



Full wwPDB EM Validation Report ⓘ

Jul 14, 2024 – 01:15 pm BST

PDB ID : 7Z87
EMDB ID : EMD-14545
Title : DNA-PK in the active state
Authors : Liang, S.; Blundell, T.L.
Deposited on : 2022-03-16
Resolution : 2.91 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.dev92
Mogul : 1.8.4, CSD as541be (2020)
MolProbity : 4.02b-467
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.37.1

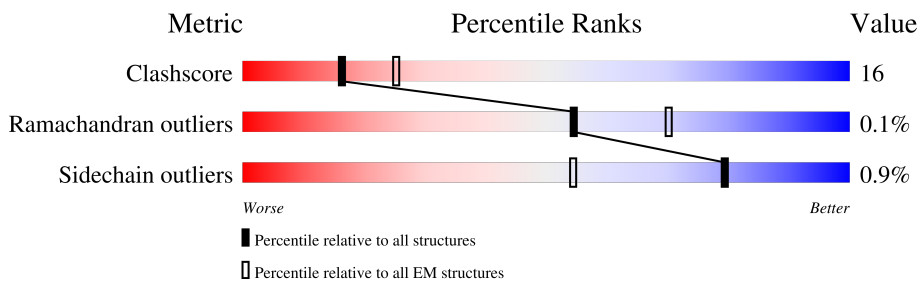
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 2.91 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	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826

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	4128	
2	B	609	
3	C	732	
4	D	26	
5	E	26	

2 Entry composition [i](#)

There are 7 unique types of molecules in this entry. The entry contains 39708 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.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	3689	29194	18729	4950	5323	192	1	0

- Molecule 2 is a protein called X-ray repair cross-complementing protein 6.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	B	490	3953	2533	669	733	18	2	0

- Molecule 3 is a protein called X-ray repair cross-complementing protein 5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	C	661	5267	3370	879	993	25	0	0

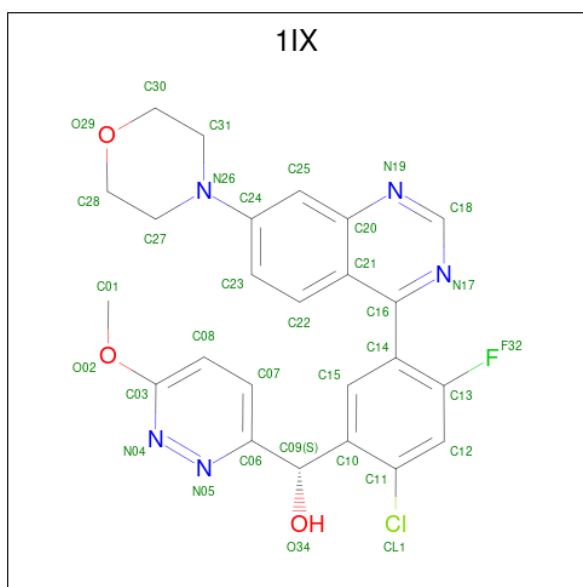
- Molecule 4 is a DNA chain called DNA (26-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
4	D	26	526	250	92	158	26	0	0

- Molecule 5 is a DNA chain called DNA (26-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
5	E	26	540	254	106	154	26	0	0

- Molecule 6 is ({S})-[2-chloranyl-4-fluoranyl-5-(7-morpholin-4-ylquinazolin-4-yl)phenyl]-(6-methoxypyridazin-3-yl)methanol (three-letter code: 1IX) (formula: C₂₄H₂₁ClFN₅O₃) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					AltConf	
			Total	C	Cl	F	N		O
6	A	1	34	24	1	1	5	3	0

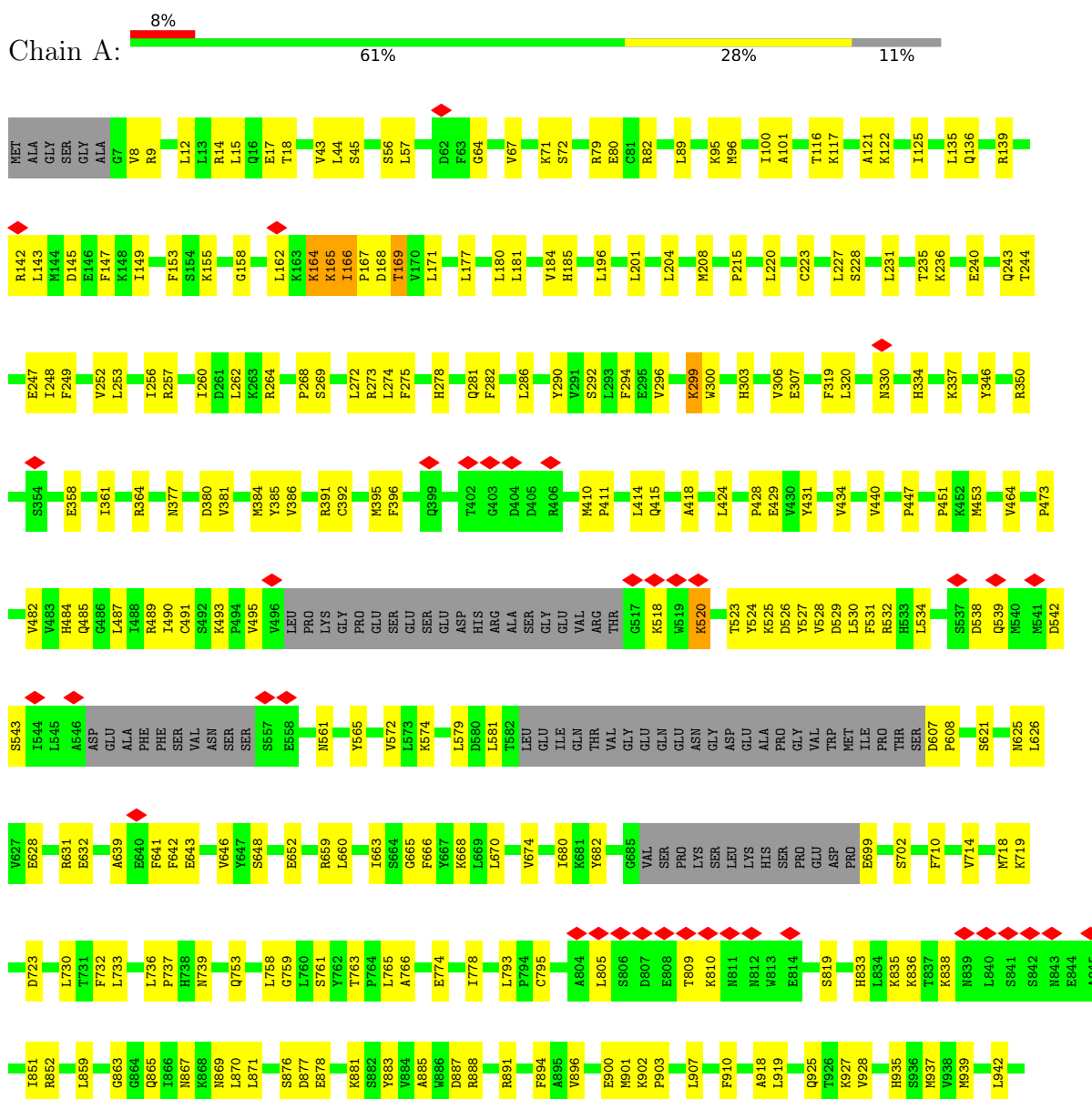
- Molecule 7 is water.

Mol	Chain	Residues	Atoms		AltConf
7	A	154	Total	O	0
			154	154	
7	B	25	Total	O	0
			25	25	
7	C	9	Total	O	0
			9	9	
7	D	4	Total	O	0
			4	4	
7	E	2	Total	O	0
			2	2	

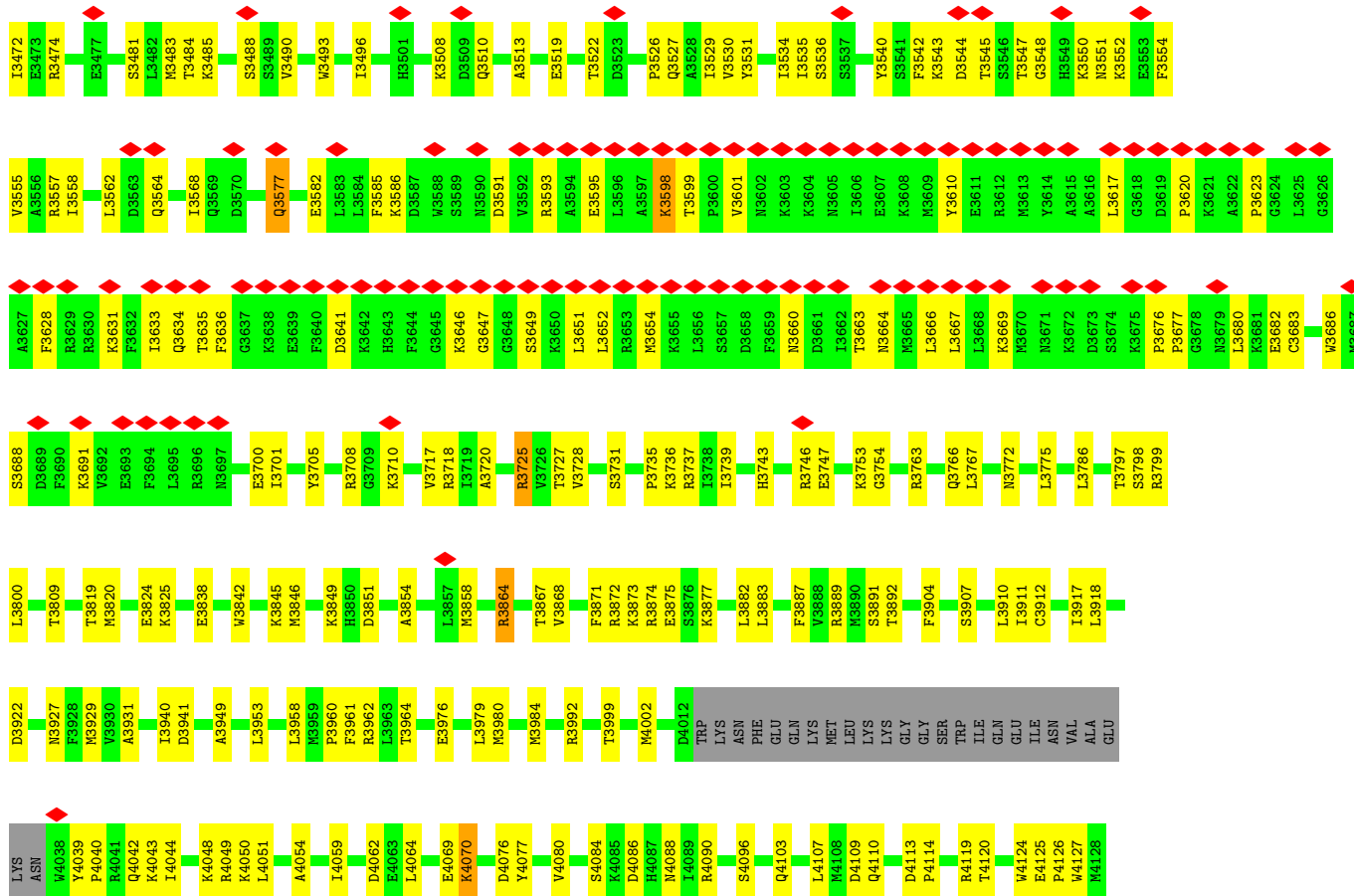
3 Residue-property plots

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

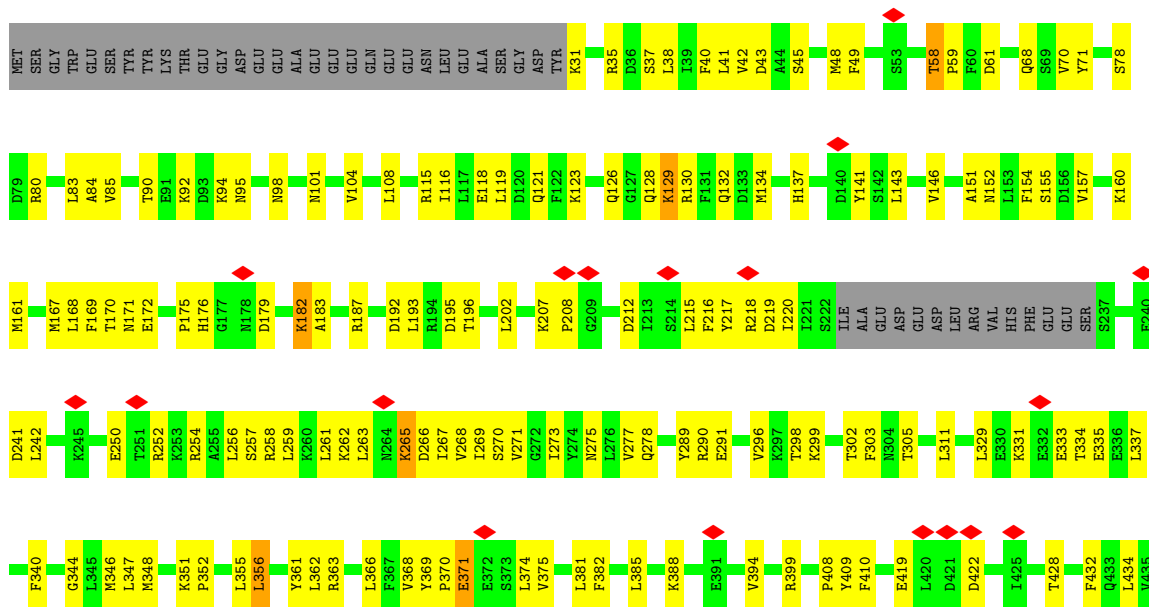
- Molecule 1: DNA-dependent protein kinase catalytic subunit

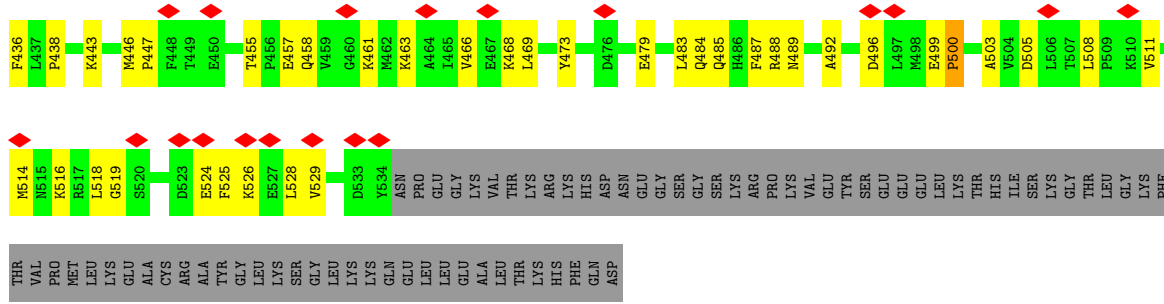


GLU	E2082	GLN	L2083	ASP	E2084	ASP	L2085	ASP	E2086	ASP	L2087	ASP	L2088	ASP	L2089	ASP	L2090	ASP	L2091	ASP	E2092	ASP	C2093	ASP	L2094	ASP	E2095	ASP	L2096	ASP	L2097	ASP	L2100	ASP	L2104	ASP	E2107	ASP	L2108	ASP	PRO	F1965	GLY	G1966	PRO	F1967	GLN	E1968	GLY	L1970	TYR	F1971	TYR	E1972	TYR	L1973	TYR	M1974	TYR	L1975	TYR	L1976	TYR	L1977	TYR	L1984	TYR	R1987	ALA	Y1988	THR	M1989	GLY	F1990	ARG	C1991	PHE	V1992	ARG	E1993	ARG	L1994	ARG	GLU	F2139	GLU	L1914	ASP	L1916	THR	L1917	THR	L1918	VAL	C1919	HIS	Y1920	TYR	T1924	ILE	E1925	VAL	M1926	LEU	G1929	LYS	T1930	ALA	M1931	ARG	Q1932	GLY	L1933	ALA	R1937	ALA	K1869	ASN	K1870	GLY	Y1945	ASP	M1946	SER	C1947	ASP	S1950	PRO	L1876	SER	L1877	TYR	D1878	MET	M1880	SER	Y1881	SER	R1882	SER	L1884	LEU	P1885	TYR	L1886	LEU	D1887	ALA	R1811	ASP	E1888	GLY	V1889	GLY	H1890	SER	A1891	TYR	E1892	SER	S1893	TYR	S1894	SER	K1895	SER	L1896	GLN	M1897	ASP	V1898	ARG	V1899	PRO	F1900	PRO	S1832	ALA	L1833	THR	D1834	GLY	F1930	ARG	L1835	PHE	L1836	ARG	R1837	ARG	E1907	ARG	G1908	ARG	T1912	ARG	M1788	GLN	L1750	GLY	Q1754	SER	H1851	GLY	H1852	GLY	S1853	GLY	R1854	GLY	F1855	SER	T1856	GLY	K1857	SER	L1858	SER	E1776	GLY	L1777	GLY	F1778	GLY	S1781	GLY	F1782	GLY	T1785	GLY	R1788	GLY	G1789	GLY	S1790	GLY	T1793	GLY	Q1794	GLY	E1799	GLY	Y1802	GLY	E1803	GLY	R1806	GLY	D1808	GLY	F1809	GLY	P1810	GLY	R1811	GLY	L1812	GLY	Q1817	GLY	V1820	GLY	D1821	GLY	R1822	GLY	L1824	GLY	L1825	GLY	L1828	GLY	S1832	GLY	L1833	GLY	D1834	GLY	F1729	GLY	P1730	GLY	P1731	GLY	V1645	GLY	F1734	GLY	R1735	GLY	F1736	GLY	M1737	GLY	K1651	GLN	I1652	GLY	Q1654	SER	L1655	GLY	D1656	GLY	S1657	GLY	S1658	GLY	F1661	GLY	S1664	GLY	H1665	GLY	F1668	GLY	F1672	GLY	I1676	GLY	K1683	GLY	L1684	GLY	D1685	GLY	H1686	GLY	L1688	GLY	K1689	GLY	G1690	GLY	Q1691	GLY	V1693	GLY	L1696	GLY	F1697	GLY	F1698	GLY	L1702	GLY	E1708	GLY	R1711	GLY	R1712	GLY	L1717	GLY	A1720	GLY	H1721	GLY	F1722	GLY	P1723	GLY	R1727	GLY	E1728	GLY	F1729	GLY	P1730	GLY	P1731	GLY	F1734	GLY	R1735	GLY	F1736	GLY	M1737	GLY	L1418	GLY	L1419	GLY	R1420	GLY	E1421	GLY	K1422	GLY	L1423	GLY	T1424	GLY	Q1426	GLY	S1427	GLY	E1429	GLY	E1430	GLY	Y1434	GLY	G1438	GLY	D1444	GLY	R1445	GLY	S1446	GLY	R1447	GLY	C1455	GLY	L1458	GLY	M1466	GLY	I1467	GLY	L1468	GLY	S1472	GLY	T1473	GLY	L1483	GLY	Y1487	GLY	G1494	GLY	ASP	GLU	ARG	Q1498	C1499	L1514	L1515	C1525	L1538	L1539	T1540	SER	L1649	LEU	A1650	SER	PRO	L1241	THR	L1242	THR	Y1243	THR	L1244	THR	P1247	THR	F1248	THR	S1249	THR	A1252	THR	L1257	THR	L281	THR	A1262	THR	L1264	THR	E1286	THR	Y1267	THR	M1268	THR	R1274	THR	T1275	THR	V1276	THR	L1279	THR	L1282	THR	G1283	THR	T1284	THR	E1285	THR	A1286	THR	Q1287	THR	S1288	THR	L1291	THR	F1297	THR	L1298	THR	I1301	THR	A1302	THR	M1303	THR	HIS	ASP	ILE	ILE	ILE	ALA	ALA	GLU	LVS	CYS	PHE	THR	THR	GLY	ALA	PRO	SER	GLY	ILE	LEU	ALA	GLN	L1066	GLY	A1067	GLY	L1068	GLY	H1069	GLY	P1070	GLY	N1071	GLY	K1074	GLY	R1075	GLY	F1082	GLY	I1085	GLY	Y1086	GLY	R1087	GLY	E1089	GLY	V1096	GLY	E1097	GLY	E1102	GLY	V1105	GLY	V1106	GLY	I1107	GLY	H1108	GLY	E1109	GLY	E1118	GLY	K1119	GLY	L1134	GLY	K1141	GLY	H1142	GLY	V1143	GLY	S1144	GLY	L1145	GLY	N1146	GLY	K1147	GLY	K1148	GLY	K1150	GLY	R1151	GLY	R1152	GLY	P1153	GLY	P1154	GLY	R1155	GLY	G1156	GLY	P1159	GLY	S1162	GLY	L1163	GLY	C1164	GLY	L1165	GLY	L1166	GLY	D1167	GLY	T1946	THR	Q1947	THR	P1948	THR	E1950	THR	G1951	THR	G1952	THR	G1954	THR	A1955	THR	P1956	THR	Y1959	THR	R1963	THR	L1969	THR	L1970	THR	R1971	THR	L1972	THR	D1975	THR	P1976	THR	P1986	THR	R1989	THR	Q1990	THR	L1991	THR	R1997	THR	F1001	THR	L1014	THR	I1017	THR	V1018	THR	D1019	THR	V1020	THR	V1021	THR	L1025	THR	R1026	THR	D1027	THR	F1028	THR	E1035	THR	F1036	THR	P1046	THR	Q1047	THR	Q1048	THR	V1054	THR	K1057	THR	R1061	THR	R1062	THR
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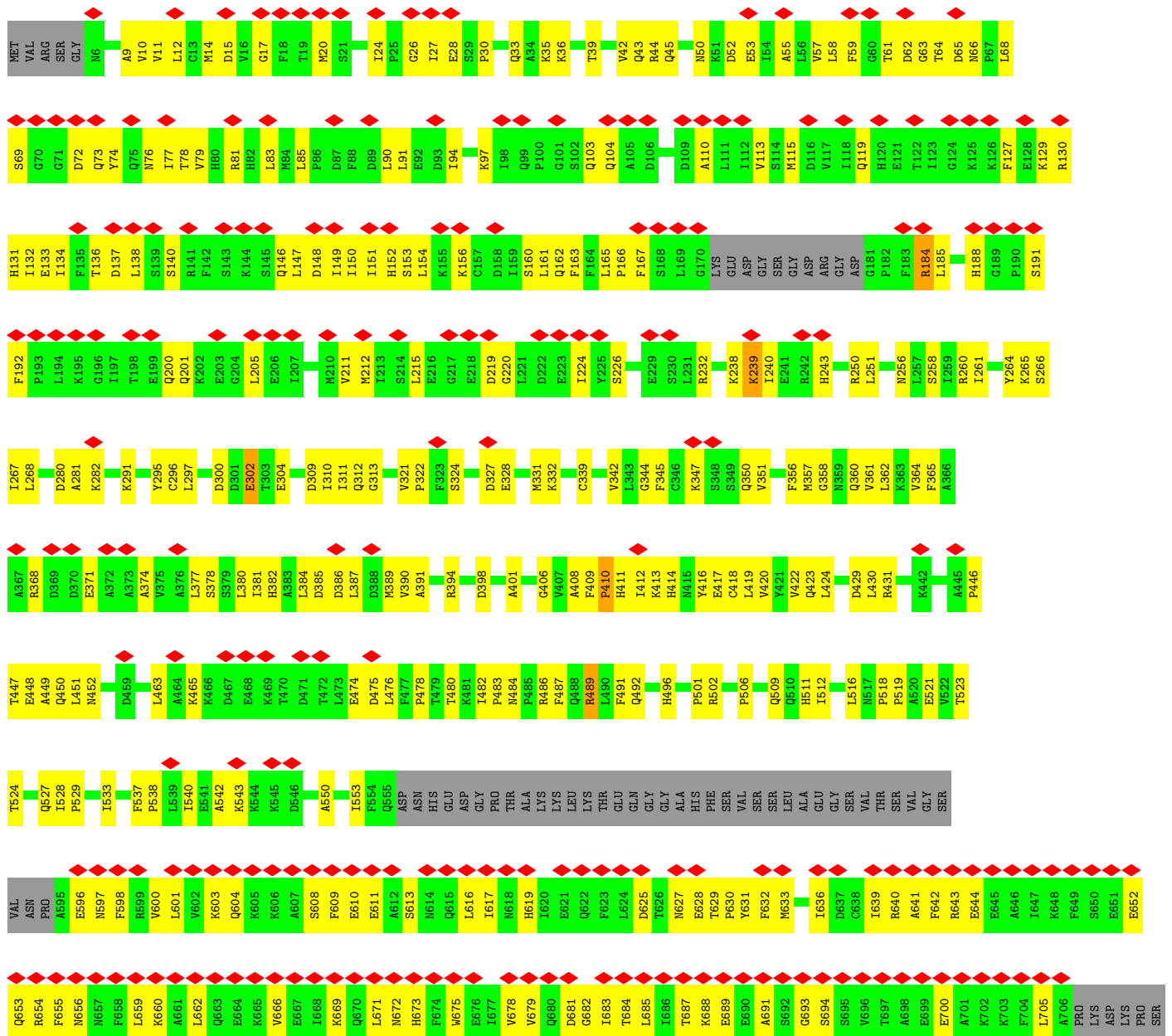


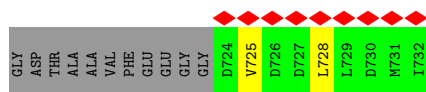
• Molecule 2: X-ray repair cross-complementing protein 6





• Molecule 3: X-ray repair cross-complementing protein 5





- Molecule 4: DNA (26-MER)



- Molecule 5: DNA (26-MER)



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	275300	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 ($e^-/\text{\AA}^2$)	47.22	Depositor
Minimum defocus (nm)	1100	Depositor
Maximum defocus (nm)	2300	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	3.034	Depositor
Minimum map value	-2.002	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.037	Depositor
Recommended contour level	0.1	Depositor
Map size (\AA)	456.4, 456.4, 456.4	wwPDB
Map dimensions	350, 350, 350	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\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: 1IX

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	0.34	0/29781	0.49	4/40270 (0.0%)
2	B	0.37	0/4036	0.56	2/5438 (0.0%)
3	C	0.30	0/5368	0.49	0/7240
4	D	0.80	0/587	0.93	0/902
5	E	0.77	0/607	0.86	0/936
All	All	0.36	0/40379	0.52	6/54786 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	3

There are no bond length outliers.

All (6) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	356	LEU	CA-CB-CG	5.75	128.54	115.30
1	A	2122	LEU	CA-CB-CG	5.24	127.35	115.30
1	A	3151	LEU	CA-CB-CG	5.19	127.23	115.30
1	A	169	THR	N-CA-C	-5.10	97.24	111.00
1	A	3025	PRO	CA-N-CD	-5.05	104.43	111.50
2	B	500	PRO	CA-N-CD	-5.04	104.45	111.50

There are no chirality outliers.

All (3) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	1020	PRO	Peptide
1	A	1960	LYS	Peptide
1	A	2122	LEU	Peptide

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	29194	0	29449	849	0
2	B	3953	0	4031	165	0
3	C	5267	0	5261	233	0
4	D	526	0	293	24	0
5	E	540	0	291	9	0
6	A	34	0	0	1	0
7	A	154	0	0	17	0
7	B	25	0	0	3	0
7	C	9	0	0	0	0
7	D	4	0	0	1	0
7	E	2	0	0	0	0
All	All	39708	0	39325	1226	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 16.

All (1226) 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:169:THR:HG23	4:D:12:DT:OP1	1.42	1.18
3:C:409:PHE:HB2	3:C:420:VAL:HG13	1.31	1.07
3:C:409:PHE:HB2	3:C:420:VAL:CG1	1.85	1.07
2:B:371:GLU:OE1	2:B:374:LEU:HD13	1.56	1.05
3:C:136:THR:HG22	3:C:138:LEU:H	1.32	0.92
1:A:888:ARG:HH12	1:A:3889:ARG:HH11	1.22	0.87
1:A:1369:MET:HB2	1:A:1418:HIS:CD2	2.12	0.85
1:A:2165:LEU:HD21	1:A:2200:ALA:HB1	1.60	0.83
1:A:948:MET:HA	1:A:948:MET:CE	2.07	0.83
1:A:1874:TYR:CE2	1:A:1947:CYS:HB3	2.14	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:169:THR:CG2	4:D:12:DT:OP1	2.27	0.83
1:A:3484:THR:HG22	1:A:3513:ALA:HB2	1.60	0.82
2:B:263:LEU:HB2	2:B:267:ILE:HB	1.60	0.81
1:A:166:ILE:HG13	1:A:171:LEU:HG	1.60	0.81
1:A:236:LYS:H	1:A:281:GLN:HE21	1.26	0.81
1:A:948:MET:N	1:A:949:PRO:HD2	1.95	0.80
1:A:1483:LEU:HD11	1:A:1514:LEU:HD22	1.62	0.80
1:A:1551:ILE:HG13	1:A:1552:HIS:H	1.45	0.80
1:A:1102:GLU:HA	1:A:1154:PRO:HB3	1.63	0.80
1:A:3623:PRO:HG3	1:A:3633:ILE:HD13	1.66	0.78
1:A:1212:LEU:HD22	1:A:1217:VAL:HA	1.66	0.78
1:A:1874:TYR:CE2	1:A:1944:ALA:HA	2.20	0.77
1:A:495:VAL:HG22	1:A:523:THR:HB	1.67	0.77
3:C:11:VAL:HB	3:C:132:ILE:HG22	1.68	0.76
3:C:409:PHE:CB	3:C:420:VAL:CG1	2.64	0.76
1:A:2953:THR:HB	1:A:2994:TRP:HE1	1.49	0.75
1:A:887:ASP:OD2	1:A:891:ARG:NH1	2.20	0.74
1:A:2439:ILE:O	1:A:2443:MET:HB2	1.86	0.74
1:A:3728:VAL:HG22	1:A:3736:LYS:HG3	1.70	0.74
2:B:399:ARG:NH2	3:C:516:LEU:O	2.20	0.73
1:A:257:ARG:HH12	1:A:292:SER:HB2	1.53	0.73
1:A:1946:ASN:HD22	1:A:2096:PRO:HG3	1.53	0.73
1:A:4064:LEU:HD21	1:A:4077:TYR:HB3	1.71	0.73
2:B:366:LEU:HB2	2:B:434:LEU:HD13	1.70	0.73
1:A:527:TYR:O	1:A:530:LEU:HB3	1.89	0.73
3:C:339:CYS:SG	3:C:394:ARG:NH1	2.62	0.73
1:A:1455:CYS:HA	1:A:1458:LEU:HD12	1.69	0.72
2:B:187:ARG:HG2	2:B:220:ILE:HD11	1.70	0.72
3:C:35:LYS:NZ	3:C:94:ILE:O	2.22	0.72
1:A:1684:LEU:HD21	1:A:1688:LEU:HB3	1.72	0.72
1:A:2837:LEU:HD11	1:A:2871:LEU:HA	1.71	0.72
1:A:3145:ILE:HD11	1:A:3196:LYS:HD2	1.71	0.72
3:C:492:GLN:HG2	3:C:509:GLN:HE22	1.55	0.72
1:A:2458:VAL:HG11	1:A:2476:ILE:HD11	1.71	0.71
1:A:1619:ALA:HB2	1:A:1655:ILE:HD11	1.72	0.71
2:B:528:LEU:HG	2:B:529:VAL:HG23	1.73	0.71
1:A:793:LEU:HD12	1:A:869:ASN:HB2	1.71	0.71
1:A:1926:ASN:OD1	1:A:1974:ASN:ND2	2.24	0.71
2:B:92:LYS:N	7:B:702:H0H:O	2.24	0.71
3:C:115:MET:O	3:C:119:GLN:NE2	2.24	0.71
1:A:1809:ASP:OD1	3:C:627:ASN:ND2	2.24	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:329:LEU:HD12	2:B:333:GLU:HB3	1.71	0.71
3:C:20:MET:HG2	3:C:137:ASP:HB2	1.73	0.70
3:C:381:ILE:HD11	3:C:419:LEU:HB2	1.73	0.70
3:C:27:ILE:HG13	3:C:28:GLU:H	1.55	0.70
3:C:679:VAL:HG12	3:C:705:LEU:HD21	1.73	0.70
1:A:3864:ARG:NH2	1:A:3868:VAL:HG21	2.06	0.70
2:B:368:VAL:HB	2:B:432:PHE:HB2	1.74	0.70
1:A:665:GLY:HA2	1:A:668:LYS:HG3	1.74	0.69
1:A:1833:LEU:HB3	1:A:1836:LEU:HB2	1.74	0.69
2:B:305:THR:HG23	2:B:311:LEU:HD11	1.74	0.69
3:C:642:PHE:HB3	3:C:654:ARG:HH12	1.58	0.69
1:A:3912:CYS:SG	7:A:4397:HOH:O	2.49	0.69
3:C:409:PHE:O	3:C:419:LEU:HD12	1.91	0.69
1:A:3647:GLY:HA2	1:A:3651:LEU:HB2	1.74	0.69
3:C:684:THR:HG22	3:C:685:LEU:H	1.57	0.69
1:A:1173:LEU:HG	1:A:1191:PHE:HE2	1.56	0.69
2:B:261:LEU:HD23	2:B:269:ILE:HD11	1.74	0.69
3:C:65:ASP:H	3:C:78:THR:HG22	1.57	0.69
1:A:918:ALA:O	1:A:927:LYS:NZ	2.26	0.69
1:A:1487:VAL:HG11	1:A:1515:LEU:HD23	1.75	0.69
1:A:3820:MET:HB3	1:A:3824:GLU:HG3	1.75	0.69
2:B:469:LEU:HD21	2:B:514:MET:HG3	1.75	0.69
1:A:3922:ASP:O	1:A:3927:ASN:ND2	2.25	0.68
1:A:1148:ALA:HB1	1:A:1162:SER:HB3	1.74	0.68
2:B:363:ARG:NH1	4:D:18:DT:OP1	2.27	0.68
1:A:227:LEU:HD21	1:A:248:ILE:HD12	1.75	0.68
1:A:2265:PRO:HB3	1:A:2309:PHE:CD1	2.28	0.68
2:B:443:LYS:NZ	3:C:480:THR:O	2.28	0.68
1:A:414:LEU:HG	1:A:464:VAL:HG21	1.77	0.67
1:A:121:ALA:HB2	1:A:167:PRO:HG2	1.76	0.67
1:A:1069:HIS:O	1:A:1075:ARG:NH1	2.26	0.67
1:A:1264:LEU:HD11	1:A:1341:ILE:HG13	1.77	0.67
3:C:184:ARG:HG2	3:C:185:LEU:H	1.59	0.67
2:B:419:GLU:HG2	2:B:428:THR:HG22	1.76	0.67
1:A:538:ASP:OD1	1:A:561:ASN:ND2	2.24	0.67
1:A:948:MET:HA	1:A:948:MET:HE1	1.76	0.67
1:A:3544:ASP:HB2	1:A:3552:LYS:HZ3	1.59	0.67
1:A:3631:LYS:HE2	1:A:3683:CYS:HA	1.76	0.67
2:B:215:LEU:HG	2:B:217:TYR:H	1.59	0.67
1:A:1261:LEU:HD13	1:A:1337:VAL:HG12	1.77	0.67
1:A:1896:ILE:HD12	1:A:1904:CYS:H	1.59	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3445:LEU:HG	1:A:3449:LYS:HE2	1.76	0.67
1:A:3462:ARG:HH12	1:A:3708:ARG:HG3	1.58	0.67
2:B:262:LYS:HB3	2:B:268:VAL:HG12	1.76	0.67
3:C:267:ILE:HG22	3:C:361:VAL:HB	1.77	0.67
1:A:3082:TYR:O	1:A:3084:GLN:N	2.28	0.66
1:A:3958:LEU:O	1:A:4110:GLN:NE2	2.28	0.66
3:C:265:LYS:NZ	3:C:360:GLN:OE1	2.24	0.66
1:A:1261:LEU:HD11	1:A:1340:ARG:HG3	1.78	0.66
1:A:3842:TRP:HH2	1:A:3867:THR:HG22	1.61	0.66
2:B:90:THR:O	2:B:101:ASN:ND2	2.27	0.66
3:C:296:CYS:HA	3:C:304:GLU:HA	1.77	0.66
1:A:3651:LEU:HA	1:A:3654:MET:HB2	1.76	0.66
1:A:2154:GLU:OE1	1:A:2158:ARG:NH1	2.29	0.66
3:C:413:LYS:HG2	3:C:416:TYR:CE1	2.31	0.66
1:A:2427:ARG:HH12	1:A:2464:HIS:CE1	2.13	0.66
2:B:168:LEU:HD23	2:B:202:LEU:HD13	1.76	0.66
1:A:1807:LYS:HG3	1:A:1809:ASP:HB2	1.77	0.66
2:B:505:ASP:OD2	2:B:508:LEU:N	2.28	0.66
3:C:58:LEU:HD11	3:C:97:LYS:HD3	1.78	0.66
3:C:687:THR:HG22	3:C:700:GLU:HB2	1.76	0.66
2:B:388:LYS:HE2	3:C:451:LEU:HD12	1.78	0.66
3:C:640:ARG:HD2	3:C:643:ARG:HH21	1.59	0.66
1:A:1105:VAL:HG11	1:A:1154:PRO:HB2	1.78	0.66
1:A:1878:ASP:HB2	1:A:1947:CYS:HB2	1.77	0.66
1:A:1852:LYS:HZ1	1:A:1914:THR:HG23	1.62	0.65
2:B:31:LYS:HD2	2:B:160:LYS:HG2	1.78	0.65
3:C:312:GLN:NE2	3:C:328:GLU:OE2	2.30	0.65
1:A:1850:VAL:O	1:A:1870:LYS:NZ	2.30	0.65
3:C:148:ASP:O	3:C:152:HIS:ND1	2.29	0.65
1:A:377:ASN:ND2	1:A:380:ASP:OD2	2.29	0.65
1:A:358:GLU:HA	1:A:361:ILE:HG22	1.79	0.65
1:A:1853:SER:OG	1:A:1870:LYS:NZ	2.29	0.65
1:A:3269:ARG:NH2	1:A:3271:ASP:OD2	2.27	0.65
1:A:3411:ASP:OD1	1:A:3412:ALA:N	2.30	0.65
1:A:1185:HIS:ND1	1:A:1189:GLU:OE2	2.29	0.65
1:A:3448:GLU:O	1:A:3452:LYS:HG2	1.96	0.65
1:A:1727:ARG:HD3	1:A:1773:VAL:HG22	1.79	0.64
1:A:1794:GLN:NE2	1:A:1832:SER:O	2.29	0.64
4:D:7:DG:H1	5:E:37:DC:H42	1.42	0.64
1:A:45:SER:O	1:A:95:LYS:NZ	2.27	0.64
1:A:1411:TYR:HD2	1:A:1414:ILE:HD11	1.62	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3867:THR:HG21	1:A:4119:ARG:HH21	1.62	0.64
1:A:1178:ARG:O	1:A:1184:ARG:NH2	2.30	0.64
1:A:1153:LEU:HD11	1:A:1159:PRO:HA	1.78	0.64
1:A:3483:MET:SD	1:A:3513:ALA:HB1	2.38	0.64
2:B:362:LEU:HD12	2:B:363:ARG:HB2	1.80	0.64
1:A:1946:ASN:ND2	1:A:2096:PRO:HG3	2.12	0.64
1:A:391:ARG:HH12	1:A:395:MET:HB3	1.63	0.64
1:A:1142:HIS:HE1	1:A:1165:LEU:HD22	1.63	0.64
1:A:3416:LEU:HB3	1:A:3449:LYS:NZ	2.12	0.64
3:C:540:ILE:O	3:C:543:LYS:NZ	2.31	0.64
1:A:125:ILE:HD11	1:A:169:THR:HB	1.79	0.63
1:A:1803:GLU:OE1	1:A:1806:ARG:NH2	2.32	0.63
1:A:1820:VAL:HA	1:A:1824:LEU:HB3	1.80	0.63
3:C:678:VAL:O	3:C:682:GLY:N	2.29	0.63
1:A:3535:ILE:HG13	1:A:3797:THR:HA	1.79	0.63
3:C:140:SER:O	3:C:200:GLN:NE2	2.32	0.63
1:A:2342:CYS:SG	1:A:2377:ARG:NH1	2.72	0.63
3:C:66:ASN:ND2	3:C:68:LEU:O	2.21	0.63
1:A:1828:LEU:O	1:A:1883:ARG:NH2	2.32	0.63
1:A:3688:SER:O	1:A:3691:LYS:NZ	2.32	0.62
3:C:77:ILE:HD12	3:C:113:VAL:HG21	1.81	0.62
1:A:3739:ILE:HG22	1:A:3747:GLU:OE2	1.99	0.62
1:A:490:ILE:HA	1:A:493:LYS:HE2	1.80	0.62
1:A:997:ASN:O	1:A:1001:PHE:N	2.31	0.62
1:A:2251:ILE:HG13	1:A:2285:LEU:HD23	1.81	0.62
1:A:3335:ARG:HG2	1:A:3339:ASN:ND2	2.15	0.62
1:A:538:ASP:O	1:A:542:ASP:N	2.24	0.62
1:A:1984:LEU:HD21	1:A:2142:ILE:HD12	1.81	0.62
1:A:3849:LYS:HB2	1:A:3854:ALA:HB2	1.80	0.62
1:A:520:LYS:NZ	1:A:526:ASP:OD2	2.33	0.62
1:A:2939:LEU:HD23	1:A:2942:ILE:HD12	1.80	0.62
1:A:3582:GLU:HB3	1:A:3586:LYS:NZ	2.14	0.62
2:B:368:VAL:HG23	2:B:434:LEU:HD11	1.80	0.62
3:C:486:ARG:NH2	4:D:20:DG:OP1	2.32	0.62
1:A:485:GLN:OE1	1:A:489:ARG:NH1	2.33	0.62
1:A:3868:VAL:HG22	1:A:4114:PRO:HB2	1.81	0.62
2:B:171:ASN:HB2	2:B:207:LYS:HG2	1.82	0.62
1:A:1017:ILE:HG13	1:A:1018:VAL:N	2.15	0.61
5:E:37:DC:H2''	5:E:38:DA:H5''	1.81	0.61
1:A:3447:VAL:HG11	1:A:3483:MET:HB2	1.82	0.61
1:A:1840:PHE:O	1:A:1844:VAL:HG23	2.00	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:357:MET:HE2	3:C:429:ASP:HB3	1.81	0.61
1:A:3720:ALA:HB2	1:A:3743:HIS:HA	1.83	0.61
3:C:412:ILE:O	3:C:412:ILE:HG22	2.01	0.61
3:C:450:GLN:HB3	3:C:537:PHE:CZ	2.36	0.61
1:A:2311:ARG:NH2	1:A:2312:TYR:OH	2.33	0.61
3:C:533:ILE:HG23	3:C:537:PHE:CD2	2.35	0.61
1:A:3335:ARG:HG2	1:A:3339:ASN:HD21	1.66	0.61
1:A:2744:ALA:HA	4:D:1:DC:C2	2.36	0.61
2:B:216:PHE:HA	2:B:218:ARG:NH1	2.16	0.61
3:C:550:ALA:HA	3:C:553:ILE:HG22	1.83	0.61
1:A:1551:ILE:HG13	1:A:1552:HIS:N	2.16	0.61
1:A:3378:TYR:OH	1:A:3426:LYS:NZ	2.33	0.61
3:C:613:SER:O	3:C:617:ILE:HG12	2.01	0.61
1:A:1268:ASN:ND2	1:A:1343:GLU:OE2	2.34	0.60
2:B:48:MET:HA	2:B:59:PRO:HG2	1.82	0.60
2:B:457:GLU:OE2	2:B:458:GLN:NE2	2.34	0.60
1:A:1894:SER:HA	1:A:1897:ASN:HB2	1.84	0.60
3:C:660:LYS:HG3	3:C:685:LEU:HD11	1.82	0.60
1:A:1734:PRO:O	1:A:1738:ASN:ND2	2.35	0.60
3:C:659:LEU:HD11	3:C:683:ILE:HG22	1.83	0.60
1:A:1852:LYS:NZ	1:A:1914:THR:HG23	2.17	0.60
1:A:3593:ARG:NH2	1:A:3664:ASN:OD1	2.35	0.60
1:A:1874:TYR:CZ	1:A:1947:CYS:HB3	2.36	0.60
3:C:342:VAL:HG12	3:C:344:GLY:H	1.66	0.60
1:A:264:ARG:NH2	7:A:4332:HOH:O	2.34	0.60
1:A:3162:ASN:O	1:A:3166:ASN:ND2	2.30	0.60
2:B:215:LEU:O	2:B:218:ARG:NH1	2.34	0.60
2:B:40:PHE:HZ	2:B:70:VAL:HG11	1.67	0.59
1:A:269:SER:OG	1:A:273:ARG:NH2	2.35	0.59
1:A:1914:THR:HA	1:A:1917:LYS:NZ	2.16	0.59
1:A:3961:PHE:HE1	1:A:4107:LEU:HG	1.66	0.59
1:A:2743:TYR:HB3	4:D:1:DC:H42	1.67	0.59
1:A:3548:GLY:HA2	1:A:3551:ASN:HD22	1.66	0.59
1:A:1282:LEU:HD21	1:A:1291:LEU:HD11	1.83	0.59
2:B:468:LYS:HZ3	2:B:518:LEU:HB3	1.67	0.59
2:B:49:PHE:HD2	2:B:128:GLN:HE21	1.50	0.59
2:B:95:ASN:OD1	2:B:98:ASN:N	2.35	0.59
1:A:532:ARG:NH2	1:A:632:GLU:O	2.36	0.59
1:A:1142:HIS:HA	1:A:1145:LEU:HG	1.85	0.59
2:B:84:ALA:HB2	2:B:108:LEU:HB3	1.85	0.59
1:A:1367:HIS:O	1:A:1370:ARG:HG3	2.02	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3307:LEU:O	1:A:3326:GLN:NE2	2.35	0.59
1:A:2122:LEU:O	1:A:2127:LYS:NZ	2.35	0.59
1:A:385:TYR:HE2	1:A:428:PRO:HD2	1.68	0.58
1:A:1564:SER:O	1:A:1568:ASN:ND2	2.36	0.58
1:A:1840:PHE:HA	1:A:1880:MET:HE1	1.85	0.58
1:A:1844:VAL:HG11	1:A:1898:GLN:HE22	1.67	0.58
1:A:2395:THR:O	1:A:2399:GLU:HG3	2.04	0.58
1:A:3543:LYS:HB2	1:A:3545:THR:HG23	1.85	0.58
1:A:3872:ARG:NH1	1:A:3875:GLU:OE2	2.32	0.58
3:C:27:ILE:HG13	3:C:28:GLU:N	2.18	0.58
1:A:2254:ARG:NH2	1:A:2292:CYS:O	2.36	0.58
3:C:265:LYS:NZ	5:E:21:DG:OP1	2.35	0.58
2:B:351:LYS:HB3	2:B:355:LEU:HD21	1.84	0.58
1:A:631:ARG:NH2	1:A:668:LYS:HD3	2.18	0.58
1:A:1096:VAL:HG21	1:A:1141:LYS:HE3	1.85	0.58
1:A:1857:LYS:NZ	1:A:1932:GLN:HG3	2.18	0.58
1:A:2091:HIS:O	1:A:2091:HIS:ND1	2.37	0.58
3:C:609:PHE:HZ	3:C:654:ARG:HE	1.51	0.58
1:A:487:LEU:HD23	1:A:490:ILE:HD11	1.86	0.58
1:A:1147:LYS:HE2	1:A:1149:LYS:HZ2	1.68	0.58
1:A:2432:GLN:OE1	1:A:2461:PHE:CE2	2.57	0.58
3:C:448:GLU:O	3:C:452:ASN:ND2	2.37	0.58
1:A:1572:LEU:HB3	1:A:1614:GLN:NE2	2.19	0.58
1:A:2383:PHE:HE2	1:A:2408:MET:HE1	1.68	0.58
1:A:2464:HIS:ND1	1:A:2465:PRO:O	2.26	0.58
1:A:3170:ASP:N	1:A:3174:ASP:OD2	2.35	0.58
1:A:3416:LEU:HB3	1:A:3449:LYS:HZ1	1.68	0.58
1:A:1337:VAL:O	1:A:1341:ILE:HD12	2.04	0.58
1:A:1594:SER:O	1:A:1598:ASN:ND2	2.30	0.58
1:A:1972:GLU:OE2	1:A:1973:LYS:NZ	2.31	0.58
3:C:57:VAL:HG12	3:C:79:VAL:HA	1.86	0.58
3:C:688:LYS:HB3	3:C:694:SER:HB2	1.85	0.58
1:A:1708:GLU:OE1	1:A:1712:ARG:NH2	2.37	0.57
1:A:3051:LEU:O	1:A:3056:GLU:HG3	2.04	0.57
1:A:3137:GLU:OE2	1:A:3186:ARG:NH2	2.29	0.57
1:A:3949:ALA:HA	1:A:3953:LEU:HD13	1.86	0.57
1:A:491:CYS:O	1:A:625:ASN:ND2	2.37	0.57
1:A:1664:SER:HA	1:A:1668:PHE:HB3	1.86	0.57
2:B:151:ALA:HB2	2:B:193:LEU:HD21	1.85	0.57
1:A:1178:ARG:NE	1:A:1180:GLN:OE1	2.34	0.57
2:B:352:PRO:HA	2:B:394:VAL:HA	1.87	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1881:TYR:HE1	1:A:1889:VAL:HG11	1.69	0.57
1:A:3544:ASP:HA	1:A:3548:GLY:HA3	1.86	0.57
1:A:572:VAL:HG22	1:A:626:LEU:HD11	1.85	0.57
2:B:468:LYS:HZ2	2:B:469:LEU:HG	1.70	0.57
3:C:12:LEU:HD23	3:C:133:GLU:HB2	1.85	0.57
1:A:3485:LYS:O	1:A:3488:SER:OG	2.23	0.57
2:B:132:GLN:OE1	2:B:137:HIS:ND1	2.36	0.57
1:A:699:GLU:O	1:A:702:SER:OG	2.22	0.57
2:B:438:PRO:HG2	3:C:267:ILE:HD11	1.86	0.57
3:C:184:ARG:HG2	3:C:185:LEU:N	2.19	0.57
3:C:689:GLU:HG3	3:C:691:ALA:HB3	1.87	0.57
1:A:2452:ARG:HG2	1:A:2498:ILE:HG23	1.87	0.57
1:A:3522:THR:HA	1:A:3529:ILE:HG21	1.85	0.57
1:A:1775:GLU:OE2	1:A:1822:ARG:NH2	2.38	0.57
1:A:3028:ASN:HA	1:A:3031:TRP:HD1	1.68	0.57
1:A:2166:SER:O	1:A:2170:GLN:CB	2.53	0.56
1:A:2573:PRO:HD2	1:A:2575:PRO:HG3	1.87	0.56
1:A:2085:MET:HB2	1:A:2090:ARG:HD2	1.87	0.56
1:A:2931:ARG:NH2	1:A:3000:ASP:OD1	2.38	0.56
1:A:4049:ARG:NH2	1:A:4062:ASP:OD2	2.29	0.56
3:C:61:THR:OG1	3:C:63:GLY:O	2.22	0.56
3:C:391:ALA:HB3	3:C:408:ALA:HB3	1.87	0.56
1:A:1886:LYS:HD3	1:A:1956:PHE:HA	1.88	0.56
1:A:3763:ARG:HA	1:A:3766:GLN:HG2	1.86	0.56
3:C:431:ARG:NH2	4:D:17:DC:OP2	2.38	0.56
3:C:137:ASP:OD1	3:C:201:GLN:NE2	2.39	0.56
3:C:266:SER:OG	3:C:267:ILE:N	2.38	0.56
3:C:666:VAL:HA	3:C:671:LEU:HD21	1.87	0.56
1:A:1017:ILE:HG13	1:A:1018:VAL:HG13	1.88	0.56
1:A:2265:PRO:HB3	1:A:2309:PHE:HD1	1.69	0.56
1:A:3267:LYS:HA	1:A:3273:LEU:HD12	1.87	0.56
1:A:3283:LEU:O	1:A:3287:ARG:HG2	2.05	0.56
3:C:64:THR:OG1	3:C:76:ASN:N	2.36	0.56
1:A:164:LYS:HG3	1:A:165:LYS:HE3	1.88	0.56
1:A:1082:PHE:HZ	1:A:1134:LEU:HD13	1.71	0.56
1:A:1711:ARG:HH21	1:A:1757:MET:HG2	1.71	0.56
1:A:1833:LEU:HG	1:A:1835:ALA:H	1.71	0.56
1:A:1881:TYR:CD2	1:A:1951:VAL:HG22	2.41	0.56
1:A:153:PHE:HE1	1:A:196:LEU:HD22	1.71	0.56
1:A:1964:GLY:O	1:A:1968:SER:OG	2.20	0.56
1:A:428:PRO:O	1:A:429:GLU:HG2	2.06	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2551:GLU:OE1	1:A:2847:THR:OG1	2.23	0.56
1:A:3082:TYR:C	1:A:3084:GLN:H	2.09	0.56
1:A:72:SER:O	1:A:82:ARG:NH1	2.38	0.56
1:A:1852:LYS:NZ	1:A:1914:THR:CG2	2.69	0.56
3:C:406:GLY:HA2	3:C:424:LEU:HB2	1.88	0.56
1:A:2379:MET:HE1	1:A:2404:ARG:HB2	1.87	0.56
1:A:3354:ASP:O	1:A:3357:ARG:NE	2.39	0.56
1:A:3544:ASP:HB2	1:A:3552:LYS:NZ	2.20	0.56
1:A:101:ALA:HB1	1:A:143:LEU:HD11	1.87	0.55
1:A:971:ARG:HA	1:A:1025:LEU:HD21	1.87	0.55
1:A:1723:PRO:HG3	1:A:1729:PHE:CZ	2.41	0.55
1:A:3075:LYS:NZ	7:A:4326:HOH:O	2.38	0.55
1:A:3731:SER:OG	6:A:4201:1IX:CL1	2.61	0.55
1:A:1027:ASP:OD1	1:A:1028:PHE:N	2.39	0.55
3:C:45:GLN:OE1	3:C:50:ASN:ND2	2.37	0.55
3:C:409:PHE:HB2	3:C:420:VAL:HG12	1.84	0.55
1:A:43:VAL:O	1:A:95:LYS:NZ	2.35	0.55
1:A:1420:ARG:HE	1:A:1467:ILE:HA	1.71	0.55
1:A:949:PRO:HB3	1:A:954:GLY:C	2.27	0.55
1:A:1572:LEU:HB3	1:A:1614:GLN:HE21	1.71	0.55
1:A:2471:GLU:O	1:A:2475:ASN:ND2	2.36	0.55
1:A:3020:ASP:OD2	1:A:3029:LYS:NZ	2.34	0.55
1:A:3582:GLU:HB3	1:A:3586:LYS:HZ3	1.71	0.55
2:B:42:VAL:HG12	2:B:169:PHE:HB2	1.88	0.55
3:C:600:VAL:HA	3:C:603:LYS:HE2	1.89	0.55
1:A:919:LEU:HD23	1:A:972:LEU:HD13	1.87	0.55
1:A:2166:SER:O	1:A:2170:GLN:HB2	2.07	0.55
3:C:188:HIS:H	3:C:232:ARG:NH1	2.05	0.55
1:A:418:ALA:HB2	1:A:464:VAL:HG22	1.88	0.55
1:A:1876:ILE:O	1:A:1880:MET:HG2	2.06	0.55
1:A:2182:ILE:HD11	1:A:2185:MET:HB2	1.87	0.55
1:A:648:SER:O	1:A:652:GLU:HG2	2.06	0.55
1:A:2440:TYR:HD1	1:A:2476:ILE:HG22	1.71	0.55
2:B:252:ARG:NH2	7:B:708:HOH:O	2.40	0.55
3:C:476:LEU:HD21	3:C:519:PRO:HG2	1.87	0.55
1:A:1641:THR:O	1:A:1645:VAL:HG23	2.07	0.55
1:A:3418:ASP:OD1	1:A:3419:PHE:N	2.40	0.55
3:C:43:GLN:HG2	3:C:491:PHE:HB3	1.87	0.55
1:A:1874:TYR:HE2	1:A:1944:ALA:HA	1.72	0.55
1:A:2921:LEU:O	1:A:2925:GLU:HG2	2.07	0.55
3:C:351:VAL:HG21	3:C:390:VAL:HG21	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:642:PHE:HB3	3:C:654:ARG:NH1	2.20	0.55
4:D:16:DG:H4'	4:D:17:DC:OP1	2.06	0.55
1:A:948:MET:N	1:A:949:PRO:CD	2.69	0.55
1:A:1338:VAL:O	1:A:1342:MET:HG3	2.07	0.55
1:A:2089:ASN:HA	1:A:2094:MET:HG2	1.88	0.55
1:A:2247:ASP:OD2	1:A:2248:CYS:N	2.40	0.55
1:A:2306:ASN:HA	1:A:2309:PHE:CD2	2.42	0.55
2:B:68:GLN:HG3	2:B:123:LYS:HE3	1.90	0.55
2:B:126:GLN:O	2:B:129:LYS:HG3	2.06	0.55
2:B:340:PHE:HB2	2:B:408:PRO:HD3	1.89	0.55
2:B:371:GLU:OE1	2:B:374:LEU:CD1	2.44	0.55
3:C:15:ASP:OD1	3:C:17:GLY:N	2.39	0.55
3:C:184:ARG:H	3:C:184:ARG:HD3	1.72	0.54
4:D:19:DG:H2''	4:D:20:DG:C8	2.42	0.54
5:E:35:DG:H2''	5:E:36:DG:C8	2.42	0.54
1:A:125:ILE:HD11	1:A:169:THR:CB	2.37	0.54
3:C:59:PHE:HB3	3:C:110:ALA:HB2	1.90	0.54
1:A:2973:ASP:OD1	1:A:2974:GLU:N	2.40	0.54
1:A:3940:ILE:HG22	1:A:3941:ASP:HB2	1.90	0.54
1:A:3462:ARG:NH1	1:A:3708:ARG:HG3	2.23	0.54
1:A:274:LEU:HD12	1:A:278:HIS:HD2	1.72	0.54
1:A:1148:ALA:HA	1:A:1164:CYS:HB3	1.90	0.54
1:A:1720:ALA:HB1	3:C:596:GLU:HB2	1.88	0.54
1:A:3519:GLU:O	1:A:3522:THR:OG1	2.24	0.54
3:C:361:VAL:HG22	3:C:422:VAL:HG22	1.88	0.54
1:A:1686:LEU:HD11	1:A:1721:HIS:HB3	1.89	0.54
1:A:4125:GLU:OE2	1:A:4127:TRP:NE1	2.41	0.54
3:C:151:ILE:HD11	3:C:211:VAL:HG13	1.89	0.54
1:A:303:HIS:O	1:A:303:HIS:ND1	2.40	0.54
1:A:3481:SER:HA	1:A:3484:THR:HG23	1.89	0.54
3:C:447:THR:HG22	3:C:449:ALA:H	1.72	0.54
4:D:6:DT:H1'	4:D:7:DG:C8	2.42	0.54
1:A:877:ASP:OD2	1:A:881:LYS:NZ	2.41	0.54
1:A:2427:ARG:NH1	1:A:2432:GLN:NE2	2.55	0.54
1:A:3312:VAL:O	1:A:3314:SER:N	2.41	0.54
3:C:423:GLN:HG2	3:C:424:LEU:H	1.72	0.54
1:A:621:SER:O	1:A:625:ASN:ND2	2.41	0.54
1:A:96:MET:HG3	1:A:100:ILE:HD11	1.88	0.53
1:A:628:GLU:O	1:A:632:GLU:HG2	2.08	0.53
1:A:1890:HIS:HA	1:A:1908:GLY:HA3	1.89	0.53
1:A:2402:LEU:HA	1:A:2405:VAL:HG23	1.90	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:41:LEU:HB3	2:B:168:LEU:HD12	1.91	0.53
1:A:231:LEU:HD12	1:A:274:LEU:HD11	1.89	0.53
1:A:1203:SER:O	1:A:1207:TRP:HD1	1.91	0.53
1:A:2452:ARG:HD2	1:A:2494:ASP:HA	1.89	0.53
1:A:3341:LEU:HD23	1:A:3348:LEU:HD12	1.90	0.53
1:A:1173:LEU:HG	1:A:1191:PHE:CE2	2.41	0.53
2:B:38:LEU:HD11	2:B:167:MET:HG3	1.90	0.53
2:B:368:VAL:HG23	2:B:434:LEU:CD1	2.38	0.53
1:A:1651:LYS:O	1:A:1655:ILE:HG23	2.08	0.53
1:A:3633:ILE:HA	1:A:3636:PHE:HB2	1.91	0.53
2:B:58:THR:HG22	2:B:61:ASP:HB2	1.90	0.53
1:A:15:LEU:O	1:A:18:THR:HG22	2.08	0.53
1:A:4090:ARG:NH2	1:A:4113:ASP:OD2	2.36	0.53
2:B:303:PHE:HA	2:B:311:LEU:HD13	1.89	0.53
1:A:9:ARG:NH1	7:A:4343:HOH:O	2.42	0.53
1:A:2264:ASP:O	1:A:2266:ASN:N	2.36	0.53
1:A:3547:THR:O	1:A:3551:ASN:ND2	2.42	0.53
3:C:131:HIS:ND1	3:C:160:SER:O	2.32	0.53
3:C:185:LEU:HD13	3:C:511:HIS:HB3	1.90	0.53
1:A:1164:CYS:SG	1:A:1165:LEU:N	2.82	0.53
1:A:2547:SER:O	1:A:2549:LYS:N	2.42	0.53
2:B:371:GLU:O	2:B:371:GLU:HG2	2.09	0.53
2:B:375:VAL:HA	3:C:542:ALA:HB3	1.90	0.53
1:A:228:SER:HA	1:A:274:LEU:HD13	1.91	0.53
1:A:235:THR:HA	1:A:281:GLN:NE2	2.23	0.53
1:A:1610:ASN:OD1	1:A:1611:GLN:N	2.42	0.53
3:C:449:ALA:HA	3:C:452:ASN:HD21	1.74	0.53
1:A:1062:ARG:NH2	1:A:3746:ARG:HH12	2.07	0.53
1:A:3628:PHE:CE2	1:A:3686:TRP:HD1	2.27	0.53
1:A:4054:ALA:HA	1:A:4096:SER:HA	1.90	0.53
3:C:640:ARG:HH21	3:C:681:ASP:HB3	1.74	0.53
1:A:3979:LEU:N	7:A:4334:HOH:O	2.34	0.53
3:C:265:LYS:HD3	3:C:268:LEU:HD22	1.90	0.53
1:A:1036:PHE:HE1	1:A:1054:VAL:HG23	1.74	0.52
1:A:1539:SER:HA	1:A:1551:ILE:HA	1.90	0.52
1:A:2083:LEU:HD21	1:A:2089:ASN:HB3	1.91	0.52
1:A:3798:SER:O	1:A:3799:ARG:HG2	2.09	0.52
1:A:116:THR:HG23	1:A:117:LYS:HG3	1.91	0.52
1:A:1014:LEU:O	1:A:1018:VAL:HG22	2.10	0.52
1:A:1984:LEU:HD23	1:A:2141:ASN:HB2	1.91	0.52
1:A:3628:PHE:HE2	1:A:3686:TRP:HD1	1.56	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:35:ARG:NH2	2:B:80:ARG:O	2.41	0.52
3:C:30:PRO:HB3	3:C:166:PRO:HB3	1.92	0.52
3:C:616:LEU:HD22	3:C:642:PHE:CZ	2.44	0.52
1:A:1539:SER:HB3	1:A:1551:ILE:HG22	1.91	0.52
1:A:2743:TYR:HB3	4:D:1:DC:N4	2.24	0.52
1:A:2851:PHE:CE2	1:A:2853:PRO:HG2	2.45	0.52
1:A:3428:GLU:OE1	1:A:3474:ARG:NE	2.43	0.52
2:B:446:MET:HE3	3:C:264:TYR:HB2	1.90	0.52
2:B:458:GLN:HG3	2:B:528:LEU:HD11	1.91	0.52
3:C:371:GLU:OE1	3:C:374:ALA:HB3	2.10	0.52
1:A:3136:THR:O	1:A:3140:GLU:HG3	2.09	0.52
1:A:1221:ILE:O	1:A:1225:GLU:N	2.43	0.52
1:A:1623:LEU:HD21	1:A:1652:ILE:HG21	1.92	0.52
1:A:3531:TYR:O	1:A:3535:ILE:HD12	2.09	0.52
2:B:277:VAL:HG23	3:C:430:LEU:HA	1.90	0.52
2:B:499:GLU:HB2	2:B:500:PRO:HD3	1.91	0.52
1:A:719:LYS:O	1:A:1026:ARG:NH2	2.43	0.52
1:A:894:PHE:HB3	1:A:907:LEU:HD23	1.91	0.52
1:A:2519:LEU:HG	1:A:2523:ASN:HD21	1.75	0.52
1:A:3530:VAL:O	1:A:3534:ILE:HG13	2.10	0.52
1:A:2288:TYR:OH	1:A:2294:ILE:O	2.23	0.52
1:A:168:ASP:HA	1:A:171:LEU:HB2	1.91	0.52
3:C:628:GLU:HB2	3:C:631:TYR:HD2	1.75	0.52
1:A:256:ILE:O	1:A:300:TRP:NE1	2.37	0.52
1:A:1297:PHE:O	1:A:1301:ILE:HG23	2.10	0.52
1:A:2086:ASP:N	1:A:2086:ASP:OD1	2.43	0.52
1:A:3125:ARG:NH2	7:A:4342:HOH:O	2.42	0.52
3:C:69:SER:HA	3:C:74:TYR:HB2	1.91	0.52
1:A:1970:LYS:HB2	1:A:1975:LEU:HD22	1.91	0.51
1:A:2122:LEU:HG	1:A:2123:PRO:HD2	1.92	0.51
1:A:2133:LEU:HG	1:A:2167:PRO:HB2	1.91	0.51
2:B:468:LYS:NZ	2:B:518:LEU:HB3	2.25	0.51
3:C:10:VAL:HG12	3:C:131:HIS:HB3	1.92	0.51
1:A:117:LYS:HD2	3:C:300:ASP:HA	1.91	0.51
1:A:523:THR:OG1	1:A:524:TYR:N	2.43	0.51
1:A:2491:THR:HB	1:A:2495:SER:HB3	1.92	0.51
1:A:2919:ASP:OD2	1:A:2922:ARG:NH1	2.39	0.51
3:C:146:GLN:HB2	3:C:149:ILE:HG22	1.92	0.51
3:C:281:ALA:O	3:C:282:LYS:HG2	2.11	0.51
3:C:364:VAL:CG2	3:C:419:LEU:HB3	2.41	0.51
3:C:662:LEU:O	3:C:666:VAL:HG22	2.11	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:9:ARG:HB3	1:A:57:LEU:HD13	1.92	0.51
1:A:2764:LYS:O	1:A:2768:GLN:HB2	2.11	0.51
2:B:266:ASP:N	7:B:707:HOH:O	2.36	0.51
1:A:659:ARG:HG3	1:A:660:LEU:HG	1.92	0.51
1:A:859:LEU:HD11	1:A:870:LEU:HD21	1.92	0.51
1:A:1684:LEU:HD11	1:A:1688:LEU:HD13	1.92	0.51
1:A:3809:THR:HG22	1:A:3931:ALA:HA	1.92	0.51
2:B:351:LYS:HG2	3:C:463:LEU:HB2	1.91	0.51
1:A:243:GLN:O	1:A:247:GLU:HG3	2.10	0.51
1:A:4126:PRO:HD2	1:A:4127:TRP:CZ3	2.46	0.51
5:E:20:DT:H2''	5:E:21:DG:C8	2.46	0.51
1:A:2251:ILE:HG21	1:A:2280:VAL:HG21	1.92	0.51
1:A:3256:MET:O	1:A:3260:LYS:HG2	2.11	0.51
4:D:15:DC:H2'	4:D:16:DG:C8	2.45	0.51
1:A:539:GLN:O	1:A:543:SER:OG	2.26	0.51
1:A:949:PRO:HB3	1:A:954:GLY:O	2.11	0.51
1:A:2517:LEU:HA	1:A:2520:ILE:HD12	1.92	0.51
2:B:409:TYR:HE2	2:B:436:PHE:HB3	1.75	0.51
2:B:463:LYS:HA	2:B:466:VAL:HG12	1.93	0.51
2:B:466:VAL:HG21	3:C:389:MET:HG2	1.91	0.51
3:C:11:VAL:HG22	3:C:55:ALA:HB3	1.91	0.51
2:B:45:SER:O	2:B:137:HIS:HD2	1.92	0.51
2:B:258:ARG:NH2	5:E:31:DA:OP2	2.44	0.51
1:A:67:VAL:HG12	1:A:71:LYS:HE2	1.92	0.51
1:A:1420:ARG:NH1	1:A:1466:ASN:O	2.40	0.51
1:A:2205:VAL:HG12	1:A:2208:ASP:H	1.75	0.51
2:B:277:VAL:HG22	3:C:357:MET:CE	2.41	0.51
1:A:1069:HIS:CD2	1:A:1074:LYS:HG3	2.46	0.51
1:A:1859:ASN:HB3	1:A:1862:THR:HG22	1.92	0.51
1:A:3008:TRP:HB2	1:A:3051:LEU:HD13	1.93	0.51
3:C:636:ILE:HA	3:C:639:ILE:HG22	1.93	0.51
1:A:169:THR:HG23	4:D:12:DT:P	2.45	0.50
2:B:252:ARG:HD2	3:C:431:ARG:CZ	2.42	0.50
2:B:256:LEU:HD13	2:B:275:ASN:HB2	1.92	0.50
2:B:256:LEU:CD1	2:B:275:ASN:HD22	2.25	0.50
2:B:270:SER:OG	2:B:375:VAL:HG12	2.10	0.50
1:A:1217:VAL:HG11	1:A:1285:GLU:HB3	1.92	0.50
1:A:2572:TYR:HE2	1:A:2788:SER:HB2	1.76	0.50
2:B:126:GLN:HE22	2:B:130:ARG:HD2	1.76	0.50
2:B:370:PRO:HD3	2:B:382:PHE:CE1	2.46	0.50
1:A:56:SER:HB3	1:A:3097:ASP:HB2	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3838:GLU:OE1	1:A:3874:ARG:NH1	2.43	0.50
2:B:40:PHE:CE2	2:B:83:LEU:HD12	2.45	0.50
1:A:116:THR:HB	1:A:155:LYS:HZ1	1.76	0.50
1:A:1190:LEU:O	1:A:1194:PHE:HB2	2.12	0.50
3:C:608:SER:OG	3:C:611:GLU:OE1	2.30	0.50
1:A:1175:HIS:CE1	1:A:1178:ARG:HB3	2.45	0.50
1:A:1266:CYS:SG	1:A:1267:TYR:N	2.84	0.50
1:A:4042:GLN:OE1	1:A:4043:LYS:NZ	2.44	0.50
2:B:38:LEU:HB3	2:B:83:LEU:HD13	1.94	0.50
3:C:629:THR:HA	3:C:632:PHE:HD2	1.76	0.50
1:A:1825:LEU:HD22	1:A:1879:VAL:HG21	1.93	0.50
3:C:138:LEU:HD12	3:C:205:LEU:HD12	1.93	0.50
3:C:409:PHE:CB	3:C:420:VAL:HG12	2.39	0.50
3:C:633:MET:O	3:C:636:ILE:HG22	2.11	0.50
3:C:652:GLU:O	3:C:656:ASN:ND2	2.44	0.50
1:A:2162:LYS:HG2	1:A:2200:ALA:HA	1.93	0.50
1:A:3353:GLU:HG2	1:A:3354:ASP:H	1.77	0.50
2:B:265:LYS:HD2	2:B:266:ASP:HB2	1.94	0.50
3:C:475:ASP:OD1	3:C:475:ASP:N	2.45	0.50
1:A:852:ARG:HB3	1:A:3111:MET:CE	2.42	0.50
1:A:1424:THR:HA	1:A:1468:LEU:HD21	1.93	0.50
3:C:147:LEU:O	3:C:151:ILE:HG12	2.11	0.50
1:A:364:ARG:NH2	1:A:415:GLN:OE1	2.44	0.50
1:A:925:GLN:HA	1:A:2769:VAL:HG12	1.93	0.50
1:A:1852:LYS:HZ2	1:A:1918:LEU:HD23	1.76	0.50
1:A:2572:TYR:N	1:A:2573:PRO:HD3	2.27	0.50
1:A:201:LEU:HD11	1:A:244:THR:HG23	1.92	0.49
1:A:2255:LEU:O	1:A:2259:LYS:HG2	2.11	0.49
1:A:3701:ILE:HG22	1:A:3717:VAL:O	2.11	0.49
3:C:161:LEU:HD23	3:C:161:LEU:H	1.77	0.49
3:C:238:LYS:O	3:C:239:LYS:HG3	2.13	0.49
1:A:3051:LEU:HG	1:A:3056:GLU:HG3	1.94	0.49
1:A:4084:SER:OG	1:A:4086:ASP:OD1	2.30	0.49
2:B:479:GLU:HG3	2:B:484:GLN:HG3	1.94	0.49
1:A:910:PHE:HB2	1:A:937:MET:HE1	1.93	0.49
1:A:1356:TRP:O	1:A:1360:LYS:N	2.45	0.49
1:A:1643:MET:HE2	1:A:1688:LEU:HD12	1.94	0.49
2:B:526:LYS:HZ3	3:C:256:ASN:HB3	1.77	0.49
3:C:496:HIS:CG	3:C:506:PRO:HG3	2.47	0.49
1:A:447:PRO:HB3	1:A:526:ASP:CB	2.41	0.49
1:A:763:THR:HG23	1:A:851:ILE:HG13	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1987:ARG:HH21	1:A:2179:GLY:HA3	1.78	0.49
1:A:2380:ASN:ND2	2:B:192:ASP:OD2	2.46	0.49
1:A:2459:VAL:HB	1:A:2505:VAL:HG21	1.94	0.49
1:A:3960:PRO:O	7:A:4301:HOH:O	2.20	0.49
2:B:195:ASP:OD1	2:B:196:THR:N	2.46	0.49
2:B:263:LEU:HD13	2:B:347:LEU:HD13	1.93	0.49
5:E:42:DG:H2''	5:E:43:DG:C8	2.48	0.49
1:A:2527:HIS:HB3	1:A:2530:ARG:HH11	1.77	0.49
1:A:2538:ARG:HH21	1:A:2565:MET:HE1	1.78	0.49
1:A:852:ARG:HB3	1:A:3111:MET:HE1	1.94	0.49
1:A:1345:THR:HA	1:A:1348:LEU:HD12	1.94	0.49
1:A:1932:GLN:HG2	1:A:1933:LEU:N	2.27	0.49
1:A:2097:LEU:HD23	1:A:2100:LEU:HD21	1.92	0.49
1:A:2190:VAL:HA	1:A:2193:ILE:HG22	1.94	0.49
1:A:2476:ILE:HG21	7:A:4322:HOH:O	2.11	0.49
2:B:257:SER:HB2	2:B:273:ILE:HB	1.95	0.49
3:C:212:MET:HG3	3:C:220:GLY:HA3	1.93	0.49
1:A:167:PRO:O	4:D:12:DT:OP1	2.30	0.49
1:A:2135:ASN:OD1	1:A:2137:ILE:HG12	2.13	0.49
1:A:2225:HIS:O	1:A:2227:LYS:N	2.46	0.49
1:A:3767:LEU:HD13	1:A:3918:LEU:HD22	1.95	0.49
1:A:1990:PHE:HE2	1:A:2144:LEU:HD23	1.76	0.49
1:A:2100:LEU:O	1:A:2104:MET:HG2	2.12	0.49
1:A:2283:ASN:HB2	1:A:2285:LEU:HD13	1.94	0.49
1:A:3536:SER:HB3	1:A:3540:TYR:HE1	1.78	0.49
1:A:3891:SER:O	1:A:3892:THR:HG22	2.13	0.49
1:A:1987:ARG:NH1	1:A:1989:ASN:HA	2.28	0.49
1:A:3052:LEU:HD21	1:A:3058:ASP:O	2.12	0.49
1:A:3680:LEU:HD12	1:A:3682:GLU:H	1.78	0.49
1:A:3754:GLY:HA2	1:A:3800:LEU:HA	1.94	0.49
2:B:368:VAL:HG12	2:B:382:PHE:HE2	1.78	0.49
3:C:653:GLN:HA	3:C:656:ASN:HD21	1.78	0.49
1:A:1105:VAL:HG23	1:A:1171:TRP:CH2	2.48	0.49
1:A:1832:SER:H	1:A:1883:ARG:HH12	1.61	0.49
3:C:296:CYS:O	3:C:297:LEU:HG	2.13	0.49
3:C:447:THR:N	3:C:450:GLN:OE1	2.39	0.49
1:A:3274:VAL:HG11	1:A:3315:TYR:CE1	2.48	0.48
2:B:290:ARG:HE	3:C:311:ILE:HG23	1.78	0.48
3:C:24:ILE:HG12	3:C:26:GLY:H	1.78	0.48
1:A:1578:ALA:O	1:A:1582:LEU:HB2	2.14	0.48
1:A:1652:ILE:O	1:A:1655:ILE:HG12	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1782:PHE:HA	1:A:1785:ILE:HD12	1.94	0.48
1:A:2743:TYR:CD1	1:A:2746:LYS:HD3	2.48	0.48
1:A:2980:ASP:N	1:A:2980:ASP:OD1	2.45	0.48
2:B:183:ALA:HB1	2:B:187:ARG:HH12	1.78	0.48
3:C:312:GLN:HG2	3:C:324:SER:HB2	1.95	0.48
3:C:378:SER:O	3:C:382:HIS:ND1	2.44	0.48
1:A:166:ILE:H	1:A:166:ILE:HG12	1.36	0.48
1:A:639:ALA:O	1:A:641:PHE:N	2.46	0.48
1:A:3676:PRO:HG2	1:A:3677:PRO:HD3	1.95	0.48
2:B:118:GLU:O	2:B:121:GLN:HG2	2.12	0.48
3:C:151:ILE:HG23	3:C:215:LEU:HD12	1.95	0.48
3:C:519:PRO:HB2	3:C:521:GLU:OE1	2.14	0.48
3:C:601:LEU:O	3:C:604:GLN:HG3	2.14	0.48
1:A:528:VAL:HG13	1:A:529:ASP:N	2.28	0.48
1:A:2202:PRO:HG3	1:A:2245:TRP:CE2	2.48	0.48
1:A:2398:LEU:HA	1:A:2401:VAL:HG12	1.96	0.48
1:A:3123:GLN:HA	1:A:3126:LEU:HB2	1.96	0.48
1:A:3508:LYS:NZ	1:A:3510:GLN:HE21	2.12	0.48
2:B:265:LYS:HD2	2:B:266:ASP:N	2.28	0.48
5:E:18:DA:H1'	5:E:19:DA:OP2	2.13	0.48
1:A:201:LEU:HD21	1:A:248:ILE:HD13	1.95	0.48
1:A:1656:ASP:OD1	1:A:1656:ASP:N	2.44	0.48
1:A:1754:GLN:NE2	1:A:1788:ARG:HD2	2.28	0.48
1:A:1896:ILE:HD13	1:A:1906:THR:O	2.14	0.48
1:A:2183:HIS:HA	1:A:2186:VAL:HG22	1.96	0.48
1:A:2484:TYR:CE2	1:A:2498:ILE:HD11	2.48	0.48
3:C:72:ASP:OD1	3:C:73:GLN:N	2.47	0.48
1:A:275:PHE:HZ	1:A:286:LEU:HD11	1.79	0.48
1:A:639:ALA:HA	1:A:680:ILE:HD11	1.94	0.48
1:A:2872:ASP:HB3	1:A:2875:ALA:HB3	1.95	0.48
1:A:3421:ASP:OD1	1:A:3425:ARG:NE	2.46	0.48
2:B:58:THR:CG2	2:B:61:ASP:H	2.26	0.48
3:C:44:ARG:HD2	3:C:491:PHE:HE2	1.79	0.48
3:C:81:ARG:HG2	3:C:90:LEU:HD11	1.96	0.48
3:C:523:THR:HG22	3:C:527:GLN:NE2	2.29	0.48
3:C:610:GLU:OE1	3:C:613:SER:OG	2.32	0.48
1:A:1298:LEU:HD23	1:A:1367:HIS:HD1	1.77	0.48
1:A:2277:LEU:HA	1:A:2280:VAL:HG12	1.95	0.48
1:A:2336:ILE:HG13	1:A:2336:ILE:O	2.13	0.48
2:B:43:ASP:OD2	2:B:170:THR:OG1	2.32	0.48
3:C:302:GLU:CD	3:C:302:GLU:H	2.16	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:473:PRO:HG2	1:A:1553:PHE:HZ	1.78	0.48
1:A:1297:PHE:HD2	1:A:1298:LEU:HD12	1.78	0.48
1:A:2197:THR:HG21	1:A:2244:CYS:SG	2.53	0.48
1:A:3351:ILE:HG13	1:A:3351:ILE:O	2.14	0.48
2:B:141:TYR:OH	2:B:172:GLU:OE1	2.30	0.48
2:B:356:LEU:O	2:B:356:LEU:HD12	2.13	0.48
1:A:674:VAL:HG11	1:A:736:LEU:HA	1.96	0.48
1:A:737:PRO:C	1:A:739:ASN:H	2.17	0.48
1:A:1422:LYS:HG3	1:A:1423:ILE:HG23	1.96	0.48
1:A:1658:SER:O	1:A:1661:PHE:HB3	2.14	0.48
1:A:1836:LEU:HB3	1:A:1840:PHE:CZ	2.49	0.48
1:A:2394:LYS:HD3	1:A:2423:VAL:HG21	1.96	0.48
2:B:443:LYS:HA	3:C:267:ILE:HG13	1.95	0.48
3:C:28:GLU:HB2	3:C:33:GLN:HE21	1.79	0.48
3:C:238:LYS:O	3:C:240:ILE:HG13	2.14	0.48
3:C:265:LYS:HA	3:C:362:LEU:HD23	1.95	0.48
3:C:489:ARG:O	3:C:492:GLN:HG3	2.14	0.48
1:A:1105:VAL:O	1:A:1109:GLU:HG2	2.14	0.48
1:A:1750:LEU:HG	1:A:1785:ILE:HD11	1.95	0.48
1:A:3335:ARG:O	1:A:3339:ASN:ND2	2.47	0.48
3:C:136:THR:HG22	3:C:138:LEU:N	2.16	0.48
3:C:232:ARG:O	3:C:483:PRO:HD3	2.14	0.48
2:B:130:ARG:HB3	2:B:134:MET:HE1	1.95	0.47
2:B:278:GLN:HG2	4:D:17:DC:OP2	2.14	0.47
2:B:466:VAL:HG23	3:C:345:PHE:CG	2.49	0.47
1:A:44:LEU:HD21	1:A:819:SER:HA	1.96	0.47
1:A:1208:LEU:HD11	1:A:1220:LEU:HD21	1.95	0.47
1:A:1672:PHE:O	1:A:1676:ILE:HG12	2.14	0.47
1:A:2432:GLN:OE1	1:A:2461:PHE:HE2	1.96	0.47
1:A:2957:LEU:HD23	1:A:2957:LEU:HA	1.78	0.47
1:A:3451:LEU:HD12	1:A:3490:VAL:HG21	1.94	0.47
2:B:361:TYR:OH	3:C:358:GLY:N	2.47	0.47
3:C:381:ILE:HG21	3:C:417:GLU:HG3	1.95	0.47
3:C:655:PHE:O	3:C:659:LEU:HD23	2.14	0.47
4:D:23:DC:H2'	4:D:24:DA:C8	2.48	0.47
1:A:759:GLY:C	1:A:761:SER:H	2.17	0.47
1:A:2256:ILE:HG22	1:A:2260:PHE:HE1	1.78	0.47
1:A:2938:VAL:O	7:A:4302:HOH:O	2.20	0.47
1:A:3357:ARG:HD2	1:A:3358:ARG:N	2.29	0.47
1:A:4069:GLU:O	1:A:4070:LYS:HG3	2.14	0.47
2:B:369:TYR:CG	2:B:370:PRO:HD2	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2288:TYR:CE1	1:A:2290:PRO:HA	2.50	0.47
2:B:410:PHE:HE2	3:C:482:ILE:HD11	1.79	0.47
3:C:104:GLN:HG2	3:C:140:SER:HB3	1.97	0.47
3:C:345:PHE:HB3	3:C:389:MET:SD	2.55	0.47
1:A:294:PHE:HE1	1:A:320:LEU:HD21	1.80	0.47
1:A:733:LEU:HA	1:A:736:LEU:HD13	1.96	0.47
3:C:660:LYS:HE2	3:C:685:LEU:HD21	1.96	0.47
1:A:8:VAL:O	1:A:9:ARG:HG2	2.15	0.47
1:A:1297:PHE:CD2	1:A:1298:LEU:HD12	2.48	0.47
1:A:1757:MET:HB3	7:A:4360:HOH:O	2.13	0.47
1:A:3591:ASP:O	1:A:3595:GLU:HG2	2.15	0.47
1:A:3864:ARG:HH21	1:A:3868:VAL:HG21	1.77	0.47
1:A:164:LYS:HE2	1:A:164:LYS:HB2	1.42	0.47
1:A:529:ASP:N	1:A:529:ASP:OD1	2.44	0.47
1:A:1018:VAL:HB	1:A:1074:LYS:HD3	1.97	0.47
1:A:1221:ILE:HG12	1:A:1288:SER:HB3	1.97	0.47
1:A:1279:LEU:HA	1:A:1358:LEU:HD13	1.97	0.47
1:A:1370:ARG:HA	1:A:1373:VAL:HG12	1.96	0.47
1:A:1912:THR:OG1	1:A:1913:LYS:N	2.47	0.47
1:A:3536:SER:HB3	1:A:3540:TYR:CE1	2.49	0.47
1:A:3918:LEU:HD12	1:A:3918:LEU:O	2.15	0.47
2:B:447:PRO:HD3	3:C:243:HIS:HB3	1.97	0.47
3:C:251:LEU:O	3:C:258:SER:HA	2.15	0.47
1:A:262:LEU:HD21	3:C:553:ILE:HD11	1.96	0.47
1:A:1688:LEU:HG	1:A:1691:GLN:HE21	1.80	0.47
1:A:3278:GLN:O	1:A:3282:ARG:HG2	2.14	0.47
1:A:3598:LYS:HD2	1:A:3599:THR:N	2.29	0.47
1:A:1257:LEU:HD11	1:A:1330:TYR:CE1	2.50	0.47
1:A:1347:THR:O	1:A:1351:THR:HG23	2.15	0.47
1:A:2327:LEU:HA	1:A:2330:VAL:HG22	1.97	0.47
1:A:3727:THR:HG23	1:A:3737:ARG:HG3	1.96	0.47
2:B:143:LEU:HD22	2:B:175:PRO:HG2	1.97	0.47
2:B:271:VAL:HG21	2:B:368:VAL:HG13	1.97	0.47
1:A:165:LYS:HA	1:A:165:LYS:HD3	1.56	0.47
1:A:607:ASP:HB3	1:A:608:PRO:HD3	1.97	0.47
1:A:975:ASP:CG	1:A:976:VAL:H	2.19	0.47
1:A:1684:LEU:HD21	1:A:1688:LEU:HD22	1.96	0.47
1:A:3291:GLN:HE22	1:A:3299:THR:HG21	1.78	0.47
1:A:3300:VAL:HG11	1:A:3336:ILE:HG21	1.96	0.47
1:A:3421:ASP:OD2	1:A:3467:ARG:NE	2.46	0.47
1:A:268:PRO:O	1:A:272:LEU:HG	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1069:HIS:HD2	1:A:1071:ASN:HB3	1.80	0.46
1:A:1781:SER:O	1:A:1785:ILE:HG13	2.14	0.46
1:A:3660:ASN:O	1:A:3663:THR:OG1	2.29	0.46
1:A:1302:ALA:HB2	1:A:1370:ARG:NH1	2.31	0.46
1:A:1984:LEU:HD21	1:A:2142:ILE:CD1	2.45	0.46
1:A:3175:PRO:HB2	1:A:3177:ASN:OD1	2.14	0.46
1:A:3586:LYS:HG3	1:A:3667:LEU:HD23	1.97	0.46
2:B:37:SER:HB3	2:B:154:PHE:HE1	1.79	0.46
1:A:1386:ILE:HA	1:A:1392:MET:SD	2.55	0.46
1:A:3999:THR:HA	1:A:4002:MET:HE2	1.98	0.46
2:B:296:VAL:HG21	3:C:310:ILE:HD11	1.96	0.46
2:B:473:TYR:HB3	3:C:350:GLN:HB3	1.97	0.46
1:A:180:LEU:O	1:A:184:VAL:HG22	2.16	0.46
1:A:1852:LYS:HZ1	1:A:1914:THR:CG2	2.26	0.46
1:A:2536:LEU:HD21	1:A:2832:ILE:HD13	1.98	0.46
1:A:3980:MET:O	1:A:3984:MET:HG3	2.15	0.46
3:C:50:ASN:ND2	3:C:52:ASP:OD2	2.48	0.46
3:C:147:LEU:HD13	3:C:150:ILE:HD11	1.96	0.46
1:A:116:THR:HB	1:A:155:LYS:NZ	2.30	0.46
1:A:451:PRO:C	1:A:453:MET:H	2.18	0.46
1:A:809:THR:HB	1:A:2765:GLN:HG3	1.98	0.46
1:A:885:ALA:HB2	1:A:3892:THR:HB	1.97	0.46
1:A:896:VAL:O	1:A:902:LYS:HA	2.15	0.46
1:A:1275:THR:OG1	1:A:1276:VAL:N	2.49	0.46
1:A:3496:ILE:HG21	1:A:3705:TYR:HB3	1.98	0.46
2:B:83:LEU:O	2:B:115:ARG:NH2	2.49	0.46
3:C:219:ASP:OD1	3:C:219:ASP:N	2.48	0.46
3:C:280:ASP:N	3:C:280:ASP:OD1	2.49	0.46
1:A:1351:THR:HB	1:A:1353:PRO:HD2	1.96	0.46
1:A:1579:VAL:O	1:A:1583:MET:HG3	2.16	0.46
1:A:1649:LEU:O	1:A:1653:LEU:HG	2.16	0.46
1:A:2940:ARG:NH1	1:A:2940:ARG:HB3	2.30	0.46
1:A:3445:LEU:HG	1:A:3449:LYS:CE	2.44	0.46
2:B:94:LYS:O	2:B:104:VAL:HG22	2.15	0.46
2:B:388:LYS:HA	2:B:388:LYS:HD3	1.66	0.46
1:A:528:VAL:HB	1:A:632:GLU:OE2	2.14	0.46
1:A:1086:TYR:OH	1:A:1087:ARG:NH1	2.25	0.46
1:A:1668:PHE:HZ	1:A:1702:LEU:HD22	1.79	0.46
1:A:3786:LEU:HB3	1:A:3910:LEU:HD22	1.96	0.46
1:A:3962:ARG:HD2	1:A:4124:TRP:CH2	2.51	0.46
1:A:3999:THR:HG22	1:A:4048:LYS:HG2	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:176:HIS:HB2	2:B:179:ASP:O	2.16	0.46
2:B:241:ASP:OD1	2:B:242:LEU:N	2.49	0.46
1:A:145:ASP:OD1	1:A:185:HIS:NE2	2.39	0.46
1:A:663:ILE:HG21	1:A:666:PHE:CD2	2.50	0.46
1:A:883:TYR:CD1	1:A:3120:LEU:HD12	2.51	0.46
1:A:1018:VAL:HG11	1:A:1066:LEU:HD22	1.98	0.46
1:A:1575:LEU:HD21	1:A:1618:LEU:HA	1.97	0.46
2:B:157:VAL:HG23	2:B:161:MET:HE1	1.98	0.46
1:A:1297:PHE:CE1	1:A:1301:ILE:HG21	2.50	0.46
1:A:1854:ARG:NH1	1:A:1856:THR:HA	2.31	0.46
1:A:2962:ARG:O	1:A:2964:ASP:N	2.49	0.46
1:A:3310:ASN:C	1:A:3312:VAL:H	2.20	0.46
1:A:3508:LYS:HZ3	1:A:3510:GLN:HG3	1.81	0.46
1:A:3976:GLU:OE1	1:A:3976:GLU:N	2.38	0.46
1:A:1167:ASP:OD1	1:A:1167:ASP:N	2.49	0.45
1:A:2743:TYR:HA	1:A:2746:LYS:HB3	1.99	0.45
1:A:3359:ILE:HG13	1:A:3360:LEU:N	2.31	0.45
2:B:488:ARG:HD2	2:B:503:ALA:HB2	1.97	0.45
3:C:533:ILE:HG23	3:C:537:PHE:HD2	1.77	0.45
3:C:616:LEU:HD22	3:C:642:PHE:CE2	2.51	0.45
1:A:525:LYS:O	1:A:528:VAL:HG12	2.16	0.45
1:A:643:GLU:O	1:A:646:VAL:HG22	2.16	0.45
1:A:859:LEU:HD22	1:A:870:LEU:HD11	1.98	0.45
1:A:871:LEU:HD11	1:A:3125:ARG:HD3	1.99	0.45
1:A:1799:GLU:O	1:A:1803:GLU:HG2	2.16	0.45
1:A:3294:SER:HB2	1:A:3351:ILE:HD11	1.97	0.45
1:A:3929:MET:HG2	1:A:3940:ILE:HG13	1.98	0.45
2:B:85:VAL:HG21	2:B:119:LEU:HD21	1.99	0.45
3:C:133:GLU:OE1	3:C:162:GLN:HB3	2.17	0.45
3:C:328:GLU:O	3:C:332:LYS:HB3	2.17	0.45
1:A:670:LEU:HB3	1:A:732:PHE:CD1	2.51	0.45
1:A:2428:ASP:O	1:A:2432:GLN:HG3	2.17	0.45
1:A:3294:SER:HB3	1:A:3348:LEU:HD22	1.98	0.45
1:A:3296:GLN:O	1:A:3300:VAL:HG22	2.16	0.45
1:A:4039:TYR:HB3	1:A:4040:PRO:HD3	1.98	0.45
1:A:4090:ARG:NH1	1:A:4109:ASP:OD2	2.47	0.45
1:A:290:TYR:CZ	1:A:337:LYS:HG2	2.51	0.45
1:A:447:PRO:HB3	1:A:526:ASP:HB3	1.99	0.45
1:A:1082:PHE:HA	1:A:1085:ILE:HG12	1.98	0.45
1:A:1984:LEU:HD23	1:A:1984:LEU:HA	1.72	0.45
2:B:58:THR:HG23	2:B:61:ASP:H	1.82	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:327:ASP:O	3:C:331:MET:HG2	2.16	0.45
3:C:398:ASP:OD1	3:C:401:ALA:N	2.45	0.45
4:D:4:DG:H2"	4:D:5:DC:C6	2.51	0.45
1:A:1369:MET:CB	1:A:1418:HIS:CD2	2.94	0.45
1:A:2800:ARG:HD2	1:A:2800:ARG:HA	1.85	0.45
2:B:262:LYS:HD2	2:B:346:MET:HG2	1.99	0.45
3:C:167:PHE:HD2	3:C:192:PHE:HA	1.81	0.45
1:A:306:VAL:HG13	1:A:307:GLU:HG2	1.99	0.45
1:A:1149:LYS:NZ	1:A:1151:ARG:HH21	2.14	0.45
1:A:1563:PHE:O	1:A:1565:GLU:N	2.49	0.45
1:A:2540:LEU:HD21	1:A:2832:ILE:HG23	1.98	0.45
1:A:3310:ASN:O	1:A:3312:VAL:HG23	2.17	0.45
2:B:289:TYR:CE2	2:B:291:GLU:HB2	2.52	0.45
3:C:36:LYS:O	3:C:39:THR:HG22	2.17	0.45
3:C:313:GLY:HA2	3:C:321:VAL:O	2.17	0.45
1:A:646:VAL:HG21	1:A:682:TYR:CZ	2.51	0.45
1:A:833:HIS:HA	1:A:836:LYS:HZ1	1.81	0.45
1:A:865:GLN:HG2	1:A:3170:ASP:HA	1.97	0.45
1:A:910:PHE:HB2	1:A:937:MET:CE	2.47	0.45
1:A:959:TYR:CE2	1:A:963:LYS:HD2	2.51	0.45
1:A:1619:ALA:O	1:A:1623:LEU:HD23	2.16	0.45
1:A:1863:PHE:HE2	1:A:1932:GLN:HE21	1.65	0.45
1:A:1992:VAL:HG21	1:A:2225:HIS:CD2	2.51	0.45
1:A:3527:GLN:HG3	1:A:3700:GLU:OE1	2.17	0.45
1:A:4088:ASN:HB3	1:A:4109:ASP:OD2	2.17	0.45
2:B:48:MET:HE1	2:B:170:THR:HA	1.99	0.45
2:B:132:GLN:CD	2:B:137:HIS:HD1	2.20	0.45
2:B:461:LYS:HZ2	2:B:528:LEU:HD13	1.81	0.45
1:A:121:ALA:HB2	1:A:167:PRO:CG	2.44	0.45
1:A:139:ARG:NE	1:A:184:VAL:HG12	2.32	0.45
1:A:1067:ALA:O	1:A:1075:ARG:HG2	2.16	0.45
1:A:1653:LEU:HD13	1:A:1698:PHE:CG	2.52	0.45
1:A:2384:PHE:CD1	2:B:155:SER:HB2	2.51	0.45
3:C:165:LEU:HD23	3:C:224:ILE:HD11	1.99	0.45
1:A:863:GLY:HA2	1:A:3167:ARG:HG3	1.98	0.45
1:A:1057:LYS:HG2	1:A:1061:LYS:NZ	2.31	0.45
1:A:1218:SER:O	1:A:1221:ILE:HG22	2.17	0.45
1:A:2097:LEU:HA	1:A:2100:LEU:CD2	2.47	0.45
1:A:2420:PHE:O	1:A:2423:VAL:HG12	2.17	0.45
1:A:2440:TYR:CD1	1:A:2476:ILE:HG22	2.50	0.45
1:A:2943:PHE:CD1	1:A:2949:THR:HG21	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3585:PHE:CD1	1:A:3617:LEU:HD23	2.52	0.45
3:C:153:SER:HA	3:C:156:LYS:HG2	1.98	0.45
1:A:147:PHE:O	1:A:149:ILE:N	2.50	0.45
1:A:1930:GLU:HG2	1:A:1937:ARG:HH12	1.83	0.45
2:B:298:THR:HA	3:C:295:TYR:HA	1.98	0.45
3:C:528:ILE:HB	3:C:529:PRO:HD3	1.98	0.45
1:A:1438:GLY:O	1:A:1445:ARG:NH2	2.39	0.44
1:A:2202:PRO:HG3	1:A:2245:TRP:NE1	2.31	0.44
2:B:331:LYS:NZ	2:B:335:GLU:OE2	2.46	0.44
3:C:53:GLU:OE1	3:C:85:LEU:HD22	2.17	0.44
3:C:134:ILE:HB	3:C:163:PHE:HD1	1.82	0.44
3:C:659:LEU:HD13	3:C:662:LEU:HD21	1.99	0.44
1:A:1202:ARG:CB	1:A:1206:LEU:HD11	2.47	0.44
1:A:1525:CYS:HB2	1:A:1574:ASN:HD21	1.81	0.44
1:A:2424:MET:HE3	1:A:2424:MET:HB2	1.76	0.44
1:A:3117:ILE:HG23	1:A:3121:LEU:HD23	2.00	0.44
2:B:48:MET:HG2	2:B:59:PRO:HG2	2.00	0.44
2:B:362:LEU:HD11	2:B:409:TYR:OH	2.17	0.44
1:A:204:LEU:HD13	1:A:223:CYS:SG	2.57	0.44
1:A:1655:ILE:HG13	1:A:1656:ASP:N	2.31	0.44
1:A:2091:HIS:O	1:A:2091:HIS:CG	2.71	0.44
2:B:492:ALA:O	2:B:496:ASP:N	2.51	0.44
4:D:18:DT:H2"	4:D:19:DG:C8	2.52	0.44
1:A:208:MET:HG3	1:A:220:LEU:HD21	1.99	0.44
1:A:2201:THR:HG23	1:A:2201:THR:O	2.18	0.44
1:A:2943:PHE:HD1	1:A:2949:THR:HG21	1.82	0.44
1:A:3610:TYR:CE1	1:A:3652:LEU:HD13	2.53	0.44
2:B:259:LEU:HB3	2:B:344:GLY:HA2	1.98	0.44
3:C:597:ASN:OD1	3:C:598:PHE:N	2.50	0.44
1:A:158:GLY:O	1:A:162:LEU:HG	2.17	0.44
1:A:384:MET:C	1:A:386:VAL:H	2.19	0.44
1:A:718:MET:HE3	1:A:730:LEU:HD21	1.99	0.44
1:A:1424:THR:O	1:A:1428:ILE:HG12	2.18	0.44
1:A:1810:PRO:HB2	3:C:669:LYS:NZ	2.33	0.44
1:A:1955:VAL:O	1:A:1955:VAL:HG23	2.18	0.44
1:A:2085:MET:O	1:A:2085:MET:HG2	2.17	0.44
1:A:2216:LEU:HD13	1:A:2241:LEU:HD22	2.00	0.44
2:B:126:GLN:O	2:B:130:ARG:HG3	2.17	0.44
1:A:240:GLU:OE1	1:A:240:GLU:N	2.51	0.44
1:A:484:HIS:HD2	1:A:574:LYS:HE3	1.83	0.44
1:A:928:VAL:HG11	1:A:2769:VAL:HG11	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1592:MET:O	1:A:1596:VAL:HG23	2.18	0.44
1:A:1717:LEU:O	1:A:1721:HIS:HB2	2.18	0.44
1:A:1729:PHE:CE2	1:A:1736:PHE:HA	2.53	0.44
1:A:2560:ASN:O	1:A:2564:GLU:HG2	2.18	0.44
1:A:3385:LEU:HB3	1:A:3416:LEU:CD2	2.48	0.44
2:B:290:ARG:HB3	3:C:309:ASP:OD1	2.18	0.44
2:B:422:ASP:OD1	2:B:422:ASP:N	2.51	0.44
3:C:616:LEU:HA	3:C:619:HIS:ND1	2.32	0.44
1:A:79:ARG:HG3	1:A:80:GLU:N	2.33	0.44
1:A:835:LYS:O	1:A:838:LYS:HG2	2.18	0.44
1:A:1257:LEU:HD11	1:A:1330:TYR:HE1	1.83	0.44
1:A:1373:VAL:HG23	1:A:1419:LEU:HD23	2.00	0.44
1:A:1684:LEU:HD11	1:A:1688:LEU:HD22	2.00	0.44
1:A:2481:HIS:O	1:A:2485:ARG:HG3	2.18	0.44
1:A:3020:ASP:HB2	1:A:3025:PRO:HD3	2.00	0.44
2:B:483:LEU:HG	2:B:487:PHE:CE2	2.53	0.44
1:A:330:ASN:O	1:A:334:HIS:HD2	2.01	0.44
1:A:876:SER:HG	1:A:878:GLU:CD	2.20	0.44
1:A:1224:PHE:CE2	1:A:1267:TYR:HB3	2.52	0.44
1:A:1358:LEU:HD23	1:A:1358:LEU:H	1.83	0.44
1:A:1812:LEU:HG	3:C:625:ASP:OD1	2.18	0.44
1:A:1832:SER:HB3	1:A:1836:LEU:HD22	1.99	0.44
1:A:2886:GLN:HB2	1:A:2933:ILE:HD11	1.99	0.44
1:A:3620:PRO:HA	1:A:3633:ILE:HG12	1.99	0.44
2:B:40:PHE:HE2	2:B:83:LEU:HD12	1.83	0.44
3:C:167:PHE:HB2	3:C:191:SER:O	2.18	0.44
3:C:365:PHE:O	3:C:377:LEU:HD23	2.17	0.44
3:C:380:LEU:O	3:C:384:LEU:HD23	2.17	0.44
1:A:392:CYS:HG	1:A:396:PHE:HD2	1.63	0.44
1:A:759:GLY:HA3	1:A:766:ALA:HB2	2.00	0.44
1:A:863:GLY:O	1:A:867:ASN:HB2	2.18	0.44
1:A:903:PRO:HB3	1:A:2819:GLU:HG3	1.99	0.44
1:A:3150:ASN:C	1:A:3151:LEU:HD23	2.39	0.44
1:A:3797:THR:HG23	1:A:3798:SER:O	2.17	0.44
1:A:3883:LEU:HD23	1:A:3883:LEU:HA	1.88	0.44
2:B:250:GLU:HB3	2:B:252:ARG:HH22	1.83	0.44
2:B:438:PRO:CG	3:C:267:ILE:HD11	2.48	0.44
2:B:447:PRO:HA	3:C:243:HIS:CE1	2.53	0.44
2:B:485:GLN:HG3	2:B:489:ASN:HD21	1.82	0.44
3:C:53:GLU:HG3	3:C:127:PHE:HZ	1.82	0.44
3:C:413:LYS:HB3	3:C:416:TYR:O	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:942:LEU:HD11	1:A:991:LEU:HD21	2.00	0.43
1:A:1195:VAL:HG23	1:A:1196:PRO:HD3	1.98	0.43
1:A:1212:LEU:HD21	1:A:1220:LEU:HD12	2.00	0.43
1:A:1966:LEU:O	1:A:1977:ILE:HD13	2.18	0.43
1:A:2500:LYS:HE3	1:A:2500:LYS:HB2	1.83	0.43
1:A:3641:ASP:OD1	1:A:3641:ASP:N	2.52	0.43
1:A:3887:PHE:O	1:A:3891:SER:HB3	2.18	0.43
2:B:348:MET:SD	3:C:518:PRO:HD3	2.58	0.43
3:C:261:ILE:CG1	3:C:364:VAL:HB	2.48	0.43
1:A:710:PHE:O	1:A:714:VAL:HG23	2.18	0.43
1:A:935:HIS:O	1:A:939:MET:HG2	2.19	0.43
1:A:1195:VAL:CG2	1:A:1196:PRO:HD3	2.48	0.43
1:A:1892:LYS:NZ	1:A:1907:GLU:HA	2.33	0.43
1:A:3103:ILE:HD12	1:A:3103:ILE:HA	1.88	0.43
1:A:3992:ARG:NH1	1:A:4103:GLN:OE1	2.50	0.43
1:A:4050:LYS:HE2	1:A:4059:ILE:HG21	2.00	0.43
1:A:167:PRO:O	4:D:12:DT:P	2.76	0.43
1:A:2281:MET:HE2	1:A:2326:ILE:HG12	2.00	0.43
1:A:2568:MET:O	1:A:2568:MET:HG3	2.18	0.43
1:A:3019:ILE:HG13	1:A:3020:ASP:N	2.32	0.43
2:B:446:MET:HB3	2:B:447:PRO:HD2	1.99	0.43
3:C:537:PHE:HD1	3:C:538:PRO:HD2	1.84	0.43
1:A:149:ILE:HG23	1:A:181:LEU:HD22	2.00	0.43
1:A:248:ILE:O	1:A:252:VAL:HG23	2.19	0.43
1:A:969:LEU:HD23	1:A:969:LEU:HA	1.83	0.43
1:A:1731:PRO:HA	1:A:1736:PHE:CG	2.53	0.43
1:A:1880:MET:O	1:A:1884:LEU:HB2	2.19	0.43
1:A:3271:ASP:HB3	1:A:3315:TYR:CE2	2.54	0.43
1:A:3387:GLU:OE2	1:A:3390:GLN:NE2	2.51	0.43
2:B:207:LYS:HB2	2:B:208:PRO:HD3	2.00	0.43
2:B:458:GLN:HB3	2:B:525:PHE:HE1	1.83	0.43
3:C:385:ASP:OD1	3:C:386:ASP:N	2.51	0.43
1:A:528:VAL:HG13	1:A:529:ASP:H	1.82	0.43
1:A:3599:THR:HG22	1:A:3601:VAL:HG13	2.00	0.43
3:C:150:ILE:O	3:C:154:LEU:HG	2.18	0.43
3:C:524:THR:HA	3:C:527:GLN:OE1	2.19	0.43
1:A:14:ARG:O	1:A:17:GLU:HG2	2.18	0.43
1:A:79:ARG:HD3	1:A:122:LYS:HE2	2.00	0.43
1:A:1802:TYR:CZ	1:A:1806:ARG:HD3	2.54	0.43
1:A:3412:ALA:HA	1:A:3415:THR:HG22	2.01	0.43
1:A:3961:PHE:CE1	1:A:4107:LEU:HG	2.50	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:346:MET:HE1	2:B:399:ARG:NH1	2.33	0.43
4:D:5:DC:H2'	4:D:6:DT:H71	2.00	0.43
1:A:1689:LYS:O	1:A:1693:VAL:HG13	2.19	0.43
1:A:1790:SER:O	1:A:1793:THR:HG22	2.18	0.43
1:A:1881:TYR:CE1	1:A:1889:VAL:HG11	2.49	0.43
1:A:2417:SER:OG	2:B:152:ASN:OD1	2.26	0.43
1:A:2763:MET:HA	1:A:2766:ASP:HB2	1.99	0.43
1:A:2952:ILE:HD11	1:A:2981:TRP:HH2	1.83	0.43
1:A:2987:THR:O	1:A:2991:LYS:HG2	2.19	0.43
1:A:3851:ASP:OD2	1:A:3851:ASP:N	2.51	0.43
2:B:518:LEU:HD12	2:B:519:GLY:N	2.32	0.43
3:C:14:MET:SD	3:C:58:LEU:HD22	2.59	0.43
1:A:1661:PHE:HA	1:A:1668:PHE:HE2	1.83	0.43
1:A:1984:LEU:HD11	1:A:2142:ILE:HD11	2.01	0.43
1:A:2140:LEU:HG	1:A:2144:LEU:HD13	2.01	0.43
1:A:2392:VAL:HG23	1:A:2393:LEU:HD12	2.00	0.43
1:A:3472:ILE:HG13	1:A:3483:MET:CE	2.49	0.43
1:A:346:TYR:O	1:A:350:ARG:HG2	2.17	0.43
1:A:579:LEU:HD23	1:A:581:LEU:HD21	2.00	0.43
1:A:732:PHE:CZ	1:A:736:LEU:HD11	2.54	0.43
1:A:810:LYS:HE3	1:A:2514:ASN:HA	2.00	0.43
1:A:2139:PRO:HG2	1:A:2142:ILE:CD1	2.49	0.43
1:A:2300:PHE:HB3	1:A:2341:LEU:HD11	1.99	0.43
1:A:2517:LEU:O	1:A:2521:ILE:HD12	2.19	0.43
1:A:2806:LYS:HG2	1:A:2857:CYS:HB2	2.01	0.43
1:A:4120:THR:OG1	1:A:4126:PRO:HG3	2.19	0.43
1:A:670:LEU:O	1:A:674:VAL:HG23	2.19	0.43
1:A:1282:LEU:HB3	1:A:1358:LEU:HD12	1.99	0.43
1:A:1820:VAL:O	1:A:1825:LEU:HG	2.19	0.43
3:C:365:PHE:HE1	3:C:418:CYS:HB3	1.84	0.43
1:A:135:LEU:HD12	1:A:177:LEU:HD11	1.99	0.42
1:A:249:PHE:HD1	1:A:282:PHE:CE2	2.37	0.42
1:A:900:GLU:HG3	1:A:901:MET:HG3	2.01	0.42
1:A:1775:GLU:O	1:A:1778:PHE:HB2	2.19	0.42
1:A:2259:LYS:O	1:A:2270:ASN:HA	2.19	0.42
1:A:3483:MET:N	7:A:4330:HOH:O	2.43	0.42
3:C:165:LEU:O	3:C:226:SER:HA	2.19	0.42
1:A:1650:ALA:O	1:A:1654:GLN:HB2	2.20	0.42
1:A:2745:ARG:O	1:A:2748:VAL:HG12	2.19	0.42
1:A:3484:THR:HG22	1:A:3513:ALA:CB	2.42	0.42
1:A:3820:MET:HB2	1:A:3825:LYS:HG3	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3917:ILE:HD12	1:A:4051:LEU:HD13	2.01	0.42
1:A:4070:LYS:HD2	1:A:4070:LYS:O	2.19	0.42
2:B:355:LEU:HD12	3:C:475:ASP:HB3	2.01	0.42
3:C:9:ALA:HB1	3:C:83:LEU:HD22	2.01	0.42
3:C:311:ILE:HB	3:C:324:SER:HB3	2.01	0.42
3:C:542:ALA:C	3:C:543:LYS:HD3	2.39	0.42
4:D:16:DG:N2	5:E:28:DC:N3	2.62	0.42
1:A:1571:LEU:HD22	1:A:1578:ALA:HB1	2.01	0.42
1:A:1881:TYR:HE2	1:A:1915:LEU:HD21	1.85	0.42
1:A:2476:ILE:HD13	7:A:4322:HOH:O	2.19	0.42
1:A:3016:THR:HG21	1:A:3048:LYS:HZ1	1.83	0.42
1:A:3680:LEU:CD1	1:A:3682:GLU:HB2	2.49	0.42
2:B:83:LEU:O	2:B:108:LEU:HA	2.19	0.42
2:B:352:PRO:O	2:B:355:LEU:HD23	2.19	0.42
3:C:165:LEU:HD12	3:C:166:PRO:O	2.19	0.42
3:C:666:VAL:HG23	3:C:675:TRP:NE1	2.34	0.42
1:A:89:LEU:HA	1:A:89:LEU:HD23	1.79	0.42
1:A:723:ASP:OD1	1:A:723:ASP:N	2.51	0.42
1:A:947:GLN:HB3	1:A:949:PRO:HD2	2.00	0.42
1:A:1344:PHE:O	1:A:1348:LEU:HG	2.20	0.42
1:A:1825:LEU:HD23	1:A:1825:LEU:HA	1.90	0.42
1:A:1915:LEU:O	1:A:1918:LEU:HG	2.20	0.42
1:A:2785:ILE:HG12	1:A:2789:SER:OG	2.20	0.42
1:A:2788:SER:O	1:A:2792:THR:HB	2.19	0.42
1:A:3281:CYS:SG	1:A:3329:LEU:HD13	2.59	0.42
1:A:4076:ASP:O	1:A:4080:VAL:HG23	2.19	0.42
3:C:653:GLN:HG2	3:C:654:ARG:H	1.84	0.42
1:A:631:ARG:HH21	1:A:668:LYS:HD3	1.84	0.42
1:A:1102:GLU:O	1:A:1106:ILE:HG12	2.19	0.42
1:A:1946:ASN:ND2	1:A:2092:GLU:O	2.50	0.42
1:A:2363:CYS:O	1:A:2367:VAL:HG23	2.19	0.42
1:A:2394:LYS:HD3	1:A:2423:VAL:CG2	2.50	0.42
1:A:3577:GLN:NE2	1:A:3577:GLN:O	2.53	0.42
2:B:71:TYR:HB3	2:B:116:ILE:HG12	2.02	0.42
2:B:461:LYS:NZ	2:B:524:GLU:OE1	2.53	0.42
4:D:16:DG:OP2	7:D:101:HOH:O	2.22	0.42
1:A:275:PHE:HE2	1:A:319:PHE:HB2	1.84	0.42
1:A:1186:LYS:O	1:A:1190:LEU:HD23	2.19	0.42
1:A:2855:VAL:O	1:A:2859:GLN:HG3	2.19	0.42
1:A:3772:ASN:HA	1:A:3775:LEU:HB3	2.01	0.42
2:B:302:THR:HA	3:C:291:LYS:HA	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:455:THR:OG1	2:B:458:GLN:OE1	2.32	0.42
1:A:1342:MET:HB3	1:A:1402:LEU:HD22	2.01	0.42
1:A:2166:SER:O	1:A:2170:GLN:HB3	2.20	0.42
1:A:2458:VAL:CG1	1:A:2476:ILE:HD11	2.45	0.42
1:A:2557:LEU:O	1:A:2560:ASN:HB3	2.20	0.42
1:A:3554:PHE:O	1:A:3557:ARG:HG2	2.20	0.42
2:B:78:SER:O	2:B:80:ARG:N	2.50	0.42
3:C:688:LYS:HE3	3:C:693:GLY:HA2	2.02	0.42
1:A:493:LYS:HE3	1:A:527:TYR:OH	2.19	0.42
1:A:753:GLN:HB2	1:A:795:CYS:SG	2.60	0.42
1:A:1185:HIS:O	1:A:1189:GLU:HG3	2.20	0.42
1:A:1189:GLU:O	1:A:1193:LYS:HG2	2.20	0.42
1:A:1789:GLY:O	1:A:1790:SER:OG	2.34	0.42
1:A:2124:SER:HA	1:A:2127:LYS:HE2	2.01	0.42
1:A:2410:GLU:C	1:A:2412:TYR:H	2.23	0.42
1:A:3118:ASP:OD2	1:A:3120:LEU:HD23	2.19	0.42
1:A:3819:THR:HG21	1:A:3882:LEU:O	2.20	0.42
3:C:39:THR:HA	3:C:42:VAL:HG12	2.02	0.42
3:C:250:ARG:HG2	3:C:260:ARG:HA	2.01	0.42
1:A:136:GLN:O	1:A:139:ARG:HG2	2.20	0.42
1:A:431:TYR:O	1:A:434:VAL:HG12	2.19	0.42
1:A:758:LEU:HB2	1:A:765:LEU:HD23	2.01	0.42
1:A:774:GLU:O	1:A:778:ILE:HD12	2.20	0.42
1:A:1147:LYS:HE2	1:A:1149:LYS:HD3	2.00	0.42
1:A:1576:ASP:OD1	1:A:1577:LEU:N	2.51	0.42
1:A:1777:LEU:HD23	1:A:1777:LEU:HA	1.76	0.42
1:A:1887:ASP:OD1	1:A:1888:ASP:N	2.52	0.42
1:A:3356:ALA:HA	1:A:3359:ILE:HG12	2.02	0.42
1:A:3481:SER:HA	1:A:3484:THR:CG2	2.50	0.42
2:B:42:VAL:HA	2:B:169:PHE:HB2	2.01	0.42
2:B:143:LEU:HA	2:B:146:VAL:HG12	2.00	0.42
2:B:299:LYS:HB3	2:B:299:LYS:HE2	1.85	0.42
2:B:334:THR:HA	2:B:337:LEU:HD22	2.01	0.42
2:B:381:LEU:O	2:B:385:LEU:HD23	2.20	0.42
3:C:62:ASP:HA	3:C:103:GLN:OE1	2.20	0.42
3:C:484:ASN:HB3	3:C:487:PHE:CE1	2.55	0.42
1:A:381:VAL:HG22	1:A:424:LEU:HB3	2.00	0.42
1:A:989:MET:SD	1:A:1035:GLU:HG3	2.59	0.42
1:A:1143:VAL:HG13	1:A:1197:LEU:HD11	2.01	0.42
1:A:1992:VAL:HG21	1:A:2225:HIS:HD2	1.83	0.42
1:A:2432:GLN:OE1	1:A:2464:HIS:NE2	2.53	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2533:SER:HA	1:A:2565:MET:CE	2.50	0.42
1:A:2870:SER:HB3	1:A:2899:ARG:HH12	1.84	0.42
1:A:3062:LEU:HD22	1:A:3093:GLN:NE2	2.35	0.42
1:A:3387:GLU:O	1:A:3390:GLN:HG3	2.20	0.42
3:C:64:THR:HG21	3:C:74:TYR:O	2.19	0.42
3:C:371:GLU:HB2	3:C:374:ALA:HB3	2.02	0.42
3:C:413:LYS:HD2	3:C:414:HIS:H	1.85	0.42
1:A:296:VAL:O	1:A:299:LYS:HG3	2.20	0.41
1:A:891:ARG:HD3	1:A:956:PRO:HB2	2.02	0.41
1:A:986:PRO:O	1:A:989:MET:N	2.53	0.41
1:A:1601:LEU:HD13	1:A:1651:LYS:HB3	2.02	0.41
1:A:1802:TYR:OH	1:A:1806:ARG:HD3	2.20	0.41
1:A:2287:PRO:HG3	1:A:2326:ILE:HG23	2.02	0.41
1:A:3530:VAL:HG11	1:A:3568:ILE:HG21	2.02	0.41
2:B:219:ASP:OD1	2:B:220:ILE:N	2.53	0.41
3:C:409:PHE:HA	3:C:410:PRO:HD3	1.88	0.41
3:C:629:THR:OG1	3:C:630:PRO:HD3	2.19	0.41
1:A:1148:ALA:CA	1:A:1164:CYS:HB3	2.50	0.41
1:A:1208:LEU:HD12	1:A:1208:LEU:HA	1.88	0.41
1:A:3293:CYS:C	1:A:3295:GLU:H	2.22	0.41
1:A:3725:ARG:H	1:A:3725:ARG:HD3	1.85	0.41
2:B:505:ASP:OD2	2:B:508:LEU:HG	2.20	0.41
3:C:364:VAL:HG22	3:C:419:LEU:O	2.20	0.41
3:C:512:ILE:HD13	3:C:512:ILE:HA	1.90	0.41
1:A:538:ASP:OD1	1:A:539:GLN:N	2.53	0.41
1:A:805:LEU:O	1:A:805:LEU:HD23	2.21	0.41
1:A:949:PRO:CB	1:A:954:GLY:O	2.68	0.41
1:A:2547:SER:O	1:A:2547:SER:OG	2.35	0.41
1:A:3530:VAL:HA	1:A:3562:LEU:HD23	2.02	0.41
1:A:3646:LYS:HA	1:A:3649:SER:HG	1.84	0.41
1:A:3663:THR:O	1:A:3666:LEU:HG	2.20	0.41
1:A:3887:PHE:HZ	1:A:3904:PHE:CD1	2.39	0.41
3:C:356:PHE:HB3	3:C:422:VAL:HG11	2.02	0.41
3:C:725:VAL:O	3:C:728:LEU:HB3	2.20	0.41
1:A:12:LEU:HD21	1:A:64:GLY:HA2	2.02	0.41
1:A:859:LEU:CD2	1:A:870:LEU:HD11	2.50	0.41
1:A:1538:LEU:HG	1:A:1555:HIS:HB2	2.01	0.41
1:A:1865:THR:O	1:A:1869:LYS:HG2	2.20	0.41
1:A:3873:LYS:HG3	1:A:3877:LYS:NZ	2.36	0.41
2:B:212:ASP:N	2:B:212:ASP:OD1	2.51	0.41
2:B:362:LEU:HD21	2:B:409:TYR:OH	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:440:VAL:HG23	1:A:482:VAL:HG23	2.02	0.41
1:A:2746:LYS:O	1:A:2749:ALA:HB3	2.21	0.41
1:A:3154:GLN:HG2	1:A:3227:ILE:HD11	2.02	0.41
1:A:3522:THR:HG21	1:A:3558:ILE:HG23	2.01	0.41
3:C:188:HIS:CD2	3:C:478:PRO:HD2	2.55	0.41
4:D:20:DG:H2''	4:D:21:DA:C8	2.56	0.41
1:A:1018:VAL:HG23	1:A:1018:VAL:O	2.20	0.41
1:A:1082:PHE:HB2	1:A:1107:TYR:OH	2.20	0.41
1:A:1960:LYS:HD3	1:A:2123:PRO:HG2	2.02	0.41
1:A:2146:LEU:O	1:A:2150:VAL:HG23	2.21	0.41
1:A:3111:MET:HE2	1:A:3111:MET:HB3	1.93	0.41
1:A:3169:PRO:HG3	1:A:3182:ILE:HG13	2.01	0.41
1:A:3259:LEU:HD23	1:A:3259:LEU:HA	1.96	0.41
1:A:3962:ARG:HE	1:A:3964:THR:HG21	1.86	0.41
3:C:42:VAL:HG13	3:C:91:LEU:HD13	2.03	0.41
1:A:253:LEU:HG	1:A:257:ARG:HD2	2.03	0.41
1:A:1247:PRO:HG3	1:A:1303:MET:SD	2.60	0.41
1:A:2253:TYR:HE2	1:A:2289:ASP:HB2	1.85	0.41
1:A:2386:LEU:HD13	1:A:2397:CYS:HB3	2.03	0.41
1:A:2506:LEU:HD23	1:A:2506:LEU:HA	1.84	0.41
1:A:3022:GLU:HG2	1:A:3022:GLU:O	2.21	0.41
1:A:3121:LEU:O	1:A:3124:SER:HB2	2.21	0.41
1:A:3542:PHE:HZ	1:A:3555:VAL:HG21	1.85	0.41
1:A:3634:GLN:HG3	1:A:3635:THR:N	2.36	0.41
2:B:484:GLN:HB3	2:B:488:ARG:NH1	2.35	0.41
2:B:511:VAL:HA	2:B:514:MET:HE2	2.02	0.41
3:C:163:PHE:CE2	3:C:165:LEU:HB3	2.56	0.41
3:C:537:PHE:CD1	3:C:538:PRO:HD2	2.55	0.41
3:C:672:ASN:OD1	3:C:673:HIS:ND1	2.54	0.41
1:A:565:TYR:HH	1:A:642:PHE:HD1	1.66	0.41
1:A:1146:ASN:HD21	1:A:1165:LEU:HB3	1.86	0.41
1:A:2104:MET:HA	1:A:2107:SER:HB3	2.03	0.41
1:A:3082:TYR:C	1:A:3084:GLN:N	2.72	0.41
1:A:3493:TRP:NE1	1:A:3710:LYS:HG3	2.36	0.41
1:A:3907:SER:O	1:A:3911:ILE:HG23	2.20	0.41
1:A:260:ILE:HG12	3:C:553:ILE:HG13	2.03	0.41
1:A:487:LEU:HD23	1:A:487:LEU:HA	1.91	0.41
1:A:660:LEU:HB3	7:A:4432:HOH:O	2.21	0.41
1:A:737:PRO:O	1:A:739:ASN:N	2.54	0.41
1:A:948:MET:H	1:A:949:PRO:HD2	1.80	0.41
1:A:1817:GLN:HB2	1:A:1868:THR:HG23	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2339:GLU:HG2	1:A:2340:SER:N	2.36	0.41
1:A:2371:PHE:CZ	1:A:2373:PRO:HG2	2.56	0.41
1:A:2439:ILE:O	1:A:2443:MET:CB	2.62	0.41
1:A:2533:SER:N	7:A:4353:HOH:O	2.48	0.41
1:A:2963:SER:HB2	1:A:3250:ASN:O	2.21	0.41
1:A:3421:ASP:O	1:A:3425:ARG:HG3	2.21	0.41
1:A:3526:PRO:HB2	1:A:3564:GLN:NE2	2.36	0.41
1:A:3735:PRO:HB3	1:A:3753:LYS:HB3	2.03	0.41
1:A:3842:TRP:O	1:A:3846:MET:HG3	2.20	0.41
1:A:3854:ALA:O	1:A:3858:MET:HB2	2.21	0.41
1:A:3871:PHE:O	1:A:3875:GLU:HG2	2.21	0.41
1:A:4044:ILE:O	1:A:4048:LYS:HG3	2.21	0.41
2:B:352:PRO:HG2	2:B:355:LEU:HD22	2.03	0.41
2:B:461:LYS:HE2	2:B:461:LYS:HB3	1.95	0.41
1:A:871:LEU:HD12	1:A:3122[B]:HIS:CD2	2.56	0.41
1:A:1184:ARG:O	1:A:1188:ILE:HG23	2.21	0.41
1:A:1333:SER:O	1:A:1336:THR:HG22	2.21	0.41
1:A:1538:LEU:HD11	1:A:1555:HIS:CD2	2.56	0.41
1:A:2746:LYS:O	1:A:2750:GLU:OE1	2.39	0.41
1:A:2855:VAL:HG12	7:A:4404:HOH:O	2.20	0.41
1:A:2931:ARG:HH22	1:A:3000:ASP:CB	2.34	0.41
1:A:3271:ASP:HB3	1:A:3315:TYR:HE2	1.86	0.41
1:A:3442:TYR:HB2	1:A:3443:PRO:HD3	2.02	0.41
2:B:179:ASP:OD2	2:B:182:LYS:N	2.42	0.41
2:B:351:LYS:HE2	2:B:355:LEU:HD11	2.02	0.41
1:A:1333:SER:HA	1:A:1336:THR:HG22	2.02	0.40
1:A:1758:LEU:HG	7:A:4360:HOH:O	2.21	0.40
1:A:2885:GLN:O	1:A:2888:VAL:HG22	2.22	0.40
1:A:3177:ASN:OD1	1:A:3177:ASN:N	2.54	0.40
1:A:3623:PRO:HG3	1:A:3633:ILE:HG21	2.03	0.40
1:A:142:ARG:HH11	1:A:145:ASP:HB2	1.86	0.40
1:A:215:PRO:HG3	3:C:553:ILE:HG21	2.02	0.40
1:A:410:MET:HB3	1:A:411:PRO:HD3	2.03	0.40
1:A:1062:ARG:HH22	1:A:3746:ARG:HH12	1.68	0.40
1:A:2929:LEU:HD23	1:A:2929:LEU:HA	1.87	0.40
1:A:3030:ILE:HG21	1:A:3041:LEU:HD13	2.04	0.40
1:A:3263:HIS:HB2	1:A:3276:TRP:CZ2	2.56	0.40
3:C:73:GLN:H	3:C:73:GLN:HG2	1.76	0.40
3:C:129:LYS:HD2	3:C:239:LYS:HD3	2.03	0.40
3:C:653:GLN:HG2	3:C:654:ARG:N	2.36	0.40
1:A:252:VAL:HG22	1:A:274:LEU:HD23	2.04	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:531:PHE:CD1	1:A:534:LEU:HD12	2.57	0.40
1:A:1118:GLU:CD	1:A:1119:LYS:H	2.24	0.40
1:A:1581:GLU:HA	1:A:1584:GLN:HB2	2.02	0.40
1:A:1873:TYR:HA	1:A:1876:ILE:HD12	2.02	0.40
1:A:1882:SER:HG	1:A:1950:SER:HG	1.69	0.40
1:A:2379:MET:CE	1:A:2404:ARG:HB2	2.51	0.40
1:A:3198:THR:OG1	1:A:3199:PRO:HD3	2.21	0.40
1:A:3385:LEU:HB3	1:A:3416:LEU:HD21	2.03	0.40
3:C:386:ASP:OD1	3:C:387:LEU:N	2.54	0.40
3:C:501:PRO:HB2	3:C:502:ARG:NH1	2.36	0.40
1:A:1224:PHE:HD2	1:A:1267:TYR:CD1	2.39	0.40
1:A:1696:LEU:HA	1:A:1696:LEU:HD23	1.85	0.40
1:A:1837:ARG:HA	1:A:1840:PHE:CD2	2.56	0.40
1:A:1988:TYR:CE2	1:A:2088:LEU:HD13	2.56	0.40
1:A:2506:LEU:HD13	1:A:2524:PHE:CE2	2.57	0.40
1:A:2844:LEU:HD23	1:A:2844:LEU:HA	1.85	0.40
1:A:3007:GLU:HB3	7:A:4347:HOH:O	2.22	0.40
1:A:3021:SER:OG	1:A:3022:GLU:OE1	2.26	0.40
1:A:3334:TYR:HE1	1:A:3384:HIS:CE1	2.39	0.40
1:A:3460:GLU:H	1:A:3460:GLU:CD	2.24	0.40
2:B:141:TYR:HE1	2:B:175:PRO:HB3	1.87	0.40
3:C:446:PRO:HB2	3:C:451:LEU:HD21	2.03	0.40
1:A:1920:TYR:CZ	1:A:1924:THR:HG21	2.57	0.40
1:A:3335:ARG:HH11	1:A:3385:LEU:HD11	1.85	0.40
3:C:347:LYS:HE3	3:C:347:LYS:HB3	1.97	0.40
3:C:465:LYS:O	3:C:474:GLU:HG3	2.20	0.40
3:C:641:ALA:O	3:C:644:GLU:HG3	2.21	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	3652/4128 (88%)	3280 (90%)	368 (10%)	4 (0%)	51	81
2	B	488/609 (80%)	423 (87%)	65 (13%)	0	100	100
3	C	653/732 (89%)	580 (89%)	71 (11%)	2 (0%)	41	70
All	All	4793/5469 (88%)	4283 (89%)	504 (10%)	6 (0%)	54	81

All (6) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	2548	PRO
1	A	3083	SER
1	A	949	PRO
1	A	3058	ASP
3	C	322	PRO
3	C	410	PRO

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	3211/3671 (88%)	3189 (99%)	22 (1%)	84	95
2	B	443/548 (81%)	435 (98%)	8 (2%)	59	83
3	C	583/649 (90%)	576 (99%)	7 (1%)	71	90
All	All	4237/4868 (87%)	4200 (99%)	37 (1%)	79	92

All (37) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	164	LYS
1	A	165	LYS
1	A	166	ILE
1	A	299	LYS
1	A	518	LYS
1	A	520	LYS
1	A	946	THR

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Mol	Chain	Res	Type
1	A	947	GLN
1	A	948	MET
1	A	1683	LYS
1	A	1822	ARG
1	A	2195	SER
1	A	2427	ARG
1	A	3550	LYS
1	A	3577	GLN
1	A	3598	LYS
1	A	3669	LYS
1	A	3718	ARG
1	A	3725	ARG
1	A	3845	LYS
1	A	3864	ARG
1	A	4070	LYS
2	B	58	THR
2	B	129	LYS
2	B	182	LYS
2	B	254[A]	ARG
2	B	254[B]	ARG
2	B	265	LYS
2	B	371	GLU
2	B	516	LYS
3	C	130	ARG
3	C	184	ARG
3	C	239	LYS
3	C	302	GLU
3	C	368	ARG
3	C	411	HIS
3	C	489	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (19) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	281	GLN
1	A	484	HIS
1	A	613	HIS
1	A	823	GLN
1	A	947	GLN
1	A	1268	ASN
1	A	1614	GLN
1	A	1691	GLN

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Mol	Chain	Res	Type
1	A	1890	HIS
1	A	2089	ASN
1	A	2380	ASN
1	A	2523	ASN
1	A	3339	ASN
1	A	3510	GLN
1	A	3951	GLN
2	B	132	GLN
2	B	275	ASN
3	C	119	GLN
3	C	452	ASN

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 monosaccharides 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
6	1IX	A	4201	-	37,38,38	2.23	11 (29%)	50,54,54	1.99	19 (38%)

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
6	1IX	A	4201	-	-	2/18/26/26	0/5/5/5

All (11) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
6	A	4201	1IX	C14-C16	6.15	1.56	1.49
6	A	4201	1IX	C12-C13	5.48	1.47	1.37
6	A	4201	1IX	C11-CL1	4.34	1.83	1.73
6	A	4201	1IX	C21-C20	-3.72	1.36	1.42
6	A	4201	1IX	C24-N26	3.22	1.47	1.38
6	A	4201	1IX	C14-C13	-2.92	1.35	1.39
6	A	4201	1IX	C25-C20	2.85	1.46	1.41
6	A	4201	1IX	C20-N19	-2.42	1.33	1.37
6	A	4201	1IX	C15-C14	2.20	1.43	1.39
6	A	4201	1IX	C15-C10	2.12	1.43	1.39
6	A	4201	1IX	C10-C09	2.04	1.56	1.52

All (19) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
6	A	4201	1IX	C21-C16-N17	-5.09	119.69	123.04
6	A	4201	1IX	C18-N19-C20	4.26	121.27	115.40
6	A	4201	1IX	C21-C20-N19	-4.13	118.43	122.83
6	A	4201	1IX	N19-C18-N17	-3.97	122.48	128.68
6	A	4201	1IX	C15-C10-C11	2.96	120.03	117.12
6	A	4201	1IX	C25-C20-N19	2.94	121.32	117.97
6	A	4201	1IX	C03-N04-N05	2.83	122.81	118.45
6	A	4201	1IX	C16-C14-C13	-2.74	120.12	123.39
6	A	4201	1IX	C16-C21-C20	2.69	118.52	115.88
6	A	4201	1IX	C14-C16-N17	2.51	119.89	115.38
6	A	4201	1IX	C12-C11-C10	-2.43	119.51	122.41
6	A	4201	1IX	C01-O02-C03	-2.36	113.66	117.36
6	A	4201	1IX	C11-C12-C13	2.35	120.08	118.59
6	A	4201	1IX	C15-C14-C13	2.21	119.23	116.15
6	A	4201	1IX	C28-C27-N26	2.12	113.93	110.02
6	A	4201	1IX	C30-C31-N26	2.10	113.90	110.02
6	A	4201	1IX	C12-C13-C14	-2.10	120.34	123.64
6	A	4201	1IX	C31-N26-C24	2.06	123.66	118.09

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
6	A	4201	1IX	C24-C25-C20	-2.03	119.60	121.02

There are no chirality outliers.

All (2) torsion outliers are listed below:

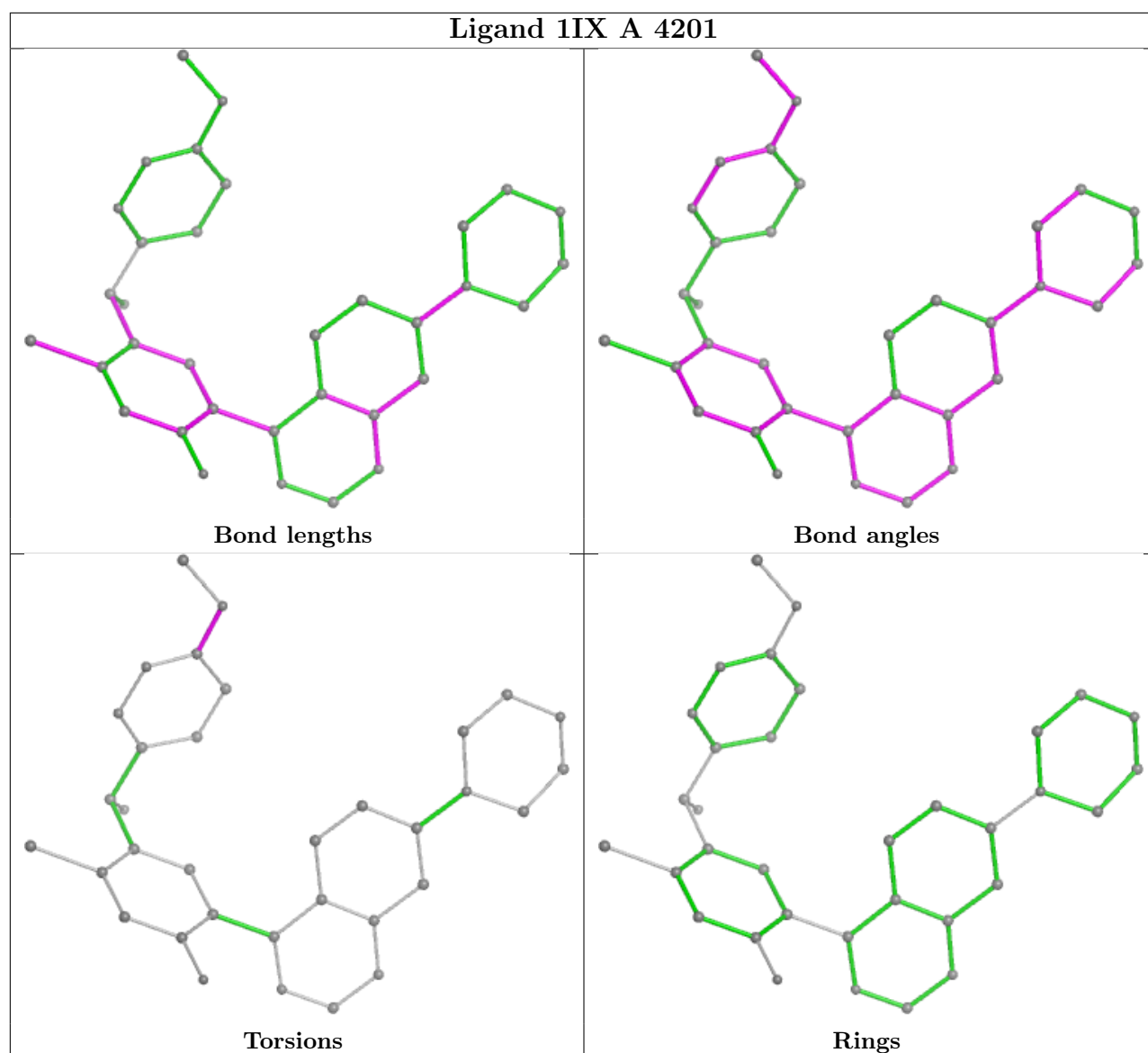
Mol	Chain	Res	Type	Atoms
6	A	4201	1IX	N04-C03-O02-C01
6	A	4201	1IX	C08-C03-O02-C01

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
6	A	4201	1IX	1	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](#)

There are no chain breaks in this entry.

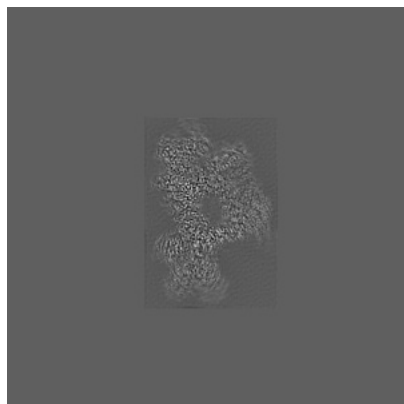
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-14545. These allow visual inspection of the internal detail of the map and identification of artifacts.

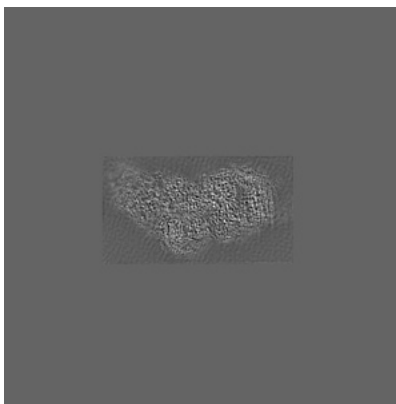
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

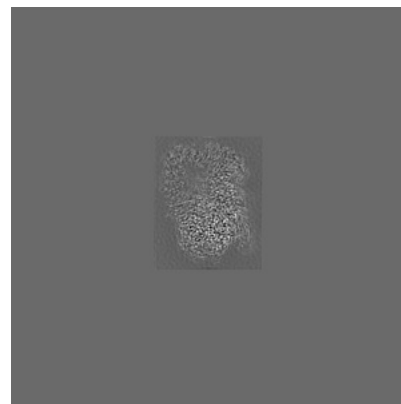
6.1.1 Primary map



X

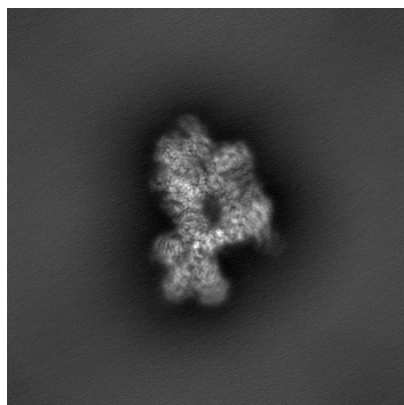


Y

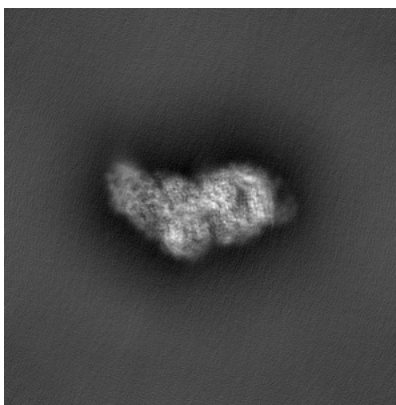


Z

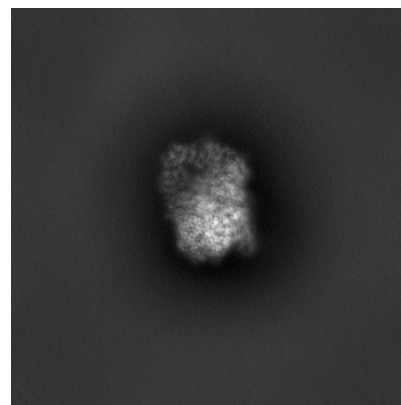
6.1.2 Raw map



X



Y

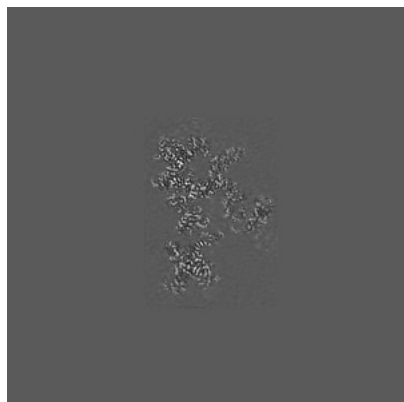


Z

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

6.2 Central slices [i](#)

6.2.1 Primary map



X Index: 175

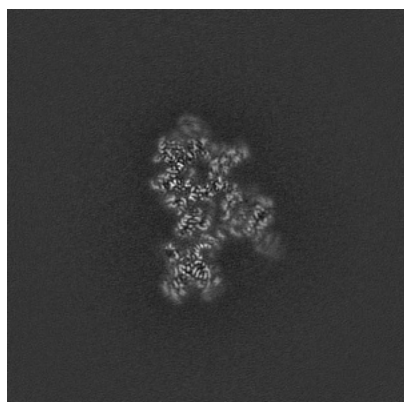


Y Index: 175

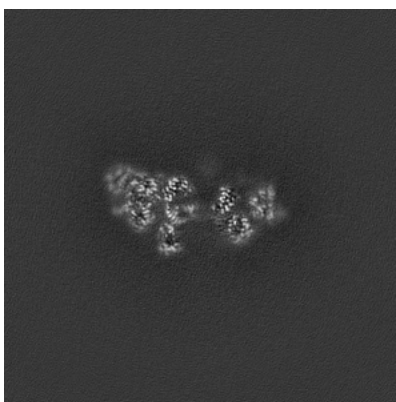


Z Index: 175

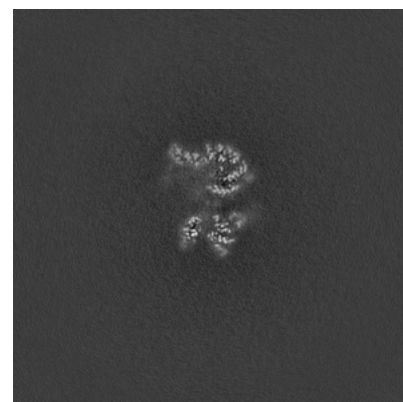
6.2.2 Raw map



X Index: 175



Y Index: 175

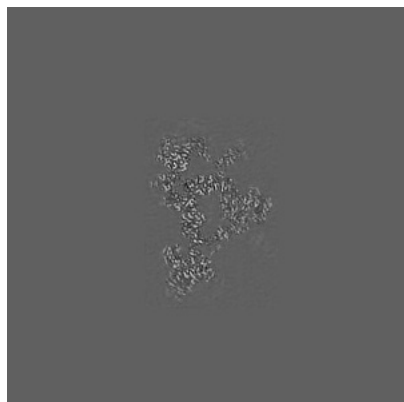


Z Index: 175

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

6.3 Largest variance slices [i](#)

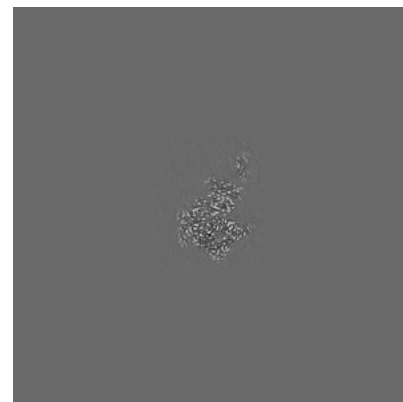
6.3.1 Primary map



X Index: 180

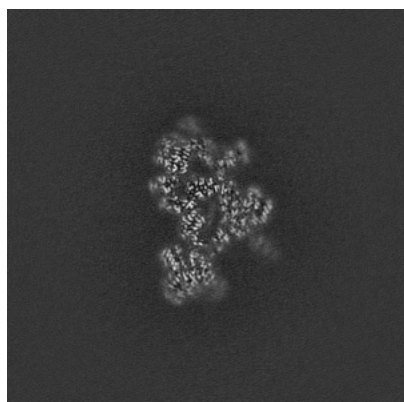


Y Index: 156

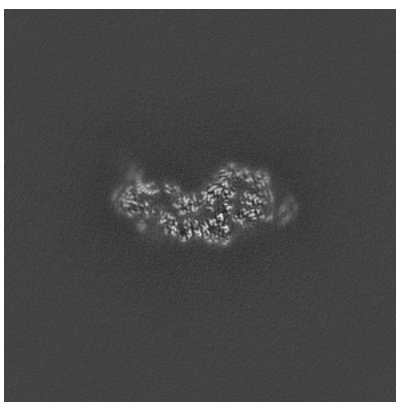


Z Index: 194

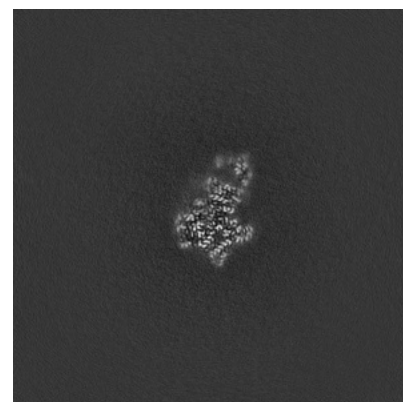
6.3.2 Raw map



X Index: 180



Y Index: 156

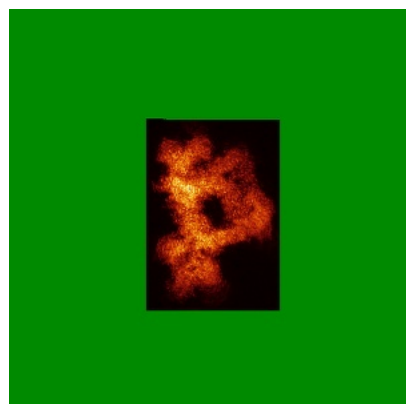


Z Index: 192

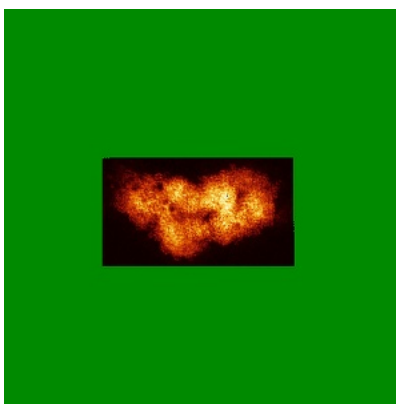
The images above show the largest variance slices of the map in three orthogonal directions.

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

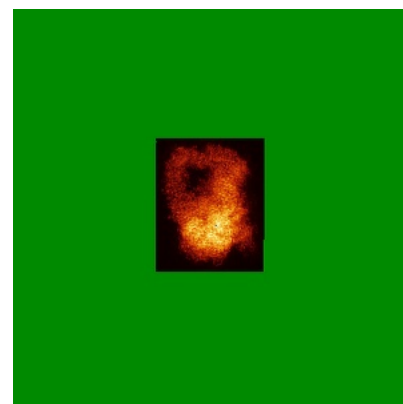
6.4.1 Primary map



X

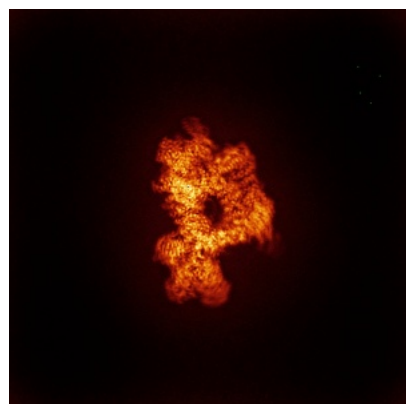


Y

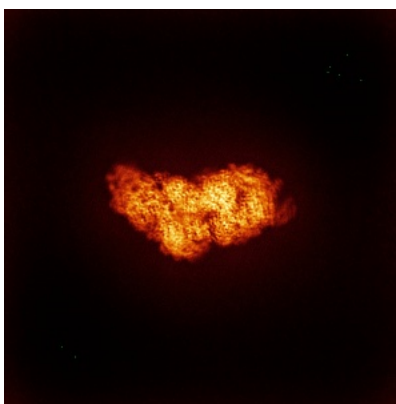


Z

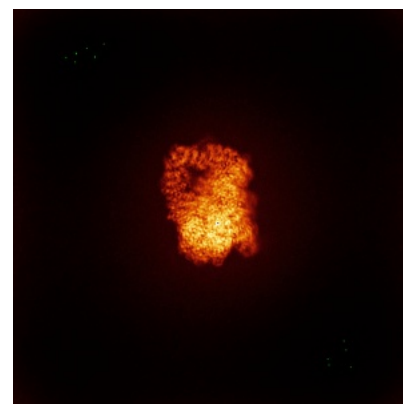
6.4.2 Raw map



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



The images above show the 3D surface view of the map at the recommended contour level 0.1. 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



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.

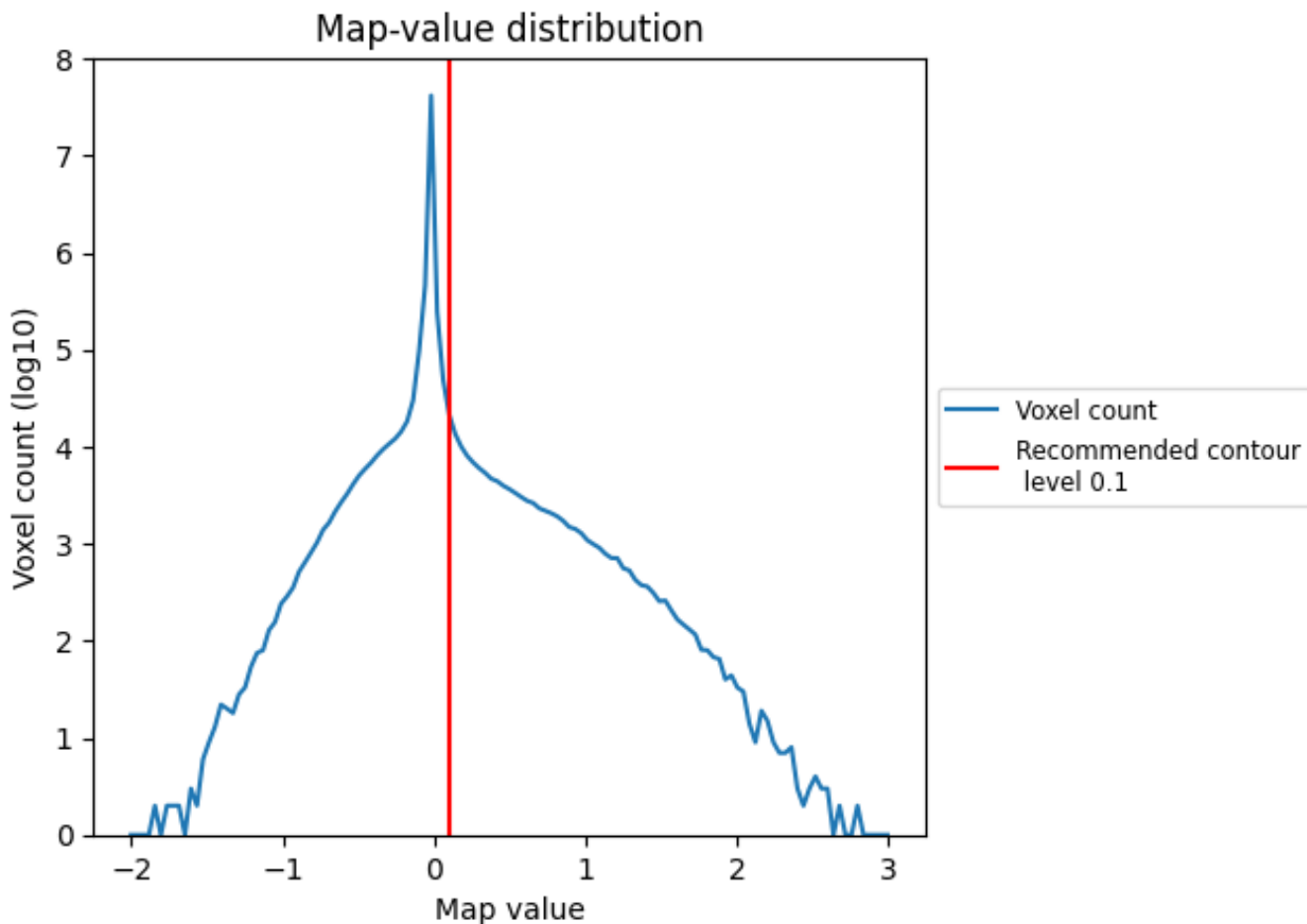
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

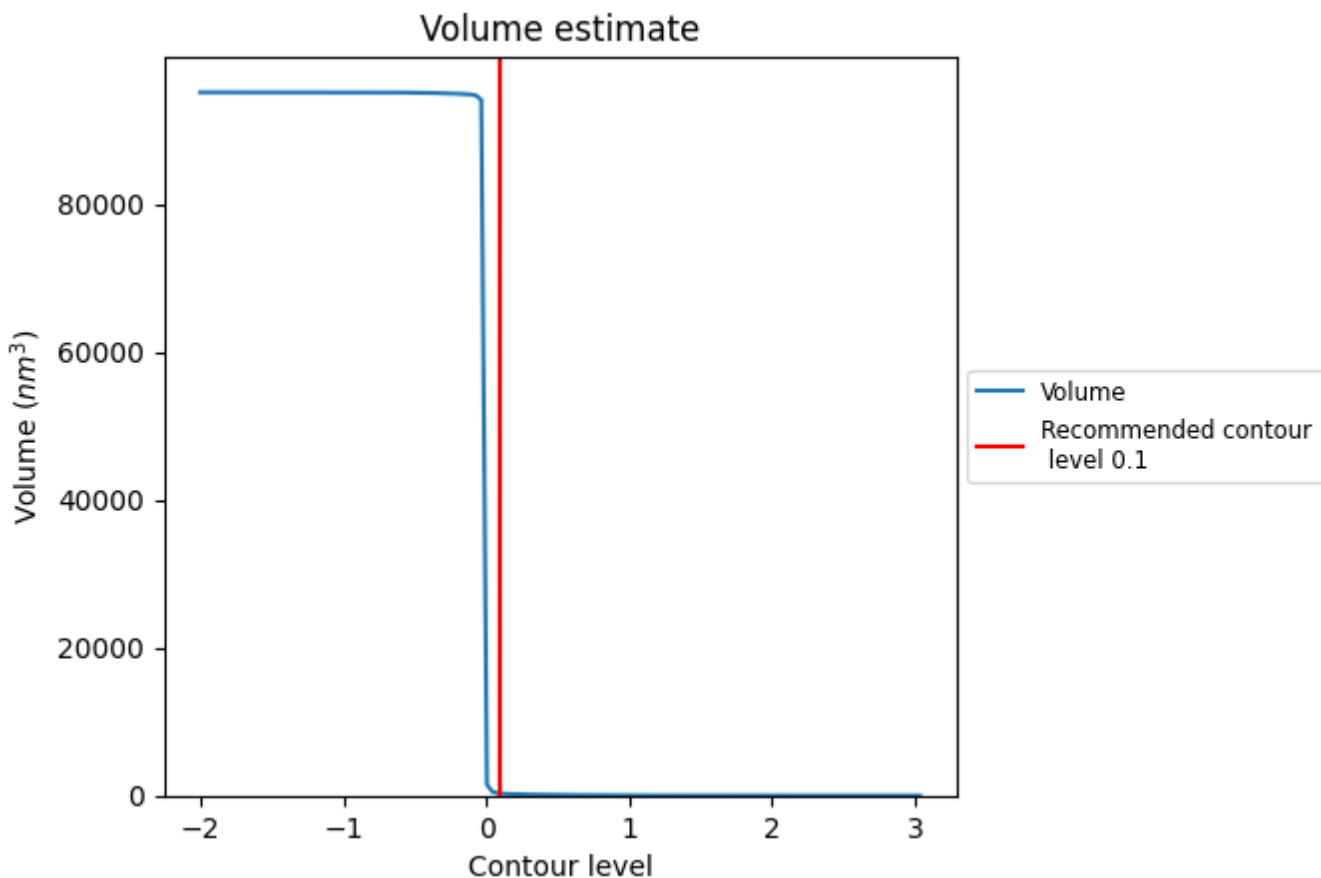
This section contains the results of statistical analysis of the map.

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.

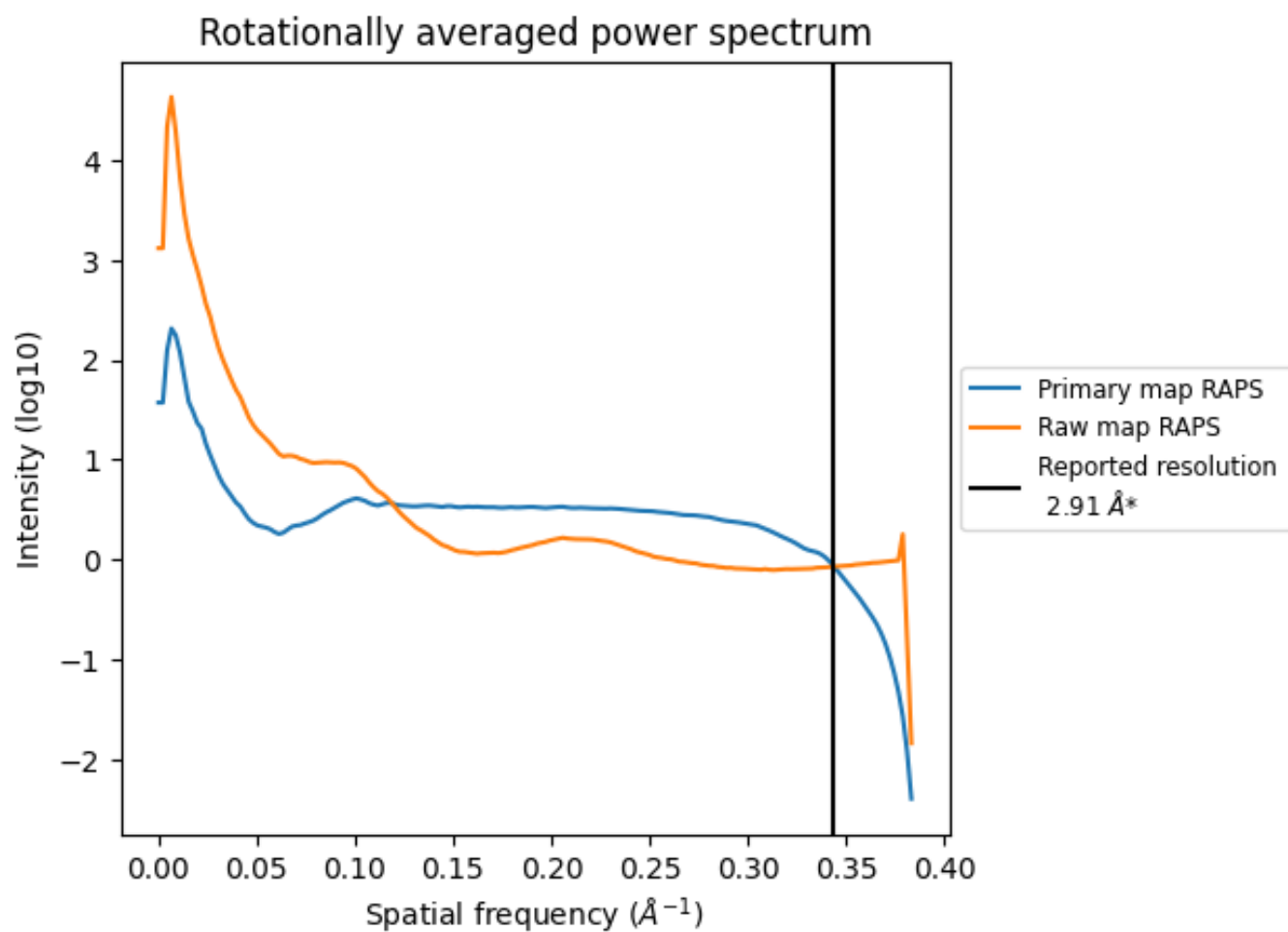
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 280 nm³; this corresponds to an approximate mass of 253 kDa.

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

7.3 Rotationally averaged power spectrum i

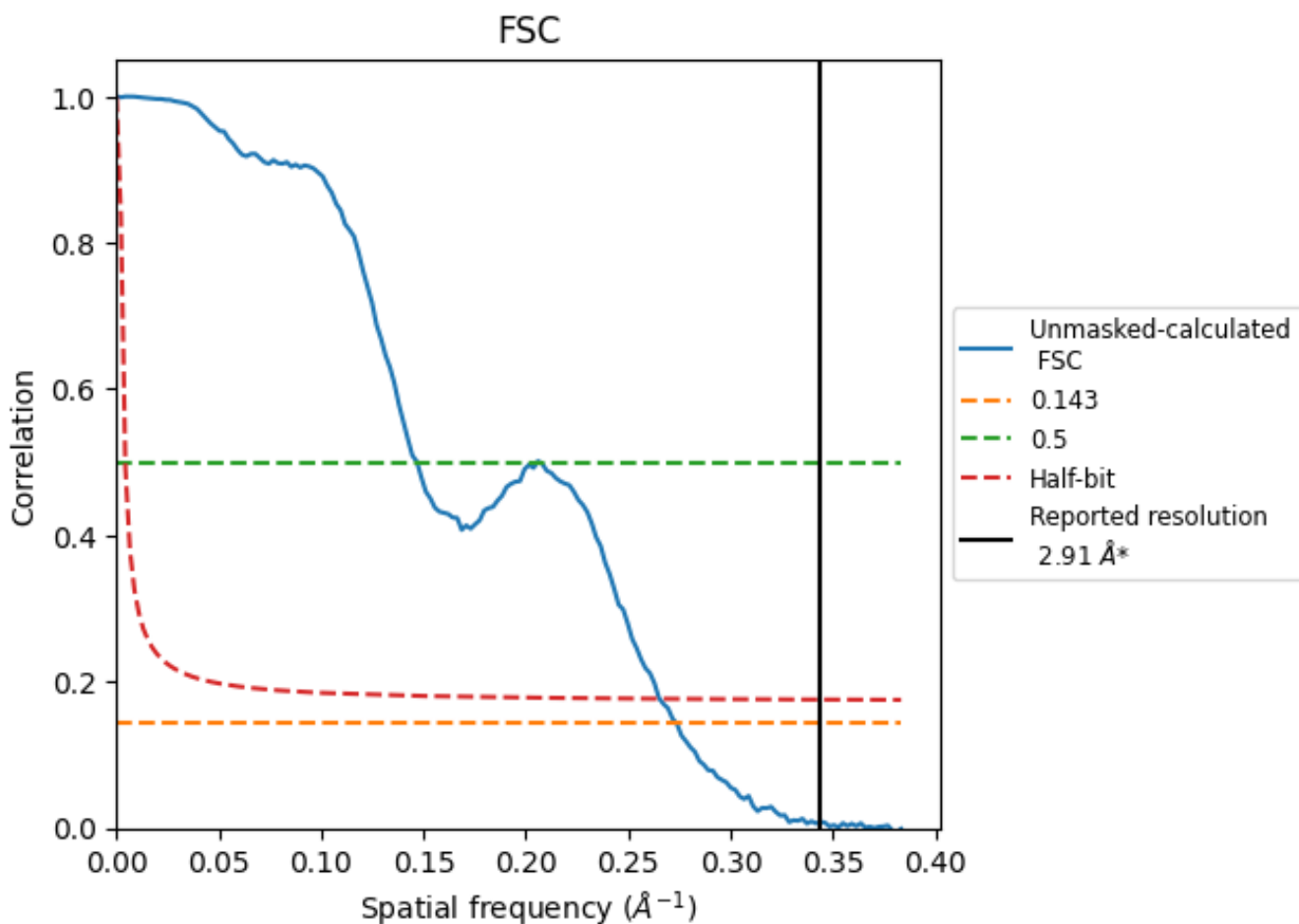


*Reported resolution corresponds to spatial frequency of 0.344 \AA^{-1}

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 0.344 Å⁻¹

8.2 Resolution estimates [i](#)

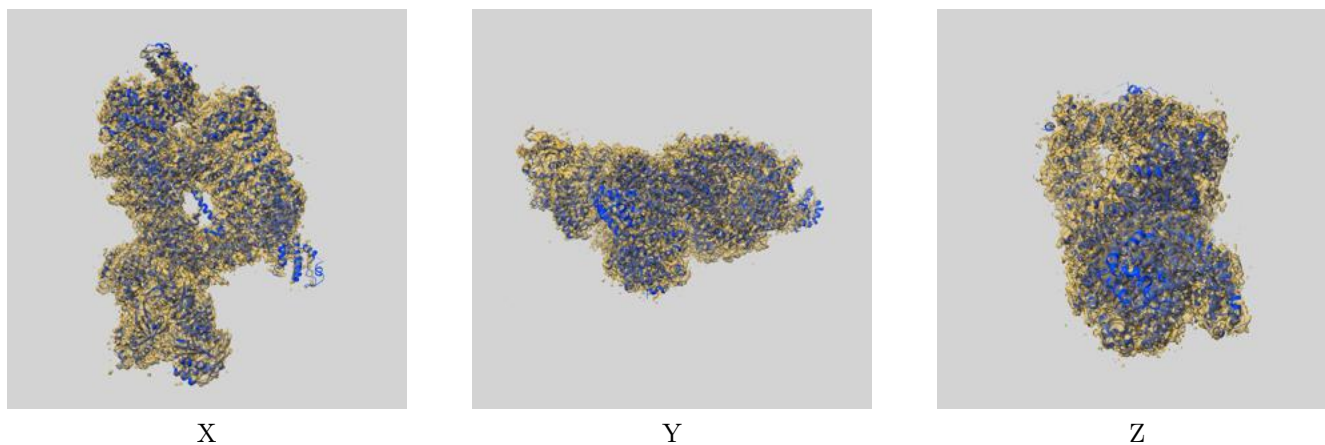
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.91	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	3.66	6.81	3.77

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.66 differs from the reported value 2.91 by more than 10 %

9 Map-model fit [i](#)

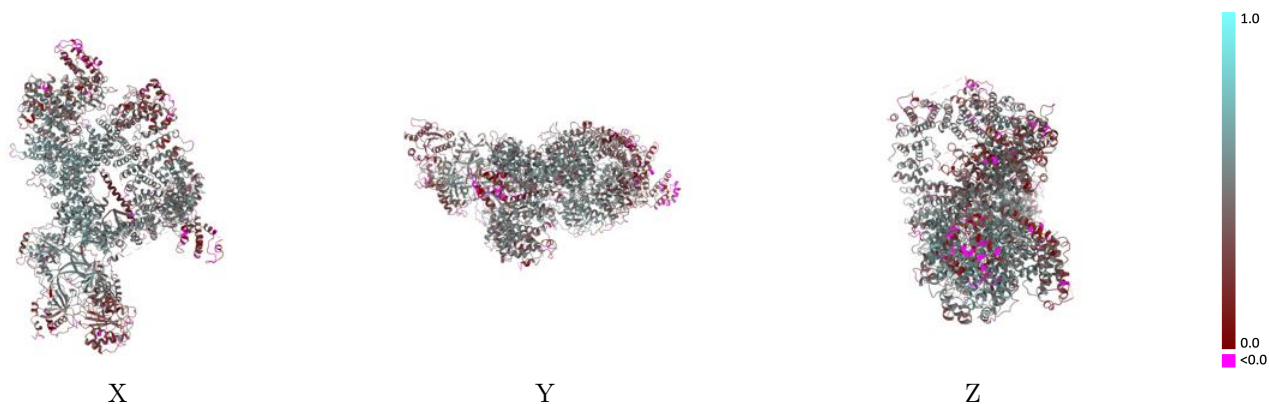
This section contains information regarding the fit between EMDB map EMD-14545 and PDB model 7Z87. Per-residue inclusion information can be found in section 3 on page 5.

9.1 Map-model overlay [i](#)



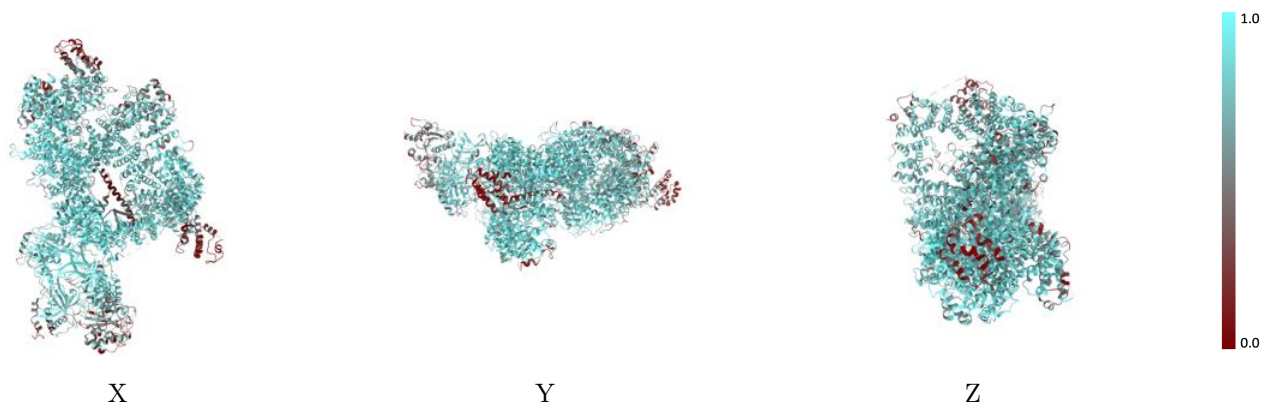
The images above show the 3D surface view of the map at the recommended contour level 0.1 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



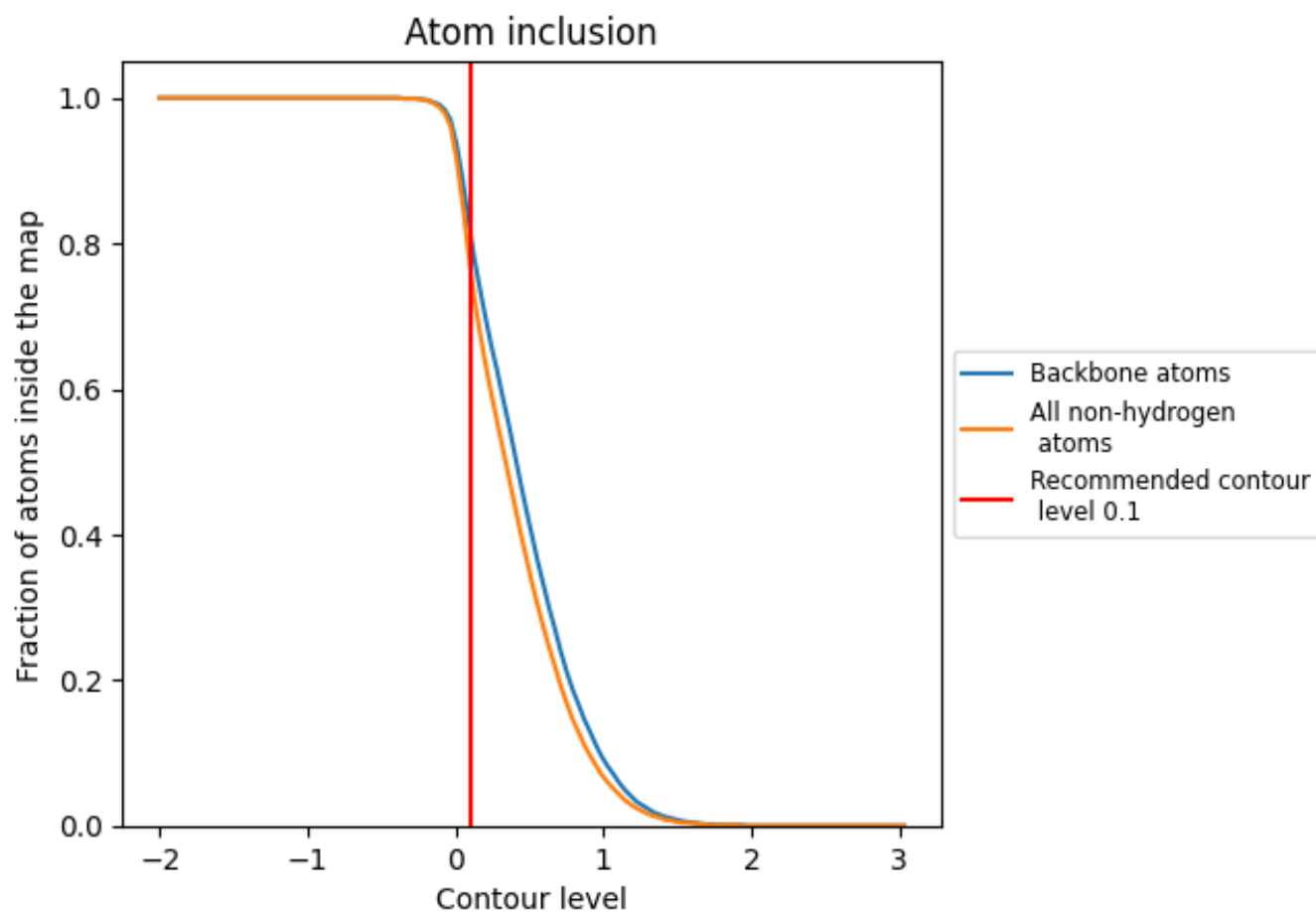
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.1).













9.4 Atom inclusion [i](#)



At the recommended contour level, 82% of all backbone atoms, 76% 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 (0.1) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.7650	 0.4260
A	 0.7980	 0.4450
B	 0.7830	 0.4200
C	 0.5500	 0.3080
D	 0.9070	 0.5050
E	 0.8810	 0.5250

