Full wwPDB EM Validation Report ⓘ

Jun 26, 2025 – 09:01 PM JST

PDB ID	:	8WEA / pdb_00008wea
EMDB ID	:	EMD-37476
Title	:	Human L-type voltage-gated calcium channel Cav1.2 (Class II) in the presence of pinaverium at 3.2 Angstrom resolution
Authors	:	Gao, S.; Yao, X.; Fan, X.; Yan, N.
Deposited on	:	2023-09-17
Resolution	:	3.20 Å(reported)

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

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/EMValidationReportHelp
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

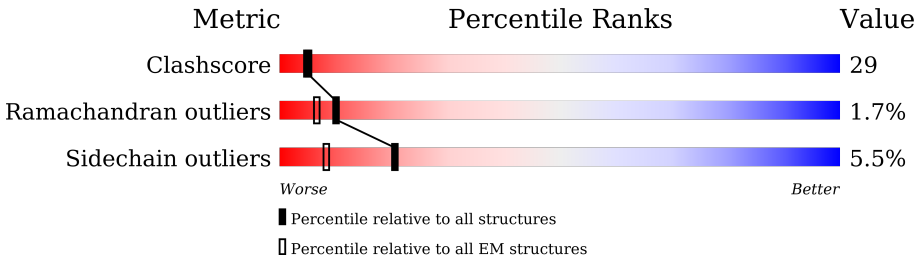
EMDB validation analysis	:	0.0.1.dev118
Mogul	:	1.8.5 (274361), CSD as541be (2020)
MolProbity	:	4-5-2 with Phenix2.0rc1
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.44

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
ELECTRON MICROSCOPY

The reported resolution of this entry is 3.20 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 <=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	2201	22% 22% 27% 5% • 45%
2	D	1103	7% 65% 20% • 14%
3	B	3	33% 67% 33%
4	C	2	50% 50% 50%
4	F	2	50% 100%
4	G	2	50% 50%
5	E	4	25% 75%

2 Entry composition

There are 9 unique types of molecules in this entry. The entry contains 17188 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.

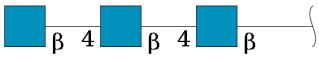
- Molecule 1 is a protein called Voltage-dependent L-type calcium channel subunit alpha-1C.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	1206	9335	6116	1541	1617	61	0	0

- Molecule 2 is a protein called Voltage-dependent calcium channel subunit alpha-2/delta-1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	D	948	7570	4803	1269	1467	31	0	0

- Molecule 3 is an oligosaccharide called 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose.



Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
3	B	3	42	24	3	15	0	0

- Molecule 4 is an oligosaccharide called 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
4	C	2	28	16	2	10	0	0
4	F	2	28	16	2	10	0	0

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Mol	Chain	Residues	Atoms				AltConf	Trace
4	G	2	Total	C	N	O	0	0
			28	16	2	10		

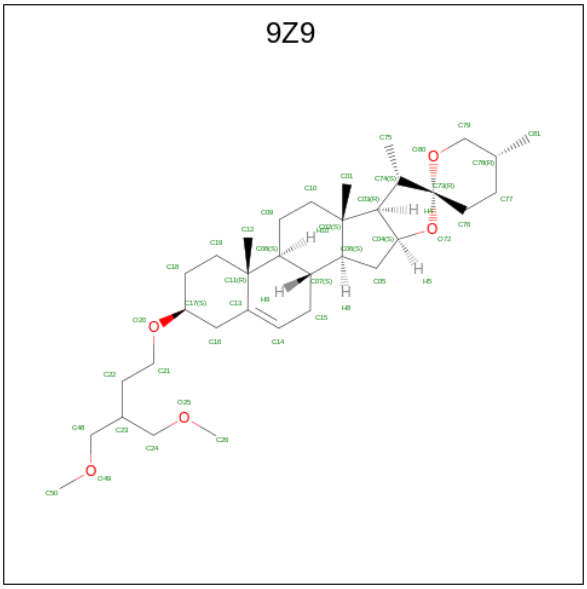
- Molecule 5 is an oligosaccharide called 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose.

Mol	Chain	Residues	Atoms				AltConf	Trace
5	E	4	Total	C	N	O	0	0
			56	32	4	20		

- Molecule 6 is CALCIUM ION (CCD ID: CA) (formula: Ca).

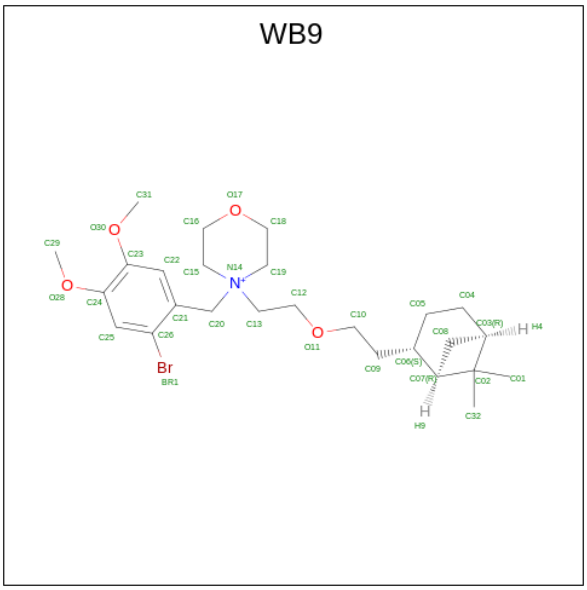
Mol	Chain	Residues	Atoms		AltConf
6	A	1	Total	Ca	0
			1	1	
6	D	1	Total	Ca	0
			1	1	

- Molecule 7 is (3beta,14beta,17beta,25R)-3-[4-methoxy-3-(methoxymethyl)butoxy]spirost-5-en (CCD ID: 9Z9) (formula: $C_{34}H_{56}O_5$) (labeled as "Ligand of Interest" by depositor).



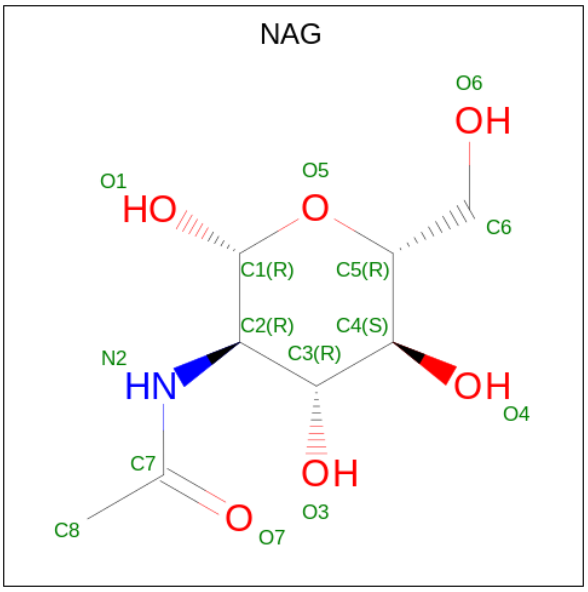
Mol	Chain	Residues	Atoms			AltConf
7	A	1	Total	C	O	0
			39	34	5	

- Molecule 8 is 4-[(2-bromanyl-4,5-dimethoxy-phenyl)methyl]-4-[2-[2-[(1 {R},2 {S},5 {R})-6,6-dimethyl-2-bicyclo[3.1.1]heptanyl]ethoxy]ethyl]morpholin-4-ium (CCD ID: WB9) (formula: $C_{26}H_{41}BrNO_4$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					AltConf
8	A	1	Total	Br	C	N	O	0
			32	1	26	1	4	

- Molecule 9 is 2-acetamido-2-deoxy-beta-D-glucopyranose (CCD ID: NAG) (formula: $C_8H_{15}NO_6$).



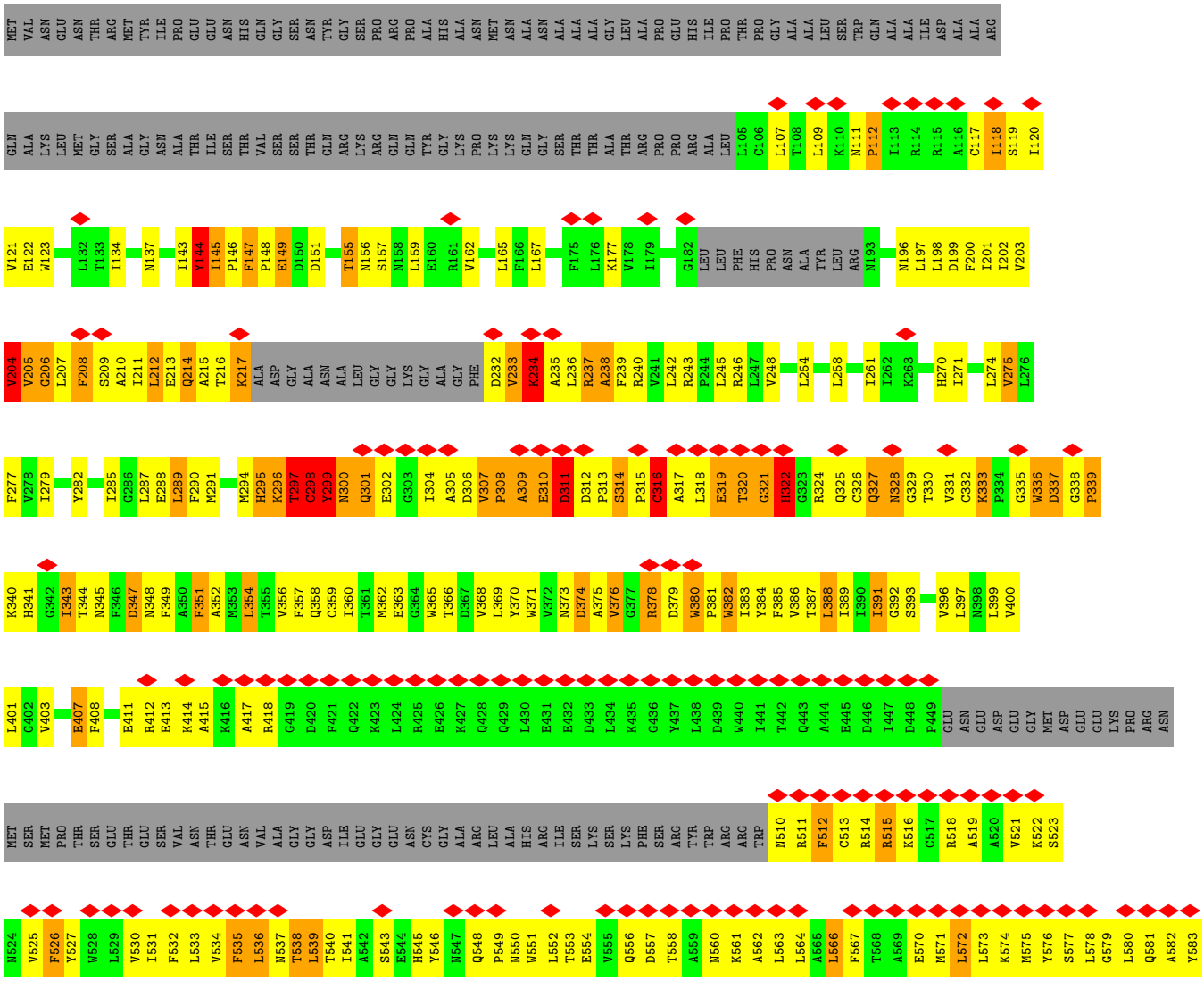
Mol	Chain	Residues	Atoms				AltConf
9	D	1	Total	C	N	O	0
			14	8	1	5	
9	D	1	Total	C	N	O	0
			14	8	1	5	

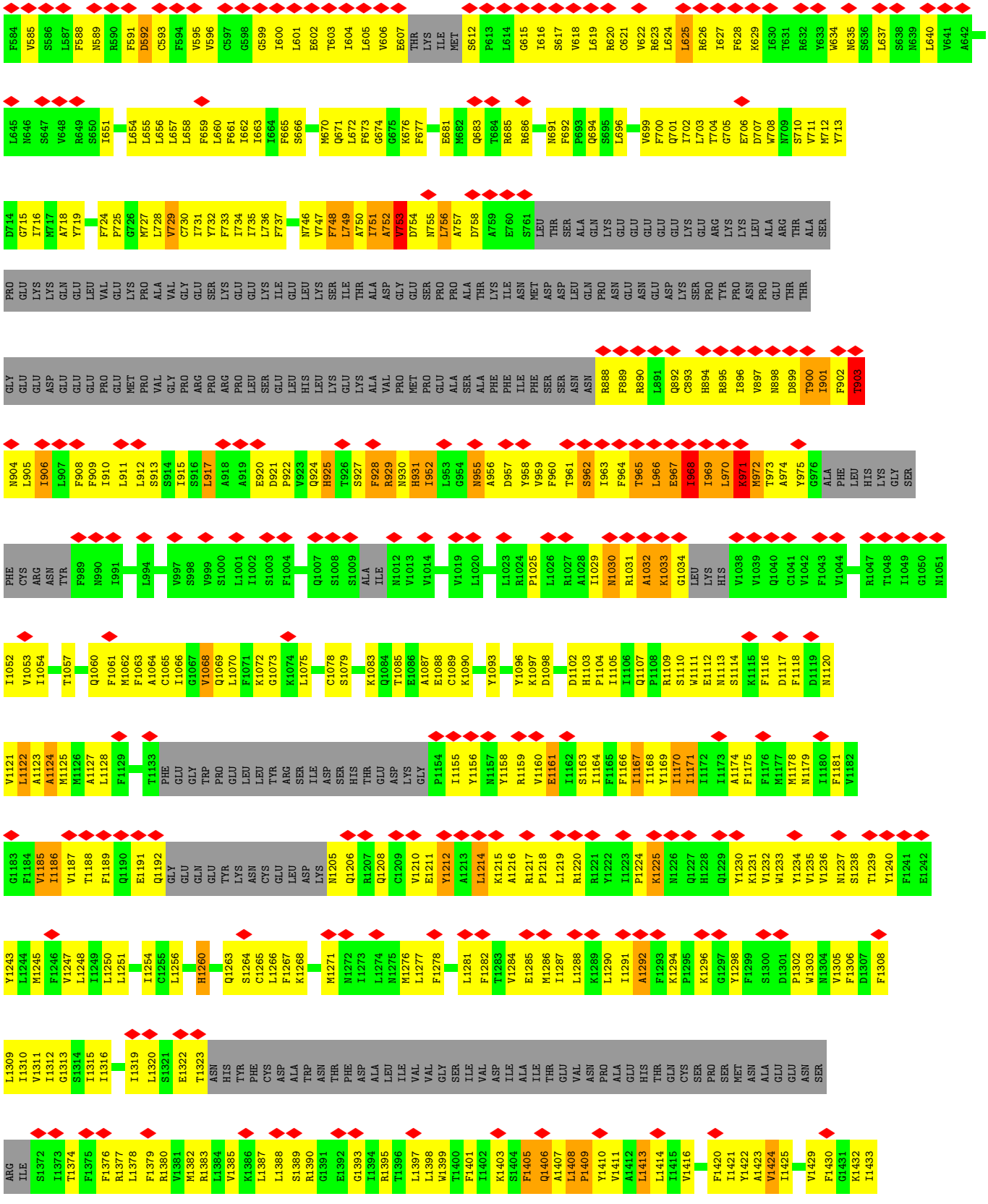
3 Residue-property plots (i)

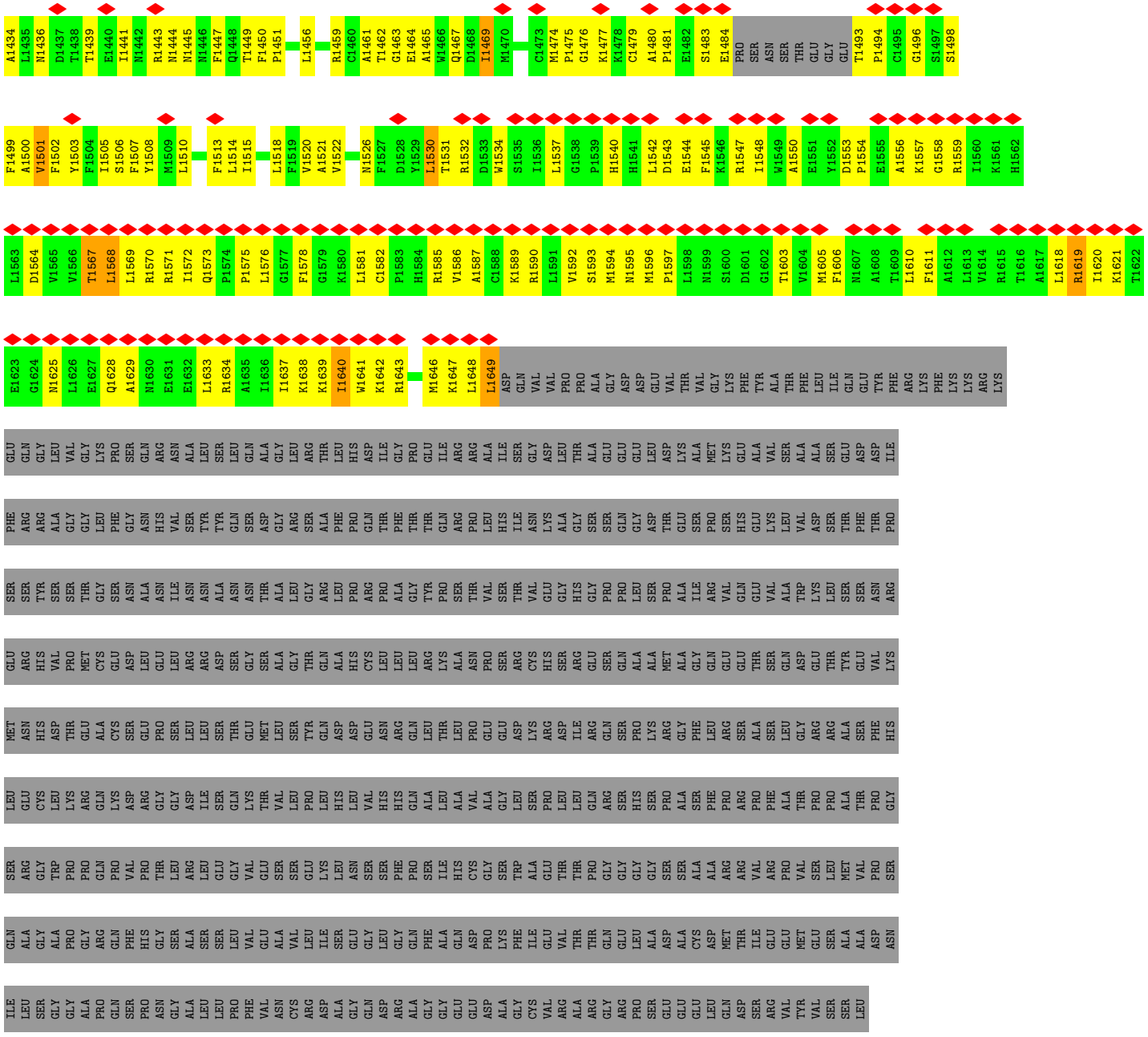
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion 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: Voltage-dependent L-type calcium channel subunit alpha-1C

Chain A:

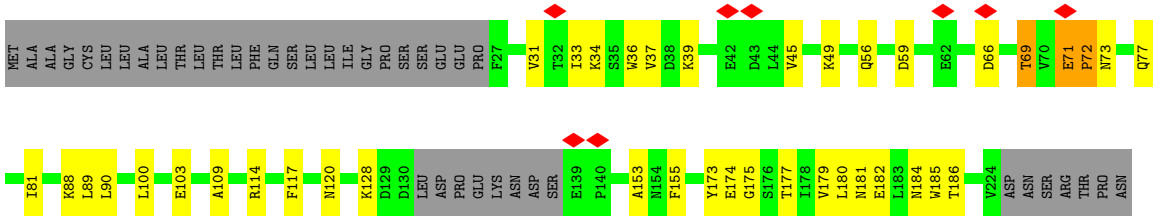


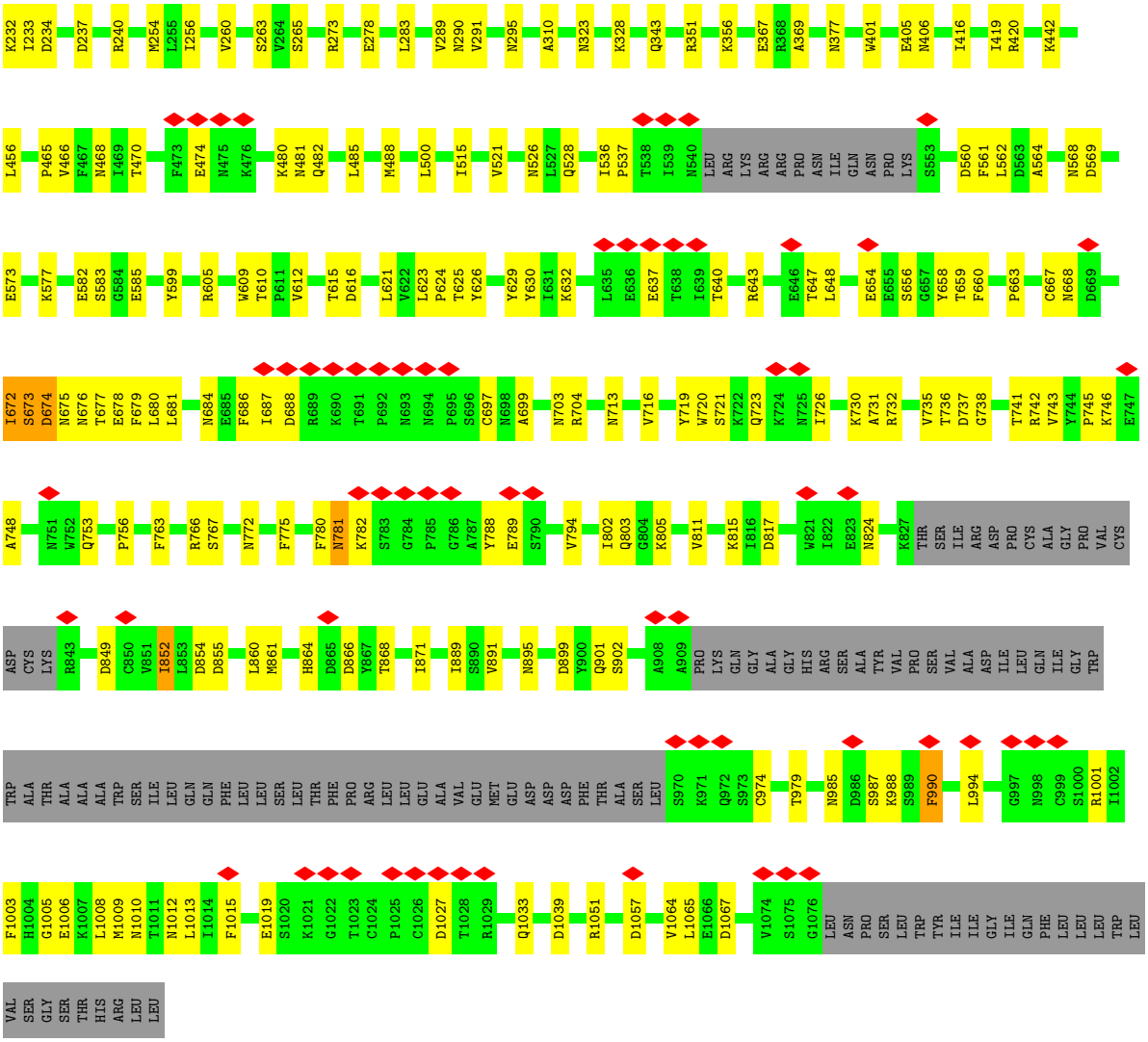

F584 V585 S586 L587 F588 N589 R590 F591 D592 C593 F594 V595 V596 C597 G598 G599 I600 L601 E602 T603 I604 L605 V606 E607 THR LYS ILE MET S612 P613 L614 G615 I616 S617 V618 L619 R620 C621 V622 R623 L624 L625 R626 I627 F628 K629 I630 T631 R632 Y633 W634 N635 S636 L637 S638 N639 L640 V641 A642
L645 N646 S647 V648 R649 S650 I651 L654 L655 L656 L657 L658 F659 L660 F661 I662 I663 I664 F665 S666 M670 Q671 L672 F673 G674 G675 K676 F677 E681 W682 Q683 T684 R685 R686 N691 F692 P693 Q694 S695 L696 V699 F700 Q701 I702 L703 T704 G705 E706 D707 W708 W709 S710 V711 M712 Y713
D714 G715 T716 M717 A718 Y719 F724 P725 G726 M727 L728 V729 C730 I731 Y732 F733 I734 I735 L736 F737 N746 V747 F748 L749 A750 I751 A752 W753 D754 N755 L756 A757 D758 A759 E760 S761 LEU THR SER ALA GLN LYS GLU GLU GLU GLU GLU LYS GLU ARG LYS LYS LEU ALA ARG THR ALA SER
PRO GLU LYS LYS GLN GLU LEU VAL GLU LYS PRO ALA VAL GLY GLU SER LYS GLU GLU LYS ILE GLU LEU LYS SER ILE THR ALA ASP GLY GLU SER PRO PRO ALA THR LYS ILE ASN MET ASP ASP LEU GLN PRO ASN GLU ASN GLU ASP LYS SER PRO TYR PRO ASN PRO GLU THR THR
GLY GLU GLU ASP GLU GLU GLU PRO GLU MET PRO VAL GLY PRO ARG PRO ARG PRO LEU SER GLU LEU HIS LEU LYS GLU LYS GLY ALA VAL PRO MET PRO GLU ALA SER ALA PHE PHE ILE PHE SER SER ASN ASN R888 F889 R890 L891 Q892 C893 H894 R895 I896 V897 N898 D899 T900 I901 F902 T903
N904 L905 I906 L907 F908 F909 I910 L911 L912 S913 S914 I915 S916 L917 A918 A919 E920 D921 P922 V923 Q924 H925 T926 S927 F928 R929 N930 H931 I952 L953 G954 N955 A956 D957 Y958 V959 F960 T961 S962 I963 F964 T965 L966 E967 I968 I969 L970 K971 M972 T973 A974 Y975 G976 ALA PHE LEU HIS LYS GLY SER
PHE CYS ARG ASN TYR F989 N990 I991 L994 V997 S998 V999 S1000 L1001 I1002 S1003 F1004 Q1007 S1008 S1009 ALA ILE N1012 V1013 V1014 V1019 L1020 L1023 R1024 P1025 L1026 R1027 A1028 I1029 N1030 R1031 A1032 K1033 G1034 LEU LYS HIS V1038 V1039 Q1040 C1041 V1042 F1043 V1044 R1047 T1048 I1049 G1050 N1051
I1052 V1053 I1054 T1057 Q1060 F1061 M1062 F1063 A1064 C1065 I1066 G1067 V1068 Q1069 L1070 F1071 K1072 G1073 K1074 L1075 C1078 S1079 K1083 Q1084 T1085 E1086 A1087 E1088 C1089 K1090 Y1093 Y1096 K1097 D1098 D1102 H1103 P1104 I1105 I1106 Q1107 P1108 R1109 S1110 W1111 E1112 N1113 S1114 K1115 F1116 D1117 F1118 D1119 N1120
V1121 L1122 A1123 A1124 M1125 M1126 A1127 L1128 F1129 T1133 PHE GLU GLY TRP PRO GLU LEU LEU TYR ARG SER ILE ASP SER HIS THR GLU ASP LYS GLY P1154 I1155 Y1156 N1157 Y1158 R1159 V1160 E1161 I1162 S1163 I1164 F1165 F1166 I1167 I1168 Y1169 I1170 I1171 I1172 I1173 A1174 F1175 F1176 M1177 M1178 N1179 I1180 F1181 V1182
G1183 F1184 V1185 I1186 V1187 T1188 F1189 Q1190 E1191 Q1192 GLY GLU GLN GLU TYR LYS ASN CYS GLU LEU ASP LYS N1205 Q1206 R1207 Q1208 C1209 V1210 E1211 Y1212 A1213 L1214 K1215 A1216 R1217 P1218 L1219 R1220 R1221 Y1222 I1223 P1224 K1225 N1226 Q1227 H1228 Q1229 Y1230 K1231 V1232 W1233 Y1234 V1235 V1236 N1237 S1238 T1239 Y1240 F1241 E1242
Y1243 L1244 M1245 F1246 V1247 L1248 I1249 L1250 L1251 I1254 C1255 L1256 H1260 Q1263 S1264 C1265 L1266 F1267 K1268 M1271 N1272 I1273 L1274 N1275 M1276 L1277 F1278 L1281 F1282 T1283 V1284 E1285 M1286 I1287 L1288 K1289 L1290 I1291 A1292 F1293 K1294 P1295 K1296 G1297 Y1298 F1299 S1300 D1301 P1302 W1303 N1304 V1305 F1306 D1307 F1308
L1309 I1310 V1311 I1312 G1313 S1314 I1315 I1316 I1319 L1320 S1321 E1322 T1323 ASN HIS TYR PHE CYS ASP ASP ALA TRP ASN THR PHE ASP ALA LEU ILE VAL VAL GLY SER ILE VAL ASP ILE ALA ILE THR GLU VAL ASN PRO ALA GLU HIS THR GLN CYS SER PRO SER MET ASN ALA GLU GLU ASN SER
ARG ILE S1372 I1373 T1374 F1375 F1376 R1377 L1378 F1379 R1380 V1381 M1382 R1383 L1384 V1385 K1386 L1387 L1388 S1389 R1390 G1391 E1392 G1393 I1394 R1395 T1396 L1397 L1398 W1399 T1400 F1401 I1402 K1403 S1404 F1405 Q1406 A1407 L1408 P1409 Y1410 V1411 A1412 L1413 L1414 I1415 V1416 F1420 I1421 Y1422 A1423 V1424 I1425 V1429 F1430 G1431 K1432 I1433



• Molecule 2: Voltage-dependent calcium channel subunit alpha-2/delta-1

Chain D:





• Molecule 3: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

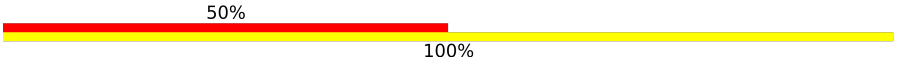
Chain B:

• Molecule 4: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain C:

• Molecule 4: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain F:



• Molecule 4: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain G:

• Molecule 5: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain E:

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	299035	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 ($e^-/Å^2$)	50	Depositor
Minimum defocus (nm)	1900	Depositor
Maximum defocus (nm)	2100	Depositor
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	4.106	Depositor
Minimum map value	-2.750	Depositor
Average map value	-0.001	Depositor
Map value standard deviation	0.081	Depositor
Recommended contour level	0.4	Depositor
Map size (Å)	311.91998, 311.91998, 311.91998	wwPDB
Map dimensions	280, 280, 280	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.114, 1.114, 1.114	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: WB9, NAG, CA, 9Z9

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	0.76	13/9535 (0.1%)	0.97	47/12941 (0.4%)
2	D	0.15	0/7728	0.37	0/10477
All	All	0.58	13/17263 (0.1%)	0.76	47/23418 (0.2%)

All (13) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	311	ASP	CA-C	-8.17	1.47	1.52
1	A	146	PRO	CA-CB	-7.83	1.45	1.54
1	A	316	CYS	CA-C	-6.93	1.44	1.52
1	A	145	ILE	CA-C	-6.89	1.45	1.52
1	A	147	PHE	CA-C	-6.50	1.44	1.52
1	A	144	TYR	CA-C	-6.28	1.44	1.52
1	A	339	PRO	N-CA	-6.07	1.39	1.47
1	A	339	PRO	CA-CB	-6.02	1.45	1.53
1	A	339	PRO	CA-C	-5.95	1.44	1.52
1	A	314	SER	CA-C	-5.89	1.46	1.53
1	A	205	VAL	CA-C	-5.63	1.45	1.52
1	A	298	CYS	CA-C	-5.45	1.45	1.52
1	A	297	THR	CA-C	-5.07	1.46	1.52

All (47) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	1032	ALA	N-CA-C	-12.01	99.40	113.21
1	A	1406	GLN	N-CA-C	-9.36	103.95	114.62
1	A	1030	ASN	N-CA-C	-8.85	101.54	111.71
1	A	379	ASP	N-CA-C	8.27	119.92	111.07
1	A	375	ALA	N-CA-C	8.00	119.78	111.14
1	A	359	CYS	N-CA-C	7.94	119.93	111.28

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	311	ASP	N-CA-C	-7.92	98.98	111.02
1	A	328	ASN	CB-CA-C	-7.82	107.55	116.63
1	A	1469	ILE	N-CA-C	-7.80	102.66	110.62
1	A	968	ILE	N-CA-C	-7.79	105.17	112.96
1	A	1413	LEU	N-CA-C	-7.76	102.82	111.28
1	A	962	SER	N-CA-C	-7.26	103.39	111.82
1	A	300	ASN	N-CA-C	7.05	117.17	107.73
1	A	299	TYR	N-CA-C	6.84	120.51	112.72
1	A	295	HIS	N-CA-C	6.63	120.98	113.02
1	A	376	VAL	N-CA-C	6.62	118.46	112.17
1	A	238	ALA	N-CA-C	-6.42	104.59	112.88
1	A	1029	ILE	N-CA-C	6.41	117.19	110.72
1	A	204	VAL	CB-CA-C	-6.30	103.91	111.97
1	A	1292	ALA	N-CA-C	-6.23	105.99	113.97
1	A	275	VAL	N-CA-C	-6.20	104.45	110.72
1	A	351	PHE	N-CA-C	-6.13	104.60	111.28
1	A	147	PHE	N-CA-C	6.12	123.33	109.81
1	A	965	THR	N-CA-C	-6.04	104.62	111.14
1	A	365	TRP	N-CA-C	-6.00	104.67	112.23
1	A	1124	ALA	N-CA-C	-6.00	104.75	111.28
1	A	1122	LEU	N-CA-C	5.80	117.28	111.07
1	A	925	HIS	N-CA-C	5.79	123.13	110.80
1	A	382	TRP	N-CA-C	5.76	117.56	111.28
1	A	378	ARG	N-CA-C	5.76	120.42	113.17
1	A	1167	ILE	N-CA-C	-5.70	107.94	113.53
1	A	1212	TYR	N-CA-C	-5.64	106.44	113.38
1	A	1214	LEU	N-CA-C	-5.59	102.48	110.59
1	A	538	THR	N-CA-C	-5.55	104.45	111.11
1	A	1065	CYS	N-CA-C	-5.54	106.22	112.87
1	A	147	PHE	CA-C-N	-5.47	114.29	119.76
1	A	147	PHE	C-N-CA	-5.47	114.29	119.76
1	A	1256	LEU	N-CA-C	-5.44	106.65	113.72
1	A	1158	TYR	N-CA-C	-5.43	104.53	113.50
1	A	149	GLU	CB-CA-C	-5.28	110.47	116.54
1	A	898	ASN	N-CA-C	-5.26	107.52	114.31
1	A	1054	ILE	N-CA-C	5.26	115.98	110.62
1	A	146	PRO	CA-C-O	-5.23	115.55	121.98
1	A	1185	VAL	N-CA-C	5.11	115.55	110.23
1	A	1387	LEU	N-CA-C	-5.11	107.00	113.18
1	A	368	VAL	N-CA-C	-5.08	105.44	110.62
1	A	1181	PHE	N-CA-C	5.01	117.70	111.24

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	9335	0	9194	817	0
2	D	7570	0	7371	173	0
3	B	42	0	37	4	0
4	C	28	0	25	1	0
4	F	28	0	25	1	0
4	G	28	0	25	1	0
5	E	56	0	49	4	0
6	A	1	0	0	0	0
6	D	1	0	0	0	0
7	A	39	0	0	0	0
8	A	32	0	0	1	0
9	D	28	0	26	2	0
All	All	17188	0	16752	990	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 29.

All (990) 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:511:ARG:CZ	1:A:512:PHE:CE1	1.97	1.46
1:A:511:ARG:NH2	1:A:512:PHE:HE1	1.00	1.44
1:A:511:ARG:NH2	1:A:512:PHE:CE1	1.93	1.36
1:A:511:ARG:CZ	1:A:512:PHE:HE1	1.32	1.28
1:A:282:TYR:CD2	1:A:384:TYR:HE1	1.55	1.25
1:A:282:TYR:HD2	1:A:384:TYR:CE1	1.61	1.18
1:A:1214:LEU:HD11	1:A:1643:ARG:HG2	1.42	1.00
1:A:511:ARG:NE	1:A:512:PHE:CE1	2.33	0.97
2:D:72:PRO:HA	2:D:629:TYR:HA	1.46	0.97
1:A:282:TYR:CD2	1:A:384:TYR:CE1	2.44	0.94
1:A:201:ILE:O	1:A:205:VAL:HG23	1.68	0.94
1:A:363:GLU:HG3	1:A:708:TRP:HE1	1.32	0.92

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1260:HIS:HD2	1:A:1263:GLN:HB3	1.34	0.91
1:A:1597:PRO:HB3	1:A:1646:MET:HG2	1.53	0.91
1:A:1567:THR:HA	1:A:1570:ARG:HB2	1.52	0.90
1:A:537:ASN:HB2	1:A:563:LEU:HD12	1.53	0.90
1:A:200:PHE:O	1:A:203:VAL:HG12	1.72	0.89
1:A:538:THR:HG23	1:A:627:ILE:HG13	1.55	0.88
1:A:201:ILE:O	1:A:204:VAL:CG1	2.20	0.88
1:A:921:ASP:HB2	1:A:929:ARG:HD3	1.53	0.88
1:A:511:ARG:H	1:A:511:ARG:HD3	1.39	0.87
1:A:620:ARG:HA	1:A:623:ARG:HD3	1.59	0.85
1:A:592:ASP:HA	1:A:625:LEU:HD21	1.59	0.85
1:A:969:ILE:HG22	1:A:970:LEU:HD13	1.61	0.83
1:A:1031:ARG:C	1:A:1033:LYS:H	1.85	0.83
1:A:512:PHE:HA	1:A:515:ARG:HD2	1.59	0.83
1:A:408:PHE:CE1	1:A:749:LEU:HB3	2.14	0.82
1:A:1374:THR:HG23	1:A:1377:ARG:HH21	1.46	0.81
1:A:1313:GLY:O	1:A:1316:ILE:HG12	1.81	0.81
1:A:204:VAL:HG13	1:A:205:VAL:H	1.45	0.80
1:A:634:TRP:HA	1:A:637:LEU:HB3	1.62	0.80
1:A:624:LEU:HA	1:A:627:ILE:HD13	1.64	0.80
1:A:1260:HIS:CD2	1:A:1263:GLN:HB3	2.16	0.80
2:D:184:ASN:HD21	3:B:1:NAG:H62	1.46	0.79
1:A:1377:ARG:HG3	1:A:1380:ARG:HH12	1.47	0.79
1:A:713:TYR:HA	1:A:716:ILE:HG12	1.63	0.79
1:A:201:ILE:O	1:A:204:VAL:HG13	1.82	0.78
1:A:543:SER:HB3	1:A:552:LEU:HD11	1.65	0.78
1:A:279:ILE:HD11	1:A:360:ILE:HD13	1.64	0.78
1:A:299:TYR:HB2	1:A:333:LYS:HG3	1.64	0.78
1:A:511:ARG:NE	1:A:512:PHE:CD1	2.52	0.77
1:A:702:ILE:HG23	1:A:708:TRP:HB2	1.67	0.77
1:A:254:LEU:HD13	1:A:656:LEU:HD22	1.67	0.77
1:A:563:LEU:HA	1:A:566:LEU:HD22	1.65	0.77
1:A:511:ARG:HH21	1:A:512:PHE:HE1	1.29	0.77
1:A:298:CYS:O	1:A:308:PRO:HD2	1.84	0.76
1:A:316:CYS:SG	1:A:317:ALA:N	2.58	0.76
1:A:369:LEU:HD23	1:A:369:LEU:O	1.86	0.75
1:A:1573:GLN:HG3	1:A:1575:PRO:HG2	1.68	0.75
1:A:204:VAL:HG13	1:A:205:VAL:N	2.01	0.75
1:A:201:ILE:HA	1:A:204:VAL:CG1	2.17	0.74
1:A:701:GLN:HG3	1:A:706:GLU:HB2	1.69	0.74
1:A:382:TRP:CH2	1:A:383:ILE:HG12	2.22	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:702:ILE:HA	1:A:708:TRP:HB3	1.70	0.74
1:A:1585:ARG:HG2	1:A:1586:VAL:H	1.52	0.74
1:A:927:SER:O	1:A:928:PHE:C	2.29	0.74
1:A:287:LEU:O	1:A:291:MET:CG	2.35	0.74
1:A:201:ILE:O	1:A:204:VAL:HG12	1.87	0.73
1:A:1611:PHE:HD1	1:A:1649:LEU:HA	1.51	0.73
1:A:541:ILE:HD12	1:A:627:ILE:HD11	1.67	0.73
1:A:382:TRP:CE3	1:A:383:ILE:HA	2.24	0.73
1:A:201:ILE:C	1:A:204:VAL:HG12	2.14	0.72
1:A:1634:ARG:HB2	1:A:1640:ILE:HG13	1.71	0.72
2:D:716:VAL:HA	2:D:720:TRP:HB2	1.69	0.72
1:A:408:PHE:HB3	1:A:753:VAL:HG21	1.71	0.72
1:A:901:ILE:O	1:A:905:LEU:HB2	1.90	0.72
1:A:1407:ALA:C	1:A:1409:PRO:HD3	2.14	0.72
2:D:39:LYS:NZ	2:D:824:ASN:O	2.22	0.72
1:A:354:LEU:HD23	1:A:354:LEU:O	1.90	0.71
1:A:624:LEU:O	1:A:627:ILE:HB	1.88	0.71
1:A:595:VAL:HB	1:A:625:LEU:HD23	1.71	0.71
1:A:1085:THR:HB	1:A:1088:GLU:HG3	1.70	0.71
1:A:1267:PHE:CZ	1:A:1271:MET:HE3	2.25	0.71
1:A:1312:ILE:O	1:A:1316:ILE:HG23	1.90	0.71
1:A:407:GLU:HA	1:A:407:GLU:OE1	1.91	0.71
1:A:888:ARG:HG3	1:A:889:PHE:H	1.54	0.71
1:A:1548:ILE:HG23	1:A:1570:ARG:HH21	1.56	0.71
2:D:860:LEU:HD12	2:D:1013:LEU:HD21	1.72	0.70
1:A:366:THR:HG21	1:A:1459:ARG:HG3	1.73	0.70
1:A:143:ILE:O	1:A:144:TYR:C	2.32	0.70
1:A:289:LEU:HD12	1:A:289:LEU:N	2.06	0.70
1:A:270:HIS:NE2	1:A:1393:GLY:HA3	2.07	0.69
1:A:1191:GLU:O	1:A:1192:GLN:C	2.36	0.69
1:A:414:LYS:C	1:A:414:LYS:HD2	2.18	0.69
1:A:1436:ASN:O	1:A:1439:THR:HG22	1.90	0.69
1:A:354:LEU:HD23	1:A:354:LEU:C	2.17	0.68
1:A:211:ILE:O	1:A:214:GLN:HB3	1.94	0.68
1:A:906:ILE:HA	1:A:909:PHE:CD2	2.29	0.68
2:D:528:GLN:O	2:D:901:GLN:NE2	2.27	0.68
2:D:100:LEU:HB3	2:D:488:MET:HE2	1.76	0.68
1:A:336:TRP:CH2	1:A:339:PRO:HA	2.29	0.67
1:A:200:PHE:O	1:A:203:VAL:CG1	2.40	0.67
1:A:606:VAL:O	1:A:607:GLU:C	2.37	0.67
1:A:201:ILE:HA	1:A:204:VAL:HG12	1.76	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:294:MET:CE	1:A:345:ASN:HA	2.24	0.67
1:A:960:PHE:O	1:A:963:ILE:HB	1.95	0.67
1:A:1568:LEU:HD13	1:A:1569:LEU:HG	1.77	0.67
1:A:1611:PHE:CD1	1:A:1649:LEU:HA	2.29	0.66
1:A:382:TRP:CZ3	1:A:383:ILE:HG12	2.30	0.66
1:A:1569:LEU:HD22	1:A:1572:ILE:HD13	1.77	0.66
1:A:1647:LYS:HG3	1:A:1648:LEU:H	1.60	0.66
2:D:109:ALA:HA	2:D:470:THR:HG22	1.78	0.66
1:A:309:ALA:O	1:A:310:GLU:C	2.38	0.66
1:A:748:PHE:O	1:A:749:LEU:C	2.39	0.66
1:A:1205:ASN:O	1:A:1208:GLN:HG2	1.95	0.66
1:A:391:ILE:HG12	1:A:391:ILE:O	1.96	0.66
1:A:203:VAL:HG13	1:A:204:VAL:N	2.09	0.66
1:A:1568:LEU:HD12	1:A:1569:LEU:H	1.61	0.66
1:A:965:THR:O	1:A:968:ILE:HB	1.96	0.66
1:A:968:ILE:HA	1:A:971:LYS:HB2	1.78	0.66
1:A:1567:THR:HA	1:A:1570:ARG:CB	2.23	0.66
1:A:345:ASN:OD1	1:A:351:PHE:HD2	1.78	0.65
1:A:1053:VAL:O	1:A:1057:THR:HG23	1.96	0.65
1:A:233:VAL:O	1:A:234:LYS:C	2.38	0.65
1:A:1215:LYS:HA	1:A:1643:ARG:HH22	1.61	0.65
1:A:206:GLY:O	1:A:207:LEU:C	2.38	0.65
1:A:511:ARG:HD3	1:A:511:ARG:N	2.12	0.65
1:A:515:ARG:HG2	1:A:516:LYS:N	2.10	0.65
1:A:1122:LEU:HD22	1:A:1122:LEU:H	1.62	0.65
1:A:1284:VAL:O	1:A:1287:ILE:HG13	1.97	0.65
1:A:756:LEU:HD21	1:A:1179:ASN:HA	1.79	0.65
1:A:961:THR:HA	1:A:964:PHE:CD2	2.32	0.65
1:A:107:LEU:HG	1:A:109:LEU:H	1.63	0.64
1:A:204:VAL:HG13	1:A:205:VAL:HG23	1.79	0.64
1:A:233:VAL:HB	1:A:237:ARG:HB2	1.79	0.64
1:A:399:LEU:O	1:A:403:VAL:HG23	1.96	0.64
1:A:545:HIS:CD2	1:A:552:LEU:HD22	2.33	0.64
1:A:1429:VAL:HG13	1:A:1430:PHE:H	1.62	0.64
1:A:1186:ILE:O	1:A:1189:PHE:N	2.30	0.64
1:A:1302:PRO:O	1:A:1305:VAL:HG12	1.98	0.64
1:A:213:GLU:HA	1:A:216:THR:CG2	2.28	0.64
1:A:603:THR:O	1:A:606:VAL:HG22	1.97	0.64
1:A:1083:LYS:HD2	1:A:1088:GLU:HB3	1.79	0.64
2:D:802:ILE:HG22	2:D:803:GLN:OE1	1.97	0.64
1:A:1060:GLN:HE22	1:A:1169:TYR:HD1	1.46	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:287:LEU:O	1:A:291:MET:HG2	1.98	0.64
1:A:1031:ARG:C	1:A:1033:LYS:N	2.51	0.64
1:A:593:CYS:O	1:A:596:VAL:HG12	1.98	0.63
2:D:177:THR:HG22	2:D:181:ASN:ND2	2.12	0.63
1:A:201:ILE:CA	1:A:204:VAL:HG12	2.27	0.63
2:D:583:SER:HB2	2:D:610:THR:HG22	1.80	0.63
1:A:1449:THR:O	1:A:1450:PHE:C	2.41	0.63
1:A:1250:LEU:O	1:A:1254:ILE:HG13	1.97	0.63
1:A:955:ASN:O	1:A:959:VAL:HG13	1.99	0.62
1:A:1422:TYR:CE2	1:A:1507:PHE:HB2	2.34	0.62
2:D:647:THR:HB	2:D:713:ASN:HD22	1.64	0.62
1:A:370:TYR:CD1	1:A:1444:ASN:HB3	2.34	0.62
1:A:275:VAL:HG22	1:A:396:VAL:HG11	1.81	0.62
1:A:1403:LYS:HA	1:A:1406:GLN:HE22	1.64	0.62
2:D:174:GLU:HA	2:D:179:VAL:HG11	1.80	0.62
1:A:385:PHE:O	1:A:386:VAL:C	2.41	0.62
1:A:1319:ILE:O	1:A:1322:GLU:HG2	2.00	0.62
1:A:673:PHE:HB3	1:A:677:PHE:CE1	2.35	0.62
1:A:702:ILE:HA	1:A:708:TRP:CB	2.29	0.62
2:D:71:GLU:HB3	2:D:630:TYR:CE1	2.35	0.62
1:A:1168:ILE:O	1:A:1169:TYR:C	2.43	0.62
1:A:539:LEU:HG	1:A:540:THR:N	2.15	0.61
1:A:1288:LEU:O	1:A:1291:ILE:HG22	2.00	0.61
1:A:965:THR:O	1:A:968:ILE:N	2.32	0.61
2:D:640:THR:HA	2:D:643:ARG:HE	1.64	0.61
1:A:625:LEU:HA	1:A:628:PHE:CZ	2.35	0.61
1:A:1501:VAL:O	1:A:1505:ILE:HG22	1.99	0.61
2:D:648:LEU:HD12	2:D:680:LEU:HD11	1.82	0.61
2:D:1001:ARG:HE	2:D:1019:GLU:HB2	1.65	0.61
1:A:518:ARG:HA	1:A:577:SER:OG	2.00	0.61
1:A:712:MET:HE3	1:A:713:TYR:CE1	2.35	0.61
1:A:134:ILE:HD11	1:A:246:ARG:HD3	1.80	0.61
2:D:673:SER:H	2:D:679:PHE:HD2	1.47	0.61
1:A:308:PRO:O	1:A:310:GLU:N	2.33	0.61
2:D:568:ASN:OD1	2:D:569:ASP:N	2.32	0.61
1:A:378:ARG:HB2	1:A:378:ARG:CZ	2.31	0.61
1:A:583:TYR:HE2	1:A:593:CYS:SG	2.23	0.61
1:A:1476:GLY:O	1:A:1493:THR:HB	2.00	0.61
1:A:1592:VAL:HA	1:A:1596:MET:HE3	1.83	0.61
1:A:370:TYR:CE1	1:A:1444:ASN:HB3	2.36	0.61
1:A:1377:ARG:HG3	1:A:1380:ARG:NH1	2.15	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:387:THR:O	1:A:391:ILE:HG22	2.01	0.60
1:A:588:PHE:HZ	1:A:629:LYS:HA	1.66	0.60
1:A:1310:ILE:CD1	1:A:1383:ARG:HG3	2.31	0.60
1:A:894:HIS:HA	1:A:897:VAL:HG22	1.82	0.60
1:A:681:GLU:HB2	1:A:685:ARG:HH22	1.67	0.60
2:D:31:VAL:HA	2:D:34:LYS:HE2	1.83	0.60
1:A:412:ARG:NH2	1:A:758:ASP:N	2.49	0.60
1:A:512:PHE:O	1:A:516:LYS:HD3	2.01	0.60
1:A:707:ASP:O	1:A:711:VAL:HG23	2.02	0.60
2:D:1009:MET:SD	2:D:1009:MET:N	2.75	0.60
1:A:550:ASN:HA	1:A:553:THR:OG1	2.02	0.60
1:A:617:SER:HB3	1:A:1069:GLN:HG3	1.84	0.60
1:A:1089:CYS:SG	1:A:1109:ARG:HB3	2.42	0.60
2:D:730:LYS:HE2	2:D:817:ASP:HB3	1.84	0.60
1:A:199:ASP:OD2	1:A:246:ARG:NH2	2.35	0.60
1:A:308:PRO:O	1:A:309:ALA:C	2.44	0.60
1:A:1310:ILE:HD13	1:A:1383:ARG:HG3	1.84	0.60
1:A:1594:MET:HB2	1:A:1648:LEU:HD22	1.83	0.60
1:A:917:LEU:HD23	1:A:917:LEU:H	1.66	0.60
1:A:137:ASN:HD22	1:A:243:ARG:HD2	1.65	0.59
1:A:340:LYS:HE2	1:A:371:TRP:HH2	1.67	0.59
1:A:523:SER:HB3	1:A:525:VAL:HG12	1.84	0.59
1:A:1422:TYR:HE2	1:A:1507:PHE:CA	2.15	0.59
1:A:373:ASN:ND2	1:A:378:ARG:HG3	2.17	0.59
1:A:387:THR:O	1:A:388:LEU:C	2.44	0.59
1:A:701:GLN:CG	1:A:706:GLU:HB2	2.31	0.59
1:A:1459:ARG:HD3	1:A:1469:ILE:HD11	1.84	0.59
1:A:302:GLU:HG2	1:A:329:GLY:O	2.03	0.59
1:A:920:GLU:O	1:A:922:PRO:HD3	2.03	0.59
1:A:1568:LEU:HD12	1:A:1569:LEU:N	2.18	0.59
2:D:260:VAL:HG23	2:D:295:ASN:HB3	1.84	0.59
1:A:901:ILE:HA	1:A:905:LEU:HG	1.83	0.59
1:A:1075:LEU:HB2	1:A:1113:ASN:HD21	1.68	0.59
2:D:585:GLU:N	2:D:585:GLU:OE2	2.36	0.59
2:D:780:PHE:HE1	9:D:1203:NAG:H4	1.67	0.59
1:A:204:VAL:O	1:A:208:PHE:HB2	2.03	0.59
1:A:307:VAL:HG21	1:A:313:PRO:HB3	1.83	0.59
1:A:924:GLN:HE22	1:A:927:SER:N	2.01	0.59
1:A:956:ALA:O	1:A:959:VAL:HG22	2.03	0.59
1:A:1639:LYS:HD2	1:A:1640:ILE:N	2.18	0.59
2:D:659:THR:OG1	2:D:742:ARG:NH1	2.36	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:155:THR:O	1:A:159:LEU:HD12	2.03	0.59
1:A:311:ASP:O	1:A:312:ASP:C	2.43	0.58
1:A:1422:TYR:HE2	1:A:1507:PHE:HA	1.66	0.58
1:A:290:PHE:HE2	1:A:384:TYR:CD2	2.21	0.58
1:A:1316:ILE:HD11	1:A:1376:PHE:CD1	2.38	0.58
1:A:1403:LYS:HD2	1:A:1406:GLN:HE22	1.67	0.58
1:A:961:THR:O	1:A:965:THR:HG23	2.02	0.58
1:A:1170:ILE:O	1:A:1171:ILE:C	2.46	0.58
1:A:1537:LEU:HD11	1:A:1576:LEU:HG	1.84	0.58
1:A:673:PHE:HB3	1:A:677:PHE:HE1	1.67	0.58
1:A:1211:GLU:HG3	1:A:1637:ILE:HD11	1.84	0.58
2:D:526:ASN:ND2	2:D:564:ALA:O	2.35	0.58
1:A:536:LEU:O	1:A:539:LEU:HB3	2.02	0.58
1:A:591:PHE:CE1	1:A:625:LEU:HD13	2.38	0.58
1:A:972:MET:O	1:A:973:THR:C	2.45	0.58
2:D:599:TYR:OH	2:D:854:ASP:OD2	2.20	0.58
2:D:240:ARG:NH2	2:D:278:GLU:O	2.36	0.58
1:A:533:LEU:HD13	1:A:536:LEU:HD23	1.84	0.58
1:A:718:ALA:O	1:A:719:TYR:C	2.46	0.58
2:D:537:PRO:HD3	2:D:974:CYS:HB3	1.84	0.58
1:A:730:CYS:C	1:A:732:TYR:N	2.59	0.57
1:A:1118:PHE:HZ	1:A:1166:PHE:CZ	2.22	0.57
1:A:1224:PRO:HG2	1:A:1230:TYR:HD1	1.69	0.57
2:D:889:ILE:HG23	2:D:891:VAL:HG13	1.86	0.57
1:A:324:ARG:HB2	1:A:374:ASP:OD1	2.03	0.57
1:A:712:MET:HA	1:A:733:PHE:CD2	2.40	0.57
1:A:1532:ARG:HD2	1:A:1534:TRP:CE3	2.39	0.57
1:A:336:TRP:O	1:A:337:ASP:C	2.47	0.57
1:A:1174:ALA:O	1:A:1175:PHE:C	2.47	0.57
1:A:369:LEU:HD23	1:A:369:LEU:C	2.30	0.57
1:A:1296:LYS:H	1:A:1296:LYS:HD2	1.69	0.57
1:A:285:ILE:O	1:A:289:LEU:HD13	2.04	0.57
1:A:306:ASP:O	1:A:307:VAL:C	2.47	0.57
1:A:378:ARG:HB3	1:A:378:ARG:NH1	2.19	0.57
1:A:1120:ASN:O	1:A:1121:VAL:C	2.48	0.57
2:D:788:TYR:OH	2:D:868:THR:O	2.20	0.57
5:E:2:NAG:H62	5:E:3:NAG:H61	1.86	0.57
1:A:1087:ALA:HA	1:A:1090:LYS:HZ3	1.70	0.57
2:D:90:LEU:HD12	2:D:615:THR:HG21	1.85	0.57
1:A:327:GLN:HG2	1:A:328:ASN:CG	2.30	0.57
1:A:1513:PHE:O	1:A:1514:LEU:C	2.45	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:591:PHE:CE1	1:A:625:LEU:HB2	2.40	0.56
1:A:1597:PRO:HA	1:A:1647:LYS:HB3	1.86	0.56
1:A:335:GLY:O	1:A:336:TRP:C	2.48	0.56
1:A:382:TRP:CE3	1:A:383:ILE:N	2.73	0.56
1:A:1063:PHE:O	1:A:1066:ILE:HB	2.05	0.56
1:A:1559:ARG:NH1	1:A:1605:MET:SD	2.76	0.56
1:A:287:LEU:C	1:A:287:LEU:HD12	2.30	0.56
1:A:313:PRO:HB2	1:A:336:TRP:CE2	2.40	0.56
1:A:363:GLU:HG3	1:A:708:TRP:NE1	2.14	0.56
1:A:581:GLN:O	1:A:585:VAL:HG23	2.05	0.56
1:A:730:CYS:C	1:A:732:TYR:H	2.14	0.56
1:A:1439:THR:HG23	1:A:1441:ILE:H	1.69	0.56
1:A:1611:PHE:CD1	1:A:1649:LEU:HD12	2.40	0.56
1:A:270:HIS:CD2	1:A:1393:GLY:HA3	2.40	0.56
1:A:274:LEU:HD13	1:A:1398:LEU:HD11	1.87	0.56
1:A:382:TRP:CE3	1:A:383:ILE:CA	2.88	0.56
1:A:1640:ILE:HG12	1:A:1640:ILE:O	2.06	0.56
1:A:634:TRP:O	1:A:635:ASN:C	2.49	0.56
1:A:755:ASN:O	1:A:756:LEU:C	2.47	0.56
1:A:927:SER:O	1:A:929:ARG:N	2.38	0.56
1:A:1155:ILE:HG22	1:A:1156:TYR:HD2	1.69	0.56
2:D:672:ILE:HA	2:D:679:PHE:HE2	1.70	0.56
1:A:314:SER:O	1:A:315:PRO:C	2.46	0.56
1:A:415:ALA:O	1:A:418:ARG:HB2	2.05	0.56
1:A:905:LEU:HB3	1:A:909:PHE:CZ	2.41	0.56
1:A:602:GLU:O	1:A:606:VAL:HG13	2.06	0.56
2:D:1027:ASP:OD1	2:D:1027:ASP:N	2.38	0.56
2:D:743:VAL:HG12	2:D:745:PRO:HD2	1.88	0.56
2:D:753:GLN:OE1	2:D:753:GLN:N	2.39	0.56
2:D:803:GLN:HG2	2:D:805:LYS:HD2	1.87	0.56
1:A:343:ILE:HD12	1:A:713:TYR:CD1	2.41	0.56
1:A:710:SER:HA	1:A:713:TYR:CD2	2.40	0.56
1:A:1401:PHE:CZ	1:A:1530:LEU:HD21	2.41	0.56
1:A:271:ILE:HD11	1:A:1397:LEU:HD13	1.86	0.56
1:A:892:GLN:O	1:A:896:ILE:HG13	2.06	0.56
1:A:1160:VAL:O	1:A:1163:SER:HB3	2.06	0.56
1:A:749:LEU:O	1:A:750:ALA:C	2.49	0.55
1:A:1034:GLY:HA3	8:A:2303:WB9:C29	2.36	0.55
1:A:1586:VAL:O	1:A:1587:ALA:C	2.49	0.55
2:D:625:THR:HG22	2:D:626:TYR:H	1.71	0.55
1:A:1061:PHE:HA	1:A:1125:MET:SD	2.46	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:128:LYS:NZ	2:D:234:ASP:OD2	2.39	0.55
1:A:620:ARG:HG2	1:A:623:ARG:NH1	2.22	0.55
2:D:577:LYS:HE3	2:D:609:TRP:HZ2	1.71	0.55
1:A:201:ILE:HA	1:A:204:VAL:HG11	1.86	0.55
1:A:299:TYR:HE1	1:A:335:GLY:HA3	1.72	0.55
1:A:588:PHE:CZ	1:A:629:LYS:HA	2.41	0.55
2:D:621:LEU:HD21	2:D:623:LEU:HD22	1.88	0.55
1:A:340:LYS:O	1:A:341:HIS:HB2	2.05	0.55
1:A:1308:PHE:HD2	1:A:1309:LEU:HD12	1.72	0.55
2:D:988:LYS:HD2	2:D:1009:MET:HE2	1.88	0.55
1:A:910:ILE:HA	1:A:913:SER:HB3	1.88	0.55
2:D:775:PHE:CE1	2:D:794:VAL:HG13	2.41	0.55
1:A:909:PHE:O	1:A:913:SER:HB2	2.07	0.55
1:A:382:TRP:CZ3	1:A:383:ILE:HA	2.41	0.55
1:A:537:ASN:HB2	1:A:563:LEU:CD1	2.34	0.55
1:A:570:GLU:O	1:A:573:LEU:HG	2.06	0.55
1:A:966:LEU:C	1:A:968:ILE:H	2.14	0.55
2:D:120:ASN:OD1	3:B:1:NAG:H61	2.06	0.55
1:A:357:PHE:C	1:A:357:PHE:CD2	2.84	0.55
1:A:412:ARG:HH12	1:A:757:ALA:HB3	1.71	0.55
1:A:899:ASP:O	1:A:900:THR:C	2.50	0.55
1:A:1432:LYS:O	1:A:1433:ILE:C	2.48	0.55
2:D:775:PHE:H	2:D:1012:ASN:ND2	2.04	0.55
1:A:564:LEU:HD11	1:A:599:GLY:HA3	1.89	0.54
1:A:1233:TRP:O	1:A:1234:TYR:C	2.45	0.54
2:D:673:SER:N	2:D:679:PHE:HD2	2.05	0.54
1:A:205:VAL:HG11	1:A:239:PHE:CD2	2.42	0.54
1:A:213:GLU:HA	1:A:216:THR:HG23	1.88	0.54
1:A:339:PRO:HG3	1:A:344:THR:O	2.07	0.54
1:A:540:THR:HA	1:A:556:GLN:NE2	2.21	0.54
1:A:1399:TRP:CH2	1:A:1403:LYS:HG2	2.42	0.54
1:A:344:THR:HG21	1:A:371:TRP:HZ3	1.71	0.54
1:A:539:LEU:O	1:A:540:THR:C	2.49	0.54
1:A:672:LEU:HD21	1:A:729:VAL:HG22	1.88	0.54
1:A:1116:PHE:CD1	1:A:1127:ALA:HB1	2.42	0.54
1:A:1232:VAL:HG21	1:A:1291:ILE:O	2.08	0.54
1:A:208:PHE:O	1:A:209:SER:C	2.49	0.54
1:A:1559:ARG:CG	1:A:1603:THR:HA	2.38	0.54
1:A:378:ARG:CZ	1:A:378:ARG:CB	2.86	0.54
1:A:681:GLU:C	1:A:683:GLN:N	2.63	0.54
1:A:724:PHE:HB3	1:A:725:PRO:HD3	1.87	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1220:ARG:HB3	1:A:1556:ALA:N	2.23	0.54
1:A:1479:CYS:SG	1:A:1494:PRO:HD2	2.48	0.54
1:A:1573:GLN:HG3	1:A:1575:PRO:CG	2.36	0.54
1:A:167:LEU:HD21	1:A:243:ARG:HH22	1.71	0.54
1:A:579:GLY:O	1:A:580:LEU:C	2.48	0.54
2:D:763:PHE:O	2:D:767:SER:OG	2.25	0.54
2:D:237:ASP:OD2	2:D:420:ARG:NH1	2.40	0.54
2:D:994:LEU:HB2	2:D:1003:PHE:HE2	1.72	0.54
1:A:964:PHE:O	1:A:967:GLU:HB2	2.07	0.54
2:D:254:MET:HE3	2:D:283:LEU:HD21	1.90	0.53
2:D:599:TYR:HD2	2:D:766:ARG:HH21	1.56	0.53
1:A:349:PHE:C	1:A:349:PHE:CD2	2.85	0.53
1:A:408:PHE:HE1	1:A:749:LEU:HB3	1.68	0.53
1:A:1093:TYR:CZ	1:A:1107:GLN:HB2	2.42	0.53
1:A:313:PRO:HB2	1:A:336:TRP:CZ2	2.43	0.53
1:A:637:LEU:O	1:A:640:LEU:HG	2.08	0.53
1:A:1233:TRP:HA	1:A:1292:ALA:HB1	1.90	0.53
2:D:474:GLU:OE1	2:D:474:GLU:N	2.41	0.53
2:D:647:THR:HB	2:D:713:ASN:ND2	2.23	0.53
2:D:735:VAL:HB	2:D:811:VAL:HG12	1.89	0.53
1:A:177:LYS:NZ	1:A:196:ASN:HD21	2.07	0.53
1:A:662:ILE:HD13	1:A:700:PHE:CE1	2.44	0.53
1:A:928:PHE:O	1:A:952:ILE:HG13	2.08	0.53
1:A:663:ILE:HG23	1:A:692:PHE:HZ	1.74	0.53
1:A:924:GLN:CD	1:A:927:SER:HB3	2.34	0.53
1:A:1078:CYS:HB2	1:A:1111:TRP:CE3	2.43	0.53
1:A:1282:PHE:O	1:A:1285:GLU:HG3	2.07	0.53
1:A:282:TYR:CE2	1:A:384:TYR:CE1	2.97	0.53
1:A:408:PHE:HE1	1:A:750:ALA:N	2.07	0.53
1:A:540:THR:HA	1:A:556:GLN:HE22	1.72	0.53
1:A:713:TYR:HA	1:A:716:ILE:CG1	2.37	0.53
1:A:1545:PHE:CD1	1:A:1610:LEU:HD13	2.43	0.53
1:A:602:GLU:HB3	1:A:619:LEU:HD23	1.91	0.53
1:A:673:PHE:HE2	1:A:729:VAL:HG13	1.74	0.53
1:A:296:LYS:HD3	1:A:318:LEU:HD21	1.90	0.53
1:A:1121:VAL:O	1:A:1125:MET:HG2	2.09	0.53
1:A:1502:PHE:CD1	1:A:1502:PHE:C	2.86	0.53
1:A:318:LEU:C	1:A:320:THR:H	2.16	0.52
1:A:1164:ILE:HA	1:A:1167:ILE:HD12	1.90	0.52
1:A:734:ILE:O	1:A:737:PHE:N	2.41	0.52
1:A:1185:VAL:O	1:A:1186:ILE:C	2.51	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1597:PRO:HA	1:A:1647:LYS:CB	2.39	0.52
1:A:928:PHE:O	1:A:929:ARG:C	2.51	0.52
1:A:1316:ILE:O	1:A:1320:LEU:HD13	2.09	0.52
2:D:273:ARG:HD2	2:D:323:ASN:HA	1.91	0.52
1:A:200:PHE:C	1:A:203:VAL:HG12	2.34	0.52
1:A:248:VAL:HG23	1:A:660:LEU:HD23	1.90	0.52
1:A:370:TYR:CE1	1:A:1444:ASN:CB	2.92	0.52
1:A:1164:ILE:O	1:A:1168:ILE:HG12	2.10	0.52
1:A:654:LEU:HD22	1:A:747:VAL:HG22	1.90	0.52
1:A:752:ALA:O	1:A:754:ASP:N	2.43	0.52
1:A:661:PHE:CZ	1:A:736:LEU:HD12	2.45	0.52
1:A:757:ALA:O	1:A:758:ASP:C	2.53	0.52
1:A:1159:ARG:O	1:A:1160:VAL:C	2.52	0.52
2:D:656:SER:OG	2:D:713:ASN:ND2	2.42	0.52
2:D:789:GLU:N	2:D:789:GLU:OE1	2.42	0.52
1:A:1379:PHE:O	1:A:1380:ARG:C	2.53	0.52
1:A:514:ARG:O	1:A:518:ARG:HD3	2.09	0.52
1:A:626:ARG:O	1:A:627:ILE:C	2.51	0.52
1:A:928:PHE:CE1	1:A:952:ILE:HG12	2.45	0.52
1:A:1399:TRP:CZ3	1:A:1403:LYS:HG2	2.45	0.52
1:A:1526:ASN:O	1:A:1530:LEU:HD23	2.10	0.52
2:D:781:ASN:C	2:D:782:LYS:HG3	2.35	0.52
1:A:370:TYR:CD1	1:A:1444:ASN:CB	2.92	0.52
1:A:1320:LEU:O	1:A:1323:THR:OG1	2.27	0.52
2:D:577:LYS:NZ	2:D:582:GLU:OE1	2.43	0.52
1:A:748:PHE:O	1:A:751:ILE:N	2.43	0.52
1:A:751:ILE:O	1:A:755:ASN:HB3	2.09	0.52
2:D:852:ILE:HB	2:D:1013:LEU:HD22	1.90	0.52
1:A:378:ARG:NH1	1:A:378:ARG:CB	2.73	0.51
1:A:704:THR:OG1	1:A:706:GLU:HG2	2.10	0.51
1:A:1581:LEU:HD21	1:A:1585:ARG:HD3	1.92	0.51
2:D:1006:GLU:O	2:D:1015:PHE:N	2.29	0.51
1:A:298:CYS:SG	1:A:330:THR:HB	2.50	0.51
1:A:356:VAL:O	1:A:360:ILE:HG23	2.10	0.51
1:A:408:PHE:CB	1:A:753:VAL:HG21	2.40	0.51
1:A:928:PHE:CD1	1:A:952:ILE:HG12	2.45	0.51
1:A:1212:TYR:OH	1:A:1543:ASP:HA	2.10	0.51
1:A:1212:TYR:CE2	1:A:1542:LEU:HB3	2.46	0.51
1:A:1590:ARG:HA	1:A:1593:SER:HB3	1.92	0.51
2:D:290:ASN:ND2	2:D:343:GLN:OE1	2.44	0.51
2:D:673:SER:OG	2:D:678:GLU:HG3	2.10	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:340:LYS:HE2	1:A:371:TRP:CH2	2.46	0.51
1:A:930:ASN:O	1:A:931:HIS:C	2.54	0.51
1:A:1116:PHE:HD1	1:A:1127:ALA:HB1	1.74	0.51
1:A:1434:ALA:HA	1:A:1480:ALA:HB2	1.92	0.51
2:D:780:PHE:CE1	9:D:1203:NAG:H4	2.46	0.51
1:A:966:LEU:O	1:A:970:LEU:HD22	2.10	0.51
1:A:546:TYR:CE2	1:A:1073:GLY:HA2	2.45	0.51
1:A:1122:LEU:O	1:A:1125:MET:HB2	2.11	0.51
1:A:925:HIS:NE2	1:A:1484:GLU:HB3	2.26	0.51
1:A:1378:LEU:O	1:A:1379:PHE:C	2.53	0.51
1:A:336:TRP:CE2	1:A:338:GLY:O	2.64	0.51
1:A:681:GLU:C	1:A:683:GLN:H	2.18	0.51
1:A:1163:SER:O	1:A:1167:ILE:HG13	2.11	0.51
2:D:616:ASP:OD1	2:D:616:ASP:N	2.44	0.51
1:A:203:VAL:CG1	1:A:204:VAL:N	2.72	0.51
1:A:285:ILE:O	1:A:289:LEU:CD1	2.58	0.51
1:A:300:ASN:OD1	1:A:331:VAL:HB	2.10	0.51
1:A:1550:ALA:HA	1:A:1553:ASP:HB3	1.92	0.51
1:A:1647:LYS:HG3	1:A:1648:LEU:HD12	1.93	0.51
1:A:291:MET:SD	1:A:291:MET:C	2.94	0.51
1:A:532:PHE:HD1	1:A:533:LEU:HD22	1.75	0.51
1:A:118:ILE:HG13	1:A:119:SER:H	1.77	0.50
1:A:623:ARG:HB3	1:A:626:ARG:CZ	2.41	0.50
1:A:1573:GLN:CG	1:A:1575:PRO:HG2	2.39	0.50
2:D:485:LEU:HD22	5:E:1:NAG:H82	1.91	0.50
1:A:897:VAL:HA	1:A:902:PHE:CB	2.41	0.50
1:A:1474:MET:HB3	1:A:1475:PRO:HD2	1.93	0.50
1:A:730:CYS:O	1:A:732:TYR:N	2.44	0.50
1:A:1499:PHE:CE1	1:A:1503:TYR:HB2	2.46	0.50
1:A:672:LEU:HD23	1:A:719:TYR:CE1	2.47	0.50
1:A:897:VAL:HA	1:A:902:PHE:HB2	1.93	0.50
2:D:704:ARG:HH21	2:D:737:ASP:HB3	1.75	0.50
1:A:356:VAL:HG13	1:A:388:LEU:HD21	1.94	0.50
1:A:752:ALA:HA	1:A:756:LEU:HD22	1.93	0.50
1:A:1278:PHE:O	1:A:1282:PHE:HD2	1.94	0.50
1:A:1405:PHE:CG	1:A:1408:LEU:HD21	2.46	0.50
1:A:210:ALA:O	1:A:214:GLN:N	2.44	0.50
1:A:1087:ALA:HA	1:A:1090:LYS:NZ	2.25	0.50
1:A:1159:ARG:HH12	1:A:1160:VAL:HG22	1.77	0.50
1:A:343:ILE:HD12	1:A:716:ILE:HD11	1.92	0.50
2:D:182:GLU:O	2:D:186:THR:OG1	2.21	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:750:ALA:O	1:A:751:ILE:C	2.54	0.50
1:A:1247:VAL:O	1:A:1251:LEU:HD13	2.12	0.50
2:D:637:GLU:HG2	2:D:640:THR:HG23	1.93	0.50
1:A:289:LEU:N	1:A:289:LEU:CD1	2.73	0.49
1:A:1185:VAL:O	1:A:1187:VAL:N	2.45	0.49
1:A:1286:MET:HE2	1:A:1308:PHE:HA	1.93	0.49
1:A:351:PHE:CD1	1:A:351:PHE:N	2.81	0.49
1:A:670:MET:HE1	1:A:692:PHE:HB2	1.93	0.49
1:A:725:PRO:HA	1:A:728:LEU:HD23	1.93	0.49
1:A:1078:CYS:HB2	1:A:1111:TRP:HE3	1.77	0.49
2:D:672:ILE:HA	2:D:679:PHE:CE2	2.46	0.49
1:A:591:PHE:CD1	1:A:625:LEU:HD13	2.47	0.49
1:A:661:PHE:HZ	1:A:736:LEU:HD12	1.77	0.49
1:A:900:THR:HG23	1:A:904:ASN:HB2	1.93	0.49
1:A:1420:PHE:O	1:A:1424:VAL:HG22	2.12	0.49
2:D:612:VAL:HG21	2:D:615:THR:HG23	1.94	0.49
1:A:201:ILE:HG13	1:A:202:ILE:N	2.27	0.49
1:A:238:ALA:HA	1:A:671:GLN:HG2	1.93	0.49
1:A:567:PHE:O	1:A:571:MET:HG2	2.12	0.49
1:A:1159:ARG:NH2	1:A:1160:VAL:HA	2.27	0.49
1:A:1169:TYR:CG	1:A:1170:ILE:N	2.81	0.49
2:D:37:VAL:HG21	2:D:1006:GLU:HG2	1.95	0.49
1:A:159:LEU:HA	1:A:162:VAL:HG22	1.93	0.49
1:A:369:LEU:C	1:A:369:LEU:CD2	2.85	0.49
1:A:414:LYS:O	1:A:417:ALA:HB3	2.13	0.49
1:A:557:ASP:CG	1:A:561:LYS:HE3	2.38	0.49
1:A:1097:LYS:HB2	1:A:1105:ILE:HD11	1.93	0.49
1:A:211:ILE:HA	1:A:214:GLN:HB3	1.94	0.49
1:A:418:ARG:HE	1:A:418:ARG:HA	1.78	0.49
1:A:625:LEU:O	1:A:626:ARG:C	2.53	0.49
2:D:852:ILE:HD11	2:D:861:MET:HE2	1.95	0.49
1:A:601:LEU:O	1:A:604:ILE:HG22	2.13	0.49
1:A:604:ILE:O	1:A:607:GLU:HB2	2.13	0.49
1:A:1075:LEU:HB3	1:A:1114:SER:OG	2.12	0.49
2:D:442:LYS:NZ	2:D:465:PRO:O	2.46	0.49
2:D:775:PHE:HE1	2:D:794:VAL:HG13	1.77	0.49
1:A:155:THR:O	1:A:159:LEU:N	2.46	0.49
1:A:1422:TYR:HE2	1:A:1507:PHE:CB	2.26	0.49
2:D:69:THR:HG23	2:D:632:LYS:HB3	1.94	0.49
2:D:994:LEU:HB3	2:D:1001:ARG:HB2	1.95	0.49
4:C:2:NAG:O7	4:C:2:NAG:O4	2.20	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:397:LEU:HD12	1:A:397:LEU:O	2.12	0.49
1:A:548:GLN:CB	1:A:552:LEU:HD23	2.43	0.49
1:A:623:ARG:HE	1:A:626:ARG:NH2	2.11	0.49
1:A:1265:CYS:O	1:A:1266:LEU:C	2.53	0.49
1:A:121:VAL:HG12	1:A:122:GLU:HG3	1.95	0.48
1:A:261:ILE:HG12	1:A:746:ASN:HD22	1.77	0.48
1:A:349:PHE:O	1:A:352:ALA:HB3	2.13	0.48
2:D:775:PHE:H	2:D:1012:ASN:HD21	1.60	0.48
1:A:351:PHE:N	1:A:351:PHE:HD1	2.10	0.48
1:A:382:TRP:CE3	1:A:382:TRP:C	2.91	0.48
1:A:1306:PHE:CZ	1:A:1310:ILE:HD11	2.48	0.48
2:D:621:LEU:HD11	2:D:623:LEU:HD13	1.94	0.48
1:A:599:GLY:O	1:A:602:GLU:HG2	2.12	0.48
1:A:1218:PRO:HD3	1:A:1606:PHE:CE1	2.47	0.48
1:A:1445:ASN:ND2	1:A:1459:ARG:HH11	2.11	0.48
1:A:1499:PHE:HE1	1:A:1503:TYR:HD2	1.61	0.48
1:A:1557:LYS:HG3	1:A:1558:GLY:H	1.77	0.48
1:A:1502:PHE:HD1	1:A:1502:PHE:O	1.96	0.48
1:A:408:PHE:HB3	1:A:753:VAL:CG2	2.42	0.48
1:A:1569:LEU:HD11	1:A:1587:ALA:HB1	1.94	0.48
2:D:660:PHE:HB2	2:D:741:THR:HB	1.95	0.48
2:D:766:ARG:NH2	2:D:855:ASP:OD2	2.46	0.48
1:A:1450:PHE:N	1:A:1451:PRO:HD2	2.28	0.48
1:A:151:ASP:OD2	2:D:263:SER:HB3	2.14	0.48
1:A:248:VAL:HG23	1:A:660:LEU:CD2	2.42	0.48
1:A:362:MET:HE3	1:A:1462:THR:HG22	1.95	0.48
1:A:1290:LEU:HD21	1:A:1298:TYR:CD2	2.48	0.48
2:D:680:LEU:O	2:D:684:ASN:ND2	2.32	0.48
1:A:511:ARG:CZ	1:A:512:PHE:CZ	2.81	0.48
1:A:752:ALA:O	1:A:753:VAL:C	2.57	0.48
1:A:968:ILE:C	1:A:971:LYS:H	2.21	0.48
1:A:1405:PHE:CD2	1:A:1408:LEU:HD21	2.49	0.48
1:A:1421:ILE:O	1:A:1425:ILE:HG12	2.13	0.48
1:A:1620:ILE:O	1:A:1621:LYS:HD3	2.14	0.48
1:A:892:GLN:HA	1:A:895:ARG:HD2	1.95	0.48
1:A:1461:ALA:C	1:A:1463:GLY:H	2.22	0.48
2:D:256:ILE:HB	2:D:291:VAL:HG22	1.96	0.48
1:A:234:LYS:O	1:A:235:ALA:C	2.55	0.48
1:A:537:ASN:O	1:A:538:THR:C	2.57	0.48
1:A:1467:GLN:CD	1:A:1467:GLN:H	2.21	0.48
2:D:468:ASN:HB3	2:D:481:ASN:HA	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:301:GLN:O	1:A:302:GLU:C	2.55	0.47
1:A:673:PHE:CE2	1:A:729:VAL:HG13	2.48	0.47
1:A:1573:GLN:HG3	1:A:1575:PRO:CD	2.44	0.47
2:D:103:GLU:N	2:D:103:GLU:OE1	2.46	0.47
2:D:377:ASN:HD21	2:D:406:ASN:HD22	1.62	0.47
1:A:515:ARG:HG2	1:A:516:LYS:HD2	1.95	0.47
1:A:527:TYR:O	1:A:531:ILE:HD13	2.14	0.47
1:A:908:PHE:O	1:A:912:LEU:HD23	2.14	0.47
2:D:71:GLU:N	2:D:630:TYR:O	2.45	0.47
2:D:560:ASP:OD1	2:D:561:PHE:N	2.48	0.47
1:A:1501:VAL:HG13	1:A:1502:PHE:H	1.78	0.47
1:A:681:GLU:CG	1:A:685:ARG:HH12	2.28	0.47
2:D:745:PRO:HG2	2:D:748:ALA:HB3	1.96	0.47
1:A:599:GLY:O	1:A:603:THR:HG23	2.15	0.47
1:A:1408:LEU:HD23	1:A:1522:VAL:HG22	1.96	0.47
2:D:416:ILE:HA	2:D:419:ILE:HD12	1.97	0.47
1:A:117:CYS:HA	1:A:120:ILE:HB	1.96	0.47
1:A:271:ILE:O	1:A:275:VAL:HG23	2.14	0.47
1:A:681:GLU:HB2	1:A:685:ARG:NH2	2.28	0.47
1:A:147:PHE:HD1	1:A:148:PRO:HD2	1.80	0.47
1:A:387:THR:HG22	1:A:391:ILE:CG2	2.44	0.47
1:A:397:LEU:O	1:A:400:VAL:CG2	2.63	0.47
1:A:510:ASN:N	1:A:513:CYS:HG	2.13	0.47
1:A:511:ARG:HG2	1:A:512:PHE:N	2.29	0.47
1:A:527:TYR:O	1:A:530:VAL:HG22	2.15	0.47
1:A:545:HIS:CE1	1:A:548:GLN:HA	2.50	0.47
1:A:897:VAL:CG1	1:A:970:LEU:HD12	2.45	0.47
1:A:900:THR:O	1:A:901:ILE:C	2.57	0.47
1:A:1030:ASN:O	1:A:1033:LYS:N	2.48	0.47
1:A:1286:MET:CE	1:A:1308:PHE:HA	2.44	0.47
1:A:612:SER:O	1:A:616:ILE:HG13	2.15	0.47
1:A:666:SER:HB2	1:A:692:PHE:CE2	2.50	0.47
1:A:1254:ILE:HG22	1:A:1254:ILE:O	2.14	0.47
1:A:1480:ALA:HB1	1:A:1481:PRO:HD2	1.96	0.47
1:A:1625:ASN:HA	1:A:1628:GLN:HB3	1.97	0.47
1:A:214:GLN:HG3	1:A:215:ALA:N	2.29	0.47
1:A:519:ALA:O	1:A:523:SER:N	2.43	0.47
1:A:711:VAL:HG12	1:A:733:PHE:CE1	2.50	0.47
2:D:668:ASN:OD1	2:D:668:ASN:N	2.48	0.47
1:A:924:GLN:NE2	1:A:927:SER:HB3	2.29	0.47
1:A:956:ALA:HA	1:A:959:VAL:HG22	1.97	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:971:LYS:HA	1:A:971:LYS:HD2	1.58	0.47
1:A:1447:PHE:CZ	1:A:1456:LEU:HD22	2.50	0.47
1:A:1585:ARG:CG	1:A:1586:VAL:H	2.24	0.47
1:A:1629:ALA:O	1:A:1633:LEU:HG	2.15	0.47
1:A:1648:LEU:H	1:A:1648:LEU:HD12	1.80	0.47
2:D:562:LEU:HD12	2:D:1051:ARG:HE	1.79	0.47
1:A:321:GLY:C	1:A:322:HIS:CG	2.93	0.46
1:A:1513:PHE:O	1:A:1515:ILE:N	2.48	0.46
1:A:1559:ARG:HG3	1:A:1603:THR:HA	1.96	0.46
2:D:731:ALA:HB3	2:D:815:LYS:HB2	1.97	0.46
1:A:261:ILE:HG12	1:A:746:ASN:ND2	2.29	0.46
1:A:532:PHE:CD2	1:A:535:PHE:HE2	2.34	0.46
1:A:546:TYR:HA	1:A:1072:LYS:HD2	1.97	0.46
1:A:665:PHE:CD2	1:A:736:LEU:HD13	2.50	0.46
2:D:699:ALA:O	2:D:703:ASN:HB2	2.15	0.46
1:A:522:LYS:HA	1:A:522:LYS:HE2	1.97	0.46
1:A:548:GLN:HG3	1:A:553:THR:HG22	1.97	0.46
1:A:1423:ALA:O	1:A:1424:VAL:C	2.54	0.46
1:A:1544:GLU:HA	1:A:1547:ARG:NE	2.31	0.46
2:D:673:SER:OG	2:D:679:PHE:HB2	2.15	0.46
1:A:369:LEU:HG	1:A:385:PHE:CD2	2.51	0.46
1:A:412:ARG:HH22	1:A:757:ALA:CB	2.28	0.46
1:A:1403:LYS:HA	1:A:1406:GLN:NE2	2.30	0.46
2:D:232:LYS:HG3	2:D:233:ILE:HG12	1.98	0.46
2:D:677:THR:O	2:D:681:LEU:HG	2.16	0.46
1:A:201:ILE:C	1:A:204:VAL:CG1	2.80	0.46
1:A:712:MET:HA	1:A:733:PHE:CE2	2.51	0.46
1:A:1030:ASN:C	1:A:1032:ALA:N	2.73	0.46
1:A:1215:LYS:CA	1:A:1643:ARG:HH22	2.27	0.46
1:A:1414:LEU:HD23	1:A:1414:LEU:HA	1.83	0.46
2:D:232:LYS:HA	2:D:232:LYS:HD3	1.69	0.46
1:A:254:LEU:HD23	1:A:254:LEU:H	1.81	0.46
1:A:378:ARG:HB3	1:A:378:ARG:HH11	1.80	0.46
1:A:550:ASN:O	1:A:551:TRP:C	2.57	0.46
1:A:666:SER:OG	1:A:696:LEU:HD23	2.16	0.46
1:A:908:PHE:O	1:A:909:PHE:C	2.58	0.46
2:D:49:LYS:HB3	2:D:49:LYS:HE2	1.70	0.46
2:D:868:THR:O	2:D:871:ILE:HG12	2.14	0.46
1:A:200:PHE:O	1:A:204:VAL:HG12	2.16	0.46
1:A:207:LEU:HD23	1:A:207:LEU:HA	1.81	0.46
1:A:548:GLN:HB2	1:A:552:LEU:HD23	1.96	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1230:TYR:HD2	1:A:1231:LYS:HD2	1.80	0.46
2:D:71:GLU:O	2:D:630:TYR:N	2.47	0.46
2:D:73:ASN:HD21	2:D:630:TYR:HB3	1.81	0.46
2:D:89:LEU:HD22	2:D:500:LEU:HD11	1.98	0.46
1:A:297:THR:O	1:A:298:CYS:C	2.59	0.46
1:A:1559:ARG:HG2	1:A:1603:THR:HA	1.96	0.46
1:A:1564:ASP:HA	1:A:1567:THR:HG23	1.97	0.46
1:A:699:VAL:O	1:A:703:LEU:HG	2.15	0.46
1:A:1216:ALA:C	1:A:1217:ARG:HD2	2.41	0.46
1:A:1498:SER:C	1:A:1500:ALA:N	2.71	0.46
1:A:1570:ARG:HD2	1:A:1571:ARG:HB2	1.97	0.46
1:A:1052:ILE:O	1:A:1053:VAL:C	2.58	0.46
1:A:1178:MET:O	1:A:1179:ASN:C	2.59	0.46
2:D:37:VAL:HG11	2:D:1006:GLU:HG2	1.98	0.46
1:A:532:PHE:CE2	1:A:535:PHE:HE2	2.33	0.45
1:A:1211:GLU:OE2	1:A:1638:LYS:HB2	2.16	0.45
1:A:1214:LEU:O	1:A:1215:LYS:C	2.56	0.45
1:A:1408:LEU:HD22	1:A:1518:LEU:HD11	1.98	0.45
1:A:1475:PRO:HA	1:A:1496:GLY:O	2.17	0.45
2:D:730:LYS:HE2	2:D:817:ASP:CB	2.47	0.45
1:A:966:LEU:C	1:A:968:ILE:N	2.74	0.45
1:A:1097:LYS:HE3	1:A:1105:ILE:CD1	2.47	0.45
1:A:1240:TYR:O	1:A:1243:TYR:HB2	2.16	0.45
1:A:1570:ARG:HD2	1:A:1570:ARG:C	2.41	0.45
2:D:177:THR:HG22	2:D:181:ASN:HD22	1.81	0.45
2:D:736:THR:HG23	2:D:738:GLY:H	1.81	0.45
1:A:155:THR:HG22	1:A:159:LEU:CD1	2.45	0.45
1:A:207:LEU:O	1:A:211:ILE:HG12	2.17	0.45
1:A:414:LYS:C	1:A:414:LYS:CD	2.86	0.45
1:A:1168:ILE:C	1:A:1170:ILE:N	2.72	0.45
1:A:1502:PHE:CD1	1:A:1502:PHE:O	2.69	0.45
1:A:1573:GLN:HG3	1:A:1575:PRO:HD2	1.98	0.45
1:A:1578:PHE:CD2	1:A:1581:LEU:HD22	2.51	0.45
1:A:120:ILE:HA	1:A:123:TRP:CE2	2.52	0.45
1:A:237:ARG:HD2	1:A:240:ARG:NE	2.32	0.45
1:A:545:HIS:O	1:A:548:GLN:HB3	2.15	0.45
1:A:546:TYR:CE2	1:A:1073:GLY:CA	3.00	0.45
1:A:625:LEU:HA	1:A:628:PHE:CE2	2.51	0.45
1:A:1225:LYS:HE2	1:A:1225:LYS:HB3	1.77	0.45
1:A:1456:LEU:HD23	1:A:1456:LEU:C	2.42	0.45
2:D:377:ASN:HD21	2:D:406:ASN:ND2	2.15	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:332:CYS:C	1:A:333:LYS:HG2	2.41	0.45
1:A:413:GLU:HA	1:A:413:GLU:OE1	2.16	0.45
1:A:663:ILE:HG23	1:A:692:PHE:CZ	2.50	0.45
1:A:670:MET:O	1:A:674:GLY:HA3	2.16	0.45
1:A:924:GLN:CD	1:A:927:SER:H	2.25	0.45
1:A:1218:PRO:HG2	1:A:1557:LYS:O	2.15	0.45
1:A:1413:LEU:O	1:A:1416:VAL:HG22	2.16	0.45
2:D:667:CYS:HA	2:D:697:CYS:HB2	1.99	0.45
2:D:716:VAL:O	2:D:721:SER:N	2.50	0.45
1:A:156:ASN:O	1:A:157:SER:C	2.60	0.45
1:A:261:ILE:HD12	1:A:657:LEU:HD23	1.98	0.45
1:A:592:ASP:HA	1:A:625:LEU:CD2	2.38	0.45
1:A:713:TYR:CA	1:A:716:ILE:HG12	2.42	0.45
1:A:1382:MET:O	1:A:1383:ARG:C	2.60	0.45
2:D:663:PRO:HD3	2:D:756:PRO:HB2	1.99	0.45
1:A:366:THR:O	1:A:370:TYR:CD2	2.70	0.45
1:A:659:PHE:O	1:A:663:ILE:HG12	2.16	0.45
1:A:701:GLN:NE2	1:A:707:ASP:HB2	2.31	0.45
2:D:77:GLN:O	2:D:81:ILE:HG12	2.17	0.45
1:A:927:SER:C	1:A:929:ARG:N	2.75	0.45
1:A:929:ARG:O	1:A:930:ASN:C	2.57	0.45
1:A:1311:VAL:O	1:A:1315:ILE:HG13	2.17	0.45
1:A:1312:ILE:HG13	1:A:1313:GLY:N	2.31	0.45
2:D:849:ASP:OD1	2:D:864:HIS:NE2	2.50	0.45
1:A:117:CYS:H	1:A:120:ILE:HG13	1.82	0.45
1:A:912:LEU:HA	1:A:915:ILE:HG12	1.98	0.45
2:D:573:GLU:N	2:D:573:GLU:OE2	2.49	0.45
2:D:979:THR:O	2:D:1033:GLN:NE2	2.42	0.45
1:A:207:LEU:O	1:A:208:PHE:C	2.60	0.44
1:A:354:LEU:C	1:A:354:LEU:CD2	2.84	0.44
1:A:1264:SER:O	1:A:1267:PHE:N	2.49	0.44
2:D:88:LYS:HB3	2:D:88:LYS:HE3	1.72	0.44
2:D:1039:ASP:OD1	2:D:1039:ASP:N	2.49	0.44
1:A:198:LEU:HD12	1:A:198:LEU:HA	1.82	0.44
1:A:1235:VAL:O	1:A:1236:VAL:C	2.59	0.44
1:A:1432:LYS:HD2	1:A:1483:SER:OG	2.17	0.44
1:A:578:LEU:HD22	1:A:583:TYR:HD1	1.81	0.44
1:A:1096:TYR:HA	1:A:1103:HIS:O	2.17	0.44
1:A:1310:ILE:HG21	1:A:1383:ARG:HG3	1.99	0.44
1:A:1499:PHE:O	1:A:1500:ALA:C	2.60	0.44
1:A:1568:LEU:CD1	1:A:1569:LEU:HG	2.47	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:994:LEU:HB2	2:D:1003:PHE:CE2	2.52	0.44
1:A:204:VAL:CG1	1:A:205:VAL:H	2.22	0.44
1:A:418:ARG:HA	1:A:418:ARG:NE	2.33	0.44
1:A:658:LEU:O	1:A:662:ILE:HG13	2.17	0.44
1:A:1277:LEU:O	1:A:1281:LEU:HG	2.17	0.44
2:D:772:ASN:HB2	2:D:1010:ASN:O	2.17	0.44
2:D:994:LEU:N	2:D:1001:ARG:O	2.45	0.44
1:A:1430:PHE:CZ	1:A:1500:ALA:HA	2.53	0.44
2:D:114:ARG:HH12	2:D:117:PHE:HE1	1.65	0.44
2:D:515:ILE:HG22	2:D:521:VAL:HG12	2.00	0.44
2:D:605:ARG:HD3	2:D:624:PRO:HB3	2.00	0.44
1:A:111:ASN:O	1:A:112:PRO:C	2.60	0.44
1:A:347:ASP:O	1:A:348:ASN:HB3	2.18	0.44
1:A:523:SER:CB	1:A:525:VAL:HG12	2.47	0.44
1:A:901:ILE:HG23	1:A:902:PHE:H	1.83	0.44
2:D:351:ARG:HH22	2:D:356:LYS:HD3	1.82	0.44
2:D:480:LYS:HD2	5:E:1:NAG:H2	1.99	0.44
2:D:1057:ASP:OD1	2:D:1057:ASP:N	2.39	0.44
1:A:201:ILE:CA	1:A:204:VAL:CG1	2.88	0.44
1:A:624:LEU:HD23	1:A:1062:MET:HG3	1.99	0.44
1:A:955:ASN:O	1:A:958:TYR:HB3	2.17	0.44
1:A:1030:ASN:C	1:A:1032:ALA:H	2.25	0.44
1:A:1502:PHE:CE1	1:A:1506:SER:HB3	2.53	0.44
1:A:1586:VAL:O	1:A:1589:LYS:N	2.51	0.44
2:D:59:ASP:OD2	2:D:59:ASP:N	2.44	0.44
2:D:1064:VAL:HG23	2:D:1065:LEU:HD13	1.99	0.44
1:A:212:LEU:O	1:A:216:THR:HG23	2.18	0.44
1:A:213:GLU:HA	1:A:216:THR:OG1	2.18	0.44
1:A:1118:PHE:HD1	1:A:1124:ALA:HB2	1.83	0.44
1:A:1210:VAL:HG13	1:A:1611:PHE:CE2	2.53	0.44
1:A:1220:ARG:HB3	1:A:1556:ALA:CA	2.48	0.44
1:A:1585:ARG:HG2	1:A:1586:VAL:N	2.27	0.44
1:A:1638:LYS:HG3	1:A:1638:LYS:O	2.17	0.44
1:A:297:THR:O	1:A:299:TYR:N	2.51	0.44
1:A:582:ALA:O	1:A:585:VAL:HB	2.18	0.44
1:A:1548:ILE:HD11	1:A:1571:ARG:HD2	2.00	0.44
1:A:1642:LYS:HD2	1:A:1643:ARG:N	2.33	0.44
2:D:990:PHE:O	2:D:1005:GLY:N	2.51	0.44
1:A:290:PHE:CE2	1:A:384:TYR:CD2	3.05	0.43
1:A:521:VAL:HG23	1:A:574:LYS:HE3	1.99	0.43
1:A:1390:ARG:O	1:A:1395:ARG:NH1	2.51	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:988:LYS:H	2:D:988:LYS:HG2	1.67	0.43
1:A:290:PHE:CE2	1:A:384:TYR:HD2	2.35	0.43
1:A:412:ARG:NH1	1:A:757:ALA:HB3	2.33	0.43
1:A:1186:ILE:C	1:A:1188:THR:N	2.75	0.43
1:A:1264:SER:O	1:A:1267:PHE:HB3	2.18	0.43
1:A:1422:TYR:HE2	1:A:1507:PHE:HB2	1.78	0.43
2:D:686:PHE:HD2	2:D:687:ILE:HD13	1.82	0.43
2:D:985:ASN:ND2	2:D:987:SER:OG	2.52	0.43
1:A:366:THR:CG2	1:A:1459:ARG:HG3	2.46	0.43
1:A:573:LEU:HD12	1:A:574:LYS:N	2.33	0.43
1:A:580:LEU:HG	1:A:581:GLN:N	2.34	0.43
1:A:596:VAL:O	1:A:600:ILE:HG13	2.18	0.43
1:A:651:ILE:O	1:A:655:LEU:HG	2.17	0.43
1:A:727:MET:C	1:A:729:VAL:H	2.27	0.43
1:A:1093:TYR:CE1	1:A:1107:GLN:HB2	2.54	0.43
1:A:1161:GLU:H	1:A:1161:GLU:HG3	1.54	0.43
1:A:1502:PHE:CD1	1:A:1506:SER:HB3	2.53	0.43
1:A:1625:ASN:HB3	1:A:1628:GLN:OE1	2.17	0.43
2:D:615:THR:OG1	2:D:616:ASP:N	2.51	0.43
1:A:318:LEU:O	1:A:320:THR:N	2.51	0.43
1:A:734:ILE:O	1:A:735:ILE:C	2.61	0.43
1:A:1117:ASP:O	1:A:1123:ALA:HB3	2.17	0.43
1:A:1499:PHE:CE1	1:A:1503:TYR:HD2	2.37	0.43
2:D:658:TYR:N	2:D:743:VAL:O	2.50	0.43
1:A:715:GLY:C	1:A:729:VAL:HG11	2.42	0.43
1:A:1322:GLU:O	1:A:1323:THR:C	2.61	0.43
1:A:1530:LEU:HA	1:A:1530:LEU:HD13	1.74	0.43
2:D:175:GLY:HA2	2:D:180:LEU:HD11	2.00	0.43
2:D:736:THR:HG23	2:D:738:GLY:N	2.33	0.43
1:A:412:ARG:HH22	1:A:757:ALA:HB1	1.83	0.43
1:A:521:VAL:HG21	1:A:578:LEU:HD11	2.00	0.43
1:A:901:ILE:C	1:A:903:THR:H	2.26	0.43
1:A:968:ILE:C	1:A:970:LEU:N	2.73	0.43
1:A:1064:ALA:C	1:A:1066:ILE:N	2.75	0.43
1:A:1388:LEU:C	1:A:1390:ARG:H	2.27	0.43
2:D:720:TRP:CZ2	2:D:732:ARG:HB3	2.53	0.43
1:A:149:GLU:HG2	2:D:328:LYS:HB2	2.01	0.43
1:A:370:TYR:HE1	1:A:1444:ASN:O	2.01	0.43
1:A:968:ILE:HD12	1:A:971:LYS:HB2	2.01	0.43
1:A:1520:VAL:HG13	1:A:1521:ALA:N	2.34	0.43
1:A:654:LEU:HD13	1:A:747:VAL:HA	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:959:VAL:HG23	1:A:960:PHE:CD1	2.53	0.43
1:A:1078:CYS:SG	1:A:1079:SER:N	2.92	0.43
1:A:1118:PHE:HZ	1:A:1166:PHE:HZ	1.63	0.43
1:A:1553:ASP:OD1	1:A:1557:LYS:HB3	2.19	0.43
1:A:1567:THR:O	1:A:1568:LEU:C	2.62	0.43
1:A:1585:ARG:C	1:A:1587:ALA:N	2.75	0.43
1:A:148:PRO:HB3	2:D:265:SER:OG	2.18	0.43
1:A:327:GLN:HG2	1:A:328:ASN:N	2.33	0.43
1:A:339:PRO:HG2	1:A:340:LYS:H	1.83	0.43
1:A:397:LEU:O	1:A:400:VAL:HG22	2.19	0.43
1:A:548:GLN:HG3	1:A:553:THR:CG2	2.49	0.43
1:A:1265:CYS:HA	1:A:1268:LYS:NZ	2.34	0.43
1:A:1382:MET:O	1:A:1385:VAL:HG12	2.19	0.43
2:D:37:VAL:HG13	2:D:1008:LEU:HD13	2.01	0.43
1:A:204:VAL:CG1	1:A:205:VAL:N	2.71	0.43
1:A:318:LEU:C	1:A:320:THR:N	2.77	0.43
1:A:1303:TRP:CZ2	1:A:1389:SER:HB3	2.54	0.43
1:A:1585:ARG:HE	1:A:1587:ALA:H	1.67	0.43
1:A:618:VAL:O	1:A:622:VAL:HG23	2.19	0.42
1:A:967:GLU:OE2	1:A:970:LEU:HD23	2.18	0.42
1:A:1234:TYR:O	1:A:1238:SER:N	2.52	0.42
2:D:674:ASP:O	2:D:676:ASN:N	2.51	0.42
1:A:400:VAL:HG23	1:A:401:LEU:HD13	2.00	0.42
1:A:514:ARG:C	1:A:518:ARG:HD3	2.43	0.42
1:A:620:ARG:HD2	1:A:1069:GLN:NE2	2.33	0.42
1:A:1532:ARG:HD2	1:A:1534:TRP:CZ3	2.53	0.42
2:D:536:ILE:H	2:D:536:ILE:HG12	1.64	0.42
1:A:287:LEU:HD12	1:A:288:GLU:N	2.35	0.42
1:A:373:ASN:OD1	1:A:381:PRO:HB2	2.18	0.42
1:A:615:GLY:O	1:A:619:LEU:HD13	2.19	0.42
1:A:889:PHE:CE1	1:A:890:ARG:HG3	2.55	0.42
1:A:965:THR:OG1	1:A:966:LEU:N	2.52	0.42
1:A:1219:LEU:HD12	1:A:1220:ARG:H	1.83	0.42
1:A:1429:VAL:HG13	1:A:1430:PHE:N	2.30	0.42
1:A:1429:VAL:HG22	1:A:1430:PHE:CD1	2.54	0.42
1:A:1501:VAL:HG13	1:A:1502:PHE:N	2.35	0.42
2:D:56:GLN:HG3	2:D:719:TYR:CE2	2.54	0.42
2:D:688:ASP:OD1	2:D:688:ASP:N	2.36	0.42
1:A:626:ARG:O	1:A:629:LYS:N	2.48	0.42
1:A:686:ARG:O	1:A:694:GLN:NE2	2.53	0.42
1:A:705:GLY:HA2	1:A:708:TRP:CD1	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:928:PHE:O	1:A:931:HIS:HB3	2.20	0.42
1:A:1097:LYS:O	1:A:1098:ASP:C	2.62	0.42
2:D:289:VAL:HG12	2:D:310:ALA:HB2	2.01	0.42
2:D:723:GLN:HB2	2:D:726:ILE:HD11	2.01	0.42
1:A:299:TYR:CB	1:A:333:LYS:HG3	2.41	0.42
1:A:616:ILE:O	1:A:620:ARG:HG3	2.20	0.42
1:A:691:ASN:OD1	1:A:694:GLN:HB2	2.19	0.42
1:A:701:GLN:O	1:A:705:GLY:N	2.52	0.42
1:A:734:ILE:C	1:A:736:LEU:N	2.74	0.42
1:A:960:PHE:C	1:A:963:ILE:HB	2.44	0.42
1:A:1068:VAL:HG13	1:A:1069:GLN:N	2.34	0.42
1:A:1078:CYS:HA	1:A:1110:SER:O	2.19	0.42
1:A:1315:ILE:O	1:A:1319:ILE:HG12	2.20	0.42
1:A:274:LEU:CD1	1:A:1398:LEU:HD21	2.49	0.42
1:A:290:PHE:HE2	1:A:384:TYR:CE2	2.38	0.42
1:A:546:TYR:CA	1:A:1072:LYS:HD2	2.50	0.42
1:A:562:ALA:O	1:A:566:LEU:HD13	2.20	0.42
1:A:889:PHE:CZ	1:A:890:ARG:HG3	2.54	0.42
1:A:1309:LEU:O	1:A:1310:ILE:C	2.62	0.42
1:A:1618:LEU:O	1:A:1619:ARG:C	2.62	0.42
2:D:185:TRP:HA	3:B:1:NAG:H82	2.01	0.42
4:F:1:NAG:H61	4:F:2:NAG:N2	2.34	0.42
1:A:120:ILE:HA	1:A:123:TRP:NE1	2.34	0.42
1:A:300:ASN:OD1	1:A:331:VAL:N	2.53	0.42
1:A:554:GLU:O	1:A:558:THR:HG23	2.19	0.42
1:A:605:LEU:HD23	1:A:605:LEU:C	2.44	0.42
2:D:153:ALA:O	2:D:155:PHE:N	2.52	0.42
2:D:155:PHE:HA	2:D:456:LEU:HD11	2.02	0.42
2:D:895:ASN:OD1	4:G:1:NAG:H2	2.20	0.42
1:A:411:GLU:O	1:A:414:LYS:HG3	2.19	0.42
2:D:36:TRP:O	2:D:39:LYS:HG3	2.19	0.42
2:D:45:VAL:O	2:D:49:LYS:N	2.50	0.42
1:A:287:LEU:O	1:A:291:MET:HG3	2.16	0.42
1:A:602:GLU:OE1	1:A:623:ARG:HD2	2.19	0.42
1:A:749:LEU:O	1:A:752:ALA:N	2.53	0.42
1:A:1224:PRO:HB2	1:A:1230:TYR:HB2	2.01	0.42
1:A:1507:PHE:O	1:A:1508:TYR:C	2.61	0.42
2:D:34:LYS:HA	2:D:37:VAL:HB	2.02	0.42
2:D:77:GLN:OE1	2:D:77:GLN:HA	2.19	0.42
1:A:177:LYS:HZ1	1:A:196:ASN:HD21	1.67	0.42
1:A:205:VAL:O	1:A:208:PHE:HB3	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:624:LEU:HG	1:A:627:ILE:HG12	2.02	0.42
1:A:625:LEU:HG	1:A:626:ARG:N	2.34	0.42
1:A:1211:GLU:HG3	1:A:1637:ILE:CD1	2.50	0.42
2:D:367:GLU:OE1	2:D:369:ALA:N	2.53	0.42
2:D:686:PHE:CD2	2:D:686:PHE:C	2.98	0.42
1:A:336:TRP:CD2	1:A:338:GLY:O	2.73	0.41
1:A:1310:ILE:HD12	1:A:1383:ARG:HG3	2.00	0.41
1:A:1480:ALA:O	1:A:1483:SER:HB3	2.20	0.41
2:D:401:TRP:CZ2	2:D:405:GLU:HG3	2.55	0.41
2:D:482:GLN:HE22	2:D:1067:ASP:HB2	1.84	0.41
5:E:3:NAG:H4	5:E:4:NAG:H2	1.49	0.41
1:A:910:ILE:O	1:A:911:LEU:C	2.62	0.41
1:A:348:ASN:OD1	1:A:349:PHE:N	2.50	0.41
1:A:662:ILE:HD13	1:A:700:PHE:CZ	2.54	0.41
1:A:1595:ASN:O	1:A:1648:LEU:HD13	2.20	0.41
2:D:466:VAL:HG23	2:D:485:LEU:HB2	2.02	0.41
2:D:672:ILE:H	2:D:672:ILE:HG13	1.48	0.41
1:A:233:VAL:O	1:A:235:ALA:N	2.53	0.41
1:A:233:VAL:O	1:A:236:LEU:N	2.53	0.41
1:A:387:THR:HG22	1:A:391:ILE:HG21	2.02	0.41
2:D:852:ILE:HG23	2:D:1015:PHE:HD1	1.85	0.41
1:A:210:ALA:O	1:A:211:ILE:C	2.63	0.41
1:A:258:LEU:HD12	1:A:258:LEU:O	2.19	0.41
1:A:380:TRP:H	1:A:381:PRO:HD3	1.86	0.41
1:A:1422:TYR:CE2	1:A:1507:PHE:HA	2.52	0.41
1:A:1449:THR:C	1:A:1451:PRO:HD2	2.46	0.41
2:D:864:HIS:C	2:D:866:ASP:H	2.29	0.41
1:A:888:ARG:HG3	1:A:889:PHE:HD2	1.85	0.41
1:A:900:THR:O	1:A:903:THR:N	2.53	0.41
1:A:921:ASP:O	1:A:930:ASN:ND2	2.53	0.41
1:A:1090:LYS:O	2:D:173:TYR:CG	2.74	0.41
1:A:1403:LYS:HA	1:A:1403:LYS:HD2	1.66	0.41
1:A:1506:SER:O	1:A:1510:LEU:HD13	2.20	0.41
1:A:1557:LYS:HA	1:A:1557:LYS:HD3	1.81	0.41
2:D:817:ASP:N	2:D:817:ASP:OD1	2.46	0.41
1:A:199:ASP:CG	1:A:246:ARG:HE	2.29	0.41
1:A:209:SER:HA	1:A:212:LEU:HD22	2.02	0.41
1:A:215:ALA:O	1:A:216:THR:C	2.62	0.41
1:A:279:ILE:HD13	1:A:279:ILE:HA	1.83	0.41
1:A:549:PRO:O	1:A:553:THR:HG23	2.20	0.41
1:A:1063:PHE:CZ	1:A:1168:ILE:HB	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1403:LYS:HD2	1:A:1406:GLN:NE2	2.34	0.41
1:A:1459:ARG:CG	1:A:1464:GLU:HB2	2.51	0.41
1:A:1499:PHE:HE2	1:A:1502:PHE:CD2	2.39	0.41
2:D:654:GLU:HA	2:D:746:LYS:HE3	2.03	0.41
1:A:147:PHE:HD1	1:A:148:PRO:CD	2.34	0.41
1:A:572:LEU:O	1:A:575:MET:HB2	2.20	0.41
1:A:676:LYS:O	1:A:718:ALA:HB1	2.21	0.41
1:A:1224:PRO:HG2	1:A:1230:TYR:CD1	2.54	0.41
1:A:1513:PHE:C	1:A:1515:ILE:N	2.77	0.41
1:A:270:HIS:CD2	1:A:1393:GLY:C	2.98	0.41
1:A:298:CYS:SG	1:A:330:THR:CB	3.08	0.41
1:A:318:LEU:HD23	1:A:332:CYS:HB3	2.02	0.41
1:A:560:ASN:O	1:A:561:LYS:C	2.64	0.41
1:A:699:VAL:HG13	1:A:736:LEU:HD21	2.02	0.41
1:A:748:PHE:O	1:A:750:ALA:N	2.54	0.41
1:A:888:ARG:HG3	1:A:889:PHE:N	2.30	0.41
1:A:1102:ASP:C	1:A:1104:PRO:HD3	2.46	0.41
1:A:1118:PHE:HD1	1:A:1124:ALA:CB	2.34	0.41
1:A:1155:ILE:HD13	1:A:1155:ILE:HA	1.89	0.41
1:A:1238:SER:O	1:A:1239:THR:C	2.63	0.41
1:A:1239:THR:HG23	1:A:1240:TYR:N	2.36	0.41
1:A:1581:LEU:O	1:A:1582:CYS:C	2.61	0.41
2:D:184:ASN:O	3:B:1:NAG:H82	2.21	0.41
1:A:213:GLU:O	1:A:217:LYS:HD3	2.21	0.41
1:A:525:VAL:HG13	1:A:526:PHE:N	2.36	0.41
1:A:617:SER:HA	1:A:1069:GLN:HE21	1.86	0.41
1:A:1206:GLN:H	1:A:1206:GLN:CD	2.27	0.41
1:A:1276:MET:O	1:A:1277:LEU:C	2.64	0.41
1:A:1474:MET:O	1:A:1477:LYS:HD3	2.21	0.41
2:D:482:GLN:NE2	2:D:1067:ASP:HB2	2.36	0.41
1:A:242:LEU:HA	1:A:245:LEU:HD23	2.03	0.40
1:A:702:ILE:HD11	1:A:711:VAL:HG11	2.03	0.40
1:A:728:LEU:HA	1:A:731:ILE:HG23	2.03	0.40
1:A:1117:ASP:OD1	1:A:1117:ASP:N	2.54	0.40
1:A:1409:PRO:HD2	1:A:1410:TYR:H	1.85	0.40
1:A:1581:LEU:HD23	1:A:1582:CYS:O	2.22	0.40
2:D:33:ILE:O	2:D:37:VAL:N	2.48	0.40
1:A:313:PRO:HG2	1:A:336:TRP:HE1	1.86	0.40
1:A:537:ASN:HD21	1:A:626:ARG:HH21	1.70	0.40
1:A:963:ILE:O	1:A:966:LEU:HB3	2.21	0.40
1:A:1215:LYS:H	1:A:1643:ARG:HH12	1.68	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1224:PRO:HG3	1:A:1233:TRP:CG	2.56	0.40
1:A:1465:ALA:HA	1:A:1467:GLN:OE1	2.20	0.40
1:A:1589:LYS:HD2	1:A:1589:LYS:HA	1.88	0.40
1:A:1647:LYS:HD3	1:A:1647:LYS:HA	1.83	0.40
2:D:66:ASP:OD1	2:D:66:ASP:N	2.52	0.40
1:A:199:ASP:OD1	1:A:246:ARG:NE	2.54	0.40
1:A:277:PHE:CD2	1:A:1388:LEU:HG	2.56	0.40
1:A:295:HIS:NE2	1:A:347:ASP:OD2	2.54	0.40
1:A:370:TYR:HD1	1:A:1444:ASN:HB3	1.83	0.40
1:A:380:TRP:N	1:A:381:PRO:HD3	2.35	0.40
1:A:387:THR:O	1:A:389:ILE:N	2.55	0.40
1:A:510:ASN:HB2	1:A:512:PHE:CZ	2.57	0.40
1:A:514:ARG:NH2	1:A:576:TYR:HB3	2.37	0.40
1:A:556:GLN:NE2	1:A:556:GLN:HA	2.35	0.40
1:A:893:CYS:O	1:A:897:VAL:HG22	2.21	0.40
1:A:1155:ILE:O	1:A:1159:ARG:HB3	2.21	0.40
1:A:1215:LYS:HE3	1:A:1215:LYS:HB3	1.89	0.40
1:A:1235:VAL:O	1:A:1238:SER:N	2.51	0.40
1:A:1377:ARG:O	1:A:1378:LEU:C	2.64	0.40
2:D:128:LYS:H	2:D:128:LYS:HG2	1.67	0.40
1:A:197:LEU:HD12	1:A:197:LEU:HA	1.93	0.40
1:A:392:GLY:O	1:A:396:VAL:HB	2.22	0.40
1:A:393:SER:O	1:A:397:LEU:CB	2.69	0.40
1:A:546:TYR:N	1:A:1072:LYS:HD2	2.36	0.40
1:A:1085:THR:HG22	1:A:1087:ALA:H	1.87	0.40
1:A:1239:THR:O	1:A:1240:TYR:C	2.64	0.40
1:A:534:VAL:O	1:A:535:PHE:C	2.62	0.40
1:A:1066:ILE:O	1:A:1070:LEU:HG	2.22	0.40
1:A:1236:VAL:HG23	1:A:1237:ASN:OD1	2.21	0.40
1:A:1245:MET:HE1	1:A:1285:GLU:HG2	2.02	0.40
1:A:1263:GLN:O	1:A:1264:SER:C	2.64	0.40
1:A:1498:SER:C	1:A:1500:ALA:H	2.28	0.40
1:A:1498:SER:O	1:A:1500:ALA:N	2.54	0.40
1:A:1540:HIS:HA	1:A:1543:ASP:OD1	2.21	0.40
2:D:899:ASP:OD1	2:D:902:SER:HB3	2.22	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	1180/2201 (54%)	998 (85%)	148 (12%)	34 (3%)	3 24
2	D	936/1103 (85%)	883 (94%)	51 (5%)	2 (0%)	44 75
All	All	2116/3304 (64%)	1881 (89%)	199 (9%)	36 (2%)	10 36

All (36) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	112	PRO
1	A	304	ILE
1	A	309	ALA
1	A	752	ALA
1	A	929	ARG
1	A	931	HIS
1	A	975	TYR
1	A	1186	ILE
2	D	72	PRO
1	A	206	GLY
1	A	305	ALA
1	A	336	TRP
1	A	753	VAL
1	A	928	PHE
1	A	144	TYR
1	A	208	PHE
1	A	234	LYS
1	A	321	GLY
1	A	322	HIS
1	A	974	ALA
1	A	1033	LYS
1	A	308	PRO
1	A	319	GLU
1	A	748	PHE
1	A	903	THR

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Mol	Chain	Res	Type
1	A	971	LYS
1	A	1170	ILE
1	A	1554	PRO
2	D	675	ASN
1	A	388	LEU
1	A	1409	PRO
1	A	310	GLU
1	A	1025	PRO
1	A	1171	ILE
1	A	952	ILE
1	A	380	TRP

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	961/1896 (51%)	870 (90%)	91 (10%)	7 28
2	D	837/971 (86%)	829 (99%)	8 (1%)	73 87
All	All	1798/2867 (63%)	1699 (94%)	99 (6%)	20 51

All (99) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	118	ILE
1	A	145	ILE
1	A	155	THR
1	A	165	LEU
1	A	204	VAL
1	A	212	LEU
1	A	214	GLN
1	A	217	LYS
1	A	232	ASP
1	A	233	VAL
1	A	234	LYS
1	A	237	ARG

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Mol	Chain	Res	Type
1	A	289	LEU
1	A	296	LYS
1	A	297	THR
1	A	298	CYS
1	A	299	TYR
1	A	301	GLN
1	A	307	VAL
1	A	311	ASP
1	A	316	CYS
1	A	319	GLU
1	A	320	THR
1	A	322	HIS
1	A	325	GLN
1	A	326	CYS
1	A	327	GLN
1	A	333	LYS
1	A	337	ASP
1	A	343	ILE
1	A	347	ASP
1	A	354	LEU
1	A	358	GLN
1	A	374	ASP
1	A	376	VAL
1	A	391	ILE
1	A	407	GLU
1	A	512	PHE
1	A	515	ARG
1	A	526	PHE
1	A	535	PHE
1	A	536	LEU
1	A	539	LEU
1	A	566	LEU
1	A	572	LEU
1	A	589	ASN
1	A	592	ASP
1	A	621	CYS
1	A	625	LEU
1	A	729	VAL
1	A	749	LEU
1	A	751	ILE
1	A	753	VAL
1	A	756	LEU

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Mol	Chain	Res	Type
1	A	900	THR
1	A	901	ILE
1	A	903	THR
1	A	906	ILE
1	A	917	LEU
1	A	955	ASN
1	A	957	ASP
1	A	962	SER
1	A	966	LEU
1	A	967	GLU
1	A	968	ILE
1	A	969	ILE
1	A	970	LEU
1	A	971	LYS
1	A	972	MET
1	A	1068	VAL
1	A	1112	GLU
1	A	1128	LEU
1	A	1161	GLU
1	A	1225	LYS
1	A	1248	LEU
1	A	1260	HIS
1	A	1294	LYS
1	A	1405	PHE
1	A	1408	LEU
1	A	1411	VAL
1	A	1424	VAL
1	A	1443	ARG
1	A	1501	VAL
1	A	1530	LEU
1	A	1531	THR
1	A	1567	THR
1	A	1568	LEU
1	A	1619	ARG
1	A	1640	ILE
1	A	1641	TRP
1	A	1649	LEU
2	D	69	THR
2	D	71	GLU
2	D	672	ILE
2	D	673	SER
2	D	674	ASP

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Mol	Chain	Res	Type
2	D	781	ASN
2	D	852	ILE
2	D	990	PHE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (28) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	137	ASN
1	A	196	ASN
1	A	270	HIS
1	A	327	GLN
1	A	398	ASN
1	A	556	GLN
1	A	560	ASN
1	A	589	ASN
1	A	1069	GLN
1	A	1113	ASN
1	A	1157	ASN
1	A	1229	GLN
1	A	1252	ASN
1	A	1259	GLN
1	A	1260	HIS
1	A	1272	ASN
1	A	1445	ASN
2	D	73	ASN
2	D	167	HIS
2	D	181	ASN
2	D	314	ASN
2	D	406	ASN
2	D	448	ASN
2	D	478	ASN
2	D	725	ASN
2	D	751	ASN
2	D	885	HIS
2	D	1010	ASN

5.3.3 RNA

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)

13 monosaccharides 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	$\#\|Z\| > 2$
3	NAG	B	1	2,3	14,14,15	0.88	1 (7%)	17,19,21	1.20	1 (5%)
3	NAG	B	2	3	14,14,15	0.27	0	17,19,21	0.49	0
3	NAG	B	3	3	14,14,15	0.30	0	17,19,21	0.39	0
4	NAG	C	1	2,4	14,14,15	0.30	0	17,19,21	0.52	0
4	NAG	C	2	4	14,14,15	0.57	0	17,19,21	0.77	0
5	NAG	E	1	2,5	14,14,15	0.28	0	17,19,21	0.41	0
5	NAG	E	2	5	14,14,15	0.71	0	17,19,21	1.96	7 (41%)
5	NAG	E	3	5	14,14,15	0.69	0	17,19,21	1.43	3 (17%)
5	NAG	E	4	5	14,14,15	0.45	0	17,19,21	0.91	1 (5%)
4	NAG	F	1	2,4	14,14,15	0.47	0	17,19,21	0.52	0
4	NAG	F	2	4	14,14,15	0.27	0	17,19,21	0.43	0
4	NAG	G	1	2,4	14,14,15	0.48	0	17,19,21	0.39	0
4	NAG	G	2	4	14,14,15	0.22	0	17,19,21	0.41	0

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
3	NAG	B	1	2,3	-	2/6/23/26	0/1/1/1
3	NAG	B	2	3	-	0/6/23/26	0/1/1/1
3	NAG	B	3	3	-	2/6/23/26	0/1/1/1
4	NAG	C	1	2,4	-	3/6/23/26	0/1/1/1
4	NAG	C	2	4	-	3/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
5	NAG	E	1	2,5	-	2/6/23/26	0/1/1/1
5	NAG	E	2	5	-	2/6/23/26	0/1/1/1
5	NAG	E	3	5	-	6/6/23/26	0/1/1/1
5	NAG	E	4	5	-	5/6/23/26	0/1/1/1
4	NAG	F	1	2,4	-	2/6/23/26	0/1/1/1
4	NAG	F	2	4	-	2/6/23/26	0/1/1/1
4	NAG	G	1	2,4	-	2/6/23/26	0/1/1/1
4	NAG	G	2	4	-	2/6/23/26	0/1/1/1

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	B	1	NAG	O5-C1	3.03	1.48	1.43

All (12) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	B	1	NAG	C1-O5-C5	4.72	118.58	112.19
5	E	2	NAG	C2-N2-C7	-3.85	117.41	122.90
5	E	3	NAG	O4-C4-C3	-3.42	102.43	110.35
5	E	2	NAG	C1-C2-N2	-3.22	104.98	110.49
5	E	2	NAG	O5-C1-C2	3.07	116.14	111.29
5	E	2	NAG	O3-C3-C2	-2.77	103.73	109.47
5	E	3	NAG	C1-O5-C5	2.46	115.53	112.19
5	E	4	NAG	C4-C3-C2	2.35	114.47	111.02
5	E	2	NAG	O5-C5-C4	-2.34	105.12	110.83
5	E	2	NAG	O4-C4-C3	2.32	115.70	110.35
5	E	3	NAG	C1-C2-N2	-2.16	106.79	110.49
5	E	2	NAG	C3-C4-C5	-2.16	106.39	110.24

There are no chirality outliers.

All (33) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	E	3	NAG	C3-C2-N2-C7
5	E	3	NAG	C8-C7-N2-C2
5	E	3	NAG	O7-C7-N2-C2
5	E	4	NAG	C8-C7-N2-C2
5	E	4	NAG	O7-C7-N2-C2

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Mol	Chain	Res	Type	Atoms
4	F	1	NAG	O5-C5-C6-O6
4	C	1	NAG	O5-C5-C6-O6
4	F	2	NAG	C4-C5-C6-O6
3	B	1	NAG	O5-C5-C6-O6
4	F	1	NAG	C4-C5-C6-O6
5	E	3	NAG	C4-C5-C6-O6
5	E	3	NAG	O5-C5-C6-O6
4	F	2	NAG	O5-C5-C6-O6
3	B	1	NAG	C4-C5-C6-O6
5	E	4	NAG	C1-C2-N2-C7
5	E	1	NAG	O5-C5-C6-O6
4	C	1	NAG	C4-C5-C6-O6
3	B	3	NAG	C8-C7-N2-C2
3	B	3	NAG	O7-C7-N2-C2
4	G	1	NAG	C8-C7-N2-C2
4	G	1	NAG	O7-C7-N2-C2
4	G	2	NAG	C8-C7-N2-C2
4	G	2	NAG	O7-C7-N2-C2
5	E	1	NAG	C4-C5-C6-O6
5	E	4	NAG	O5-C5-C6-O6
5	E	2	NAG	O5-C5-C6-O6
5	E	2	NAG	C4-C5-C6-O6
5	E	4	NAG	C4-C5-C6-O6
5	E	3	NAG	C1-C2-N2-C7
4	C	1	NAG	C3-C2-N2-C7
4	C	2	NAG	C3-C2-N2-C7
4	C	2	NAG	C4-C5-C6-O6
4	C	2	NAG	C1-C2-N2-C7

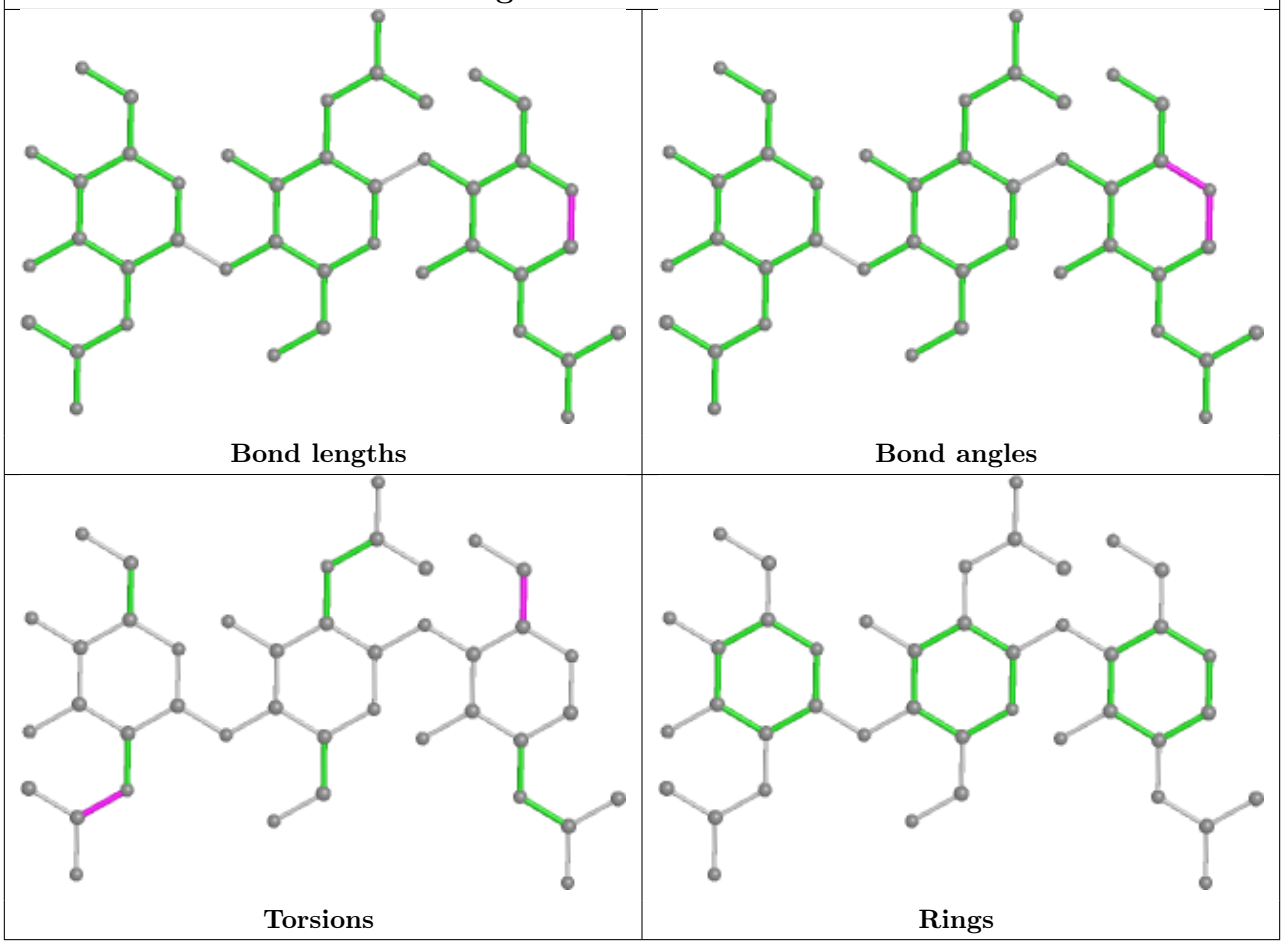
There are no ring outliers.

9 monomers are involved in 11 short contacts:

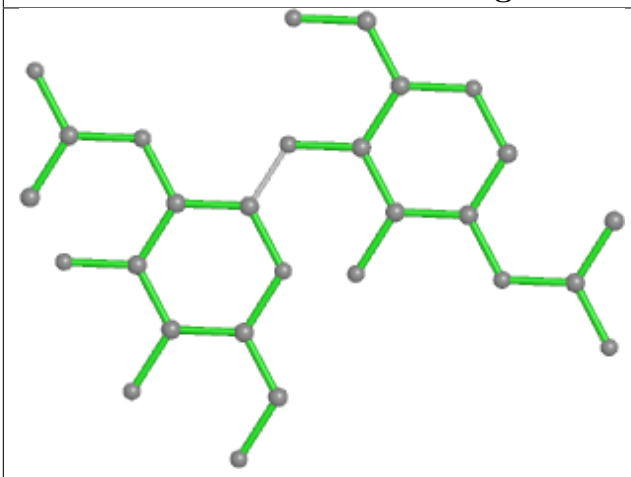
Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	E	1	NAG	2	0
5	E	3	NAG	2	0
4	G	1	NAG	1	0
4	F	1	NAG	1	0
4	F	2	NAG	1	0
3	B	1	NAG	4	0
5	E	4	NAG	1	0
5	E	2	NAG	1	0
4	C	2	NAG	1	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for oligosaccharide.

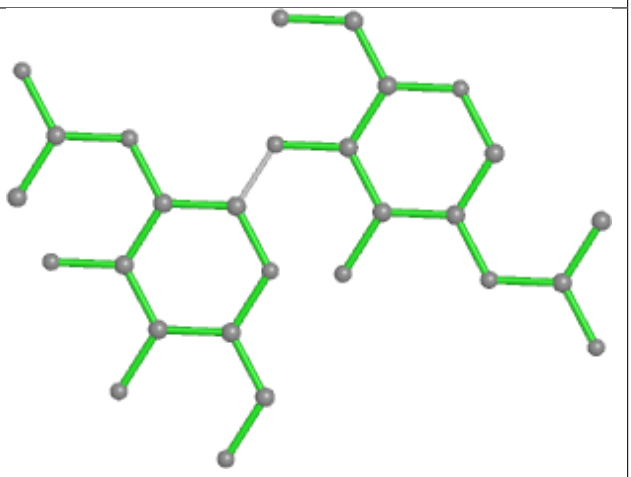
Oligosaccharide Chain B



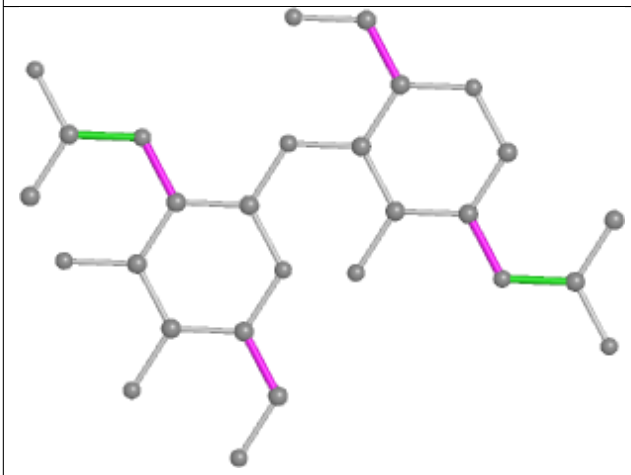
Oligosaccharide Chain C



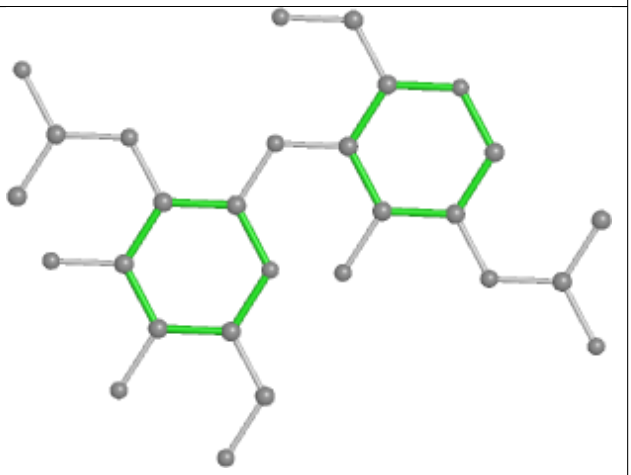
Bond lengths



Bond angles

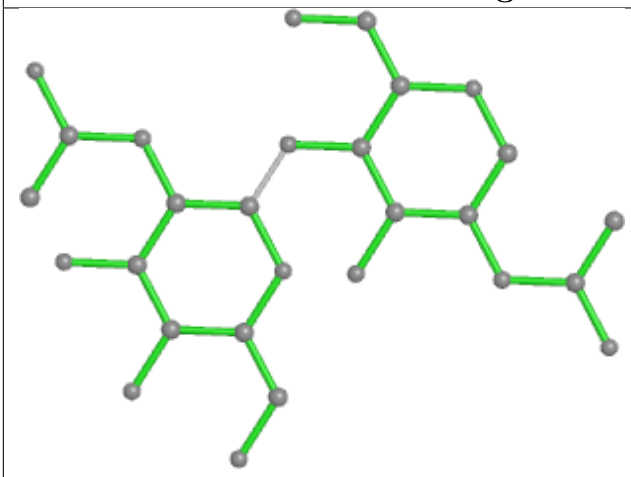


Torsions

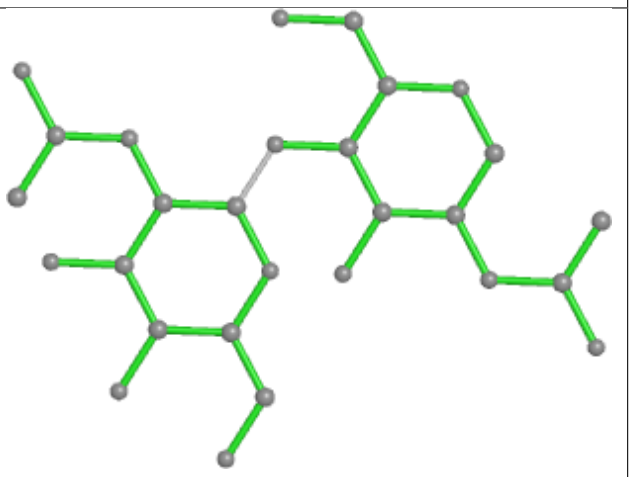


Rings

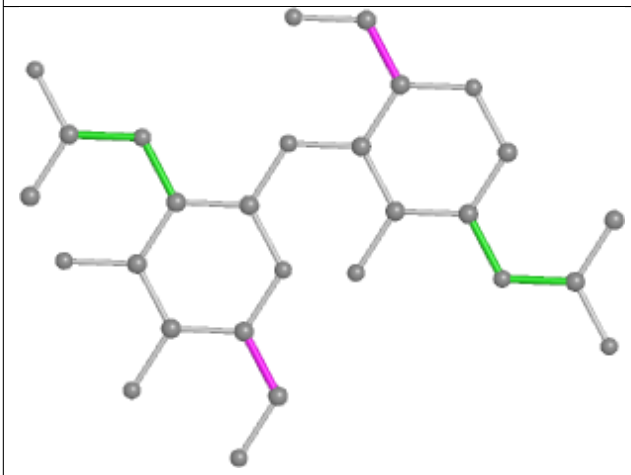
Oligosaccharide Chain F



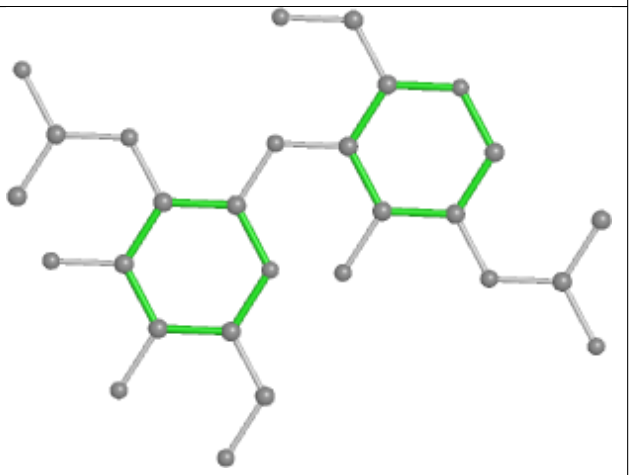
Bond lengths



Bond angles

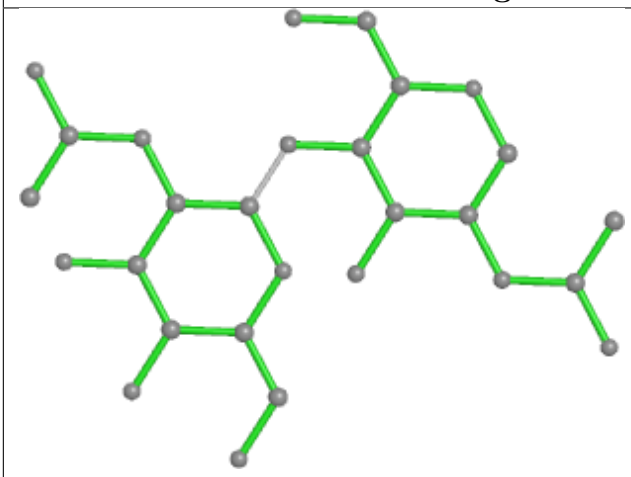


Torsions

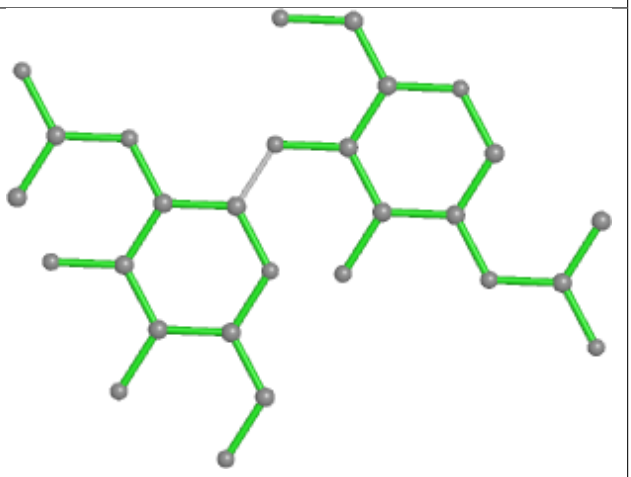


Rings

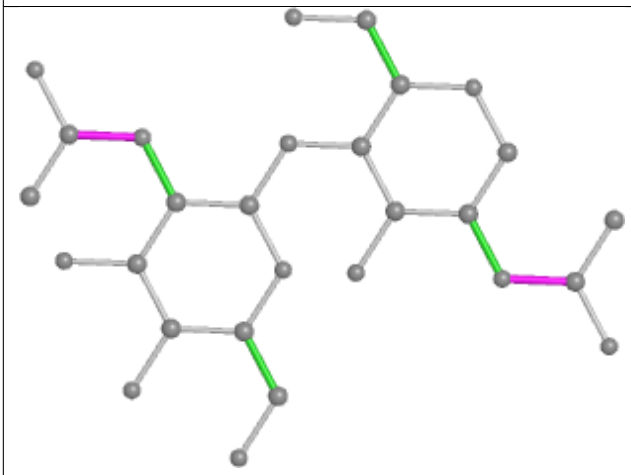
Oligosaccharide Chain G



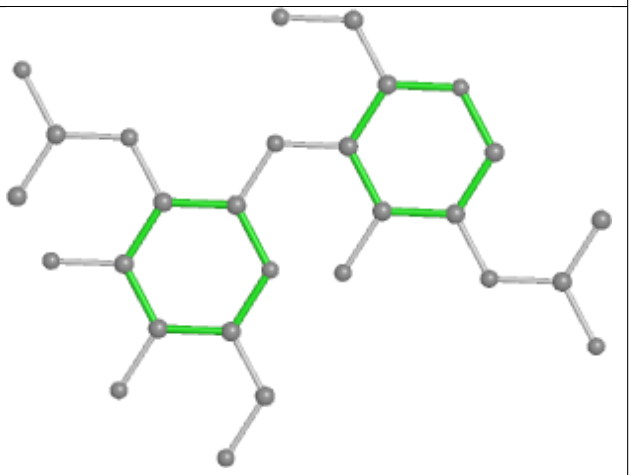
Bond lengths



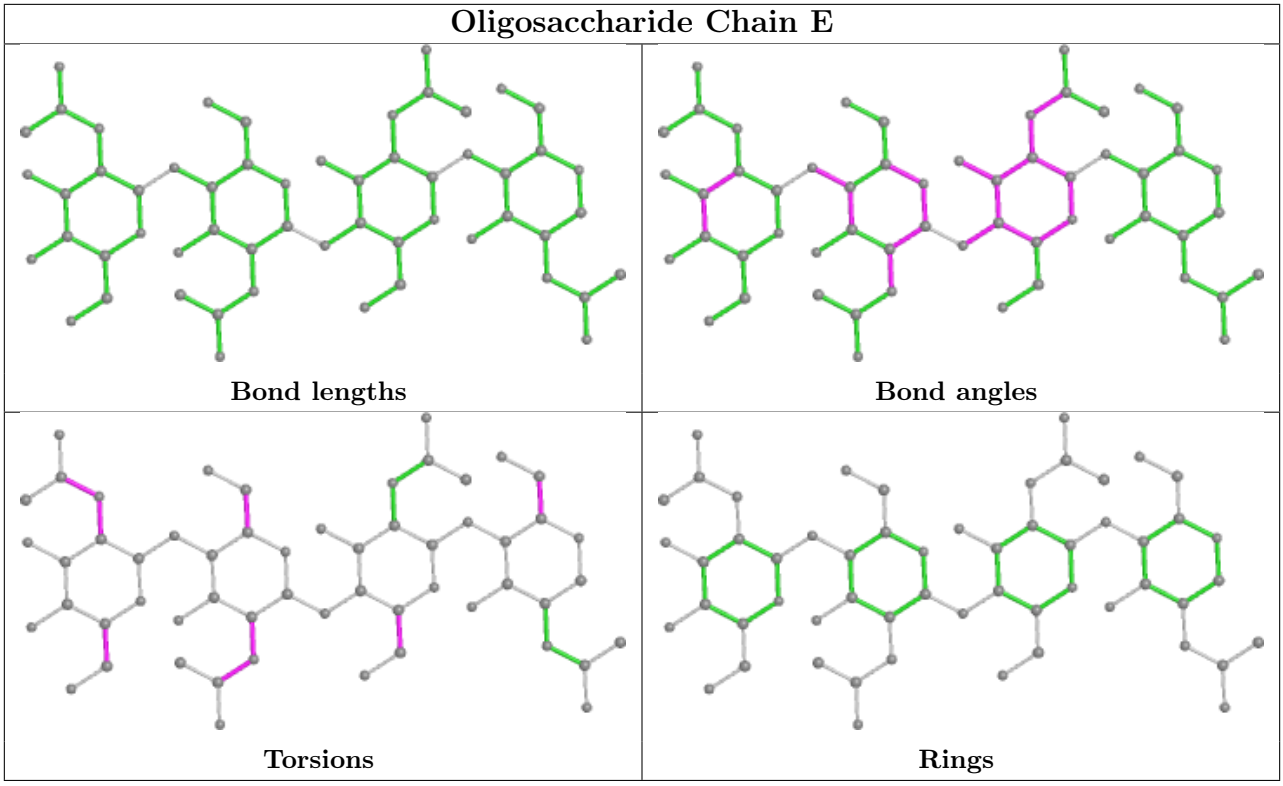
Bond angles



Torsions



Rings



5.6 Ligand geometry (i)

Of 6 ligands modelled in this entry, 2 are monoatomic - leaving 4 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	$\#\|Z\| > 2$
9	NAG	D	1203	2	14,14,15	1.14	1 (7%)	17,19,21	1.19	1 (5%)
8	WB9	A	2303	-	35,35,35	1.54	7 (20%)	48,51,51	6.99	21 (43%)
7	9Z9	A	2302	-	44,44,44	1.69	11 (25%)	66,68,68	1.57	14 (21%)
9	NAG	D	1202	2	14,14,15	0.44	0	17,19,21	0.40	0

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
9	NAG	D	1203	2	-	1/6/23/26	0/1/1/1
8	WB9	A	2303	-	-	15/18/53/53	0/5/4/4
7	9Z9	A	2302	-	-	5/12/100/100	0/6/6/6
9	NAG	D	1202	2	-	4/6/23/26	0/1/1/1

All (19) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
7	A	2302	9Z9	C11-C08	-3.90	1.49	1.56
9	D	1203	NAG	O5-C1	3.86	1.49	1.43
7	A	2302	9Z9	C11-C13	-3.80	1.45	1.52
7	A	2302	9Z9	O80-C79	-3.77	1.38	1.43
7	A	2302	9Z9	C09-C08	-3.58	1.47	1.53
8	A	2303	WB9	C05-C06	3.48	1.61	1.53
8	A	2303	WB9	C15-N14	-3.28	1.42	1.51
8	A	2303	WB9	C05-C04	3.24	1.61	1.52
8	A	2303	WB9	C19-N14	-2.89	1.43	1.51
7	A	2302	9Z9	C10-C02	-2.84	1.49	1.54
7	A	2302	9Z9	C01-C02	-2.56	1.49	1.54
7	A	2302	9Z9	C10-C09	-2.53	1.48	1.53
8	A	2303	WB9	C20-C21	2.50	1.56	1.51
7	A	2302	9Z9	C02-C03	-2.49	1.51	1.56
8	A	2303	WB9	O30-C23	2.49	1.41	1.37
7	A	2302	9Z9	O80-C73	-2.46	1.38	1.42
7	A	2302	9Z9	C19-C11	-2.28	1.49	1.54
7	A	2302	9Z9	C16-C17	2.27	1.57	1.52
8	A	2303	WB9	O28-C24	2.20	1.40	1.37

All (36) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
8	A	2303	WB9	C02-C07-C06	-25.98	67.13	113.91
8	A	2303	WB9	C04-C03-C02	-22.51	66.33	111.51
8	A	2303	WB9	C08-C03-C04	19.70	134.76	108.69
8	A	2303	WB9	C08-C07-C06	15.88	135.21	107.66
8	A	2303	WB9	C32-C02-C01	-14.72	74.81	108.67
8	A	2303	WB9	C01-C02-C03	-8.39	78.74	115.33
8	A	2303	WB9	C32-C02-C07	-6.82	79.82	115.70
8	A	2303	WB9	C04-C05-C06	-6.60	97.39	112.24
8	A	2303	WB9	C29-O28-C24	-5.35	109.45	117.53
9	D	1203	NAG	C1-O5-C5	4.71	118.58	112.19
8	A	2303	WB9	C31-O30-C23	-4.49	110.76	117.53

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
7	A	2302	9Z9	O80-C73-C76	4.12	114.60	110.77
7	A	2302	9Z9	C17-C16-C13	3.83	117.47	111.52
7	A	2302	9Z9	C09-C10-C02	-3.52	106.75	112.78
8	A	2303	WB9	C32-C02-C03	3.49	130.53	115.33
8	A	2303	WB9	C07-C08-C03	3.17	90.46	86.20
7	A	2302	9Z9	C09-C08-C07	-2.99	107.44	111.75
8	A	2303	WB9	C12-C13-N14	-2.86	111.57	116.95
8	A	2303	WB9	O28-C24-C23	2.76	119.25	115.41
8	A	2303	WB9	C01-C02-C07	2.75	130.16	115.70
8	A	2303	WB9	O30-C23-C24	2.72	119.19	115.41
7	A	2302	9Z9	C09-C08-C11	-2.68	109.54	113.08
7	A	2302	9Z9	C08-C07-C06	-2.54	105.69	109.09
7	A	2302	9Z9	O80-C73-O72	-2.53	102.72	109.78
7	A	2302	9Z9	C05-C06-C02	-2.50	100.58	103.91
7	A	2302	9Z9	C18-C17-C16	2.46	114.65	110.99
8	A	2303	WB9	C22-C21-C26	2.37	119.30	116.51
7	A	2302	9Z9	C10-C09-C08	-2.35	109.04	113.11
7	A	2302	9Z9	C16-C13-C11	2.34	119.53	116.42
8	A	2303	WB9	C16-C15-N14	-2.34	107.41	111.89
8	A	2303	WB9	O28-C24-C25	-2.24	120.26	124.12
7	A	2302	9Z9	C77-C78-C79	2.23	111.65	108.56
8	A	2303	WB9	C10-C09-C06	-2.12	109.25	113.17
7	A	2302	9Z9	C10-C02-C03	-2.12	112.07	115.46
8	A	2303	WB9	O30-C23-C22	-2.09	120.53	124.12
7	A	2302	9Z9	C48-C23-C24	-2.03	107.75	111.00

There are no chirality outliers.

All (25) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
7	A	2302	9Z9	C24-C23-C48-O49
8	A	2303	WB9	C05-C06-C09-C10
8	A	2303	WB9	C07-C06-C09-C10
8	A	2303	WB9	O11-C12-C13-N14
8	A	2303	WB9	C12-C13-N14-C15
8	A	2303	WB9	C12-C13-N14-C19
8	A	2303	WB9	C21-C20-N14-C13
8	A	2303	WB9	C21-C20-N14-C15
8	A	2303	WB9	C21-C20-N14-C19
8	A	2303	WB9	C13-C12-O11-C10
8	A	2303	WB9	C25-C24-O28-C29
9	D	1202	NAG	C4-C5-C6-O6

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Mol	Chain	Res	Type	Atoms
9	D	1202	NAG	C8-C7-N2-C2
9	D	1202	NAG	O7-C7-N2-C2
7	A	2302	9Z9	C22-C23-C48-O49
8	A	2303	WB9	C22-C23-O30-C31
8	A	2303	WB9	C23-C24-O28-C29
9	D	1202	NAG	O5-C5-C6-O6
8	A	2303	WB9	C24-C23-O30-C31
9	D	1203	NAG	O5-C5-C6-O6
7	A	2302	9Z9	O20-C21-C22-C23
7	A	2302	9Z9	C18-C17-O20-C21
8	A	2303	WB9	C12-C13-N14-C20
7	A	2302	9Z9	C16-C17-O20-C21
8	A	2303	WB9	C09-C10-O11-C12

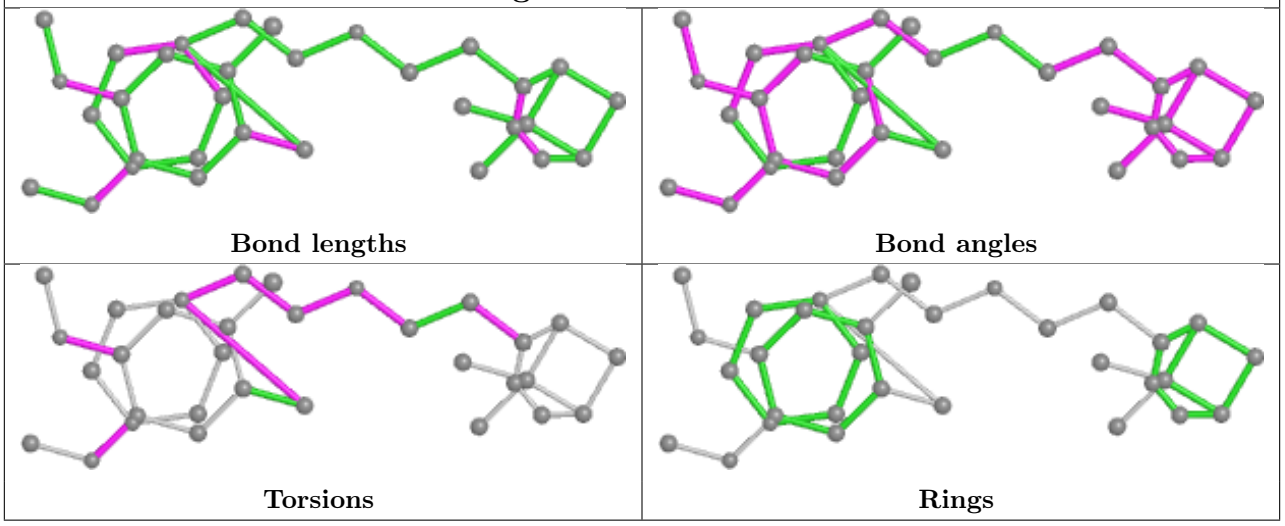
There are no ring outliers.

2 monomers are involved in 3 short contacts:

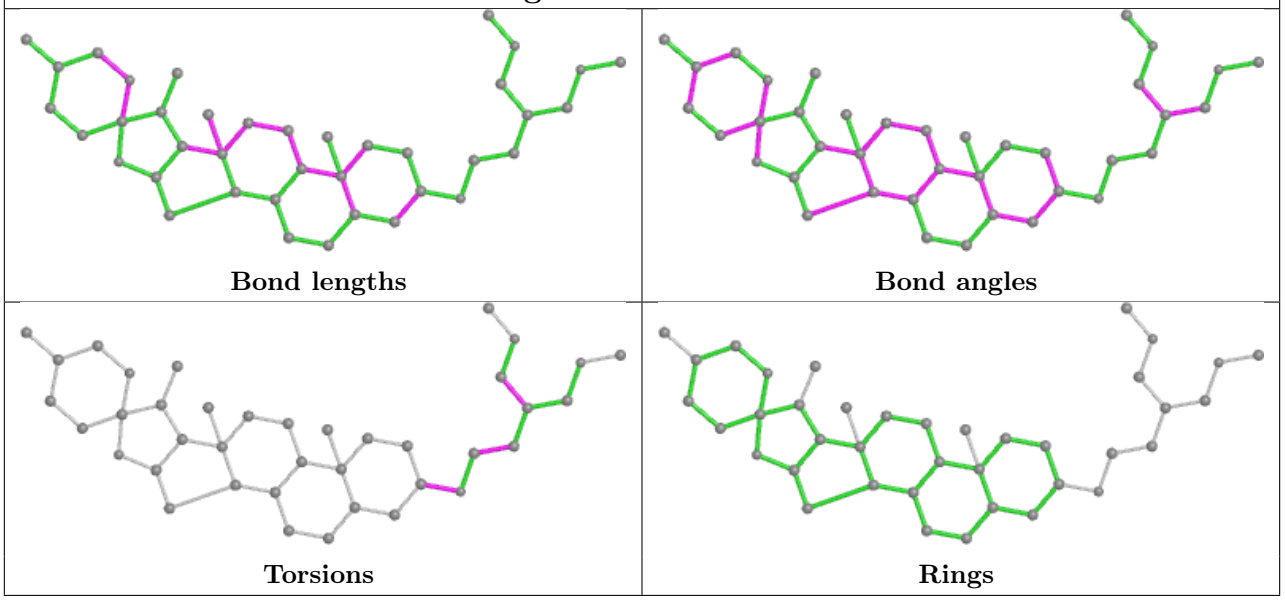
Mol	Chain	Res	Type	Clashes	Symm-Clashes
9	D	1203	NAG	2	0
8	A	2303	WB9	1	0

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 then 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.

Ligand WB9 A 2303



Ligand 9Z9 A 2302



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.

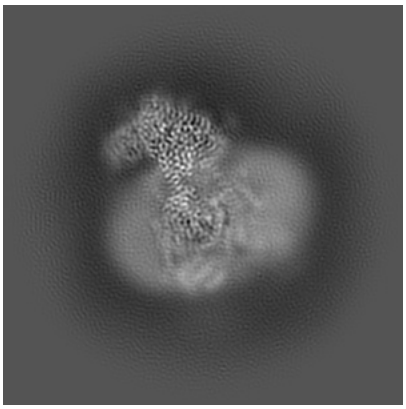
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-37476. These allow visual inspection of the internal detail of the map and identification of artifacts.

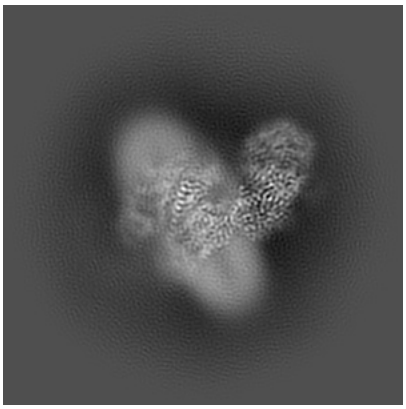
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

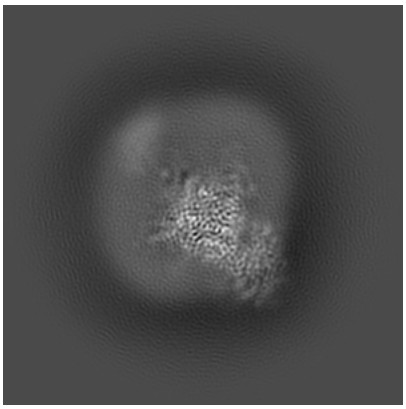
6.1.1 Primary map



X

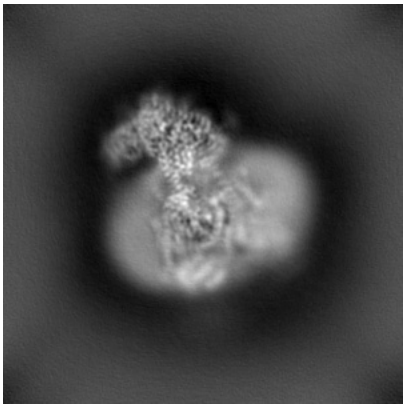


Y

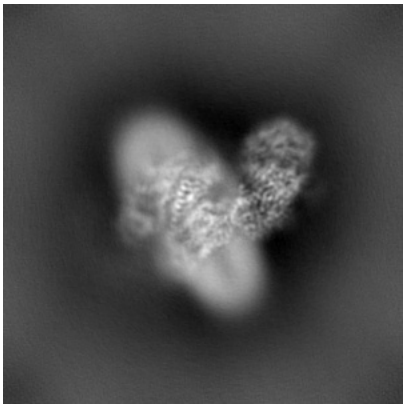


Z

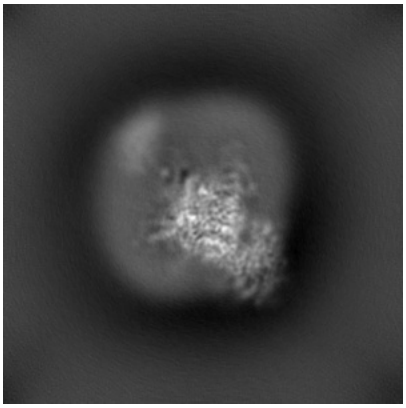
6.1.2 Raw map



X



Y

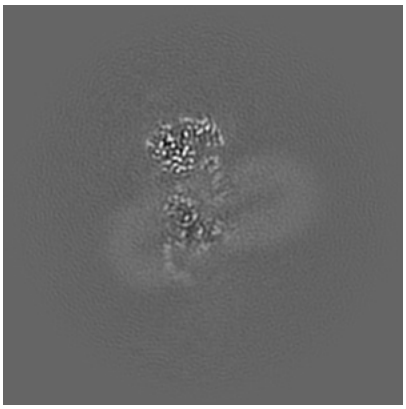


Z

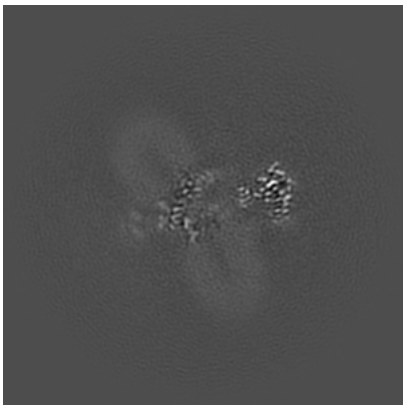
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

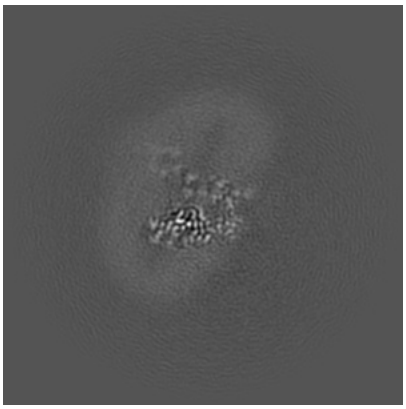
6.2.1 Primary map



X Index: 140

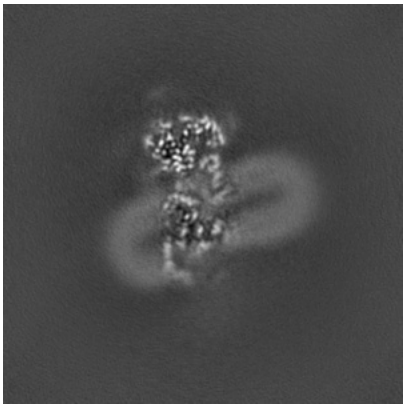


Y Index: 140

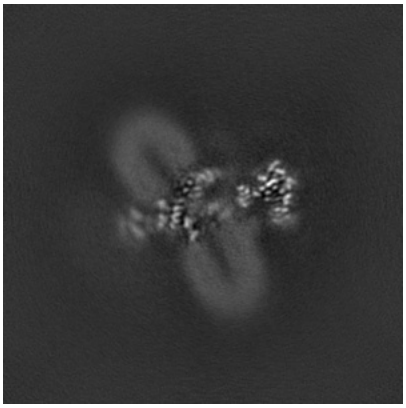


Z Index: 140

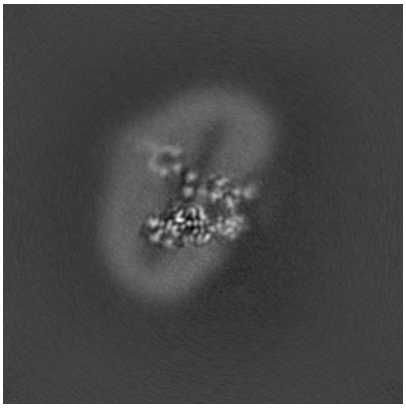
6.2.2 Raw map



X Index: 140



Y Index: 140

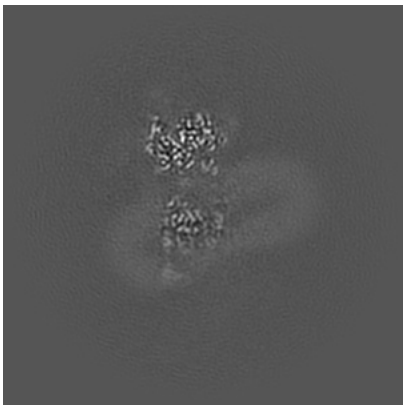


Z Index: 140

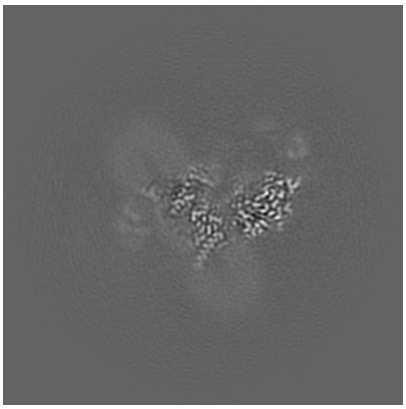
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

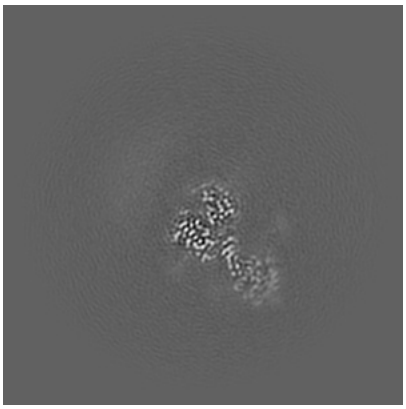
6.3.1 Primary map



X Index: 143

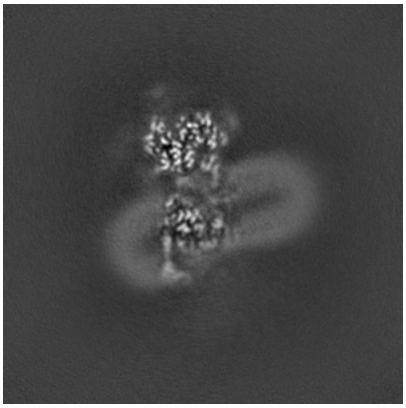


Y Index: 127

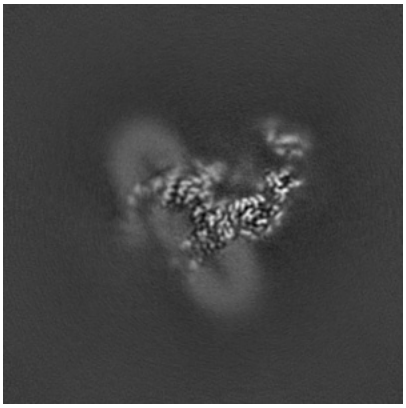


Z Index: 182

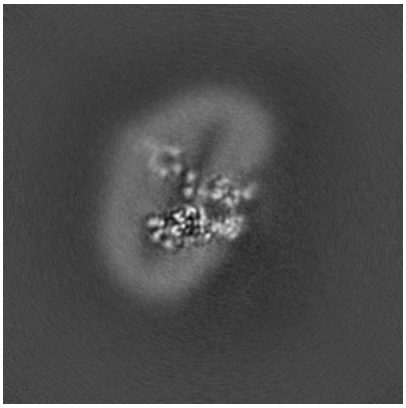
6.3.2 Raw map



X Index: 142



Y Index: 122

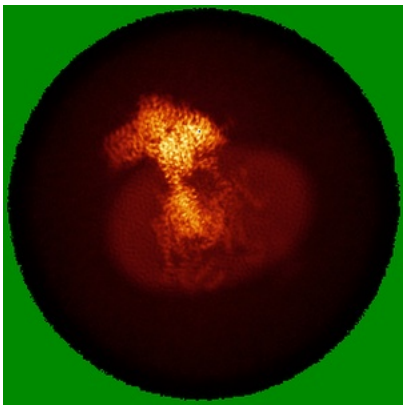


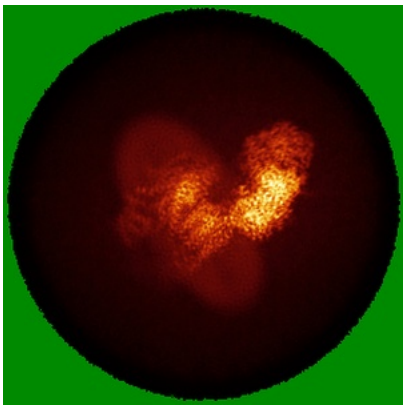
Z Index: 141

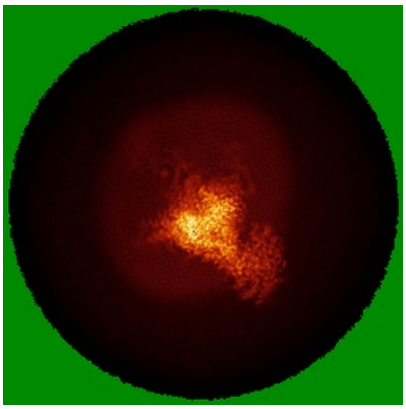
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) (i)

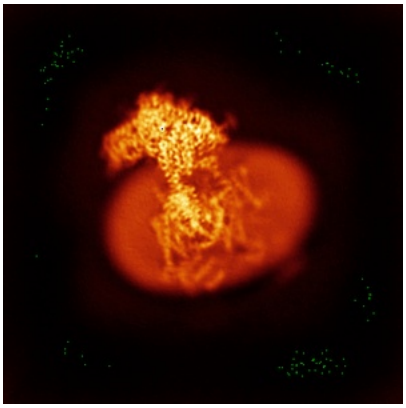
6.4.1 Primary map

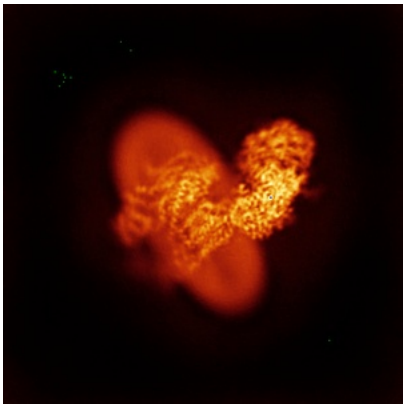

X

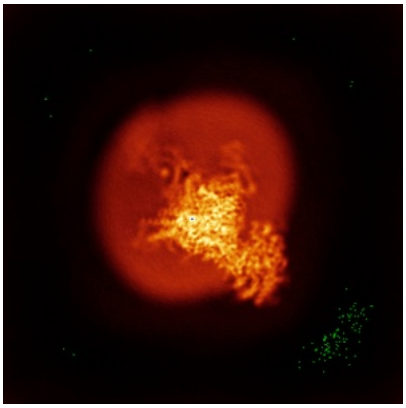

Y


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.

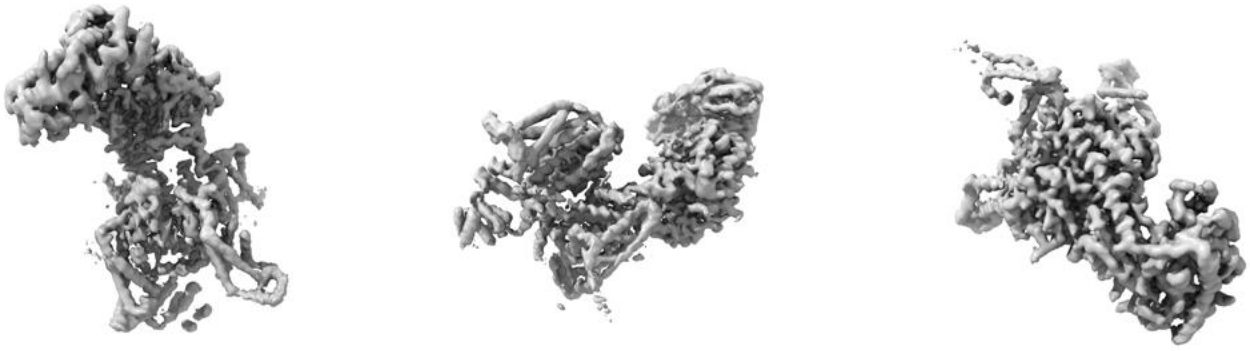
6.5 Orthogonal surface views (i)

6.5.1 Primary map

X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.4. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



X Y Z

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

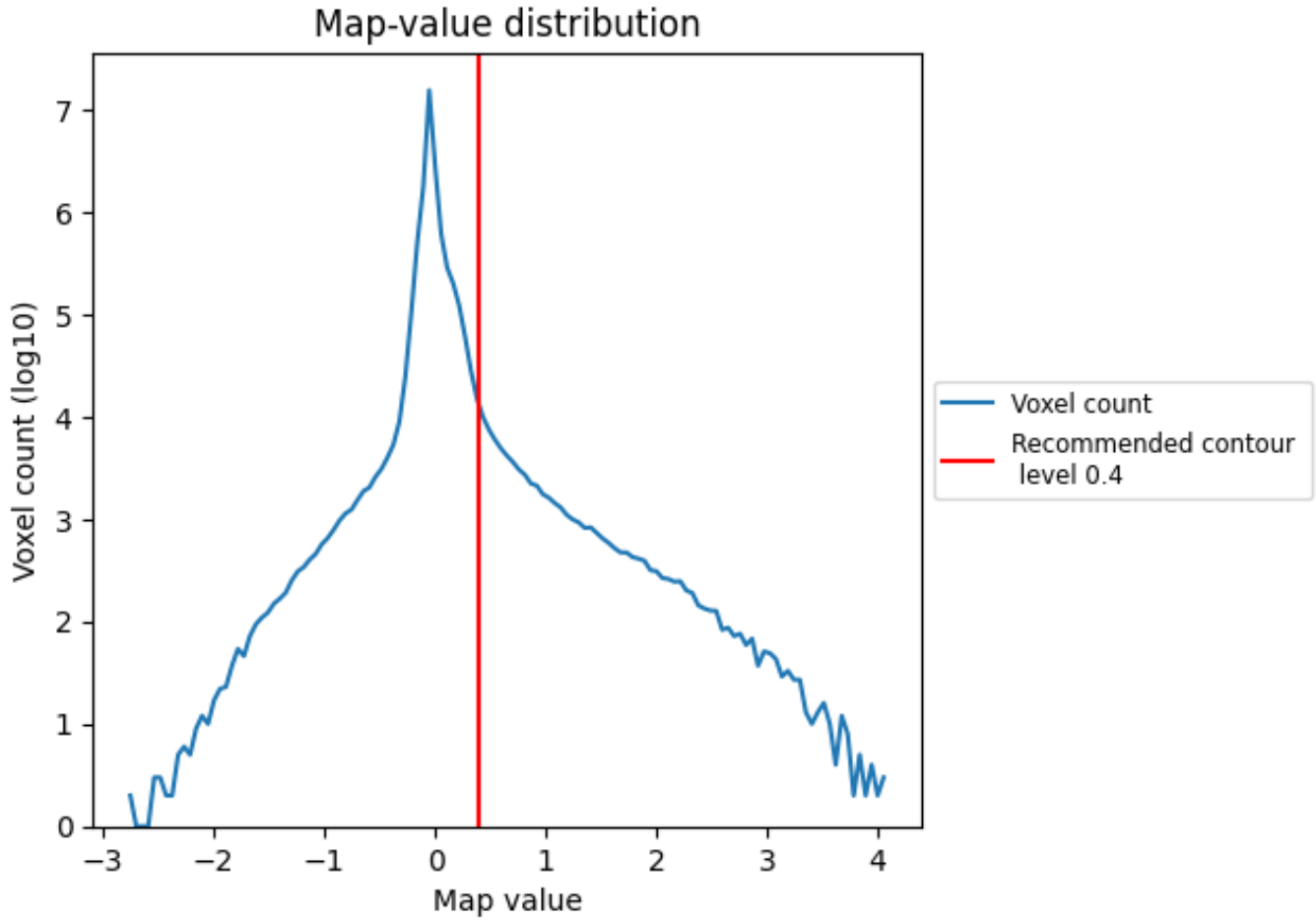
6.6 Mask visualisation (i)

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

7 Map analysis

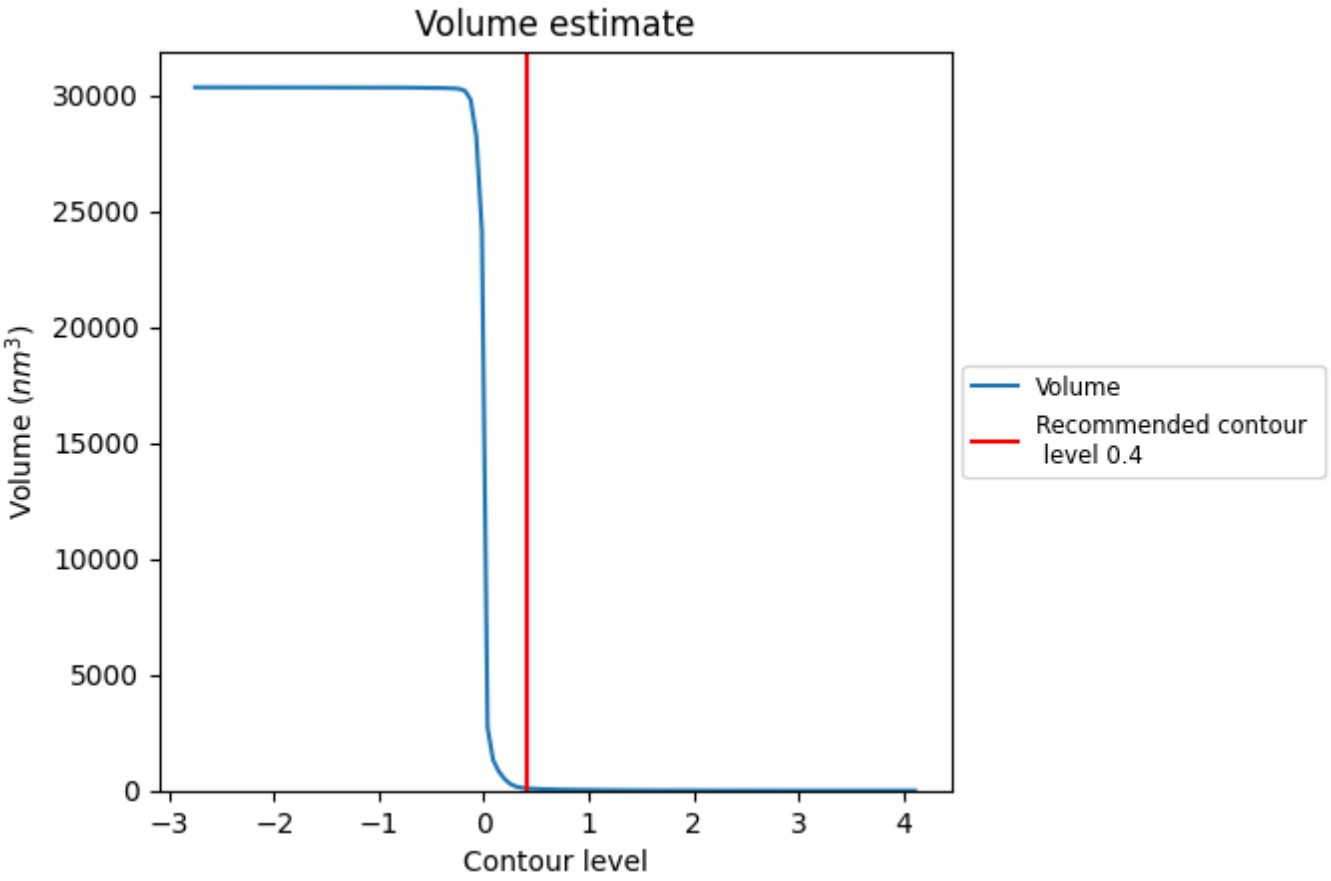
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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.

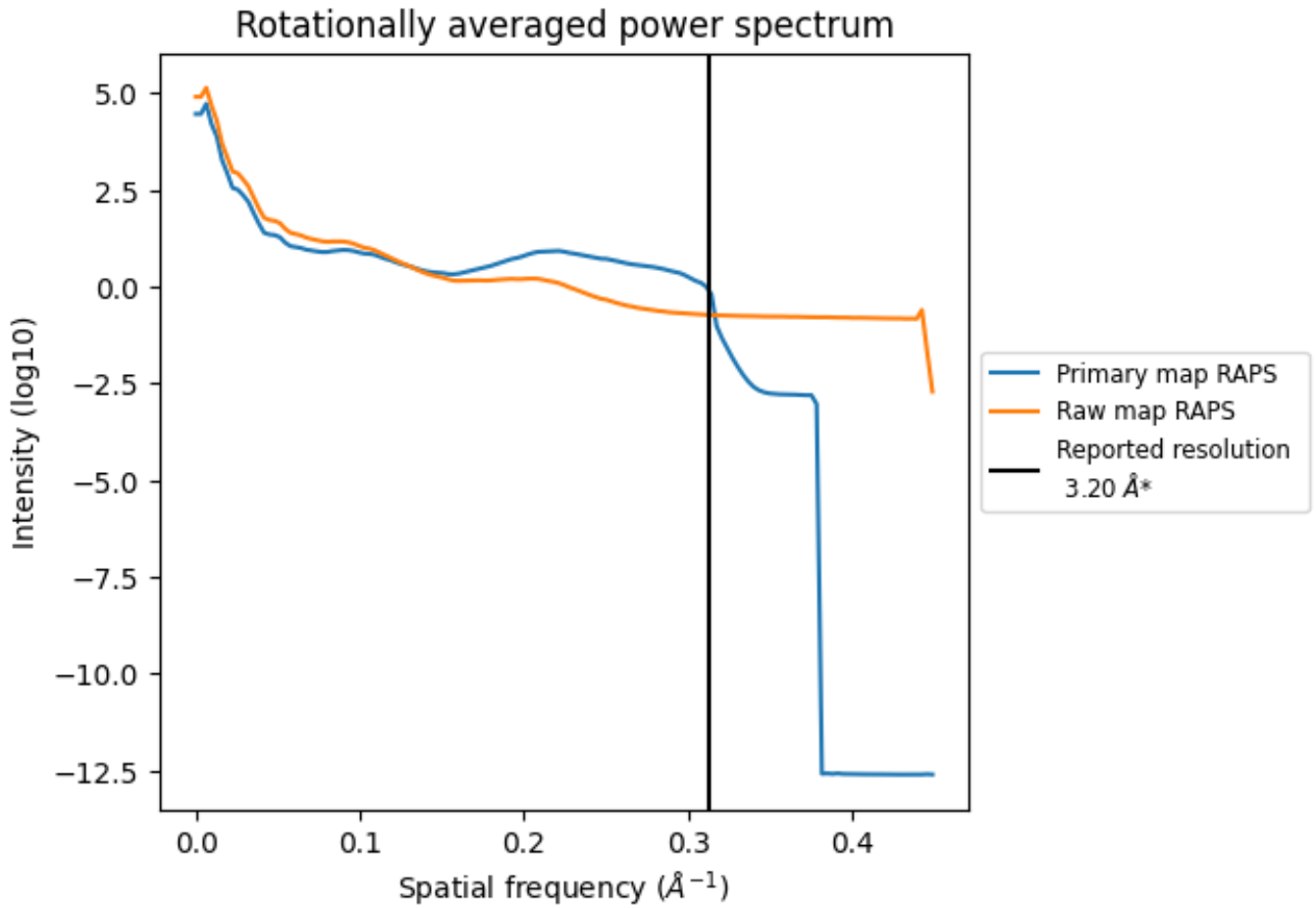
7.2 Volume estimate



The volume at the recommended contour level is 103 nm^3; this corresponds to an approximate mass of 93 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)

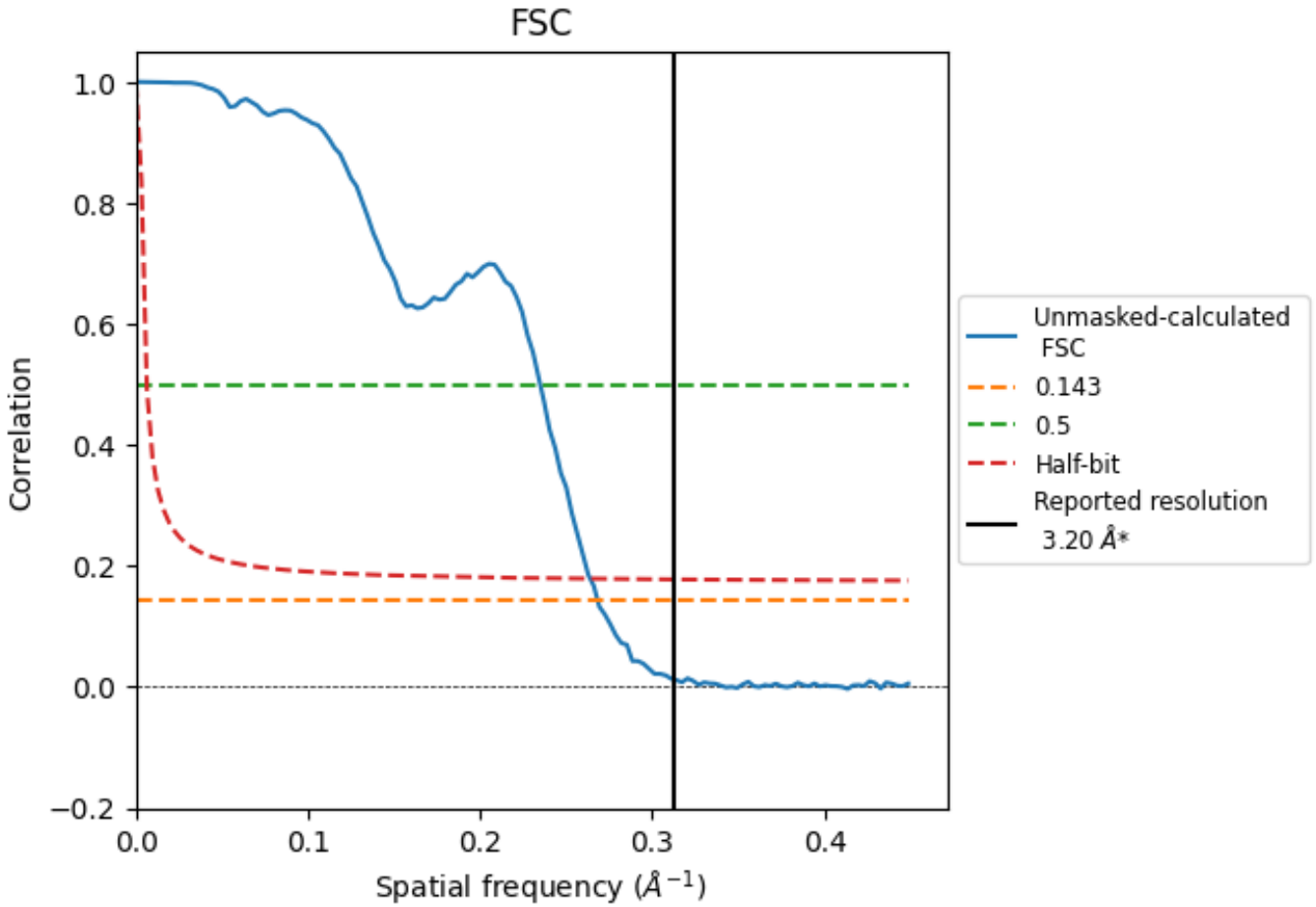


*Reported resolution corresponds to spatial frequency of 0.312 Å^{-1}

8 Fourier-Shell correlation

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



*Reported resolution corresponds to spatial frequency of 0.312 Å^{-1}

8.2 Resolution estimates (i)

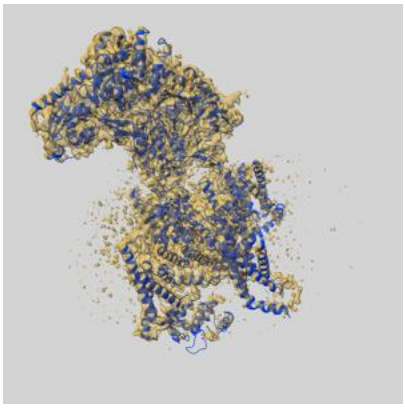
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.20	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	3.73	4.26	3.79

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.73 differs from the reported value 3.2 by more than 10 %

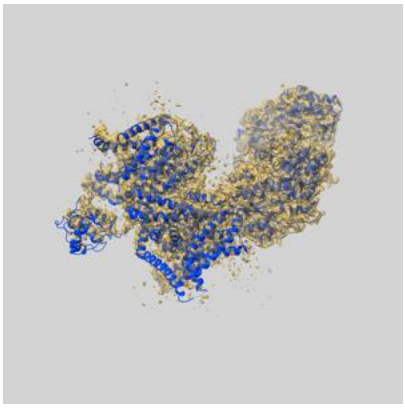
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-37476 and PDB model 8WEA. Per-residue inclusion information can be found in section 3 on page 7.

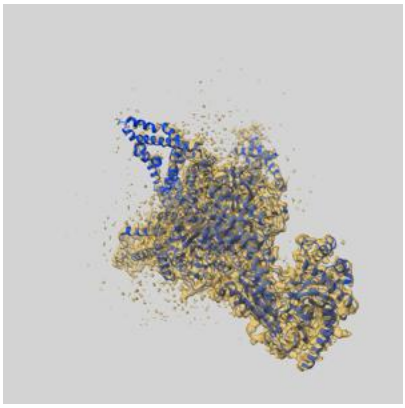
9.1 Map-model overlay



X



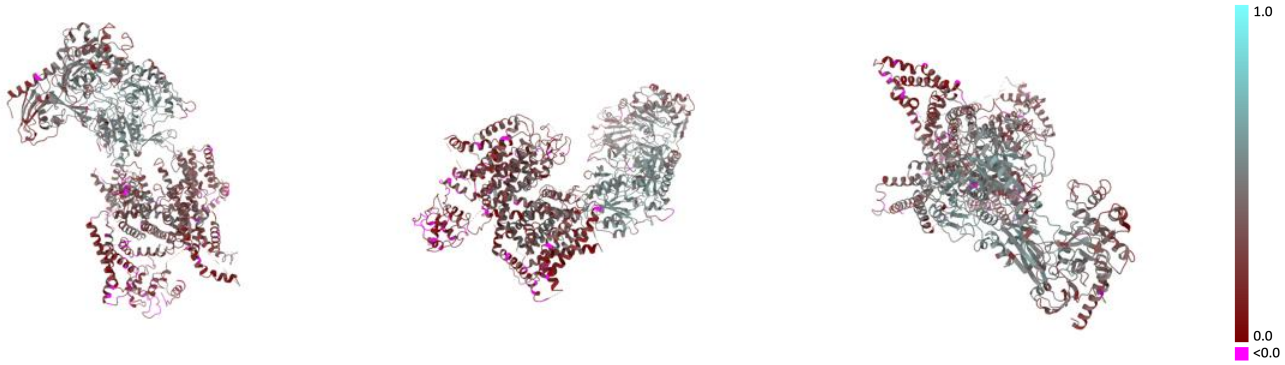
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.4 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.

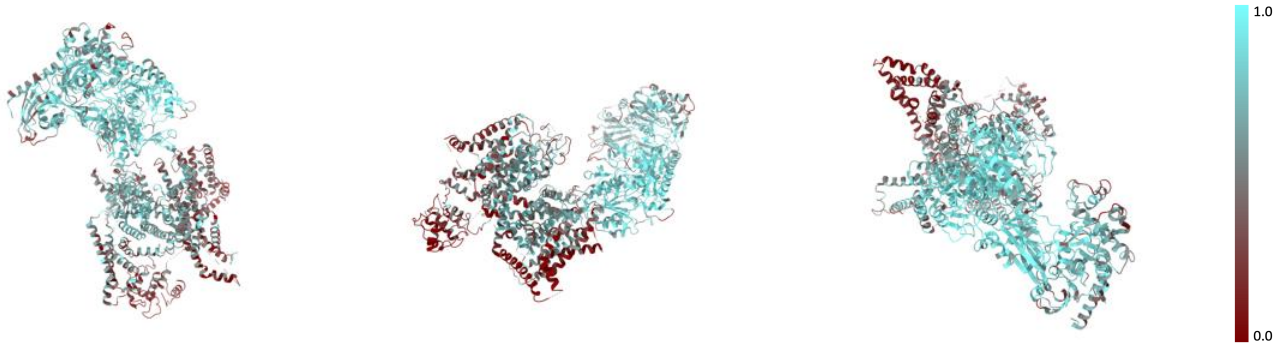
9.2 Q-score mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according 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.

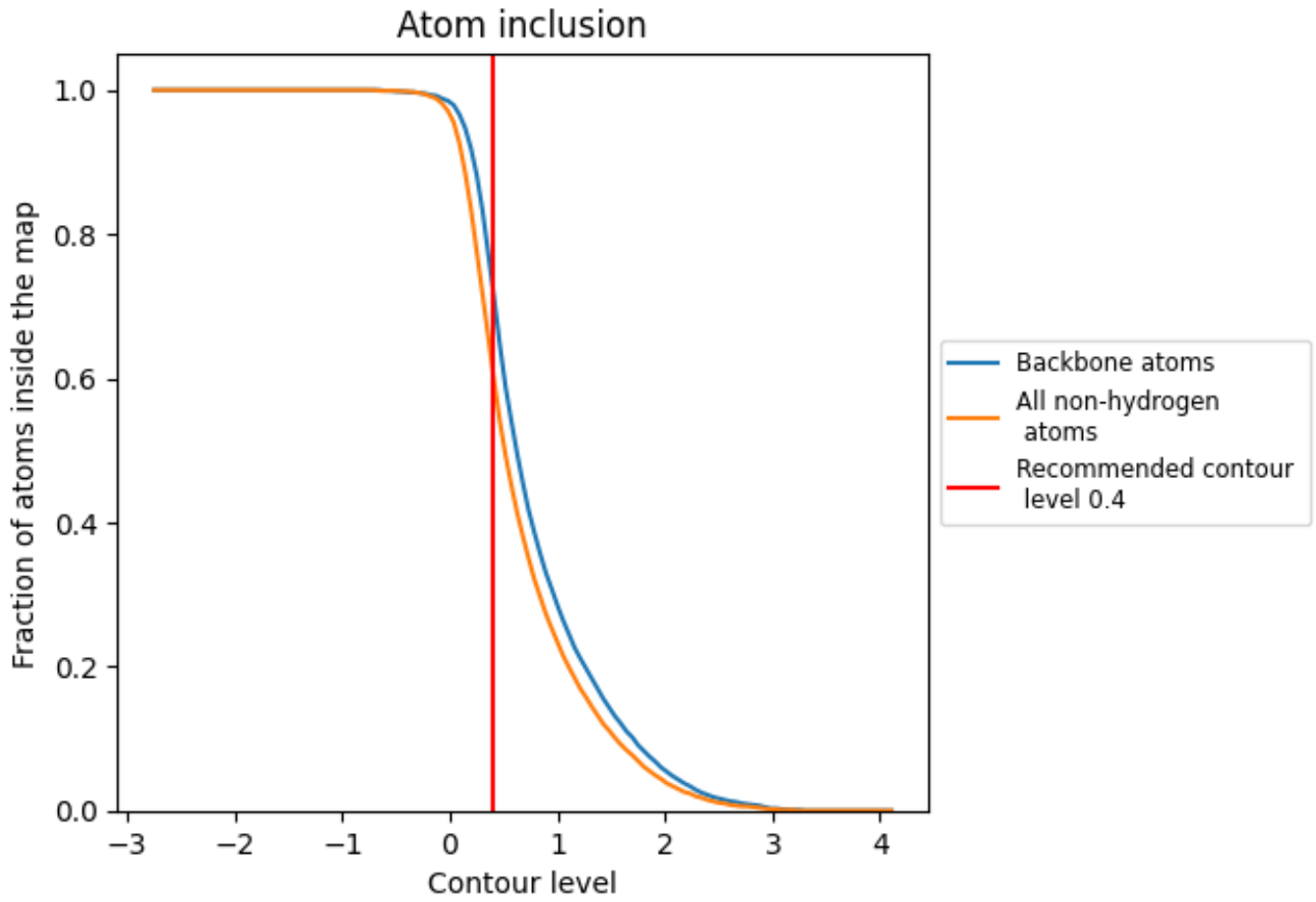
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

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 (0.4).

9.4 Atom inclusion (i)



At the recommended contour level, 72% of all backbone atoms, 61% 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 (0.4) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.6080	0.3490
A	0.4720	0.2600
B	0.4290	0.3350
C	0.2860	0.3440
D	0.7790	0.4590
E	0.7860	0.5040
F	0.3210	0.2010
G	0.5360	0.3500