



Full wwPDB EM Validation Report ⓘ

May 26, 2024 – 12:38 PM EDT

PDB ID : 7SIC
EMDB ID : EMD-25140
Title : Human ATM Dimer
Authors : Warren, C.; Pavletich, N.P.
Deposited on : 2021-10-13
Resolution : 2.51 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 : 1.8.5 (274361), 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) : 2.36.2

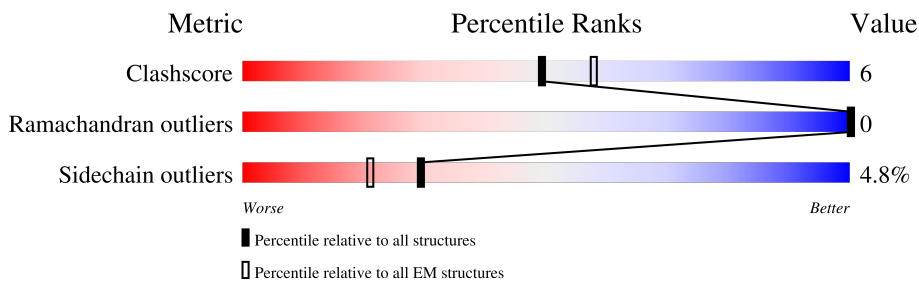
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 2.51 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	3056	
1	B	3056	

2 Entry composition [i](#)

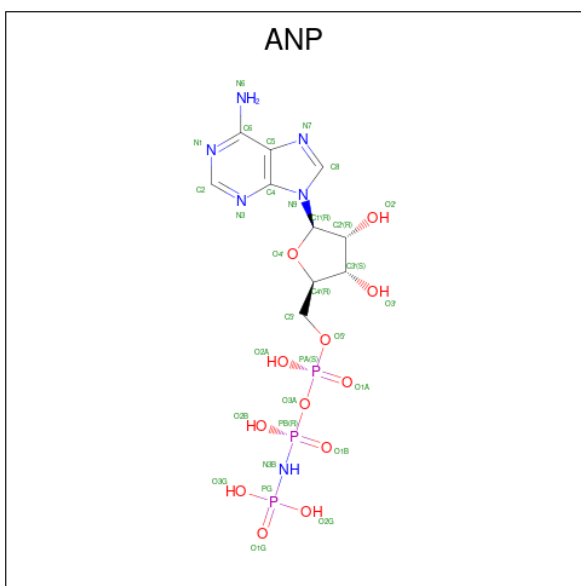
There are 3 unique types of molecules in this entry. The entry contains 44484 atoms, of which 0 are hydrogens and 0 are deuteriums.

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 Serine-protein kinase ATM.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	2773	Total	C	N	O	S	0	0
			22210	14200	3774	4083	153		
1	B	2773	Total	C	N	O	S	0	0
			22210	14200	3774	4083	153		

- Molecule 2 is PHOSPHOAMINOPHOSPHONIC ACID-ADENYLATE ESTER (three-letter code: ANP) (formula: $C_{10}H_{17}N_6O_{12}P_3$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
2	A	1	Total	C	N	O	P	0
			31	10	6	12	3	
2	B	1	Total	C	N	O	P	0
			31	10	6	12	3	

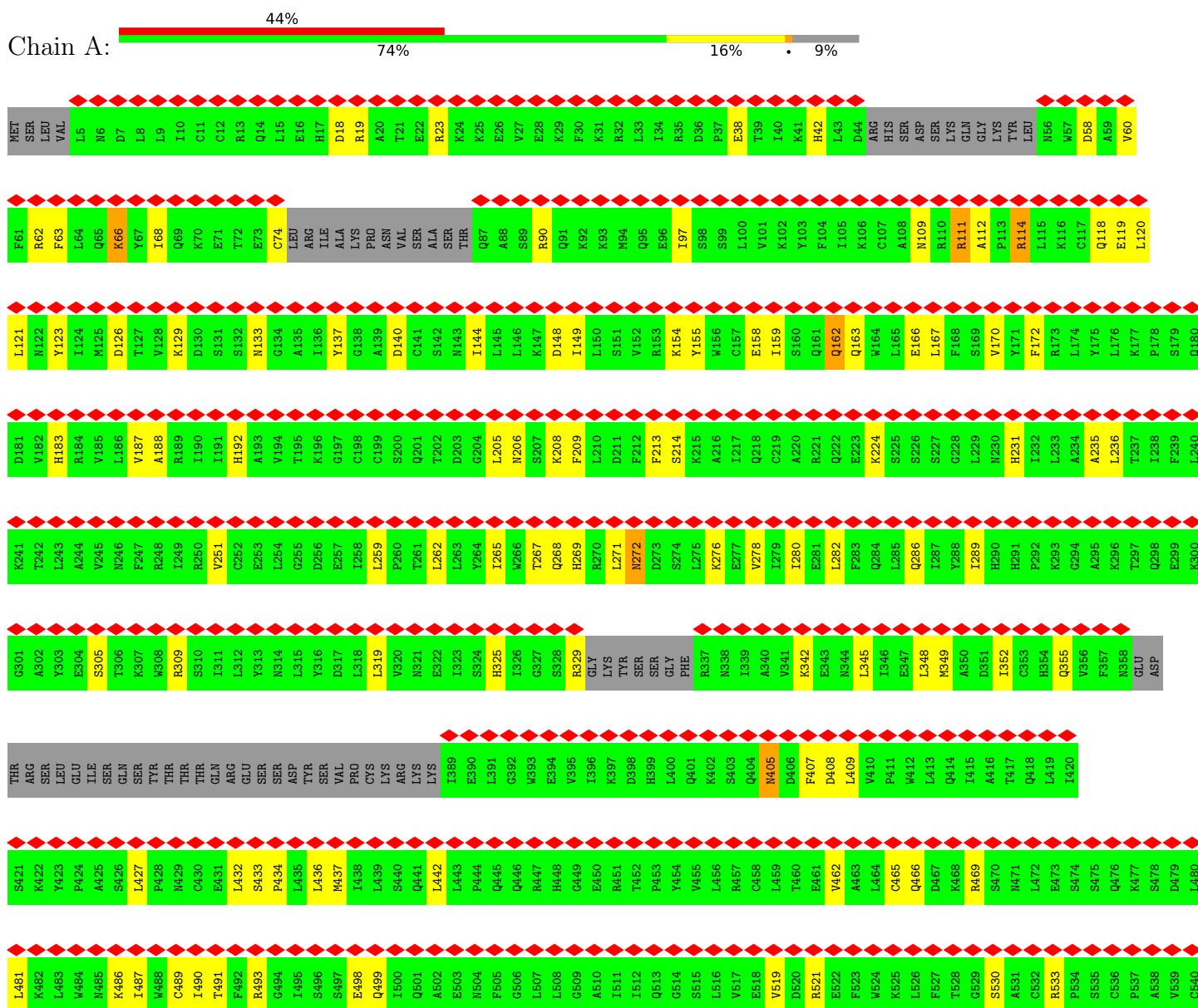
- Molecule 3 is MAGNESIUM ION (three-letter code: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

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

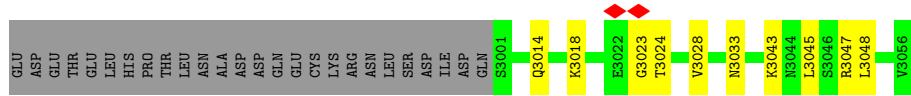
3 Residue-property plots

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.

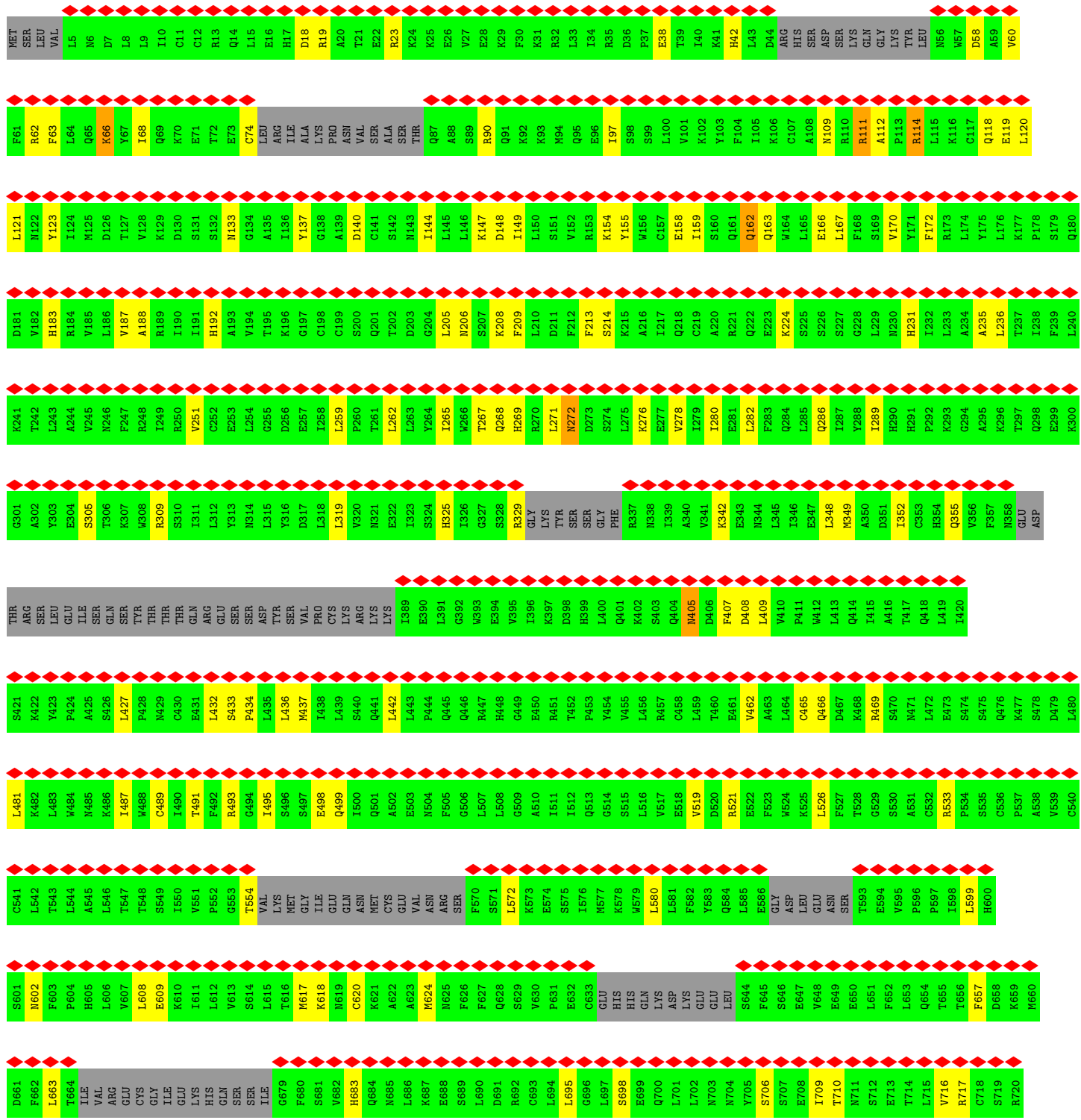
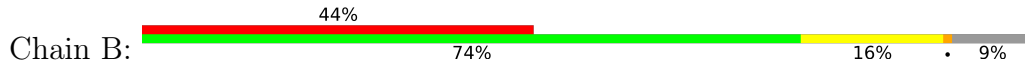
- Molecule 1: Serine-protein kinase ATM



I1261	F1201	PRO	M1081	V1021	L961	L901	Q781	L721	D661	S601	C541
R1262	G1202	E1142	H1082	I1022	P962	K902	L782	L722	F662	M602	L642
S1263	G1023	T1143	H1083	G1023	M963	F903	C783	V723	L663	F603	T543
H1264	A1024	L1144	Q1084	A1024	E964	L904	T784	G724	L664	P604	L644
F1265	R1205	D1145	V1085	F1025	D965	C905	R785	V725	I1E	H605	A545
D1266	L1206	E1146	R1086	W1026	V966	L906	C786	L726	VAL	H606	L646
E1267	L1207	I1147	M1087	H1027	L967	C907	L787	G727	ARG	V607	T547
V1268	D1208	M1149	L1088	L1028	E968	V908	S788	C728	GLY	L608	T648
K1269	F1209	R1150	A1089	L1029	L969	T909	M789	Y729	ASP	E609	S549
S1270	M1210	K1151	A1090	K1030	L970	T910	C790	Y730	GLU	K610	I650
I1271	A1211	S1152	E1091	E1031	K971	A911	T791	Y731	LYS	I611	V551
A1272	S1212	S1153	S1092	R1032	P972	Q912	K792	M732	HIS	L612	P552
M1273	H1213	V1153	I1093	Y1033	L973	T913	S793	G733	GLN	V613	G553
Q1274	L1214	L1154	M1094	Y1034	S974	N914	K794	V734	SER	S614	T554
I1275	D1215	L1155	R1095	I1035	M975	T915	P795	I735	I1E	L615	VAL
Y1276	Y1216	T1156	L1096	F1036	V976	V916	N796	A736	G679	T616	LYS
E1277	L1217	L1157	F1097	S1037	C977	S917	K797	E737	F680	M617	MET
V1278	V1218	I1158	Q1098	Y1038	S978	F918	I798	E738	S681	K618	GLY
M1279	E1220	A1159	D1099	R1039	C978	R919	A799	E739	V682	M619	GLU
K1280	W1221	V1160	T1100	M1040	L979	A920	S800	A740	H683	C620	GLN
S1281	L1222	L1162	K1101	A1041	R981	A921	G801	Y741	Q684	K621	ASN
L1282	L1223	L1163	GLY	L1042	R982	D922	F902	K742	M685	A622	MET
L1283	N1223	S1163	ASP	V1043	D983	I923	F903	S743	L686	A623	CYS
T1284	L1224	C1164	SER	N1044	Q984	R924	L804	E744	L687	M624	VAL
D1285	Q1225	S1165	ARG	C1045	D985	R925	R805	L745	K688	N625	ASN
C1286	D1226	P1166	LEU	L1046	V986	K926	L806	F746	E689	F626	ARG
F1287	T1227	I1167	L1108	K1047	C987	L927	L807	Q747	L690	F627	SER
P1288	E1228	C1168	K1109	T1048	K988	L928	T808	K748	D691	Q628	F570
K1289	Y1229	C1169	A1110	L1049	T989	M929	S809	A749	R692	S629	S571
L1290	N1230	K1170	L1111	L1050	I990	L930	K810	K750	R693	G630	K573
L1291	L1231	Q1171	P1112	E1051	T991	I931	L811	S751	L694	P631	E574
S1292	S1232	A1172	L1113	A1052	N992	D932	M812	L752	L695	E632	S575
M1293	F1233	L1173	K1114	D1053	H993	S933	N813	M753	G696	C633	S576
I1294	F1234	F1174	L1115	P1054	V994	S934	D814	Q754	L697	GLU	M577
L1295	P1235	A1175	L1116	Y1055	L995	T935	I815	C755	S698	HIS	K578
P1296	L1236	A1176	Q1116	S1056	H996	L936	A816	A756	E699	GLN	M579
Y1297	I1237	C1177	Q1117	S1057	H997	E937	D817	G757	Q700	LYS	L580
F1298	L1238	K1178	T1118	W1058	V998	P938	I818	E758	L701	ASP	L581
A1299	L1239	S1179	A1119	A1059	K999	T939	C819	S759	L702	LYS	F582
I1300	N1240	V1180	F1120	I1060	M1000	K940	K820	I760	N703	GLU	Y583
E1301	Y1241	K1181	E1121	L1061	L1001	S941	S821	I761	I760	LEU	Q584
G1302	T1242	E1182	A1123	N1062	G1002	L942	L822	L762	Y705	S644	L585
T1303	N1243	M1183	Y1124	V1063	Q1003	H943	A823	F763	S706	F645	E586
R1304	I1244	G1184	L1125	M1064	S1004	L944	S824	K764	S707	S646	GLY
L1305	E1245	L1185	K1126	G1065	Q893	H945	F825	M765	E708	E647	ASP
S1306	D1246	E1186	A1127	L1066	M1006	N946	I826	K766	I709	V648	LEU
G1307	F1247	P1187	Q1128	D1067	D1007	Y947	L836	T767	T710	E649	GLU
M1308	Y1248	H1188	E1129	F1068	S1008	L948	L836	N768	N711	E650	ASN
A1309	R1249	L1189	G1130	P1069	E1009	M949	F837	E769	S712	E651	SER
Q1310	S1250	V1190	M1131	W1070	M1010	L950	L838	E770	F512	L651	T593
Q1311	Y1251	K1191	R1132	M1071	T1011	L951	D839	F771	E713	F652	E594
R1312	K1253	L1192	E1133	E1072	R1012	K952	M900	R772	L715	L653	V595
L1313	V1254	L1194	M1134	V1073	D1013	E953		I773	V716	T655	P596
T1314	L1255	E1195	SER	F1074	A1014	L954		G774	R717	T656	I598
A1315	I1256	E1196	HIS	T1075	Q1015	P955		S775	C718	F657	L599
T1316	P1257	K1196	SER	Q1076	G1016	G956		L776	S719	K658	H600
K1317	H1258	V1197	ALA	F1077	G1017	E957		R777	R720	M660	
V1318	L1259	S1198	GLU	L1078	F1017	E958		M778			
Y1319	V1260	T1200	ASN	A1079	L1019	Y959		M779			
D1320				D1080	T1020	P960		M780			



• Molecule 1: Serine-protein kinase ATM



I1469	H1384	M1321	F1201	I1261	E1142	V1021	L961	L901	Q781	L721	L722	L723	G724	V725	V726	V727	C728	Y729	C730	Y731	M732	G733	V734	I735	A736	E737	E738	E739	A740	Y741	K742	S743	E744	L745	L746	Q747	K748	A749	K750	S751	L752	M753	Q754	C755	A756	G757	E758	S759	I760	T761	L762	F763	K764	N765	K766	T767	N768	E769	E770	F771	R772	I773	G774	S775	L776	R777	M779	M780																																																					
I1473	V1385	L1322	G1202	R1262	E1143	I1022	P962	K902	L782	L783	C783	T784	A785	V786	V787	S788	N789	C790	Y791	M792	K793	S794	V795	A796	E797	E798	E799	S800	G801	F802	F803	L804	L805	L806	L807	T808	S809	K810	L811	M812	D813	M814	I815	A816	G817	I818	C819	K820	L821	L822	A823	S824	F825	D826	L827	L828	P829	L829	Y829	L830	D832	S833	S834	T835	L836	L837	P838	I839	K840	L841	L842	L843	L844	M845	M846	Y847	L848	M849	L850	T1011	K952	E953	P955	G956	E957	L1019	P960																																		
Q1478	A1388	K1323	R1204	H1264	L1144	A1024	E964	L904	L784	L785	C785	T786	A787	V788	V789	S790	N791	C792	Y793	M794	K795	S796	V797	A798	E799	E800	G801	F802	F803	L804	L805	L806	L807	T808	S809	K810	L811	M812	D813	M814	I815	A816	G817	I818	C819	K820	L821	L822	A823	S824	F825	D826	L827	L828	P829	L830	D832	S833	S834	T835	L836	L837	P838	I839	K840	L841	L842	L843	L844	M845	M846	Y847	L848	M849	L850	T1011	K952	E953	P955	G956	E957	L1019	P960																																						
R1479	F1389	E1325	R1206	F1265	E1145	F1025	E965	C905	L786	L787	C787	T788	A789	V790	V791	S792	N793	C794	Y795	M796	K797	S798	V799	A800	E801	E802	E803	L804	L805	L806	L807	T808	S809	K810	L811	M812	D813	M814	I815	A816	G817	I818	C819	K820	L821	L822	A823	S824	F825	D826	L827	L828	P829	L830	D832	S833	S834	T835	L836	L837	P838	I839	K840	L841	L842	L843	L844	M845	M846	Y847	L848	M849	L850	T1011	K952	E953	P955	G956	E957	L1019	P960																																								
S1481	A1391	N1326	R1208	E1267	I1147	W1027	V966	C907	L789	L790	C790	T791	A792	V793	V794	S795	N796	C797	Y798	M799	K800	S801	V802	A803	E804	E805	E806	E807	E808	E809	E810	E811	E812	E813	E814	E815	E816	E817	E818	E819	E820	E821	E822	E823	E824	E825	E826	E827	E828	E829	E830	E831	E832	E833	E834	E835	E836	E837	E838	E839	E840	E841	E842	E843	E844	E845	E846	E847	E848	E849	E850	E851	E852	E853	E854	E855	E856	E857	E858	E859	E860	E861	E862	E863	E864	E865	E866	E867	E868	E869	E870	E871	E872	E873	E874	E875	E876	E877	E878	E879	E880	E881	E882	E883	E884	E885	E886	E887	E888	E889	E890	E891	E892	E893	E894	E895	E896	E897	E898	E899	M900
I1483	I1393	L1329	F1209	M1210	K1151	L1033	E968	V908	L791	L792	C792	T793	A794	V795	V796	S797	N798	C799	Y800	M801	K802	S803	V804	A805	E806	E807	E808	E809	E810	E811	E812	E813	E814	E815	E816	E817	E818	E819	E820	E821	E822	E823	E824	E825	E826	E827	E828	E829	E830	E831	E832	E833	E834	E835	E836	E837	E838	E839	E840	E841	E842	E843	E844	E845	E846	E847	E848	E849	E850	E851	E852	E853	E854	E855	E856	E857	E858	E859	E860	E861	E862	E863	E864	E865	E866	E867	E868	E869	E870	E871	E872	E873	E874	E875	E876	E877	E878	E879	E880	E881	E882	E883	E884	E885	E886	E887	E888	E889	E890	E891	E892	E893	E894	E895	E896	E897	E898	E899	M900		
D1485	C1396	I1332	M1212	A1211	S1152	E1031	L970	T909	L793	L794	C794	T795	A796	V797	V798	S799	N800	C801	Y802	M803	K804	S805	V806	A807	E808	E809	E810	E811	E812	E813	E814	E815	E816	E817	E818	E819	E820	E821	E822	E823	E824	E825	E826	E827	E828	E829	E830	E831	E832	E833	E834	E835	E836	E837	E838	E839	E840	E841	E842	E843	E844	E845	E846	E847	E848	E849	E850	E851	E852	E853	E854	E855	E856	E857	E858	E859	E860	E861	E862	E863	E864	E865	E866	E867	E868	E869	E870	E871	E872	E873	E874	E875	E876	E877	E878	E879	E880	E881	E882	E883	E884	E885	E886	E887	E888	E889	E890	E891	E892	E893	E894	E895	E896	E897	E898	E899	M900				
R1489	K1398	H1334	L1214	D1215	L1155	I1035	E969	V909	L795	L796	C796	T797	A798	V799	V800	S801	N802	C803	Y804	M805	K806	S807	V808	A809	E810	E811	E812	E813	E814	E815	E816	E817	E818	E819	E820	E821	E822	E823	E824	E825	E826	E827	E828	E829	E830	E831	E832	E833	E834	E835	E836	E837	E838	E839	E840	E841	E842	E843	E844	E845	E846	E847	E848	E849	E850	E851	E852	E853	E854	E855	E856	E857	E858	E859	E860	E861	E862	E863	E864	E865	E866	E867	E868	E869	E870	E871	E872	E873	E874	E875	E876	E877	E878	E879	E880	E881	E882	E883	E884	E885	E886	E887	E888	E889	E890	E891	E892	E893	E894	E895	E896	E897	E898	E899	M900						
D1496	T1399	L1335	Y1216	L1217	T1156	F1036	L971	T910	L797	L798	C798	T799	A800	V801	V802	S803	N804	C805	Y806	M807	K808	S809	V810	A811	E812	E813	E814	E815	E816	E817	E818	E819	E820	E821	E822	E823	E824	E825	E826	E827	E828	E829	E830	E831	E832	E833	E834	E835	E836	E837	E838	E839	E840	E841	E842	E843	E844	E845	E846	E847	E848	E849	E850	E851	E852	E853	E854	E855	E856	E857	E858	E859	E860	E861	E862	E863	E864	E865	E866	E867	E868	E869	E870	E871	E872	E873	E874	E875	E876	E877	E878	E879	E880	E881	E882	E883	E884	E885	E886	E887	E888	E889	E890	E891	E892	E893	E894	E895	E896	E897	E898	E899	M900								
S1499	I1400	F1336	Y1218	L1219	T1157	F1037	L972	T911	L799	L800	C800	T801	A802	V803	V804	S805	N806	C807	Y808	M809	K810	S811	V812	A813	E814	E815	E816	E817	E818	E819	E820	E821	E822	E823	E824	E825	E826	E827	E828	E829	E830	E831	E832	E833	E834	E835	E836	E837	E838	E839	E840	E841	E842	E843	E844	E845	E846	E847	E848	E849	E850	E851	E852	E853	E854	E855	E856	E857	E858	E859	E860	E861	E862	E863	E864	E865	E866	E867	E868	E869	E870	E871	E872	E873	E874	E875	E876	E877	E878	E879	E880	E881	E882	E883	E884	E885	E886	E887	E888	E889	E890	E891	E892	E893	E894	E895	E896	E897	E898	E899	M900										
Q1503	T1402	I1337	W1219	L1220	A1159	D1099	L973	T912	L801	L802	C802	T803	A804	V805	V806	S807	N808	C809	Y810	M811	K812	S813	V814	A815	E816	E817	E818	E819	E820	E821	E822	E823	E824	E825	E826	E827	E828	E829	E830	E831	E832	E833	E834	E835	E836	E837	E838	E839	E840	E841	E842	E843	E844	E845	E846	E847	E848	E849	E850	E851	E852	E853	E854	E855	E856	E857	E858	E859	E860	E861	E862	E863	E864	E865	E866	E867	E868	E869	E870	E871	E872	E873	E874	E875	E876	E877	E878	E879	E880	E881	E882	E883	E884	E885	E886	E887	E888	E889	E890	E891	E892	E893	E894	E895	E896	E897	E898	E899	M900												
A1505	L1404	P1341	K1280	W1221	V1161	T1100	L974	T913	L803	L804	C804	T805	A806	V807	V808	S809	N810	C811	Y812	M813	K814	S815	V816	A817	E818	E819	E820	E821	E822	E823	E824	E825	E826	E827	E828	E829	E830	E831	E832	E833	E834	E835	E836	E837	E838	E839	E840	E841	E842	E843	E844	E845	E846	E847	E848	E849	E850	E851	E852	E853	E854	E855	E856	E857	E858	E859	E860	E861	E862	E863	E864	E865	E866	E867	E868	E869	E870	E871	E872	E873	E874	E875	E876	E877	E878	E879	E880	E881	E882	E883	E884	E885	E886	E887	E888	E889	E890	E891	E892	E893	E894	E895	E896	E897	E898	E899	M900														
Y1508	L1408	I1343	L1282	L1283	L1162	GLY	L975	T914	L805	L806	C806	T807	A808	V809	V810	S811	N812	C813	Y814	M815	K816	S817	V818	A819	E820	E821	E822	E823	E824	E825	E826	E827	E828	E829	E830	E831	E832	E833	E834	E835	E836	E837	E838	E839	E840	E841	E842	E843	E844	E845	E846	E847	E848	E849	E850	E851	E852	E853	E854	E855	E856	E857	E858	E859	E860	E861	E862	E863	E864	E865	E866	E867	E868	E869	E870	E871	E872	E873	E874	E875	E876	E877	E878	E879	E880	E881	E882	E883	E884	E885	E886	E887	E888	E889	E890	E891	E892	E893	E894	E895	E896	E897	E898	E899	M900																
C1509	S1409	V1344	L1284	L1285	S1163	ASP	L976	T915	L807	L808	C807	T809	A810	V811	V812	S813	N814	C815	Y816	M817	K818	S819	V820	A821	E822	E823	E824	E825	E826	E827	E828	E829	E830	E831	E832	E833	E834	E835	E836	E837	E838	E839	E840	E841	E842	E843	E844	E845	E846	E847	E848	E849	E850	E851	E852	E853	E854	E855	E856	E857	E858	E859	E860	E861	E862	E863	E864	E865	E866	E867	E868	E869	E870	E871	E872	E873	E874	E875	E876	E877	E878	E879	E880	E881	E882	E883	E884	E885	E886	E887	E888	E889	E890	E891	E892	E893	E894	E895	E896	E897	E898	E899	M900																		
D1511	K1410	V1345	L1286	L1287	C1164	ARG	L977	T916	L809	L810	C808	T811	A812	V813	V814	S815	N816	C817	Y818	M819	K820	S821	V822	A823	E824	E825	E826	E827	E828	E829	E830	E831	E832	E833	E834	E835	E836	E837	E838	E839	E840	E841	E842	E843	E844	E845	E846	E847	E																																																																								

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C2	Depositor
Number of particles used	303604	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 ($e^-/\text{\AA}^2$)	53.8	Depositor
Minimum defocus (nm)	600	Depositor
Maximum defocus (nm)	1600	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.222	Depositor
Minimum map value	-0.125	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.004	Depositor
Recommended contour level	0.02	Depositor
Map size (Å)	316.8, 316.8, 316.8	wwPDB
Map dimensions	300, 300, 300	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.056, 1.056, 1.056	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: MG, ANP

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	0.25	0/22624	0.46	3/30565 (0.0%)
1	B	0.25	0/22624	0.46	3/30565 (0.0%)
All	All	0.25	0/45248	0.46	6/61130 (0.0%)

There are no bond length outliers.

All (6) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	663	LEU	CA-CB-CG	5.08	126.97	115.30
1	B	663	LEU	CA-CB-CG	5.08	126.97	115.30
1	A	1372	LEU	CA-CB-CG	5.03	126.87	115.30
1	B	1372	LEU	CA-CB-CG	5.03	126.87	115.30
1	A	1322	LEU	CA-CB-CG	5.01	126.83	115.30
1	B	1322	LEU	CA-CB-CG	5.01	126.83	115.30

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	22210	0	22392	279	0
1	B	22210	0	22392	278	0
2	A	31	0	13	1	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	B	31	0	13	1	0
3	A	1	0	0	0	0
3	B	1	0	0	0	0
All	All	44484	0	44810	545	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 6.

All (545) 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:B:1312:ARG:HG3	1:B:1312:ARG:HH11	1.31	0.95
1:A:1312:ARG:HG3	1:A:1312:ARG:HH11	1.31	0.93
1:B:2458:ASP:OD1	1:B:2461:ARG:NH2	2.23	0.71
1:B:1509:CYS:HB2	1:B:1512:ALA:HB2	1.73	0.71
1:A:1509:CYS:HB2	1:A:1512:ALA:HB2	1.73	0.71
1:A:272:ASN:OD1	1:A:272:ASN:N	2.19	0.70
1:A:2458:ASP:OD1	1:A:2461:ARG:NH2	2.23	0.70
1:A:1988:SER:OG	1:A:1992:LYS:NZ	2.26	0.69
1:B:1988:SER:OG	1:B:1992:LYS:NZ	2.26	0.69
1:B:272:ASN:OD1	1:B:272:ASN:N	2.19	0.68
1:A:2480:HIS:HB3	1:A:2483:TRP:HD1	1.58	0.68
1:A:2061:GLN:HG2	1:A:2084:LEU:HD21	1.76	0.67
1:A:3043:LYS:HE3	1:A:3047:ARG:NH2	2.10	0.67
1:B:2480:HIS:HB3	1:B:2483:TRP:HD1	1.58	0.67
1:B:1685:THR:HG23	1:B:2166:VAL:HG21	1.76	0.67
1:B:3043:LYS:HE3	1:B:3047:ARG:NH2	2.10	0.67
1:A:1685:THR:HG23	1:A:2166:VAL:HG21	1.76	0.67
1:A:2030:ILE:HD12	1:A:2030:ILE:H	1.60	0.67
1:B:2061:GLN:HG2	1:B:2084:LEU:HD21	1.76	0.67
1:B:2030:ILE:HD12	1:B:2030:ILE:H	1.60	0.66
1:A:319:LEU:HD23	1:A:349:MET:HG2	1.78	0.66
1:A:427:LEU:O	1:A:469:ARG:NH2	2.25	0.66
1:A:1131:MET:HG2	1:A:1150:ARG:HB3	1.76	0.66
1:B:319:LEU:HD23	1:B:349:MET:HG2	1.78	0.66
1:B:1131:MET:HG2	1:B:1150:ARG:HB3	1.76	0.66
1:A:329:ARG:NH2	1:A:407:PHE:O	2.29	0.65
1:B:329:ARG:NH2	1:B:407:PHE:O	2.29	0.65
1:A:1290:ILE:O	1:A:1294:ILE:HD12	1.97	0.65
1:A:1294:ILE:HG23	1:A:1315:ALA:HB1	1.79	0.65
1:A:2969:TYR:OH	2:A:3101:ANP:O2G	2.15	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1310:GLN:HE21	1:B:1311:GLN:HE21	1.45	0.64
1:A:1310:GLN:HE21	1:A:1311:GLN:HE21	1.45	0.64
1:B:1290:ILE:O	1:B:1294:ILE:HD12	1.97	0.64
1:B:1223:ASN:OD1	1:B:1262:ARG:NH2	2.32	0.63
1:B:1294:ILE:HG23	1:B:1315:ALA:HB1	1.79	0.63
1:A:1215:ASP:OD2	1:A:1258:HIS:NE2	2.28	0.63
1:B:602:ASN:OD1	1:B:717:ARG:NH1	2.32	0.63
1:B:2368:ALA:HB1	1:B:2383:LYS:HG2	1.80	0.62
1:B:63:PHE:HD1	1:B:66:LYS:HZ1	1.47	0.62
1:B:1747:HIS:O	1:B:1751:GLU:HG2	1.99	0.62
1:B:68:ILE:HD12	1:B:97:ILE:HD12	1.82	0.62
1:B:2744:GLU:HG2	1:B:2933:LYS:HD2	1.81	0.62
1:A:2368:ALA:HB1	1:A:2383:LYS:HG2	1.80	0.62
1:A:2744:GLU:HG2	1:A:2933:LYS:HD2	1.81	0.62
1:A:1223:ASN:OD1	1:A:1262:ARG:NH2	2.32	0.62
1:A:1294:ILE:HG21	1:A:1319:TYR:HB2	1.82	0.62
1:A:1351:LEU:O	1:A:1437:ARG:NH1	2.32	0.62
1:B:1351:LEU:O	1:B:1437:ARG:NH1	2.32	0.62
1:A:1747:HIS:O	1:A:1751:GLU:HG2	1.99	0.61
1:B:2969:TYR:OH	2:B:3101:ANP:O2G	2.15	0.61
1:A:68:ILE:HD12	1:A:97:ILE:HD12	1.82	0.61
1:A:602:ASN:OD1	1:A:717:ARG:NH1	2.32	0.61
1:A:2142:THR:O	1:A:2146:SER:OG	2.19	0.61
1:B:1294:ILE:HG21	1:B:1319:TYR:HB2	1.82	0.60
1:B:2214:ASP:OD1	1:B:2746:ARG:NH1	2.34	0.60
1:A:2664:VAL:HB	1:A:2667:MET:HG3	1.84	0.60
1:A:2697:ASN:HD22	1:A:2719:ARG:HG3	1.66	0.60
1:A:2214:ASP:OD1	1:A:2746:ARG:NH1	2.34	0.60
1:B:2656:LEU:HD13	1:B:2659:LEU:HD11	1.84	0.60
1:B:2142:THR:O	1:B:2146:SER:OG	2.19	0.60
1:B:2378:GLU:OE1	1:B:2378:GLU:N	2.20	0.60
1:B:2697:ASN:HD22	1:B:2719:ARG:HG3	1.66	0.60
1:B:2401:ILE:HG21	1:B:2459:ARG:HB2	1.84	0.60
1:A:1652:LEU:HD13	1:A:2163:LEU:HD21	1.84	0.59
1:B:1652:LEU:HD13	1:B:2163:LEU:HD21	1.84	0.59
1:B:2188:LEU:HD11	1:B:2198:LEU:HD22	1.85	0.59
1:A:3045:LEU:HA	1:A:3048:LEU:HD12	1.85	0.59
1:B:1215:ASP:OD2	1:B:1258:HIS:NE2	2.28	0.59
1:A:2188:LEU:HD11	1:A:2198:LEU:HD22	1.85	0.59
1:A:2401:ILE:HG21	1:A:2459:ARG:HB2	1.84	0.59
1:B:2520:MET:HG2	1:B:2556:THR:HG22	1.85	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:2448:ASP:OD2	1:A:2449:GLU:N	2.36	0.59
1:B:2448:ASP:OD2	1:B:2449:GLU:N	2.36	0.59
1:B:2928:ARG:NH1	1:B:3033:ASN:OD1	2.35	0.59
1:A:1251:CYS:O	1:A:1255:LEU:HG	2.02	0.59
1:A:2520:MET:HG2	1:A:2556:THR:HG22	1.85	0.59
1:A:205:LEU:HD23	1:A:205:LEU:H	1.67	0.59
1:B:3045:LEU:HA	1:B:3048:LEU:HD12	1.85	0.59
1:A:2928:ARG:NH1	1:A:3033:ASN:OD1	2.35	0.58
1:A:1575:ARG:HB3	1:A:1575:ARG:HH11	1.68	0.58
1:B:2664:VAL:HB	1:B:2667:MET:HG3	1.84	0.58
1:A:2633:LEU:HB3	1:A:2700:LYS:HE2	1.85	0.58
1:A:2656:LEU:HD13	1:A:2659:LEU:HD11	1.84	0.58
1:A:618:LYS:HG2	1:A:683:HIS:CD2	2.39	0.58
1:B:1312:ARG:HG3	1:B:1312:ARG:NH1	2.07	0.58
1:B:1575:ARG:HH11	1:B:1575:ARG:HB3	1.68	0.58
1:B:618:LYS:HG2	1:B:683:HIS:CD2	2.39	0.58
1:B:1251:CYS:O	1:B:1255:LEU:HG	2.02	0.58
1:B:205:LEU:HD23	1:B:205:LEU:H	1.67	0.58
1:B:427:LEU:O	1:B:469:ARG:NH2	2.25	0.57
1:A:62:ARG:HB2	1:A:62:ARG:HH11	1.69	0.57
1:B:62:ARG:NH1	1:B:62:ARG:HB2	2.20	0.57
1:A:2719:ARG:HA	1:A:2763:ARG:HG2	1.87	0.56
1:B:2633:LEU:HB3	1:B:2700:LYS:HE2	1.85	0.56
1:A:62:ARG:HB2	1:A:62:ARG:NH1	2.20	0.56
1:A:2101:GLN:HA	1:A:2104:TRP:CD1	2.40	0.56
1:A:111:ARG:HE	1:A:114:ARG:HH22	1.52	0.56
1:B:62:ARG:HB2	1:B:62:ARG:HH11	1.69	0.56
1:B:2101:GLN:HA	1:B:2104:TRP:CD1	2.40	0.56
1:A:19:ARG:O	1:A:23:ARG:N	2.36	0.56
1:B:1208:ASP:N	1:B:1208:ASP:OD1	2.38	0.56
1:A:1745:THR:OG1	1:A:1822:GLU:OE2	2.24	0.56
1:A:1208:ASP:OD1	1:A:1208:ASP:N	2.38	0.55
1:B:2719:ARG:HA	1:B:2763:ARG:HG2	1.87	0.55
1:A:140:ASP:O	1:A:144:ILE:HD12	2.07	0.55
1:B:205:LEU:HD12	1:B:209:PHE:HD1	1.71	0.55
1:A:192:HIS:HA	1:A:235:ALA:HB2	1.88	0.55
1:A:487:ILE:O	1:A:491:THR:HG22	2.06	0.55
1:B:111:ARG:HE	1:B:114:ARG:HH22	1.52	0.55
1:B:192:HIS:HA	1:B:235:ALA:HB2	1.88	0.55
1:A:405:ASN:OD1	1:A:405:ASN:N	2.29	0.54
1:B:487:ILE:O	1:B:491:THR:HG22	2.06	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:309:ARG:NH2	1:A:355:GLN:O	2.40	0.54
1:B:162:GLN:O	1:B:162:GLN:NE2	2.34	0.54
1:A:205:LEU:HD12	1:A:209:PHE:HD1	1.71	0.54
1:A:2196:ARG:O	1:A:2200:GLU:HG3	2.08	0.54
1:B:19:ARG:O	1:B:23:ARG:N	2.36	0.54
1:B:140:ASP:O	1:B:144:ILE:HD12	2.07	0.54
1:B:2402:GLU:OE2	1:B:2459:ARG:NE	2.32	0.54
1:A:2901:PRO:HB3	1:B:2444:GLU:OE1	2.08	0.54
1:B:1710:TRP:O	1:B:1714:MET:HG2	2.08	0.54
1:A:2968:LEU:HD11	1:B:2440:LYS:HD3	1.90	0.54
1:B:309:ARG:NH2	1:B:355:GLN:O	2.40	0.54
1:B:1959:GLU:OE2	1:B:2849:ARG:NH1	2.36	0.53
1:B:2196:ARG:O	1:B:2200:GLU:HG3	2.08	0.53
1:A:1182:GLU:OE2	1:A:1229:TYR:OH	2.26	0.53
1:A:2444:GLU:OE1	1:B:2901:PRO:HB3	2.08	0.53
1:B:1182:GLU:OE2	1:B:1229:TYR:OH	2.26	0.53
1:A:2936:GLU:HG3	1:A:3028:VAL:HG21	1.90	0.53
1:B:1318:VAL:O	1:B:1322:LEU:HD12	2.09	0.53
1:A:1567:ASP:O	1:A:1568:HIS:ND1	2.36	0.53
1:B:2936:GLU:HG3	1:B:3028:VAL:HG21	1.90	0.53
1:A:580:LEU:HD22	1:A:608:LEU:HD21	1.91	0.53
1:A:1318:VAL:O	1:A:1322:LEU:HD12	2.09	0.53
1:B:1343:ILE:H	1:B:1343:ILE:HD12	1.74	0.53
1:A:1710:TRP:O	1:A:1714:MET:HG2	2.08	0.52
1:A:2378:GLU:OE1	1:A:2378:GLU:N	2.20	0.52
1:A:1755:MET:SD	1:A:1755:MET:N	2.82	0.52
1:B:580:LEU:HD22	1:B:608:LEU:HD21	1.91	0.52
1:A:2440:LYS:HD3	1:B:2968:LEU:HD11	1.90	0.52
1:A:618:LYS:HG2	1:A:683:HIS:HD2	1.73	0.52
1:A:1312:ARG:HG3	1:A:1312:ARG:NH1	2.07	0.52
1:A:2697:ASN:HB3	1:A:2719:ARG:HD3	1.92	0.52
1:B:618:LYS:HG2	1:B:683:HIS:HD2	1.73	0.52
1:A:1551:ASP:OD1	1:A:1551:ASP:N	2.41	0.52
1:B:1755:MET:SD	1:B:1755:MET:N	2.82	0.52
1:B:2838:LYS:HE2	1:B:2880:GLU:HG2	1.92	0.52
1:A:74:CYS:O	1:A:90:ARG:NH1	2.37	0.52
1:A:162:GLN:O	1:A:162:GLN:NE2	2.34	0.52
1:A:1697:THR:O	1:A:1701:LYS:HG2	2.10	0.52
1:B:1745:THR:OG1	1:B:1822:GLU:OE2	2.24	0.52
1:B:2697:ASN:HB3	1:B:2719:ARG:HD3	1.92	0.52
1:A:1343:ILE:HD12	1:A:1343:ILE:H	1.74	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1211:ALA:HA	1:B:1214:LEU:HB2	1.91	0.51
1:B:405:ASN:OD1	1:B:405:ASN:N	2.29	0.51
1:B:2319:LEU:HD13	1:B:2334:TYR:HA	1.93	0.51
1:A:112:ALA:HB3	1:A:114:ARG:HH11	1.76	0.51
1:B:2745:THR:HG22	1:B:2750:LEU:HD12	1.93	0.51
1:A:2319:LEU:HD13	1:A:2334:TYR:HA	1.93	0.51
1:B:957:GLU:HB2	1:B:999:LYS:HB2	1.93	0.51
1:A:162:GLN:HE21	1:A:162:GLN:C	2.12	0.50
1:A:1211:ALA:HA	1:A:1214:LEU:HB2	1.91	0.50
1:A:1265:PHE:HA	1:A:1268:VAL:HG12	1.93	0.50
1:A:1413:ASP:OD1	1:A:1413:ASP:N	2.45	0.50
1:A:2838:LYS:HE2	1:A:2880:GLU:HG2	1.92	0.50
1:B:1265:PHE:HA	1:B:1268:VAL:HG12	1.93	0.50
1:B:1697:THR:O	1:B:1701:LYS:HG2	2.10	0.50
1:A:2745:THR:HG22	1:A:2750:LEU:HD12	1.93	0.50
1:B:112:ALA:HB3	1:B:114:ARG:HH11	1.76	0.50
1:B:1551:ASP:OD1	1:B:1551:ASP:N	2.41	0.50
1:A:599:LEU:O	1:A:717:ARG:NE	2.44	0.50
1:A:957:GLU:HB2	1:A:999:LYS:HB2	1.93	0.50
1:B:18:ASP:O	1:B:23:ARG:NH1	2.45	0.50
1:B:1992:LYS:O	1:B:1996:GLU:HG3	2.12	0.50
1:A:154:LYS:O	1:A:158:GLU:HG3	2.12	0.50
1:B:706:SER:N	1:B:710:THR:OG1	2.40	0.50
1:B:1655:SER:HB3	1:B:2159:CYS:SG	2.52	0.50
1:A:1655:SER:HB3	1:A:2159:CYS:SG	2.52	0.50
1:A:63:PHE:HD1	1:A:66:LYS:HZ1	1.60	0.50
1:B:521:ARG:HE	1:B:554:THR:HB	1.77	0.49
1:A:18:ASP:O	1:A:23:ARG:NH1	2.45	0.49
1:A:1754:LYS:HG3	1:A:1755:MET:SD	2.52	0.49
1:B:1754:LYS:HG3	1:B:1755:MET:SD	2.52	0.49
1:A:521:ARG:HE	1:A:554:THR:HB	1.77	0.49
1:B:599:LEU:O	1:B:717:ARG:NE	2.44	0.49
1:B:1288:PRO:O	1:B:1292:VAL:HG13	2.13	0.49
1:B:154:LYS:O	1:B:158:GLU:HG3	2.12	0.49
1:A:409:LEU:HD11	1:A:442:LEU:HD11	1.94	0.49
1:B:1875:ARG:O	1:B:1876:HIS:ND1	2.46	0.49
1:A:1473:ILE:HD13	1:A:1519:VAL:HG22	1.95	0.49
1:B:1473:ILE:HD13	1:B:1519:VAL:HG22	1.95	0.49
1:A:938:PRO:HB3	1:A:976:VAL:HG22	1.94	0.49
1:B:938:PRO:HB3	1:B:976:VAL:HG22	1.94	0.49
1:A:2033:LEU:HD21	1:A:2048:THR:HB	1.95	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:409:LEU:HD11	1:B:442:LEU:HD11	1.94	0.49
1:A:1656:LYS:HD2	1:A:2163:LEU:HD12	1.95	0.48
1:A:2307:LEU:HD21	1:B:2032:ARG:HD3	1.95	0.48
1:B:162:GLN:HE21	1:B:162:GLN:C	2.13	0.48
1:B:1779:ARG:HH22	1:B:1820:LYS:HD2	1.78	0.48
1:A:1779:ARG:HH22	1:A:1820:LYS:HD2	1.78	0.48
1:A:1875:ARG:O	1:A:1876:HIS:ND1	2.46	0.48
1:B:2033:LEU:HD21	1:B:2048:THR:HB	1.95	0.48
1:A:1288:PRO:O	1:A:1292:VAL:HG13	2.13	0.48
1:A:1344:VAL:HG11	1:A:1418:ILE:HD13	1.94	0.48
1:B:2727:VAL:O	1:B:2731:VAL:HG23	2.14	0.48
1:B:1413:ASP:N	1:B:1413:ASP:OD1	2.45	0.48
1:A:1652:LEU:HB3	1:A:2163:LEU:HD11	1.95	0.48
1:A:1992:LYS:O	1:A:1996:GLU:HG3	2.12	0.48
1:A:2727:VAL:O	1:A:2731:VAL:HG23	2.14	0.48
1:B:251:VAL:HG11	1:B:289:ILE:HD13	1.95	0.48
1:B:657:PHE:CZ	1:B:1155:LEU:HB3	2.49	0.48
1:B:1656:LYS:HD2	1:B:2163:LEU:HD12	1.95	0.48
1:B:74:CYS:O	1:B:90:ARG:NH1	2.37	0.47
1:A:2573:THR:O	1:A:2573:THR:OG1	2.28	0.47
1:A:2865:ILE:HG13	1:A:2938:MET:HG3	1.97	0.47
1:B:1344:VAL:HG11	1:B:1418:ILE:HD13	1.94	0.47
1:B:2228:THR:OG1	1:B:2254:HIS:NE2	2.39	0.47
1:A:2228:THR:OG1	1:A:2254:HIS:NE2	2.39	0.47
1:B:432:LEU:HD21	1:B:466:GLN:HG3	1.97	0.47
1:B:1652:LEU:HB3	1:B:2163:LEU:HD11	1.95	0.47
1:B:1680:PRO:O	1:B:2215:SER:OG	2.26	0.47
1:A:1959:GLU:OE2	1:A:2849:ARG:NH1	2.36	0.47
1:A:1307:GLY:O	1:A:1311:GLN:NE2	2.48	0.47
1:A:2027:LEU:HD13	1:B:2311:ILE:HD11	1.97	0.47
1:A:2311:ILE:HD11	1:B:2027:LEU:HD13	1.97	0.47
1:B:2094:GLU:H	1:B:2094:GLU:CD	2.18	0.47
1:B:2697:ASN:OD1	1:B:2697:ASN:N	2.42	0.47
1:A:119:GLU:OE1	1:A:119:GLU:N	2.46	0.47
1:A:265:ILE:O	1:A:269:HIS:HB2	2.15	0.47
1:A:251:VAL:HG11	1:A:289:ILE:HD13	1.95	0.47
1:A:2032:ARG:HD3	1:B:2307:LEU:HD21	1.95	0.47
1:B:1307:GLY:O	1:B:1311:GLN:NE2	2.48	0.47
1:A:1341:PRO:HG3	1:A:1414:SER:HB2	1.97	0.47
1:A:2406:LYS:HB2	1:A:2406:LYS:HE3	1.73	0.47
1:A:2665:PRO:HD3	1:A:2683:ILE:HD11	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:2865:ILE:HG13	1:B:2938:MET:HG3	1.97	0.47
1:A:657:PHE:CZ	1:A:1155:LEU:HB3	2.49	0.46
1:A:1231:LEU:HD21	1:A:1255:LEU:HB3	1.97	0.46
1:A:2402:GLU:OE2	1:A:2459:ARG:NE	2.32	0.46
1:B:265:ILE:O	1:B:269:HIS:HB2	2.15	0.46
1:B:924:ARG:HD2	1:B:961:LEU:HD21	1.98	0.46
1:A:3014:GLN:HG2	1:A:3018:LYS:NZ	2.30	0.46
1:B:1827:LEU:HD22	1:B:1837:PHE:HZ	1.80	0.46
1:A:342:LYS:HB2	1:A:342:LYS:HE3	1.56	0.46
1:A:2731:VAL:HG21	1:A:2952:LEU:HD21	1.98	0.46
1:B:1231:LEU:HD21	1:B:1255:LEU:HB3	1.97	0.46
1:A:924:ARG:HD2	1:A:961:LEU:HD21	1.98	0.46
1:B:342:LYS:HB2	1:B:342:LYS:HE3	1.56	0.46
1:B:938:PRO:HB2	1:B:979:LEU:HD12	1.97	0.46
1:B:2665:PRO:HD3	1:B:2683:ILE:HD11	1.96	0.46
1:A:1669:GLU:HG3	1:A:2148:LYS:HG3	1.98	0.46
1:B:2025:LYS:HB2	1:B:2025:LYS:HE3	1.79	0.46
1:A:271:LEU:HB3	1:A:276:LYS:HD3	1.98	0.46
1:A:432:LEU:HD21	1:A:466:GLN:HG3	1.97	0.46
1:A:1596:HIS:O	1:A:1600:VAL:HG23	2.16	0.46
1:A:2094:GLU:CD	1:A:2094:GLU:H	2.18	0.46
1:A:938:PRO:HB2	1:A:979:LEU:HD12	1.97	0.46
1:B:716:VAL:HG21	1:B:779:MET:HG3	1.98	0.46
1:B:1341:PRO:HG3	1:B:1414:SER:HB2	1.97	0.46
1:B:1596:HIS:O	1:B:1600:VAL:HG23	2.16	0.46
1:B:533:ARG:HG2	1:B:533:ARG:HH11	1.81	0.46
1:A:1678:VAL:HG23	1:A:1681:ILE:HD12	1.98	0.45
1:B:58:ASP:OD1	1:B:62:ARG:NH2	2.43	0.45
1:B:271:LEU:HB3	1:B:276:LYS:HD3	1.98	0.45
1:A:741:TYR:CE1	1:A:805:ARG:HD3	2.51	0.45
1:A:1680:PRO:O	1:A:2215:SER:OG	2.26	0.45
1:B:753:MET:HG2	1:B:806:LEU:HD13	1.98	0.45
1:B:1527:LEU:HB3	1:B:1538:VAL:HG21	1.99	0.45
1:B:1669:GLU:HG3	1:B:2148:LYS:HG3	1.98	0.45
1:A:533:ARG:HG2	1:A:533:ARG:HH11	1.81	0.45
1:B:206:ASN:HD22	1:B:208:LYS:HG2	1.82	0.45
1:B:2474:LEU:O	1:B:2515:LYS:NZ	2.50	0.45
1:A:120:LEU:HG	1:A:149:ILE:HD11	1.99	0.45
1:A:967:LEU:HD11	1:A:1013:ASP:HB3	1.98	0.45
1:B:1715:LEU:HD22	1:B:1737:LEU:HD23	1.97	0.45
1:B:2237:LYS:HA	1:B:2237:LYS:HD3	1.70	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:3014:GLN:HG2	1:B:3018:LYS:NZ	2.30	0.45
1:A:109:ASN:ND2	1:A:155:TYR:OH	2.48	0.45
1:A:1527:LEU:HB3	1:A:1538:VAL:HG21	1.99	0.45
1:B:1567:ASP:O	1:B:1568:HIS:ND1	2.36	0.45
1:B:2358:GLN:HA	1:B:2358:GLN:OE1	2.17	0.45
1:A:1465:LEU:HD13	1:A:1469:ILE:HD12	1.99	0.45
1:B:1334:HIS:HD1	1:B:1334:HIS:C	2.19	0.45
1:B:2731:VAL:HG21	1:B:2952:LEU:HD21	1.98	0.45
1:A:60:VAL:HA	1:A:63:PHE:CD2	2.51	0.45
1:A:1034:TYR:HB3	1:A:1038:VAL:HB	1.98	0.45
1:A:2670:LYS:HB2	1:A:2670:LYS:HE2	1.68	0.45
1:B:2570:GLU:CD	1:B:2570:GLU:H	2.20	0.45
1:A:1869:PHE:CE1	1:A:1909:MET:HG3	2.51	0.45
1:A:2763:ARG:NH1	1:A:2763:ARG:HB3	2.32	0.45
1:A:716:VAL:HG21	1:A:779:MET:HG3	1.98	0.45
1:A:1290:ILE:HG22	1:A:1294:ILE:CD1	2.47	0.45
1:A:2693:ALA:HB3	1:A:2699:PRO:HG2	1.99	0.45
1:B:741:TYR:CE1	1:B:805:ARG:HD3	2.51	0.45
1:B:1678:VAL:HG23	1:B:1681:ILE:HD12	1.98	0.45
1:B:2406:LYS:HE3	1:B:2406:LYS:HB2	1.73	0.45
1:A:183:HIS:O	1:A:187:VAL:HG23	2.16	0.45
1:A:753:MET:HG2	1:A:806:LEU:HD13	1.98	0.45
1:A:1257:PRO:O	1:A:1261:ILE:HG22	2.17	0.45
1:A:2474:LEU:O	1:A:2515:LYS:NZ	2.50	0.45
1:B:892:LYS:HD2	1:B:892:LYS:HA	1.74	0.45
1:B:967:LEU:HD11	1:B:1013:ASP:HB3	1.98	0.45
1:B:1257:PRO:O	1:B:1261:ILE:HG22	2.17	0.45
1:B:2025:LYS:HB3	1:B:2028:GLN:HG3	1.99	0.45
1:A:206:ASN:HD22	1:A:208:LYS:HG2	1.82	0.44
1:A:262:LEU:HD11	1:A:282:LEU:HD23	1.99	0.44
1:A:706:SER:N	1:A:710:THR:OG1	2.40	0.44
1:A:1334:HIS:HD1	1:A:1334:HIS:C	2.19	0.44
1:A:1460:ALA:HB2	1:A:1766:PRO:HB3	1.99	0.44
1:A:2358:GLN:OE1	1:A:2358:GLN:HA	2.17	0.44
1:B:120:LEU:HG	1:B:149:ILE:HD11	1.99	0.44
1:B:159:ILE:HG23	1:B:163:GLN:HB2	2.00	0.44
1:B:262:LEU:HD11	1:B:282:LEU:HD23	1.99	0.44
1:B:609:GLU:HG2	1:B:724:GLY:HA3	1.99	0.44
1:B:1643:ILE:HD12	1:B:1643:ILE:HA	1.89	0.44
1:B:2514:TYR:HA	1:B:2517:LEU:HG	2.00	0.44
1:B:2531:MET:H	1:B:2538:HIS:HD2	1.65	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:159:ILE:HG23	1:A:163:GLN:HB2	2.00	0.44
1:A:1715:LEU:HD22	1:A:1737:LEU:HD23	1.97	0.44
1:A:1827:LEU:HD22	1:A:1837:PHE:HZ	1.80	0.44
1:B:109:ASN:ND2	1:B:155:TYR:OH	2.48	0.44
1:B:183:HIS:O	1:B:187:VAL:HG23	2.16	0.44
1:B:1802:HIS:HB2	1:B:1902:ASP:OD2	2.17	0.44
1:B:2763:ARG:HB3	1:B:2763:ARG:NH1	2.32	0.44
1:A:121:LEU:HD23	1:A:163:GLN:NE2	2.33	0.44
1:A:948:LEU:HB3	1:A:993:HIS:ND1	2.32	0.44
1:A:1607:PRO:HG2	1:A:1658:ALA:HA	1.99	0.44
1:A:2109:TRP:O	1:A:2133:GLN:NE2	2.51	0.44
1:B:60:VAL:HA	1:B:63:PHE:CD2	2.51	0.44
1:B:1761:LEU:O	1:B:1765:GLN:HG2	2.17	0.44
1:B:1869:PHE:CE1	1:B:1909:MET:HG3	2.51	0.44
1:B:2109:TRP:O	1:B:2133:GLN:NE2	2.51	0.44
1:B:2561:LEU:O	1:B:2565:ASN:N	2.48	0.44
1:A:780:MET:HG3	1:A:900:MET:HG2	1.99	0.44
1:B:224:LYS:HE3	1:B:269:HIS:HA	1.99	0.44
1:B:1378:PRO:HG2	1:B:1379:PRO:HD3	1.98	0.44
1:B:1460:ALA:HB2	1:B:1766:PRO:HB3	1.99	0.44
1:B:2616:MET:HB2	1:B:2661:ASP:HB3	2.00	0.44
1:A:1378:PRO:HG2	1:A:1379:PRO:HD3	1.98	0.44
1:A:1860:ASN:O	1:A:1864:THR:HG22	2.17	0.44
1:A:2025:LYS:HB3	1:A:2028:GLN:HG3	1.99	0.44
1:A:2616:MET:HB2	1:A:2661:ASP:HB3	1.99	0.44
1:B:121:LEU:HD23	1:B:163:GLN:NE2	2.33	0.44
1:B:948:LEU:HB3	1:B:993:HIS:ND1	2.32	0.44
1:B:1465:LEU:HD13	1:B:1469:ILE:HD12	1.99	0.44
1:B:433:SER:O	1:B:437:MET:HG3	2.18	0.44
1:B:780:MET:HG3	1:B:900:MET:HG2	1.99	0.44
1:B:1860:ASN:O	1:B:1864:THR:HG22	2.17	0.44
1:A:433:SER:O	1:A:437:MET:HG3	2.18	0.44
1:A:790:CYS:SG	1:A:792:LYS:HG3	2.58	0.44
1:B:1034:TYR:HB3	1:B:1038:VAL:HB	1.98	0.44
1:B:1280:LYS:HD2	1:B:1280:LYS:HA	1.81	0.44
1:B:3043:LYS:O	1:B:3047:ARG:HG3	2.18	0.44
1:A:706:SER:HB3	1:A:709:ILE:HG13	1.99	0.44
1:A:1117:GLN:NE2	1:A:1171:GLN:OE1	2.48	0.44
1:A:1802:HIS:HB2	1:A:1902:ASP:OD2	2.17	0.44
1:A:2514:TYR:HA	1:A:2517:LEU:HG	2.00	0.44
1:A:2570:GLU:H	1:A:2570:GLU:CD	2.20	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:1465:LEU:HD21	1:B:1505:ALA:HB2	1.99	0.44
1:B:166:GLU:O	1:B:170:VAL:HG13	2.18	0.44
1:B:706:SER:HB3	1:B:709:ILE:HG13	1.99	0.44
1:A:1465:LEU:HD21	1:A:1505:ALA:HB2	1.99	0.43
1:A:2734:MET:HG2	1:A:2948:ILE:HD13	2.00	0.43
1:B:1607:PRO:HG2	1:B:1658:ALA:HA	1.99	0.43
1:B:2693:ALA:HB3	1:B:2699:PRO:HG2	1.99	0.43
1:A:267:THR:HG22	1:A:268:GLN:OE1	2.18	0.43
1:A:768:ASN:OD1	1:A:768:ASN:N	2.50	0.43
1:A:3043:LYS:O	1:A:3047:ARG:HG3	2.18	0.43
1:A:205:LEU:HD12	1:A:209:PHE:CD1	2.53	0.43
1:A:1066:LYS:HB3	1:A:1066:LYS:HE2	1.55	0.43
1:A:1761:LEU:O	1:A:1765:GLN:HG2	2.17	0.43
1:B:814:ASP:O	1:B:818:ILE:HG13	2.19	0.43
1:B:2749:LYS:HB2	1:B:2749:LYS:HE3	1.62	0.43
1:A:436:LEU:HD12	1:A:436:LEU:HA	1.90	0.43
1:A:554:THR:HG22	1:A:572:LEU:HD22	2.00	0.43
1:A:609:GLU:HG2	1:A:724:GLY:HA3	1.99	0.43
1:B:554:THR:HG22	1:B:572:LEU:HD22	2.00	0.43
1:B:2417:LEU:HD23	1:B:2417:LEU:HA	1.70	0.43
1:A:166:GLU:O	1:A:170:VAL:HG13	2.18	0.43
1:A:2416:LEU:HD22	1:B:2899:ILE:HG22	2.00	0.43
1:A:2899:ILE:HG22	1:B:2416:LEU:HD22	2.00	0.43
1:B:119:GLU:OE1	1:B:119:GLU:N	2.46	0.43
1:A:319:LEU:HD22	1:A:352:ILE:HD12	2.00	0.43
1:A:2332:LEU:HD21	1:A:2379:LEU:HA	2.01	0.43
1:A:2531:MET:H	1:A:2538:HIS:HD2	1.65	0.43
1:A:2570:GLU:OE1	1:A:2570:GLU:N	2.51	0.43
1:A:2691:ARG:HG3	1:A:2691:ARG:HH11	1.84	0.43
1:B:433:SER:HB3	1:B:434:PRO:HD3	2.00	0.43
1:B:1608:LEU:HD23	1:B:1608:LEU:HA	1.83	0.43
1:A:2237:LYS:HA	1:A:2237:LYS:HD3	1.70	0.43
1:A:2335:THR:HG21	1:A:2368:ALA:HB2	2.01	0.43
1:A:2440:LYS:O	1:A:2444:GLU:HG2	2.19	0.43
1:A:2530:LYS:H	1:A:2530:LYS:HD3	1.84	0.43
1:B:133:ASN:HB3	1:B:137:TYR:HD2	1.84	0.43
1:A:63:PHE:HD1	1:A:66:LYS:NZ	2.16	0.43
1:A:2623:LEU:HD22	1:A:2662:VAL:HG11	2.01	0.43
1:B:259:LEU:HD11	1:B:286:GLN:HG3	2.01	0.43
1:B:2440:LYS:O	1:B:2444:GLU:HG2	2.19	0.43
1:B:2734:MET:HG2	1:B:2948:ILE:HD13	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:3043:LYS:HA	1:B:3043:LYS:HD2	1.85	0.43
1:B:319:LEU:HD22	1:B:352:ILE:HD12	2.00	0.43
1:B:790:CYS:SG	1:B:792:LYS:HG3	2.58	0.43
1:B:2570:GLU:OE1	1:B:2570:GLU:N	2.51	0.43
1:A:1294:ILE:HG22	1:A:1298:PHE:CE1	2.54	0.43
1:B:1290:ILE:HG22	1:B:1294:ILE:CD1	2.47	0.43
1:B:2332:LEU:HD21	1:B:2379:LEU:HA	2.01	0.43
1:A:38:GLU:O	1:A:42:HIS:HB2	2.19	0.42
1:A:224:LYS:HE3	1:A:269:HIS:HA	1.99	0.42
1:B:38:GLU:O	1:B:42:HIS:HB2	2.19	0.42
1:B:768:ASN:OD1	1:B:768:ASN:N	2.50	0.42
1:B:1093:ILE:HG21	1:B:1157:LEU:HD12	2.01	0.42
1:B:1294:ILE:HG22	1:B:1298:PHE:CE1	2.54	0.42
1:B:2602:ALA:O	1:B:2606:ILE:HG12	2.19	0.42
1:A:192:HIS:CE1	1:A:879:ILE:HG13	2.54	0.42
1:A:433:SER:HB3	1:A:434:PRO:HD3	2.00	0.42
1:A:1256:ILE:HG12	1:A:1268:VAL:HG23	2.01	0.42
1:A:2010:ARG:CZ	1:A:2034:ARG:HD2	2.49	0.42
1:B:192:HIS:CE1	1:B:879:ILE:HG13	2.55	0.42
1:A:2561:LEU:O	1:A:2565:ASN:N	2.48	0.42
1:B:205:LEU:HD12	1:B:209:PHE:CD1	2.53	0.42
1:B:267:THR:HG22	1:B:268:GLN:OE1	2.18	0.42
1:B:1117:GLN:NE2	1:B:1171:GLN:OE1	2.48	0.42
1:B:1820:LYS:HB2	1:B:1852:GLN:HG3	2.02	0.42
1:B:2691:ARG:NH1	1:B:2691:ARG:HG3	2.34	0.42
1:A:892:LYS:HA	1:A:892:LYS:HD2	1.74	0.42
1:A:1643:ILE:HD12	1:A:1643:ILE:HA	1.89	0.42
1:A:1820:LYS:HB2	1:A:1852:GLN:HG3	2.02	0.42
1:A:2312:LEU:HD12	1:A:2312:LEU:HA	1.88	0.42
1:B:1256:ILE:HG12	1:B:1268:VAL:HG23	2.01	0.42
1:B:2010:ARG:CZ	1:B:2034:ARG:HD2	2.49	0.42
1:B:2563:LEU:HD23	1:B:2563:LEU:HA	1.80	0.42
1:A:1093:ILE:HG21	1:A:1157:LEU:HD12	2.01	0.42
1:B:1536:LYS:HA	1:B:1536:LYS:HD2	1.85	0.42
1:B:1606:LEU:HD12	1:B:1606:LEU:HA	1.80	0.42
1:A:436:LEU:HD13	1:A:462:VAL:HG11	2.02	0.42
1:A:814:ASP:O	1:A:818:ILE:HG13	2.19	0.42
1:A:1705:ASP:HB3	1:A:1708:LEU:HG	2.00	0.42
1:A:2691:ARG:HG3	1:A:2691:ARG:NH1	2.34	0.42
1:B:188:ALA:HB1	1:B:231:HIS:HB2	2.02	0.42
1:A:530:SER:O	1:A:530:SER:OG	2.32	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1405:LEU:HA	1:A:1408:LEU:HB2	2.02	0.42
1:A:3043:LYS:HD2	1:A:3043:LYS:HA	1.85	0.42
1:B:436:LEU:HD13	1:B:462:VAL:HG11	2.02	0.42
1:B:1499:SER:O	1:B:1503:GLN:HG3	2.20	0.42
1:B:2691:ARG:HG3	1:B:2691:ARG:HH11	1.84	0.42
1:B:2708:ASP:OD1	1:B:2708:ASP:N	2.53	0.42
1:A:259:LEU:HD11	1:A:286:GLN:HG3	2.01	0.42
1:A:822:LEU:HD23	1:A:897:PHE:HB2	2.02	0.42
1:A:2708:ASP:OD1	1:A:2708:ASP:N	2.53	0.42
1:B:822:LEU:HD23	1:B:897:PHE:HB2	2.02	0.42
1:B:1705:ASP:HB3	1:B:1708:LEU:HG	2.00	0.42
1:A:2025:LYS:HB2	1:A:2025:LYS:HE3	1.79	0.42
1:A:2092:CYS:SG	1:A:2095:LEU:HB2	2.60	0.42
1:A:2602:ALA:O	1:A:2606:ILE:HG12	2.19	0.42
1:B:206:ASN:ND2	1:B:208:LYS:HG2	2.35	0.42
1:B:1461:TRP:CH2	1:B:1465:LEU:HD23	2.55	0.42
1:B:1590:LEU:HD11	1:B:1621:LEU:HD23	2.02	0.42
1:B:2792:ARG:NE	1:B:2795:ASP:OD2	2.52	0.42
1:A:133:ASN:HB3	1:A:137:TYR:HD2	1.84	0.42
1:A:1461:TRP:CH2	1:A:1465:LEU:HD23	2.55	0.42
1:A:2698:LEU:HD12	1:A:2698:LEU:H	1.85	0.42
1:A:2792:ARG:NE	1:A:2795:ASP:OD2	2.52	0.42
1:B:2335:THR:HG21	1:B:2368:ALA:HB2	2.01	0.42
1:A:621:LYS:O	1:A:625:ASN:ND2	2.49	0.41
1:A:1499:SER:O	1:A:1503:GLN:HG3	2.20	0.41
1:A:1555:LEU:O	1:A:1559:ILE:HG13	2.20	0.41
1:A:1608:LEU:HA	1:A:1608:LEU:HD23	1.83	0.41
1:B:805:ARG:HE	1:B:805:ARG:HB3	1.79	0.41
1:B:2573:THR:O	1:B:2573:THR:OG1	2.28	0.41
1:B:2623:LEU:HD22	1:B:2662:VAL:HG11	2.01	0.41
1:A:2854:ARG:HG2	1:A:2930:CYS:SG	2.60	0.41
1:B:2530:LYS:H	1:B:2530:LYS:HD3	1.84	0.41
1:A:206:ASN:ND2	1:A:208:LYS:HG2	2.35	0.41
1:B:2844:ILE:O	1:B:2848:LYS:HG2	2.21	0.41
1:A:1590:LEU:HD11	1:A:1621:LEU:HD23	2.02	0.41
1:A:2749:LYS:HE3	1:A:2749:LYS:HB2	1.62	0.41
1:A:3018:LYS:HE2	1:B:3023:GLY:O	2.20	0.41
1:A:1290:ILE:HG22	1:A:1294:ILE:HD11	2.03	0.41
1:A:1659:ILE:HD13	1:A:1659:ILE:HA	1.92	0.41
1:B:2092:CYS:SG	1:B:2095:LEU:HB2	2.60	0.41
1:A:213:PHE:CG	1:A:236:LEU:HD13	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:3023:GLY:O	1:B:3018:LYS:HE2	2.20	0.41
1:B:1398:LYS:H	1:B:1398:LYS:HG2	1.67	0.41
1:B:1416:GLN:NE2	1:B:1734:VAL:HG21	2.35	0.41
1:B:2331:LYS:HZ2	1:B:2373:GLY:H	1.68	0.41
1:A:1539:LEU:HD13	1:A:1539:LEU:HA	1.91	0.41
1:A:1677:GLU:OE1	1:A:1677:GLU:HA	2.21	0.41
1:A:1903:LYS:HA	1:A:1903:LYS:HD3	1.90	0.41
1:A:2844:ILE:O	1:A:2848:LYS:HG2	2.21	0.41
1:B:2854:ARG:HG2	1:B:2930:CYS:SG	2.60	0.41
1:A:345:LEU:HD23	1:A:345:LEU:HA	1.87	0.41
1:A:486:LYS:O	1:A:490:ILE:HG13	2.21	0.41
1:A:1821:CYS:SG	1:A:1823:ILE:HG13	2.60	0.41
1:A:2815:GLU:O	1:A:2818:GLU:HG3	2.21	0.41
1:A:2868:LEU:HG	1:A:2871:ARG:HD3	2.02	0.41
1:B:213:PHE:CG	1:B:236:LEU:HD13	2.56	0.41
1:B:1066:LYS:HB3	1:B:1066:LYS:HE2	1.55	0.41
1:B:1290:ILE:HG22	1:B:1294:ILE:HD11	2.03	0.41
1:B:1555:LEU:O	1:B:1559:ILE:HG13	2.20	0.41
1:B:1821:CYS:SG	1:B:1823:ILE:HG13	2.60	0.41
1:B:2815:GLU:O	1:B:2818:GLU:HG3	2.21	0.41
1:A:126:ASP:HA	1:A:129:LYS:HB2	2.03	0.41
1:A:657:PHE:HZ	1:A:1155:LEU:HB3	1.85	0.41
1:A:1110:ALA:HB3	1:A:1372:LEU:HD21	2.03	0.41
1:A:1524:LEU:O	1:A:1527:LEU:HB2	2.21	0.41
1:B:147:LYS:HA	1:B:147:LYS:HD3	1.94	0.41
1:B:495:ILE:HG21	1:B:526:LEU:HD21	2.03	0.41
1:B:657:PHE:HZ	1:B:1155:LEU:HB3	1.85	0.41
1:B:1339:ASN:OD1	1:B:1339:ASN:N	2.54	0.41
1:B:1405:LEU:HA	1:B:1408:LEU:HB2	2.02	0.41
1:B:2163:LEU:HD23	1:B:2163:LEU:HA	1.89	0.41
1:B:2417:LEU:HD13	1:B:2445:LEU:HD22	2.03	0.41
1:B:2687:LYS:HZ2	1:B:2711:GLU:HG2	1.85	0.41
1:B:2868:LEU:HG	1:B:2871:ARG:HD3	2.02	0.41
1:B:2178:ALA:HB1	1:B:2226:LEU:HD23	2.03	0.41
1:B:2669:ILE:HD12	1:B:2669:ILE:N	2.36	0.41
1:A:188:ALA:HB1	1:A:231:HIS:HB2	2.02	0.40
1:A:280:ILE:HG23	1:A:348:LEU:HD22	2.03	0.40
1:A:2517:LEU:N	1:A:2518:PRO:HD2	2.36	0.40
1:A:2627:TYR:HB3	1:A:2760:LEU:HD13	2.03	0.40
1:B:1611:LEU:O	1:B:1614:LEU:HB2	2.21	0.40
1:B:2049:TYR:HB3	1:B:2064:ILE:HG13	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1416:GLN:NE2	1:A:1734:VAL:HG21	2.35	0.40
1:B:1677:GLU:HA	1:B:1677:GLU:OE1	2.21	0.40
1:B:1903:LYS:HD3	1:B:1903:LYS:HA	1.90	0.40
1:A:58:ASP:OD1	1:A:62:ARG:NH2	2.43	0.40
1:A:1040:MET:HG3	1:A:1085:VAL:HG22	2.04	0.40
1:A:1611:LEU:O	1:A:1614:LEU:HB2	2.21	0.40
1:A:1692:LYS:HE3	1:A:1692:LYS:HB3	1.87	0.40
1:A:2331:LYS:HZ2	1:A:2373:GLY:H	1.70	0.40
1:A:2615:GLN:NE2	1:A:2615:GLN:O	2.53	0.40
1:B:280:ILE:HG23	1:B:348:LEU:HD22	2.03	0.40
1:B:1289:LYS:O	1:B:1293:ASN:ND2	2.53	0.40
1:B:1524:LEU:O	1:B:1527:LEU:HB2	2.21	0.40
1:B:2615:GLN:NE2	1:B:2615:GLN:O	2.53	0.40
1:A:2669:ILE:HD12	1:A:2669:ILE:N	2.36	0.40
1:A:2872:HIS:CE1	1:A:2874:GLN:HB2	2.57	0.40
1:B:2698:LEU:HD12	1:B:2698:LEU:H	1.85	0.40
1:A:1310:GLN:NE2	1:A:1311:GLN:HE21	2.15	0.40
1:A:1339:ASN:OD1	1:A:1339:ASN:N	2.54	0.40
1:A:1902:ASP:O	1:A:1906:GLN:HG3	2.21	0.40
1:A:2073:LEU:HD22	1:A:2076:ILE:HD12	2.03	0.40
1:B:63:PHE:HD1	1:B:66:LYS:NZ	2.16	0.40
1:B:1110:ALA:HB3	1:B:1372:LEU:HD21	2.03	0.40
1:B:1687:ALA:HB1	1:B:2843:ALA:HB1	2.03	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	2735/3056 (90%)	2687 (98%)	48 (2%)	0	100	100
1	B	2735/3056 (90%)	2687 (98%)	48 (2%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
All	All	5470/6112 (90%)	5374 (98%)	96 (2%)	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	2469/2780 (89%)	2350 (95%)	119 (5%)	25	48
1	B	2469/2780 (89%)	2351 (95%)	118 (5%)	25	48
All	All	4938/5560 (89%)	4701 (95%)	237 (5%)	29	48

All (237) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	66	LYS
1	A	111	ARG
1	A	114	ARG
1	A	118	GLN
1	A	123	TYR
1	A	148	ASP
1	A	162	GLN
1	A	167	LEU
1	A	172	PHE
1	A	214	SER
1	A	272	ASN
1	A	278	VAL
1	A	305	SER
1	A	325	HIS
1	A	405	ASN
1	A	408	ASP
1	A	465	CYS
1	A	481	LEU
1	A	489	CYS
1	A	493	ARG

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Mol	Chain	Res	Type
1	A	498	GLU
1	A	499	GLN
1	A	519	VAL
1	A	617	MET
1	A	620	CYS
1	A	624	MET
1	A	695	LEU
1	A	698	SER
1	A	729	TYR
1	A	759	SER
1	A	768	ASN
1	A	791	THR
1	A	800	SER
1	A	898	LEU
1	A	929	MET
1	A	967	LEU
1	A	985	ASP
1	A	995	LEU
1	A	1000	ASN
1	A	1021	VAL
1	A	1032	ARG
1	A	1045	CYS
1	A	1063	VAL
1	A	1108	LEU
1	A	1133	GLU
1	A	1143	THR
1	A	1145	ASP
1	A	1164	CYS
1	A	1167	ILE
1	A	1204	ARG
1	A	1208	ASP
1	A	1233	SER
1	A	1243	ASN
1	A	1279	TRP
1	A	1285	ASP
1	A	1308	MET
1	A	1312	ARG
1	A	1317	LYS
1	A	1321	MET
1	A	1336	PHE
1	A	1383	SER
1	A	1396	CYS

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Mol	Chain	Res	Type
1	A	1423	CYS
1	A	1428	GLU
1	A	1434	LYS
1	A	1478	GLN
1	A	1509	CYS
1	A	1529	TYR
1	A	1540	ASP
1	A	1562	LEU
1	A	1563	ASP
1	A	1567	ASP
1	A	1568	HIS
1	A	1575	ARG
1	A	1580	LYS
1	A	1608	LEU
1	A	1618	ARG
1	A	1626	ASP
1	A	1641	ASP
1	A	1655	SER
1	A	1678	VAL
1	A	1721	THR
1	A	1755	MET
1	A	1756	THR
1	A	1787	GLU
1	A	1801	ASN
1	A	1806	ILE
1	A	1830	MET
1	A	1835	THR
1	A	1871	THR
1	A	2007	GLU
1	A	2057	SER
1	A	2059	THR
1	A	2141	SER
1	A	2146	SER
1	A	2237	LYS
1	A	2289	SER
1	A	2323	CYS
1	A	2380	ARG
1	A	2419	ARG
1	A	2440	LYS
1	A	2457	GLU
1	A	2529	THR
1	A	2530	LYS

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Mol	Chain	Res	Type
1	A	2531	MET
1	A	2615	GLN
1	A	2627	TYR
1	A	2655	LYS
1	A	2661	ASP
1	A	2674	THR
1	A	2698	LEU
1	A	2703	ASP
1	A	2719	ARG
1	A	2720	ASP
1	A	2725	ASP
1	A	2789	LYS
1	A	2831	PHE
1	A	2920	ILE
1	A	3024	THR
1	B	66	LYS
1	B	111	ARG
1	B	114	ARG
1	B	118	GLN
1	B	123	TYR
1	B	148	ASP
1	B	162	GLN
1	B	167	LEU
1	B	172	PHE
1	B	214	SER
1	B	272	ASN
1	B	278	VAL
1	B	305	SER
1	B	325	HIS
1	B	405	ASN
1	B	408	ASP
1	B	465	CYS
1	B	481	LEU
1	B	489	CYS
1	B	493	ARG
1	B	498	GLU
1	B	499	GLN
1	B	519	VAL
1	B	617	MET
1	B	620	CYS
1	B	624	MET
1	B	695	LEU

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Mol	Chain	Res	Type
1	B	698	SER
1	B	729	TYR
1	B	759	SER
1	B	768	ASN
1	B	791	THR
1	B	800	SER
1	B	898	LEU
1	B	929	MET
1	B	967	LEU
1	B	985	ASP
1	B	995	LEU
1	B	1000	ASN
1	B	1021	VAL
1	B	1032	ARG
1	B	1045	CYS
1	B	1063	VAL
1	B	1108	LEU
1	B	1133	GLU
1	B	1143	THR
1	B	1164	CYS
1	B	1167	ILE
1	B	1204	ARG
1	B	1208	ASP
1	B	1233	SER
1	B	1243	ASN
1	B	1279	TRP
1	B	1285	ASP
1	B	1308	MET
1	B	1312	ARG
1	B	1317	LYS
1	B	1321	MET
1	B	1336	PHE
1	B	1383	SER
1	B	1396	CYS
1	B	1423	CYS
1	B	1428	GLU
1	B	1434	LYS
1	B	1478	GLN
1	B	1509	CYS
1	B	1529	TYR
1	B	1540	ASP
1	B	1562	LEU

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Mol	Chain	Res	Type
1	B	1563	ASP
1	B	1567	ASP
1	B	1568	HIS
1	B	1575	ARG
1	B	1580	LYS
1	B	1608	LEU
1	B	1618	ARG
1	B	1626	ASP
1	B	1641	ASP
1	B	1655	SER
1	B	1678	VAL
1	B	1721	THR
1	B	1755	MET
1	B	1756	THR
1	B	1787	GLU
1	B	1801	ASN
1	B	1806	ILE
1	B	1830	MET
1	B	1835	THR
1	B	1871	THR
1	B	2007	GLU
1	B	2057	SER
1	B	2059	THR
1	B	2141	SER
1	B	2146	SER
1	B	2237	LYS
1	B	2289	SER
1	B	2323	CYS
1	B	2380	ARG
1	B	2419	ARG
1	B	2440	LYS
1	B	2457	GLU
1	B	2529	THR
1	B	2530	LYS
1	B	2531	MET
1	B	2615	GLN
1	B	2627	TYR
1	B	2655	LYS
1	B	2661	ASP
1	B	2674	THR
1	B	2698	LEU
1	B	2703	ASP

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Mol	Chain	Res	Type
1	B	2719	ARG
1	B	2720	ASP
1	B	2725	ASP
1	B	2789	LYS
1	B	2831	PHE
1	B	2920	ILE
1	B	3024	THR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (6) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	118	GLN
1	A	163	GLN
1	A	1311	GLN
1	B	118	GLN
1	B	163	GLN
1	B	1311	GLN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 4 ligands modelled in this entry, 2 are monoatomic - leaving 2 for Mogul analysis.

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	ANP	B	3101	3	29,33,33	1.08	4 (13%)	31,52,52	1.09	2 (6%)
2	ANP	A	3101	3	29,33,33	1.08	4 (13%)	31,52,52	1.09	2 (6%)

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	ANP	B	3101	3	-	4/14/38/38	0/3/3/3
2	ANP	A	3101	3	-	4/14/38/38	0/3/3/3

All (8) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	3101	ANP	PG-O1G	2.43	1.50	1.46
2	B	3101	ANP	PG-O1G	2.43	1.50	1.46
2	A	3101	ANP	PG-N3B	2.39	1.69	1.63
2	B	3101	ANP	PG-N3B	2.39	1.69	1.63
2	A	3101	ANP	PB-O3A	-2.39	1.56	1.59
2	B	3101	ANP	PB-O3A	-2.39	1.56	1.59
2	A	3101	ANP	PB-O1B	2.28	1.49	1.46
2	B	3101	ANP	PB-O1B	2.28	1.49	1.46

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	3101	ANP	PB-O3A-PA	-4.02	118.45	132.62
2	B	3101	ANP	PB-O3A-PA	-4.02	118.45	132.62
2	A	3101	ANP	C5-C6-N6	2.25	123.78	120.35
2	B	3101	ANP	C5-C6-N6	2.25	123.78	120.35

There are no chirality outliers.

All (8) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	3101	ANP	PB-N3B-PG-O1G

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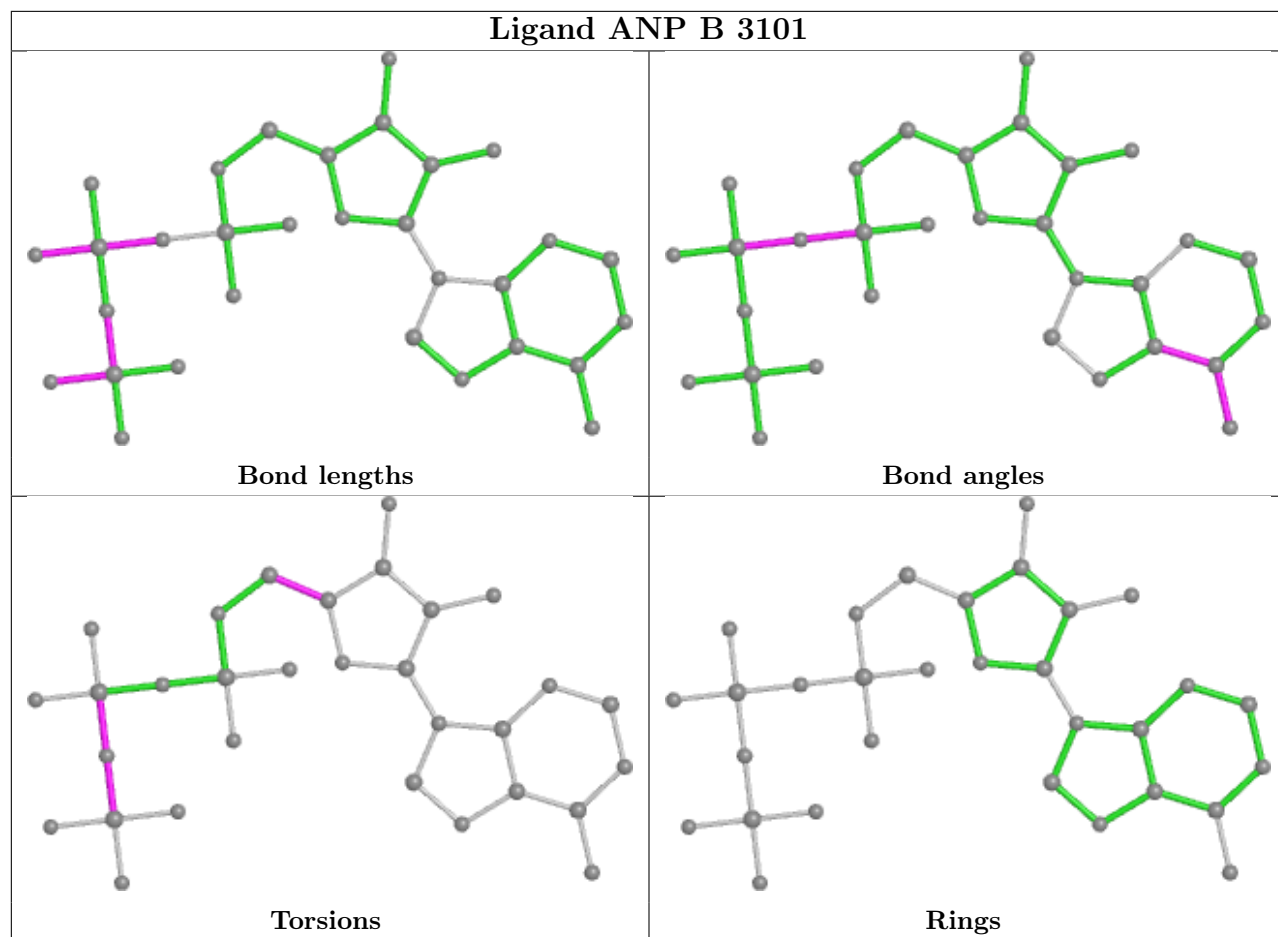
Mol	Chain	Res	Type	Atoms
2	A	3101	ANP	PG-N3B-PB-O1B
2	B	3101	ANP	PB-N3B-PG-O1G
2	B	3101	ANP	PG-N3B-PB-O1B
2	A	3101	ANP	O4'-C4'-C5'-O5'
2	B	3101	ANP	O4'-C4'-C5'-O5'
2	A	3101	ANP	C3'-C4'-C5'-O5'
2	B	3101	ANP	C3'-C4'-C5'-O5'

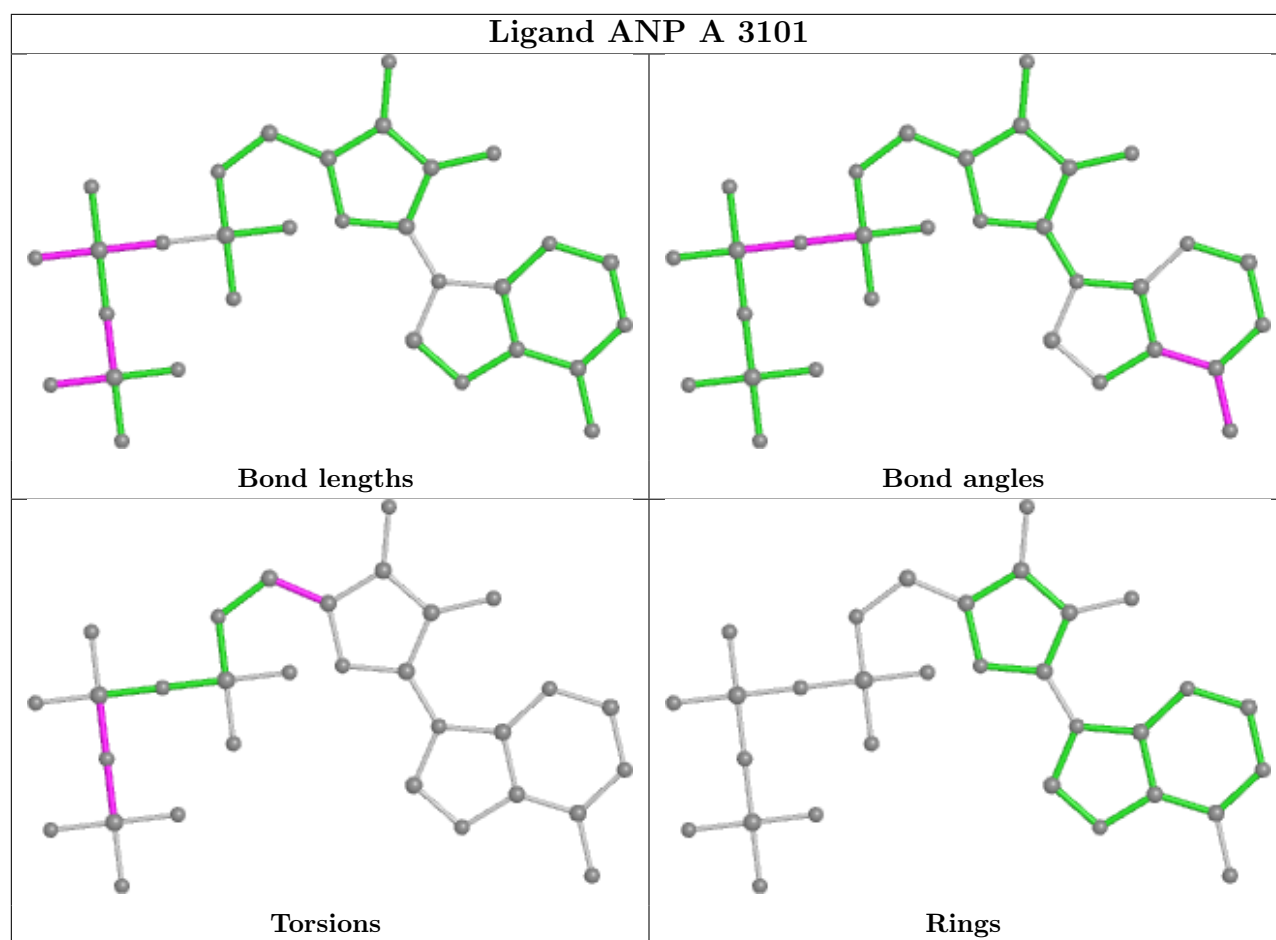
There are no ring outliers.

2 monomers are involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	B	3101	ANP	1	0
2	A	3101	ANP	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.

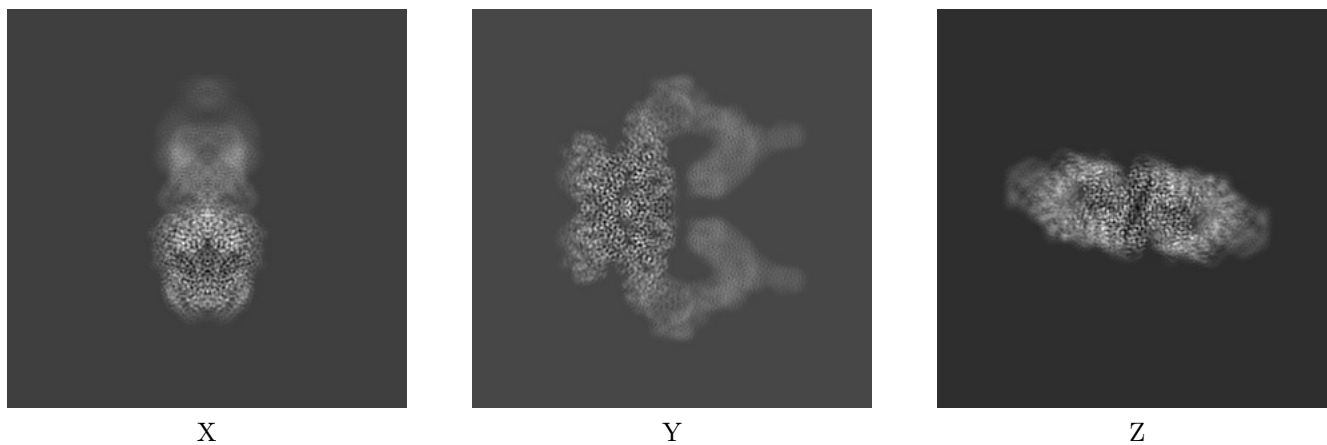
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-25140. These allow visual inspection of the internal detail of the map and identification of artifacts.

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

6.1 Orthogonal projections [i](#)

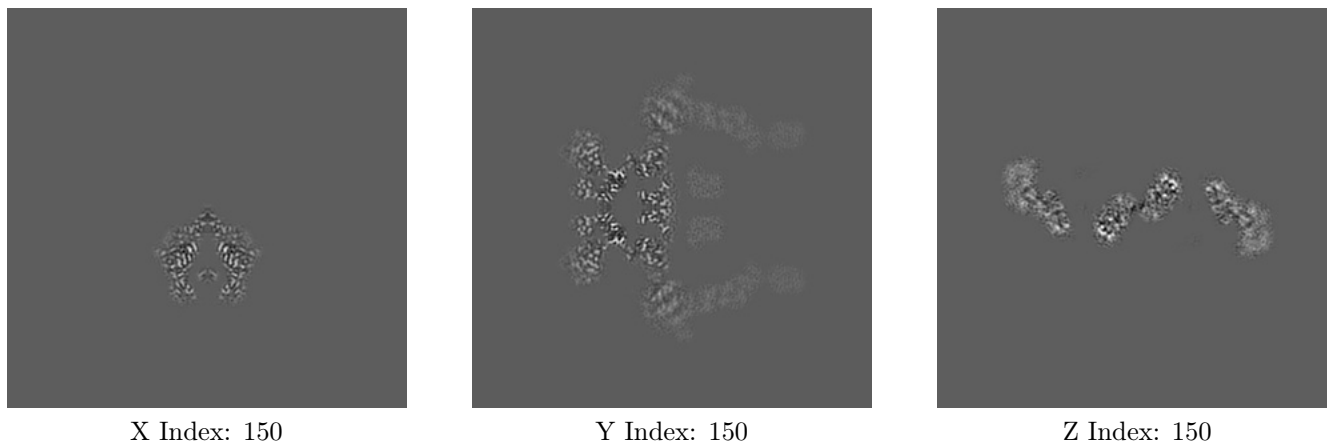
6.1.1 Primary map



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

6.2 Central slices [i](#)

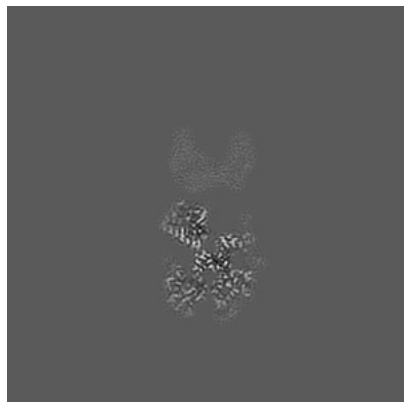
6.2.1 Primary map



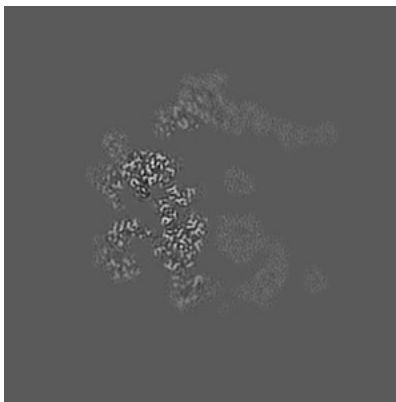
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

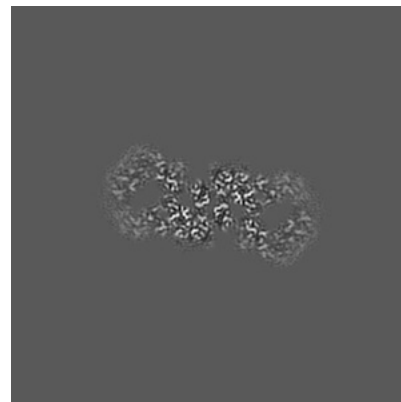
6.3.1 Primary map



X Index: 127



Y Index: 140

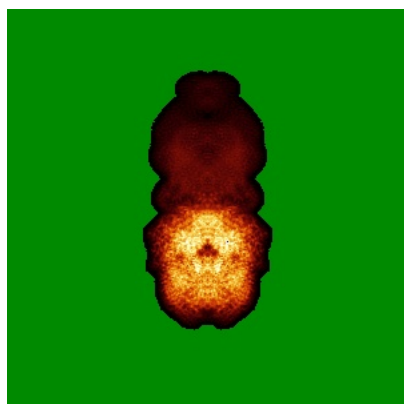


Z Index: 128

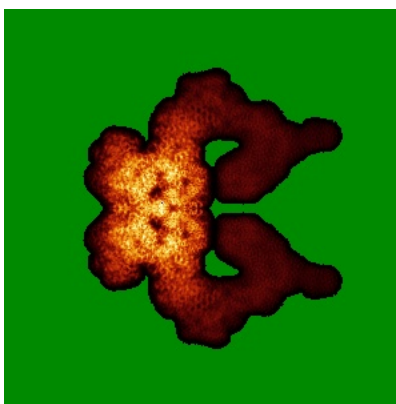
The images above show the largest variance slices of the map in three orthogonal directions.

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

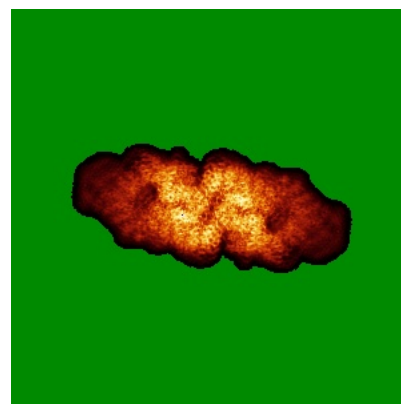
6.4.1 Primary map



X



Y

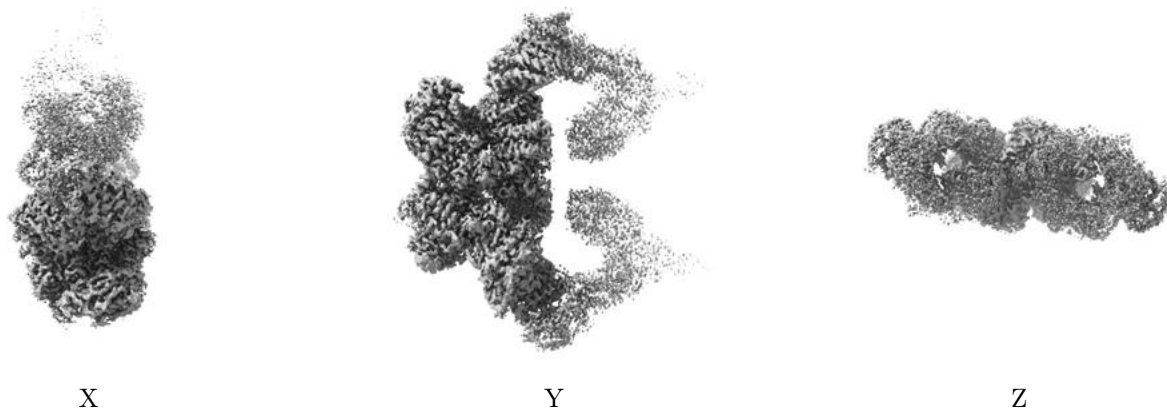


Z

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

6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.02. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

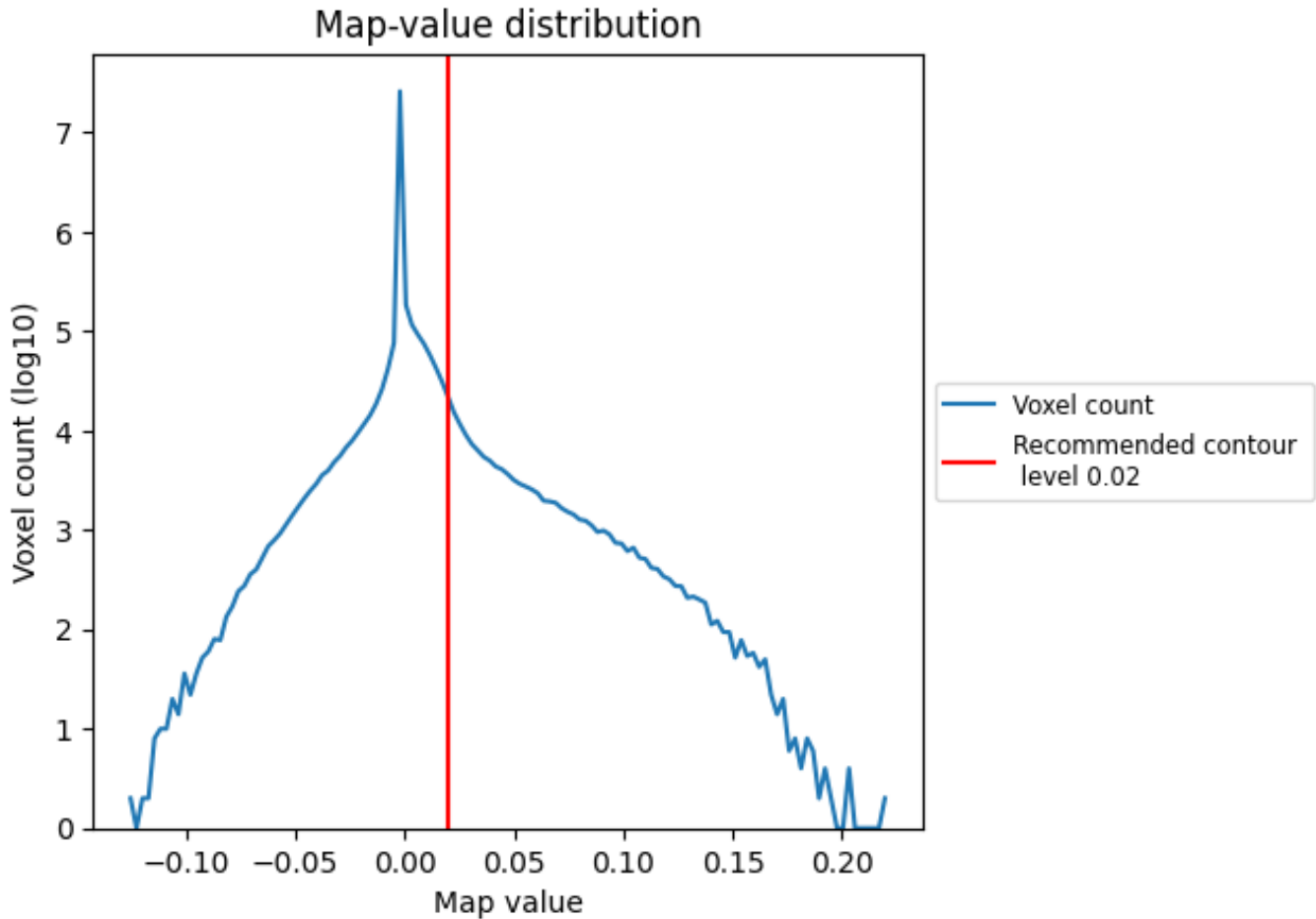
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

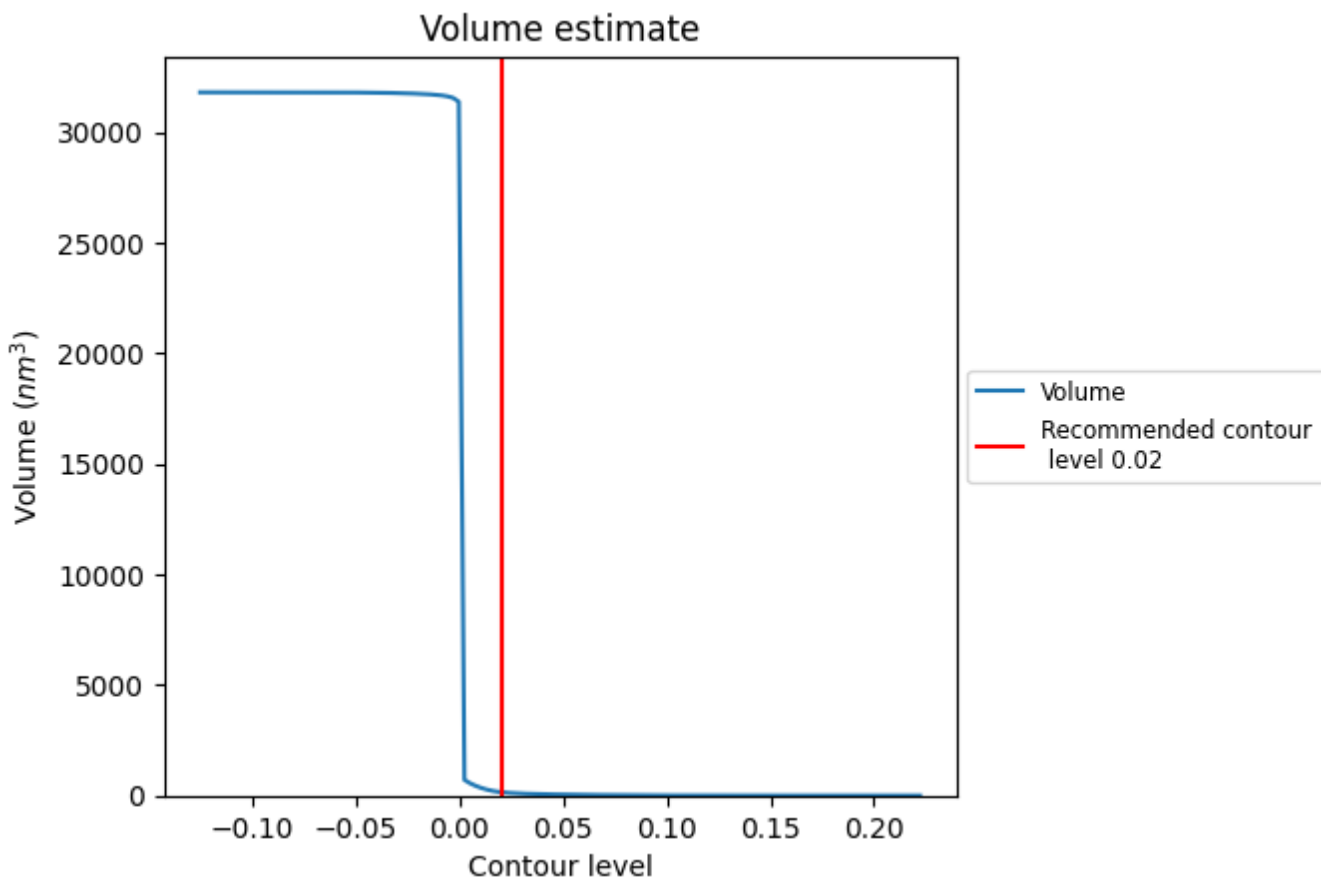
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

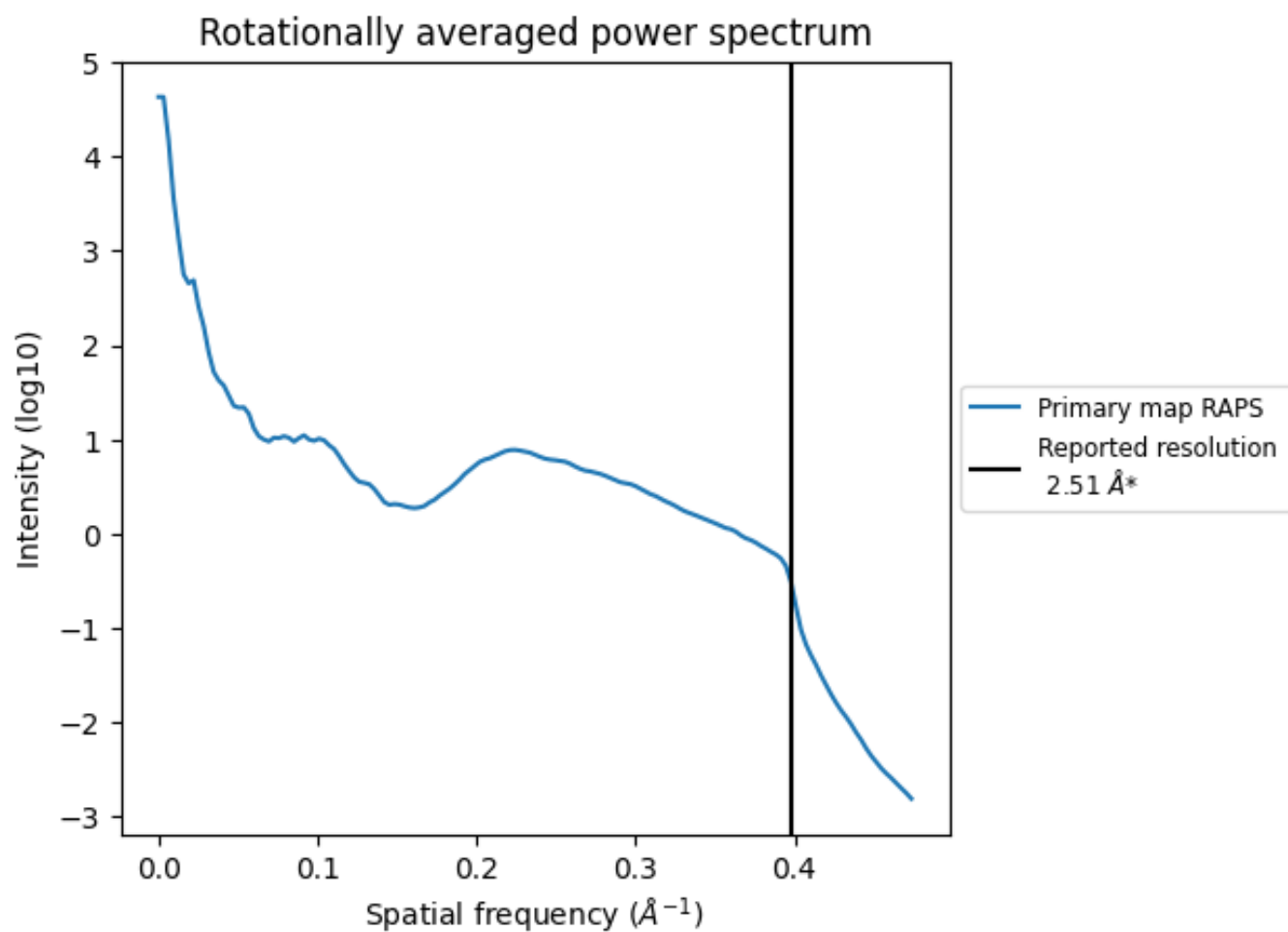
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 154 nm³; this corresponds to an approximate mass of 139 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

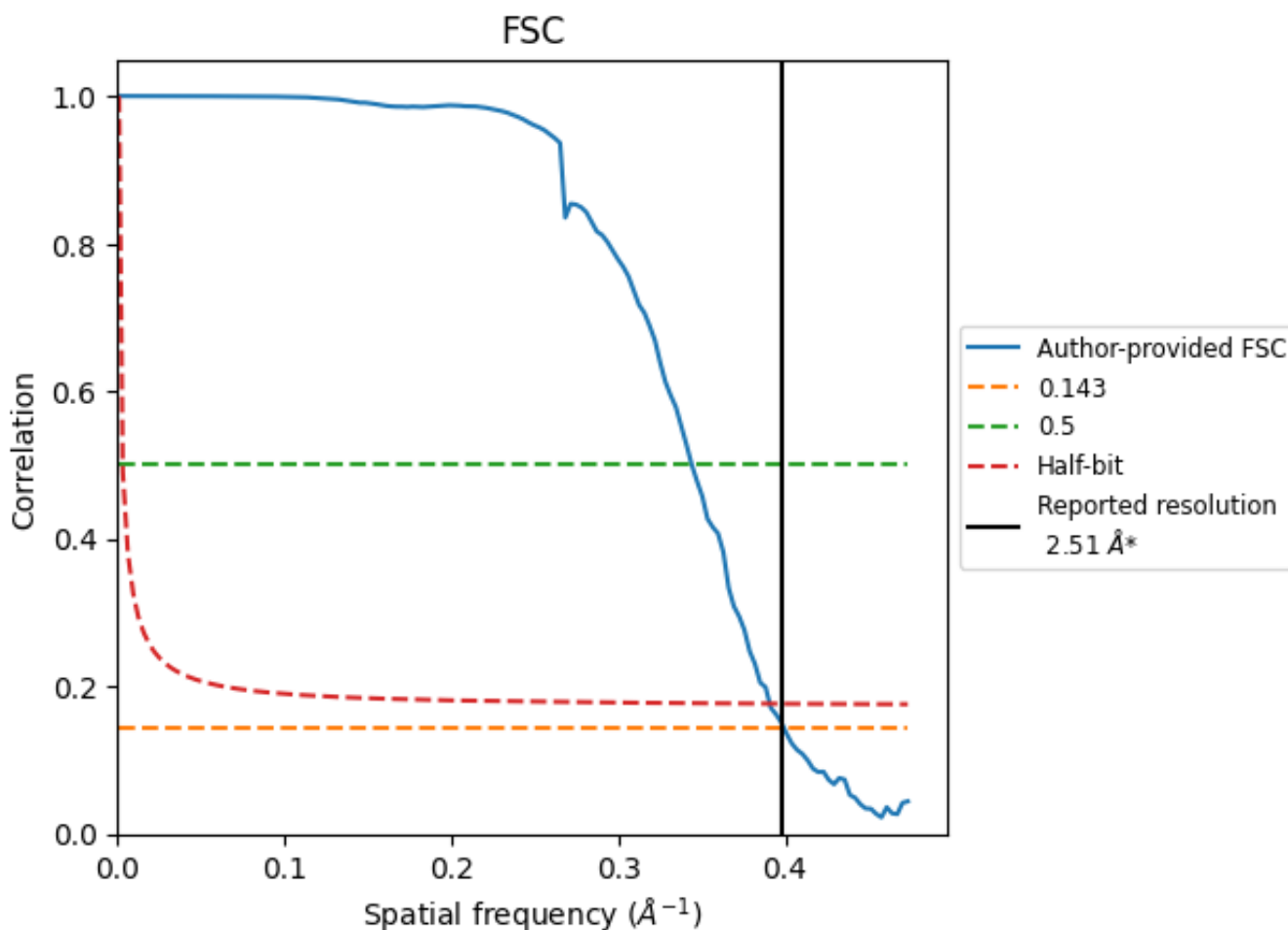


*Reported resolution corresponds to spatial frequency of 0.398 \AA^{-1}

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 0.398 Å⁻¹

8.2 Resolution estimates [i](#)

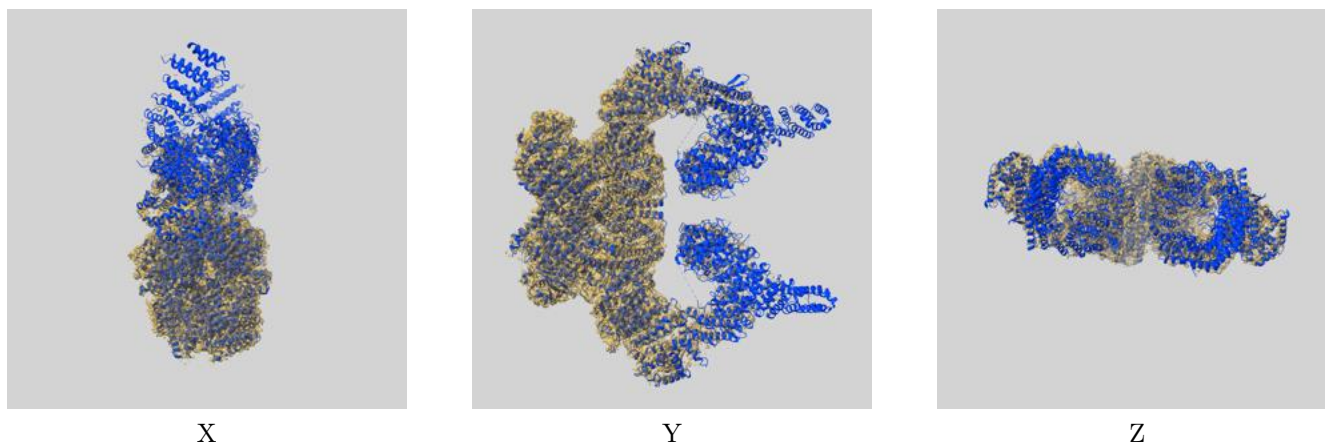
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.51	-	-
Author-provided FSC curve	2.50	2.91	2.56
Unmasked-calculated*	-	-	-

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps.

9 Map-model fit [i](#)

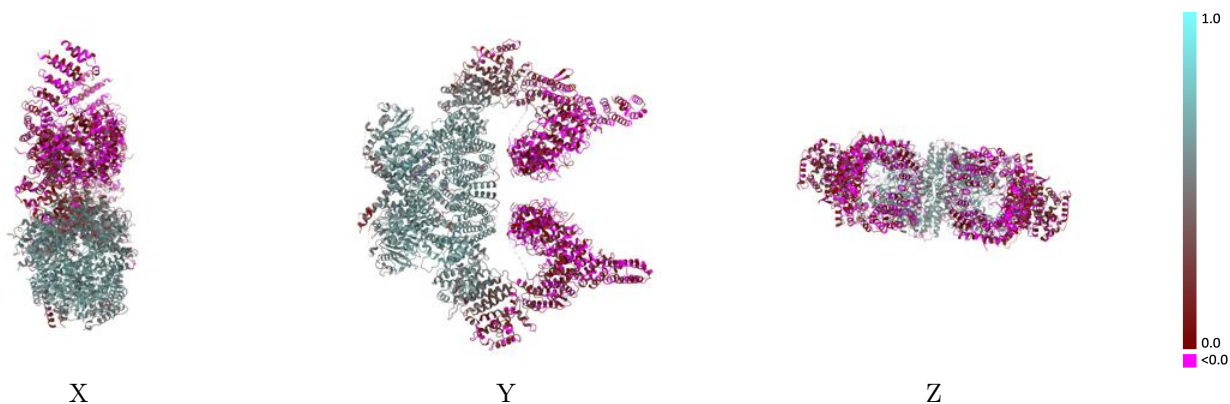
This section contains information regarding the fit between EMDB map EMD-25140 and PDB model 7SIC. Per-residue inclusion information can be found in section 3 on page 5.

9.1 Map-model overlay [i](#)



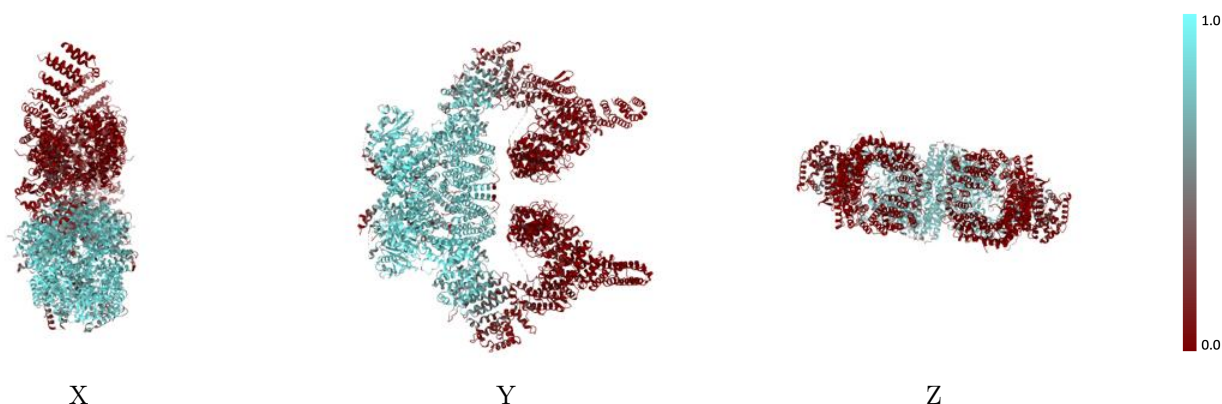
The images above show the 3D surface view of the map at the recommended contour level 0.02 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



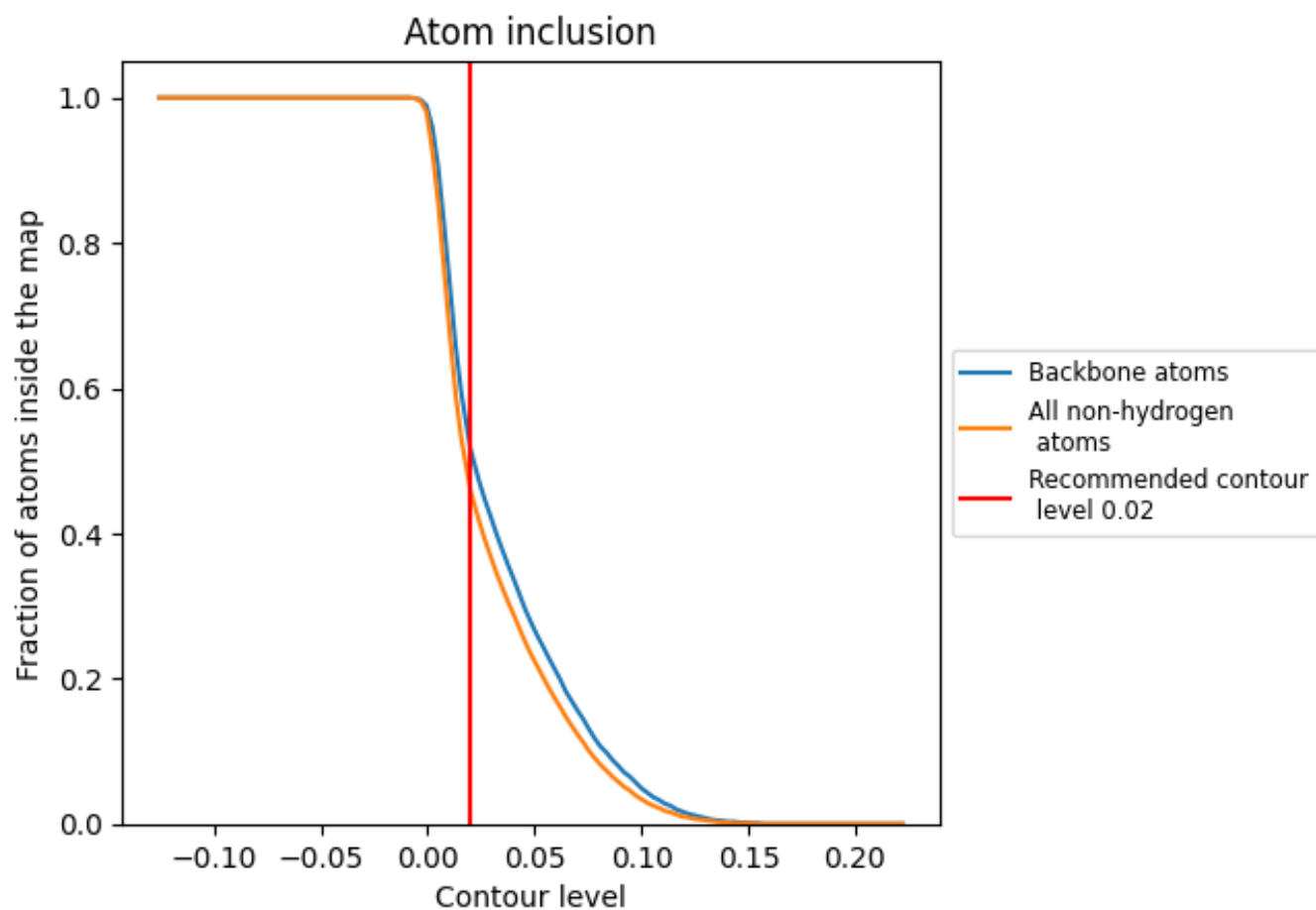
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.02).

9.4 Atom inclusion [i](#)



At the recommended contour level, 52% of all backbone atoms, 46% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary [i](#)

The table lists the average atom inclusion at the recommended contour level (0.02) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	■ 0.4600	■ 0.3400
A	■ 0.4600	■ 0.3400
B	■ 0.4600	■ 0.3400

