:MET:HB2	2.02	0.41
6:K:66:THR:O	6:K:106:VAL:HA	2.20	0.41
7:O:164:LEU:HD22	7:O:176:LEU:HG	2.02	0.41
1:A:322:LEU:O	1:A:326:LEU:N	2.52	0.41
1:A:1468:GLU:O	1:A:1472:THR:OG1	2.23	0.41
1:A:1959:GLU:N	1:A:2017:THR:O	2.53	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2641:TYR:HE1	1:A:2701:VAL:HG11	1.85	0.41
1:A:3871:VAL:HG12	1:A:3875:MET:HE2	2.01	0.41
1:B:440:ARG:NH1	1:B:444:GLU:HB2	2.36	0.41
1:B:895:ASN:HD21	3:F:353:GLU:HB2	1.83	0.41
1:B:2620:LEU:HD22	1:B:2631:LEU:HD23	2.01	0.41
1:B:3403:ALA:C	1:B:3405:MET:H	2.29	0.41
1:B:3623:LEU:O	1:B:3627:LEU:HD23	2.20	0.41
4:G:45:LEU:HD12	4:G:45:LEU:HA	1.88	0.41
4:G:47:HIS:HA	4:G:50:ILE:HG12	2.03	0.41
1:A:3416:LEU:O	1:A:3420:GLU:HG3	2.21	0.41
1:A:4564:LYS:HD3	1:A:4584:ALA:HA	2.00	0.41
1:B:120:LYS:HE2	1:B:125:ILE:HG12	2.02	0.41
1:B:180:PRO:HA	1:B:183:GLU:CD	2.46	0.41
1:B:441:LYS:HZ3	1:B:446:LEU:HG	1.86	0.41
1:B:779:ILE:HG13	2:D:375:LEU:HD21	2.02	0.41
1:B:860:GLU:HG2	1:B:877:ILE:HG23	2.02	0.41
1:B:2490:ILE:HD13	1:B:2490:ILE:HA	1.91	0.41
1:B:3354:PHE:HE2	1:B:3356:ALA:HB3	1.83	0.41
2:D:548:ARG:NH2	2:D:564:SER:HB3	2.36	0.41
3:F:68:THR:HG21	3:F:82:LYS:HE2	2.02	0.41
4:H:79:MET:HB2	4:H:90:VAL:HB	2.02	0.41
5:I:78:LEU:O	5:I:81:VAL:HB	2.20	0.41
5:J:86:PHE:HE2	5:J:88:SER:HB3	1.84	0.41
7:P:366:ASP:O	7:P:370:LYS:HD2	2.20	0.41
1:A:462:ARG:NH2	1:A:539:SER:O	2.52	0.41
1:A:466:MET:O	1:A:467:ARG:C	2.62	0.41
1:A:1530:ILE:HG22	1:A:1531:MET:HE2	2.02	0.41
1:A:2605:LEU:O	1:A:2609:LEU:HD23	2.20	0.41
1:A:2622:PHE:CD2	1:A:2666:ILE:HA	2.55	0.41
1:A:2633:LYS:CG	1:A:3019:GLY:HA3	2.50	0.41
1:A:2643:ARG:HD2	1:A:2648:VAL:HG22	2.02	0.41
1:A:3085:LEU:HD12	1:A:3085:LEU:HA	1.82	0.41
1:A:3291:GLU:OE1	1:A:3395:TRP:HA	2.21	0.41
1:A:3639:GLU:HB3	1:A:3686:VAL:HG21	2.02	0.41
1:B:1020:ARG:HH22	3:F:84:ARG:N	2.18	0.41
1:B:1150:ARG:HG3	5:J:70:THR:HG21	2.01	0.41
1:B:2308:ASP:O	1:B:2312:VAL:HG12	2.20	0.41
1:B:3293:GLN:O	1:B:3297:LYS:HG3	2.20	0.41
2:C:205:ARG:O	2:C:208:GLU:HG2	2.21	0.41
2:C:445:ASN:O	2:C:461:ARG:N	2.33	0.41
3:F:59:VAL:CG1	3:F:108:ILE:HA	2.50	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:I:21:SER:HA	5:I:46:PHE:HZ	1.83	0.41
5:I:55:HIS:CD2	5:I:88:SER:HB3	2.56	0.41
5:J:54:TRP:CD1	5:J:87:LYS:HB2	2.55	0.41
6:K:43:THR:HB	6:L:80:ALA:HB3	2.02	0.41
1:A:52:LEU:O	1:A:56:LEU:HB3	2.20	0.41
1:A:257:GLN:NE2	1:A:320:THR:O	2.44	0.41
1:A:1517:GLU:O	1:A:1521:LEU:HG	2.21	0.41
1:A:1567:ARG:HG3	1:A:1567:ARG:NH1	2.36	0.41
1:A:1567:ARG:HE	1:B:3043:MET:HE2	1.86	0.41
1:A:3264:LEU:HD23	1:A:3267:GLN:NE2	2.35	0.41
1:B:304:LEU:HD13	1:B:309:ARG:HB3	2.03	0.41
1:B:434:LEU:O	1:B:438:VAL:HG23	2.20	0.41
1:B:1071:ARG:HH11	3:F:46:ARG:HD2	1.85	0.41
1:B:1181:LYS:HG2	1:B:1185:LYS:NZ	2.36	0.41
1:B:3039:LYS:O	1:B:3039:LYS:HD2	2.20	0.41
1:B:3292:ALA:HA	1:B:3395:TRP:HZ2	1.86	0.41
4:G:56:THR:HA	4:G:59:ASP:OD2	2.20	0.41
7:O:110:PRO:HB3	7:O:400:VAL:HA	2.01	0.41
7:O:146:LEU:HD23	7:O:177:TRP:CD2	2.56	0.41
7:P:230:PHE:CE1	7:P:266:LYS:HG3	2.56	0.41
7:P:269:LYS:NZ	7:P:325:VAL:HG12	2.36	0.41
7:P:365:TRP:HA	7:P:372:CYS:O	2.20	0.41
1:A:152:PHE:HE2	1:B:119:ILE:O	2.04	0.41
1:A:158:ALA:HB3	1:A:159:PRO:HD3	2.03	0.41
1:A:2605:LEU:HD23	1:A:2609:LEU:HD23	2.02	0.41
1:A:2804:ARG:O	1:A:2807:PHE:N	2.54	0.41
1:A:2840:ASP:OD1	1:A:2841:GLU:N	2.54	0.41
1:A:3034:LYS:NZ	1:A:3045:ASP:HA	2.36	0.41
1:A:3435:GLN:O	1:A:3438:ARG:HB2	2.21	0.41
1:A:4102:ALA:HB1	1:A:4105:TRP:HB3	2.03	0.41
1:B:242:LEU:HD21	1:B:307:GLY:HA3	2.02	0.41
1:B:361:PHE:CG	1:B:426:GLU:HG3	2.54	0.41
1:B:462:ARG:HH21	1:B:537:ASP:HB2	1.85	0.41
1:B:539:SER:O	1:B:542:GLY:N	2.50	0.41
1:B:550:MET:HE2	1:B:550:MET:HB2	1.98	0.41
1:B:664:ARG:O	1:B:668:VAL:HG12	2.21	0.41
1:B:2063:GLU:O	1:B:2067:ASN:ND2	2.54	0.41
1:B:2206:LYS:HD3	1:B:2206:LYS:HA	1.87	0.41
1:B:2615:MET:HE2	1:B:2707:GLN:NE2	2.35	0.41
1:B:3046:SER:HB3	1:B:3049:GLU:OE1	2.21	0.41
1:B:3551:GLU:HA	1:B:3559:ARG:NH1	2.35	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:4065:GLN:HB3	1:B:4092:ARG:NE	2.35	0.41
2:D:526:TYR:CE1	2:D:528:TYR:HA	2.56	0.41
6:K:35:GLN:HG3	6:K:38:LYS:HG2	2.03	0.41
7:P:399:SER:OG	7:P:400:VAL:N	2.53	0.41
1:A:170:LYS:HE2	1:A:176:ASP:HB3	2.03	0.41
1:A:351:ASP:OD1	1:A:352:LYS:N	2.52	0.41
1:A:1170:ILE:HA	1:A:1170:ILE:HD13	1.88	0.41
1:A:1477:LEU:HD23	1:A:1487:ILE:HG13	2.03	0.41
1:A:2144:THR:HG23	1:A:2145:MET:HG2	2.01	0.41
1:A:2758:LEU:CD2	1:A:2811:ARG:HA	2.50	0.41
1:B:191:MET:O	1:B:194:LEU:HG	2.20	0.41
1:B:639:ARG:NH2	2:D:528:TYR:CE2	2.88	0.41
1:B:724:ARG:HH21	1:B:729:THR:HA	1.86	0.41
1:B:1153:LEU:HD22	1:B:1224:ILE:HG21	2.02	0.41
1:B:1170:ILE:HG22	1:B:1174:GLN:HE22	1.86	0.41
1:B:1606:ASP:CG	1:B:1610:LYS:HZ3	2.25	0.41
1:B:2300:TRP:CE3	1:B:2342:MET:HE1	2.56	0.41
1:B:3031:THR:O	1:B:3035:GLU:OE1	2.38	0.41
1:B:3284:LYS:O	1:B:3402:TYR:OH	2.29	0.41
1:B:3849:VAL:HG12	1:B:3855:ARG:HG2	2.03	0.41
1:B:4296:MET:SD	1:B:4297:PRO:HD2	2.61	0.41
2:D:271:PHE:CZ	2:D:273:ASP:HB2	2.56	0.41
2:D:504:TRP:NE1	2:D:522:ASP:H	2.18	0.41
4:H:68:PHE:CZ	4:H:70:ARG:HG3	2.56	0.41
5:I:78:LEU:HA	5:I:78:LEU:HD12	1.72	0.41
6:K:59:LYS:CD	6:K:61:PHE:HD2	2.33	0.41
7:O:130:ALA:HA	7:O:153:VAL:HG23	2.03	0.41
7:P:127:SER:OG	7:P:128:GLU:N	2.54	0.41
1:A:456:HIS:O	1:A:459:LEU:HB2	2.20	0.41
1:A:1079:TRP:O	1:A:1081:ALA:N	2.53	0.41
1:A:1144:SER:HB2	1:A:1148:LYS:NZ	2.35	0.41
1:A:1698:ILE:HD12	1:A:1701:TRP:HE1	1.86	0.41
1:A:1708:GLU:HA	1:A:1711:VAL:HG22	2.02	0.41
1:A:2386:PRO:HG3	1:A:2413:LEU:HD12	2.03	0.41
1:A:2483:ILE:O	1:A:2486:LEU:N	2.54	0.41
1:A:2495:VAL:HG11	1:A:2526:LEU:HD21	2.03	0.41
1:A:2500:TRP:CE2	1:A:2535:ILE:HD11	2.56	0.41
1:A:3276:MET:SD	1:A:3277:SER:N	2.93	0.41
1:A:3426:ASN:HA	1:A:3429:LYS:HD2	2.03	0.41
1:A:3612:THR:HG23	1:A:3635:VAL:HG22	2.03	0.41
1:A:4189:ILE:HD12	1:A:4321:LEU:HD23	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:4413:PHE:CD1	1:A:4492:ILE:HD12	2.56	0.41
1:B:49:PRO:HG3	1:B:81:ARG:NH2	2.35	0.41
1:B:399:ARG:NH2	1:B:404:VAL:HG11	2.32	0.41
1:B:664:ARG:HG2	1:B:664:ARG:HH11	1.86	0.41
1:B:959:VAL:HA	1:B:1106:VAL:O	2.21	0.41
1:B:2003:ASN:O	1:B:2004:LYS:HD2	2.20	0.41
1:B:2238:LEU:HD13	1:B:2300:TRP:CE3	2.55	0.41
1:B:2592:VAL:HB	1:B:2733:VAL:HG22	2.03	0.41
1:B:3140:ARG:O	1:B:3144:VAL:HG23	2.21	0.41
1:B:3242:LYS:HZ1	1:B:3447:TYR:HB3	1.85	0.41
1:B:3243:MET:CE	1:B:3447:TYR:HB2	2.50	0.41
1:B:3521:ASP:OD1	1:B:3521:ASP:N	2.50	0.41
1:B:4179:LEU:HD12	1:B:4223:LEU:HD22	2.03	0.41
2:D:475:HIS:NE2	2:D:503:ASP:HB2	2.36	0.41
2:D:502:PHE:CE1	2:D:526:TYR:HB2	2.55	0.41
3:F:247:ARG:NH1	3:F:329:THR:OG1	2.39	0.41
3:F:321:ALA:HA	3:F:324:HIS:ND1	2.36	0.41
3:F:358:ASP:OD1	3:F:358:ASP:N	2.53	0.41
7:P:109:SER:OG	7:P:128:GLU:HB2	2.20	0.41
7:P:233:HIS:NE2	7:P:251:SER:OG	2.49	0.41
1:A:442:ARG:HA	1:A:445:ASN:OD1	2.21	0.41
1:A:804:LEU:HA	1:A:894:SER:O	2.21	0.41
1:A:2224:GLY:O	1:A:2346:GLN:HA	2.20	0.41
1:A:3225:LYS:HE2	1:A:3225:LYS:HB3	1.97	0.41
1:A:4489:LEU:HD23	1:A:4492:ILE:HD11	2.03	0.41
1:B:93:GLU:O	1:B:247:SER:HB3	2.21	0.41
1:B:263:ASP:HA	1:B:277:PHE:CE2	2.56	0.41
1:B:351:ASP:OD1	1:B:352:LYS:N	2.53	0.41
1:B:526:ALA:O	1:B:553:TYR:CZ	2.73	0.41
1:B:1526:LYS:HA	1:B:1529:ARG:NH1	2.36	0.41
1:B:1665:ILE:HD11	1:B:1683:GLU:HG2	2.03	0.41
1:B:2967:TYR:OH	1:B:2975:ASP:OD2	2.35	0.41
1:B:3154:LEU:HD11	1:B:3516:TYR:HB3	2.02	0.41
1:B:3585:ARG:NH1	1:B:3694:SER:O	2.41	0.41
2:C:204:THR:HA	4:G:10:ARG:HH12	1.85	0.41
2:D:212:SER:HA	2:D:320:TYR:OH	2.21	0.41
2:D:344:HIS:ND1	2:D:345:PRO:HD2	2.36	0.41
2:D:504:TRP:O	2:D:520:PHE:HD2	2.04	0.41
2:D:509:TRP:HE3	2:D:516:PRO:HA	1.86	0.41
2:D:537:PRO:HB3	2:D:611:TRP:CZ3	2.56	0.41
2:D:542:CYS:HG	2:D:552:TRP:CD1	2.39	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:F:62:GLU:OE2	3:F:141:ARG:NH2	2.35	0.41
4:G:45:LEU:HD22	4:H:59:ASP:OD2	2.21	0.41
7:P:253:SER:OG	7:P:254:ASN:N	2.54	0.41
7:P:337:HIS:CE1	7:P:363:ARG:HD2	2.56	0.41
1:A:141:SER:OG	1:A:143:ASP:OD1	2.37	0.40
1:A:1170:ILE:O	1:A:1174:GLN:HG2	2.21	0.40
1:A:2074:LYS:HB3	1:A:2074:LYS:HE3	1.81	0.40
1:A:2075:LEU:O	1:A:2079:GLN:HB2	2.21	0.40
1:A:2837:LEU:HD13	1:A:2842:GLU:HB3	2.02	0.40
1:A:3612:THR:OG1	1:A:3613:SER:N	2.53	0.40
1:A:4157:MET:SD	1:A:4185:TRP:HA	2.60	0.40
1:B:253:ILE:HD11	1:B:316:PHE:CD1	2.56	0.40
1:B:1724:VAL:HG23	1:B:1727:PHE:HD2	1.86	0.40
1:B:2774:VAL:HG22	1:B:2799:MET:HE1	2.03	0.40
1:B:3877:HIS:NE2	1:B:4151:PRO:HB3	2.37	0.40
1:B:4079:GLN:HA	1:B:4082:LYS:HE2	2.03	0.40
1:B:4534:TRP:HE3	1:B:4539:LEU:HD21	1.85	0.40
2:D:357:ILE:H	2:D:373:THR:HG22	1.86	0.40
2:D:526:TYR:OH	2:D:528:TYR:HD2	2.04	0.40
3:F:146:MET:HG2	3:F:336:TYR:CD2	2.57	0.40
3:F:343:PRO:HB2	3:F:346:ARG:HH12	1.86	0.40
6:K:78:HIS:HE1	6:K:80:ALA:HB2	1.86	0.40
7:O:176:LEU:HD13	7:O:207:ILE:HD11	2.02	0.40
1:A:146:TYR:CZ	1:B:164:TYR:HD2	2.39	0.40
1:A:1619:LEU:HD21	1:A:1638:LEU:HD21	2.01	0.40
1:A:1912:LYS:HG2	1:A:2041:MET:HE2	2.03	0.40
1:A:1966:ARG:HA	1:A:4101:LEU:HD13	2.02	0.40
1:A:2206:LYS:HD3	1:A:2206:LYS:HA	1.83	0.40
1:A:3030:MET:HA	1:A:3030:MET:HE2	2.03	0.40
1:A:3306:GLU:OE2	1:A:3386:SER:HB2	2.21	0.40
1:A:3319:LEU:HD22	1:A:3377:TYR:CD1	2.55	0.40
1:A:3616:ASP:OD1	7:O:226:CYS:N	2.51	0.40
1:A:3716:VAL:HB	1:A:3836:TYR:OH	2.21	0.40
1:B:435:ARG:HH21	1:B:438:VAL:HG21	1.86	0.40
1:B:557:ILE:HA	1:B:560:VAL:HG22	2.03	0.40
1:B:3276:MET:HE1	1:B:3412:LEU:HD13	2.03	0.40
1:B:3868:PHE:CE1	1:B:3884:ALA:HB2	2.56	0.40
1:B:4095:MET:HE2	1:B:4095:MET:HB3	1.85	0.40
2:D:334:ALA:O	2:D:352:THR:OG1	2.25	0.40
3:F:247:ARG:O	3:F:250:HIS:HB2	2.20	0.40
7:P:365:TRP:HD1	7:P:373:MET:HA	1.85	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:93:GLU:HB2	1:A:211:PRO:HB2	2.03	0.40
1:A:1572:SER:O	1:A:1576:LEU:HG	2.21	0.40
1:A:1590:ASP:O	1:A:1594:ILE:HG13	2.21	0.40
1:A:2043:LYS:HD3	1:A:2044:PRO:O	2.21	0.40
1:A:2607:SER:HA	1:A:2610:ARG:HH11	1.87	0.40
1:A:2758:LEU:HD22	1:A:2811:ARG:HA	2.03	0.40
1:A:3143:ILE:HD13	1:A:3541:ILE:HD13	2.03	0.40
1:A:3403:ALA:C	1:A:3405:MET:H	2.29	0.40
1:A:3451:TYR:HA	1:A:3454:LEU:HB2	2.04	0.40
1:B:219:GLN:HA	1:B:222:GLU:CD	2.46	0.40
1:B:242:LEU:HB3	1:B:309:ARG:NE	2.32	0.40
1:B:479:VAL:HG11	1:B:590:ALA:HB2	2.04	0.40
1:B:3223:ARG:O	1:B:3227:GLN:HG2	2.20	0.40
2:D:457:TYR:HE1	2:D:471:MET:HG2	1.82	0.40
3:F:261:PHE:O	3:F:264:GLN:HG3	2.22	0.40
4:G:22:VAL:HB	4:G:30:ILE:HG22	2.03	0.40
4:H:3:GLU:HB2	4:H:6:GLU:OE1	2.21	0.40
5:I:4:ARG:HH11	5:I:29:LEU:HD13	1.86	0.40
7:O:213:ASP:O	7:O:215:THR:HG23	2.21	0.40
7:P:243:ASN:ND2	7:P:247:THR:H	2.20	0.40
7:P:353:ILE:O	7:P:364:VAL:HA	2.20	0.40
1:A:351:ASP:O	1:A:354:ARG:HD3	2.22	0.40
1:A:454:PRO:HG2	1:A:457:ARG:NH1	2.36	0.40
1:A:1038:SER:O	1:A:1042:GLY:N	2.49	0.40
1:A:1487:ILE:HD13	1:A:1537:TRP:CZ2	2.57	0.40
1:A:1853:VAL:HA	1:A:1856:GLN:HG3	2.02	0.40
1:A:2181:GLU:HG3	1:A:2244:LEU:HB2	2.02	0.40
1:A:2227:GLY:HA3	1:A:2452:LEU:CD1	2.52	0.40
1:A:3207:LYS:HD3	1:A:3207:LYS:HA	1.82	0.40
1:A:3973:LEU:HD23	1:A:3973:LEU:O	2.22	0.40
1:A:4401:THR:O	1:A:4405:ILE:HG12	2.21	0.40
1:B:120:LYS:HA	1:B:135:LEU:HD13	2.03	0.40
1:B:926:LEU:HD13	1:B:1104:PRO:HG3	2.04	0.40
1:B:1069:TYR:OH	1:B:1130:LYS:HB3	2.21	0.40
1:B:1110:GLY:HA2	1:B:1113:GLN:HB3	2.02	0.40
1:B:1190:TYR:HE2	1:B:1214:ILE:HD11	1.86	0.40
1:B:2668:LEU:N	1:B:2669:PRO:HD2	2.37	0.40
1:B:3260:ILE:HG12	1:B:3430:ALA:HA	2.03	0.40
1:B:3302:GLN:HB3	1:B:3388:ALA:HB2	2.04	0.40
4:G:20:ILE:HD13	4:G:31:LYS:HZ2	1.86	0.40
5:I:23:GLU:HB3	5:I:27:GLN:HE21	1.87	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:J:9:LYS:HG3	5:J:77:TYR:CE1	2.56	0.40
7:O:353:ILE:HB	7:O:365:TRP:HB2	2.03	0.40
1:A:23:ASN:O	1:A:126:ASP:HB3	2.21	0.40
1:A:229:VAL:HG13	1:A:236:VAL:HG21	2.04	0.40
1:A:305:LYS:HA	1:A:305:LYS:HD2	1.93	0.40
1:A:1155:GLN:NE2	1:A:1157:SER:HB2	2.33	0.40
1:A:1961:ASN:OD1	1:A:1961:ASN:N	2.54	0.40
1:A:1967:MET:HA	1:A:1967:MET:HE3	2.03	0.40
1:A:2269:ASP:OD2	1:A:2272:THR:OG1	2.31	0.40
1:A:3333:THR:O	1:A:3337:GLN:HG3	2.22	0.40
1:A:3402:TYR:O	1:A:3406:LEU:N	2.52	0.40
1:A:3793:GLU:HA	1:A:3796:THR:HG22	2.02	0.40
1:A:4454:GLU:HA	1:A:4457:LYS:NZ	2.36	0.40
1:B:368:ARG:NH1	1:B:437:ILE:HD13	2.37	0.40
1:B:391:GLN:O	1:B:395:VAL:HG23	2.22	0.40
1:B:583:ARG:NH1	2:D:559:GLU:OE1	2.55	0.40
1:B:639:ARG:NH1	2:D:528:TYR:CE2	2.84	0.40
1:B:760:VAL:HG23	1:B:765:VAL:HG22	2.02	0.40
1:B:1182:GLN:O	1:B:1185:LYS:HG2	2.21	0.40
1:B:1806:ARG:NH2	1:B:1877:ASP:OD1	2.55	0.40
1:B:2431:GLY:C	1:B:2435:LYS:HZ3	2.30	0.40
1:B:3115:LEU:HD21	1:B:3143:ILE:HG21	2.03	0.40
2:D:495:HIS:HD1	2:D:510:THR:HG1	1.62	0.40
2:D:591:GLU:OE1	2:D:591:GLU:N	2.55	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	4530/4646 (98%)	4368 (96%)	157 (4%)	5 (0%)	48 83

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
1	B	4507/4646 (97%)	4365 (97%)	137 (3%)	5 (0%)	48 83
2	C	390/638 (61%)	363 (93%)	27 (7%)	0	100 100
2	D	390/638 (61%)	365 (94%)	25 (6%)	0	100 100
3	E	307/492 (62%)	296 (96%)	11 (4%)	0	100 100
3	F	307/492 (62%)	291 (95%)	14 (5%)	2 (1%)	19 56
4	G	91/96 (95%)	86 (94%)	5 (6%)	0	100 100
4	H	91/96 (95%)	85 (93%)	6 (7%)	0	100 100
5	I	87/89 (98%)	73 (84%)	14 (16%)	0	100 100
5	J	87/89 (98%)	83 (95%)	3 (3%)	1 (1%)	12 46
6	K	111/113 (98%)	110 (99%)	1 (1%)	0	100 100
6	L	111/113 (98%)	109 (98%)	2 (2%)	0	100 100
7	O	320/410 (78%)	306 (96%)	14 (4%)	0	100 100
7	P	317/410 (77%)	297 (94%)	19 (6%)	1 (0%)	37 72
All	All	11646/12968 (90%)	11197 (96%)	435 (4%)	14 (0%)	50 83

All (14) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	589	ASN
1	A	3270	VAL
1	A	3271	ILE
1	A	3384	ARG
1	A	3444	ILE
1	B	540	LYS
1	B	3267	GLN
1	B	3268	GLN
1	B	3384	ARG
1	B	1161	ALA
7	P	93	GLU
3	F	112	ASP
5	J	51	ASN
3	F	39	ILE

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	4044/4125 (98%)	4036 (100%)	8 (0%)	92 93
1	B	4028/4125 (98%)	4021 (100%)	7 (0%)	92 93
2	C	344/557 (62%)	344 (100%)	0	100 100
2	D	344/557 (62%)	344 (100%)	0	100 100
3	E	279/422 (66%)	279 (100%)	0	100 100
3	F	279/422 (66%)	279 (100%)	0	100 100
4	G	87/89 (98%)	87 (100%)	0	100 100
4	H	87/89 (98%)	87 (100%)	0	100 100
5	I	78/78 (100%)	78 (100%)	0	100 100
5	J	78/78 (100%)	78 (100%)	0	100 100
6	K	97/97 (100%)	97 (100%)	0	100 100
6	L	97/97 (100%)	97 (100%)	0	100 100
7	O	287/364 (79%)	287 (100%)	0	100 100
7	P	284/364 (78%)	284 (100%)	0	100 100
All	All	10413/11464 (91%)	10398 (100%)	15 (0%)	92 94

All (15) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	3229	LEU
1	A	3242	LYS
1	A	3243	MET
1	A	3247	GLN
1	A	3256	MET
1	A	3440	LEU
1	A	3450	GLU
1	A	3454	LEU
1	B	3243	MET
1	B	3244	VAL
1	B	3253	LYS
1	B	3428	GLN
1	B	3429	LYS
1	B	3436	MET
1	B	3440	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (110) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	22	GLN
1	A	102	ASN
1	A	195	HIS
1	A	210	HIS
1	A	280	ASN
1	A	1155	GLN
1	A	1186	GLN
1	A	1203	GLN
1	A	1233	GLN
1	A	1465	GLN
1	A	1541	GLN
1	A	1850	GLN
1	A	1856	GLN
1	A	1950	GLN
1	A	1979	GLN
1	A	1985	HIS
1	A	2476	HIS
1	A	2549	GLN
1	A	2560	HIS
1	A	2698	GLN
1	A	3152	GLN
1	A	3247	GLN
1	A	3248	GLN
1	A	3346	ASN
1	A	3499	GLN
1	A	3526	GLN
1	A	3735	GLN
1	A	3754	ASN
1	A	3820	GLN
1	A	3877	HIS
1	A	3925	GLN
1	A	3931	GLN
1	A	3952	GLN
1	A	4098	ASN
1	A	4156	ASN
1	A	4174	ASN
1	A	4191	GLN
1	A	4490	GLN
1	A	4506	ASN
1	A	4530	GLN
1	A	4566	GLN

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Mol	Chain	Res	Type
1	B	33	HIS
1	B	150	HIS
1	B	155	ASN
1	B	210	HIS
1	B	246	GLN
1	B	257	GLN
1	B	306	HIS
1	B	421	GLN
1	B	456	HIS
1	B	472	GLN
1	B	605	GLN
1	B	620	HIS
1	B	680	GLN
1	B	731	ASN
1	B	871	HIS
1	B	972	ASN
1	B	1056	GLN
1	B	1174	GLN
1	B	1186	GLN
1	B	1213	ASN
1	B	1222	ASN
1	B	1233	GLN
1	B	1495	ASN
1	B	1569	GLN
1	B	1841	GLN
1	B	1867	ASN
1	B	1974	GLN
1	B	2047	GLN
1	B	2067	ASN
1	B	2217	ASN
1	B	2464	GLN
1	B	2577	HIS
1	B	2637	HIS
1	B	2707	GLN
1	B	3135	GLN
1	B	3200	HIS
1	B	3214	GLN
1	B	3248	GLN
1	B	3427	GLN
1	B	3431	ASN
1	B	3526	GLN
1	B	3535	HIS

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Mol	Chain	Res	Type
1	B	3636	GLN
1	B	3820	GLN
1	B	3826	GLN
1	B	4100	HIS
1	B	4156	ASN
1	B	4191	GLN
1	B	4249	GLN
1	B	4335	GLN
1	B	4386	ASN
1	B	4393	GLN
1	B	4477	GLN
2	D	270	GLN
2	D	290	GLN
2	D	344	HIS
2	D	371	GLN
2	D	462	HIS
3	F	115	HIS
3	F	295	HIS
4	H	36	ASN
5	I	18	GLN
5	I	27	GLN
5	I	51	ASN
5	I	80	GLN
6	K	45	ASN
6	L	53	GLN
7	O	254	ASN
7	O	381	HIS

5.3.3 RNA

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 12 ligands modelled in this entry, 4 are monoatomic - leaving 8 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
9	ATP	B	4702	10	28,33,33	0.78	0	34,52,52	0.60	1 (2%)
8	ADP	A	4704	-	24,29,29	0.87	0	29,45,45	1.17	2 (6%)
8	ADP	A	4703	-	24,29,29	0.87	0	29,45,45	1.24	2 (6%)
8	ADP	B	4703	-	24,29,29	0.88	0	29,45,45	1.25	2 (6%)
8	ADP	B	4704	-	24,29,29	0.84	0	29,45,45	1.20	2 (6%)
9	ATP	A	4702	10	28,33,33	0.72	0	34,52,52	0.59	1 (2%)
8	ADP	A	4701	10	24,29,29	0.85	0	29,45,45	1.26	2 (6%)
8	ADP	B	4701	10	24,29,29	0.86	0	29,45,45	1.24	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
9	ATP	B	4702	10	-	4/18/38/38	0/3/3/3
8	ADP	A	4704	-	-	1/12/32/32	0/3/3/3
8	ADP	A	4703	-	-	5/12/32/32	0/3/3/3
8	ADP	B	4703	-	-	5/12/32/32	0/3/3/3
8	ADP	B	4704	-	-	3/12/32/32	0/3/3/3
9	ATP	A	4702	10	-	4/18/38/38	0/3/3/3
8	ADP	A	4701	10	-	0/12/32/32	0/3/3/3
8	ADP	B	4701	10	-	3/12/32/32	0/3/3/3

There are no bond length outliers.

All (14) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
8	B	4703	ADP	N3-C2-N1	-3.68	123.67	128.67
8	A	4701	ADP	N3-C2-N1	-3.66	123.70	128.67
8	A	4703	ADP	N3-C2-N1	-3.66	123.71	128.67
8	B	4704	ADP	N3-C2-N1	-3.63	123.75	128.67
8	A	4704	ADP	N3-C2-N1	-3.61	123.77	128.67
8	B	4701	ADP	N3-C2-N1	-3.61	123.78	128.67
8	A	4701	ADP	C4-C5-N7	-2.59	106.60	109.34
8	A	4704	ADP	C4-C5-N7	-2.49	106.71	109.34
8	B	4704	ADP	C4-C5-N7	-2.45	106.74	109.34
8	A	4703	ADP	C4-C5-N7	-2.40	106.80	109.34
8	B	4703	ADP	C4-C5-N7	-2.38	106.82	109.34
8	B	4701	ADP	C4-C5-N7	-2.37	106.84	109.34
9	B	4702	ATP	C5-C6-N6	2.31	123.83	120.31
9	A	4702	ATP	C5-C6-N6	2.29	123.80	120.31

There are no chirality outliers.

All (25) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
8	A	4703	ADP	C5'-O5'-PA-O1A
8	A	4703	ADP	C5'-O5'-PA-O3A
8	B	4701	ADP	C5'-O5'-PA-O1A
8	B	4701	ADP	C5'-O5'-PA-O2A
8	B	4701	ADP	C5'-O5'-PA-O3A
8	B	4703	ADP	C5'-O5'-PA-O1A
8	B	4703	ADP	C5'-O5'-PA-O2A
8	B	4703	ADP	C5'-O5'-PA-O3A
8	B	4704	ADP	C5'-O5'-PA-O1A
9	A	4702	ATP	PB-O3B-PG-O3G
9	B	4702	ATP	O4'-C4'-C5'-O5'
8	B	4703	ADP	O4'-C4'-C5'-O5'
9	A	4702	ATP	O4'-C4'-C5'-O5'
9	B	4702	ATP	C3'-C4'-C5'-O5'
8	B	4703	ADP	C3'-C4'-C5'-O5'
8	B	4704	ADP	C3'-C4'-C5'-O5'
8	A	4703	ADP	O4'-C4'-C5'-O5'
8	B	4704	ADP	O4'-C4'-C5'-O5'
8	A	4703	ADP	C3'-C4'-C5'-O5'
9	A	4702	ATP	C3'-C4'-C5'-O5'
9	B	4702	ATP	PA-O3A-PB-O1B
8	A	4703	ADP	C5'-O5'-PA-O2A
8	A	4704	ADP	C5'-O5'-PA-O1A
9	B	4702	ATP	PA-O3A-PB-O2B

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Continued from previous page...

Mol	Chain	Res	Type	Atoms
9	A	4702	ATP	PB-O3A-PA-O2A

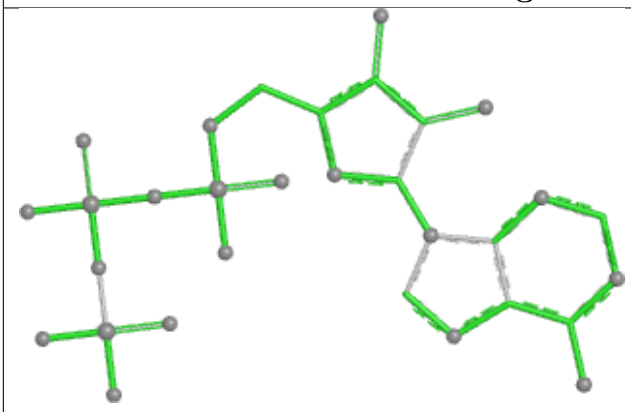
There are no ring outliers.

7 monomers are involved in 12 short contacts:

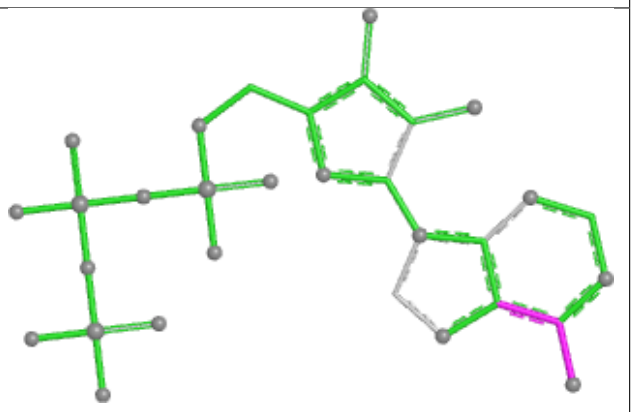
Mol	Chain	Res	Type	Clashes	Symm-Clashes
9	B	4702	ATP	2	0
8	A	4704	ADP	1	0
8	B	4703	ADP	2	0
8	B	4704	ADP	1	0
9	A	4702	ATP	2	0
8	A	4701	ADP	1	0
8	B	4701	ADP	3	0

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.

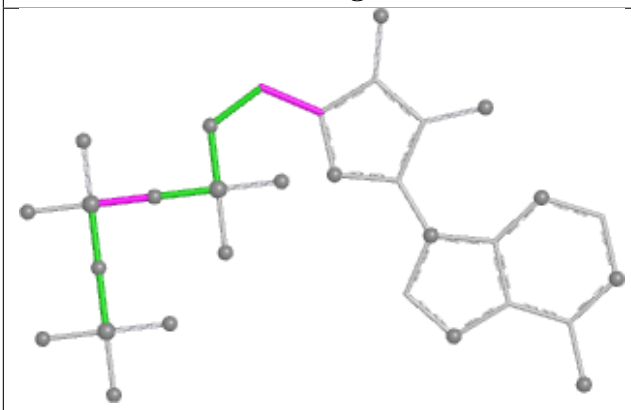
Ligand ATP B 4702



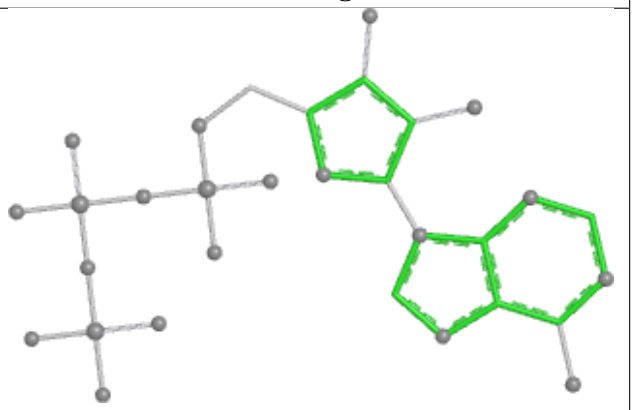
Bond lengths



Bond angles

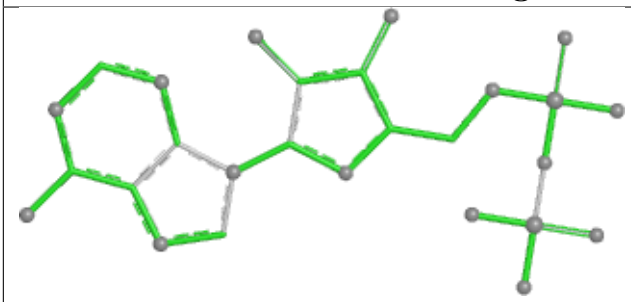


Torsions

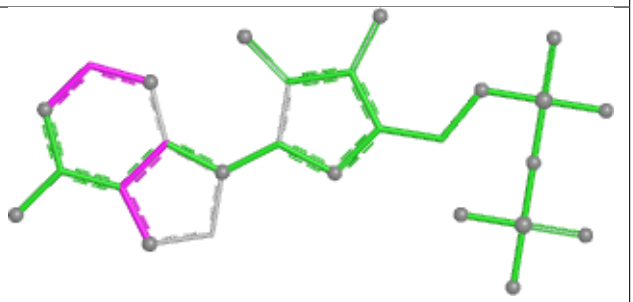


Rings

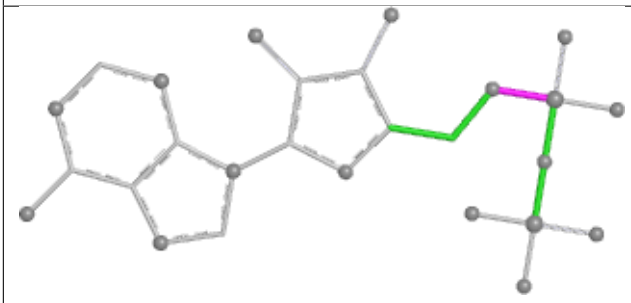
Ligand ADP A 4704



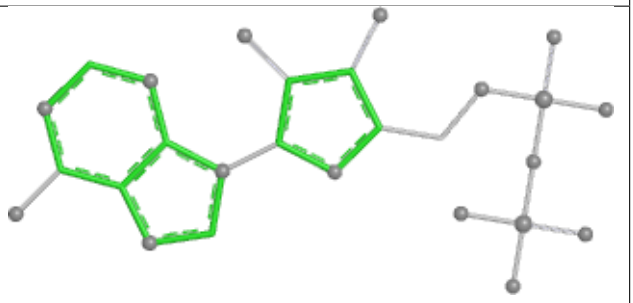
Bond lengths



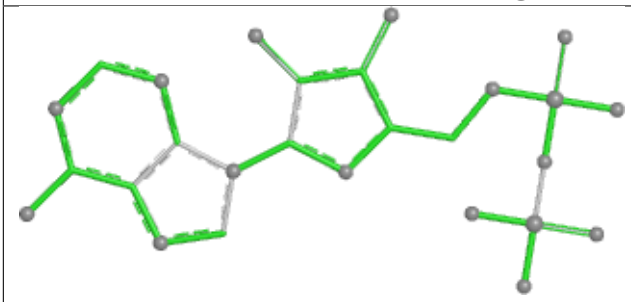
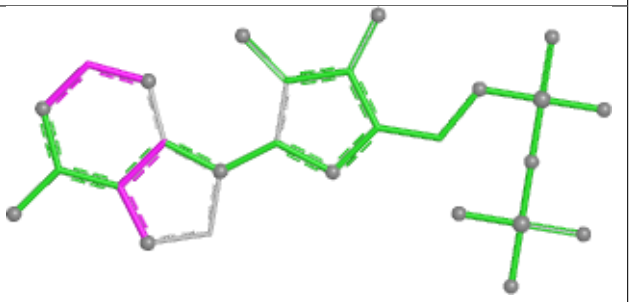
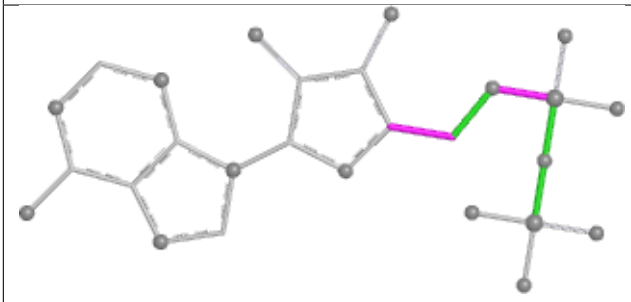
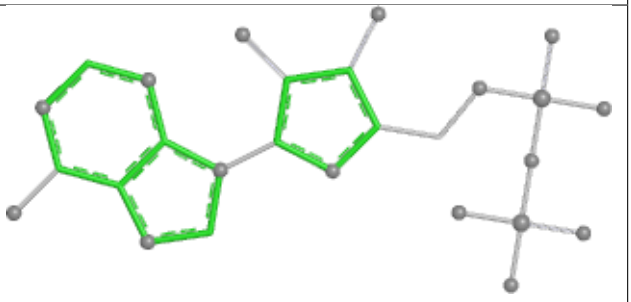
Bond angles

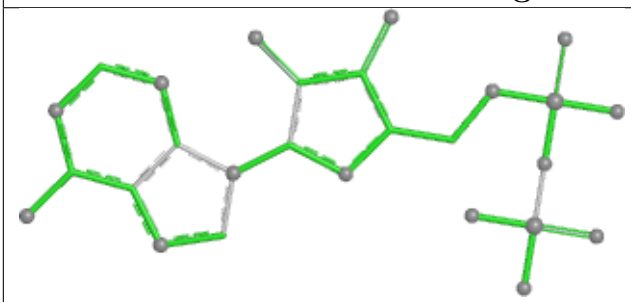
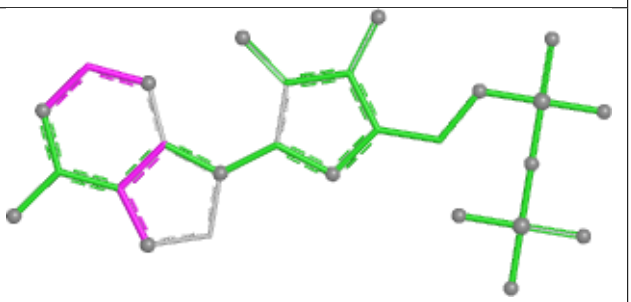
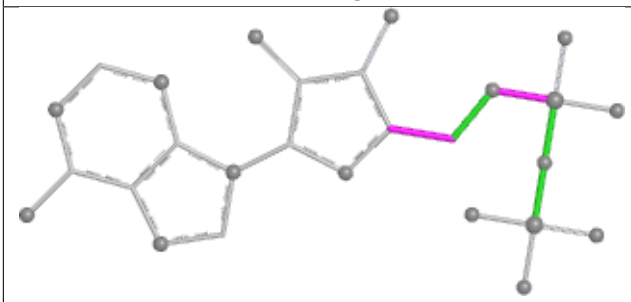
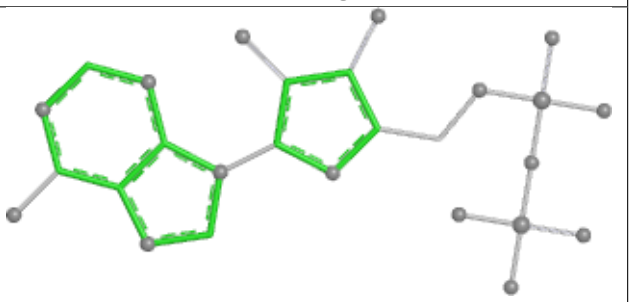


Torsions

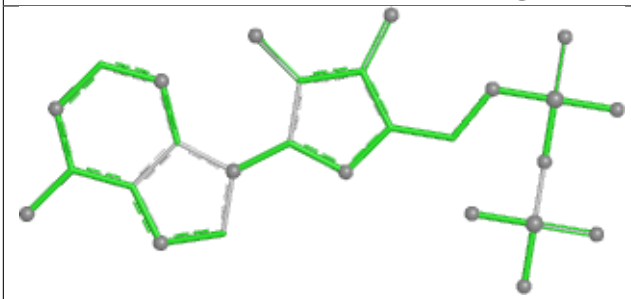


Rings

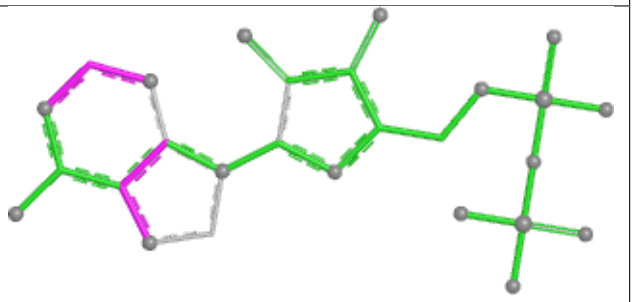
Ligand ADP A 4703	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand ADP B 4703	
 Bond lengths	 Bond angles
 Torsions	 Rings

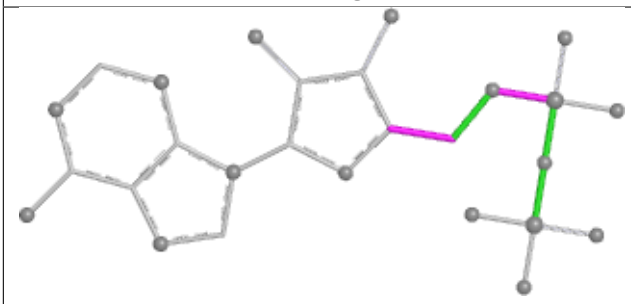
Ligand ADP B 4704



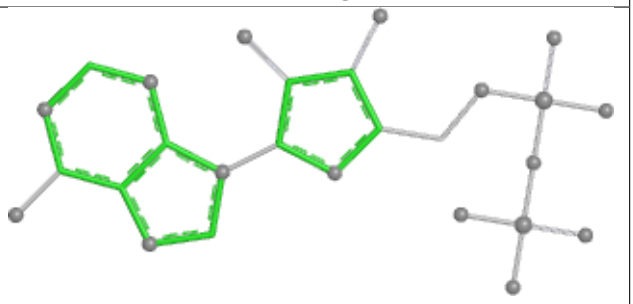
Bond lengths



Bond angles

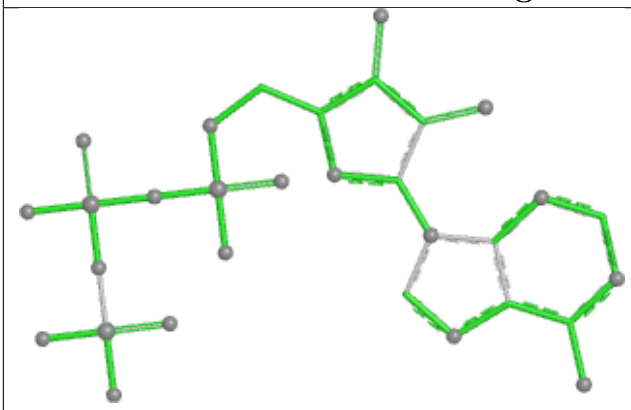


Torsions

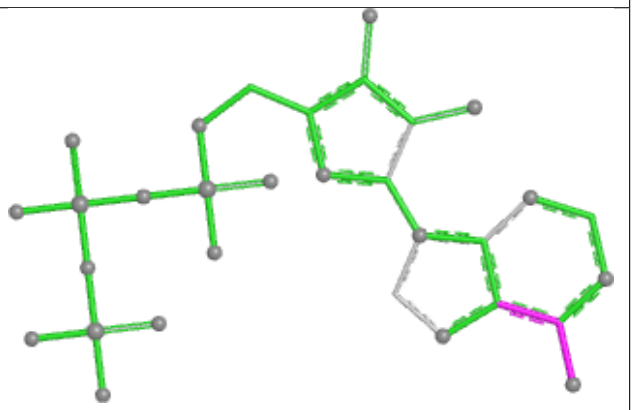


Rings

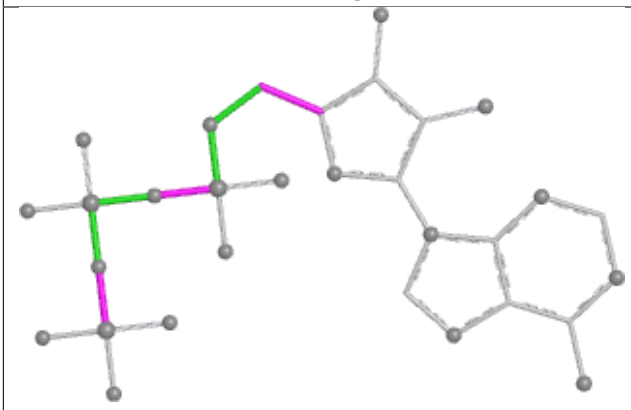
Ligand ATP A 4702



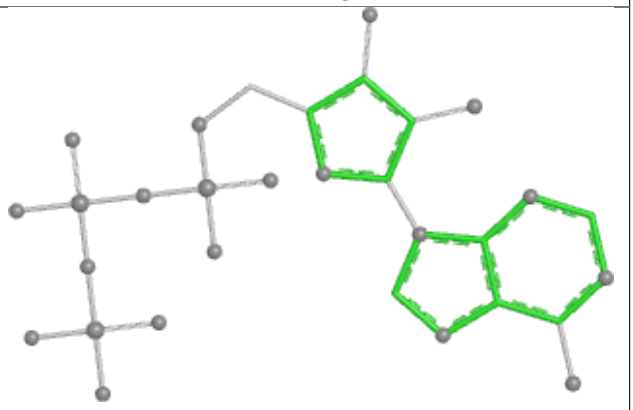
Bond lengths



Bond angles

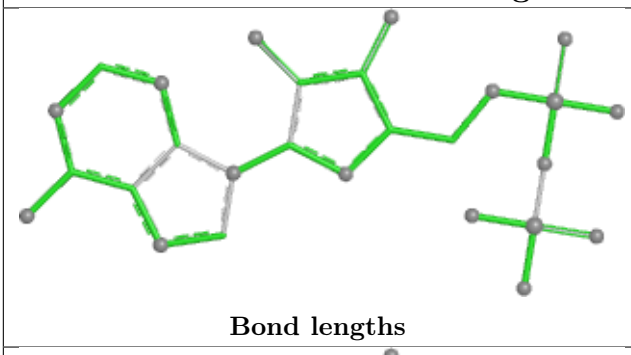


Torsions

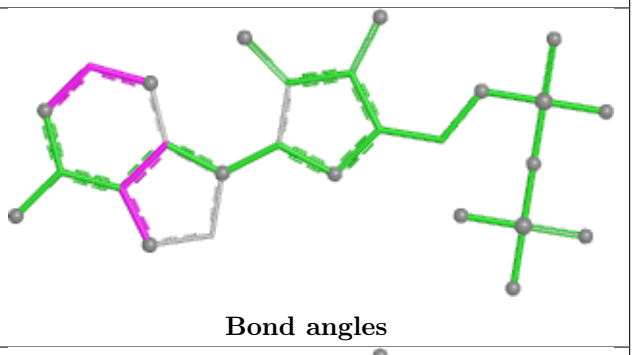


Rings

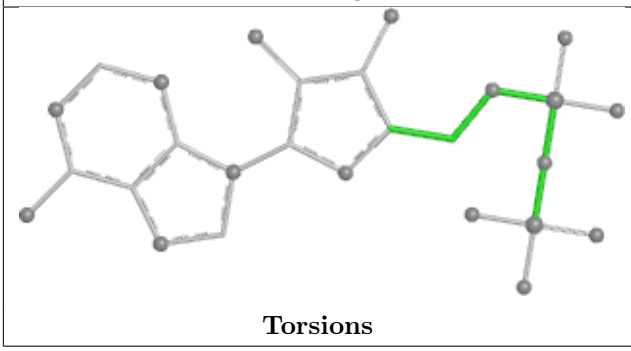
Ligand ADP A 4701



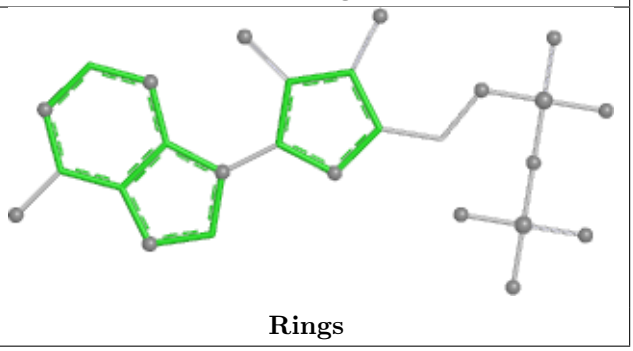
Bond lengths



Bond angles

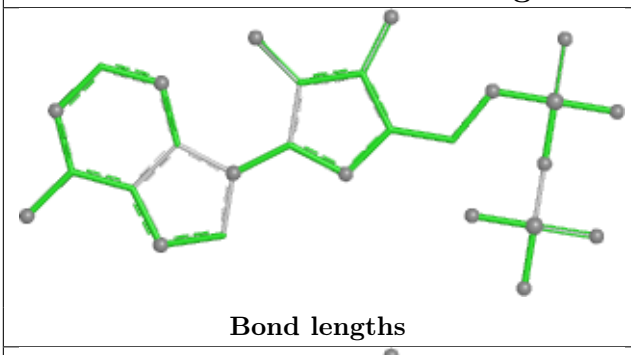


Torsions

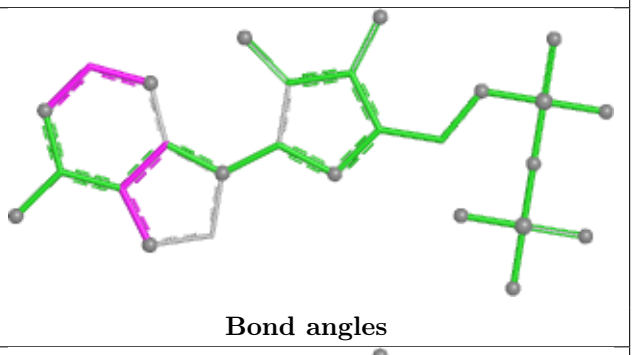


Rings

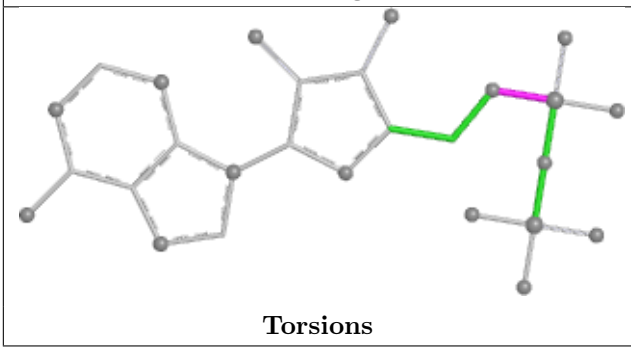
Ligand ADP B 4701



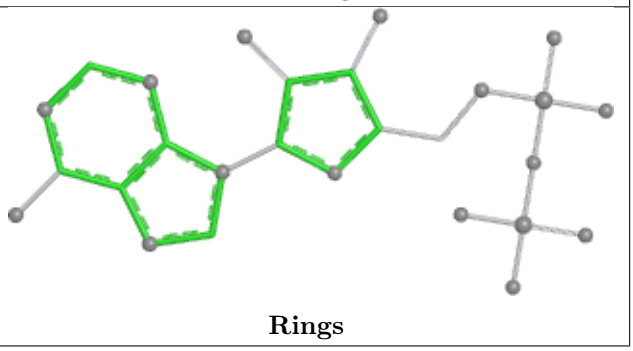
Bond lengths



Bond angles



Torsions



Rings

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
1	B	1
1	A	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	B	1394:MET	C	1395:LYS	N	8.64
1	A	1394:MET	C	1395:LYS	N	5.37

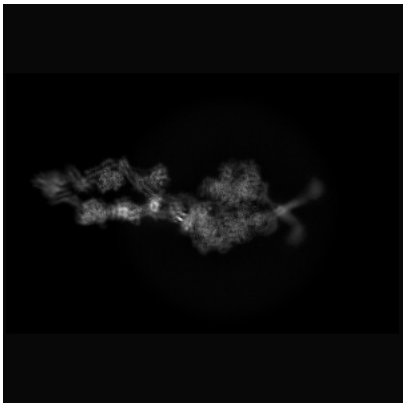
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-47382. These allow visual inspection of the internal detail of the map and identification of artifacts.

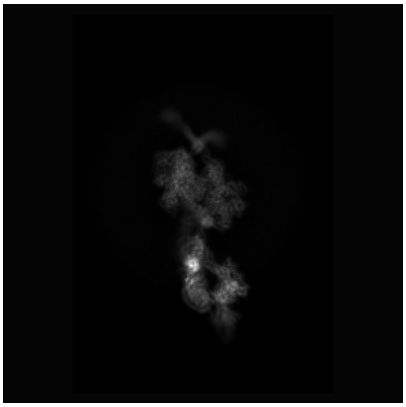
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections

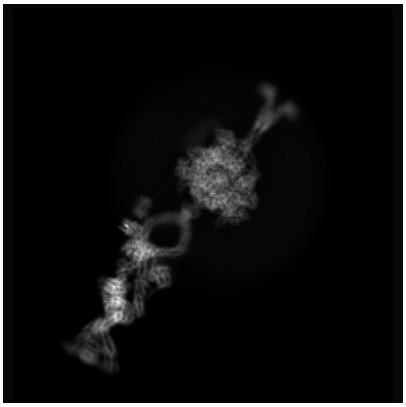
6.1.1 Primary map



X



Y

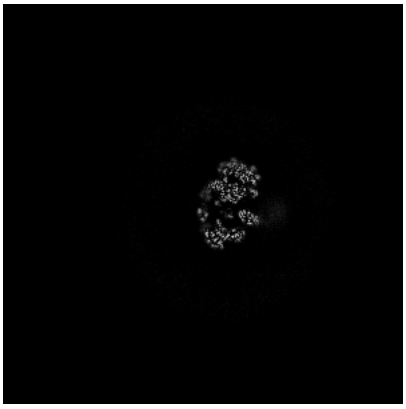


Z

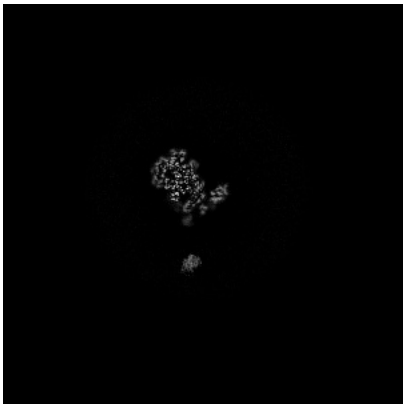
The images above show the map projected in three orthogonal directions.

6.2 Central slices

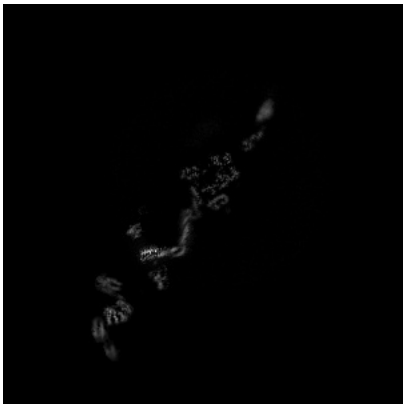
6.2.1 Primary map



X Index: 210



Y Index: 210



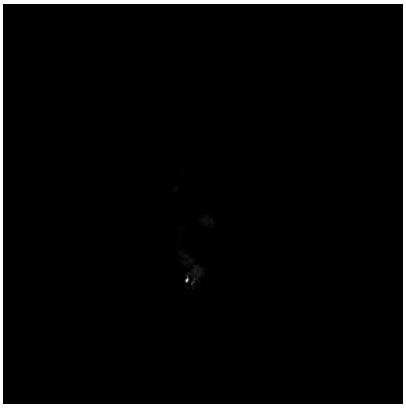
Z Index: 210

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

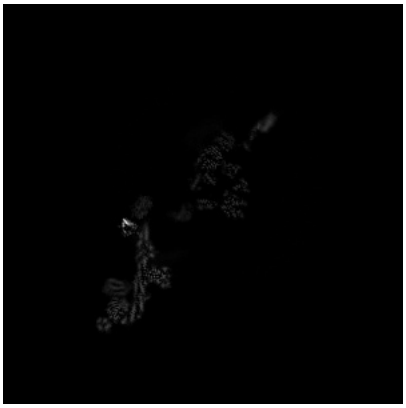
6.3 Largest variance slices (i)

6.3.1 Primary map

X Index: 130



Y Index: 186

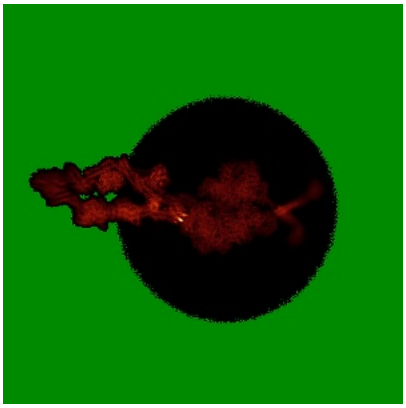


Z Index: 198

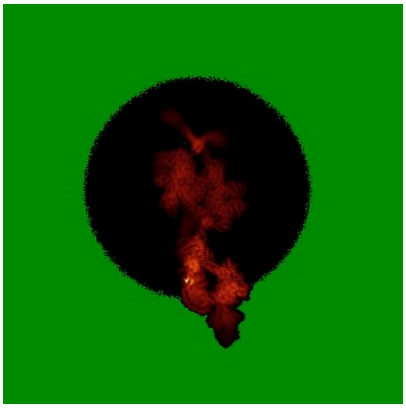
The images above show the largest variance slices of the map in three orthogonal directions.

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

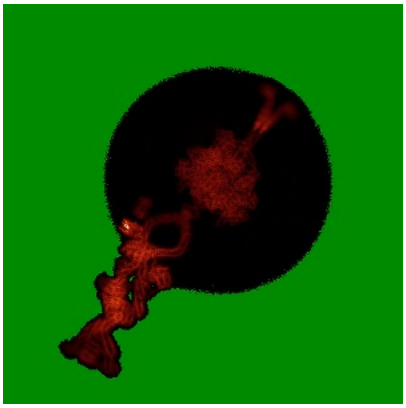
6.4.1 Primary map



X



Y



Z

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

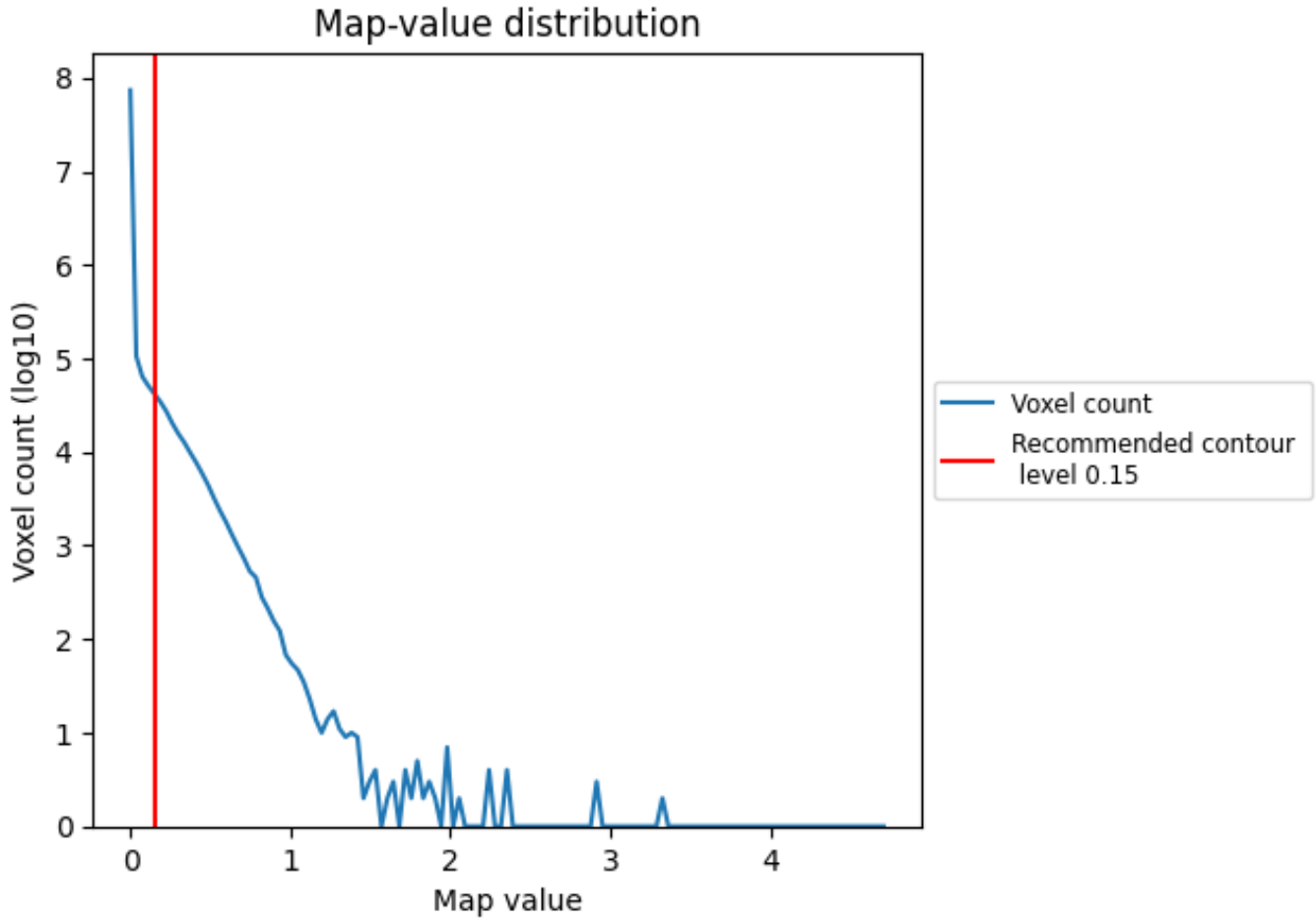
6.6 Mask visualisation (i)

This section was not generated. No masks/segmentation were deposited.

7 Map analysis

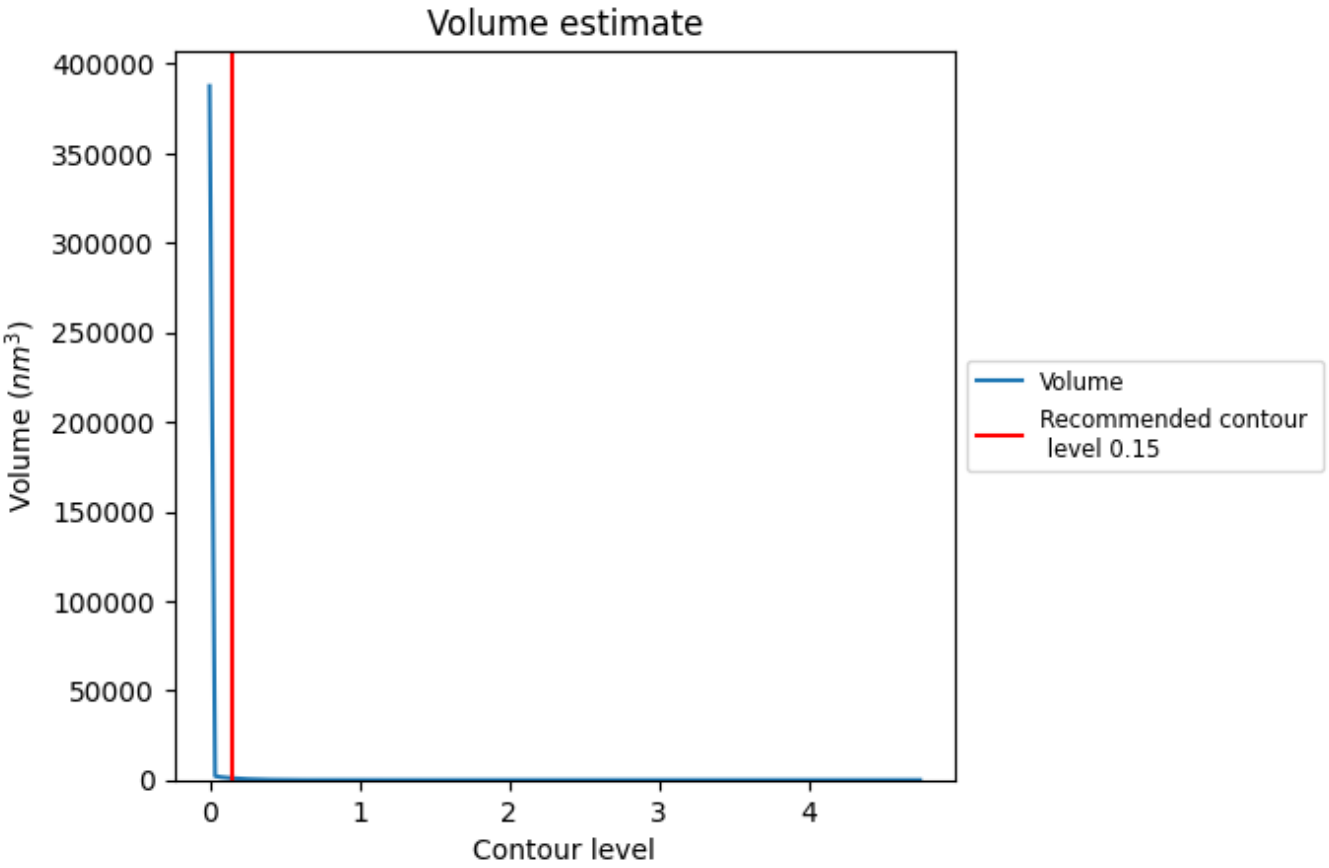
This section contains the results of statistical analysis of the map.

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.

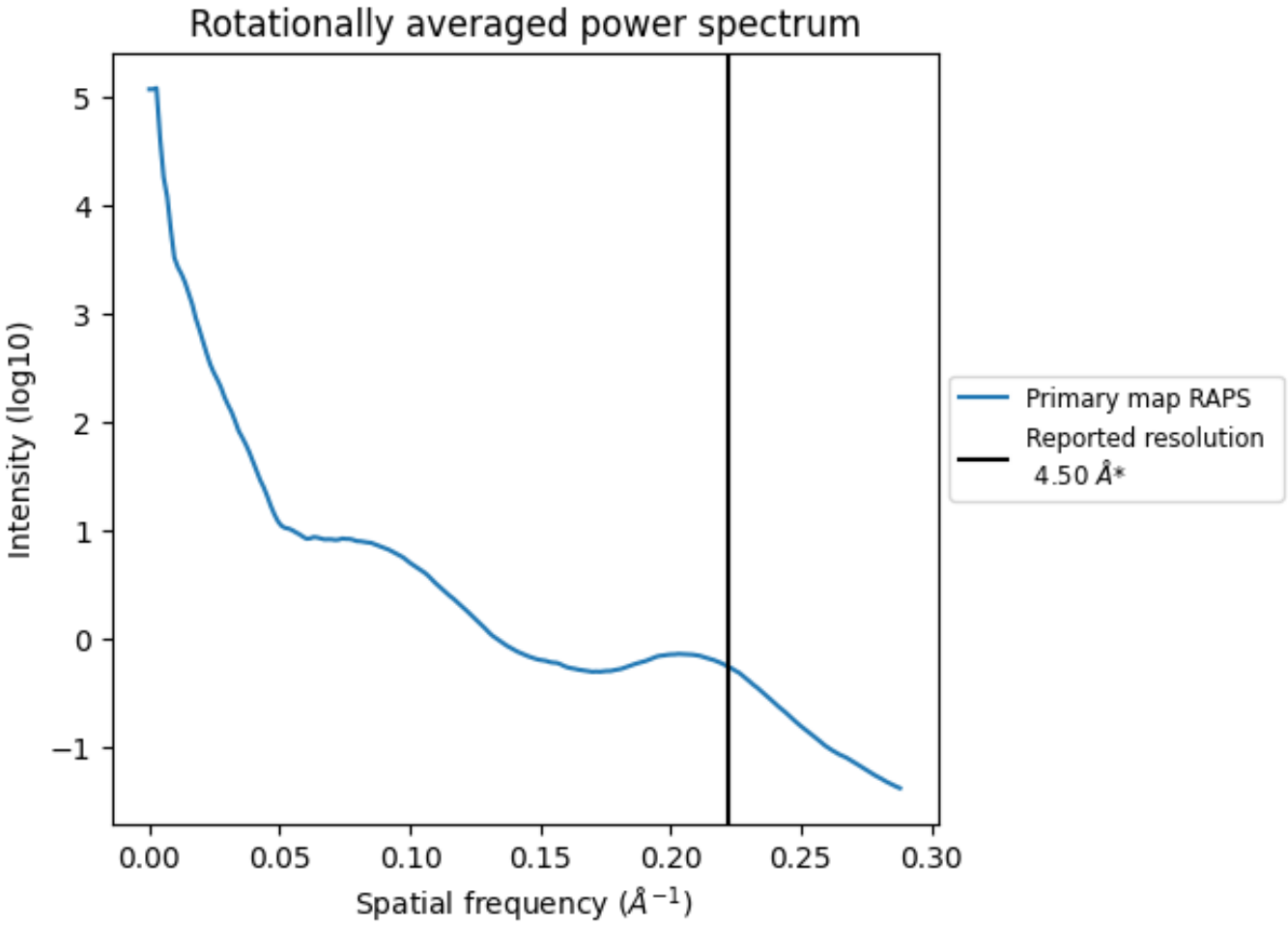
7.2 Volume estimate



The volume at the recommended contour level is 1011 nm^3; this corresponds to an approximate mass of 913 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 0.222 Å^{-1}

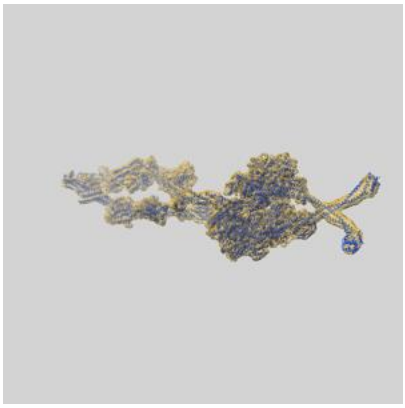
8 Fourier-Shell correlation

This section was not generated. No FSC curve or half-maps provided.

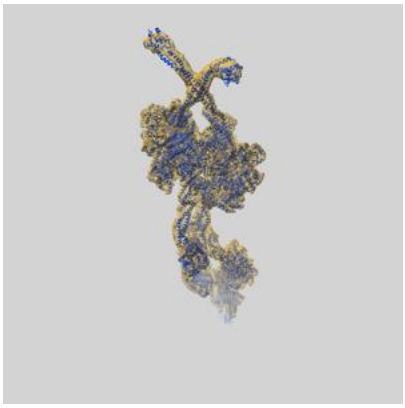
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-47382 and PDB model 9E13. Per-residue inclusion information can be found in section 3 on page 8.

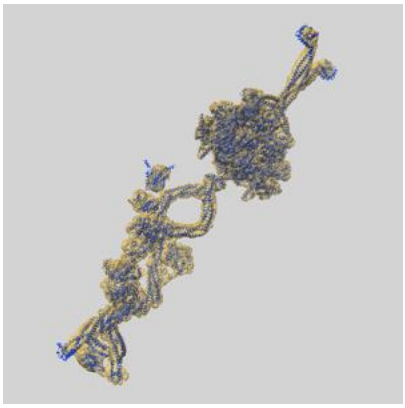
9.1 Map-model overlay



X



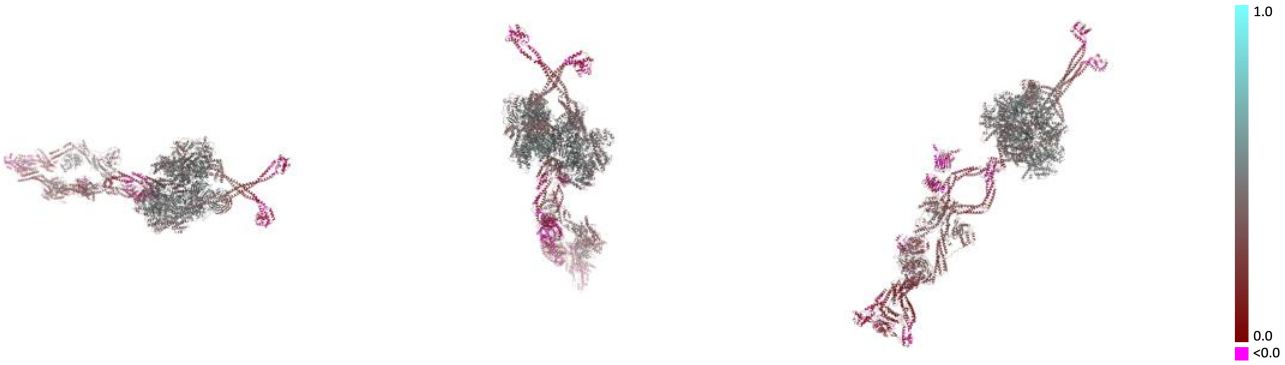
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.15 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.

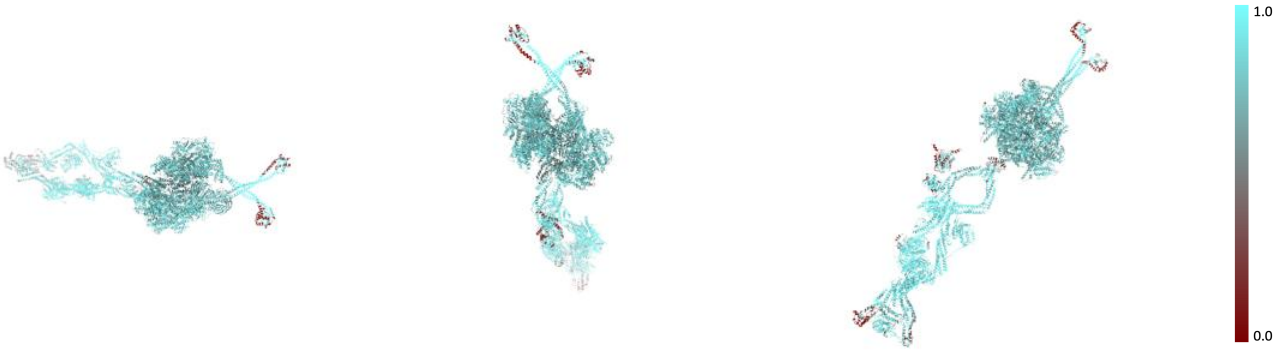
9.2 Q-score mapped to coordinate model (i)



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.

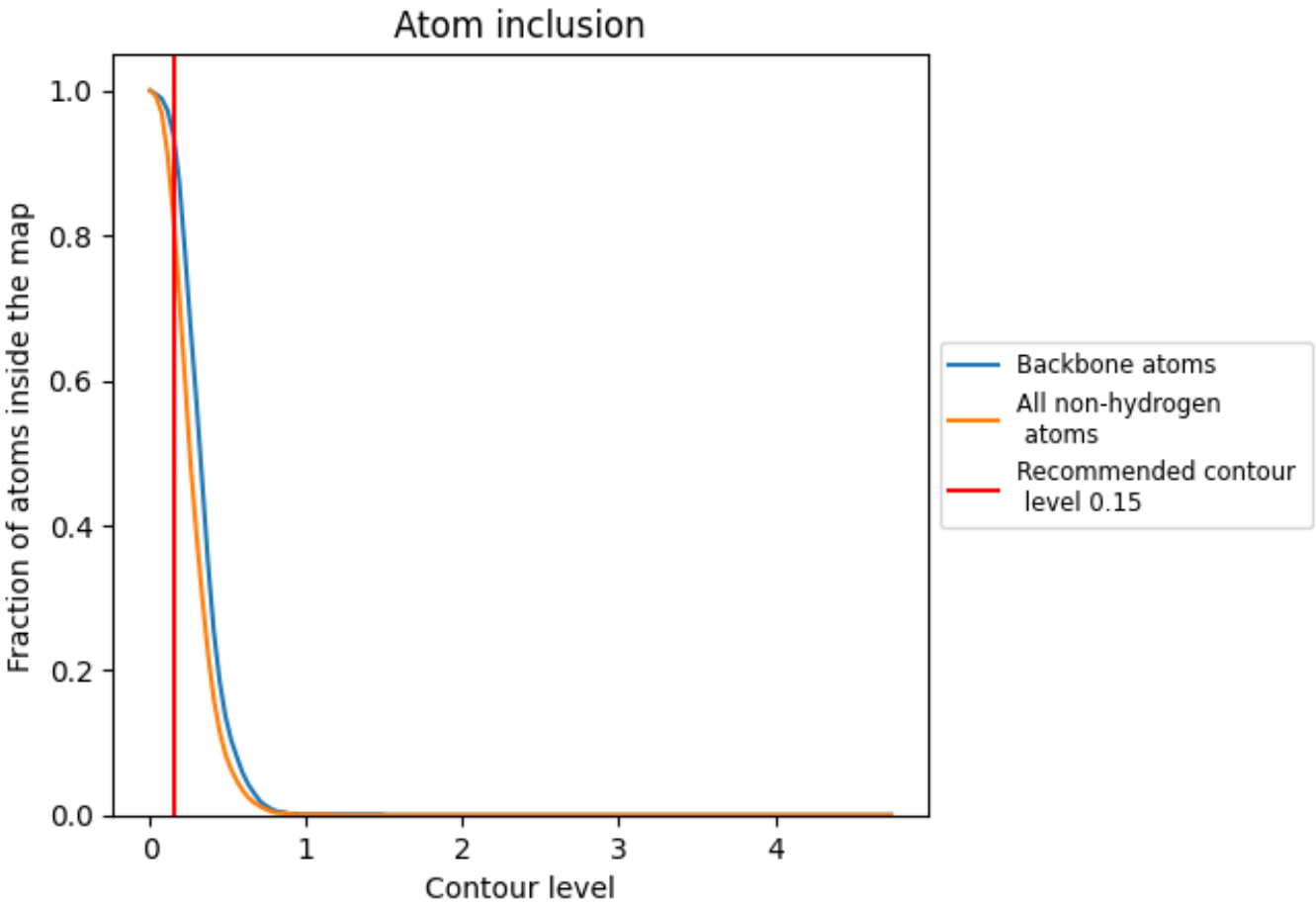
9.3 Atom inclusion mapped to coordinate model (i)



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 (0.15).

9.4 Atom inclusion (i)



At the recommended contour level, 94% of all backbone atoms, 82% 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 (0.15) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8240	0.3450
A	0.8020	0.3540
B	0.8320	0.3620
C	0.9310	0.3560
D	0.9320	0.2890
E	0.9490	0.3300
F	0.9530	0.3150
G	0.7640	0.1010
H	0.8580	0.1450
I	0.7760	0.1040
J	0.8010	0.0940
K	0.3960	0.0350
L	0.5500	0.0770
O	0.8570	0.4980
P	0.7510	0.3890