



## Full wwPDB EM Validation Report ⓘ

Mar 6, 2026 – 05:59 PM UTC

PDB ID : 6ZH6 / pdb\_00006zh6  
EMDB ID : EMD-11215  
Title : Cryo-EM structure of DNA-PKcs:Ku80ct194  
Authors : Chaplin, A.K.; Hardwick, S.W.; Chirgadze, D.Y.; Blundell, T.L.  
Deposited on : 2020-06-21  
Resolution : 3.93 Å(reported)

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

We welcome your comments at [validation@mail.wwpdb.org](mailto: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>.

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

EMDB validation analysis : 0.0.1.dev132  
MolProbity : 4-5-2 with Phenix2.0  
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)  
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) : 2.49

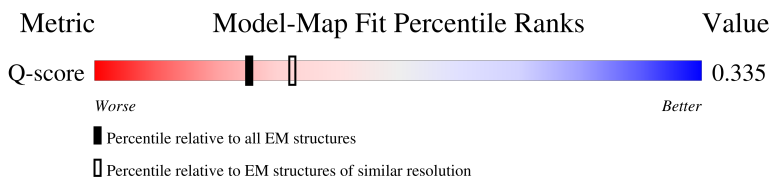
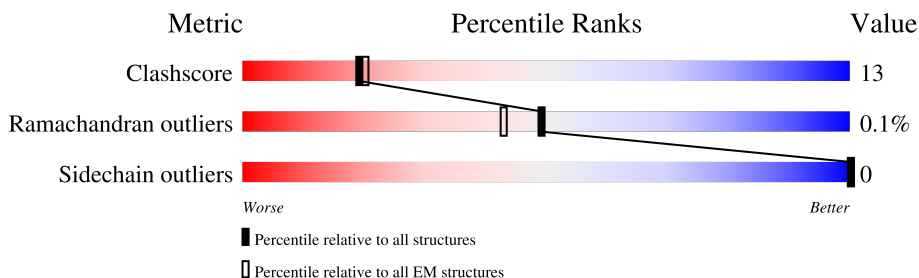
# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

*ELECTRON MICROSCOPY*

The reported resolution of this entry is 3.93 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
Q-score	-	25397	7811 ( 3.43 - 4.43 )

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 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	4156	 64% 24% 11%
2	B	192	 6% 93%

## 2 Entry composition

There are 2 unique types of molecules in this entry. The entry contains 29201 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
1	A	3692	Total	C	N	O	S	0	0
			29138	18697	4938	5311	192		

- Molecule 2 is a protein called X-ray repair cross-complementing protein 5.

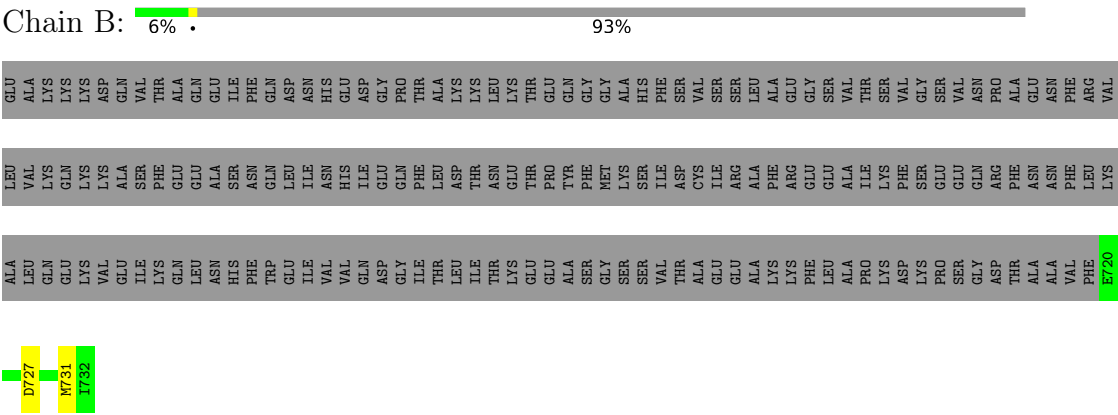
Mol	Chain	Residues	Atoms				AltConf	Trace
2	B	13	Total	C	N	O	0	0
			63	37	13	13		





W4027	M3658	R3734	G3626	Y3531	P3405	N3310	G3104	L2939	A2796	LEU
E4030	Y3859	P3735	A3627	P3532	A3406	N3311	N3105	ARG	R2800	ARG
B4041	R3964	R3736	R3630	I3534	M3414	S3109	Q3108	ARG	D2801	ARG
L4051	V3668	H3743	Q3634	S3541	L3416	F3110	F3109	ARG	A2805	ARG
A4054	E3875	D3744	F3642	P3542	L3424	M3111	M3111	PHE	L2837	MET
L4064	V3878	L3751	D3640	G3548	N3430	L3120	L3120	THR	N2841	ASP
L4065	P3879	D3757	K3642	H3549	ALA	L3121	L3121	THR	N2845	THR
L4066	A3880	L3758	H3643	K3550	SER	K3128	K3128	THR	C2857	GLN
E4069	D3881	R3759	K3646	N3551	VAL	Q3133	Q3133	THR	L2976	LEU
D4086	L3882	Q3760	F3653	K3552	ILE	T3136	T3136	THR	S2862	LEU
H4087	R3889	R3763	S3649	F3554	ASP	E3137	E3137	THR	Q2864	ALA
M4088	K3650	R3763	V3555	A3556	ALA	L3142	L3142	THR	H2865	ALA
E4093	K3655	M3771	K3657	R3557	GLU	I3145	I3145	THR	L2868	GLY
E4100	L3656	L3774	K3657	K3561	A3440	L3151	L3151	THR	D2872	VAL
E4101	D3657	L3775	L3662	L3562	A3441	E2990	E2990	THR	V2876	GLU
T4102	D3658	L3776	D3658	V3567	Y3442	K3164	K3164	THR	G2879	GLN
Q4103	F3659	A3775	F3660	I3568	K3449	P3169	P3169	THR	A3006	GLY
L4104	D3661	A3776	D3661	Q3569	L3451	W3179	W3179	THR	S2883	GLY
K4105	G3912	Q3777	D3664	F3570	I3472	K3180	K3180	THR	E2894	GLY
C4106	I3913	Q3787	N3664	F3571	I3472	P3181	P3181	THR	P2902	ALA
L4107	H3915	Q3787	M3670	N3572	K3483	I3182	I3182	THR	A3022	GLY
M4108	D3922	V3794	S3674	A3574	T3484	R3186	R3186	THR	N3028	GLY
D4113	R3923	F3795	L3680	L3575	K3485	K3196	K3196	THR	K3029	GLY
E4122	E3942	M3796	K3681	S3577	F3487	L3197	L3197	THR	LEU	GLY
G4123	Q3951	L3800	E3682	L3578	I3487	THR	THR	THR	PRO	GLY
H4124	G3801	G3801	C3683	E3582	P3491	PRO	PRO	THR	LEU	GLY
E4125	L3802	L3802	S3684	L3596	C3492	LEU	LEU	THR	GLY	GLY
P4126	L3803	L3803	P3685	K3586	W3493	PRO	PRO	THR	LEU	GLY
M4127	W3686	L3806	W3686	V3592	F3495	GLU	GLU	THR	VAL	ASP
X5009	M3687	L3806	M3687	V3592	K3502	ASN	ASN	THR	ARG	GLY
X6004	L3699	T3809	L3699	E3595	L3505	ASN	ASN	THR	GLY	GLY
X6005	E3700	L3812	E3700	L3596	L3505	SER	SER	THR	LYS	GLY
X6006	I3701	L3812	I3701	A3597	D3509	MET	MET	THR	VAL	ASP
X6015	P3702	N3818	P3702	K3598	Q3510	ASN	ASN	THR	L2916	VAL
X6019	Q3703	M3819	Q3703	K3598	K3510	VAL	VAL	THR	P2917	GLY
X6023	Q3704	M3820	Q3704	V3601	A3513	ASP	ASP	THR	V2920	ASP
X6023	S3821	S3821	S3711	K3603	V3514	GLN	GLN	THR	L2921	GLY
X6023	K3825	K3825	V3717	T3606	S3517	GLY	GLY	THR	R2922	ASP
X6023	R3718	L3829	R3718	E3607	I3521	ASP	ASP	THR	W2923	GLY
X6023	S3830	S3830	M3609	M3609	T3522	SER	SER	THR	W2924	ALA
X6023	D3723	D3831	D3723	M3609	Y3525	ASP	ASP	THR	S2789	ALA
X6023	E3724	E3724	E3724	R3612	Y3525	ARG	ARG	THR	L2790	GLY
X6023	A3834	A3834	V3728	M3613	I3529	MET	MET	THR	I2791	GLY
X6023	Y3855	Y3855	M3729	M3613	I3529	GLU	GLU	THR	S2931	ARG
X6023	P3995	P3995	A3730	L3617	V3530	VAL	VAL	THR	I2933	ASP

- Molecule 2: X-ray repair cross-complementing protein 5



## 4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	43995	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 ( $e^-/\text{\AA}^2$ )	54.49	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.504	Depositor
Minimum map value	-0.138	Depositor
Average map value	0.002	Depositor
Map value standard deviation	0.024	Depositor
Recommended contour level	0.125	Depositor
Map size ( $\text{\AA}$ )	336.64, 336.64, 336.64	wwPDB
Map dimensions	320, 320, 320	wwPDB
Map angles ( $^\circ$ )	90.0, 90.0, 90.0	wwPDB
Pixel spacing ( $\text{\AA}$ )	1.052, 1.052, 1.052	Depositor



## 5 Model quality [i](#)

### 5.1 Standard geometry [i](#)

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	0.16	0/29593	0.38	1/40028 (0.0%)
2	B	0.16	0/62	0.43	0/84
All	All	0.16	0/29655	0.38	1/40112 (0.0%)

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	1659	VAL	N-CA-C	-6.32	107.70	113.71

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	29138	0	29130	702	0
2	B	63	0	27	1	0
All	All	29201	0	29157	703	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 13.

All (703) 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:1175:HIS:HB3	1:A:1178:ARG:HH21	1.41	0.85
1:A:1396:PRO:HB3	1:A:1457:GLN:HE22	1.40	0.85
1:A:1178:ARG:NH1	1:A:1183:CYS:SG	2.55	0.80
1:A:3256:MET:HE3	1:A:3287:ARG:HH21	1.47	0.79
1:A:166:ILE:HG13	1:A:167:PRO:HD3	1.64	0.79
1:A:3169:PRO:HG3	1:A:3182:ILE:HD11	1.64	0.79
1:A:3521:ILE:HG22	1:A:3529:ILE:HD11	1.66	0.78
1:A:2578:GLU:OE1	1:A:2579:HIS:ND1	2.17	0.77
1:A:3702:PRO:HB2	1:A:3794:VAL:HG11	1.66	0.76
1:A:2220:MET:HE1	1:A:2255:LEU:HB3	1.67	0.75
1:A:251:PHE:HA	1:A:254:LYS:HG2	1.68	0.74
1:A:1151:ARG:NH1	1:A:1163:LEU:O	2.21	0.74
1:A:165:LYS:HB3	1:A:167:PRO:HD2	1.69	0.74
1:A:537:SER:HA	1:A:540:MET:HE2	1.69	0.73
1:A:1445:ARG:HA	1:A:1448:LEU:HB3	1.70	0.73
1:A:3236:PHE:HE1	1:A:3262:LEU:HD21	1.52	0.73
1:A:3288:SER:O	1:A:3289:ARG:NH1	2.22	0.73
1:A:1479:VAL:HA	1:A:1482:GLU:HG3	1.69	0.73
1:A:330:ASN:HB3	1:A:333:MET:HE2	1.71	0.72
1:A:734:LEU:HD11	1:A:768:VAL:HG12	1.69	0.72
1:A:3592:VAL:HA	1:A:3595:GLU:HG2	1.72	0.72
1:A:3655:LYS:HB2	1:A:3659:PHE:H	1.55	0.72
1:A:3596:LEU:HD22	1:A:3602:ASN:HB2	1.71	0.71
1:A:253:LEU:HD13	1:A:268:PRO:HA	1.72	0.71
1:A:2148:LYS:HZ3	1:A:2152:ASN:HB3	1.56	0.71
1:A:2796:ALA:O	1:A:2800:ARG:NH1	2.24	0.70
1:A:2091:HIS:HB3	1:A:2094:MET:HG2	1.74	0.70
1:A:2424:MET:HE1	1:A:2435:CYS:HB3	1.73	0.69
1:A:616:LYS:HD3	1:A:6004:UNK:HA	1.74	0.69
1:A:1010:LEU:HA	1:A:1013:ILE:HG22	1.74	0.69
1:A:1295:ALA:HA	1:A:1298:LEU:HD12	1.76	0.68
1:A:2175:GLU:HG3	1:A:2176:ASN:H	1.57	0.68
1:A:3767:LEU:HB3	1:A:3771:MET:HE1	1.76	0.68
1:A:1200:GLY:HA3	1:A:1202:ARG:HH21	1.59	0.68
1:A:3680:LEU:HD23	1:A:3682:GLU:H	1.59	0.68
1:A:2467:THR:HG21	1:A:2514:ASN:HD22	1.57	0.67
1:A:381:VAL:HA	1:A:384:MET:HE2	1.76	0.67
1:A:1653:LEU:HD12	1:A:1695:LEU:HD12	1.75	0.67
1:A:2131:GLY:O	1:A:2135:ASN:ND2	2.27	0.67
1:A:668:LYS:NZ	1:A:728:SER:OG	2.24	0.67
1:A:131:LEU:HD11	1:A:171:LEU:HG	1.77	0.67
1:A:236:LYS:O	1:A:246:ARG:NH1	2.28	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:977:ASP:OD1	1:A:978:GLN:N	2.29	0.66
1:A:333:MET:HG3	1:A:334:HIS:CD2	2.30	0.66
1:A:1952:ILE:HG23	1:A:1956:PHE:HB3	1.78	0.66
1:A:3369:ASP:HB3	1:A:3372:LYS:HD3	1.78	0.66
1:A:1864:ASP:HA	1:A:1867:ILE:HG12	1.77	0.66
1:A:2837:LEU:O	1:A:2841:ASN:ND2	2.29	0.65
1:A:3757:ASP:OD1	1:A:3758:LEU:N	2.30	0.65
1:A:1396:PRO:HB3	1:A:1457:GLN:NE2	2.10	0.65
1:A:538:ASP:OD1	1:A:539:GLN:NE2	2.29	0.65
1:A:3626:GLY:HA3	1:A:3684:SER:HA	1.78	0.65
1:A:3760:GLN:NE2	1:A:3942:PHE:O	2.30	0.65
1:A:2922:ARG:HH11	1:A:2922:ARG:HG3	1.61	0.65
1:A:3006:ALA:HB3	1:A:3257:LYS:HE2	1.78	0.65
1:A:4086:ASP:OD1	1:A:4087:HIS:N	2.29	0.65
1:A:1049:GLN:OE1	1:A:1057:LYS:NZ	2.29	0.64
1:A:1444:ASP:OD1	1:A:1445:ARG:N	2.29	0.64
1:A:3529:ILE:HG22	1:A:3533:PHE:HB2	1.79	0.64
1:A:3493:TRP:CE2	1:A:3711:PRO:HG3	2.33	0.64
1:A:1568:ASN:ND2	1:A:1599:GLY:O	2.31	0.64
1:A:3776:ALA:HB2	1:A:3787:GLN:HE22	1.63	0.64
1:A:3613:MET:O	1:A:3617:LEU:N	2.27	0.64
1:A:1124:ILE:HD13	1:A:1182:GLU:HG3	1.79	0.63
1:A:1057:LYS:HG3	1:A:1152:ARG:HH22	1.62	0.63
1:A:1583:MET:HE1	1:A:1629:CYS:HB2	1.80	0.63
1:A:3525:TYR:HE2	1:A:3712:LEU:HB2	1.63	0.63
1:A:753:GLN:NE2	1:A:791:ASP:O	2.32	0.63
1:A:172:GLU:HG2	1:A:223:CYS:HB3	1.79	0.63
1:A:924:ARG:NH1	1:A:977:ASP:OD2	2.23	0.63
1:A:1414:ILE:O	1:A:1418:HIS:ND1	2.28	0.62
1:A:1202:ARG:HH12	1:A:1207:TRP:HD1	1.47	0.62
1:A:3704:GLN:HE22	1:A:3717:VAL:HB	1.64	0.62
1:A:2391:GLY:O	1:A:2431:ARG:NH2	2.31	0.62
1:A:3164:TRP:O	1:A:3186:ARG:NH1	2.31	0.62
1:A:538:ASP:HA	1:A:541:MET:HE1	1.81	0.62
1:A:3923:ARG:O	1:A:4124:TRP:NE1	2.32	0.62
1:A:280:SER:HA	1:A:322:GLN:HE21	1.64	0.62
1:A:10:CYS:SG	1:A:14:ARG:NH1	2.72	0.62
1:A:2100:LEU:O	1:A:2104:MET:HG3	1.99	0.62
1:A:2217:ASN:OD1	1:A:2218:PHE:N	2.33	0.62
1:A:1265:GLU:HG2	1:A:1340:ARG:HH22	1.64	0.61
1:A:2987:THR:HG23	1:A:2990:GLU:H	1.64	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3576:ASP:HB3	1:A:3800:LEU:HD12	1.82	0.61
1:A:135:LEU:HD11	1:A:176:GLU:HB3	1.81	0.61
1:A:3989:ARG:NH2	1:A:4101:GLU:OE2	2.33	0.61
1:A:254:LYS:HB3	1:A:296:VAL:HG11	1.81	0.61
1:A:1361:LYS:O	1:A:1365:ASN:N	2.32	0.61
1:A:229:SER:O	1:A:278:HIS:NE2	2.33	0.61
1:A:891:ARG:NH1	1:A:957:PRO:O	2.34	0.61
1:A:2135:ASN:O	1:A:2143:ARG:NH1	2.33	0.61
1:A:1840:PHE:HA	1:A:1843:ILE:HG22	1.82	0.61
1:A:2439:ILE:O	1:A:2443:MET:N	2.34	0.60
1:A:3108:GLN:NE2	1:A:3111:MET:SD	2.73	0.60
1:A:1014:LEU:HD12	1:A:1025:LEU:HD21	1.84	0.60
1:A:879:MET:SD	1:A:879:MET:N	2.74	0.60
1:A:994:TRP:CE2	1:A:2581:LEU:HD13	2.37	0.60
1:A:1690:GLY:O	1:A:1693:VAL:HG12	2.01	0.60
1:A:1881:TYR:HD2	1:A:1951:VAL:HA	1.66	0.60
1:A:3699:LEU:O	1:A:3718:ARG:HB2	2.01	0.60
1:A:1825:LEU:HA	1:A:1828:LEU:HB2	1.82	0.59
1:A:939:MET:HE3	1:A:987:LEU:HD11	1.84	0.59
1:A:3424:LEU:HD11	1:A:3442:TYR:HB3	1.85	0.59
1:A:3472:ILE:HD13	1:A:3483:MET:HE1	1.83	0.59
1:A:3831:ASP:HB3	1:A:3834:ALA:HB2	1.82	0.59
1:A:1181:THR:HG22	1:A:1184:ARG:HH22	1.66	0.59
1:A:217:LEU:HD23	1:A:218:PRO:HD3	1.84	0.59
1:A:2466:SER:HB2	1:A:2468:THR:HG22	1.85	0.58
1:A:989:MET:O	1:A:993:HIS:ND1	2.29	0.58
1:A:2467:THR:OG1	1:A:2470:ARG:NH2	2.37	0.58
1:A:3606:ILE:HG23	1:A:3609:MET:HE1	1.85	0.58
1:A:4088:ASN:ND2	1:A:4113:ASP:OD2	2.35	0.58
1:A:1389:VAL:HG13	1:A:1390:GLN:H	1.67	0.58
1:A:70:ARG:HG2	1:A:82:ARG:HB3	1.85	0.58
1:A:1675:TYR:OH	1:A:1692:ALA:O	2.20	0.58
1:A:580:ASP:OD2	1:A:616:LYS:NZ	2.37	0.57
1:A:1372:LEU:HD21	1:A:1403:MET:HE1	1.85	0.57
1:A:1770:GLN:HG3	1:A:1822:ARG:HH22	1.70	0.57
1:A:2143:ARG:O	1:A:2147:ALA:N	2.34	0.57
1:A:1575:LEU:H	1:A:1575:LEU:HD23	1.70	0.57
1:A:2104:MET:HE1	1:A:2125:TRP:CE2	2.40	0.57
1:A:3179:TRP:HB3	1:A:3242:MET:HE3	1.87	0.57
1:A:3829:LEU:HD12	1:A:3830:SER:HB3	1.86	0.57
1:A:978:GLN:OE1	1:A:981:ARG:NH2	2.38	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2931:ARG:HH21	1:A:2939:LEU:HD21	1.69	0.57
1:A:286:LEU:HD23	1:A:319:PHE:HD1	1.70	0.56
1:A:395:MET:HA	1:A:395:MET:HE3	1.85	0.56
1:A:1148:ALA:HB2	1:A:1164:CYS:HB2	1.87	0.56
1:A:1365:ASN:HD22	1:A:1411:TYR:HE1	1.53	0.56
1:A:3256:MET:O	1:A:3260:LYS:N	2.35	0.56
1:A:741:ILE:HG23	1:A:748:TYR:HD2	1.71	0.56
1:A:3525:TYR:CE2	1:A:3712:LEU:HB2	2.40	0.56
1:A:1473:THR:OG1	1:A:1474:ASP:N	2.39	0.56
1:A:1754:GLN:HA	1:A:1785:ILE:HD11	1.85	0.56
1:A:2225:HIS:CD2	1:A:2226:PRO:HD2	2.40	0.56
1:A:1949:ILE:HG23	1:A:2100:LEU:HD22	1.87	0.56
1:A:1976:LEU:HD23	1:A:2142:ILE:HD13	1.87	0.56
1:A:2576:MET:HB3	1:A:2787:HIS:NE2	2.20	0.56
1:A:1802:TYR:CZ	1:A:1806:ARG:HD3	2.41	0.56
1:A:3758:LEU:HD12	1:A:3801:GLY:HA3	1.88	0.56
1:A:3274:VAL:HG11	1:A:3315:TYR:CE2	2.41	0.56
1:A:1819:PHE:O	1:A:1823:SER:OG	2.22	0.56
1:A:3335:ARG:O	1:A:3339:ASN:ND2	2.37	0.56
1:A:727:ALA:HA	1:A:765:LEU:HD11	1.88	0.55
1:A:1045:THR:HB	1:A:1048:GLN:HG2	1.86	0.55
1:A:1301:ILE:HD12	1:A:1371:VAL:HG21	1.89	0.55
1:A:1817:GLN:OE1	1:A:1936:ARG:NH2	2.36	0.55
1:A:1933:LEU:HB3	1:A:1936:ARG:HB2	1.88	0.55
1:A:248:ILE:HA	1:A:251:PHE:CE2	2.41	0.55
1:A:1203:SER:HB2	1:A:1206:LEU:HD13	1.87	0.55
1:A:3383:GLN:O	1:A:3387:GLU:N	2.36	0.55
1:A:3244:ASP:OD1	1:A:3247:ARG:NH1	2.33	0.55
1:A:131:LEU:HD21	1:A:171:LEU:HA	1.88	0.55
1:A:1512:SER:HB2	1:A:1566:THR:HG21	1.88	0.55
1:A:1882:SER:O	1:A:1883:ARG:HG2	2.06	0.55
1:A:2216:LEU:HA	1:A:2219:LEU:HB2	1.87	0.55
1:A:1634:ALA:O	1:A:1642:LYS:NZ	2.39	0.55
1:A:1623:LEU:HD21	1:A:1652:ILE:HG21	1.88	0.55
1:A:3151:LEU:HD21	1:A:3197:LEU:HB2	1.89	0.55
1:A:3484:THR:HA	1:A:3487:ILE:HG22	1.88	0.55
1:A:3879:PRO:HB2	1:A:3882:LEU:HG	1.89	0.55
1:A:3048:LYS:HE2	1:A:3061:LEU:HD21	1.89	0.55
1:A:3100:LYS:HD3	1:A:3142:ILE:HG21	1.89	0.55
1:A:89:LEU:HA	1:A:92:PHE:HB3	1.88	0.54
1:A:1155:ARG:HG2	1:A:1155:ARG:HH11	1.72	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2126:MET:O	1:A:2130:HIS:N	2.40	0.54
1:A:3243:ILE:HD13	1:A:3259:LEU:HD13	1.90	0.54
1:A:1479:VAL:HG11	1:A:1518:ALA:HA	1.89	0.54
1:A:3627:ALA:HA	1:A:3630:ARG:HG2	1.90	0.54
1:A:1369:MET:HA	1:A:1372:LEU:HB3	1.89	0.54
1:A:2310:VAL:HG12	1:A:2311:ARG:N	2.23	0.54
1:A:3818:ASN:O	1:A:3889:ARG:NH2	2.38	0.54
1:A:1211:VAL:O	1:A:1215:GLU:HG3	2.08	0.54
1:A:1482:GLU:HA	1:A:1486:LEU:HD23	1.90	0.54
1:A:2999:LEU:HD13	1:A:3043:TYR:HD2	1.72	0.54
1:A:21:ALA:HA	1:A:24:ARG:HD2	1.90	0.54
1:A:281:GLN:N	1:A:281:GLN:OE1	2.41	0.54
1:A:3793:VAL:HG22	1:A:3803:ILE:HG22	1.90	0.54
1:A:3120:LEU:HD12	1:A:3896:ALA:HA	1.89	0.54
1:A:334:HIS:O	1:A:338:LEU:N	2.36	0.54
1:A:1407:LYS:HA	1:A:1412:LYS:HD3	1.90	0.54
1:A:718:MET:SD	1:A:719:LYS:HD3	2.47	0.53
1:A:3530:VAL:HA	1:A:3562:LEU:HD21	1.90	0.53
1:A:1733:THR:HG22	1:A:1735:ARG:H	1.72	0.53
1:A:2227:LYS:HB2	1:A:2230:VAL:HG22	1.90	0.53
1:A:3718:ARG:HD3	1:A:3743:HIS:ND1	2.23	0.53
1:A:364:ARG:HG3	1:A:364:ARG:HH11	1.73	0.53
1:A:921:ALA:HB3	1:A:927:LYS:HB2	1.91	0.53
1:A:2786:LYS:O	1:A:2788:SER:N	2.41	0.53
1:A:308:LEU:O	1:A:312:ALA:N	2.38	0.53
1:A:2538:ARG:O	1:A:2542:LEU:N	2.42	0.53
1:A:154:SER:O	1:A:158:GLY:N	2.33	0.53
1:A:1442:GLN:HA	1:A:1445:ARG:NH1	2.23	0.53
1:A:1868:THR:HA	1:A:1871:MET:HE3	1.89	0.53
1:A:3606:ILE:HD11	1:A:3608:LYS:HB3	1.89	0.53
1:A:397:LEU:HD11	1:A:437:HIS:HB3	1.89	0.53
1:A:542:ASP:OD1	1:A:543:SER:N	2.42	0.53
1:A:653:LEU:HD11	1:A:669:LEU:HG	1.89	0.53
1:A:60:SER:HA	1:A:63:PHE:HD2	1.74	0.53
1:A:466:LEU:HD11	1:A:557:SER:HB3	1.90	0.53
1:A:2168:LEU:HD22	1:A:2189:ILE:HD11	1.89	0.53
1:A:3348:LEU:HD23	1:A:3351:ILE:HD11	1.91	0.53
1:A:3640:PHE:HA	1:A:3643:HIS:HB3	1.89	0.53
1:A:3901:ARG:HG3	1:A:3970:LEU:HD11	1.90	0.53
1:A:1225:GLU:HB3	1:A:1236:LEU:HB2	1.91	0.53
1:A:1227:GLY:N	1:A:1233:SER:O	2.32	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1575:LEU:HD21	1:A:1617:LYS:HE3	1.91	0.53
1:A:1843:ILE:O	1:A:1847:ALA:N	2.42	0.53
1:A:1972:GLU:HB3	1:A:2142:ILE:HD12	1.90	0.53
1:A:2327:LEU:HA	1:A:2330:VAL:HG12	1.91	0.53
1:A:3567:VAL:HG22	1:A:3699:LEU:HD21	1.91	0.53
1:A:431:TYR:CE1	1:A:1643:MET:HE1	2.44	0.52
1:A:1112:ALA:HB2	1:A:1178:ARG:HH11	1.74	0.52
1:A:3389:VAL:HG11	1:A:3416:LEU:HD22	1.91	0.52
1:A:394:GLN:NE2	1:A:1738:ASN:OD1	2.42	0.52
1:A:1200:GLY:HA3	1:A:1202:ARG:NH2	2.25	0.52
1:A:1686:LEU:O	1:A:1690:GLY:N	2.39	0.52
1:A:320:LEU:HA	1:A:323:VAL:HG12	1.90	0.52
1:A:878:GLU:HA	1:A:880:MET:HE1	1.90	0.52
1:A:3145:ILE:HD11	1:A:3196:LYS:HE2	1.92	0.52
1:A:959:TYR:HB2	1:A:1004:GLN:HG3	1.90	0.52
1:A:1828:LEU:O	1:A:1883:ARG:NH2	2.42	0.52
1:A:162:LEU:HD12	1:A:163:LYS:HG2	1.91	0.52
1:A:345:PHE:O	1:A:349:ILE:HG22	2.09	0.52
1:A:3717:VAL:HA	1:A:3743:HIS:CE1	2.44	0.52
1:A:243:GLN:O	1:A:246:ARG:HG2	2.10	0.52
1:A:707:PHE:O	1:A:711:GLY:N	2.39	0.52
1:A:913:ARG:NH1	1:A:2801:ASP:OD2	2.42	0.52
1:A:2470:ARG:NH1	1:A:2512:ASP:OD1	2.42	0.52
1:A:538:ASP:OD1	1:A:538:ASP:N	2.42	0.52
1:A:1727:ARG:HG3	1:A:1727:ARG:HH11	1.75	0.52
1:A:201:LEU:HA	1:A:204:LEU:HD12	1.91	0.52
1:A:382:ASP:OD1	1:A:383:PHE:N	2.42	0.52
1:A:537:SER:HA	1:A:540:MET:CE	2.40	0.51
1:A:977:ASP:HB3	1:A:980:THR:HB	1.92	0.51
1:A:2864:GLN:C	1:A:2865:HIS:HD1	2.17	0.51
1:A:192:ASN:HA	1:A:195:ASN:HD21	1.75	0.51
1:A:2439:ILE:HG22	1:A:2443:MET:HB3	1.91	0.51
1:A:3646:LYS:O	1:A:3650:LYS:N	2.40	0.51
1:A:1949:ILE:HD12	1:A:2100:LEU:HD22	1.92	0.51
1:A:3298:LEU:HA	1:A:3301:LEU:HD13	1.92	0.51
1:A:877:ASP:HA	1:A:879:MET:HE1	1.92	0.51
1:A:936:SER:OG	1:A:2773:ARG:NH1	2.44	0.51
1:A:1054:VAL:O	1:A:1054:VAL:HG12	2.10	0.51
1:A:1866:GLN:O	1:A:1870:LYS:N	2.42	0.51
1:A:370:ALA:O	1:A:374:LYS:N	2.40	0.51
1:A:998:ASN:OD1	1:A:999:LYS:N	2.43	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1840:PHE:O	1:A:1844:VAL:HG13	2.11	0.51
1:A:2464:HIS:CE1	1:A:2466:SER:HB3	2.45	0.51
1:A:2139:PRO:HB2	1:A:2140:LEU:HD12	1.93	0.51
1:A:2578:GLU:CD	1:A:2579:HIS:HD1	2.18	0.51
1:A:2136:PRO:HA	1:A:2143:ARG:HH12	1.75	0.51
1:A:3370:SER:OG	1:A:3371:GLU:OE1	2.28	0.51
1:A:4093:GLU:OE1	1:A:4093:GLU:N	2.44	0.51
1:A:2415:LEU:HB3	1:A:2420:PHE:HB2	1.93	0.51
1:A:3535:ILE:HG21	1:A:3759:ARG:HD3	1.93	0.50
1:A:3550:LYS:HA	1:A:3553:GLU:HB2	1.93	0.50
1:A:4054:ALA:O	1:A:4103:GLN:NE2	2.41	0.50
1:A:2344:LEU:HD12	1:A:2347:LYS:HE3	1.93	0.50
1:A:1353:PRO:HB2	1:A:1356:TRP:HB3	1.93	0.50
1:A:2555:LEU:HD11	1:A:2857:CYS:SG	2.51	0.50
1:A:3880:ALA:HA	1:A:3965:ARG:HH22	1.77	0.50
1:A:1493:PRO:HD2	1:A:1500:LEU:HD12	1.94	0.50
1:A:1766:LEU:HD13	1:A:1778:PHE:HD2	1.77	0.50
1:A:3285:HIS:NE2	1:A:3333:THR:OG1	2.38	0.50
1:A:3075:LYS:O	1:A:3079:GLU:HG2	2.12	0.50
1:A:3951:GLN:HE22	1:A:4066:LEU:HB3	1.76	0.50
1:A:2148:LYS:O	1:A:2148:LYS:HD3	2.12	0.50
1:A:2946:GLU:OE2	1:A:3975:LYS:NZ	2.41	0.50
1:A:3681:LYS:HE2	1:A:3681:LYS:HA	1.94	0.50
1:A:1015:ASP:HB2	1:A:1029:CYS:HB3	1.94	0.50
1:A:1016:GLY:HA3	1:A:1077:GLY:HA3	1.93	0.50
1:A:1482:GLU:O	1:A:1486:LEU:N	2.44	0.50
1:A:1880:MET:HE1	1:A:1881:TYR:CE1	2.47	0.50
1:A:2513:GLU:OE1	1:A:2513:GLU:N	2.43	0.50
1:A:1670:GLU:O	1:A:1673:THR:OG1	2.29	0.49
1:A:3354:ASP:OD1	1:A:3355:LYS:N	2.45	0.49
1:A:3881:ASP:OD1	1:A:3881:ASP:N	2.45	0.49
1:A:4086:ASP:OD1	1:A:4087:HIS:ND1	2.45	0.49
1:A:1459:HIS:HB2	1:A:1464:LEU:HD22	1.94	0.49
1:A:1638:PRO:HB2	1:A:1640:GLU:HG3	1.93	0.49
1:A:1389:VAL:HG13	1:A:1390:GLN:N	2.27	0.49
1:A:2862:SER:HB2	1:A:2868:LEU:O	2.12	0.49
1:A:3596:LEU:HD21	1:A:3603:LYS:HB2	1.95	0.49
1:A:3763:ARG:O	1:A:3766:GLN:HG2	2.12	0.49
1:A:1102:GLU:O	1:A:1106:ILE:HG12	2.12	0.49
1:A:1848:ILE:O	1:A:1852:LYS:N	2.45	0.49
1:A:2096:PRO:O	1:A:2100:LEU:N	2.39	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2428:ASP:HB2	1:A:2431:ARG:HB3	1.94	0.49
1:A:2493:ASN:H	1:A:2496:GLN:HB2	1.76	0.49
1:A:1175:HIS:HD2	1:A:1228:GLY:HA3	1.76	0.49
1:A:2464:HIS:HE1	1:A:2466:SER:HB3	1.77	0.49
1:A:3980:MET:HE3	1:A:4108:MET:HE3	1.94	0.49
1:A:2586:PHE:CD1	1:A:2778:GLY:HA3	2.47	0.49
1:A:2471:GLU:N	1:A:2471:GLU:OE1	2.45	0.49
1:A:3535:ILE:HD11	1:A:3796:MET:O	2.12	0.49
1:A:3821:SER:O	1:A:3825:LYS:N	2.46	0.49
1:A:175:TYR:O	1:A:179:GLY:N	2.33	0.49
1:A:2376:ASP:HB3	1:A:2404:ARG:NH1	2.28	0.49
1:A:3270:ASP:OD1	1:A:3271:ASP:N	2.46	0.49
1:A:191:ASN:O	1:A:195:ASN:ND2	2.46	0.49
1:A:287:LEU:O	1:A:337:LYS:NZ	2.44	0.49
1:A:627:VAL:HG22	1:A:669:LEU:HD22	1.94	0.49
1:A:3269:ARG:HB2	1:A:3269:ARG:NH1	2.28	0.49
1:A:1476:HIS:ND1	1:A:1521:PHE:HB3	2.27	0.48
1:A:2386:LEU:HD23	1:A:2418:LYS:HB3	1.94	0.48
1:A:2494:ASP:OD1	1:A:2495:SER:N	2.45	0.48
1:A:2894:GLU:HB2	1:A:3973:PRO:HG2	1.94	0.48
1:A:3295:GLU:OE1	1:A:3295:GLU:N	2.40	0.48
1:A:3913:ILE:HB	1:A:3984:MET:HG2	1.95	0.48
1:A:541:MET:HA	1:A:544:ILE:HG12	1.95	0.48
1:A:606:SER:OG	1:A:1026:ARG:NH1	2.46	0.48
1:A:1429:GLU:O	1:A:1433:ALA:N	2.43	0.48
1:A:3855:TYR:OH	1:A:4122:GLU:HB2	2.13	0.48
1:A:1095:LEU:HD12	1:A:1099:PHE:HE2	1.78	0.48
1:A:3324:ARG:HG3	1:A:3388:ALA:HB1	1.95	0.48
1:A:6015:UNK:O	1:A:6019:UNK:N	2.46	0.48
1:A:67:VAL:HA	1:A:70:ARG:HH21	1.77	0.48
1:A:93:LEU:HD21	1:A:137:THR:HG22	1.95	0.48
1:A:1164:CYS:SG	1:A:1165:LEU:N	2.87	0.48
1:A:3255:ALA:HB1	1:A:3283:LEU:HD11	1.95	0.48
1:A:1300:SER:HA	1:A:1312:CYS:HB2	1.94	0.48
1:A:2310:VAL:HG12	1:A:2311:ARG:H	1.77	0.48
1:A:3509:ASP:OD1	1:A:3509:ASP:N	2.43	0.48
1:A:758:LEU:HD22	1:A:765:LEU:HD12	1.96	0.48
1:A:2253:TYR:HA	1:A:2256:ILE:HD13	1.96	0.48
1:A:2973:ASP:OD1	1:A:2974:GLU:N	2.47	0.48
1:A:3180:ASP:HA	1:A:3242:MET:HE1	1.95	0.48
1:A:3517:SER:O	1:A:3521:ILE:HG12	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1133:HIS:O	1:A:1137:ILE:HG12	2.13	0.48
1:A:3297:VAL:O	1:A:3300:VAL:HG12	2.14	0.48
1:A:3959:MET:HE2	1:A:4124:TRP:CZ3	2.48	0.48
1:A:282:PHE:HB3	1:A:285:CYS:HB2	1.95	0.48
1:A:2930:TYR:HA	1:A:2933:ILE:HG22	1.95	0.48
1:A:2976:LEU:HD11	1:A:2995:GLU:HB3	1.95	0.48
1:A:3552:LYS:HA	1:A:3555:VAL:HG12	1.94	0.48
1:A:1066:LEU:HD22	1:A:1074:LYS:HD2	1.96	0.47
1:A:1849:ASP:OD1	1:A:1850:VAL:N	2.46	0.47
1:A:3287:ARG:O	1:A:3287:ARG:HG2	2.14	0.47
1:A:3493:TRP:CD2	1:A:3711:PRO:HG3	2.49	0.47
1:A:105:VAL:HA	1:A:108:LYS:HE3	1.95	0.47
1:A:2933:ILE:HD11	1:A:3121:LEU:HD22	1.96	0.47
1:A:3686:TRP:O	1:A:3687:MET:HE2	2.14	0.47
1:A:355:ASN:OD1	1:A:356:ASN:N	2.47	0.47
1:A:1019:ASP:OD1	1:A:1019:ASP:N	2.47	0.47
1:A:2085:MET:SD	1:A:2088:LEU:HB3	2.54	0.47
1:A:3247:ARG:HD2	1:A:3283:LEU:HA	1.96	0.47
1:A:776:TRP:HB3	1:A:785:MET:HE1	1.96	0.47
1:A:909:VAL:O	1:A:912:PRO:HD2	2.15	0.47
1:A:2371:PHE:HB3	1:A:2374:LEU:HD23	1.96	0.47
1:A:3855:TYR:HA	1:A:3858:MET:HG3	1.96	0.47
1:A:1031:ARG:O	1:A:1034:ARG:HG2	2.15	0.47
1:A:2183:HIS:CE1	1:A:2186:VAL:HG13	2.49	0.47
1:A:2443:MET:N	1:A:2444:PRO:HD2	2.29	0.47
1:A:681:LYS:HE2	1:A:681:LYS:HA	1.97	0.47
1:A:1335:CYS:HB3	1:A:1384:PHE:HD1	1.79	0.47
1:A:2220:MET:SD	1:A:2255:LEU:HD23	2.54	0.47
1:A:2941:GLY:HA2	1:A:2944:THR:HG22	1.96	0.47
1:A:151:GLU:HB3	1:A:153:PHE:CZ	2.49	0.47
1:A:327:VAL:HG12	1:A:372:PRO:HB3	1.96	0.47
1:A:1810:PRO:C	1:A:1812:LEU:H	2.23	0.47
1:A:3274:VAL:O	1:A:3278:GLN:N	2.41	0.47
1:A:3354:ASP:O	1:A:3358:ARG:N	2.46	0.47
1:A:3864:ARG:NH1	1:A:3868:VAL:HG21	2.29	0.47
1:A:1402:LEU:HB3	1:A:1403:MET:HE2	1.97	0.47
1:A:1524:LEU:O	1:A:1528:LEU:N	2.33	0.47
1:A:1588:ASP:OD1	1:A:1589:ASN:N	2.47	0.47
1:A:1686:LEU:HD13	1:A:1721:HIS:CD2	2.48	0.47
1:A:1920:TYR:HA	1:A:1923:PHE:CE1	2.50	0.47
1:A:2443:MET:HE1	1:A:2479:TRP:CE3	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2554:PHE:O	1:A:2555:LEU:HB2	2.14	0.47
1:A:3483:MET:CE	1:A:3513:ALA:HB1	2.45	0.47
1:A:3541:SER:OG	1:A:3542:PHE:N	2.47	0.47
1:A:1694:THR:O	1:A:1697:PRO:HD2	2.15	0.47
1:A:1816:ARG:HA	1:A:1819:PHE:CE2	2.49	0.47
1:A:3531:TYR:HB2	1:A:3532:PRO:HD3	1.96	0.47
1:A:3800:LEU:HD23	1:A:3801:GLY:N	2.29	0.47
1:A:757:LYS:HB2	1:A:757:LYS:HE3	1.67	0.47
1:A:1839:PHE:HE1	1:A:1843:ILE:HD12	1.80	0.47
1:A:3911:ILE:HG23	1:A:3915:HIS:CE1	2.50	0.47
1:A:269:SER:O	1:A:273:ARG:HG2	2.15	0.46
1:A:331:ALA:HB2	1:A:375:VAL:HG23	1.97	0.46
1:A:1305:ASP:O	1:A:1330:TYR:OH	2.29	0.46
1:A:2510:LEU:HB3	1:A:2557:LEU:HD13	1.98	0.46
1:A:2574:ASN:O	1:A:2786:LYS:HA	2.14	0.46
1:A:2920:VAL:O	1:A:2924:VAL:HG23	2.15	0.46
1:A:4126:PRO:HD2	1:A:4127:TRP:CE3	2.50	0.46
1:A:255:ALA:HB3	1:A:296:VAL:HG13	1.98	0.46
1:A:331:ALA:HB1	1:A:376:ILE:HB	1.97	0.46
1:A:1611:GLN:HE21	1:A:1614:GLN:NE2	2.13	0.46
1:A:335:LYS:HA	1:A:338:LEU:HB3	1.97	0.46
1:A:541:MET:HB3	1:A:545:LEU:HD23	1.96	0.46
1:A:570:LYS:HD3	1:A:1505:LEU:HD21	1.97	0.46
1:A:1247:PRO:HB2	1:A:1250:LEU:HB3	1.98	0.46
1:A:1323:SER:O	1:A:1326:GLU:N	2.49	0.46
1:A:1880:MET:HE1	1:A:1881:TYR:HE1	1.79	0.46
1:A:1369:MET:HG3	1:A:1372:LEU:HD23	1.96	0.46
1:A:1403:MET:HE2	1:A:1403:MET:N	2.31	0.46
1:A:1946:ASN:ND2	1:A:2096:PRO:HG2	2.31	0.46
1:A:4027:TRP:HE3	1:A:4030:GLU:H	1.62	0.46
1:A:3568:ILE:O	1:A:3572:ILE:HG12	2.16	0.46
1:A:709:LYS:O	1:A:709:LYS:HG2	2.15	0.46
1:A:1442:GLN:HA	1:A:1445:ARG:HH12	1.81	0.46
1:A:3875:GLU:HG2	1:A:3965:ARG:HD3	1.97	0.46
1:A:730:LEU:O	1:A:734:LEU:HG	2.16	0.46
1:A:2307:MET:HE3	1:A:2349:LEU:HA	1.97	0.46
1:A:3137:GLU:OE1	1:A:3186:ARG:NE	2.28	0.46
1:A:245:SER:HA	1:A:248:ILE:HB	1.97	0.46
1:A:1947:CYS:O	1:A:1951:VAL:HG23	2.16	0.46
1:A:2841:ASN:O	1:A:2845:ASN:ND2	2.49	0.46
1:A:2970:LYS:HA	1:A:2970:LYS:HD3	1.77	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3028:ASN:C	1:A:3030:ILE:H	2.24	0.46
1:A:3451:LEU:HD11	1:A:3483:MET:HG3	1.97	0.46
1:A:1746:PHE:O	1:A:1750:LEU:N	2.48	0.45
1:A:1771:GLN:HA	1:A:1775:GLU:OE1	2.16	0.45
1:A:2879:GLY:O	1:A:2883:SER:OG	2.21	0.45
1:A:3641:ASP:OD1	1:A:3642:LYS:N	2.48	0.45
1:A:3717:VAL:HA	1:A:3743:HIS:HE1	1.80	0.45
1:A:10:CYS:HA	1:A:13:LEU:HD12	1.98	0.45
1:A:247:GLU:HB2	1:A:282:PHE:CE1	2.51	0.45
1:A:985:GLU:O	1:A:989:MET:HG2	2.15	0.45
1:A:1729:PHE:CE1	1:A:1735:ARG:HG2	2.52	0.45
1:A:2392:VAL:O	1:A:2395:THR:HG22	2.17	0.45
1:A:3033:GLU:HB3	1:A:3034:PRO:HD3	1.98	0.45
1:A:3186:ARG:HH11	1:A:3238:MET:HE1	1.80	0.45
1:A:3570:ASP:OD2	1:A:3687:MET:HE1	2.17	0.45
1:A:177:LEU:HA	1:A:177:LEU:HD23	1.76	0.45
1:A:659:ARG:HG3	1:A:660:LEU:HG	1.99	0.45
1:A:1965:PHE:H	1:A:1971:PRO:HD2	1.82	0.45
1:A:3751:LEU:HD23	1:A:3803:ILE:HD11	1.98	0.45
1:A:1335:CYS:HB3	1:A:1384:PHE:CD1	2.52	0.45
1:A:1881:TYR:CE2	1:A:1951:VAL:HG22	2.51	0.45
1:A:3376:GLY:O	1:A:3380:ARG:N	2.42	0.45
1:A:319:PHE:CD2	1:A:320:LEU:HD12	2.51	0.45
1:A:439:VAL:HG11	1:A:465:PHE:HE1	1.81	0.45
1:A:453:MET:HE2	1:A:453:MET:HA	1.98	0.45
1:A:2319:ALA:O	1:A:2323:LEU:HG	2.17	0.45
1:A:2587:GLN:HG3	1:A:2588:GLU:O	2.17	0.45
1:A:2917:PRO:O	1:A:2920:VAL:HG22	2.17	0.45
1:A:3608:LYS:O	1:A:3612:ARG:HG2	2.17	0.45
1:A:178:LEU:HD21	1:A:196:LEU:HD22	1.99	0.45
1:A:1013:ILE:O	1:A:1013:ILE:HG13	2.17	0.45
1:A:1156:GLY:C	1:A:1157:PHE:HD1	2.25	0.45
1:A:1715:GLU:HA	1:A:1718:ILE:HG12	1.97	0.45
1:A:1770:GLN:HG3	1:A:1822:ARG:HH12	1.82	0.45
1:A:3548:GLY:HA2	1:A:3551:ASN:OD1	2.17	0.45
1:A:3723:ASP:OD1	1:A:3724:GLU:N	2.50	0.45
1:A:3728:VAL:HG22	1:A:3736:LYS:HG3	1.99	0.45
1:A:3825:LYS:HG2	1:A:3829:LEU:HD23	1.99	0.45
1:A:852:ARG:HH11	1:A:3111:MET:HE1	1.82	0.45
1:A:1877:LEU:HD13	1:A:1915:LEU:HD21	1.98	0.45
1:A:3082:TYR:HB3	1:A:3085:GLU:HB2	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3133:GLN:O	1:A:3137:GLU:HG3	2.17	0.45
1:A:3287:ARG:HG3	1:A:3287:ARG:HH11	1.81	0.45
1:A:3522:THR:HG21	1:A:3561:LYS:HG3	1.99	0.45
1:A:3878:VAL:HG13	1:A:3965:ARG:HH21	1.82	0.45
1:A:129:ASP:OD1	1:A:129:ASP:N	2.49	0.44
1:A:607:ASP:N	1:A:607:ASP:OD1	2.48	0.44
1:A:619:ASP:OD1	1:A:6006:UNK:N	2.50	0.44
1:A:1153:LEU:HD13	1:A:1163:LEU:HD21	1.98	0.44
1:A:1156:GLY:C	1:A:1158:PRO:HD3	2.41	0.44
1:A:1700:THR:HG21	1:A:1753:SER:HB2	1.99	0.44
1:A:1965:PHE:HA	1:A:1970:LYS:HA	1.98	0.44
1:A:2383:PHE:CD2	1:A:2414:GLN:HG2	2.52	0.44
1:A:2480:ILE:O	1:A:2484:TYR:HB2	2.18	0.44
1:A:2506:LEU:HD13	1:A:2524:PHE:HE2	1.82	0.44
1:A:3729:MET:HE2	1:A:3737:ARG:HD3	1.98	0.44
1:A:1632:TRP:HZ3	1:A:1648:LEU:HD21	1.81	0.44
1:A:2256:ILE:HA	1:A:2259:LYS:HB2	1.99	0.44
1:A:3858:MET:SD	1:A:3859:TYR:N	2.89	0.44
1:A:3958:LEU:HD21	1:A:4064:LEU:HD11	1.99	0.44
1:A:860:GLY:HA3	1:A:3136:THR:HG21	1.99	0.44
1:A:1034:ARG:HB3	1:A:1084:ASN:HB3	1.99	0.44
1:A:1824:LEU:O	1:A:1828:LEU:N	2.48	0.44
1:A:3105:ASN:O	1:A:3109:SER:N	2.41	0.44
1:A:3284:SER:HB3	1:A:3301:LEU:HD11	1.99	0.44
1:A:3530:VAL:HB	1:A:3562:LEU:HD11	1.99	0.44
1:A:1743:MET:O	1:A:1747:LEU:HG	2.16	0.44
1:A:1830:HIS:O	1:A:1883:ARG:NH2	2.49	0.44
1:A:1881:TYR:HE2	1:A:1951:VAL:HG13	1.81	0.44
1:A:153:PHE:HA	1:A:156:PHE:CD2	2.52	0.44
1:A:237:SER:O	1:A:243:GLN:HG3	2.18	0.44
1:A:1086:TYR:O	1:A:1087:ARG:HB2	2.18	0.44
1:A:3095:ASP:OD1	1:A:3095:ASP:N	2.48	0.44
1:A:3700:GLU:HA	1:A:3718:ARG:HA	2.00	0.44
1:A:4065:LEU:O	1:A:4069:GLU:HB3	2.18	0.44
1:A:131:LEU:HA	1:A:173:LYS:HD3	2.00	0.44
1:A:1483:LEU:HA	1:A:1487:VAL:HG12	1.98	0.44
1:A:2923:TRP:CE2	1:A:2946:GLU:HG3	2.53	0.44
1:A:2949:THR:HG23	1:A:2950:LYS:HE3	1.99	0.44
1:A:200:PHE:CE1	1:A:224:LEU:HB3	2.53	0.44
1:A:272:LEU:HD12	1:A:272:LEU:HA	1.89	0.44
1:A:2304:VAL:O	1:A:2307:MET:HG3	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3509:ASP:O	1:A:3510:GLN:HG2	2.16	0.44
1:A:3897:PHE:CZ	1:A:3901:ARG:HD3	2.52	0.44
1:A:70:ARG:NH1	1:A:81:CYS:SG	2.91	0.44
1:A:3327:ASN:HB2	1:A:3388:ALA:HB2	2.00	0.44
1:A:3995:PRO:HB3	1:A:4051:LEU:HD13	1.99	0.44
1:A:255:ALA:HB2	1:A:300:TRP:NE1	2.33	0.44
1:A:1388:ASP:HA	1:A:1392:MET:SD	2.58	0.44
1:A:1866:GLN:HA	1:A:1869:LYS:HB3	2.00	0.44
1:A:2461:PHE:HB2	1:A:2473:MET:CE	2.47	0.44
1:A:2478:MET:HG2	1:A:2524:PHE:CE2	2.53	0.44
1:A:3308:ASP:OD1	1:A:3308:ASP:N	2.45	0.44
1:A:3774:ILE:O	1:A:3777:GLN:HG3	2.18	0.44
1:A:259:GLN:OE1	1:A:259:GLN:N	2.43	0.43
1:A:1499:CYS:O	1:A:1501:PRO:HD3	2.18	0.43
1:A:2142:ILE:O	1:A:2146:LEU:N	2.34	0.43
1:A:2466:SER:C	1:A:2468:THR:H	2.25	0.43
1:A:197:PHE:HA	1:A:200:PHE:HB3	2.00	0.43
1:A:1880:MET:O	1:A:1884:LEU:HD13	2.18	0.43
1:A:3290:SER:HG	1:A:3293:CYS:HG	1.64	0.43
1:A:15:LEU:O	1:A:19:LEU:N	2.39	0.43
1:A:189:MET:HE2	1:A:192:ASN:H	1.82	0.43
1:A:2190:VAL:HA	1:A:2193:ILE:HG12	1.99	0.43
1:A:3718:ARG:HD3	1:A:3743:HIS:CE1	2.53	0.43
1:A:393:LYS:HE2	1:A:1687:HIS:CE1	2.53	0.43
1:A:1711:ARG:HD3	1:A:1757:MET:CG	2.48	0.43
1:A:2436:LEU:HD11	1:A:2461:PHE:CD2	2.54	0.43
1:A:2456:ASN:HB2	1:A:2457:PRO:HD3	2.00	0.43
1:A:3169:PRO:HB2	1:A:3179:TRP:NE1	2.33	0.43
1:A:3661:ASP:HA	1:A:3664:ASN:HD21	1.82	0.43
1:A:1718:ILE:HG13	1:A:1719:VAL:N	2.33	0.43
1:A:1878:ASP:OD2	1:A:1950:SER:OG	2.30	0.43
1:A:2132:LYS:HA	1:A:2135:ASN:HD21	1.83	0.43
1:A:2225:HIS:CG	1:A:2226:PRO:HD2	2.54	0.43
1:A:3472:ILE:HG21	1:A:3483:MET:CE	2.48	0.43
1:A:221:ALA:HA	1:A:224:LEU:HG	1.99	0.43
1:A:459:ARG:NH1	1:A:543:SER:OG	2.50	0.43
1:A:584:GLU:HG3	1:A:613:HIS:O	2.18	0.43
1:A:1050:GLU:OE1	1:A:1050:GLU:N	2.44	0.43
1:A:1335:CYS:SG	1:A:1384:PHE:HA	2.58	0.43
1:A:1476:HIS:CG	1:A:1521:PHE:HB3	2.54	0.43
1:A:2439:ILE:HA	1:A:2442:MET:SD	2.59	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2790:LEU:C	1:A:2793:PRO:HD2	2.44	0.43
1:A:3568:ILE:HD13	1:A:3699:LEU:HD22	2.00	0.43
1:A:3864:ARG:HH12	1:A:3868:VAL:HG21	1.82	0.43
1:A:1786:ALA:HB2	1:A:1827:LEU:HD23	2.00	0.43
1:A:3236:PHE:CE1	1:A:3262:LEU:HD21	2.42	0.43
1:A:3256:MET:CE	1:A:3287:ARG:HH21	2.25	0.43
1:A:3502:MET:HG3	1:A:3514:VAL:HG11	2.00	0.43
1:A:3553:GLU:C	1:A:3557:ARG:HH21	2.26	0.43
1:A:3582:GLU:O	1:A:3586:LYS:HG3	2.18	0.43
1:A:746:ARG:HD3	1:A:746:ARG:O	2.19	0.43
1:A:1467:ILE:HG13	1:A:1468:LEU:HG	2.00	0.43
1:A:1538:LEU:HD12	1:A:1553:PHE:CE2	2.54	0.43
1:A:2217:ASN:O	1:A:2221:LYS:HB2	2.19	0.43
1:A:1384:PHE:CE2	1:A:1395:LEU:HD22	2.54	0.43
1:A:1488:TYR:CZ	1:A:1531:LEU:HD11	2.54	0.43
1:A:2125:TRP:CD1	1:A:2125:TRP:H	2.37	0.43
1:A:2438:ILE:O	1:A:2442:MET:HG3	2.19	0.43
1:A:163:LYS:HD3	1:A:163:LYS:HA	1.94	0.43
1:A:294:PHE:O	1:A:298:LEU:HD23	2.19	0.43
1:A:342:MET:HE3	1:A:346:TYR:CE1	2.54	0.43
1:A:886:TRP:HH2	1:A:915:THR:HG21	1.84	0.43
1:A:989:MET:C	1:A:993:HIS:HD1	2.22	0.43
1:A:20:SER:O	1:A:24:ARG:N	2.51	0.42
1:A:101:ALA:HB3	1:A:102:PRO:HD3	1.99	0.42
1:A:1881:TYR:CD2	1:A:1951:VAL:HA	2.51	0.42
1:A:2454:LEU:O	1:A:2457:PRO:HD2	2.19	0.42
1:A:2555:LEU:O	1:A:2805:ALA:HB1	2.19	0.42
1:A:3338:ALA:O	1:A:3342:SER:N	2.52	0.42
1:A:3670:MET:SD	1:A:3670:MET:N	2.91	0.42
1:A:1344:PHE:CZ	1:A:1348:LEU:HD11	2.54	0.42
1:A:1378:GLU:OE2	1:A:1380:ALA:HB3	2.19	0.42
1:A:1391:VAL:O	1:A:1395:LEU:N	2.49	0.42
1:A:1935:GLU:HG2	1:A:1936:ARG:N	2.33	0.42
1:A:2219:LEU:O	1:A:2223:VAL:HG13	2.19	0.42
1:A:3575:LEU:O	1:A:3578:LEU:HG	2.19	0.42
1:A:3646:LYS:N	1:A:3649:SER:OG	2.51	0.42
1:A:3806:LEU:HB3	1:A:3809:THR:HG21	2.00	0.42
1:A:3907:SER:O	1:A:3911:ILE:HG12	2.19	0.42
1:A:1418:HIS:O	1:A:1421:GLU:HB2	2.19	0.42
1:A:1946:ASN:HD21	1:A:2096:PRO:HG2	1.85	0.42
1:A:2532:PRO:O	1:A:2538:ARG:NH2	2.52	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2864:GLN:O	1:A:2865:HIS:ND1	2.52	0.42
1:A:3655:LYS:C	1:A:3657:SER:H	2.27	0.42
1:A:409:GLN:HG3	1:A:413:PHE:HE1	1.84	0.42
1:A:796:LEU:HD11	1:A:858:MET:HE1	2.01	0.42
1:A:1202:ARG:HG3	1:A:1206:LEU:HB2	2.01	0.42
1:A:2094:MET:HE1	1:A:2145:PHE:CE1	2.55	0.42
1:A:3660:ASN:O	1:A:3664:ASN:ND2	2.53	0.42
1:A:790:LYS:HB2	1:A:790:LYS:HE2	1.73	0.42
1:A:1153:LEU:HD11	1:A:1157:PHE:O	2.20	0.42
1:A:1980:ASN:OD1	1:A:1981:LEU:N	2.48	0.42
1:A:2097:LEU:HA	1:A:2097:LEU:HD23	1.74	0.42
1:A:2872:ASP:O	1:A:2876:VAL:HG23	2.19	0.42
1:A:3250:ASN:HA	1:A:3252:PHE:CE1	2.55	0.42
1:A:85:ILE:HG13	1:A:89:LEU:HD23	2.02	0.42
1:A:300:TRP:HA	1:A:303:HIS:ND1	2.35	0.42
1:A:1261:LEU:HB2	1:A:1337:VAL:HG22	2.01	0.42
1:A:1707:LEU:HA	1:A:1710:LEU:HB3	2.02	0.42
1:A:2554:PHE:HD2	1:A:2555:LEU:HD22	1.84	0.42
1:A:2563:LEU:HD23	1:A:2791:ILE:HG23	2.02	0.42
1:A:3360:LEU:HD12	1:A:3361:GLU:N	2.35	0.42
1:A:3414:MET:SD	1:A:3415:THR:N	2.93	0.42
1:A:3451:LEU:HD23	1:A:3451:LEU:HA	1.84	0.42
1:A:3992:ARG:HD3	1:A:4100:GLU:HG3	2.01	0.42
1:A:1112:ALA:O	1:A:1180:GLN:HG2	2.20	0.42
1:A:1425:ALA:O	1:A:1429:GLU:HG2	2.20	0.42
1:A:1770:GLN:HA	1:A:1822:ARG:NH2	2.35	0.42
1:A:2312:TYR:O	1:A:2315:VAL:HG12	2.19	0.42
1:A:3103:ILE:HD12	1:A:3103:ILE:HA	1.92	0.42
1:A:3405:PRO:HB2	1:A:3406:ALA:H	1.65	0.42
1:A:3734:ARG:HD3	1:A:3734:ARG:HA	1.79	0.42
1:A:47:SER:OG	1:A:96:MET:HE1	2.20	0.42
1:A:2950:LYS:NZ	1:A:2983:ASP:O	2.53	0.42
1:A:13:LEU:HD13	1:A:59:PHE:CE2	2.55	0.41
1:A:353:ASP:OD2	1:A:359:LEU:HB2	2.20	0.41
1:A:1306:ILE:HG23	1:A:1307:ILE:HG12	2.02	0.41
1:A:2350:LYS:HD2	1:A:2353:GLN:HB3	2.02	0.41
1:A:3353:GLU:O	1:A:3357:ARG:N	2.47	0.41
1:A:292:SER:O	1:A:296:VAL:HG23	2.20	0.41
1:A:1103:ALA:O	1:A:1107:TYR:HD1	2.03	0.41
1:A:1412:LYS:HA	1:A:1415:LEU:HB3	2.02	0.41
1:A:1617:LYS:O	1:A:1621:THR:HG23	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1734:PRO:O	1:A:1738:ASN:ND2	2.52	0.41
1:A:3472:ILE:HG13	1:A:3510:GLN:OE1	2.20	0.41
1:A:868:LYS:HB2	1:A:868:LYS:HE3	1.71	0.41
1:A:1414:ILE:HG13	1:A:1418:HIS:CE1	2.55	0.41
1:A:2085:MET:HE1	1:A:2088:LEU:HD22	2.03	0.41
1:A:2276:LEU:O	1:A:2280:VAL:HG23	2.19	0.41
1:A:2452:ARG:HA	1:A:2452:ARG:HD2	1.95	0.41
1:A:2589:TYR:HB3	1:A:2775:TYR:O	2.20	0.41
1:A:393:LYS:HA	1:A:397:LEU:HD23	2.02	0.41
1:A:643:GLU:N	1:A:644:PRO:HD2	2.35	0.41
1:A:1244:LEU:HD23	1:A:1244:LEU:HA	1.92	0.41
1:A:240:GLU:HB2	1:A:243:GLN:HG2	2.02	0.41
1:A:932:GLU:HG3	1:A:2775:TYR:OH	2.20	0.41
1:A:3128:LYS:HD3	1:A:3128:LYS:HA	1.80	0.41
1:A:1301:ILE:HG22	1:A:1334:LYS:NZ	2.36	0.41
1:A:2448:PRO:HA	1:A:2451:LEU:HB3	2.02	0.41
1:A:3430:ASN:HA	1:A:4041:ARG:HH11	1.85	0.41
1:A:3484:THR:C	1:A:3486:GLU:N	2.78	0.41
1:A:3492:CYS:HB3	1:A:3521:ILE:HD13	2.01	0.41
1:A:3502:MET:O	1:A:3505:LEU:HG	2.19	0.41
1:A:3820:MET:HB3	1:A:3882:LEU:HD21	2.02	0.41
1:A:3901:ARG:HG2	1:A:3971:MET:HE1	2.02	0.41
1:A:3992:ARG:HG2	1:A:4051:LEU:HD22	2.02	0.41
1:A:3262:LEU:O	1:A:3262:LEU:HD23	2.21	0.41
1:A:3992:ARG:NE	1:A:4051:LEU:O	2.54	0.41
1:A:4107:LEU:HD23	1:A:4107:LEU:HA	1.90	0.41
1:A:645:TRP:O	1:A:649:PHE:N	2.38	0.41
1:A:1146:ASN:OD1	1:A:1147:LYS:N	2.53	0.41
1:A:1611:GLN:HB2	1:A:1613:HIS:CE1	2.56	0.41
1:A:1709:GLU:HA	1:A:1709:GLU:OE1	2.20	0.41
1:A:2342:CYS:O	1:A:2346:ALA:N	2.47	0.41
1:A:2493:ASN:HA	1:A:2496:GLN:HB2	2.01	0.41
1:A:248:ILE:O	1:A:252:VAL:HG23	2.21	0.41
1:A:405:ASP:OD2	1:A:406:ARG:NH1	2.54	0.41
1:A:683:PHE:HD2	1:A:737:PRO:HG3	1.85	0.41
1:A:1071:ASN:OD1	1:A:1073:PHE:N	2.54	0.41
1:A:1432:CYS:HB3	1:A:1486:LEU:HG	2.02	0.41
1:A:2088:LEU:HD12	1:A:2148:LYS:NZ	2.36	0.41
1:A:2088:LEU:HD12	1:A:2148:LYS:HZ2	1.85	0.41
1:A:2931:ARG:HE	1:A:2939:LEU:HD11	1.86	0.41
1:A:3235:LYS:HB2	1:A:3235:LYS:HE3	1.79	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3257:LYS:HE3	1:A:3257:LYS:HB3	1.94	0.41
1:A:3449:LYS:HD3	1:A:3449:LYS:HA	1.78	0.41
1:A:3491:PRO:HB3	1:A:3493:TRP:CH2	2.56	0.41
1:A:3812:LEU:HD12	1:A:3812:LEU:HA	1.85	0.41
1:A:3922:ASP:C	1:A:3923:ARG:HD2	2.46	0.41
1:A:4066:LEU:HD12	1:A:4066:LEU:HA	1.93	0.41
2:B:727:ASP:O	2:B:731:MET:N	2.40	0.41
1:A:131:LEU:HA	1:A:173:LYS:CD	2.51	0.41
1:A:393:LYS:HE2	1:A:1687:HIS:ND1	2.36	0.41
1:A:611:ASN:O	1:A:612:LEU:HD23	2.21	0.41
1:A:804:ALA:HA	1:A:852:ARG:NH1	2.36	0.41
1:A:1238:GLN:HA	1:A:1243:TYR:OH	2.22	0.41
1:A:1502:SER:O	1:A:1503:LEU:HD22	2.21	0.41
1:A:1718:ILE:HG13	1:A:1719:VAL:H	1.86	0.41
1:A:1913:LYS:HA	1:A:1916:ILE:HD12	2.02	0.41
1:A:2195:SER:O	1:A:5009:UNK:N	2.36	0.41
1:A:3495:PHE:HB3	1:A:3502:MET:HE3	2.02	0.41
1:A:1037:LEU:HD23	1:A:1085:ILE:HB	2.04	0.40
1:A:1452:VAL:O	1:A:1456:LYS:HG2	2.22	0.40
1:A:1503:LEU:HA	1:A:1507:CYS:SG	2.61	0.40
1:A:1916:ILE:HA	1:A:1919:CYS:SG	2.61	0.40
1:A:2186:VAL:HA	1:A:2189:ILE:HG22	2.02	0.40
1:A:2205:VAL:HG12	1:A:2207:LYS:H	1.87	0.40
1:A:1145:LEU:HD23	1:A:1151:ARG:HH21	1.87	0.40
1:A:1241:LEU:O	1:A:1244:LEU:HG	2.20	0.40
1:A:1479:VAL:CG1	1:A:1518:ALA:HA	2.52	0.40
1:A:1589:ASN:C	1:A:1591:LYS:H	2.29	0.40
1:A:1745:LYS:HD3	1:A:1745:LYS:HA	1.78	0.40
1:A:2777:HIS:CG	1:A:2778:GLY:N	2.90	0.40
1:A:3325:ASP:O	1:A:3329:LEU:HG	2.20	0.40
1:A:3730:ALA:HA	1:A:3734:ARG:NH1	2.36	0.40
1:A:944:LYS:HA	1:A:944:LYS:HD3	1.81	0.40
1:A:3717:VAL:HG22	1:A:3744:ASP:HB3	2.03	0.40
1:A:3981:TYR:OH	1:A:4105:LYS:HE3	2.21	0.40
1:A:1850:VAL:HG13	1:A:1851:LEU:HD23	2.03	0.40
1:A:1863:PHE:O	1:A:1866:GLN:HG2	2.22	0.40
1:A:2443:MET:SD	1:A:2444:PRO:HD3	2.62	0.40
1:A:2554:PHE:C	1:A:2556:SER:H	2.29	0.40
1:A:3630:ARG:O	1:A:3634:GLN:HG2	2.20	0.40
1:A:1867:ILE:HA	1:A:1870:LYS:HB2	2.03	0.40
1:A:1939:LEU:HD23	1:A:1939:LEU:HA	1.91	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2124:SER:O	1:A:2127:LYS:HB2	2.22	0.40
1:A:2377:ARG:HG3	1:A:2378:PHE:CE2	2.57	0.40
1:A:3573:ASN:O	1:A:3577:GLN:HG2	2.21	0.40
1:A:3875:GLU:OE2	1:A:3965:ARG:HB2	2.21	0.40
1:A:4127:TRP:CD1	1:A:4128:MET:H	2.40	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	3630/4156 (87%)	3335 (92%)	292 (8%)	3 (0%)	48	81
2	B	11/192 (6%)	11 (100%)	0	0	100	100
All	All	3641/4348 (84%)	3346 (92%)	292 (8%)	3 (0%)	49	81

All (3) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	102	PRO
1	A	2787	HIS
1	A	101	ALA

### 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	3168/3671 (86%)	3168 (100%)	0	100	100

There are no protein residues with a non-rotameric sidechain to report.

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (24) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	233	ASN
1	A	243	GLN
1	A	322	GLN
1	A	753	GLN
1	A	783	HIS
1	A	1083	ASN
1	A	1098	GLN
1	A	1350	ASN
1	A	1584	GLN
1	A	1614	GLN
1	A	1946	ASN
1	A	2103	HIS
1	A	2432	GLN
1	A	2508	GLN
1	A	2795	GLN
1	A	2799	GLN
1	A	2841	ASN
1	A	3093	GLN
1	A	3177	ASN
1	A	3379	GLN
1	A	3423	GLN
1	A	3664	ASN
1	A	3704	GLN
1	A	3787	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 [i](#)

There are no oligosaccharides in this entry.

## 5.6 Ligand geometry [i](#)

There are no ligands in this entry.

## 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	2

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	A	4128:MET	C	5009:UNK	N	96.24
1	A	5016:UNK	C	6004:UNK	N	50.57

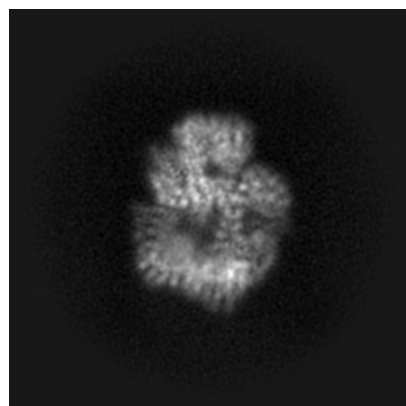
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-11215. These allow visual inspection of the internal detail of the map and identification of artifacts.

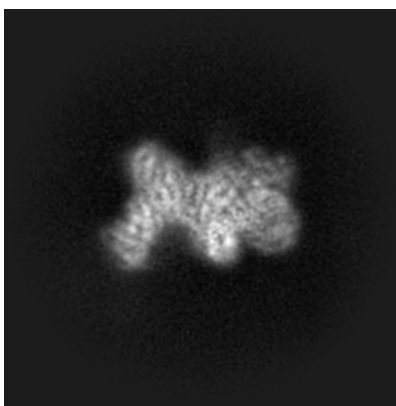
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

### 6.1 Orthogonal projections [i](#)

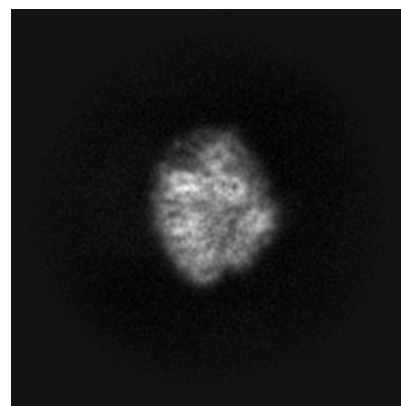
#### 6.1.1 Primary map



X

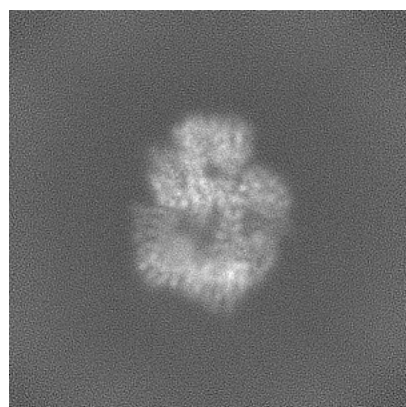


Y

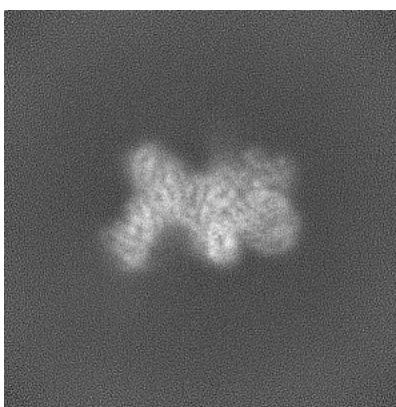


Z

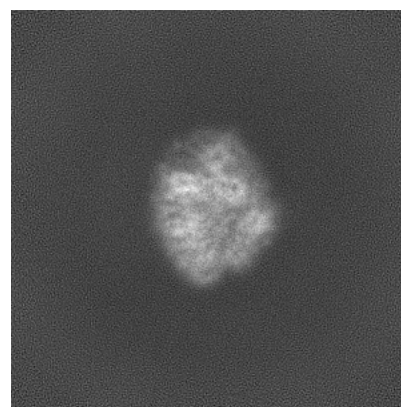
#### 6.1.2 Raw map



X



Y

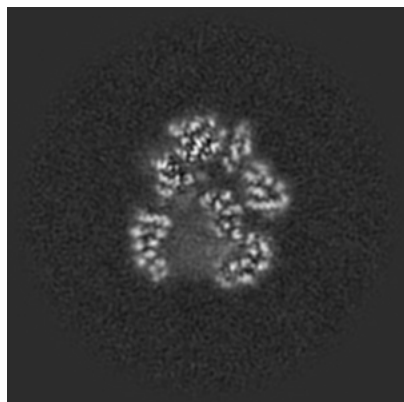


Z

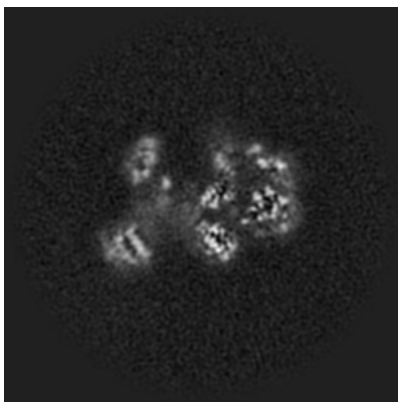
The images above show the map projected in three orthogonal directions.

## 6.2 Central slices [i](#)

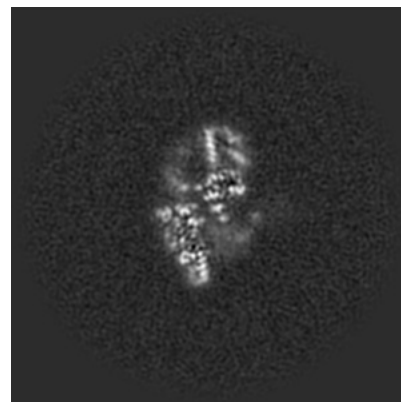
### 6.2.1 Primary map



X Index: 160

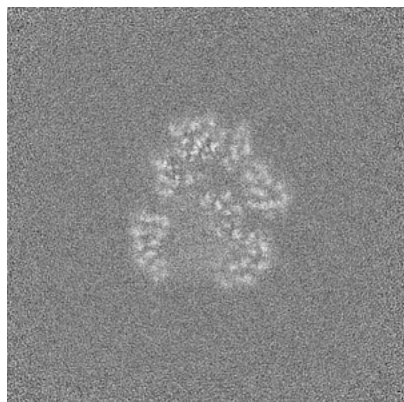


Y Index: 160



Z Index: 160

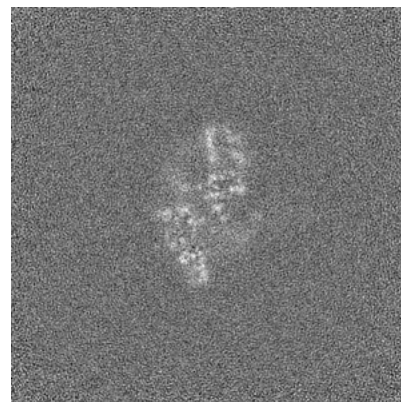
### 6.2.2 Raw map



X Index: 160



Y Index: 160



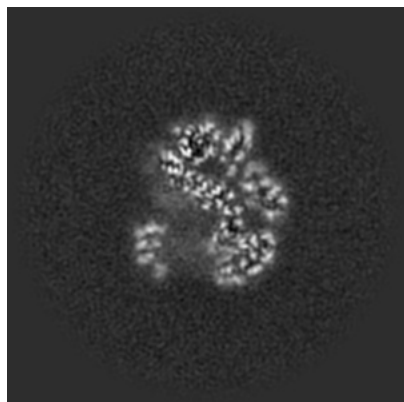
Z Index: 160

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

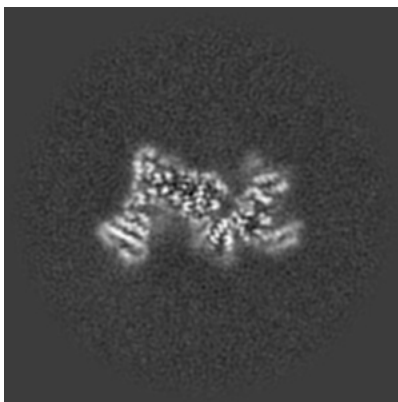


## 6.3 Largest variance slices [i](#)

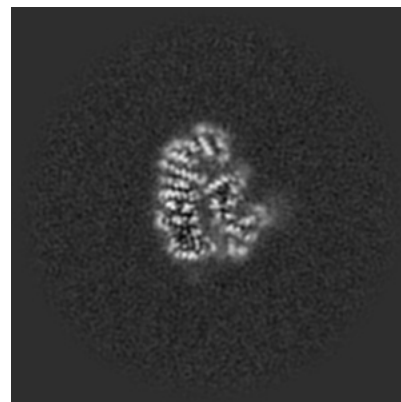
### 6.3.1 Primary map



X Index: 165

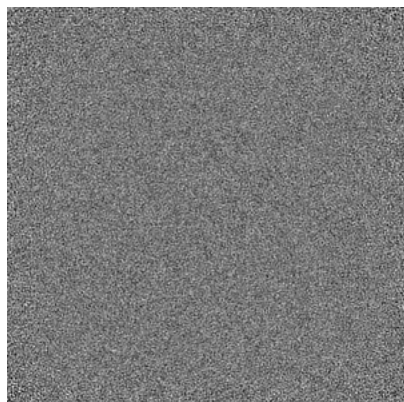


Y Index: 176

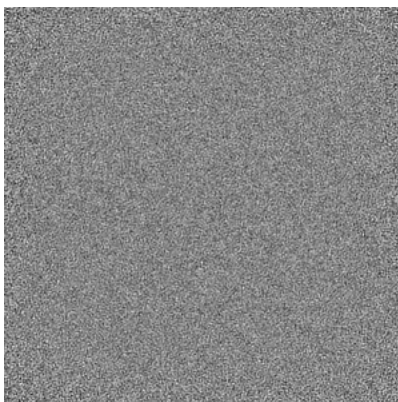


Z Index: 169

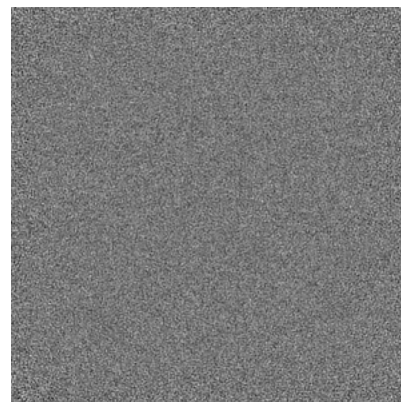
### 6.3.2 Raw map



X Index: 0



Y Index: 0



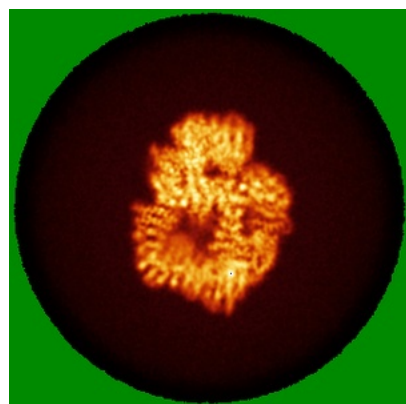
Z Index: 0

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

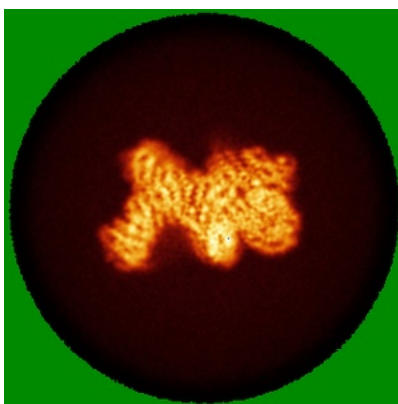


## 6.4 Orthogonal standard-deviation projections (False-color) [i](#)

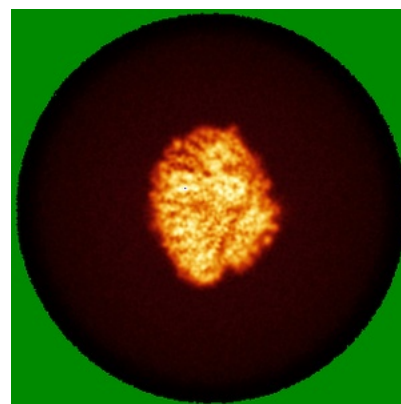
### 6.4.1 Primary map



X

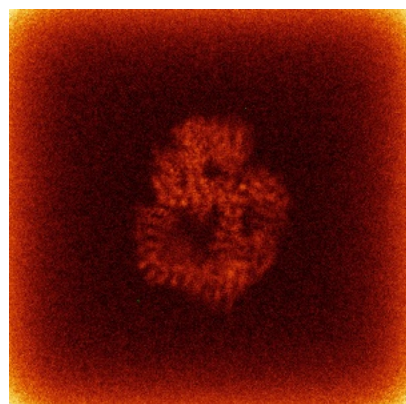


Y

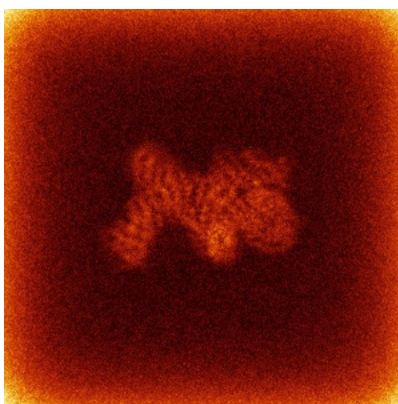


Z

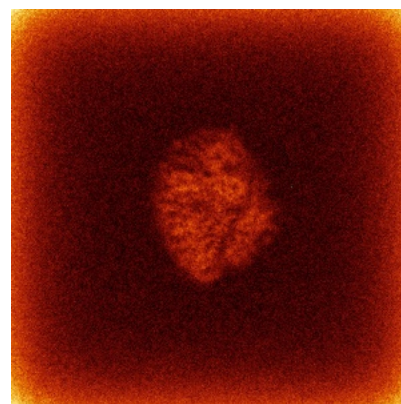
### 6.4.2 Raw map



X



Y

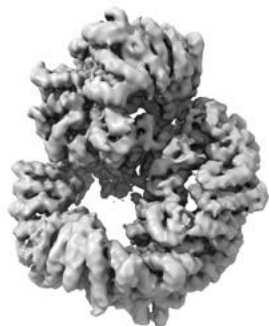


Z

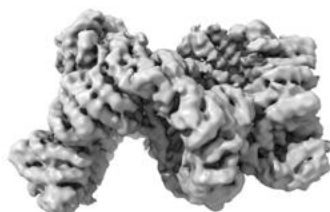
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

## 6.5 Orthogonal surface views [i](#)

### 6.5.1 Primary map



X



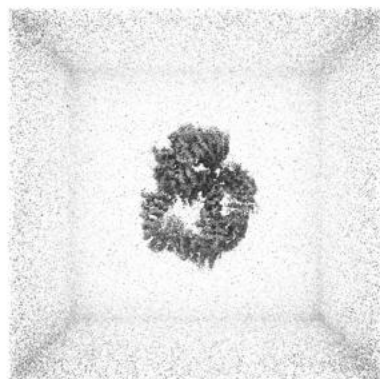
Y



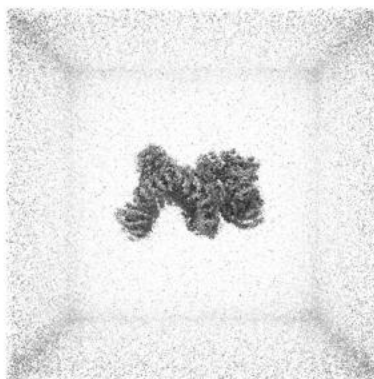
Z

The images above show the 3D surface view of the map at the recommended contour level 0.125. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

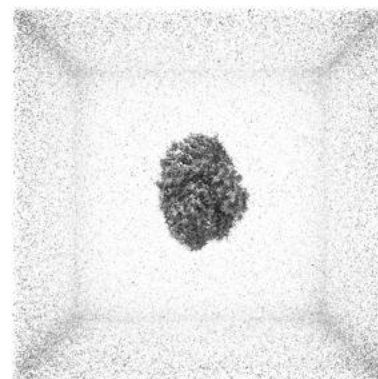
### 6.5.2 Raw map



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.

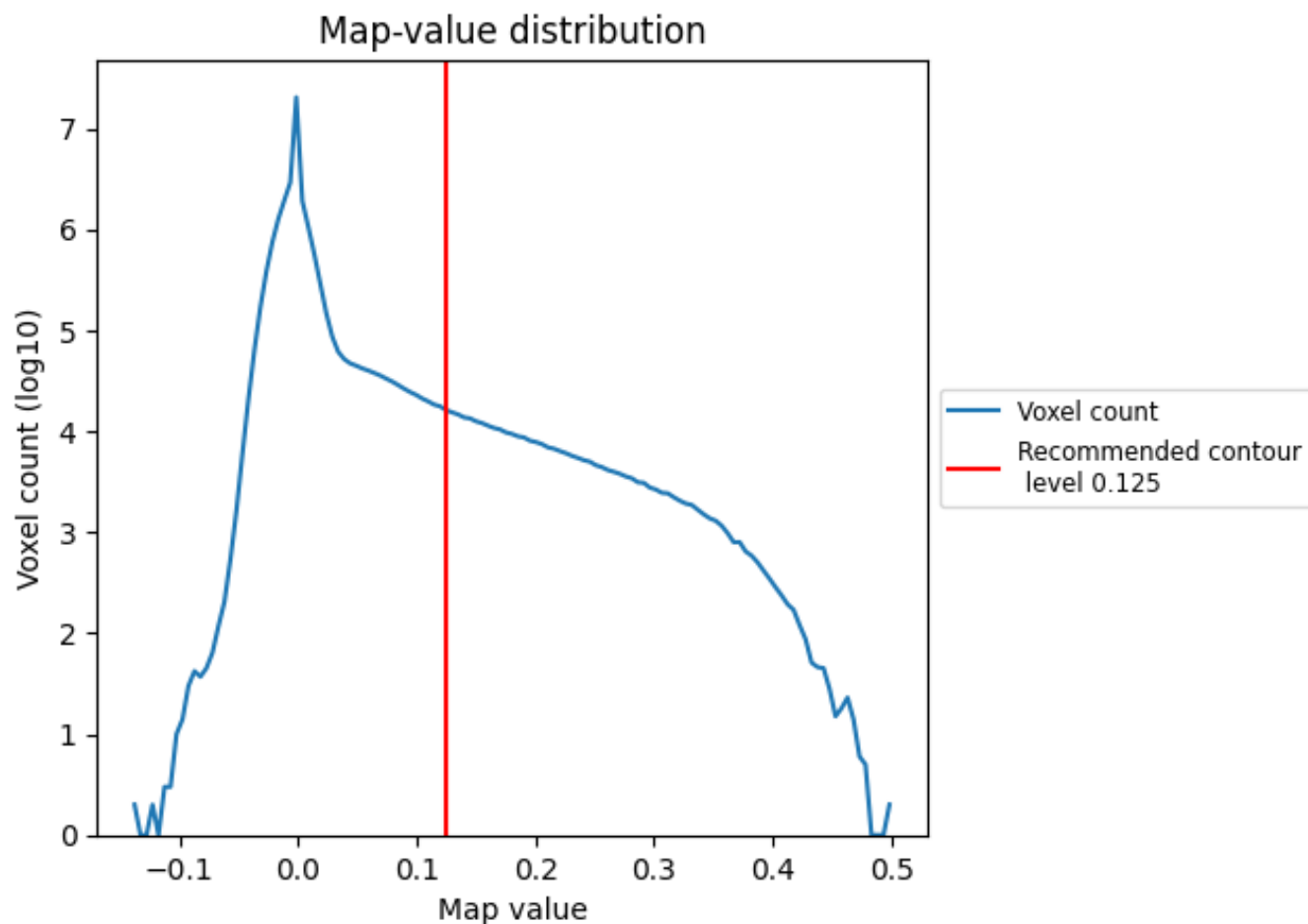
## 6.6 Mask visualisation [i](#)

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

## 7 Map analysis [i](#)

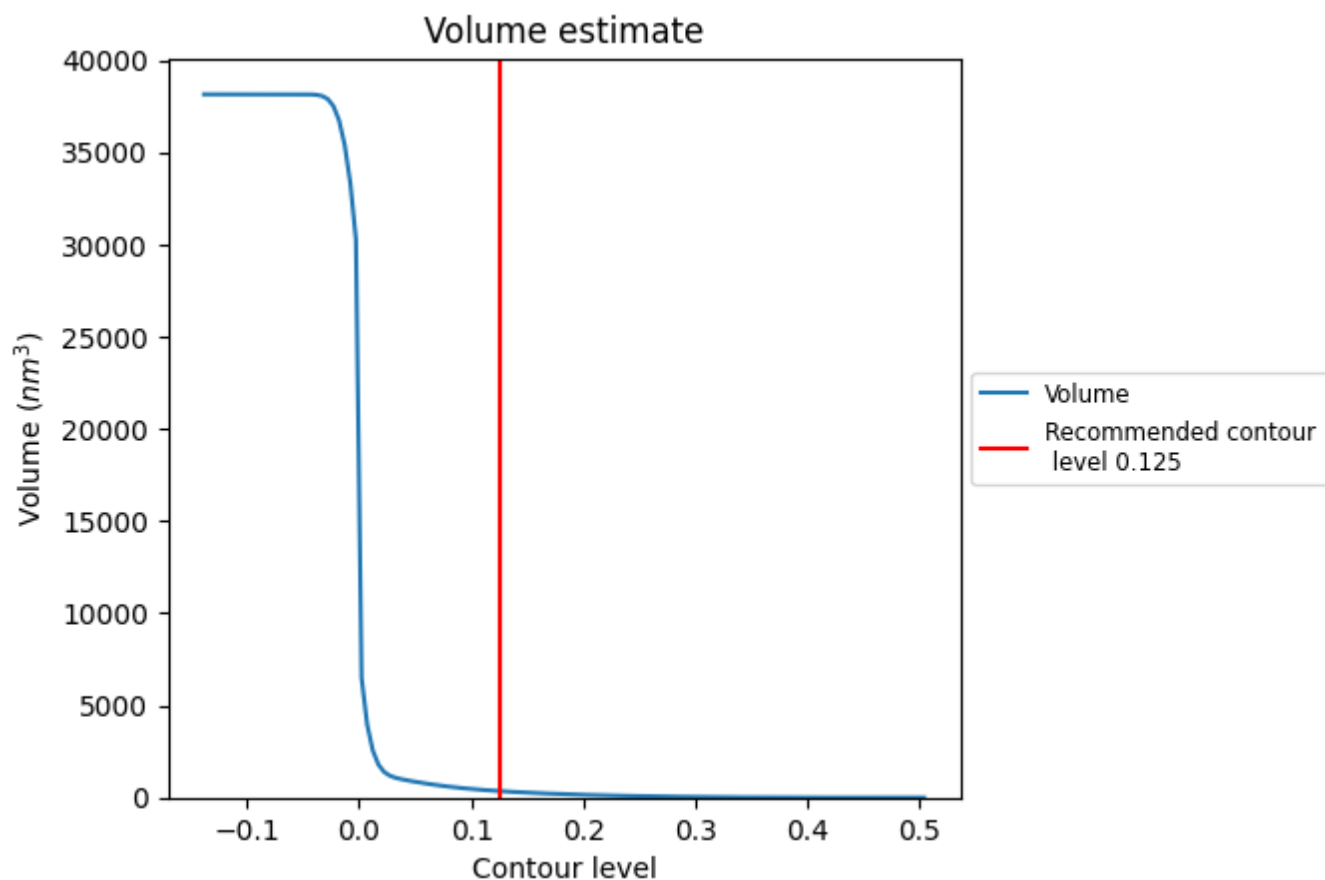
This section contains the results of statistical analysis of the map.

### 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.

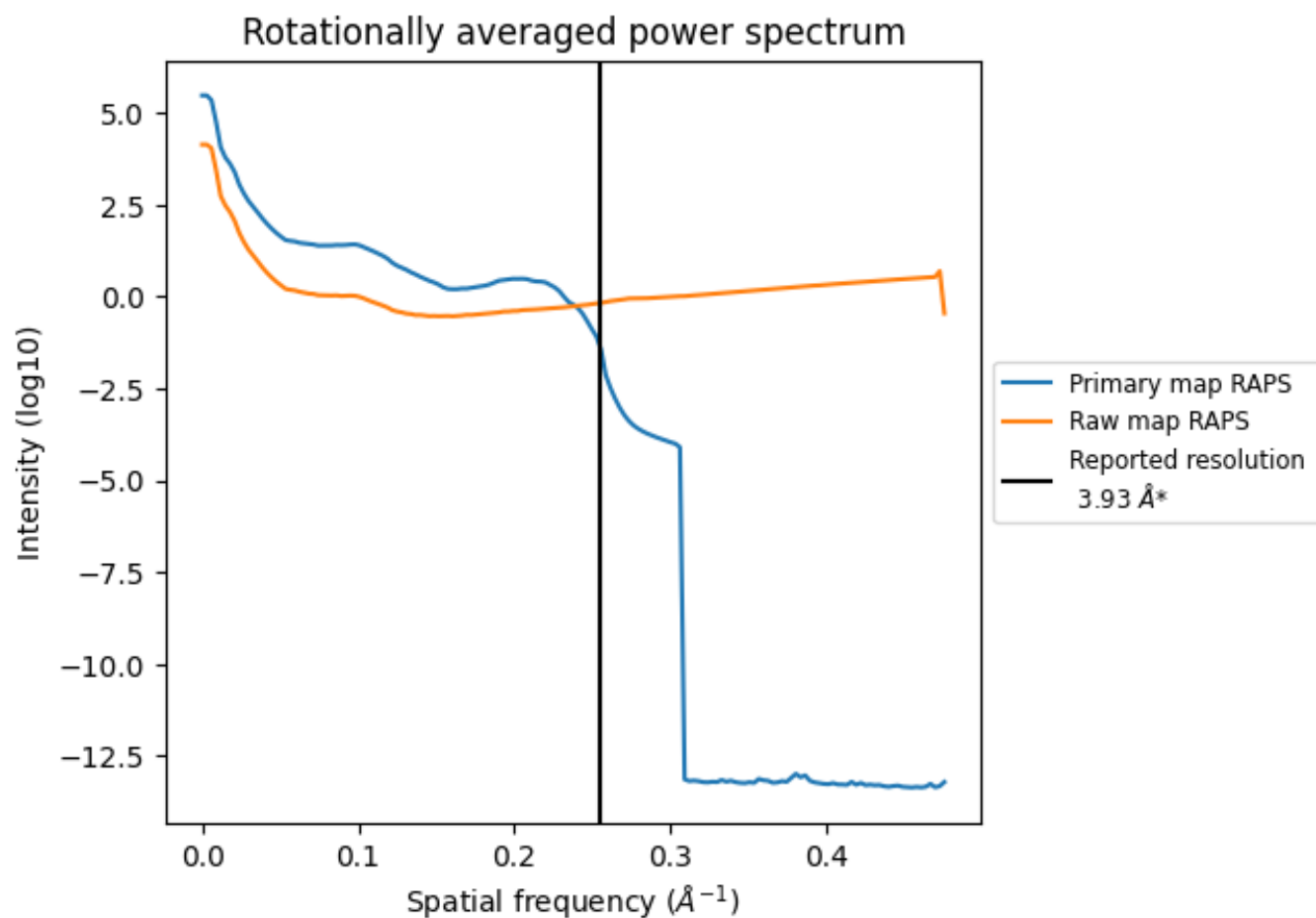
## 7.2 Volume estimate [i](#)



The volume at the recommended contour level is 352 nm<sup>3</sup>; this corresponds to an approximate mass of 318 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 ⓘ

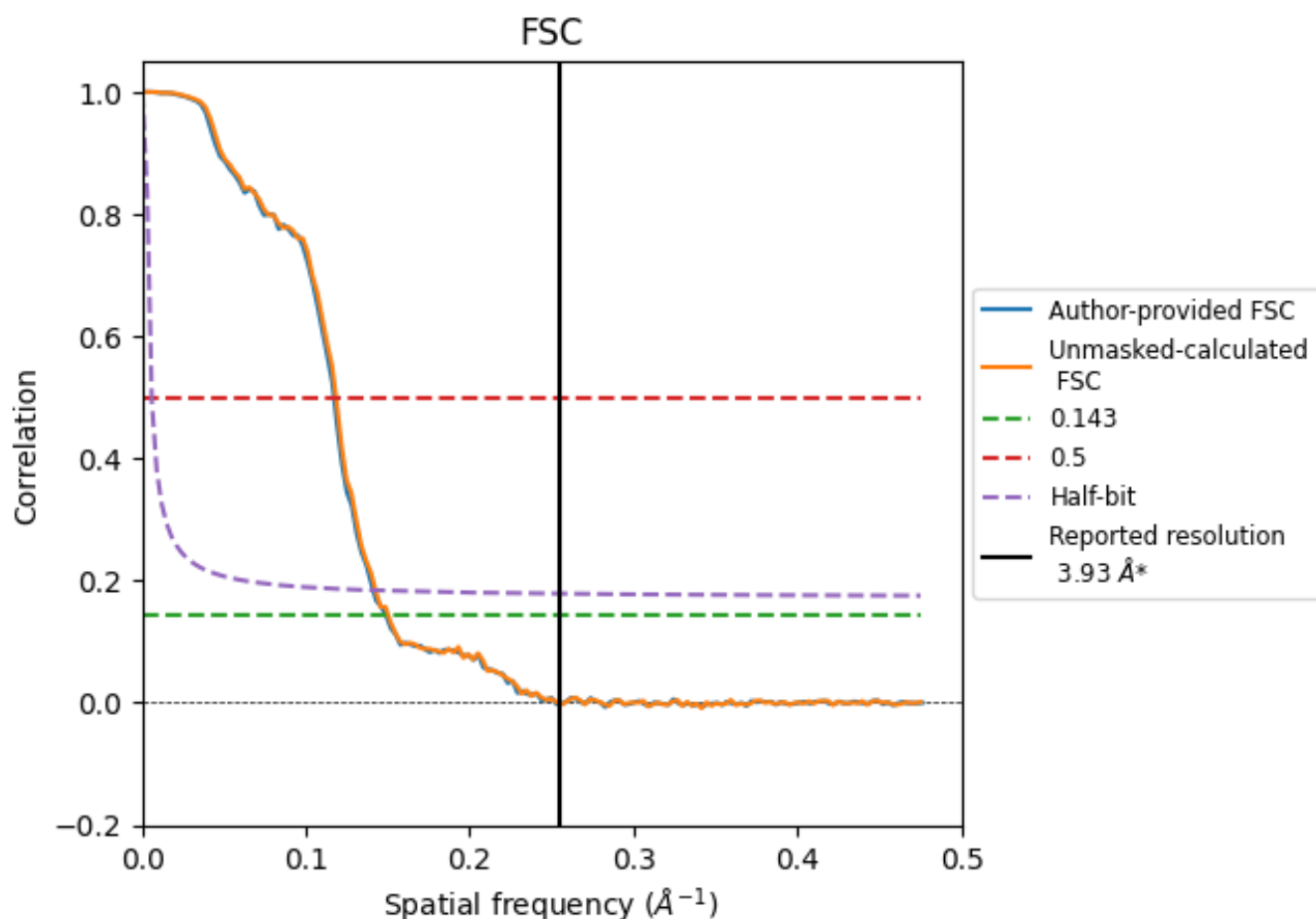


\*Reported resolution corresponds to spatial frequency of 0.254 Å<sup>-1</sup>

## 8 Fourier-Shell correlation [i](#)

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 [i](#)



\*Reported resolution corresponds to spatial frequency of  $0.254 \text{ \AA}^{-1}$

## 8.2 Resolution estimates

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.93	-	-
Author-provided FSC curve	6.72	8.54	7.09
Unmasked-calculated*	6.66	8.45	7.02

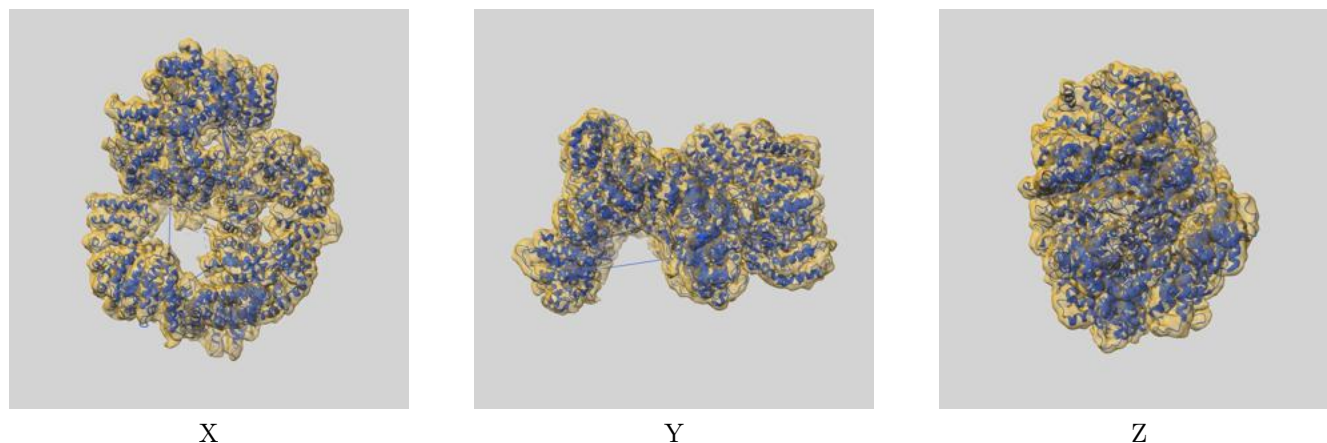
\*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from author-provided FSC intersecting FSC 0.143 CUT-OFF 6.72 differs from the reported value 3.93 by more than 10 %

The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 6.66 differs from the reported value 3.93 by more than 10 %

## 9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-11215 and PDB model 6ZH6. Per-residue inclusion information can be found in section [3](#) on page [4](#).

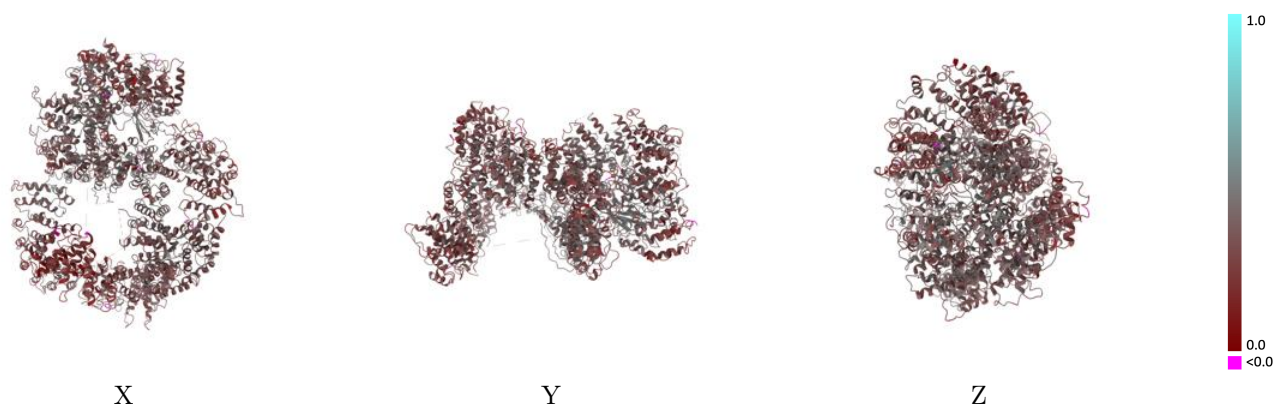
### 9.1 Map-model overlay [i](#)



The images above show the 3D surface view of the map at the recommended contour level 0.125 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.

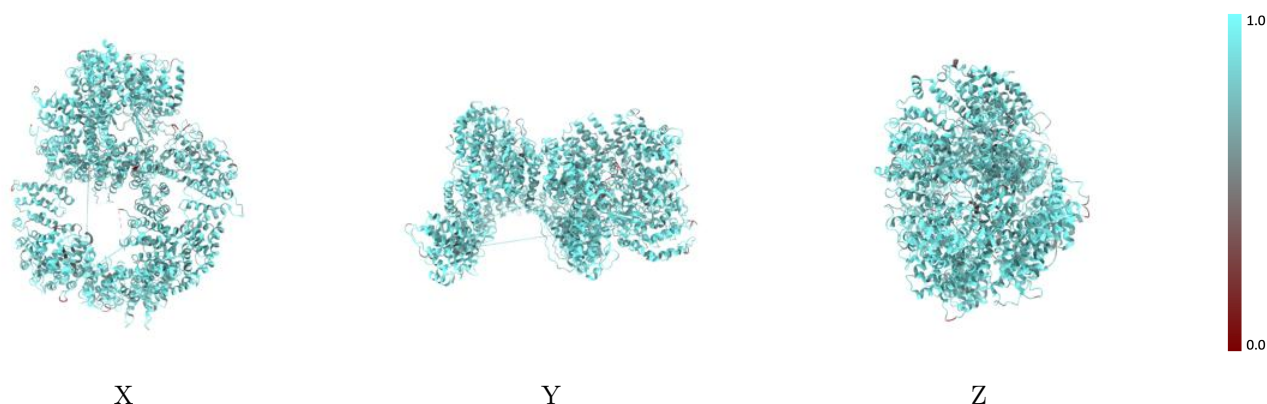


## 9.2 Q-score mapped to coordinate model [i](#)



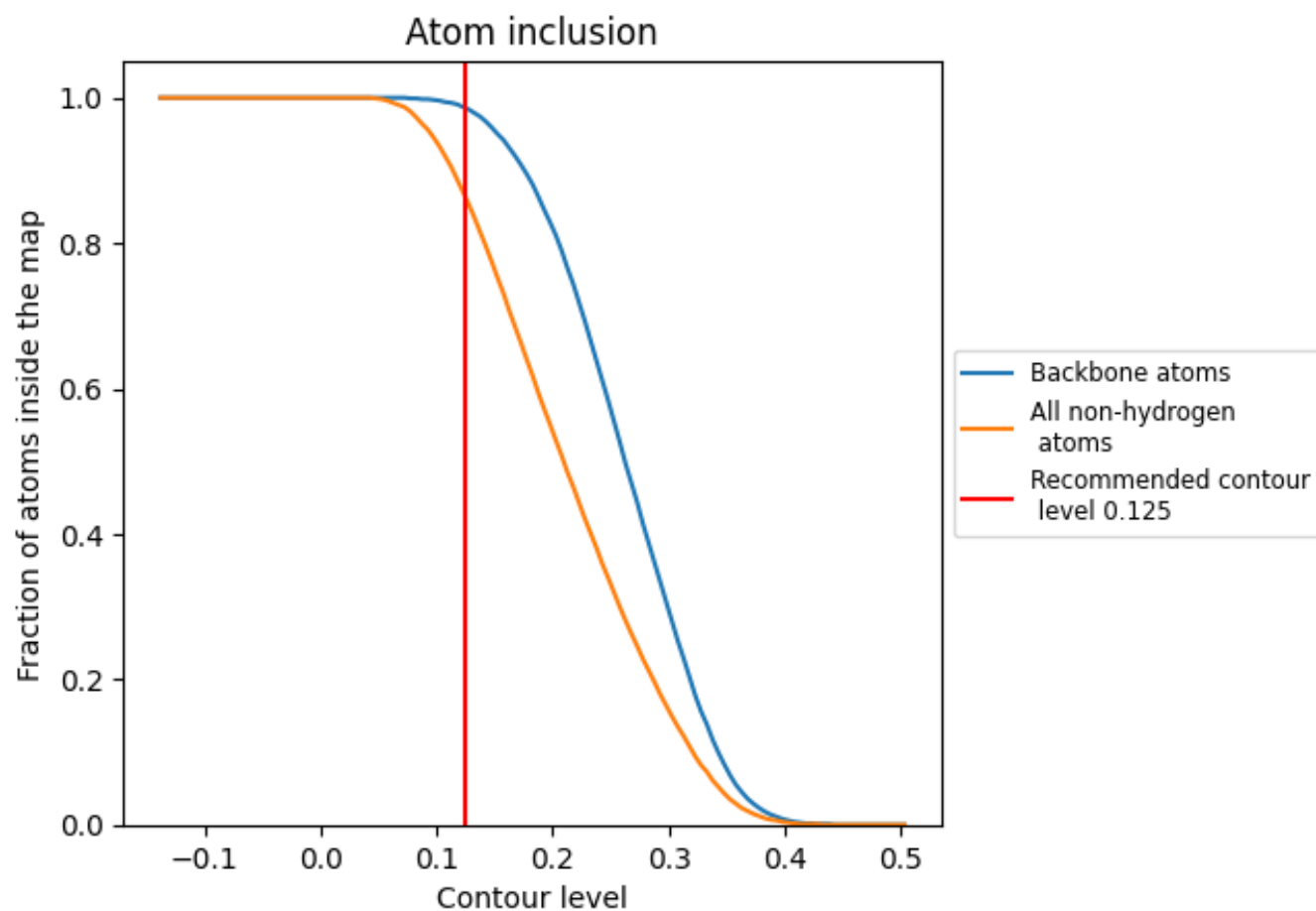
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.125).

## 9.4 Atom inclusion [i](#)



At the recommended contour level, 99% of all backbone atoms, 86% 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 (0.125) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	<div></div> 0.8620	<div></div> 0.3350
A	<div></div> 0.8620	<div></div> 0.3350
B	<div></div> 0.9210	<div></div> 0.3380

