



Full wwPDB EM Validation Report ⓘ

Oct 27, 2024 – 03:48 AM EDT

PDB ID : 6XCN
EMDB ID : EMD-22128
Title : Structure of the SARS-CoV-2 spike glycoprotein in complex with the C105 neutralizing antibody Fab fragment (state 2)
Authors : Barnes, C.O.; Bjorkman, P.J.
Deposited on : 2020-06-08
Resolution : 3.66 Å(reported)
Based on initial model : 6VYB

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.dev113
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4.02b-467
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) : 2.39

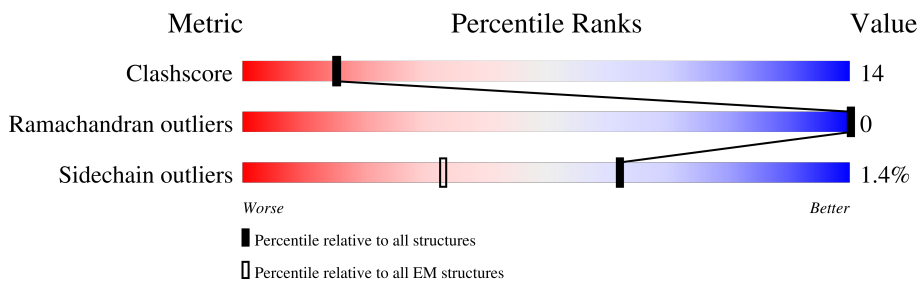
1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.66 Å.

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



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

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

Mol	Chain	Length	Quality of chain
1	A	1259	
1	C	1259	
1	E	1259	
2	B	230	
2	F	230	
2	H	230	
3	D	217	
3	G	217	

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Mol	Chain	Length	Quality of chain
3	L	217	
4	I	2	
4	J	2	
4	M	2	
4	O	2	
4	P	2	
4	R	2	
4	T	2	
4	U	2	
4	W	2	
5	K	3	
5	Q	3	
5	V	3	
6	N	3	
6	S	3	
6	X	3	

2 Entry composition [i](#)

There are 7 unique types of molecules in this entry. The entry contains 28662 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 Spike glycoprotein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	985	7581	4854	1258	1435	34	1	0
1	C	985	7581	4854	1258	1435	34	1	0
1	E	985	7581	4854	1258	1435	34	1	0

There are 147 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	607	GLU	GLN	conflict	UNP P0DTC2
A	986	PRO	LYS	conflict	UNP P0DTC2
A	987	PRO	VAL	conflict	UNP P0DTC2
A	1214	SER	-	expression tag	UNP P0DTC2
A	1215	GLY	-	expression tag	UNP P0DTC2
A	1216	ARG	-	expression tag	UNP P0DTC2
A	1217	LEU	-	expression tag	UNP P0DTC2
A	1218	VAL	-	expression tag	UNP P0DTC2
A	1219	PRO	-	expression tag	UNP P0DTC2
A	1220	ARG	-	expression tag	UNP P0DTC2
A	1221	GLY	-	expression tag	UNP P0DTC2
A	1222	SER	-	expression tag	UNP P0DTC2
A	1223	PRO	-	expression tag	UNP P0DTC2
A	1224	GLY	-	expression tag	UNP P0DTC2
A	1225	SER	-	expression tag	UNP P0DTC2
A	1226	GLY	-	expression tag	UNP P0DTC2
A	1227	TYR	-	expression tag	UNP P0DTC2
A	1228	ILE	-	expression tag	UNP P0DTC2
A	1229	PRO	-	expression tag	UNP P0DTC2
A	1230	GLU	-	expression tag	UNP P0DTC2
A	1231	ALA	-	expression tag	UNP P0DTC2
A	1232	PRO	-	expression tag	UNP P0DTC2
A	1233	ARG	-	expression tag	UNP P0DTC2
A	1234	ASP	-	expression tag	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
A	1235	GLY	-	expression tag	UNP P0DTC2
A	1236	GLN	-	expression tag	UNP P0DTC2
A	1237	ALA	-	expression tag	UNP P0DTC2
A	1238	TYR	-	expression tag	UNP P0DTC2
A	1239	VAL	-	expression tag	UNP P0DTC2
A	1240	ARG	-	expression tag	UNP P0DTC2
A	1241	LYS	-	expression tag	UNP P0DTC2
A	1242	ASP	-	expression tag	UNP P0DTC2
A	1243	GLY	-	expression tag	UNP P0DTC2
A	1244	GLU	-	expression tag	UNP P0DTC2
A	1245	TRP	-	expression tag	UNP P0DTC2
A	1246	VAL	-	expression tag	UNP P0DTC2
A	1247	LEU	-	expression tag	UNP P0DTC2
A	1248	LEU	-	expression tag	UNP P0DTC2
A	1249	SER	-	expression tag	UNP P0DTC2
A	1250	THR	-	expression tag	UNP P0DTC2
A	1251	PHE	-	expression tag	UNP P0DTC2
A	1252	LEU	-	expression tag	UNP P0DTC2
A	1253	GLY	-	expression tag	UNP P0DTC2
A	1254	HIS	-	expression tag	UNP P0DTC2
A	1255	HIS	-	expression tag	UNP P0DTC2
A	1256	HIS	-	expression tag	UNP P0DTC2
A	1257	HIS	-	expression tag	UNP P0DTC2
A	1258	HIS	-	expression tag	UNP P0DTC2
A	1259	HIS	-	expression tag	UNP P0DTC2
C	607	GLU	GLN	conflict	UNP P0DTC2
C	986	PRO	LYS	conflict	UNP P0DTC2
C	987	PRO	VAL	conflict	UNP P0DTC2
C	1214	SER	-	expression tag	UNP P0DTC2
C	1215	GLY	-	expression tag	UNP P0DTC2
C	1216	ARG	-	expression tag	UNP P0DTC2
C	1217	LEU	-	expression tag	UNP P0DTC2
C	1218	VAL	-	expression tag	UNP P0DTC2
C	1219	PRO	-	expression tag	UNP P0DTC2
C	1220	ARG	-	expression tag	UNP P0DTC2
C	1221	GLY	-	expression tag	UNP P0DTC2
C	1222	SER	-	expression tag	UNP P0DTC2
C	1223	PRO	-	expression tag	UNP P0DTC2
C	1224	GLY	-	expression tag	UNP P0DTC2
C	1225	SER	-	expression tag	UNP P0DTC2
C	1226	GLY	-	expression tag	UNP P0DTC2
C	1227	TYR	-	expression tag	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
C	1228	ILE	-	expression tag	UNP P0DTC2
C	1229	PRO	-	expression tag	UNP P0DTC2
C	1230	GLU	-	expression tag	UNP P0DTC2
C	1231	ALA	-	expression tag	UNP P0DTC2
C	1232	PRO	-	expression tag	UNP P0DTC2
C	1233	ARG	-	expression tag	UNP P0DTC2
C	1234	ASP	-	expression tag	UNP P0DTC2
C	1235	GLY	-	expression tag	UNP P0DTC2
C	1236	GLN	-	expression tag	UNP P0DTC2
C	1237	ALA	-	expression tag	UNP P0DTC2
C	1238	TYR	-	expression tag	UNP P0DTC2
C	1239	VAL	-	expression tag	UNP P0DTC2
C	1240	ARG	-	expression tag	UNP P0DTC2
C	1241	LYS	-	expression tag	UNP P0DTC2
C	1242	ASP	-	expression tag	UNP P0DTC2
C	1243	GLY	-	expression tag	UNP P0DTC2
C	1244	GLU	-	expression tag	UNP P0DTC2
C	1245	TRP	-	expression tag	UNP P0DTC2
C	1246	VAL	-	expression tag	UNP P0DTC2
C	1247	LEU	-	expression tag	UNP P0DTC2
C	1248	LEU	-	expression tag	UNP P0DTC2
C	1249	SER	-	expression tag	UNP P0DTC2
C	1250	THR	-	expression tag	UNP P0DTC2
C	1251	PHE	-	expression tag	UNP P0DTC2
C	1252	LEU	-	expression tag	UNP P0DTC2
C	1253	GLY	-	expression tag	UNP P0DTC2
C	1254	HIS	-	expression tag	UNP P0DTC2
C	1255	HIS	-	expression tag	UNP P0DTC2
C	1256	HIS	-	expression tag	UNP P0DTC2
C	1257	HIS	-	expression tag	UNP P0DTC2
C	1258	HIS	-	expression tag	UNP P0DTC2
C	1259	HIS	-	expression tag	UNP P0DTC2
E	607	GLU	GLN	conflict	UNP P0DTC2
E	986	PRO	LYS	conflict	UNP P0DTC2
E	987	PRO	VAL	conflict	UNP P0DTC2
E	1214	SER	-	expression tag	UNP P0DTC2
E	1215	GLY	-	expression tag	UNP P0DTC2
E	1216	ARG	-	expression tag	UNP P0DTC2
E	1217	LEU	-	expression tag	UNP P0DTC2
E	1218	VAL	-	expression tag	UNP P0DTC2
E	1219	PRO	-	expression tag	UNP P0DTC2
E	1220	ARG	-	expression tag	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
E	1221	GLY	-	expression tag	UNP P0DTC2
E	1222	SER	-	expression tag	UNP P0DTC2
E	1223	PRO	-	expression tag	UNP P0DTC2
E	1224	GLY	-	expression tag	UNP P0DTC2
E	1225	SER	-	expression tag	UNP P0DTC2
E	1226	GLY	-	expression tag	UNP P0DTC2
E	1227	TYR	-	expression tag	UNP P0DTC2
E	1228	ILE	-	expression tag	UNP P0DTC2
E	1229	PRO	-	expression tag	UNP P0DTC2
E	1230	GLU	-	expression tag	UNP P0DTC2
E	1231	ALA	-	expression tag	UNP P0DTC2
E	1232	PRO	-	expression tag	UNP P0DTC2
E	1233	ARG	-	expression tag	UNP P0DTC2
E	1234	ASP	-	expression tag	UNP P0DTC2
E	1235	GLY	-	expression tag	UNP P0DTC2
E	1236	GLN	-	expression tag	UNP P0DTC2
E	1237	ALA	-	expression tag	UNP P0DTC2
E	1238	TYR	-	expression tag	UNP P0DTC2
E	1239	VAL	-	expression tag	UNP P0DTC2
E	1240	ARG	-	expression tag	UNP P0DTC2
E	1241	LYS	-	expression tag	UNP P0DTC2
E	1242	ASP	-	expression tag	UNP P0DTC2
E	1243	GLY	-	expression tag	UNP P0DTC2
E	1244	GLU	-	expression tag	UNP P0DTC2
E	1245	TRP	-	expression tag	UNP P0DTC2
E	1246	VAL	-	expression tag	UNP P0DTC2
E	1247	LEU	-	expression tag	UNP P0DTC2
E	1248	LEU	-	expression tag	UNP P0DTC2
E	1249	SER	-	expression tag	UNP P0DTC2
E	1250	THR	-	expression tag	UNP P0DTC2
E	1251	PHE	-	expression tag	UNP P0DTC2
E	1252	LEU	-	expression tag	UNP P0DTC2
E	1253	GLY	-	expression tag	UNP P0DTC2
E	1254	HIS	-	expression tag	UNP P0DTC2
E	1255	HIS	-	expression tag	UNP P0DTC2
E	1256	HIS	-	expression tag	UNP P0DTC2
E	1257	HIS	-	expression tag	UNP P0DTC2
E	1258	HIS	-	expression tag	UNP P0DTC2
E	1259	HIS	-	expression tag	UNP P0DTC2

- Molecule 2 is a protein called C105 Fab Heavy Chain.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	B	116	Total	C	N	O	S	0	0
			890	562	150	174	4		
2	F	116	Total	C	N	O	S	0	0
			890	562	150	174	4		
2	H	116	Total	C	N	O	S	0	0
			890	562	150	174	4		

- Molecule 3 is a protein called C105 Fab Light Chain.

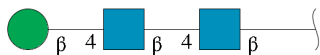
Mol	Chain	Residues	Atoms					AltConf	Trace
3	D	111	Total	C	N	O	S	0	0
			810	504	134	169	3		
3	G	111	Total	C	N	O	S	0	0
			810	504	134	169	3		
3	L	111	Total	C	N	O	S	0	0
			810	504	134	169	3		

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



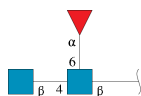
Mol	Chain	Residues	Atoms				AltConf	Trace
4	I	2	Total	C	N	O	0	0
			28	16	2	10		
4	J	2	Total	C	N	O	0	0
			28	16	2	10		
4	M	2	Total	C	N	O	0	0
			28	16	2	10		
4	O	2	Total	C	N	O	0	0
			28	16	2	10		
4	P	2	Total	C	N	O	0	0
			28	16	2	10		
4	R	2	Total	C	N	O	0	0
			28	16	2	10		
4	T	2	Total	C	N	O	0	0
			28	16	2	10		
4	U	2	Total	C	N	O	0	0
			28	16	2	10		
4	W	2	Total	C	N	O	0	0
			28	16	2	10		

- Molecule 5 is an oligosaccharide called beta-D-mannopyranose-(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		
5	K	3	39	22	2	15	0	0
5	Q	3	39	22	2	15	0	0
5	V	3	39	22	2	15	0	0

- Molecule 6 is an oligosaccharide called 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-[alpha-L-fucopyranose-(1-6)]2-acetamido-2-deoxy-beta-D-glucopyranose.



Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
6	N	3	38	22	2	14	0	0
6	S	3	38	22	2	14	0	0
6	X	3	38	22	2	14	0	0

- Molecule 7 is 2-acetamido-2-deoxy-beta-D-glucopyranose (three-letter code: NAG) (formula: C₈H₁₅NO₆).



Mol	Chain	Residues	Atoms				AltConf
			Total	C	N	O	
7	A	1	Total	C	N	O	0
			14	8	1	5	
7	A	1	Total	C	N	O	0
			14	8	1	5	
7	A	1	Total	C	N	O	0
			14	8	1	5	
7	A	1	Total	C	N	O	0
			14	8	1	5	
7	A	1	Total	C	N	O	0
			14	8	1	5	
7	A	1	Total	C	N	O	0
			14	8	1	5	
7	A	1	Total	C	N	O	0
			14	8	1	5	
7	A	1	Total	C	N	O	0
			14	8	1	5	
7	C	1	Total	C	N	O	0
			14	8	1	5	
7	C	1	Total	C	N	O	0
			14	8	1	5	
7	C	1	Total	C	N	O	0
			14	8	1	5	
7	C	1	Total	C	N	O	0
			14	8	1	5	
7	C	1	Total	C	N	O	0
			14	8	1	5	

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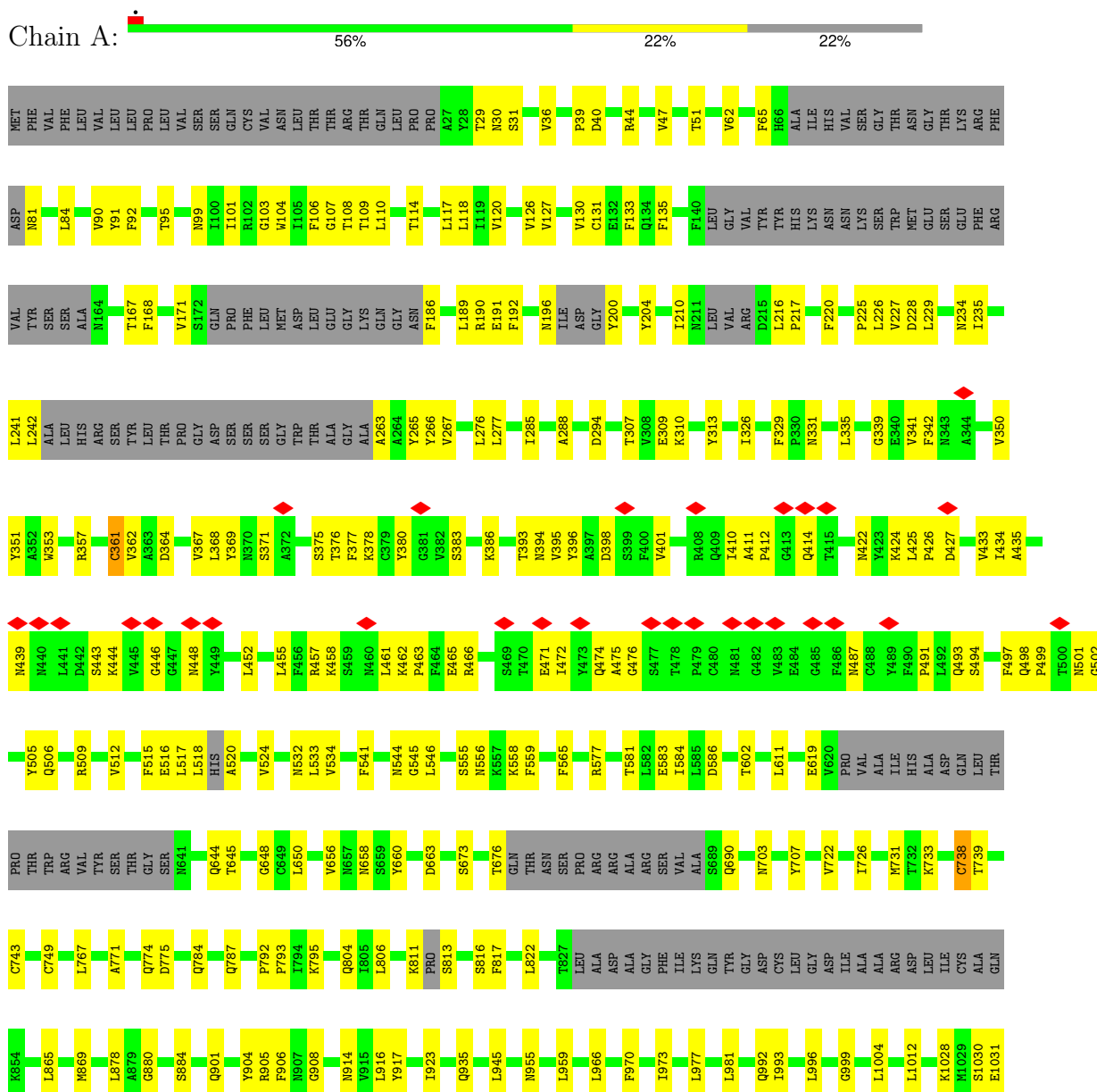
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Mol	Chain	Residues	Atoms				AltConf
			Total	C	N	O	
7	C	1	Total 14	8	1	5	0
7	C	1	Total 14	8	1	5	0
7	E	1	Total 14	8	1	5	0
7	E	1	Total 14	8	1	5	0
7	E	1	Total 14	8	1	5	0
7	E	1	Total 14	8	1	5	0
7	E	1	Total 14	8	1	5	0
7	E	1	Total 14	8	1	5	0
7	E	1	Total 14	8	1	5	0
7	E	1	Total 14	8	1	5	0

3 Residue-property plots

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

• Molecule 1: Spike glycoprotein



C1032	PHE	GLN
R1039	LYS	TYR
L1049	GLU	ILE
L1050	LEU	LYS
S1051	ASP	TRP
F1052	LYS	PRO
P1053	TYR	GLY
Q1054	LYS	ARG
S1055	ASN	THR
A1056	THR	GLY
V1061	SER	PRO
V1065	PRO	CYS
T1077	VAL	GLN
A1078	ASP	GLY
F1079	LEU	GLY
A1080	GLY	TYR
K1086	ILE	PRO
A1087	SER	ILE
H1088	GLY	ALA
R1091	ASN	PRO
V1094	ALA	ARG
S1097	VAL	ARG
T1100	ILE	ASN
H1101	GLN	GLN
W1102	LYS	VAL
I1102	ASP	VAL
Q1106	ILE	GLY
F1109	ASP	GLY
Y1110	ARG	TRP
E1111	LEU	VAL
D1118	ASN	LEU
N1126	LYS	THE
C1126	ASN	LEU
D1127	LEU	GLY
V1128	ASN	HIS
V1129	GLU	HIS
V1129	SER	HIS
I1132	ILE	HIS
I1132	LEU	HIS
V1137	ASP	ILE
Y1138	LEU	ASN
D1139	GLN	ASN
P1140	LEU	VAL
P1143	GLY	SER
S1147	TYR	GLY
	TYR	GLY
	GLU	THR

• Molecule 1: Spike glycoprotein



MET	LYS	GLU	N234	V350	M339	Y505	PRO	T739	LEU	I1018
PHE	ARG	PHE	I235	Y351	M440	Q506	THR	C743	ILE	K1028
VAL	PHE	ARG	L241	W353	L441	R509	TRP	C749	CYS	M1029
LEU	ASP	VAL	L442	R357	D442	V512	ARG	L752	ALA	S1030
VAL	N81	TYR	ALA	C361	S443	F515	TYR	L767	GLN	E1031
LEU	L84	SER	HIS	V362	K444	E516	SER	A771	K854	C1032
LEU	V90	ALA	LEU	D364	G447	L517	THR	Q774	L878	R1039
PRO	Y91	LEU	THR	D367	M448	L518	THR	Q784	A879	L1049
LEU	F92	VAL	PRO	L368	Y449	A520	SER	Q787	C880	S1051
VAL	T95	SER	GLY	Y369	L452	V524	THR	P792	S884	F1052
SER	N99	GLN	ASP	S371	L455	N532	THR	P793	Q801	P1053
ASP	I100	VAL	SER	A372	F456	L533	THR	I794	Y904	Q1054
VAL	R102	LEU	SER	S375	R457	V534	THR	K795	R905	S1055
THR	G103	THR	SER	T376	M460	C538	THR	Q804	N907	A1056
GLY	M104	THR	SER	F377	K462	F541	THR	L806	G908	V1061
TYR	W105	ARG	GLY	K378	P463	N544	THR	K811	N914	V1065
ILE	I106	ILE	ALA	G379	F464	G545	THR	PRO	Y915	T1077
ALA	F106	THR	ALA	Y380	E465	L546	THR	ARG	L916	A1078
PRO	G107	GLN	ALA	G381	R466	L565	THR	ALA	Y917	F1079
ARG	T108	LEU	ALA	V382	S469	S555	THR	LEU	I923	A1080
ARG	A1088	PRO	ALA	S383	T470	N556	THR	LEU	Q934	H1083
ASN	R1091	PRO	GLN	K386	E471	K557	THR	LEU	Q935	H1088
ALA	V1094	PRO	TRP	T393	I472	K559	THR	LEU	L938	R1091
ALA	N30	VAL	THR	N394	Y473	F559	THR	LEU	S943	V1094
VAL	F1118	VAL	ALA	Y395	Q474	F565	THR	LEU	L945	S1097
ASN	S1097	VAL	ALA	Y396	A475	R577	THR	LEU	N955	T1100
ILE	T1100	VAL	ALA	A397	G476	R577	THR	LEU	L959	H1101
GLN	W1101	VAL	ALA	D398	G476	T581	THR	LEU	L966	W1102
LYS	H1101	VAL	ALA	S399	S477	L582	THR	LEU	S944	Q1106
ASP	W1102	VAL	ALA	F400	T478	E583	THR	LEU	F970	F1109
ILE	I1102	VAL	ALA	V401	C480	I584	THR	LEU	L973	Y1110
GLY	Q1106	VAL	ALA	W408	M481	L585	THR	LEU	L977	E1111
ASP	Q1106	VAL	ALA	Q409	N481	D586	THR	LEU	L981	D1118
ARG	F1109	VAL	ALA	I410	G482	E619	THR	LEU	Q892	N1126
LEU	Y1110	VAL	ALA	A411	V483	L611	THR	LEU	C1126	C1126
ASN	E1111	VAL	ALA	P412	E484	E619	THR	LEU	D1127	D1127
GLU	E1111	VAL	ALA	G413	G485	V620	THR	LEU	V1128	V1128
VAL	D1118	VAL	ALA	Q414	F486	PRO	THR	LEU	V1129	V1129
ALA	D1118	VAL	ALA	T415	M487	VAL	THR	LEU	I1132	I1132
LYS	N1126	VAL	ALA	N422	C488	ALA	THR	LEU	V1137	V1137
ASN	C1126	VAL	ALA	Y423	M488	ALA	THR	LEU	Y1138	Y1138
LEU	D1127	VAL	ALA	K424	Y489	ILE	THR	LEU	D1139	D1139
GLU	V1128	VAL	ALA	L425	F490	HIS	THR	LEU	P1140	P1140
SER	V1129	VAL	ALA	P426	P491	ASP	THR	LEU	P1143	P1143
SER	V1129	VAL	ALA	D427	L492	GLN	THR	LEU	S1147	S1147
ILE	I1132	VAL	ALA	W433	Q493	LEU	THR	LEU		
LEU	V1137	VAL	ALA	I434	S494	THR	THR	LEU		
ASN	Y1138	VAL	ALA	A435	F497	THR	THR	LEU		
GLN	D1139	VAL	ALA		Q498	THR	THR	LEU		
LEU	P1140	VAL	ALA		P499	THR	THR	LEU		
GLY	P1143	VAL	ALA		T500	THR	THR	LEU		
TYR	S1147	VAL	ALA		G502	THR	THR	LEU		
GLU		VAL	ALA			THR	THR	LEU		

LEU
THR
PRO
GLU
GLN
TRP
LYS
SER
HIS
ARG
SER
TYR
SER
CYS
GLN
VAL
THR
HIS
GLU
GLY
SER
THR
VAL
GLU
LYS
THR
VAL
ALA
PRO
THR
GLU
CYS
SER

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

Chain I:  100%

MAG1
MAG2

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

Chain J:  50% 50%

MAG1
MAG2

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

Chain M:  50% 50%

MAG1
MAG2

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

Chain O:  100%

MAG1
MAG2

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

Chain P:  50% 50% 50%


MAG1
MAG2

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

Chain R:  50% 50%

MAG1
MAG2

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

Chain T:  100%

 MAG1
MAG2

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

Chain U:  50%
50% 50%

 MAG1
MAG2

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

Chain W:  50% 50%

 MAG1
MAG2

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

Chain K:  33%
67% 33%

 MAG1
MAG2
BMA3

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

Chain Q:  33%
67% 33%


 MAG1
MAG2
BMA3

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

Chain V:  33%
67% 33%


 MAG1
MAG2
BMA3

- Molecule 6: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-[alpha-L-fucopyranose-(1-6)]2-acetamido-2-deoxy-beta-D-glucopyranose

Chain N:  100%

MAG1
MAG2
FUC3

- Molecule 6: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-[alpha-L-fucopyranose-(1-6)]2-acetamido-2-deoxy-beta-D-glucopyranose

Chain S:  100%

MAG1
MAG2
FUC3

- Molecule 6: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-[alpha-L-fucopyranose-(1-6)]2-acetamido-2-deoxy-beta-D-glucopyranose

Chain X:  100%

MAG1
MAG2
FUC3

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C3	Depositor
Number of particles used	14119	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	60	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	105000	Depositor
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	0.703	Depositor
Minimum map value	-0.379	Depositor
Average map value	0.004	Depositor
Map value standard deviation	0.024	Depositor
Recommended contour level	0.1	Depositor
Map size (Å)	294.272, 294.272, 294.272	wwPDB
Map dimensions	352, 352, 352	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.836, 0.836, 0.836	Depositor

5 Model quality i

5.1 Standard geometry i

Bond lengths and bond angles in the following residue types are not validated in this section: FUC, NAG, BMA

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	0.59	0/7752	0.55	0/10556
1	C	0.59	0/7752	0.55	0/10556
1	E	0.59	0/7752	0.55	0/10556
2	B	0.35	0/911	0.56	2/1237 (0.2%)
2	F	0.35	0/911	0.56	2/1237 (0.2%)
2	H	0.35	0/911	0.56	2/1237 (0.2%)
3	D	0.31	0/829	0.52	0/1125
3	G	0.31	0/829	0.52	0/1125
3	L	0.31	0/829	0.52	0/1125
All	All	0.55	0/28476	0.55	6/38754 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	1
1	C	0	1
1	E	0	1
All	All	0	3

There are no bond length outliers.

All (6) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	F	85	GLU	CA-CB-CG	6.27	127.19	113.40
2	H	85	GLU	CA-CB-CG	6.26	127.18	113.40
2	B	85	GLU	CA-CB-CG	6.26	127.17	113.40
2	B	108	LEU	CA-CB-CG	5.46	127.85	115.30

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Mol	Chain	Res	Type	Atoms	Z	Observed($^{\circ}$)	Ideal($^{\circ}$)
2	H	108	LEU	CA-CB-CG	5.43	127.80	115.30
2	F	108	LEU	CA-CB-CG	5.43	127.79	115.30

There are no chirality outliers.

All (3) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	361	CYS	Peptide
1	C	361	CYS	Peptide
1	E	361	CYS	Peptide

5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	7581	0	7307	203	0
1	C	7581	0	7307	204	0
1	E	7581	0	7307	201	0
2	B	890	0	851	44	0
2	F	890	0	851	42	0
2	H	890	0	851	40	0
3	D	810	0	769	32	0
3	G	810	0	769	33	0
3	L	810	0	769	33	0
4	I	28	0	25	1	0
4	J	28	0	25	1	0
4	M	28	0	24	0	0
4	O	28	0	25	1	0
4	P	28	0	25	1	0
4	R	28	0	24	0	0
4	T	28	0	25	1	0
4	U	28	0	25	1	0
4	W	28	0	24	0	0
5	K	39	0	34	0	0
5	Q	39	0	34	0	0
5	V	39	0	34	0	0
6	N	38	0	34	1	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
6	S	38	0	34	1	0
6	X	38	0	34	1	0
7	A	112	0	104	0	0
7	C	112	0	104	0	0
7	E	112	0	104	0	0
All	All	28662	0	27519	813	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 14.

All (813) 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:E:81:ASN:N	1:E:265:TYR:HH	1.63	0.97
1:C:81:ASN:N	1:C:265:TYR:HH	1.63	0.96
1:A:81:ASN:N	1:A:265:TYR:HH	1.65	0.93
1:C:226:LEU:HG	1:C:227:VAL:HG23	1.52	0.89
1:E:226:LEU:HG	1:E:227:VAL:HG23	1.52	0.88
1:A:226:LEU:HG	1:A:227:VAL:HG23	1.52	0.88
1:A:738:CYS:SG	1:A:739:THR:N	2.47	0.88
1:C:738:CYS:SG	1:C:739:THR:N	2.47	0.87
1:E:738:CYS:SG	1:E:739:THR:N	2.47	0.87
1:C:353:TRP:HE1	1:C:466:ARG:HA	1.44	0.82
1:A:353:TRP:HE1	1:A:466:ARG:HA	1.44	0.82
1:E:353:TRP:HE1	1:E:466:ARG:HA	1.44	0.82
1:C:1053:PRO:O	1:C:1054:GLN:NE2	2.16	0.78
2:F:95:GLY:HA2	2:F:100:LEU:HD22	1.66	0.77
2:B:95:GLY:HA2	2:B:100:LEU:HD22	1.66	0.77
1:A:118:LEU:HD13	1:A:133:PHE:CE2	2.21	0.76
1:C:90:VAL:HG12	1:C:92:PHE:H	1.51	0.76
1:A:1053:PRO:O	1:A:1054:GLN:NE2	2.16	0.76
1:E:90:VAL:HG12	1:E:92:PHE:H	1.51	0.76
2:F:59:TYR:HB3	2:F:63:VAL:HG23	1.68	0.76
2:B:59:TYR:HB3	2:B:63:VAL:HG23	1.68	0.75
1:E:118:LEU:HD13	1:E:133:PHE:CE2	2.20	0.75
2:H:95:GLY:HA2	2:H:100:LEU:HD22	1.66	0.75
1:C:326:ILE:HD11	1:C:533:LEU:HA	1.68	0.75
1:A:118:LEU:HD13	1:A:133:PHE:HE2	1.52	0.75
1:E:118:LEU:HD13	1:E:133:PHE:HE2	1.52	0.75
1:C:118:LEU:HD13	1:C:133:PHE:CE2	2.20	0.74
1:E:1053:PRO:O	1:E:1054:GLN:NE2	2.16	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:59:TYR:HB3	2:H:63:VAL:HG23	1.68	0.74
3:D:33:VAL:HG22	3:D:51:VAL:HG22	1.69	0.74
1:A:90:VAL:HG12	1:A:92:PHE:H	1.51	0.74
1:C:676:THR:OG1	1:C:690:GLN:NE2	2.21	0.74
1:E:326:ILE:HD11	1:E:533:LEU:HA	1.68	0.74
1:E:726:ILE:HG12	1:E:1061:VAL:HG22	1.69	0.74
3:G:79:GLN:NE2	3:G:81:GLU:OE1	2.21	0.74
3:L:33:VAL:HG22	3:L:51:VAL:HG22	1.69	0.74
1:A:326:ILE:HD11	1:A:533:LEU:HA	1.68	0.74
1:A:107:GLY:H	1:A:235:ILE:HG23	1.53	0.73
1:C:455:LEU:N	1:C:491:PRO:O	2.20	0.73
1:C:726:ILE:HG12	1:C:1061:VAL:HG22	1.69	0.73
3:L:79:GLN:NE2	3:L:81:GLU:OE1	2.21	0.73
1:C:118:LEU:HD13	1:C:133:PHE:HE2	1.52	0.73
1:E:107:GLY:H	1:E:235:ILE:HG23	1.53	0.73
1:C:107:GLY:H	1:C:235:ILE:HG23	1.53	0.72
3:G:33:VAL:HG22	3:G:51:VAL:HG22	1.69	0.72
1:A:726:ILE:HG12	1:A:1061:VAL:HG22	1.69	0.72
1:C:189:LEU:HB2	1:C:210:ILE:HD13	1.71	0.72
3:D:79:GLN:NE2	3:D:81:GLU:OE1	2.21	0.72
2:B:48:VAL:HG12	2:B:63:VAL:HG11	1.72	0.72
1:A:676:THR:OG1	1:A:690:GLN:NE2	2.21	0.71
1:E:676:THR:OG1	1:E:690:GLN:NE2	2.21	0.71
1:A:1106:GLN:HE21	1:A:1109:PHE:HB3	1.56	0.71
1:E:1106:GLN:HE21	1:E:1109:PHE:HB3	1.56	0.70
1:A:189:LEU:HB2	1:A:210:ILE:HD13	1.71	0.70
1:A:375:SER:N	1:A:435:ALA:O	2.24	0.70
1:E:189:LEU:HB2	1:E:210:ILE:HD13	1.71	0.70
2:F:48:VAL:HG12	2:F:63:VAL:HG11	1.72	0.70
1:E:455:LEU:N	1:E:491:PRO:O	2.20	0.70
1:C:375:SER:N	1:C:435:ALA:O	2.24	0.70
1:C:1106:GLN:HE21	1:C:1109:PHE:HB3	1.56	0.70
2:H:48:VAL:HG12	2:H:63:VAL:HG11	1.72	0.70
3:L:54:ARG:HD3	3:L:63:SER:HB3	1.74	0.69
1:E:375:SER:N	1:E:435:ALA:O	2.24	0.69
2:H:89:VAL:HG12	2:H:108:LEU:HA	1.74	0.69
1:C:393:THR:HG23	1:C:517:LEU:HD12	1.75	0.69
1:A:393:THR:HG23	1:A:517:LEU:HD12	1.74	0.69
2:F:89:VAL:HG12	2:F:108:LEU:HA	1.74	0.69
1:E:120:VAL:HG22	1:E:241:LEU:HD11	1.75	0.69
1:A:120:VAL:HG22	1:A:241:LEU:HD11	1.75	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:89:VAL:HG12	2:B:108:LEU:HA	1.74	0.68
3:G:54:ARG:HD3	3:G:63:SER:HB3	1.74	0.68
3:D:54:ARG:HD3	3:D:63:SER:HB3	1.74	0.68
1:C:120:VAL:HG22	1:C:241:LEU:HD11	1.75	0.68
1:E:393:THR:HG23	1:E:517:LEU:HD12	1.74	0.68
1:A:29:THR:HG22	1:A:30:ASN:H	1.59	0.67
1:A:357:ARG:NH1	1:A:394:ASN:OD1	2.28	0.67
1:C:91:TYR:OH	1:C:191:GLU:OE2	2.12	0.67
1:A:91:TYR:OH	1:A:191:GLU:OE2	2.12	0.67
1:E:335:LEU:HD12	1:E:362:VAL:HG23	1.76	0.67
1:C:357:ARG:NH1	1:C:394:ASN:OD1	2.28	0.66
1:E:29:THR:HG22	1:E:30:ASN:H	1.59	0.66
1:E:357:ARG:NH1	1:E:394:ASN:OD1	2.28	0.66
1:C:335:LEU:HD12	1:C:362:VAL:HG23	1.76	0.66
2:B:33:TYR:HB3	2:B:96:GLU:HB2	1.78	0.66
1:C:29:THR:HG22	1:C:30:ASN:H	1.59	0.66
1:A:335:LEU:HD12	1:A:362:VAL:HG23	1.76	0.65
1:A:339:GLY:HA2	4:J:1:NAG:H83	1.79	0.65
1:C:39:PRO:HG3	1:C:51:THR:HG21	1.79	0.65
1:C:731:MET:N	1:C:774:GLN:OE1	2.29	0.65
1:A:455:LEU:N	1:A:491:PRO:O	2.20	0.65
2:H:33:TYR:HB3	2:H:96:GLU:HB2	1.78	0.65
1:E:39:PRO:HG3	1:E:51:THR:HG21	1.79	0.65
1:E:91:TYR:OH	1:E:191:GLU:OE2	2.12	0.65
2:H:28:THR:OG1	2:H:32:ASN:ND2	2.30	0.65
1:A:448:ASN:H	1:A:497:PHE:N	1.95	0.65
1:E:339:GLY:HA2	4:U:1:NAG:H83	1.79	0.65
2:B:28:THR:OG1	2:B:32:ASN:ND2	2.30	0.65
2:F:28:THR:OG1	2:F:32:ASN:ND2	2.30	0.65
1:A:471:GLU:OE1	1:A:474:GLN:NE2	2.30	0.64
1:E:448:ASN:H	1:E:497:PHE:N	1.95	0.64
1:E:471:GLU:OE1	1:E:474:GLN:NE2	2.30	0.64
1:C:448:ASN:H	1:C:497:PHE:N	1.95	0.64
2:F:33:TYR:HB3	2:F:96:GLU:HB2	1.78	0.64
1:A:108:THR:OG1	1:A:234:ASN:O	2.16	0.64
1:C:108:THR:OG1	1:C:234:ASN:O	2.16	0.64
1:A:39:PRO:HG3	1:A:51:THR:HG21	1.79	0.64
1:C:339:GLY:HA2	4:P:1:NAG:H83	1.79	0.64
1:E:361:CYS:HB2	1:E:524:VAL:HG12	1.80	0.64
1:A:361:CYS:HB2	1:A:524:VAL:HG12	1.80	0.63
1:A:498:GLN:HG3	1:A:499:PRO:HD2	1.81	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:95:THR:HG22	1:A:186:PHE:HB3	1.80	0.63
1:A:1100:THR:OG1	1:A:1101:HIS:ND1	2.31	0.63
1:C:361:CYS:HB2	1:C:524:VAL:HG12	1.80	0.63
1:C:393:THR:OG1	1:C:516:GLU:O	2.15	0.63
1:C:498:GLN:HG3	1:C:499:PRO:HD2	1.81	0.63
1:E:376:THR:HG22	1:E:435:ALA:HB3	1.81	0.63
3:D:59:PRO:HG2	3:D:62:PHE:HE2	1.64	0.63
1:A:644:GLN:NE2	1:A:645:THR:O	2.32	0.63
1:A:127:VAL:HG12	1:A:171:VAL:HG22	1.81	0.63
1:C:127:VAL:HG12	1:C:171:VAL:HG22	1.81	0.63
1:C:471:GLU:OE1	1:C:474:GLN:NE2	2.30	0.63
3:L:59:PRO:HG2	3:L:62:PHE:HE2	1.64	0.63
1:C:95:THR:HG22	1:C:186:PHE:HB3	1.80	0.63
1:E:644:GLN:NE2	1:E:645:THR:O	2.32	0.63
1:E:95:THR:HG22	1:E:186:PHE:HB3	1.80	0.63
1:E:131:CYS:HB2	1:E:133:PHE:CE1	2.34	0.63
1:E:393:THR:OG1	1:E:516:GLU:O	2.15	0.63
1:E:498:GLN:HG3	1:E:499:PRO:HD2	1.81	0.63
1:C:376:THR:HG22	1:C:435:ALA:HB3	1.81	0.63
1:C:644:GLN:NE2	1:C:645:THR:O	2.32	0.62
1:E:731:MET:N	1:E:774:GLN:OE1	2.29	0.62
1:E:127:VAL:HG12	1:E:171:VAL:HG22	1.81	0.62
1:E:462:LYS:HB2	1:E:465:GLU:HB2	1.82	0.62
3:G:59:PRO:HG2	3:G:62:PHE:HE2	1.64	0.62
1:A:309:GLU:O	1:A:313:TYR:OH	2.16	0.62
1:C:1100:THR:OG1	1:C:1101:HIS:ND1	2.31	0.62
1:A:393:THR:HG21	1:A:518:LEU:H	1.65	0.62
1:C:131:CYS:HB2	1:C:133:PHE:CE1	2.34	0.62
1:E:108:THR:OG1	1:E:234:ASN:O	2.16	0.62
1:A:131:CYS:HB2	1:A:133:PHE:CE1	2.34	0.62
1:A:462:LYS:HB2	1:A:465:GLU:HB2	1.82	0.62
1:E:393:THR:HG21	1:E:518:LEU:H	1.65	0.62
1:A:376:THR:HG22	1:A:435:ALA:HB3	1.81	0.62
1:C:462:LYS:HB2	1:C:465:GLU:HB2	1.81	0.62
1:A:1088:HIS:CE1	1:A:1137:VAL:HG11	2.35	0.61
1:E:309:GLU:O	1:E:313:TYR:OH	2.16	0.61
1:C:309:GLU:O	1:C:313:TYR:OH	2.16	0.61
2:B:12:ILE:HG21	2:B:18:LEU:HD11	1.82	0.61
1:E:1088:HIS:CE1	1:E:1137:VAL:HG11	2.35	0.61
1:C:393:THR:HG21	1:C:518:LEU:H	1.65	0.61
1:C:644:GLN:NE2	1:C:648:GLY:O	2.34	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:555:SER:OG	1:E:556:ASN:N	2.34	0.61
1:E:644:GLN:NE2	1:E:648:GLY:O	2.34	0.61
1:A:656:VAL:HG12	1:A:658:ASN:H	1.66	0.61
1:C:1088:HIS:CE1	1:C:1137:VAL:HG11	2.35	0.61
3:L:103:LYS:HG3	3:L:105:THR:HG23	1.83	0.61
1:E:658:ASN:ND2	1:E:660:TYR:OH	2.33	0.61
1:C:656:VAL:HG12	1:C:658:ASN:H	1.66	0.60
2:H:12:ILE:HG21	2:H:18:LEU:HD11	1.82	0.60
1:C:555:SER:OG	1:C:556:ASN:N	2.34	0.60
1:E:457:ARG:O	2:F:53:SER:OG	2.14	0.60
1:E:37:TYR:OH	1:E:54:LEU:O	2.18	0.60
1:E:656:VAL:HG12	1:E:658:ASN:H	1.66	0.60
3:G:103:LYS:HG3	3:G:105:THR:HG23	1.83	0.60
1:A:644:GLN:NE2	1:A:648:GLY:O	2.34	0.59
2:F:12:ILE:HG21	2:F:18:LEU:HD11	1.82	0.59
1:A:658:ASN:ND2	1:A:660:TYR:OH	2.33	0.59
1:A:393:THR:OG1	1:A:516:GLU:O	2.15	0.59
1:A:555:SER:OG	1:A:556:ASN:N	2.34	0.59
3:D:103:LYS:HG3	3:D:105:THR:HG23	1.83	0.59
1:A:731:MET:N	1:A:774:GLN:OE1	2.29	0.59
3:G:21:ILE:HD12	3:G:73:LEU:HD22	1.85	0.59
3:L:21:ILE:HG23	3:L:102:THR:HG21	1.84	0.59
1:C:658:ASN:ND2	1:C:660:TYR:OH	2.33	0.59
2:H:38:ARG:NH2	2:H:86:ASP:OD2	2.35	0.59
3:G:21:ILE:HG23	3:G:102:THR:HG21	1.84	0.59
1:E:502:GLY:O	1:E:506:GLN:HG3	2.03	0.59
1:E:1100:THR:OG1	1:E:1101:HIS:ND1	2.31	0.59
2:F:38:ARG:NH2	2:F:86:ASP:OD2	2.35	0.59
3:L:35:TRP:HB2	3:L:48:ILE:H	1.68	0.59
2:B:38:ARG:NH2	2:B:86:ASP:OD2	2.35	0.59
3:G:35:TRP:HB2	3:G:48:ILE:H	1.68	0.59
1:A:357:ARG:HB2	1:A:396:TYR:HE1	1.68	0.59
1:C:357:ARG:HB2	1:C:396:TYR:HE1	1.68	0.59
2:F:82:MET:HG3	2:F:82(C):LEU:HD11	1.84	0.59
3:L:21:ILE:HD12	3:L:73:LEU:HD22	1.85	0.59
1:E:1100:THR:HG1	1:E:1101:HIS:CE1	2.21	0.58
1:E:1125:ASN:ND2	1:E:1127:ASP:OD2	2.36	0.58
3:D:21:ILE:HG23	3:D:102:THR:HG21	1.85	0.58
1:E:357:ARG:HB2	1:E:396:TYR:HE1	1.68	0.58
3:L:4:LEU:HD22	3:L:88:CYS:HB3	1.84	0.58
1:C:804:GLN:OE1	1:C:935:GLN:NE2	2.24	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:35:TRP:HB2	3:D:48:ILE:H	1.68	0.58
1:C:410:ILE:HG23	1:C:425:LEU:HD11	1.86	0.58
1:A:502:GLY:O	1:A:506:GLN:HG3	2.03	0.58
1:A:1125:ASN:ND2	1:A:1127:ASP:OD2	2.36	0.58
2:B:82:MET:HG3	2:B:82(C):LEU:HD11	1.84	0.58
3:G:4:LEU:HD22	3:G:88:CYS:HB3	1.84	0.58
1:A:410:ILE:HG23	1:A:425:LEU:HD11	1.86	0.58
1:C:502:GLY:O	1:C:506:GLN:HG3	2.03	0.58
2:H:82:MET:HG3	2:H:82(C):LEU:HD11	1.84	0.58
1:C:36:VAL:HG11	1:C:220:PHE:CZ	2.39	0.58
1:E:1077:THR:OG1	1:E:1078:ALA:N	2.37	0.58
3:D:4:LEU:HD22	3:D:88:CYS:HB3	1.84	0.58
3:G:32:TYR:HE1	3:G:49:TYR:HB2	1.69	0.58
1:A:36:VAL:HG11	1:A:220:PHE:CZ	2.39	0.58
1:C:1125:ASN:ND2	1:C:1127:ASP:OD2	2.36	0.58
3:D:21:ILE:HD12	3:D:73:LEU:HD22	1.85	0.57
1:C:414:GLN:O	1:C:424:LYS:NZ	2.37	0.57
3:G:86:TYR:HB2	3:G:102:THR:HB	1.87	0.57
1:E:36:VAL:HG11	1:E:220:PHE:CZ	2.39	0.57
1:E:81:ASN:N	1:E:265:TYR:OH	2.36	0.57
1:A:414:GLN:O	1:A:424:LYS:NZ	2.37	0.57
1:C:1039:ARG:NH2	1:E:1031:GLU:OE2	2.36	0.57
1:E:410:ILE:HG23	1:E:425:LEU:HD11	1.86	0.57
1:A:1031:GLU:OE2	1:E:1039:ARG:NH2	2.37	0.57
3:D:86:TYR:HB2	3:D:102:THR:HB	1.87	0.57
3:L:32:TYR:HE1	3:L:49:TYR:HB2	1.69	0.57
1:C:793:PRO:O	1:C:795:LYS:NZ	2.38	0.57
3:D:32:TYR:HE1	3:D:49:TYR:HB2	1.69	0.57
2:F:72:ASP:OD2	2:F:73:ASN:N	2.37	0.57
1:A:1039:ARG:NH2	1:C:1031:GLU:OE2	2.37	0.56
1:E:444:LYS:O	1:E:499:PRO:HD3	2.05	0.56
3:L:86:TYR:HB2	3:L:102:THR:HB	1.87	0.56
1:A:294:ASP:OD1	1:A:294:ASP:N	2.37	0.56
1:A:977:LEU:HD11	1:A:993:ILE:HG12	1.87	0.56
1:C:1077:THR:OG1	1:C:1078:ALA:N	2.37	0.56
1:E:804:GLN:OE1	1:E:935:GLN:NE2	2.24	0.56
1:A:1077:THR:OG1	1:A:1078:ALA:N	2.37	0.56
1:C:977:LEU:HD11	1:C:993:ILE:HG12	1.87	0.56
1:C:444:LYS:O	1:C:499:PRO:HD3	2.05	0.56
1:C:518:LEU:HD22	1:C:520:ALA:HB2	1.88	0.56
1:C:784:GLN:NE2	1:C:1030:SER:OG	2.39	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:70:SER:HG	2:F:79:TYR:HD2	1.53	0.56
1:A:784:GLN:NE2	1:A:1030:SER:OG	2.39	0.56
2:B:70:SER:HG	2:B:79:TYR:HD2	1.53	0.56
2:B:72:ASP:OD2	2:B:73:ASN:N	2.37	0.56
1:A:326:ILE:HG22	1:A:541:PHE:HA	1.88	0.56
1:E:518:LEU:HD22	1:E:520:ALA:HB2	1.88	0.56
2:H:72:ASP:OD2	2:H:73:ASN:N	2.37	0.56
1:E:414:GLN:O	1:E:424:LYS:NZ	2.37	0.56
1:E:493:GLN:OE1	1:E:494:SER:N	2.39	0.56
2:H:2:VAL:HA	2:H:26:GLY:HA3	1.87	0.56
2:H:70:SER:HG	2:H:79:TYR:HD2	1.53	0.56
1:C:326:ILE:HG22	1:C:541:PHE:HA	1.88	0.56
1:E:294:ASP:OD1	1:E:294:ASP:N	2.37	0.56
1:E:977:LEU:HD11	1:E:993:ILE:HG12	1.87	0.56
1:A:518:LEU:HD22	1:A:520:ALA:HB2	1.87	0.55
1:E:326:ILE:HG22	1:E:541:PHE:HA	1.88	0.55
2:B:2:VAL:HA	2:B:26:GLY:HA3	1.87	0.55
2:F:2:VAL:HA	2:F:26:GLY:HA3	1.87	0.55
1:A:793:PRO:O	1:A:795:LYS:NZ	2.38	0.55
1:E:401:VAL:HG22	1:E:509:ARG:HG2	1.88	0.55
1:A:351:TYR:CE1	1:A:452:LEU:HB2	2.42	0.55
1:A:444:LYS:O	1:A:499:PRO:HD3	2.05	0.55
1:C:294:ASP:OD1	1:C:294:ASP:N	2.37	0.55
1:C:493:GLN:OE1	1:C:494:SER:N	2.39	0.55
1:E:1091:ARG:NH1	1:E:1118:ASP:O	2.40	0.55
1:A:277:LEU:HD22	1:A:285:ILE:HD13	1.88	0.55
1:E:351:TYR:CE1	1:E:452:LEU:HB2	2.42	0.55
1:E:793:PRO:O	1:E:795:LYS:NZ	2.38	0.55
1:C:1100:THR:HG1	1:C:1101:HIS:CE1	2.24	0.55
1:E:733:LYS:NZ	1:E:775:ASP:OD2	2.35	0.55
1:A:1091:ARG:NH1	1:A:1118:ASP:O	2.39	0.55
1:C:401:VAL:HG22	1:C:509:ARG:HG2	1.88	0.55
2:H:39:GLN:HB2	2:H:45:LEU:HD13	1.88	0.55
1:C:351:TYR:CE1	1:C:452:LEU:HB2	2.42	0.55
2:B:39:GLN:HB2	2:B:45:LEU:HD13	1.88	0.55
1:A:401:VAL:HG22	1:A:509:ARG:HG2	1.88	0.55
1:A:493:GLN:OE1	1:A:494:SER:N	2.39	0.55
1:C:1028:LYS:O	1:C:1032:CYS:CB	2.55	0.55
1:A:81:ASN:N	1:A:265:TYR:OH	2.36	0.55
1:A:357:ARG:NH2	1:A:396:TYR:OH	2.40	0.54
1:A:804:GLN:OE1	1:A:935:GLN:NE2	2.24	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:731:MET:HG2	1:C:955:ASN:HD21	1.72	0.54
1:E:731:MET:HG2	1:E:955:ASN:HD21	1.72	0.54
1:C:81:ASN:N	1:C:265:TYR:OH	2.36	0.54
1:C:1091:ARG:NH1	1:C:1118:ASP:O	2.39	0.54
1:A:1028:LYS:O	1:A:1032:CYS:CB	2.55	0.54
2:H:82:MET:SD	2:H:90:TYR:OH	2.59	0.54
1:C:357:ARG:NH2	1:C:396:TYR:OH	2.40	0.54
1:E:277:LEU:HD22	1:E:285:ILE:HD13	1.88	0.54
3:G:19:VAL:HG12	3:G:78:LEU:HD11	1.89	0.54
1:C:277:LEU:HD22	1:C:285:ILE:HD13	1.88	0.54
1:E:1028:LYS:O	1:E:1032:CYS:CB	2.55	0.54
2:F:39:GLN:HB2	2:F:45:LEU:HD13	1.88	0.54
3:G:50:GLU:O	3:G:53:LYS:N	2.21	0.54
1:A:731:MET:HG2	1:A:955:ASN:HD21	1.71	0.54
3:G:91:TYR:HE1	3:G:95(A):ASN:HA	1.73	0.54
1:E:357:ARG:NH2	1:E:396:TYR:OH	2.40	0.54
1:A:457:ARG:O	2:B:53:SER:OG	2.14	0.54
3:D:19:VAL:HG12	3:D:78:LEU:HD11	1.89	0.54
1:E:350:VAL:HG12	1:E:422:ASN:HB3	1.90	0.53
1:C:37:TYR:OH	1:C:54:LEU:O	2.18	0.53
1:C:353:TRP:NE1	1:C:466:ARG:HA	2.20	0.53
1:E:784:GLN:NE2	1:E:1030:SER:OG	2.39	0.53
1:E:326:ILE:HD12	1:E:534:VAL:HG22	1.91	0.53
3:L:2:SER:OG	3:L:3:ALA:N	2.41	0.53
1:A:350:VAL:HG12	1:A:422:ASN:HB3	1.90	0.53
1:C:1032:CYS:O	1:C:1051:SER:OG	2.26	0.53
1:E:1100:THR:HG1	1:E:1101:HIS:HD1	1.51	0.53
1:C:1100:THR:HG1	1:C:1101:HIS:HD1	1.52	0.53
3:D:2:SER:OG	3:D:3:ALA:N	2.41	0.53
3:L:19:VAL:HG12	3:L:78:LEU:HD11	1.89	0.53
3:D:91:TYR:HE1	3:D:95(A):ASN:HA	1.73	0.52
3:L:91:TYR:HE1	3:L:95(A):ASN:HA	1.73	0.52
1:A:917:TYR:HB3	1:E:1129:VAL:HG23	1.91	0.52
1:A:1129:VAL:HG23	1:C:917:TYR:HB3	1.92	0.52
1:C:277:LEU:HD13	1:C:285:ILE:HD11	1.92	0.52
1:C:326:ILE:HD12	1:C:534:VAL:HG22	1.91	0.52
1:A:90:VAL:HG12	1:A:92:PHE:N	2.23	0.52
1:A:398:ASP:HB2	1:A:512:VAL:HG12	1.91	0.52
1:C:544:ASN:OD1	1:C:545:GLY:N	2.43	0.52
1:E:544:ASN:OD1	1:E:545:GLY:N	2.43	0.52
1:A:99:ASN:OD1	1:A:190:ARG:NH2	2.43	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:350:VAL:HG12	1:C:422:ASN:HB3	1.90	0.52
1:C:916:LEU:HD12	1:C:923:ILE:HD12	1.92	0.52
1:E:103:GLY:H	1:E:241:LEU:HB2	1.74	0.52
1:E:619:GLU:N	1:E:619:GLU:OE1	2.43	0.52
1:A:326:ILE:HD12	1:A:534:VAL:HG22	1.91	0.52
1:C:90:VAL:HG12	1:C:92:PHE:N	2.23	0.52
1:C:398:ASP:HB2	1:C:512:VAL:HG12	1.91	0.52
1:C:619:GLU:N	1:C:619:GLU:OE1	2.43	0.52
1:E:99:ASN:OD1	1:E:190:ARG:NH2	2.43	0.52
1:A:277:LEU:HD13	1:A:285:ILE:HD11	1.92	0.52
1:A:544:ASN:OD1	1:A:545:GLY:N	2.43	0.52
1:C:1129:VAL:HG23	1:E:917:TYR:HB3	1.92	0.52
1:E:277:LEU:HD13	1:E:285:ILE:HD11	1.92	0.52
1:E:398:ASP:HB2	1:E:512:VAL:HG12	1.91	0.52
2:B:36:TRP:HE1	2:B:78:LEU:HG	1.75	0.52
2:F:37:VAL:HG22	2:F:45:LEU:HD12	1.92	0.52
1:A:619:GLU:OE1	1:A:619:GLU:N	2.43	0.52
2:F:36:TRP:HE1	2:F:78:LEU:HG	1.75	0.52
1:A:103:GLY:H	1:A:241:LEU:HB2	1.74	0.52
1:A:377:PHE:CD1	1:A:434:ILE:HD12	2.46	0.51
1:A:916:LEU:HD12	1:A:923:ILE:HD12	1.92	0.51
1:A:1028:LYS:O	1:A:1032:CYS:HB3	2.10	0.51
1:E:1032:CYS:O	1:E:1051:SER:OG	2.26	0.51
3:D:50:GLU:O	3:D:53:LYS:N	2.21	0.51
1:C:99:ASN:OD1	1:C:190:ARG:NH2	2.43	0.51
1:C:204:TYR:CE2	1:C:225:PRO:HB3	2.46	0.51
1:A:426:PRO:HB3	1:A:463:PRO:HB3	1.93	0.51
1:E:377:PHE:CD1	1:E:434:ILE:HD12	2.46	0.51
1:E:1097:SER:HB2	1:E:1102:TRP:CD2	2.46	0.51
1:E:1028:LYS:O	1:E:1032:CYS:HB3	2.10	0.51
1:A:446:GLY:N	1:A:498:GLN:OE1	2.40	0.51
1:C:1097:SER:HB2	1:C:1102:TRP:CD2	2.46	0.51
1:E:204:TYR:CE2	1:E:225:PRO:HB3	2.46	0.51
2:B:37:VAL:HG22	2:B:45:LEU:HD12	1.92	0.51
2:H:36:TRP:HE1	2:H:78:LEU:HG	1.75	0.51
1:C:103:GLY:H	1:C:241:LEU:HB2	1.74	0.51
1:C:1028:LYS:O	1:C:1032:CYS:HB3	2.10	0.51
3:L:50:GLU:O	3:L:53:LYS:N	2.21	0.51
1:A:353:TRP:NE1	1:A:466:ARG:HA	2.20	0.51
1:C:426:PRO:HB3	1:C:463:PRO:HB3	1.93	0.51
1:A:1097:SER:HB2	1:A:1102:TRP:CD2	2.46	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:411:ALA:HB3	1:E:414:GLN:HG3	1.93	0.51
1:C:501:ASN:HB3	1:C:505:TYR:HB2	1.94	0.50
1:E:90:VAL:HG12	1:E:92:PHE:N	2.23	0.50
1:E:916:LEU:HD12	1:E:923:ILE:HD12	1.92	0.50
2:F:82:MET:SD	2:F:90:TYR:OH	2.59	0.50
2:H:37:VAL:HG22	2:H:45:LEU:HD12	1.92	0.50
3:D:5:THR:N	3:D:24:THR:O	2.44	0.50
1:A:411:ALA:HB3	1:A:414:GLN:HG3	1.93	0.50
1:A:204:TYR:CE2	1:A:225:PRO:HB3	2.46	0.50
1:E:426:PRO:HB3	1:E:463:PRO:HB3	1.93	0.50
2:F:87:THR:HA	2:F:111:VAL:H	1.76	0.50
1:C:377:PHE:CD1	1:C:434:ILE:HD12	2.46	0.50
1:E:216:LEU:HD12	1:E:217:PRO:HD2	1.94	0.50
2:B:87:THR:HA	2:B:111:VAL:H	1.76	0.50
2:F:20:LEU:O	2:F:79:TYR:HA	2.11	0.50
2:H:20:LEU:O	2:H:79:TYR:HA	2.11	0.50
3:G:5:THR:N	3:G:24:THR:O	2.44	0.50
1:A:1080:ALA:O	1:A:1132:ILE:HG13	2.12	0.50
1:C:216:LEU:HD12	1:C:217:PRO:HD2	1.94	0.50
1:C:411:ALA:HB3	1:C:414:GLN:HG3	1.93	0.50
2:H:87:THR:HA	2:H:111:VAL:H	1.76	0.50
1:A:216:LEU:HD12	1:A:217:PRO:HD2	1.94	0.50
1:A:501:ASN:HB3	1:A:505:TYR:HB2	1.94	0.50
1:E:65:PHE:CE1	1:E:84:LEU:HD21	2.47	0.50
1:A:811:LYS:HB2	1:A:813:SER:O	2.12	0.50
1:C:65:PHE:CE1	1:C:84:LEU:HD21	2.47	0.50
3:L:5:THR:N	3:L:24:THR:O	2.44	0.50
3:D:35:TRP:HB2	3:D:48:ILE:N	2.27	0.50
3:G:2:SER:OG	3:G:3:ALA:N	2.41	0.50
1:C:811:LYS:HB2	1:C:813:SER:O	2.12	0.50
1:E:353:TRP:NE1	1:E:466:ARG:HA	2.20	0.50
1:C:104:TRP:HB3	1:C:106:PHE:HE1	1.77	0.49
1:E:104:TRP:HB3	1:E:106:PHE:HE1	1.77	0.49
1:E:811:LYS:HB2	1:E:813:SER:O	2.12	0.49
1:E:1080:ALA:O	1:E:1132:ILE:HG13	2.12	0.49
1:E:501:ASN:HB3	1:E:505:TYR:HB2	1.94	0.49
2:B:20:LEU:O	2:B:79:TYR:HA	2.11	0.49
1:A:65:PHE:CE1	1:A:84:LEU:HD21	2.47	0.49
1:A:1032:CYS:O	1:A:1051:SER:OG	2.26	0.49
1:C:342:PHE:HE1	1:C:434:ILE:HG21	1.78	0.49
1:C:722:VAL:HG22	1:C:1065:VAL:HG22	1.94	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:1080:ALA:O	1:C:1132:ILE:HG13	2.12	0.49
1:A:433:VAL:C	1:A:434:ILE:HD13	2.33	0.49
3:D:91:TYR:CE1	3:D:95(A):ASN:HA	2.48	0.49
3:L:35:TRP:HB2	3:L:48:ILE:N	2.27	0.49
1:E:91:TYR:CG	1:E:91:TYR:O	2.66	0.48
1:E:532:ASN:OD1	1:E:533:LEU:N	2.46	0.48
1:A:342:PHE:HE1	1:A:434:ILE:HG21	1.78	0.48
1:C:91:TYR:CG	1:C:91:TYR:O	2.66	0.48
1:E:433:VAL:C	1:E:434:ILE:HD13	2.33	0.48
1:A:367:VAL:O	1:A:371:SER:OG	2.32	0.48
1:E:367:VAL:O	1:E:371:SER:OG	2.32	0.48
1:A:104:TRP:HB3	1:A:106:PHE:HE1	1.77	0.48
1:A:703:ASN:ND2	1:C:787:GLN:OE1	2.42	0.48
3:L:91:TYR:CE1	3:L:95(A):ASN:HA	2.48	0.48
1:C:433:VAL:C	1:C:434:ILE:HD13	2.33	0.48
2:H:93:ALA:HB1	2:H:100(B):TYR:CG	2.49	0.48
1:A:498:GLN:HB3	1:A:501:ASN:ND2	2.29	0.48
1:A:722:VAL:HG22	1:A:1065:VAL:HG22	1.94	0.48
1:E:342:PHE:HE1	1:E:434:ILE:HG21	1.78	0.48
3:G:48:ILE:HG22	3:G:51:VAL:HA	1.96	0.48
3:L:48:ILE:HG22	3:L:51:VAL:HA	1.96	0.48
1:C:532:ASN:OD1	1:C:533:LEU:N	2.46	0.48
3:G:35:TRP:HB2	3:G:48:ILE:N	2.27	0.48
1:E:722:VAL:HG22	1:E:1065:VAL:HG22	1.94	0.47
1:E:458:LYS:HA	2:F:53:SER:HB2	1.96	0.47
2:B:93:ALA:HB1	2:B:100(B):TYR:CG	2.49	0.47
3:D:48:ILE:HG22	3:D:51:VAL:HA	1.96	0.47
3:G:79:GLN:CD	3:G:81:GLU:HB3	2.35	0.47
1:A:84:LEU:HD22	1:A:267:VAL:HG21	1.96	0.47
1:E:84:LEU:HD22	1:E:267:VAL:HG21	1.96	0.47
3:D:5:THR:O	3:D:24:THR:OG1	2.29	0.47
1:A:650:LEU:HD12	1:A:650:LEU:HA	1.72	0.47
1:A:472:ILE:HD12	1:A:472:ILE:H	1.80	0.47
1:C:106:PHE:HB2	1:C:117:LEU:HB3	1.97	0.47
1:C:1094:VAL:HB	1:E:904:TYR:OH	2.15	0.47
1:A:1094:VAL:HB	1:C:904:TYR:OH	2.15	0.47
1:C:472:ILE:H	1:C:472:ILE:HD12	1.80	0.47
2:F:93:ALA:HB1	2:F:100(B):TYR:CG	2.49	0.47
3:G:91:TYR:CE1	3:G:95(A):ASN:HA	2.48	0.47
1:A:906:PHE:HE1	1:A:1049:LEU:HD11	1.80	0.47
1:C:367:VAL:O	1:C:371:SER:OG	2.32	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:816:SER:OG	1:C:817:PHE:N	2.48	0.47
1:E:130:VAL:HG23	1:E:168:PHE:HB3	1.97	0.47
1:A:904:TYR:OH	1:E:1094:VAL:HB	2.15	0.47
1:C:498:GLN:HB3	1:C:501:ASN:ND2	2.29	0.47
1:E:906:PHE:HE1	1:E:1049:LEU:HD11	1.80	0.47
3:L:79:GLN:CD	3:L:81:GLU:HB3	2.35	0.47
1:A:475:ALA:HB3	1:A:487:ASN:O	2.15	0.46
1:A:816:SER:OG	1:A:817:PHE:N	2.48	0.46
1:C:906:PHE:HE1	1:C:1049:LEU:HD11	1.80	0.46
1:E:498:GLN:HB3	1:E:501:ASN:ND2	2.29	0.46
1:C:110:LEU:O	1:C:135:PHE:HD1	1.99	0.46
1:C:475:ALA:HB3	1:C:487:ASN:O	2.15	0.46
1:E:476:GLY:HA2	1:E:487:ASN:HD22	1.80	0.46
1:A:110:LEU:O	1:A:135:PHE:HD1	1.99	0.46
1:C:84:LEU:HD22	1:C:267:VAL:HG21	1.96	0.46
1:C:880:GLY:O	1:C:884:SER:OG	2.29	0.46
1:A:532:ASN:OD1	1:A:533:LEU:N	2.46	0.46
1:A:787:GLN:OE1	1:E:703:ASN:ND2	2.42	0.46
1:C:517:LEU:HD12	1:C:517:LEU:HA	1.81	0.46
1:A:106:PHE:HB2	1:A:117:LEU:HB3	1.97	0.46
3:D:79:GLN:CD	3:D:81:GLU:HB3	2.35	0.46
3:L:42:LYS:HB3	3:L:42:LYS:HE3	1.64	0.46
1:A:130:VAL:HG23	1:A:168:PHE:HB3	1.97	0.46
1:A:131:CYS:O	1:A:133:PHE:N	2.49	0.46
1:E:110:LEU:O	1:E:135:PHE:HD1	1.99	0.46
1:E:395:VAL:HG12	1:E:515:PHE:HD1	1.81	0.46
2:H:70:SER:HB3	2:H:79:TYR:HB2	1.98	0.46
3:G:23:CYS:HB2	3:G:35:TRP:CZ2	2.51	0.46
1:A:91:TYR:CG	1:A:91:TYR:O	2.66	0.46
1:A:331:ASN:HD22	4:I:1:NAG:C7	2.27	0.46
1:A:476:GLY:HA2	1:A:487:ASN:HD22	1.81	0.46
1:A:558:LYS:HA	1:A:558:LYS:HD3	1.64	0.46
1:C:242:LEU:HA	1:C:242:LEU:HD23	1.79	0.46
1:E:914:ASN:ND2	1:E:1111:GLU:OE2	2.48	0.46
1:C:130:VAL:HG23	1:C:168:PHE:HB3	1.97	0.46
1:C:476:GLY:HA2	1:C:487:ASN:HD22	1.80	0.46
1:E:475:ALA:HB3	1:E:487:ASN:O	2.15	0.46
2:B:39:GLN:NE2	2:B:43:LYS:O	2.47	0.46
1:C:966:LEU:HD23	1:C:966:LEU:HA	1.77	0.46
1:E:127:VAL:HG23	1:E:127:VAL:O	2.16	0.46
2:B:82(C):LEU:HD23	2:B:111:VAL:HG13	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:L:23:CYS:HB2	3:L:35:TRP:CZ2	2.51	0.46
3:L:26:THR:O	3:L:27(C):VAL:HG22	2.16	0.46
1:C:126:VAL:HG23	1:C:126:VAL:O	2.16	0.46
1:C:127:VAL:O	1:C:127:VAL:HG23	2.16	0.46
1:C:558:LYS:HA	1:C:558:LYS:HD3	1.64	0.46
1:E:131:CYS:O	1:E:133:PHE:N	2.49	0.46
2:F:36:TRP:HB3	2:F:80:LEU:HD22	1.98	0.46
2:F:70:SER:HB3	2:F:79:TYR:HB2	1.98	0.46
2:F:82(C):LEU:HD23	2:F:111:VAL:HG13	1.98	0.46
3:D:37:GLN:HB2	3:D:86:TYR:CE2	2.51	0.46
3:G:37:GLN:HB2	3:G:86:TYR:CE2	2.51	0.46
1:C:131:CYS:O	1:C:133:PHE:N	2.49	0.45
2:B:37:VAL:HG21	2:B:45:LEU:HB3	1.97	0.45
2:F:59:TYR:HD2	2:F:64:LYS:HD3	1.81	0.45
3:G:30:TYR:HE2	3:G:33:VAL:HG12	1.81	0.45
1:C:62:VAL:HB	1:C:266:TYR:HB3	1.98	0.45
1:C:104:TRP:HB3	1:C:106:PHE:CE1	2.51	0.45
1:C:395:VAL:HG12	1:C:515:PHE:HD1	1.81	0.45
1:C:733:LYS:HE3	1:C:771:ALA:O	2.17	0.45
1:E:126:VAL:HG23	1:E:126:VAL:O	2.16	0.45
1:A:905:ARG:HD2	1:A:1049:LEU:O	2.17	0.45
1:C:697:MET:HG3	1:E:869:MET:HE3	1.99	0.45
1:E:446:GLY:N	1:E:498:GLN:OE1	2.40	0.45
1:E:733:LYS:HE3	1:E:771:ALA:O	2.17	0.45
1:E:943:SER:O	1:E:943:SER:OG	2.34	0.45
2:B:70:SER:HB3	2:B:79:TYR:HB2	1.98	0.45
2:F:37:VAL:HG21	2:F:45:LEU:HB3	1.97	0.45
2:H:37:VAL:HG21	2:H:45:LEU:HB3	1.97	0.45
1:E:106:PHE:HB2	1:E:117:LEU:HB3	1.97	0.45
2:B:59:TYR:HD2	2:B:64:LYS:HD3	1.81	0.45
1:A:127:VAL:HG23	1:A:127:VAL:O	2.16	0.45
1:C:457:ARG:HD2	1:C:457:ARG:HA	1.81	0.45
1:C:905:ARG:HD2	1:C:1049:LEU:O	2.17	0.45
1:E:331:ASN:HD22	4:T:1:NAG:C7	2.27	0.45
1:A:104:TRP:HB3	1:A:106:PHE:CE1	2.51	0.45
1:A:398:ASP:HB2	1:A:512:VAL:CG1	2.47	0.45
1:A:461:LEU:HB3	1:A:465:GLU:HB3	1.99	0.45
1:E:472:ILE:HD12	1:E:472:ILE:H	1.80	0.45
1:E:905:ARG:HD2	1:E:1049:LEU:O	2.17	0.45
2:H:36:TRP:HB3	2:H:80:LEU:HD22	1.98	0.45
2:H:68:THR:O	2:H:81:GLN:N	2.36	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:L:37:GLN:HB2	3:L:86:TYR:CE2	2.51	0.45
1:C:878:LEU:HD13	1:C:1052:PHE:HB3	1.99	0.45
1:E:977:LEU:HD12	1:E:977:LEU:HA	1.76	0.45
2:H:82(C):LEU:HD23	2:H:111:VAL:HG13	1.98	0.45
1:E:1012:LEU:HD23	1:E:1012:LEU:HA	1.80	0.45
2:B:36:TRP:HB3	2:B:80:LEU:HD22	1.98	0.45
3:D:23:CYS:HB2	3:D:35:TRP:CZ2	2.51	0.45
3:G:26:THR:O	3:G:27(C):VAL:HG22	2.16	0.45
3:L:30:TYR:HE2	3:L:33:VAL:HG12	1.81	0.45
1:A:395:VAL:HG12	1:A:515:PHE:HD1	1.81	0.45
1:A:878:LEU:HD13	1:A:1052:PHE:HB3	1.99	0.45
1:E:816:SER:OG	1:E:817:PHE:N	2.48	0.45
2:B:43:LYS:HD2	2:B:44:GLY:H	1.82	0.45
3:D:30:TYR:HE2	3:D:33:VAL:HG12	1.81	0.45
1:A:981:LEU:HD23	1:A:981:LEU:HA	1.75	0.45
1:E:895:GLN:OE1	1:E:895:GLN:N	2.44	0.45
2:F:39:GLN:NE2	2:F:43:LYS:O	2.47	0.45
2:H:90:TYR:HB2	2:H:107:THR:HG23	1.99	0.45
3:D:26:THR:O	3:D:27(C):VAL:HG22	2.16	0.45
3:L:53:LYS:HE2	3:L:53:LYS:HB3	1.66	0.45
1:A:62:VAL:HB	1:A:266:TYR:HB3	1.98	0.44
1:A:767:LEU:HA	1:A:767:LEU:HD23	1.77	0.44
1:E:44:ARG:HB3	1:E:47:VAL:CG1	2.48	0.44
1:E:104:TRP:HB3	1:E:106:PHE:CE1	2.51	0.44
1:E:190:ARG:HB3	1:E:192:PHE:HE1	1.82	0.44
2:F:43:LYS:HD2	2:F:44:GLY:H	1.82	0.44
2:H:59:TYR:HD2	2:H:64:LYS:HD3	1.81	0.44
3:G:53:LYS:HB3	3:G:53:LYS:HE2	1.66	0.44
1:A:126:VAL:HG23	1:A:126:VAL:O	2.16	0.44
1:C:707:TYR:HB3	1:E:792:PRO:HG3	1.99	0.44
1:C:959:LEU:HD23	1:C:959:LEU:HA	1.74	0.44
1:E:62:VAL:HB	1:E:266:TYR:HB3	1.98	0.44
1:E:555:SER:HB2	1:E:586:ASP:CG	2.38	0.44
1:E:901:GLN:HE21	1:E:905:ARG:HE	1.66	0.44
1:A:914:ASN:ND2	1:A:1111:GLU:OE2	2.48	0.44
1:A:977:LEU:HD12	1:A:977:LEU:HA	1.76	0.44
1:C:398:ASP:HB2	1:C:512:VAL:CG1	2.47	0.44
1:C:457:ARG:O	2:H:53:SER:OG	2.24	0.44
1:E:336:CYS:HB2	1:E:361:CYS:HB3	1.94	0.44
2:B:51:ILE:HD13	2:B:71:ARG:HE	1.83	0.44
1:A:383:SER:HB3	1:A:386:LYS:HE2	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:611:LEU:HD12	1:A:650:LEU:HD13	2.00	0.44
1:C:806:LEU:HA	1:C:806:LEU:HD23	1.78	0.44
1:C:914:ASN:ND2	1:C:1111:GLU:OE2	2.48	0.44
1:E:196:ASN:HA	1:E:200:TYR:O	2.18	0.44
1:E:461:LEU:HB3	1:E:465:GLU:HB3	1.99	0.44
1:E:1049:LEU:HD23	1:E:1049:LEU:HA	1.71	0.44
1:C:190:ARG:HB3	1:C:192:PHE:HE1	1.82	0.44
1:E:611:LEU:HD12	1:E:650:LEU:HD13	2.00	0.44
1:E:878:LEU:HD13	1:E:1052:PHE:HB3	1.99	0.44
1:A:190:ARG:HB3	1:A:192:PHE:HE1	1.82	0.44
1:C:331:ASN:HD22	4:O:1:NAG:C7	2.27	0.44
1:C:446:GLY:N	1:C:498:GLN:OE1	2.40	0.44
1:C:901:GLN:HE21	1:C:905:ARG:HE	1.66	0.44
2:F:24:ALA:HB2	2:F:29:VAL:HG13	1.99	0.44
1:C:44:ARG:HB3	1:C:47:VAL:CG1	2.47	0.44
1:C:186:PHE:CZ	1:C:263:ALA:HA	2.53	0.44
1:C:329:PHE:CE2	1:C:544:ASN:HA	2.53	0.44
1:C:938:LEU:HD23	1:C:938:LEU:HA	1.82	0.44
1:A:555:SER:HB2	1:A:586:ASP:CG	2.38	0.44
1:A:733:LYS:HE3	1:A:771:ALA:O	2.17	0.44
1:A:901:GLN:HE21	1:A:905:ARG:HE	1.66	0.44
1:C:555:SER:HB2	1:C:586:ASP:CG	2.38	0.44
1:E:276:LEU:O	1:E:288:ALA:HA	2.18	0.44
1:E:581:THR:O	1:E:583:GLU:N	2.47	0.44
1:E:242:LEU:HD23	1:E:242:LEU:HA	1.79	0.44
2:H:43:LYS:HD2	2:H:44:GLY:H	1.82	0.44
1:A:351:TYR:HE1	1:A:452:LEU:HB2	1.83	0.43
1:A:707:TYR:HB3	1:C:792:PRO:HG3	2.00	0.43
1:A:1100:THR:HG1	1:A:1101:HIS:CE1	2.30	0.43
1:C:767:LEU:HA	1:C:767:LEU:HD23	1.77	0.43
1:C:970:PHE:CD2	1:C:999:GLY:HA3	2.52	0.43
2:B:24:ALA:HB2	2:B:29:VAL:HG13	1.99	0.43
2:B:28:THR:HA	2:B:75:LYS:HG2	2.00	0.43
1:A:733:LYS:NZ	1:A:775:ASP:OD2	2.35	0.43
1:A:792:PRO:HG3	1:E:707:TYR:HB3	2.00	0.43
1:C:196:ASN:HA	1:C:200:TYR:O	2.18	0.43
1:C:383:SER:HB3	1:C:386:LYS:HE2	1.99	0.43
1:E:398:ASP:HB2	1:E:512:VAL:CG1	2.47	0.43
2:F:51:ILE:HD13	2:F:71:ARG:HE	1.83	0.43
1:A:44:ARG:HB3	1:A:47:VAL:CG1	2.48	0.43
1:A:276:LEU:O	1:A:288:ALA:HA	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:461:LEU:HB3	1:C:465:GLU:HB3	1.99	0.43
1:E:383:SER:HB3	1:E:386:LYS:HE2	1.99	0.43
2:H:24:ALA:HB2	2:H:29:VAL:HG13	1.99	0.43
1:A:186:PHE:CZ	1:A:263:ALA:HA	2.53	0.43
1:A:329:PHE:CE2	1:A:544:ASN:HA	2.53	0.43
1:A:970:PHE:CD2	1:A:999:GLY:HA3	2.53	0.43
1:C:703:ASN:ND2	1:E:787:GLN:OE1	2.43	0.43
1:E:378:LYS:HD3	1:E:380:TYR:OH	2.19	0.43
2:F:28:THR:HA	2:F:75:LYS:HG2	2.00	0.43
1:C:364:ASP:O	1:C:367:VAL:HG12	2.19	0.43
2:F:90:TYR:HB2	2:F:107:THR:HG23	1.99	0.43
1:C:546:LEU:HD22	1:C:565:PHE:CE1	2.54	0.43
1:C:1140:PRO:O	1:C:1143:PRO:HD2	2.19	0.43
1:E:186:PHE:CZ	1:E:263:ALA:HA	2.53	0.43
2:B:90:TYR:HB2	2:B:107:THR:HG23	1.99	0.43
3:G:27(B):ASP:HB2	3:G:30:TYR:HE1	1.84	0.43
1:A:880:GLY:O	1:A:884:SER:OG	2.29	0.43
1:C:378:LYS:HD3	1:C:380:TYR:OH	2.19	0.43
1:E:329:PHE:CE2	1:E:544:ASN:HA	2.53	0.43
1:E:970:PHE:CD2	1:E:999:GLY:HA3	2.53	0.43
3:L:27(B):ASP:HB2	3:L:30:TYR:HE1	1.84	0.43
1:A:996:LEU:HD23	1:A:996:LEU:HA	1.82	0.43
1:A:1086:LYS:HB3	1:A:1086:LYS:HE2	1.79	0.43
1:C:663:ASP:HB3	1:C:673:SER:HB2	2.01	0.43
1:E:546:LEU:HD22	1:E:565:PHE:CE1	2.54	0.43
2:H:28:THR:HA	2:H:75:LYS:HG2	2.01	0.43
2:H:51:ILE:HB	2:H:69:ILE:HD13	2.00	0.43
1:A:364:ASP:O	1:A:367:VAL:HG12	2.19	0.43
1:C:411:ALA:HB1	1:C:412:PRO:HD2	2.01	0.43
1:C:611:LEU:HD12	1:C:650:LEU:HD13	2.00	0.43
2:B:30:SER:OG	2:B:73:ASN:O	2.32	0.43
2:H:51:ILE:HD13	2:H:71:ARG:HE	1.83	0.43
6:N:1:NAG:H61	6:N:2:NAG:C7	2.49	0.43
1:A:378:LYS:HD3	1:A:380:TYR:OH	2.19	0.43
1:A:581:THR:O	1:A:583:GLU:N	2.47	0.43
1:A:865:LEU:HD23	1:A:865:LEU:HA	1.73	0.43
1:C:368:LEU:HD12	1:C:369:TYR:N	2.34	0.43
1:E:31:SER:HB3	1:E:62:VAL:HG13	2.01	0.43
2:F:72:ASP:HB3	2:F:76:ASN:HB3	2.01	0.43
1:A:196:ASN:HA	1:A:200:TYR:O	2.18	0.42
1:A:411:ALA:HB1	1:A:412:PRO:HD2	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:167:THR:HG22	1:E:167:THR:O	2.19	0.42
1:A:228:ASP:OD1	1:A:229:LEU:N	2.52	0.42
1:A:1055:SER:OG	1:A:1056:ALA:N	2.52	0.42
1:A:1140:PRO:O	1:A:1143:PRO:HD2	2.19	0.42
1:C:109:THR:OG1	1:C:114:THR:HB	2.19	0.42
1:C:993:ILE:O	1:C:996:LEU:N	2.52	0.42
1:E:335:LEU:HD12	1:E:335:LEU:HA	1.81	0.42
1:E:368:LEU:HD12	1:E:369:TYR:N	2.34	0.42
2:H:87:THR:O	2:H:87:THR:HG23	2.19	0.42
1:A:242:LEU:HD23	1:A:242:LEU:HA	1.79	0.42
1:C:822:LEU:HA	1:C:822:LEU:HD23	1.81	0.42
1:C:977:LEU:HA	1:C:977:LEU:HD12	1.77	0.42
2:B:22:CYS:HB2	2:B:36:TRP:CH2	2.54	0.42
2:F:51:ILE:HB	2:F:69:ILE:HD13	2.00	0.42
2:H:39:GLN:NE2	2:H:43:LYS:O	2.47	0.42
3:D:53:LYS:HE2	3:D:53:LYS:HB3	1.66	0.42
1:A:993:ILE:O	1:A:996:LEU:N	2.52	0.42
1:C:581:THR:O	1:C:583:GLU:N	2.47	0.42
1:C:1018:ILE:HD13	1:C:1018:ILE:HA	1.83	0.42
1:E:993:ILE:O	1:E:996:LEU:N	2.52	0.42
2:B:72:ASP:HB3	2:B:76:ASN:HB3	2.01	0.42
2:B:87:THR:HG23	2:B:87:THR:O	2.19	0.42
2:H:40:ALA:HA	2:H:88:ALA:HA	2.01	0.42
3:D:27(B):ASP:HB2	3:D:30:TYR:HE1	1.84	0.42
3:G:35:TRP:HB3	3:G:47:MET:HB2	2.02	0.42
1:A:109:THR:OG1	1:A:114:THR:HB	2.19	0.42
1:A:663:ASP:HB3	1:A:673:SER:HB2	2.01	0.42
1:C:276:LEU:O	1:C:288:ALA:HA	2.18	0.42
1:C:555:SER:HB3	1:C:584:ILE:O	2.20	0.42
1:E:1055:SER:OG	1:E:1056:ALA:N	2.52	0.42
2:F:22:CYS:HB2	2:F:36:TRP:CH2	2.55	0.42
2:F:40:ALA:HA	2:F:88:ALA:HA	2.01	0.42
1:A:310:LYS:HE2	1:A:310:LYS:HB3	1.84	0.42
1:A:546:LEU:HD22	1:A:565:PHE:CE1	2.54	0.42
1:A:1012:LEU:HD23	1:A:1012:LEU:HA	1.81	0.42
1:A:1028:LYS:HE2	1:A:1028:LYS:HB2	1.88	0.42
1:C:167:THR:O	1:C:167:THR:HG22	2.19	0.42
1:E:555:SER:HB3	1:E:584:ILE:O	2.20	0.42
2:B:51:ILE:HB	2:B:69:ILE:HD13	2.00	0.42
1:C:228:ASP:OD1	1:C:229:LEU:N	2.52	0.42
1:C:752:LEU:HD23	1:C:752:LEU:HA	1.90	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:663:ASP:HB3	1:E:673:SER:HB2	2.01	0.42
3:D:35:TRP:HB3	3:D:47:MET:HB2	2.02	0.42
3:L:35:TRP:HB3	3:L:47:MET:HB2	2.02	0.42
6:X:1:NAG:H61	6:X:2:NAG:C7	2.49	0.42
1:A:743:CYS:HB3	1:A:749:CYS:HB3	1.91	0.42
1:C:351:TYR:HE1	1:C:452:LEU:HB2	1.83	0.42
1:E:650:LEU:HA	1:E:650:LEU:HD12	1.72	0.42
1:E:1140:PRO:O	1:E:1143:PRO:HD2	2.19	0.42
2:F:68:THR:O	2:F:81:GLN:N	2.37	0.42
2:H:22:CYS:HB2	2:H:36:TRP:CH2	2.54	0.42
1:A:31:SER:HB3	1:A:62:VAL:HG13	2.01	0.42
1:A:341:VAL:HG13	1:A:342:PHE:CD2	2.55	0.42
1:A:555:SER:HB3	1:A:584:ILE:O	2.20	0.42
1:C:1028:LYS:HB2	1:C:1028:LYS:HE2	1.87	0.42
1:E:40:ASP:N	1:E:40:ASP:OD1	2.53	0.42
1:E:228:ASP:OD1	1:E:229:LEU:N	2.52	0.42
1:E:966:LEU:HD23	1:E:966:LEU:HA	1.77	0.42
1:A:40:ASP:OD1	1:A:40:ASP:N	2.53	0.42
1:A:368:LEU:HD12	1:A:369:TYR:N	2.34	0.42
1:A:559:PHE:HB2	1:A:577:ARG:HH21	1.85	0.42
1:E:364:ASP:O	1:E:367:VAL:HG12	2.19	0.42
2:H:72:ASP:HB3	2:H:76:ASN:HB3	2.01	0.42
1:A:439:ASN:O	1:A:443:SER:HB2	2.20	0.41
1:C:644:GLN:HE21	1:C:645:THR:N	2.18	0.41
1:E:29:THR:HG22	1:E:30:ASN:N	2.33	0.41
1:E:880:GLY:O	1:E:884:SER:OG	2.29	0.41
2:F:87:THR:HG23	2:F:87:THR:O	2.19	0.41
1:A:167:THR:O	1:A:167:THR:HG22	2.19	0.41
1:A:307:THR:HG1	1:A:602:THR:HG1	1.66	0.41
1:A:517:LEU:HD12	1:A:517:LEU:HA	1.81	0.41
1:C:1055:SER:OG	1:C:1056:ALA:N	2.52	0.41
1:E:341:VAL:HG13	1:E:342:PHE:CD2	2.55	0.41
1:E:411:ALA:HB1	1:E:412:PRO:HD2	2.01	0.41
1:E:822:LEU:HA	1:E:822:LEU:HD23	1.81	0.41
1:E:938:LEU:HD23	1:E:938:LEU:HA	1.82	0.41
1:A:644:GLN:HE21	1:A:645:THR:N	2.18	0.41
1:A:869:MET:HE3	1:E:697:MET:HG3	2.02	0.41
1:C:981:LEU:HA	1:C:981:LEU:HD23	1.75	0.41
1:C:743:CYS:HB3	1:C:749:CYS:HB3	1.91	0.41
1:C:906:PHE:O	1:C:908:GLY:N	2.54	0.41
1:E:517:LEU:HD12	1:E:517:LEU:HA	1.81	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:G:26:THR:OG1	3:G:27(A):SER:HB3	2.21	0.41
6:S:1:NAG:H61	6:S:2:NAG:C7	2.49	0.41
1:A:959:LEU:HD23	1:A:959:LEU:HA	1.74	0.41
1:A:973:ILE:HG13	1:A:992:GLN:OE1	2.20	0.41
1:A:1049:LEU:HD23	1:A:1049:LEU:HA	1.71	0.41
1:C:439:ASN:O	1:C:443:SER:HB2	2.21	0.41
1:C:943:SER:O	1:C:943:SER:OG	2.34	0.41
1:E:546:LEU:H	1:E:546:LEU:HD23	1.86	0.41
2:B:40:ALA:HA	2:B:88:ALA:HA	2.01	0.41
2:H:35:SER:OG	2:H:50:VAL:HG12	2.21	0.41
1:C:546:LEU:HD23	1:C:546:LEU:H	1.86	0.41
1:C:1141:LEU:HD12	1:C:1141:LEU:HA	1.88	0.41
1:E:109:THR:OG1	1:E:114:THR:HB	2.19	0.41
2:F:35:SER:OG	2:F:50:VAL:HG12	2.21	0.41
3:D:42:LYS:HB3	3:D:42:LYS:HE3	1.64	0.41
1:A:1138:TYR:CG	1:A:1139:ASP:N	2.89	0.41
1:C:31:SER:HB3	1:C:62:VAL:HG13	2.01	0.41
1:C:934:ILE:HD13	1:C:934:ILE:HA	1.83	0.41
3:D:26:THR:OG1	3:D:27(A):SER:HB3	2.20	0.41
3:L:47:MET:O	3:L:55:PRO:HD2	2.21	0.41
1:A:335:LEU:HD12	1:A:335:LEU:HA	1.81	0.41
1:A:458:LYS:HA	2:B:53:SER:HB2	2.03	0.41
1:C:40:ASP:N	1:C:40:ASP:OD1	2.53	0.41
1:C:322:PRO:HA	1:C:538:CYS:O	2.21	0.41
1:C:822:LEU:HD22	1:C:945:LEU:HD21	2.03	0.41
1:E:322:PRO:HA	1:E:538:CYS:O	2.21	0.41
1:E:538:CYS:HB2	1:E:590:CYS:HB2	2.02	0.41
1:A:101:ILE:HA	1:A:242:LEU:HD23	2.03	0.41
1:A:546:LEU:HD23	1:A:546:LEU:H	1.86	0.41
1:A:822:LEU:HD22	1:A:945:LEU:HD21	2.03	0.41
1:A:966:LEU:HA	1:A:966:LEU:HD23	1.77	0.41
1:A:1004:LEU:HA	1:A:1004:LEU:HD12	1.82	0.41
1:C:101:ILE:HG13	1:C:242:LEU:HD21	2.03	0.41
1:E:101:ILE:HD12	1:E:101:ILE:H	1.86	0.41
2:B:11:LEU:HD13	2:B:110:THR:OG1	2.21	0.41
2:H:11:LEU:HD13	2:H:110:THR:OG1	2.21	0.41
3:D:50:GLU:HB3	3:D:53:LYS:HE2	2.03	0.41
3:G:54:ARG:HD2	3:G:62:PHE:HB2	2.03	0.41
3:G:83:GLU:HA	3:G:104:LEU:HD22	2.03	0.41
3:L:54:ARG:HD2	3:L:62:PHE:HB2	2.03	0.41
3:L:83:GLU:HA	3:L:104:LEU:HD22	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:341:VAL:HG13	1:C:342:PHE:CD2	2.55	0.41
1:E:439:ASN:O	1:E:443:SER:HB2	2.20	0.41
2:H:108:LEU:O	2:H:108:LEU:HG	2.21	0.41
3:G:50:GLU:HB3	3:G:53:LYS:HE2	2.03	0.41
1:C:825:LYS:HA	1:C:825:LYS:HD3	1.75	0.40
1:C:1004:LEU:HD12	1:C:1004:LEU:HA	1.82	0.40
1:E:644:GLN:HE21	1:E:645:THR:N	2.18	0.40
2:B:24:ALA:HB3	2:B:75:LYS:O	2.21	0.40
2:B:33:TYR:HE1	2:B:52:TYR:CD2	2.39	0.40
2:F:24:ALA:HB3	2:F:75:LYS:O	2.21	0.40
3:L:26:THR:OG1	3:L:27(A):SER:HB3	2.21	0.40
1:A:906:PHE:O	1:A:908:GLY:N	2.54	0.40
1:A:1100:THR:HG1	1:A:1101:HIS:CG	2.35	0.40
1:C:1083:HIS:CB	1:C:1137:VAL:HG12	2.52	0.40
1:E:1086:LYS:HE2	1:E:1086:LYS:HB3	1.79	0.40
1:E:1138:TYR:CG	1:E:1139:ASP:N	2.89	0.40
2:B:37:VAL:CG2	2:B:45:LEU:HB3	2.52	0.40
2:B:90:TYR:HB2	2:B:107:THR:CG2	2.51	0.40
3:D:54:ARG:HD2	3:D:62:PHE:HB2	2.03	0.40
3:G:47:MET:O	3:G:55:PRO:HD2	2.21	0.40
1:A:216:LEU:HD12	1:A:217:PRO:CD	2.51	0.40
1:A:806:LEU:HA	1:A:806:LEU:HD23	1.78	0.40
1:C:101:ILE:HA	1:C:242:LEU:HD23	2.03	0.40
1:C:216:LEU:HD12	1:C:217:PRO:CD	2.52	0.40
1:C:559:PHE:HB2	1:C:577:ARG:HH21	1.85	0.40
1:C:906:PHE:CD2	1:C:916:LEU:HB2	2.57	0.40
1:C:1138:TYR:CG	1:C:1139:ASP:N	2.89	0.40
1:E:168:PHE:CD2	1:E:169:GLU:N	2.90	0.40
1:E:558:LYS:HD3	1:E:558:LYS:HA	1.64	0.40
1:E:559:PHE:HB2	1:E:577:ARG:HH21	1.85	0.40
1:E:743:CYS:HB3	1:E:749:CYS:HB3	1.91	0.40
1:E:1083:HIS:CB	1:E:1137:VAL:HG12	2.52	0.40
2:B:82:MET:SD	2:B:90:TYR:OH	2.59	0.40
2:F:90:TYR:HB2	2:F:107:THR:CG2	2.51	0.40
1:A:101:ILE:HG13	1:A:242:LEU:HD21	2.02	0.40
1:E:416:GLY:O	1:E:420:ASP:N	2.49	0.40
1:E:973:ILE:HG13	1:E:992:GLN:OE1	2.20	0.40
1:E:1141:LEU:HA	1:E:1141:LEU:HD12	1.88	0.40
2:B:19:ARG:HG2	2:B:81:GLN:NE2	2.37	0.40
3:G:50:GLU:O	3:G:52:SER:N	2.55	0.40
3:L:50:GLU:O	3:L:52:SER:N	2.55	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:457:ARG:HD2	1:A:457:ARG:HA	1.81	0.40
1:A:1137:VAL:HG13	1:A:1137:VAL:O	2.22	0.40
1:C:168:PHE:CD2	1:C:169:GLU:N	2.90	0.40
1:C:973:ILE:HG13	1:C:992:GLN:OE1	2.20	0.40
1:E:906:PHE:O	1:E:908:GLY:N	2.54	0.40
2:F:11:LEU:HD13	2:F:110:THR:OG1	2.21	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	962/1259 (76%)	867 (90%)	95 (10%)	0	100	100
1	C	962/1259 (76%)	867 (90%)	95 (10%)	0	100	100
1	E	962/1259 (76%)	866 (90%)	96 (10%)	0	100	100
2	B	114/230 (50%)	104 (91%)	10 (9%)	0	100	100
2	F	114/230 (50%)	104 (91%)	10 (9%)	0	100	100
2	H	114/230 (50%)	104 (91%)	10 (9%)	0	100	100
3	D	109/217 (50%)	93 (85%)	16 (15%)	0	100	100
3	G	109/217 (50%)	93 (85%)	16 (15%)	0	100	100
3	L	109/217 (50%)	93 (85%)	16 (15%)	0	100	100
All	All	3555/5118 (70%)	3191 (90%)	364 (10%)	0	100	100

There are no Ramachandran outliers to report.

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	830/1096 (76%)	828 (100%)	2 (0%)	92	96
1	C	830/1096 (76%)	828 (100%)	2 (0%)	92	96
1	E	830/1096 (76%)	828 (100%)	2 (0%)	92	96
2	B	94/194 (48%)	88 (94%)	6 (6%)	14	40
2	F	94/194 (48%)	88 (94%)	6 (6%)	14	40
2	H	94/194 (48%)	88 (94%)	6 (6%)	14	40
3	D	90/182 (50%)	84 (93%)	6 (7%)	13	39
3	G	90/182 (50%)	84 (93%)	6 (7%)	13	39
3	L	90/182 (50%)	84 (93%)	6 (7%)	13	39
All	All	3042/4416 (69%)	3000 (99%)	42 (1%)	62	77

All (42) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	427	ASP
1	A	738	CYS
1	C	427	ASP
1	C	738	CYS
1	E	427	ASP
1	E	738	CYS
2	B	37	VAL
2	B	68	THR
2	B	85	GLU
2	B	94	ARG
2	B	108	LEU
2	B	110	THR
2	F	37	VAL
2	F	68	THR
2	F	85	GLU
2	F	94	ARG
2	F	108	LEU
2	F	110	THR

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Mol	Chain	Res	Type
2	H	37	VAL
2	H	68	THR
2	H	85	GLU
2	H	94	ARG
2	H	108	LEU
2	H	110	THR
3	D	9	SER
3	D	26	THR
3	D	27(A)	SER
3	D	31	LYS
3	D	78	LEU
3	D	106	VAL
3	G	9	SER
3	G	26	THR
3	G	27(A)	SER
3	G	31	LYS
3	G	78	LEU
3	G	106	VAL
3	L	9	SER
3	L	26	THR
3	L	27(A)	SER
3	L	31	LYS
3	L	78	LEU
3	L	106	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (29) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	317	ASN
1	A	487	ASN
1	A	644	GLN
1	A	658	ASN
1	A	690	GLN
1	A	901	GLN
1	A	1106	GLN
1	C	317	ASN
1	C	388	ASN
1	C	487	ASN
1	C	644	GLN
1	C	658	ASN
1	C	690	GLN
1	C	901	GLN

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Mol	Chain	Res	Type
1	C	1106	GLN
1	E	317	ASN
1	E	487	ASN
1	E	644	GLN
1	E	658	ASN
1	E	690	GLN
1	E	751	ASN
1	E	901	GLN
1	E	1106	GLN
2	B	32	ASN
2	F	32	ASN
2	H	32	ASN
3	D	39	HIS
3	G	39	HIS
3	L	39	HIS

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

36 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
4	NAG	I	1	1,4	14,14,15	0.43	0	17,19,21	0.45	0
4	NAG	I	2	4	14,14,15	0.75	1 (7%)	17,19,21	0.84	0
4	NAG	J	1	1,4	14,14,15	0.41	0	17,19,21	0.57	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
4	NAG	J	2	4	14,14,15	0.27	0	17,19,21	0.47	0
5	NAG	K	1	1,5	14,14,15	0.59	1 (7%)	17,19,21	0.59	0
5	NAG	K	2	5	14,14,15	0.31	0	17,19,21	0.42	0
5	BMA	K	3	5	11,11,12	0.62	0	15,15,17	0.73	0
4	NAG	M	1	1,4	14,14,15	0.62	1 (7%)	17,19,21	0.59	0
4	NAG	M	2	4	14,14,15	0.21	0	17,19,21	0.52	0
6	NAG	N	1	1,6	14,14,15	0.42	0	17,19,21	0.45	0
6	NAG	N	2	6	14,14,15	0.29	0	17,19,21	0.50	0
6	FUC	N	3	6	10,10,11	0.76	1 (10%)	14,14,16	0.52	0
4	NAG	O	1	1,4	14,14,15	0.43	0	17,19,21	0.45	0
4	NAG	O	2	4	14,14,15	0.76	1 (7%)	17,19,21	0.85	0
4	NAG	P	1	1,4	14,14,15	0.42	0	17,19,21	0.57	0
4	NAG	P	2	4	14,14,15	0.26	0	17,19,21	0.47	0
5	NAG	Q	1	1,5	14,14,15	0.59	1 (7%)	17,19,21	0.59	0
5	NAG	Q	2	5	14,14,15	0.31	0	17,19,21	0.42	0
5	BMA	Q	3	5	11,11,12	0.62	0	15,15,17	0.74	0
4	NAG	R	1	1,4	14,14,15	0.63	1 (7%)	17,19,21	0.59	0
4	NAG	R	2	4	14,14,15	0.22	0	17,19,21	0.52	0
6	NAG	S	1	1,6	14,14,15	0.43	0	17,19,21	0.45	0
6	NAG	S	2	6	14,14,15	0.29	0	17,19,21	0.51	0
6	FUC	S	3	6	10,10,11	0.76	1 (10%)	14,14,16	0.52	0
4	NAG	T	1	1,4	14,14,15	0.43	0	17,19,21	0.45	0
4	NAG	T	2	4	14,14,15	0.74	1 (7%)	17,19,21	0.85	0
4	NAG	U	1	1,4	14,14,15	0.40	0	17,19,21	0.57	0
4	NAG	U	2	4	14,14,15	0.26	0	17,19,21	0.46	0
5	NAG	V	1	1,5	14,14,15	0.60	1 (7%)	17,19,21	0.59	0
5	NAG	V	2	5	14,14,15	0.31	0	17,19,21	0.42	0
5	BMA	V	3	5	11,11,12	0.62	0	15,15,17	0.73	0
4	NAG	W	1	1,4	14,14,15	0.63	1 (7%)	17,19,21	0.59	0
4	NAG	W	2	4	14,14,15	0.22	0	17,19,21	0.52	0
6	NAG	X	1	1,6	14,14,15	0.42	0	17,19,21	0.45	0
6	NAG	X	2	6	14,14,15	0.30	0	17,19,21	0.50	0
6	FUC	X	3	6	10,10,11	0.76	1 (10%)	14,14,16	0.52	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
4	NAG	I	1	1,4	-	1/6/23/26	0/1/1/1
4	NAG	I	2	4	-	3/6/23/26	0/1/1/1
4	NAG	J	1	1,4	-	3/6/23/26	0/1/1/1
4	NAG	J	2	4	-	2/6/23/26	0/1/1/1
5	NAG	K	1	1,5	-	2/6/23/26	0/1/1/1
5	NAG	K	2	5	-	0/6/23/26	0/1/1/1
5	BMA	K	3	5	-	1/2/19/22	0/1/1/1
4	NAG	M	1	1,4	-	2/6/23/26	0/1/1/1
4	NAG	M	2	4	-	2/6/23/26	0/1/1/1
6	NAG	N	1	1,6	-	2/6/23/26	0/1/1/1
6	NAG	N	2	6	-	4/6/23/26	0/1/1/1
6	FUC	N	3	6	-	-	0/1/1/1
4	NAG	O	1	1,4	-	1/6/23/26	0/1/1/1
4	NAG	O	2	4	-	3/6/23/26	0/1/1/1
4	NAG	P	1	1,4	-	3/6/23/26	0/1/1/1
4	NAG	P	2	4	-	2/6/23/26	0/1/1/1
5	NAG	Q	1	1,5	-	2/6/23/26	0/1/1/1
5	NAG	Q	2	5	-	0/6/23/26	0/1/1/1
5	BMA	Q	3	5	-	1/2/19/22	0/1/1/1
4	NAG	R	1	1,4	-	2/6/23/26	0/1/1/1
4	NAG	R	2	4	-	2/6/23/26	0/1/1/1
6	NAG	S	1	1,6	-	2/6/23/26	0/1/1/1
6	NAG	S	2	6	-	4/6/23/26	0/1/1/1
6	FUC	S	3	6	-	-	0/1/1/1
4	NAG	T	1	1,4	-	1/6/23/26	0/1/1/1
4	NAG	T	2	4	-	3/6/23/26	0/1/1/1
4	NAG	U	1	1,4	-	3/6/23/26	0/1/1/1
4	NAG	U	2	4	-	2/6/23/26	0/1/1/1
5	NAG	V	1	1,5	-	2/6/23/26	0/1/1/1
5	NAG	V	2	5	-	0/6/23/26	0/1/1/1
5	BMA	V	3	5	-	1/2/19/22	0/1/1/1
4	NAG	W	1	1,4	-	2/6/23/26	0/1/1/1
4	NAG	W	2	4	-	2/6/23/26	0/1/1/1
6	NAG	X	1	1,6	-	2/6/23/26	0/1/1/1
6	NAG	X	2	6	-	4/6/23/26	0/1/1/1
6	FUC	X	3	6	-	-	0/1/1/1

All (12) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	O	2	NAG	O5-C1	-2.63	1.39	1.43
4	I	2	NAG	O5-C1	-2.60	1.39	1.43
4	T	2	NAG	O5-C1	-2.56	1.39	1.43
4	R	1	NAG	O5-C1	-2.14	1.40	1.43
4	W	1	NAG	O5-C1	-2.13	1.40	1.43
4	M	1	NAG	O5-C1	-2.11	1.40	1.43
6	N	3	FUC	O5-C1	-2.08	1.40	1.43
6	X	3	FUC	O5-C1	-2.08	1.40	1.43
5	V	1	NAG	O5-C1	-2.08	1.40	1.43
6	S	3	FUC	O5-C1	-2.08	1.40	1.43
5	Q	1	NAG	O5-C1	-2.07	1.40	1.43
5	K	1	NAG	O5-C1	-2.06	1.40	1.43

There are no bond angle outliers.

There are no chirality outliers.

All (66) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	I	2	NAG	C1-C2-N2-C7
4	O	2	NAG	C1-C2-N2-C7
4	T	2	NAG	C1-C2-N2-C7
4	J	2	NAG	C4-C5-C6-O6
4	P	2	NAG	C4-C5-C6-O6
4	U	2	NAG	C4-C5-C6-O6
4	J	2	NAG	O5-C5-C6-O6
4	P	2	NAG	O5-C5-C6-O6
4	U	2	NAG	O5-C5-C6-O6
4	I	2	NAG	O5-C5-C6-O6
4	O	2	NAG	O5-C5-C6-O6
4	T	2	NAG	O5-C5-C6-O6
6	N	1	NAG	O5-C5-C6-O6
6	S	1	NAG	O5-C5-C6-O6
6	X	1	NAG	O5-C5-C6-O6
6	N	1	NAG	C4-C5-C6-O6
6	S	1	NAG	C4-C5-C6-O6
6	X	1	NAG	C4-C5-C6-O6
4	I	2	NAG	C4-C5-C6-O6
4	O	2	NAG	C4-C5-C6-O6
4	T	2	NAG	C4-C5-C6-O6
5	K	1	NAG	O5-C5-C6-O6
5	Q	1	NAG	O5-C5-C6-O6
5	V	1	NAG	O5-C5-C6-O6

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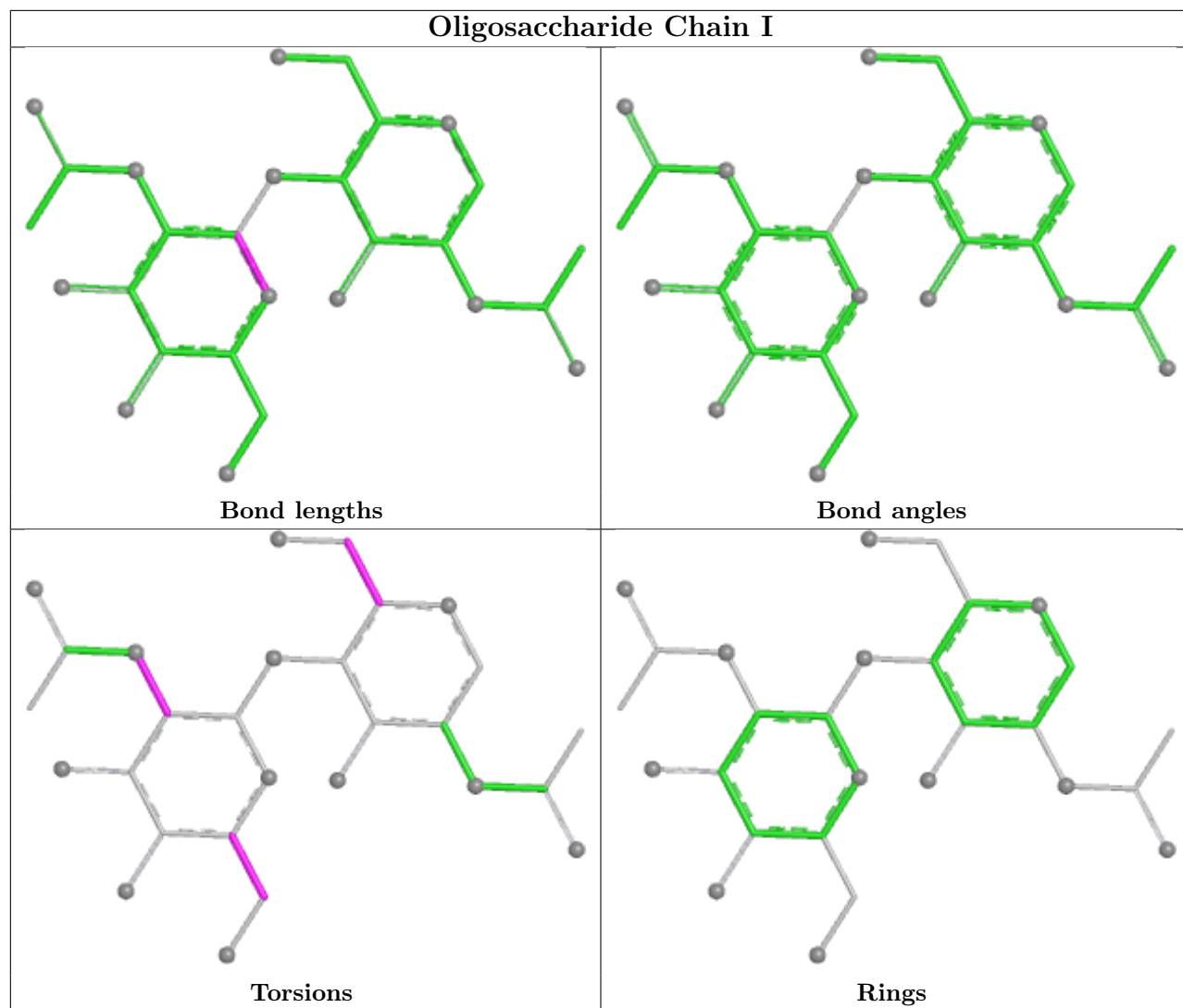
Mol	Chain	Res	Type	Atoms
5	K	3	BMA	O5-C5-C6-O6
5	Q	3	BMA	O5-C5-C6-O6
5	V	3	BMA	O5-C5-C6-O6
4	J	1	NAG	O5-C5-C6-O6
4	P	1	NAG	O5-C5-C6-O6
4	U	1	NAG	O5-C5-C6-O6
6	N	2	NAG	C4-C5-C6-O6
6	X	2	NAG	C4-C5-C6-O6
6	S	2	NAG	C4-C5-C6-O6
4	I	1	NAG	O5-C5-C6-O6
4	O	1	NAG	O5-C5-C6-O6
4	T	1	NAG	O5-C5-C6-O6
4	M	2	NAG	C4-C5-C6-O6
4	R	2	NAG	C4-C5-C6-O6
4	W	2	NAG	C4-C5-C6-O6
4	M	1	NAG	C1-C2-N2-C7
4	R	1	NAG	C1-C2-N2-C7
4	W	1	NAG	C1-C2-N2-C7
6	N	2	NAG	C1-C2-N2-C7
6	S	2	NAG	C1-C2-N2-C7
6	X	2	NAG	C1-C2-N2-C7
5	K	1	NAG	C4-C5-C6-O6
5	Q	1	NAG	C4-C5-C6-O6
5	V	1	NAG	C4-C5-C6-O6
4	M	2	NAG	O5-C5-C6-O6
4	R	2	NAG	O5-C5-C6-O6
4	W	2	NAG	O5-C5-C6-O6
4	J	1	NAG	C3-C2-N2-C7
4	M	1	NAG	C3-C2-N2-C7
4	P	1	NAG	C3-C2-N2-C7
4	R	1	NAG	C3-C2-N2-C7
4	U	1	NAG	C3-C2-N2-C7
4	W	1	NAG	C3-C2-N2-C7
6	N	2	NAG	C3-C2-N2-C7
6	S	2	NAG	C3-C2-N2-C7
6	X	2	NAG	C3-C2-N2-C7
6	N	2	NAG	O5-C5-C6-O6
6	S	2	NAG	O5-C5-C6-O6
6	X	2	NAG	O5-C5-C6-O6
4	J	1	NAG	C1-C2-N2-C7
4	P	1	NAG	C1-C2-N2-C7
4	U	1	NAG	C1-C2-N2-C7

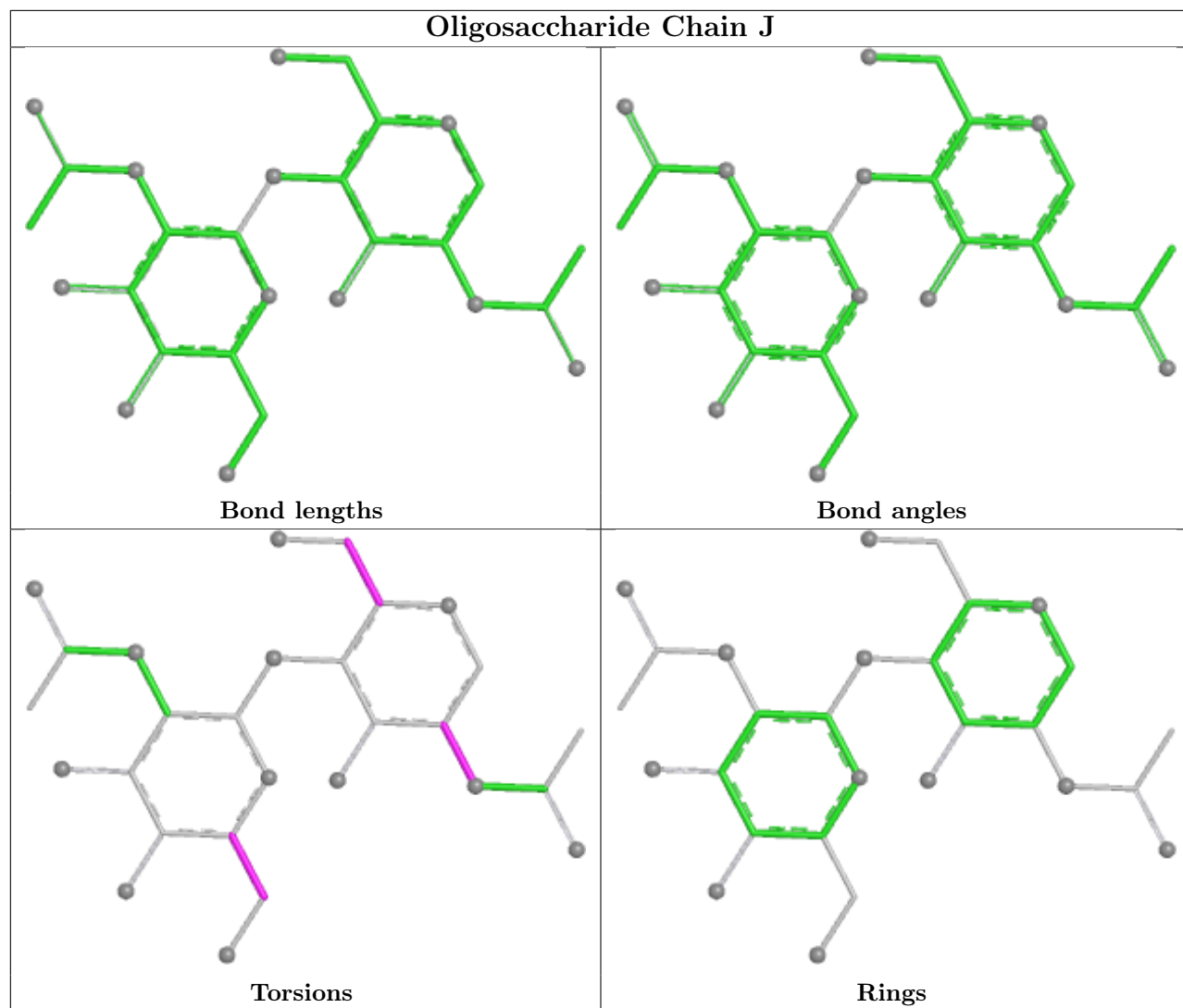
There are no ring outliers.

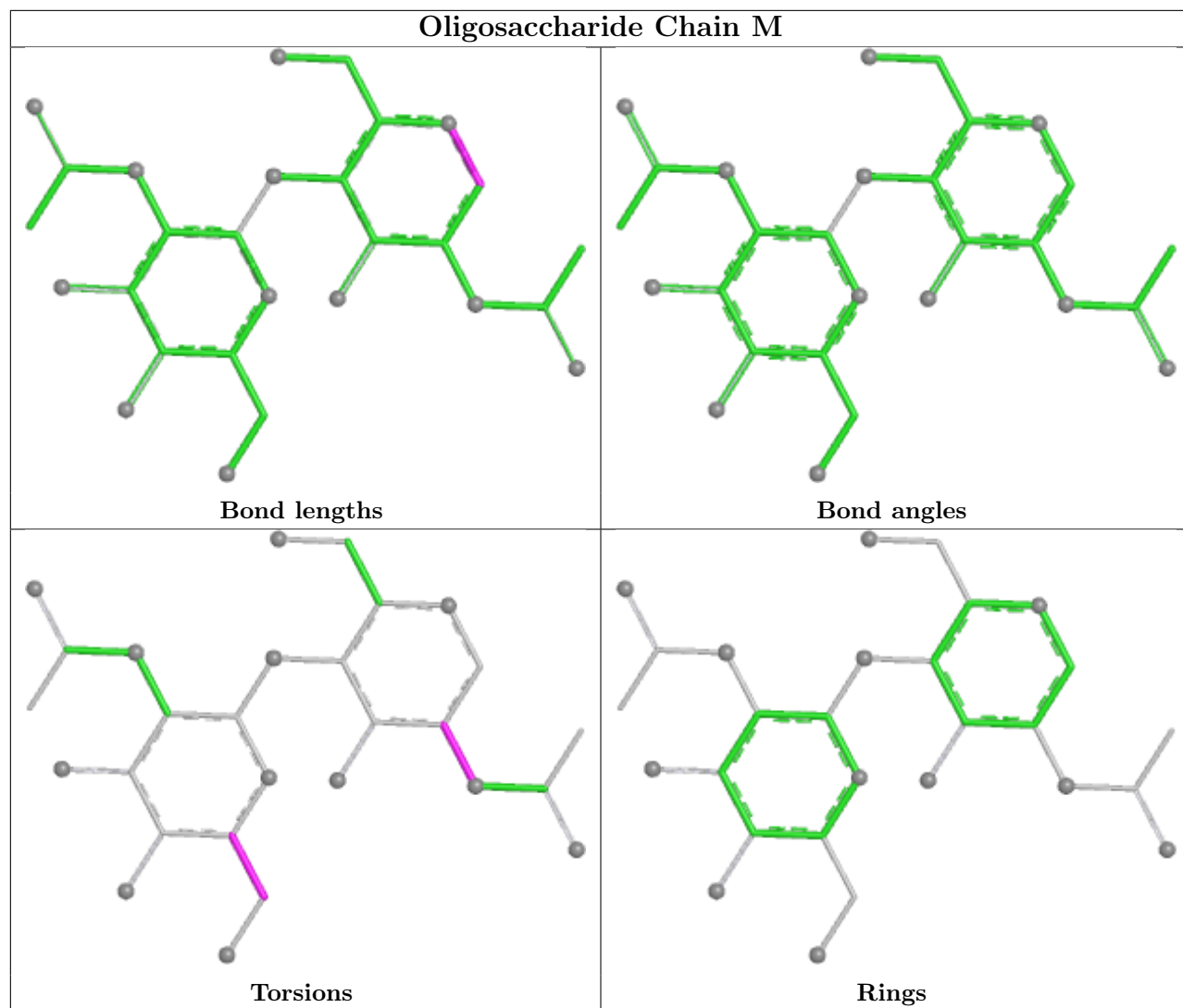
12 monomers are involved in 9 short contacts:

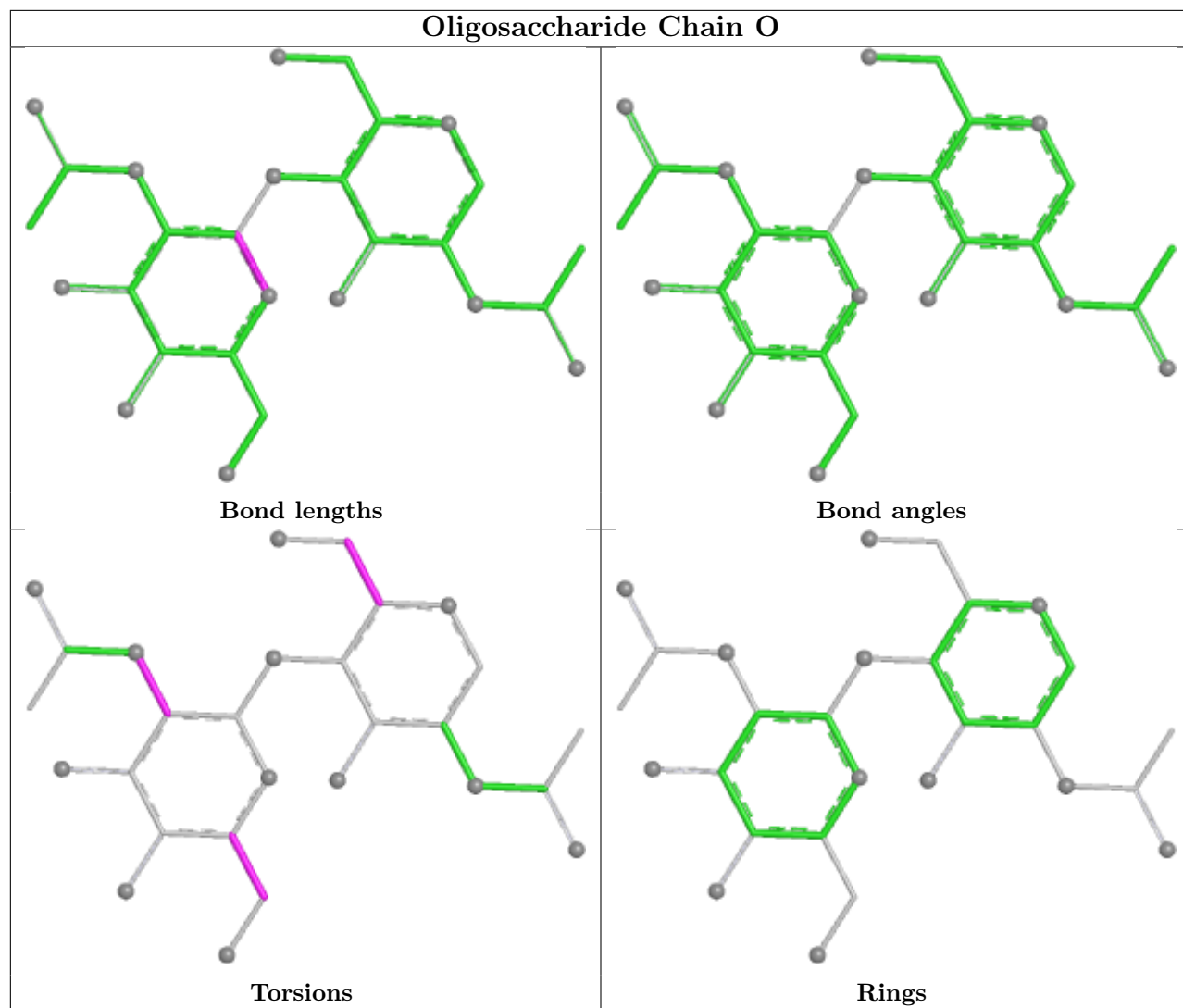
Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	O	1	NAG	1	0
6	N	2	NAG	1	0
6	X	1	NAG	1	0
4	J	1	NAG	1	0
6	X	2	NAG	1	0
4	I	1	NAG	1	0
4	P	1	NAG	1	0
4	U	1	NAG	1	0
6	N	1	NAG	1	0
6	S	1	NAG	1	0
4	T	1	NAG	1	0
6	S	2	NAG	1	0

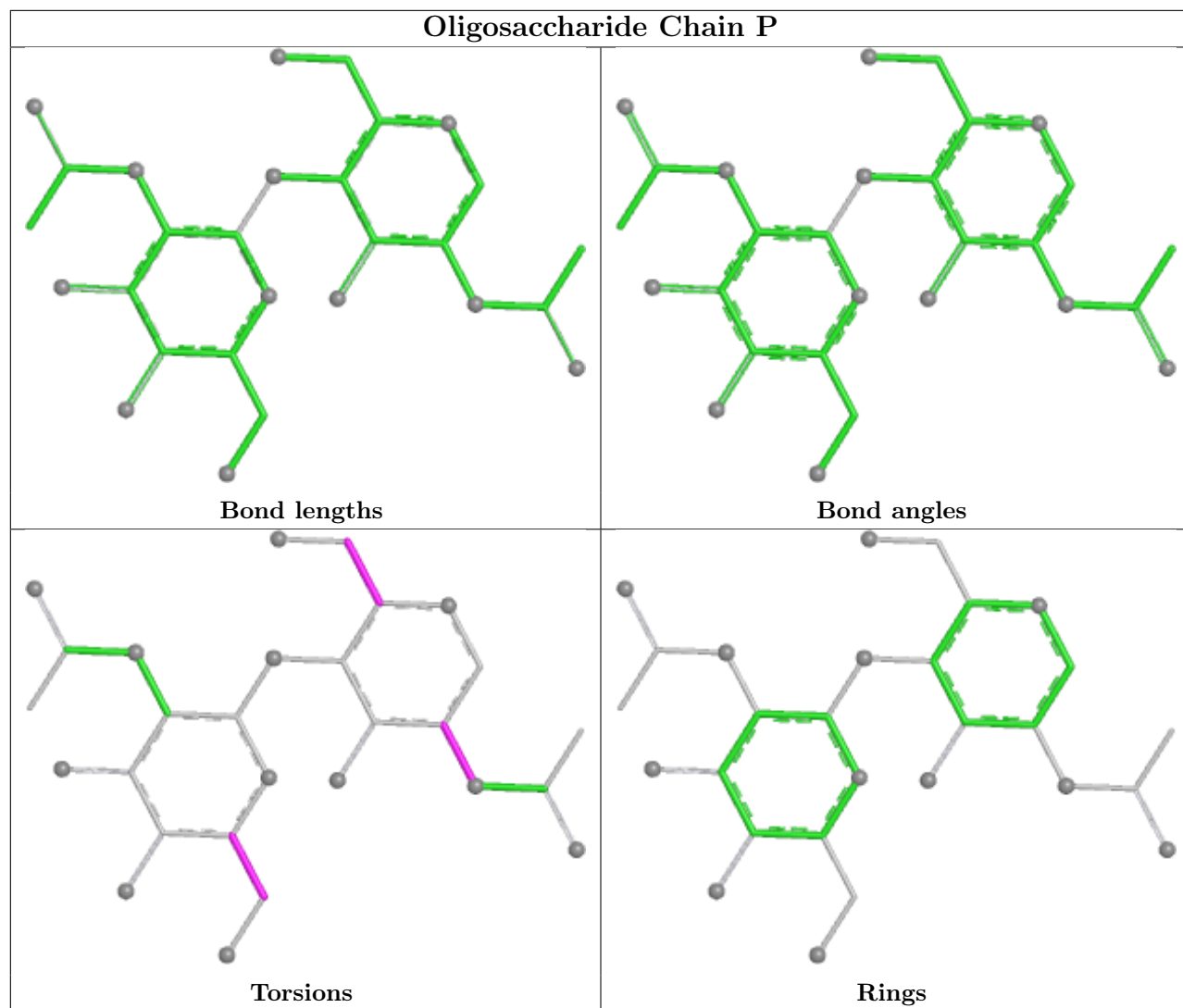
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for oligosaccharide.

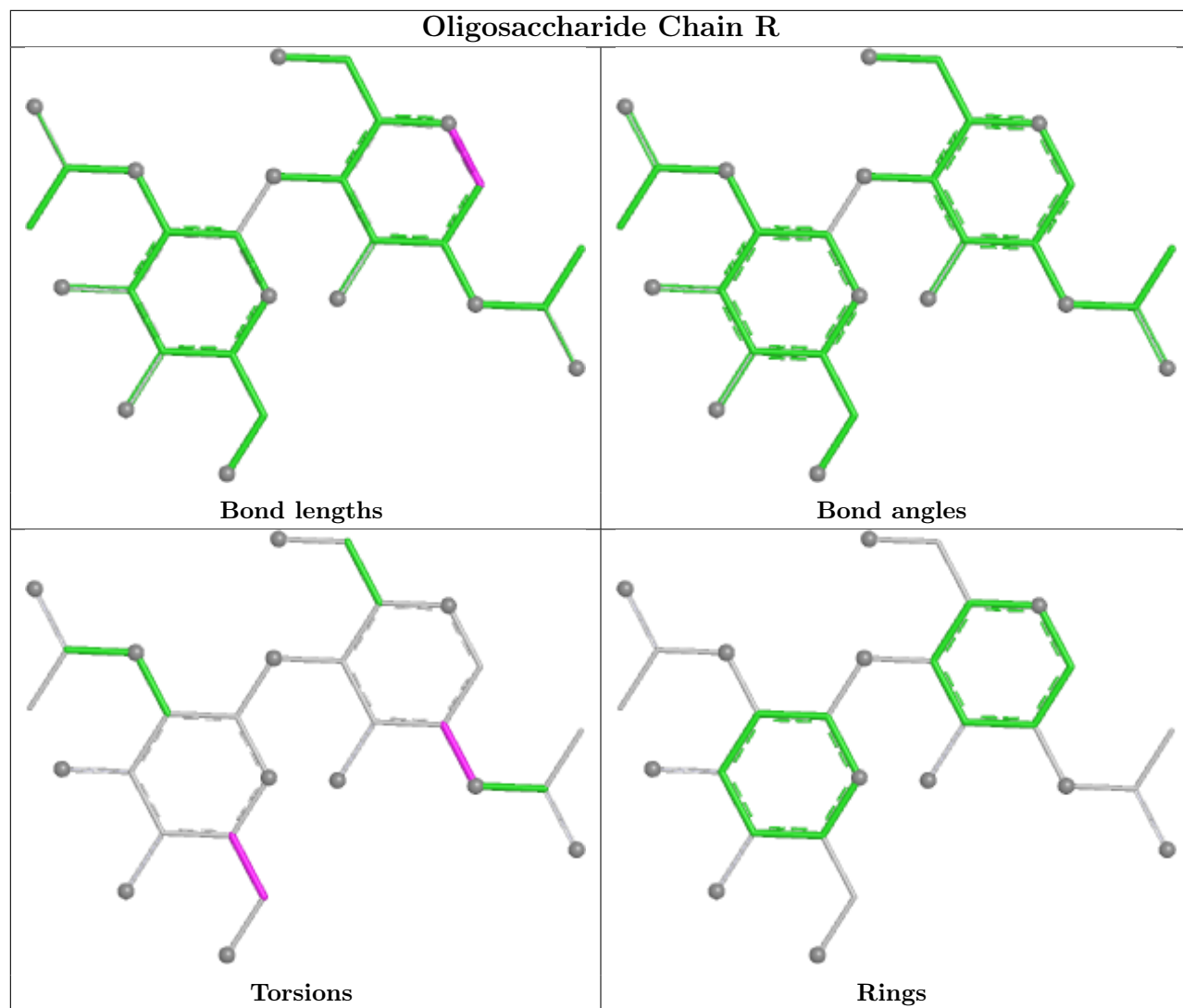


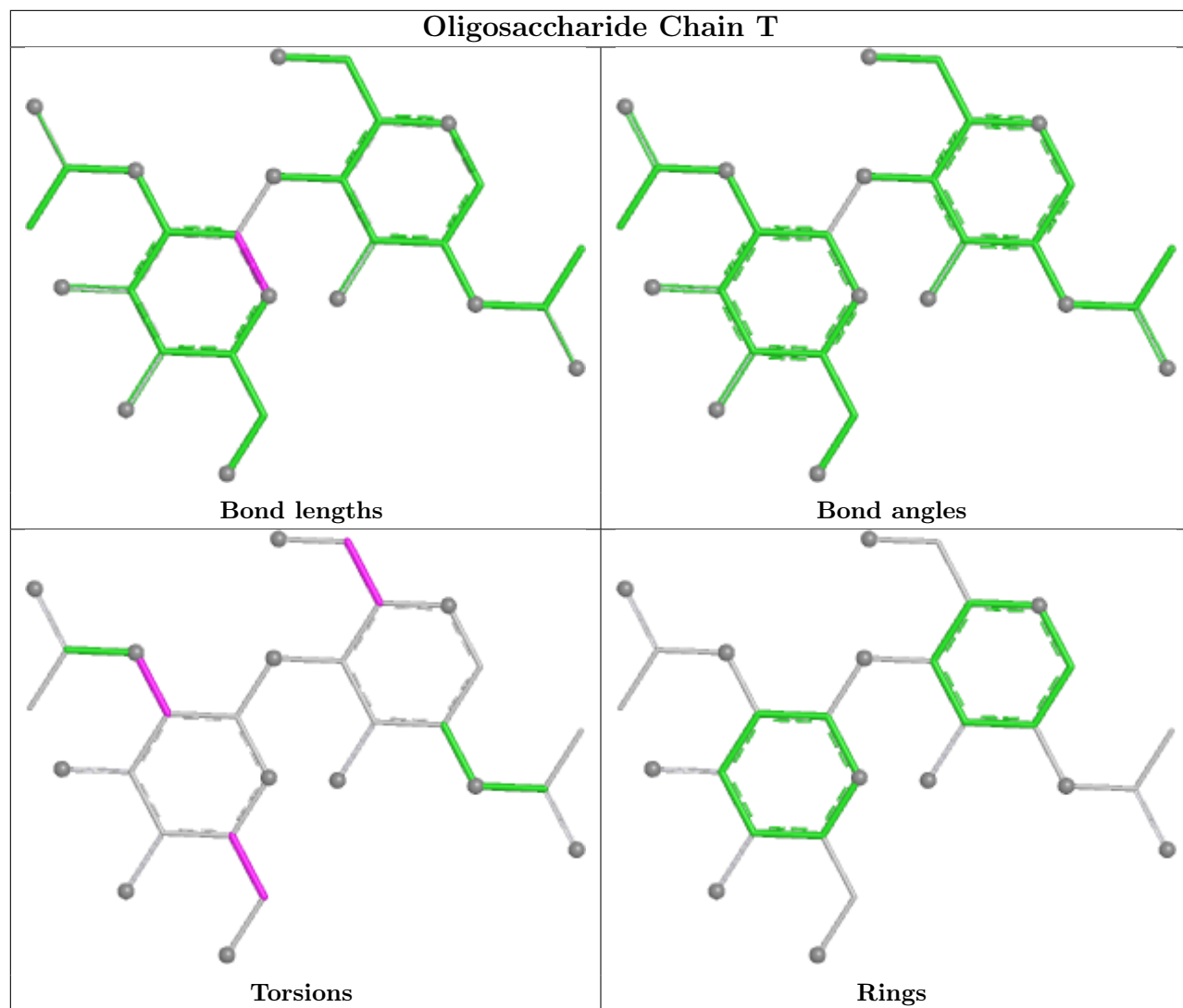


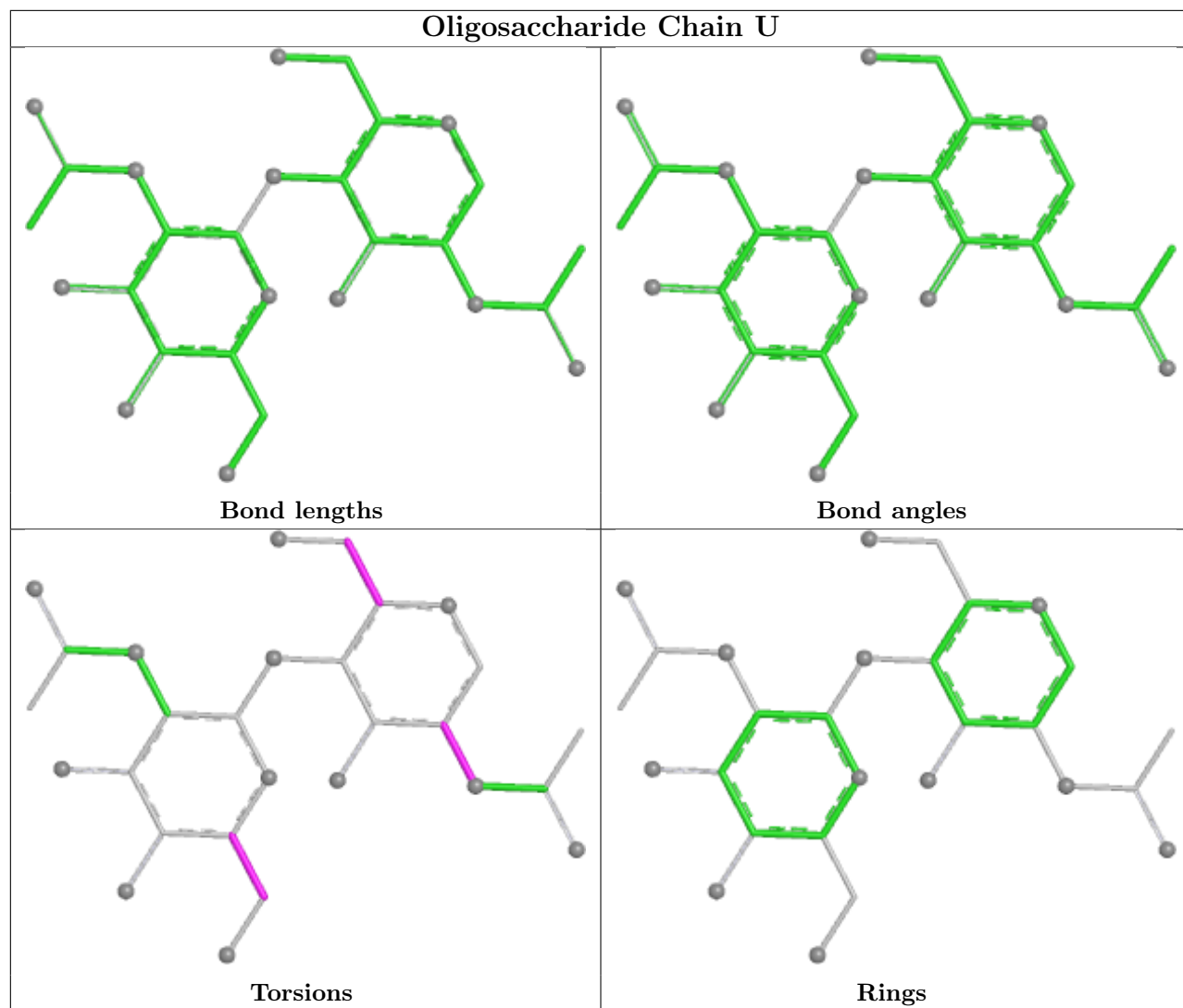


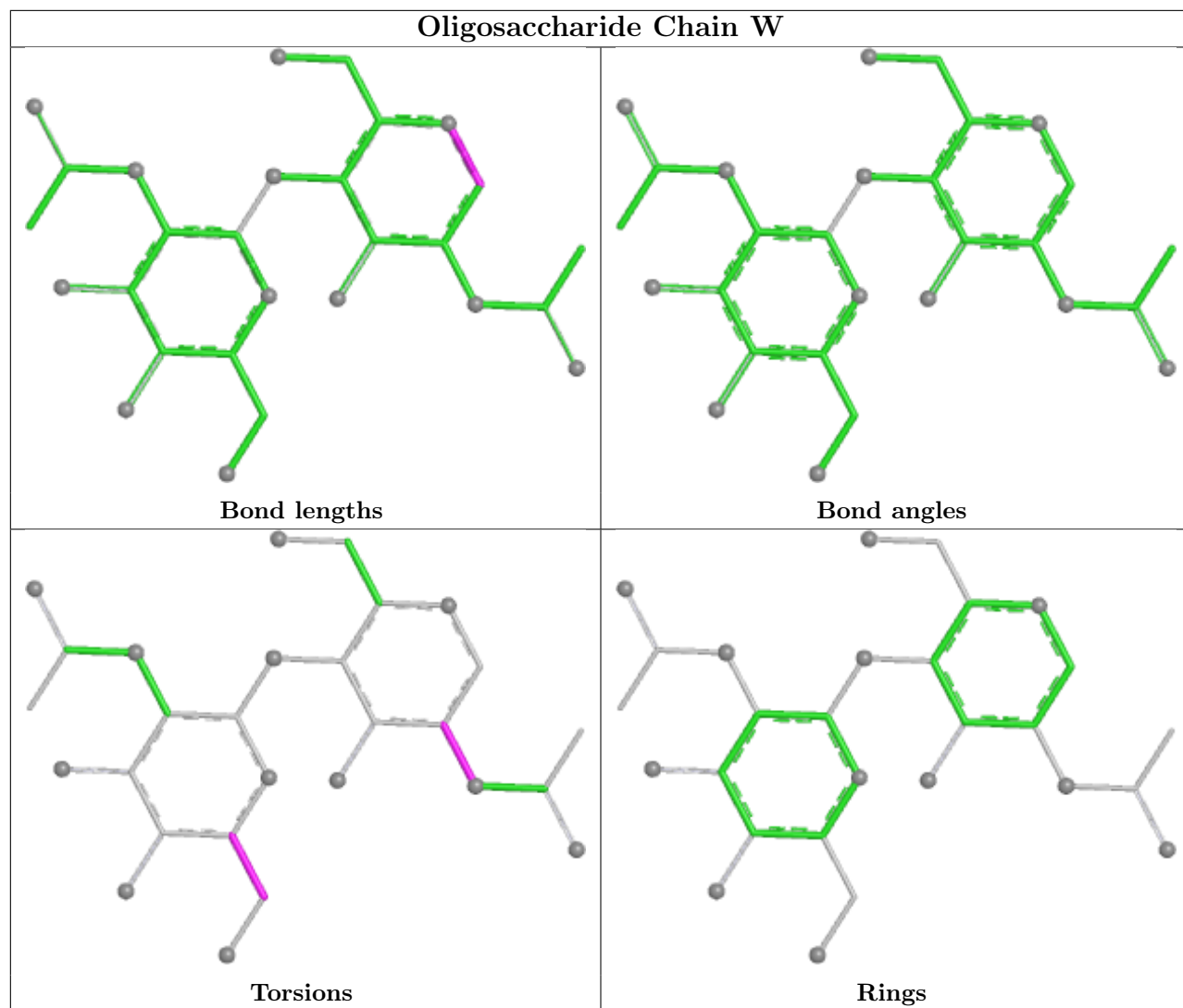


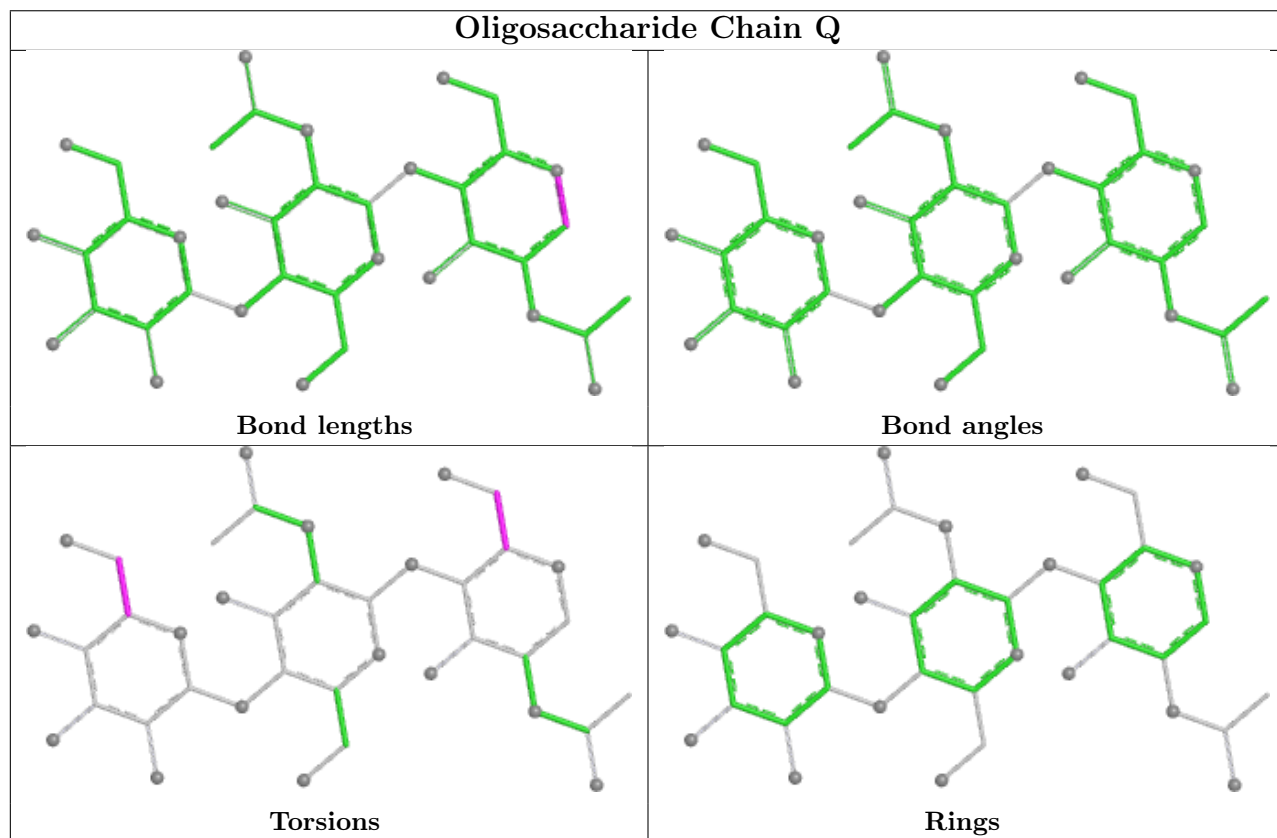
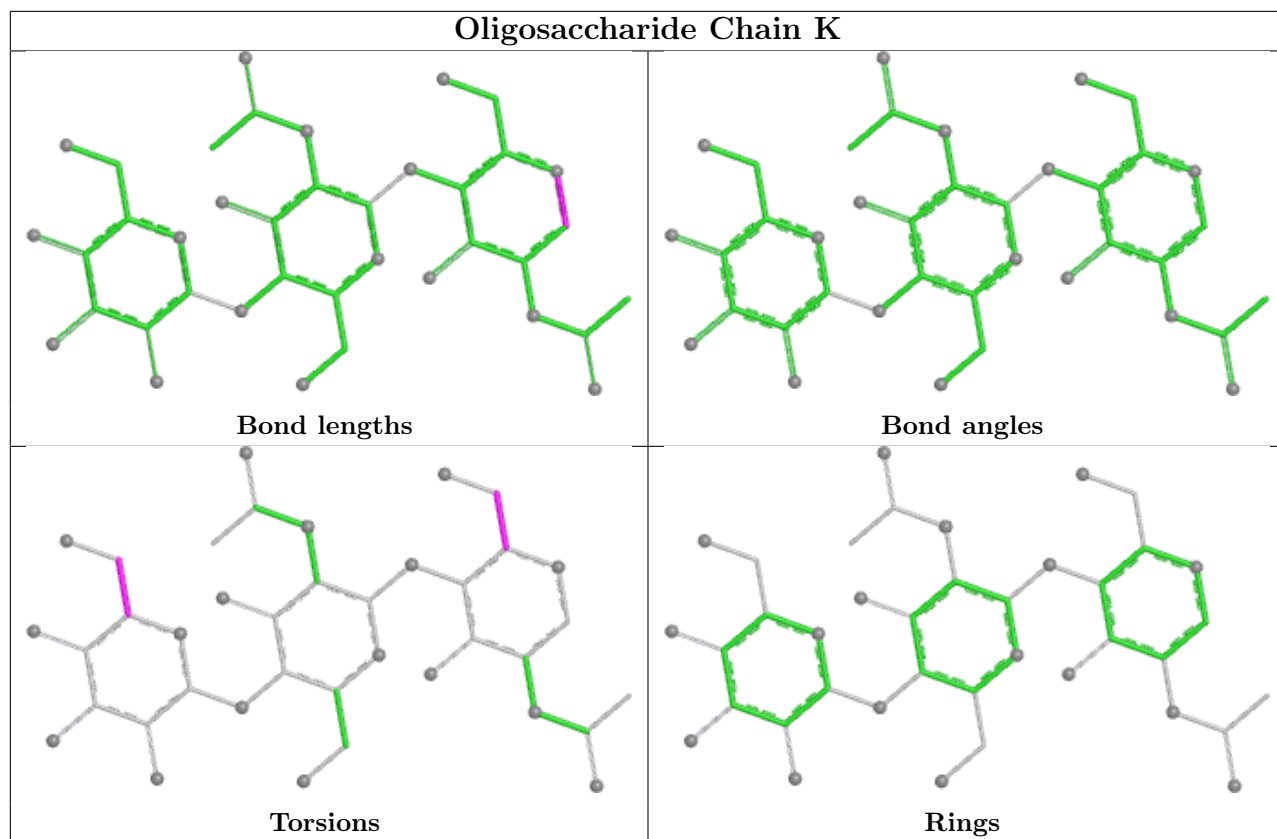


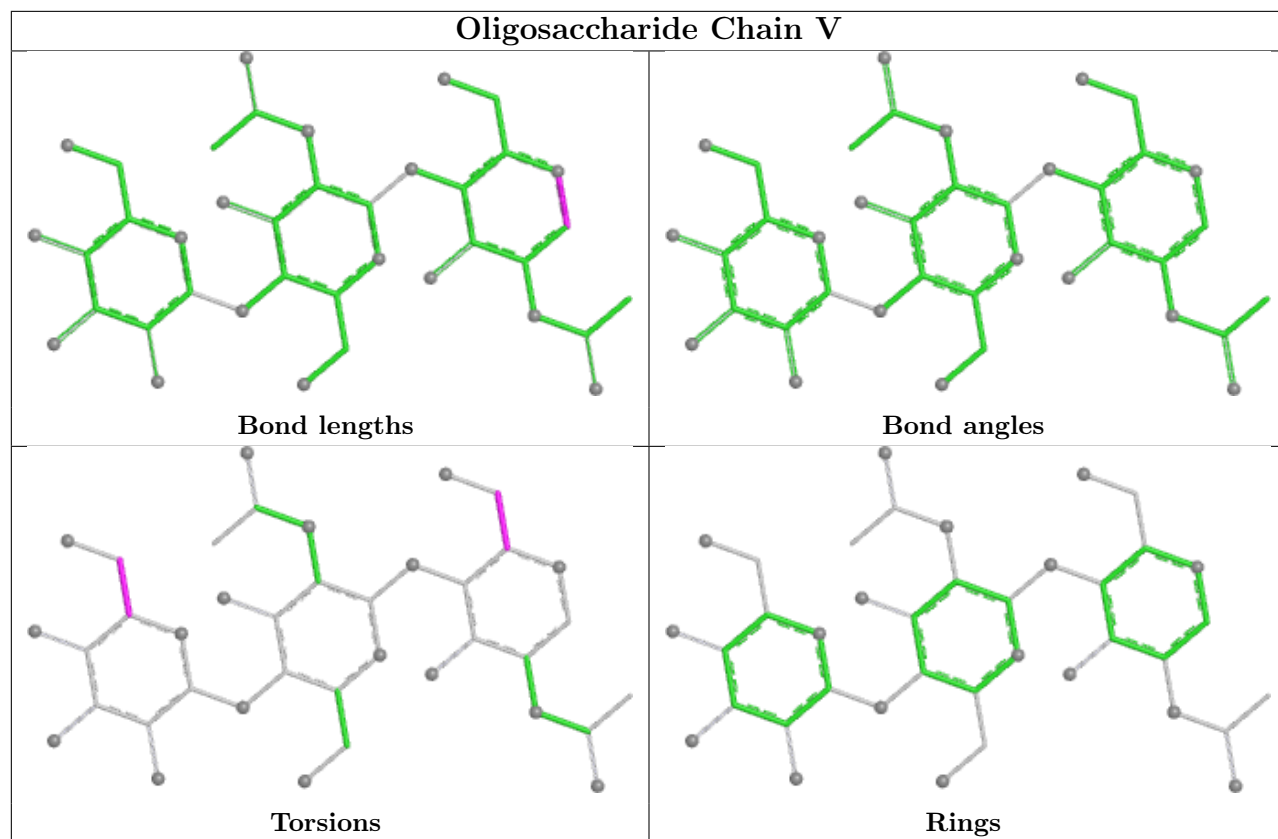


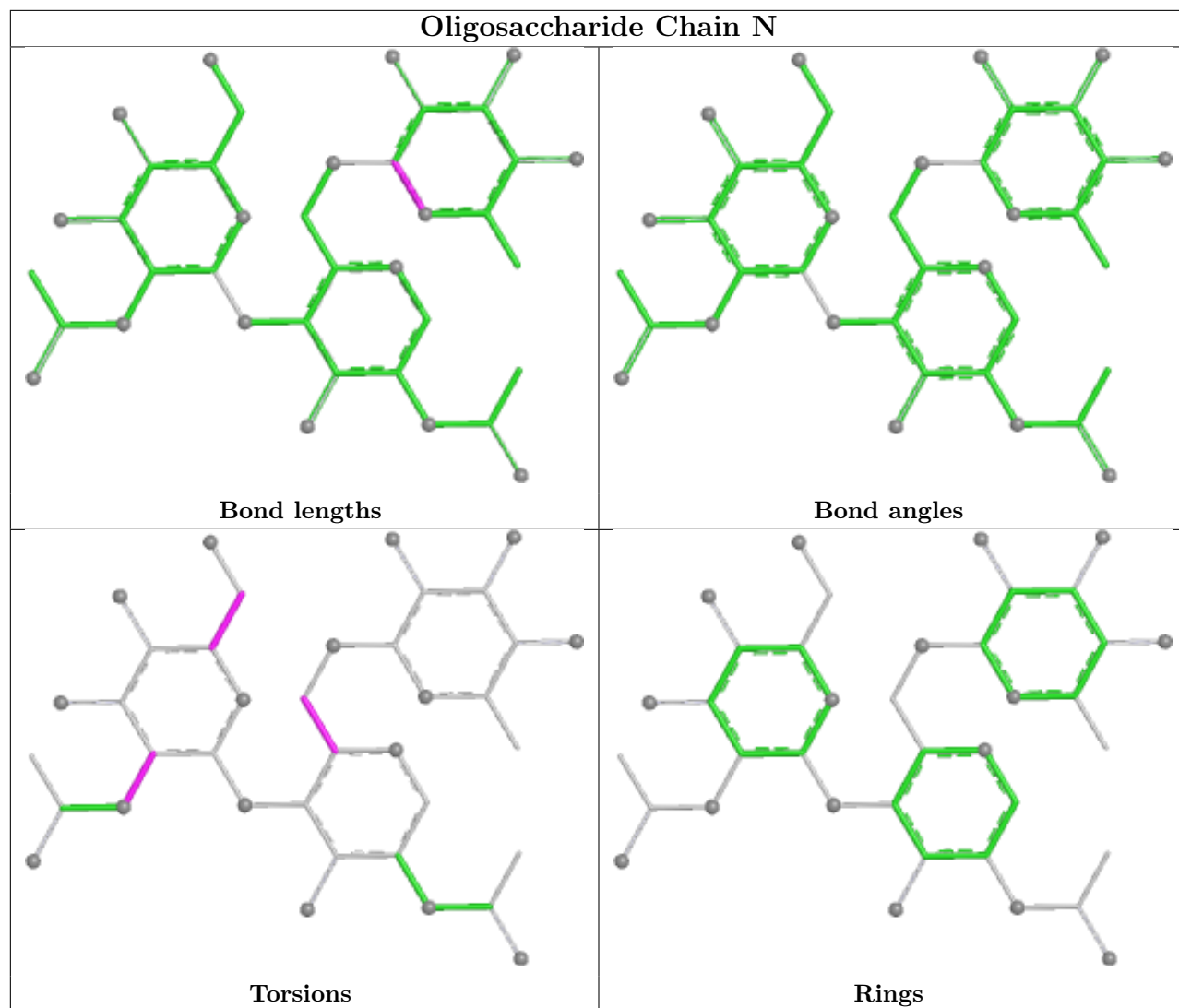


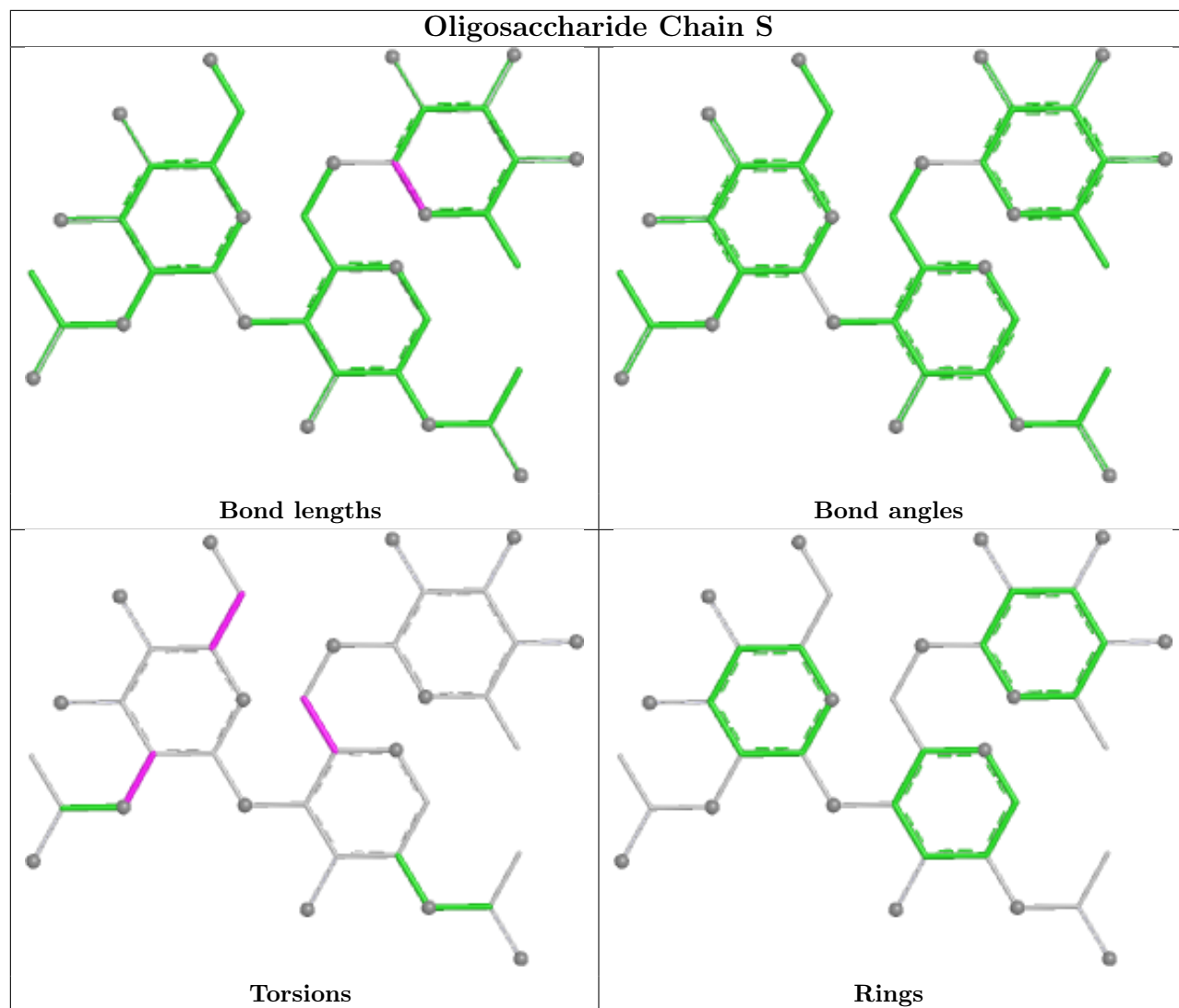


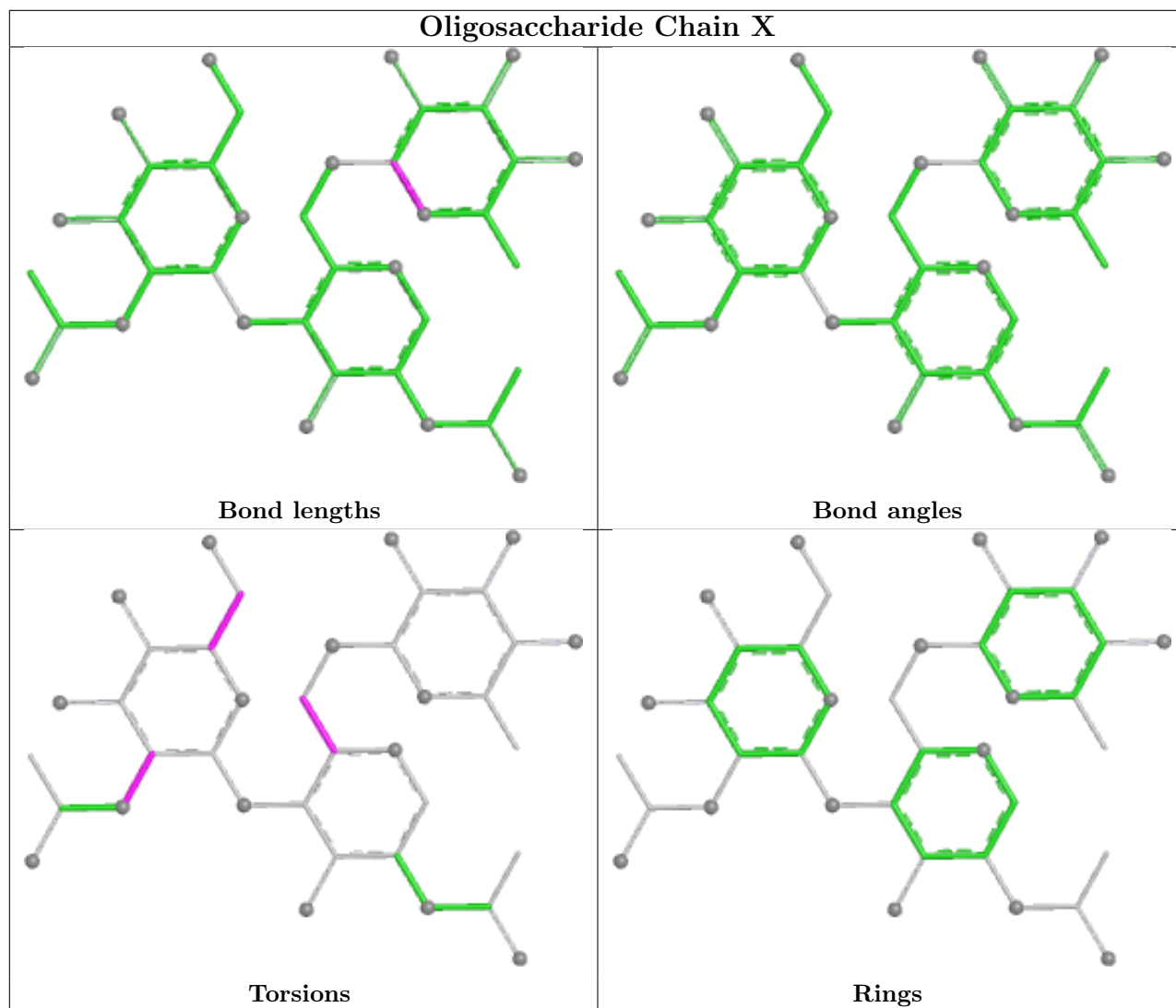












5.6 Ligand geometry [i](#)

24 ligands are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
7	NAG	C	1305	1	14,14,15	0.36	0	17,19,21	0.56	0
7	NAG	A	1310	1	14,14,15	0.36	0	17,19,21	0.91	1 (5%)
7	NAG	C	1306	1	14,14,15	0.30	0	17,19,21	0.68	1 (5%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
7	NAG	E	1312	1	14,14,15	0.21	0	17,19,21	0.42	0
7	NAG	E	1311	1	14,14,15	0.25	0	17,19,21	0.62	1 (5%)
7	NAG	E	1305	1	14,14,15	0.36	0	17,19,21	0.56	0
7	NAG	C	1310	1	14,14,15	0.35	0	17,19,21	0.91	1 (5%)
7	NAG	E	1309	1	14,14,15	0.20	0	17,19,21	0.60	0
7	NAG	C	1311	1	14,14,15	0.25	0	17,19,21	0.61	1 (5%)
7	NAG	E	1308	1	14,14,15	0.17	0	17,19,21	0.54	0
7	NAG	A	1306	1	14,14,15	0.29	0	17,19,21	0.67	0
7	NAG	C	1307	1	14,14,15	0.28	0	17,19,21	0.36	0
7	NAG	E	1310	1	14,14,15	0.36	0	17,19,21	0.91	1 (5%)
7	NAG	A	1305	1	14,14,15	0.35	0	17,19,21	0.56	0
7	NAG	E	1307	1	14,14,15	0.27	0	17,19,21	0.35	0
7	NAG	A	1311	1	14,14,15	0.25	0	17,19,21	0.62	1 (5%)
7	NAG	C	1308	1	14,14,15	0.16	0	17,19,21	0.53	0
7	NAG	A	1312	1	14,14,15	0.21	0	17,19,21	0.42	0
7	NAG	C	1309	1	14,14,15	0.20	0	17,19,21	0.61	0
7	NAG	A	1307	1	14,14,15	0.28	0	17,19,21	0.36	0
7	NAG	C	1312	1	14,14,15	0.21	0	17,19,21	0.42	0
7	NAG	E	1306	1	14,14,15	0.29	0	17,19,21	0.68	0
7	NAG	A	1309	1	14,14,15	0.21	0	17,19,21	0.60	0
7	NAG	A	1308	1	14,14,15	0.17	0	17,19,21	0.53	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. '2' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
7	NAG	C	1305	1	-	2/6/23/26	0/1/1/1
7	NAG	A	1310	1	-	2/6/23/26	0/1/1/1
7	NAG	C	1306	1	-	2/6/23/26	0/1/1/1
7	NAG	E	1312	1	-	2/6/23/26	0/1/1/1
7	NAG	E	1311	1	-	1/6/23/26	0/1/1/1
7	NAG	E	1305	1	-	2/6/23/26	0/1/1/1
7	NAG	C	1310	1	-	2/6/23/26	0/1/1/1
7	NAG	E	1309	1	-	3/6/23/26	0/1/1/1
7	NAG	C	1311	1	-	1/6/23/26	0/1/1/1
7	NAG	E	1308	1	-	2/6/23/26	0/1/1/1
7	NAG	A	1306	1	-	2/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
7	NAG	C	1307	1	-	2/6/23/26	0/1/1/1
7	NAG	E	1310	1	-	2/6/23/26	0/1/1/1
7	NAG	A	1305	1	-	2/6/23/26	0/1/1/1
7	NAG	E	1307	1	-	2/6/23/26	0/1/1/1
7	NAG	A	1311	1	-	1/6/23/26	0/1/1/1
7	NAG	C	1308	1	-	2/6/23/26	0/1/1/1
7	NAG	A	1312	1	-	2/6/23/26	0/1/1/1
7	NAG	C	1309	1	-	3/6/23/26	0/1/1/1
7	NAG	A	1307	1	-	2/6/23/26	0/1/1/1
7	NAG	C	1312	1	-	2/6/23/26	0/1/1/1
7	NAG	E	1306	1	-	2/6/23/26	0/1/1/1
7	NAG	A	1309	1	-	3/6/23/26	0/1/1/1
7	NAG	A	1308	1	-	2/6/23/26	0/1/1/1

There are no bond length outliers.

All (7) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
7	E	1310	NAG	C1-O5-C5	3.31	116.62	112.19
7	A	1310	NAG	C1-O5-C5	3.30	116.61	112.19
7	C	1310	NAG	C1-O5-C5	3.30	116.61	112.19
7	A	1311	NAG	C1-O5-C5	2.07	114.96	112.19
7	E	1311	NAG	C1-O5-C5	2.05	114.93	112.19
7	C	1311	NAG	C1-O5-C5	2.04	114.92	112.19
7	C	1306	NAG	C1-O5-C5	2.02	114.89	112.19

There are no chirality outliers.

All (48) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
7	A	1312	NAG	C4-C5-C6-O6
7	C	1312	NAG	C4-C5-C6-O6
7	E	1312	NAG	C4-C5-C6-O6
7	A	1312	NAG	O5-C5-C6-O6
7	C	1312	NAG	O5-C5-C6-O6
7	E	1312	NAG	O5-C5-C6-O6
7	A	1307	NAG	O5-C5-C6-O6
7	C	1307	NAG	O5-C5-C6-O6

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Mol	Chain	Res	Type	Atoms
7	E	1307	NAG	O5-C5-C6-O6
7	A	1308	NAG	O5-C5-C6-O6
7	A	1309	NAG	O5-C5-C6-O6
7	C	1308	NAG	O5-C5-C6-O6
7	C	1309	NAG	O5-C5-C6-O6
7	E	1308	NAG	O5-C5-C6-O6
7	E	1309	NAG	O5-C5-C6-O6
7	A	1306	NAG	C4-C5-C6-O6
7	E	1306	NAG	C4-C5-C6-O6
7	A	1306	NAG	O5-C5-C6-O6
7	C	1306	NAG	O5-C5-C6-O6
7	E	1306	NAG	O5-C5-C6-O6
7	C	1306	NAG	C4-C5-C6-O6
7	A	1311	NAG	O5-C5-C6-O6
7	C	1311	NAG	O5-C5-C6-O6
7	E	1311	NAG	O5-C5-C6-O6
7	A	1310	NAG	C4-C5-C6-O6
7	E	1310	NAG	C4-C5-C6-O6
7	C	1310	NAG	C4-C5-C6-O6
7	A	1309	NAG	C1-C2-N2-C7
7	C	1309	NAG	C1-C2-N2-C7
7	E	1309	NAG	C1-C2-N2-C7
7	A	1308	NAG	C4-C5-C6-O6
7	C	1308	NAG	C4-C5-C6-O6
7	E	1308	NAG	C4-C5-C6-O6
7	A	1310	NAG	O5-C5-C6-O6
7	C	1310	NAG	O5-C5-C6-O6
7	E	1310	NAG	O5-C5-C6-O6
7	A	1305	NAG	C3-C2-N2-C7
7	A	1309	NAG	C3-C2-N2-C7
7	C	1305	NAG	C3-C2-N2-C7
7	E	1305	NAG	C3-C2-N2-C7
7	E	1309	NAG	C3-C2-N2-C7
7	E	1307	NAG	C4-C5-C6-O6
7	A	1307	NAG	C4-C5-C6-O6
7	C	1307	NAG	C4-C5-C6-O6
7	A	1305	NAG	C1-C2-N2-C7
7	C	1305	NAG	C1-C2-N2-C7
7	E	1305	NAG	C1-C2-N2-C7
7	C	1309	NAG	C3-C2-N2-C7

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

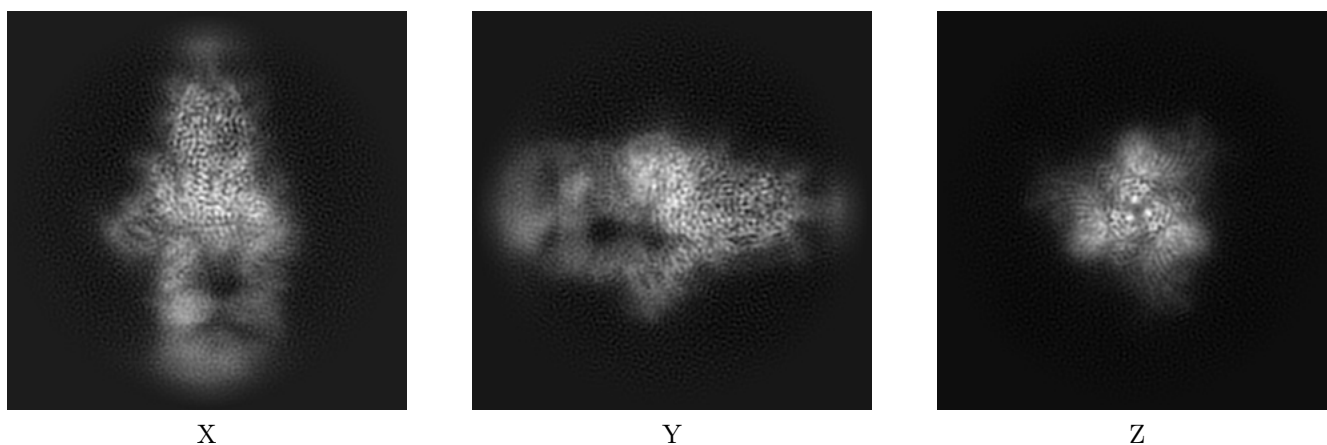
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-22128. These allow visual inspection of the internal detail of the map and identification of artifacts.

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

6.1 Orthogonal projections [i](#)

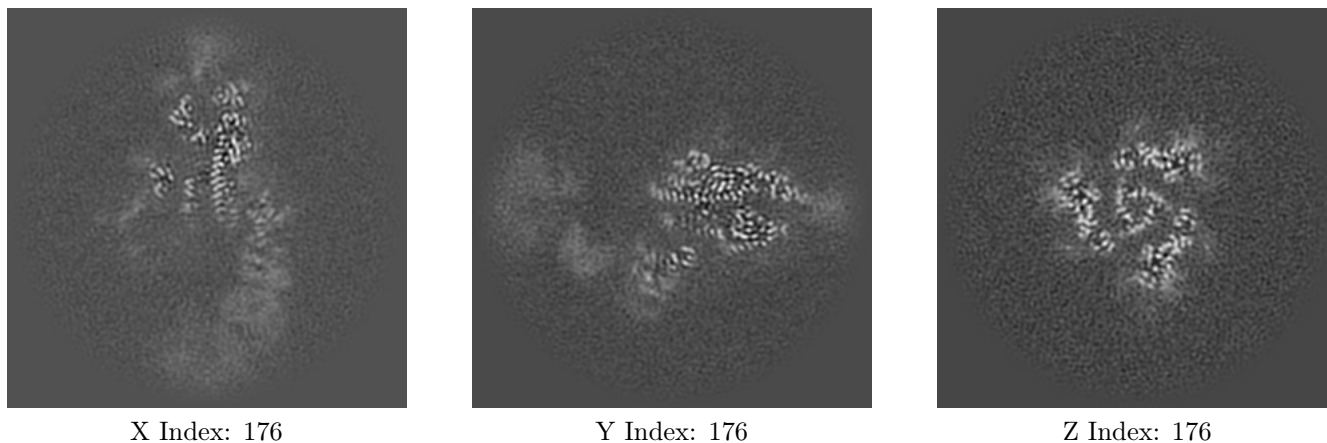
6.1.1 Primary map



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

6.2 Central slices [i](#)

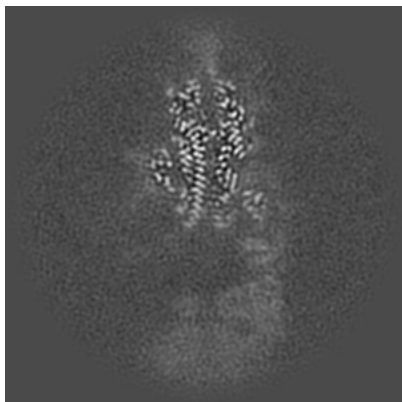
6.2.1 Primary map



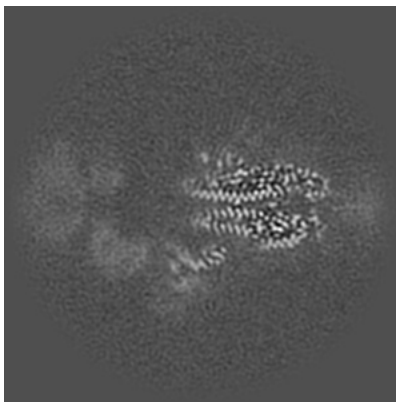
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

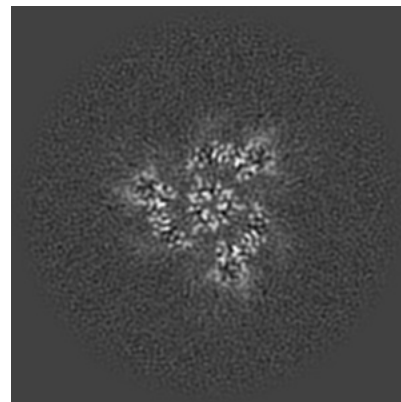
6.3.1 Primary map



X Index: 168



Y Index: 173

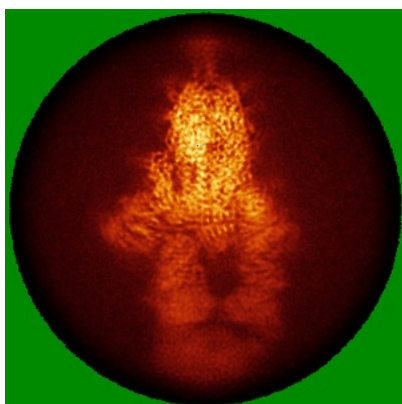


Z Index: 178

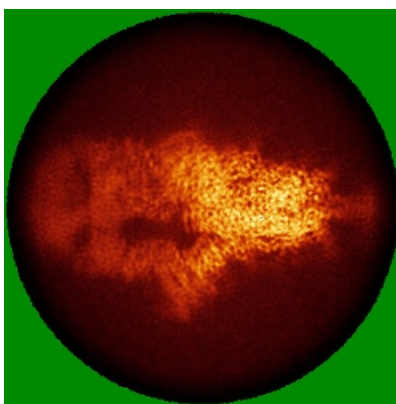
The images above show the largest variance slices of the map in three orthogonal directions.

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

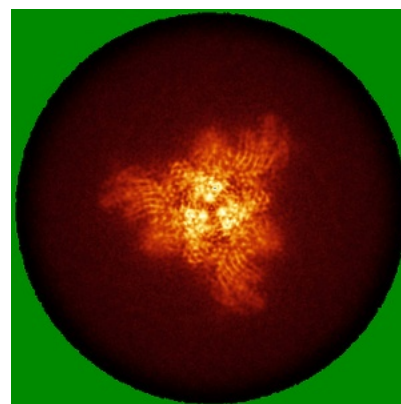
6.4.1 Primary map



X



Y

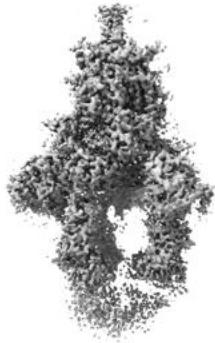


Z

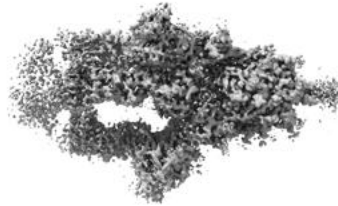
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.1. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

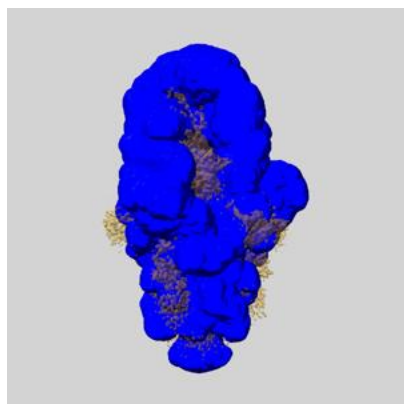
6.6 Mask visualisation [i](#)

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

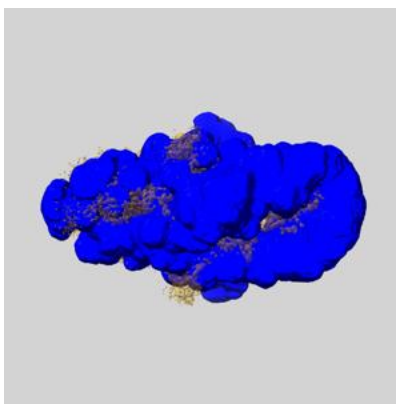
A mask typically either:

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

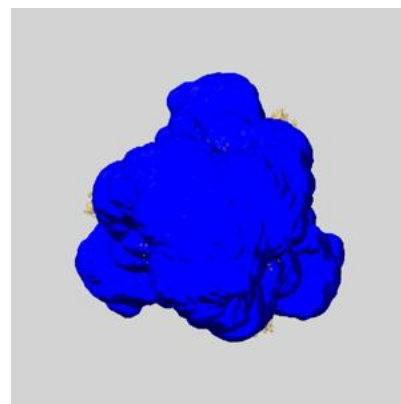
6.6.1 emd_22128_msk_1.map [i](#)



X



Y

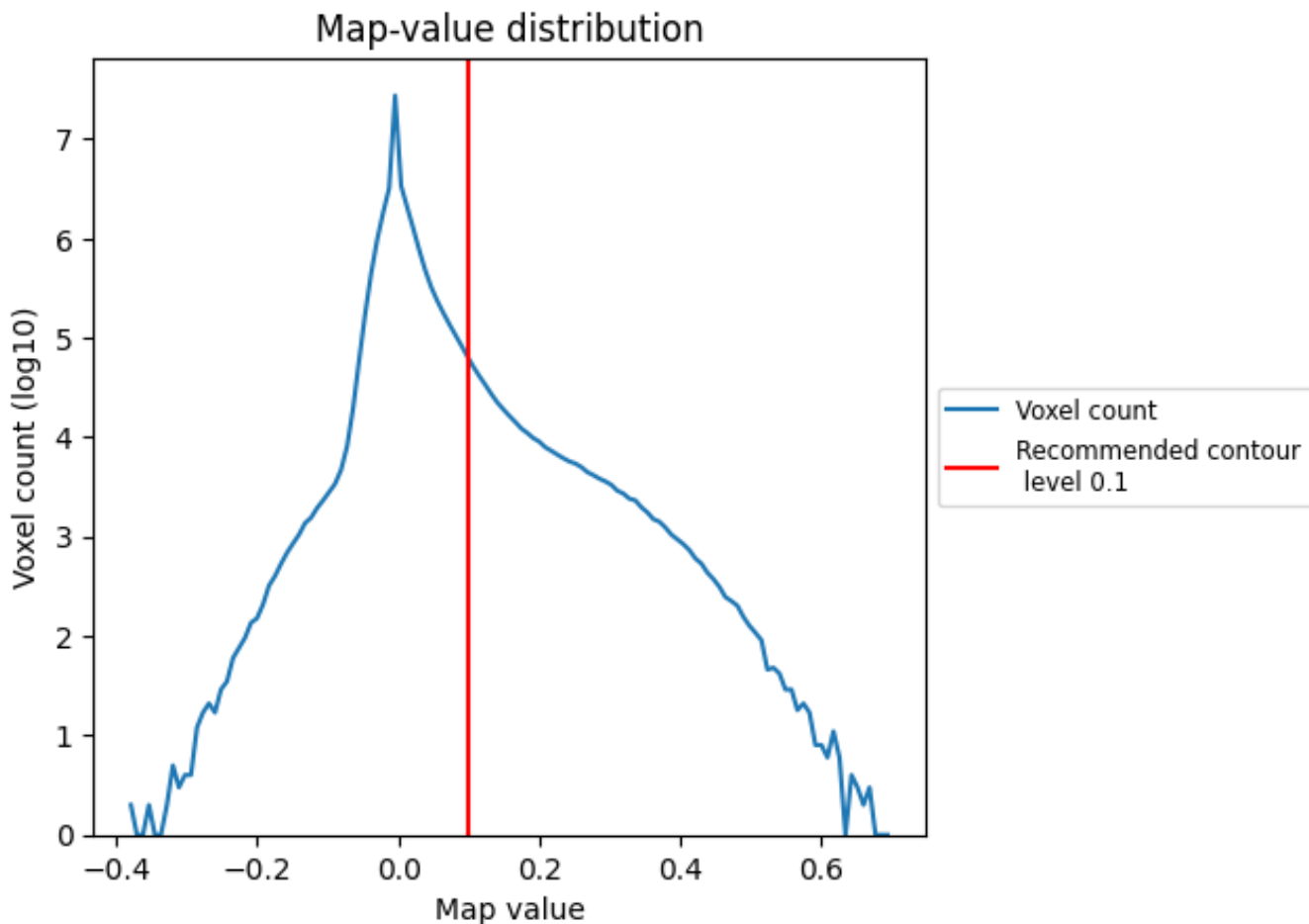


Z

7 Map analysis [i](#)

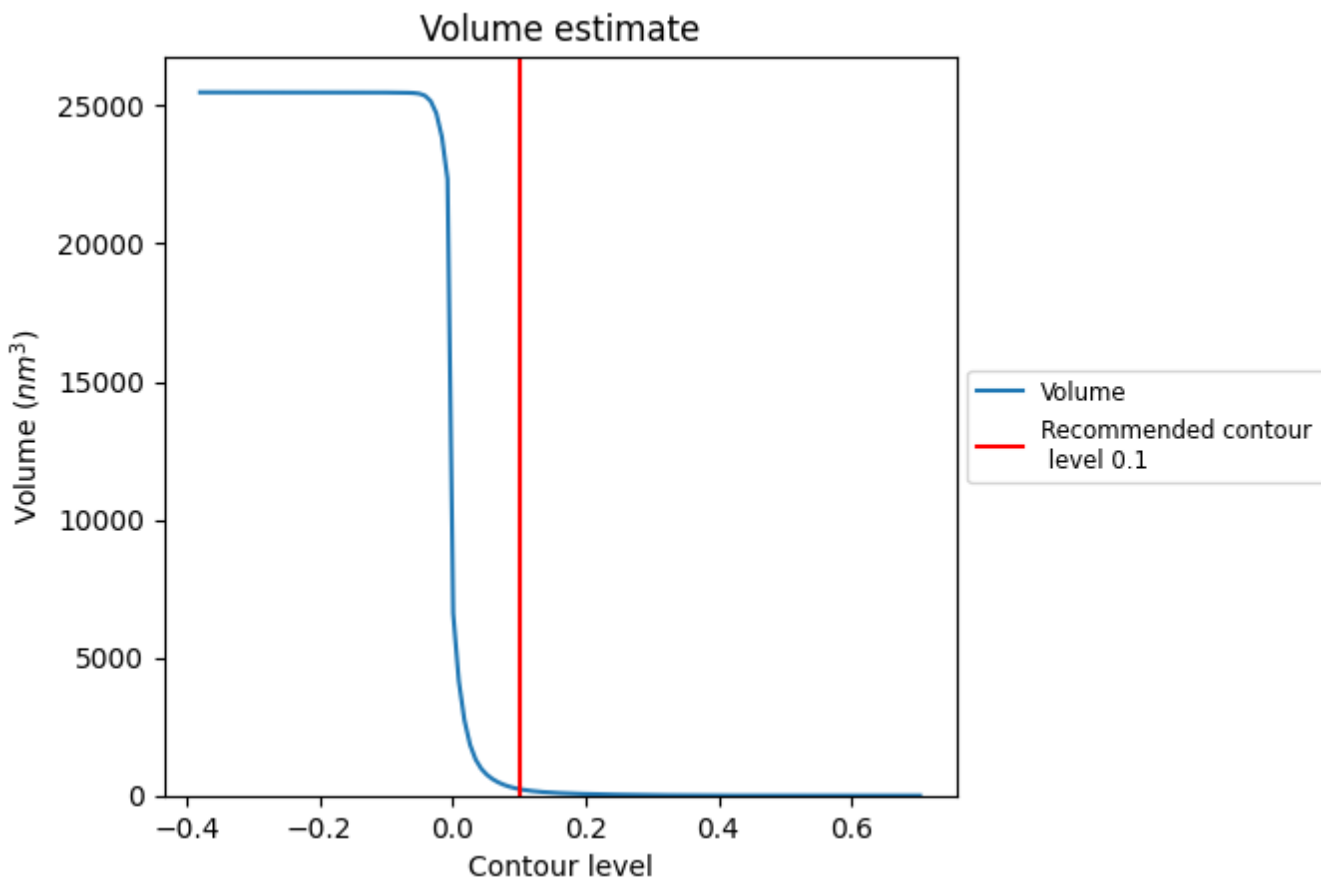
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

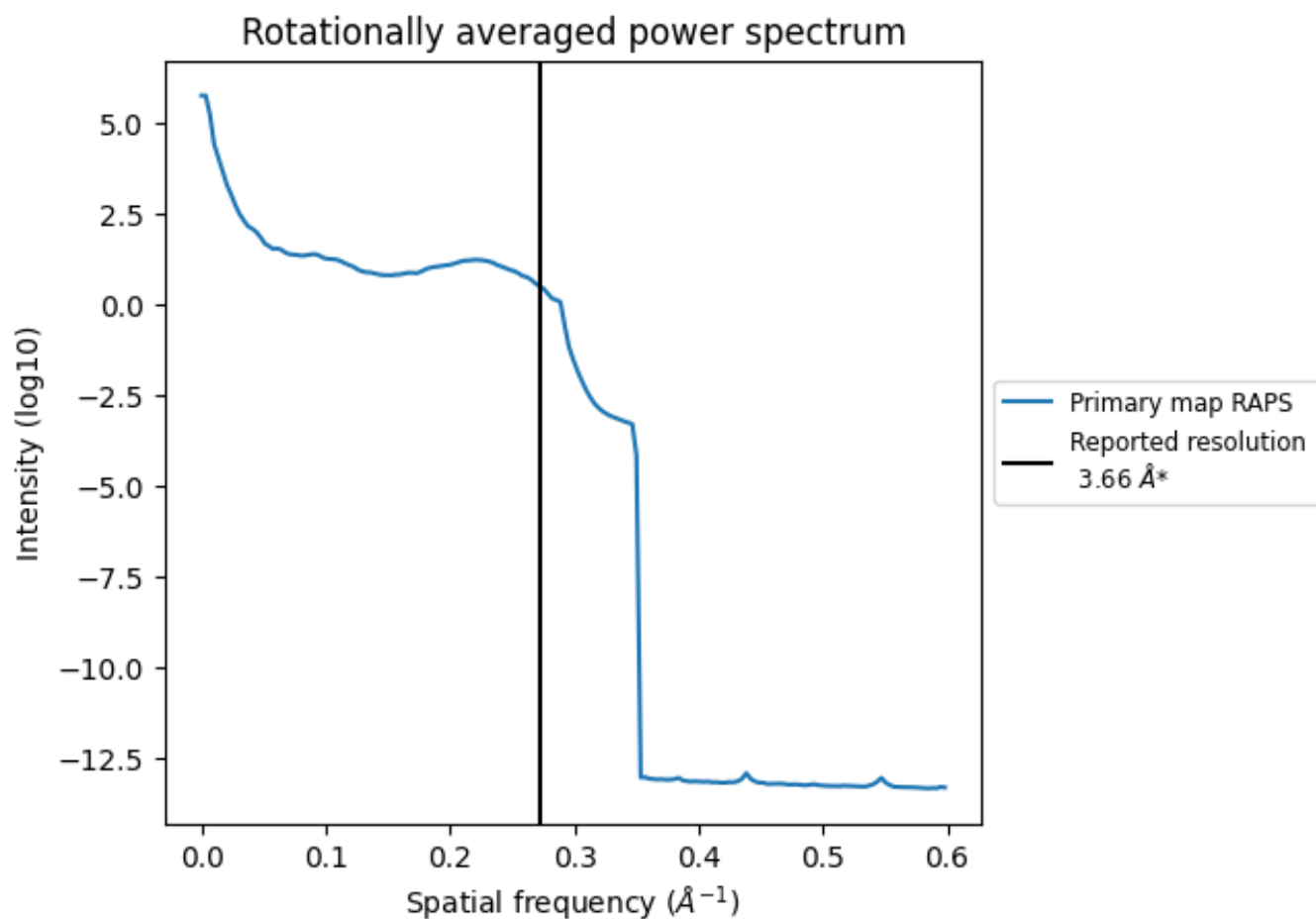
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 238 nm³; this corresponds to an approximate mass of 215 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](#)

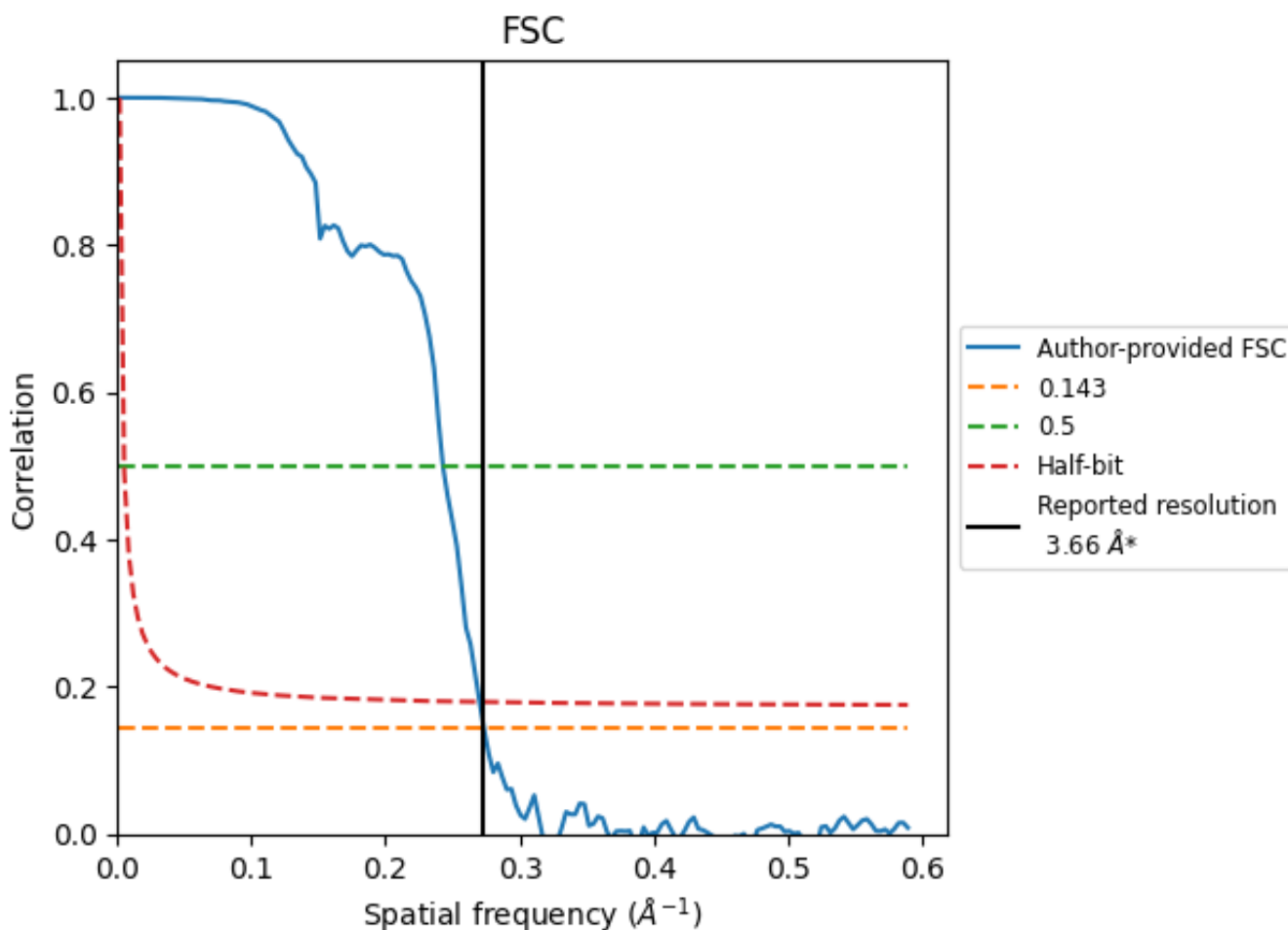


*Reported resolution corresponds to spatial frequency of 0.273 Å⁻¹

8 Fourier-Shell correlation [i](#)

Fourier-Shell Correlation (FSC) is the most commonly used method to estimate the resolution of single-particle and subtomogram-averaged maps. The shape of the curve depends on the imposed symmetry, mask and whether or not the two 3D reconstructions used were processed from a common reference. The reported resolution is shown as a black line. A curve is displayed for the half-bit criterion in addition to lines showing the 0.143 gold standard cut-off and 0.5 cut-off.

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.273 Å⁻¹

8.2 Resolution estimates [i](#)

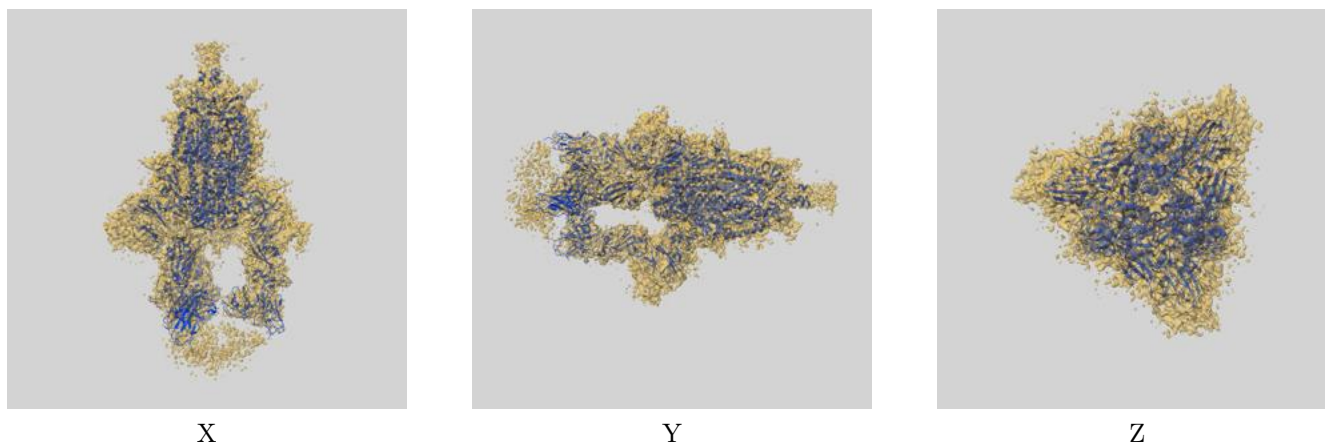
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.66	-	-
Author-provided FSC curve	3.66	4.12	3.70
Unmasked-calculated*	-	-	-

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

9 Map-model fit [i](#)

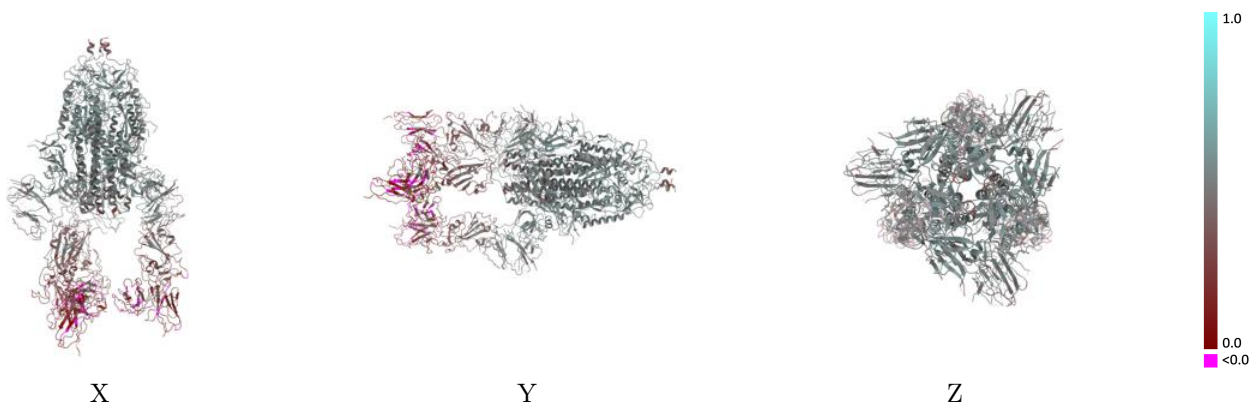
This section contains information regarding the fit between EMDB map EMD-22128 and PDB model 6XCN. Per-residue inclusion information can be found in section 3 on page 12.

9.1 Map-model overlay [i](#)



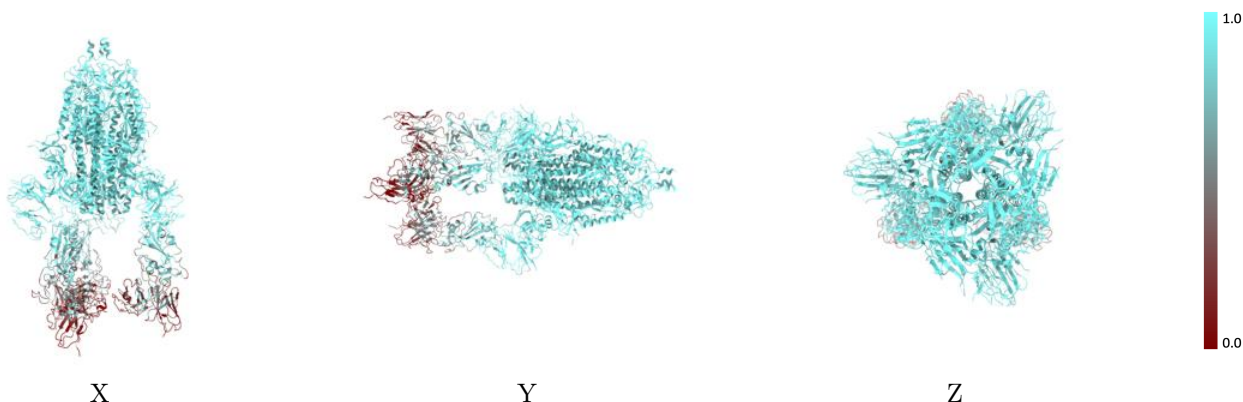
The images above show the 3D surface view of the map at the recommended contour level 0.1 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



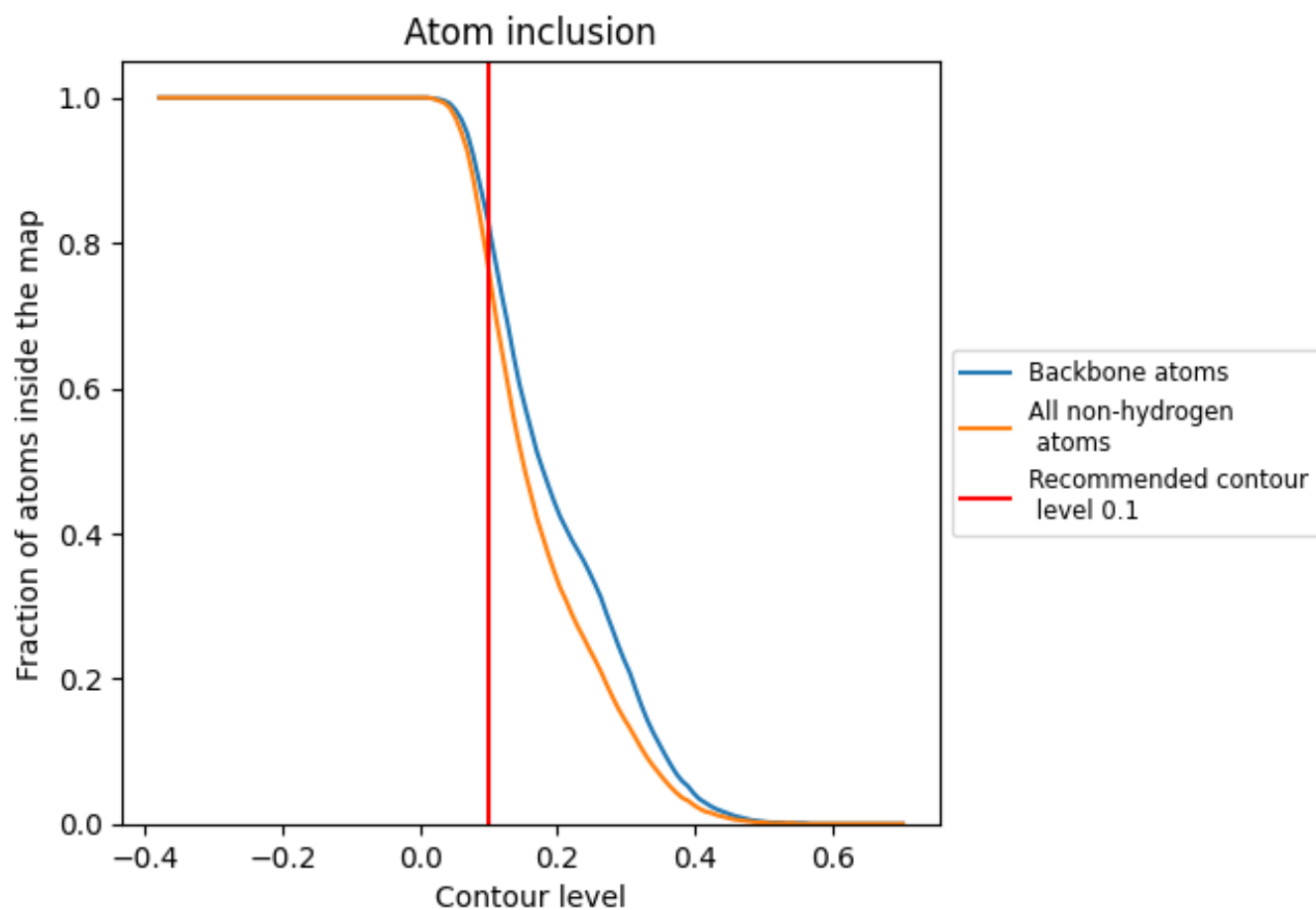
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions at which atoms can be resolved. Low Q-score values may therefore be expected for many entries.

9.3 Atom inclusion mapped to coordinate model [\(i\)](#)



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.1).



















































9.4 Atom inclusion [i](#)



At the recommended contour level, 83% of all backbone atoms, 76% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.1) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.7640	 0.4230
A	 0.8710	 0.4730
B	 0.3070	 0.2040
C	 0.8710	 0.4730
D	 0.2760	 0.1990
E	 0.8700	 0.4740
F	 0.3050	 0.2020
G	 0.2690	 0.1950
H	 0.3100	 0.1970
I	 0.7140	 0.3740
J	 0.5000	 0.2670
K	 0.6150	 0.4110
L	 0.2670	 0.2060
M	 0.7140	 0.3520
N	 0.6840	 0.4510
O	 0.7140	 0.3890
P	 0.4640	 0.2660
Q	 0.6150	 0.4160
R	 0.7500	 0.3620
S	 0.6840	 0.4510
T	 0.7140	 0.3780
U	 0.4640	 0.2570
V	 0.6150	 0.4100
W	 0.7500	 0.3700
X	 0.6840	 0.4440

