Full wwPDB EM Validation Report

Feb 5, 2026 – 09:30 AM EST

PDB ID	:	9E0Z / pdb_00009e0z
EMDB ID	:	EMD-47378
Title	:	Dimeric motor domains from phi-like dynein-1 bound to a Lis1 dimer under Nde1-Lis1 condition
Authors	:	Yang, J.; Zhang, K.
Deposited on	:	2024-10-21
Resolution	:	2.86 Å(reported)

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

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

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

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

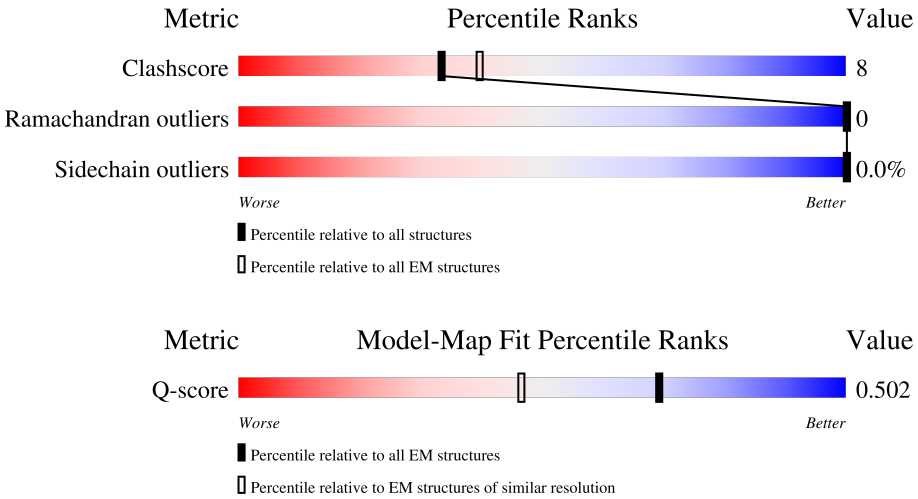
EMDB validation analysis	:	0.0.1.dev129
Mogul	:	2022.3.0, CSD as543be (2022)
MolProbity	:	4-5-2 with Phenix2.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive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

1 Overall quality at a glance

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

The reported resolution of this entry is 2.86 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
Q-score	-	25397	12017 (2.36 - 3.36)

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	15% 50% 13% 37%
1	B	4646	10% 51% 12% 37%
2	C	410	62% 16% 21%
2	D	410	20% 48% 29% 22%

2 Entry composition

There are 5 unique types of molecules in this entry. The entry contains 52502 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

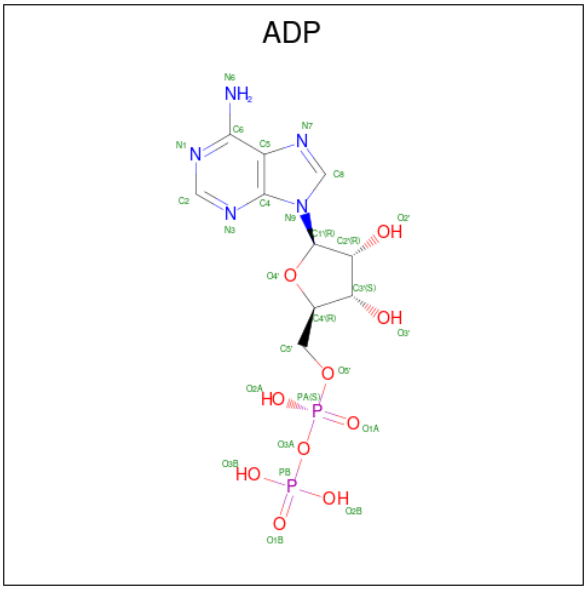
- Molecule 1 is a protein called Cytoplasmic dynein 1 heavy chain 1.

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

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

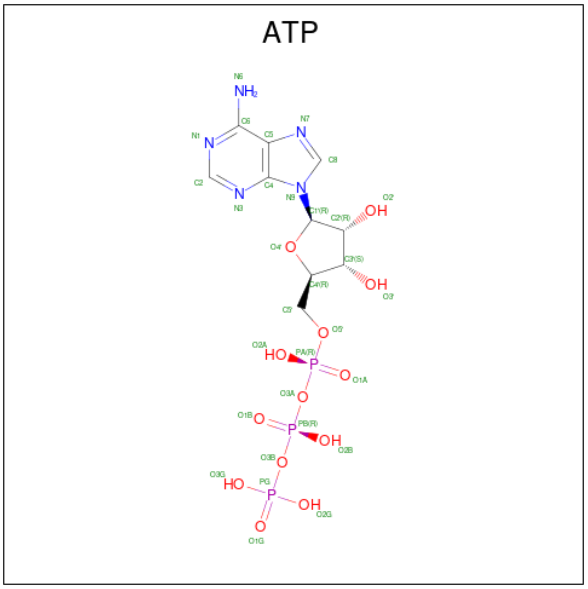
Mol	Chain	Residues	Atoms					AltConf	Trace
2	C	322	Total 2557	C 1608	N 452	O 477	S 20	0	0
2	D	319	Total 2531	C 1593	N 446	O 472	S 20	0	0

- Molecule 3 is ADENOSINE-5'-DIPHOSPHATE (CCD ID: ADP) (formula: $C_{10}H_{15}N_5O_{10}P_2$) (labeled as "Ligand of Interest" by depositor).



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

- Molecule 4 is ADENOSINE-5'-TRIPHOSPHATE (CCD ID: ATP) (formula: $C_{10}H_{16}N_5O_{13}P_3$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					AltConf
4	A	1	Total	C	N	O	P	0
			31	10	5	13	3	
4	B	1	Total	C	N	O	P	0
			31	10	5	13	3	

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

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

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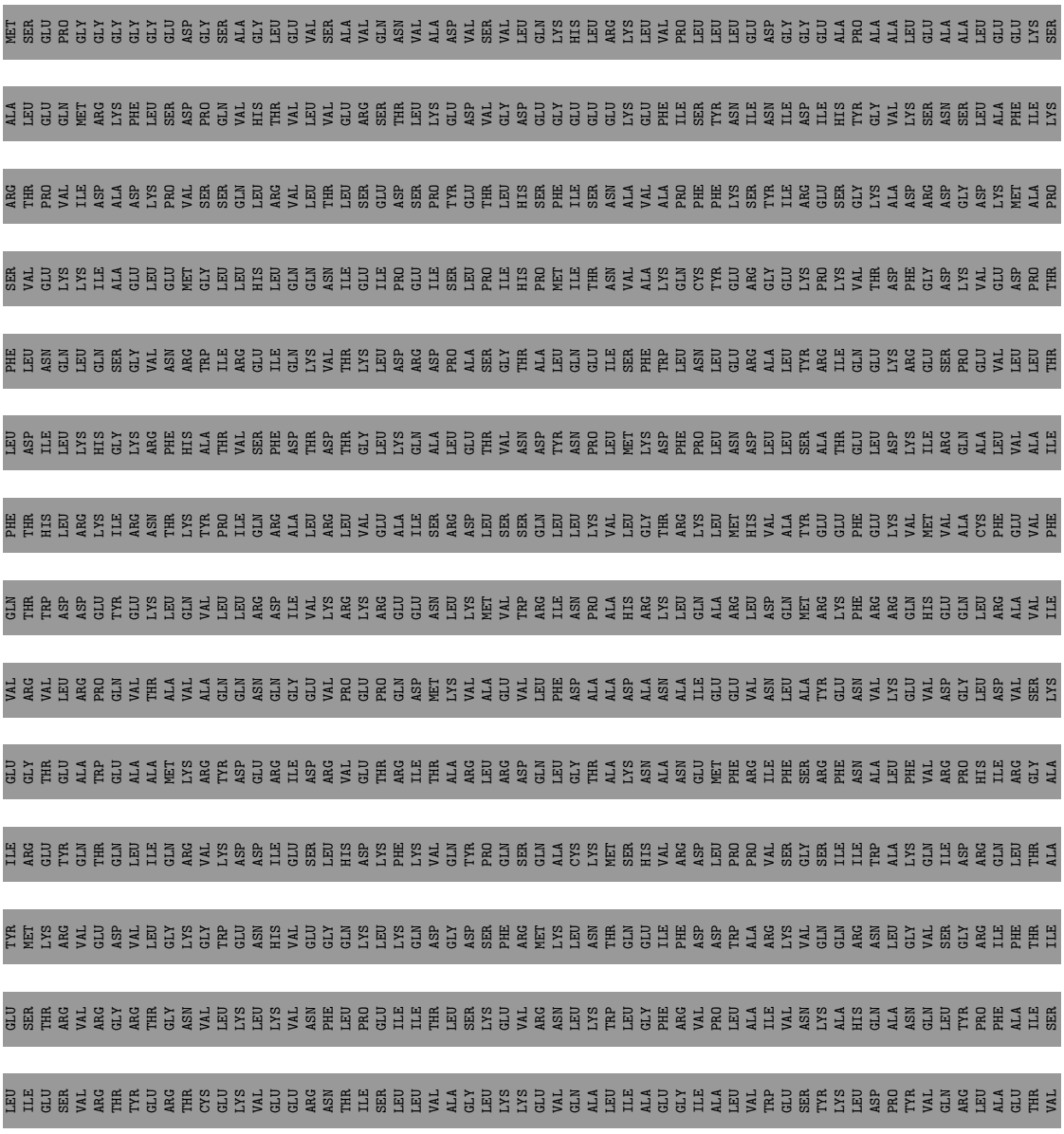
Mol	Chain	Residues	Atoms		AltConf
5	B	2	Total 2	Mg 2	0

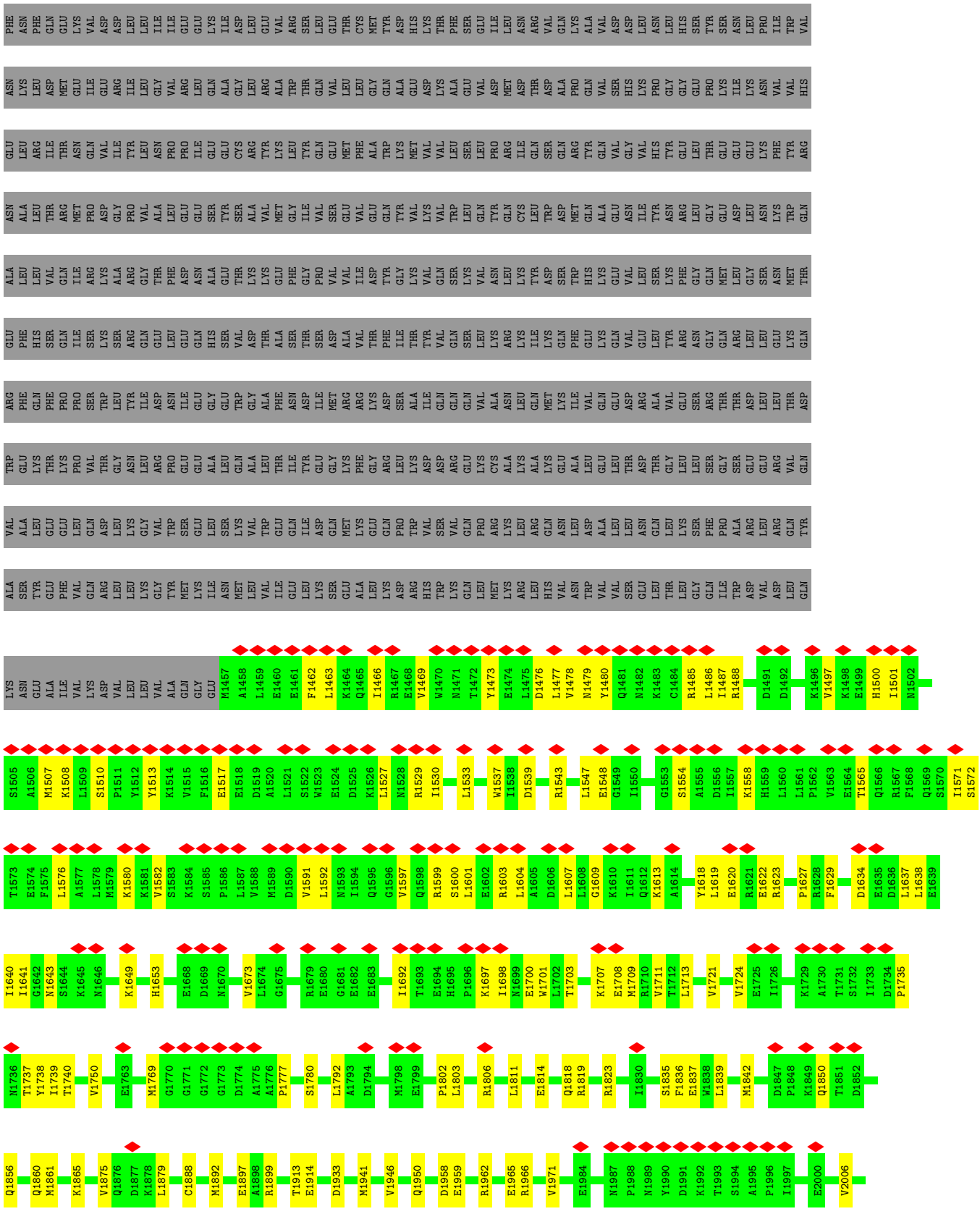
3 Residue-property plots (i)

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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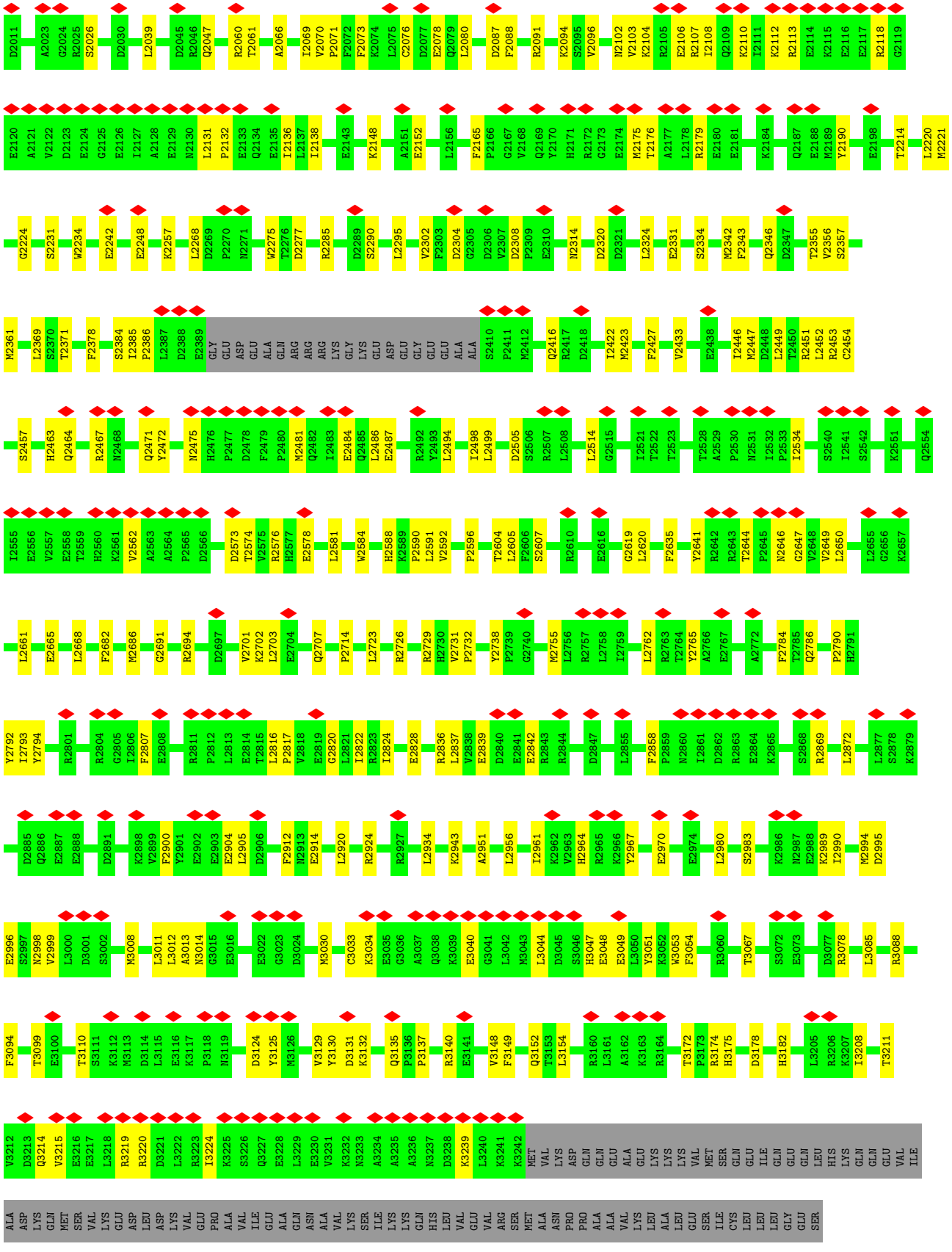
ASN LYS LEU ASP MET GLU ILE GLU ARG ILE LEU GLY VAL ARG LEU GLN ALA GLY LEU ARG ALA TRP THR GLN VAL LEU LEU GLY GLN ALA GLU ASP LYS ALA GLU GLU VAL ASP MET ASP THR ASP ALA PRO GLN VAL SER HIS LYS PRO GLY GLY GLU PRO LYS ILE LYS ASN VAL VAL HIS
GLU LEU ARG ILE THR ASN GLN VAL ILE TYR LEU ASN PRO PRO ILE GLU GLU CYS ARG TYR LYS LEU TYR GLN GLU MET PHE ALA TRP LYS MET VAL VAL LEU GLU SER LEU PRO ARG ILE GLN SER GLN ARG TYR GLN VAL GLY VAL HIS TYR GLU LEU THR GLU GLU GLU LYS PHE TYR ARG
ASN ALA LEU THR ARG MET PRO ASP GLY PRO VAL ALA LEU GLU GLU SER TYR SER ALA VAL MET GLY ILE VAL GLU GLN VAL SER LEU VAL LYS VAL VAL LEU GLN TYR GLN CYS LEU TRP ASP MET GLN ALA GLU ASN ILE TYR ASN ARG LEU GLY GLU ASP LEU ASN LYS TRP GLN
ALA LEU LEU VAL GLN ILE ARG LYS ALA ARG GLY THR PHE ASP ASN ALA GLU THR LYS LYS GLU PHE GLY PRO VAL VAL ILE ASP TYR GLY LYS VAL GLN SER LYS VAL ASN LEU GLN LYS TYR ASP SER TRP HIS LYS GLU VAL LEU SER LYS PHE GLY GLN MET LEU GLY SER ASN MET THR
GLU PHE HIS SER GLN ILE SER LYS SER ARG GLN GLU LEU GLU GLN HIS SER VAL ASP THR ALA SER THR SER ASP VAL PRO VAL ALA ILE THR TYR GLU PHE ILE THR TYR ARG GLN GLU LYS GLN VAL GLU LEU TYR ARG ASN GLY GLY GLN LEU ARG LEU LEU GLU VAL ARG
ARG PHE GLN PHE PRO PRO SER TRP LEU TYR ILE ASP ILE MET ARG ARG LYS ASP SER ALA ILE ASP ALA ASN PHE ASN ASP ILE MET LYS ILE VAL GLN VAL GLU ASP ARG ALA VAL GLU ASP ARG THR THR ASP ASP LEU LEU THR ASP
TRP GLU LYS THR LYS PRO VAL THR GLY ASN LEU ARG PRO GLU GLU ALA LEU GLN ALA LEU THR ILE TYR GLU GLY LYS PHE GLY ARG LEU LYS ASP ASP ARG GLU LYS CYS ALA LYS ALA LYS GLU ALA LEU GLU LEU THR ASP THR GLY LEU LEU SER GLY SER GLU GLU ARG VAL GLN
VAL ALA LEU GLU GLN ASP LEU LYS GLY VAL TRP SER GLU LEU SER LYS VAL TRP GLU GLN ILE ASP GLN MET LYS GLU MET ASN LEU ASP ALA LEU LEU LEU ASN GLN LEU LEU LYS SER PHE PRO ALA ARG LEU ARG GLN TYR
ALA SER TYR GLU PHE VAL GLN ARG LEU LEU LYS GLY TYR MET LYS ILE ASN MET LEU VAL ILE GLU LEU LYS SER GLU ALA LEU LYS ASP ARG HIS TRP LYS GLN LEU MET LYS ARG LEU HIS VAL ASN TRP VAL VAL SER GLU LEU THR LEU GLY GLN ILE TRP ASP VAL ASP LEU GLN
LYS ASN GLU ALA ILE VAL LYS ASP VAL LEU LEU LEU VAL ALA GLN GLY GLU M1457 A1458 L1459 E1460 E1461 F1462 L1463 K1464 Q1465 I1466 R1467 E1468 V1469 W1470 N1471 T1472 Y1473 E1474 L1475 D1476 L1477 V1478 N1479 Y1480 Q1481 N1482 K1483 C1484 R1485 L1486 I1487 R1488 D1491 D1492 K1496 V1497 K1498 E1499 H1500 I1501 N1502
S1505 A1506 M1507 K1508 L1509 S1510 P1511 Y1512 Y1513 K1514 V1515 F1516 E1517 E1518 D1519 A1520 L1521 S1522 W1523 E1524 D1525 K1526 L1527 N1528 R1529 I1530 L1533 W1537 I1538 D1539 R1543 L1547 E1548 G1549 I1550 G1553 S1554 A1555 D1556 I1557 K1558 H1559 L1560 L1561 P1562 V1563 E1564 T1565 Q1566 R1567 F1568 Q1569 S1570 I1571 S1572
T1573 E1574 F1575 L1576 A1577 L1578 M1579 K1580 K1581 V1582 S1583 K1584 S1585 P1586 L1587 V1588 M1589 D1590 V1591 L1592 N1593 I1594 Q1595 G1596 V1597 Q1598 R1599 S1600 L1601 E1602 R1603 L1604 K1605 D1606 L1607 L1608 G1609 K1610 I1611 Q1612 K1613 A1614 Y1618 L1619 E1620 R1621 E1622 R1623 P1627 R1628 F1629 D1634 E1635 D1636 L1637 L1638 E1639
I1640 I1641 G1642 N1643 S1644 K1645 N1646 K1649 H1653 E1668 D1669 N1670 V1673 L1674 G1675 R1679 E1680 G1681 E1682 E1683 I1692 T1693 E1694 H1695 P1696 K1697 I1698 N1699 E1700 W1701 L1702 T1703 K1707 E1708 M1709 R1710 V1711 T1712 L1713 V1721 V1724 E1725 I1726 K1729 A1730 T1731 S1732 I1733 D1734 P1735
N1736 T1737 Y1738 I1739 T1740 V1750 E1763 M1769 G1770 G1771 G1772 G1773 D1774 A1775 A1776 P1777 S1780 L1792 A1793 D1794 M1798 E1799 P1802 L1803 R1806 L1811 E1814 Q1818 R1819 R1823 I1830 S1835 F1836 E1837 W1838 L1839 M1842 D1847 P1848 K1849 Q1850 T1851 D1852
Q1856 Q1860 M1861 K1865 V1875 Q1876 D1877 K1878 L1879 C1888 M1892 E1897 A1898 R1899 T1913 E1914 D1933 M1941 V1946 Q1950 D1958 E1959 R1962 E1965 R1966 V1971 E1984 N1987 P1988 N1989 Y1990 D1991 K1992 T1993 S1994 A1995 P1996 I1997 E2000 V2006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E2120 A2121 V2122 D2123 E2124 G2125 E2126 I2127 A2128 E2129 N2130 L2131 P2132 E2133 Q2134 E2135 I2136 L2137 I2138 E2143 K2148 A2151 E2152 L2156 F2165 P2166 G2167 V2168 Q2169 Y2170 H2171 R2172 G2173 E2174 M2175 T2176 A2177 L2178 R2179 E2180 E2181 K2184 Q2187 E2188 M2189 Y2190 E2198 T2214 L2220 M2221
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M2361 L2369 S2370 T2371 F2378 S2384 I2385 P2386 L2387 D2388 E2389 GLY GLU ASP GLU ALA GLN ARG ARG ARG LYS GLY LYS GLU ASP GLU GLY GLU GLU ALA ALA S2410 P2411 M2412 Q2416 R2417 D2418 I2422 M2423 F2427 V2433 E2438 I2446 M2447 D2448 L2449 T2450 R2451 L2452 R2453 C2454
S2457 H2463 Q2464 R2467 N2468 Q2471 Y2472 N2475 H2476 P2477 D2478 F2479 P2480 M2481 Q2482 I2483 E2484 Q2485 L2486 E2487 R2492 Y2493 L2494 I2498 L2499 D2505 S2506 R2507 L2508 L2514 G2515 I2521 T2522 T2523 T2528 A2529 P2530 N2531 I2532 P2533 I2534 S2540 I2541 S2542 K2551 Q2554
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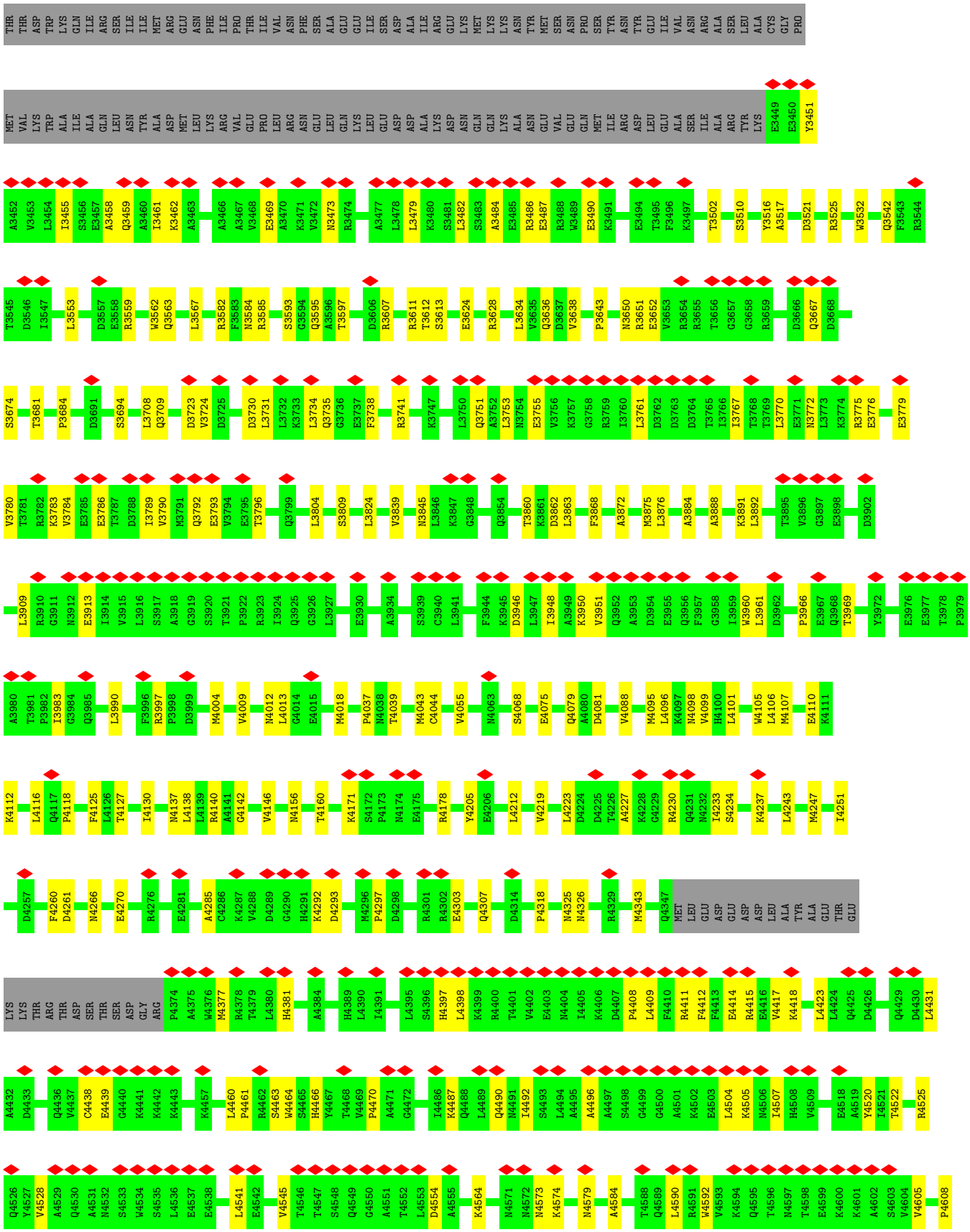
V3212 D3213 Q3214 V3215 E3216 E3217 L3218 R3219 R3220 D3221 L3222 R3223 I3224 K3225 S3226 Q3227 E3228 L3229 E3230 V3231 K3232 N3233 A3234 A3235 A3236 N3237 D3238 K3239 L3240 K3241 K3242 MET VAL LYS ASP GLN GLN GLU ALA GLU LYS LYS LYS VAL MET SER GLN GLU ILE GLN GLU GLN LEU HIS LYS GLN GLN GLU VAL ILE
ALA ASP LYS GLN MET SER VAL LYS GLU ASP LEU ASP LYS VAL GLU PRO ALA VAL ILE GLU ALA GLN ASN ALA VAL LYS SER ILE LYS LYS GLN HIS LEU VAL GLU VAL ARG SER MET ALA ASN PRO PRO ALA ALA VAL LYS LEU ALA LEU GLU SER ILE CYS LEU LEU LEU GLY GLU SER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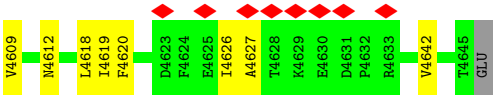
D4257 F4260 D4261 N4266 E4270 R4276 E4281 A4285 C4286 K4287 V4288 D4289 G4290 H4291 K4292 D4293 M4296 P4297 D4298 R4301 R4302 E4303 Q4307 D4314 P4318 N4325 N4326 R4329 M4343 Q4347 MET LEU GLU ASP GLU ASP ASP LEU ALA TYR ALA GLU THR GLU
LYS LYS THR ARG THR ASP SER THR SER ASP GLY ARG P4374 A4375 W4376 M4377 R4378 T4379 L4380 H4381 A4384 H4389 L4390 I4391 L4395 S4396 H4397 L4398 K4399 R4400 T4401 V4402 E4403 N4404 I4405 K4406 D4407 P4408 L4409 F4410 R4411 F4412 F4413 E4414 R4415 E4416 V4417 K4418 L4423 L4424 Q4425 D4426 Q4429 D4430 L4431
A4432 D4433 Q4436 V4437 C4438 E4439 G4440 K4441 K4442 K4443 K4457 L4460 P4461 R4462 S4463 W4464 S4465 H4466 Y4467 T4468 V4469 P4470 A4471 G4472 I4486 K4487 Q4488 L4489 Q4490 N4491 I4492 S4493 L4494 A4495 A4496 A4497 S4498 G4499 G4500 A4501 K4502 E4503 L4504 K4505 N4506 I4507 H4508 V4509 E4518 A4519 Y4520 I4521 T4522 R4525
Q4526 Y4527 V4528 A4529 Q4530 A4531 N4532 S4533 W4534 S4535 L4536 E4537 E4538 L4541 E4542 V4545 T4546 T4547 S4548 Q4549 G4550 A4551 T4552 L4553 D4554 A4555 K4564 N4571 N4572 N4573 K4574 N4579 A4584 T4588 Q4589 L4590 R4591 W4592 V4593 K4594 Q4595 T4596 N4597 T4598 E4599 K4600 K4601 A4602 S4603 V4604 V4605 P4608



• Molecule 1: Cytoplasmic dynein 1 heavy chain 1

Chain B:

MET SER GLU PRO GLY GLY GLY GLY GLU ASP GLY SER ALA GLY LEU GLU VAL SER ALA VAL GLN ASN VAL ALA ASP VAL SER VAL LEU GLN LYS HIS LEU ARG LYS LEU VAL PRO LEU LEU LEU GLU ASP GLY GLY GLU ALA PRO ALA ALA LEU GLU GLU ALA ALA LEU GLU LYS SER

ALA LEU GLU GLN MET ARG LYS PHE LEU SER ASP PRO GLN VAL LEU VAL GLU ARG SER THR LEU LYS GLU ASP VAL GLY ASP GLU GLY GLU GLU GLU LYS GLU PHE ILE SER TYR ASN ILE ASN ILE ASP ILE HIS TYR GLY VAL LYS SER ASN SER LEU ALA PHE ILE LYS

ARG THR PRO VAL ILE ASP ALA ASP LYS PRO VAL SER SER GLN LEU ARG VAL LEU THR LEU GLU SER ASP PRO TYR GLU THR LEU HIS SER PHE ILE SER ASN ALA VAL ALA PRO PHE PHE LYS SER TYR ILE ARG GLU SER GLY LYS ALA ASP ARG ASP GLY ASP LYS MET ALA PRO

SER VAL GLU LYS LYS ILE ALA GLU GLU LEU GLU MET GLY LEU LEU HIS LEU GLN GLN GLN ASN ILE GLU ILE PRO GLU ILE SER LEU PRO ILE HIS PRO MET ILE THR ASN VAL ALA LYS GLN CYS TYR GLU ARG GLY GLU LYS PRO LYS VAL THR ASP PHE GLY ASP LYS VAL GLU ASP PRO THR

PHE LEU ASN GLN LEU GLN SER GLY VAL ASN ARG TRP ILE ARG GLU ILE GLN LYS VAL THR LYS LEU ASP ARG ASP PRO ALA SER GLY THR ALA LEU GLN GLU ILE SER PHE TRP LEU ASN LEU GLU ARG ALA LEU TYR ARG ILE GLN GLU LYS ARG GLU SER PRO GLU VAL LEU ASP THR

LEU ASP ILE LEU LYS HIS GLY LYS ARG PHE HIS ALA THR VAL SER PHE ASP THR ASP THR GLY LEU LYS GLN ALA LEU GLU THR VAL ASN ASP TYR ASN PRO LEU MET LYS ASP PHE PRO LEU ASN ASP LEU LEU SER ALA THR GLU LEU ASP ARG GLN ALA LEU VAL ALA ILE

PHE THR HIS LEU ARG LYS ILE ARG ASN THR LYS TYR PRO ILE GLN ARG ALA LEU ARG LEU VAL GLU ALA ILE SER ARG ASP LEU SER SER GLN LEU LEU LEU LYS VAL LEU GLY THR ARG LYS LEU MET HIS VAL ALA TYR GLU GLU PHE GLU LYS VAL MET VAL ALA CYS PHE GLU VAL PHE

GLN THR TRP ASP ASP GLU TYR GLU LYS LEU GLN VAL LEU LEU ARG ASP ILE VAL LYS ARG LYS ARG GLU GLU GLU ASN LEU LYS MET VAL TRP ARG ILE ASN PRO ALA HIS ARG LYS LEU GLN ALA ALA ARG LEU ASP GLN HIS GLU GLN LEU ARG ALA ALA VAL VAL ILE

VAL ARG VAL LEU ARG PRO GLN VAL THR ALA VAL GLN GLN ASN GLN GLY GLU VAL PRO GLU PRO GLN ASP MET LYS VAL ALA GLU VAL LEU PHE ASP ALA ALA ASP ALA ASN ALA ILE GLU GLU VAL ASN LEU ALA ALA TYR GLU ASN VAL LYS GLU VAL ASP GLY LEU ASP VAL SER LYS

GLU GLY THR GLU ALA TRP GLU ALA ALA MET LYS ARG TYR ASP GLU ARG ILE ASP ARG VAL GLU THR ARG ILE THR ALA ARG LEU ASP ARG GLN LEU GLY THR ALA LYS ASN ALA ASN GLU MET PHE ARG ILE PHE SER ARG PHE ASN ALA LEU PHE VAL ARG PRO HIS ILE ARG GLY ALA

ILE ARG GLU TYR GLN THR GLN LEU ILE GLN ARG VAL LYS ASP ASP ILE GLU SER LEU HIS ASP LYS PHE LYS VAL GLN TYR PRO GLN SER GLN ALA CYS LYS MET SER HIS VAL ARG ASP LEU PRO PRO VAL SER GLY SER ILE ILE TRP ALA LYS GLN ILE ASP ARG GLN LEU THR ALA

TYR MET LYS ARG VAL GLU ASP VAL LEU GLY LYS GLY TRP GLU ASN HIS VAL GLU GLY GLN LYS LEU LYS GLN ASP GLY SER PHE ARG MET LYS LEU ASN THR GLN GLU ILE PHE ASP ASP TRP ALA ARG LYS VAL GLN GLN ARG ASN LEU GLY VAL SER GLY ARG ILE PHE THR ILE

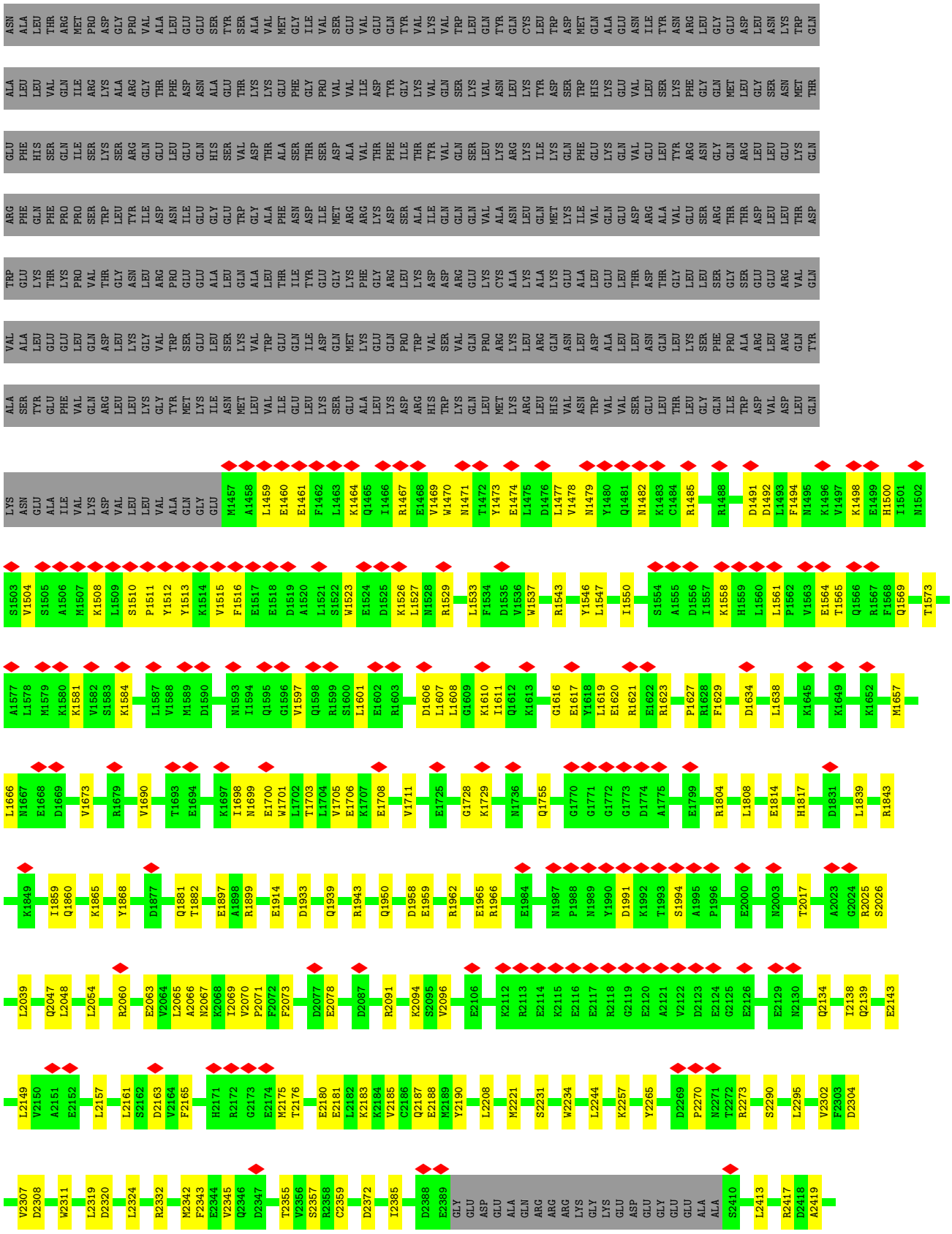
GLU SER THR ARG VAL ARG GLY THR GLY ASN VAL LEU LYS LEU LYS VAL ASN PHE LEU PRO GLU ILE ILE THR LEU SER LYS GLU VAL ARG ASN LEU LYS THR LEU GLY PHE ARG VAL PRO LEU ALA ILE VAL ASN LYS ALA HIS GLN ALA ASN GLN LEU TYR PRO PHE ALA ILE SER

LEU ILE GLU SER VAL ARG THR TYR GLU ARG THR CYS GLU LYS VAL GLU GLU ARG ASN THR ILE SER LEU LEU VAL ALA GLY LEU LYS LYS GLU VAL GLN ALA LEU ILE ALA GLU GLY ILE ALA LEU VAL TRP GLU SER TYR LYS LEU ASP PRO TYR VAL GLN ARG VAL LEU ALA GLU THR VAL

PHE ASN PHE GLN GLU LEU LEU ILE ILE GLU GLU LYS ILE ASP LEU GLU VAL ARG SER LEU GLU THR CYS MET TYR ASP HIS LYS THR PHE SER GLU ILE LEU ASN ALA VAL GLN LYS ALA VAL ASP ASP LEU ASN LEU HIS SER TYR SER ASN LEU PRO ILE THR VAL

ASN LYS LEU ASP MET GLU ILE LEU GLY VAL ARG LEU GLN ALA GLY LEU ARG ALA TRP THR GLN VAL LEU LEU GLY GLN ALA GLU ASP LYS ASP MET ASP THR ASP ALA PRO GLN VAL SER HIS LYS PRO GLY GLY GLU PRO LYS ILE LYS ASN VAL HIS

GLU LEU ARG ILE THR ASN GLN VAL ILE GLU MET PHE ALA TRP LYS MET VAL VAL LEU SER LEU PRO ARG ILE GLN SER GLN ARG TYR GLN VAL GLY VAL HIS TYR GLU LEU THR GLU GLU CYS ARG TYR LYS LEU TYR GLN GLU MET PHE ALA ASP LEU ASP ILE GLN ARG TYR GLN VAL GLY VAL HIS TYR GLU LEU THR GLU GLU LYS PHE TYR ARG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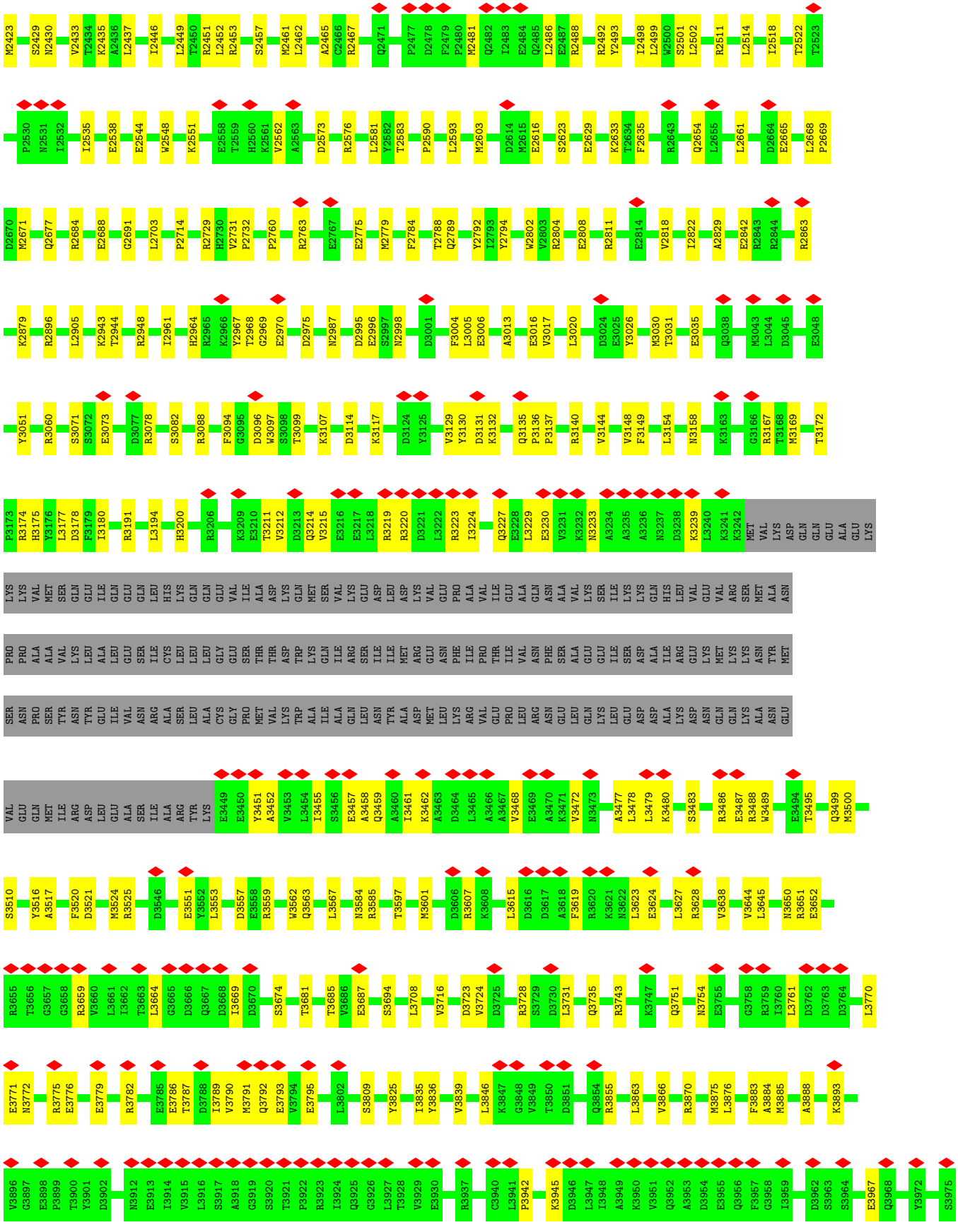
ALA LEU LEU VAL GLN ILE ARG LYS ALA ARG GLY THR PHE ASP ASN ALA GLU THR LYS LYS GLU PHE GLY PRO VAL VAL ALA ILE ASP TYR PHE GLY LYS VAL GLN SER LYS VAL ASN LEU LYS TYR ASP SER TRP HIS LYS GLU VAL LEU SER LYS PHE GLY GLN MET LEU GLY SER ASN MET THR
GLU PHE HIS SER GLN ILE SER LYS SER ARG GLN GLU LEU GLU GLN HIS SER VAL ASP THR ALA SER THR SER ASP ALA VAL THR PHE ILE THR TYR VAL GLN SER LEU LYS ARG LYS ILE LYS GLN PHE GLU LYS GLN VAL GLU LEU TYR ARG ASN GLY GLN ARG LEU GLU LEU GLU GLN LYS
ARG PHE GLN PHE PRO PRO SER TRP LEU TYR ILE ASP ASN ILE GLU GLY GLU TRP GLY ALA PHE ASN ASP ILE MET ARG ARG LYS ASP SER ALA ILE MET LYS ILE VAL GLN GLU ASP ARG ALA VAL GLU LEU ASN ARG GLN GLN VAL GLN ASN LEU GLN MET LYS GLU GLN THR THR ASP LEU LEU THR ASP
TRP GLU LYS THR LYS PRO VAL THR GLY ASN LEU ARG PRO GLU GLU GLU ALA LEU GLN ALA LEU LEU THR ILE TYR GLU GLY LYS PHE GLY ARG LEU LYS ASP ASP ARG GLU GLN LYS CYS ALA LYS ALA LYS GLU LEU GLU THR ASP GLY LEU GLY LEU SER GLY SER ARG THR GLN GLN ARG GLU GLU LEU ARG VAL GLN
VAL ALA LEU GLU GLU GLN ASP LEU LYS GLY VAL TRP SER GLU LEU SER VAL GLN PRO TRP VAL SER LYS LEU ARG GLN ASN LEU ASP ALA LEU LEU ASN GLN LEU LEU LYS SER PHE PRO ALA ARG LEU ARG GLN TYR
ALA SER TYR GLU PHE VAL GLN ARG LEU LEU LYS GLY TYR MET LYS ILE ASN MET LEU VAL ILE GLU LEU LYS SER GLU ALA ASP ARG HIS TRP LYS GLN LEU MET LYS ARG LEU HIS VAL ASN TRP VAL VAL SER GLU LEU THR LEU GLY GLN ILE TRP ASP VAL ASP LEU GLN
LYS ASN GLU ALA ILE VAL LYS ASP VAL LEU LEU VAL ALA GLN GLY GLU M1457 A1458 L1459 E1460 E1461 F1462 L1463 K1464 Q1465 I1466 R1467 E1468 V1469 W1470 N1471 T1472 Y1473 E1474 L1475 D1476 L1477 V1478 N1479 Y1480 Q1481 N1482 K1483 C1484 R1485 R1488 D1491 D1492 L1493 F1494 N1495 K1496 V1497 K1498 E1499 H1500 I1501 N1502
S1503 V1504 S1505 A1506 M1507 K1508 L1509 S1510 P1511 Y1512 Y1513 K1514 V1515 F1516 E1517 E1518 D1519 A1520 L1521 S1522 W1523 E1524 D1525 K1526 L1527 N1528 R1529 L1533 F1534 D1535 V1536 W1537 R1543 Y1546 L1547 I1550 S1554 A1555 D1556 I1557 K1558 H1559 L1560 L1561 P1562 V1563 E1564 T1565 Q1566 R1567 F1568 Q1569 T1573
A1577 L1578 M1579 K1580 K1581 V1582 S1583 K1584 L1587 V1588 M1589 D1590 N1593 I1594 Q1595 G1596 V1597 Q1598 R1599 S1600 L1601 E1602 R1603 D1606 L1607 L1608 G1609 K1610 I1611 Q1612 K1613 G1616 E1617 Y1618 L1619 E1620 R1621 E1622 R1623 P1627 R1628 F1629 D1634 L1638 K1645 K1649 K1652 M1657
L1666 N1667 E1668 D1669 V1673 R1679 V1690 T1693 E1694 K1697 I1698 N1699 E1700 W1701 L1702 T1703 L1704 V1705 E1706 K1707 E1708 V1711 E1725 G1728 K1729 N1736 Q1755 G1770 G1771 G1772 G1773 D1774 A1775 E1799 R1804 L1808 E1814 H1817 D1831 L1839 R1843
K1849 I1859 Q1860 K1865 Y1868 D1877 Q1881 T1882 E1897 A1898 R1899 E1914 D1933 Q1939 R1943 Q1950 D1958 E1959 R1962 E1965 R1966 E1984 N1987 P1988 N1989 Y1990 D1991 K1992 T1993 S1994 A1995 P1996 E2000 N2003 T2017 A2023 G2024 R2025 S2026
L2039 Q2047 L2048 L2054 R2060 E2063 V2064 L2065 A2066 N2067 K2068 I2069 V2070 P2071 F2072 F2073 D2077 E2078 D2087 R2091 K2094 S2095 V2096 E2106 K2112 R2113 E2114 K2115 E2116 E2117 R2118 G2119 E2120 A2121 V2122 D2123 E2124 G2125 E2126 E2129 N2130 Q2134 I2138 Q2139 E2143
L2149 V2150 A2151 E2152 L2157 L2161 S2162 D2163 V2164 F2165 H2171 R2172 G2173 E2174 M2175 T2176 E2180 E2181 L2182 K2183 K2184 V2185 C2186 Q2187 E2188 M2189 Y2190 L2208 M2221 S2231 W2234 L2244 K2257 Y2265 D2269 P2270 N2271 T2272 R2273 S2290 L2295 V2302 F2303 D2304
V2307 D2308 W2311 L2319 D2320 L2324 R2232 M2342 F2343 E2344 V2345 Q2346 D2347 T2355 V2356 S2357 R2358 C2359 D2372 I2385 D2388 E2389 GLY GLU ASP GLU ALA GLN ARG ARG LYS GLY LYS GLU ASP GLU GLY GLU GLU ALA ALA S2410 L2413 R2417 D2418 A2419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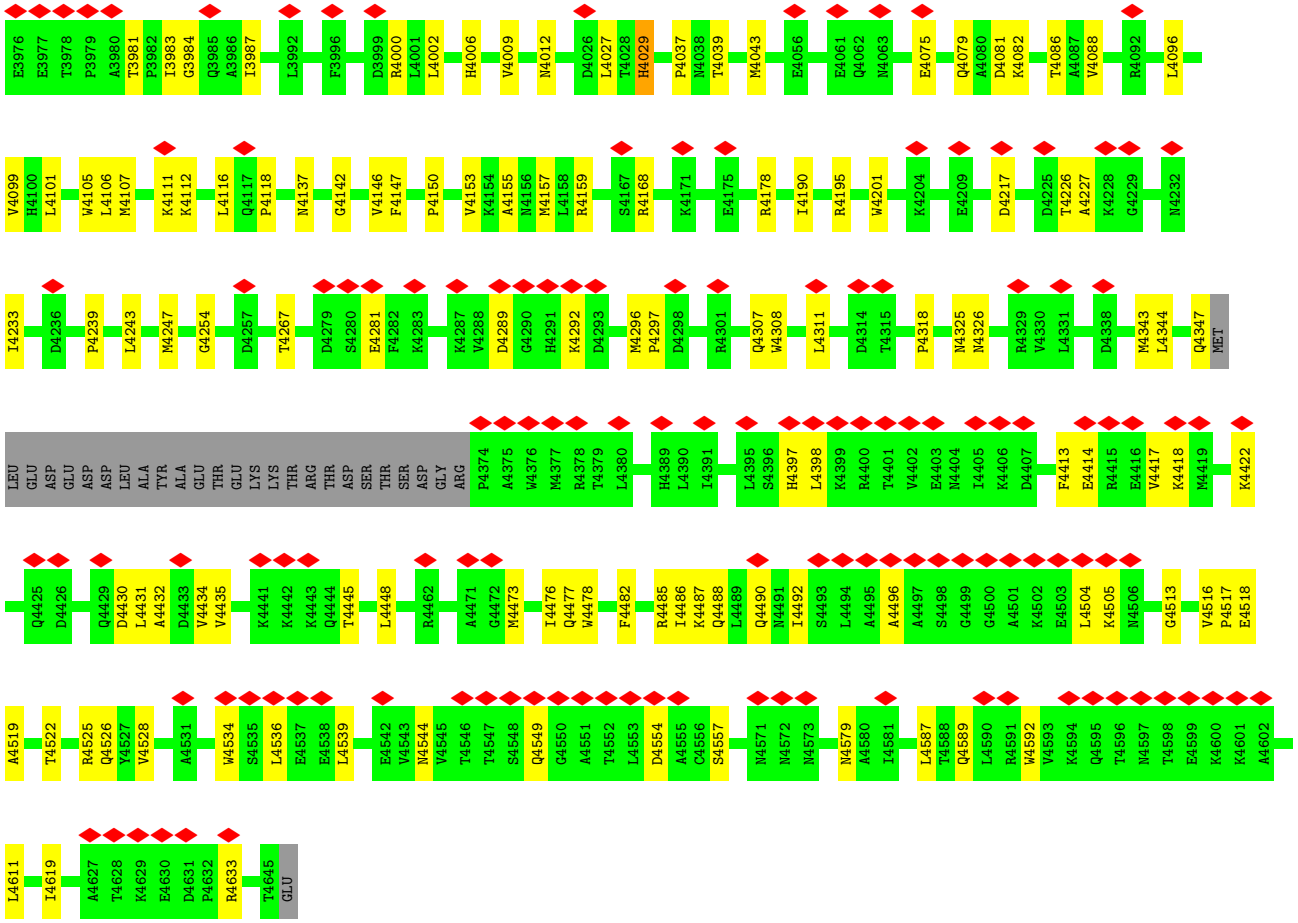
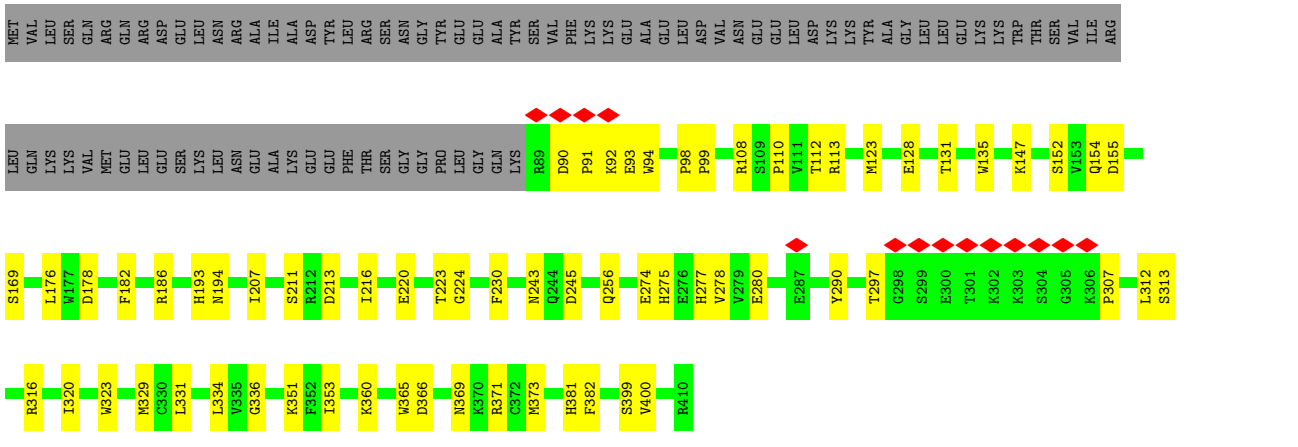
P2530 N2531 I2532 I2535 E2538 E2544 W2548 K2551 E2558 T2559 H2560 K2561 V2562 A2563 D2573 R2576 L2581 Y2582 T2583 P2590 L2593 M2603 D2614 M2615 E2616 S2623 E2629 K2633 T2634 F2635 R2643 Q2654 L2655 L2661 D2664 E2665 L2668 P2669
D2670 M2671 Q2677 R2684 E2688 G2691 L2703 P2714 R2729 H2730 V2731 P2732 P2760 R2763 E2767 E2775 M2779 F2784 T2788 Q2789 Y2792 I2793 Y2794 W2802 V2803 R2804 E2808 R2811 E2814 V2818 I2822 A2829 E2842 R2843 R2844 R2863
K2879 R2896 L2905 K2943 T2944 R2948 I2961 H2964 R2965 K2966 Y2967 T2968 G2969 E2970 D2975 N2987 D2995 E2996 S2997 N2998 D3001 F3004 L3005 E3006 A3013 E3016 V3017 L3020 D3024 E3025 Y3026 M3030 T3031 E3035 Q3038 M3043 L3044 D3045 E3048
Y3051 R3060 S3071 S3072 E3073 D3077 R3078 S3082 R3088 F3094 G3095 D3096 W3097 S3098 T3099 K3107 D3114 K3117 D3124 Y3125 V3129 Y3130 D3131 K3132 Q3135 P3136 P3137 R3140 V3144 V3148 F3149 L3154 N3158 K3163 G3166 R3167 T3168 M3169 T3172
P3173 R3174 H3175 Y3176 L3177 D3178 P3179 I3180 R3191 L3194 H3200 R3206 K3209 E3210 T3211 V3212 D3213 Q3214 V3215 E3216 E3217 L3218 R3219 R3220 D3221 L3222 R3223 I3224 Q3227 E3228 L3229 E3230 V3231 K3232 N3233 A3234 A3235 A3236 N3237 D3238 K3239 L3240 K3241 K3242 MET VAL LYS ASP GLN GLU GLU ALA GLU LYS
LYS LYS VAL MET SER GLN GLU ILE GLN GLU GLN LEU HIS LYS GLN GLN GLU GLU VAL ILE ALA ASP LYS GLN MET SER VAL LYS GLU ASP LEU ASP LYS VAL GLU GLU PRO ALA VAL ILE GLU ALA GLN ASN ALA VAL LYS SER ILE LYS LYS GLN HIS LEU VAL GLU VAL ARG SER MET ALA ASN
PRO PRO ALA ALA VAL LYS LEU ALA LEU GLU SER ILE CYS LEU LEU LEU LEU GLY GLU SER THR THR ASP TRP LYS GLN ILE ARG SER ILE ILE MET ARG GLU ASN PHE ILE PRO THR ILE VAL ASN PHE SER ALA GLU GLU ILE SER ASP ALA ILE ARG GLU LYS LYS MET LYS LYS ASN TYR MET
SER ASN PRO SER TYR ASN TYR GLU ILE VAL ASN ARG ALA SER LEU ALA CYS GLY PRO MET VAL LYS TRP ALA ILE ALA GLN LEU ASN TYR ALA ASP MET LEU LYS ARG VAL GLU PRO LEU ARG ASN GLU LEU GLN LYS LEU GLU ASP ASP ALA LYS ASP ASN GLN GLN LYS ALA ASN GLU
VAL GLU GLN MET ILE ARG ASP LEU GLU ALA SER ILE ALA ARG TYR LYS E3449 E3450 Y3451 A3452 V3453 L3454 I3455 S3456 E3457 A3458 Q3459 A3460 I3461 K3462 A3463 D3464 L3465 A3466 A3467 V3468 E3469 A3470 K3471 V3472 N3473 A3477 L3478 L3479 K3480 S3483 R3486 E3487 R3488 W3489 E3494 T3495 Q3499 M3500
S3510 Y3516 A3517 F3520 D3521 M3524 R3525 D3546 E3551 Y3552 L3553 D3557 E3558 R3559 W3562 Q3563 L3567 N3584 R3585 T3597 M3601 D3606 R3607 K3608 L3615 D3616 D3617 A3618 F3619 R3620 K3621 N3622 L3623 E3624 L3627 R3628 V3638 V3644 L3645 N3650 R3651 E3652
R3655 T3656 G3657 G3658 R3659 V3660 L3661 I3662 T3663 L3664 G3665 D3666 Q3667 D3668 I3669 D3670 S3674 T3681 T3685 V3686 E3687 S3694 L3708 V3716 D3723 V3724 D3725 R3728 S3729 D3730 L3731 Q3735 R3743 K3747 Q3751 N3754 E3755 G3758 R3759 I3760 L3761 D3762 D3763 D3764 L3770
E3771 N3772 R3775 E3776 E3779 R3782 E3785 E3786 T3787 D3788 I3789 V3790 M3791 Q3792 E3793 V3794 E3795 L3802 S3809 Y3825 I3835 Y3836 V3839 L3846 K3847 G3848 V3849 T3850 D3851 Q3854 R3855 L3863 V3866 R3870 M3875 L3876 F3883 A3884 M3885 A3888 K3893
V3896 G3897 E3898 P3899 T3900 Y3901 D3902 N3912 E3913 I3914 V3915 L3916 S3917 A3918 G3919 S3920 T3921 P3922 R3923 I3924 Q3925 G3926 L3927 T3928 V3929 E3930 R3937 C3940 L3941 P3942 K3945 D3946 L3947 I3948 A3949 K3950 V3951 Q3952 A3953 D3954 E3955 Q3956 F3957 G3958 I3959 D3962 S3963 S3964 E3967 Q3968 Y3972 S3975



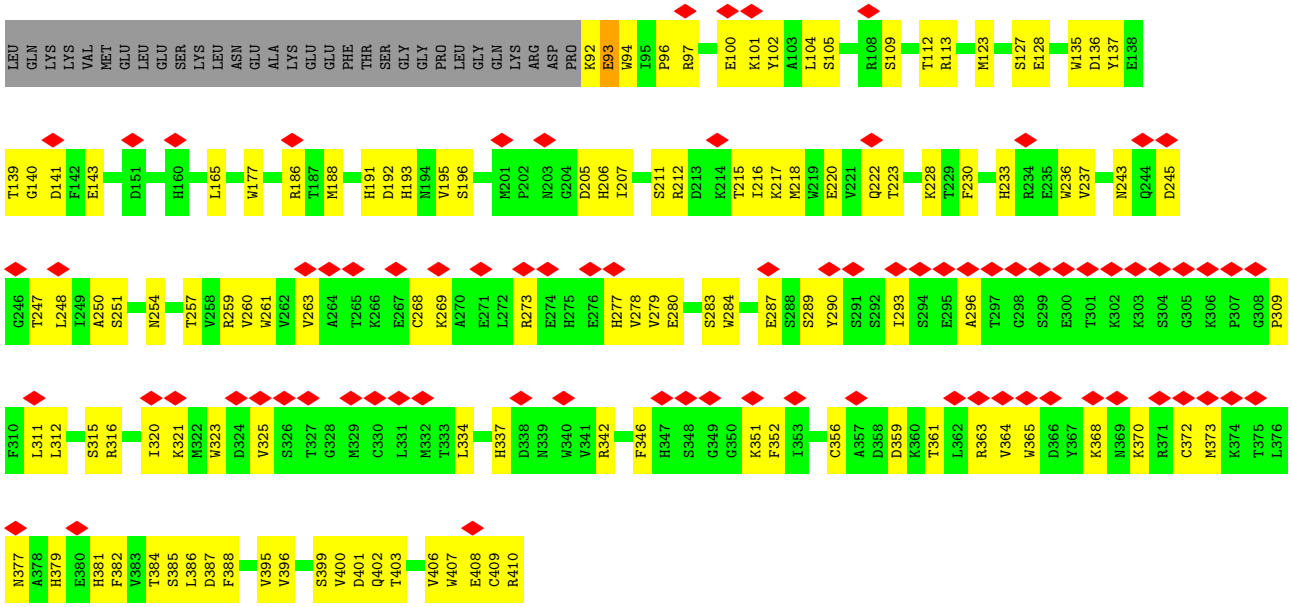
• Molecule 2: Platelet-activating factor acetylhydrolase IB subunit beta

Chain C:



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

Chain D: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T139 G140 D141 F142 E143 D151 H160 L165 W177 R186 T187 M188 H191 D192 H193 N194 V195 S196 M201 P202 N203 C204 D205 H206 I207 S211 R212 D213 K214 T215 I216 K217 M218 W219 E220 V221 Q222 T223 K228 T229 F230 H233 R234 E235 W236 V237 N243 Q244 D245
G246 T247 L248 T249 A250 S251 N254 T257 V258 R259 V260 W261 V262 V263 A264 T265 K266 E267 C268 K269 A270 E271 L272 R273 E274 H275 E276 H277 V278 V279 E280 S283 W284 E287 S288 S289 Y290 S291 S292 I293 S294 E295 A296 T297 G298 S299 E300 T301 K302 K303 S304 G305 K306 P307 G308 P309
F310 L311 L312 S315 R316 I320 K321 M322 W323 D324 V325 S326 T327 G328 M329 C330 L331 M332 T333 L334 H337 D338 N339 W340 V341 R342 F346 H347 S348 G349 G350 K351 F352 I353 C356 A357 D358 D359 K360 T361 L362 R363 V364 W365 D366 Y367 K368 N369 K370 R371 C372 M373 K374 T375 L376
N377 A378 H379 E380 H381 F382 V383 T384 S385 L386 D387 F388 V395 V396 S399 V400 D401 Q402 T403 V406 W407 E408 C409 R410

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	215049	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS GLACIOS	Depositor
Voltage (kV)	200	Depositor
Electron dose ($e^-/Å^2$)	40	Depositor
Minimum defocus (nm)	1200	Depositor
Maximum defocus (nm)	3000	Depositor
Magnification	45000	Depositor
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	1.498	Depositor
Minimum map value	-0.699	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	0.044	Depositor
Recommended contour level	0.3	Depositor
Map size (Å)	444.4032, 444.4032, 444.4032	wwPDB
Map dimensions	384, 384, 384	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.1573, 1.1573, 1.1573	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: 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	0.12	0/24093	0.29	0/32651
1	B	0.12	0/24093	0.29	0/32651
2	C	0.12	0/2624	0.32	0/3555
2	D	0.16	0/2597	0.38	1/3518 (0.0%)
All	All	0.12	0/53407	0.30	1/72375 (0.0%)

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	D	93	GLU	N-CA-C	-5.10	106.90	112.72

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	23593	0	23658	377	0
1	B	23593	0	23658	351	0
2	C	2557	0	2487	42	0
2	D	2531	0	2463	87	0
3	A	81	0	36	2	0
3	B	81	0	36	5	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
4	A	31	0	12	1	0
4	B	31	0	12	0	0
5	A	2	0	0	0	0
5	B	2	0	0	0	0
All	All	52502	0	52362	854	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 8.

All (854) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2686:MET:HE2	1:A:2703:LEU:HD11	1.65	0.79
1:A:2221:MET:HG2	1:A:2343:PHE:HB2	1.64	0.79
1:A:4234:SER:HB3	1:A:4237:LYS:HG2	1.64	0.79
1:A:2956:LEU:HD23	1:A:2989:LYS:HB3	1.65	0.78
1:A:2644:THR:HG22	1:A:2646:ASN:H	1.49	0.78
2:D:94:TRP:HB3	2:D:409:CYS:HB3	1.67	0.77
2:D:311:LEU:HB3	2:D:323:TRP:HB2	1.68	0.75
1:B:3229:LEU:O	1:B:3233:ASN:ND2	2.18	0.75
1:B:2163:ASP:OD2	1:B:4526:GLN:NE2	2.19	0.75
2:C:381:HIS:HD2	2:C:400:VAL:HB	1.51	0.74
2:D:259:ARG:HE	2:D:261:TRP:HE1	1.36	0.73
1:A:2816:LEU:HD12	1:A:2817:PRO:HD2	1.70	0.72
1:A:1529:ARG:HE	1:A:1592:LEU:HD11	1.56	0.71
1:A:2481:MET:HE2	1:A:2486:LEU:HA	1.72	0.71
1:A:1558:LYS:HG3	1:A:1565:THR:HG21	1.72	0.70
1:B:2538:GLU:OE2	1:B:2551:LYS:NZ	2.24	0.70
2:C:92:LYS:HE2	2:C:351:LYS:HE3	1.74	0.70
1:A:3517:ALA:HB1	1:A:3525:ARG:HG2	1.73	0.69
1:A:4574:LYS:HB3	1:A:4627:ALA:HB2	1.74	0.69
1:A:3628:ARG:HH22	1:B:3628:ARG:HH22	1.40	0.69
1:A:4423:LEU:HD13	1:A:4466:HIS:HD2	1.56	0.69
1:B:3510:SER:HB3	1:B:3553:LEU:HD21	1.75	0.69
1:B:4326:ASN:ND2	1:B:4579:ASN:O	2.25	0.68
2:D:243:ASN:ND2	2:D:245:ASP:OD1	2.27	0.68
1:A:2578:GLU:OE2	1:A:2607:SER:OG	2.11	0.68
1:B:2616:GLU:OE1	1:B:2654:GLN:NE2	2.26	0.68
1:A:4398:LEU:HG	1:A:4417:VAL:HG21	1.74	0.68
1:B:2562:VAL:O	1:B:2804:ARG:NH1	2.27	0.68
2:D:243:ASN:HB3	2:D:284:TRP:HZ3	1.58	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2152:GLU:OE1	1:A:4418:LYS:NZ	2.27	0.67
1:B:2452:LEU:HD13	1:B:2729:ARG:HH21	1.59	0.67
1:A:3611:ARG:NH1	1:A:3636:GLN:OE1	2.28	0.67
2:C:280:GLU:OE2	2:C:316:ARG:NE	2.28	0.67
1:A:2970:GLU:N	1:A:2970:GLU:OE1	2.26	0.66
1:A:2995:ASP:OD1	1:A:2996:GLU:N	2.28	0.66
1:B:4178:ARG:HH21	1:B:4296:MET:HG3	1.57	0.66
1:B:2573:ASP:OD1	1:B:2576:ARG:NH2	2.29	0.66
1:A:2091:ARG:HD2	1:A:2357:SER:HB2	1.78	0.66
1:B:2181:GLU:HG3	1:B:2244:LEU:HB2	1.78	0.65
1:A:1673:VAL:HG23	1:A:1692:ILE:HD11	1.78	0.65
1:A:3239:LYS:HG2	1:A:3451:TYR:HE1	1.59	0.65
1:A:2828:GLU:OE1	1:A:2924:ARG:NH2	2.26	0.65
1:B:3638:VAL:HG12	1:B:3681:THR:HB	1.79	0.65
1:B:4525:ARG:NH1	1:B:4536:LEU:O	2.30	0.65
1:B:4505:LYS:NZ	1:B:4554:ASP:O	2.28	0.65
1:B:1958:ASP:HA	1:B:2017:THR:HB	1.79	0.65
1:B:1477:LEU:HB3	1:B:1485:ARG:HG3	1.79	0.65
1:B:3708:LEU:HD23	1:B:3809:SER:HA	1.79	0.65
1:A:2682:PHE:O	1:A:2686:MET:HG3	1.97	0.64
1:A:1582:VAL:HG13	1:A:1591:VAL:HG11	1.79	0.64
1:A:4043:MET:HE1	1:A:4055:VAL:HG21	1.79	0.64
1:B:2139:GLN:NE2	1:B:2143:GLU:OE2	2.28	0.64
1:A:2449:LEU:HA	1:A:2453:ARG:HH21	1.63	0.64
1:A:3638:VAL:HG12	1:A:3681:THR:HB	1.80	0.64
1:B:2581:LEU:HD11	1:B:2593:LEU:HD21	1.79	0.64
1:A:2091:ARG:NH1	1:A:2320:ASP:OD1	2.31	0.64
1:B:2091:ARG:NH1	1:B:2320:ASP:OD1	2.29	0.64
1:A:4230:ARG:HH21	1:A:4233:ILE:HG13	1.63	0.64
1:B:2138:ILE:HD12	1:B:2161:LEU:HD22	1.80	0.64
1:B:2671:MET:HG2	1:B:2677:GLN:HG3	1.80	0.64
1:B:1526:LYS:HG2	1:B:1529:ARG:HH21	1.63	0.63
1:A:3624:GLU:OE2	1:A:3667:GLN:NE2	2.32	0.63
1:B:1933:ASP:HB2	1:B:1962:ARG:HH21	1.61	0.63
1:A:1643:ASN:HD22	1:A:1649:LYS:HD2	1.64	0.63
1:A:2961:ILE:HD11	1:A:2998:ASN:HB3	1.79	0.63
1:A:3961:LEU:O	1:A:3997:ARG:NH1	2.31	0.63
1:B:3557:ASP:OD1	1:B:3743:ARG:NH1	2.31	0.63
1:B:4281:GLU:N	1:B:4281:GLU:OE2	2.30	0.63
1:A:2446:ILE:HD11	1:A:2714:PRO:HB3	1.79	0.63
1:B:3129:VAL:HG21	1:B:3149:PHE:HB2	1.80	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:4096:LEU:HD13	1:B:4105:TRP:HH2	1.64	0.63
1:A:3178:ASP:OD2	1:A:3585:ARG:NE	2.31	0.63
1:A:1463:LEU:HD21	1:A:1507:MET:HE1	1.81	0.62
1:A:1814:GLU:OE2	1:A:1818:GLN:NE2	2.32	0.62
1:A:2573:ASP:OD1	1:A:2576:ARG:NH2	2.32	0.62
1:A:4178:ARG:NH2	1:A:4297:PRO:O	2.32	0.62
1:B:1914:GLU:HG3	3:B:4701:ADP:H2'	1.82	0.62
1:A:2647:GLY:HA3	1:A:2702:LYS:HZ1	1.64	0.62
1:B:3239:LYS:HB3	1:B:3451:TYR:HE1	1.64	0.62
2:C:297:THR:HG21	2:C:331:LEU:HD13	1.81	0.62
1:A:2452:LEU:HD13	1:A:2729:ARG:HH21	1.65	0.62
1:A:4044:CYS:HB3	1:A:4130:ILE:HG12	1.81	0.62
1:B:3731:LEU:HD23	1:B:3787:THR:HG23	1.80	0.62
1:B:2302:VAL:HA	1:B:2342:MET:HB2	1.82	0.62
1:B:1606:ASP:O	1:B:1610:LYS:HG2	2.00	0.62
1:A:2453:ARG:NH1	1:A:2505:ASP:OD2	2.32	0.61
1:A:3208:ILE:HG21	1:A:3486:ARG:HD3	1.82	0.61
1:A:2060:ARG:HE	1:A:2061:THR:HG23	1.65	0.61
2:C:90:ASP:HB3	2:C:93:GLU:HB3	1.81	0.61
1:A:3946:ASP:OD2	1:A:3950:LYS:NZ	2.33	0.61
1:B:1959:GLU:OE1	1:B:2025:ARG:NH1	2.33	0.61
1:A:4088:VAL:HG11	1:A:4116:LEU:HD21	1.83	0.61
1:A:3584:ASN:O	1:A:3651:ARG:NH1	2.29	0.61
1:A:3872:ALA:HA	1:A:3875:MET:HB3	1.83	0.61
1:A:4505:LYS:NZ	1:A:4554:ASP:O	2.34	0.61
2:D:359:ASP:OD2	2:D:363:ARG:NH2	2.34	0.61
1:B:3239:LYS:HE3	1:B:3239:LYS:HA	1.83	0.60
1:A:2457:SER:HB2	1:A:2732:PRO:HB3	1.83	0.60
1:A:3708:LEU:HD23	1:A:3809:SER:HA	1.82	0.60
1:B:3167:ARG:HH12	1:B:3685:THR:HA	1.67	0.60
2:D:243:ASN:ND2	2:D:247:THR:OG1	2.34	0.60
1:A:2103:VAL:HG23	1:A:2136:ILE:HG23	1.83	0.60
1:A:3845:ASN:ND2	1:A:3862:ASP:OD2	2.34	0.60
1:B:1965:GLU:HG2	1:B:2026:SER:HB3	1.83	0.60
1:B:3517:ALA:HB1	1:B:3525:ARG:HG2	1.83	0.60
1:B:4178:ARG:NH2	1:B:4297:PRO:O	2.34	0.60
1:A:4541:LEU:HD11	1:A:4590:LEU:HB3	1.83	0.60
1:B:3178:ASP:OD2	1:B:3585:ARG:NE	2.35	0.60
2:D:105:SER:HB3	2:D:403:THR:HG22	1.84	0.60
2:D:396:VAL:HG12	2:D:406:VAL:HG22	1.83	0.60
1:A:4107:MET:HG3	1:A:4137:ASN:HD21	1.65	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:257:THR:HG22	2:D:273:ARG:HB3	1.84	0.60
1:A:3990:LEU:HA	1:A:4004:MET:HG2	1.82	0.60
1:B:3520:PHE:HB3	1:B:3524:MET:HB3	1.84	0.60
2:C:360:LYS:HE3	2:C:381:HIS:HA	1.84	0.60
1:A:2088:PHE:HE1	1:A:2148:LYS:HZ1	1.50	0.59
1:A:4266:ASN:O	1:A:4270:GLU:HG2	2.03	0.59
1:A:3469:GLU:OE2	1:A:3473:ASN:ND2	2.35	0.59
1:B:2995:ASP:OD1	1:B:2996:GLU:N	2.35	0.59
1:B:2905:LEU:HD11	1:B:3652:GLU:HB3	1.84	0.59
1:B:4398:LEU:HG	1:B:4417:VAL:HG11	1.83	0.59
1:A:2839:GLU:OE2	1:A:2839:GLU:N	2.36	0.59
1:A:4470:PRO:HG3	1:A:4612:ASN:HD22	1.67	0.59
1:B:3597:THR:O	1:B:3601:MET:HG2	2.03	0.59
1:A:2447:MET:HE1	1:A:2723:LEU:HD12	1.84	0.58
1:A:3129:VAL:HG21	1:A:3149:PHE:HB2	1.83	0.58
2:C:278:VAL:HB	2:C:316:ARG:HD2	1.85	0.58
1:B:3839:VAL:HG21	1:B:3863:LEU:HA	1.84	0.58
1:B:4430:ASP:O	1:B:4434:VAL:HG23	2.03	0.58
1:A:2620:LEU:HD11	1:A:2661:LEU:HD22	1.85	0.58
1:B:2488:ARG:O	1:B:2492:ARG:HG2	2.04	0.58
1:B:3619:PHE:HZ	1:B:3645:LEU:HD21	1.67	0.58
1:A:1777:PRO:O	1:A:1780:SER:OG	2.19	0.58
1:B:3835:ILE:HG12	1:B:3870:ARG:HD2	1.85	0.58
2:C:320:ILE:HB	2:C:334:LEU:HB2	1.85	0.58
1:B:1839:LEU:O	1:B:1843:ARG:NH1	2.36	0.58
1:B:2788:THR:HG22	1:B:2789:GLN:HG2	1.86	0.58
1:B:2457:SER:HB3	1:B:2732:PRO:HB3	1.86	0.58
1:B:2944:THR:O	1:B:2948:ARG:HG3	2.04	0.58
1:B:1491:ASP:OD1	1:B:1492:ASP:N	2.36	0.58
1:B:2221:MET:HG2	1:B:2343:PHE:HB2	1.85	0.58
1:A:2592:VAL:HG23	1:A:2731:VAL:HG11	1.85	0.57
1:B:3983:ILE:O	1:B:3987:ILE:HD12	2.04	0.57
2:D:188:MET:HE1	2:D:207:ILE:HD12	1.86	0.57
1:B:1569:GLN:O	1:B:1573:THR:HG23	2.05	0.57
1:B:4075:GLU:O	1:B:4079:GLN:HG2	2.03	0.57
1:B:1607:LEU:O	1:B:1611:ILE:HG12	2.03	0.57
1:B:2449:LEU:HA	1:B:2453:ARG:HH21	1.68	0.57
1:A:2784:PHE:HB2	1:A:2794:TYR:HE2	1.69	0.57
1:B:2047:GLN:HE22	1:B:2067:ASN:HA	1.69	0.57
1:B:4029:HIS:HD1	1:B:4029:HIS:C	2.13	0.57
1:A:2242:GLU:OE1	1:A:2248:GLU:HA	2.04	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2185:VAL:HA	1:B:2188:GLU:HG2	1.86	0.57
1:A:2427:PHE:HE1	1:A:2433:VAL:HG21	1.69	0.57
1:B:1708:GLU:HA	1:B:1711:VAL:HG22	1.87	0.57
1:A:2131:LEU:HD12	1:A:2132:PRO:HD2	1.87	0.57
1:B:3459:GLN:HA	1:B:3462:LYS:HD2	1.87	0.57
1:A:1508:LYS:HD3	1:A:1513:TYR:CZ	2.40	0.56
1:A:4260:PHE:HE2	1:A:4618:LEU:HD21	1.70	0.56
1:B:1537:TRP:CE3	1:B:1601:LEU:HD11	2.40	0.56
1:A:4409:LEU:HD21	1:A:4504:LEU:HB3	1.87	0.56
1:B:2499:LEU:HD23	1:B:2514:LEU:HD23	1.88	0.56
1:B:2775:GLU:HG2	1:B:2779:MET:HE2	1.86	0.56
1:B:4082:LYS:O	1:B:4086:THR:HG23	2.05	0.56
2:C:216:ILE:HB	2:C:230:PHE:HB2	1.86	0.56
2:D:216:ILE:HD11	2:D:237:VAL:HG11	1.86	0.56
1:A:3487:GLU:HA	1:A:3490:GLU:HG2	1.87	0.56
1:A:4096:LEU:HD13	1:A:4105:TRP:HH2	1.70	0.56
1:B:1467:ARG:HD2	1:B:1523:TRP:HZ2	1.71	0.56
1:B:2433:VAL:HG22	1:B:2498:ILE:HD11	1.88	0.56
1:B:4002:LEU:O	1:B:4006:HIS:ND1	2.32	0.56
2:D:279:VAL:HA	2:D:315:SER:HA	1.88	0.56
1:B:1474:GLU:N	1:B:1474:GLU:OE2	2.38	0.56
1:A:2427:PHE:CE1	1:A:2433:VAL:HG21	2.41	0.56
1:A:4609:VAL:HG22	1:A:4642:VAL:HB	1.88	0.56
2:C:243:ASN:ND2	2:C:245:ASP:OD1	2.39	0.56
1:A:3510:SER:HB3	1:A:3553:LEU:HD21	1.88	0.56
1:A:3502:THR:HG22	1:A:3542:GLN:HB3	1.87	0.56
1:B:4081:ASP:OD1	1:B:4112:LYS:NZ	2.36	0.56
2:D:233:HIS:NE2	2:D:251:SER:OG	2.32	0.56
2:D:277:HIS:CG	2:D:278:VAL:H	2.23	0.56
1:A:2905:LEU:HD11	1:A:3652:GLU:HG2	1.88	0.55
1:A:4326:ASN:ND2	1:A:4579:ASN:O	2.40	0.55
1:A:3559:ARG:O	1:A:3563:GLN:HG2	2.06	0.55
1:B:1533:LEU:HD11	1:B:1597:VAL:HG22	1.87	0.55
1:B:1623:ARG:NH2	1:B:1634:ASP:OD1	2.39	0.55
1:B:2446:ILE:HD11	1:B:2714:PRO:HB3	1.89	0.55
1:A:4492:ILE:HG22	1:A:4507:ILE:HD13	1.89	0.55
1:A:3172:THR:HG21	1:A:3694:SER:HB3	1.87	0.55
1:B:3230:GLU:HA	1:B:3233:ASN:HD21	1.71	0.55
1:B:3468:VAL:O	1:B:3472:VAL:HG23	2.06	0.55
2:C:98:PRO:HG2	2:C:99:PRO:HD3	1.88	0.55
1:A:2148:LYS:HB2	1:A:2361:MET:HB2	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:4081:ASP:OD1	1:A:4112:LYS:NZ	2.36	0.55
2:D:254:ASN:HD22	2:D:278:VAL:HG11	1.72	0.55
1:A:2257:LYS:NZ	1:A:2308:ASP:OD2	2.39	0.55
1:A:2820:GLY:O	1:A:2824:ILE:HD12	2.06	0.55
1:B:1494:PHE:O	1:B:1498:LYS:HG2	2.06	0.55
1:B:3607:ARG:NH2	1:B:3674:SER:O	2.39	0.55
1:B:2684:ARG:NH1	1:B:2688:GLU:OE1	2.39	0.54
2:C:131:THR:HG22	2:C:147:LYS:HG2	1.88	0.54
1:A:4137:ASN:OD1	1:A:4138:LEU:N	2.40	0.54
1:B:2265:TYR:OH	1:B:2311:TRP:O	2.24	0.54
1:B:2760:PRO:HB3	1:B:2763:ARG:HH21	1.72	0.54
1:B:3219:ARG:NH2	1:B:3472:VAL:HG13	2.22	0.54
1:B:3239:LYS:HB3	1:B:3451:TYR:CE1	2.42	0.54
1:B:3942:PRO:O	1:B:3945:LYS:NZ	2.34	0.54
1:A:2302:VAL:HA	1:A:2342:MET:HB2	1.89	0.54
1:A:2464:GLN:HA	1:A:2467:ARG:HG3	1.89	0.54
1:B:1627:PRO:HB3	1:B:1950:GLN:HB3	1.90	0.54
2:D:236:TRP:HB3	2:D:254:ASN:OD1	2.07	0.54
1:A:3211:THR:HG22	1:A:3479:LEU:HD11	1.89	0.54
1:A:3013:ALA:HA	1:A:3088:ARG:HG3	1.89	0.54
2:C:112:THR:HG21	2:C:154:GLN:HA	1.90	0.54
1:A:2996:GLU:HG3	1:A:3078:ARG:HH12	1.73	0.54
1:B:2091:ARG:NH2	3:B:4701:ADP:O3A	2.41	0.54
2:C:186:ARG:HD3	2:C:224:GLY:HA3	1.89	0.54
2:C:381:HIS:CD2	2:C:382:PHE:H	2.26	0.54
1:B:2863:ARG:HG3	1:B:2863:ARG:HH11	1.73	0.54
1:B:3172:THR:HG21	1:B:3694:SER:HB3	1.90	0.54
1:A:3891:LYS:HD2	1:A:4013:LEU:HD23	1.90	0.54
1:B:2590:PRO:HB2	1:B:2731:VAL:HG12	1.90	0.54
1:A:1619:LEU:HD21	1:A:1638:LEU:HG	1.90	0.53
1:A:2584:TRP:HE3	1:A:2591:LEU:HD22	1.72	0.53
1:A:2290:SER:HB2	1:A:2295:LEU:HG	1.90	0.53
1:A:2619:GLY:O	1:A:3014:ASN:ND2	2.35	0.53
1:B:2465:ALA:HB2	1:B:2493:TYR:CD1	2.43	0.53
1:B:3005:LEU:HD22	1:B:3082:SER:HB2	1.89	0.53
1:B:4037:PRO:HB2	1:B:4118:PRO:HG2	1.89	0.53
1:A:2047:GLN:HA	1:A:2070:VAL:HG21	1.90	0.53
1:B:3017:VAL:HB	1:B:3020:LEU:HB2	1.90	0.53
2:C:312:LEU:HD21	2:C:353:ILE:HD13	1.90	0.53
1:A:1836:PHE:HA	1:A:1839:LEU:HB2	1.91	0.53
1:A:4292:LYS:HD2	1:A:4293:ASP:H	1.72	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1897:GLU:O	1:B:1899:ARG:NH1	2.42	0.53
1:B:2183:LYS:O	1:B:2187:GLN:HG2	2.08	0.53
2:D:370:LYS:NZ	2:D:373:MET:SD	2.82	0.53
1:A:1769:MET:SD	1:A:1777:PRO:HD2	2.49	0.53
1:A:2581:LEU:HD22	1:A:2604:THR:HG22	1.90	0.53
1:B:3735:GLN:HG3	1:B:3787:THR:HG21	1.91	0.53
1:B:3875:MET:HE1	1:B:3883:PHE:HB2	1.91	0.53
2:C:274:GLU:HB2	2:C:323:TRP:HH2	1.74	0.53
2:D:196:SER:OG	2:D:236:TRP:NE1	2.40	0.53
1:A:1554:SER:O	1:A:1558:LYS:NZ	2.39	0.53
1:A:2231:SER:HA	1:A:2234:TRP:CD1	2.44	0.53
1:A:4247:MET:HG2	1:A:4251:ILE:HD12	1.90	0.53
1:B:3167:ARG:NH1	1:B:3685:THR:HA	2.23	0.53
1:B:3584:ASN:O	1:B:3651:ARG:NH2	2.41	0.53
1:B:4549:GLN:HG3	1:B:4587:LEU:HB2	1.91	0.53
2:C:277:HIS:ND1	2:C:316:ARG:HB2	2.24	0.53
1:B:1959:GLU:HB3	1:B:1962:ARG:HD3	1.91	0.53
1:A:3124:ASP:OD1	1:A:3125:TYR:N	2.42	0.52
1:A:4160:THR:HG23	1:A:4212:LEU:HD21	1.91	0.52
1:B:3981:THR:HG23	1:B:3984:GLY:H	1.72	0.52
2:D:191:HIS:HD2	2:D:195:VAL:HG22	1.74	0.52
1:A:3131:ASP:OD1	1:A:3132:LYS:N	2.42	0.52
1:A:1627:PRO:HB3	1:A:1950:GLN:HB3	1.90	0.52
1:B:3782:ARG:NH1	1:B:3786:GLU:OE2	2.43	0.52
1:B:3888:ALA:HB1	1:B:4012:ASN:HD22	1.74	0.52
2:D:372:CYS:O	2:D:373:MET:HE2	2.09	0.52
1:A:2066:ALA:HA	1:A:2069:ILE:HG22	1.91	0.52
2:D:356:CYS:SG	2:D:386:LEU:HD22	2.50	0.52
1:A:3753:LEU:HD21	1:A:3770:LEU:HD21	1.92	0.52
1:B:3479:LEU:O	1:B:3486:ARG:NH2	2.42	0.52
1:A:1698:ILE:HD12	1:A:1701:TRP:NE1	2.25	0.52
1:A:2304:ASP:OD1	1:A:2726:ARG:NH1	2.36	0.52
2:D:212:ARG:HD3	2:D:236:TRP:CG	2.43	0.52
1:A:4039:THR:HG23	1:A:4142:GLY:HA2	1.91	0.52
1:A:2574:THR:O	1:A:2578:GLU:HG2	2.10	0.51
1:B:4611:LEU:HB2	1:B:4619:ILE:HD11	1.92	0.51
2:D:92:LYS:HG3	2:D:93:GLU:H	1.74	0.51
2:D:191:HIS:HB2	2:D:217:LYS:HD2	1.91	0.51
1:A:4408:PRO:HB3	1:A:4411:ARG:HH21	1.76	0.51
1:B:1623:ARG:NH1	1:B:1629:PHE:O	2.43	0.51
1:B:3107:LYS:HD2	1:B:3144:VAL:HG21	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:4155:ALA:O	1:B:4159:ARG:HG3	2.10	0.51
2:D:381:HIS:CE1	2:D:382:PHE:HD2	2.28	0.51
1:B:3458:ALA:O	1:B:3462:LYS:HG3	2.10	0.51
2:D:269:LYS:NZ	2:D:325:VAL:O	2.43	0.51
1:A:3130:TYR:CZ	1:A:3132:LYS:HB2	2.46	0.51
1:B:1508:LYS:HG2	1:B:1513:TYR:CZ	2.46	0.51
1:A:2951:ALA:HB1	1:A:2956:LEU:HB2	1.92	0.51
1:B:2257:LYS:NZ	1:B:2308:ASP:OD2	2.33	0.51
1:A:2108:ILE:HD11	1:A:2131:LEU:HD22	1.93	0.51
1:A:3780:VAL:O	1:A:3784:VAL:HG23	2.11	0.51
1:B:2175:MET:HE2	1:B:2208:LEU:HD22	1.93	0.51
1:B:4190:ILE:HD12	1:B:4201:TRP:HZ2	1.76	0.51
1:A:2107:ARG:O	1:A:2110:LYS:HG3	2.11	0.51
1:A:2964:HIS:HA	1:A:3643:PRO:HD2	1.92	0.51
1:B:4473:MET:HE2	1:B:4478:TRP:HB2	1.93	0.51
1:A:1479:ASN:HA	1:A:1485:ARG:HD2	1.93	0.50
1:B:3791:MET:O	1:B:3795:GLU:HG3	2.11	0.50
2:C:275:HIS:NE2	2:C:313:SER:OG	2.43	0.50
1:A:1480:TYR:HB2	1:A:1486:LEU:HD23	1.93	0.50
1:A:3597:THR:HG23	1:A:3634:LEU:HD21	1.93	0.50
1:B:4099:VAL:HB	1:B:4106:LEU:HD21	1.92	0.50
1:A:1897:GLU:O	1:A:1899:ARG:NH1	2.44	0.50
1:A:3458:ALA:O	1:A:3461:ILE:HG22	2.11	0.50
1:B:1460:GLU:O	1:B:1464:LYS:HG3	2.11	0.50
1:B:1515:VAL:HG13	1:B:1516:PHE:CD2	2.47	0.50
1:B:3158:ASN:ND2	1:B:3169:MET:O	2.44	0.50
1:A:2175:MET:SD	1:A:2175:MET:N	2.84	0.50
1:A:4619:ILE:HG22	1:A:4620:PHE:HD1	1.76	0.50
1:B:1699:ASN:OD1	1:B:1700:GLU:N	2.45	0.50
2:C:381:HIS:CG	2:C:382:PHE:H	2.30	0.50
2:D:351:LYS:HG3	2:D:352:PHE:CD2	2.47	0.50
1:A:1507:MET:O	1:A:1510:SER:OG	2.24	0.50
1:B:2176:THR:O	1:B:2180:GLU:HG2	2.12	0.50
1:A:1543:ARG:O	1:A:1547:LEU:HD23	2.12	0.50
1:B:3477:ALA:HA	1:B:3480:LYS:HE3	1.94	0.50
2:D:334:LEU:HD23	2:D:365:TRP:HE3	1.77	0.50
1:B:1561:LEU:HB3	1:B:1564:GLU:HB2	1.93	0.50
2:C:353:ILE:HB	2:C:365:TRP:HB2	1.93	0.50
1:A:2110:LYS:HA	1:A:2113:ARG:HE	1.77	0.50
1:A:2446:ILE:HG23	1:A:2447:MET:HG3	1.94	0.49
1:B:1943:ARG:HG2	1:B:1943:ARG:HH11	1.77	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2518:ILE:O	1:B:2522:THR:HG22	2.11	0.49
2:D:109:SER:N	2:D:402:GLN:OE1	2.45	0.49
1:A:1965:GLU:HG3	1:A:2026:SER:HB3	1.94	0.49
1:B:1804:ARG:O	1:B:1808:LEU:HG	2.13	0.49
1:B:2423:MET:HE1	1:B:2462:LEU:HD22	1.93	0.49
1:A:1480:TYR:OH	1:A:1548:GLU:OE2	2.22	0.49
1:A:2078:GLU:OE1	1:A:4522:THR:OG1	2.24	0.49
1:A:2635:PHE:CE2	1:A:2686:MET:HE1	2.47	0.49
1:A:3048:GLU:N	1:A:3048:GLU:OE1	2.45	0.49
1:B:4243:LEU:O	1:B:4247:MET:HG3	2.12	0.49
1:A:2070:VAL:HB	1:A:2071:PRO:HD3	1.95	0.49
1:A:2588:HIS:HD2	1:A:2707:GLN:HE21	1.60	0.49
1:A:3174:ARG:NH1	1:A:3650:ASN:OD1	2.45	0.49
1:A:4068:SER:HA	1:A:4095:MET:HB3	1.95	0.49
1:B:2784:PHE:HB2	1:B:2794:TYR:HE2	1.78	0.49
1:B:3154:LEU:HG	1:B:3516:TYR:CD1	2.47	0.49
1:A:1533:LEU:HD11	1:A:1597:VAL:HG22	1.95	0.49
1:A:2433:VAL:HG22	1:A:2498:ILE:HD11	1.94	0.49
1:A:2994:MET:HE2	1:A:2999:VAL:HG22	1.95	0.49
1:A:3741:ARG:NH2	1:A:3776:GLU:OE1	2.46	0.49
1:B:1469:VAL:O	1:B:1473:TYR:HB2	2.12	0.49
1:B:2538:GLU:HB3	1:B:2548:TRP:CE2	2.47	0.49
1:B:3551:GLU:HA	1:B:3559:ARG:HH12	1.77	0.49
1:B:3728:ARG:HH11	1:B:3728:ARG:HG2	1.78	0.49
1:A:2562:VAL:HG21	1:A:2755:MET:HB2	1.95	0.49
1:A:3960:TRP:HD1	1:A:3969:THR:HG23	1.78	0.49
1:A:4260:PHE:CE2	1:A:4608:PRO:HB3	2.48	0.49
1:A:4541:LEU:HB2	1:A:4592:TRP:CZ3	2.47	0.49
1:B:1617:GLU:O	1:B:1621:ARG:HG3	2.11	0.49
1:B:2623:SER:OG	1:B:3006:GLU:OE1	2.31	0.49
1:B:3099:THR:HG23	1:B:3148:VAL:HG11	1.94	0.49
2:D:104:LEU:HD23	2:D:135:TRP:CE3	2.47	0.49
1:A:1721:VAL:HA	1:A:1724:VAL:HG12	1.95	0.49
1:A:2356:VAL:HG13	1:A:2361:MET:HE3	1.95	0.49
1:A:3239:LYS:HG2	1:A:3451:TYR:CE1	2.45	0.49
2:D:395:VAL:HG23	2:D:407:TRP:HD1	1.77	0.49
1:A:3135:GLN:O	1:A:3137:PRO:HD3	2.13	0.49
1:B:2290:SER:HB2	1:B:2295:LEU:HG	1.94	0.49
1:B:3131:ASP:OD1	1:B:3132:LYS:N	2.45	0.49
1:B:3483:SER:O	1:B:3486:ARG:HG2	2.13	0.49
1:B:3751:GLN:O	1:B:3754:ASN:N	2.45	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:4153:VAL:O	1:B:4157:MET:HG3	2.13	0.49
2:C:211:SER:OG	2:C:213:ASP:OD1	2.31	0.49
2:C:220:GLU:OE2	2:C:223:THR:OG1	2.26	0.49
2:D:287:GLU:HA	2:D:290:TYR:CD1	2.47	0.48
2:D:379:HIS:HB3	2:D:401:ASP:OD2	2.12	0.48
1:B:4043:MET:HE2	1:B:4147:PHE:CE2	2.48	0.48
1:B:4088:VAL:HG11	1:B:4116:LEU:HD23	1.95	0.48
1:B:4150:PRO:O	1:B:4195:ARG:NH2	2.44	0.48
2:D:192:ASP:OD1	2:D:193:HIS:N	2.46	0.48
1:A:1497:VAL:O	1:A:1501:ILE:HG12	2.13	0.48
1:A:1933:ASP:OD2	1:A:2314:ASN:ND2	2.43	0.48
1:A:3034:LYS:NZ	1:A:3044:LEU:O	2.45	0.48
1:A:3597:THR:HG21	1:A:3611:ARG:HH12	1.78	0.48
1:B:2231:SER:HA	1:B:2234:TRP:CD1	2.49	0.48
1:B:3177:LEU:HD23	1:B:3180:ILE:HD11	1.95	0.48
2:D:205:ASP:O	2:D:206:HIS:ND1	2.44	0.48
2:D:165:LEU:HB3	2:D:177:TRP:HB2	1.95	0.48
1:A:4528:VAL:HG11	1:A:4592:TRP:HB2	1.95	0.48
1:A:1637:LEU:O	1:A:1641:ILE:HG12	2.14	0.48
1:A:1946:VAL:HG13	1:A:2006:VAL:HG21	1.95	0.48
1:A:3030:MET:HE3	1:A:3047:HIS:HB3	1.95	0.48
1:B:1728:GLY:C	1:B:1729:LYS:HG2	2.38	0.48
1:B:2070:VAL:HB	1:B:2071:PRO:HD3	1.94	0.48
1:B:3031:THR:O	1:B:3035:GLU:HG3	2.14	0.48
2:D:206:HIS:CD2	2:D:218:MET:HE3	2.48	0.48
1:A:3876:LEU:HD23	1:A:4146:VAL:HG11	1.94	0.48
1:B:2437:LEU:HD21	1:B:2451:ARG:HG3	1.95	0.48
1:B:4487:LYS:O	1:B:4490:GLN:HG2	2.13	0.48
2:C:110:PRO:HB3	2:C:400:VAL:HA	1.94	0.48
2:D:109:SER:O	2:D:127:SER:OG	2.31	0.48
1:A:2102:ASN:O	1:A:2106:GLU:HG2	2.12	0.48
1:A:3154:LEU:HG	1:A:3516:TYR:CD1	2.48	0.48
1:B:2304:ASP:OD1	1:B:2684:ARG:NH2	2.46	0.48
1:A:1750:VAL:HG12	1:A:1811:LEU:HD21	1.95	0.48
1:A:4227:ALA:HB2	1:A:4233:ILE:HD12	1.95	0.48
1:A:4545:VAL:O	1:A:4573:ASN:ND2	2.47	0.48
1:B:3723:ASP:OD1	1:B:3724:VAL:N	2.47	0.48
1:B:3885:MET:HE3	1:B:4343:MET:HE1	1.95	0.48
1:A:1527:LEU:HA	1:A:1530:ILE:HG12	1.96	0.47
1:B:3114:ASP:O	1:B:3140:ARG:NH2	2.47	0.47
1:B:3220:ARG:HA	1:B:3223:ARG:NH1	2.29	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:4496:ALA:HB2	1:B:4504:LEU:HD21	1.96	0.47
1:B:3790:VAL:O	1:B:3793:GLU:HG3	2.14	0.47
2:D:109:SER:HA	2:D:402:GLN:HE22	1.79	0.47
1:A:1913:THR:OG1	1:A:1958:ASP:OD1	2.32	0.47
1:A:2371:THR:HG22	1:A:2451:ARG:HD2	1.96	0.47
1:A:2472:TYR:HD2	1:A:2481:MET:HB2	1.79	0.47
1:A:3459:GLN:HA	1:A:3462:LYS:HG2	1.96	0.47
1:A:1537:TRP:CE3	1:A:1601:LEU:HD11	2.50	0.47
1:A:2786:GLN:HG3	1:A:2790:PRO:HA	1.96	0.47
1:A:4303:GLU:O	1:A:4307:GLN:HG3	2.15	0.47
1:B:2802:TRP:CZ2	1:B:2829:ALA:HB2	2.49	0.47
1:A:1513:TYR:CE2	1:A:1517:GLU:HG3	2.50	0.47
1:A:2088:PHE:HE1	1:A:2148:LYS:NZ	2.12	0.47
1:B:1616:GLY:O	1:B:1620:GLU:HG2	2.15	0.47
1:A:4043:MET:HE2	1:A:4125:PHE:HB3	1.96	0.47
1:B:3457:GLU:O	1:B:3461:ILE:HG12	2.15	0.47
2:D:228:LYS:NZ	2:D:263:VAL:O	2.48	0.47
1:A:1623:ARG:NH1	1:A:1629:PHE:O	2.48	0.47
1:A:1842:MET:HA	1:A:1861:MET:HB2	1.97	0.47
1:A:2190:TYR:CE2	1:A:2385:ILE:HD11	2.50	0.47
1:A:2641:TYR:CE2	1:A:2694:ARG:HD3	2.49	0.47
1:A:2837:LEU:HD13	1:A:2842:GLU:HB3	1.97	0.47
1:A:3772:ASN:OD1	1:A:3775:ARG:NH1	2.47	0.47
1:A:4412:PHE:CZ	1:A:4520:TYR:HB2	2.50	0.47
1:B:2481:MET:HG2	1:B:2486:LEU:HD13	1.97	0.47
1:B:3884:ALA:HB1	1:B:4009:VAL:HG11	1.97	0.47
1:B:4227:ALA:HB2	1:B:4233:ILE:HD12	1.96	0.47
1:B:4267:THR:HG23	1:B:4633:ARG:HG2	1.97	0.47
2:D:215:THR:OG1	2:D:230:PHE:O	2.19	0.47
1:A:1619:LEU:O	1:A:1623:ARG:HG3	2.15	0.47
1:A:2423:MET:HG2	1:A:2494:LEU:HD12	1.97	0.47
1:B:2635:PHE:HE1	1:B:2661:LEU:HD11	1.80	0.47
1:B:3479:LEU:HD12	1:B:3486:ARG:HH22	1.80	0.47
1:A:1860:GLN:HG2	1:A:1865:LYS:HG3	1.97	0.47
1:A:2324:LEU:HD23	1:A:2334:SER:HA	1.97	0.47
1:A:3804:LEU:HD13	1:A:3860:THR:HG22	1.96	0.47
1:A:4171:LYS:HE2	1:A:4171:LYS:HA	1.97	0.47
1:B:1698:ILE:HD12	1:B:1701:TRP:NE1	2.29	0.47
1:B:2091:ARG:HD2	1:B:2357:SER:HB2	1.97	0.47
1:A:1609:GLY:O	1:A:1613:LYS:HG3	2.15	0.47
1:A:2384:SER:HB2	1:A:2385:ILE:HD12	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:3191:ARG:HG3	1:B:3500:MET:HE1	1.96	0.47
2:C:91:PRO:HA	2:C:94:TRP:HZ3	1.80	0.47
2:D:296:ALA:HB2	2:D:368:LYS:HG3	1.96	0.47
1:A:4037:PRO:HB2	1:A:4118:PRO:HG2	1.97	0.46
1:A:4219:VAL:HA	1:A:4243:LEU:HD21	1.97	0.46
1:B:2307:VAL:HG23	1:B:2345:VAL:HG11	1.96	0.46
1:B:2943:LYS:HG2	1:B:3094:PHE:HD2	1.81	0.46
1:B:3135:GLN:O	1:B:3137:PRO:HD3	2.14	0.46
2:D:363:ARG:HD2	2:D:365:TRP:HE1	1.80	0.46
1:A:2635:PHE:CE1	1:A:2661:LEU:HD11	2.51	0.46
1:A:3008:MET:O	1:A:3012:LEU:HG	2.15	0.46
1:A:3723:ASP:OD1	1:A:3724:VAL:N	2.47	0.46
1:B:2467:ARG:HG3	1:B:2467:ARG:HH11	1.81	0.46
1:B:2792:TYR:OH	1:B:2842:GLU:OE1	2.25	0.46
2:C:108:ARG:HH12	2:D:143:GLU:CD	2.23	0.46
2:D:92:LYS:N	2:D:94:TRP:CD1	2.84	0.46
2:D:254:ASN:ND2	2:D:278:VAL:HG11	2.29	0.46
1:A:1478:VAL:HG23	1:A:1488:ARG:CZ	2.45	0.46
1:A:2369:LEU:HD11	4:A:4702:ATP:C5	2.51	0.46
1:A:2943:LYS:HE2	1:A:3067:THR:HB	1.98	0.46
1:B:3229:LEU:HD21	1:B:3462:LYS:HG2	1.96	0.46
2:D:139:THR:OG1	2:D:141:ASP:OD2	2.23	0.46
1:A:1529:ARG:HH21	1:A:1592:LEU:HD21	1.81	0.46
1:A:3110:THR:O	1:A:3140:ARG:NH1	2.49	0.46
1:B:2603:MET:HE1	3:B:4703:ADP:C5	2.51	0.46
1:B:3483:SER:O	1:B:3487:GLU:HG2	2.15	0.46
2:D:277:HIS:CE1	2:D:316:ARG:HD2	2.49	0.46
1:A:1888:CYS:HA	1:A:2039:LEU:HD22	1.97	0.46
1:A:1941:MET:HG3	1:A:1971:VAL:HG21	1.97	0.46
1:A:2588:HIS:CD2	1:A:2707:GLN:HE21	2.33	0.46
1:A:4605:VAL:HG13	1:A:4626:ILE:HD11	1.98	0.46
1:B:4488:GLN:O	1:B:4492:ILE:HD12	2.15	0.46
2:D:399:SER:OG	2:D:400:VAL:N	2.49	0.46
1:A:4318:PRO:HG2	1:A:4325:ASN:HA	1.97	0.46
1:B:4413:PHE:CE2	1:B:4492:ILE:HG21	2.51	0.46
1:A:1539:ASP:O	1:A:1543:ARG:HG2	2.16	0.46
1:A:2094:LYS:NZ	3:A:4701:ADP:O2'	2.41	0.46
1:A:2581:LEU:HD23	1:A:2605:LEU:HA	1.97	0.46
1:A:3482:LEU:HD11	1:A:3770:LEU:HD23	1.98	0.46
1:A:4099:VAL:HB	1:A:4106:LEU:HD21	1.97	0.46
1:B:2964:HIS:H	1:B:2967:TYR:HB2	1.81	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:4544:ASN:OD1	1:B:4589:GLN:HB2	2.16	0.46
1:A:2138:ILE:HD11	1:A:2165:PHE:CG	2.50	0.46
1:B:2039:LEU:HD12	1:B:4254:GLY:HA2	1.98	0.46
1:B:2514:LEU:O	1:B:2518:ILE:HG12	2.16	0.46
1:B:3130:TYR:CZ	1:B:3132:LYS:HB2	2.50	0.46
1:A:1618:TYR:O	1:A:1622:GLU:HG2	2.16	0.46
1:A:2175:MET:O	1:A:2179:ARG:HG3	2.16	0.46
1:A:2588:HIS:HA	1:A:2707:GLN:NE2	2.30	0.46
2:C:123:MET:HE2	2:C:135:TRP:HB2	1.98	0.46
1:A:1469:VAL:O	1:A:1473:TYR:HB2	2.15	0.46
1:A:2378:PHE:HE2	1:A:2427:PHE:HE2	1.64	0.46
1:A:4496:ALA:HB2	1:A:4504:LEU:HD21	1.98	0.46
1:B:2987:ASN:OD1	1:B:3060:ARG:NH2	2.49	0.46
2:D:211:SER:OG	2:D:212:ARG:N	2.49	0.46
1:A:1703:THR:HG22	1:A:1707:LYS:HE2	1.98	0.45
1:B:2134:GLN:O	1:B:2138:ILE:HG12	2.16	0.45
1:B:3174:ARG:NH1	1:B:3650:ASN:OD1	2.50	0.45
1:B:4029:HIS:C	1:B:4029:HIS:ND1	2.73	0.45
1:A:1737:THR:HA	1:A:1740:THR:HG22	1.98	0.45
1:A:2275:TRP:NE1	1:A:2277:ASP:OD1	2.45	0.45
2:C:274:GLU:HB2	2:C:323:TRP:CH2	2.51	0.45
1:A:3751:GLN:OE1	1:A:3755:GLU:HB2	2.16	0.45
1:A:3909:LEU:HD21	1:A:4343:MET:HE2	1.99	0.45
1:A:4487:LYS:O	1:A:4490:GLN:HG2	2.16	0.45
1:B:1543:ARG:HA	1:B:1546:TYR:CE1	2.51	0.45
1:B:1547:LEU:HD12	1:B:1608:LEU:HD22	1.97	0.45
1:B:3967:GLU:OE2	1:B:4000:ARG:NH2	2.40	0.45
1:A:1959:GLU:HB3	1:A:1962:ARG:HD3	1.98	0.45
1:B:1461:GLU:HA	1:B:1464:LYS:HD2	1.98	0.45
1:B:1477:LEU:C	1:B:1485:ARG:HE	2.24	0.45
1:B:2430:ASN:O	1:B:2435:LYS:NZ	2.50	0.45
1:B:3175:HIS:HB3	1:B:3516:TYR:CE1	2.51	0.45
1:B:3478:LEU:HD11	1:B:3770:LEU:HB3	1.99	0.45
2:D:259:ARG:HB2	2:D:268:CYS:SG	2.56	0.45
1:A:1709:MET:O	1:A:1713:LEU:HD23	2.17	0.45
1:A:3792:GLN:O	1:A:3796:THR:HG23	2.16	0.45
1:A:3884:ALA:HB1	1:A:4009:VAL:HG11	1.98	0.45
1:B:1619:LEU:HD21	1:B:1638:LEU:HD23	1.98	0.45
1:B:2065:LEU:HD21	1:B:2134:GLN:HG2	1.99	0.45
1:B:2066:ALA:HA	1:B:2069:ILE:HG22	1.99	0.45
1:B:4307:GLN:O	1:B:4311:LEU:HG	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:387:ASP:OD1	2:D:388:PHE:N	2.49	0.45
1:A:1529:ARG:NE	1:A:1592:LEU:HD11	2.30	0.45
1:A:2285:ARG:NH1	1:A:2331:GLU:OE2	2.31	0.45
1:A:2422:ILE:HD13	1:A:2487:GLU:HA	1.98	0.45
1:A:3521:ASP:OD1	1:A:3521:ASP:N	2.47	0.45
1:B:4112:LYS:O	1:B:4116:LEU:HD13	2.16	0.45
1:B:4318:PRO:HG2	1:B:4325:ASN:HA	1.99	0.45
2:D:206:HIS:CE1	2:D:220:GLU:HG2	2.51	0.45
1:A:1462:PHE:O	1:A:1466:ILE:HG13	2.17	0.45
1:A:4205:TYR:OH	1:A:4261:ASP:OD2	2.31	0.45
1:A:4381:HIS:HD2	1:A:4438:CYS:HB2	1.82	0.45
1:B:2665:GLU:HB3	1:B:2668:LEU:HD12	1.99	0.45
1:B:3876:LEU:HD23	1:B:4146:VAL:HG11	1.99	0.45
1:A:1476:ASP:HB3	1:A:1488:ARG:NH1	2.32	0.45
1:A:1802:PRO:O	1:A:1806:ARG:HG2	2.16	0.45
1:A:3451:TYR:O	1:A:3455:ILE:HG23	2.17	0.45
1:A:2110:LYS:HA	1:A:2113:ARG:HH21	1.80	0.45
1:A:2934:LEU:HD13	1:A:3085:LEU:HD11	1.99	0.45
1:A:4381:HIS:HB2	1:A:4438:CYS:HB3	1.99	0.45
1:A:4525:ARG:HD2	1:A:4592:TRP:CH2	2.51	0.45
1:B:2969:GLY:HA2	1:B:3004:PHE:HE1	1.82	0.45
1:A:3888:ALA:HB1	1:A:4012:ASN:HD22	1.82	0.45
1:A:4381:HIS:NE2	1:A:4439:GLU:OE1	2.50	0.45
1:B:2943:LYS:HG2	1:B:3094:PHE:CD2	2.52	0.45
2:C:128:GLU:HA	2:C:152:SER:HB2	1.99	0.45
1:A:1599:ARG:HD2	1:A:1599:ARG:N	2.32	0.44
1:A:1600:SER:HA	1:A:1603:ARG:HG2	1.99	0.44
1:A:2484:GLU:O	1:A:2487:GLU:HG3	2.17	0.44
1:A:2755:MET:HG3	1:A:2807:PHE:HB2	1.99	0.44
1:A:2872:LEU:HD22	1:A:2920:LEU:HD12	1.99	0.44
1:A:4377:MET:SD	1:A:4438:CYS:HA	2.56	0.44
1:A:4463:SER:HG	1:A:4464:TRP:CD1	2.35	0.44
1:B:2138:ILE:HD11	1:B:2165:PHE:CG	2.52	0.44
2:D:361:THR:HG22	2:D:377:ASN:HA	2.00	0.44
1:B:3212:VAL:HG12	1:B:3479:LEU:HD11	1.99	0.44
2:C:152:SER:C	2:C:169:SER:HG	2.24	0.44
2:D:259:ARG:HH21	2:D:268:CYS:HB2	1.82	0.44
1:A:1698:ILE:HD12	1:A:1701:TRP:HE1	1.81	0.44
1:A:3099:THR:HG23	1:A:3148:VAL:HG11	1.99	0.44
1:B:2094:LYS:HD2	3:B:4701:ADP:H1'	2.00	0.44
1:B:3117:LYS:HE2	1:B:3117:LYS:HB2	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:3551:GLU:HA	1:B:3559:ARG:NH1	2.31	0.44
1:B:4431:LEU:HD23	1:B:4431:LEU:HA	1.87	0.44
1:A:4009:VAL:HG13	1:A:4013:LEU:HD12	1.97	0.44
1:B:1991:ASP:O	1:B:1994:SER:OG	2.32	0.44
1:B:2603:MET:HE1	3:B:4703:ADP:N7	2.33	0.44
2:D:283:SER:O	2:D:312:LEU:HB3	2.17	0.44
1:A:1819:ARG:HD2	1:A:1823:ARG:NH2	2.32	0.44
1:A:1879:LEU:HD11	1:A:1914:GLU:HB3	1.99	0.44
1:A:2449:LEU:HD11	1:A:2454:CYS:SG	2.57	0.44
1:B:3664:LEU:HB3	1:B:3669:ILE:HD12	1.98	0.44
1:B:3776:GLU:HA	1:B:3779:GLU:HG2	1.99	0.44
2:C:369:ASN:HB2	2:C:371:ARG:HG2	1.99	0.44
2:D:112:THR:HA	2:D:384:THR:HG21	2.00	0.44
1:A:2762:LEU:HD13	1:A:2765:TYR:HD2	1.82	0.44
1:A:3214:GLN:NE2	1:A:3761:LEU:HB2	2.32	0.44
1:A:3459:GLN:OE1	1:A:3462:LYS:HD3	2.17	0.44
1:B:2190:TYR:CE2	1:B:2385:ILE:HD11	2.52	0.44
1:B:2319:LEU:HD13	1:B:2359:CYS:SG	2.57	0.44
1:B:3096:ASP:OD1	1:B:3097:TRP:N	2.50	0.44
1:B:3211:THR:O	1:B:3215:VAL:HG23	2.18	0.44
1:B:3615:LEU:HD11	1:B:4111:LYS:HD3	2.00	0.44
2:D:97:ARG:HE	2:D:410:ARG:HB2	1.82	0.44
2:D:312:LEU:HD22	2:D:346:PHE:CE1	2.53	0.44
1:A:1571:ILE:HD13	1:A:1607:LEU:HB3	1.98	0.44
1:A:3154:LEU:HD21	1:A:3532:TRP:HZ2	1.83	0.44
1:B:1698:ILE:HD12	1:B:1701:TRP:HE1	1.83	0.44
1:B:3846:LEU:HD22	1:B:3855:ARG:HD2	1.98	0.44
1:B:4445:THR:H	1:B:4448:LEU:HB2	1.83	0.44
2:D:220:GLU:OE1	2:D:223:THR:OG1	2.27	0.44
2:D:230:PHE:HB3	2:D:261:TRP:CZ3	2.52	0.44
1:A:3824:LEU:HD11	1:A:4044:CYS:SG	2.58	0.44
1:A:3892:LEU:HD13	1:A:3983:ILE:HG21	2.00	0.44
1:B:1470:TRP:NE1	1:B:1527:LEU:HD21	2.33	0.44
1:B:1882:THR:HA	1:B:2048:LEU:HD23	1.98	0.44
2:D:123:MET:HE2	2:D:137:TYR:HB3	1.99	0.44
1:A:2176:THR:O	1:A:2179:ARG:N	2.50	0.44
1:A:2983:SER:HB2	1:A:2990:ILE:HD12	2.00	0.44
1:B:1701:TRP:O	1:B:1705:VAL:HG23	2.18	0.44
1:B:1939:GLN:HB2	1:B:2273:ARG:NH2	2.33	0.44
1:B:2488:ARG:HG2	1:B:2492:ARG:HH12	1.83	0.44
1:B:2590:PRO:O	1:B:2732:PRO:HD2	2.18	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:3644:VAL:HG22	1:B:3664:LEU:HD11	1.98	0.44
1:B:4297:PRO:HG3	1:B:4308:TRP:CD2	2.53	0.44
1:B:4432:ALA:HA	1:B:4435:VAL:HG22	1.99	0.44
1:A:2943:LYS:HG2	1:A:3094:PHE:CD2	2.53	0.43
1:B:2967:TYR:OH	1:B:2975:ASP:OD2	2.36	0.43
1:A:2087:ASP:O	1:A:2088:PHE:HD1	2.01	0.43
1:A:2584:TRP:CE3	1:A:2591:LEU:HD22	2.52	0.43
1:A:2641:TYR:CZ	1:A:2650:LEU:HD12	2.52	0.43
1:A:3585:ARG:NH1	1:A:3694:SER:O	2.40	0.43
1:A:3775:ARG:O	1:A:3779:GLU:OE1	2.35	0.43
1:B:3135:GLN:HB2	1:B:3136:PRO:HD3	2.00	0.43
1:A:1803:LEU:HD11	1:A:1875:VAL:HG21	1.99	0.43
1:A:2110:LYS:CB	1:A:2113:ARG:HH21	2.31	0.43
1:A:2649:VAL:HG22	1:A:2702:LYS:HB2	2.00	0.43
1:A:2964:HIS:H	1:A:2967:TYR:HB2	1.82	0.43
1:B:1459:LEU:HD21	1:B:1510:SER:OG	2.18	0.43
1:A:2224:GLY:O	1:A:2346:GLN:HA	2.19	0.43
1:A:3790:VAL:O	1:A:3793:GLU:HG2	2.19	0.43
1:B:2221:MET:HE1	1:B:2355:THR:HG22	1.99	0.43
1:B:2372:ASP:OD2	1:B:2429:SER:OG	2.31	0.43
1:B:3013:ALA:HA	1:B:3088:ARG:HG3	2.00	0.43
1:B:3071:SER:OG	1:B:3073:GLU:OE1	2.36	0.43
1:B:4414:GLU:HA	1:B:4417:VAL:HG12	2.01	0.43
1:B:4534:TRP:HE3	1:B:4539:LEU:HD21	1.83	0.43
1:A:2080:LEU:O	1:A:4415:ARG:NH1	2.51	0.43
1:A:3182:HIS:NE2	1:A:3582:ARG:O	2.51	0.43
1:A:3562:TRP:HB3	1:A:3567:LEU:HD22	2.00	0.43
1:B:2073:PHE:HZ	1:B:2096:VAL:HG21	1.83	0.43
1:B:2808:GLU:OE2	1:B:2811:ARG:NH2	2.35	0.43
1:B:4413:PHE:CD2	1:B:4492:ILE:HG21	2.54	0.43
2:D:280:GLU:OE1	2:D:316:ARG:NH2	2.51	0.43
1:A:1620:GLU:HA	1:A:1623:ARG:HD2	1.99	0.43
1:A:2534:ILE:HD12	1:A:2534:ILE:H	1.83	0.43
1:A:2980:LEU:HD21	1:A:3011:LEU:HD11	1.99	0.43
1:A:3607:ARG:NH2	1:A:3674:SER:O	2.34	0.43
1:A:3948:ILE:HA	1:A:3951:VAL:HG12	2.01	0.43
1:B:2270:PRO:HA	1:B:2273:ARG:HH11	1.83	0.43
1:B:2879:LYS:HE2	2:C:336:GLY:HA2	1.99	0.43
2:C:366:ASP:HB2	2:C:373:MET:SD	2.58	0.43
2:D:216:ILE:HB	2:D:230:PHE:HB2	2.00	0.43
1:A:4292:LYS:HD2	1:A:4293:ASP:N	2.34	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1860:GLN:HG2	1:B:1865:LYS:HG2	2.01	0.43
1:B:2324:LEU:HD22	1:B:2332:ARG:HB3	2.01	0.43
1:B:3224:ILE:O	1:B:3227:GLN:HG3	2.18	0.43
1:B:3786:GLU:O	1:B:3789:ILE:HG22	2.19	0.43
1:B:4482:PHE:O	1:B:4486:ILE:HG12	2.19	0.43
2:C:329:MET:HE3	2:C:329:MET:HB3	1.81	0.43
1:A:2472:TYR:CD2	1:A:2481:MET:HB2	2.53	0.43
1:A:3731:LEU:O	1:A:3735:GLN:HG3	2.19	0.43
1:A:4414:GLU:OE2	1:A:4418:LYS:HD2	2.19	0.43
1:B:1508:LYS:HA	1:B:1513:TYR:CD1	2.54	0.43
1:B:3772:ASN:HA	1:B:3775:ARG:NH1	2.33	0.43
2:D:321:LYS:HD2	2:D:323:TRP:CZ2	2.54	0.43
1:B:1666:LEU:HD23	1:B:1673:VAL:HA	2.01	0.43
1:A:2900:PHE:CE1	1:A:2904:GLU:HB2	2.53	0.43
1:A:3220:ARG:O	1:A:3224:ILE:HG12	2.19	0.43
1:A:3868:PHE:CZ	1:A:4018:MET:HG2	2.54	0.43
1:B:1558:LYS:HD3	1:B:1558:LYS:N	2.34	0.43
1:B:2961:ILE:HD11	1:B:2998:ASN:HB3	2.00	0.43
1:B:4476:ILE:HG13	1:B:4477:GLN:N	2.34	0.43
2:D:250:ALA:HB2	2:D:260:VAL:HG22	2.00	0.43
1:B:1500:HIS:O	1:B:1504:VAL:HG23	2.18	0.42
1:B:1657:MET:HE3	1:B:1657:MET:HB2	1.89	0.42
1:B:2461:MET:HG2	1:B:2583:THR:HG21	2.00	0.42
1:B:3825:TYR:CZ	1:B:3875:MET:HG3	2.54	0.42
2:C:290:TYR:HD2	2:C:307:PRO:HD2	1.84	0.42
1:A:2869:ARG:O	1:A:2869:ARG:HD3	2.19	0.42
1:B:1479:ASN:HD21	1:B:1482:ASN:H	1.67	0.42
1:B:3194:LEU:HD23	1:B:3500:MET:SD	2.59	0.42
1:B:3562:TRP:HB3	1:B:3567:LEU:HD22	2.00	0.42
1:A:2378:PHE:HE1	1:A:2463:HIS:NE2	2.18	0.42
1:A:2449:LEU:HA	1:A:2453:ARG:NH2	2.33	0.42
1:A:4460:LEU:HD12	1:A:4461:PRO:HD2	2.01	0.42
1:B:1673:VAL:N	1:B:1690:VAL:O	2.41	0.42
1:B:3623:LEU:O	1:B:3627:LEU:HG	2.20	0.42
1:B:4226:THR:HG21	1:B:4239:PRO:HD3	2.02	0.42
2:D:243:ASN:ND2	2:D:248:LEU:H	2.18	0.42
1:A:1966:ARG:HA	1:A:4101:LEU:HD13	2.02	0.42
1:B:2818:VAL:O	1:B:2822:ILE:HG12	2.20	0.42
2:C:216:ILE:O	2:C:230:PHE:N	2.46	0.42
1:A:1643:ASN:HD22	1:A:1649:LYS:CD	2.31	0.42
1:A:2104:LYS:O	1:A:2108:ILE:HG12	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:3167:ARG:NE	1:B:3687:GLU:OE2	2.53	0.42
2:D:96:PRO:HA	2:D:408:GLU:O	2.20	0.42
1:A:2073:PHE:HZ	1:A:2096:VAL:HG21	1.84	0.42
1:A:2221:MET:HE1	1:A:2355:THR:HG22	2.02	0.42
1:A:2665:GLU:HB3	1:A:2668:LEU:HD12	2.02	0.42
1:A:3040:GLU:OE1	1:A:3053:TRP:NE1	2.45	0.42
1:B:2629:GLU:OE2	1:B:2633:LYS:HD3	2.19	0.42
1:B:2896:ARG:HA	1:B:2896:ARG:HD3	1.80	0.42
1:B:3716:VAL:HB	1:B:3836:TYR:OH	2.20	0.42
1:B:4039:THR:HG23	1:B:4142:GLY:HA2	2.02	0.42
2:D:243:ASN:HD21	2:D:247:THR:H	1.68	0.42
2:D:364:VAL:C	2:D:365:TRP:HD1	2.27	0.42
1:A:2118:ARG:O	1:A:2118:ARG:NH1	2.53	0.42
1:A:2691:GLY:HA3	1:A:2701:VAL:O	2.20	0.42
1:A:3175:HIS:HB3	1:A:3516:TYR:CE1	2.54	0.42
1:B:1817:HIS:CD2	1:B:1881:GLN:HG2	2.55	0.42
1:B:2149:LEU:HD11	1:B:2157:LEU:HD22	2.01	0.42
1:B:3659:ARG:H	1:B:3659:ARG:CZ	2.32	0.42
1:B:3792:GLN:HA	1:B:3792:GLN:OE1	2.20	0.42
1:B:1581:LYS:HA	1:B:1584:LYS:HE3	2.01	0.42
1:B:1755:GLN:HG2	1:B:1814:GLU:OE1	2.19	0.42
1:B:2498:ILE:HG23	1:B:2502:LEU:HD22	2.01	0.42
1:B:2511:ARG:HD3	1:B:2535:ILE:HD13	2.01	0.42
2:C:113:ARG:HD2	2:C:155:ASP:HA	2.00	0.42
1:A:1888:CYS:O	1:A:1892:MET:HG2	2.20	0.42
1:B:4107:MET:HE1	1:B:4137:ASN:HB2	2.02	0.42
1:B:4517:PRO:HG2	1:B:4619:ILE:HD12	2.02	0.42
1:B:4554:ASP:OD2	1:B:4557:SER:OG	2.30	0.42
2:D:113:ARG:HA	2:D:385:SER:HB3	2.02	0.42
2:D:136:ASP:O	2:D:140:GLY:N	2.50	0.42
1:A:1708:GLU:HA	1:A:1711:VAL:HG22	2.01	0.42
1:A:3030:MET:HE1	1:A:3051:TYR:HB2	2.01	0.42
1:A:3607:ARG:HE	1:A:3607:ARG:HB3	1.70	0.42
1:A:3709:GLN:HG3	1:A:3809:SER:HB3	2.02	0.42
1:A:4223:LEU:HD12	1:A:4223:LEU:HA	1.93	0.42
1:B:4422:LYS:HD3	1:B:4422:LYS:O	2.20	0.42
1:B:3214:GLN:NE2	1:B:3761:LEU:HB2	2.34	0.41
1:B:4344:LEU:O	1:B:4347:GLN:HG3	2.20	0.41
2:D:101:LYS:HB2	2:D:408:GLU:OE2	2.20	0.41
2:D:186:ARG:NH2	2:D:222:GLN:O	2.53	0.41
1:A:1477:LEU:HB3	1:A:1485:ARG:HB3	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1850:GLN:HB3	1:A:1856:GLN:HG2	2.01	0.41
1:A:3738:PHE:CE2	1:A:3783:LYS:HB3	2.55	0.41
1:B:1558:LYS:HD2	1:B:1565:THR:HG21	2.03	0.41
1:B:2413:LEU:O	1:B:2417:ARG:HG3	2.20	0.41
1:B:3219:ARG:NH2	1:B:3472:VAL:HG22	2.35	0.41
1:B:3521:ASP:N	1:B:3521:ASP:OD1	2.51	0.41
2:D:101:LYS:HG2	2:D:102:TYR:CD2	2.55	0.41
1:A:1640:ILE:HD11	1:A:1653:HIS:HB3	2.02	0.41
1:A:1769:MET:SD	1:A:1769:MET:N	2.93	0.41
1:A:2214:THR:HA	1:A:2220:LEU:HD21	2.02	0.41
1:A:2499:LEU:HD12	1:A:2514:LEU:HD23	2.02	0.41
1:A:3913:GLU:OE1	1:A:3913:GLU:N	2.53	0.41
1:B:3893:LYS:HB3	1:B:3893:LYS:HE2	1.92	0.41
1:A:1477:LEU:C	1:A:1485:ARG:HH21	2.26	0.41
1:A:1697:LYS:HB2	1:A:1700:GLU:OE2	2.20	0.41
1:A:4343:MET:HE2	1:A:4343:MET:HB3	1.89	0.41
1:B:3488:ARG:HG3	1:B:3489:TRP:CD1	2.55	0.41
1:A:3044:LEU:HD22	1:A:3049:GLU:HG3	2.02	0.41
1:A:3593:SER:OG	1:A:3595:GLN:HG3	2.21	0.41
1:B:1859:ILE:HD11	1:B:1868:TYR:HD1	1.86	0.41
1:B:1943:ARG:HG2	1:B:1943:ARG:NH1	2.35	0.41
1:B:2273:ARG:HA	1:B:2273:ARG:HD2	1.78	0.41
1:B:2467:ARG:HG3	1:B:2467:ARG:NH1	2.36	0.41
1:B:3888:ALA:HB1	1:B:4012:ASN:ND2	2.35	0.41
1:B:4528:VAL:HG11	1:B:4592:TRP:HB2	2.02	0.41
2:D:277:HIS:CG	2:D:278:VAL:N	2.88	0.41
1:A:1466:ILE:HG12	1:A:1500:HIS:ND1	2.34	0.41
1:A:2076:CYS:HB3	1:A:2088:PHE:CE2	2.55	0.41
1:A:4431:LEU:HD23	1:A:4431:LEU:HA	1.87	0.41
1:A:2591:LEU:HA	1:A:2731:VAL:HG13	2.02	0.41
1:A:3684:PRO:HD2	1:A:4140:ARG:NH2	2.35	0.41
1:B:2078:GLU:OE1	1:B:4518:GLU:HG3	2.20	0.41
1:B:2457:SER:OG	1:B:2501:SER:HB3	2.20	0.41
1:B:2544:GLU:N	1:B:2544:GLU:OE2	2.53	0.41
1:B:3452:ALA:HA	1:B:3455:ILE:HG22	2.03	0.41
1:B:4519:ALA:HA	1:B:4522:THR:HG22	2.03	0.41
2:D:243:ASN:HB3	2:D:284:TRP:CZ3	2.47	0.41
2:D:311:LEU:O	2:D:323:TRP:N	2.31	0.41
2:D:342:ARG:NH2	2:D:384:THR:HG23	2.36	0.41
1:A:1738:TYR:HE2	1:A:1792:LEU:HD21	1.85	0.41
1:A:3154:LEU:HD11	1:A:3516:TYR:HB3	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:4075:GLU:C	1:A:4079:GLN:HE21	2.28	0.41
1:A:4463:SER:O	1:A:4466:HIS:NE2	2.54	0.41
1:A:4564:LYS:HD3	1:A:4584:ALA:HA	2.02	0.41
1:B:2054:LEU:HD23	1:B:2054:LEU:HA	1.90	0.41
1:B:2063:GLU:O	1:B:2067:ASN:ND2	2.54	0.41
1:B:3154:LEU:HD11	1:B:3516:TYR:HB3	2.03	0.41
1:B:3495:THR:O	1:B:3499:GLN:HG3	2.21	0.41
1:B:3835:ILE:HG23	1:B:3866:VAL:HG12	2.03	0.41
1:B:4516:VAL:HG12	1:B:4519:ALA:H	1.85	0.41
2:C:176:LEU:HD13	2:C:207:ILE:HD11	2.03	0.41
2:D:309:PRO:HB2	2:D:325:VAL:HB	2.02	0.41
1:A:1580:LYS:HA	1:A:1580:LYS:HD3	1.81	0.41
1:A:1604:LEU:HD23	1:A:1604:LEU:HA	1.85	0.41
1:A:1623:ARG:NH2	1:A:1634:ASP:OD1	2.54	0.41
1:A:1735:PRO:O	1:A:1739:ILE:HG12	2.21	0.41
1:A:2108:ILE:O	1:A:2112:LYS:HG2	2.21	0.41
1:A:2386:PRO:HA	1:A:2416:GLN:OE1	2.21	0.41
1:A:2471:GLN:O	1:A:2475:ASN:ND2	2.54	0.41
1:A:2596:PRO:HB2	1:A:2738:TYR:CZ	2.56	0.41
1:A:2793:ILE:O	1:A:2836:ARG:NH1	2.54	0.41
1:A:2912:PHE:CE2	1:A:2914:GLU:HB2	2.56	0.41
1:A:3215:VAL:HG12	1:A:3219:ARG:NH2	2.35	0.41
1:A:4098:ASN:N	1:A:4127:THR:O	2.53	0.41
1:B:1547:LEU:HD23	1:B:1547:LEU:HA	1.92	0.41
1:B:1882:THR:HG22	1:B:2048:LEU:HD23	2.03	0.41
1:B:2419:ALA:O	1:B:2423:MET:HG2	2.20	0.41
1:B:2449:LEU:HA	1:B:2453:ARG:NH2	2.36	0.41
1:B:2863:ARG:HG3	1:B:2863:ARG:NH1	2.33	0.41
1:B:2968:THR:HG23	1:B:2970:GLU:HG2	2.03	0.41
1:B:3026:TYR:CZ	1:B:3030:MET:HE3	2.56	0.41
1:B:3030:MET:HE1	1:B:3051:TYR:HB2	2.03	0.41
1:B:3200:HIS:HD2	1:B:3754:ASN:OD1	2.04	0.41
2:D:243:ASN:CG	2:D:248:LEU:H	2.28	0.41
1:A:3783:LYS:O	1:A:3786:GLU:HG2	2.21	0.41
1:A:3839:VAL:HG11	1:A:3863:LEU:HD13	2.03	0.41
1:B:4289:ASP:OD1	1:B:4292:LYS:HG2	2.21	0.41
2:C:256:GLN:HG2	2:C:277:HIS:C	2.46	0.41
2:C:382:PHE:O	2:C:399:SER:OG	2.34	0.41
1:A:1476:ASP:O	1:A:1487:ILE:HA	2.20	0.40
1:A:2792:TYR:OH	1:A:2842:GLU:OE1	2.33	0.40
1:A:3612:THR:OG1	1:A:3613:SER:N	2.54	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:4110:GLU:HG3	1:A:4138:LEU:HA	2.03	0.40
1:B:3628:ARG:HG2	1:B:3628:ARG:HH11	1.85	0.40
2:C:193:HIS:CG	2:C:194:ASN:H	2.39	0.40
1:A:2091:ARG:NH1	3:A:4701:ADP:H5'2	2.36	0.40
1:A:2635:PHE:HE1	1:A:2661:LEU:HD11	1.86	0.40
1:B:2996:GLU:HB2	1:B:3078:ARG:HH12	1.85	0.40
1:B:3559:ARG:O	1:B:3563:GLN:HG2	2.21	0.40
2:D:289:SER:O	2:D:293:ILE:HG12	2.21	0.40
1:A:1572:SER:O	1:A:1576:LEU:HG	2.21	0.40
1:A:2268:LEU:HD12	1:A:2268:LEU:HA	1.90	0.40
1:A:2590:PRO:O	1:A:2732:PRO:HD2	2.21	0.40
1:A:2822:ILE:HD11	1:A:2858:PHE:CD1	2.57	0.40
1:A:3033:CYS:SG	1:A:3054:PHE:HB2	2.61	0.40
1:A:3484:ALA:O	1:A:3487:GLU:HG3	2.20	0.40
1:A:3966:PRO:HG3	1:A:3997:ARG:NH1	2.35	0.40
1:A:4285:ALA:O	1:A:4293:ASP:HB2	2.22	0.40
1:B:1467:ARG:NH2	1:B:1471:ASN:HB3	2.35	0.40
1:B:1966:ARG:HA	1:B:4101:LEU:HD13	2.03	0.40
1:B:2060:ARG:HB2	1:B:2060:ARG:NH1	2.36	0.40
1:B:2231:SER:HA	1:B:2234:TRP:NE1	2.36	0.40
1:B:2668:LEU:N	1:B:2669:PRO:HD2	2.37	0.40
1:B:4168:ARG:NH2	1:B:4217:ASP:OD1	2.55	0.40
1:B:4296:MET:HE2	1:B:4296:MET:HA	2.03	0.40
1:B:4397:HIS:NE2	1:B:4418:LYS:HA	2.37	0.40
2:C:178:ASP:O	2:C:182:PHE:N	2.54	0.40
2:D:100:GLU:HB3	2:D:407:TRP:CZ3	2.56	0.40
1:A:3148:VAL:O	1:A:3152:GLN:HG3	2.22	0.40
1:A:3786:GLU:O	1:A:3789:ILE:HG22	2.21	0.40
1:B:1547:LEU:HA	1:B:1550:ILE:HG22	2.04	0.40
1:B:4027:LEU:HD11	1:B:4043:MET:HE1	2.03	0.40
1:B:4297:PRO:HG3	1:B:4308:TRP:CG	2.56	0.40
2:D:127:SER:OG	2:D:128:GLU:N	2.54	0.40
2:D:212:ARG:HD3	2:D:236:TRP:HB2	2.04	0.40
2:D:320:ILE:HD11	2:D:337:HIS:CD2	2.57	0.40
1:A:1835:SER:OG	1:A:1837:GLU:OE1	2.38	0.40
1:A:3730:ASP:O	1:A:3734:LEU:HG	2.21	0.40
1:A:3767:ILE:HD12	1:A:3767:ILE:H	1.87	0.40
1:A:4156:ASN:C	1:A:4156:ASN:HD22	2.27	0.40
1:B:1478:VAL:C	1:B:1485:ARG:HD2	2.47	0.40
1:B:1511:PRO:HG2	1:B:1512:TYR:CD1	2.56	0.40
1:B:1703:THR:HA	1:B:1706:GLU:HG2	2.02	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2691:GLY:HA2	1:B:2703:LEU:HG	2.03	0.40
1:B:3016:GLU:OE1	1:B:3051:TYR:OH	2.24	0.40
1:B:3478:LEU:HD13	1:B:3771:GLU:HG3	2.02	0.40
1:B:3624:GLU:OE2	1:B:3628:ARG:HD3	2.21	0.40
1:B:4485:ARG:HG2	1:B:4513:GLY:HA2	2.04	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	2929/4646 (63%)	2885 (98%)	44 (2%)	0	100	100
1	B	2929/4646 (63%)	2872 (98%)	57 (2%)	0	100	100
2	C	320/410 (78%)	306 (96%)	14 (4%)	0	100	100
2	D	317/410 (77%)	300 (95%)	17 (5%)	0	100	100
All	All	6495/10112 (64%)	6363 (98%)	132 (2%)	0	100	100

There are no Ramachandran outliers to report.

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	2605/4125 (63%)	2604 (100%)	1 (0%)	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	B	2605/4125 (63%)	2604 (100%)	1 (0%)	100	100
2	C	287/364 (79%)	287 (100%)	0	100	100
2	D	284/364 (78%)	284 (100%)	0	100	100
All	All	5781/8978 (64%)	5779 (100%)	2 (0%)	100	100

All (2) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	4397	HIS
1	B	4029	HIS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (68) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	1850	GLN
1	A	1856	GLN
1	A	1950	GLN
1	A	2067	ASN
1	A	2102	ASN
1	A	2171	HIS
1	A	2212	GLN
1	A	2263	HIS
1	A	2549	GLN
1	A	2588	HIS
1	A	2677	GLN
1	A	2707	GLN
1	A	2781	GLN
1	A	2827	HIS
1	A	2928	GLN
1	A	3152	GLN
1	A	3523	GLN
1	A	3526	GLN
1	A	3535	HIS
1	A	3538	GLN
1	A	3820	GLN
1	A	3826	GLN
1	A	3877	HIS
1	A	3985	GLN
1	A	4012	ASN
1	A	4062	GLN

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Mol	Chain	Res	Type
1	A	4079	GLN
1	A	4114	HIS
1	A	4389	HIS
1	A	4429	GLN
1	A	4436	GLN
1	A	4466	HIS
1	A	4490	GLN
1	A	4506	ASN
1	A	4566	GLN
1	A	4589	GLN
1	B	1541	GLN
1	B	1643	ASN
1	B	1670	ASN
1	B	1755	GLN
1	B	1841	GLN
1	B	1950	GLN
1	B	1979	GLN
1	B	2047	GLN
1	B	2263	HIS
1	B	2464	GLN
1	B	2485	GLN
1	B	2752	ASN
1	B	2827	HIS
1	B	3063	HIS
1	B	3214	GLN
1	B	3233	ASN
1	B	3535	HIS
1	B	3744	GLN
1	B	3820	GLN
1	B	3877	HIS
1	B	4012	ASN
1	B	4098	ASN
1	B	4156	ASN
1	B	4191	GLN
1	B	4249	GLN
1	B	4258	ASN
1	B	4566	GLN
2	C	369	ASN
2	C	377	ASN
2	C	381	HIS
2	D	189	HIS
2	D	377	ASN

5.3.3 RNA

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates

There are no oligosaccharides in this entry.

5.6 Ligand geometry

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

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
3	ADP	B	4703	-	24,29,29	0.88	0	29,45,45	1.23	2 (6%)
4	ATP	A	4702	5	28,33,33	0.66	0	34,52,52	0.58	1 (2%)
3	ADP	A	4704	-	24,29,29	0.88	0	29,45,45	1.20	2 (6%)
3	ADP	A	4701	5	24,29,29	0.89	0	29,45,45	1.22	2 (6%)
3	ADP	B	4701	5	24,29,29	0.87	0	29,45,45	1.24	2 (6%)
3	ADP	A	4703	-	24,29,29	0.89	0	29,45,45	1.23	2 (6%)
3	ADP	B	4704	-	24,29,29	0.86	0	29,45,45	1.19	2 (6%)
4	ATP	B	4702	5	28,33,33	0.67	0	34,52,52	0.59	1 (2%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	ADP	B	4703	-	-	5/12/32/32	0/3/3/3
4	ATP	A	4702	5	-	5/18/38/38	0/3/3/3
3	ADP	A	4704	-	-	1/12/32/32	0/3/3/3
3	ADP	A	4701	5	-	0/12/32/32	0/3/3/3
3	ADP	B	4701	5	-	3/12/32/32	0/3/3/3
3	ADP	A	4703	-	-	5/12/32/32	0/3/3/3
3	ADP	B	4704	-	-	1/12/32/32	0/3/3/3
4	ATP	B	4702	5	-	4/18/38/38	0/3/3/3

There are no bond length outliers.

All (14) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	B	4703	ADP	N3-C2-N1	-3.73	123.61	128.67
3	A	4701	ADP	N3-C2-N1	-3.72	123.62	128.67
3	A	4703	ADP	N3-C2-N1	-3.69	123.66	128.67
3	B	4704	ADP	N3-C2-N1	-3.68	123.67	128.67
3	A	4704	ADP	N3-C2-N1	-3.68	123.67	128.67
3	B	4701	ADP	N3-C2-N1	-3.66	123.70	128.67
3	A	4701	ADP	C4-C5-N7	-2.57	106.62	109.34
3	B	4704	ADP	C4-C5-N7	-2.56	106.63	109.34
3	B	4703	ADP	C4-C5-N7	-2.55	106.64	109.34
3	A	4703	ADP	C4-C5-N7	-2.52	106.67	109.34
3	B	4701	ADP	C4-C5-N7	-2.52	106.67	109.34
3	A	4704	ADP	C4-C5-N7	-2.51	106.69	109.34
4	B	4702	ATP	C5-C6-N6	2.33	123.86	120.31
4	A	4702	ATP	C5-C6-N6	2.28	123.78	120.31

There are no chirality outliers.

All (24) torsion outliers are listed below:

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

Continued on next page...

Continued from previous page...

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

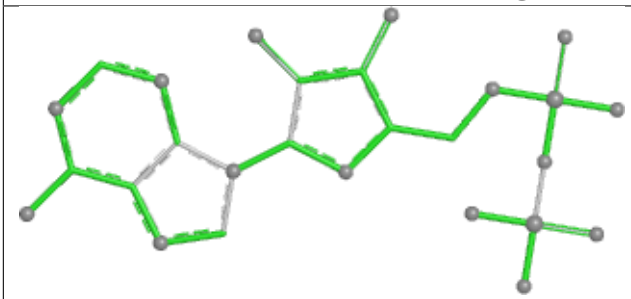
There are no ring outliers.

4 monomers are involved in 8 short contacts:

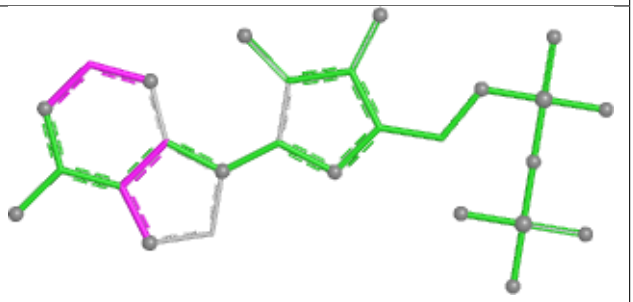
Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	B	4703	ADP	2	0
4	A	4702	ATP	1	0
3	A	4701	ADP	2	0
3	B	4701	ADP	3	0

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.

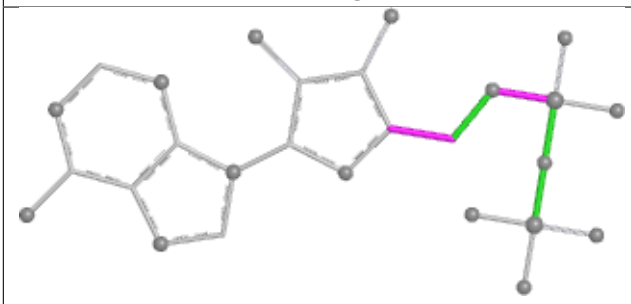
Ligand ADP B 4703



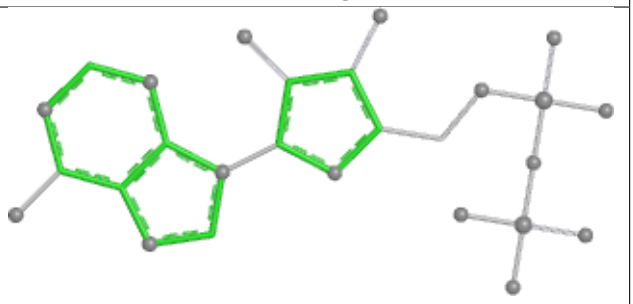
Bond lengths



Bond angles

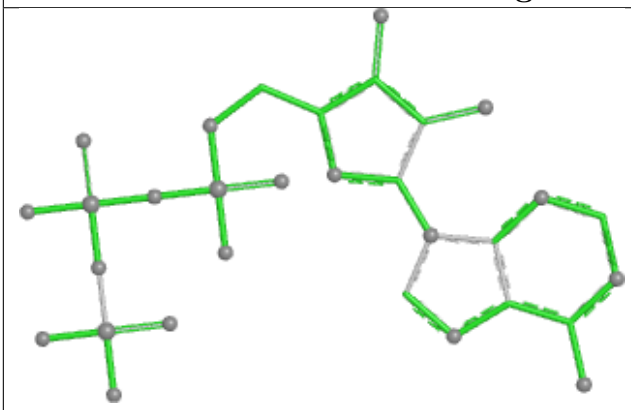


Torsions

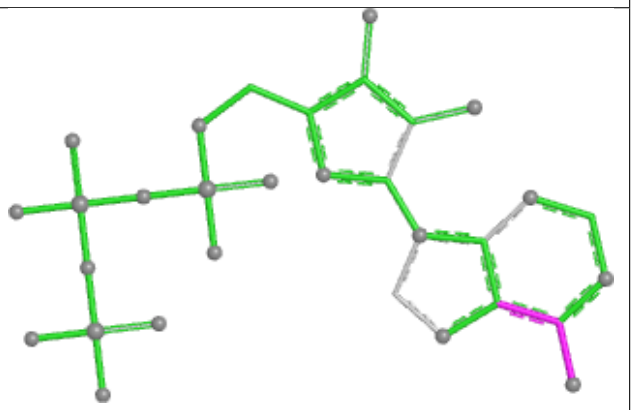


Rings

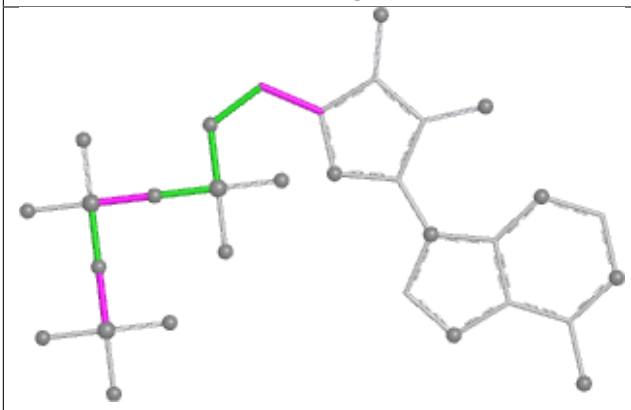
Ligand ATP A 4702



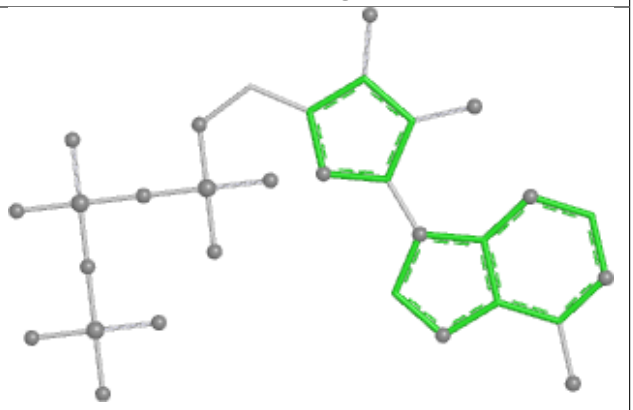
Bond lengths



Bond angles

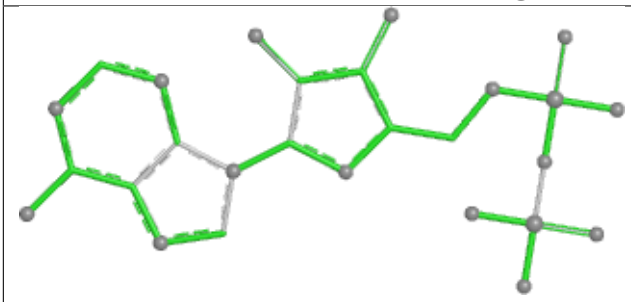


Torsions

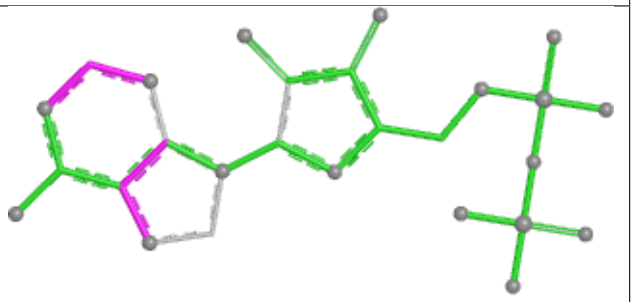


Rings

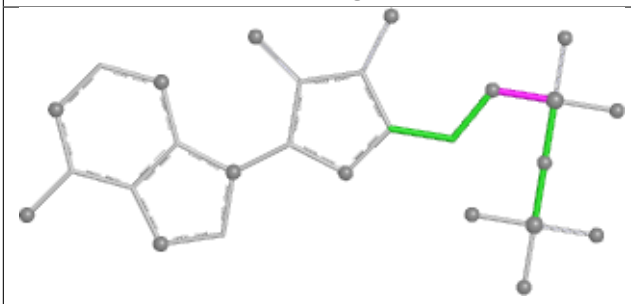
Ligand ADP A 4704



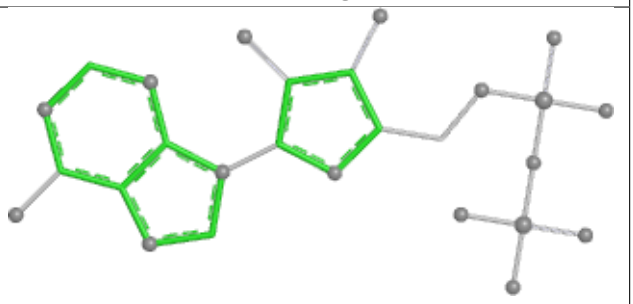
Bond lengths



Bond angles

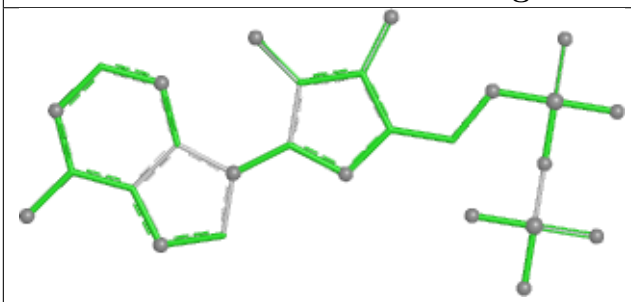


Torsions

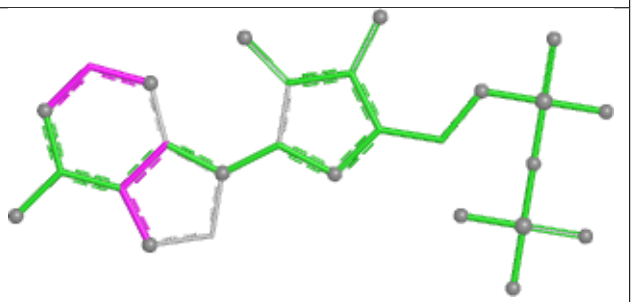


Rings

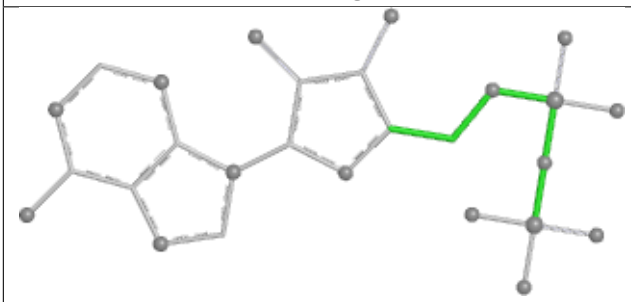
Ligand ADP A 4701



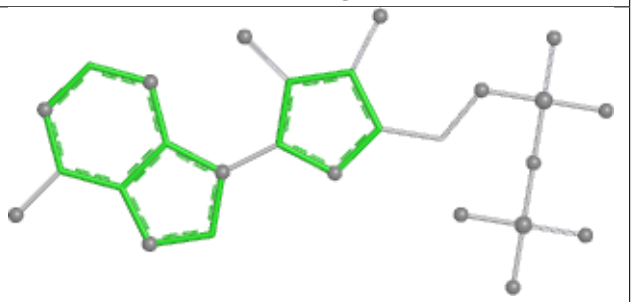
Bond lengths



Bond angles

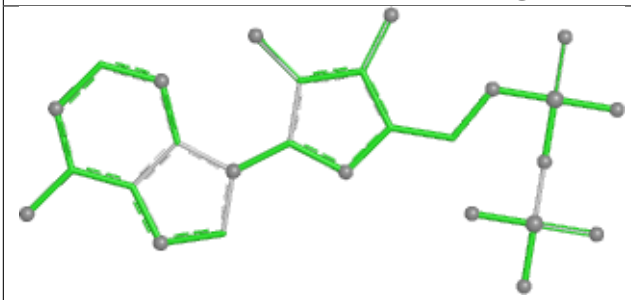


Torsions

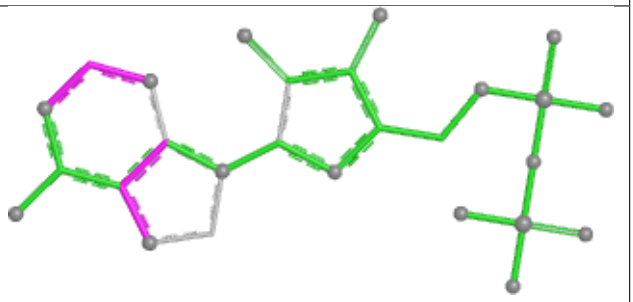


Rings

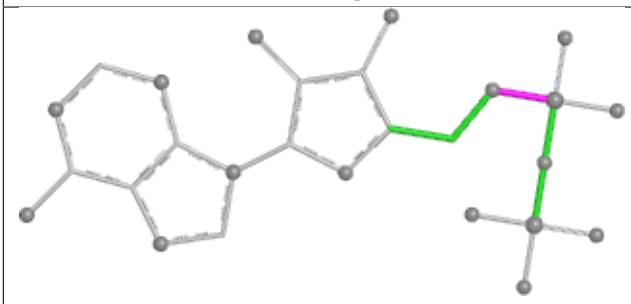
Ligand ADP B 4701



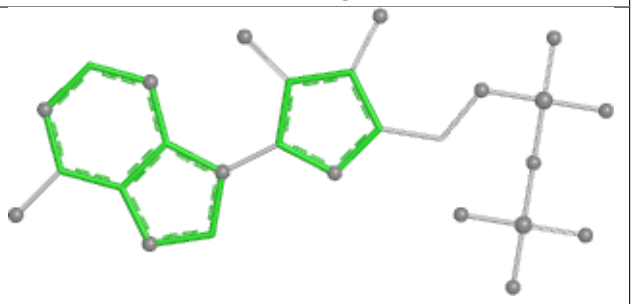
Bond lengths



Bond angles

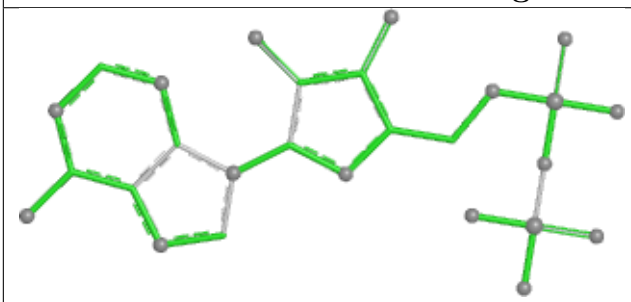


Torsions



Rings

Ligand ADP A 4703



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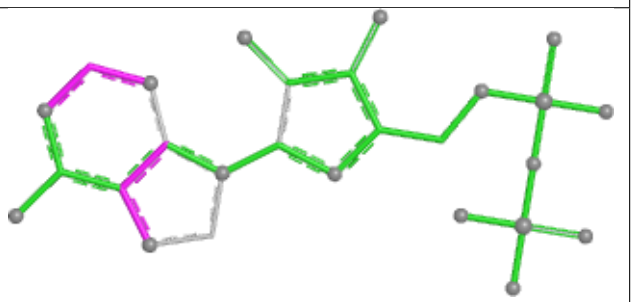
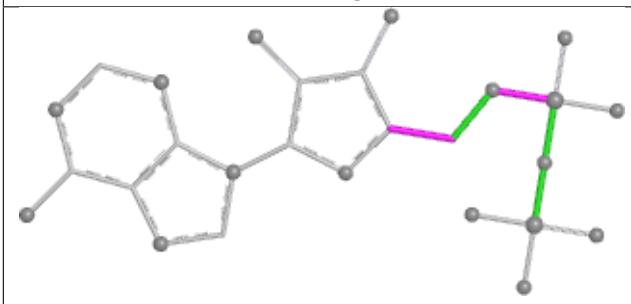
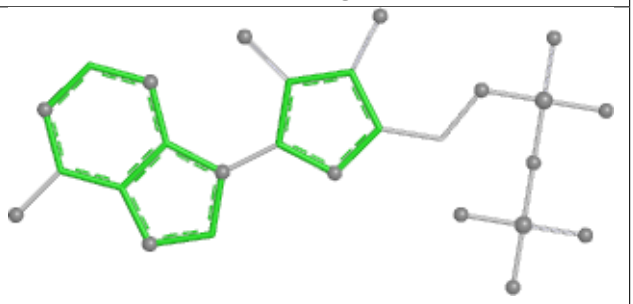


Bond angles

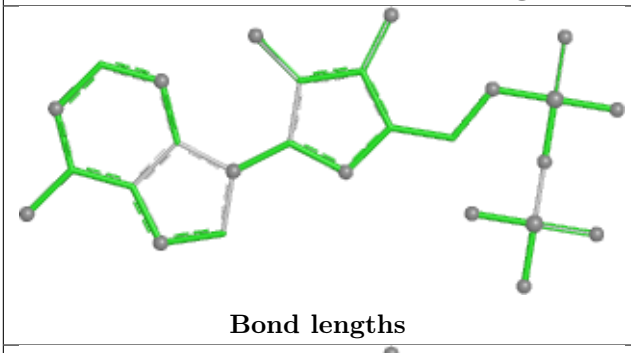


Torsions



Rings

Ligand ADP B 4704



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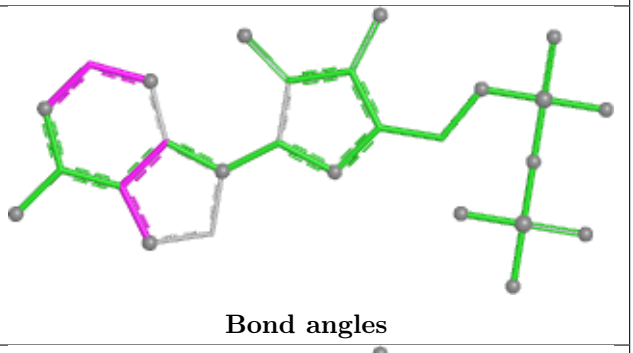
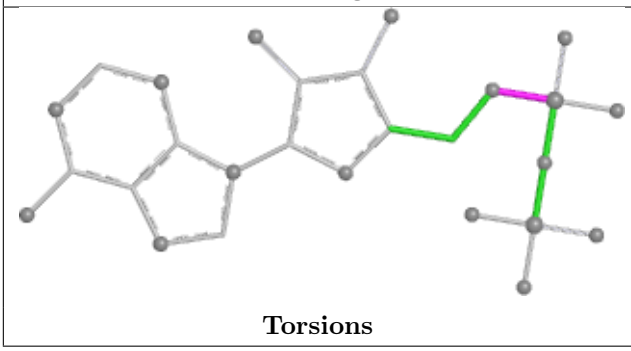
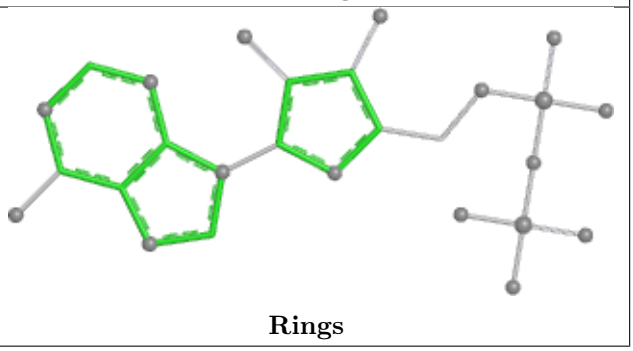


Bond angles

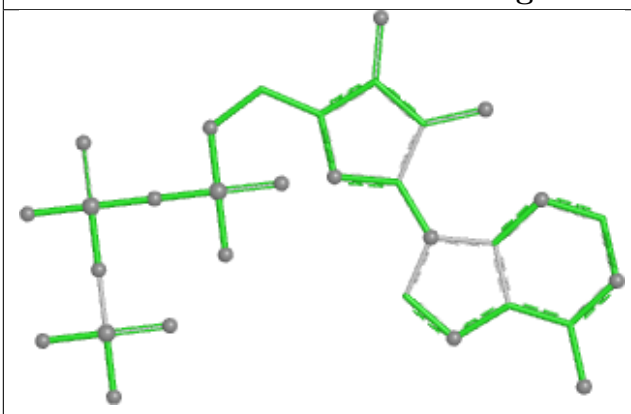


Torsions

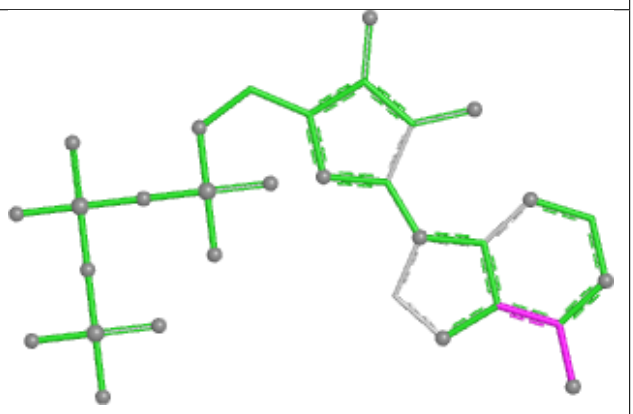


Rings

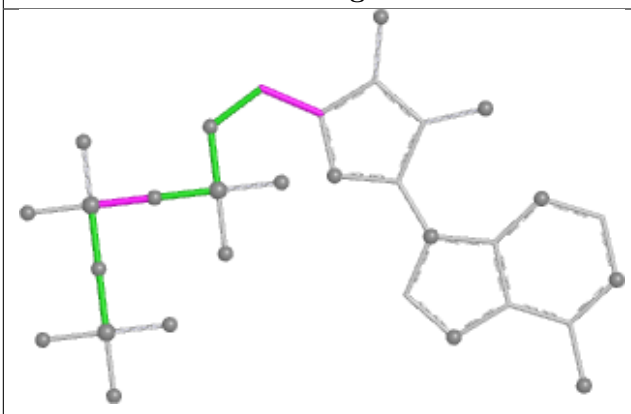
Ligand ATP B 4702



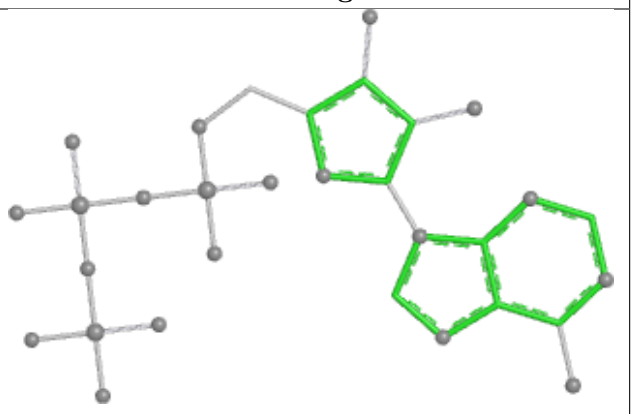
Bond lengths



Bond angles



Torsions



Rings

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

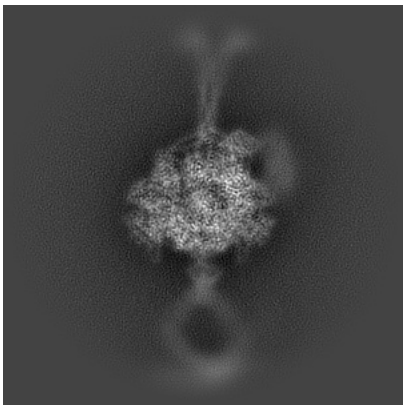
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-47378. These allow visual inspection of the internal detail of the map and identification of artifacts.

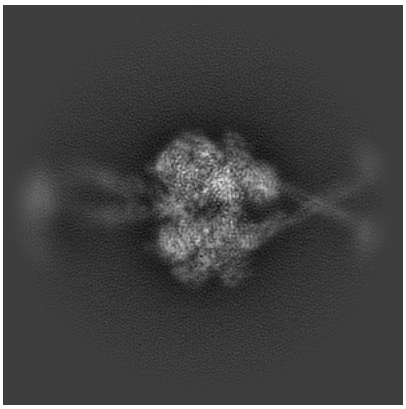
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

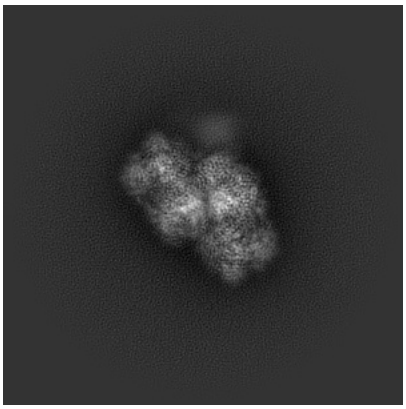
6.1.1 Primary map



X

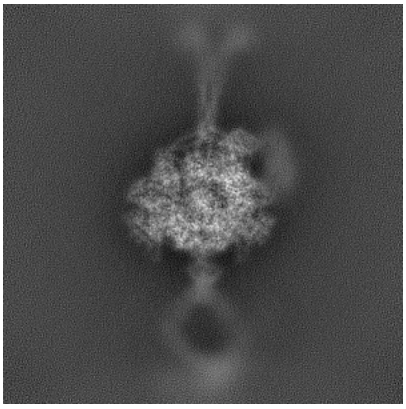


Y

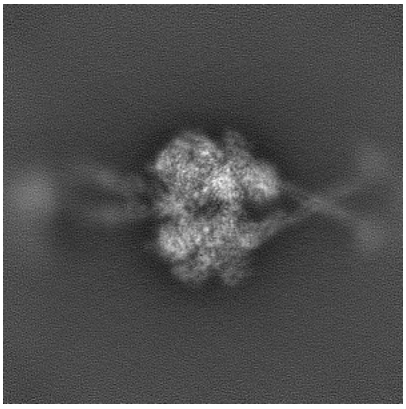


Z

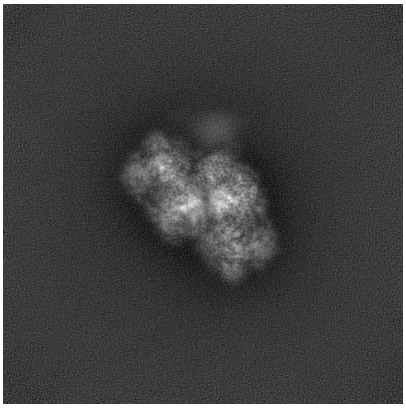
6.1.2 Raw map



X



Y



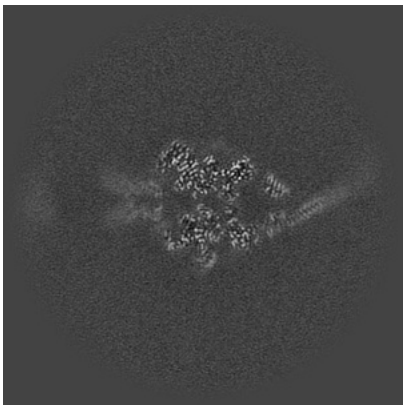
Z

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

6.2 Central slices (i)

6.2.1 Primary map

X Index: 192

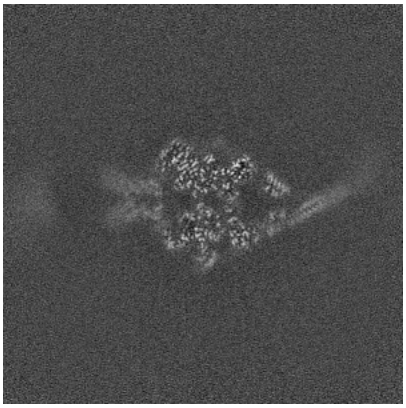


Y Index: 192

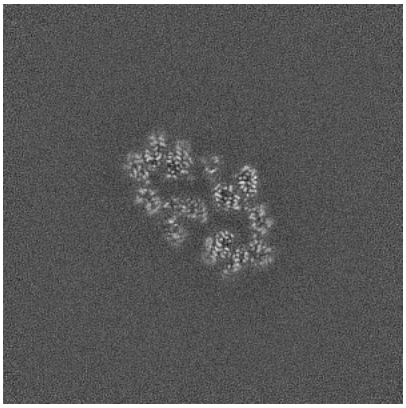
Z Index: 192

6.2.2 Raw map

X Index: 192



Y Index: 192

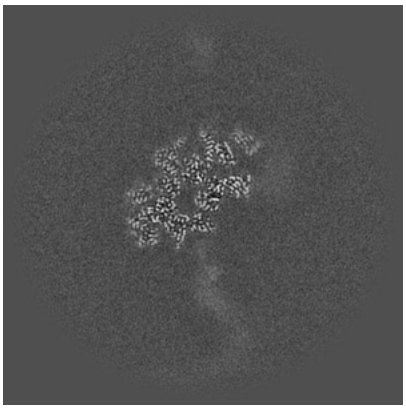


Z Index: 192

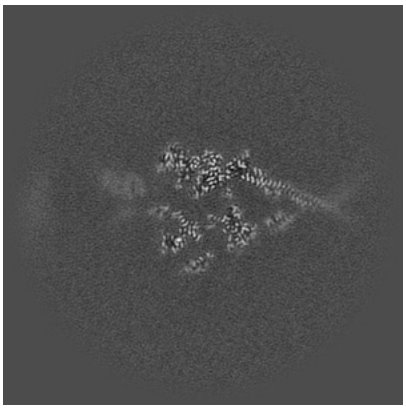
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

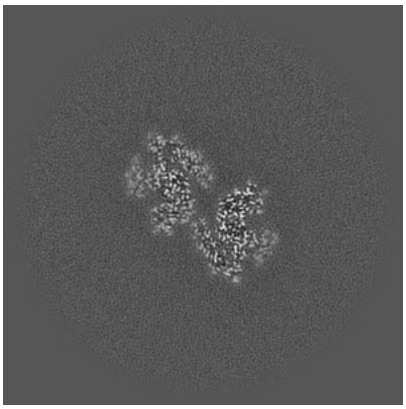
6.3.1 Primary map



X Index: 215

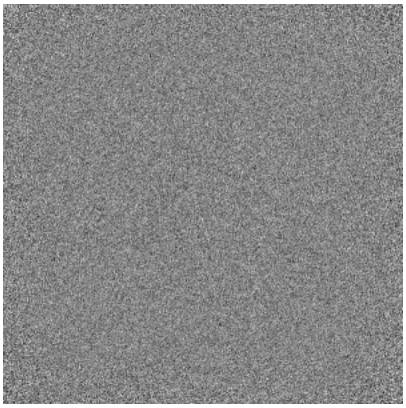


Y Index: 199

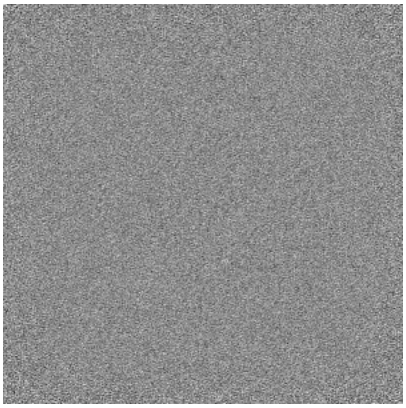


Z Index: 173

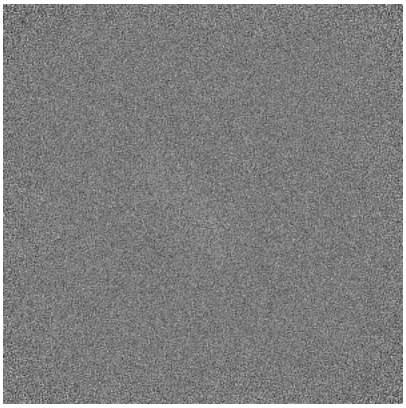
6.3.2 Raw map



X Index: 0



Y Index: 0

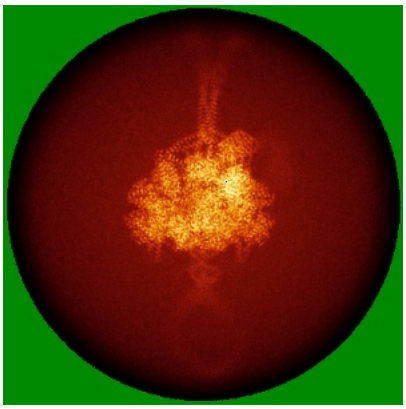


Z Index: 0

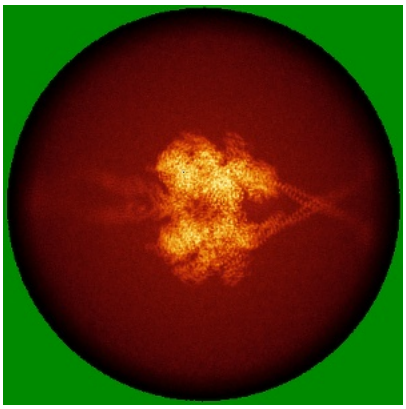
The images above show the largest variance slices of the map in three orthogonal directions.

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

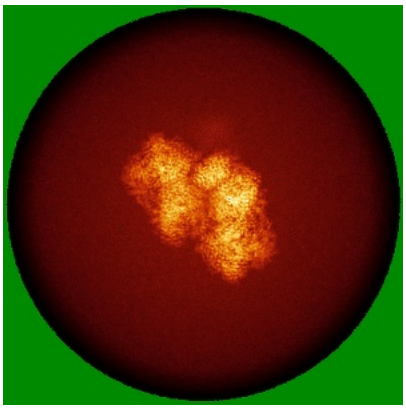
6.4.1 Primary map



X

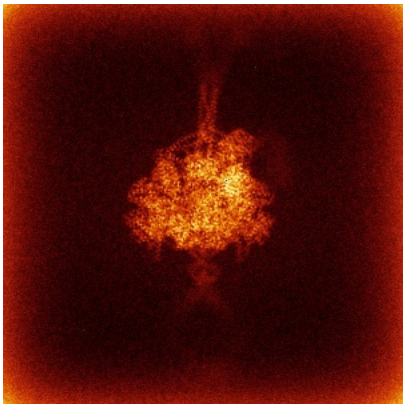


Y

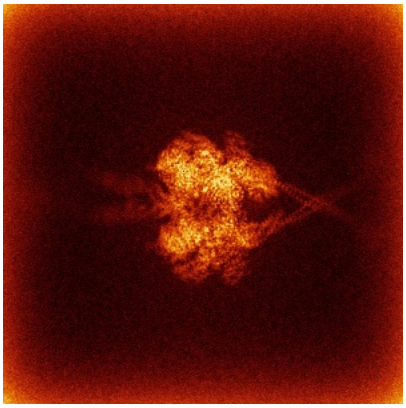


Z

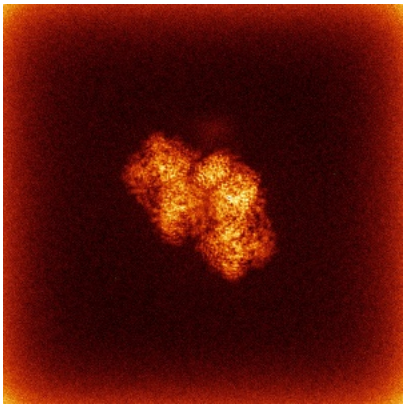
6.4.2 Raw map



X



Y



Z

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

6.5 Orthogonal surface views (i)

6.5.1 Primary map

X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.3. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map

X Y Z

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

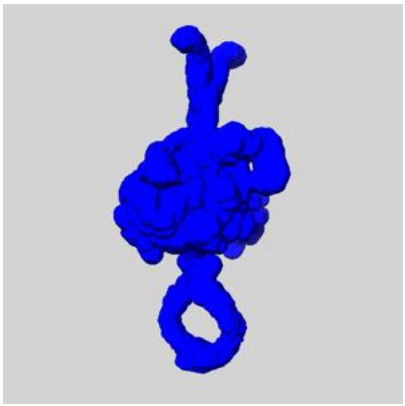
6.6 Mask visualisation

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

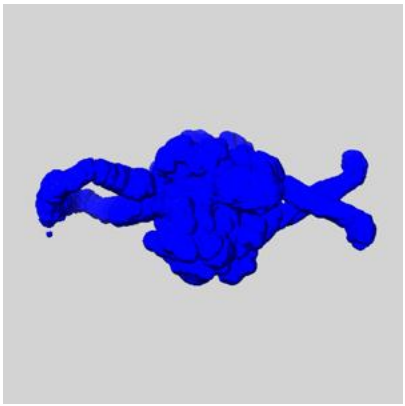
A mask typically either:

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

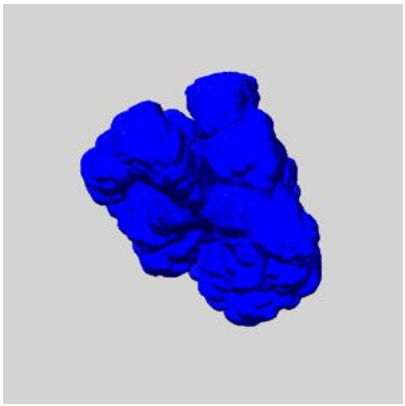
6.6.1 emd_47378_msk_1.map



X



Y

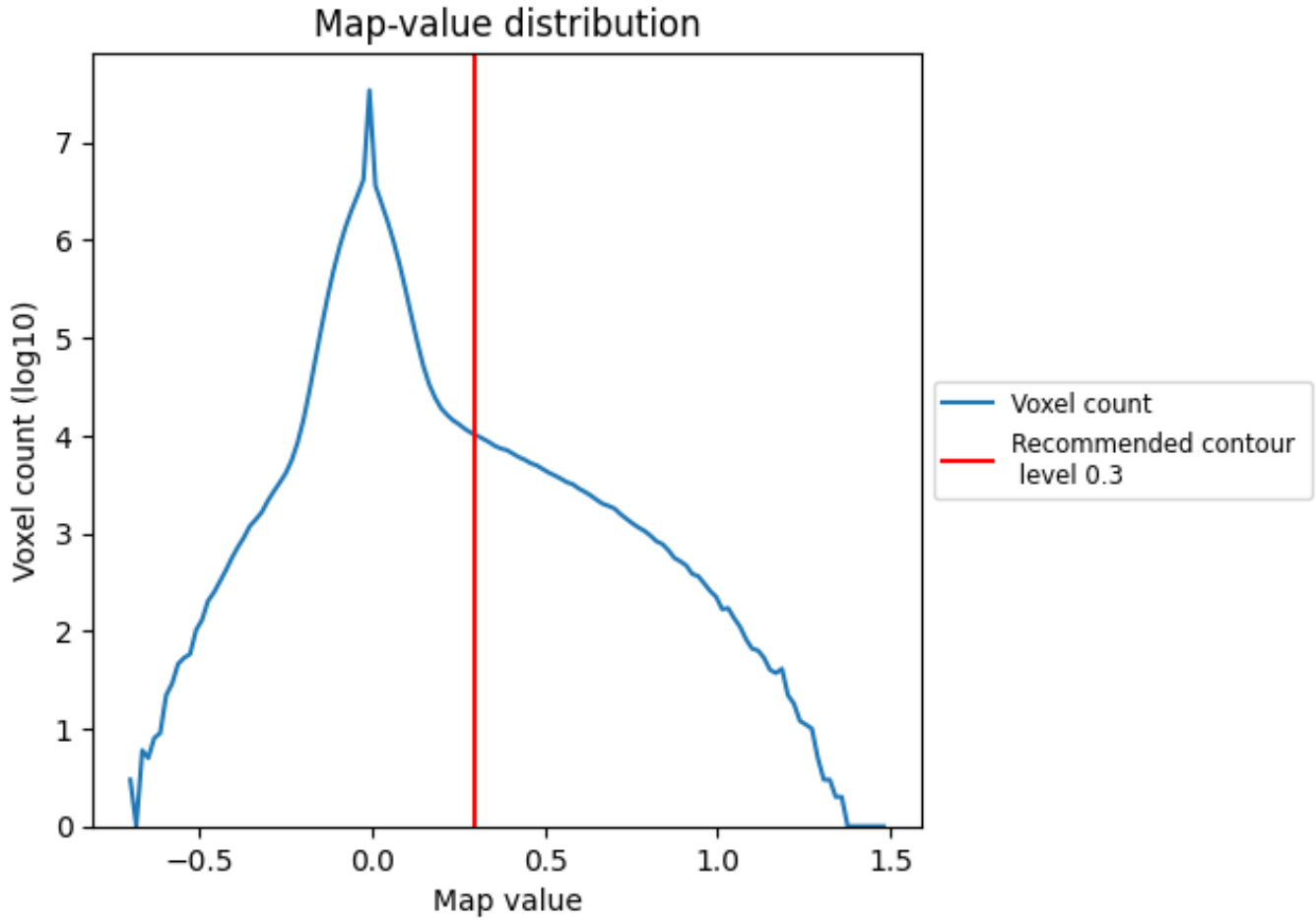


Z

7 Map analysis

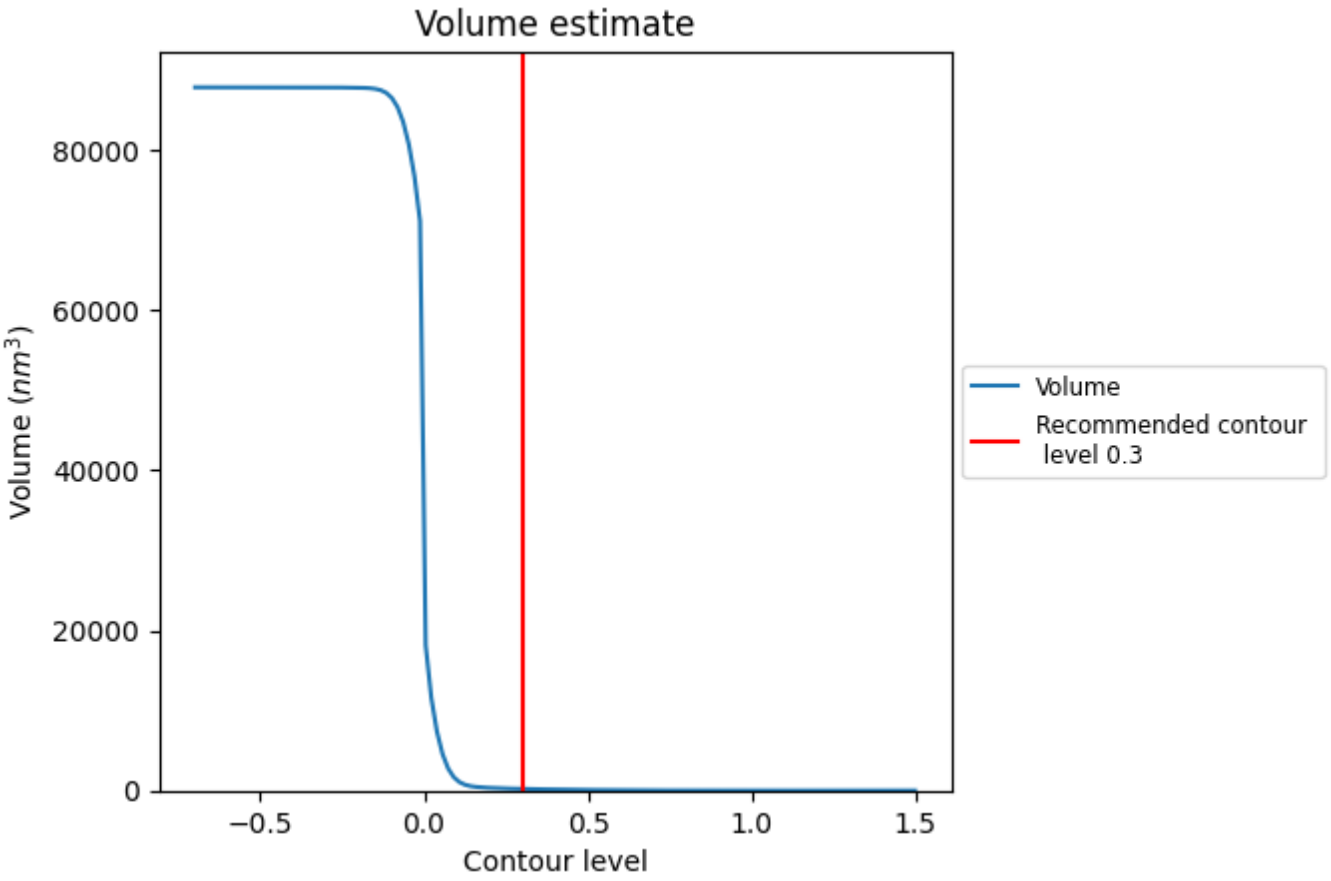
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

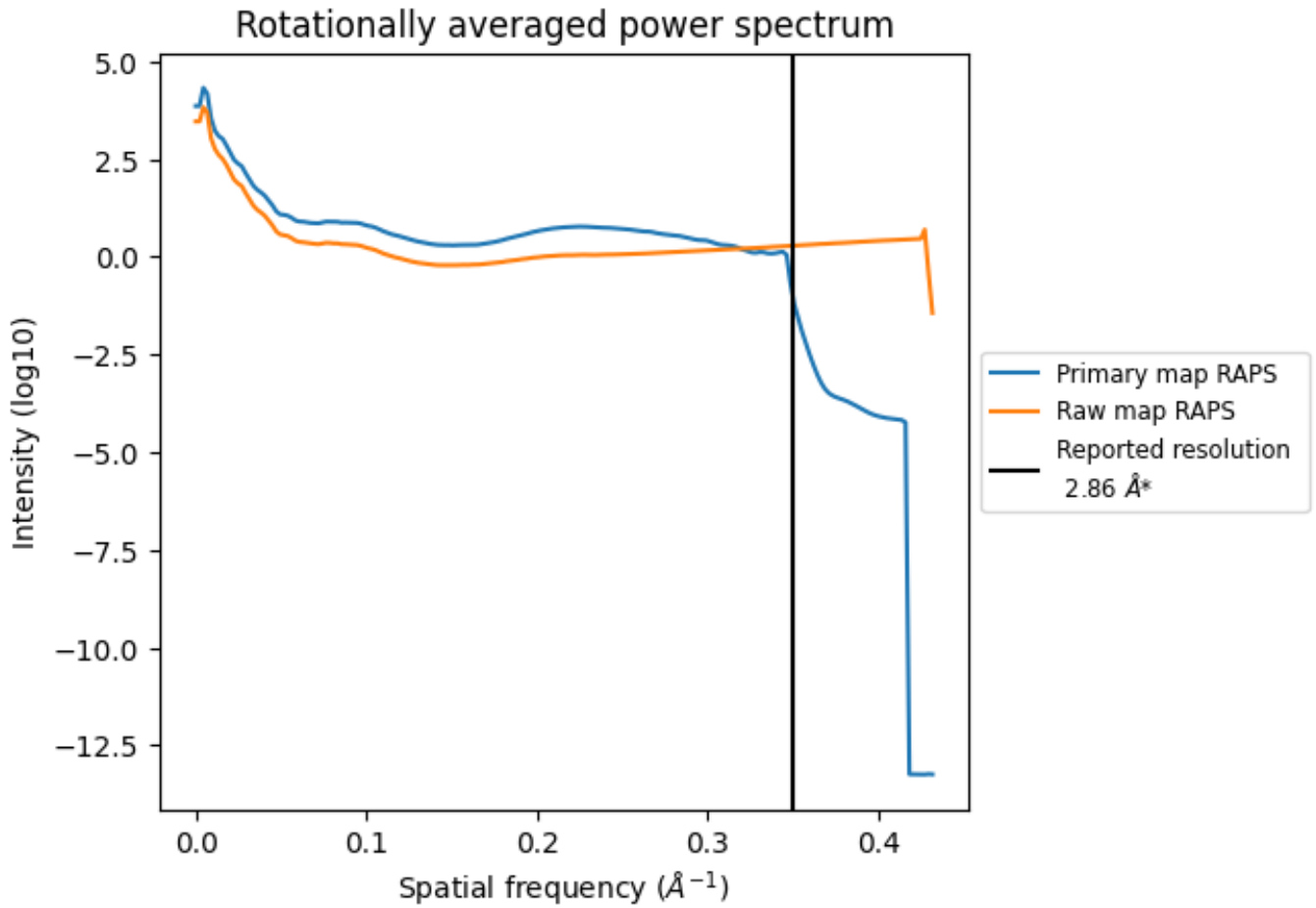
7.2 Volume estimate



The volume at the recommended contour level is 207 nm^3; this corresponds to an approximate mass of 187 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

7.3 Rotationally averaged power spectrum (i)

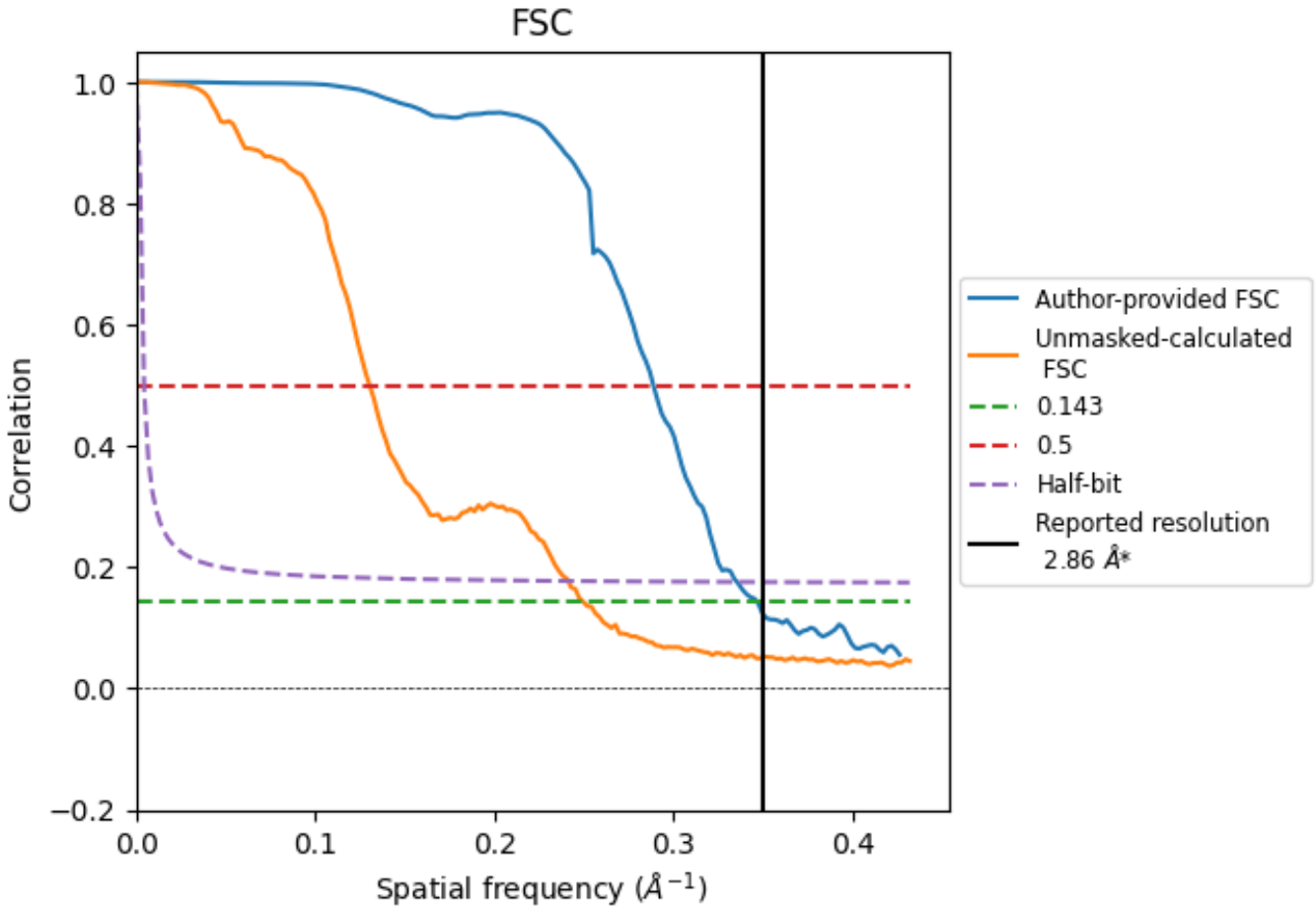


*Reported resolution corresponds to spatial frequency of 0.350 $Å^{-1}$

8 Fourier-Shell correlation

Fourier-Shell Correlation (FSC) is the most commonly used method to estimate the resolution of single-particle and subtomogram-averaged maps. The shape of the curve depends on the imposed symmetry, mask and whether or not the two 3D reconstructions used were processed from a common reference. The reported resolution is shown as a black line. A curve is displayed for the half-bit criterion in addition to lines showing the 0.143 gold standard cut-off and 0.5 cut-off.

8.1 FSC



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

8.2 Resolution estimates (i)

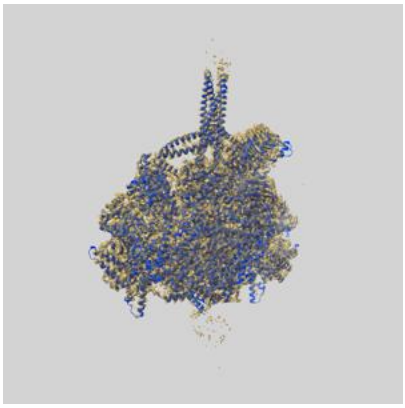
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.86	-	-
Author-provided FSC curve	2.88	3.46	2.98
Unmasked-calculated*	4.00	7.67	4.14

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 4.00 differs from the reported value 2.86 by more than 10 %

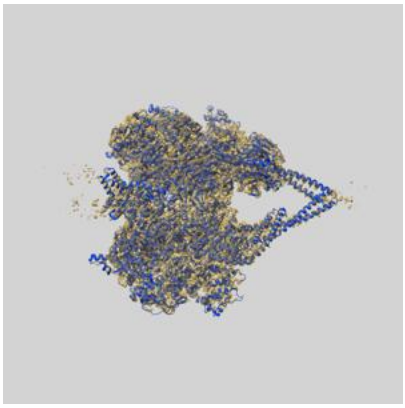
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-47378 and PDB model 9E0Z. Per-residue inclusion information can be found in section 3 on page 6.

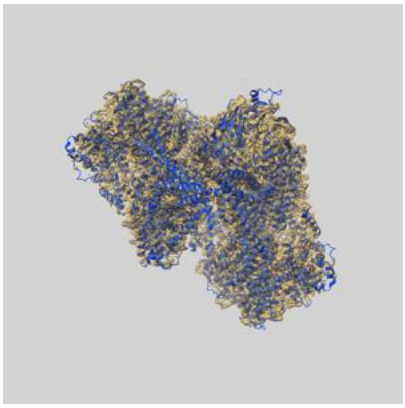
9.1 Map-model overlay



X



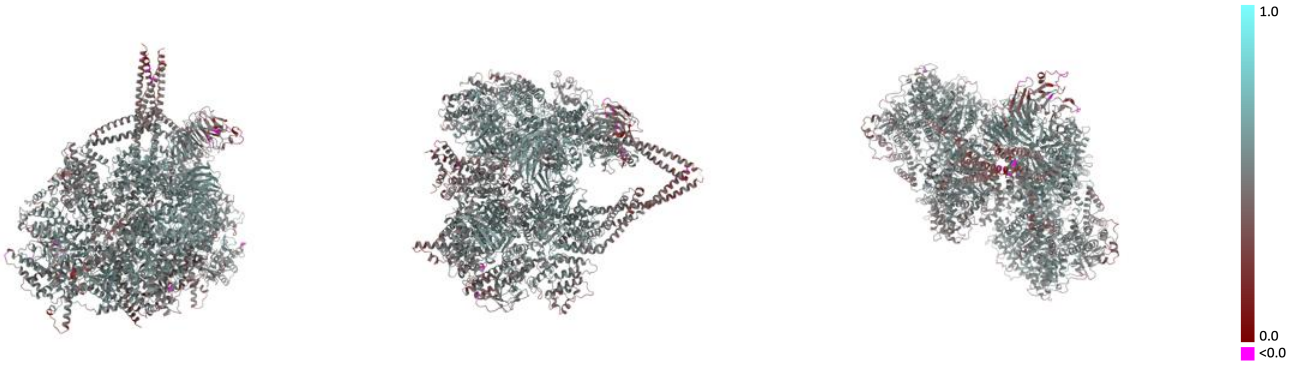
Y



Z

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

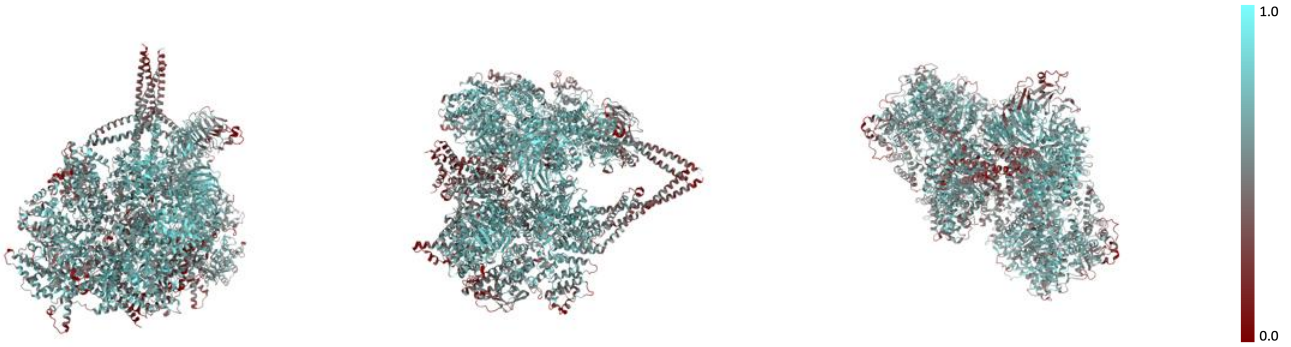
9.2 Q-score mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions at which atoms can be resolved. Low Q-score values may therefore be expected for many entries.

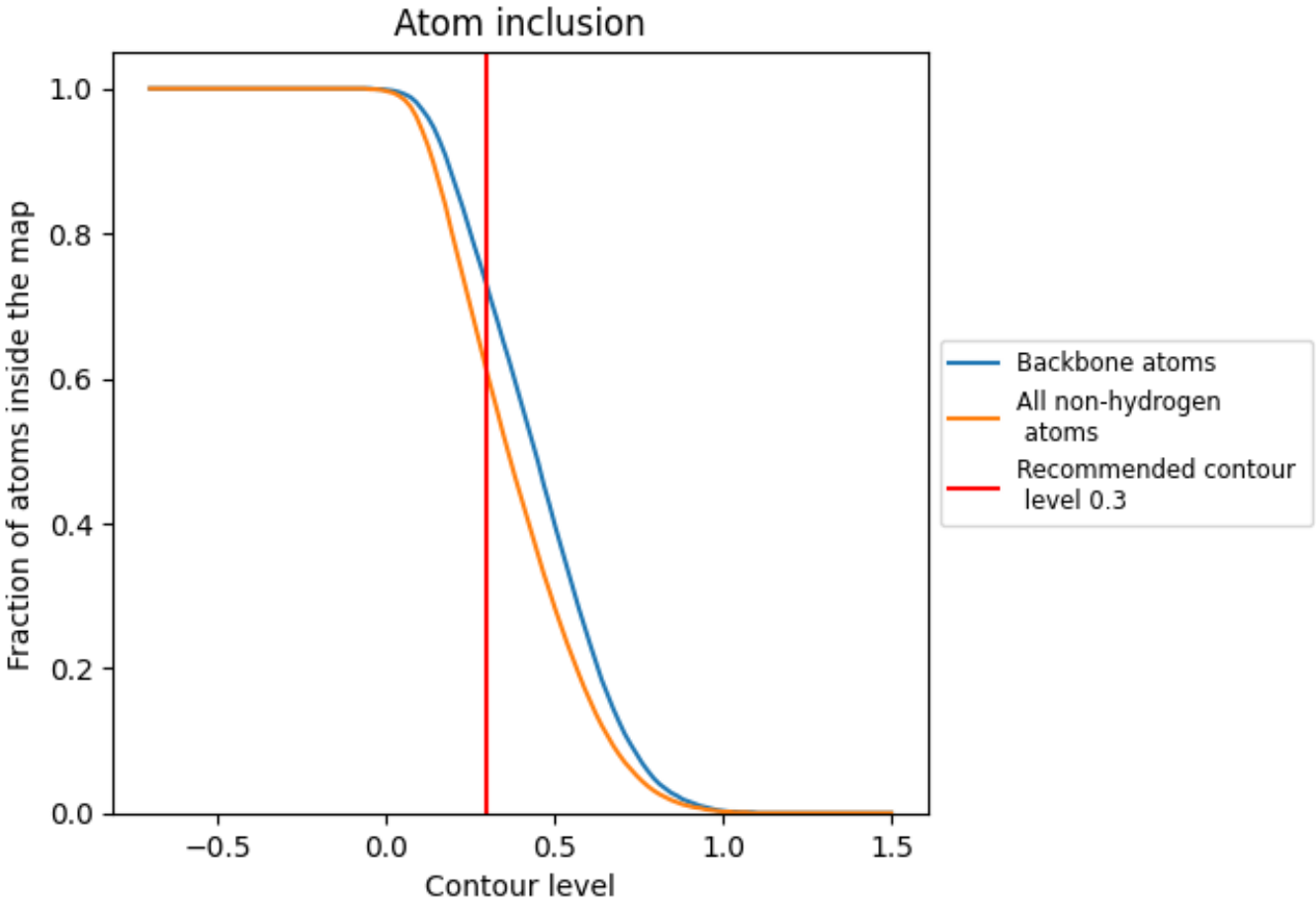
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.3).

9.4 Atom inclusion (i)



At the recommended contour level, 73% of all backbone atoms, 61% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary (i)

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

Chain	Atom inclusion	Q-score
All	0.6080	0.5020
A	0.5740	0.4920
B	0.6360	0.5130
C	0.7400	0.5600
D	0.5350	0.4330