



Full wwPDB EM Validation Report ⓘ

Jun 29, 2025 – 07:53 am BST

PDB ID : 8OTX / pdb_00008otx
EMDB ID : EMD-17186
Title : Cryo-EM structure of Strongylocentrotus purpuratus sperm-specific Na⁺/H⁺ exchanger SLC9C1 in nanodisc
Authors : Yeo, H.; Mehta, V.; Gulati, A.; Drew, D.
Deposited on : 2023-04-21
Resolution : 3.08 Å(reported)

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

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A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

EMDB validation analysis : 0.0.1.dev118
Mogul : 1.8.4, CSD as541be (2020)
MolProbity : 4-5-2 with Phenix2.0rc1
buster-report : 1.1.7 (2018)
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.44

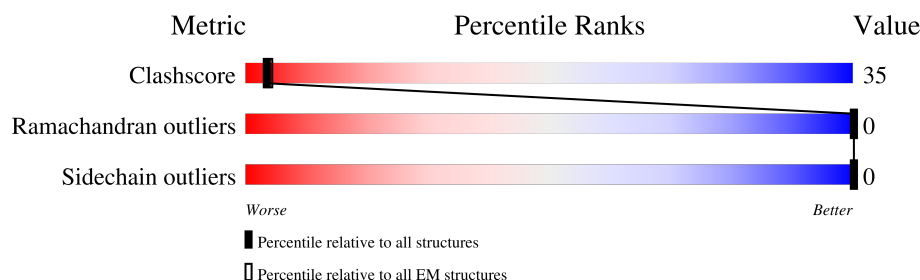
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.08 Å.

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



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

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion $< 40\%$). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	1331	10% 44% 35% 21%
1	B	1331	10% 45% 34% 21%

2 Entry composition

There are 3 unique types of molecules in this entry. The entry contains 16116 atoms, of which 150 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.

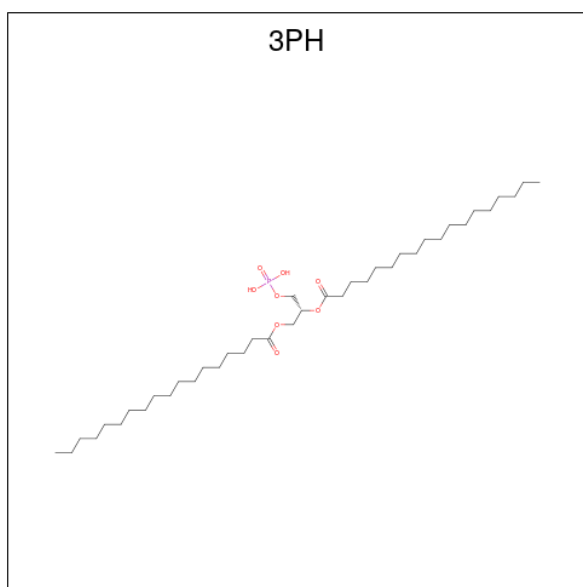
- Molecule 1 is a protein called Sperm-specific sodium proton exchanger.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	B	1054	Total	C	N	O	S	1	0
			7889	5097	1334	1421	37		
1	A	1054	Total	C	N	O	S	1	0
			7889	5097	1334	1421	37		

There are 12 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	1326	GLU	-	expression tag	UNP A3RL54
B	1327	ASN	-	expression tag	UNP A3RL54
B	1328	LEU	-	expression tag	UNP A3RL54
B	1329	TYR	-	expression tag	UNP A3RL54
B	1330	PHE	-	expression tag	UNP A3RL54
B	1331	GLN	-	expression tag	UNP A3RL54
A	1326	GLU	-	expression tag	UNP A3RL54
A	1327	ASN	-	expression tag	UNP A3RL54
A	1328	LEU	-	expression tag	UNP A3RL54
A	1329	TYR	-	expression tag	UNP A3RL54
A	1330	PHE	-	expression tag	UNP A3RL54
A	1331	GLN	-	expression tag	UNP A3RL54

- Molecule 2 is 1,2-DIACYL-GLYCEROL-3-SN-PHOSPHATE (CCD ID: 3PH) (formula: $C_{39}H_{77}O_8P$) (labeled as "Ligand of Interest" by depositor).



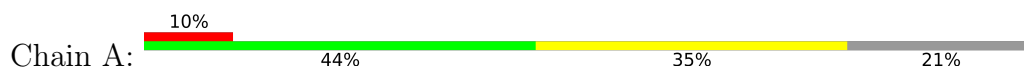
Mol	Chain	Residues	Atoms					AltConf
2	B	1	Total	C	H	O	P	0
			123	39	75	8	1	
2	B	1	Total	C	O	P		0
			45	36	8	1		
2	A	1	Total	C	H	O	P	0
			123	39	75	8	1	
2	A	1	Total	C	O	P		0
			45	36	8	1		

- Molecule 3 is water.

Mol	Chain	Residues	Atoms		AltConf
3	B	1	Total	O	0
			1	1	
3	A	1	Total	O	0
			1	1	

L833	L904	L980	L1048	K1116	V1188	LYS	GLN
S834	L905	H981	T1049	L1119	V1189	GLU	GLY
L836	L906	F982	K1050	L1122	ASN	GLU	GLU
G836	ASN	D983	K1051	E1127	ALA	THR	GLU
Y837	L913	Y984	P1052	E1128	GLY	PRO	GLU
H914	H914	G985	R1053	V1127	TYR	ILE	GLU
D838	E915	E986	P1057	D1128	ASN	PRO	THR
V839	L916	V987	T1059	D1129	GLY	ASN	GLU
G840	L922	V988	T1061	A1130	PRO	THR	GLU
K841	D923	V989	T1062	E1131	ILE	THR	GLY
I844	E924	E990	T1063	S1132	LEU	VAL	GLY
I845	M925	E991	V1063	H1133	ASP	ALA	ALA
E849	E926	G992	Q1064	F1134	GLY	VAL	PRO
V850	K929	D993	Y1066	Q1135	ARG	GLN	ALA
G851	L930	E994	Y1065	S1137	LEU	VAL	VAL
K852	L931	D996	F1067	I1138	ASP	ALA	VAL
I853	E931	D997	I1068	I1139	VAL	GLY	GLY
I854	I932	L998	T1069	D1140	ASP	VAL	ASN
D855	T933	F999	A1070	A1141	SER	SER	LEU
R856	K937	I1000	I1071	T1141	PRO	PRO	ALA
M857	M938	T1001	D1072	E1142	ARG	VAL	VAL
V858	V938	V1002	M1073	E1143	SER	VAL	LEU
D859	K939	L1005	N1074	D1144	LEU	PRO	ILE
N860	R940	L1006	I1075	Y1145	LEU	THR	GLN
K861	L941	Y1009	A1076	I1146	SER	LYS	SER
K862	A944	G1010	D1078	L1147	ILE	THR	ALA
I863	P945	I1011	L1082	T1148	THR	THR	GLY
L864	L946	S1012	L1083	G1150	GLU	PRO	LYS
R865	ALA	PHE	Y1083	Y1153	SER	PRO	LYS
E866	LEU	LEU	P1084	N1154	ASN	SER	GLY
L867	ASP	ASP	S1085	A1155	MET	PHE	SER
K868	HIS	HIS	L1086	R1158	CYS	LEU	GLY
S871	P952	ASN	R1089	E1159	LEU	PRO	THR
G874	E954	ASN	L1090	E1160	LYS	SER	THR
Q877	N955	PRO	Y1091	I1161	HIS	LEU	PRO
V878	L956	PRO	R1092	S1163	ALA	GLY	THR
V879	L957	VAL	V1093	S1166	ALA	LEU	THR
K880	K958	THR	V1094	L1167	GLU	MET	ALA
E881	N959	ALA	A1095	S1168	LEU	SER	THR
L885	V960	GLY	I1096	T1170	ARG	GLN	LYS
Q886	S961	SER	R1097	E1171	ASN	LYS	ALA
R887	W962	GLU	I1098	H1172	SER	VAL	ASP
I892	A964	ASN	P1101	K1173	GLY	ASN	HIS
A893	M967	E1030	M1104	L1174	VAL	GLY	LEU
V894	K968	E1033	E1105	F1175	MET	ALA	THR
S895	L969	D1034	Q1106	T1176	LEU	VAL	THR
V896	V970	Y1035	M1107	S1177	ARG	GLU	ASN
D971	D971	L1036	A1108	Q1177	GLY	GLY	GLY
K972	F972	T1037	F1109	P1178	LYS	SER	THR
T898	K973	V1038	Q1110	P1184	PRO	VAL	GLU
R899	I974	I1038	G1111	R1185	SER	THR	GLU
Q900	A975	V1041	W1112	L1186	GLY	VAL	GLU
A901	R976	I1042	T1113	L1187	ALA	LYS	GLU
I902	A977	G1043	Q1114	F1187	ALA	THR	HIS
R903			E1115		ALA	LYS	ASP

• Molecule 1: Sperm-specific sodium proton exchanger



MET	ASP	L147	S959	L391	E503	R573
LYS	GLY	I156	T260	A394	M511	E574
LYS	HIS	V156	V261	G262	L512	F575
ARG	ASP	H157	Q263	N264	D515	A576
VAL	ASP	T158	Q264	H159	R516	D577
VAL	GLY	F159	V265	L405	F517	M578
LYS	HIS	M160	L266	P406	R518	E580
LEU	D68	R161	V273	S407	A519	R583
ARG	D69	F162	A274	P408	D520	L584
GLU	L70	S163	G275	I469	A521	R585
THR	A72	Q165	P276	L410	I525	M586
GLY	P75	L169	V282	S411	A526	L587
PRO	K76	F172	A283	R412	T527	K588
ALA	V77	G173	K284	I413	A528	E589
VAL	I78	V79	G174	G414	A529	E590
ALA	F80	L174	T286	Y415	C530	I592
VAL	I81	V175	F284	G416	E531	S593
ALA	S82	V176	N295	L417	L532	Y594
VAL	C85	V179	D296	W419	S533	W595
ILE	S91	M186	A297	R420	D534	K596
GLN	L187	L188	E300	V423	F597	F598
SER	L188	F189	T302	I424	E599	E599
THR	L98	N190	L305	M425	L603	L603
GLY	P99	Y191	L310	L436	E606	E606
SER	Y102	A198	T311	V441	A607	A607
LYS	V105	M199	W318	D449	L608	L608
GLY	L106	M205	L319	V450	R609	R609
GLY	I107	L216	E320	K454	L610	L610
THR	L109	D219	V321	L467	L611	L611
THR	I112	L220	G322	A471	V612	V612
PRO	G114	G221	V324	T472	Q613	Q613
GLN	V115	K224	L325	T473	H614	H614
ALA	V116	Q225	L341	L478	A615	A615
THR	L122	T228	S342	L481	E616	E616
HIS	V130	E344	E344	S487	V617	V617
ASP	A131	H132	E346	I488	A618	A618
ASP	H132	M133	V347	P489	ARG	ARG
LEU	D134	P135	L359	M494	LYS	LYS
THR	H136	I242	A241	A495	VAL	VAL
THR	V243	F365	V243	G496	ALA	ALA
ASN	L138	V368	I244	A497	MET	MET
GLY	I141	Q255	P255	V498	PRO	PRO
THR	F142	Q256	T258	R499	ASN	ASN
GLU	L143	V372	H502	R500	GLU	GLU
HIS	P144			I501	PRO	PRO
ASP				S502	SER	SER
				Q636	PRO	PRO

GLY	VAL	K1173	M104	E1033	K968	V894	V824	H762	Q702	I637
GLU	MET	L1174	E105	D1034	L969	S895	V825	V763	D703	K638
ALA	LEU	T1175	Q1106	Y1035	I970	K896	N826	N764	K704	G839
VAL	SER	F1176	M107	L1036	F971	K897	G827	K765	MET	I640
GLU	ARG	Y1177	A1108	T1037	F972	T898	K828	F766	ALA	Y641
GLU	LYS	Y1178	F1109	V1038	K974	R899	I829	D767	SER	W643
SER	SER		Q1110			Q900	N830	F766	VAL	L644
PRO	SER	E1183	G1111	V1041	A975	A901	N831	A768	SER	K645
VAL	GLY	P1184	G1112	I1042	A976	I902	Q832	THR	THR	R646
LYS	ALA	R1185	T1113	G1043	A977	R903	L833	F769	MET	K647
THR	ALA	L1186	Q1114			T904	S834	I770	ALA	L648
LYS	ALA	F1187		L1048	L980	I905	L835	I771	ALA	E649
GLN	LYS	V1188	L1119	T1049	R981	L906	G836	V772	PRO	D850
GLY	GLU	V1189		K1050	F982	I913	Y837	V773	GLY	L651
GLU	GLU		E1122	P1051	D983	H914	V839	A774	SER	I852
THR	ASP	ASN		R1053	G985	E915	K941	L775	VAL	S953
PRO	CYS	ALA	V1127	T1056	E986	L916		V776	SER	E854
GLU	ILE	TYR	D1128	V1057	V987		I844	D777	SER	K655
THR	PRO	ASN	L1129	T1058	I988	L921	I845	I778	GLU	K656
GLU	ASN	GLY	A1130		V989	L922		I779	PRO	I857
GLY	THR	ILE	E1131	T1061	R990	E924	E849	I780		A658
ALA	SER	ASP	S1132	T1062	E991	M925	G851	I780		A659
VAL	ASP	LEU	F1134	V1063	G992	E926	K852	I780		I660
ALA	VAL	ASP	F1136	Q1064	D993		I853	I780		P861
PRO	GLY	GLY	F1136	V1065	E994	K929	I854	I780		M662
ARG	GLN	ARG	T1137	Y1066	S995	L932	R855	I780		P863
VAL	ALA	LEU	I1138	F1067	D996	T933	M857	I780		K664
ASN	ALA	ASP	D1139	T1068	G997		V858	I780		Y665
VAL	GLY	VAL	A1140	L1069	L998	K937	N860	I780		K666
GLU	VAL	ASP	T1141	A1070	F999	M938	K861	I780		L667
ASN	SER	SER	E1142	E1071	I1001	R940	I863	I780		G668
LEU	PRO	LYS	L1143	D1072	V1002	L941	L864	I780		K669
TYR	SER	ARG	D1144	M1073		A944	R865	I780		L670
PHE	THR	SER	V1145	N1074	L1005	P945	E866	I780		M671
GLN	THR	ILE	T1146	I1075		I948	L867	I780		Y672
	LYS	ILE	L1147	A1076	Y1009	P949	K868	I780		K673
	THR	ILE	T1148	I1077	G1010	P950	S871	I780		I674
	PRO	GLY	M1149	D1078	K1011	P951	G874	I780		C675
	LYS	LYS	G1150		S1012	P952	R875	I780		C675
	PRO	LYS	Y1153	L1082	ALA	E954	Q877	I780		H676
	PRO	LYS	N1154	Y1083	PHE	N955	V878	I780		H677
	LYS	SER	A1155	P1084	LEU	L956	V879	I780		M678
	SER	ASN	H1156	S1085	ASP	K957	K880	I780		E881
	SER	MET	T1157	L1086	HIS	N959	E881	I780		M685
	LEU	CYS	R1158		ASN	S961	L885	I780		I686
	PRO	LEU	E1159	R1089	PRO	Q886	R887	I780		A687
	SER	LYS	E1160	V1091	PRO	L963	I892	I780		I688
	LYS	HIS	I1161	R1092	VAL	A964	A893	I780		V689
	ALA	ALA	S1163	V1093	THR			I780		L690
	GLY	GLU		A1094	ALA			I780		M691
	LEU	GLU		V1095	GLY			I780		I692
	SER	LEU		I1096	SER			I780		V693
	MET	LEU		T1097	GLU			I780		P694
	SER	ARG		I1167	GLU			I780		E598
	LYS	GLN		S1168	ASN			I780		F699
	GLY	LYS		T1169	GLU			I780		V700
	ARG	ASN		V1170	ASN			I780		V701
	VAL	SER		H1172	E1030			I780		
	ASN	LYS						I780		

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	1737146	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 ($e^-/\text{\AA}^2$)	58.45	Depositor
Minimum defocus (nm)	600	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	0.655	Depositor
Minimum map value	-0.333	Depositor
Average map value	-0.001	Depositor
Map value standard deviation	0.016	Depositor
Recommended contour level	0.11	Depositor
Map size (Å)	365.47998, 365.47998, 365.47998	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.9136999, 0.9136999, 0.9136999	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: 3PH

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	0.14	0/8033	0.29	2/10927 (0.0%)
1	B	0.10	0/8033	0.24	0/10927
All	All	0.12	0/16066	0.27	2/21854 (0.0%)

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	1184	PRO	CA-N-CD	-14.79	91.29	112.00
1	A	1184	PRO	N-CD-CG	-6.65	93.22	103.20

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	7889	0	7744	584	0
1	B	7889	0	7744	590	0
2	A	93	75	141	11	0
2	B	93	75	141	9	0
3	A	1	0	0	0	0
3	B	1	0	0	0	0
All	All	15966	150	15770	1117	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 35.

All (1117) 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:1184:PRO:HD2	1:A:1184:PRO:O	1.54	1.06
1:B:1138:ILE:HA	1:B:1142:LEU:HD21	1.37	1.06
1:A:1142:LEU:HA	1:A:1190:ARG:HA	1.38	1.05
1:A:1138:ILE:HA	1:A:1142:LEU:HD21	1.39	1.03
1:B:1142:LEU:HA	1:B:1190:ARG:HA	1.37	1.02
1:A:819:PRO:HA	1:A:822:ILE:HD12	1.42	1.00
1:B:1147:LEU:HA	1:B:1186:LEU:HD13	1.46	0.98
1:A:1147:LEU:HA	1:A:1186:LEU:HD13	1.46	0.98
1:A:579:MET:HE3	1:A:579:MET:HA	1.46	0.97
1:B:819:PRO:HA	1:B:822:ILE:HD12	1.44	0.96
1:B:530:CYS:HA	1:A:937:LYS:HE2	1.50	0.93
1:A:642:PRO:HB3	1:A:646:ARG:HH21	1.31	0.93
1:A:1183:GLU:OE2	1:A:1184:PRO:HD3	1.68	0.93
1:A:411:SER:HA	1:A:416:GLY:HA2	1.53	0.91
1:B:411:SER:HA	1:B:416:GLY:HA2	1.53	0.90
1:B:937:LYS:HE2	1:A:530:CYS:HA	1.53	0.90
1:B:587:LEU:HD13	1:B:619:ALA:HB2	1.53	0.90
1:A:853:ILE:HD11	1:A:1107:MET:HE1	1.51	0.89
1:A:898:THR:O	1:A:902:ILE:HG13	1.72	0.88
1:B:628:VAL:HG22	1:B:632:LYS:HE3	1.57	0.87
1:A:587:LEU:HD13	1:A:619:ALA:HB2	1.53	0.87
1:B:852:LYS:HE3	1:B:1105:GLU:HG2	1.57	0.87
1:B:853:ILE:HD11	1:B:1107:MET:HE1	1.57	0.86
1:A:615:ALA:HA	1:A:626:ILE:HD13	1.58	0.86
1:B:924:GLU:OE1	1:B:924:GLU:N	2.08	0.85
1:B:898:THR:O	1:B:902:ILE:HG13	1.75	0.85
1:B:407:SER:HA	1:B:410:LEU:HD11	1.56	0.85
1:A:852:LYS:HE3	1:A:1105:GLU:HG2	1.57	0.85
1:B:615:ALA:HA	1:B:626:ILE:HD13	1.58	0.84
1:B:530:CYS:HB3	1:A:937:LYS:HD3	1.58	0.84
1:A:407:SER:HA	1:A:410:LEU:HD11	1.57	0.84
1:A:628:VAL:HG22	1:A:632:LYS:HE3	1.58	0.84
1:B:937:LYS:HD3	1:A:530:CYS:HB3	1.58	0.83
1:B:951:PRO:HB2	1:B:955:ASN:HD21	1.42	0.83
1:A:583:ARG:O	1:A:587:LEU:HG	1.79	0.83
1:A:853:ILE:HG22	1:A:857:MET:HE2	1.61	0.83
1:A:951:PRO:HB2	1:A:955:ASN:HD21	1.42	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:588:LYS:O	1:A:592:ILE:HG13	1.78	0.83
1:B:863:ILE:O	1:B:867:LEU:HD12	1.79	0.82
1:A:627:LEU:HA	1:A:632:LYS:HD2	1.61	0.82
1:B:583:ARG:O	1:B:587:LEU:HG	1.80	0.81
1:A:952:PRO:O	1:A:955:ASN:ND2	2.13	0.81
1:B:853:ILE:HG22	1:B:857:MET:HE2	1.61	0.81
1:B:224:LYS:H	1:B:224:LYS:HD2	1.46	0.81
1:B:952:PRO:O	1:B:955:ASN:ND2	2.14	0.81
1:A:1135:GLN:HE22	1:A:1155:ALA:HB2	1.46	0.81
1:B:515:ASP:OD1	1:B:516:ARG:N	2.14	0.81
1:B:588:LYS:O	1:B:592:ILE:HG13	1.79	0.81
1:B:586:MET:HE3	1:B:867:LEU:HD23	1.62	0.80
1:A:515:ASP:OD1	1:A:516:ARG:N	2.15	0.80
1:A:618:ALA:HB3	1:A:626:ILE:HG12	1.63	0.80
1:A:863:ILE:O	1:A:867:LEU:HD12	1.83	0.79
1:B:573:ARG:O	1:B:573:ARG:NH1	2.16	0.79
1:A:1071:GLU:N	1:A:1071:GLU:OE1	2.16	0.79
1:A:853:ILE:HG22	1:A:857:MET:CE	2.12	0.79
1:B:1153:TYR:HE1	1:B:1160:GLU:HA	1.48	0.79
1:B:628:VAL:H	1:B:632:LYS:HZ2	1.30	0.79
1:A:933:THR:O	1:A:937:LYS:HG3	1.83	0.79
1:B:627:LEU:HA	1:B:632:LYS:HD2	1.65	0.78
1:B:1162:ARG:O	1:B:1162:ARG:NH1	2.15	0.78
1:A:621:GLU:OE1	1:A:624:GLN:HB3	1.83	0.78
1:A:628:VAL:H	1:A:632:LYS:HZ2	1.31	0.78
1:B:837:TYR:OH	1:B:886:GLN:HB2	1.83	0.78
1:A:219:ASP:OD1	1:A:220:LEU:HD12	1.82	0.78
1:B:618:ALA:HB3	1:B:626:ILE:HG12	1.64	0.78
1:B:621:GLU:OE1	1:B:624:GLN:HB3	1.83	0.78
1:B:68:ASP:HB2	1:B:72:ALA:CB	2.14	0.78
1:B:219:ASP:OD1	1:B:220:LEU:HD12	1.83	0.78
1:A:1183:GLU:OE1	1:A:1185:ARG:NH1	2.17	0.78
1:B:179:VAL:HG22	1:B:199:MET:HE1	1.66	0.78
1:B:1071:GLU:OE1	1:B:1071:GLU:N	2.15	0.78
1:A:573:ARG:O	1:A:573:ARG:NH1	2.16	0.77
1:B:525:ILE:CD1	1:A:902:ILE:HG12	2.13	0.77
1:A:77:VAL:O	1:A:81:ILE:HG13	1.85	0.77
1:B:1011:LYS:HD3	1:B:1030:GLU:HG3	1.65	0.77
1:A:1153:TYR:HE1	1:A:1160:GLU:HA	1.50	0.77
1:B:531:GLU:N	1:B:531:GLU:OE1	2.17	0.77
1:B:632:LYS:HA	1:B:635:TRP:CH2	2.20	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1092:ARG:NH2	1:B:1122:GLU:OE2	2.17	0.77
1:B:933:THR:O	1:B:937:LYS:HG3	1.84	0.77
1:B:1184:PRO:O	1:B:1185:ARG:HD2	1.85	0.77
1:A:1092:ARG:NH2	1:A:1122:GLU:OE2	2.17	0.77
1:B:821:LEU:O	1:B:824:VAL:HG12	1.86	0.76
1:A:319:LEU:HD12	1:A:319:LEU:O	1.86	0.76
1:A:821:LEU:O	1:A:824:VAL:HG12	1.85	0.75
1:A:586:MET:HE3	1:A:867:LEU:HD23	1.69	0.75
1:B:224:LYS:HD2	1:B:224:LYS:N	2.01	0.74
1:B:77:VAL:O	1:B:81:ILE:HG13	1.88	0.74
1:B:1172:HIS:ND1	1:A:1173:LYS:HE3	2.03	0.74
1:B:1139:ASP:OD1	1:B:1141:THR:OG1	2.06	0.74
1:A:525:ILE:O	1:A:529:ALA:N	2.20	0.74
1:A:583:ARG:HH21	1:A:624:GLN:H	1.35	0.74
1:B:645:LYS:O	1:B:648:LEU:HG	1.88	0.73
1:A:531:GLU:OE1	1:A:531:GLU:N	2.18	0.73
1:A:579:MET:HE1	1:A:863:ILE:HG23	1.70	0.73
1:A:645:LYS:O	1:A:648:LEU:HG	1.88	0.73
1:A:833:LEU:HD13	1:A:885:LEU:HD21	1.70	0.73
1:A:967:MET:HE3	1:A:967:MET:O	1.88	0.73
1:B:586:MET:CE	1:B:867:LEU:HD23	2.17	0.73
1:B:636:GLN:N	1:B:636:GLN:OE1	2.21	0.73
1:A:987:VAL:HG22	1:A:1058:THR:HG22	1.69	0.73
1:B:853:ILE:HG22	1:B:857:MET:CE	2.18	0.73
1:B:849:GLU:OE1	1:B:849:GLU:N	2.22	0.72
1:B:77:VAL:HG13	1:B:130:VAL:CG2	2.19	0.72
1:B:987:VAL:HG22	1:B:1058:THR:HG22	1.68	0.72
1:A:632:LYS:HA	1:A:635:TRP:CZ2	2.24	0.72
1:A:530:CYS:O	1:A:532:ILE:HG12	1.89	0.72
1:B:282:VAL:O	1:B:286:THR:HG22	1.90	0.72
1:B:530:CYS:O	1:B:532:ILE:HG12	1.88	0.72
1:A:179:VAL:HG22	1:A:199:MET:HE1	1.70	0.72
1:B:587:LEU:HB2	1:B:588:LYS:HZ3	1.54	0.72
1:B:1155:ALA:HB2	1:B:1173:LYS:HB3	1.70	0.72
1:A:587:LEU:HB2	1:A:588:LYS:HZ3	1.54	0.72
1:B:1162:ARG:H	1:B:1162:ARG:HD3	1.52	0.71
1:A:282:VAL:O	1:A:286:THR:HG22	1.90	0.71
1:B:583:ARG:HH21	1:B:624:GLN:H	1.35	0.71
1:A:853:ILE:CD1	1:A:1107:MET:HE1	2.20	0.71
1:A:1074:ASN:HA	1:A:1077:ILE:HG12	1.72	0.71
1:B:530:CYS:SG	1:A:906:LEU:HD21	2.31	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1145:VAL:HB	1:B:1167:ILE:HD11	1.72	0.71
1:B:625:PHE:CE2	1:B:867:LEU:HA	2.25	0.71
1:B:906:LEU:HD21	1:A:530:CYS:SG	2.30	0.71
1:A:625:PHE:CE2	1:A:867:LEU:HA	2.24	0.71
1:B:219:ASP:OD1	1:B:220:LEU:N	2.24	0.71
1:B:645:LYS:HA	1:B:648:LEU:CD2	2.21	0.71
1:A:68:ASP:HB2	1:A:72:ALA:HB3	1.73	0.70
1:A:494:MET:O	1:A:498:VAL:HG13	1.90	0.70
1:B:960:VAL:HB	1:B:963:LEU:CD2	2.21	0.70
1:A:586:MET:HE2	1:A:867:LEU:HB3	1.73	0.70
1:B:1131:GLU:OE1	1:B:1132:SER:N	2.24	0.70
1:B:494:MET:O	1:B:498:VAL:HG13	1.91	0.70
1:B:841:LYS:O	1:B:845:ILE:HG12	1.92	0.69
1:B:1074:ASN:HA	1:B:1077:ILE:HG12	1.72	0.69
1:A:636:GLN:OE1	1:A:636:GLN:N	2.22	0.69
1:A:645:LYS:HA	1:A:648:LEU:CD2	2.22	0.69
1:A:951:PRO:HB2	1:A:955:ASN:ND2	2.06	0.69
1:B:1098:ILE:O	1:B:1101:PRO:HD2	1.92	0.69
1:B:318:TRP:O	1:B:319:LEU:HG	1.92	0.69
1:A:487:SER:OG	1:A:489:PRO:HD2	1.92	0.69
1:A:579:MET:HA	1:A:579:MET:CE	2.18	0.69
1:A:960:VAL:HB	1:A:963:LEU:CD2	2.22	0.69
1:B:579:MET:HE2	1:B:579:MET:N	2.07	0.69
1:B:590:GLU:OE1	1:B:594:TYR:OH	2.11	0.69
1:B:951:PRO:HB2	1:B:955:ASN:ND2	2.07	0.69
1:B:982:PHE:HB2	1:B:1063:VAL:HG12	1.74	0.69
1:A:650:ASP:HB3	1:A:822:ILE:HG12	1.74	0.69
1:A:982:PHE:HB2	1:A:1063:VAL:HG12	1.73	0.69
1:A:1098:ILE:O	1:A:1101:PRO:HD2	1.92	0.69
1:B:650:ASP:HB3	1:B:822:ILE:HG12	1.75	0.69
1:A:224:LYS:HD2	1:A:224:LYS:N	2.07	0.69
1:A:1147:LEU:HA	1:A:1186:LEU:CD1	2.23	0.69
1:A:590:GLU:OE1	1:A:594:TYR:OH	2.10	0.68
1:B:962:TRP:CH2	1:B:1073:MET:HE1	2.28	0.68
1:B:853:ILE:CD1	1:B:1107:MET:HE1	2.22	0.68
1:B:858:VAL:HG12	1:B:860:ASN:H	1.59	0.68
1:B:260:THR:HG23	1:B:263:GLN:OE1	1.93	0.68
1:A:579:MET:HE1	1:A:863:ILE:CG2	2.24	0.68
1:B:172:PHE:O	1:B:176:VAL:HG23	1.94	0.68
1:B:967:MET:HE3	1:B:967:MET:O	1.94	0.68
1:A:962:TRP:CH2	1:A:1073:MET:HE1	2.28	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:319:LEU:HD12	1:B:319:LEU:O	1.94	0.68
1:B:627:LEU:HD23	1:B:633:LYS:NZ	2.09	0.68
1:A:419:TRP:O	1:A:423:VAL:HG23	1.94	0.68
1:A:877:GLN:O	1:A:881:GLU:HG2	1.94	0.68
1:A:647:LYS:NZ	1:A:822:ILE:O	2.27	0.67
1:A:627:LEU:HD23	1:A:633:LYS:NZ	2.10	0.67
1:B:487:SER:OG	1:B:489:PRO:HD2	1.93	0.67
1:B:647:LYS:NZ	1:B:822:ILE:O	2.27	0.67
1:B:419:TRP:O	1:B:423:VAL:HG23	1.94	0.67
1:A:219:ASP:OD1	1:A:220:LEU:N	2.27	0.67
1:A:633:LYS:HA	1:A:636:GLN:NE2	2.09	0.67
2:B:1402:3PH:H2	2:B:1402:3PH:H322	1.75	0.67
1:B:1132:SER:CB	1:B:1178:TYR:HB2	2.24	0.67
1:A:262:GLY:O	1:A:265:VAL:HG12	1.94	0.67
1:B:902:ILE:CD1	1:A:525:ILE:HD11	2.25	0.67
1:A:172:PHE:O	1:A:176:VAL:HG23	1.94	0.67
1:A:1107:MET:HG2	1:A:1112:TRP:HD1	1.60	0.67
1:A:1132:SER:O	1:A:1176:PHE:HB3	1.94	0.67
1:B:877:GLN:O	1:B:881:GLU:HG2	1.95	0.66
1:B:1131:GLU:HB3	1:B:1134:PHE:HE1	1.59	0.66
1:B:574:GLU:HA	1:B:577:ASP:OD2	1.95	0.66
1:B:948:ILE:HG23	1:B:949:PRO:HD2	1.78	0.66
1:A:574:GLU:HA	1:A:577:ASP:OD2	1.95	0.66
1:A:586:MET:CE	1:A:867:LEU:HD23	2.26	0.66
1:A:1002:VAL:HG23	1:A:1064:GLN:HB2	1.77	0.66
1:B:633:LYS:HA	1:B:636:GLN:NE2	2.11	0.66
1:A:260:THR:N	1:A:263:GLN:OE1	2.26	0.66
1:B:262:GLY:O	1:B:265:VAL:HG12	1.95	0.66
1:A:112:ILE:O	1:A:115:VAL:HG12	1.96	0.66
1:B:584:LEU:O	1:B:588:LYS:HG2	1.96	0.66
1:A:1132:SER:CB	1:A:1178:TYR:HB2	2.25	0.66
1:A:1131:GLU:HB3	1:A:1134:PHE:HE2	1.61	0.66
1:B:854:ILE:HD12	1:B:867:LEU:HD22	1.78	0.66
2:A:1402:3PH:H2	2:A:1402:3PH:H322	1.75	0.66
1:B:112:ILE:O	1:B:115:VAL:HG12	1.95	0.66
1:A:221:GLY:HA2	1:A:224:LYS:NZ	2.11	0.66
1:B:645:LYS:HA	1:B:648:LEU:HD23	1.78	0.66
1:B:1002:VAL:HG23	1:B:1064:GLN:HB2	1.78	0.66
1:A:841:LYS:O	1:A:845:ILE:HG12	1.96	0.65
1:A:989:VAL:HG11	1:A:1053:ARG:HD2	1.78	0.65
1:B:1173:LYS:HE2	1:A:1172:HIS:CD2	2.32	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:641:TYR:CD1	1:B:642:PRO:HD2	2.32	0.65
1:B:897:LYS:NZ	1:A:520:ASP:OD2	2.27	0.65
1:A:412:ARG:HG2	1:A:413:ILE:HD13	1.78	0.65
1:B:968:LYS:NZ	1:B:972:PHE:HB2	2.12	0.65
1:A:595:TRP:O	1:A:599:GLU:HG2	1.96	0.65
1:B:530:CYS:CB	1:A:937:LYS:HD3	2.25	0.65
1:A:584:LEU:O	1:A:588:LYS:HG2	1.96	0.65
1:A:1154:ASN:HB2	1:A:1171:VAL:HG13	1.78	0.65
1:A:1145:VAL:HB	1:A:1167:ILE:HD11	1.78	0.65
1:B:613:GLN:HG2	1:B:616:GLU:OE2	1.97	0.65
1:B:989:VAL:HG11	1:B:1053:ARG:HD2	1.77	0.65
1:B:1135:GLN:OE1	1:B:1173:LYS:HG3	1.96	0.65
1:B:1173:LYS:HE2	1:A:1172:HIS:CG	2.32	0.65
1:A:1149:ASN:HA	1:A:1163:SER:OG	1.96	0.65
1:B:1160:GLU:O	1:B:1161:ILE:HD13	1.98	0.64
1:A:495:ALA:O	1:A:498:VAL:HG22	1.97	0.64
1:B:1131:GLU:HB3	1:B:1134:PHE:CE1	2.32	0.64
1:A:1082:LEU:HG	1:A:1084:PRO:HD2	1.80	0.64
1:B:77:VAL:HG12	1:B:81:ILE:HD11	1.80	0.64
1:A:68:ASP:HB2	1:A:72:ALA:CB	2.26	0.64
1:A:968:LYS:NZ	1:A:972:PHE:HB2	2.12	0.64
1:B:412:ARG:HG2	1:B:413:ILE:HD13	1.80	0.64
1:B:615:ALA:CA	1:B:626:ILE:HD13	2.27	0.64
1:A:849:GLU:N	1:A:849:GLU:OE1	2.30	0.64
1:B:1149:ASN:HA	1:B:1163:SER:OG	1.98	0.64
1:A:573:ARG:NH1	1:A:576:ALA:HB3	2.13	0.64
1:B:449:ASP:OD1	1:B:450:VAL:N	2.31	0.64
1:A:613:GLN:HG2	1:A:616:GLU:OE2	1.97	0.64
1:B:107:LEU:HD21	1:B:368:VAL:HG13	1.80	0.63
1:B:937:LYS:HD3	1:A:530:CYS:CB	2.28	0.63
1:B:1107:MET:HE3	1:B:1107:MET:O	1.97	0.63
1:A:175:VAL:O	1:A:179:VAL:HG23	1.98	0.63
1:A:449:ASP:OD1	1:A:450:VAL:N	2.31	0.63
1:A:499:ARG:O	1:A:503:GLU:HG2	1.98	0.63
1:A:615:ALA:CA	1:A:626:ILE:HD13	2.27	0.63
1:A:925:MET:O	1:A:929:LYS:HG2	1.98	0.63
1:A:300:GLU:OE1	1:A:345:VAL:HG11	1.97	0.63
1:A:575:PHE:HE2	1:A:862:LYS:HD2	1.62	0.63
1:B:962:TRP:HH2	1:B:1073:MET:HE1	1.63	0.63
1:B:495:ALA:O	1:B:498:VAL:HG22	1.98	0.63
1:A:172:PHE:HB3	1:A:406:PHE:CZ	2.34	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1009:TYR:HD1	1:A:1033:GLU:HG2	1.63	0.63
1:A:158:THR:HG22	1:A:228:THR:HG21	1.80	0.63
1:A:816:ALA:O	1:A:819:PRO:HD2	1.99	0.63
1:A:856:ARG:HA	1:A:856:ARG:NH1	2.13	0.63
1:B:172:PHE:HB3	1:B:406:PHE:CZ	2.33	0.63
1:B:175:VAL:O	1:B:179:VAL:HG23	1.98	0.63
1:A:642:PRO:HB3	1:A:646:ARG:NH2	2.09	0.63
1:B:1082:LEU:HG	1:B:1084:PRO:HD2	1.80	0.63
1:A:854:ILE:HD12	1:A:867:LEU:HD22	1.81	0.63
1:A:416:GLY:O	1:A:417:LEU:HD23	1.99	0.63
1:B:499:ARG:O	1:B:503:GLU:HG2	1.99	0.63
1:B:580:GLU:O	1:B:584:LEU:HG	1.99	0.63
1:B:300:GLU:OE1	1:B:345:VAL:HG11	1.98	0.62
1:B:573:ARG:NH1	1:B:576:ALA:HB3	2.14	0.62
1:A:580:GLU:O	1:A:584:LEU:HG	1.99	0.62
1:B:856:ARG:NH1	1:B:856:ARG:HA	2.14	0.62
1:A:858:VAL:HG12	1:A:860:ASN:H	1.64	0.62
1:B:525:ILE:HD11	1:A:902:ILE:CD1	2.30	0.62
1:A:224:LYS:HD2	1:A:224:LYS:H	1.61	0.62
1:A:1131:GLU:HB3	1:A:1134:PHE:CE2	2.34	0.62
1:B:413:ILE:HG22	1:B:414:GLY:H	1.63	0.62
1:B:618:ALA:CB	1:B:626:ILE:HG12	2.29	0.62
1:B:1132:SER:O	1:B:1176:PHE:HB3	2.00	0.62
1:A:645:LYS:HA	1:A:648:LEU:HD23	1.81	0.62
1:A:1147:LEU:HG	1:A:1163:SER:HB3	1.81	0.62
1:B:1147:LEU:HA	1:B:1186:LEU:CD1	2.26	0.62
1:B:1172:HIS:CE1	1:A:1173:LYS:HG2	2.34	0.62
1:B:85:CYS:HB3	1:A:302:THR:CG2	2.30	0.62
1:A:976:ARG:HD3	1:A:1072:ASP:CG	2.24	0.62
1:B:302:THR:CG2	1:A:85:CYS:HB3	2.30	0.62
1:B:587:LEU:CD2	1:B:626:ILE:HD11	2.29	0.62
1:B:1145:VAL:CG1	1:B:1188:VAL:HG12	2.30	0.62
1:A:318:TRP:O	1:A:319:LEU:HG	1.99	0.62
1:B:874:GLY:O	1:B:878:VAL:HG23	2.00	0.62
1:B:976:ARG:HD3	1:B:1072:ASP:CG	2.25	0.62
1:B:987:VAL:HG22	1:B:1058:THR:CG2	2.30	0.62
1:B:1173:LYS:HB2	1:A:1172:HIS:HD2	1.64	0.62
2:B:1402:3PH:H221	2:B:1402:3PH:H332	1.82	0.62
1:A:962:TRP:HH2	1:A:1073:MET:HE1	1.63	0.62
2:A:1402:3PH:H362	2:A:1402:3PH:H251	1.81	0.62
1:B:976:ARG:HD3	1:B:1072:ASP:OD1	1.99	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1145:VAL:CG1	1:A:1188:VAL:HG12	2.29	0.62
1:B:257:LEU:HD12	1:B:258:THR:N	2.15	0.61
1:A:856:ARG:HA	1:A:856:ARG:HH11	1.65	0.61
1:A:987:VAL:HG22	1:A:1058:THR:CG2	2.31	0.61
1:B:158:THR:HG22	1:B:228:THR:HG21	1.82	0.61
1:B:205:MET:HE3	1:B:391:LEU:HD21	1.82	0.61
2:B:1402:3PH:H362	2:B:1402:3PH:H251	1.81	0.61
1:A:976:ARG:HD3	1:A:1072:ASP:OD1	2.00	0.61
2:A:1402:3PH:H332	2:A:1402:3PH:H221	1.83	0.61
1:B:856:ARG:HA	1:B:856:ARG:HH11	1.64	0.61
1:A:257:LEU:HD12	1:A:258:THR:O	2.00	0.61
1:B:1107:MET:HG2	1:B:1112:TRP:HD1	1.66	0.61
1:A:573:ARG:HH12	1:A:577:ASP:H	1.47	0.61
1:A:1145:VAL:HG13	1:A:1188:VAL:HG12	1.82	0.61
1:A:853:ILE:O	1:A:857:MET:HE2	2.01	0.61
1:B:416:GLY:O	1:B:417:LEU:HD23	2.00	0.61
1:A:413:ILE:HG22	1:A:414:GLY:H	1.66	0.61
1:A:587:LEU:CD2	1:A:626:ILE:HD11	2.30	0.61
1:A:242:ILE:HG21	1:A:324:VAL:HG11	1.83	0.60
1:A:874:GLY:O	1:A:878:VAL:HG23	2.00	0.60
1:B:573:ARG:HH12	1:B:577:ASP:H	1.47	0.60
1:B:850:VAL:O	1:B:854:ILE:HG12	2.02	0.60
1:A:1153:TYR:CE1	1:A:1160:GLU:HA	2.35	0.60
1:A:205:MET:HE3	1:A:391:LEU:HD21	1.82	0.60
1:B:130:VAL:O	1:B:133:MET:HG3	2.02	0.60
1:B:240:CYS:O	1:B:244:ILE:HG13	2.01	0.60
1:B:816:ALA:O	1:B:819:PRO:HD2	2.01	0.60
1:B:1145:VAL:HG13	1:B:1188:VAL:HG12	1.83	0.60
1:A:137:VAL:HG13	1:A:141:ILE:HD12	1.82	0.60
1:A:221:GLY:HA2	1:A:224:LYS:HZ3	1.66	0.60
1:A:618:ALA:CB	1:A:626:ILE:HG12	2.29	0.60
1:B:412:ARG:HG2	1:B:413:ILE:CD1	2.31	0.60
1:A:1148:ILE:O	1:A:1149:ASN:ND2	2.33	0.60
1:B:163:PHE:CZ	2:B:1402:3PH:H272	2.37	0.60
1:B:627:LEU:HD23	1:B:633:LYS:CE	2.32	0.60
1:B:1133:HIS:CE1	1:B:1177:GLN:HA	2.36	0.60
1:A:594:TYR:O	1:A:603:LEU:HD23	2.02	0.60
1:A:647:LYS:HZ1	1:A:826:ASN:N	1.99	0.60
1:A:75:PRO:HB2	1:A:78:ILE:HD12	1.83	0.60
1:A:240:CYS:O	1:A:244:ILE:HG13	2.02	0.60
1:A:627:LEU:HD23	1:A:633:LYS:CE	2.32	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1071:GLU:O	1:A:1075:ILE:HG12	2.02	0.60
1:B:242:ILE:HG21	1:B:324:VAL:HG11	1.84	0.60
1:A:649:GLU:HA	1:A:652:ILE:HD11	1.84	0.60
1:B:1139:ASP:O	1:B:1142:LEU:HG	2.02	0.59
1:B:1153:TYR:CE1	1:B:1160:GLU:HA	2.33	0.59
1:A:649:GLU:HA	1:A:652:ILE:CD1	2.32	0.59
1:A:850:VAL:O	1:A:854:ILE:HG12	2.01	0.59
1:B:179:VAL:HG22	1:B:199:MET:CE	2.32	0.59
1:B:221:GLY:HA2	1:B:224:LYS:NZ	2.18	0.59
1:B:406:PHE:O	1:B:410:LEU:HG	2.03	0.59
1:A:852:LYS:HE3	1:A:1105:GLU:CG	2.31	0.59
1:A:863:ILE:HA	1:A:866:GLU:CD	2.26	0.59
1:A:1142:LEU:HD12	1:A:1143:GLU:N	2.17	0.59
1:A:1132:SER:HB3	1:A:1178:TYR:HB2	1.83	0.59
1:B:1034:ASP:OD1	1:B:1035:TYR:N	2.32	0.59
1:B:628:VAL:HG22	1:B:632:LYS:HG2	1.85	0.59
1:A:622:LYS:HD2	1:A:623:ASP:N	2.17	0.59
1:A:641:TYR:CD1	1:A:642:PRO:HD2	2.37	0.59
1:A:647:LYS:HZ1	1:A:826:ASN:H	1.51	0.59
1:B:621:GLU:CD	1:B:624:GLN:HB3	2.28	0.59
1:A:575:PHE:CE2	1:A:862:LYS:HD2	2.37	0.59
1:A:587:LEU:HD22	1:A:626:ILE:HD11	1.84	0.59
1:A:1133:HIS:CE1	1:A:1177:GLN:HA	2.38	0.59
1:B:647:LYS:HZ1	1:B:826:ASN:N	2.00	0.59
1:B:85:CYS:HB3	1:A:302:THR:HG23	1.85	0.58
1:B:964:ALA:O	1:B:1089:ARG:NH1	2.36	0.58
1:A:1131:GLU:OE1	1:A:1132:SER:N	2.31	0.58
1:A:107:LEU:HD21	1:A:368:VAL:HG13	1.86	0.58
1:A:412:ARG:HG2	1:A:413:ILE:CD1	2.33	0.58
1:A:621:GLU:CD	1:A:624:GLN:HB3	2.29	0.58
1:B:174:LEU:HB2	1:B:237:ASN:OD1	2.03	0.58
1:B:902:ILE:HG12	1:A:525:ILE:CD1	2.33	0.58
1:B:1071:GLU:O	1:B:1075:ILE:HG12	2.02	0.58
1:A:174:LEU:HB2	1:A:237:ASN:OD1	2.03	0.58
1:A:633:LYS:HA	1:A:636:GLN:HE22	1.67	0.58
1:B:525:ILE:HD12	1:A:902:ILE:HG12	1.84	0.58
1:B:91:SER:OG	1:B:102:TYR:HB2	2.03	0.58
1:B:302:THR:HG23	1:A:85:CYS:HB3	1.85	0.58
1:B:369:GLY:O	1:B:372:VAL:HG12	2.03	0.58
1:B:1184:PRO:C	1:B:1185:ARG:HD2	2.28	0.58
1:B:1155:ALA:CB	1:B:1173:LYS:HB3	2.33	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:406:PHE:O	1:A:410:LEU:HG	2.03	0.58
1:A:964:ALA:O	1:A:1089:ARG:NH1	2.36	0.58
1:B:98:LEU:HD13	1:B:99:PRO:HD2	1.86	0.58
1:B:633:LYS:HA	1:B:636:GLN:HE22	1.67	0.58
1:A:625:PHE:HE2	1:A:867:LEU:HA	1.67	0.58
1:B:863:ILE:HA	1:B:866:GLU:CD	2.29	0.58
1:B:902:ILE:HG12	1:A:525:ILE:HG12	1.86	0.58
1:A:91:SER:OG	1:A:102:TYR:HB2	2.04	0.58
1:A:107:LEU:HD21	1:A:368:VAL:CG1	2.34	0.58
1:A:179:VAL:HG22	1:A:199:MET:CE	2.33	0.58
1:B:1011:LYS:HE2	1:B:1030:GLU:OE1	2.05	0.57
1:B:1005:LEU:HD12	1:B:1036:LEU:O	2.04	0.57
1:A:163:PHE:CZ	2:A:1402:3PH:H272	2.38	0.57
1:A:982:PHE:HB2	1:A:1063:VAL:CG1	2.34	0.57
1:B:255:PRO:O	1:B:256:GLN:NE2	2.37	0.57
1:B:1140:ALA:HB3	1:A:1169:ARG:NH1	2.19	0.57
1:A:1107:MET:HE3	1:A:1107:MET:O	2.05	0.57
1:B:256:GLN:O	1:B:257:LEU:HG	2.04	0.57
1:A:820:LYS:O	1:A:823:LEU:HB2	2.04	0.57
1:B:852:LYS:HE3	1:B:1105:GLU:CG	2.30	0.57
1:B:626:ILE:HG22	1:B:627:LEU:HG	1.87	0.57
1:B:1142:LEU:HD12	1:B:1143:GLU:N	2.20	0.57
1:A:369:GLY:O	1:A:372:VAL:HG12	2.04	0.57
1:B:575:PHE:CE2	1:B:862:LYS:HD2	2.39	0.57
1:B:820:LYS:O	1:B:823:LEU:HB2	2.04	0.57
1:A:627:LEU:HA	1:A:632:LYS:CD	2.34	0.57
1:A:628:VAL:HG22	1:A:632:LYS:CE	2.33	0.57
1:B:587:LEU:HD22	1:B:626:ILE:HD11	1.86	0.57
1:B:628:VAL:HG22	1:B:632:LYS:CE	2.31	0.57
1:A:613:GLN:O	1:A:617:VAL:HG12	2.05	0.57
1:B:305:LEU:HD22	2:A:1401:3PH:H3G2	1.87	0.56
1:A:368:VAL:HG21	1:A:436:LEU:HD22	1.87	0.56
1:B:499:ARG:HG3	1:B:500:ARG:N	2.20	0.56
1:B:525:ILE:HD11	1:A:902:ILE:HG12	1.85	0.56
1:B:613:GLN:O	1:B:617:VAL:HG12	2.05	0.56
1:B:897:LYS:HD3	1:A:518:LEU:HD12	1.88	0.56
1:B:1112:TRP:HA	1:B:1116:LYS:CE	2.35	0.56
1:A:638:LYS:C	1:A:640:ILE:HD12	2.30	0.56
1:A:1005:LEU:HD12	1:A:1036:LEU:O	2.06	0.56
1:B:586:MET:HE2	1:B:867:LEU:HB3	1.87	0.56
1:B:622:LYS:HD2	1:B:623:ASP:N	2.19	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:634:SER:HB3	1:B:638:LYS:HZ1	1.70	0.56
1:B:634:SER:O	1:B:638:LYS:HG2	2.05	0.56
1:B:750:LYS:O	1:B:752:LEU:N	2.39	0.56
1:B:1107:MET:CG	1:B:1112:TRP:HD1	2.18	0.56
1:B:925:MET:O	1:B:929:LYS:HG2	2.06	0.56
1:A:499:ARG:HG3	1:A:500:ARG:N	2.20	0.56
1:B:632:LYS:O	1:B:633:LYS:HD3	2.06	0.56
1:A:609:ARG:NH1	1:A:610:LEU:HA	2.21	0.56
1:A:98:LEU:HD13	1:A:99:PRO:HD2	1.86	0.56
1:B:518:LEU:HD12	1:A:897:LYS:HD3	1.88	0.56
1:B:520:ASP:OD2	1:A:897:LYS:NZ	2.26	0.56
1:B:833:LEU:HD13	1:B:885:LEU:HD21	1.87	0.56
1:B:982:PHE:HB2	1:B:1063:VAL:CG1	2.34	0.56
1:A:607:ALA:CB	1:A:839:VAL:HG22	2.34	0.56
1:A:628:VAL:HG22	1:A:632:LYS:HG2	1.87	0.56
1:A:1139:ASP:O	1:A:1142:LEU:HG	2.06	0.56
1:B:407:SER:O	1:B:410:LEU:HD12	2.06	0.56
1:B:900:GLN:HA	1:B:900:GLN:OE1	2.05	0.56
1:A:631:LEU:HG	1:A:635:TRP:CH2	2.41	0.56
1:B:80:PHE:CD1	1:B:130:VAL:HG11	2.41	0.55
1:B:648:LEU:HA	1:B:651:LEU:HD12	1.88	0.55
1:A:134:ASP:OD1	1:A:135:PRO:HD2	2.06	0.55
1:A:750:LYS:O	1:A:752:LEU:N	2.39	0.55
1:B:609:ARG:NH1	1:B:610:LEU:HA	2.22	0.55
1:B:1141:THR:HG23	1:A:1169:ARG:NH1	2.21	0.55
1:A:1034:ASP:OD1	1:A:1035:TYR:N	2.34	0.55
1:B:156:VAL:O	1:B:160:MET:HG2	2.07	0.55
1:B:165:GLN:OE1	1:B:415:TYR:HB3	2.06	0.55
1:B:627:LEU:HA	1:B:632:LYS:CD	2.34	0.55
1:A:156:VAL:O	1:A:160:MET:HG2	2.06	0.55
1:A:586:MET:CE	1:A:867:LEU:HB3	2.35	0.55
1:A:634:SER:O	1:A:638:LYS:HG2	2.07	0.55
1:A:641:TYR:CD1	1:A:643:TRP:HD1	2.23	0.55
1:B:107:LEU:HD21	1:B:368:VAL:CG1	2.36	0.55
1:B:625:PHE:HE2	1:B:867:LEU:HA	1.70	0.55
1:A:260:THR:HG23	1:A:263:GLN:OE1	2.06	0.55
1:A:795:SER:HA	1:A:798:VAL:O	2.06	0.55
1:B:960:VAL:HB	1:B:963:LEU:HD22	1.89	0.55
1:A:1155:ALA:CB	1:A:1173:LYS:HB2	2.37	0.55
1:B:649:GLU:HA	1:B:652:ILE:CD1	2.37	0.55
1:B:1132:SER:HB3	1:B:1178:TYR:HB2	1.89	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:256:GLN:C	1:A:257:LEU:HG	2.32	0.55
1:B:647:LYS:NZ	1:B:825:VAL:HB	2.21	0.55
1:B:957:LEU:HD21	1:B:973:ILE:CG2	2.37	0.55
1:A:957:LEU:HD21	1:A:973:ILE:CG2	2.37	0.55
1:A:976:ARG:NH1	1:A:976:ARG:HB2	2.21	0.55
1:B:862:LYS:HG3	1:B:863:ILE:HD12	1.89	0.55
1:A:138:LEU:HD12	1:A:142:PHE:HD2	1.72	0.55
1:A:255:PRO:O	1:A:256:GLN:NE2	2.40	0.55
1:A:1107:MET:CG	1:A:1112:TRP:HD1	2.20	0.55
1:A:613:GLN:O	1:A:616:GLU:HG3	2.06	0.54
1:B:525:ILE:O	1:B:529:ALA:N	2.40	0.54
1:B:1169:ARG:NH1	1:A:1140:ALA:HB3	2.23	0.54
1:A:282:VAL:HG11	1:A:311:THR:OG1	2.07	0.54
1:A:627:LEU:CA	1:A:632:LYS:HD2	2.36	0.54
1:A:864:LEU:O	1:A:868:LYS:HG3	2.07	0.54
1:A:1138:ILE:HD13	1:A:1172:HIS:O	2.07	0.54
1:B:368:VAL:HG21	1:B:436:LEU:HD22	1.88	0.54
1:B:1173:LYS:HB2	1:A:1172:HIS:CD2	2.43	0.54
1:A:407:SER:O	1:A:410:LEU:HD12	2.06	0.54
1:A:1135:GLN:NE2	1:A:1155:ALA:HB2	2.19	0.54
1:B:613:GLN:O	1:B:616:GLU:HG3	2.07	0.54
1:A:165:GLN:OE1	1:A:415:TYR:HB3	2.07	0.54
1:A:322:SER:OG	1:A:325:LEU:HB2	2.08	0.54
1:A:948:ILE:CG2	1:A:949:PRO:HD2	2.36	0.54
1:A:863:ILE:HG22	1:A:867:LEU:HD11	1.89	0.54
1:A:1030:GLU:OE1	1:A:1030:GLU:N	2.41	0.54
1:B:649:GLU:HA	1:B:652:ILE:HD11	1.90	0.54
1:B:980:LEU:HB2	1:B:1065:VAL:HG23	1.89	0.54
1:A:1011:LYS:HD2	1:A:1012:SER:N	2.23	0.54
1:B:138:LEU:HD12	1:B:142:PHE:HD2	1.72	0.54
1:B:405:LEU:O	1:B:408:PRO:HD2	2.08	0.54
1:B:412:ARG:O	1:B:413:ILE:HD13	2.08	0.54
1:A:615:ALA:CB	1:A:626:ILE:HD13	2.38	0.54
1:B:322:SER:OG	1:B:325:LEU:HB2	2.08	0.54
1:B:861:LYS:O	1:B:863:ILE:HD12	2.07	0.54
1:B:914:HIS:NE2	1:B:931:GLU:OE2	2.41	0.54
1:B:960:VAL:HB	1:B:963:LEU:HD21	1.89	0.54
1:B:976:ARG:NH1	1:B:976:ARG:HB2	2.22	0.54
1:B:282:VAL:HG11	1:B:311:THR:OG1	2.07	0.54
1:A:343:PRO:O	1:A:346:GLU:HG2	2.09	0.54
1:A:960:VAL:HB	1:A:963:LEU:HD21	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:904:THR:HG21	1:A:512:LEU:HD21	1.90	0.53
1:B:257:LEU:HD12	1:B:258:THR:H	1.73	0.53
1:B:521:ALA:HB2	1:A:897:LYS:CB	2.37	0.53
1:B:343:PRO:O	1:B:346:GLU:HG2	2.08	0.53
1:A:174:LEU:CD2	1:A:240:CYS:HB2	2.38	0.53
1:B:647:LYS:HZ1	1:B:826:ASN:H	1.54	0.53
1:B:897:LYS:CB	1:A:521:ALA:HB2	2.38	0.53
1:B:989:VAL:HB	1:B:1057:VAL:HG12	1.91	0.53
1:A:405:LEU:O	1:A:408:PRO:HD2	2.08	0.53
1:B:275:GLY:HA2	1:B:321:VAL:CG1	2.39	0.53
1:B:980:LEU:HB2	1:B:1065:VAL:CG2	2.39	0.53
1:A:627:LEU:HD23	1:A:633:LYS:HE2	1.90	0.53
1:A:980:LEU:HB2	1:A:1065:VAL:HG23	1.89	0.53
1:B:137:VAL:HG13	1:B:141:ILE:HD12	1.88	0.53
1:B:294:PHE:CE1	1:B:939:LYS:HG2	2.44	0.53
1:B:584:LEU:HA	1:B:587:LEU:CD1	2.38	0.53
1:B:587:LEU:HD13	1:B:619:ALA:CB	2.34	0.53
1:B:1082:LEU:HG	1:B:1084:PRO:CD	2.39	0.53
1:A:275:GLY:HA2	1:A:321:VAL:CG1	2.38	0.53
1:A:1049:THR:C	1:A:1050:LYS:HG2	2.34	0.53
1:B:407:SER:HA	1:B:410:LEU:CD1	2.34	0.53
1:B:598:PHE:HB2	1:B:603:LEU:HB3	1.89	0.53
1:A:976:ARG:O	1:A:977:ALA:HB3	2.09	0.53
1:B:296:ASP:O	1:B:300:GLU:HG3	2.09	0.53
1:B:628:VAL:O	1:B:629:ASP:HB3	2.09	0.53
1:B:174:LEU:CD2	1:B:240:CYS:HB2	2.38	0.52
1:B:996:ASP:OD1	1:B:996:ASP:N	2.41	0.52
1:A:647:LYS:HZ1	1:A:825:VAL:HB	1.74	0.52
1:A:811:LEU:O	1:A:814:THR:HG23	2.10	0.52
1:B:833:LEU:HD23	1:B:892:ILE:HG21	1.91	0.52
1:B:1107:MET:CG	1:B:1111:GLY:H	2.22	0.52
1:A:1174:LEU:HD23	1:A:1174:LEU:O	2.08	0.52
1:B:902:ILE:HB	1:B:941:LEU:CD1	2.39	0.52
1:A:960:VAL:HB	1:A:963:LEU:HD22	1.90	0.52
1:B:606:GLU:CD	1:B:606:GLU:H	2.18	0.52
1:B:923:ASP:OD2	1:B:926:GLU:HG2	2.10	0.52
1:B:1138:ILE:HD13	1:B:1172:HIS:O	2.10	0.52
1:B:1147:LEU:HG	1:B:1163:SER:HB3	1.91	0.52
1:A:1002:VAL:C	1:A:1038:VAL:HG23	2.34	0.52
1:A:75:PRO:HB2	1:A:78:ILE:CD1	2.40	0.52
1:A:294:PHE:CE1	1:A:939:LYS:HG2	2.45	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:645:LYS:HE3	1:B:646:ARG:HH22	1.75	0.52
1:B:902:ILE:HG12	1:A:525:ILE:HD11	1.92	0.52
1:A:615:ALA:HA	1:A:626:ILE:HG21	1.90	0.52
1:A:1082:LEU:HG	1:A:1084:PRO:CD	2.38	0.52
1:B:77:VAL:HG13	1:B:130:VAL:HG22	1.91	0.52
1:A:902:ILE:HB	1:A:941:LEU:CD1	2.40	0.52
1:B:1002:VAL:C	1:B:1038:VAL:HG23	2.35	0.52
1:A:411:SER:HA	1:A:416:GLY:CA	2.34	0.52
1:B:615:ALA:CB	1:B:626:ILE:HD13	2.39	0.52
1:B:864:LEU:O	1:B:868:LYS:HG3	2.09	0.52
1:A:225:GLN:O	1:A:229:ILE:HG13	2.10	0.52
2:A:1402:3PH:H221	2:A:1402:3PH:H31	1.91	0.52
1:B:225:GLN:O	1:B:229:ILE:HG13	2.09	0.52
1:B:627:LEU:CA	1:B:632:LYS:HD2	2.38	0.51
1:A:584:LEU:HA	1:A:587:LEU:CD1	2.40	0.51
1:A:1153:TYR:HB3	1:A:1158:ARG:CG	2.40	0.51
1:B:186:MET:HG3	1:B:198:ALA:HB2	1.92	0.51
1:B:618:ALA:HB2	1:B:626:ILE:HA	1.93	0.51
1:B:976:ARG:O	1:B:977:ALA:HB3	2.09	0.51
1:B:1049:THR:C	1:B:1050:LYS:HG2	2.34	0.51
1:A:296:ASP:O	1:A:300:GLU:HG3	2.09	0.51
1:A:643:TRP:HZ3	1:A:828:LYS:CG	2.22	0.51
1:A:980:LEU:HB2	1:A:1065:VAL:CG2	2.39	0.51
1:B:134:ASP:OD1	1:B:135:PRO:HD2	2.10	0.51
2:B:1402:3PH:H221	2:B:1402:3PH:H31	1.91	0.51
1:A:615:ALA:HA	1:A:626:ILE:CG2	2.41	0.51
1:B:1147:LEU:HD11	1:B:1150:GLY:O	2.11	0.51
1:B:1172:HIS:ND1	1:A:1173:LYS:HG2	2.25	0.51
1:A:647:LYS:NZ	1:A:825:VAL:HB	2.25	0.51
1:B:81:ILE:HD13	2:B:1401:3PH:H2C2	1.92	0.51
1:B:647:LYS:HG3	1:B:651:LEU:HD11	1.92	0.51
1:A:863:ILE:O	1:A:866:GLU:HB2	2.11	0.51
1:A:996:ASP:OD1	1:A:996:ASP:N	2.42	0.51
1:A:1011:LYS:NZ	1:A:1030:GLU:HB2	2.26	0.51
1:A:647:LYS:HG3	1:A:651:LEU:HD11	1.93	0.51
1:A:1011:LYS:NZ	1:A:1012:SER:O	2.44	0.51
1:A:1049:THR:OG1	1:A:1051:LYS:HE2	2.11	0.51
1:B:496:GLY:HA2	1:B:499:ARG:NH1	2.26	0.51
1:B:641:TYR:CG	1:B:642:PRO:HD2	2.46	0.51
1:B:962:TRP:CZ3	1:B:963:LEU:HB3	2.46	0.51
1:A:137:VAL:HG13	1:A:141:ILE:CD1	2.41	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:283:ALA:HA	1:A:286:THR:CG2	2.41	0.51
1:A:861:LYS:O	1:A:862:LYS:HG2	2.11	0.51
1:B:283:ALA:HA	1:B:286:THR:CG2	2.41	0.51
1:B:937:LYS:CD	1:A:530:CYS:HB3	2.35	0.51
1:B:863:ILE:HG22	1:B:867:LEU:HD11	1.93	0.50
1:B:1153:TYR:HB3	1:B:1158:ARG:HA	1.92	0.50
2:B:1401:3PH:H3G2	1:A:305:LEU:HD22	1.93	0.50
1:A:260:THR:OG1	1:A:263:GLN:HB3	2.11	0.50
1:A:424:ILE:HD11	1:A:478:LEU:HD23	1.93	0.50
1:A:751:ILE:O	1:A:755:GLY:N	2.34	0.50
1:A:1011:LYS:HD2	1:A:1012:SER:H	1.75	0.50
1:B:494:MET:SD	1:A:926:GLU:HB3	2.52	0.50
1:B:579:MET:SD	1:B:863:ILE:HG12	2.51	0.50
1:B:609:ARG:HD2	1:B:609:ARG:O	2.11	0.50
1:B:615:ALA:HA	1:B:626:ILE:HG21	1.92	0.50
1:B:632:LYS:HD3	1:B:633:LYS:HZ2	1.76	0.50
1:B:633:LYS:O	1:B:637:ILE:HD12	2.12	0.50
1:B:1048:LEU:HD11	1:B:1090:LEU:HB3	1.92	0.50
1:B:1149:ASN:HA	1:B:1163:SER:CB	2.41	0.50
1:A:880:LYS:HD2	1:A:1035:TYR:CZ	2.46	0.50
1:A:960:VAL:O	1:A:963:LEU:HD23	2.11	0.50
1:A:1048:LEU:HD11	1:A:1090:LEU:HB3	1.92	0.50
1:B:615:ALA:HA	1:B:626:ILE:CG2	2.41	0.50
1:B:1176:PHE:HZ	1:B:1184:PRO:HB2	1.75	0.50
1:A:1107:MET:CG	1:A:1111:GLY:H	2.24	0.50
1:A:1154:ASN:CB	1:A:1171:VAL:HG13	2.42	0.50
1:B:649:GLU:O	1:B:652:ILE:HG12	2.11	0.50
1:B:819:PRO:CA	1:B:822:ILE:HD12	2.31	0.50
1:B:1119:LEU:HD12	1:A:511:MET:HG3	1.93	0.50
1:B:960:VAL:O	1:B:963:LEU:HD23	2.11	0.50
1:A:633:LYS:O	1:A:637:ILE:HD12	2.11	0.50
1:A:898:THR:HG22	1:A:902:ILE:HD11	1.93	0.50
1:A:913:ILE:HD12	1:A:930:LEU:HD13	1.94	0.50
1:A:962:TRP:CZ3	1:A:963:LEU:HB3	2.46	0.50
1:B:1112:TRP:O	1:B:1113:THR:OG1	2.25	0.50
1:B:225:GLN:NE2	1:B:415:TYR:OH	2.43	0.50
1:B:424:ILE:HD11	1:B:478:LEU:HD23	1.94	0.50
1:B:1049:THR:OG1	1:B:1051:LYS:HE2	2.11	0.50
1:A:641:TYR:HD1	1:A:643:TRP:HD1	1.60	0.50
1:A:944:ALA:HB1	1:A:945:PRO:HD2	1.93	0.50
1:B:635:TRP:O	1:B:638:LYS:HB2	2.11	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:638:LYS:HB3	1:B:640:ILE:HD12	1.94	0.50
1:A:407:SER:HA	1:A:410:LEU:CD1	2.34	0.50
1:A:958:LYS:HB2	1:A:974:LYS:NZ	2.27	0.50
1:B:317:ILE:HG22	1:B:318:TRP:CD1	2.47	0.49
1:B:628:VAL:N	1:B:632:LYS:HD2	2.27	0.49
1:A:186:MET:HG3	1:A:198:ALA:HB2	1.92	0.49
1:A:224:LYS:N	1:A:224:LYS:CD	2.75	0.49
1:A:618:ALA:HB2	1:A:626:ILE:HA	1.93	0.49
1:A:626:ILE:HG22	1:A:627:LEU:HG	1.93	0.49
1:A:650:ASP:HB3	1:A:822:ILE:CG1	2.39	0.49
1:B:817:LEU:HD21	1:B:821:LEU:HD12	1.94	0.49
1:B:863:ILE:O	1:B:866:GLU:HB2	2.12	0.49
1:B:937:LYS:HE2	1:A:530:CYS:CA	2.35	0.49
1:A:641:TYR:CG	1:A:642:PRO:HD2	2.47	0.49
1:B:895:SER:HA	1:B:948:ILE:HD13	1.93	0.49
1:B:944:ALA:HB1	1:B:945:PRO:HD2	1.93	0.49
1:A:135:PRO:HB3	1:A:441:VAL:HG22	1.93	0.49
1:A:622:LYS:HD2	1:A:623:ASP:H	1.77	0.49
1:B:579:MET:O	1:B:583:ARG:HG3	2.12	0.49
1:B:795:SER:HA	1:B:798:VAL:O	2.12	0.49
1:B:915:GLU:OE1	1:B:916:LEU:N	2.46	0.49
1:A:81:ILE:HD13	2:A:1401:3PH:H2C2	1.93	0.49
1:A:97:LYS:HG2	1:A:98:LEU:N	2.28	0.49
1:B:530:CYS:SG	1:A:937:LYS:HD3	2.52	0.49
1:B:594:TYR:HB3	1:B:603:LEU:HD21	1.95	0.49
1:B:837:TYR:HH	1:B:886:GLN:HB2	1.76	0.49
1:B:958:LYS:HB2	1:B:974:LYS:NZ	2.27	0.49
1:A:991:GLU:HB2	1:A:1056:THR:OG1	2.13	0.49
1:B:97:LYS:HG2	1:B:98:LEU:N	2.28	0.49
1:B:650:ASP:HB3	1:B:822:ILE:CG1	2.42	0.49
1:B:880:LYS:HD2	1:B:1035:TYR:CZ	2.47	0.49
1:A:496:GLY:HA2	1:A:499:ARG:NH1	2.27	0.49
1:A:609:ARG:HD2	1:A:609:ARG:O	2.12	0.49
1:A:642:PRO:O	1:A:646:ARG:HG2	2.13	0.49
1:A:344:GLU:OE1	1:A:344:GLU:N	2.36	0.49
1:B:68:ASP:HB2	1:B:72:ALA:HB1	1.91	0.49
1:B:68:ASP:HB2	1:B:72:ALA:HB3	1.91	0.49
1:B:512:LEU:HD21	1:A:904:THR:HG21	1.95	0.49
1:B:573:ARG:HH12	1:B:577:ASP:N	2.09	0.49
1:B:593:SER:O	1:B:597:GLN:HG3	2.13	0.49
1:A:81:ILE:HG22	2:A:1401:3PH:C3I	2.42	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:467:LEU:O	1:A:471:ALA:HB3	2.13	0.49
1:A:751:ILE:HA	1:A:758:TYR:CB	2.43	0.49
1:A:1155:ALA:HB2	1:A:1173:LYS:HB2	1.93	0.49
1:B:135:PRO:HB3	1:B:441:VAL:HG22	1.95	0.49
1:B:584:LEU:HA	1:B:587:LEU:HD12	1.94	0.49
1:B:1136:PHE:O	1:B:1138:ILE:HD12	2.13	0.49
1:A:584:LEU:HA	1:A:587:LEU:HD12	1.95	0.49
1:A:641:TYR:CD1	1:A:643:TRP:CD1	3.01	0.49
1:B:467:LEU:O	1:B:471:ALA:HB3	2.13	0.48
1:B:628:VAL:CG2	1:B:632:LYS:HG2	2.43	0.48
1:B:833:LEU:HD11	1:B:837:TYR:CE2	2.48	0.48
1:A:876:LEU:HD21	1:A:1033:GLU:O	2.12	0.48
1:A:649:GLU:O	1:A:652:ILE:HG12	2.12	0.48
1:A:923:ASP:CG	1:A:926:GLU:HG2	2.39	0.48
1:B:81:ILE:HG22	2:B:1401:3PH:C3I	2.43	0.48
1:B:751:ILE:HA	1:B:758:TYR:CB	2.44	0.48
1:B:1153:TYR:CE2	1:B:1177:GLN:HG2	2.48	0.48
1:A:613:GLN:HA	1:A:616:GLU:CG	2.44	0.48
1:A:1138:ILE:HD13	1:A:1173:LYS:HA	1.95	0.48
1:B:580:GLU:HB2	1:B:622:LYS:NZ	2.29	0.48
1:B:613:GLN:HA	1:B:616:GLU:CG	2.44	0.48
1:A:579:MET:O	1:A:583:ARG:HG3	2.13	0.48
1:B:77:VAL:CG1	1:B:81:ILE:HD11	2.43	0.48
1:B:259:SER:HB2	1:B:264:ASN:OD1	2.13	0.48
1:B:473:THR:HG22	1:B:473:THR:O	2.14	0.48
1:B:1089:ARG:O	1:B:1093:VAL:HG23	2.13	0.48
1:B:1160:GLU:C	1:B:1161:ILE:HD13	2.37	0.48
1:A:473:THR:HG22	1:A:473:THR:O	2.14	0.48
1:A:648:LEU:HA	1:A:651:LEU:HD12	1.94	0.48
1:A:795:SER:HA	1:A:799:VAL:HA	1.95	0.48
1:B:179:VAL:CG2	1:B:199:MET:HE1	2.40	0.48
1:B:575:PHE:HE2	1:B:862:LYS:HD2	1.75	0.48
1:B:887:ARG:NH2	1:B:1062:THR:HG23	2.28	0.48
1:A:641:TYR:CD1	1:A:642:PRO:CD	2.97	0.48
1:A:1132:SER:HB2	1:A:1178:TYR:N	2.28	0.48
1:B:260:THR:O	1:B:263:GLN:HG2	2.14	0.48
1:B:1077:ILE:HG13	1:B:1078:ASP:N	2.29	0.48
1:B:1153:TYR:HB3	1:B:1158:ARG:CG	2.43	0.48
1:A:636:GLN:HA	1:A:832:GLN:HE22	1.78	0.48
1:B:913:ILE:HD13	1:A:501:ILE:HD11	1.96	0.48
1:A:1141:THR:HG22	1:A:1190:ARG:O	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:984:TYR:HD1	1:B:985:GLY:N	2.12	0.48
1:A:105:VAL:O	1:A:109:LEU:HG	2.14	0.48
1:A:1147:LEU:HD11	1:A:1150:GLY:O	2.13	0.48
1:B:902:ILE:HG12	1:A:525:ILE:CG1	2.43	0.48
1:B:1145:VAL:O	1:B:1167:ILE:HG12	2.14	0.48
1:A:1107:MET:HG2	1:A:1111:GLY:H	1.79	0.48
1:B:75:PRO:HB2	1:B:78:ILE:HD12	1.96	0.47
1:B:573:ARG:HH22	1:B:577:ASP:HB3	1.79	0.47
1:B:811:LEU:O	1:B:814:THR:HG23	2.13	0.47
1:A:819:PRO:CA	1:A:822:ILE:HD12	2.30	0.47
1:A:1077:ILE:HG13	1:A:1078:ASP:N	2.29	0.47
1:A:1089:ARG:O	1:A:1093:VAL:HG23	2.13	0.47
1:A:1160:GLU:O	1:A:1161:ILE:HD13	2.14	0.47
1:B:317:ILE:HG22	1:B:318:TRP:HD1	1.79	0.47
1:B:411:SER:HA	1:B:416:GLY:CA	2.37	0.47
1:B:494:MET:CE	1:A:926:GLU:HB3	2.44	0.47
1:B:627:LEU:HD23	1:B:633:LYS:HE2	1.95	0.47
1:B:897:LYS:HB3	1:A:521:ALA:HB2	1.96	0.47
1:A:632:LYS:O	1:A:633:LYS:HD3	2.14	0.47
1:A:984:TYR:HD1	1:A:985:GLY:N	2.12	0.47
2:A:1402:3PH:H31	2:A:1402:3PH:C22	2.43	0.47
1:B:344:GLU:OE1	1:B:344:GLU:N	2.36	0.47
1:B:511:MET:HG3	1:A:1119:LEU:HD12	1.96	0.47
1:B:1127:VAL:HG12	1:B:1186:LEU:H	1.79	0.47
1:A:609:ARG:HA	1:A:612:VAL:HG22	1.95	0.47
1:B:885:LEU:HD12	1:B:885:LEU:O	2.14	0.47
1:A:573:ARG:HH12	1:A:577:ASP:N	2.09	0.47
1:A:1092:ARG:HG3	1:A:1096:ILE:HD12	1.96	0.47
1:A:1145:VAL:O	1:A:1167:ILE:HG12	2.14	0.47
1:A:1136:PHE:O	1:A:1138:ILE:HD12	2.14	0.47
1:B:609:ARG:HA	1:B:612:VAL:HG22	1.97	0.47
1:B:105:VAL:O	1:B:109:LEU:HG	2.14	0.47
1:B:224:LYS:N	1:B:224:LYS:CD	2.70	0.47
1:B:413:ILE:HG22	1:B:414:GLY:N	2.30	0.47
1:B:521:ALA:HB2	1:A:897:LYS:HB3	1.95	0.47
1:B:628:VAL:H	1:B:632:LYS:NZ	2.08	0.47
1:B:937:LYS:HD3	1:A:530:CYS:SG	2.55	0.47
1:B:1135:GLN:CD	1:B:1173:LYS:HG3	2.40	0.47
1:A:914:HIS:NE2	1:A:931:GLU:OE2	2.47	0.47
1:A:983:ASP:O	1:A:986:GLU:HG3	2.15	0.47
1:A:1184:PRO:C	1:A:1185:ARG:HD2	2.40	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:216:LEU:O	1:B:220:LEU:HD12	2.14	0.47
1:B:320:GLU:O	1:B:321:VAL:HG23	2.15	0.47
1:B:1145:VAL:HG22	1:B:1188:VAL:HA	1.97	0.47
1:B:372:VAL:HG13	1:B:373:THR:N	2.30	0.47
1:B:902:ILE:HB	1:B:941:LEU:HD11	1.97	0.47
1:B:983:ASP:O	1:B:986:GLU:HG3	2.15	0.47
1:A:273:VAL:O	1:A:276:PRO:HD2	2.15	0.47
1:A:394:ALA:O	1:A:398:ILE:HG12	2.15	0.47
1:A:637:ILE:HG23	1:A:885:LEU:HD22	1.97	0.47
1:A:1112:TRP:O	1:A:1113:THR:OG1	2.26	0.47
1:A:1145:VAL:CG2	1:A:1188:VAL:HG12	2.45	0.47
1:B:77:VAL:HG12	1:B:81:ILE:CD1	2.45	0.47
1:B:394:ALA:O	1:B:398:ILE:HG12	2.15	0.47
1:B:525:ILE:HD11	1:A:902:ILE:CG1	2.44	0.47
1:B:161:ARG:HB3	1:B:161:ARG:NH1	2.31	0.46
1:B:641:TYR:CD1	1:B:642:PRO:CD	2.97	0.46
1:B:1092:ARG:HG3	1:B:1096:ILE:HD12	1.96	0.46
1:B:1107:MET:HG2	1:B:1111:GLY:H	1.80	0.46
1:A:372:VAL:HG13	1:A:373:THR:N	2.30	0.46
1:A:957:LEU:HD12	1:A:957:LEU:O	2.15	0.46
1:A:1131:GLU:CB	1:A:1134:PHE:HE2	2.26	0.46
1:B:957:LEU:O	1:B:957:LEU:HD12	2.16	0.46
1:B:1112:TRP:CE3	1:B:1116:LYS:HE3	2.50	0.46
1:B:1131:GLU:CB	1:B:1134:PHE:HE1	2.26	0.46
1:A:161:ARG:NH1	1:A:161:ARG:HB3	2.30	0.46
1:A:885:LEU:HD12	1:A:885:LEU:O	2.15	0.46
1:A:1145:VAL:HG22	1:A:1188:VAL:HA	1.98	0.46
1:B:68:ASP:HB3	1:A:136:HIS:NE2	2.31	0.46
1:B:861:LYS:O	1:B:862:LYS:HG2	2.15	0.46
1:B:1011:LYS:HD2	1:B:1012:SER:N	2.30	0.46
1:B:1145:VAL:CG2	1:B:1188:VAL:HG12	2.45	0.46
1:A:320:GLU:O	1:A:321:VAL:HG23	2.15	0.46
1:A:417:LEU:HD11	1:A:425:MET:HE1	1.98	0.46
1:A:420:ARG:HB3	1:A:481:LEU:HD13	1.97	0.46
1:A:580:GLU:HB2	1:A:622:LYS:NZ	2.30	0.46
1:A:1001:ILE:O	1:A:1038:VAL:HA	2.16	0.46
1:B:751:ILE:O	1:B:755:GLY:N	2.37	0.46
1:B:922:LEU:HD23	1:B:922:LEU:HA	1.80	0.46
1:A:412:ARG:O	1:A:413:ILE:HD13	2.15	0.46
1:B:365:PHE:O	1:B:368:VAL:HG12	2.16	0.46
1:B:647:LYS:HZ1	1:B:825:VAL:HB	1.78	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:898:THR:CG2	1:A:525:ILE:HD13	2.44	0.46
1:B:1011:LYS:HD2	1:B:1012:SER:H	1.80	0.46
1:A:587:LEU:HD13	1:A:619:ALA:CB	2.34	0.46
1:A:628:VAL:H	1:A:632:LYS:NZ	2.07	0.46
1:A:1154:ASN:HD22	1:A:1157:THR:HG23	1.81	0.46
1:B:638:LYS:HA	1:B:638:LYS:HD3	1.59	0.46
1:B:1001:ILE:O	1:B:1038:VAL:HA	2.15	0.46
1:A:365:PHE:O	1:A:368:VAL:HG12	2.16	0.46
1:A:1127:VAL:HG12	1:A:1186:LEU:H	1.81	0.46
1:B:622:LYS:HD2	1:B:623:ASP:H	1.80	0.46
1:B:626:ILE:HB	1:B:627:LEU:HD12	1.98	0.46
1:B:896:VAL:O	1:B:900:GLN:HG2	2.16	0.46
1:A:413:ILE:HG22	1:A:414:GLY:N	2.30	0.46
1:A:587:LEU:O	1:A:591:LYS:HG3	2.15	0.46
1:A:827:GLY:O	1:A:831:ASN:OD1	2.34	0.46
1:A:948:ILE:HG23	1:A:949:PRO:HD2	1.98	0.46
1:B:525:ILE:O	1:B:529:ALA:HB2	2.16	0.46
1:B:578:MET:C	1:B:579:MET:HE2	2.41	0.46
1:B:902:ILE:HG21	1:B:941:LEU:HD12	1.98	0.46
1:B:987:VAL:HG11	1:B:990:ARG:HE	1.81	0.46
1:A:517:PHE:O	1:A:518:LEU:HD12	2.16	0.46
1:B:517:PHE:O	1:B:518:LEU:HD12	2.16	0.46
1:A:216:LEU:O	1:A:220:LEU:HD12	2.16	0.46
1:A:632:LYS:HD3	1:A:633:LYS:HZ2	1.79	0.46
1:A:637:ILE:HG23	1:A:885:LEU:CD2	2.46	0.46
1:B:412:ARG:C	1:B:413:ILE:HD13	2.42	0.45
1:B:895:SER:O	1:B:899:ARG:HG3	2.16	0.45
1:A:893:ALA:O	1:A:897:LYS:HG3	2.16	0.45
1:A:1176:PHE:HZ	1:A:1184:PRO:HB2	1.81	0.45
1:B:273:VAL:O	1:B:276:PRO:HD2	2.15	0.45
1:B:494:MET:HE1	1:A:926:GLU:HB3	1.98	0.45
1:A:266:LEU:HD12	1:A:266:LEU:O	2.15	0.45
1:A:638:LYS:HD3	1:A:638:LYS:HA	1.60	0.45
1:A:863:ILE:HA	1:A:866:GLU:OE1	2.15	0.45
1:A:925:MET:HE1	1:A:929:LYS:NZ	2.31	0.45
1:A:593:SER:O	1:A:597:GLN:HG3	2.16	0.45
1:A:857:MET:O	1:A:858:VAL:HB	2.16	0.45
1:A:989:VAL:HB	1:A:1057:VAL:HG12	1.97	0.45
1:A:1153:TYR:CE2	1:A:1177:GLN:HG2	2.51	0.45
1:B:637:ILE:HG23	1:B:885:LEU:HD22	1.98	0.45
1:B:641:TYR:CD1	1:B:643:TRP:CD1	3.04	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1104:MET:SD	1:A:1114:GLN:HA	2.56	0.45
1:B:853:ILE:O	1:B:857:MET:HE2	2.16	0.45
1:B:993:ASP:O	1:B:1053:ARG:HG2	2.17	0.45
1:A:816:ALA:C	1:A:819:PRO:HD2	2.42	0.45
1:A:853:ILE:HG22	1:A:857:MET:HE1	1.95	0.45
1:B:527:THR:HA	1:B:531:GLU:OE2	2.17	0.45
1:B:893:ALA:O	1:B:897:LYS:HG3	2.17	0.45
1:B:1166:LEU:HD23	1:B:1167:ILE:N	2.32	0.45
1:A:112:ILE:O	1:A:116:VAL:HG23	2.17	0.45
1:A:579:MET:HE3	1:A:579:MET:CA	2.33	0.45
1:B:816:ALA:C	1:B:819:PRO:HD2	2.41	0.45
1:B:833:LEU:CD1	1:B:885:LEU:HD21	2.46	0.45
1:A:179:VAL:CG2	1:A:199:MET:HE1	2.43	0.45
1:A:628:VAL:N	1:A:632:LYS:HD2	2.32	0.45
1:A:900:GLN:OE1	1:A:900:GLN:HA	2.17	0.45
1:A:962:TRP:CD2	1:A:1090:LEU:HD21	2.52	0.45
1:B:420:ARG:HB3	1:B:481:LEU:HD13	1.98	0.45
1:B:642:PRO:O	1:B:646:ARG:HG2	2.16	0.45
1:A:81:ILE:HG22	2:A:1401:3PH:H3I1	1.98	0.45
1:A:137:VAL:CG1	1:A:141:ILE:HD12	2.47	0.45
1:B:69:ASP:O	1:B:70:LEU:HB2	2.17	0.45
1:B:179:VAL:HA	1:B:199:MET:CE	2.47	0.45
1:B:501:ILE:HG13	1:A:913:ILE:HD11	1.99	0.45
1:B:516:ARG:HG3	1:B:517:PHE:CD1	2.52	0.45
1:B:892:ILE:HD12	1:B:892:ILE:H	1.81	0.45
1:A:516:ARG:HG3	1:A:517:PHE:CD1	2.52	0.45
1:A:527:THR:HA	1:A:531:GLU:OE2	2.16	0.45
1:A:646:ARG:NH1	1:A:649:GLU:OE1	2.49	0.45
1:A:895:SER:O	1:A:899:ARG:HG3	2.17	0.45
1:A:902:ILE:HB	1:A:941:LEU:HD11	1.97	0.45
1:B:81:ILE:HG22	2:B:1401:3PH:H3I1	1.99	0.45
1:B:587:LEU:O	1:B:591:LYS:HG3	2.16	0.45
1:B:632:LYS:HD3	1:B:633:LYS:NZ	2.31	0.45
1:B:970:ILE:CG2	1:B:974:LYS:HE3	2.48	0.45
1:A:516:ARG:HG3	1:A:517:PHE:N	2.32	0.45
1:A:861:LYS:O	1:A:863:ILE:HD12	2.17	0.45
1:A:970:ILE:HG22	1:A:974:LYS:HE3	2.00	0.45
1:B:821:LEU:O	1:B:825:VAL:HG23	2.17	0.44
1:B:897:LYS:HB2	1:A:521:ALA:HB2	1.99	0.44
1:A:962:TRP:CE3	1:A:963:LEU:HB3	2.52	0.44
1:A:169:LEU:HD13	1:A:410:LEU:HD23	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:521:ALA:HB2	1:A:897:LYS:HB2	1.98	0.44
1:B:833:LEU:HD23	1:B:892:ILE:CG2	2.47	0.44
1:B:962:TRP:CD2	1:B:1090:LEU:HD21	2.52	0.44
1:A:80:PHE:CD1	1:A:130:VAL:HG11	2.52	0.44
1:A:143:LEU:O	1:A:147:ILE:HG12	2.17	0.44
1:A:638:LYS:O	1:A:640:ILE:HD12	2.17	0.44
1:A:887:ARG:NH2	1:A:1062:THR:HG23	2.32	0.44
1:A:993:ASP:O	1:A:1053:ARG:HG2	2.17	0.44
1:B:143:LEU:O	1:B:147:ILE:HG12	2.17	0.44
1:B:1104:MET:SD	1:B:1114:GLN:HA	2.58	0.44
1:A:77:VAL:HG21	2:A:1401:3PH:H351	1.99	0.44
1:A:573:ARG:HH22	1:A:577:ASP:HB3	1.82	0.44
1:A:643:TRP:HZ3	1:A:828:LYS:HG3	1.81	0.44
1:A:1145:VAL:HB	1:A:1167:ILE:CD1	2.45	0.44
1:B:107:LEU:HD23	1:B:107:LEU:HA	1.83	0.44
1:B:143:LEU:N	1:B:144:PRO:HD2	2.32	0.44
1:A:138:LEU:HD12	1:A:142:PHE:CD2	2.51	0.44
1:A:987:VAL:HG11	1:A:990:ARG:HE	1.82	0.44
1:A:1069:THR:HG22	1:A:1071:GLU:OE1	2.18	0.44
1:A:1082:LEU:HG	1:A:1083:TYR:N	2.32	0.44
1:B:579:MET:HE1	1:B:863:ILE:HG12	1.99	0.44
1:B:609:ARG:C	1:B:609:ARG:HH11	2.26	0.44
1:B:836:GLY:O	1:B:837:TYR:C	2.60	0.44
1:B:913:ILE:HD11	1:A:501:ILE:HG13	2.00	0.44
1:A:343:PRO:O	1:A:347:VAL:HG23	2.17	0.44
1:B:343:PRO:O	1:B:347:VAL:HG23	2.17	0.44
1:B:857:MET:O	1:B:858:VAL:HB	2.16	0.44
1:A:143:LEU:N	1:A:144:PRO:HD2	2.32	0.44
1:A:609:ARG:C	1:A:609:ARG:HH11	2.26	0.44
1:A:632:LYS:HD3	1:A:633:LYS:NZ	2.33	0.44
1:A:913:ILE:HD12	1:A:930:LEU:CD1	2.48	0.44
1:A:1074:ASN:O	1:A:1077:ILE:HG13	2.18	0.44
1:B:608:LEU:O	1:B:612:VAL:HG22	2.18	0.44
1:B:613:GLN:HA	1:B:616:GLU:HG3	2.00	0.44
1:B:614:HIS:HA	1:B:617:VAL:HG12	2.00	0.44
1:B:970:ILE:HG22	1:B:974:LYS:HE3	1.99	0.44
1:A:494:MET:HE2	1:A:535:PRO:CG	2.47	0.44
1:B:137:VAL:CG1	1:B:141:ILE:HD12	2.47	0.44
1:B:525:ILE:CG2	1:B:529:ALA:HB2	2.48	0.44
1:B:647:LYS:HB2	1:B:647:LYS:HE2	1.55	0.44
1:B:795:SER:HA	1:B:799:VAL:HA	1.98	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:898:THR:HG22	1:B:902:ILE:HD11	2.00	0.44
1:B:962:TRP:CE3	1:B:963:LEU:HB3	2.52	0.44
1:A:412:ARG:C	1:A:413:ILE:HD13	2.43	0.44
1:A:626:ILE:HB	1:A:627:LEU:HD12	1.99	0.44
1:B:283:ALA:HA	1:B:286:THR:HG22	2.00	0.43
1:B:1009:TYR:HD1	1:B:1033:GLU:CG	2.31	0.43
1:B:1142:LEU:HA	1:B:1190:ARG:HG2	1.99	0.43
1:A:179:VAL:HA	1:A:199:MET:CE	2.48	0.43
1:A:284:LYS:HA	1:A:284:LYS:HD2	1.75	0.43
1:A:606:GLU:H	1:A:606:GLU:CD	2.26	0.43
1:A:902:ILE:HG21	1:A:941:LEU:HD12	2.00	0.43
1:A:1149:ASN:HA	1:A:1163:SER:CB	2.48	0.43
1:B:191:TYR:CE1	1:B:454:LYS:HE3	2.53	0.43
1:B:594:TYR:O	1:B:603:LEU:HD23	2.18	0.43
1:B:1095:ALA:HB1	1:B:1148:ILE:HG13	2.00	0.43
1:B:318:TRP:C	1:B:319:LEU:HG	2.43	0.43
1:A:997:GLY:HA3	1:A:1067:PHE:CE1	2.53	0.43
1:B:169:LEU:HD13	1:B:410:LEU:HD23	2.00	0.43
1:B:853:ILE:HG23	1:B:1109:PHE:CE1	2.53	0.43
1:B:902:ILE:CG1	1:A:525:ILE:HD11	2.47	0.43
1:B:1074:ASN:O	1:B:1077:ILE:HG13	2.17	0.43
1:A:263:GLN:HG2	1:A:264:ASN:N	2.33	0.43
1:A:283:ALA:HA	1:A:286:THR:HG22	2.00	0.43
1:A:1127:VAL:HG11	1:A:1186:LEU:HB2	2.01	0.43
1:B:1009:TYR:HD1	1:B:1033:GLU:HG2	1.84	0.43
1:B:1082:LEU:HG	1:B:1083:TYR:N	2.33	0.43
1:A:588:LYS:HA	1:A:591:LYS:HD2	2.00	0.43
1:A:613:GLN:HA	1:A:616:GLU:HG3	2.00	0.43
1:A:830:ASN:O	1:A:831:ASN:C	2.61	0.43
1:A:1138:ILE:HA	1:A:1142:LEU:CD2	2.29	0.43
1:B:594:TYR:HB3	1:B:603:LEU:CD2	2.48	0.43
1:B:607:ALA:CB	1:B:839:VAL:HG22	2.49	0.43
1:B:221:GLY:HA2	1:B:224:LYS:HZ3	1.82	0.43
1:B:497:ALA:O	1:B:501:ILE:HG12	2.18	0.43
1:B:516:ARG:HG3	1:B:517:PHE:N	2.33	0.43
1:B:1142:LEU:HD12	1:B:1142:LEU:C	2.44	0.43
1:B:1142:LEU:O	1:B:1143:GLU:HB2	2.19	0.43
1:B:1162:ARG:HD3	1:B:1162:ARG:N	2.23	0.43
1:A:635:TRP:O	1:A:638:LYS:HB2	2.19	0.43
1:A:868:LYS:HA	1:A:871:SER:OG	2.19	0.43
1:B:137:VAL:HG13	1:B:141:ILE:CD1	2.49	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:310:LEU:HG	1:A:82:SER:HB2	2.01	0.43
1:B:586:MET:HE2	1:B:867:LEU:HD23	2.00	0.43
1:B:637:ILE:HG23	1:B:885:LEU:CD2	2.49	0.43
1:B:645:LYS:HG3	1:B:648:LEU:HD21	1.99	0.43
1:B:962:TRP:HE3	1:B:1086:LEU:HD11	1.84	0.43
1:B:1127:VAL:CG1	1:B:1186:LEU:H	2.32	0.43
1:B:1176:PHE:CZ	1:B:1184:PRO:HB2	2.52	0.43
1:A:76:LYS:O	1:A:79:VAL:HG12	2.18	0.43
1:A:525:ILE:O	1:A:529:ALA:HB2	2.18	0.43
1:B:294:PHE:HE1	1:B:939:LYS:HG2	1.84	0.43
1:A:647:LYS:HB2	1:A:647:LYS:HE2	1.55	0.43
1:A:970:ILE:CG2	1:A:974:LYS:HE3	2.48	0.43
1:A:1129:LEU:O	1:A:1129:LEU:HD23	2.19	0.43
1:B:80:PHE:CE1	1:B:130:VAL:HG11	2.54	0.43
1:B:82:SER:HB2	1:A:310:LEU:HG	2.00	0.43
1:B:122:LEU:HD23	1:B:122:LEU:HA	1.86	0.43
1:B:1083:TYR:HB3	1:B:1084:PRO:HD3	2.00	0.43
1:B:1132:SER:HB2	1:B:1178:TYR:N	2.33	0.43
1:B:1174:LEU:O	1:B:1174:LEU:HD23	2.18	0.43
1:A:69:ASP:O	1:A:70:LEU:HB2	2.18	0.43
1:A:191:TYR:CE1	1:A:454:LYS:HE3	2.53	0.43
1:A:614:HIS:HA	1:A:617:VAL:HG12	2.00	0.43
1:B:627:LEU:HD23	1:B:633:LYS:HZ1	1.83	0.42
1:B:826:ASN:O	1:B:827:GLY:C	2.62	0.42
1:B:829:ILE:O	1:B:830:ASN:C	2.62	0.42
1:B:976:ARG:HB2	1:B:976:ARG:HH11	1.83	0.42
1:A:916:LEU:HD23	1:A:916:LEU:HA	1.81	0.42
1:A:1074:ASN:HA	1:A:1077:ILE:CG1	2.46	0.42
1:B:136:HIS:NE2	1:A:68:ASP:HB3	2.34	0.42
1:B:827:GLY:O	1:B:828:LYS:C	2.62	0.42
1:A:297:ALA:O	1:A:301:ILE:HD12	2.19	0.42
1:A:645:LYS:HE3	1:A:646:ARG:HH22	1.83	0.42
1:A:826:ASN:O	1:A:827:GLY:C	2.61	0.42
1:A:833:LEU:CD1	1:A:885:LEU:HD21	2.45	0.42
1:A:836:GLY:O	1:A:837:TYR:C	2.62	0.42
1:A:1074:ASN:CA	1:A:1077:ILE:HG12	2.47	0.42
1:B:960:VAL:O	1:B:964:ALA:HB2	2.19	0.42
1:B:1069:THR:HG22	1:B:1071:GLU:OE1	2.19	0.42
1:B:1074:ASN:CA	1:B:1077:ILE:HG12	2.47	0.42
1:B:1189:VAL:HG12	1:B:1190:ARG:N	2.34	0.42
1:A:225:GLN:NE2	1:A:415:TYR:OH	2.47	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:636:GLN:O	1:A:832:GLN:NE2	2.52	0.42
1:A:646:ARG:HA	1:A:646:ARG:HD3	1.90	0.42
1:B:583:ARG:HH21	1:B:624:GLN:N	2.10	0.42
1:B:1127:VAL:HG11	1:B:1186:LEU:HB2	2.01	0.42
1:A:113:LEU:HD23	1:A:113:LEU:O	2.20	0.42
1:A:603:LEU:HD12	1:A:603:LEU:O	2.20	0.42
1:A:1145:VAL:HG22	1:A:1188:VAL:HG12	2.01	0.42
1:B:112:ILE:O	1:B:116:VAL:HG23	2.18	0.42
1:B:967:MET:HE1	1:B:971:ASP:OD1	2.19	0.42
1:A:294:PHE:HE1	1:A:939:LYS:HG2	1.84	0.42
1:A:628:VAL:CG2	1:A:632:LYS:HG2	2.48	0.42
1:A:1083:TYR:HB3	1:A:1084:PRO:HD3	2.00	0.42
1:A:1142:LEU:HD12	1:A:1142:LEU:C	2.44	0.42
1:B:297:ALA:O	1:B:301:ILE:HD12	2.19	0.42
1:A:833:LEU:O	1:A:834:SER:C	2.62	0.42
1:A:960:VAL:O	1:A:964:ALA:HB2	2.19	0.42
1:A:991:GLU:OE1	1:A:991:GLU:HA	2.18	0.42
1:B:868:LYS:HA	1:B:871:SER:OG	2.20	0.42
1:B:948:ILE:CG2	1:B:949:PRO:HD2	2.47	0.42
1:A:962:TRP:HE3	1:A:1086:LEU:HD11	1.84	0.42
1:A:976:ARG:HB2	1:A:976:ARG:HH11	1.82	0.42
1:A:1166:LEU:HD23	1:A:1167:ILE:N	2.34	0.42
1:B:138:LEU:HD12	1:B:142:PHE:CD2	2.52	0.42
1:A:257:LEU:HD12	1:A:258:THR:N	2.34	0.42
1:A:853:ILE:HG23	1:A:1109:PHE:CE1	2.54	0.42
1:B:957:LEU:HD21	1:B:973:ILE:HG22	2.02	0.42
1:A:1142:LEU:O	1:A:1143:GLU:HB2	2.20	0.42
1:A:1153:TYR:HB3	1:A:1158:ARG:HG3	2.02	0.42
1:B:902:ILE:HG13	1:B:902:ILE:H	1.70	0.42
1:A:621:GLU:HB3	1:A:624:GLN:OE1	2.19	0.42
1:A:838:ASP:OD1	1:A:838:ASP:N	2.53	0.42
1:B:219:ASP:OD1	1:B:219:ASP:C	2.63	0.41
1:B:498:VAL:HG11	1:B:534:ASP:CB	2.50	0.41
1:B:585:ARG:HA	1:B:585:ARG:HD2	1.92	0.41
1:B:954:GLU:OE1	1:B:974:LYS:HG2	2.20	0.41
1:B:991:GLU:OE1	1:B:991:GLU:HA	2.19	0.41
1:B:1061:THR:HG22	1:B:1062:THR:N	2.35	0.41
1:B:113:LEU:HD23	1:B:113:LEU:O	2.20	0.41
1:B:344:GLU:H	1:B:344:GLU:CD	2.22	0.41
1:B:645:LYS:HB3	1:B:646:ARG:HH21	1.85	0.41
1:A:862:LYS:HG3	1:A:863:ILE:HD12	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1189:VAL:HG12	1:A:1190:ARG:N	2.35	0.41
1:B:263:GLN:HG3	1:B:264:ASN:N	2.34	0.41
1:B:284:LYS:HD2	1:B:284:LYS:HA	1.75	0.41
1:B:849:GLU:O	1:B:853:ILE:HG12	2.20	0.41
1:B:1138:ILE:HD13	1:B:1173:LYS:HA	2.02	0.41
1:A:85:CYS:SG	1:A:359:LEU:HD21	2.60	0.41
1:A:122:LEU:HA	1:A:122:LEU:HD23	1.85	0.41
1:A:608:LEU:O	1:A:612:VAL:HG22	2.21	0.41
1:A:641:TYR:CD1	1:A:642:PRO:N	2.89	0.41
1:A:817:LEU:HD21	1:A:821:LEU:HD12	2.01	0.41
1:A:864:LEU:HA	1:A:867:LEU:CD1	2.50	0.41
1:B:85:CYS:SG	1:B:359:LEU:HD21	2.60	0.41
1:B:169:LEU:HD12	1:B:169:LEU:HA	1.85	0.41
1:B:359:LEU:HD23	1:B:359:LEU:HA	1.92	0.41
1:B:530:CYS:HB3	1:A:937:LYS:CD	2.38	0.41
1:B:636:GLN:H	1:B:636:GLN:CD	2.21	0.41
1:B:863:ILE:HG23	1:B:866:GLU:OE1	2.20	0.41
1:B:997:GLY:HA3	1:B:1067:PHE:CE1	2.55	0.41
1:A:844:ILE:HD12	1:A:879:VAL:HG23	2.01	0.41
1:A:896:VAL:O	1:A:900:GLN:HG2	2.19	0.41
1:A:1009:TYR:HD1	1:A:1033:GLU:CG	2.31	0.41
1:B:107:LEU:CD2	1:B:368:VAL:HG13	2.48	0.41
1:B:584:LEU:HA	1:B:587:LEU:HG	2.02	0.41
1:B:838:ASP:OD1	1:B:838:ASP:N	2.52	0.41
1:B:1138:ILE:HD12	1:B:1138:ILE:N	2.35	0.41
1:A:188:LEU:HG	1:A:189:PHE:HD1	1.84	0.41
1:A:341:ILE:H	1:A:341:ILE:HG13	1.76	0.41
1:A:1042:ILE:HG22	1:A:1043:GLY:N	2.35	0.41
1:B:525:ILE:HG23	1:B:529:ALA:HB2	2.02	0.41
1:A:999:PHE:O	1:A:1041:VAL:HA	2.20	0.41
1:A:1148:ILE:HD13	1:A:1148:ILE:HA	1.94	0.41
1:A:628:VAL:N	1:A:632:LYS:HZ2	2.07	0.41
1:A:833:LEU:O	1:A:833:LEU:HD12	2.20	0.41
1:B:621:GLU:HB3	1:B:624:GLN:OE1	2.20	0.41
1:B:830:ASN:O	1:B:831:ASN:C	2.62	0.41
1:B:834:SER:OG	1:B:835:LEU:N	2.54	0.41
1:B:1042:ILE:HG22	1:B:1043:GLY:N	2.35	0.41
1:A:107:LEU:HD23	1:A:107:LEU:HA	1.82	0.41
1:A:921:LEU:HD12	1:A:921:LEU:N	2.36	0.41
1:A:999:PHE:HB2	1:A:1042:ILE:HB	2.03	0.41
1:A:1037:THR:OG1	1:A:1038:VAL:N	2.54	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:819:PRO:O	1:B:823:LEU:HD13	2.21	0.41
1:B:844:ILE:HD12	1:B:879:VAL:HG23	2.01	0.41
1:B:863:ILE:HA	1:B:866:GLU:OE1	2.21	0.41
1:B:999:PHE:HB2	1:B:1042:ILE:HB	2.03	0.41
1:A:584:LEU:HA	1:A:587:LEU:HG	2.03	0.41
1:A:1097:ARG:HH11	1:A:1097:ARG:HG3	1.86	0.41
1:A:1137:ASN:OD1	1:A:1139:ASP:HB3	2.20	0.41
1:B:579:MET:CE	1:B:863:ILE:HG12	2.51	0.41
1:B:590:GLU:HB3	1:B:594:TYR:CZ	2.55	0.41
1:B:999:PHE:O	1:B:1041:VAL:HA	2.20	0.41
1:A:647:LYS:HD3	1:A:822:ILE:HG23	2.02	0.41
1:A:922:LEU:HA	1:A:922:LEU:HD23	1.79	0.41
1:A:973:ILE:HD13	1:A:973:ILE:HA	1.99	0.41
1:A:1185:ARG:C	1:A:1186:LEU:HD22	2.46	0.41
1:B:588:LYS:HA	1:B:591:LYS:HD2	2.01	0.40
1:B:627:LEU:C	1:B:632:LYS:HD2	2.46	0.40
1:B:828:LYS:O	1:B:829:ILE:C	2.64	0.40
1:B:839:VAL:O	1:B:840:GLY:C	2.64	0.40
1:B:962:TRP:CE3	1:B:1086:LEU:HD11	2.56	0.40
1:B:1141:THR:HG23	1:A:1169:ARG:HH11	1.86	0.40
1:B:1148:ILE:HD13	1:B:1148:ILE:HA	1.93	0.40
1:A:68:ASP:OD1	1:A:68:ASP:N	2.54	0.40
1:A:131:ALA:O	1:A:132[A]:HIS:ND1	2.55	0.40
1:A:322:SER:OG	1:A:322:SER:O	2.38	0.40
1:A:829:ILE:O	1:A:830:ASN:C	2.64	0.40
1:A:867:LEU:HD12	1:A:867:LEU:H	1.86	0.40
1:A:954:GLU:OE1	1:A:974:LYS:HG2	2.22	0.40
1:A:995:SER:HA	1:A:1053:ARG:NH2	2.36	0.40
1:A:1061:THR:HG22	1:A:1062:THR:N	2.35	0.40
1:B:530:CYS:SG	1:A:906:LEU:HD11	2.61	0.40
1:B:1097:ARG:HH11	1:B:1097:ARG:HG3	1.87	0.40
1:A:990:ARG:CZ	1:A:990:ARG:HB2	2.51	0.40
1:B:319:LEU:O	1:B:320:GLU:C	2.65	0.40
1:B:852:LYS:HE3	1:B:1105:GLU:CD	2.45	0.40
1:A:819:PRO:O	1:A:823:LEU:HD13	2.21	0.40
1:A:852:LYS:HE3	1:A:1105:GLU:CD	2.46	0.40
1:A:892:ILE:H	1:A:892:ILE:HD12	1.86	0.40
1:B:356:LEU:HD23	1:B:356:LEU:HA	1.92	0.40
1:B:512:LEU:HD13	1:B:512:LEU:HA	1.97	0.40
1:B:835:LEU:O	1:B:836:GLY:C	2.64	0.40
1:B:995:SER:HA	1:B:1053:ARG:NH2	2.36	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1129:LEU:HD23	1:B:1129:LEU:O	2.21	0.40
1:B:1138:ILE:H	1:A:1172:HIS:CE1	2.40	0.40
1:B:1153:TYR:HB3	1:B:1158:ARG:HG3	2.03	0.40
1:B:1154:ASN:CG	1:B:1171:VAL:HG13	2.46	0.40
1:A:318:TRP:C	1:A:319:LEU:HG	2.46	0.40
1:A:498:VAL:HG11	1:A:534:ASP:CB	2.51	0.40
1:A:957:LEU:HD11	1:A:973:ILE:HG21	2.04	0.40
1:A:967:MET:HE1	1:A:971:ASP:OD1	2.21	0.40
1:A:1138:ILE:HD12	1:A:1138:ILE:N	2.36	0.40
1:A:1155:ALA:HB2	1:A:1173:LYS:CB	2.51	0.40
1:B:641:TYR:O	1:B:643:TRP:N	2.55	0.40
1:B:972:PHE:O	1:B:976:ARG:NH1	2.54	0.40
1:A:613:GLN:C	1:A:616:GLU:HG3	2.47	0.40
1:A:1095:ALA:HB1	1:A:1148:ILE:HG13	2.02	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	1047/1331 (79%)	982 (94%)	65 (6%)	0	100	100
1	B	1047/1331 (79%)	985 (94%)	62 (6%)	0	100	100
All	All	2094/2662 (79%)	1967 (94%)	127 (6%)	0	100	100

There are no Ramachandran outliers to report.

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	781/1138 (69%)	781 (100%)	0	100	100
1	B	781/1138 (69%)	781 (100%)	0	100	100
All	All	1562/2276 (69%)	1562 (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 (15) such sidechains are listed below:

Mol	Chain	Res	Type
1	B	73	HIS
1	B	510	ASN
1	B	614	HIS
1	B	955	ASN
1	B	1040	ASN
1	B	1156	HIS
1	B	1172	HIS
1	A	510	ASN
1	A	614	HIS
1	A	832	GLN
1	A	955	ASN
1	A	1040	ASN
1	A	1135	GLN
1	A	1149	ASN
1	A	1172	HIS

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates ⓘ

There are no oligosaccharides in this entry.

5.6 Ligand geometry

4 ligands are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
2	3PH	B	1401	-	47,47,47	0.62	1 (2%)	51,52,52	0.61	1 (1%)
2	3PH	B	1402	-	44,44,47	0.65	1 (2%)	48,49,52	0.60	1 (2%)
2	3PH	A	1401	-	47,47,47	0.63	1 (2%)	51,52,52	0.61	1 (1%)
2	3PH	A	1402	-	44,44,47	0.65	1 (2%)	48,49,52	0.61	1 (2%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	3PH	B	1401	-	-	22/49/49/49	-
2	3PH	B	1402	-	-	17/46/46/49	-
2	3PH	A	1401	-	-	22/49/49/49	-
2	3PH	A	1402	-	-	17/46/46/49	-

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	1401	3PH	P-O11	3.29	1.70	1.60
2	A	1402	3PH	P-O11	3.26	1.70	1.60
2	B	1401	3PH	P-O11	3.26	1.70	1.60
2	B	1402	3PH	P-O11	3.25	1.70	1.60

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	B	1401	3PH	O13-P-O11	-2.16	100.99	106.73
2	A	1402	3PH	O13-P-O11	-2.16	100.99	106.73

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	1401	3PH	O13-P-O11	-2.15	101.00	106.73
2	B	1402	3PH	O13-P-O11	-2.14	101.04	106.73

There are no chirality outliers.

All (78) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	B	1401	3PH	C1-O11-P-O13
2	B	1401	3PH	C1-O11-P-O14
2	B	1401	3PH	O11-C1-C2-O21
2	B	1401	3PH	O22-C21-O21-C2
2	B	1402	3PH	C1-O11-P-O13
2	B	1402	3PH	C1-O11-P-O14
2	B	1402	3PH	C22-C21-O21-C2
2	A	1401	3PH	C1-O11-P-O13
2	A	1401	3PH	C1-O11-P-O14
2	A	1401	3PH	O22-C21-O21-C2
2	A	1401	3PH	C22-C21-O21-C2
2	A	1402	3PH	C1-O11-P-O13
2	A	1402	3PH	C1-O11-P-O14
2	A	1402	3PH	C22-C21-O21-C2
2	B	1402	3PH	O32-C31-O31-C3
2	A	1402	3PH	O32-C31-O31-C3
2	B	1402	3PH	O22-C21-O21-C2
2	A	1402	3PH	O22-C21-O21-C2
2	B	1402	3PH	C32-C31-O31-C3
2	A	1402	3PH	C32-C31-O31-C3
2	B	1401	3PH	C22-C21-O21-C2
2	B	1401	3PH	C32-C31-O31-C3
2	A	1401	3PH	C32-C31-O31-C3
2	B	1401	3PH	O32-C31-O31-C3
2	A	1401	3PH	O32-C31-O31-C3
2	A	1401	3PH	C21-C22-C23-C24
2	B	1401	3PH	C21-C22-C23-C24
2	B	1402	3PH	C21-C22-C23-C24
2	A	1402	3PH	C21-C22-C23-C24
2	B	1402	3PH	C38-C39-C3A-C3B
2	A	1401	3PH	C29-C2A-C2B-C2C
2	A	1402	3PH	C38-C39-C3A-C3B
2	B	1402	3PH	C3-C2-O21-C21
2	A	1402	3PH	C3-C2-O21-C21
2	B	1401	3PH	C29-C2A-C2B-C2C

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Mol	Chain	Res	Type	Atoms
2	B	1401	3PH	C32-C33-C34-C35
2	A	1401	3PH	C32-C33-C34-C35
2	B	1401	3PH	C33-C34-C35-C36
2	B	1401	3PH	C3B-C3C-C3D-C3E
2	A	1401	3PH	C3B-C3C-C3D-C3E
2	B	1401	3PH	C36-C37-C38-C39
2	B	1402	3PH	C2B-C2C-C2D-C2E
2	A	1401	3PH	C36-C37-C38-C39
2	A	1401	3PH	O11-C1-C2-O21
2	A	1402	3PH	C2B-C2C-C2D-C2E
2	A	1401	3PH	C33-C34-C35-C36
2	B	1401	3PH	O11-C1-C2-C3
2	B	1401	3PH	C2-C1-O11-P
2	A	1401	3PH	O11-C1-C2-C3
2	B	1402	3PH	C22-C23-C24-C25
2	A	1402	3PH	C22-C23-C24-C25
2	A	1401	3PH	C2-C1-O11-P
2	B	1401	3PH	C3D-C3E-C3F-C3G
2	A	1401	3PH	C3D-C3E-C3F-C3G
2	A	1401	3PH	C34-C35-C36-C37
2	B	1401	3PH	C34-C35-C36-C37
2	B	1402	3PH	C31-C32-C33-C34
2	A	1402	3PH	C31-C32-C33-C34
2	B	1402	3PH	O21-C2-C3-O31
2	A	1402	3PH	O21-C2-C3-O31
2	B	1401	3PH	C25-C26-C27-C28
2	B	1401	3PH	C2C-C2D-C2E-C2F
2	A	1402	3PH	C28-C29-C2A-C2B
2	B	1402	3PH	C28-C29-C2A-C2B
2	A	1401	3PH	C2C-C2D-C2E-C2F
2	A	1401	3PH	C3F-C3G-C3H-C3I
2	A	1401	3PH	C25-C26-C27-C28
2	B	1401	3PH	C3C-C3D-C3E-C3F
2	B	1401	3PH	C3F-C3G-C3H-C3I
2	B	1402	3PH	C33-C34-C35-C36
2	B	1401	3PH	C1-O11-P-O12
2	A	1402	3PH	C33-C34-C35-C36
2	A	1401	3PH	C27-C28-C29-C2A
2	B	1402	3PH	C1-C2-C3-O31
2	A	1402	3PH	C1-C2-C3-O31
2	A	1401	3PH	C3C-C3D-C3E-C3F
2	A	1402	3PH	O31-C31-C32-C33

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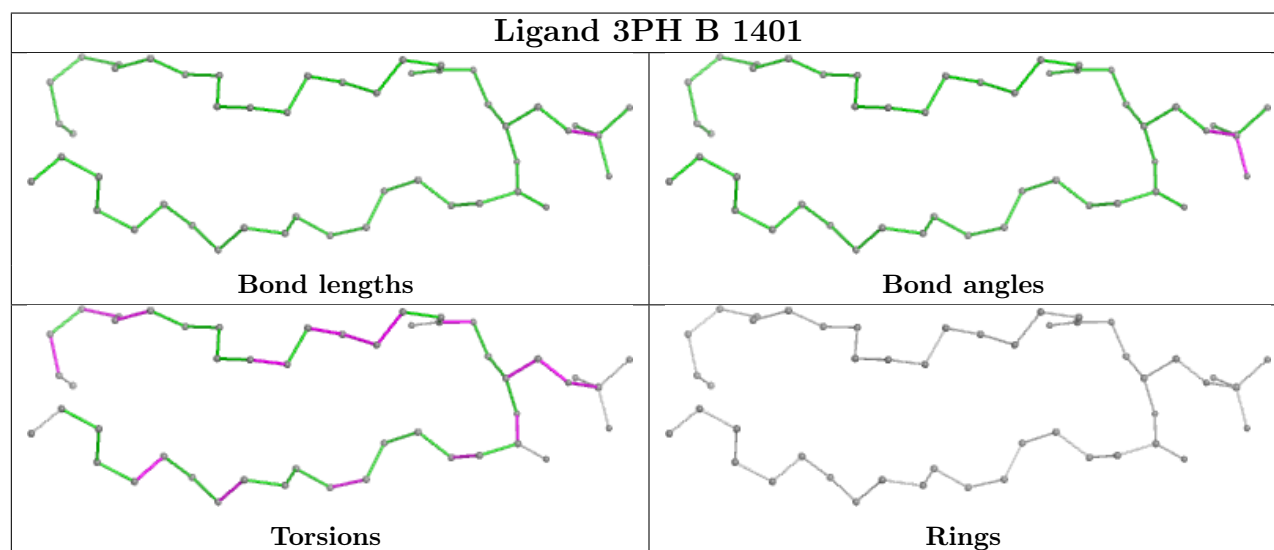
Mol	Chain	Res	Type	Atoms
2	B	1402	3PH	O31-C31-C32-C33

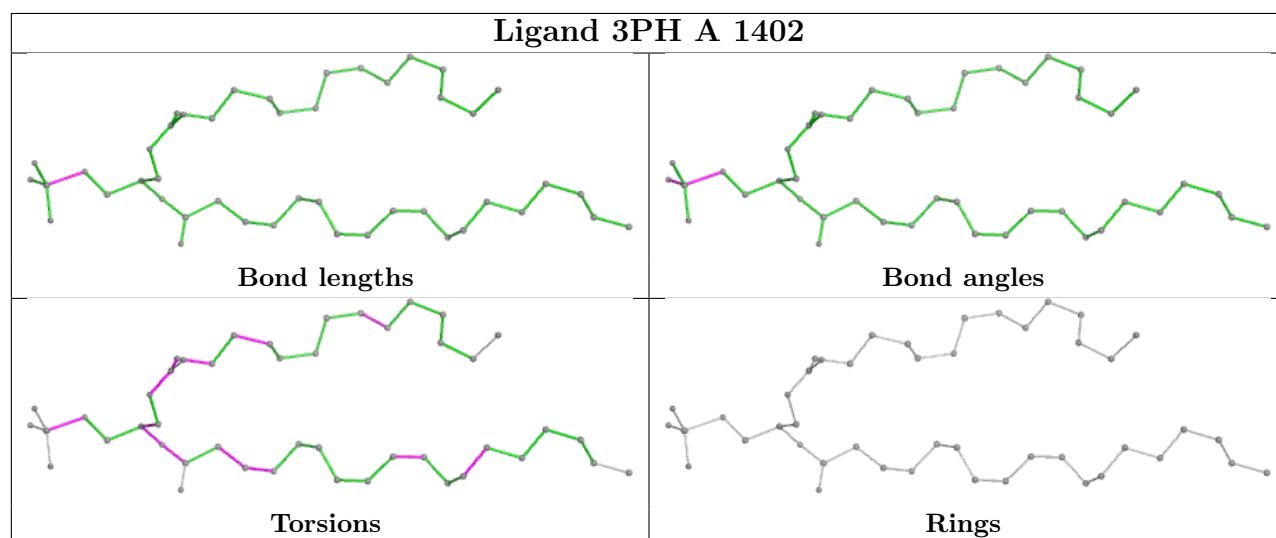
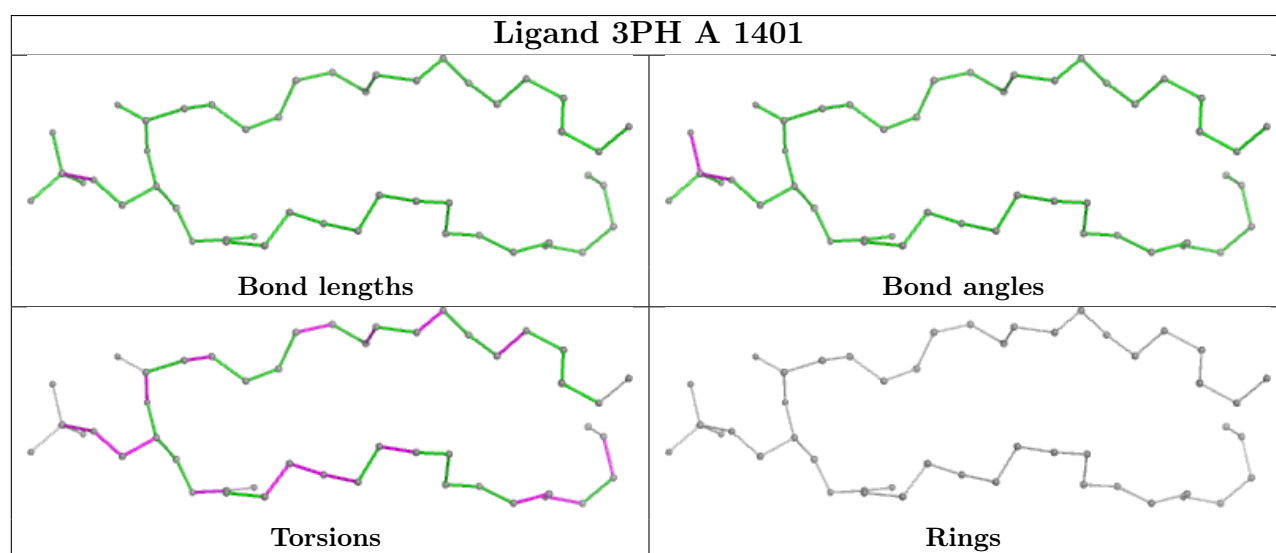
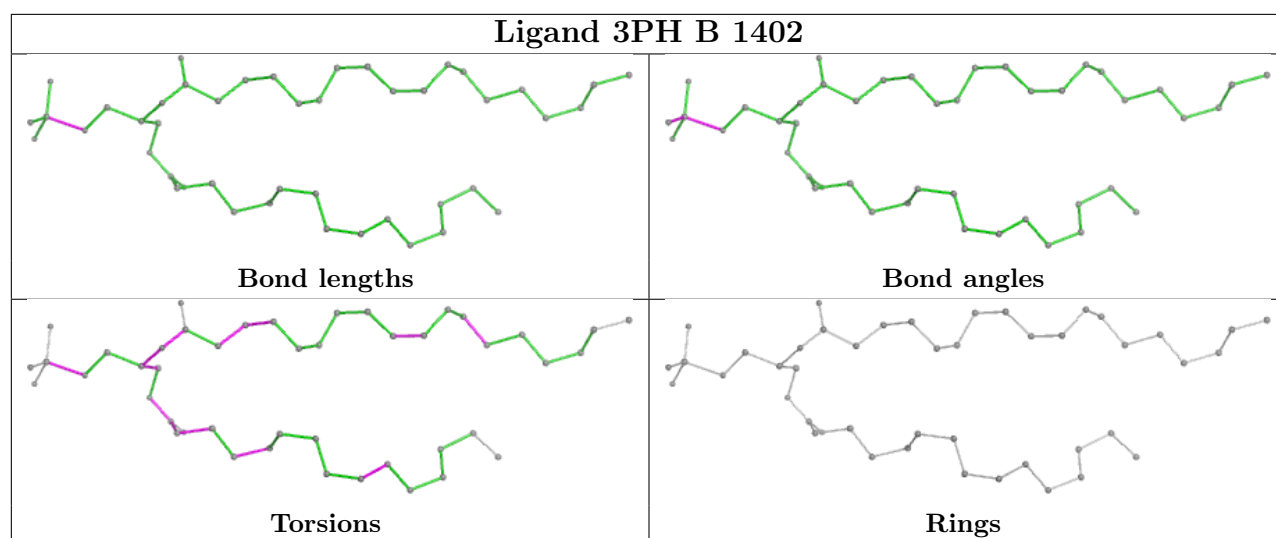
There are no ring outliers.

4 monomers are involved in 20 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	B	1401	3PH	4	0
2	B	1402	3PH	5	0
2	A	1401	3PH	5	0
2	A	1402	3PH	6	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

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

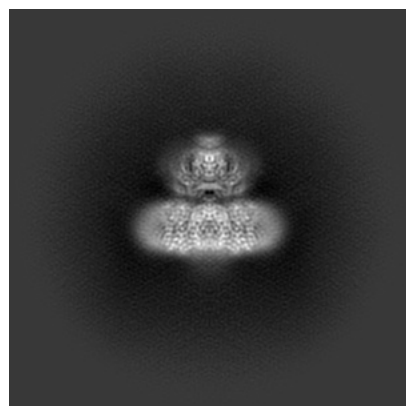
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-17186. These allow visual inspection of the internal detail of the map and identification of artifacts.

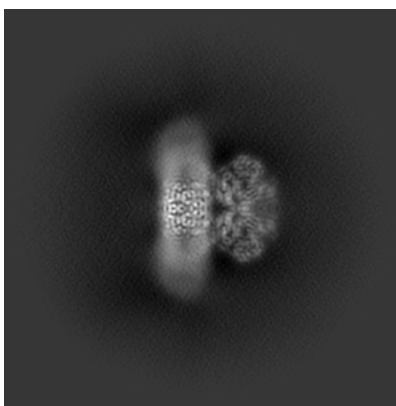
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

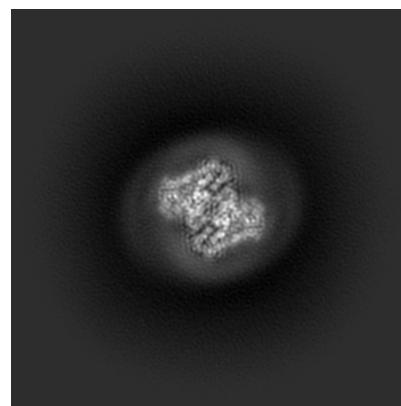
6.1.1 Primary map



X

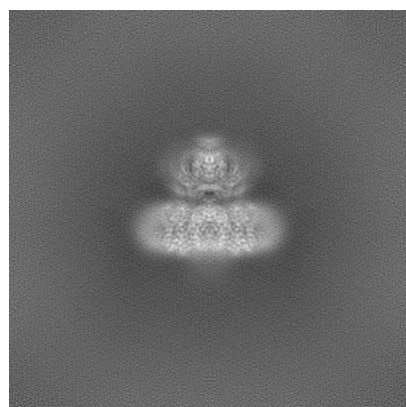


Y

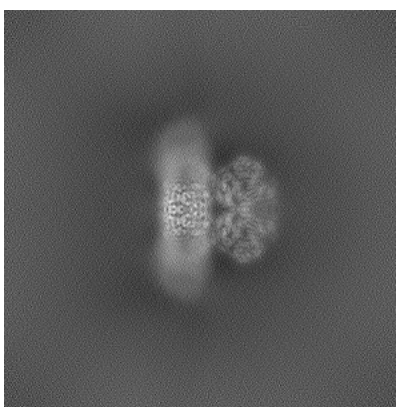


Z

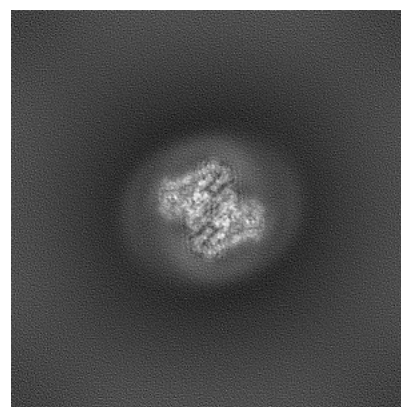
6.1.2 Raw map



X



Y

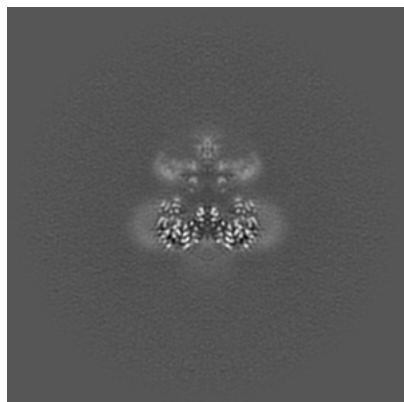


Z

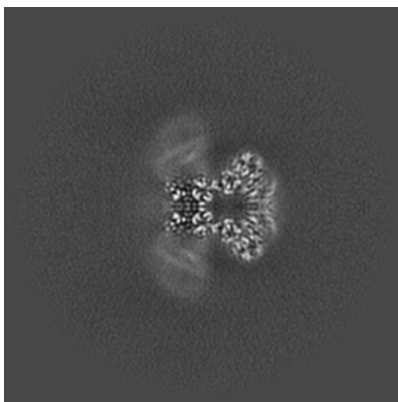
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

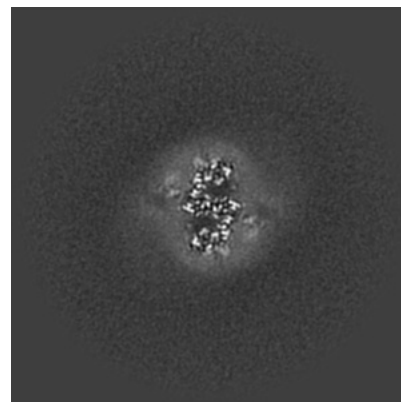
6.2.1 Primary map



X Index: 200

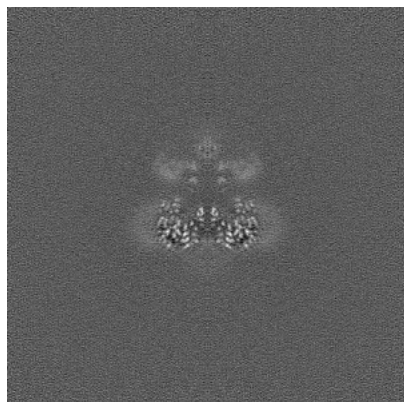


Y Index: 200

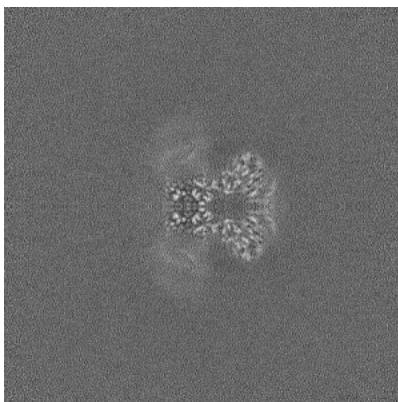


Z Index: 200

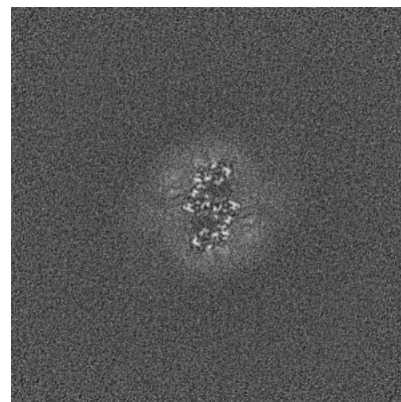
6.2.2 Raw map



X Index: 200



Y Index: 200

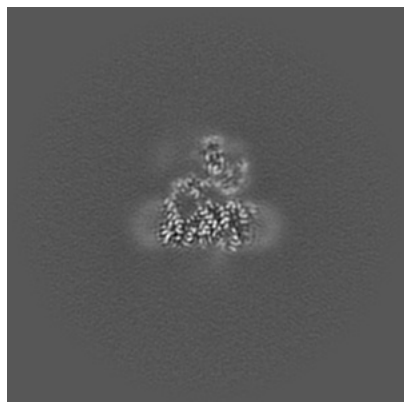


Z Index: 200

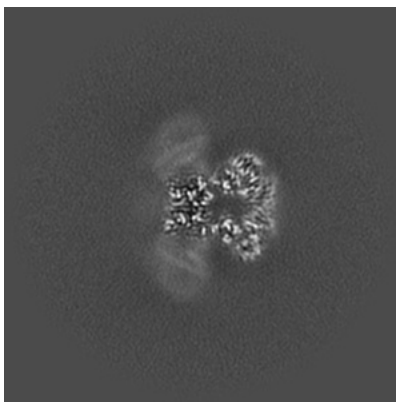
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

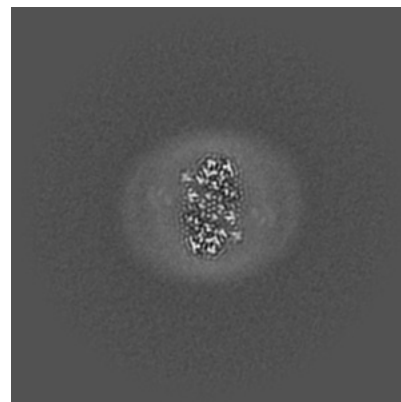
6.3.1 Primary map



X Index: 187

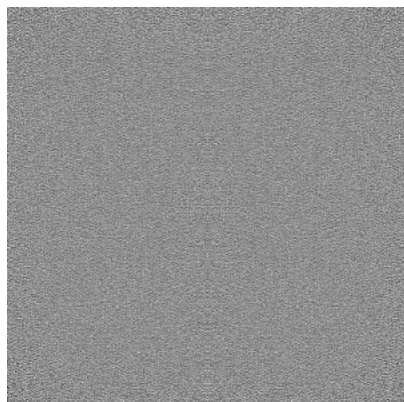


Y Index: 198

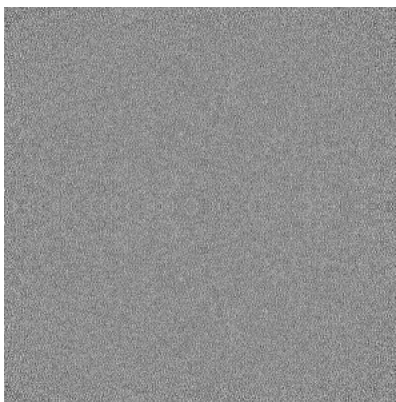


Z Index: 170

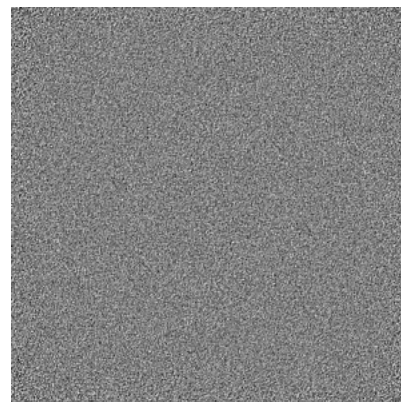
6.3.2 Raw map



X Index: 0



Y Index: 0

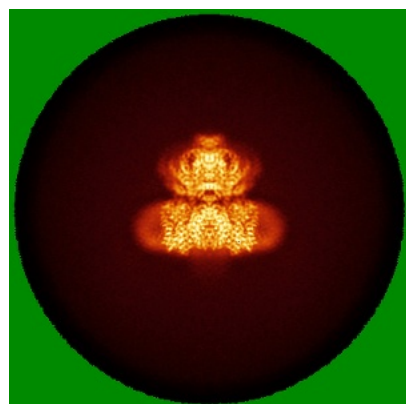


Z Index: 399

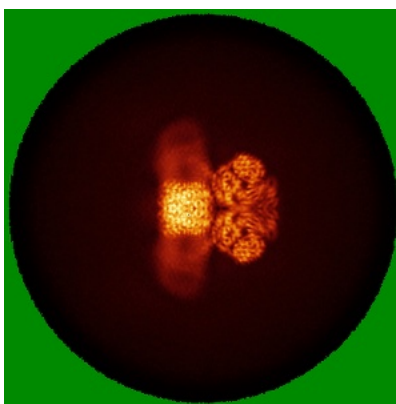
The images above show the largest variance slices of the map in three orthogonal directions.

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

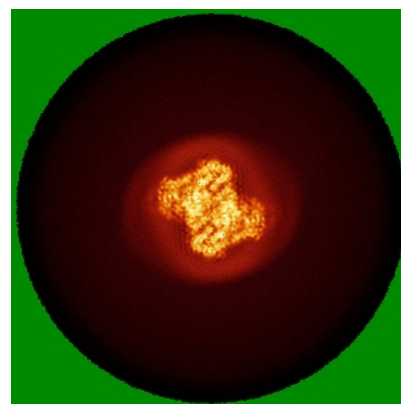
6.4.1 Primary map



X

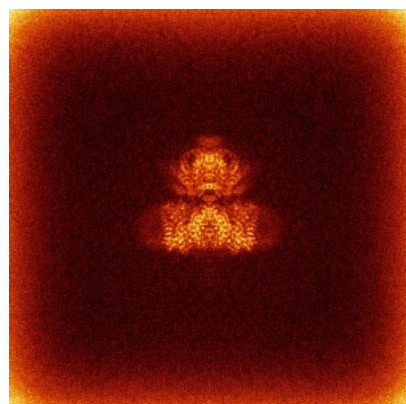


Y

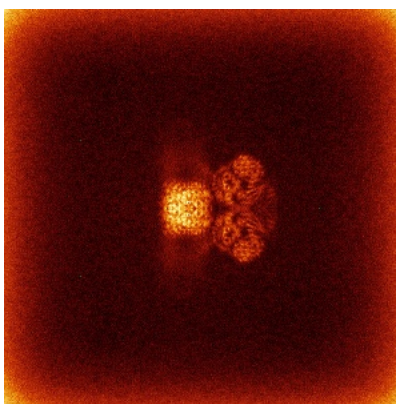


Z

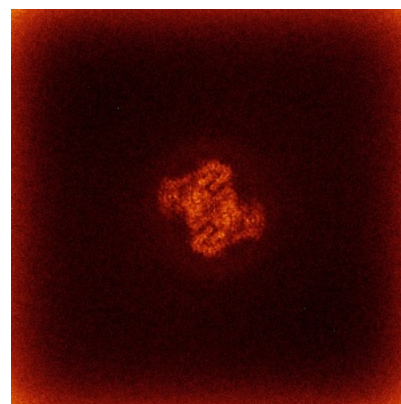
6.4.2 Raw map



X



Y

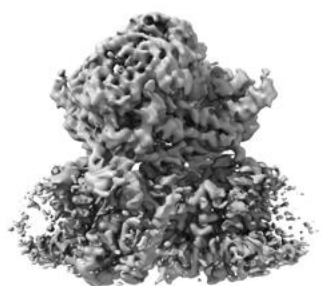


Z

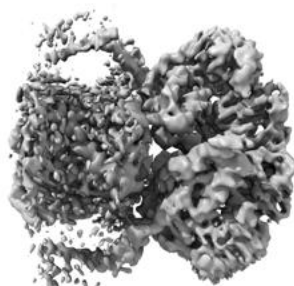
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views [i](#)

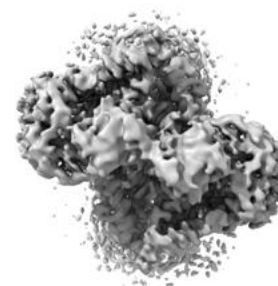
6.5.1 Primary map



X



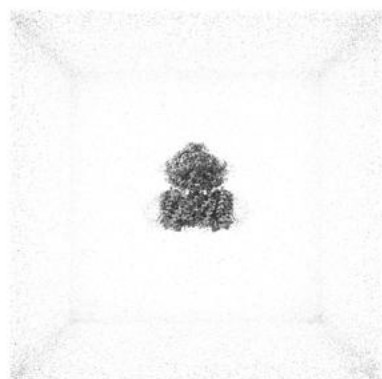
Y



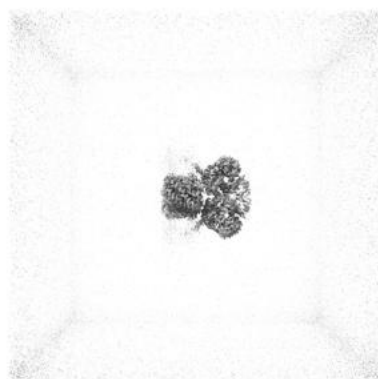
Z

The images above show the 3D surface view of the map at the recommended contour level 0.11. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

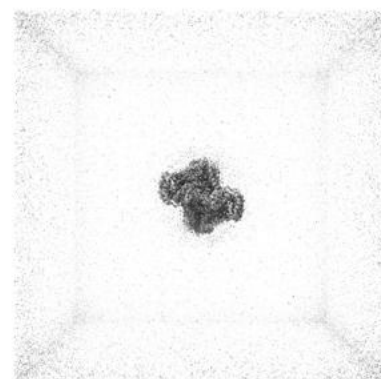
6.5.2 Raw map



X



Y



Z

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

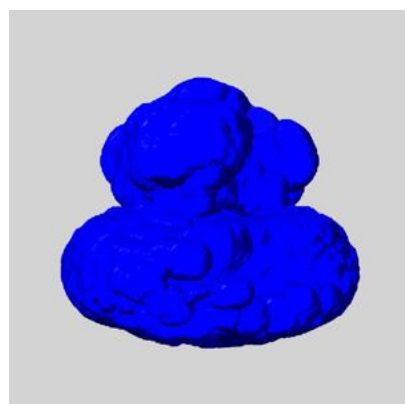
6.6 Mask visualisation [i](#)

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

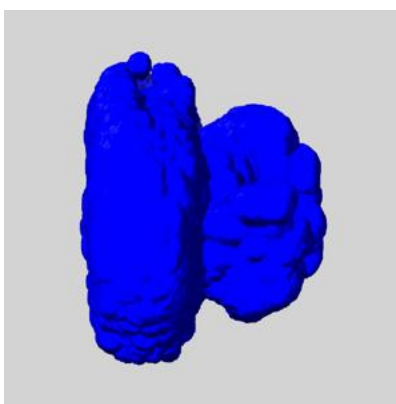
A mask typically either:

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

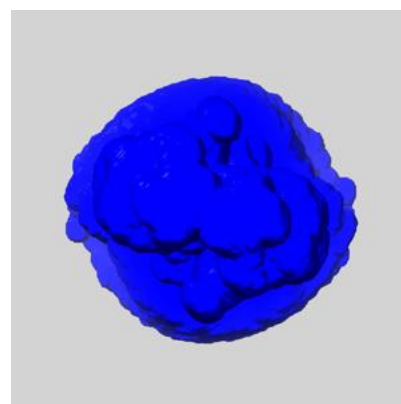
6.6.1 emd_17186_msk_1.map [i](#)



X



Y

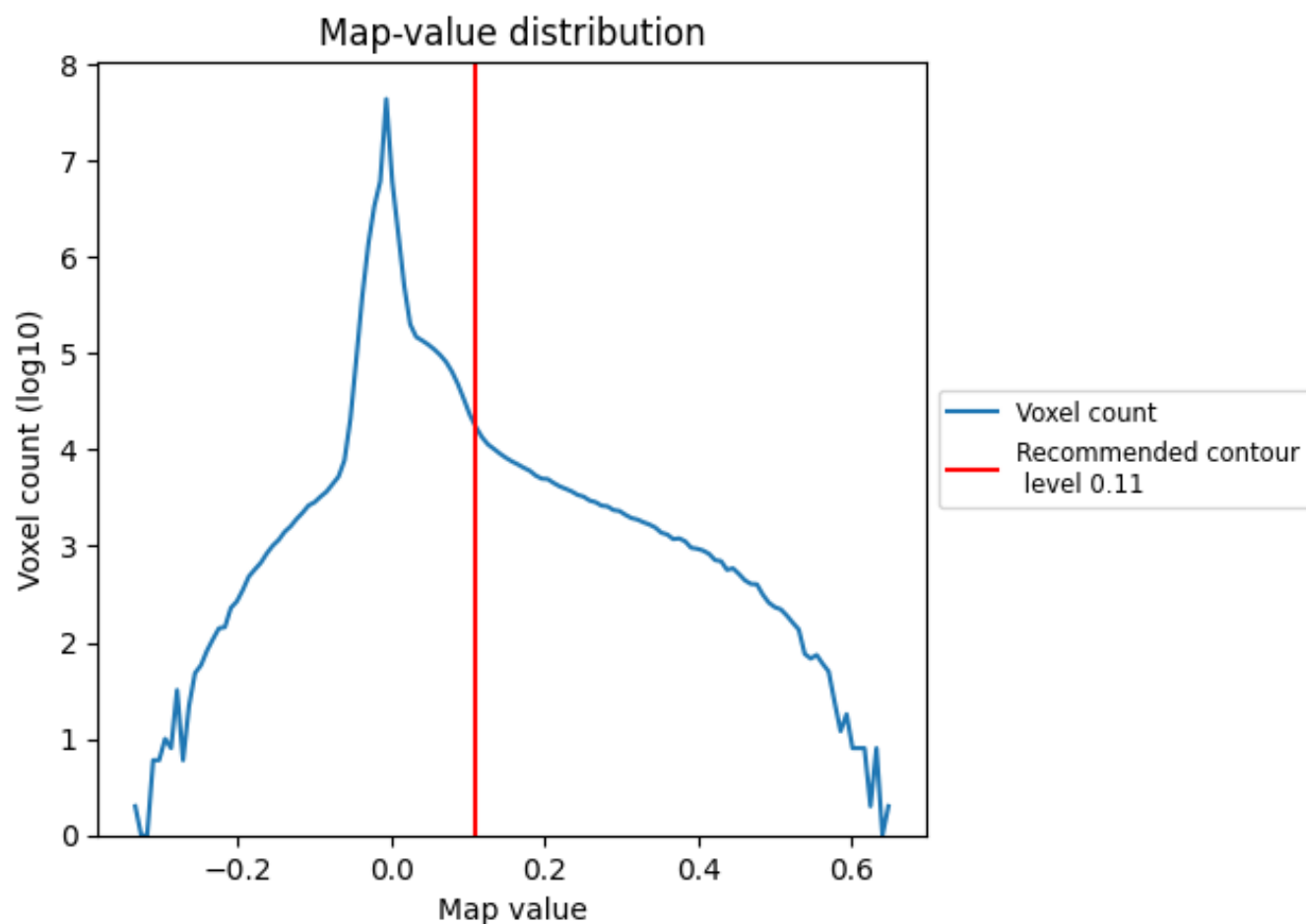


Z

7 Map analysis [i](#)

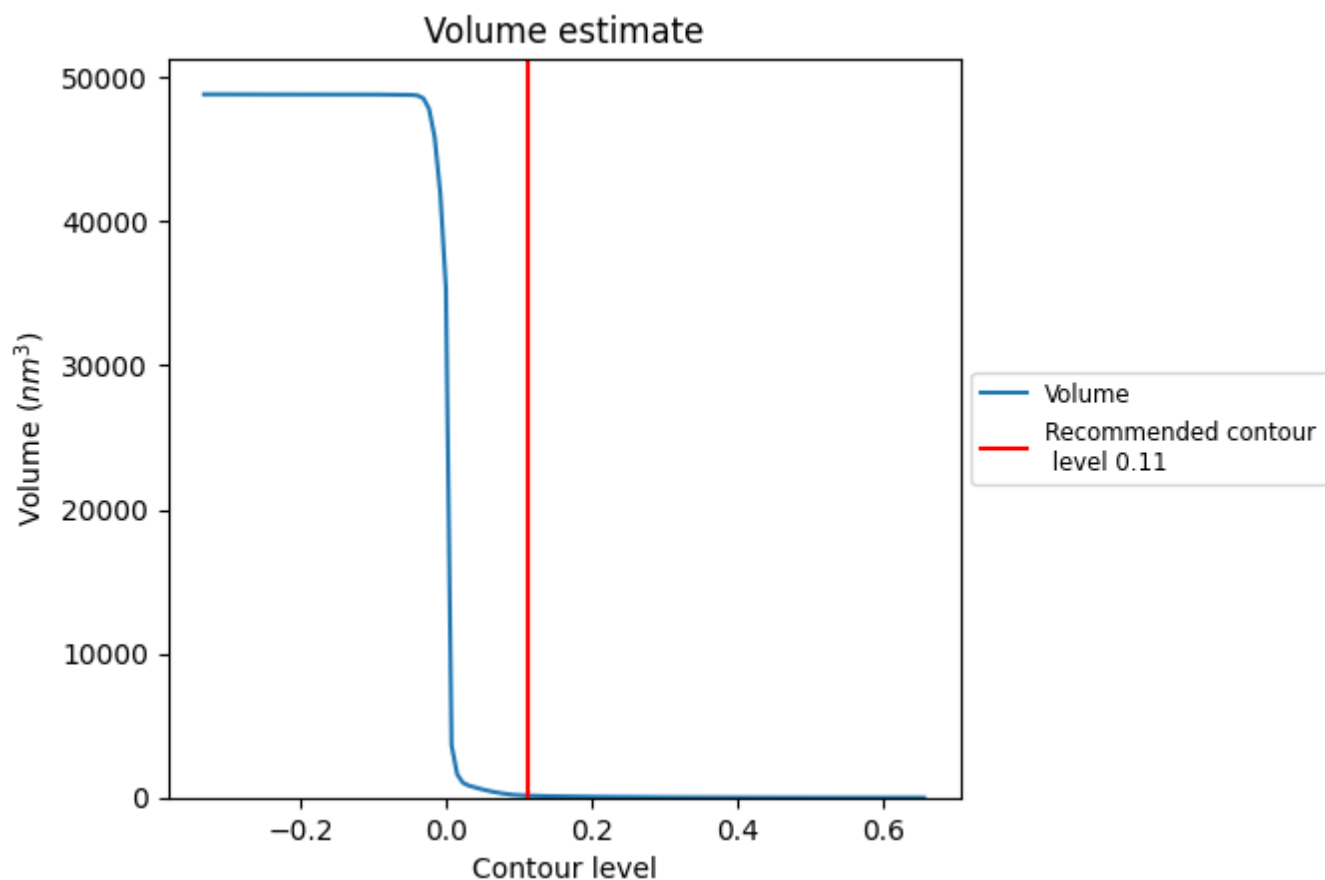
This section contains the results of statistical analysis of the map.

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.

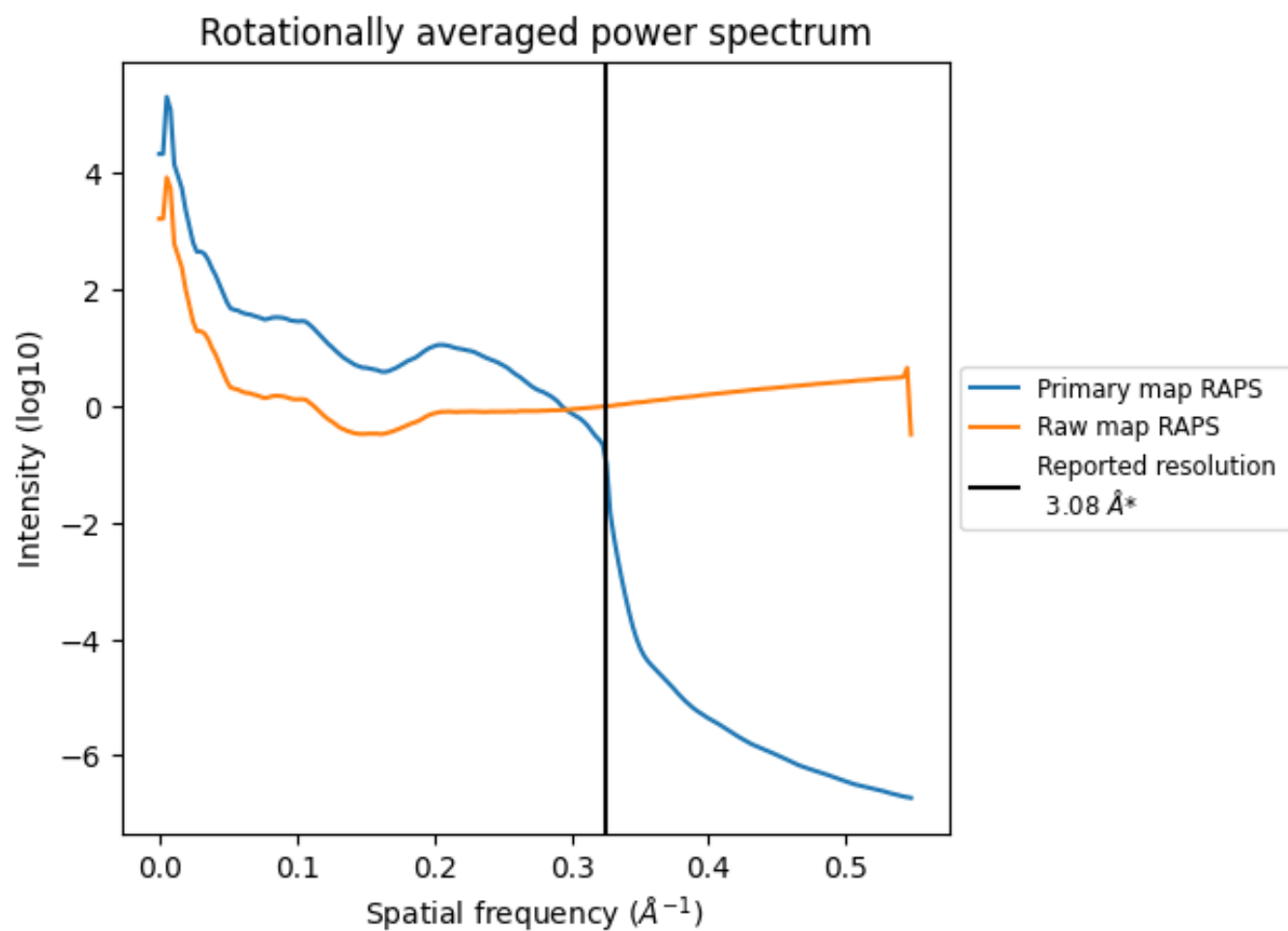
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 136 nm³; this corresponds to an approximate mass of 123 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 ⓘ

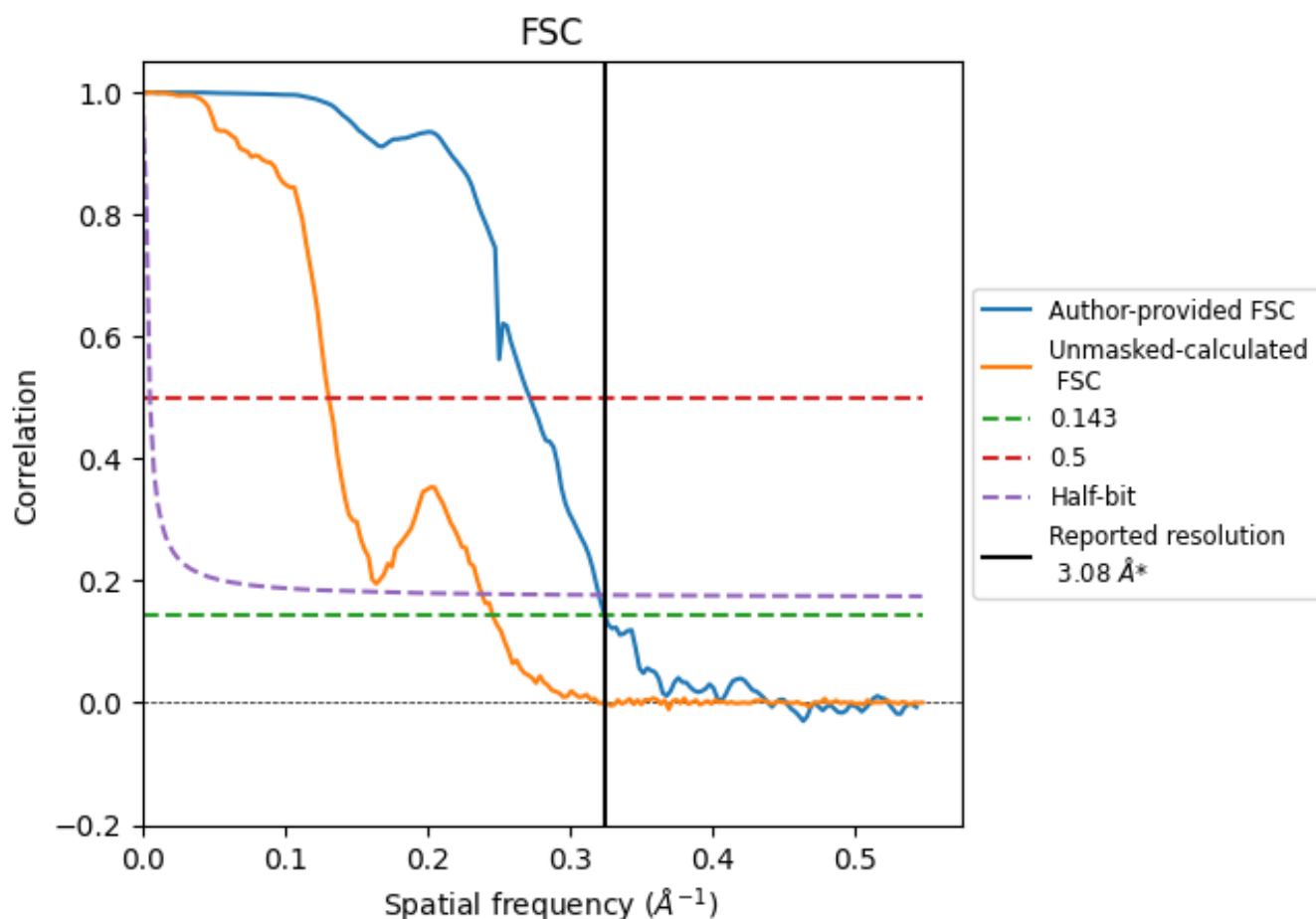


*Reported resolution corresponds to spatial frequency of 0.325 $\text{\AA}^{-1}$

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 $0.325 \text{ \AA}^{-1}$

8.2 Resolution estimates [i](#)

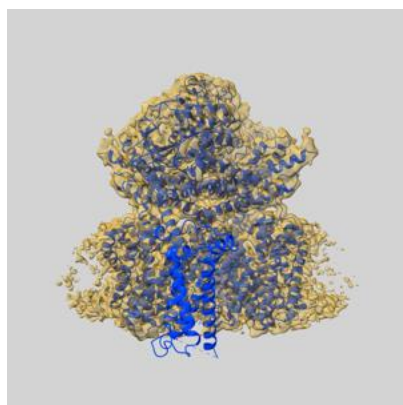
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.08	-	-
Author-provided FSC curve	3.08	3.68	3.12
Unmasked-calculated*	4.07	7.64	4.20

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 4.07 differs from the reported value 3.08 by more than 10 %

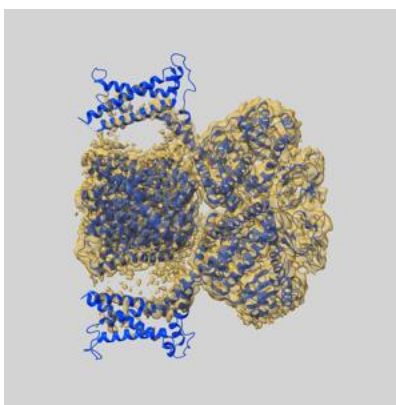
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-17186 and PDB model 8OTX. Per-residue inclusion information can be found in [section 3](#) on [page 5](#).

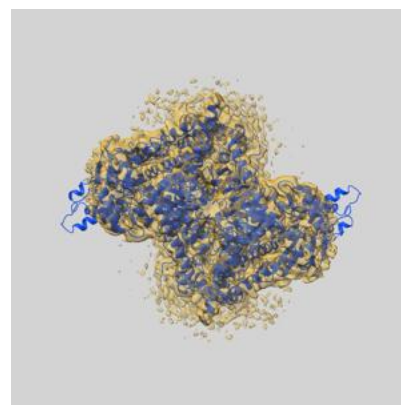
9.1 Map-model overlay [i](#)



X



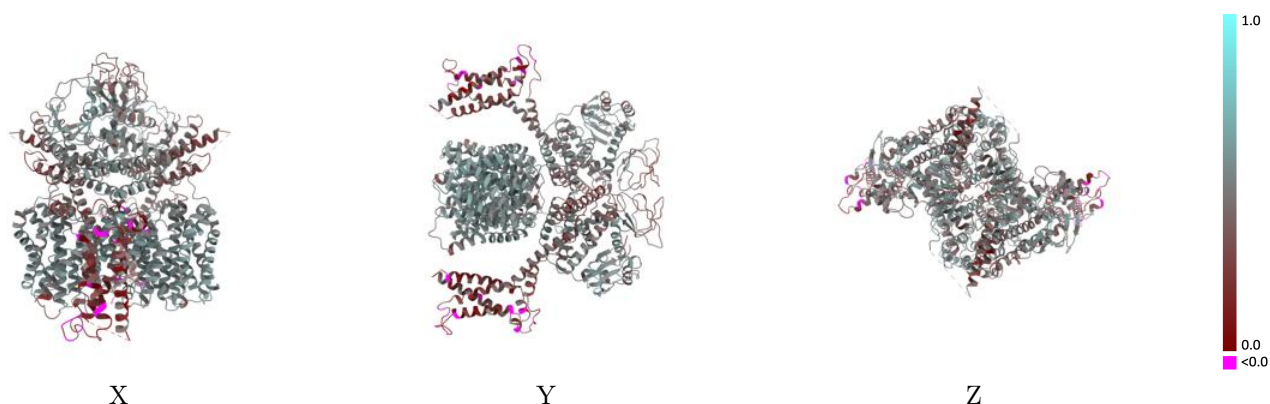
Y



Z

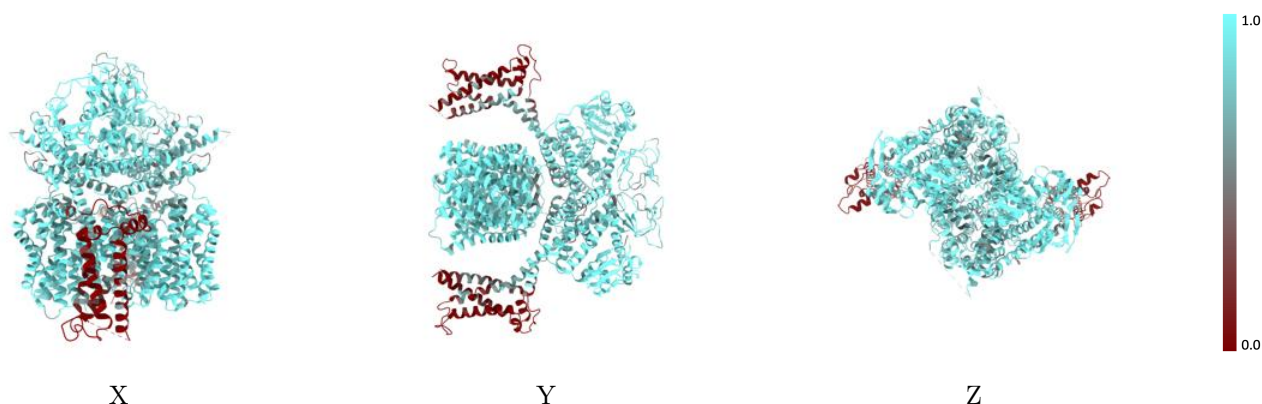
The images above show the 3D surface view of the map at the recommended contour level 0.11 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



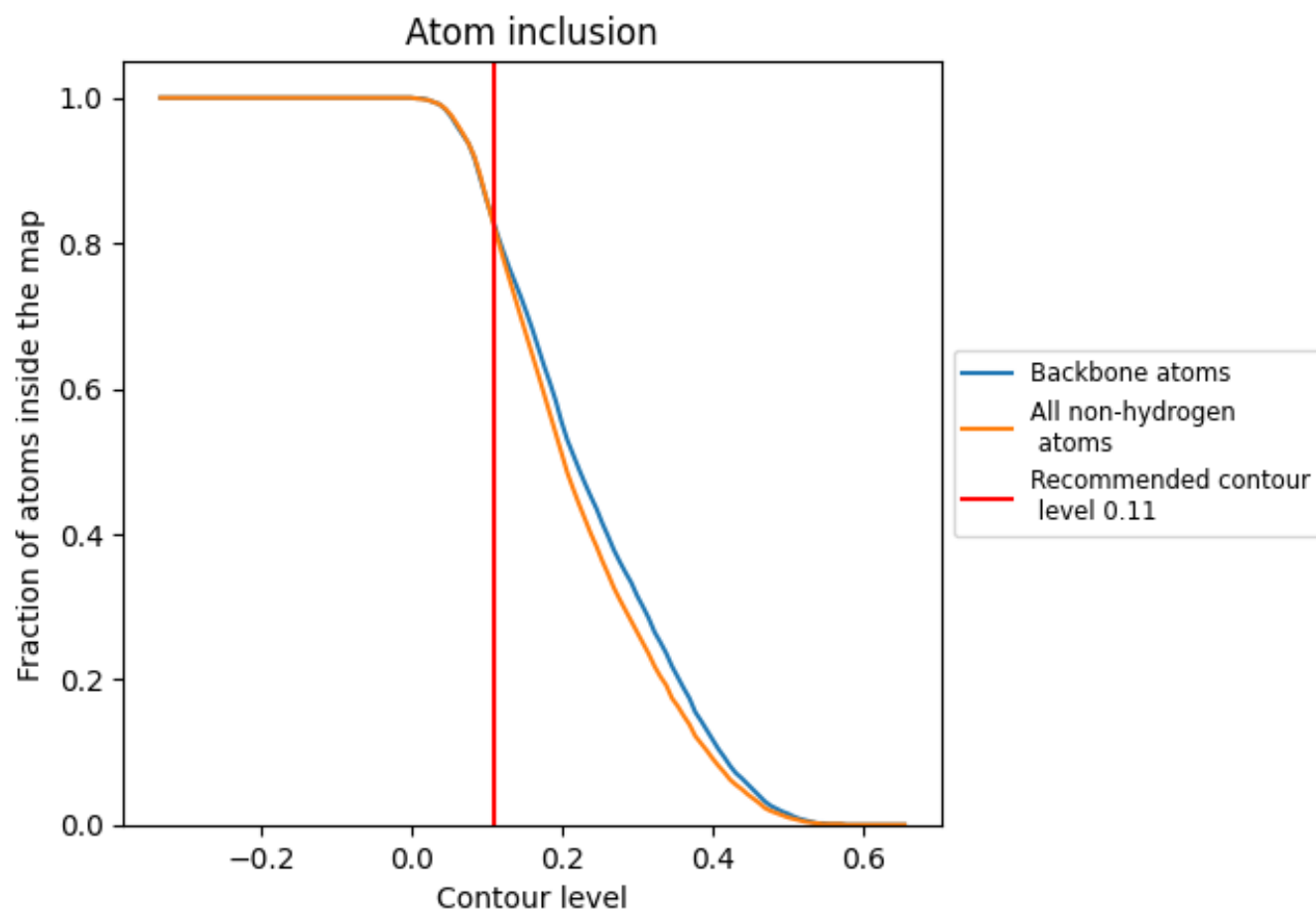
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.11).

9.4 Atom inclusion [i](#)



At the recommended contour level, 83% of all backbone atoms, 82% 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 (0.11) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8230	0.4570
A	0.8250	0.4570
B	0.8250	0.4570

