



Full wwPDB EM Validation Report ⓘ

Jun 25, 2025 – 02:15 pm BST

PDB ID : 7OTM / pdb_00007otm
EMDB ID : EMD-13062
Title : Cryo-EM structure of DNA-PKcs in complex with NU7441
Authors : Liang, S.; Thomas, S.E.; Blundell, T.L.
Deposited on : 2021-06-10
Resolution : 3.33 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.dev118
Mogul : 1.8.4, CSD as541be (2020)
MolProbity : 4-5-2 with Phenix2.0rc1
buster-report : 1.1.7 (2018)
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.44

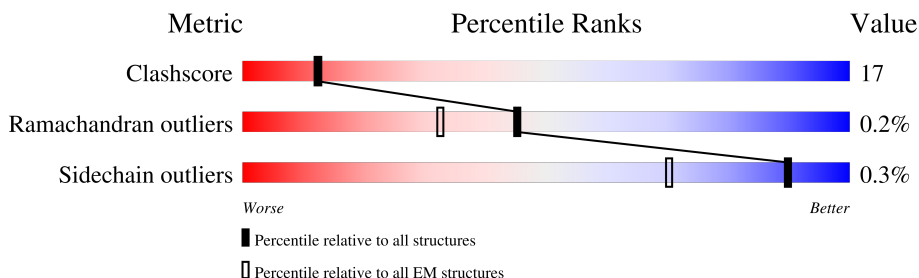
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.33 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. 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	4148	

2 Entry composition [i](#)

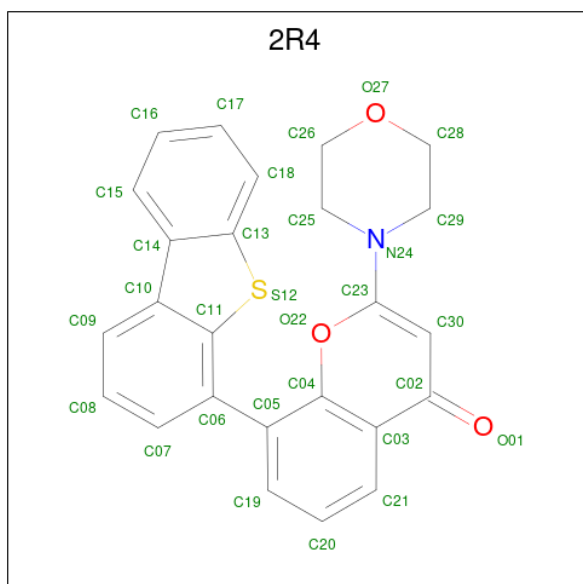
There are 2 unique types of molecules in this entry. The entry contains 29040 atoms, of which 0 are hydrogens and 0 are deuteriums.

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 DNA-dependent protein kinase catalytic subunit,DNA-PKcs.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	3656	29010	18609	4903	5307	191	0	0

- Molecule 2 is 8-(dibenzo[b,d]thiophen-4-yl)-2-(morpholin-4-yl)-4H-chromen-4-one (CCD ID: 2R4) (formula: C₂₅H₁₉NO₃S) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	S	
2	A	1	30	25	1	3	1	0





W4038	V3937	E3807	S3731	V3555	K3449
Y4039	I3938	R3908	L3732	I3558	K3450
R4040	G3939	T3809	R3733	L3562	L3451
Q4042	I3940	L3816	R3734	D3563	L3454
K4043	F3946	K3825	K3735	Q3564	L3463
I4044	P3954	L3829	K3736	G3565	P3466
C4045	V3955	S3830	R3737	G3566	R3467
K4050	P3956	D3831	I3738	V3567	L3468
L4051	M3959	A3834	I3739	D3570	L3469
I4059	R3965	K3840	H3743	A3574	R3474
T4060	L3968	F3749	D3744	L3575	Y3475
L4064	L3968	F3750	P3749	L3578	K3483
L4065	L3968	L3843	F3751	L3587	T3484
L4066	L3968	T3844	V3752	D3588	I3487
F4074	L3972	K3845	K3753	S3589	V3490
R4075	P3973	M3846	E3756	V3592	C3492
D4076	M3974	H3850	D3757	R3593	K3493
Y4077	L3979	M3858	L3758	L3596	K3498
V4080	M3984	Y3859	R3759	A3597	V3503
A4081	R3992	F3871	Q3760	K3604	A3504
R4090	L3997	R3872	D3761	N3605	L3505
D4113	L3997	K3873	Q3762	I3606	L3506
P4114	L3998	K3874	R3763	M3609	D3509
N4115	M4002	E3875	E3765	A3616	V3512
G4118	P4003	S3876	L3767	L3617	A3513
R4119	V4004	D3881	M3771	G3618	V3514
T4120	F4005	L3882	D3778	A3622	Q3515
W4121	V4006	L3883	S3779	G3624	R3517
E4122	K4007	F3887	S3779	L3625	V3518
G4123	E4008	P3887	A3780	G3626	T3522
S4010	P4009	L3900	C3781	A3627	Y3525
F4011	S4010	A3905	S3782	F3628	I3529
D4012	K4014	S3906	Q3783	R3629	Y3530
W4013	Q4018	S3907	L3786	R3630	Y3531
K4014	Q4018	L3910	Q3787	T3633	P3532
X6012	Q4018	I3911	Y3791	Q3634	I3534
X6016	K4023	C3912	S3792	Q3636	F3542
X6019	G4024	I3913	V3793	F3636	K3543
X6020	G4025	S3914	V3794	F3640	N3551
	S4026	K3923	P3795	K3646	
	W4027	H3924	M3796		
	I4028	L3925	S3797		
	Q4029	N3926	S3798		
	E4030	K3927	G3801		
	I4031	F3928	L3802		
	N4032	M3929	I3803		
	V4033	V3930	E3804		
	A4034	A3931	L3806		

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	115505	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	47.3	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	2.057	Depositor
Minimum map value	-0.958	Depositor
Average map value	0.003	Depositor
Map value standard deviation	0.046	Depositor
Recommended contour level	0.2	Depositor
Map size ($\text{\AA}$)	339.04, 339.04, 339.04	wwPDB
Map dimensions	260, 260, 260	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing ($\text{\AA}$)	1.304, 1.304, 1.304	Depositor

5 Model quality [i](#)

5.1 Standard geometry [i](#)

Bond lengths and bond angles in the following residue types are not validated in this section: 2R4

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	0.36	0/29502	0.52	8/39893 (0.0%)

There are no bond length outliers.

All (8) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	3735	PRO	CB-CA-C	9.78	123.75	111.23
1	A	2337	LEU	N-CA-C	6.71	120.82	112.03
1	A	3735	PRO	N-CA-C	-6.38	101.07	111.21
1	A	4024	GLY	N-CA-C	-5.47	106.16	112.50
1	A	1386	ILE	N-CA-C	-5.44	107.55	112.12
1	A	3753	LYS	N-CA-C	-5.32	101.80	110.20
1	A	722	LYS	N-CA-C	5.07	116.01	108.60
1	A	3804	GLU	N-CA-C	5.04	121.53	110.80

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	29010	0	29195	921	0
2	A	30	0	19	8	0
All	All	29040	0	29214	921	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 17.

All (921) 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:3911:ILE:HD11	1:A:3928:PHE:CE2	1.57	1.37
1:A:2576:MET:HE2	1:A:2787:HIS:CE1	1.63	1.31
1:A:3911:ILE:CD1	1:A:3928:PHE:CE2	2.31	1.13
1:A:3753:LYS:HD3	1:A:3803:ILE:HD11	1.32	1.10
1:A:3804:GLU:HG3	1:A:3804:GLU:O	1.53	1.03
1:A:3911:ILE:CD1	1:A:3928:PHE:HE2	1.71	0.99
1:A:3911:ILE:HD11	1:A:3928:PHE:HE2	0.84	0.98
1:A:3809:THR:HB	1:A:3929:MET:HE3	1.42	0.97
1:A:3804:GLU:O	1:A:3804:GLU:CG	2.10	0.97
1:A:3729:MET:HE3	1:A:3731:SER:HB2	1.47	0.95
1:A:3929:MET:HB2	1:A:3938:ILE:HB	1.50	0.94
1:A:1178:ARG:NH1	1:A:1183:CYS:SG	2.42	0.92
1:A:2576:MET:HE2	1:A:2787:HIS:HE1	1.27	0.92
1:A:3753:LYS:CD	1:A:3803:ILE:HD11	2.00	0.91
1:A:147:PHE:O	1:A:151:GLU:HB2	1.72	0.89
1:A:3466:PRO:HB2	1:A:4004:VAL:HG11	1.58	0.86
1:A:3753:LYS:HG2	1:A:3803:ILE:CD1	2.06	0.85
1:A:999:LYS:HG3	1:A:1000:LYS:HG2	1.58	0.84
1:A:3806:LEU:HD12	1:A:3938:ILE:HD13	1.58	0.84
1:A:3809:THR:HB	1:A:3929:MET:CE	2.08	0.84
1:A:3793:VAL:HG22	1:A:3803:ILE:HG22	1.61	0.83
1:A:3506:LEU:HD11	1:A:3518:VAL:HG21	1.62	0.81
1:A:3578:LEU:O	1:A:3736:LYS:NZ	2.13	0.81
1:A:3670:MET:O	1:A:3674:SER:HB3	1.82	0.79
1:A:536:SER:O	1:A:539:GLN:NE2	2.15	0.79
1:A:3187:CYS:SG	1:A:3239:LYS:NZ	2.55	0.79
1:A:3616:ALA:O	1:A:3629:ARG:NH2	2.16	0.79
1:A:1407:LYS:HB2	1:A:1463:LEU:HD21	1.65	0.78
1:A:3844:THR:HG22	1:A:3850:HIS:HB3	1.65	0.78
1:A:1175:HIS:HB3	1:A:1178:ARG:HE	1.48	0.78
1:A:3503:VAL:HA	1:A:3506:LEU:HD13	1.66	0.77
1:A:272:LEU:HD11	1:A:312:ALA:HA	1.68	0.76
1:A:131:LEU:HD13	1:A:173:LYS:HB2	1.68	0.76
1:A:1684:LEU:HB2	1:A:1689:LYS:HE3	1.68	0.75
1:A:4081:ALA:O	1:A:4090:ARG:NH1	2.19	0.75
1:A:2482:ASP:OD1	1:A:2485:ARG:NH2	2.19	0.75
1:A:1298:LEU:O	1:A:1370:ARG:NH2	2.18	0.75

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2576:MET:CE	1:A:2787:HIS:CE1	2.59	0.75
1:A:1097:GLU:OE2	1:A:1151:ARG:NH2	2.18	0.74
1:A:3753:LYS:HG2	1:A:3803:ILE:HD13	1.68	0.74
1:A:356:ASN:ND2	1:A:404:ASP:O	2.22	0.73
1:A:3998:LEU:HG	1:A:4002:MET:HE3	1.69	0.73
1:A:774:GLU:HG2	1:A:858:MET:HE1	1.70	0.73
1:A:917:LEU:O	1:A:921:ALA:HB2	1.89	0.73
1:A:3288:SER:O	1:A:3289:ARG:NH1	2.20	0.72
1:A:2171:LEU:O	1:A:2177:ASN:ND2	2.22	0.72
1:A:2493:ASN:HA	1:A:2496:GLN:HE22	1.54	0.72
1:A:1727:ARG:NH2	1:A:1771:GLN:O	2.23	0.71
1:A:4090:ARG:NH2	1:A:4113:ASP:OD2	2.22	0.71
1:A:147:PHE:O	1:A:151:GLU:CB	2.39	0.71
1:A:3469:LEU:HD12	1:A:3505:LEU:HD21	1.73	0.71
1:A:1459:HIS:HB2	1:A:1464:LEU:HD22	1.71	0.71
1:A:280:SER:O	1:A:283:SER:OG	2.07	0.71
1:A:2260:PHE:HA	1:A:2270:ASN:HA	1.71	0.71
1:A:463:LYS:HD3	1:A:545:LEU:HD22	1.73	0.71
1:A:2575:PRO:HB2	1:A:2784:GLN:HB3	1.73	0.71
1:A:3763:ARG:HH12	1:A:4008:GLU:HG2	1.56	0.71
1:A:3587:ASP:OD2	1:A:3733:ARG:NH2	2.22	0.70
1:A:2183:HIS:CE1	1:A:2186:VAL:HG23	2.25	0.70
1:A:631:ARG:HH22	1:A:668:LYS:HD2	1.56	0.70
1:A:2518:GLN:HE22	1:A:2522:ARG:HD3	1.57	0.70
1:A:3700:GLU:HA	1:A:3718:ARG:HA	1.73	0.70
1:A:1828:LEU:O	1:A:1883:ARG:NH2	2.25	0.70
1:A:446:PHE:HD1	1:A:457:CYS:HG	1.40	0.70
1:A:2133:LEU:HB2	1:A:2146:LEU:HD23	1.73	0.70
1:A:2347:LYS:O	1:A:2351:GLN:NE2	2.24	0.70
1:A:3646:LYS:H	1:A:3650:LYS:HB3	1.57	0.70
1:A:3859:TYR:HE1	1:A:4119:ARG:HB2	1.55	0.70
1:A:3729:MET:HB3	2:A:6101:2R4:C18	2.22	0.69
1:A:2330:VAL:HG11	1:A:2337:LEU:HD11	1.74	0.69
1:A:2432:GLN:OE1	1:A:2464:HIS:NE2	2.25	0.69
1:A:2786:LYS:O	1:A:2789:SER:N	2.24	0.69
1:A:1758:LEU:HD23	1:A:1761:LEU:HD12	1.75	0.69
1:A:2330:VAL:CG1	1:A:2337:LEU:HD11	2.23	0.68
1:A:3846:MET:SD	1:A:3858:MET:HG2	2.34	0.68
1:A:2223:VAL:HG11	1:A:2238:ILE:HD11	1.75	0.67
1:A:3809:THR:CB	1:A:3929:MET:CE	2.72	0.67
1:A:3361:GLU:O	1:A:3367:SER:OG	2.09	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3911:ILE:HD12	1:A:3928:PHE:CE2	2.29	0.67
1:A:356:ASN:HD22	1:A:404:ASP:HB3	1.60	0.67
1:A:2347:LYS:HG2	1:A:2351:GLN:HE22	1.58	0.67
1:A:2839:ASP:OD1	1:A:2842:ARG:NH2	2.28	0.67
1:A:4050:LYS:HE3	1:A:4059:ILE:HG21	1.75	0.67
1:A:461:ILE:HG23	1:A:534:LEU:HD21	1.77	0.67
1:A:2123:PRO:HD2	1:A:2126:MET:HE2	1.76	0.67
1:A:2216:LEU:HD22	1:A:2249:LEU:HD23	1.75	0.67
1:A:3626:GLY:O	1:A:3630:ARG:HB2	1.95	0.67
1:A:1240:THR:HG22	1:A:1242:LEU:H	1.61	0.66
1:A:3134:ALA:HB2	1:A:3182:ILE:HG22	1.77	0.66
1:A:917:LEU:O	1:A:921:ALA:CB	2.42	0.66
1:A:3341:LEU:HD11	1:A:3360:LEU:HD21	1.78	0.66
1:A:3791:TYR:HB2	1:A:3804:GLU:HG2	1.78	0.66
1:A:3012:GLU:HG3	1:A:3013:TYR:N	2.11	0.66
1:A:1657:SER:HB3	1:A:1659:VAL:HG13	1.78	0.65
1:A:2796:ALA:O	1:A:2800:ARG:NH1	2.30	0.65
1:A:3684:SER:HB2	1:A:3685:PRO:HD3	1.78	0.65
1:A:1257:LEU:HD12	1:A:1337:VAL:HG21	1.77	0.65
1:A:1817:GLN:OE1	1:A:1875:LYS:NZ	2.29	0.65
1:A:967:PRO:HD3	1:A:1010:LEU:HD12	1.78	0.65
1:A:154:SER:HA	1:A:157:TYR:HD2	1.62	0.64
1:A:355:ASN:HB3	1:A:358:GLU:HG2	1.80	0.64
1:A:2424:MET:HE1	1:A:2439:ILE:HD11	1.79	0.64
1:A:3515:GLN:NE2	1:A:3551:ASN:OD1	2.30	0.64
1:A:3757:ASP:OD2	1:A:3759:ARG:NH1	2.29	0.64
1:A:1977:ILE:HG13	1:A:1979:GLU:H	1.61	0.64
1:A:1268:ASN:ND2	1:A:1343:GLU:OE2	2.30	0.64
1:A:1075:ARG:NH1	1:A:1117:ASP:OD2	2.22	0.64
1:A:1185:HIS:NE2	1:A:1265:GLU:OE2	2.28	0.64
1:A:1920:TYR:O	1:A:1924:THR:CB	2.46	0.64
1:A:2540:LEU:HD11	1:A:2832:ILE:HG23	1.79	0.64
1:A:2576:MET:O	1:A:2576:MET:HG3	1.98	0.64
1:A:709:LYS:O	1:A:713:GLU:HG2	1.98	0.64
1:A:2304:VAL:HG22	1:A:2323:LEU:HD21	1.79	0.64
1:A:2522:ARG:NH1	1:A:2564:GLU:OE1	2.31	0.64
1:A:566:ASP:OD1	1:A:645:TRP:NE1	2.23	0.63
1:A:3685:PRO:HG2	1:A:3687:MET:HB2	1.81	0.63
1:A:1751:GLU:O	1:A:1788:ARG:NH1	2.31	0.63
1:A:2349:LEU:HA	1:A:2352:HIS:CE1	2.34	0.63
1:A:2185:MET:O	1:A:2189:ILE:HG13	1.98	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1479:VAL:HG21	1:A:1524:LEU:HD11	1.80	0.62
1:A:3316:LEU:HD12	1:A:3323:PHE:HD1	1.65	0.62
1:A:1397:ASP:OD1	1:A:1460:ARG:NH2	2.32	0.62
1:A:3281:CYS:HB2	1:A:3329:LEU:HD23	1.82	0.62
1:A:1568:ASN:ND2	1:A:1603:GLN:OE1	2.31	0.62
1:A:1949:ILE:HD12	1:A:2100:LEU:HD22	1.80	0.62
1:A:2168:LEU:HD23	1:A:2193:ILE:HD11	1.82	0.62
1:A:4014:LYS:O	1:A:4018:GLN:NE2	2.32	0.62
1:A:2398:LEU:HD12	1:A:2431:ARG:HG3	1.80	0.62
1:A:3791:TYR:CB	1:A:3804:GLU:HG2	2.30	0.62
1:A:1365:ASN:HA	1:A:1368:LEU:HB2	1.80	0.62
1:A:2279:ILE:O	1:A:2283:ASN:ND2	2.31	0.62
1:A:2452:ARG:O	1:A:2452:ARG:NH1	2.33	0.62
1:A:3058:ASP:O	1:A:3059:GLN:NE2	2.33	0.62
1:A:3145:ILE:HD11	1:A:3196:LYS:HD2	1.80	0.62
1:A:3753:LYS:CG	1:A:3803:ILE:CD1	2.76	0.62
1:A:2239:LYS:HB3	1:A:2279:ILE:HD12	1.81	0.62
1:A:2519:LEU:O	1:A:2523:ASN:ND2	2.33	0.62
1:A:3506:LEU:HD21	1:A:3518:VAL:HG11	1.82	0.62
1:A:3685:PRO:HB2	1:A:3687:MET:H	1.65	0.62
1:A:3831:ASP:HB3	1:A:3834:ALA:HB2	1.82	0.61
1:A:1432:CYS:HB2	1:A:1486:LEU:HD11	1.81	0.61
1:A:444:ASP:OD2	1:A:489:ARG:NE	2.29	0.61
1:A:1975:LEU:HD12	1:A:1976:LEU:HG	1.81	0.61
1:A:1202:ARG:CZ	1:A:1207:TRP:HA	2.31	0.61
1:A:3366:SER:OG	1:A:3368:GLU:OE2	2.18	0.61
1:A:305:ASN:HB3	1:A:308:LEU:HB3	1.82	0.61
1:A:3416:LEU:HD23	1:A:3449:LYS:HG3	1.83	0.61
1:A:1525:CYS:SG	1:A:1574:ASN:ND2	2.73	0.61
1:A:3622:ALA:HB1	1:A:3623:PRO:HD2	1.83	0.61
1:A:3670:MET:O	1:A:3674:SER:CB	2.48	0.61
1:A:943:GLY:HA3	1:A:2577:PHE:CE1	2.34	0.61
1:A:1251:GLN:HB3	1:A:1254:LEU:HD12	1.82	0.60
1:A:1810:PRO:HA	1:A:1816:ARG:HH12	1.65	0.60
1:A:2330:VAL:HG11	1:A:2337:LEU:CD1	2.31	0.60
1:A:1118:GLU:HG3	1:A:1120:SER:H	1.66	0.60
1:A:1134:LEU:O	1:A:1138:ILE:HD12	2.01	0.60
1:A:1175:HIS:HB3	1:A:1178:ARG:NE	2.16	0.60
1:A:6012:UNK:O	1:A:6016:UNK:N	2.34	0.60
1:A:1079:SER:HA	1:A:1107:TYR:HE1	1.67	0.60
1:A:1770:GLN:HB3	1:A:1814:PHE:HZ	1.67	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1755:SER:OG	1:A:1758:LEU:HB2	2.01	0.60
1:A:3493:TRP:CG	1:A:3711:PRO:HB3	2.37	0.60
1:A:1603:GLN:HG3	1:A:1606:ARG:NH2	2.17	0.60
1:A:2328:ARG:HH21	1:A:2371:PHE:HD1	1.50	0.60
1:A:2365:ASN:ND2	1:A:2396:LEU:O	2.35	0.60
1:A:3530:VAL:O	1:A:3534:ILE:HG13	2.02	0.59
1:A:3797:THR:HG22	1:A:3798:SER:H	1.66	0.59
1:A:1011:GLU:OE1	1:A:1032:CYS:HB3	2.02	0.59
1:A:1066:LEU:HB2	1:A:1078:ALA:HB2	1.83	0.59
1:A:165:LYS:HB2	1:A:167:PRO:HD2	1.83	0.59
1:A:3737:ARG:HG3	1:A:3750:PHE:O	2.02	0.59
1:A:1867:ILE:HA	1:A:1870:LYS:HE3	1.85	0.59
1:A:3378:TYR:OH	1:A:3426:LYS:NZ	2.36	0.59
1:A:355:ASN:OD1	1:A:356:ASN:N	2.34	0.59
1:A:1224:PHE:HD2	1:A:1267:TYR:HE1	1.51	0.59
1:A:614:PRO:HB3	1:A:620:PHE:CD1	2.37	0.59
1:A:1702:LEU:O	1:A:1707:LEU:HB2	2.03	0.59
1:A:1820:VAL:O	1:A:1825:LEU:HD23	2.03	0.59
1:A:1868:THR:HA	1:A:1871:MET:HE2	1.84	0.59
1:A:2298:GLU:OE1	1:A:2301:GLN:NE2	2.33	0.59
1:A:2389:PHE:CD2	1:A:2393:LEU:HB2	2.38	0.59
1:A:3686:TRP:HZ3	1:A:3690:PHE:HD1	1.50	0.59
1:A:1786:ALA:HB2	1:A:1827:LEU:HD23	1.85	0.58
1:A:2474:TYR:O	1:A:2478:MET:HG3	2.03	0.58
1:A:3450:MET:HE2	1:A:3468:LEU:HD11	1.85	0.58
1:A:3751:LEU:HB3	1:A:3803:ILE:HG12	1.85	0.58
1:A:3825:LYS:O	1:A:3829:LEU:HG	2.04	0.58
1:A:301:CYS:O	1:A:309:LYS:NZ	2.34	0.58
1:A:1372:LEU:HD11	1:A:1402:LEU:HD11	1.84	0.58
1:A:3758:LEU:HD12	1:A:3801:GLY:HA3	1.84	0.58
1:A:1080:LEU:O	1:A:1084:ASN:ND2	2.35	0.58
1:A:2786:LYS:NZ	1:A:2788:SER:OG	2.36	0.58
1:A:3805:TRP:HZ3	2:A:6101:2R4:C09	2.16	0.58
1:A:652:GLU:O	1:A:656:GLN:HG2	2.04	0.58
1:A:1811:ARG:HH11	1:A:1816:ARG:HH11	1.51	0.58
1:A:554:ASN:HB2	1:A:1549:SER:HB3	1.85	0.58
1:A:2843:PHE:O	1:A:2847:THR:OG1	2.13	0.58
1:A:159:GLU:O	1:A:163:LYS:HG2	2.03	0.58
1:A:2183:HIS:CE1	1:A:2185:MET:HB2	2.38	0.58
1:A:2274:ILE:HG23	1:A:2322:VAL:HG21	1.85	0.57
1:A:2425:ARG:HE	1:A:2457:PRO:HB3	1.69	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2462:VAL:HG13	1:A:2473:MET:HE1	1.85	0.57
1:A:3313:SER:HA	1:A:3316:LEU:HB2	1.84	0.57
1:A:2817:LEU:HD13	1:A:2820:MET:HE3	1.86	0.57
1:A:3295:GLU:OE2	1:A:3295:GLU:N	2.31	0.57
1:A:4012:ASP:OD1	1:A:4013:TRP:N	2.37	0.57
1:A:1102:GLU:OE2	1:A:1152:ARG:NE	2.38	0.57
1:A:2318:ALA:O	1:A:2322:VAL:HG23	2.04	0.57
1:A:3806:LEU:CD1	1:A:3938:ILE:HD13	2.33	0.57
1:A:322:GLN:O	1:A:326:MET:HG2	2.04	0.57
1:A:2412:TYR:HA	1:A:2415:LEU:HB2	1.87	0.57
1:A:3522:THR:OG1	1:A:3558:ILE:HD11	2.05	0.57
1:A:2478:MET:HE3	1:A:2524:PHE:CD1	2.39	0.57
1:A:2088:LEU:HA	1:A:2094:MET:HG2	1.86	0.57
1:A:2124:SER:HA	1:A:2127:LYS:HB2	1.85	0.57
1:A:2828:GLU:O	1:A:2832:ILE:HG12	2.05	0.57
1:A:4027:TRP:HE3	1:A:4030:GLU:HB3	1.69	0.57
1:A:1733:THR:O	1:A:1737:ASN:ND2	2.38	0.57
1:A:2973:ASP:O	1:A:2977:ASN:ND2	2.38	0.56
1:A:3771:MET:HE1	1:A:3914:SER:HB3	1.86	0.56
1:A:109:ASN:OD1	1:A:110:THR:N	2.37	0.56
1:A:1365:ASN:O	1:A:1369:MET:HG2	2.04	0.56
1:A:79:ARG:HA	1:A:82:ARG:HB2	1.87	0.56
1:A:1424:THR:HG23	1:A:1427:SER:H	1.70	0.56
1:A:1762:MET:HA	1:A:1762:MET:HE2	1.87	0.56
1:A:2313:LYS:HA	1:A:2316:TYR:CE2	2.39	0.56
1:A:2477:LEU:HD23	1:A:2480:ILE:HD12	1.87	0.56
1:A:3575:LEU:HD12	1:A:3796:MET:HE1	1.86	0.56
1:A:3722:PHE:CD1	1:A:3740:ILE:HG12	2.41	0.56
1:A:3763:ARG:HG3	1:A:4011:PHE:HZ	1.70	0.56
1:A:3923:ARG:HD3	1:A:3928:PHE:HE1	1.69	0.56
1:A:238:MET:HE1	1:A:284:THR:H	1.70	0.56
1:A:3629:ARG:O	1:A:3633:ILE:HG12	2.06	0.56
1:A:776:TRP:HE3	1:A:785:MET:HE1	1.71	0.56
1:A:2470:ARG:NH1	1:A:2513:GLU:OE2	2.39	0.56
1:A:3622:ALA:HB3	1:A:3625:LEU:HD11	1.87	0.56
1:A:1652:ILE:O	1:A:1655:ILE:HG22	2.06	0.56
1:A:535:LEU:HD11	1:A:565:TYR:HD1	1.71	0.56
1:A:898:PHE:HB2	1:A:901:MET:O	2.06	0.56
1:A:2327:LEU:HA	1:A:2330:VAL:HG22	1.86	0.56
1:A:2576:MET:CE	1:A:2787:HIS:HE1	2.11	0.56
1:A:2919:ASP:OD1	1:A:2920:VAL:N	2.39	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3484:THR:HG22	1:A:3513:ALA:HB2	1.88	0.55
1:A:56:SER:HA	1:A:59:PHE:CD2	2.40	0.55
1:A:1173:LEU:HA	1:A:1176:CYS:SG	2.46	0.55
1:A:1370:ARG:HD2	1:A:1371:VAL:N	2.21	0.55
1:A:1864:ASP:O	1:A:1868:THR:OG1	2.18	0.55
1:A:1871:MET:HA	1:A:1874:TYR:HD2	1.70	0.55
1:A:2257:PHE:CE1	1:A:2261:SER:HB2	2.41	0.55
1:A:3027:LEU:HA	1:A:3030:ILE:HG22	1.88	0.55
1:A:3285:HIS:HD2	1:A:3298:LEU:HD11	1.71	0.55
1:A:3753:LYS:CG	1:A:3803:ILE:HD11	2.36	0.55
1:A:3574:ALA:HB1	1:A:3687:MET:HG3	1.86	0.55
1:A:290:TYR:CE2	1:A:291:VAL:HG13	2.41	0.55
1:A:291:VAL:HG12	1:A:340:TYR:CE2	2.41	0.55
1:A:358:GLU:HA	1:A:361:ILE:HD12	1.89	0.55
1:A:1224:PHE:HD2	1:A:1267:TYR:CE1	2.25	0.55
1:A:2129:LEU:HB3	1:A:2146:LEU:HD21	1.88	0.55
1:A:3646:LYS:N	1:A:3650:LYS:HB3	2.22	0.55
1:A:1342:MET:O	1:A:1345:THR:OG1	2.21	0.55
1:A:3353:GLU:O	1:A:3356:ALA:N	2.27	0.55
1:A:2194:LEU:HD11	1:A:2241:LEU:HA	1.89	0.55
1:A:781:ASP:HB3	1:A:784:VAL:HG23	1.88	0.55
1:A:3843:LEU:HD22	1:A:3858:MET:HG3	1.89	0.55
1:A:2785:ILE:O	1:A:2789:SER:HB2	2.07	0.55
1:A:339:GLN:HA	1:A:342:MET:HG3	1.89	0.54
1:A:2129:LEU:HD12	1:A:2146:LEU:HD13	1.87	0.54
1:A:2486:ASP:HB3	1:A:2489:SER:HB2	1.88	0.54
1:A:59:PHE:HA	1:A:62:ASP:HB2	1.88	0.54
1:A:3681:LYS:NZ	1:A:3723:ASP:O	2.37	0.54
1:A:3722:PHE:HD1	1:A:3740:ILE:HG12	1.71	0.54
1:A:254:LYS:HZ2	1:A:271:GLY:HA3	1.72	0.54
1:A:1351:THR:HG22	1:A:1353:PRO:HD2	1.90	0.54
1:A:1825:LEU:HD12	1:A:1879:VAL:HG21	1.89	0.54
1:A:2471:GLU:HA	1:A:2517:LEU:HD11	1.89	0.54
1:A:2824:LYS:HB3	1:A:2828:GLU:HG3	1.90	0.54
1:A:3451:LEU:HD12	1:A:3454:LEU:HD12	1.90	0.54
1:A:1014:LEU:HD13	1:A:1025:LEU:HD21	1.90	0.54
1:A:1596:VAL:HG12	1:A:1600:MET:HE2	1.90	0.54
1:A:1795:VAL:HA	1:A:1798:LEU:HD12	1.90	0.54
1:A:2446:LEU:HD21	1:A:2454:LEU:HD12	1.89	0.54
1:A:3293:CYS:O	1:A:3297:VAL:HG23	2.06	0.54
1:A:3929:MET:O	1:A:3937:VAL:HA	2.08	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:92:PHE:O	1:A:96:MET:HG3	2.08	0.54
1:A:238:MET:HE1	1:A:285:CYS:H	1.72	0.54
1:A:2542:LEU:HD21	1:A:2558:ALA:HA	1.90	0.54
1:A:3269:ARG:C	1:A:3271:ASP:H	2.16	0.54
1:A:3792:SER:N	1:A:3804:GLU:HB3	2.22	0.54
1:A:3805:TRP:CZ3	2:A:6101:2R4:C09	2.91	0.54
1:A:943:GLY:HA3	1:A:2577:PHE:CZ	2.43	0.54
1:A:1848:ILE:HG21	1:A:1911:LEU:HD11	1.88	0.54
1:A:3033:GLU:HG3	1:A:3034:PRO:HD3	1.90	0.54
1:A:3281:CYS:SG	1:A:3301:LEU:HD11	2.48	0.54
1:A:63:PHE:HD1	1:A:66:LEU:HD12	1.73	0.53
1:A:2232:ARG:HA	1:A:2235:LEU:HD12	1.90	0.53
1:A:2349:LEU:HA	1:A:2352:HIS:HE1	1.71	0.53
1:A:195:ASN:O	1:A:198:ARG:HG3	2.08	0.53
1:A:2104:MET:HA	1:A:2107:SER:HB3	1.90	0.53
1:A:4060:THR:O	1:A:4064:LEU:HD23	2.08	0.53
1:A:410:MET:HB3	1:A:411:PRO:HD3	1.90	0.53
1:A:1611:GLN:HB3	1:A:1614:GLN:HB3	1.91	0.53
1:A:3344:GLU:OE2	1:A:3348:LEU:HD23	2.07	0.53
1:A:3687:MET:HE3	1:A:3722:PHE:CG	2.44	0.53
1:A:3687:MET:HE3	1:A:3722:PHE:CD1	2.44	0.53
1:A:1863:PHE:HA	1:A:1866:GLN:OE1	2.08	0.53
1:A:2577:PHE:HD2	1:A:2784:GLN:HA	1.72	0.53
1:A:3137:GLU:OE1	1:A:3186:ARG:NH2	2.33	0.53
1:A:437:HIS:O	1:A:441:MET:HG3	2.08	0.53
1:A:1078:ALA:O	1:A:1107:TYR:OH	2.22	0.53
1:A:1538:LEU:HD21	1:A:1555:HIS:CG	2.43	0.53
1:A:3881:ASP:OD1	1:A:3881:ASP:N	2.40	0.53
1:A:292:SER:HA	1:A:295:GLU:OE2	2.08	0.53
1:A:718:MET:HE1	1:A:730:LEU:HD21	1.91	0.53
1:A:4074:PHE:HA	1:A:4077:TYR:CD2	2.44	0.53
1:A:1241:LEU:HD11	1:A:1253:THR:HA	1.91	0.53
1:A:3029:LYS:C	1:A:3031:TRP:H	2.16	0.53
1:A:3493:TRP:CZ2	1:A:3711:PRO:HD3	2.43	0.53
1:A:1399:CYS:O	1:A:1402:LEU:HG	2.08	0.53
1:A:1585:SER:OG	1:A:1588:ASP:OD1	2.25	0.53
1:A:2443:MET:HE3	1:A:2476:ILE:HG23	1.91	0.53
1:A:3923:ARG:HD3	1:A:3928:PHE:CE1	2.43	0.53
1:A:1104:LEU:HD23	1:A:1168:LEU:HD21	1.91	0.52
1:A:243:GLN:HG3	1:A:246:ARG:HH12	1.74	0.52
1:A:864:GLY:O	1:A:868:LYS:NZ	2.39	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1046:PRO:HA	1:A:1049:GLN:HB2	1.91	0.52
1:A:1452:VAL:HG23	1:A:1517:LEU:HD22	1.91	0.52
1:A:2559:THR:O	1:A:2563:LEU:HB2	2.09	0.52
1:A:2987:THR:HG23	1:A:2990:GLU:H	1.75	0.52
1:A:3729:MET:O	1:A:3729:MET:HG3	2.06	0.52
1:A:2461:PHE:HB2	1:A:2473:MET:SD	2.49	0.52
1:A:3327:ASN:HB3	1:A:3388:ALA:HB2	1.90	0.52
1:A:3466:PRO:HA	1:A:3469:LEU:HD23	1.92	0.52
1:A:1686:LEU:HD23	1:A:1738:ASN:HB3	1.91	0.52
1:A:1714:LEU:HD12	1:A:1757:MET:HE1	1.91	0.52
1:A:2233:HIS:O	1:A:2237:ILE:HG12	2.09	0.52
1:A:1741:ASP:OD1	1:A:1742:CYS:N	2.43	0.52
1:A:3998:LEU:O	1:A:4002:MET:HG3	2.10	0.52
1:A:3542:PHE:HZ	1:A:3555:VAL:HG21	1.74	0.52
1:A:2802:PRO:HG2	1:A:2803:ILE:HD12	1.92	0.52
1:A:131:LEU:HD12	1:A:132:ILE:N	2.25	0.52
1:A:304:THR:HA	1:A:309:LYS:HE2	1.92	0.52
1:A:1484:LEU:O	1:A:1489:LYS:HG2	2.09	0.52
1:A:2548:PRO:HB2	1:A:2848:PHE:HD1	1.74	0.52
1:A:3753:LYS:CD	1:A:3803:ILE:CD1	2.81	0.52
1:A:356:ASN:ND2	1:A:404:ASP:HB3	2.24	0.52
1:A:913:ARG:HH11	1:A:2803:ILE:HD13	1.74	0.52
1:A:1367:HIS:O	1:A:1370:ARG:HG3	2.09	0.52
1:A:1802:TYR:CZ	1:A:1806:ARG:HD3	2.45	0.52
1:A:1935:GLU:CD	1:A:1938:ARG:HE	2.16	0.51
1:A:2540:LEU:HD11	1:A:2832:ILE:HD12	1.91	0.51
1:A:406:ARG:HB2	1:A:409:GLN:HE22	1.75	0.51
1:A:3416:LEU:HD21	1:A:3445:LEU:HD21	1.91	0.51
1:A:1445:ARG:HG3	1:A:1510:LEU:HD13	1.93	0.51
1:A:2211:LEU:HA	1:A:2214:ARG:HG2	1.92	0.51
1:A:2421:VAL:HG13	1:A:2457:PRO:HG3	1.93	0.51
1:A:1668:PHE:CD1	1:A:1669:PRO:HD3	2.46	0.51
1:A:1983:ASP:HA	1:A:2184:TYR:OH	2.09	0.51
1:A:2577:PHE:HB2	1:A:2784:GLN:HG2	1.93	0.51
1:A:773:LEU:HD13	1:A:792:ILE:HG21	1.91	0.51
1:A:1424:THR:O	1:A:1428:ILE:HG13	2.10	0.51
1:A:2439:ILE:HA	1:A:2442:MET:HE2	1.93	0.51
1:A:3605:ASN:OD1	1:A:3606:ILE:N	2.43	0.51
1:A:4027:TRP:CE3	1:A:4030:GLU:HB3	2.44	0.51
1:A:13:LEU:O	1:A:14:ARG:NE	2.42	0.51
1:A:1195:VAL:HA	1:A:1198:LEU:HG	1.93	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:635:PRO:HA	1:A:676:ASN:HD22	1.75	0.51
1:A:1764:GLU:OE1	1:A:1768:ARG:NH2	2.38	0.51
1:A:1358:LEU:HD11	1:A:1410:PRO:HB2	1.92	0.51
1:A:200:PHE:CZ	1:A:227:LEU:HD23	2.46	0.50
1:A:2921:LEU:O	1:A:2925:GLU:HG2	2.11	0.50
1:A:374:LYS:HD3	1:A:423:TYR:HB3	1.93	0.50
1:A:2085:MET:HE3	1:A:2089:ASN:HB2	1.93	0.50
1:A:2298:GLU:HA	1:A:2301:GLN:NE2	2.26	0.50
1:A:3570:ASP:HB3	1:A:3686:TRP:CZ2	2.45	0.50
1:A:3077:ILE:HA	1:A:3080:LEU:HG	1.92	0.50
1:A:924:ARG:O	1:A:924:ARG:HG2	2.11	0.50
1:A:1105:VAL:O	1:A:1109:GLU:HG2	2.11	0.50
1:A:303:HIS:CE1	1:A:305:ASN:HB2	2.46	0.50
1:A:631:ARG:HH21	1:A:668:LYS:HB3	1.75	0.50
1:A:1402:LEU:HD12	1:A:1403:MET:N	2.27	0.50
1:A:1657:SER:OG	1:A:1658:SER:N	2.45	0.50
1:A:1716:GLN:HA	1:A:1719:VAL:HG22	1.92	0.50
1:A:2439:ILE:HG22	1:A:2443:MET:HE1	1.92	0.50
1:A:240:GLU:HB3	1:A:242:PRO:HD2	1.94	0.50
1:A:255:ALA:HB2	1:A:300:TRP:HZ2	1.77	0.50
1:A:1436:LEU:HD23	1:A:1436:LEU:H	1.76	0.50
1:A:1802:TYR:CE1	1:A:1806:ARG:HD3	2.47	0.50
1:A:1864:ASP:OD1	1:A:1865:THR:N	2.45	0.50
1:A:2443:MET:O	1:A:2445:LYS:N	2.42	0.50
1:A:3704:GLN:OE1	1:A:3716:HIS:HB3	2.12	0.50
1:A:3796:MET:O	1:A:3797:THR:OG1	2.25	0.50
1:A:3858:MET:HE1	1:A:4119:ARG:CB	2.41	0.50
1:A:3451:LEU:HD11	1:A:3490:VAL:HG21	1.94	0.50
1:A:3466:PRO:HG3	1:A:3498:TRP:CZ3	2.47	0.50
1:A:3718:ARG:H	1:A:3743:HIS:CE1	2.30	0.50
1:A:114:VAL:HG12	1:A:130:LEU:HD21	1.93	0.50
1:A:489:ARG:O	1:A:492:SER:OG	2.26	0.50
1:A:1242:LEU:HG	1:A:1310:GLU:HB2	1.93	0.50
1:A:1980:ASN:ND2	1:A:2141:ASN:OD1	2.45	0.50
1:A:2091:HIS:NE2	1:A:2093:CYS:SG	2.83	0.50
1:A:2281:MET:HG2	1:A:2287:PRO:HG3	1.93	0.50
1:A:37:GLY:O	1:A:40:GLN:HG2	2.11	0.49
1:A:849:GLU:HG2	1:A:850:GLU:N	2.26	0.49
1:A:3564:GLN:HG2	1:A:3565:GLY:N	2.27	0.49
1:A:3928:PHE:HD2	1:A:3937:VAL:HG11	1.77	0.49
1:A:381:VAL:HA	1:A:384:MET:SD	2.52	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:411:PRO:HD3	1:A:449:TYR:OH	2.12	0.49
1:A:986:PRO:C	1:A:990:GLN:HE21	2.20	0.49
1:A:2245:TRP:O	1:A:2249:LEU:HD13	2.11	0.49
1:A:2252:PRO:C	1:A:2254:ARG:H	2.19	0.49
1:A:2365:ASN:OD1	1:A:2396:LEU:HB3	2.12	0.49
1:A:2466:SER:C	1:A:2468:THR:H	2.19	0.49
1:A:1104:LEU:HA	1:A:1134:LEU:HD13	1.95	0.49
1:A:2148:LYS:HG2	1:A:2185:MET:HE1	1.95	0.49
1:A:2245:TRP:HB3	1:A:2249:LEU:HD13	1.94	0.49
1:A:1083:ASN:ND2	1:A:1126:GLN:OE1	2.45	0.49
1:A:3809:THR:OG1	1:A:3929:MET:CE	2.59	0.49
1:A:938:VAL:HG21	1:A:969:LEU:HD11	1.93	0.49
1:A:1413:ASP:O	1:A:1417:THR:HG23	2.13	0.49
1:A:3509:ASP:OD1	1:A:3509:ASP:N	2.45	0.49
1:A:131:LEU:O	1:A:135:LEU:HG	2.13	0.49
1:A:931:CYS:O	1:A:984:TYR:OH	2.28	0.49
1:A:4008:GLU:HG3	1:A:4010:SER:HB3	1.94	0.49
1:A:800:LEU:O	1:A:3115:SER:OG	2.27	0.49
1:A:3319:ASN:OD1	1:A:3320:ILE:N	2.45	0.49
1:A:3859:TYR:CE1	1:A:4119:ARG:HD3	2.48	0.49
1:A:3723:ASP:HB3	1:A:3739:ILE:HB	1.95	0.49
1:A:984:TYR:O	1:A:988:VAL:HG22	2.13	0.49
1:A:1016:GLY:O	1:A:1018:VAL:N	2.46	0.49
1:A:1414:ILE:O	1:A:1417:THR:OG1	2.25	0.49
1:A:3529:ILE:HG23	1:A:3562:LEU:HD11	1.94	0.49
1:A:258:PRO:HG3	1:A:300:TRP:HH2	1.77	0.48
1:A:1136:ARG:HA	1:A:1139:GLU:HG2	1.93	0.48
1:A:1148:ALA:HB2	1:A:1164:CYS:HB2	1.95	0.48
1:A:1052:SER:OG	1:A:1054:VAL:HG12	2.13	0.48
1:A:3531:TYR:O	1:A:3535:ILE:HG13	2.13	0.48
1:A:3797:THR:HG22	1:A:3798:SER:N	2.28	0.48
1:A:2898:LEU:HD21	1:A:3972:LEU:HB3	1.93	0.48
1:A:3425:ARG:O	1:A:3428:GLU:N	2.46	0.48
1:A:1476:HIS:CE1	1:A:1478:SER:HB3	2.48	0.48
1:A:1766:LEU:HB2	1:A:1778:PHE:CD2	2.48	0.48
1:A:1850:VAL:HG21	1:A:1873:TYR:CE2	2.48	0.48
1:A:2917:PRO:HB2	1:A:2919:ASP:OD1	2.12	0.48
1:A:448:GLN:OE1	1:A:519:TRP:N	2.47	0.48
1:A:1532:LEU:HD11	1:A:1567:ILE:HG21	1.94	0.48
1:A:2548:PRO:HB2	1:A:2848:PHE:CD1	2.48	0.48
1:A:2999:LEU:HD21	1:A:3015:SER:O	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3940:ILE:HG22	2:A:6101:2R4:H291	1.96	0.48
1:A:237:SER:O	1:A:243:GLN:NE2	2.47	0.48
1:A:860:GLY:HA3	1:A:3136:THR:HG21	1.94	0.48
1:A:1154:PRO:HD2	1:A:1157:PHE:CD2	2.49	0.48
1:A:1202:ARG:HH12	1:A:1210:ASP:HB2	1.78	0.48
1:A:763:THR:HG23	1:A:851:ILE:CD1	2.43	0.48
1:A:1087:ARG:HG2	1:A:1090:ARG:NH1	2.28	0.48
1:A:2494:ASP:HA	1:A:2497:GLU:HG3	1.95	0.48
1:A:3348:LEU:HA	1:A:3351:ILE:HG12	1.96	0.48
1:A:3761:ASP:O	1:A:3765:GLU:HG2	2.14	0.48
1:A:1690:GLY:O	1:A:1693:VAL:HG12	2.14	0.48
1:A:2151:ILE:HD13	1:A:2192:THR:OG1	2.14	0.48
1:A:2428:ASP:HB3	1:A:2431:ARG:HB3	1.95	0.48
1:A:62:ASP:O	1:A:65:LEU:HG	2.13	0.48
1:A:458:CYS:HA	1:A:461:ILE:HG22	1.95	0.48
1:A:642:PHE:CE2	1:A:646:VAL:HG22	2.48	0.48
1:A:1195:VAL:HG13	1:A:1198:LEU:HD12	1.95	0.48
1:A:1205:ASN:HB2	1:A:1275:THR:HA	1.94	0.48
1:A:1389:VAL:HG13	1:A:1390:GLN:N	2.29	0.48
1:A:2127:LYS:HA	1:A:2130:HIS:HB3	1.96	0.48
1:A:2129:LEU:HB3	1:A:2146:LEU:CD2	2.44	0.48
1:A:2379:MET:HA	1:A:2382:VAL:HG12	1.96	0.48
1:A:2457:PRO:HA	1:A:2460:GLU:OE1	2.13	0.48
1:A:3324:ARG:O	1:A:3328:ILE:HG12	2.14	0.48
1:A:3627:ALA:HB3	1:A:3683:CYS:HB2	1.95	0.48
1:A:3924:HIS:ND1	1:A:3926:ASN:OD1	2.45	0.48
1:A:1672:PHE:CE2	1:A:1702:LEU:HD13	2.49	0.48
1:A:2298:GLU:HA	1:A:2301:GLN:CD	2.39	0.48
1:A:2817:LEU:HD13	1:A:2820:MET:CE	2.44	0.47
1:A:3923:ARG:HB3	1:A:3928:PHE:HE1	1.78	0.47
1:A:901:MET:SD	1:A:2535:THR:OG1	2.67	0.47
1:A:1186:LYS:O	1:A:1190:LEU:HG	2.14	0.47
1:A:3686:TRP:CZ3	1:A:3690:PHE:HD1	2.32	0.47
1:A:344:GLN:O	1:A:348:ILE:HG12	2.15	0.47
1:A:1202:ARG:HH22	1:A:1210:ASP:HB3	1.79	0.47
1:A:1212:LEU:HD21	1:A:1217:VAL:HG22	1.97	0.47
1:A:3088:LEU:O	1:A:3092:LEU:HD12	2.15	0.47
1:A:31:GLY:HA2	1:A:34:LEU:HB2	1.96	0.47
1:A:1476:HIS:HB3	1:A:1479:VAL:HG22	1.96	0.47
1:A:3662:ILE:O	1:A:3666:LEU:HD13	2.13	0.47
1:A:2092:GLU:N	1:A:2092:GLU:OE1	2.47	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2473:MET:HA	1:A:2476:ILE:HD12	1.97	0.47
1:A:2930:TYR:HA	1:A:2933:ILE:HG22	1.95	0.47
1:A:3535:ILE:HD11	1:A:3795:PRO:O	2.15	0.47
1:A:406:ARG:HB2	1:A:409:GLN:NE2	2.29	0.47
1:A:766:ALA:HB3	1:A:851:ILE:HD13	1.96	0.47
1:A:1158:PRO:N	1:A:1159:PRO:HD2	2.28	0.47
1:A:1271:ILE:HD12	1:A:1344:PHE:HE1	1.80	0.47
1:A:1378:GLU:HG2	1:A:1378:GLU:O	2.14	0.47
1:A:1477:HIS:O	1:A:1481:THR:HG22	2.14	0.47
1:A:1580:LEU:O	1:A:1584:GLN:HG3	2.15	0.47
1:A:2329:TYR:O	1:A:2332:GLU:HG3	2.15	0.47
1:A:55:THR:O	1:A:58:VAL:HG12	2.14	0.47
1:A:75:SER:H	1:A:78:PHE:HB3	1.78	0.47
1:A:540:MET:HA	1:A:543:SER:OG	2.15	0.47
1:A:607:ASP:HB3	1:A:1023:SER:OG	2.14	0.47
1:A:763:THR:HG23	1:A:851:ILE:HD11	1.97	0.47
1:A:856:VAL:HG21	1:A:3111:MET:HG2	1.97	0.47
1:A:1633:TRP:CD1	1:A:1645:VAL:HG11	2.50	0.47
1:A:1726:SER:O	1:A:1726:SER:OG	2.26	0.47
1:A:2227:LYS:HB2	1:A:2230:VAL:HG22	1.95	0.47
1:A:2443:MET:HG3	1:A:2479:TRP:CZ3	2.49	0.47
1:A:12:LEU:HA	1:A:15:LEU:HB3	1.97	0.47
1:A:419:SER:OG	1:A:463:LYS:NZ	2.44	0.47
1:A:2097:LEU:O	1:A:2101:VAL:HG22	2.15	0.47
1:A:4008:GLU:HG3	1:A:4010:SER:H	1.78	0.47
1:A:1373:VAL:HG21	1:A:1418:HIS:HB3	1.97	0.47
1:A:1980:ASN:OD1	1:A:1981:LEU:N	2.45	0.47
1:A:2233:HIS:HA	1:A:2236:GLU:HG2	1.97	0.47
1:A:3729:MET:O	1:A:3731:SER:N	2.43	0.47
1:A:1221:ILE:CD1	1:A:1288:SER:HA	2.45	0.47
1:A:1235:ILE:HG22	1:A:1256:TRP:NE1	2.30	0.47
1:A:493:LYS:HD2	1:A:522:PRO:HG2	1.96	0.46
1:A:1718:ILE:O	1:A:1722:PHE:HB2	2.14	0.46
1:A:3194:GLU:HG3	1:A:3231:ILE:HD11	1.97	0.46
1:A:3564:GLN:HG2	1:A:3565:GLY:H	1.79	0.46
1:A:3681:LYS:O	1:A:3685:PRO:HD2	2.14	0.46
1:A:363:ILE:HG13	1:A:413:PHE:CE2	2.51	0.46
1:A:1402:LEU:HD12	1:A:1402:LEU:C	2.40	0.46
1:A:3744:ASP:OD1	1:A:3744:ASP:N	2.48	0.46
1:A:933:LEU:HG	1:A:937:MET:HE2	1.97	0.46
1:A:1376:LEU:HD13	1:A:1399:CYS:HB3	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3661:ASP:HA	1:A:3664:ASN:ND2	2.31	0.46
1:A:3664:ASN:OD1	1:A:3665:MET:N	2.47	0.46
1:A:3954:PRO:HD2	1:A:4027:TRP:HB3	1.96	0.46
1:A:100:ILE:HB	1:A:102:PRO:HD3	1.97	0.46
1:A:349:ILE:HD13	1:A:366:TYR:HE2	1.79	0.46
1:A:745:VAL:O	1:A:749:VAL:HG23	2.15	0.46
1:A:762:TYR:CE2	1:A:764:PRO:HB2	2.50	0.46
1:A:2577:PHE:CD2	1:A:2784:GLN:HA	2.49	0.46
1:A:334:HIS:HB3	1:A:337:LYS:HD2	1.97	0.46
1:A:1723:PRO:HG3	1:A:1729:PHE:CZ	2.50	0.46
1:A:2371:PHE:CD2	1:A:2374:LEU:HB2	2.50	0.46
1:A:4002:MET:O	1:A:4006:VAL:HG12	2.15	0.46
1:A:2123:PRO:HB2	1:A:2125:TRP:CD1	2.50	0.46
1:A:3661:ASP:HA	1:A:3664:ASN:HD21	1.80	0.46
1:A:1045:THR:OG1	1:A:1047:GLN:OE1	2.30	0.46
1:A:2575:PRO:CB	1:A:2784:GLN:HB3	2.44	0.46
1:A:172:GLU:HB3	1:A:220:LEU:HD13	1.97	0.46
1:A:1767:CYS:O	1:A:1815:THR:HG23	2.16	0.46
1:A:2817:LEU:HA	1:A:2820:MET:HE3	1.98	0.46
1:A:3630:ARG:O	1:A:3634:GLN:HG2	2.15	0.46
1:A:317:GLU:O	1:A:321:LYS:HG2	2.16	0.46
1:A:943:GLY:C	1:A:2577:PHE:CE1	2.94	0.46
1:A:1605:PHE:CD1	1:A:1608:ARG:HD3	2.51	0.46
1:A:3493:TRP:CD1	1:A:3711:PRO:HB3	2.50	0.46
1:A:3786:LEU:HD22	1:A:3910:LEU:HD22	1.97	0.46
1:A:402:THR:HA	1:A:406:ARG:HH12	1.81	0.46
1:A:575:ILE:O	1:A:579:LEU:HD13	2.15	0.46
1:A:3012:GLU:HG3	1:A:3013:TYR:H	1.81	0.46
1:A:3072:GLU:C	1:A:3074:GLN:H	2.23	0.46
1:A:3913:ILE:HB	1:A:3984:MET:HG2	1.97	0.46
1:A:471:LYS:HB2	1:A:474:VAL:HB	1.97	0.45
1:A:1115:HIS:ND1	1:A:1180:GLN:HA	2.31	0.45
1:A:2261:SER:OG	1:A:2262:GLY:N	2.49	0.45
1:A:2339:GLU:H	1:A:2339:GLU:CD	2.24	0.45
1:A:3729:MET:CB	2:A:6101:2R4:C18	2.93	0.45
1:A:3858:MET:HE1	1:A:4119:ARG:HB3	1.98	0.45
1:A:540:MET:O	1:A:544:ILE:HG12	2.16	0.45
1:A:1811:ARG:NH2	1:A:1819:PHE:HE2	2.14	0.45
1:A:2533:SER:O	1:A:2565:MET:HE2	2.15	0.45
1:A:2877:SER:OG	1:A:2925:GLU:HB3	2.17	0.45
1:A:2891:ARG:O	1:A:2895:GLU:HG2	2.15	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2953:THR:HB	1:A:2994:TRP:HE1	1.81	0.45
1:A:3483:MET:HG3	1:A:3513:ALA:HB1	1.98	0.45
1:A:3840:LYS:O	1:A:3844:THR:HG23	2.16	0.45
1:A:607:ASP:OD1	1:A:607:ASP:N	2.44	0.45
1:A:1871:MET:HA	1:A:1874:TYR:CD2	2.51	0.45
1:A:2352:HIS:NE2	1:A:2360:PHE:HA	2.31	0.45
1:A:2430:GLU:H	1:A:2430:GLU:CD	2.24	0.45
1:A:265:TYR:O	1:A:269:SER:OG	2.20	0.45
1:A:446:PHE:HD1	1:A:457:CYS:SG	2.38	0.45
1:A:493:LYS:O	1:A:625:ASN:ND2	2.50	0.45
1:A:2454:LEU:C	1:A:2457:PRO:HD2	2.42	0.45
1:A:3271:ASP:HB2	1:A:3315:TYR:CE2	2.51	0.45
1:A:1640:GLU:OE1	1:A:1640:GLU:N	2.46	0.45
1:A:1863:PHE:HZ	1:A:1932:GLN:HB3	1.82	0.45
1:A:2527:HIS:HB3	1:A:2530:ARG:NH1	2.32	0.45
1:A:2863:CYS:SG	1:A:2895:GLU:HG3	2.56	0.45
1:A:2255:LEU:O	1:A:2259:LYS:HG2	2.17	0.45
1:A:3360:LEU:HD11	1:A:3377:LEU:HD11	1.98	0.45
1:A:3442:TYR:O	1:A:3446:VAL:HG23	2.17	0.45
1:A:359:LEU:HD21	1:A:391:ARG:HH11	1.82	0.45
1:A:2183:HIS:ND1	1:A:2185:MET:HB2	2.32	0.45
1:A:3805:TRP:HZ3	2:A:6101:2R4:C08	2.30	0.45
1:A:985:GLU:HB3	1:A:986:PRO:HD3	1.99	0.45
1:A:1092:GLU:HG2	1:A:1095:LEU:HG	1.99	0.45
1:A:1202:ARG:HH22	1:A:1210:ASP:CB	2.30	0.45
1:A:1388:ASP:HA	1:A:1392:MET:CE	2.46	0.45
1:A:1400:VAL:HG11	1:A:1460:ARG:HG2	1.98	0.45
1:A:1872:GLY:O	1:A:1876:ILE:HG13	2.17	0.45
1:A:2554:PHE:C	1:A:2556:SER:H	2.24	0.45
1:A:3622:ALA:HB3	1:A:3625:LEU:CD1	2.47	0.45
1:A:3723:ASP:OD1	1:A:3724:GLU:N	2.50	0.45
1:A:3858:MET:HB3	1:A:3858:MET:HE3	1.64	0.45
1:A:1454:ALA:O	1:A:1458:LEU:HD23	2.16	0.45
1:A:1492:ALA:HB2	1:A:1538:LEU:HD13	1.98	0.45
1:A:2236:GLU:HA	1:A:2239:LYS:HG2	1.99	0.45
1:A:1222:ASN:HA	1:A:1236:LEU:HD13	1.99	0.45
1:A:2157:PHE:HA	1:A:2160:TYR:HD2	1.80	0.45
1:A:3100:LYS:HA	1:A:3103:ILE:HG22	1.98	0.45
1:A:3484:THR:O	1:A:3487:ILE:HG22	2.17	0.45
1:A:182:GLY:O	1:A:233:ASN:ND2	2.50	0.44
1:A:341:PHE:HA	1:A:344:GLN:HE21	1.81	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:776:TRP:HB3	1:A:785:MET:HE2	1.99	0.44
1:A:782:ARG:O	1:A:786:GLN:HB2	2.17	0.44
1:A:1799:GLU:HA	1:A:1802:TYR:HB3	1.97	0.44
1:A:3011:LEU:HD23	1:A:3047:SER:HB2	1.99	0.44
1:A:3266:SER:C	1:A:3268:THR:H	2.25	0.44
1:A:3567:VAL:HG22	1:A:3699:LEU:HD22	1.99	0.44
1:A:4039:TYR:HB2	1:A:4042:GLN:HB2	2.00	0.44
1:A:238:MET:HE3	1:A:283:SER:H	1.82	0.44
1:A:2093:CYS:C	1:A:2096:PRO:HD2	2.43	0.44
1:A:996:THR:O	1:A:996:THR:HG22	2.17	0.44
1:A:1079:SER:HA	1:A:1107:TYR:CE1	2.50	0.44
1:A:1092:GLU:HB3	1:A:1095:LEU:HD12	1.99	0.44
1:A:1234:GLY:HA2	1:A:1259:LEU:HD22	1.99	0.44
1:A:1410:PRO:C	1:A:1412:LYS:H	2.26	0.44
1:A:1767:CYS:HB3	1:A:1818:SER:OG	2.17	0.44
1:A:2439:ILE:HG22	1:A:2443:MET:CE	2.48	0.44
1:A:266:ALA:O	1:A:270:ALA:HB2	2.18	0.44
1:A:393:LYS:HA	1:A:397:LEU:HD12	1.99	0.44
1:A:1037:LEU:HD22	1:A:1085:ILE:HD12	1.99	0.44
1:A:2317:ALA:HB1	1:A:2366:LYS:HE3	2.00	0.44
1:A:3702:PRO:HG2	1:A:3802:LEU:HD12	1.99	0.44
1:A:3786:LEU:O	1:A:3787:GLN:HG2	2.18	0.44
1:A:4076:ASP:O	1:A:4080:VAL:HG12	2.17	0.44
1:A:4121:TRP:CD1	1:A:4123:GLY:H	2.35	0.44
1:A:1324:PRO:O	1:A:1327:GLY:N	2.46	0.44
1:A:1365:ASN:HB2	1:A:1369:MET:HE2	1.99	0.44
1:A:1389:VAL:HG13	1:A:1390:GLN:H	1.83	0.44
1:A:1565:GLU:OE2	1:A:1565:GLU:N	2.41	0.44
1:A:1641:THR:O	1:A:1645:VAL:HG23	2.18	0.44
1:A:2443:MET:C	1:A:2445:LYS:H	2.24	0.44
1:A:2493:ASN:HA	1:A:2496:GLN:NE2	2.30	0.44
1:A:3763:ARG:HG3	1:A:4011:PHE:CZ	2.52	0.44
1:A:1099:PHE:CE1	1:A:1152:ARG:HD3	2.53	0.44
1:A:1441:ALA:HB1	1:A:1444:ASP:HB3	1.99	0.44
1:A:3767:LEU:HA	1:A:3767:LEU:HD23	1.81	0.44
1:A:4023:LYS:HB2	1:A:4023:LYS:HE2	1.93	0.44
1:A:4038:TRP:CH2	1:A:4043:LYS:HE3	2.53	0.44
1:A:4041:ARG:NH1	1:A:4045:CYS:SG	2.90	0.44
1:A:1202:ARG:NH2	1:A:1207:TRP:HA	2.32	0.44
1:A:1205:ASN:HA	1:A:1275:THR:HG23	2.00	0.44
1:A:1568:ASN:HA	1:A:1571:LEU:HB2	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1921:ASP:OD1	1:A:1922:ALA:N	2.50	0.44
1:A:2143:ARG:HB3	1:A:2171:LEU:HD13	1.99	0.44
1:A:3241:LYS:HE2	1:A:3241:LYS:HB2	1.80	0.44
1:A:3266:SER:OG	1:A:3267:LYS:N	2.47	0.44
1:A:4115:ASN:ND2	1:A:4115:ASN:O	2.51	0.44
1:A:129:ASP:OD1	1:A:129:ASP:N	2.51	0.44
1:A:523:THR:HG23	1:A:525:LYS:H	1.83	0.44
1:A:1358:LEU:HD23	1:A:1411:TYR:CZ	2.53	0.44
1:A:1593:VAL:O	1:A:1597:LEU:HD23	2.17	0.44
1:A:1751:GLU:HA	1:A:1785:ILE:CG2	2.47	0.44
1:A:1771:GLN:HA	1:A:1775:GLU:OE1	2.18	0.44
1:A:1818:SER:HB2	1:A:1822:ARG:HH22	1.82	0.44
1:A:2281:MET:HE1	1:A:2322:VAL:HG13	1.99	0.44
1:A:2496:GLN:HG2	1:A:2497:GLU:N	2.33	0.44
1:A:3589:SER:O	1:A:3593:ARG:HG3	2.18	0.44
1:A:3728:VAL:O	2:A:6101:2R4:H171	2.18	0.44
1:A:414:LEU:HA	1:A:417:VAL:HG12	1.98	0.43
1:A:1362:ASP:OD1	1:A:1362:ASP:N	2.51	0.43
1:A:1449:ALA:HB2	1:A:1510:LEU:HD12	2.00	0.43
1:A:1505:LEU:HD23	1:A:1505:LEU:O	2.17	0.43
1:A:1626:TRP:CD1	1:A:1670:GLU:HG3	2.53	0.43
1:A:2088:LEU:HD12	1:A:2094:MET:HG2	1.99	0.43
1:A:3680:LEU:HD23	1:A:3682:GLU:H	1.81	0.43
1:A:156:PHE:HA	1:A:159:GLU:HG2	2.00	0.43
1:A:189:MET:HE3	1:A:193:ALA:HB2	1.99	0.43
1:A:332:GLU:O	1:A:335:LYS:NZ	2.49	0.43
1:A:1093:GLU:HA	1:A:1096:VAL:HG12	2.01	0.43
1:A:1874:TYR:HE2	1:A:1940:TYR:HE1	1.65	0.43
1:A:1875:LYS:O	1:A:1878:ASP:HB3	2.18	0.43
1:A:3176:MET:SD	1:A:3179:TRP:HB2	2.59	0.43
1:A:3483:MET:HE3	1:A:3513:ALA:HB1	1.99	0.43
1:A:37:GLY:HA2	1:A:40:GLN:NE2	2.33	0.43
1:A:1367:HIS:O	1:A:1371:VAL:HG12	2.18	0.43
1:A:2330:VAL:HG12	1:A:2337:LEU:HD11	2.00	0.43
1:A:2379:MET:O	1:A:2382:VAL:HG12	2.18	0.43
1:A:2862:SER:OG	1:A:2868:LEU:O	2.37	0.43
1:A:468:LEU:HD21	1:A:478:CYS:HB3	2.01	0.43
1:A:1007:VAL:O	1:A:1011:GLU:HG3	2.18	0.43
1:A:1212:LEU:HD11	1:A:1217:VAL:HA	2.00	0.43
1:A:2455:LEU:HD12	1:A:2458:VAL:HB	2.01	0.43
1:A:631:ARG:NH2	1:A:668:LYS:HB3	2.33	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1480:GLY:O	1:A:1484:LEU:HD13	2.18	0.43
1:A:1592:MET:HE3	1:A:1592:MET:O	2.19	0.43
1:A:2208:ASP:HA	1:A:2211:LEU:HG	2.00	0.43
1:A:2398:LEU:HD23	1:A:2398:LEU:HA	1.73	0.43
1:A:2999:LEU:HD13	1:A:3043:TYR:CD2	2.53	0.43
1:A:3301:LEU:HD12	1:A:3301:LEU:HA	1.62	0.43
1:A:3405:PRO:C	1:A:3407:ALA:H	2.27	0.43
1:A:3792:SER:H	1:A:3804:GLU:HB3	1.82	0.43
1:A:3816:LEU:HD21	1:A:3883:LEU:HD13	2.01	0.43
1:A:297:LEU:HD13	1:A:316:LEU:HA	2.00	0.43
1:A:486:GLY:O	1:A:490:ILE:HG23	2.19	0.43
1:A:1101:PHE:CE1	1:A:1145:LEU:HD22	2.52	0.43
1:A:3450:MET:SD	1:A:3468:LEU:HD21	2.58	0.43
1:A:3531:TYR:HB2	1:A:3532:PRO:HD3	2.01	0.43
1:A:3596:LEU:HB2	1:A:3601:VAL:HG22	2.00	0.43
1:A:1108:MET:HG3	1:A:1178:ARG:HH12	1.83	0.43
1:A:1334:LYS:O	1:A:1338:VAL:HG23	2.19	0.43
1:A:1403:MET:HE1	1:A:1458:LEU:HD13	2.00	0.43
1:A:3483:MET:HG3	1:A:3513:ALA:CB	2.48	0.43
1:A:3704:GLN:HE22	1:A:3717:VAL:HB	1.83	0.43
1:A:207:GLN:HE22	1:A:217:LEU:HD12	1.83	0.43
1:A:624:ILE:O	1:A:628:GLU:HG2	2.19	0.43
1:A:998:ASN:HA	1:A:1001:PHE:CE1	2.54	0.43
1:A:1672:PHE:O	1:A:1676:ILE:HG12	2.18	0.43
1:A:1748:ASP:O	1:A:1751:GLU:HG2	2.19	0.43
1:A:2185:MET:HE3	1:A:2185:MET:HB3	1.82	0.43
1:A:2506:LEU:O	1:A:2525:TRP:NE1	2.34	0.43
1:A:3295:GLU:OE1	1:A:3348:LEU:HD22	2.19	0.43
1:A:3692:VAL:HG13	1:A:3692:VAL:O	2.19	0.43
1:A:249:PHE:HA	1:A:252:VAL:HG12	2.01	0.43
1:A:339:GLN:HA	1:A:342:MET:CG	2.49	0.43
1:A:359:LEU:HD12	1:A:359:LEU:HA	1.76	0.43
1:A:1525:CYS:SG	1:A:1526:GLU:N	2.92	0.43
1:A:2377:ARG:HG3	1:A:2378:PHE:HD1	1.83	0.43
1:A:3809:THR:HG22	1:A:3931:ALA:HA	2.00	0.43
1:A:144:MET:SD	1:A:144:MET:N	2.89	0.43
1:A:641:PHE:O	1:A:644:PRO:HD2	2.19	0.43
1:A:997:ASN:HB3	1:A:999:LYS:HG2	2.00	0.43
1:A:1235:ILE:HG22	1:A:1256:TRP:HE1	1.83	0.43
1:A:2347:LYS:C	1:A:2351:GLN:HE22	2.26	0.43
1:A:2411:LEU:O	1:A:2412:TYR:HB3	2.19	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2813:PHE:O	1:A:2817:LEU:HD23	2.18	0.43
1:A:943:GLY:CA	1:A:2577:PHE:CE1	3.02	0.42
1:A:1541:ALA:HA	1:A:1550:VAL:HA	2.01	0.42
1:A:1775:GLU:O	1:A:1779:GLN:HG2	2.19	0.42
1:A:2362:VAL:O	1:A:2366:LYS:HG2	2.19	0.42
1:A:2397:CYS:O	1:A:2400:VAL:HG12	2.18	0.42
1:A:3575:LEU:HD23	1:A:3687:MET:SD	2.59	0.42
1:A:3592:VAL:HG12	1:A:3609:MET:SD	2.59	0.42
1:A:3729:MET:HG3	1:A:3731:SER:H	1.83	0.42
1:A:3778:ASP:HB3	1:A:3781:CYS:HB2	1.99	0.42
1:A:183:GLU:HB2	1:A:230:LEU:HG	2.01	0.42
1:A:404:ASP:HB2	1:A:1732:GLY:O	2.19	0.42
1:A:1417:THR:HA	1:A:1420:ARG:HH21	1.83	0.42
1:A:1528:LEU:HD21	1:A:1567:ILE:HG23	2.01	0.42
1:A:1532:LEU:HD23	1:A:1532:LEU:HA	1.86	0.42
1:A:2555:LEU:HD22	1:A:2809:PHE:CD2	2.53	0.42
1:A:2577:PHE:CB	1:A:2784:GLN:HG2	2.49	0.42
1:A:3474:ARG:HG2	1:A:3475:TYR:H	1.84	0.42
1:A:170:VAL:O	1:A:171:LEU:HD22	2.19	0.42
1:A:1881:TYR:HB3	1:A:1954:CYS:SG	2.59	0.42
1:A:2270:ASN:O	1:A:2274:ILE:HG12	2.19	0.42
1:A:3006:ALA:HB3	1:A:3257:LYS:HE2	2.01	0.42
1:A:3873:LYS:O	1:A:3876:SER:OG	2.30	0.42
1:A:106:GLU:O	1:A:110:THR:OG1	2.23	0.42
1:A:432:THR:O	1:A:436:GLU:HG2	2.19	0.42
1:A:3751:LEU:CD2	1:A:3753:LYS:HD3	2.50	0.42
1:A:200:PHE:CE1	1:A:224:LEU:HD22	2.54	0.42
1:A:1149:LYS:HG2	1:A:1151:ARG:CZ	2.50	0.42
1:A:1403:MET:HE2	1:A:1463:LEU:HD12	2.01	0.42
1:A:1634:ALA:H	1:A:1637:SER:HB2	1.83	0.42
1:A:1759:LEU:HD13	1:A:1797:LEU:HD22	2.01	0.42
1:A:1933:LEU:HD13	1:A:1936:ARG:HG3	2.02	0.42
1:A:2213:ASN:O	1:A:2217:ASN:ND2	2.51	0.42
1:A:2350:LYS:HZ2	1:A:2353:GLN:HB3	1.85	0.42
1:A:3618:GLY:N	1:A:3633:ILE:HD12	2.33	0.42
1:A:29:LEU:HD13	1:A:32:HIS:HB3	2.01	0.42
1:A:2253:TYR:C	1:A:2254:ARG:HD2	2.45	0.42
1:A:3449:LYS:HA	1:A:3449:LYS:HD3	1.78	0.42
1:A:643:GLU:HG2	1:A:680:ILE:HD12	2.02	0.42
1:A:923:ASP:C	1:A:925:GLN:H	2.27	0.42
1:A:1496:GLU:HB2	1:A:1498:GLN:HE22	1.85	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3759:ARG:O	1:A:3763:ARG:HG2	2.20	0.42
1:A:230:LEU:HD12	1:A:230:LEU:HA	1.88	0.42
1:A:443:ILE:HG13	1:A:461:ILE:HD11	2.02	0.42
1:A:1226:GLY:HA2	1:A:1233:SER:O	2.20	0.42
1:A:2130:HIS:CD2	1:A:2167:PRO:HG2	2.54	0.42
1:A:3749:PRO:CG	1:A:3805:TRP:HD1	2.32	0.42
1:A:535:LEU:HD11	1:A:565:TYR:CD1	2.52	0.42
1:A:1256:TRP:CE3	1:A:1257:LEU:HD22	2.55	0.42
1:A:3107:ILE:O	1:A:3111:MET:HG3	2.19	0.42
1:A:3319:ASN:O	1:A:3323:PHE:HB3	2.20	0.42
1:A:3609:MET:HE2	1:A:3609:MET:HB3	1.98	0.42
1:A:3905:ALA:HB3	1:A:3979:LEU:HD23	2.01	0.42
1:A:3965:ARG:HA	1:A:3968:ILE:HG12	2.01	0.42
1:A:174:VAL:O	1:A:177:LEU:HG	2.20	0.42
1:A:1373:VAL:HG22	1:A:1419:LEU:HD23	2.01	0.42
1:A:1414:ILE:HG13	1:A:1418:HIS:CE1	2.55	0.42
1:A:1496:GLU:OE1	1:A:1496:GLU:N	2.50	0.42
1:A:1616:LEU:HD22	1:A:1659:VAL:HG21	2.02	0.42
1:A:2169:LEU:HB3	1:A:2211:LEU:HD13	2.01	0.42
1:A:2254:ARG:HH12	1:A:2292:CYS:C	2.27	0.42
1:A:2347:LYS:HG2	1:A:2351:GLN:NE2	2.30	0.42
1:A:2357:GLU:HA	1:A:2360:PHE:HB3	2.02	0.42
1:A:2790:LEU:C	1:A:2793:PRO:HD2	2.45	0.42
1:A:3483:MET:HE1	1:A:3487:ILE:HD12	2.01	0.42
1:A:3753:LYS:HG2	1:A:3803:ILE:HD11	1.93	0.42
1:A:3875:GLU:OE2	1:A:4127:TRP:HA	2.19	0.42
1:A:1794:GLN:O	1:A:1798:LEU:HG	2.19	0.41
1:A:1797:LEU:O	1:A:1800:SER:OG	2.30	0.41
1:A:2093:CYS:O	1:A:2097:LEU:HD23	2.20	0.41
1:A:2128:PHE:CD2	1:A:2129:LEU:HD22	2.55	0.41
1:A:2492:ASP:C	1:A:2494:ASP:H	2.27	0.41
1:A:3029:LYS:C	1:A:3031:TRP:N	2.77	0.41
1:A:3169:PRO:HD3	1:A:3182:ILE:HD11	2.01	0.41
1:A:393:LYS:HG3	1:A:397:LEU:HD12	2.02	0.41
1:A:573:LEU:HA	1:A:576:VAL:HG12	2.01	0.41
1:A:1491:ILE:HD12	1:A:1558:TYR:CD2	2.55	0.41
1:A:1782:PHE:HA	1:A:1785:ILE:HG12	2.02	0.41
1:A:2133:LEU:HD23	1:A:2164:TRP:HZ3	1.84	0.41
1:A:2259:LYS:HB3	1:A:2272:VAL:HG13	2.01	0.41
1:A:2272:VAL:O	1:A:2276:LEU:HG	2.19	0.41
1:A:3946:PHE:HB2	1:A:4043:LYS:HE2	2.01	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:4039:TYR:CE2	1:A:4066:LEU:HD11	2.55	0.41
1:A:14:ARG:CZ	1:A:17:GLU:HG3	2.50	0.41
1:A:137:THR:O	1:A:141:SER:OG	2.22	0.41
1:A:790:LYS:HE3	1:A:790:LYS:HB3	1.91	0.41
1:A:1756:PRO:O	1:A:1760:GLU:HG2	2.20	0.41
1:A:2424:MET:SD	1:A:2457:PRO:HB2	2.60	0.41
1:A:2536:LEU:HD21	1:A:2820:MET:HE2	2.03	0.41
1:A:2851:PHE:CD2	1:A:2853:PRO:HD2	2.56	0.41
1:A:3243:ILE:HG21	1:A:3259:LEU:HD13	2.01	0.41
1:A:3959:MET:HE3	1:A:3959:MET:HB3	1.92	0.41
1:A:129:ASP:HA	1:A:132:ILE:HG22	2.02	0.41
1:A:1753:SER:OG	1:A:1755:SER:HB3	2.20	0.41
1:A:3406:ALA:O	1:A:3410:ILE:HG13	2.20	0.41
1:A:3463:LEU:HB3	1:A:3997:LEU:HD11	2.02	0.41
1:A:3791:TYR:CG	2:A:6101:2R4:H281	2.55	0.41
1:A:3974:MET:HE2	1:A:3974:MET:HB2	1.94	0.41
1:A:1335:CYS:HB3	1:A:1384:PHE:CE2	2.56	0.41
1:A:1811:ARG:NH1	1:A:1816:ARG:HH11	2.16	0.41
1:A:3051:LEU:HD23	1:A:3051:LEU:HA	1.86	0.41
1:A:3078:LEU:HA	1:A:3078:LEU:HD12	1.86	0.41
1:A:3293:CYS:HA	1:A:3296:GLN:CD	2.44	0.41
1:A:3911:ILE:HD11	1:A:3928:PHE:CD2	2.37	0.41
1:A:200:PHE:HZ	1:A:224:LEU:HA	1.84	0.41
1:A:1538:LEU:HD12	1:A:1553:PHE:CE2	2.55	0.41
1:A:2208:ASP:O	1:A:2211:LEU:HG	2.20	0.41
1:A:2254:ARG:NH2	1:A:2292:CYS:O	2.50	0.41
1:A:3525:TYR:OH	1:A:3712:LEU:N	2.54	0.41
1:A:132:ILE:HA	1:A:135:LEU:HD12	2.02	0.41
1:A:294:PHE:HE1	1:A:316:LEU:HD11	1.86	0.41
1:A:770:LEU:O	1:A:774:GLU:HG3	2.21	0.41
1:A:1685:ASP:OD1	1:A:1685:ASP:N	2.46	0.41
1:A:2236:GLU:O	1:A:2239:LYS:HG2	2.20	0.41
1:A:2334:LYS:C	1:A:2336:ILE:H	2.29	0.41
1:A:2535:THR:OG1	1:A:2536:LEU:N	2.53	0.41
1:A:3016:THR:HG21	1:A:3044:MET:HB2	2.03	0.41
1:A:3669:LYS:O	1:A:3672:LYS:HB2	2.20	0.41
1:A:3767:LEU:O	1:A:3771:MET:HG3	2.20	0.41
1:A:3925:LEU:HA	1:A:3925:LEU:HD23	1.82	0.41
1:A:202:GLY:HA2	1:A:205:LYS:HE2	2.02	0.41
1:A:1046:PRO:HG2	1:A:1047:GLN:HE22	1.86	0.41
1:A:2219:LEU:O	1:A:2223:VAL:HG13	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3077:ILE:HG13	1:A:3078:LEU:N	2.36	0.41
1:A:3439:LEU:HD12	1:A:3439:LEU:O	2.20	0.41
1:A:3626:GLY:HA3	1:A:3684:SER:O	2.21	0.41
1:A:159:GLU:HB2	1:A:163:LYS:NZ	2.36	0.41
1:A:1067:ALA:O	1:A:1075:ARG:HG2	2.20	0.41
1:A:1220:LEU:HD23	1:A:1220:LEU:HA	1.87	0.41
1:A:1620:THR:HG22	1:A:1624:GLN:HE22	1.86	0.41
1:A:2377:ARG:HG3	1:A:2378:PHE:CD1	2.56	0.41
1:A:2454:LEU:HD23	1:A:2454:LEU:HA	1.90	0.41
1:A:2454:LEU:O	1:A:2458:VAL:HG23	2.20	0.41
1:A:2854:PHE:O	1:A:2858:ILE:HG12	2.21	0.41
1:A:3176:MET:HE3	1:A:3246:ALA:HB2	2.02	0.41
1:A:3907:SER:O	1:A:3911:ILE:HG23	2.20	0.41
1:A:108:LYS:HZ3	1:A:151:GLU:HA	1.85	0.41
1:A:146:GLU:O	1:A:148:LYS:N	2.54	0.41
1:A:1339:VAL:HG23	1:A:1398:VAL:HG21	2.03	0.41
1:A:1711:ARG:NH2	1:A:1757:MET:HG2	2.35	0.41
1:A:2452:ARG:HD2	1:A:2452:ARG:HA	1.89	0.41
1:A:3992:ARG:HG2	1:A:4051:LEU:O	2.20	0.41
1:A:13:LEU:HD23	1:A:14:ARG:HE	1.86	0.40
1:A:229:SER:HB2	1:A:278:HIS:CD2	2.55	0.40
1:A:1211:VAL:O	1:A:1214:GLU:HB2	2.22	0.40
1:A:1271:ILE:HD12	1:A:1344:PHE:CE1	2.56	0.40
1:A:2269:ASP:O	1:A:2272:VAL:HG12	2.20	0.40
1:A:3492:CYS:SG	1:A:3517:SER:HA	2.61	0.40
1:A:3779:SER:O	1:A:3783:GLN:HG3	2.21	0.40
1:A:197:PHE:HA	1:A:200:PHE:HB3	2.04	0.40
1:A:441:MET:HA	1:A:444:ASP:HB2	2.02	0.40
1:A:718:MET:HE1	1:A:730:LEU:CD2	2.50	0.40
1:A:778:ILE:HG22	1:A:779:TYR:CD1	2.56	0.40
1:A:1977:ILE:HD12	1:A:1977:ILE:HA	1.96	0.40
1:A:2225:HIS:ND1	1:A:2230:VAL:HG21	2.35	0.40
1:A:2510:LEU:HA	1:A:2510:LEU:HD23	1.86	0.40
1:A:178:LEU:HD23	1:A:178:LEU:H	1.86	0.40
1:A:1033:ILE:HD11	1:A:1059:LEU:HD11	2.02	0.40
1:A:1504:ASP:C	1:A:1506:SER:H	2.29	0.40
1:A:2296:SER:O	1:A:2299:TYR:HB2	2.22	0.40
1:A:2547:SER:O	1:A:2549:LYS:N	2.54	0.40
1:A:2785:ILE:HD12	1:A:2785:ILE:HA	1.94	0.40
1:A:3088:LEU:HD23	1:A:3088:LEU:HA	1.89	0.40
1:A:3167:ARG:O	1:A:3167:ARG:HG3	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3512:VAL:HG12	1:A:3513:ALA:H	1.87	0.40
1:A:3636:PHE:CD2	1:A:3640:PHE:HD2	2.38	0.40
1:A:336:ASN:HA	1:A:339:GLN:OE1	2.22	0.40
1:A:782:ARG:H	1:A:782:ARG:HG3	1.63	0.40
1:A:890:LYS:HA	1:A:908:ASP:OD2	2.21	0.40
1:A:1850:VAL:HG21	1:A:1873:TYR:CD2	2.56	0.40
1:A:2169:LEU:HD11	1:A:2193:ILE:HG13	2.03	0.40
1:A:2240:THR:HA	1:A:2243:GLU:CD	2.46	0.40
1:A:2288:TYR:CD2	1:A:2296:SER:HB3	2.56	0.40
1:A:3090:TYR:HE2	1:A:3102:TYR:HE2	1.69	0.40
1:A:3956:PRO:HG2	1:A:4064:LEU:HD11	2.02	0.40
1:A:345:PHE:O	1:A:349:ILE:HG22	2.21	0.40
1:A:487:LEU:HD23	1:A:487:LEU:HA	1.85	0.40
1:A:1033:ILE:HD11	1:A:1059:LEU:HD21	2.04	0.40
1:A:1838:GLU:O	1:A:1842:THR:OG1	2.29	0.40
1:A:2260:PHE:O	1:A:2270:ASN:ND2	2.55	0.40
1:A:2289:ASP:HB3	1:A:2290:PRO:HD3	2.03	0.40
1:A:2825:THR:HG22	1:A:2828:GLU:HG2	2.04	0.40
1:A:2999:LEU:HA	1:A:2999:LEU:HD23	1.87	0.40
1:A:3314:SER:C	1:A:3316:LEU:H	2.30	0.40
1:A:3574:ALA:HB2	1:A:3686:TRP:NE1	2.37	0.40
1:A:3871:PHE:CD1	1:A:4118:GLY:HA2	2.57	0.40
1:A:3887:PHE:CD2	1:A:3900:LEU:HB3	2.56	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	3602/4148 (87%)	3262 (91%)	332 (9%)	8 (0%)	44 72

All (8) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	723	ASP
1	A	2336	ILE
1	A	3730	ALA
1	A	3406	ALA
1	A	3804	GLU
1	A	2787	HIS
1	A	4026	SER
1	A	1813	SER

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	3196/3671 (87%)	3187 (100%)	9 (0%)	91 94

All (9) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	722	LYS
1	A	2576	MET
1	A	3728	VAL
1	A	3729	MET
1	A	3753	LYS
1	A	3756	GLU
1	A	3803	ILE
1	A	3804	GLU
1	A	3807	GLU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (21) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	322	GLN
1	A	356	ASN
1	A	638	GLN
1	A	990	GLN
1	A	1374	GLN

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Mol	Chain	Res	Type
1	A	1459	HIS
1	A	1574	ASN
1	A	1614	GLN
1	A	1691	GLN
1	A	1737	ASN
1	A	2163	HIS
1	A	2170	GLN
1	A	2225	HIS
1	A	2305	ASN
1	A	2351	GLN
1	A	2518	GLN
1	A	2553	HIS
1	A	2831	ASN
1	A	3327	ASN
1	A	3573	ASN
1	A	4110	GLN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains [i](#)

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

1 ligand is 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	2R4	A	6101	-	32,35,35	1.52	4 (12%)	38,51,51	1.63	8 (21%)

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	2R4	A	6101	-	-	2/8/16/16	0/6/6/6

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	6101	2R4	C06-C05	-4.89	1.43	1.50
2	A	6101	2R4	C03-C02	-3.43	1.42	1.48
2	A	6101	2R4	C30-C02	-2.13	1.40	1.44
2	A	6101	2R4	C07-C06	2.07	1.42	1.38

All (8) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	6101	2R4	C14-C10-C11	4.30	113.07	106.27
2	A	6101	2R4	C04-O22-C23	4.09	124.63	118.03
2	A	6101	2R4	O22-C04-C03	-3.31	117.31	121.27
2	A	6101	2R4	C15-C14-C10	-2.49	127.69	133.15
2	A	6101	2R4	C19-C05-C06	2.40	123.16	119.27
2	A	6101	2R4	C09-C10-C14	-2.35	127.98	133.15
2	A	6101	2R4	C10-C14-C13	2.07	114.17	108.03
2	A	6101	2R4	C29-N24-C25	2.04	116.55	112.62

There are no chirality outliers.

All (2) torsion outliers are listed below:

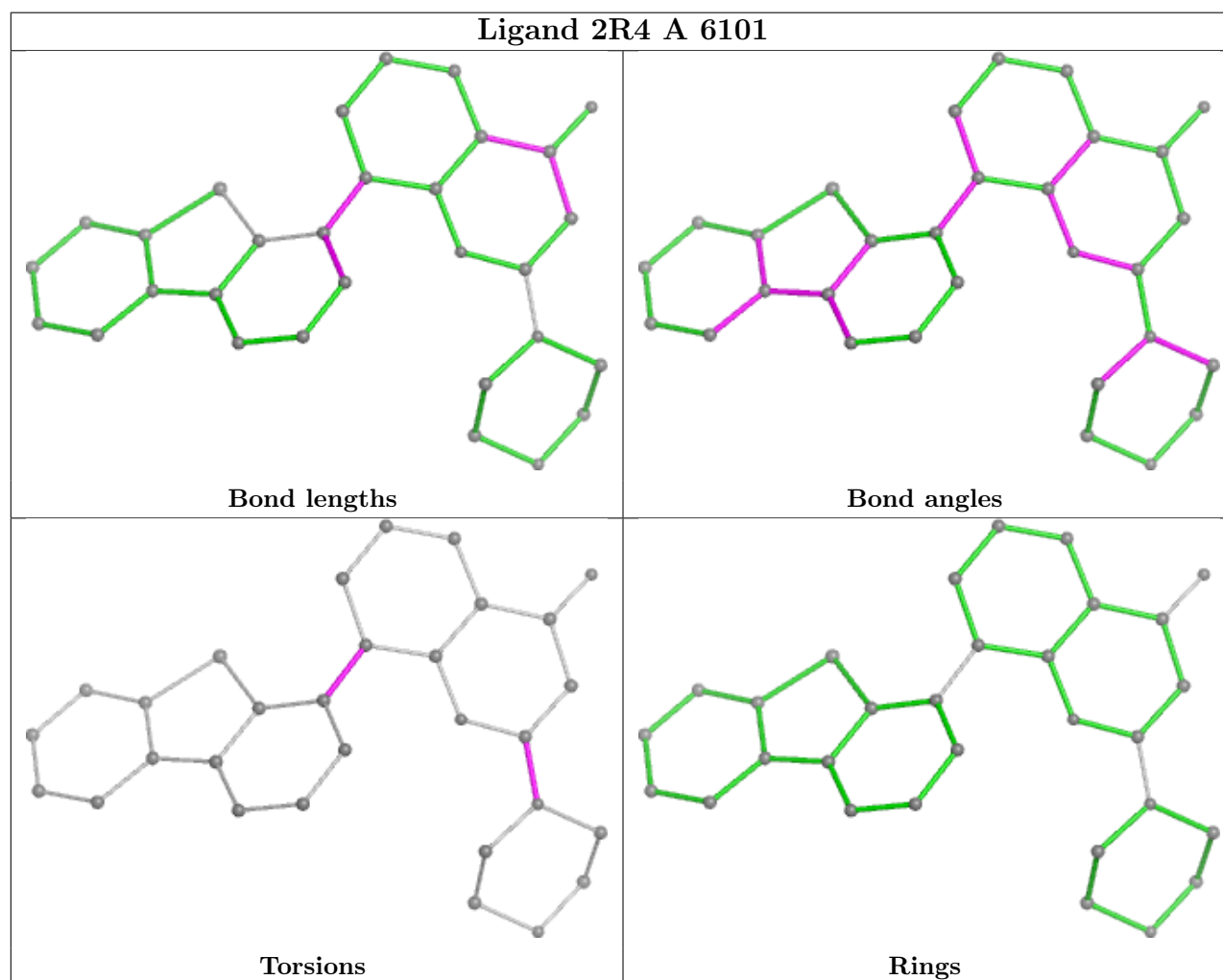
Mol	Chain	Res	Type	Atoms
2	A	6101	2R4	C30-C23-N24-C25
2	A	6101	2R4	C19-C05-C06-C07

There are no ring outliers.

1 monomer is involved in 8 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	A	6101	2R4	8	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 than 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.



5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
1	A	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	A	4128:MET	C	6001:UNK	N	83.48

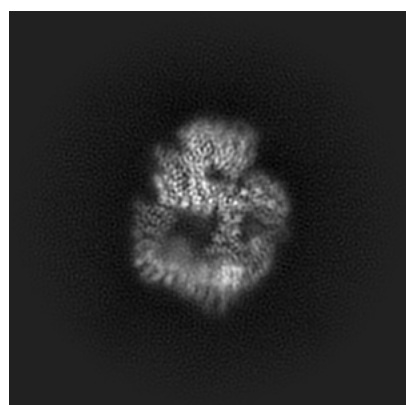
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-13062. These allow visual inspection of the internal detail of the map and identification of artifacts.

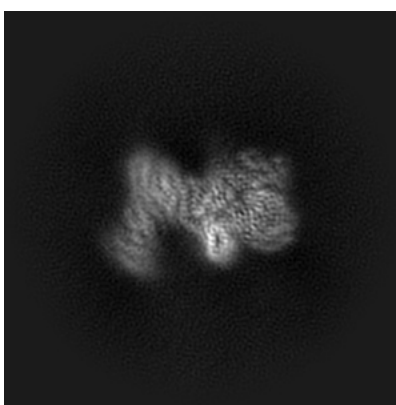
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections [i](#)

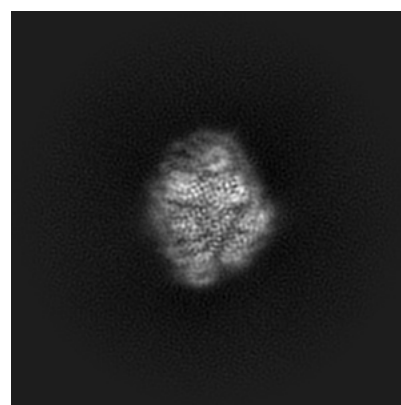
6.1.1 Primary map



X



Y

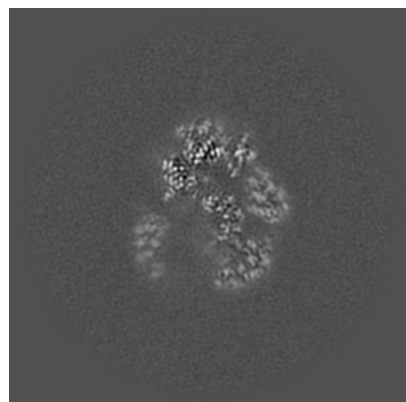


Z

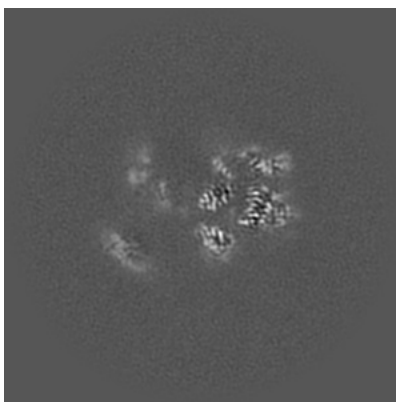
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

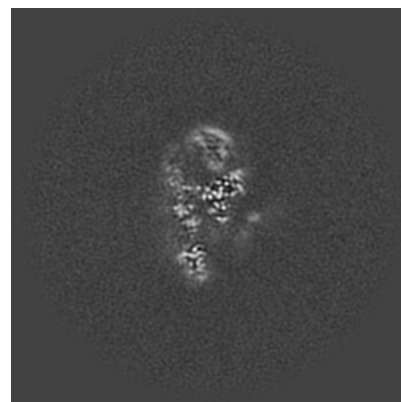
6.2.1 Primary map



X Index: 130



Y Index: 130

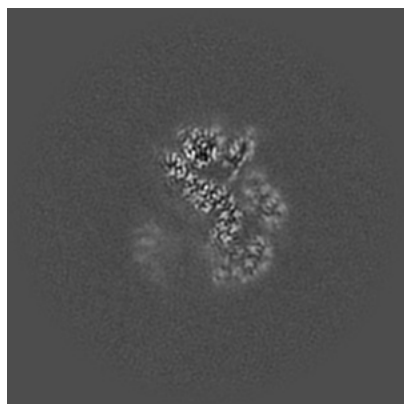


Z Index: 130

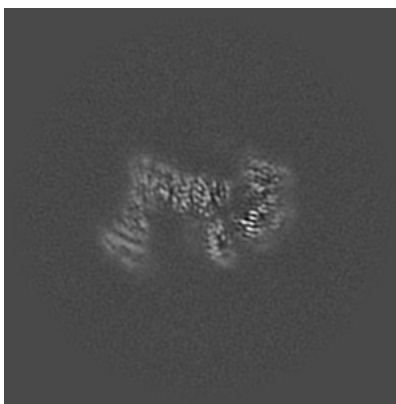
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

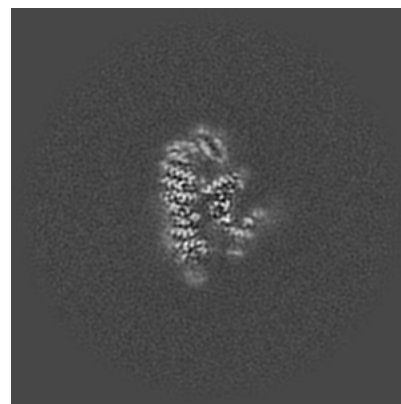
6.3.1 Primary map



X Index: 134



Y Index: 139

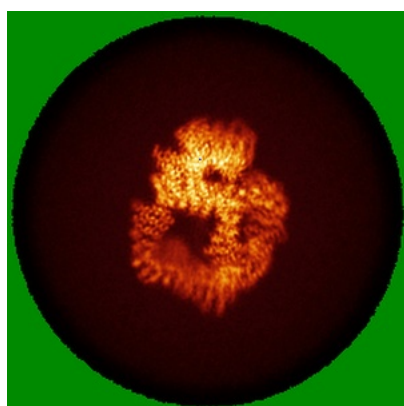


Z Index: 134

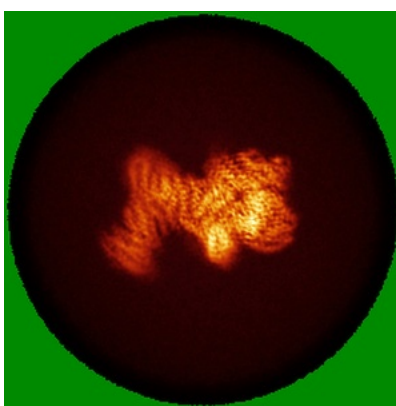
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) [i](#)

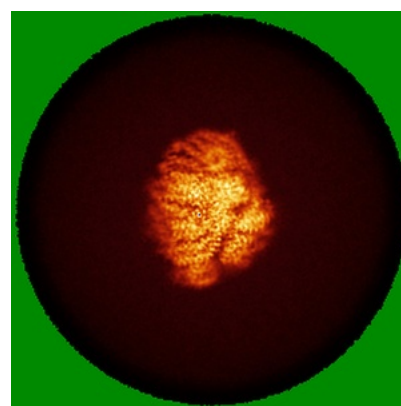
6.4.1 Primary map



X



Y



Z

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

6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



X



Y



Z

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

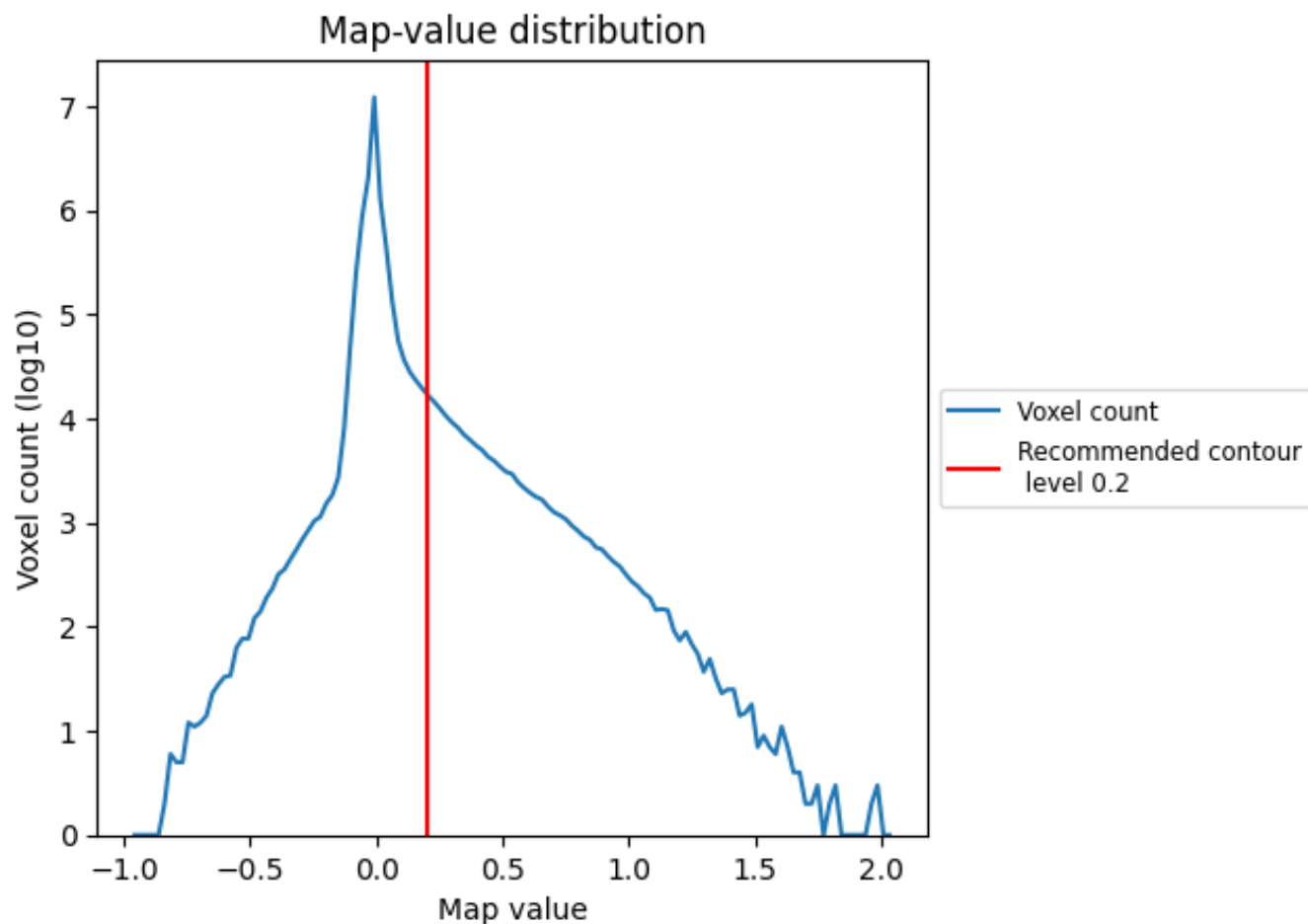
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

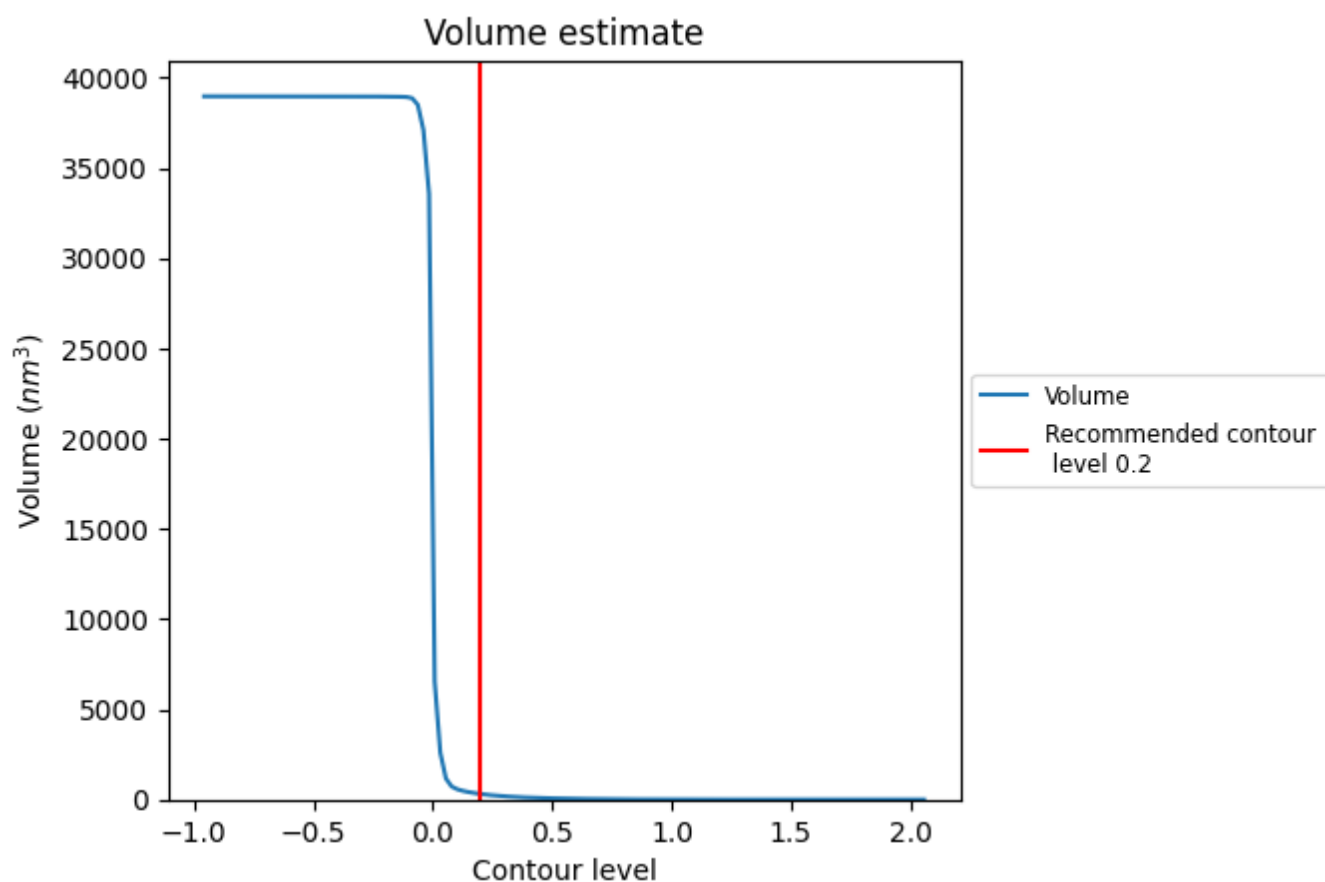
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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.

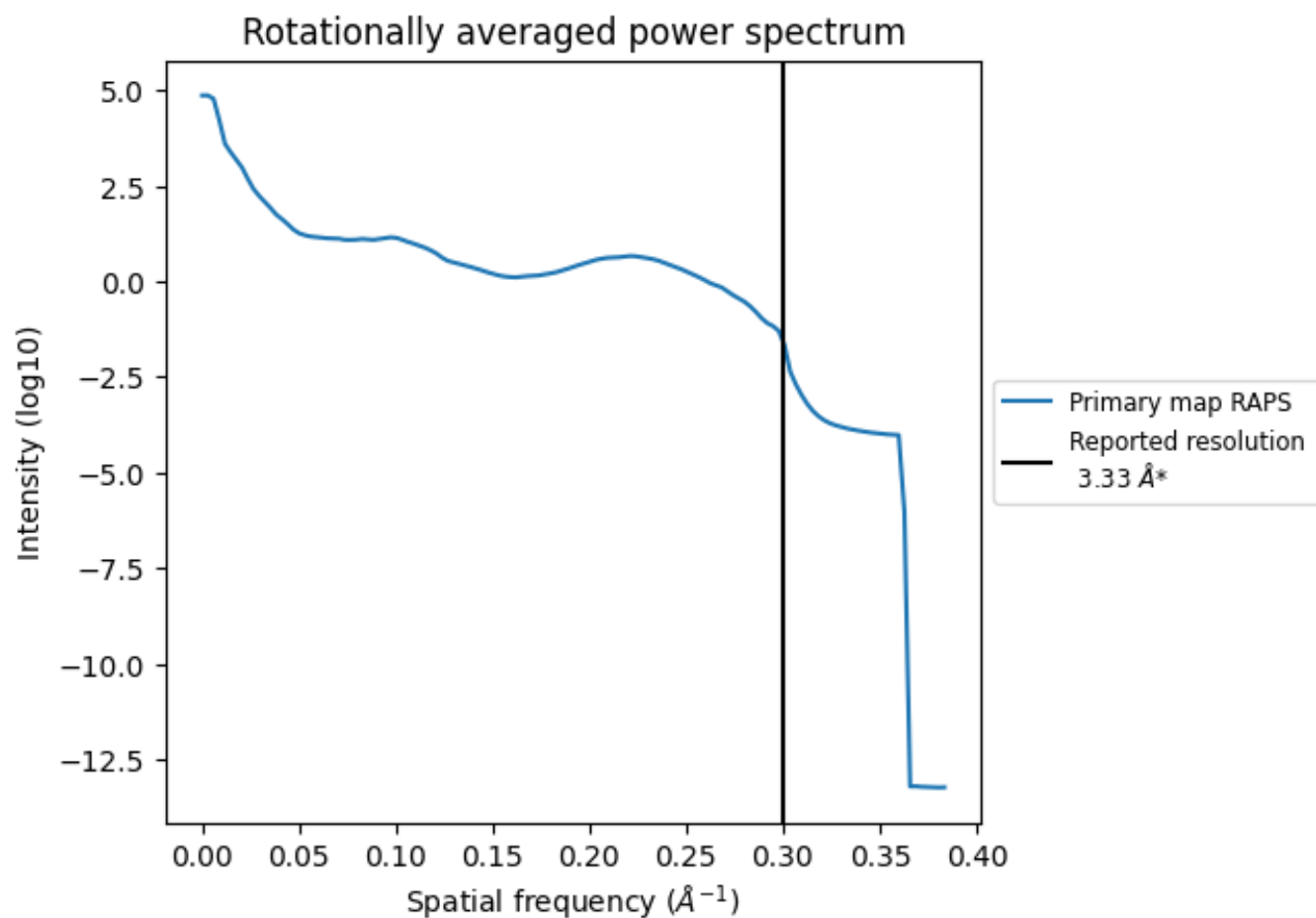
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 310 nm³; this corresponds to an approximate mass of 280 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 ⓘ



*Reported resolution corresponds to spatial frequency of 0.300 Å⁻¹

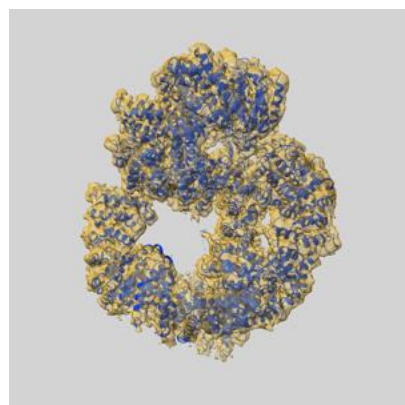
8 Fourier-Shell correlation ⓘ

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

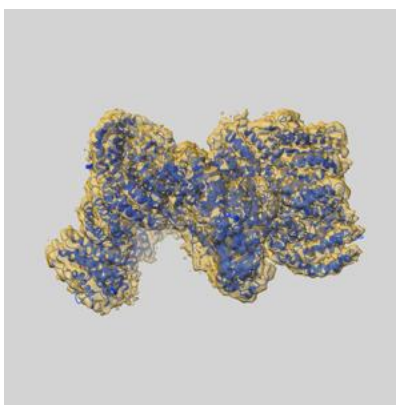
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-13062 and PDB model 7OTM. Per-residue inclusion information can be found in [section 3](#) on [page 4](#).

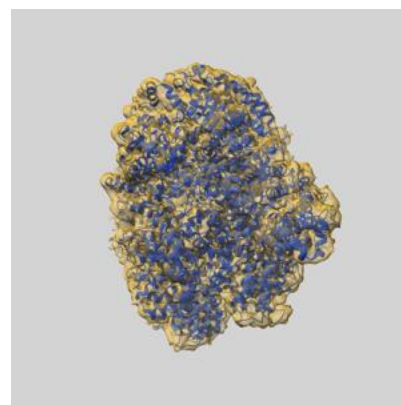
9.1 Map-model overlay [i](#)



X



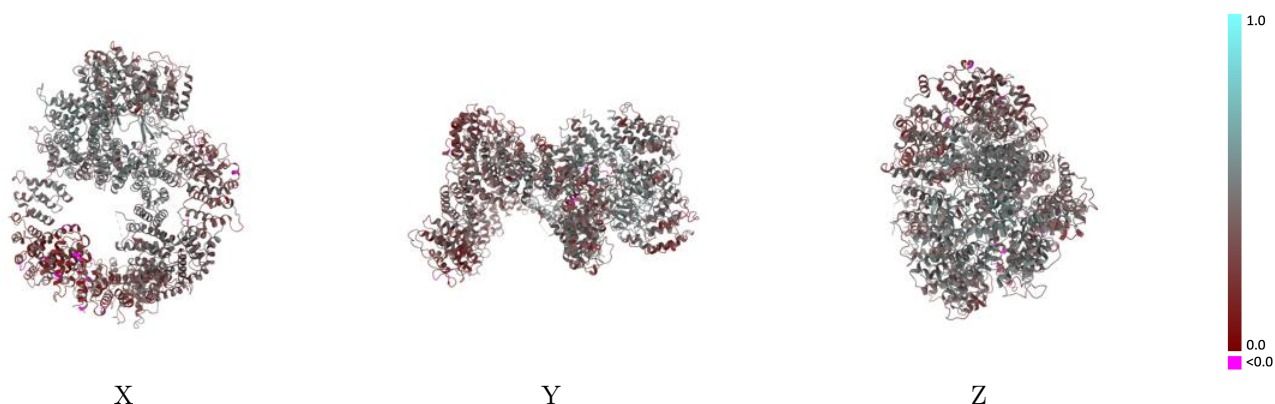
Y



Z

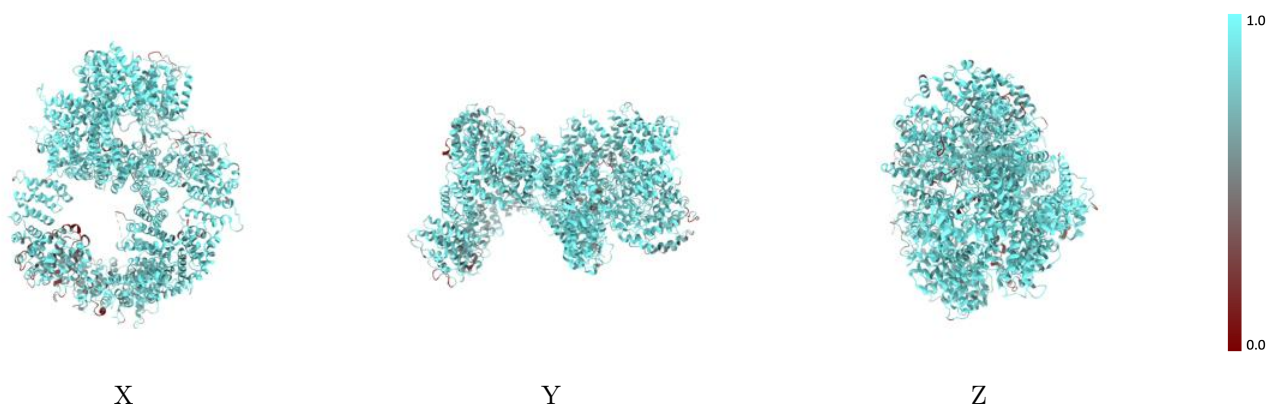
The images above show the 3D surface view of the map at the recommended contour level 0.2 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

9.2 Q-score mapped to coordinate model [i](#)



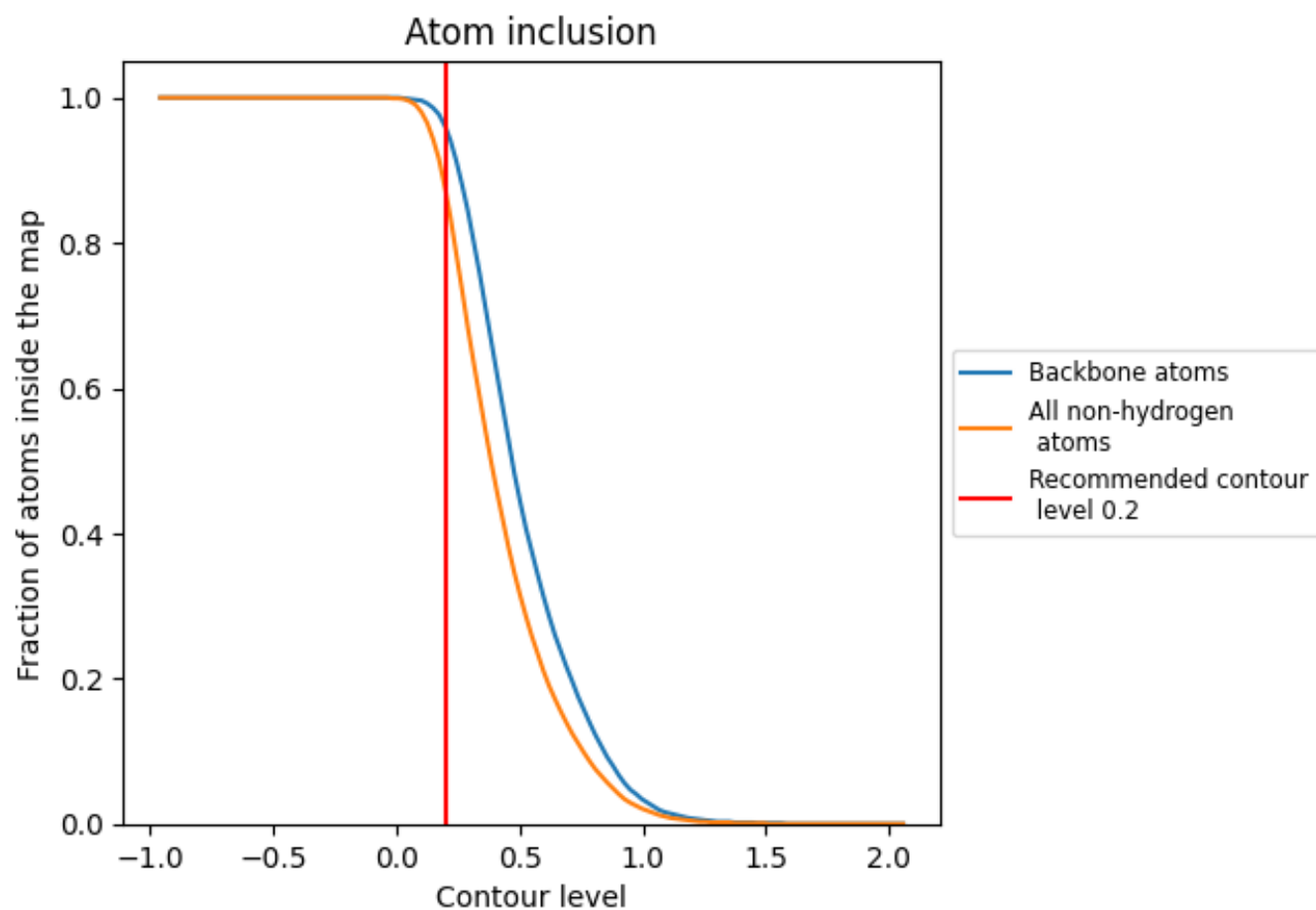
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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](#)



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, 96% of all backbone atoms, 87% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary ⓘ

The table lists the average atom inclusion at the recommended contour level (0.2) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8710	0.3940
A	0.8710	0.3940

