Full wwPDB EM Validation Report ⓘ

Jan 26, 2026 – 04:12 PM EST

PDB ID	:	9MFW / pdb_00009mfw
EMDB ID	:	EMD-48240
Title	:	Motor domain with ADP AAA1 and ADP AAA3 from yeast full-length dynein-1 in 0.1 mM ATP condition
Authors	:	Geohring, I.C.; Chai, P.; Iyer, B.R.
Deposited on	:	2024-12-10
Resolution	:	4.10 Å(reported)

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

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

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

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

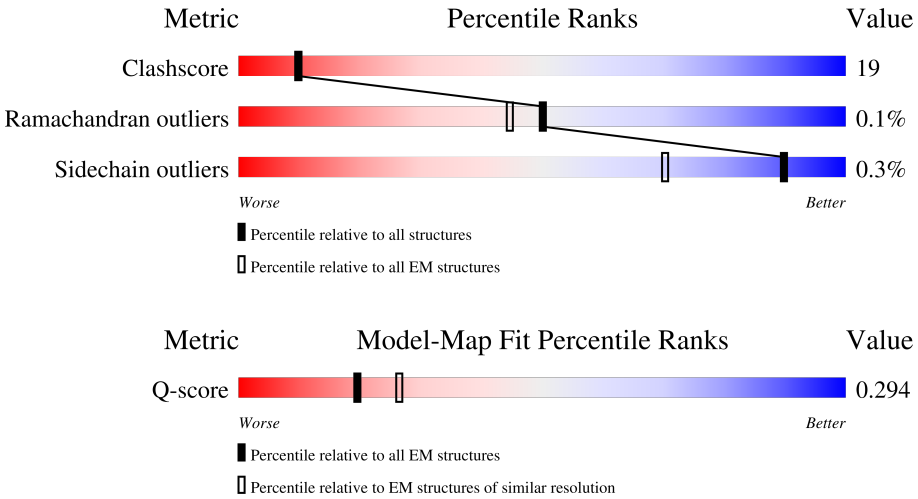
EMDB validation analysis	:	0.0.1.dev129
Mogul	:	2022.3.0, CSD as543be (2022)
MolProbity	:	4-5-2 with Phenix2.0
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive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

1 Overall quality at a glance

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

The reported resolution of this entry is 4.10 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	6458 (3.60 - 4.60)

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	4092	12% 39% 24% 37%

2 Entry composition

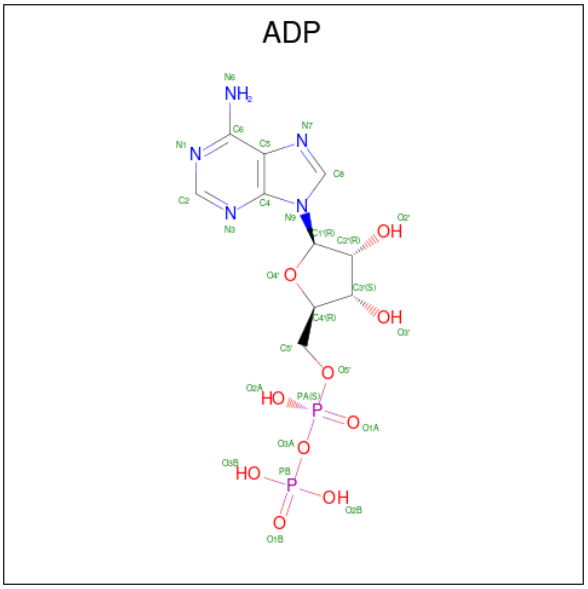
There are 3 unique types of molecules in this entry. The entry contains 21037 atoms, of which 0 are hydrogens and 0 are deuteriums.

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 Dynein heavy chain, cytoplasmic.

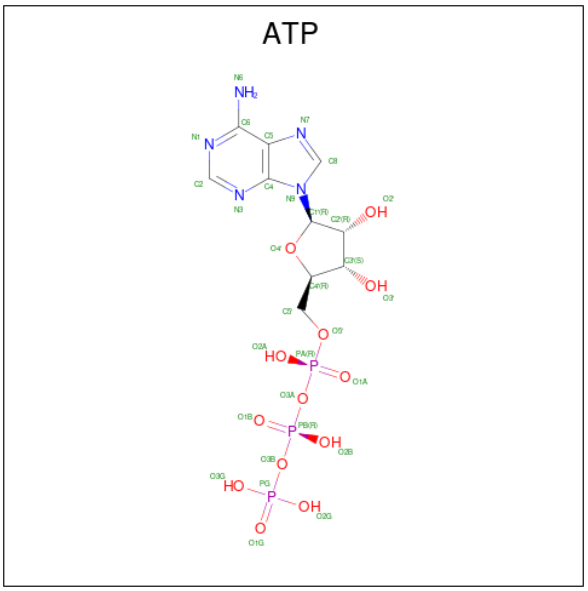
Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	2583	20925	13431	3476	3920	98	0	0

- Molecule 2 is ADENOSINE-5'-DIPHOSPHATE (CCD ID: ADP) (formula: $C_{10}H_{15}N_5O_{10}P_2$) (labeled as "Ligand of Interest" by depositor).



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

- Molecule 3 is ADENOSINE-5'-TRIPHOSPHATE (CCD ID: ATP) (formula: $C_{10}H_{16}N_5O_{13}P_3$) (labeled as "Ligand of Interest" by depositor).



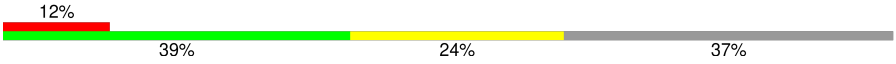
Mol	Chain	Residues	Atoms					AltConf
3	A	1	Total	C	N	O	P	0
			31	10	5	13	3	

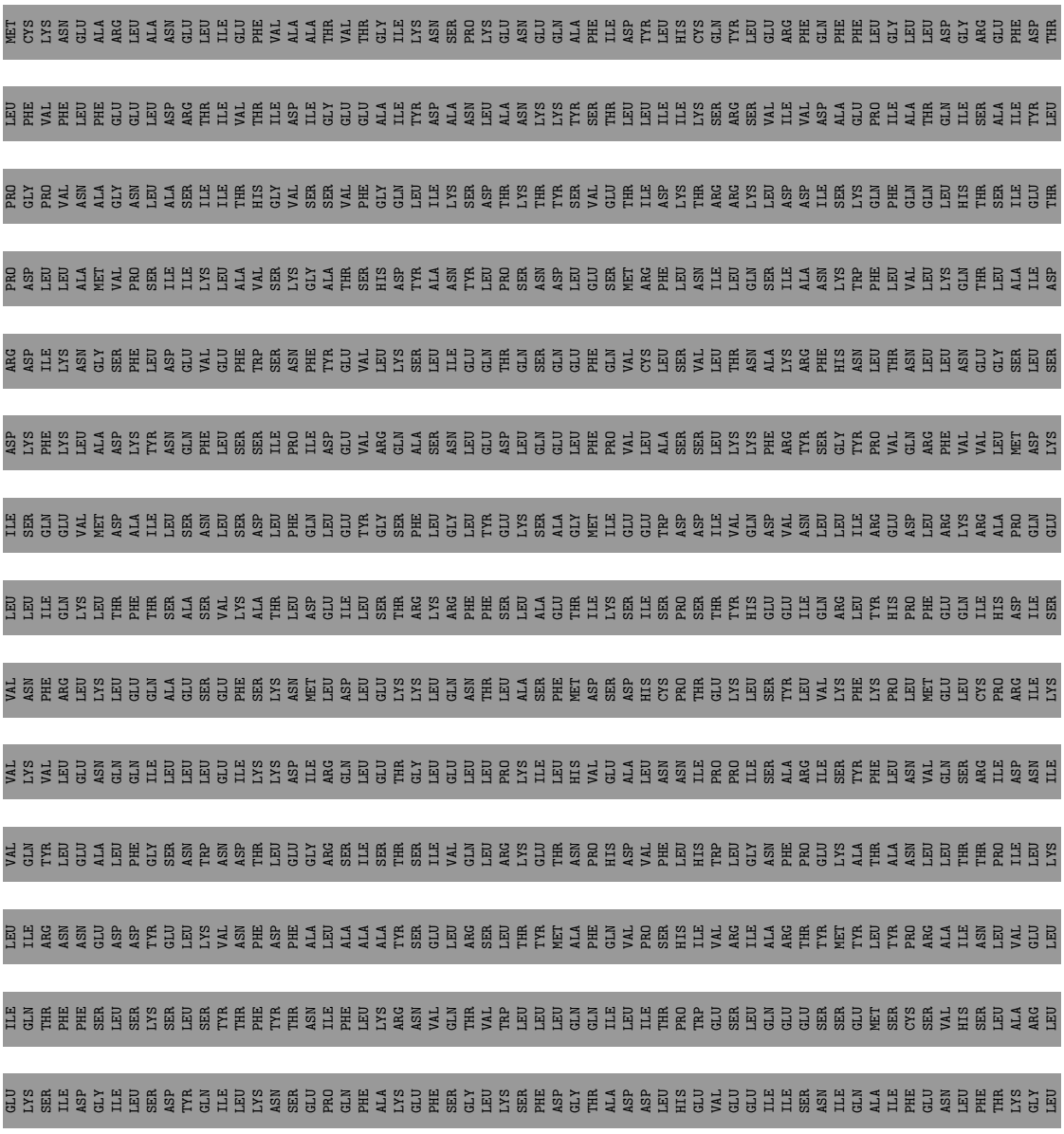
3 Residue-property plots (i)

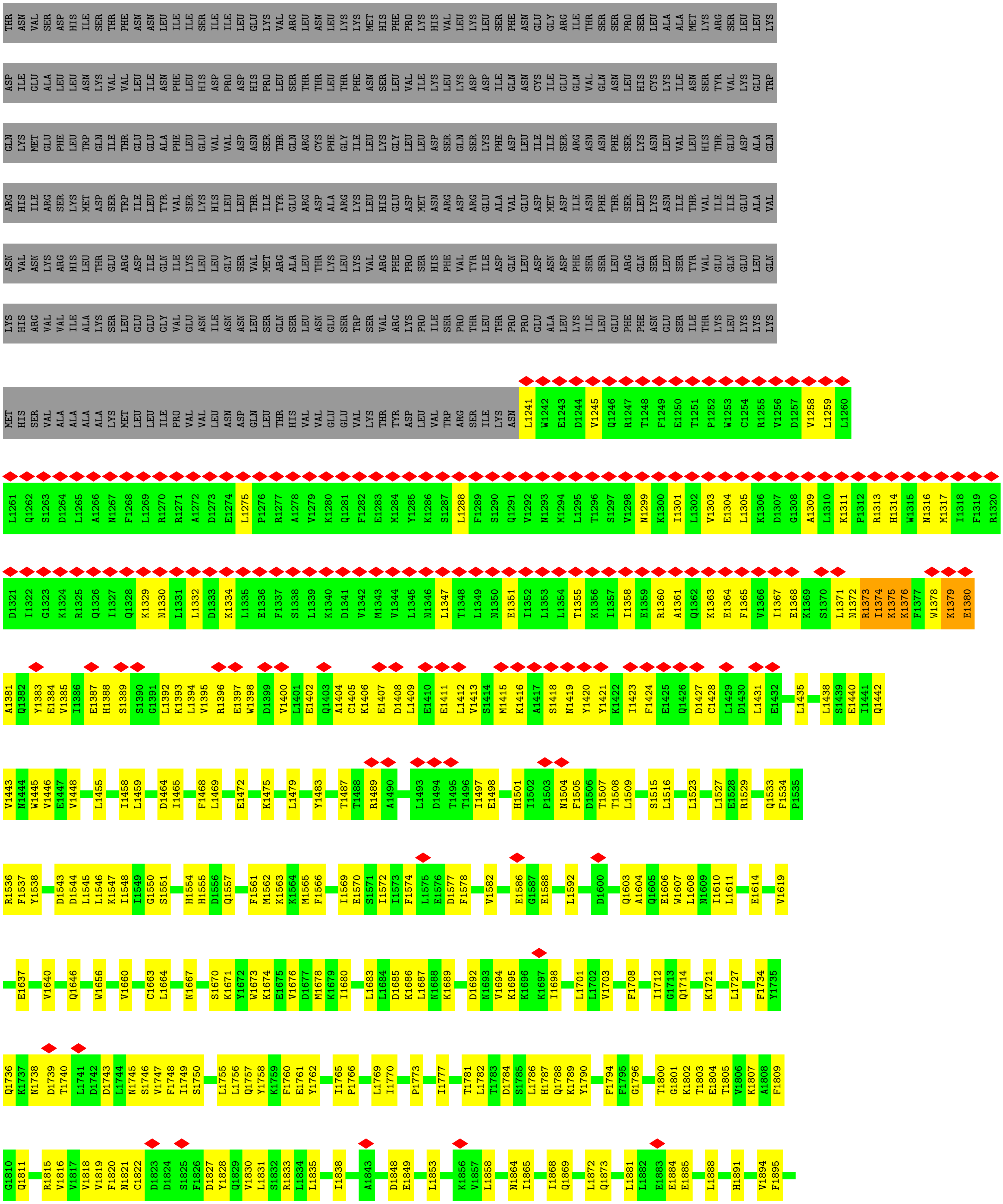
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion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

Chain A:






THR ASN VAL SER ASP HIS ILE SER THR PHE ASN ASN LEU ILE ILE SER ILE ILE LEU GLU LYS VAL ARG LEU ASN LEU LYS LYS MET HIS PHE PRO LYS HIS VAL LEU LYS LEU SER PHE ASN GLU GLY ARG ILE THR SER SER PRO SER LEU ALA ALA MET LYS ARG SER LEU LEU LYS
ASP ILE GLU ALA LEU LEU ASN LYS VAL VAL LEU ILE ASN PHE LEU HIS ASP PRO ASP HIS PRO LEU SER THR THR LEU THR PHE ASN SER LEU VAL ILE LYS LEU LYS ASP ASP ILE GLN ASN CYS ILE GLU GLN VAL GLN ASN LEU HIS CYS LYS ILE ASN SER TYR VAL LYS GLU TRP
GLN LYS MET GLU PHE LEU TRP GLN ILE THR GLU GLU ALA PHE LEU GLU VAL VAL ASP ASN SER THR GLN ARG CYS PHE GLY ILE LEU LYS GLY LEU LEU ASP SER GLN SER LYS PHE ASP LEU ILE ILE SER ARG ASN ASN PHE SER LYS ASN LEU VAL LEU HIS THR GLU ASP ALA GLN
ARG HIS ILE ARG SER LYS MET ASP SER TRP ILE LEU TYR VAL SER LYS HIS LEU LEU THR ILE TYR GLU ARG ASP ALA ARG LYS LEU HIS GLU ASP MET ASN ARG ASP ARG GLU ALA VAL GLU ASP MET ASP ILE ASN PHE THR SER LEU LYS ASN ILE THR VAL ILE ILE GLU ALA VAL
ASN VAL ASN LYS ARG HIS LEU THR GLU ARG ASP ILE GLN ILE LYS LEU LEU GLY SER VAL MET ARG ALA LEU THR LYS LEU LYS VAL ARG PHE PRO SER HIS PHE VAL TYR ILE ASP GLN LEU ASP ASN ASP PHE SER SER LEU ARG GLN SER LEU SER TYR VAL GLU GLN GLU LEU GLN
LYS HIS ARG VAL VAL ILE ALA LYS SER LEU GLU GLU GLY VAL GLU ASN ILE ASN ASN LEU SER GLN SER LEU ASN GLU SER TRP SER VAL ARG LYS PRO ILE SER PRO THR LEU THR PRO PRO GLU ALA LEU LYS ILE LEU GLU PHE PHE ASN GLU SER ILE THR LYS LEU LYS LYS LYS
MET HIS SER VAL ALA ALA ALA ALA LYS MET LEU LEU ILE PRO VAL VAL LEU ASN ASP GLN LEU THR HIS VAL VAL GLU GLU VAL LYS THR TYR ASP LEU VAL TRP ARG SER ILE LYS ASN L1241 W1242 E1243 D1244 V1245 Q1246 R1247 T1248 F1249 E1250 T1251 P1252 W1253 C1254 R1255 V1256 D1257 V1258 L1259 L1260
L1261 Q1262 S1263 D1264 L1265 A1266 N1267 F1268 L1269 R1270 R1271 A1272 D1273 E1274 L1275 P1276 R1277 A1278 V1279 K1280 Q1281 F1282 E1283 M1284 Y1285 K1286 S1287 L1288 F1289 S1290 Q1291 V1292 N1293 M1294 L1295 T1296 S1297 V1298 N1299 K1300 I1301 L1302 V1303 E1304 L1305 K1306 D1307 G1308 A1309 L1310 K1311 P1312 R1313 H1314 W1315 N1316 M1317 I1318 F1319 R1320
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V1443 N1444 W1445 V1446 E1447 V1448 L1455 I1458 L1459 D1464 I1465 F1468 L1469 E1472 K1475 L1479 Y1483 T1487 T1488 R1489 A1490 L1493 D1494 T1495 T1496 I1497 E1498 H1501 I1502 P1503 N1504 F1505 D1506 T1507 T1508 L1509 S1515 L1516 L1523 L1527 E1528 R1529 Q1533 F1534 P1535
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E1637 V1640 Q1646 W1656 V1660 C1663 L1664 N1667 S1670 K1671 Y1672 W1673 K1674 E1675 V1676 D1677 M1678 K1679 I1680 L1683 L1684 D1685 K1686 L1687 N1688 K1689 D1692 N1693 V1694 K1695 K1696 K1697 I1698 L1701 L1702 V1703 F1708 I1712 G1713 Q1714 K1721 L1727 F1734 Y1735
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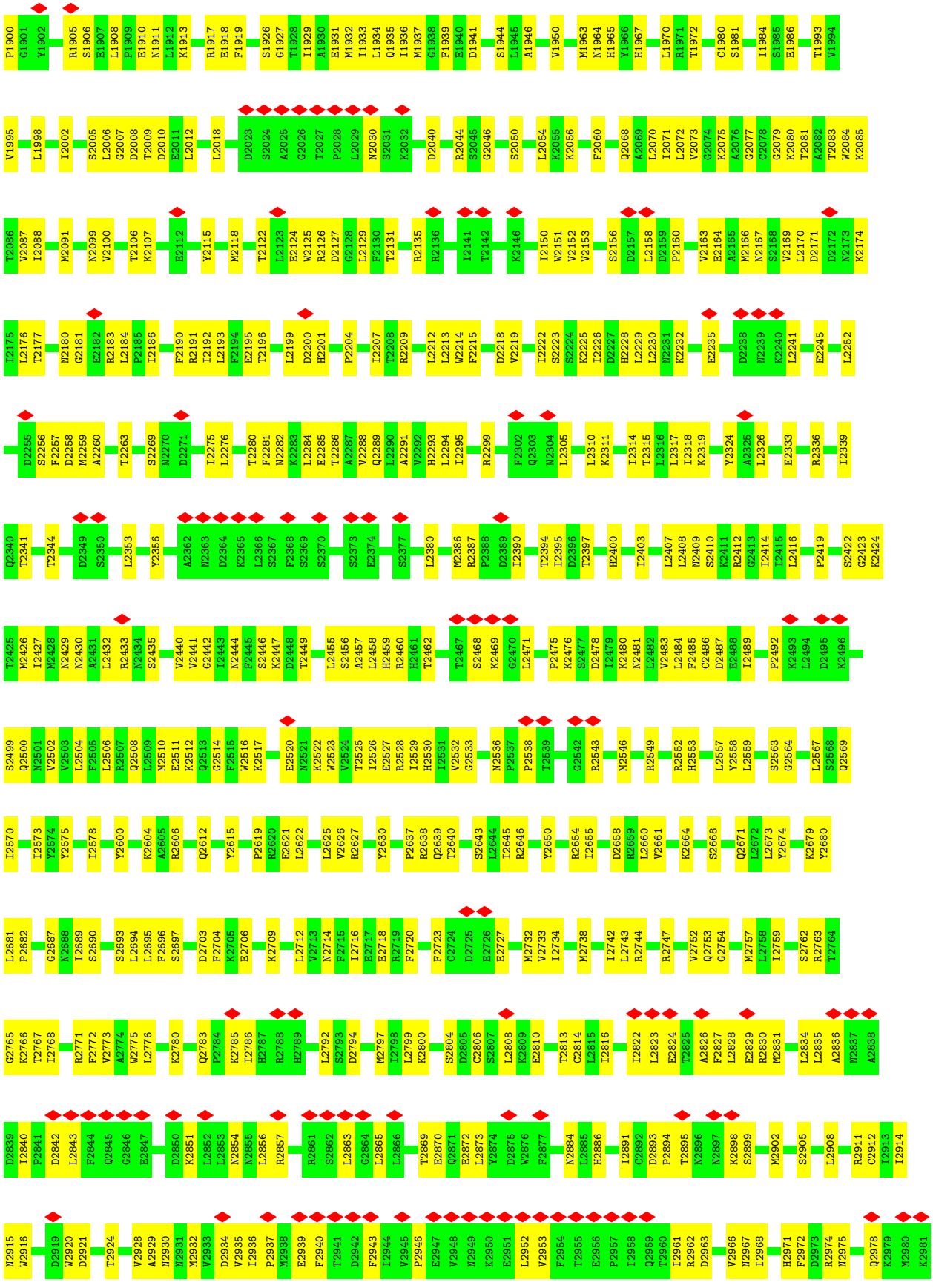
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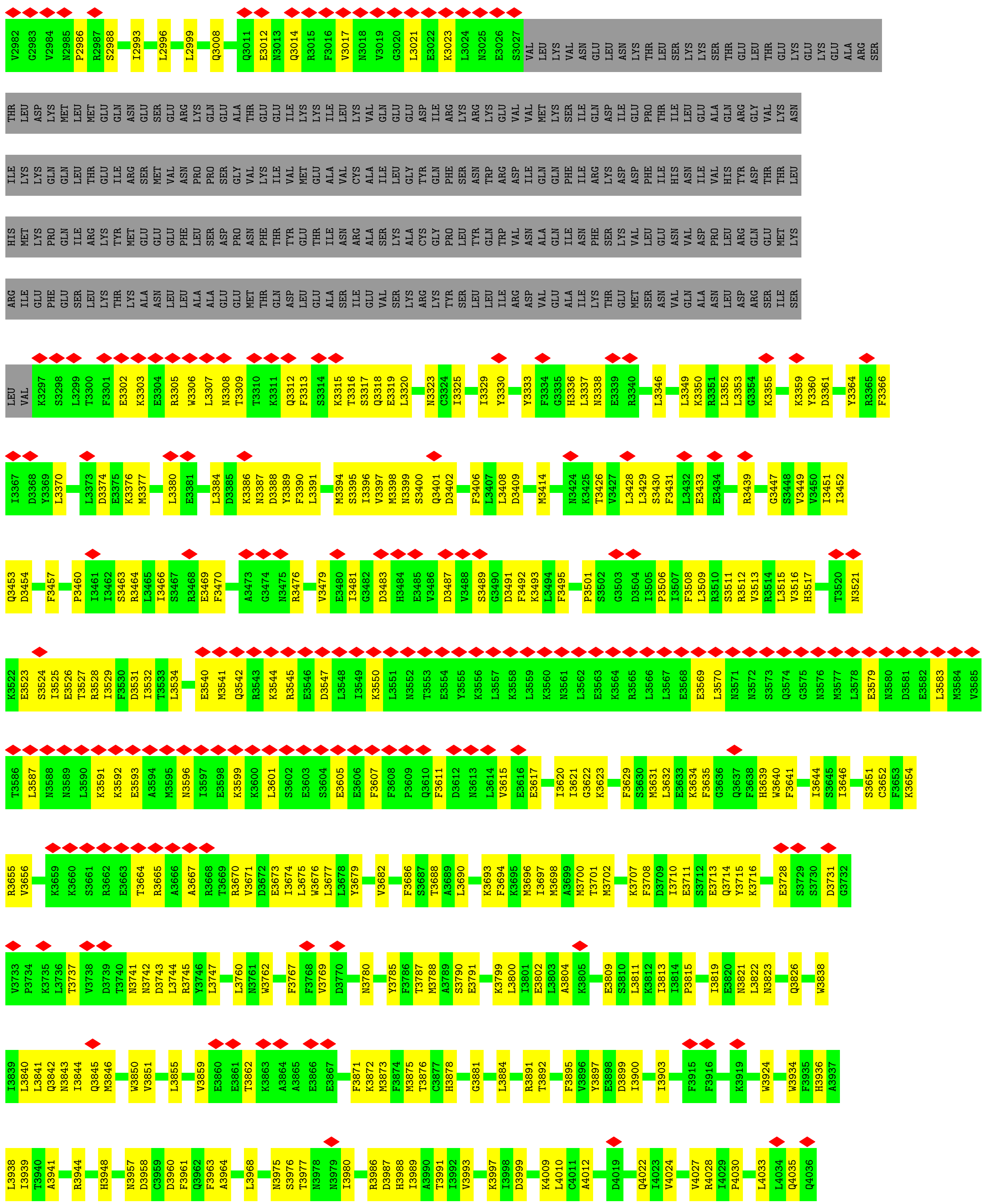
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THR LEU ASP LYS MET LEU MET GLU GLN ASN GLU SER GLU ARG LYS GLN GLU ALA THR GLU GLU ILE LYS LYS ILE LEU LYS VAL GLN GLU GLU ASP ILE ARG LYS ARG LYS GLU VAL VAL MET LYS SER ILE GLN ASP ILE GLU PRO THR ILE LEU GLU ALA GLN ARG GLY VAL LYS ASN
ILE LYS LYS GLN GLN LEU THR GLU ILE ARG SER MET VAL ASN PRO PRO SER GLY VAL LYS ILE VAL MET GLU ALA VAL CYS ALA ILE LEU GLY TYR GLN PHE SER ASN TRP ARG ASP ILE GLN GLN PHE ILE ARG LYS ASP ASP PHE ILE HIS ASN ILE VAL HIS TYR ASP THR THR LEU
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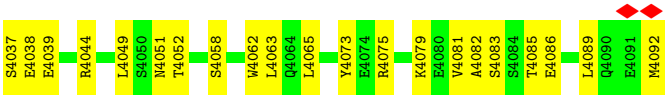
R3655 V3656 K3659 K3660 S3661 R3662 E3663 T3664 R3665 A3666 A3667 R3668 T3669 R3670 V3671 D3672 E3673 I3674 L3675 W3676 L3677 L3678 Y3679 V3682 F3686 S3687 T3688 A3689 L3690 K3693 F3694 K3695 M3696 I3697 M3698 A3699 M3700 T3701 M3702 K3707 F3708 D3709 I3710 E3711 S3712 E3713 Q3714 Y3715 K3716 E3728 S3729 S3730 D3731 G3732
V3733 P3734 K3735 L3736 T3737 V3738 D3739 T3740 N3741 N3742 D3743 L3744 R3745 Y3746 L3747 L3760 N3761 W3762 F3767 F3768 V3769 D3770 N3780 Y3785 F3786 T3787 M3788 A3789 S3790 E3791 K3799 L3800 I3801 E3802 L3803 A3804 K3805 E3809 S3810 L3811 K3812 I3813 I3814 P3815 I3819 E3820 N3821 L3822 N3823 Q3826 W3838
I3839 L3840 L3841 Q3842 N3843 I3844 Q3845 M3846 W3850 V3851 L3855 V3859 E3860 E3861 T3862 K3863 A3864 A3865 E3866 E3867 F3871 K3872 M3873 F3874 M3875 T3876 C3877 H3878 G3881 L3884 R3891 T3892 F3895 V3896 Y3897 E3898 D3899 I3900 I3903 F3915 F3916 K3919 W3924 W3934 F3935 H3936 A3937
L3938 I3939 T3940 A3941 R3944 H3948 N3957 D3958 C3959 D3960 F3961 Q3962 F3963 A3964 L3968 N3975 S3976 T3977 N3978 N3979 I3980 R3986 D3987 H3988 I3989 A3990 T3991 I3992 V3993 K3997 I3998 D3999 K4009 L4010 C4011 A4012 D4019 Q4022 I4023 V4024 V4027 R4028 I4029 P4030 L4033 L4034 Q4035 Q4036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E4039
R4044
L4049
S4050
N4051
T4052
S4058
W4062
L4063
Q4064
L4065
Y4073
E4074
R4075
K4079
E4080
V4081
A4082
S4083
S4084
T4085
E4086
L4089
Q4090
E4091
M4092

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	53499	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)	2500	Depositor
Magnification	45000	Depositor
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.881	Depositor
Minimum map value	-0.306	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	0.029	Depositor
Recommended contour level	0.2	Depositor
Map size (Å)	333.312, 333.312, 333.312	wwPDB
Map dimensions	256, 256, 256	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.302, 1.302, 1.302	Depositor

5 Model quality

5.1 Standard geometry

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

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	0.18	0/21346	0.37	0/28844

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	1

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	1373	ARG	Sidechain

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	20925	0	21047	810	0
2	A	81	0	36	9	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	A	31	0	12	5	0
All	All	21037	0	21095	810	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 19.

All (810) 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:1364:GLU:CG	1:A:1420:TYR:CD2	1.83	1.62
1:A:1364:GLU:CD	1:A:1420:TYR:C	1.84	1.46
1:A:1364:GLU:HG3	1:A:1420:TYR:CD2	1.41	1.42
1:A:1364:GLU:CD	1:A:1420:TYR:O	1.66	1.39
1:A:1364:GLU:CG	1:A:1420:TYR:O	1.69	1.38
1:A:1367:ILE:HG23	1:A:1415:MET:CE	1.51	1.37
1:A:1364:GLU:OE1	1:A:1421:TYR:CA	1.76	1.32
1:A:1364:GLU:HG3	1:A:1420:TYR:CE2	1.69	1.27
1:A:1313:ARG:NH1	1:A:1423:ILE:HG23	1.49	1.25
1:A:1364:GLU:CG	1:A:1420:TYR:CG	2.20	1.25
1:A:1313:ARG:CZ	1:A:1423:ILE:HG23	1.70	1.20
1:A:1364:GLU:HG2	1:A:1420:TYR:CG	1.77	1.20
1:A:1360:ARG:O	1:A:1420:TYR:CD2	1.99	1.14
1:A:1367:ILE:HD11	1:A:1418:SER:CB	1.78	1.12
1:A:1364:GLU:HG2	1:A:1420:TYR:CD2	1.66	1.11
1:A:1363:LYS:HB3	1:A:1419:ASN:OD1	1.54	1.08
1:A:1364:GLU:HG2	1:A:1420:TYR:O	1.46	1.07
1:A:1364:GLU:HG3	1:A:1420:TYR:CG	1.87	1.07
1:A:1364:GLU:CD	1:A:1421:TYR:HA	1.79	1.06
1:A:1367:ILE:HG21	1:A:1424:PHE:CZ	1.90	1.06
1:A:1367:ILE:HD11	1:A:1418:SER:OG	1.56	1.05
1:A:1367:ILE:CG2	1:A:1424:PHE:CZ	2.39	1.05
1:A:1367:ILE:HG23	1:A:1415:MET:HE2	1.37	1.04
1:A:1364:GLU:OE2	1:A:1420:TYR:C	1.97	1.04
1:A:1364:GLU:CD	1:A:1421:TYR:N	2.16	1.03
1:A:1364:GLU:OE2	1:A:1421:TYR:N	1.93	1.02
1:A:1364:GLU:OE1	1:A:1421:TYR:HA	0.84	1.01
1:A:1367:ILE:HD13	1:A:1421:TYR:CB	1.90	1.00
1:A:1367:ILE:HG23	1:A:1415:MET:HE3	1.43	0.98
1:A:1364:GLU:CD	1:A:1421:TYR:CA	2.34	0.98
1:A:1360:ARG:HG2	1:A:1420:TYR:HB2	1.41	0.98
1:A:1360:ARG:HG2	1:A:1420:TYR:CB	1.98	0.93

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1367:ILE:CG2	1:A:1424:PHE:HZ	1.77	0.92
1:A:1367:ILE:HD13	1:A:1421:TYR:HB2	1.53	0.90
1:A:1367:ILE:CG2	1:A:1415:MET:CE	2.46	0.89
1:A:3617:GLU:HB3	1:A:3671:VAL:HG11	1.53	0.89
1:A:1360:ARG:HG2	1:A:1420:TYR:CG	2.08	0.88
1:A:1364:GLU:CB	1:A:1420:TYR:CD2	2.56	0.88
1:A:1313:ARG:NH1	1:A:1423:ILE:CG2	2.35	0.88
1:A:1367:ILE:CD1	1:A:1421:TYR:HB3	2.03	0.87
1:A:1360:ARG:O	1:A:1420:TYR:HD2	1.54	0.86
1:A:1364:GLU:HG2	1:A:1420:TYR:CB	2.05	0.85
1:A:3569:GLU:HG3	1:A:3583:LEU:HD21	1.58	0.85
1:A:3395:SER:O	1:A:3399:ASN:HB2	1.78	0.82
1:A:1367:ILE:HD13	1:A:1421:TYR:HB3	1.63	0.81
1:A:1367:ILE:HG21	1:A:1424:PHE:CE1	2.16	0.80
1:A:2269:SER:HB2	1:A:2326:LEU:HD21	1.63	0.80
1:A:1367:ILE:HG21	1:A:1424:PHE:HZ	1.34	0.79
1:A:3534:LEU:HB2	1:A:3542:GLN:HG2	1.64	0.79
1:A:3785:TYR:HA	1:A:3873:MET:HB2	1.62	0.79
1:A:2282:ASN:HB3	1:A:2552:ARG:HG3	1.66	0.78
1:A:1361:ALA:HA	1:A:1420:TYR:CE2	2.19	0.77
1:A:1367:ILE:HD11	1:A:1418:SER:HB2	1.67	0.77
1:A:1364:GLU:HG2	1:A:1420:TYR:C	2.08	0.76
1:A:1392:LEU:HD21	1:A:1483:TYR:HE2	1.50	0.76
1:A:1364:GLU:CG	1:A:1420:TYR:C	2.40	0.76
1:A:2135:ARG:HE	1:A:2184:LEU:HD21	1.51	0.76
1:A:2759:ILE:HD11	1:A:2894:PRO:HG3	1.66	0.76
1:A:2124:GLU:HB3	1:A:2126:ARG:HH21	1.52	0.75
1:A:3631:MET:HA	1:A:3634:LYS:HD2	1.68	0.75
1:A:1364:GLU:CG	1:A:1420:TYR:CE2	2.48	0.75
1:A:3330:TYR:HE1	1:A:3346:LEU:HD21	1.52	0.75
1:A:1364:GLU:OE1	1:A:1420:TYR:O	2.04	0.75
1:A:1363:LYS:CB	1:A:1419:ASN:OD1	2.34	0.75
1:A:1789:LYS:O	1:A:1873:GLN:NE2	2.20	0.74
1:A:1929:ILE:HD11	1:A:1970:LEU:HD11	1.67	0.74
1:A:3374:ASP:HA	1:A:3377:MET:HE2	1.68	0.74
1:A:1360:ARG:HD3	1:A:1420:TYR:CZ	2.13	0.73
1:A:2552:ARG:NH2	3:A:4102:ATP:O3G	2.22	0.73
1:A:1313:ARG:CZ	1:A:1423:ILE:CG2	2.59	0.72
1:A:2009:THR:HA	1:A:2012:LEU:HD12	1.71	0.72
1:A:2800:LYS:HE3	1:A:2843:LEU:HD23	1.72	0.72
1:A:3631:MET:HE1	1:A:3698:MET:HG2	1.70	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1714:GLN:HE22	1:A:1727:LEU:HD13	1.54	0.71
1:A:3521:ASN:O	1:A:3528:ARG:NH2	2.24	0.71
1:A:1367:ILE:CD1	1:A:1418:SER:CB	2.66	0.70
1:A:1367:ILE:HD11	1:A:1418:SER:HG	1.53	0.70
1:A:1364:GLU:CB	1:A:1420:TYR:O	2.39	0.70
1:A:1551:SER:O	1:A:1557:GLN:NE2	2.24	0.70
1:A:2275:ILE:HG22	1:A:2276:LEU:HD12	1.73	0.70
1:A:4035:GLN:HE22	1:A:4037:SER:HB3	1.56	0.70
1:A:4033:LEU:HD21	1:A:4035:GLN:HE21	1.54	0.70
1:A:2040:ASP:HB3	1:A:2044:ARG:HH21	1.58	0.69
1:A:2744:ARG:HD3	1:A:2915:ASN:HD21	1.58	0.69
1:A:1905:ARG:NH1	1:A:1906:SER:O	2.26	0.68
1:A:1908:LEU:O	1:A:1913:LYS:NZ	2.26	0.68
1:A:3527:THR:HG23	1:A:3528:ARG:HD3	1.75	0.68
1:A:2084:TRP:HA	1:A:2087:VAL:HG12	1.74	0.68
1:A:2637:PRO:HD3	1:A:2703:ASP:HB3	1.76	0.68
1:A:1313:ARG:HH12	1:A:1423:ILE:HA	1.59	0.68
1:A:1364:GLU:HG3	1:A:1420:TYR:CZ	2.27	0.68
1:A:3741:ASN:OD1	1:A:3745:ARG:NH1	2.26	0.68
1:A:3350:LYS:HA	1:A:3353:LEU:HD12	1.75	0.68
1:A:1392:LEU:HD21	1:A:1483:TYR:CE2	2.29	0.67
1:A:2226:ILE:HD11	1:A:2284:LEU:HD22	1.76	0.67
1:A:2441:VAL:HB	1:A:2484:LEU:HA	1.76	0.67
1:A:2763:ARG:NH1	1:A:3511:SER:O	2.27	0.67
1:A:2468:SER:OG	1:A:2469:LYS:NZ	2.28	0.67
1:A:1685:ASP:O	1:A:1689:LYS:NZ	2.27	0.67
1:A:2177:THR:HA	1:A:2183:ARG:HD2	1.77	0.67
1:A:3629:PHE:HZ	1:A:3646:ILE:HG13	1.60	0.66
1:A:2127:ASP:O	1:A:2131:THR:OG1	2.12	0.66
1:A:3800:LEU:HG	1:A:3811:LEU:HD11	1.77	0.66
1:A:1364:GLU:CA	1:A:1420:TYR:O	2.44	0.66
1:A:2921:ASP:O	1:A:2924:THR:OG1	2.13	0.66
1:A:2650:TYR:HB2	1:A:2694:LEU:HD23	1.78	0.66
1:A:2762:SER:O	1:A:2988:SER:OG	2.13	0.66
1:A:2563:SER:OG	1:A:2564:GLY:N	2.27	0.65
1:A:2600:TYR:CZ	1:A:2604:LYS:HD2	2.31	0.65
1:A:3464:ARG:HH21	1:A:3481:ILE:HA	1.60	0.65
1:A:2549:ARG:NH1	3:A:4102:ATP:O2G	2.30	0.65
1:A:2106:THR:H	1:A:2156:SER:HB3	1.61	0.65
1:A:3330:TYR:CE1	1:A:3346:LEU:HD21	2.30	0.65
1:A:1815:ARG:HH22	1:A:1891:HIS:HB3	1.60	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1910:GLU:HA	1:A:1913:LYS:HD3	1.79	0.65
1:A:2118:MET:HA	1:A:2125:TRP:HA	1.78	0.65
1:A:3707:LYS:HA	1:A:3710:ILE:HG22	1.78	0.65
1:A:2174:LYS:HG3	1:A:2186:ILE:HG13	1.79	0.64
1:A:1562:MET:HA	1:A:1565:MET:HG3	1.78	0.64
1:A:4022:GLN:NE2	1:A:4024:VAL:O	2.29	0.64
1:A:3713:GLU:HA	1:A:3716:LYS:HE2	1.79	0.64
1:A:2333:GLU:HA	1:A:2336:ARG:HE	1.62	0.64
1:A:2446:SER:HG	1:A:2449:THR:HG1	1.37	0.64
1:A:1572:ILE:HG22	1:A:1582:VAL:HG12	1.78	0.64
1:A:1313:ARG:NH1	1:A:1423:ILE:HA	2.12	0.64
1:A:2286:THR:OG1	1:A:2412:ARG:NH1	2.31	0.64
1:A:1964:ASN:OD1	1:A:1965:HIS:N	2.32	0.64
1:A:4081:VAL:O	1:A:4085:THR:HG23	1.98	0.64
1:A:3547:ASP:HA	1:A:3550:LYS:HE3	1.80	0.63
1:A:1364:GLU:CG	1:A:1420:TYR:HD2	1.97	0.63
1:A:2836:ALA:O	1:A:2911:ARG:NH2	2.31	0.63
1:A:1853:LEU:HB2	1:A:1858:LEU:HD12	1.80	0.63
1:A:2723:PHE:CZ	1:A:2772:PHE:HA	2.34	0.63
1:A:3859:VAL:O	1:A:3891:ARG:NH1	2.32	0.63
1:A:3742:ASN:OD1	1:A:3745:ARG:NH2	2.30	0.63
1:A:3800:LEU:HD23	1:A:3840:LEU:HD22	1.81	0.63
1:A:2225:LYS:NZ	1:A:2281:PHE:O	2.32	0.62
1:A:3694:PHE:HA	1:A:3697:ILE:HG12	1.80	0.62
1:A:3312:GLN:HA	1:A:3315:LYS:HE3	1.80	0.62
1:A:3634:LYS:NZ	1:A:4092:MET:SD	2.72	0.62
1:A:1367:ILE:HG23	1:A:1415:MET:HE1	1.70	0.62
1:A:3862:THR:O	1:A:3891:ARG:NH2	2.32	0.62
1:A:2056:LYS:NZ	1:A:2214:TRP:O	2.30	0.62
1:A:2336:ARG:HA	1:A:2339:ILE:HD12	1.82	0.62
1:A:1756:LEU:HD11	1:A:1786:LEU:HD22	1.82	0.62
1:A:1367:ILE:CD1	1:A:1421:TYR:CB	2.63	0.61
1:A:1388:HIS:CD2	1:A:1394:LEU:HD23	2.35	0.61
1:A:4063:LEU:HB3	1:A:4065:LEU:HD23	1.82	0.61
1:A:2940:PHE:O	1:A:3318:GLN:NE2	2.30	0.61
1:A:4030:PRO:HD2	1:A:4044:ARG:HH12	1.65	0.61
1:A:2081:THR:N	3:A:4102:ATP:O2B	2.23	0.61
1:A:3621:ILE:HG12	1:A:3675:LEU:HD13	1.82	0.61
1:A:3823:ASN:HA	1:A:3826:GLN:HG2	1.82	0.61
1:A:3711:GLU:O	1:A:3716:LYS:NZ	2.33	0.61
1:A:2606:ARG:NH1	1:A:2668:SER:OG	2.34	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1364:GLU:HA	1:A:1420:TYR:O	2.00	0.61
1:A:1364:GLU:HB2	1:A:1420:TYR:CD2	2.35	0.61
1:A:1674:LYS:O	1:A:1678:MET:HG2	2.01	0.61
1:A:3306:TRP:O	1:A:3309:THR:OG1	2.19	0.61
1:A:2245:GLU:OE2	1:A:2299:ARG:NH1	2.34	0.61
1:A:2971:HIS:HB3	1:A:3352:LEU:HD11	1.81	0.61
1:A:3305:ARG:HH11	1:A:3308:ASN:HB3	1.66	0.61
1:A:1694:VAL:O	1:A:1698:ILE:HD12	2.01	0.60
1:A:3523:GLU:O	1:A:3528:ARG:NH2	2.28	0.60
1:A:3596:ASN:OD1	1:A:3599:LYS:NZ	2.29	0.60
1:A:2612:GLN:HE22	1:A:2661:VAL:HG13	1.66	0.60
1:A:3319:GLU:HB2	1:A:3360:TYR:HA	1.83	0.60
1:A:2423:GLY:O	1:A:2427:ILE:HG12	2.01	0.60
1:A:2810:GLU:OE1	1:A:2884:ASN:ND2	2.33	0.60
1:A:3665:ARG:H	1:A:3676:TRP:HZ3	1.48	0.60
1:A:1364:GLU:HB2	1:A:1420:TYR:CE2	2.37	0.60
1:A:3431:PHE:HD2	1:A:3454:ASP:HB2	1.66	0.60
1:A:1911:ASN:HB3	1:A:3846:MET:HB2	1.84	0.60
1:A:2100:VAL:HB	1:A:2150:ILE:HA	1.82	0.60
1:A:2857:ARG:HH12	1:A:2873:LEU:HD11	1.66	0.60
1:A:1865:ILE:HD11	1:A:1894:VAL:HG11	1.84	0.60
1:A:2075:LYS:NZ	1:A:2215:PHE:O	2.35	0.60
1:A:2252:LEU:O	1:A:2256:SER:HB3	2.02	0.60
1:A:3021:LEU:HD13	1:A:3307:LEU:HG	1.82	0.60
1:A:3743:ASP:HB2	1:A:3762:TRP:HZ2	1.65	0.60
1:A:1367:ILE:HG22	1:A:1424:PHE:CZ	2.33	0.60
1:A:2115:TYR:HE1	1:A:2166:MET:HE2	1.67	0.60
1:A:3506:PRO:HD2	1:A:3509:LEU:HD21	1.83	0.59
1:A:1692:ASP:HA	1:A:1695:LYS:HB2	1.85	0.59
1:A:2481:ASN:OD1	1:A:2528:ARG:NH1	2.35	0.59
1:A:2455:LEU:HG	1:A:2459:HIS:CE1	2.38	0.59
1:A:3509:LEU:O	1:A:3513:VAL:N	2.34	0.59
1:A:3728:GLU:HG2	1:A:4075:ARG:HH22	1.66	0.59
1:A:1800:THR:N	2:A:4101:ADP:O2A	2.36	0.59
1:A:2068:GLN:HG2	1:A:2174:LYS:HE3	1.84	0.59
1:A:3611:PHE:O	1:A:3615:VAL:HG13	2.03	0.59
1:A:3707:LYS:HB3	1:A:3715:TYR:HE2	1.68	0.59
1:A:3693:LYS:HG3	1:A:4081:VAL:HG12	1.85	0.58
1:A:1703:VAL:HG13	1:A:1770:ILE:HD12	1.85	0.58
1:A:1748:PHE:HA	1:A:1758:TYR:H	1.68	0.58
1:A:1822:CYS:SG	1:A:1853:LEU:HD21	2.44	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1360:ARG:HD3	1:A:1420:TYR:CE2	2.38	0.58
1:A:2414:ILE:HG23	1:A:2532:VAL:HG23	1.85	0.58
1:A:3476:ARG:NH2	1:A:3487:ASP:OD1	2.35	0.58
1:A:2822:ILE:HA	1:A:2827:PHE:HE2	1.68	0.58
1:A:1538:TYR:O	1:A:1833:ARG:NE	2.36	0.58
1:A:2766:LYS:NZ	1:A:2891:ILE:O	2.34	0.58
1:A:1258:VAL:HG11	1:A:1303:VAL:HA	1.84	0.58
1:A:1301:ILE:HD13	1:A:1347:LEU:HB3	1.85	0.58
1:A:1787:HIS:ND1	1:A:1788:GLN:OE1	2.29	0.58
1:A:2400:HIS:HA	1:A:2403:ILE:HG22	1.84	0.58
1:A:2733:VAL:HG11	1:A:2928:VAL:HA	1.86	0.58
1:A:3302:GLU:O	1:A:3591:LYS:NZ	2.32	0.57
1:A:2934:ASP:HA	1:A:2962:ARG:HH22	1.70	0.57
1:A:2422:SER:OG	1:A:2424:LYS:NZ	2.37	0.57
1:A:4022:GLN:NE2	1:A:4027:VAL:O	2.37	0.57
1:A:2870:GLU:HA	1:A:2873:LEU:HD12	1.84	0.57
1:A:3447:GLY:HA3	1:A:3489:SER:HB3	1.84	0.57
1:A:1445:TRP:HA	1:A:1448:VAL:HG22	1.86	0.57
1:A:1360:ARG:C	1:A:1420:TYR:CD2	2.82	0.57
1:A:2681:LEU:HD12	1:A:2682:PRO:HD2	1.87	0.57
1:A:1608:LEU:HD23	1:A:1611:LEU:HD21	1.85	0.57
1:A:2639:GLN:OE1	1:A:2643:SER:OG	2.22	0.57
1:A:2759:ILE:HA	1:A:2891:ILE:HG22	1.86	0.57
1:A:3384:LEU:HD21	1:A:3394:MET:HE3	1.86	0.57
1:A:1360:ARG:HD3	1:A:1420:TYR:CD2	2.39	0.57
1:A:3644:ILE:HD11	1:A:3686:PHE:CE2	2.40	0.57
1:A:1402:GLU:OE1	1:A:1442:GLN:HB3	2.04	0.56
1:A:2060:PHE:HE1	1:A:2072:LEU:HD21	1.70	0.56
1:A:2517:LYS:HB3	1:A:2520:GLU:HB3	1.85	0.56
1:A:3330:TYR:HE2	1:A:3364:TYR:HE2	1.51	0.56
1:A:3960:ASP:OD2	1:A:3997:LYS:NZ	2.38	0.56
1:A:1504:ASN:O	1:A:1508:THR:OG1	2.20	0.56
1:A:2500:GLN:HE22	1:A:2502:VAL:HG22	1.70	0.56
1:A:2081:THR:OG1	3:A:4102:ATP:O2A	2.23	0.56
1:A:2088:ILE:HG12	1:A:2099:ASN:ND2	2.20	0.56
1:A:2229:LEU:HB3	1:A:2288:VAL:HG11	1.85	0.56
1:A:2823:LEU:HD12	1:A:2824:GLU:HG3	1.86	0.56
1:A:1607:TRP:HA	1:A:1610:ILE:HG22	1.88	0.56
1:A:2792:LEU:HD11	1:A:2830:ARG:HG3	1.87	0.56
1:A:2523:TRP:HE1	1:A:2525:THR:HG22	1.70	0.56
1:A:1603:GLN:N	1:A:1606:GLU:OE1	2.39	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1664:LEU:O	1:A:1721:LYS:NZ	2.39	0.56
1:A:3315:LYS:HA	1:A:3359:LYS:HZ1	1.70	0.56
1:A:1396:ARG:HH22	1:A:2122:THR:HB	1.70	0.56
1:A:1801:GLY:O	1:A:1805:THR:N	2.38	0.56
1:A:2689:ILE:HD12	1:A:2694:LEU:HD11	1.87	0.56
1:A:2822:ILE:HD11	1:A:2828:LEU:HB2	1.87	0.56
1:A:1569:ILE:HG21	1:A:1582:VAL:HB	1.87	0.56
1:A:1367:ILE:CG2	1:A:1415:MET:HE3	2.25	0.56
1:A:2166:MET:O	1:A:2170:LEU:N	2.31	0.56
1:A:3430:SER:HB3	1:A:3433:GLU:HG2	1.88	0.56
1:A:3844:ILE:HG13	1:A:3875:MET:HB3	1.88	0.56
1:A:2640:THR:HG23	1:A:2643:SER:H	1.71	0.55
1:A:3826:GLN:HB3	1:A:3850:TRP:HZ2	1.71	0.55
1:A:1364:GLU:HG3	1:A:1420:TYR:CD1	2.39	0.55
1:A:1458:ILE:HG21	1:A:1523:LEU:HD21	1.88	0.55
1:A:2742:ILE:HG23	1:A:2773:VAL:HG22	1.88	0.55
1:A:3406:PHE:HB3	1:A:3515:LEU:HA	1.87	0.55
1:A:1504:ASN:OD1	1:A:1507:THR:OG1	2.24	0.55
1:A:3524:SER:HB3	1:A:3528:ARG:HH12	1.71	0.55
1:A:3845:GLN:HG2	1:A:3881:GLY:HA3	1.89	0.55
1:A:1784:ASP:OD2	1:A:3988:HIS:NE2	2.36	0.55
1:A:3844:ILE:HG23	1:A:3851:VAL:HG11	1.87	0.55
1:A:3934:TRP:HE1	1:A:4049:LEU:HD21	1.70	0.55
1:A:2289:GLN:NE2	1:A:2410:SER:O	2.32	0.54
1:A:3819:ILE:HA	1:A:3822:LEU:HD12	1.89	0.54
1:A:2163:VAL:O	1:A:2167:ASN:N	2.41	0.54
1:A:3690:LEU:HD12	1:A:3694:PHE:HB3	1.90	0.54
1:A:1241:LEU:HD22	1:A:1275:LEU:HD21	1.89	0.54
1:A:3987:ASP:O	1:A:3991:THR:OG1	2.20	0.54
1:A:2169:VAL:HG13	1:A:2186:ILE:HD13	1.90	0.54
1:A:1687:LEU:HD12	1:A:1695:LYS:HG2	1.90	0.54
1:A:1986:GLU:OE2	1:A:2030:ASN:ND2	2.41	0.54
1:A:1364:GLU:CB	1:A:1420:TYR:CE2	2.87	0.54
1:A:1562:MET:HE1	1:A:1569:ILE:HB	1.89	0.54
1:A:2081:THR:HA	1:A:2084:TRP:NE1	2.22	0.54
1:A:3542:GLN:HA	1:A:3545:ARG:HE	1.72	0.54
1:A:1745:ASN:O	1:A:1757:GLN:NE2	2.40	0.54
1:A:3654:LYS:O	1:A:3654:LYS:NZ	2.39	0.54
1:A:1360:ARG:CG	1:A:1420:TYR:CG	2.69	0.54
1:A:1404:ALA:O	1:A:1407:GLU:HG2	2.08	0.54
1:A:2612:GLN:HE22	1:A:2661:VAL:CG1	2.21	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1364:GLU:OE2	1:A:1421:TYR:CA	2.50	0.54
1:A:2828:LEU:HD13	1:A:2902:MET:HE1	1.89	0.54
1:A:1360:ARG:O	1:A:1420:TYR:CG	2.59	0.53
1:A:1387:GLU:HB2	1:A:1393:LYS:HZ3	1.73	0.53
1:A:3338:ASN:HD22	1:A:3523:GLU:HG2	1.73	0.53
1:A:3815:PRO:O	1:A:3821:ASN:ND2	2.35	0.53
1:A:1361:ALA:HA	1:A:1420:TYR:HE2	1.70	0.53
1:A:1489:ARG:O	1:A:1489:ARG:NH1	2.41	0.53
1:A:1884:GLU:OE1	1:A:1885:GLU:N	2.41	0.53
1:A:1935:GLN:HG2	1:A:1939:PHE:CE1	2.43	0.53
1:A:2773:VAL:HA	1:A:2776:LEU:HD12	1.91	0.53
1:A:3579:GLU:O	1:A:3583:LEU:HD23	2.09	0.53
1:A:1864:ASN:HB3	1:A:1881:LEU:HD21	1.90	0.53
1:A:2080:LYS:NZ	1:A:2196:THR:O	2.41	0.53
1:A:2444:ASN:HA	1:A:2487:ASP:HB2	1.91	0.53
1:A:2934:ASP:OD1	1:A:2962:ARG:NH1	2.41	0.53
1:A:2060:PHE:CD2	1:A:2087:VAL:HG11	2.42	0.53
1:A:1557:GLN:OE1	1:A:1557:GLN:N	2.31	0.53
1:A:1804:GLU:N	1:A:1804:GLU:OE1	2.41	0.53
1:A:2646:ARG:HH12	1:A:2687:GLY:H	1.56	0.53
1:A:2830:ARG:HH21	1:A:2840:ILE:HD12	1.73	0.53
1:A:3303:LYS:HD3	1:A:3587:LEU:HD22	1.90	0.53
1:A:3325:ILE:O	1:A:3329:ILE:HD12	2.09	0.53
1:A:1663:CYS:O	1:A:1667:ASN:N	2.34	0.53
1:A:1865:ILE:HA	1:A:1868:ILE:HG22	1.91	0.53
1:A:1998:LEU:HD13	1:A:2002:ILE:HD13	1.90	0.53
1:A:2536:ASN:OD1	1:A:2543:ARG:NH2	2.42	0.53
1:A:1586:GLU:OE2	1:A:1765:ILE:N	2.42	0.53
1:A:2621:GLU:N	1:A:2621:GLU:OE1	2.42	0.53
1:A:2792:LEU:HD22	1:A:2826:ALA:HB1	1.91	0.53
1:A:2920:TRP:HB3	1:A:2924:THR:OG1	2.09	0.52
1:A:3463:SER:HA	1:A:3466:ILE:HG22	1.91	0.52
1:A:1543:ASP:OD1	1:A:1544:ASP:N	2.43	0.52
1:A:2419:PRO:HD3	1:A:2558:TYR:HE1	1.74	0.52
1:A:1555:HIS:NE2	1:A:1577:ASP:OD1	2.42	0.52
1:A:3394:MET:HA	1:A:3397:VAL:HG12	1.91	0.52
1:A:1379:LYS:HD2	1:A:1380:GLU:HG3	1.91	0.52
1:A:1872:LEU:HD22	1:A:1888:LEU:HD21	1.91	0.52
1:A:1438:LEU:HD11	1:A:1497:ILE:HA	1.92	0.52
1:A:1773:PRO:O	1:A:1777:ILE:HD12	2.10	0.52
1:A:1828:TYR:OH	1:A:1864:ASN:ND2	2.33	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2757:MET:HB3	1:A:2914:ILE:HG22	1.92	0.52
1:A:2419:PRO:HD2	1:A:2422:SER:HB3	1.90	0.52
1:A:3408:LEU:HD11	1:A:3501:PRO:HB3	1.90	0.52
1:A:2107:LYS:HB2	1:A:2504:LEU:HD12	1.91	0.52
1:A:2932:MET:SD	1:A:2996:LEU:HD22	2.49	0.52
1:A:3384:LEU:HD11	1:A:3394:MET:HG2	1.92	0.52
1:A:2752:VAL:HG13	1:A:2753:GLN:HG2	1.92	0.52
1:A:3017:VAL:HG11	1:A:3313:PHE:HE2	1.75	0.52
1:A:1963:MET:HE1	1:A:1965:HIS:CD2	2.46	0.52
1:A:3986:ARG:HD2	1:A:4012:ALA:HA	1.92	0.52
1:A:1637:GLU:O	1:A:1640:VAL:HG22	2.10	0.51
1:A:2654:ARG:NH2	1:A:2658:ASP:OD1	2.37	0.51
1:A:3319:GLU:OE1	1:A:3361:ASP:N	2.43	0.51
1:A:3708:PHE:HA	1:A:3716:LYS:HG2	1.90	0.51
1:A:1917:ARG:HD3	1:A:3963:PHE:HE2	1.76	0.51
1:A:3788:MET:HB3	1:A:3876:THR:HA	1.92	0.51
1:A:1351:GLU:O	1:A:1355:THR:OG1	2.22	0.51
1:A:2780:LYS:O	1:A:2814:CYS:N	2.32	0.51
1:A:3509:LEU:O	1:A:3513:VAL:HG12	2.09	0.51
1:A:4082:ALA:O	1:A:4085:THR:OG1	2.16	0.51
1:A:1367:ILE:CG2	1:A:1424:PHE:CE1	2.83	0.51
1:A:1424:PHE:HB2	1:A:1427:ASP:HB3	1.92	0.51
1:A:1926:SER:HA	1:A:1929:ILE:HG12	1.91	0.51
1:A:2600:TYR:CG	1:A:2622:LEU:HD11	2.45	0.51
1:A:2294:LEU:HD11	1:A:2317:LEU:HB3	1.93	0.51
1:A:2893:ASP:OD2	1:A:2895:THR:OG1	2.28	0.51
1:A:2971:HIS:O	1:A:2974:ARG:NH1	2.44	0.51
1:A:2260:ALA:O	1:A:2263:THR:OG1	2.29	0.51
1:A:3593:GLU:HA	1:A:3596:ASN:HD22	1.76	0.51
1:A:4058:SER:HG	1:A:4062:TRP:CG	2.29	0.51
1:A:2619:PRO:HA	1:A:2622:LEU:HD13	1.93	0.51
1:A:2673:LEU:HD22	1:A:2689:ILE:HG21	1.91	0.51
1:A:2974:ARG:NH1	1:A:2975:ASN:HB2	2.26	0.51
1:A:3401:GLN:OE1	1:A:3401:GLN:N	2.44	0.51
1:A:3426:THR:HG23	1:A:3451:ILE:HD13	1.92	0.51
1:A:2759:ILE:HG23	1:A:2916:TRP:HA	1.92	0.51
1:A:1412:LEU:HD22	1:A:1435:LEU:HD12	1.93	0.51
1:A:1869:GLN:O	1:A:1873:GLN:HG2	2.11	0.51
1:A:2152:VAL:O	1:A:2193:LEU:N	2.39	0.51
1:A:2422:SER:HB2	1:A:2559:LEU:HD12	1.93	0.51
1:A:3454:ASP:HB3	1:A:3457:PHE:HD1	1.76	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3948:HIS:HB2	1:A:4073:TYR:HD2	1.76	0.51
1:A:2697:SER:HB2	1:A:2743:LEU:HD22	1.93	0.50
1:A:3851:VAL:HA	1:A:3855:LEU:HB3	1.93	0.50
1:A:1927:GLY:HA2	1:A:1950:VAL:HG21	1.93	0.50
1:A:2661:VAL:HG12	1:A:2916:TRP:CD2	2.47	0.50
1:A:4051:ASN:OD1	1:A:4052:THR:N	2.44	0.50
1:A:2869:THR:O	1:A:2873:LEU:N	2.36	0.50
1:A:2259:MET:N	1:A:2259:MET:HE2	2.26	0.50
1:A:2824:GLU:HB2	1:A:2827:PHE:CE1	2.46	0.50
1:A:3330:TYR:CE2	1:A:3366:PHE:HB2	2.46	0.50
1:A:1398:TRP:HZ3	1:A:1446:VAL:HB	1.76	0.50
1:A:2280:THR:O	1:A:2284:LEU:HG	2.12	0.50
1:A:2674:TYR:HE1	1:A:2689:ILE:HG22	1.75	0.50
1:A:2930:ASN:OD1	1:A:2962:ARG:HD3	2.11	0.50
1:A:3741:ASN:ND2	1:A:3744:LEU:HD12	2.27	0.50
1:A:1604:ALA:HA	1:A:1607:TRP:NE1	2.27	0.50
1:A:2079:GLY:O	1:A:2083:THR:N	2.40	0.50
1:A:2538:PRO:HA	1:A:2543:ARG:HB2	1.93	0.50
1:A:2546:MET:HE2	1:A:2546:MET:HA	1.94	0.50
1:A:2968:ILE:HG13	1:A:3352:LEU:CD2	2.41	0.50
1:A:2475:PRO:HB3	1:A:2527:GLU:HB2	1.93	0.49
1:A:2891:ILE:HD11	1:A:2899:SER:HA	1.94	0.49
1:A:2567:LEU:HA	1:A:2570:ILE:HG22	1.94	0.49
1:A:3317:SER:HA	1:A:3320:LEU:HD23	1.94	0.49
1:A:3329:ILE:HG23	1:A:3333:TYR:HB2	1.94	0.49
1:A:2606:ARG:HH22	1:A:2671:GLN:HE22	1.60	0.49
1:A:2423:GLY:N	2:A:4103:ADP:O2A	2.36	0.49
1:A:2830:ARG:NH1	1:A:2842:ASP:OD2	2.46	0.49
1:A:2806:CYS:SG	1:A:2813:THR:OG1	2.65	0.49
1:A:3632:LEU:HB3	1:A:3644:ILE:HD13	1.94	0.49
1:A:2324:TYR:HB3	1:A:2403:ILE:HD11	1.93	0.49
1:A:2655:ILE:HD11	1:A:2747:ARG:HH22	1.78	0.49
1:A:2830:ARG:NH2	1:A:2842:ASP:OD1	2.44	0.49
1:A:2963:ASP:HA	1:A:2966:VAL:HG22	1.95	0.49
1:A:2690:SER:N	1:A:2693:SER:OG	2.46	0.49
1:A:1835:LEU:HD12	1:A:1838:ILE:HD11	1.95	0.49
1:A:1935:GLN:HA	1:A:1939:PHE:CD1	2.47	0.49
1:A:2695:LEU:HD11	1:A:2709:LYS:HE2	1.94	0.49
1:A:1314:HIS:HA	1:A:1317:MET:HE2	1.94	0.49
1:A:1371:LEU:HD13	1:A:1424:PHE:CE2	2.48	0.49
1:A:1592:LEU:HD11	1:A:1614:GLU:HG3	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2160:PRO:O	1:A:2164:GLU:N	2.46	0.49
1:A:1865:ILE:HD11	1:A:1894:VAL:HG21	1.95	0.49
1:A:2898:LYS:O	1:A:2902:MET:HG2	2.13	0.49
1:A:1313:ARG:HH12	1:A:1423:ILE:CA	2.26	0.48
1:A:2457:ALA:HA	1:A:2460:ARG:NE	2.27	0.48
1:A:3524:SER:C	1:A:3526:GLU:H	2.20	0.48
1:A:1365:PHE:HA	1:A:1368:GLU:HB3	1.95	0.48
1:A:3366:PHE:HE1	1:A:3370:LEU:HD12	1.78	0.48
1:A:2429:ASN:O	1:A:2433:ARG:HG2	2.14	0.48
1:A:2645:ILE:HD13	1:A:2681:LEU:HD21	1.95	0.48
1:A:3710:ILE:HG23	1:A:3711:GLU:HG2	1.95	0.48
1:A:3975:ASN:HD21	1:A:3980:ILE:HB	1.78	0.48
1:A:2575:TYR:O	1:A:2578:ILE:HG22	2.13	0.48
1:A:2167:ASN:O	1:A:2171:ASP:N	2.46	0.48
1:A:1420:TYR:CE1	1:A:1423:ILE:HD11	2.48	0.48
1:A:1572:ILE:HG13	1:A:1574:PHE:HE1	1.77	0.48
1:A:2738:MET:O	1:A:2742:ILE:HG13	2.13	0.48
1:A:2823:LEU:H	1:A:2827:PHE:HZ	1.61	0.48
1:A:2856:LEU:HD13	1:A:2873:LEU:HB3	1.96	0.48
1:A:2929:ALA:O	1:A:2932:MET:HG2	2.13	0.48
1:A:3799:LYS:O	1:A:3802:GLU:HG3	2.13	0.48
1:A:1941:ASP:OD2	1:A:1944:SER:HB2	2.14	0.48
1:A:3396:ILE:HD11	1:A:3516:VAL:HG23	1.96	0.48
1:A:3788:MET:HE1	1:A:3897:TYR:HB2	1.95	0.48
1:A:2822:ILE:HA	1:A:2827:PHE:CE2	2.46	0.48
1:A:3493:LYS:HB3	1:A:3495:PHE:CE1	2.49	0.48
1:A:1619:VAL:HG12	1:A:1760:PHE:HD2	1.78	0.48
1:A:1995:VAL:HG13	1:A:2018:LEU:HD11	1.95	0.48
1:A:2458:LEU:O	1:A:2462:THR:OG1	2.31	0.48
1:A:2935:VAL:HG13	1:A:2936:ILE:HG12	1.95	0.48
1:A:3714:GLN:NE2	1:A:3737:THR:OG1	2.47	0.48
1:A:3743:ASP:HB2	1:A:3762:TRP:CZ2	2.46	0.48
1:A:2129:LEU:HD11	1:A:2516:TRP:CD2	2.48	0.47
1:A:2492:PRO:HB2	1:A:2500:GLN:HG3	1.96	0.47
1:A:2218:ASP:OD1	1:A:2219:VAL:N	2.47	0.47
1:A:2230:LEU:HD21	1:A:2257:PHE:HZ	1.79	0.47
1:A:3312:GLN:O	1:A:3315:LYS:HG2	2.14	0.47
1:A:1743:ASP:O	1:A:1746:SER:OG	2.25	0.47
1:A:2008:ASP:OD1	1:A:2008:ASP:N	2.47	0.47
1:A:2072:LEU:HD13	1:A:2213:LEU:HB3	1.96	0.47
1:A:2407:LEU:HD12	1:A:2408:LEU:HD22	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3464:ARG:HE	1:A:3481:ILE:HD13	1.79	0.47
1:A:2456:SER:O	1:A:2460:ARG:HG3	2.14	0.47
1:A:2794:ASP:HA	1:A:2797:MET:SD	2.54	0.47
1:A:2975:ASN:HA	1:A:2978:GLN:HG2	1.95	0.47
1:A:3815:PRO:HA	1:A:3842:GLN:HG2	1.97	0.47
1:A:1918:GLU:OE1	1:A:1918:GLU:N	2.43	0.47
1:A:2285:GLU:HG3	1:A:2286:THR:N	2.30	0.47
1:A:1475:LYS:HE3	1:A:1515:SER:HB3	1.97	0.47
1:A:1545:LEU:HA	1:A:1548:ILE:HG12	1.95	0.47
1:A:2005:SER:OG	1:A:2212:LEU:O	2.32	0.47
1:A:3323:ASN:C	1:A:3323:ASN:HD22	2.23	0.47
1:A:1378:TRP:CZ2	1:A:1405:CYS:HB2	2.50	0.47
1:A:1676:VAL:O	1:A:1680:ILE:HG12	2.15	0.47
1:A:2661:VAL:HG12	1:A:2916:TRP:CE2	2.50	0.47
1:A:2046:GLY:O	1:A:2228:HIS:ND1	2.42	0.47
1:A:2088:ILE:O	1:A:2091:MET:HG2	2.15	0.47
1:A:2319:LYS:HB3	1:A:2353:LEU:HD22	1.95	0.47
1:A:2772:PHE:O	1:A:2776:LEU:HG	2.15	0.47
1:A:2857:ARG:NH1	1:A:2873:LEU:HD11	2.30	0.47
1:A:2930:ASN:OD1	1:A:2962:ARG:NH1	2.48	0.47
1:A:1364:GLU:CD	1:A:1423:ILE:CD1	2.89	0.46
1:A:1570:GLU:OE1	1:A:1570:GLU:N	2.48	0.46
1:A:1766:PRO:HG2	1:A:1811:GLN:CD	2.40	0.46
1:A:2851:LYS:HA	1:A:2854:ASN:ND2	2.29	0.46
1:A:2939:GLU:OE1	1:A:2961:ILE:HD13	2.14	0.46
1:A:1646:GLN:NE2	1:A:1762:TYR:HA	2.30	0.46
1:A:2160:PRO:HA	1:A:2163:VAL:HG22	1.98	0.46
1:A:3679:TYR:HD1	1:A:3702:MET:HE3	1.81	0.46
1:A:3975:ASN:OD1	1:A:3976:SER:N	2.48	0.46
1:A:3346:LEU:HD23	1:A:3346:LEU:HA	1.71	0.46
1:A:1981:SER:HA	1:A:1984:ILE:HD12	1.97	0.46
1:A:2315:THR:HA	1:A:2318:ILE:HG22	1.97	0.46
1:A:2952:LEU:HB2	1:A:3355:LYS:HZ1	1.79	0.46
1:A:3652:CYS:O	1:A:3656:VAL:HG23	2.16	0.46
1:A:2081:THR:HA	1:A:2084:TRP:CD1	2.51	0.46
1:A:2088:ILE:HD11	1:A:2151:TRP:CD1	2.51	0.46
1:A:2419:PRO:O	1:A:2424:LYS:NZ	2.48	0.46
1:A:2783:GLN:HB3	1:A:2816:ILE:HD11	1.97	0.46
1:A:3843:ASN:O	1:A:3846:MET:HG3	2.15	0.46
1:A:1750:SER:HB2	1:A:1755:LEU:HD13	1.96	0.46
1:A:1933:ILE:O	1:A:1936:ILE:HG22	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2176:LEU:HD23	1:A:2184:LEU:HB2	1.97	0.46
1:A:3541:MET:SD	1:A:3542:GLN:NE2	2.88	0.46
1:A:3640:TRP:HZ3	1:A:3884:LEU:HB2	1.78	0.46
1:A:1469:LEU:HB3	1:A:1472:GLU:HB2	1.98	0.46
1:A:2511:GLU:HG2	1:A:2512:LYS:HG3	1.97	0.46
1:A:3350:LYS:HE3	1:A:3360:TYR:HE2	1.81	0.46
1:A:3813:ILE:HD12	1:A:3840:LEU:HD23	1.97	0.46
1:A:1313:ARG:NH1	1:A:1423:ILE:CA	2.79	0.46
1:A:1984:ILE:HA	1:A:1993:THR:HG21	1.97	0.46
1:A:2068:GLN:OE1	1:A:2191:ARG:HD3	2.16	0.46
1:A:2514:GLY:HA2	1:A:2526:ILE:HG23	1.98	0.46
1:A:2714:ASN:O	1:A:2718:GLU:HG2	2.16	0.46
1:A:2780:LYS:HB3	1:A:2813:THR:HG22	1.97	0.46
1:A:3460:PRO:HA	1:A:3463:SER:HB2	1.97	0.46
1:A:1367:ILE:O	1:A:1415:MET:HE1	2.16	0.46
1:A:1534:PHE:HB3	1:A:1537:PHE:CD2	2.51	0.46
1:A:1781:THR:HG21	1:A:1919:PHE:CD2	2.51	0.46
1:A:3728:GLU:HA	1:A:3731:ASP:HB3	1.97	0.46
1:A:1534:PHE:CE2	1:A:1536:ARG:HB2	2.50	0.46
1:A:2070:LEU:HB2	1:A:2193:LEU:HD13	1.98	0.46
1:A:2937:PRO:O	1:A:2961:ILE:HG12	2.16	0.46
1:A:1395:VAL:HG11	1:A:1398:TRP:CD1	2.51	0.45
1:A:1440:GLU:HA	1:A:1443:VAL:HG22	1.98	0.45
1:A:2311:LYS:O	1:A:2314:ILE:HG22	2.16	0.45
1:A:1604:ALA:HA	1:A:1607:TRP:CE2	2.52	0.45
1:A:2204:PRO:HA	1:A:2207:ILE:HD12	1.98	0.45
1:A:2928:VAL:O	1:A:2932:MET:HE3	2.15	0.45
1:A:3592:LYS:O	1:A:3596:ASN:ND2	2.49	0.45
1:A:3700:MET:SD	1:A:3701:THR:N	2.90	0.45
1:A:3741:ASN:H	1:A:3745:ARG:HH12	1.64	0.45
1:A:1458:ILE:HG12	1:A:1546:LEU:HD13	1.99	0.45
1:A:2222:ILE:HD12	1:A:2284:LEU:HD11	1.98	0.45
1:A:3989:ILE:HD13	1:A:3993:VAL:HG21	1.98	0.45
1:A:4086:GLU:HA	1:A:4089:LEU:HG	1.97	0.45
1:A:1670:SER:O	1:A:1674:LYS:HG2	2.17	0.45
1:A:2615:TYR:CZ	1:A:2660:LEU:HD12	2.51	0.45
1:A:3822:LEU:HD22	1:A:3850:TRP:CG	2.51	0.45
1:A:2786:ILE:HG12	1:A:3460:PRO:HG2	1.99	0.45
1:A:3305:ARG:O	1:A:3305:ARG:NH1	2.50	0.45
1:A:3454:ASP:HB3	1:A:3457:PHE:CD1	2.52	0.45
1:A:3936:HIS:HA	1:A:3939:ILE:HG22	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1734:PHE:CE2	1:A:1749:ILE:HD13	2.52	0.45
1:A:1803:THR:HG21	1:A:1848:ASP:CG	2.41	0.45
1:A:3414:MET:HA	1:A:3414:MET:HE2	1.98	0.45
1:A:3540:GLU:O	1:A:3544:LYS:HB2	2.17	0.45
1:A:1782:LEU:HD11	1:A:1895:PHE:CD1	2.52	0.45
1:A:1820:PHE:CE2	1:A:1831:LEU:HD11	2.52	0.45
1:A:1933:ILE:HA	1:A:1936:ILE:HG22	1.98	0.45
1:A:1934:LEU:HD12	1:A:1946:ALA:HB2	1.98	0.45
1:A:2285:GLU:HG3	1:A:2412:ARG:HH12	1.82	0.45
1:A:2293:HIS:CE1	1:A:2409:ASN:HB3	2.52	0.45
1:A:1316:ASN:HB2	1:A:1332:LEU:HD21	1.98	0.45
1:A:4083:SER:HA	1:A:4086:GLU:OE1	2.17	0.45
1:A:1305:LEU:HG	1:A:1358:ILE:HD11	1.98	0.45
1:A:1364:GLU:OE2	1:A:1423:ILE:HD12	2.16	0.45
1:A:3023:LYS:HB3	1:A:3570:LEU:HD21	1.99	0.45
1:A:1367:ILE:CD1	1:A:1418:SER:OG	2.47	0.45
1:A:2079:GLY:HA2	3:A:4102:ATP:H5'2	1.99	0.45
1:A:3652:CYS:SG	1:A:3682:VAL:HG12	2.57	0.45
1:A:1736:GLN:OE1	1:A:1736:GLN:N	2.50	0.44
1:A:2765:GLY:N	2:A:4104:ADP:O1A	2.41	0.44
1:A:3305:ARG:NH1	1:A:3308:ASN:HB3	2.31	0.44
1:A:3400:SER:OG	1:A:3402:ASP:OD1	2.30	0.44
1:A:3664:THR:HB	1:A:3677:LEU:HD11	1.99	0.44
1:A:2476:LYS:HD2	1:A:2478:ASP:O	2.17	0.44
1:A:2932:MET:SD	1:A:2996:LEU:HD13	2.57	0.44
1:A:3583:LEU:O	1:A:3587:LEU:HG	2.17	0.44
1:A:3788:MET:CE	1:A:3897:TYR:HB2	2.47	0.44
1:A:1367:ILE:CG2	1:A:1415:MET:HE2	2.28	0.44
1:A:1413:VAL:HA	1:A:1416:LYS:HD2	2.00	0.44
1:A:2446:SER:HB2	1:A:2829:GLU:CG	2.47	0.44
1:A:2508:GLN:HG3	1:A:2512:LYS:HE2	1.99	0.44
1:A:2638:ARG:NH1	1:A:2638:ARG:HB2	2.32	0.44
1:A:2723:PHE:HZ	1:A:2775:TRP:HB3	1.82	0.44
1:A:3620:ILE:HA	1:A:3623:LYS:HZ2	1.82	0.44
1:A:1304:GLU:HB3	1:A:1358:ILE:HD13	1.99	0.44
1:A:1479:LEU:HD13	1:A:1516:LEU:HD22	1.98	0.44
1:A:3337:LEU:O	1:A:3389:TYR:OH	2.29	0.44
1:A:1397:GLU:O	1:A:1400:VAL:HG22	2.18	0.44
1:A:2232:LYS:O	1:A:2235:GLU:HG3	2.18	0.44
1:A:2486:CYS:O	1:A:2533:GLY:HA2	2.18	0.44
1:A:1245:VAL:HG21	1:A:1288:LEU:HG	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2068:GLN:HA	1:A:2191:ARG:HH11	1.83	0.44
1:A:2661:VAL:HG12	1:A:2916:TRP:CG	2.52	0.44
1:A:3639:HIS:CD2	1:A:3641:PHE:H	2.36	0.44
1:A:3688:THR:HB	1:A:3895:PHE:HD1	1.82	0.44
1:A:3790:SER:OG	1:A:3791:GLU:N	2.50	0.44
1:A:1505:PHE:O	1:A:1509:LEU:HG	2.17	0.44
1:A:1827:ASP:OD1	1:A:1828:TYR:N	2.51	0.44
1:A:2483:VAL:HG22	1:A:2530:HIS:HB2	2.00	0.44
1:A:2712:LEU:O	1:A:2716:ILE:HG12	2.18	0.44
1:A:3667:ALA:HB3	1:A:3673:GLU:CD	2.42	0.44
1:A:3934:TRP:O	1:A:3938:LEU:HD23	2.17	0.44
1:A:1385:VAL:HG12	1:A:1395:VAL:HG22	1.99	0.44
1:A:1527:LEU:HD13	1:A:1545:LEU:HD22	2.00	0.44
1:A:1683:LEU:HD22	1:A:1701:LEU:HD11	2.00	0.44
1:A:2073:VAL:HG21	1:A:2199:LEU:HD21	2.00	0.44
1:A:2768:ILE:HA	1:A:2771:ARG:HD3	2.00	0.44
1:A:3646:ILE:HD12	1:A:3646:ILE:H	1.83	0.44
1:A:1646:GLN:HE22	1:A:1762:TYR:HA	1.83	0.44
1:A:3780:ASN:C	1:A:3780:ASN:HD22	2.24	0.44
1:A:1383:TYR:HB3	1:A:1395:VAL:CG1	2.48	0.43
1:A:1465:ILE:HA	1:A:1468:PHE:HB2	2.00	0.43
1:A:1534:PHE:CZ	1:A:1608:LEU:HB3	2.53	0.43
1:A:1738:ASN:OD1	1:A:1739:ASP:N	2.51	0.43
1:A:1761:GLU:OE1	1:A:1816:VAL:HG23	2.17	0.43
1:A:2241:LEU:HD11	1:A:2299:ARG:HD3	2.00	0.43
1:A:2387:ARG:HB2	1:A:2390:ILE:HG12	1.99	0.43
1:A:2622:LEU:O	1:A:2626:VAL:HG13	2.18	0.43
1:A:3508:PHE:O	1:A:3512:ARG:HG2	2.18	0.43
1:A:3838:TRP:NE1	1:A:3872:LYS:HD3	2.32	0.43
1:A:4027:VAL:HG22	1:A:4052:THR:HG21	2.00	0.43
1:A:1380:GLU:O	1:A:1381:ALA:C	2.60	0.43
1:A:1459:LEU:HD23	1:A:1465:ILE:HG23	1.99	0.43
1:A:2170:LEU:HG	1:A:2209:ARG:HB3	2.00	0.43
1:A:2222:ILE:HG23	1:A:2284:LEU:HD11	1.99	0.43
1:A:3957:ASN:OD1	1:A:3958:ASP:N	2.51	0.43
1:A:3999:ASP:OD1	1:A:3999:ASP:N	2.51	0.43
1:A:1364:GLU:HG2	1:A:1420:TYR:CA	2.48	0.43
1:A:1708:PHE:O	1:A:1712:ILE:HG12	2.18	0.43
1:A:2506:LEU:O	1:A:2510:MET:HG3	2.17	0.43
1:A:3696:MET:HE2	1:A:3760:LEU:HB3	2.00	0.43
1:A:1330:ASN:O	1:A:1334:LYS:NZ	2.50	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1408:ASP:O	1:A:1411:GLU:HG3	2.18	0.43
1:A:1980:CYS:O	1:A:1984:ILE:HG13	2.18	0.43
1:A:3380:LEU:HD22	1:A:3386:LYS:HE3	2.00	0.43
1:A:3409:ASP:OD1	1:A:3409:ASP:N	2.50	0.43
1:A:1498:GLU:HA	1:A:1501:HIS:ND1	2.33	0.43
1:A:1769:LEU:HD11	2:A:4101:ADP:C5	2.53	0.43
1:A:2007:GLY:O	1:A:2010:ASP:N	2.51	0.43
1:A:2258:ASP:OD1	1:A:2258:ASP:N	2.45	0.43
1:A:2510:MET:SD	1:A:2553:HIS:HB3	2.59	0.43
1:A:1388:HIS:O	1:A:1389:SER:C	2.61	0.43
1:A:1917:ARG:HD3	1:A:3963:PHE:CE2	2.54	0.43
1:A:2416:LEU:HD13	1:A:2557:LEU:HB2	2.01	0.43
1:A:2442:GLY:HA2	1:A:2485:PHE:HB3	2.00	0.43
1:A:2637:PRO:C	1:A:2639:GLN:HE21	2.24	0.43
1:A:2804:SER:O	1:A:2808:LEU:N	2.36	0.43
1:A:2953:VAL:HA	1:A:2967:ASN:ND2	2.33	0.43
1:A:3316:THR:HA	1:A:3319:GLU:HG2	2.01	0.43
1:A:3428:LEU:HD12	1:A:3453:GLN:NE2	2.33	0.43
1:A:3747:LEU:HD11	1:A:3762:TRP:CZ3	2.53	0.43
1:A:1586:GLU:HG3	1:A:1765:ILE:HB	2.00	0.43
1:A:2305:LEU:HD23	1:A:2305:LEU:H	1.84	0.43
1:A:2943:PHE:CD2	1:A:2946:PRO:HB3	2.53	0.43
1:A:3470:PHE:HD1	1:A:3479:VAL:HB	1.83	0.43
1:A:3903:ILE:HD12	1:A:3941:ALA:HB2	2.00	0.43
1:A:4028:ARG:HE	1:A:4028:ARG:HB3	1.65	0.43
1:A:1796:GLY:O	1:A:1900:PRO:HD3	2.19	0.43
1:A:2447:LYS:H	1:A:2829:GLU:CD	2.26	0.43
1:A:1931:GLU:HG2	1:A:1932:MET:HE2	2.01	0.43
1:A:2696:PHE:HB3	1:A:2704:PHE:CZ	2.53	0.43
1:A:2831:MET:HE3	1:A:2834:LEU:HB3	2.01	0.43
1:A:3366:PHE:CE1	1:A:3370:LEU:HD12	2.54	0.43
1:A:3617:GLU:O	1:A:3620:ILE:HG22	2.19	0.43
1:A:3707:LYS:HA	1:A:3707:LYS:HD3	1.84	0.43
1:A:1868:ILE:HD11	1:A:1888:LEU:HD13	2.01	0.43
1:A:2077:GLY:HA3	1:A:2552:ARG:NE	2.33	0.43
1:A:2732:MET:HE1	2:A:4104:ADP:C4	2.54	0.43
1:A:1864:ASN:HA	1:A:1881:LEU:HD11	2.01	0.42
1:A:1934:LEU:HA	1:A:1937:MET:HG3	2.02	0.42
1:A:2081:THR:O	1:A:2085:LYS:HG2	2.18	0.42
1:A:2223:SER:HB2	1:A:2259:MET:HG3	2.01	0.42
1:A:2394:THR:H	1:A:2397:THR:HB	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3635:PHE:CZ	1:A:3698:MET:HB2	2.54	0.42
1:A:1384:GLU:OE1	1:A:1384:GLU:N	2.39	0.42
1:A:2294:LEU:HD13	1:A:2317:LEU:HD22	2.00	0.42
1:A:2929:ALA:HA	1:A:2932:MET:SD	2.59	0.42
1:A:2932:MET:HE2	1:A:2932:MET:HB3	1.73	0.42
1:A:3336:HIS:HA	1:A:3517:HIS:CE1	2.54	0.42
1:A:3651:SER:O	1:A:3655:ARG:HG2	2.19	0.42
1:A:3682:VAL:HG23	1:A:3702:MET:HE1	2.00	0.42
1:A:3767:PHE:HB3	1:A:3769:VAL:HG13	2.01	0.42
1:A:3841:LEU:HD12	1:A:3875:MET:HG3	2.01	0.42
1:A:1586:GLU:CD	1:A:1765:ILE:H	2.27	0.42
1:A:1671:LYS:HA	1:A:1671:LYS:HD3	1.76	0.42
1:A:1739:ASP:OD1	1:A:1740:THR:N	2.51	0.42
1:A:1910:GLU:HG2	1:A:3846:MET:HB3	2.00	0.42
1:A:2380:LEU:HD23	1:A:2380:LEU:H	1.84	0.42
1:A:2432:LEU:HG	1:A:2440:VAL:HG22	2.00	0.42
1:A:2785:LYS:NZ	1:A:3483:ASP:OD1	2.52	0.42
1:A:2972:PHE:CE1	1:A:3349:LEU:HD12	2.54	0.42
1:A:3512:ARG:NH2	2:A:4104:ADP:O5'	2.53	0.42
1:A:1766:PRO:HG2	1:A:1811:GLN:NE2	2.34	0.42
1:A:1933:ILE:O	1:A:1937:MET:HG3	2.19	0.42
1:A:2414:ILE:CG2	1:A:2532:VAL:HG23	2.48	0.42
1:A:2569:GLN:O	1:A:2573:ILE:HG12	2.20	0.42
1:A:1588:GLU:OE1	1:A:1762:TYR:OH	2.33	0.42
1:A:1673:TRP:HD1	1:A:1712:ILE:HG22	1.84	0.42
1:A:1378:TRP:O	1:A:1379:LYS:C	2.62	0.42
1:A:1827:ASP:O	1:A:1830:VAL:HG12	2.20	0.42
1:A:2050:SER:O	1:A:2054:LEU:N	2.33	0.42
1:A:3387:ASN:OD1	1:A:3390:PHE:HB2	2.20	0.42
1:A:3397:VAL:HG13	1:A:3398:MET:HE3	2.01	0.42
1:A:1258:VAL:HG23	1:A:1259:LEU:HD22	2.02	0.42
1:A:1687:LEU:HB2	1:A:1698:ILE:HG21	2.02	0.42
1:A:2831:MET:HE1	1:A:2834:LEU:HD23	2.01	0.42
1:A:2971:HIS:O	1:A:2974:ARG:HD3	2.20	0.42
1:A:3528:ARG:O	1:A:3532:ILE:HG12	2.20	0.42
1:A:1329:LYS:HB3	1:A:1329:LYS:HE2	1.85	0.42
1:A:2241:LEU:HD12	1:A:2241:LEU:HA	1.91	0.42
1:A:2426:MET:O	1:A:2430:ASN:ND2	2.52	0.42
1:A:2578:ILE:HD11	1:A:2630:TYR:N	2.35	0.42
1:A:2696:PHE:CZ	1:A:2706:GLU:HB2	2.55	0.42
1:A:2835:LEU:O	1:A:2911:ARG:NE	2.53	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3787:THR:HG23	1:A:3892:THR:HG21	2.01	0.42
1:A:1309:ALA:HA	1:A:1365:PHE:HB2	2.00	0.42
1:A:1371:LEU:HD11	1:A:1431:LEU:HD22	2.01	0.42
1:A:1801:GLY:H	2:A:4101:ADP:PA	2.41	0.42
1:A:1818:VAL:HG11	1:A:1838:ILE:HG21	2.01	0.42
1:A:2071:ILE:HG23	1:A:2212:LEU:HA	2.01	0.42
1:A:2190:PHE:CE2	1:A:2192:ILE:HD11	2.55	0.42
1:A:2526:ILE:HB	1:A:2529:ILE:HD13	2.02	0.42
1:A:2732:MET:HE2	1:A:2732:MET:HA	2.02	0.42
1:A:3380:LEU:HD21	1:A:3391:LEU:HD21	2.01	0.42
1:A:3402:ASP:OD1	1:A:3402:ASP:N	2.51	0.42
1:A:3460:PRO:O	1:A:3464:ARG:NH1	2.53	0.42
1:A:1801:GLY:HA3	2:A:4101:ADP:H8	1.84	0.42
1:A:2080:LYS:HE3	1:A:2195:GLU:HG3	2.01	0.42
1:A:2508:GLN:HA	1:A:2512:LYS:HZ1	1.84	0.42
1:A:3804:ALA:HB1	1:A:3809:GLU:HA	2.01	0.42
1:A:3840:LEU:HG	1:A:3842:GLN:OE1	2.20	0.42
1:A:1301:ILE:HD12	1:A:1351:GLU:HG3	2.01	0.41
1:A:1311:LYS:HB2	1:A:1314:HIS:HD1	1.84	0.41
1:A:1782:LEU:HD23	1:A:1809:PHE:CD2	2.55	0.41
1:A:2799:LEU:HD21	1:A:2834:LEU:HD22	2.01	0.41
1:A:3601:LEU:O	1:A:3605:GLU:HG2	2.20	0.41
1:A:3958:ASP:O	1:A:3961:PHE:N	2.53	0.41
1:A:1364:GLU:CB	1:A:1420:TYR:HD2	2.26	0.41
1:A:1563:LYS:HA	1:A:1569:ILE:O	2.20	0.41
1:A:1794:PHE:HB3	1:A:1802:LYS:HD2	2.01	0.41
1:A:2341:THR:O	1:A:2344:THR:OG1	2.33	0.41
1:A:3489:SER:OG	1:A:3491:ASP:OD1	2.34	0.41
1:A:3529:ILE:HD11	1:A:3622:GLY:HA2	2.02	0.41
1:A:3531:ASP:HA	1:A:3534:LEU:HG	2.02	0.41
1:A:4038:GLU:CD	1:A:4038:GLU:H	2.27	0.41
1:A:1406:LYS:HA	1:A:1409:LEU:HD12	2.02	0.41
1:A:1483:TYR:O	1:A:1487:THR:HG23	2.20	0.41
1:A:1523:LEU:O	1:A:1527:LEU:HD23	2.20	0.41
1:A:1566:PHE:O	1:A:1816:VAL:HG11	2.20	0.41
1:A:2527:GLU:C	1:A:2528:ARG:HG3	2.45	0.41
1:A:2905:SER:HB3	1:A:2908:LEU:HD12	2.03	0.41
1:A:3429:LEU:O	1:A:3452:ILE:HA	2.20	0.41
1:A:3430:SER:OG	1:A:3454:ASP:OD2	2.35	0.41
1:A:3547:ASP:O	1:A:3550:LYS:HG2	2.20	0.41
1:A:2153:VAL:HA	1:A:2193:LEU:HB2	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2489:ILE:O	1:A:2492:PRO:HD2	2.20	0.41
1:A:2893:ASP:HB2	1:A:2986:PRO:HB2	2.03	0.41
1:A:3336:HIS:HA	1:A:3517:HIS:ND1	2.35	0.41
1:A:3670:ARG:CZ	1:A:3674:ILE:HD11	2.50	0.41
1:A:1424:PHE:O	1:A:1428:CYS:N	2.33	0.41
1:A:3014:GLN:HA	1:A:3017:VAL:HG22	2.02	0.41
1:A:3629:PHE:CZ	1:A:3646:ILE:HG13	2.46	0.41
1:A:3845:GLN:CD	1:A:3878:HIS:H	2.28	0.41
1:A:3924:TRP:CD1	1:A:3977:THR:HG1	2.38	0.41
1:A:1820:PHE:CZ	1:A:1831:LEU:HD21	2.55	0.41
1:A:2485:PHE:CD1	1:A:2532:VAL:HG13	2.55	0.41
1:A:2999:LEU:HA	1:A:2999:LEU:HD12	1.81	0.41
1:A:3449:VAL:HG22	1:A:3493:LYS:HB2	2.02	0.41
1:A:1299:ASN:O	1:A:1303:VAL:HG23	2.21	0.41
1:A:1607:TRP:O	1:A:1610:ILE:HG22	2.20	0.41
1:A:1747:VAL:O	1:A:1757:GLN:NE2	2.53	0.41
1:A:1849:GLU:O	1:A:1849:GLU:HG3	2.21	0.41
1:A:2575:TYR:HA	1:A:2578:ILE:HG22	2.03	0.41
1:A:2664:LYS:NZ	1:A:2668:SER:HB2	2.36	0.41
1:A:2679:LYS:HD2	1:A:2680:TYR:CE2	2.56	0.41
1:A:2720:PHE:CE1	1:A:2732:MET:HB3	2.56	0.41
1:A:3900:ILE:HD13	1:A:3944:ARG:HD3	2.02	0.41
1:A:4033:LEU:HG	1:A:4035:GLN:HG3	2.03	0.41
1:A:2356:TYR:CG	1:A:2395:ILE:HD11	2.55	0.41
1:A:2520:GLU:HG3	1:A:2522:LYS:HB3	2.02	0.41
1:A:2622:LEU:HA	1:A:2625:LEU:HG	2.03	0.41
1:A:1821:ASN:HA	1:A:1848:ASP:HB3	2.03	0.41
1:A:2006:LEU:HB3	1:A:2010:ASP:HB2	2.02	0.41
1:A:2158:LEU:HD12	1:A:2163:VAL:HG11	2.03	0.41
1:A:2180:ASN:ND2	1:A:2181:GLY:N	2.69	0.41
1:A:2863:LEU:HB3	1:A:2865:LEU:HD13	2.03	0.41
1:A:2993:ILE:O	1:A:2996:LEU:HG	2.21	0.41
1:A:3376:LYS:HE2	1:A:3376:LYS:HA	2.03	0.41
1:A:2200:ASP:OD1	1:A:2201:HIS:N	2.53	0.41
1:A:2291:ALA:O	1:A:2295:ILE:HG23	2.21	0.41
1:A:2471:LEU:HD23	1:A:2522:LYS:HG2	2.03	0.41
1:A:2723:PHE:CZ	1:A:2775:TRP:HB3	2.56	0.41
1:A:2723:PHE:O	1:A:2727:GLU:N	2.54	0.41
1:A:2908:LEU:O	1:A:2912:CYS:HB2	2.21	0.41
1:A:3509:LEU:C	1:A:3513:VAL:HG12	2.46	0.41
1:A:3871:PHE:CD1	1:A:3873:MET:HE3	2.57	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3964:ALA:O	1:A:3968:LEU:HD23	2.22	0.41
1:A:4009:LYS:HG3	1:A:4010:LEU:N	2.36	0.41
1:A:1373:ARG:HA	1:A:1376:LYS:HE3	2.03	0.40
1:A:1656:TRP:O	1:A:1660:VAL:HG13	2.21	0.40
1:A:1790:TYR:CD2	1:A:3963:PHE:HZ	2.39	0.40
1:A:2085:LYS:O	1:A:2088:ILE:HG22	2.21	0.40
1:A:3743:ASP:OD1	1:A:3743:ASP:N	2.54	0.40
1:A:3897:TYR:CE2	1:A:3899:ASP:HB2	2.56	0.40
1:A:4039:GLU:H	1:A:4039:GLU:CD	2.26	0.40
1:A:1374:ILE:O	1:A:1375:LYS:C	2.64	0.40
1:A:1574:PHE:HA	1:A:1578:PHE:O	2.20	0.40
1:A:1608:LEU:O	1:A:1611:LEU:HG	2.21	0.40
1:A:1685:ASP:OD1	1:A:1686:LYS:N	2.53	0.40
1:A:1967:HIS:O	1:A:1972:THR:HG21	2.21	0.40
1:A:2661:VAL:HG12	1:A:2916:TRP:CD1	2.57	0.40
1:A:2734:ILE:HG23	1:A:2738:MET:SD	2.61	0.40
1:A:2754:GLY:HA3	1:A:2886:HIS:ND1	2.37	0.40
1:A:2869:THR:HB	1:A:2872:GLU:HB3	2.03	0.40
1:A:3447:GLY:HA2	1:A:3492:PHE:HB2	2.03	0.40
1:A:3997:LYS:HB2	1:A:3997:LYS:HE2	1.97	0.40
1:A:1383:TYR:HB3	1:A:1395:VAL:HG11	2.04	0.40
1:A:1554:HIS:O	1:A:1555:HIS:ND1	2.54	0.40
1:A:2163:VAL:HA	1:A:2166:MET:HB2	2.02	0.40
1:A:2305:LEU:HD11	1:A:2310:LEU:HD13	2.03	0.40
1:A:2386:MET:HG2	1:A:2627:ARG:CD	2.51	0.40
1:A:2943:PHE:HD2	1:A:2946:PRO:HB3	1.87	0.40
1:A:3464:ARG:HG3	1:A:3469:GLU:CD	2.46	0.40
1:A:3607:PHE:O	1:A:3611:PHE:N	2.45	0.40
1:A:1464:ASP:HB2	1:A:1550:GLY:HA2	2.04	0.40
1:A:1547:LYS:HD2	1:A:1561:PHE:CE2	2.56	0.40
1:A:1807:LYS:HD3	1:A:1819:VAL:HG21	2.04	0.40
1:A:2767:THR:HG22	2:A:4104:ADP:O2A	2.21	0.40
1:A:3008:GLN:O	1:A:3012:GLU:OE1	2.39	0.40
1:A:3439:ARG:HD2	1:A:3439:ARG:HA	1.93	0.40
1:A:4075:ARG:O	1:A:4079:LYS:HG2	2.21	0.40
1:A:1455:LEU:HD23	1:A:1458:ILE:HD12	2.04	0.40
1:A:1529:ARG:O	1:A:1533:GLN:HG2	2.22	0.40
1:A:2435:SER:O	1:A:2480:LYS:NZ	2.50	0.40
1:A:3388:ASP:OD1	1:A:3389:TYR:N	2.54	0.40
1:A:3592:LYS:HD2	1:A:3596:ASN:HD21	1.86	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	2579/4092 (63%)	2453 (95%)	124 (5%)	2 (0%)	48 82

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	2499	SER
1	A	3525	ILE

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
1	A	2358/3759 (63%)	2352 (100%)	6 (0%)	91 92

All (6) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	1372	ASN
1	A	1374	ILE
1	A	1375	LYS
1	A	1376	LYS
1	A	1379	LYS
1	A	1380	GLU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (27) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	1246	GLN
1	A	1299	ASN
1	A	1542	ASN
1	A	1554	HIS
1	A	1717	ASN
1	A	1757	GLN
1	A	1866	GLN
1	A	1878	HIS
1	A	1925	GLN
1	A	2030	ASN
1	A	2138	ASN
1	A	2180	ASN
1	A	2270	ASN
1	A	2293	HIS
1	A	2513	GLN
1	A	2612	GLN
1	A	2671	GLN
1	A	2741	HIS
1	A	2832	ASN
1	A	2915	ASN
1	A	3574	GLN
1	A	3639	HIS
1	A	3714	GLN
1	A	3765	ASN
1	A	3984	GLN
1	A	4035	GLN
1	A	4064	GLN

5.3.3 RNA

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

4 ligands are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
2	ADP	A	4103	-	24,29,29	0.86	0	29,45,45	1.18	2 (6%)
3	ATP	A	4102	-	28,33,33	0.75	0	34,52,52	0.60	1 (2%)
2	ADP	A	4101	-	24,29,29	0.84	0	29,45,45	1.19	2 (6%)
2	ADP	A	4104	-	24,29,29	0.90	0	29,45,45	1.27	3 (10%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	ADP	A	4103	-	-	7/12/32/32	0/3/3/3
3	ATP	A	4102	-	-	9/18/38/38	0/3/3/3
2	ADP	A	4101	-	-	7/12/32/32	0/3/3/3
2	ADP	A	4104	-	-	1/12/32/32	0/3/3/3

There are no bond length outliers.

All (8) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	A	4101	ADP	N3-C2-N1	-3.64	123.73	128.67
2	A	4104	ADP	N3-C2-N1	-3.62	123.75	128.67
2	A	4103	ADP	N3-C2-N1	-3.57	123.83	128.67
2	A	4104	ADP	C4-C5-N7	-2.74	106.44	109.34
2	A	4103	ADP	C4-C5-N7	-2.55	106.64	109.34
2	A	4101	ADP	C4-C5-N7	-2.41	106.79	109.34
3	A	4102	ATP	C5-C6-N6	2.31	123.83	120.31
2	A	4104	ADP	C4'-O4'-C1'	2.12	111.86	109.92

There are no chirality outliers.

All (24) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	4101	ADP	PA-O3A-PB-O2B
2	A	4101	ADP	PA-O3A-PB-O3B
2	A	4101	ADP	C5'-O5'-PA-O1A
2	A	4101	ADP	C5'-O5'-PA-O3A
2	A	4103	ADP	PA-O3A-PB-O2B
2	A	4103	ADP	PA-O3A-PB-O3B
2	A	4103	ADP	C5'-O5'-PA-O1A
3	A	4102	ATP	PB-O3B-PG-O3G
3	A	4102	ATP	C5'-O5'-PA-O2A
2	A	4101	ADP	O4'-C4'-C5'-O5'
2	A	4101	ADP	C3'-C4'-C5'-O5'
3	A	4102	ATP	O4'-C4'-C5'-O5'
2	A	4103	ADP	O4'-C4'-C5'-O5'
2	A	4103	ADP	C3'-C4'-C5'-O5'
3	A	4102	ATP	C3'-C4'-C5'-O5'
3	A	4102	ATP	PA-O3A-PB-O1B
2	A	4103	ADP	C5'-O5'-PA-O3A
3	A	4102	ATP	C5'-O5'-PA-O1A
3	A	4102	ATP	C5'-O5'-PA-O3A
2	A	4104	ADP	C4'-C5'-O5'-PA
3	A	4102	ATP	PG-O3B-PB-O1B
2	A	4103	ADP	PA-O3A-PB-O1B
3	A	4102	ATP	PG-O3B-PB-O2B
2	A	4101	ADP	PA-O3A-PB-O1B

There are no ring outliers.

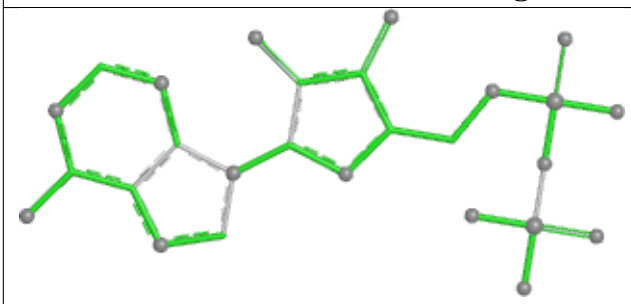
4 monomers are involved in 14 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	4103	ADP	1	0
3	A	4102	ATP	5	0
2	A	4101	ADP	4	0
2	A	4104	ADP	4	0

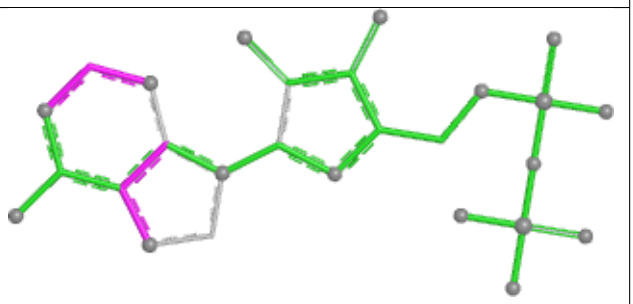
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be

highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

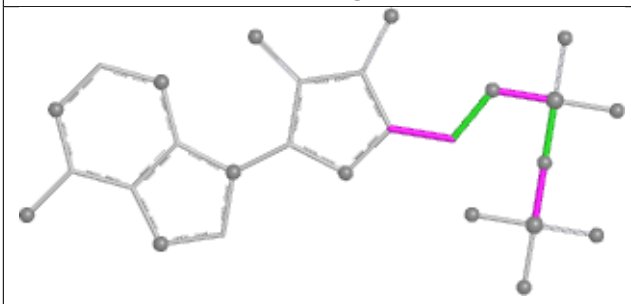
Ligand ADP A 4103



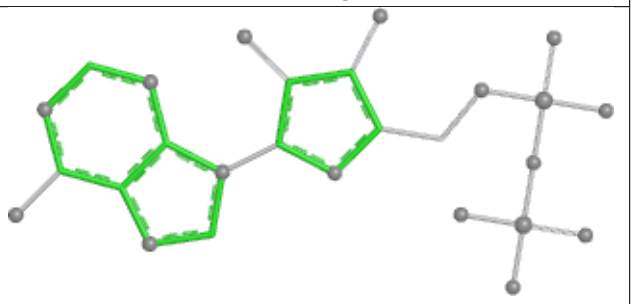
Bond lengths



Bond angles

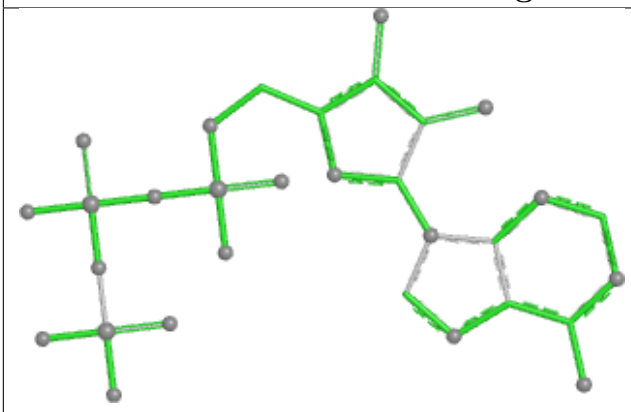


Torsions

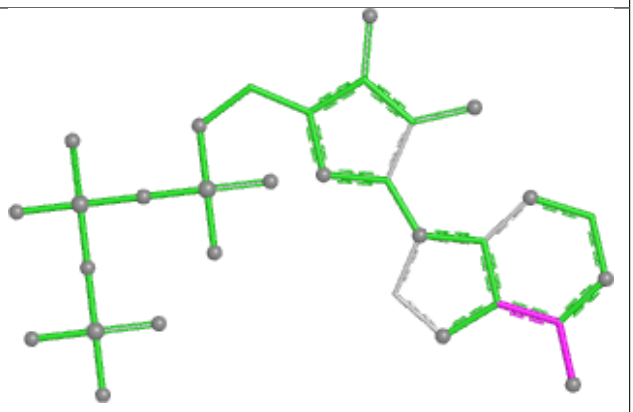


Rings

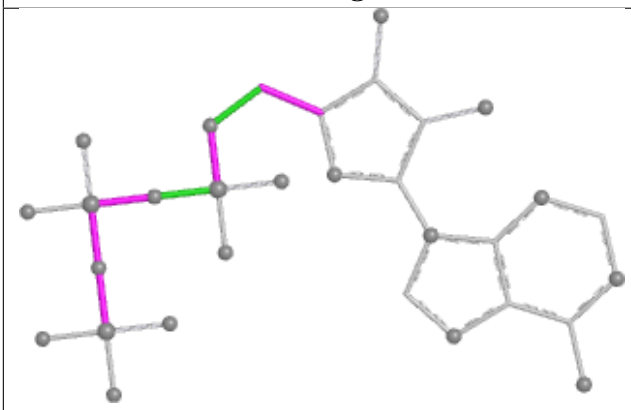
Ligand ATP A 4102



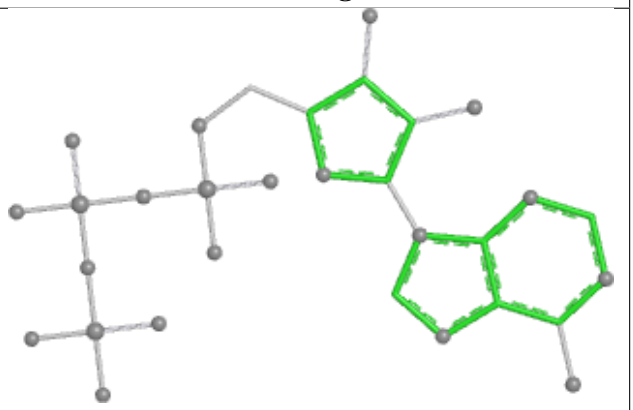
Bond lengths



Bond angles

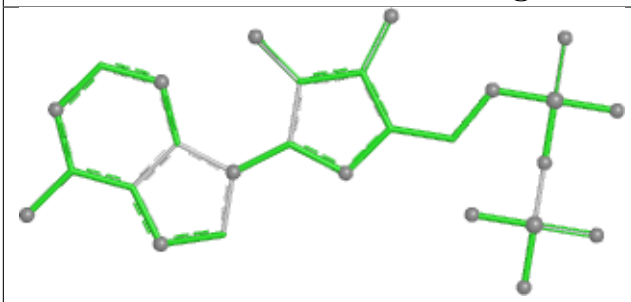


Torsions

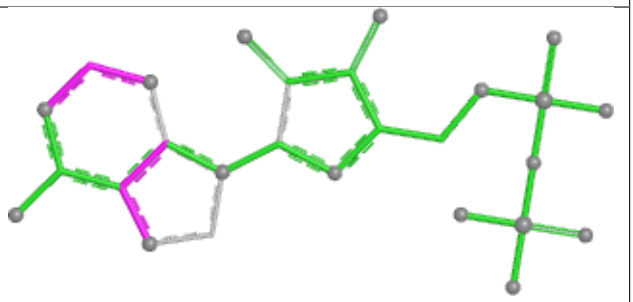


Rings

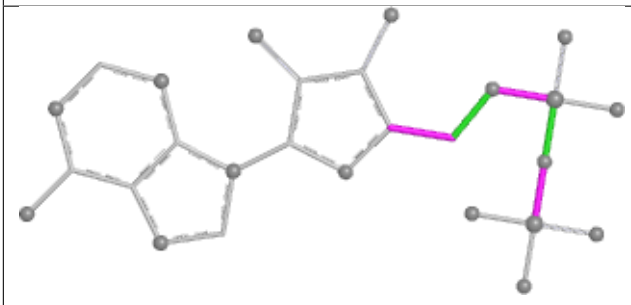
Ligand ADP A 4101



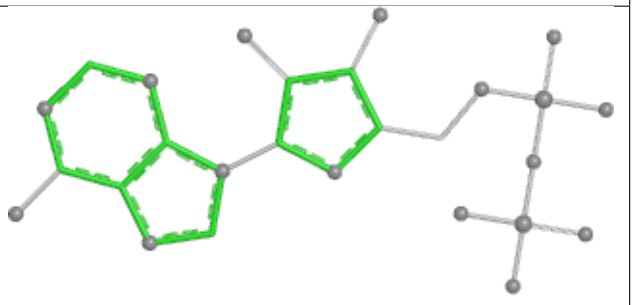
Bond lengths



Bond angles

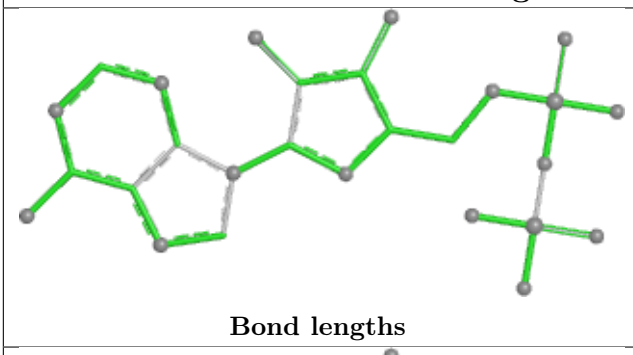


Torsions

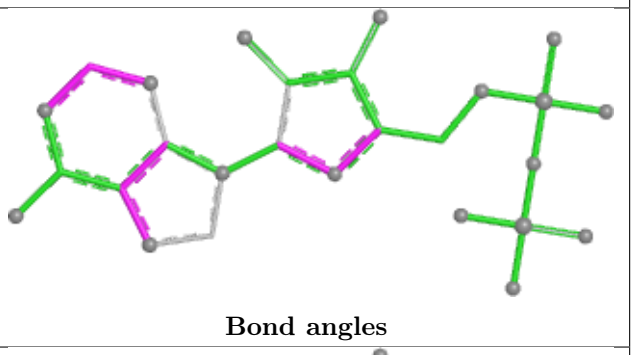


Rings

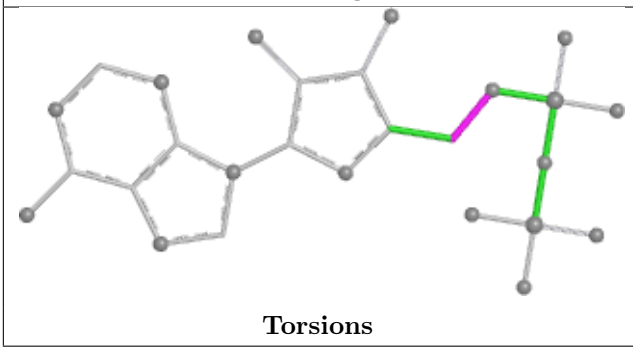
Ligand ADP A 4104



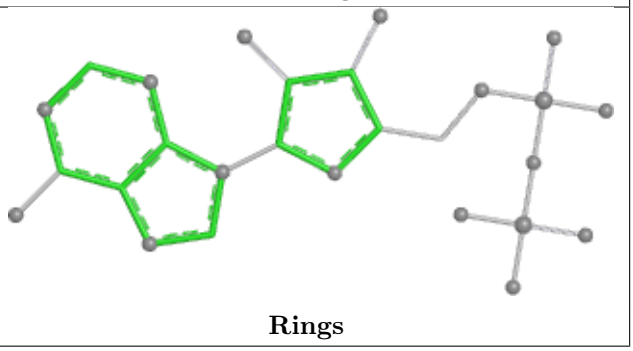
Bond lengths



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.

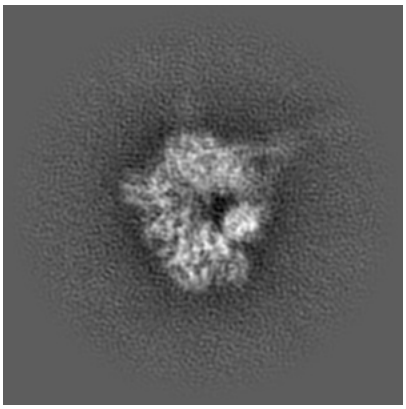
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-48240. These allow visual inspection of the internal detail of the map and identification of artifacts.

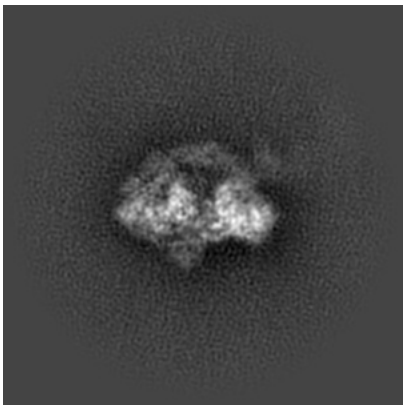
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

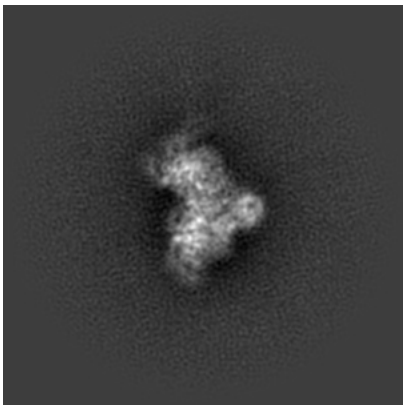
6.1.1 Primary map



X

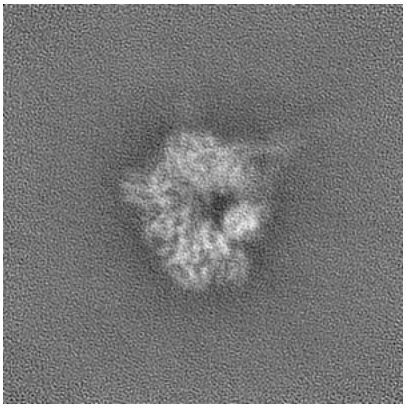


Y

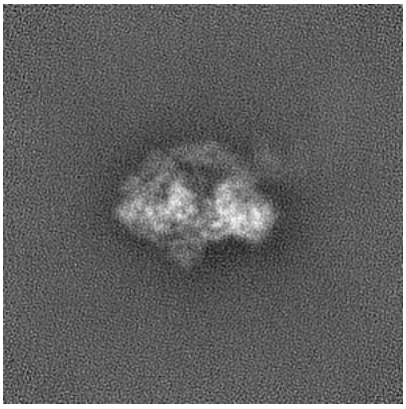


Z

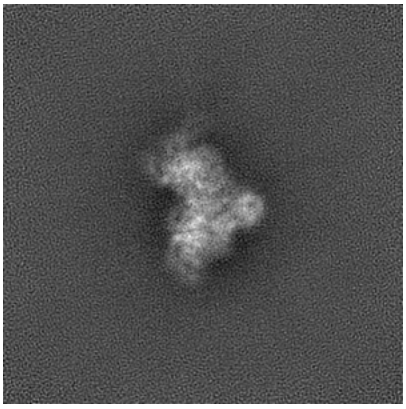
6.1.2 Raw map



X



Y

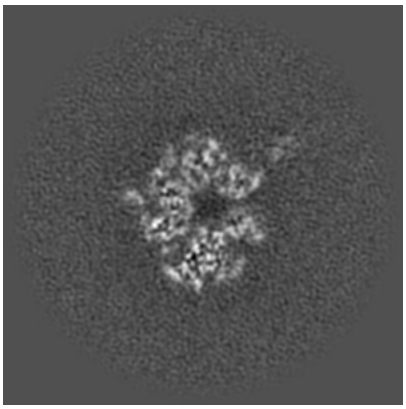


Z

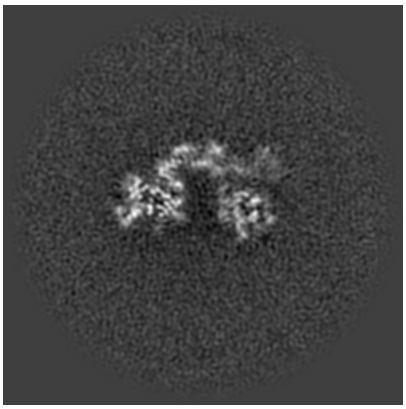
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

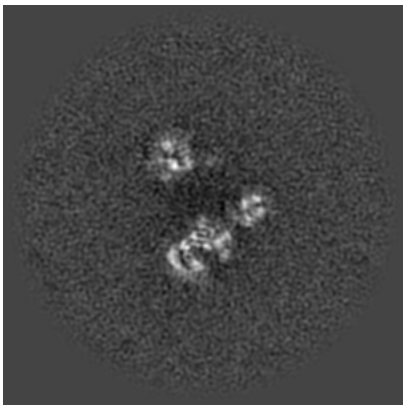
6.2.1 Primary map



X Index: 128

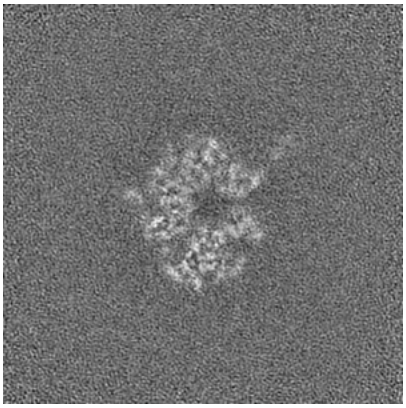


Y Index: 128

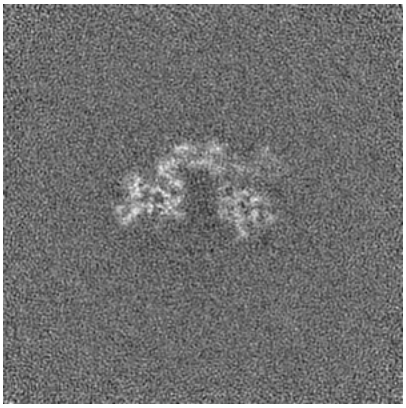


Z Index: 128

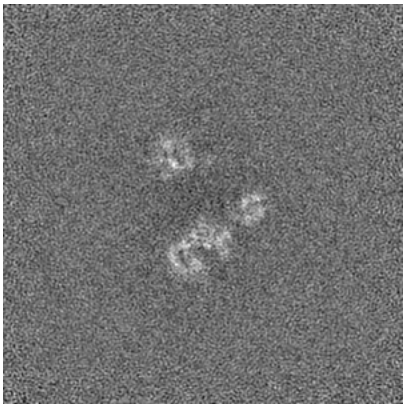
6.2.2 Raw map



X Index: 128



Y Index: 128

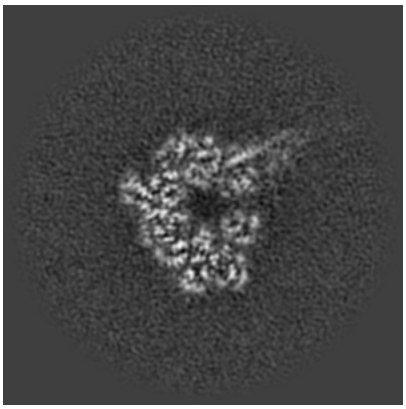


Z Index: 128

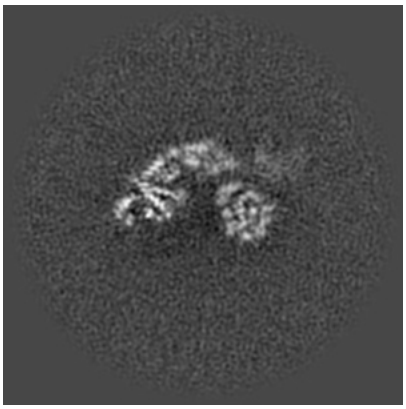
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

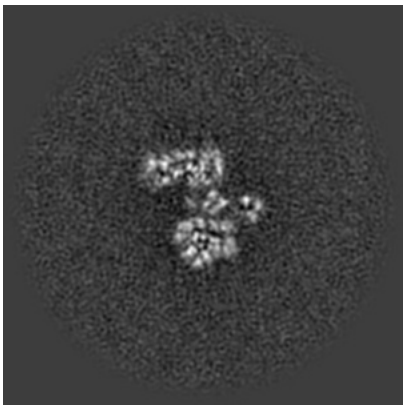
6.3.1 Primary map



X Index: 122

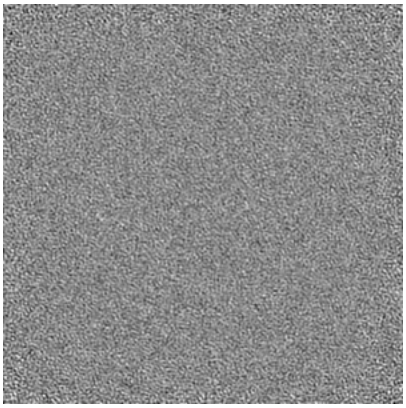


Y Index: 124

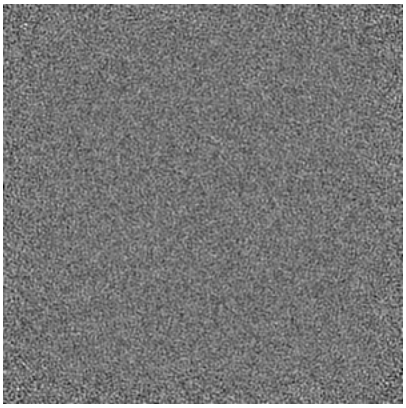


Z Index: 113

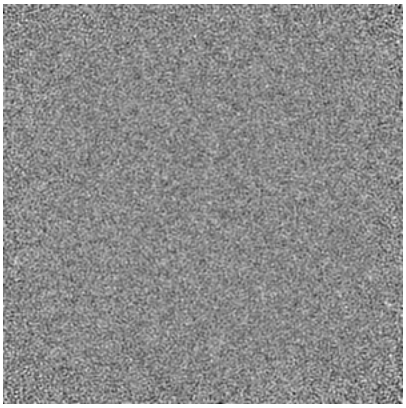
6.3.2 Raw map



X Index: 0



Y Index: 0

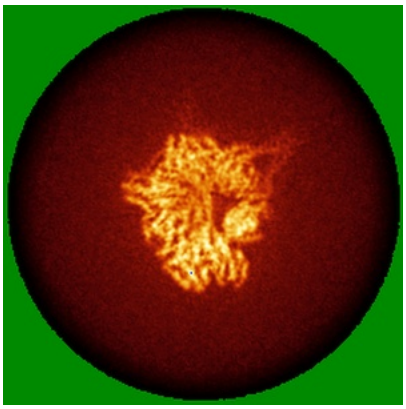


Z Index: 0

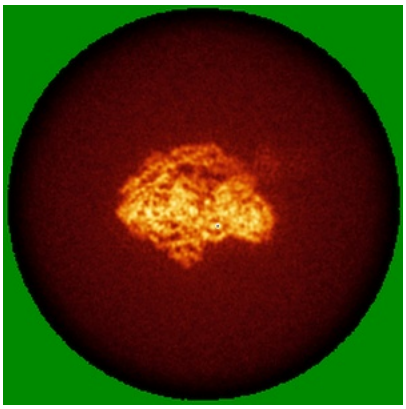
The images above show the largest variance slices of the map in three orthogonal directions.

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

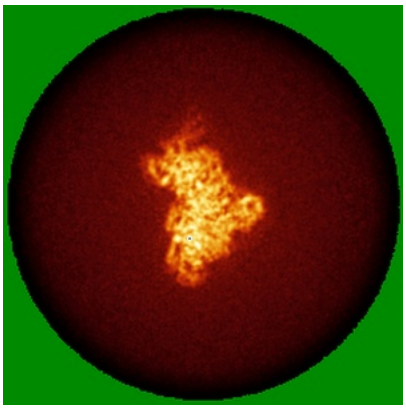
6.4.1 Primary map



X

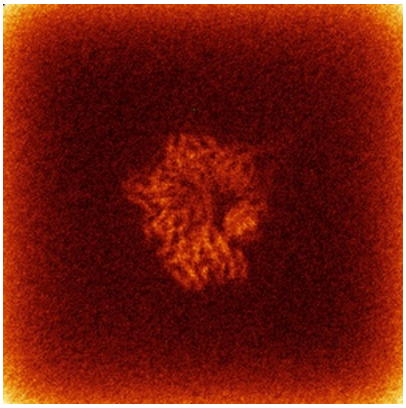


Y

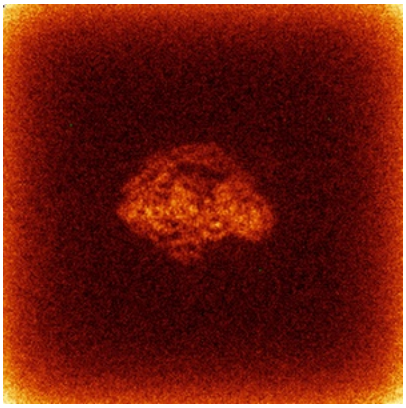


Z

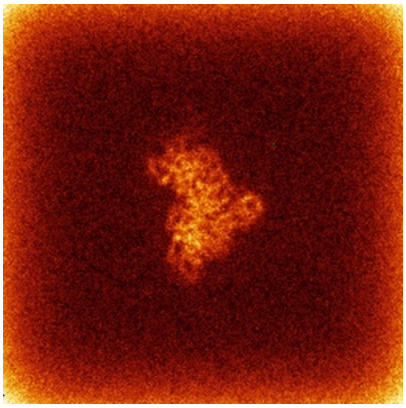
6.4.2 Raw map



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.

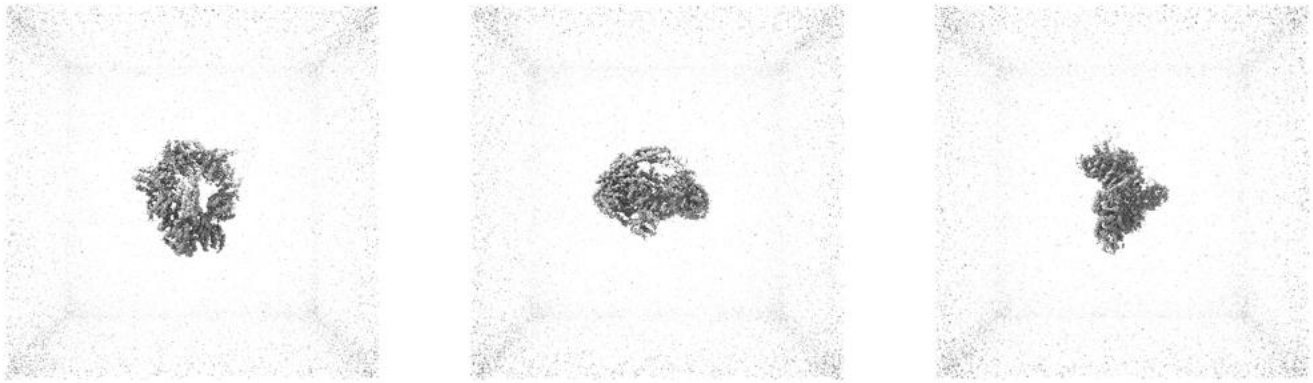
6.5 Orthogonal surface views (i)

6.5.1 Primary map

X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.2. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



X Y Z

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

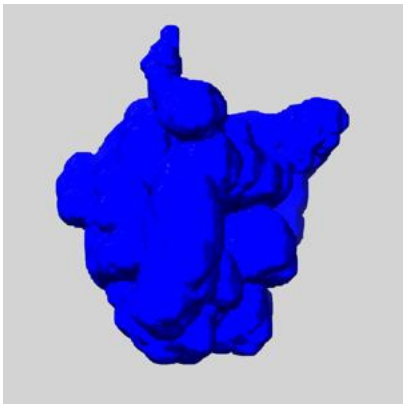
6.6 Mask visualisation (i)

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

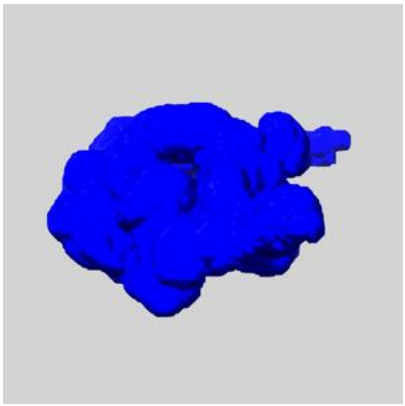
A mask typically either:

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

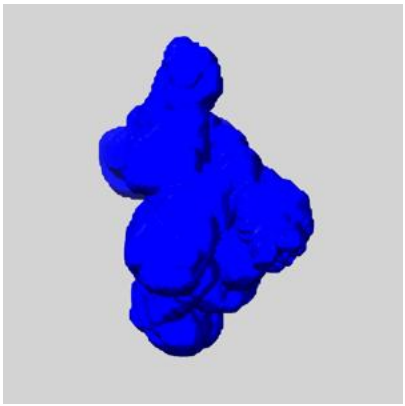
6.6.1 emd_48240_msk_1.map (i)



X



Y

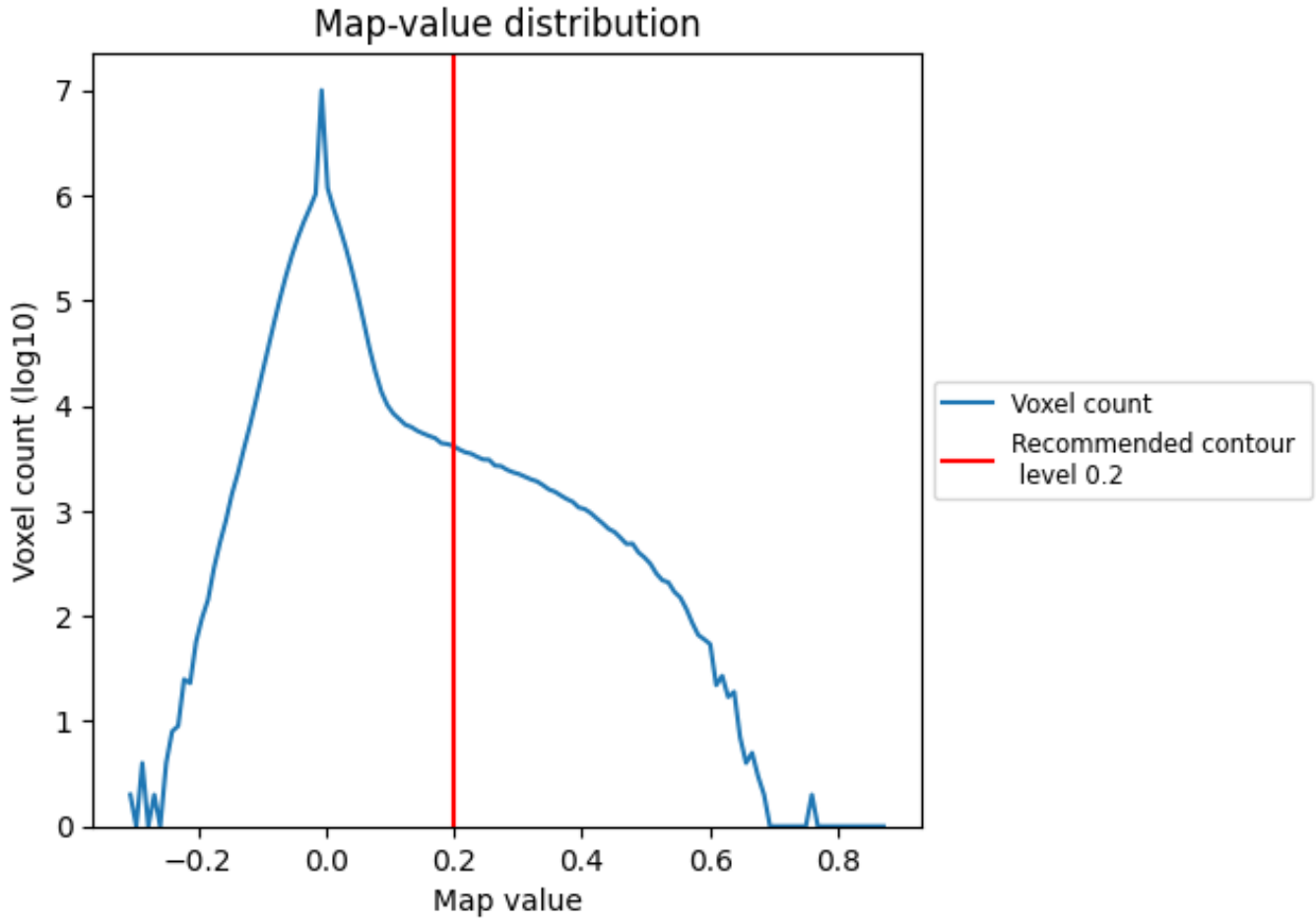


Z

7 Map analysis

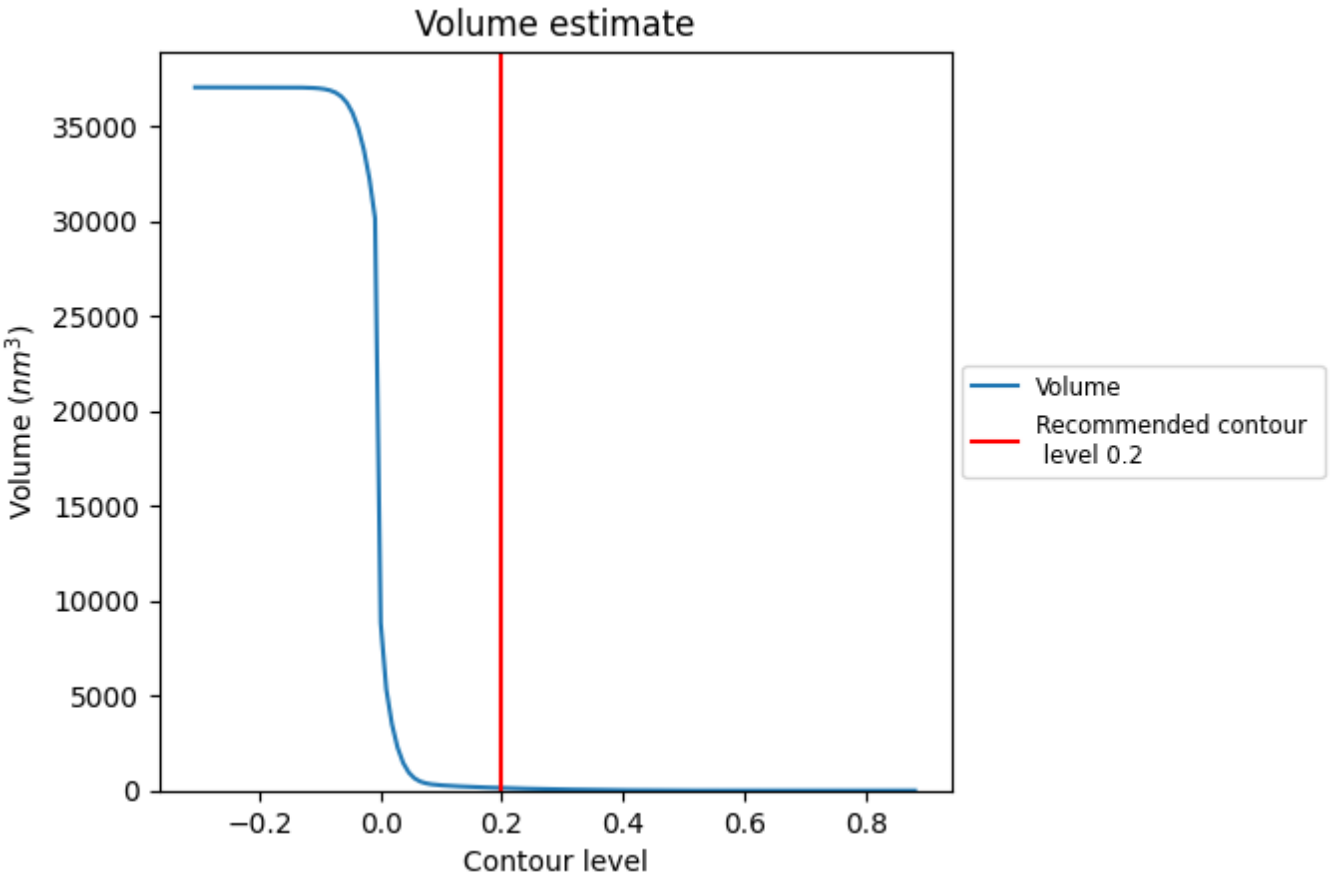
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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

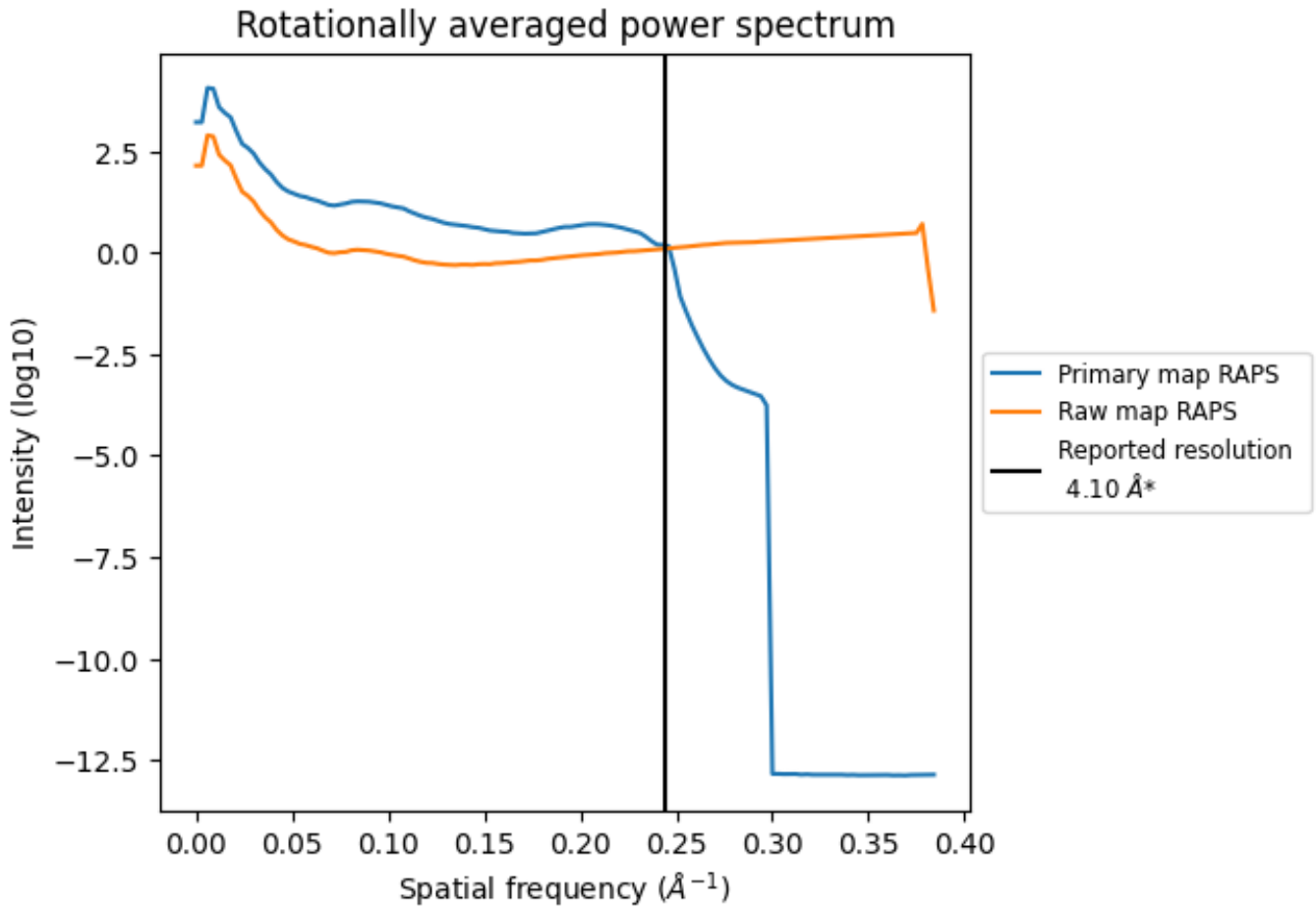
7.2 Volume estimate (i)



The volume at the recommended contour level is 135 nm^3; this corresponds to an approximate mass of 122 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)

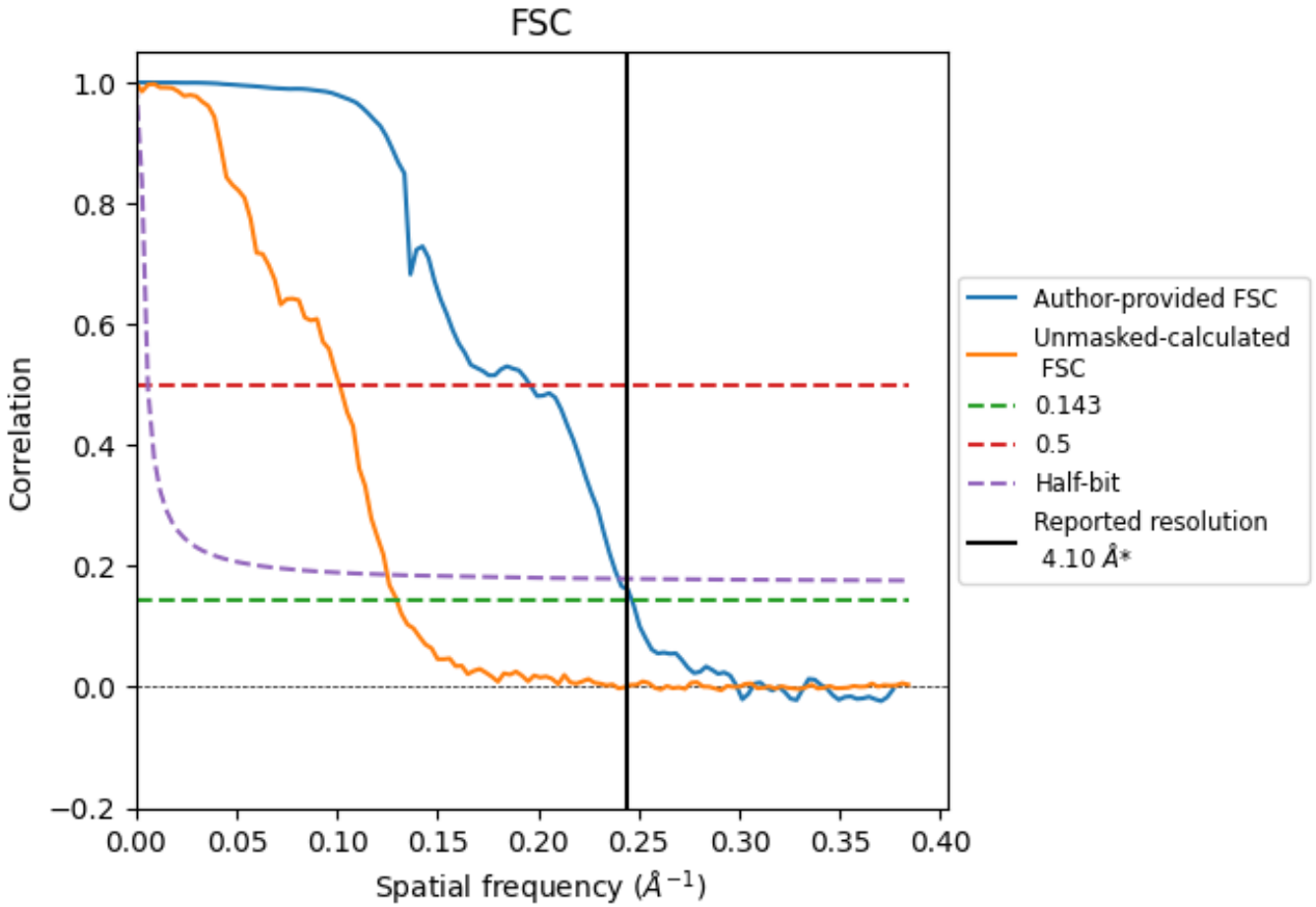


*Reported resolution corresponds to spatial frequency of 0.244 $Å^{-1}$

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 0.244 Å^{-1}

8.2 Resolution estimates (i)

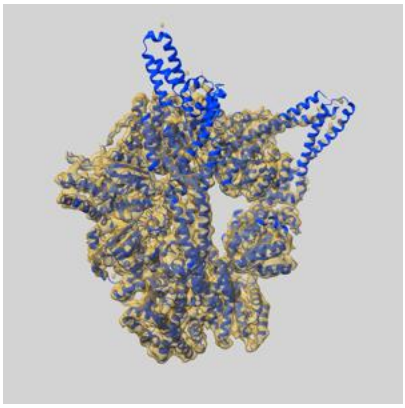
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	4.10	-	-
Author-provided FSC curve	4.06	5.11	4.17
Unmasked-calculated*	7.71	9.88	8.00

*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 7.71 differs from the reported value 4.1 by more than 10 %

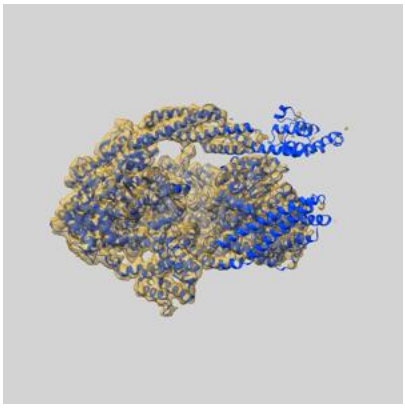
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-48240 and PDB model 9MFW. Per-residue inclusion information can be found in section 3 on page 5.

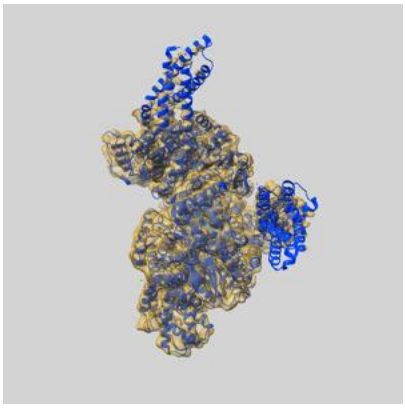
9.1 Map-model overlay



X



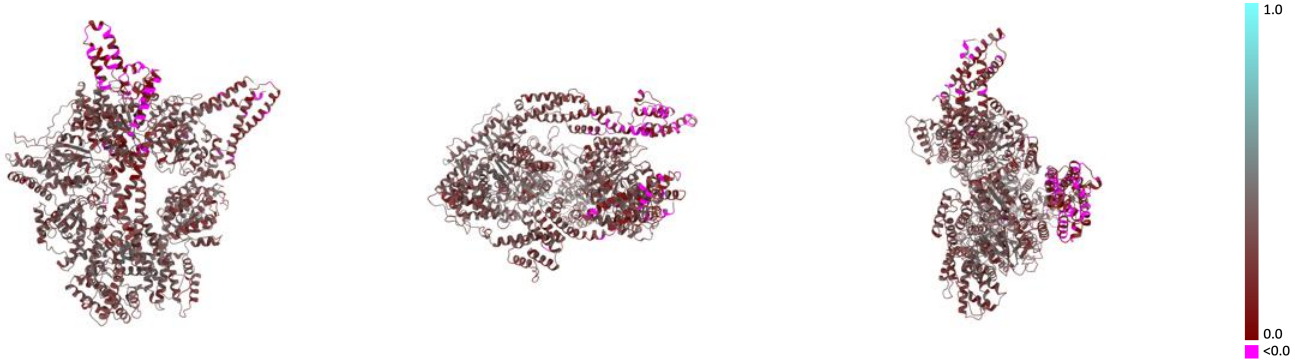
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.2 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.

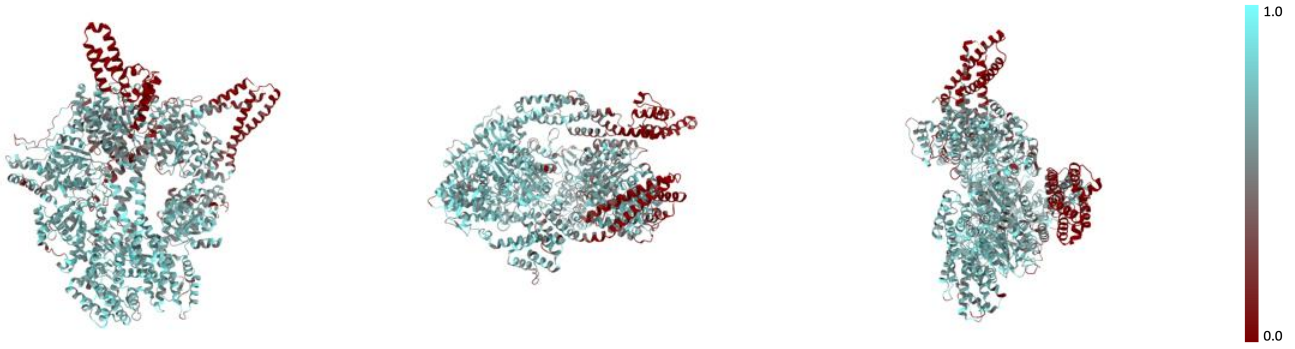
9.2 Q-score mapped to coordinate model



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.

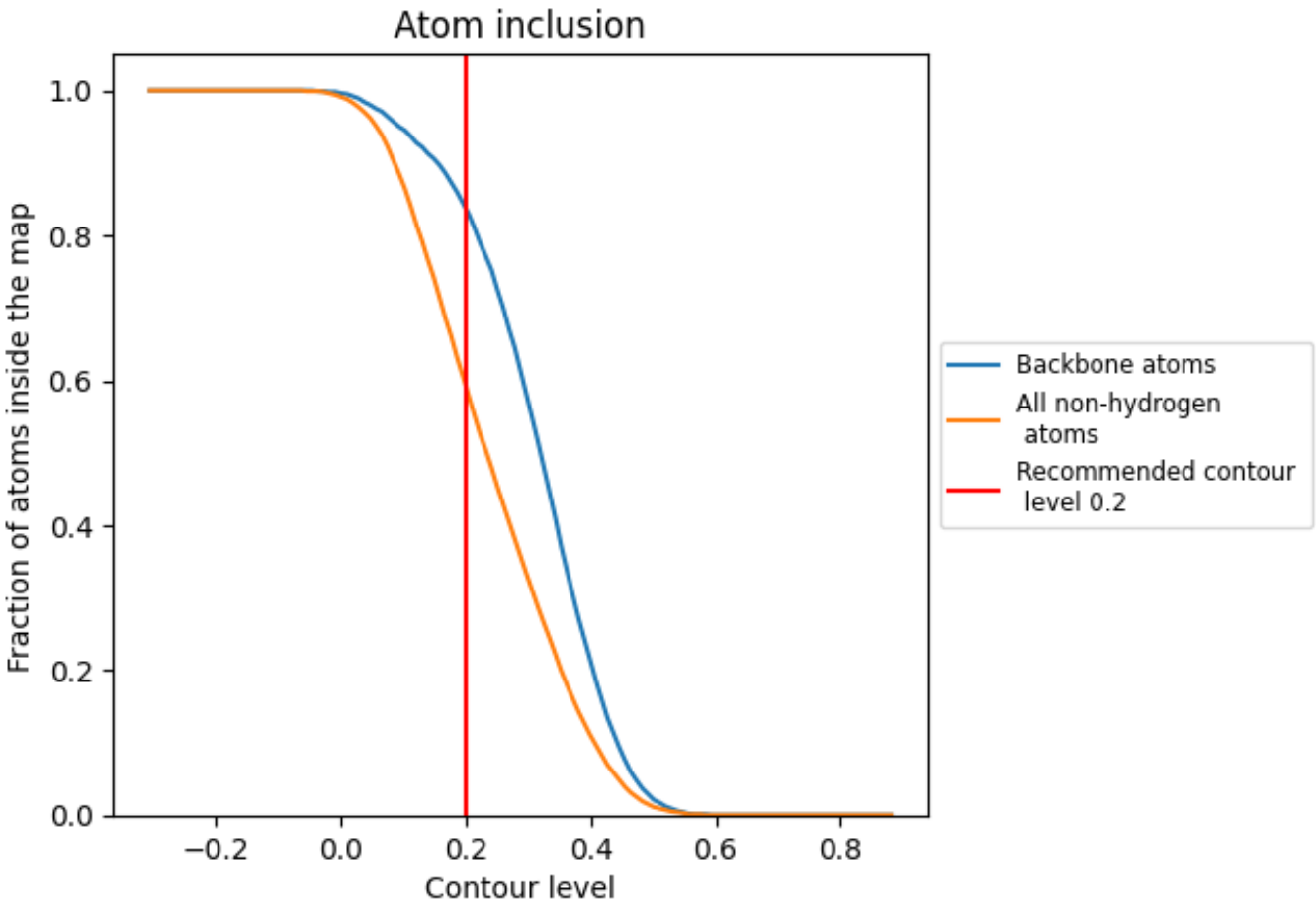
9.3 Atom inclusion mapped to coordinate model



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 (0.2).

9.4 Atom inclusion (i)



At the recommended contour level, 84% of all backbone atoms, 59% 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 (0.2) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.5920	0.2940
A	0.5920	0.2940