



wwPDB EM Validation Summary Report ⓘ

Nov 23, 2022 – 03:56 PM JST

PDB ID : 7V83
EMDB ID : EMD-31788
Title : Cryo-EM structure of SARS-CoV-2 S-Gamma variant (P.1) in complex with Angiotensin-converting enzyme 2 (ACE2) ectodomain, three ACE2-bound form conformation 2
Authors : Yang, T.J.; Yu, P.Y.; Chang, Y.C.; Hsu, S.T.D.
Deposited on : 2021-08-22
Resolution : 2.80 Å(reported)

This is a wwPDB EM Validation Summary 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.dev43
Mogul : 1.8.5 (274361), CSD as541be (2020)
MolProbity : 4.02b-467
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.9
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.31.3

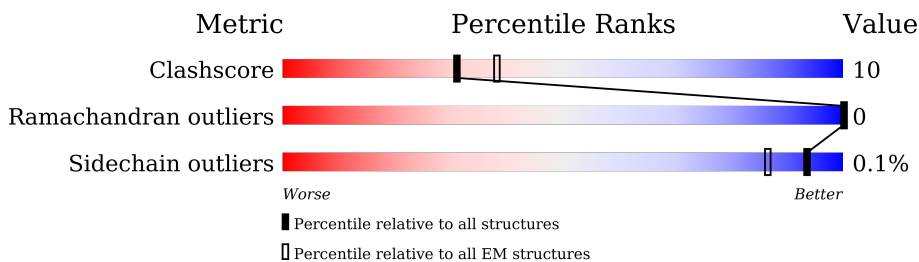
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 2.80 Å.

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


















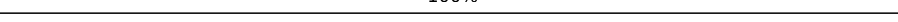
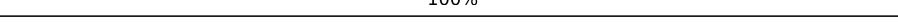

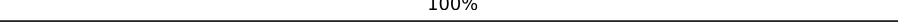

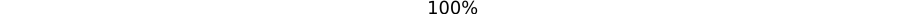
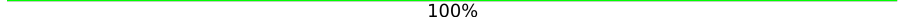
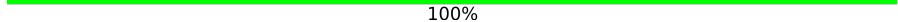

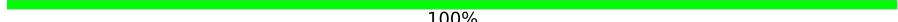
Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826

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

Mol	Chain	Length	Quality of chain
1	A	1283	65% 16% 19%
1	B	1283	65% 16% 19%
1	C	1283	64% 17% 19%
2	D	861	48% 21% 31%
2	E	861	52% 17% 31%
2	F	861	38% 50% 20% 31%
3	G	2	100%
3	H	2	100%


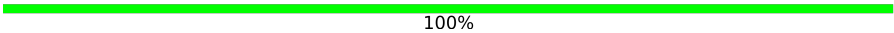
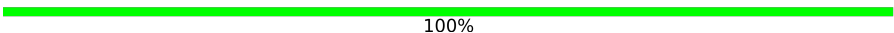
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Mol	Chain	Length	Quality of chain
3	I	2	 100%
3	J	2	 100%
3	K	2	 50% 50%
3	L	2	 100%
3	M	2	 100%
3	N	2	 100%
3	O	2	 100%
3	P	2	 50% 50%
3	Q	2	 50% 50%
3	R	2	 50% 50%
3	S	2	 100%
3	T	2	 100%
3	U	2	 50% 50%
3	V	2	 100%
3	W	2	 100%
3	X	2	 100%
3	Y	2	 50% 50%
3	Z	2	 100%
3	a	2	 50% 50%
3	b	2	 100%
3	c	2	 100%
3	d	2	 100%
3	e	2	 100%
3	f	2	 100%
3	g	2	 100%

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Mol	Chain	Length	Quality of chain
3	h	2	 50% 50%
3	i	2	 100%
3	j	2	 100%

2 Entry composition [i](#)

There are 4 unique types of molecules in this entry. The entry contains 40162 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	1038	8110	5187	1342	1544	37	0	0
1	B	1038	8110	5187	1342	1544	37	0	0
1	C	1038	8110	5187	1342	1544	37	0	0

There are 273 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	18	PHE	LEU	variant	UNP P0DTC2
A	20	ASN	THR	variant	UNP P0DTC2
A	26	SER	PRO	variant	UNP P0DTC2
A	138	TYR	ASP	variant	UNP P0DTC2
A	190	SER	ARG	variant	UNP P0DTC2
A	417	THR	LYS	variant	UNP P0DTC2
A	484	LYS	GLU	variant	UNP P0DTC2
A	501	TYR	ASN	variant	UNP P0DTC2
A	614	GLY	ASP	variant	UNP P0DTC2
A	655	TYR	HIS	variant	UNP P0DTC2
A	682	GLY	ARG	engineered mutation	UNP P0DTC2
A	683	SER	ARG	engineered mutation	UNP P0DTC2
A	685	SER	ARG	engineered mutation	UNP P0DTC2
A	986	PRO	LYS	engineered mutation	UNP P0DTC2
A	987	PRO	VAL	engineered mutation	UNP P0DTC2
A	1027	ILE	THR	variant	UNP P0DTC2
A	1209	GLU	-	expression tag	UNP P0DTC2
A	1210	PHE	-	expression tag	UNP P0DTC2
A	1211	GLY	-	expression tag	UNP P0DTC2
A	1212	SER	-	expression tag	UNP P0DTC2
A	1213	GLY	-	expression tag	UNP P0DTC2
A	1214	GLY	-	expression tag	UNP P0DTC2
A	1215	TYR	-	expression tag	UNP P0DTC2
A	1216	ILE	-	expression tag	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
A	1217	PRO	-	expression tag	UNP P0DTC2
A	1218	GLU	-	expression tag	UNP P0DTC2
A	1219	ALA	-	expression tag	UNP P0DTC2
A	1220	PRO	-	expression tag	UNP P0DTC2
A	1221	ARG	-	expression tag	UNP P0DTC2
A	1222	ASP	-	expression tag	UNP P0DTC2
A	1223	GLY	-	expression tag	UNP P0DTC2
A	1224	GLN	-	expression tag	UNP P0DTC2
A	1225	ALA	-	expression tag	UNP P0DTC2
A	1226	TYR	-	expression tag	UNP P0DTC2
A	1227	VAL	-	expression tag	UNP P0DTC2
A	1228	ARG	-	expression tag	UNP P0DTC2
A	1229	LYS	-	expression tag	UNP P0DTC2
A	1230	ASP	-	expression tag	UNP P0DTC2
A	1231	GLY	-	expression tag	UNP P0DTC2
A	1232	GLU	-	expression tag	UNP P0DTC2
A	1233	TRP	-	expression tag	UNP P0DTC2
A	1234	VAL	-	expression tag	UNP P0DTC2
A	1235	LEU	-	expression tag	UNP P0DTC2
A	1236	LEU	-	expression tag	UNP P0DTC2
A	1237	SER	-	expression tag	UNP P0DTC2
A	1238	THR	-	expression tag	UNP P0DTC2
A	1239	PHE	-	expression tag	UNP P0DTC2
A	1240	LEU	-	expression tag	UNP P0DTC2
A	1241	LYS	-	expression tag	UNP P0DTC2
A	1242	GLY	-	expression tag	UNP P0DTC2
A	1243	GLN	-	expression tag	UNP P0DTC2
A	1244	ASP	-	expression tag	UNP P0DTC2
A	1245	ASN	-	expression tag	UNP P0DTC2
A	1246	SER	-	expression tag	UNP P0DTC2
A	1247	ALA	-	expression tag	UNP P0DTC2
A	1248	ASP	-	expression tag	UNP P0DTC2
A	1249	ILE	-	expression tag	UNP P0DTC2
A	1250	GLN	-	expression tag	UNP P0DTC2
A	1251	HIS	-	expression tag	UNP P0DTC2
A	1252	SER	-	expression tag	UNP P0DTC2
A	1253	GLY	-	expression tag	UNP P0DTC2
A	1254	ARG	-	expression tag	UNP P0DTC2
A	1255	PRO	-	expression tag	UNP P0DTC2
A	1256	LEU	-	expression tag	UNP P0DTC2
A	1257	GLU	-	expression tag	UNP P0DTC2
A	1258	SER	-	expression tag	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
A	1259	ARG	-	expression tag	UNP P0DTC2
A	1260	GLY	-	expression tag	UNP P0DTC2
A	1261	PRO	-	expression tag	UNP P0DTC2
A	1262	PHE	-	expression tag	UNP P0DTC2
A	1263	GLU	-	expression tag	UNP P0DTC2
A	1264	GLN	-	expression tag	UNP P0DTC2
A	1265	LYS	-	expression tag	UNP P0DTC2
A	1266	LEU	-	expression tag	UNP P0DTC2
A	1267	ILE	-	expression tag	UNP P0DTC2
A	1268	SER	-	expression tag	UNP P0DTC2
A	1269	GLU	-	expression tag	UNP P0DTC2
A	1270	GLU	-	expression tag	UNP P0DTC2
A	1271	ASP	-	expression tag	UNP P0DTC2
A	1272	LEU	-	expression tag	UNP P0DTC2
A	1273	ASN	-	expression tag	UNP P0DTC2
A	1274	MET	-	expression tag	UNP P0DTC2
A	1275	HIS	-	expression tag	UNP P0DTC2
A	1276	THR	-	expression tag	UNP P0DTC2
A	1277	GLY	-	expression tag	UNP P0DTC2
A	1278	HIS	-	expression tag	UNP P0DTC2
A	1279	HIS	-	expression tag	UNP P0DTC2
A	1280	HIS	-	expression tag	UNP P0DTC2
A	1281	HIS	-	expression tag	UNP P0DTC2
A	1282	HIS	-	expression tag	UNP P0DTC2
A	1283	HIS	-	expression tag	UNP P0DTC2
B	18	PHE	LEU	variant	UNP P0DTC2
B	20	ASN	THR	variant	UNP P0DTC2
B	26	SER	PRO	variant	UNP P0DTC2
B	138	TYR	ASP	variant	UNP P0DTC2
B	190	SER	ARG	variant	UNP P0DTC2
B	417	THR	LYS	variant	UNP P0DTC2
B	484	LYS	GLU	variant	UNP P0DTC2
B	501	TYR	ASN	variant	UNP P0DTC2
B	614	GLY	ASP	variant	UNP P0DTC2
B	655	TYR	HIS	variant	UNP P0DTC2
B	682	GLY	ARG	engineered mutation	UNP P0DTC2
B	683	SER	ARG	engineered mutation	UNP P0DTC2
B	685	SER	ARG	engineered mutation	UNP P0DTC2
B	986	PRO	LYS	engineered mutation	UNP P0DTC2
B	987	PRO	VAL	engineered mutation	UNP P0DTC2
B	1027	ILE	THR	variant	UNP P0DTC2
B	1209	GLU	-	expression tag	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
B	1210	PHE	-	expression tag	UNP P0DTC2
B	1211	GLY	-	expression tag	UNP P0DTC2
B	1212	SER	-	expression tag	UNP P0DTC2
B	1213	GLY	-	expression tag	UNP P0DTC2
B	1214	GLY	-	expression tag	UNP P0DTC2
B	1215	TYR	-	expression tag	UNP P0DTC2
B	1216	ILE	-	expression tag	UNP P0DTC2
B	1217	PRO	-	expression tag	UNP P0DTC2
B	1218	GLU	-	expression tag	UNP P0DTC2
B	1219	ALA	-	expression tag	UNP P0DTC2
B	1220	PRO	-	expression tag	UNP P0DTC2
B	1221	ARG	-	expression tag	UNP P0DTC2
B	1222	ASP	-	expression tag	UNP P0DTC2
B	1223	GLY	-	expression tag	UNP P0DTC2
B	1224	GLN	-	expression tag	UNP P0DTC2
B	1225	ALA	-	expression tag	UNP P0DTC2
B	1226	TYR	-	expression tag	UNP P0DTC2
B	1227	VAL	-	expression tag	UNP P0DTC2
B	1228	ARG	-	expression tag	UNP P0DTC2
B	1229	LYS	-	expression tag	UNP P0DTC2
B	1230	ASP	-	expression tag	UNP P0DTC2
B	1231	GLY	-	expression tag	UNP P0DTC2
B	1232	GLU	-	expression tag	UNP P0DTC2
B	1233	TRP	-	expression tag	UNP P0DTC2
B	1234	VAL	-	expression tag	UNP P0DTC2
B	1235	LEU	-	expression tag	UNP P0DTC2
B	1236	LEU	-	expression tag	UNP P0DTC2
B	1237	SER	-	expression tag	UNP P0DTC2
B	1238	THR	-	expression tag	UNP P0DTC2
B	1239	PHE	-	expression tag	UNP P0DTC2
B	1240	LEU	-	expression tag	UNP P0DTC2
B	1241	LYS	-	expression tag	UNP P0DTC2
B	1242	GLY	-	expression tag	UNP P0DTC2
B	1243	GLN	-	expression tag	UNP P0DTC2
B	1244	ASP	-	expression tag	UNP P0DTC2
B	1245	ASN	-	expression tag	UNP P0DTC2
B	1246	SER	-	expression tag	UNP P0DTC2
B	1247	ALA	-	expression tag	UNP P0DTC2
B	1248	ASP	-	expression tag	UNP P0DTC2
B	1249	ILE	-	expression tag	UNP P0DTC2
B	1250	GLN	-	expression tag	UNP P0DTC2
B	1251	HIS	-	expression tag	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
B	1252	SER	-	expression tag	UNP P0DTC2
B	1253	GLY	-	expression tag	UNP P0DTC2
B	1254	ARG	-	expression tag	UNP P0DTC2
B	1255	PRO	-	expression tag	UNP P0DTC2
B	1256	LEU	-	expression tag	UNP P0DTC2
B	1257	GLU	-	expression tag	UNP P0DTC2
B	1258	SER	-	expression tag	UNP P0DTC2
B	1259	ARG	-	expression tag	UNP P0DTC2
B	1260	GLY	-	expression tag	UNP P0DTC2
B	1261	PRO	-	expression tag	UNP P0DTC2
B	1262	PHE	-	expression tag	UNP P0DTC2
B	1263	GLU	-	expression tag	UNP P0DTC2
B	1264	GLN	-	expression tag	UNP P0DTC2
B	1265	LYS	-	expression tag	UNP P0DTC2
B	1266	LEU	-	expression tag	UNP P0DTC2
B	1267	ILE	-	expression tag	UNP P0DTC2
B	1268	SER	-	expression tag	UNP P0DTC2
B	1269	GLU	-	expression tag	UNP P0DTC2
B	1270	GLU	-	expression tag	UNP P0DTC2
B	1271	ASP	-	expression tag	UNP P0DTC2
B	1272	LEU	-	expression tag	UNP P0DTC2
B	1273	ASN	-	expression tag	UNP P0DTC2
B	1274	MET	-	expression tag	UNP P0DTC2
B	1275	HIS	-	expression tag	UNP P0DTC2
B	1276	THR	-	expression tag	UNP P0DTC2
B	1277	GLY	-	expression tag	UNP P0DTC2
B	1278	HIS	-	expression tag	UNP P0DTC2
B	1279	HIS	-	expression tag	UNP P0DTC2
B	1280	HIS	-	expression tag	UNP P0DTC2
B	1281	HIS	-	expression tag	UNP P0DTC2
B	1282	HIS	-	expression tag	UNP P0DTC2
B	1283	HIS	-	expression tag	UNP P0DTC2
C	18	PHE	LEU	variant	UNP P0DTC2
C	20	ASN	THR	variant	UNP P0DTC2
C	26	SER	PRO	variant	UNP P0DTC2
C	138	TYR	ASP	variant	UNP P0DTC2
C	190	SER	ARG	variant	UNP P0DTC2
C	417	THR	LYS	variant	UNP P0DTC2
C	484	LYS	GLU	variant	UNP P0DTC2
C	501	TYR	ASN	variant	UNP P0DTC2
C	614	GLY	ASP	variant	UNP P0DTC2
C	655	TYR	HIS	variant	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
C	682	GLY	ARG	engineered mutation	UNP P0DTC2
C	683	SER	ARG	engineered mutation	UNP P0DTC2
C	685	SER	ARG	engineered mutation	UNP P0DTC2
C	986	PRO	LYS	engineered mutation	UNP P0DTC2
C	987	PRO	VAL	engineered mutation	UNP P0DTC2
C	1027	ILE	THR	variant	UNP P0DTC2
C	1209	GLU	-	expression tag	UNP P0DTC2
C	1210	PHE	-	expression tag	UNP P0DTC2
C	1211	GLY	-	expression tag	UNP P0DTC2
C	1212	SER	-	expression tag	UNP P0DTC2
C	1213	GLY	-	expression tag	UNP P0DTC2
C	1214	GLY	-	expression tag	UNP P0DTC2
C	1215	TYR	-	expression tag	UNP P0DTC2
C	1216	ILE	-	expression tag	UNP P0DTC2
C	1217	PRO	-	expression tag	UNP P0DTC2
C	1218	GLU	-	expression tag	UNP P0DTC2
C	1219	ALA	-	expression tag	UNP P0DTC2
C	1220	PRO	-	expression tag	UNP P0DTC2
C	1221	ARG	-	expression tag	UNP P0DTC2
C	1222	ASP	-	expression tag	UNP P0DTC2
C	1223	GLY	-	expression tag	UNP P0DTC2
C	1224	GLN	-	expression tag	UNP P0DTC2
C	1225	ALA	-	expression tag	UNP P0DTC2
C	1226	TYR	-	expression tag	UNP P0DTC2
C	1227	VAL	-	expression tag	UNP P0DTC2
C	1228	ARG	-	expression tag	UNP P0DTC2
C	1229	LYS	-	expression tag	UNP P0DTC2
C	1230	ASP	-	expression tag	UNP P0DTC2
C	1231	GLY	-	expression tag	UNP P0DTC2
C	1232	GLU	-	expression tag	UNP P0DTC2
C	1233	TRP	-	expression tag	UNP P0DTC2
C	1234	VAL	-	expression tag	UNP P0DTC2
C	1235	LEU	-	expression tag	UNP P0DTC2
C	1236	LEU	-	expression tag	UNP P0DTC2
C	1237	SER	-	expression tag	UNP P0DTC2
C	1238	THR	-	expression tag	UNP P0DTC2
C	1239	PHE	-	expression tag	UNP P0DTC2
C	1240	LEU	-	expression tag	UNP P0DTC2
C	1241	LYS	-	expression tag	UNP P0DTC2
C	1242	GLY	-	expression tag	UNP P0DTC2
C	1243	GLN	-	expression tag	UNP P0DTC2
C	1244	ASP	-	expression tag	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
C	1245	ASN	-	expression tag	UNP P0DTC2
C	1246	SER	-	expression tag	UNP P0DTC2
C	1247	ALA	-	expression tag	UNP P0DTC2
C	1248	ASP	-	expression tag	UNP P0DTC2
C	1249	ILE	-	expression tag	UNP P0DTC2
C	1250	GLN	-	expression tag	UNP P0DTC2
C	1251	HIS	-	expression tag	UNP P0DTC2
C	1252	SER	-	expression tag	UNP P0DTC2
C	1253	GLY	-	expression tag	UNP P0DTC2
C	1254	ARG	-	expression tag	UNP P0DTC2
C	1255	PRO	-	expression tag	UNP P0DTC2
C	1256	LEU	-	expression tag	UNP P0DTC2
C	1257	GLU	-	expression tag	UNP P0DTC2
C	1258	SER	-	expression tag	UNP P0DTC2
C	1259	ARG	-	expression tag	UNP P0DTC2
C	1260	GLY	-	expression tag	UNP P0DTC2
C	1261	PRO	-	expression tag	UNP P0DTC2
C	1262	PHE	-	expression tag	UNP P0DTC2
C	1263	GLU	-	expression tag	UNP P0DTC2
C	1264	GLN	-	expression tag	UNP P0DTC2
C	1265	LYS	-	expression tag	UNP P0DTC2
C	1266	LEU	-	expression tag	UNP P0DTC2
C	1267	ILE	-	expression tag	UNP P0DTC2
C	1268	SER	-	expression tag	UNP P0DTC2
C	1269	GLU	-	expression tag	UNP P0DTC2
C	1270	GLU	-	expression tag	UNP P0DTC2
C	1271	ASP	-	expression tag	UNP P0DTC2
C	1272	LEU	-	expression tag	UNP P0DTC2
C	1273	ASN	-	expression tag	UNP P0DTC2
C	1274	MET	-	expression tag	UNP P0DTC2
C	1275	HIS	-	expression tag	UNP P0DTC2
C	1276	THR	-	expression tag	UNP P0DTC2
C	1277	GLY	-	expression tag	UNP P0DTC2
C	1278	HIS	-	expression tag	UNP P0DTC2
C	1279	HIS	-	expression tag	UNP P0DTC2
C	1280	HIS	-	expression tag	UNP P0DTC2
C	1281	HIS	-	expression tag	UNP P0DTC2
C	1282	HIS	-	expression tag	UNP P0DTC2
C	1283	HIS	-	expression tag	UNP P0DTC2

- Molecule 2 is a protein called Angiotensin-converting enzyme 2, Green fluorescent protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	D	596	Total	C	N	O	S	0	0
			4862	3111	805	917	29		
2	E	596	Total	C	N	O	S	0	0
			4862	3111	805	917	29		
2	F	596	Total	C	N	O	S	0	0
			4862	3111	805	917	29		

- Molecule 3 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
3	G	2	Total	C	N	O	0	0
			28	16	2	10		
3	H	2	Total	C	N	O	0	0
			28	16	2	10		
3	I	2	Total	C	N	O	0	0
			28	16	2	10		
3	J	2	Total	C	N	O	0	0
			28	16	2	10		
3	K	2	Total	C	N	O	0	0
			28	16	2	10		
3	L	2	Total	C	N	O	0	0
			28	16	2	10		
3	M	2	Total	C	N	O	0	0
			28	16	2	10		
3	N	2	Total	C	N	O	0	0
			28	16	2	10		
3	O	2	Total	C	N	O	0	0
			28	16	2	10		
3	P	2	Total	C	N	O	0	0
			28	16	2	10		
3	Q	2	Total	C	N	O	0	0
			28	16	2	10		
3	R	2	Total	C	N	O	0	0
			28	16	2	10		
3	S	2	Total	C	N	O	0	0
			28	16	2	10		
3	T	2	Total	C	N	O	0	0
			28	16	2	10		

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Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
3	U	2	28	16	2	10	0	0
3	V	2	28	16	2	10	0	0
3	W	2	28	16	2	10	0	0
3	X	2	28	16	2	10	0	0
3	Y	2	28	16	2	10	0	0
3	Z	2	28	16	2	10	0	0
3	a	2	28	16	2	10	0	0
3	b	2	28	16	2	10	0	0
3	c	2	28	16	2	10	0	0
3	d	2	28	16	2	10	0	0
3	e	2	28	16	2	10	0	0
3	f	2	28	16	2	10	0	0
3	g	2	28	16	2	10	0	0
3	h	2	28	16	2	10	0	0
3	i	2	28	16	2	10	0	0
3	j	2	28	16	2	10	0	0

- Molecule 4 is 2-acetamido-2-deoxy-beta-D-glucopyranose (three-letter code: NAG) (formula: $C_8H_{15}NO_6$).



Mol	Chain	Residues	Atoms				AltConf
			Total	C	N	O	
4	A	1	112	64	8	40	0
4	A	1	112	64	8	40	0
4	A	1	112	64	8	40	0
4	A	1	112	64	8	40	0
4	A	1	112	64	8	40	0
4	A	1	112	64	8	40	0
4	A	1	112	64	8	40	0
4	A	1	112	64	8	40	0
4	B	1	98	56	7	35	0
4	B	1	98	56	7	35	0
4	B	1	98	56	7	35	0
4	B	1	98	56	7	35	0
4	B	1	98	56	7	35	0
4	B	1	98	56	7	35	0

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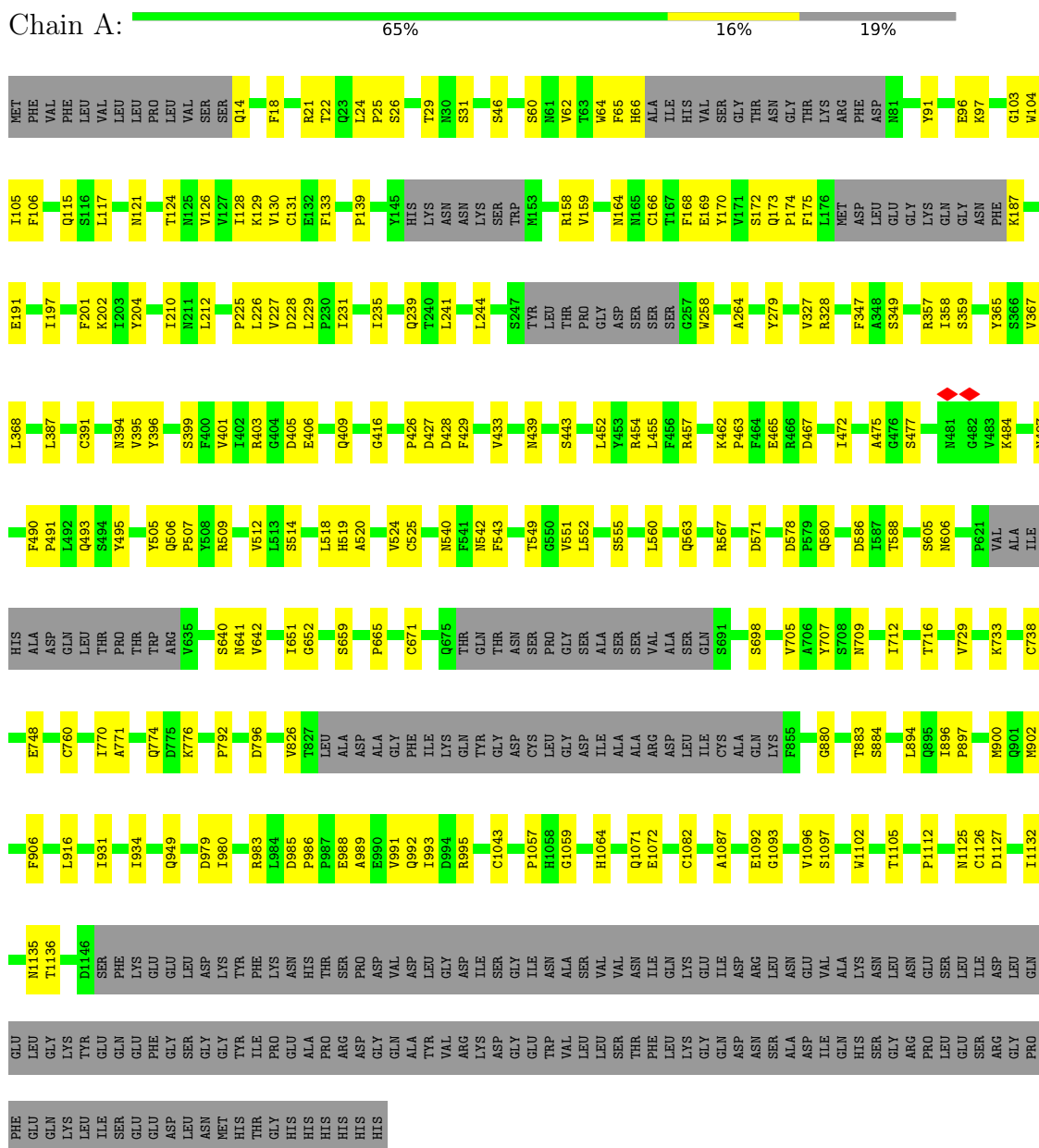
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Mol	Chain	Residues	Atoms				AltConf
			Total	C	N	O	
4	B	1	Total 98	C 56	N 7	O 35	0
4	C	1	Total 112	C 64	N 8	O 40	0
4	C	1	Total 112	C 64	N 8	O 40	0
4	C	1	Total 112	C 64	N 8	O 40	0
4	C	1	Total 112	C 64	N 8	O 40	0
4	C	1	Total 112	C 64	N 8	O 40	0
4	C	1	Total 112	C 64	N 8	O 40	0
4	C	1	Total 112	C 64	N 8	O 40	0
4	C	1	Total 112	C 64	N 8	O 40	0
4	C	1	Total 112	C 64	N 8	O 40	0
4	D	1	Total 84	C 48	N 6	O 30	0
4	D	1	Total 84	C 48	N 6	O 30	0
4	D	1	Total 84	C 48	N 6	O 30	0
4	D	1	Total 84	C 48	N 6	O 30	0
4	D	1	Total 84	C 48	N 6	O 30	0
4	D	1	Total 84	C 48	N 6	O 30	0

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: Spike glycoprotein



● Molecule 1: Spike glycoprotein

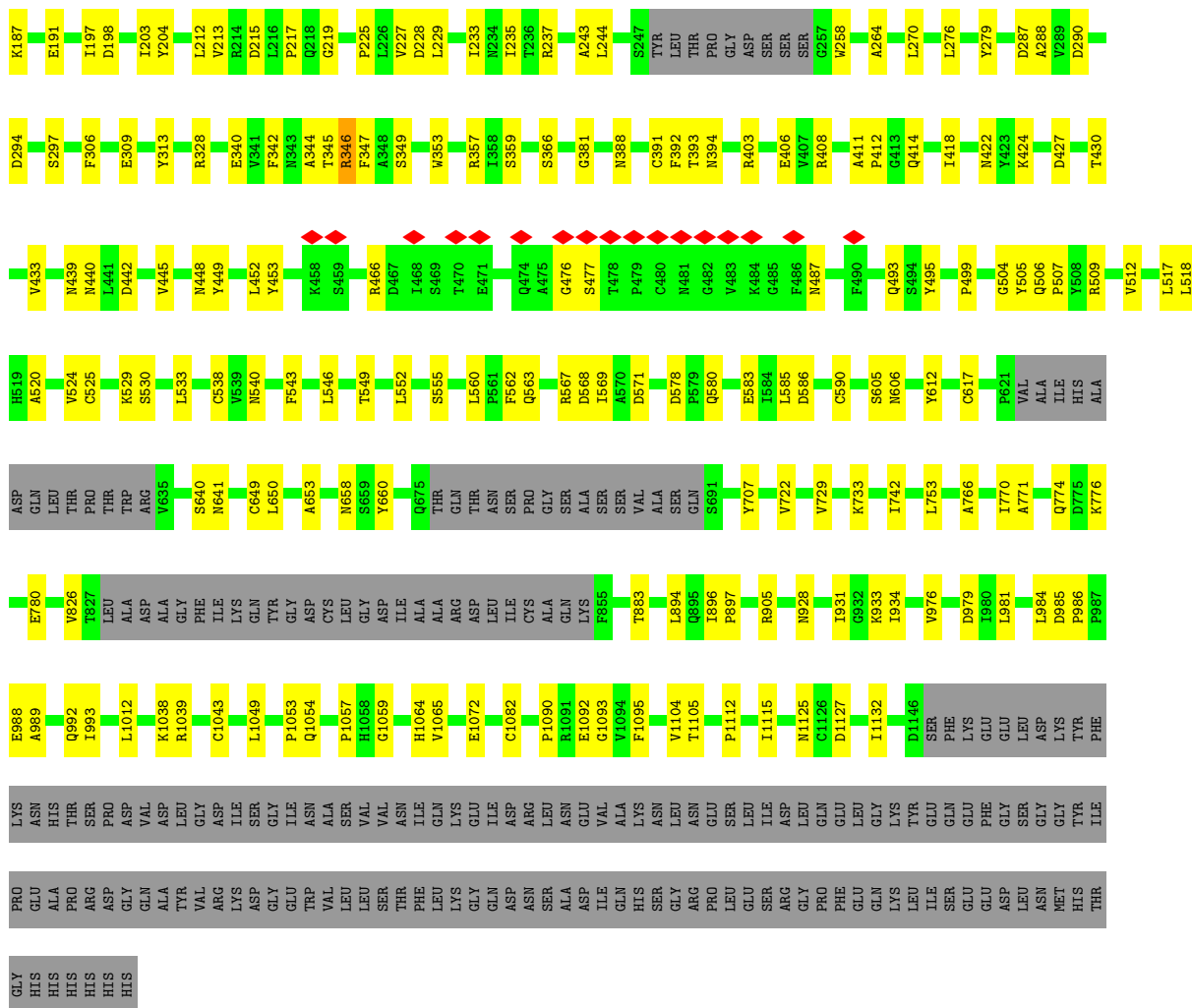


MET	PHE	VAL	PHE	LEU	VAL	LEU	LEU	PRO	PHO	LEU	LEU	VAL	VAL	LEU	SER	SER	Q14	M17	F18	R21	L24	P25	N30	S31	F32	Y36	S46	V47	L48	F65	H66	ALA	ILE	ALA	HIS	VAL	SER	GLY	THR	THR	ASN	GLY	THR	THR	LYS	ARG	ARG	PHE	ASP	N81	P82	V83	L84	G89	K97	S98	N99	R102																						
R102	I105	T109	L110	D111	L118	I119	V120	A123	V126	V130	C131	E132	F133	Q134	N137	Y138	L141	G142	V143	Y144	Y145	HIS	LYS	ASN	ASN	LYS	LYS	TRP	H153	R158	S161	S162	A163	M164	M165	C166	Y170	V171	S172	Q173	P174	F175	L176	MET	ASP	LEU	GLU	GLY																																
LYS	GLN	GLY	ASN	PHE	K187	I203	M211	L212	V213	R214	D215	L216	L223	C131	E132	F133	Q134	N137	Y138	L141	G142	V143	Y144	Y145	HIS	LYS	ASN	ASN	LYS	TRP	H153	R158	S161	S162	A163	M164	M165	C166	Y170	V171	S172	Q173	P174	F175	L176	MET	ASP	LEU	GLU	GLY																														
L227	D228	L229	P230	L231	G232	L233	N234	L241	L242	A243	L244	H245	R246	S247	TYR	LEU	THR	PHO	GLY	ASP	SER	SER	SER	SER	G2957	W258	A264	L270	L276	Y279	D290	C291	V327	R328	L332	F342	T345	R346	F347	A348	S349	V350	Y351	A352	M353	S359	F374	S375	T376	C391	F392	T393	V401	I402	R403	E406	A411	P412	G413	Q414	T415	I418	Y421	N422	D427	D428	F429	T430	G431	A435	W436	D442	S443	K444	V445	G446	G447	M448	L452	Y453
R454	L455	F456	R457	K458	S459	R466	D467	I468	S469	T470	E471	Y473	Q474	A475	G476	S477	T478	P479	C480	M481	G482	V483	K484	G485	F486	M487	C488	Y489	F490	P491	L492	O493	S494	Y495	T500	Y501	G502	V503	G504	Y505	R509	S514	F515	E516	L517	L518	H519	A520	P521	A522	T523	V524	C525	G526																										
P527	N542	F543	L546	S555	L560	Q563	R567	D571	D578	E583	L584	D586	S605	R606	N616	C617	T618	P621	VAL	ALA	ILE	HIS	ALA	ASP	GLN	LEU	THR	PRO	THR	TRP	ARG	W635	S640	N641	V642	L651	P665	C671	Q675	THR	GLN	H619	A520	P521	A522	T523	V524	C525	G526																															
THR	ASN	SER	PRO	GLY	SER	ALA	SER	SER	ARG	VAL	ALA	GLN	S691	V705	A706	Y707	T719	T724	L586	E725	I726	V729	C738	Y741	I742	L753	L754	L763	I770	Q774	P792	D796	Q804	V826	LEU	ALA	ASP	ALA	GLY	ALA	ALA	GLY	ALA	ALA	GLY	THR	THR	LYS	GLN	TYR	GLY																													
ASP	CYS	LEU	GLY	ILE	ALA	ALA	ARG	ASP	LEU	ALA	GLN	LYS	F855	T883	L894	P897	M900	Q926	F927	N928	I931	I934	Q935	S939	D950	V951	S975	V976	D979	R983	D985	E988	A989	I993	V1008	R1039	C1043	L1057	H1088	G1089	Y1061	H1064	E1072	C1082	E1092	G1093	V1104	I1115	M1125	C1126	D1127	I1132	D1146	SER	PHE	LYS	GLU	PHE	GLU	GLY	LEU	ASP	GLY	SER	ALA	ASN	GLY	LEU	TYR											
LYS	GLY	ASP	ASN	ARG	ASN	GLU	VAL	ILE	GLN	ALA	ASN	VAL	LEU	ASP	GLN	GLU	GLY	LEU	GLY	LEU	GLY	LYS	TYR	SER	GLN	GLU	PHE	GLU	ASP	LEU	ALA	ASN	MET	HIS	THR	GLY	HIS	ALA	PRO	ARG	ASP	GLY	ALA	TYR	VAL	VAL	LYS	ASP	GLY	GLY	ILE	TRP	VAL	VAL	LEU	SER	THR	PHE	LEU																					
LYS	GLY	ASP	ASN	ARG	ASN	PRO	LEU	GLU	SER	ARG	GLY	PRO	GLN	GLY	PHE	GLU	GLU	ASP	LEU	ALA	ASN	MET	HIS	THR	GLY	HIS	ALA	PRO	ARG	ASP	GLY	ALA	TYR	VAL	VAL	LYS	ASP	GLY	GLY	ILE	TRP	VAL	VAL	LEU	SER	THR	PHE	LEU																																

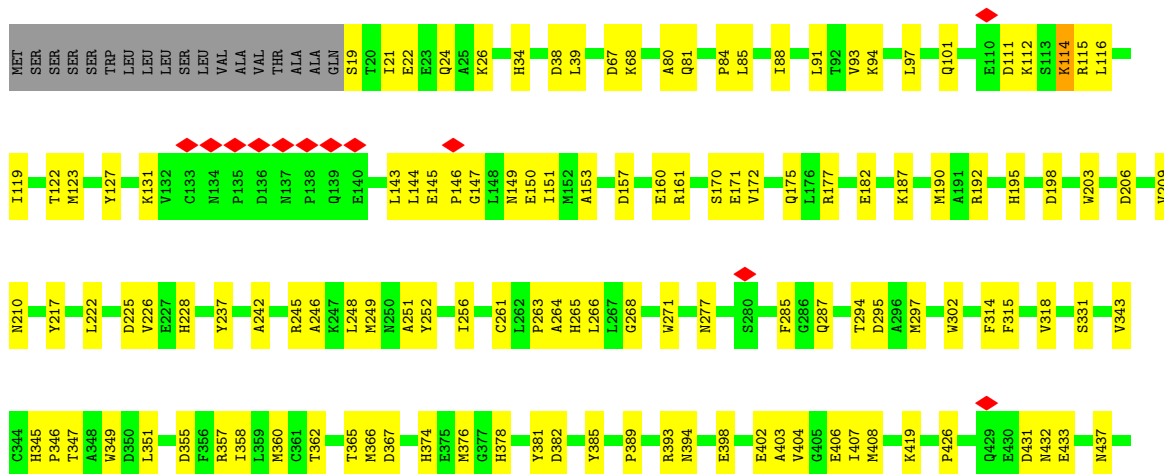
● Molecule 1: Spike glycoprotein

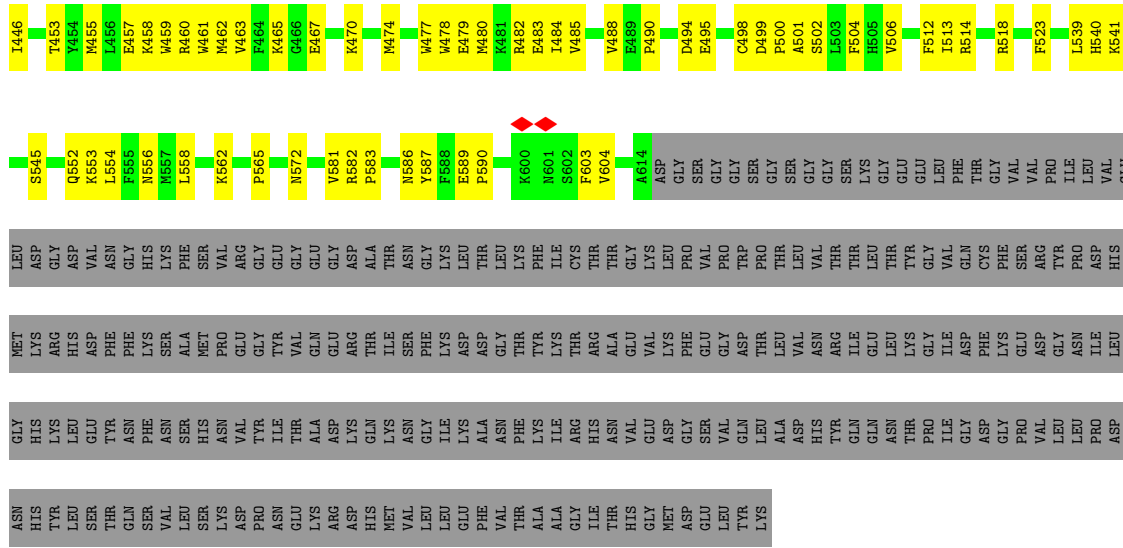


MET	PHE	VAL	PHE	LEU	VAL	LEU	LEU	PRO	PRO	LEU	LEU	VAL	VAL	SER	SER	Q14	P25	S26	N30	S31	F32	T33	R34	S46	F59	S60	W64	F65	H66	ALA	ILE	HIS	HIS	THR	GLY	HIS	VAL	SER	GLY	THR	ASN	GLY	THR	THR	LYS	ARG	PHE	ASP	N81	P82	V83	G89	V90	Y91	K97	S98	N99	R102
F106	G107	T108	S112	L117	M121	N122	A123	T124	N125	V126	V127	I128	K129	V130	C131	E132	F133	G142	V143	Y144	Y145	HIS	LYS	ASN	S60	W64	F65	H66	ALA	ILE	HIS	HIS	THR	GLY	HIS	VAL	SER	GLY	THR	ASN	GLY	THR	THR	LYS	ARG	PHE	ASP	N81	P82	V83	G89	V90	Y91	K97	S98	N99	R102	
G107	T108	S112	L117	M121	N122	A123	T124	N125	V126	V127	I128	K129	V130	C131	E132	F133	G142	V143	Y144	Y145	HIS	LYS	ASN	S60	W64	F65	H66	ALA	ILE	HIS	HIS	THR	GLY	HIS	VAL	SER	GLY	THR	ASN	GLY	THR	THR	LYS	ARG	PHE	ASP	N81	P82	V83	G89	V90	Y91	K97	S98	N99	R102		
T108	S112	L117	M121	N122	A123	T124	N125	V126	V127	I128	K129	V130	C131	E132	F133	G142	V143	Y144	Y145	HIS	LYS	ASN	S60	W64	F65	H66	ALA	ILE	HIS	HIS	THR	GLY	HIS	VAL	SER	GLY	THR	ASN	GLY	THR	THR	LYS	ARG	PHE	ASP	N81	P82	V83	G89	V90	Y91	K97	S98	N99	R102			
T108	S112	L117	M121	N122	A123	T124	N125	V126	V127	I128	K129	V130	C131	E132	F133	G142	V143	Y144	Y145	HIS	LYS	ASN	S60	W64	F65	H66	ALA	ILE	HIS	HIS	THR	GLY	HIS	VAL	SER	GLY	THR	ASN	GLY	THR	THR	LYS	ARG	PHE	ASP	N81	P82	V83	G89	V90	Y91	K97	S98	N99	R102			
T108	S112	L117	M121	N122	A123	T124	N125	V126	V127	I128	K129	V130	C131	E132	F133	G142	V143	Y144	Y145	HIS	LYS	ASN	S60	W64	F65	H66	ALA	ILE	HIS	HIS	THR	GLY	HIS	VAL	SER	GLY	THR	ASN	GLY	THR	THR	LYS	ARG	PHE	ASP	N81	P82	V83	G89	V90	Y91	K97	S98	N99	R102			

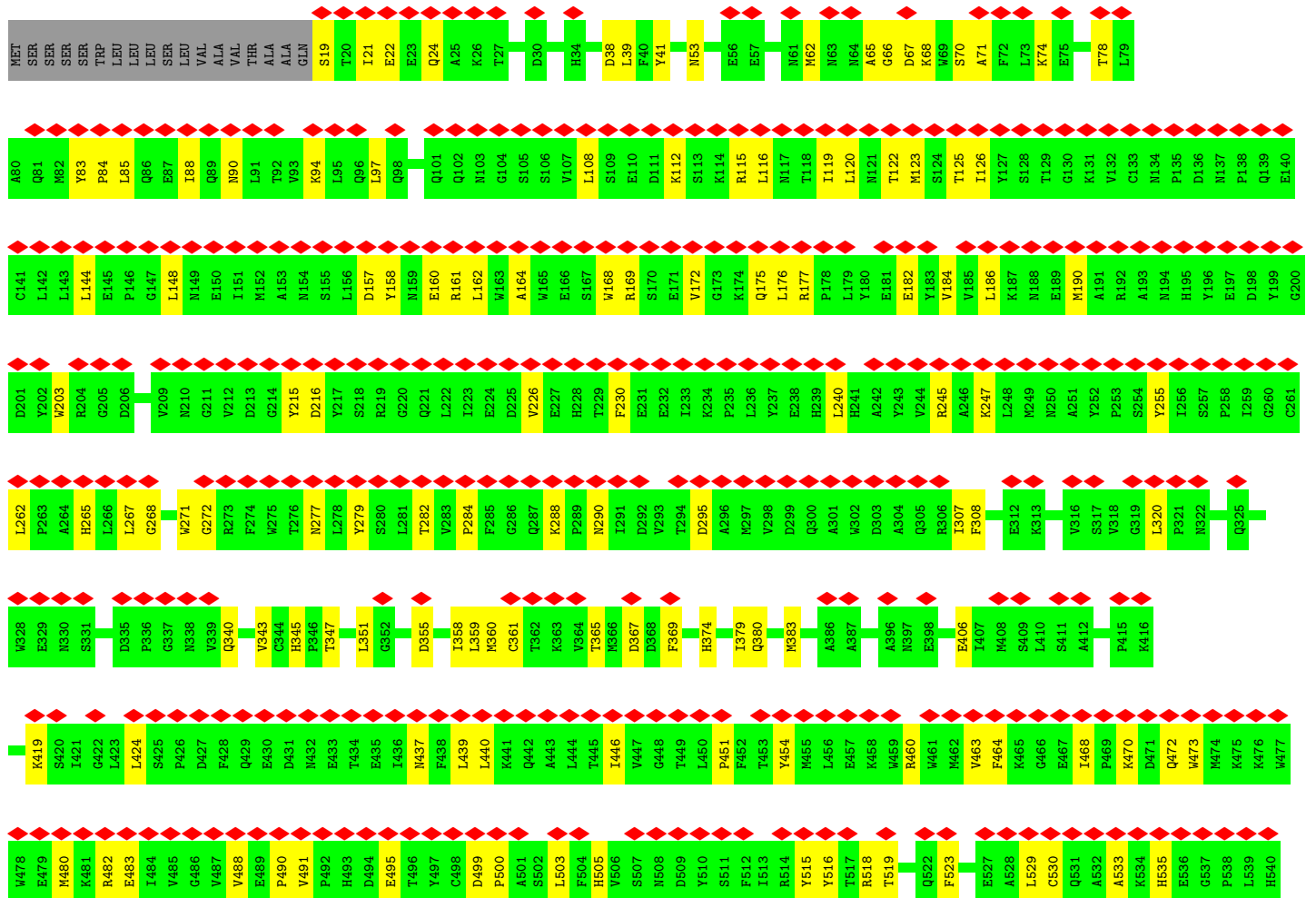


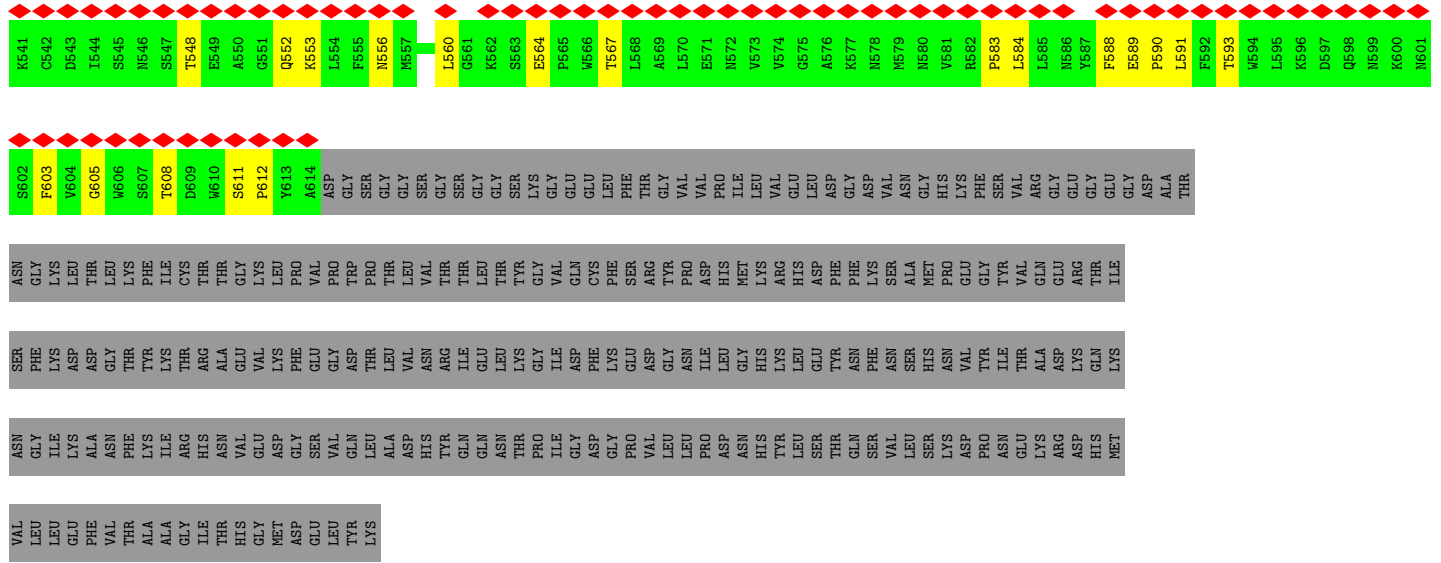
• Molecule 2: Angiotensin-converting enzyme 2, Green fluorescent protein



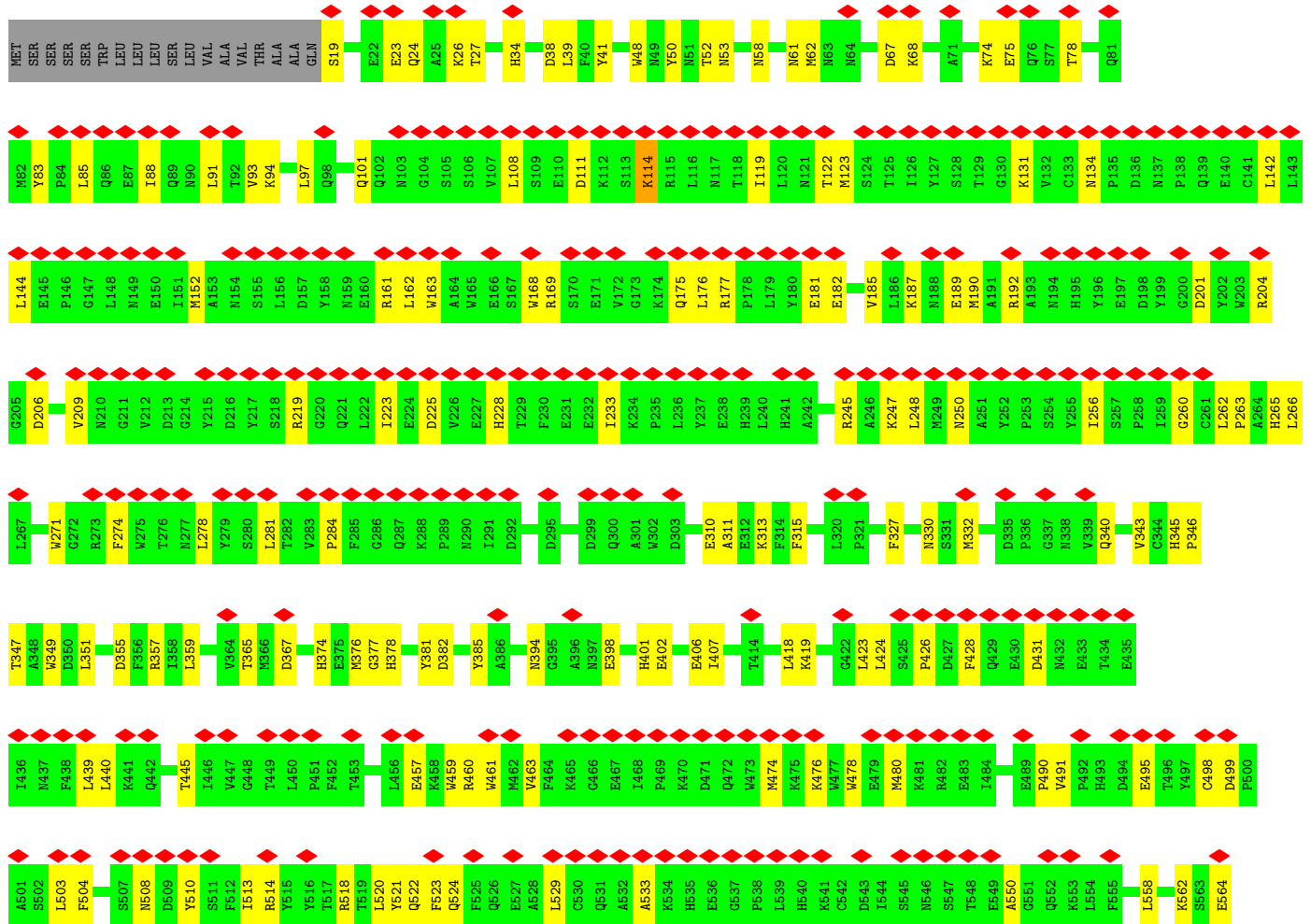


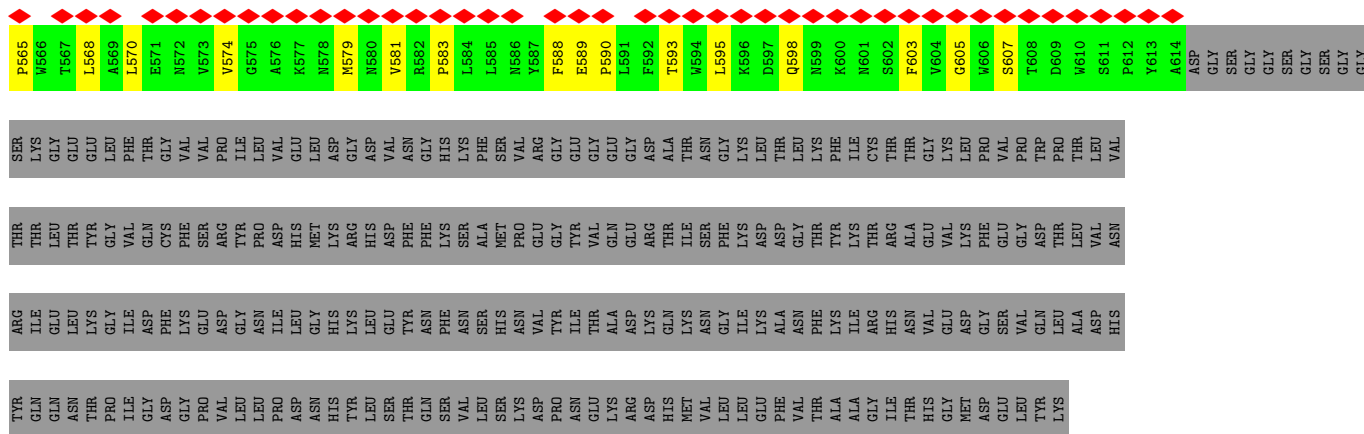
● Molecule 2: Angiotensin-converting enzyme 2, Green fluorescent protein



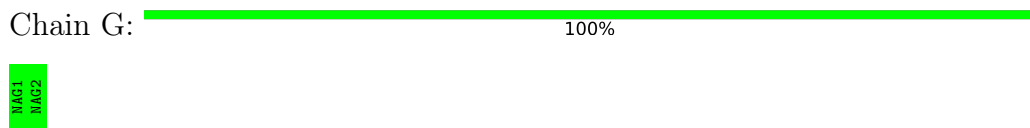


● Molecule 2: Angiotensin-converting enzyme 2, Green fluorescent protein

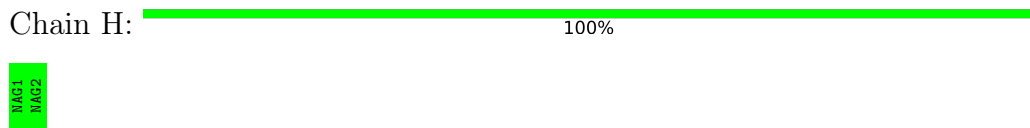




● Molecule 3: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose



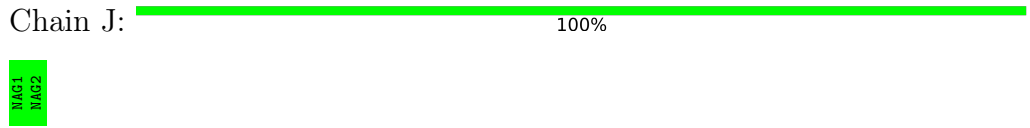
● Molecule 3: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose



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



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



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





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

Chain L:  100%



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

Chain M:  100%



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

Chain N:  100%



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

Chain O:  100%



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

Chain P:  50% 50%



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

Chain Q:  50% 50%



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

Chain R:  50% 50%

MAG1
MAG2

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

Chain S:  100%

MAG1
MAG2

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

Chain T:  100%

MAG1
MAG2

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

Chain U:  50% 50%

MAG1
MAG2

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

Chain V:  100%

MAG1
MAG2

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

Chain W:  100%

MAG1
MAG2

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

Chain X:  100%

MAG1
MAG2

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

Chain Y:  50% 50%

MAG1
MAG2

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

Chain Z:  100%

MAG1
MAG2

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

Chain a:  50% 50%

MAG1
MAG2

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

Chain b:  100%

MAG1
MAG2

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

Chain c:  100%

MAG1
MAG2

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

Chain d:  100%

MAG1
MAG2

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

Chain e:  100%

MAG1
MAG2

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

Chain f:  100%

MAG1
MAG2

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

Chain g:  100%

MAG1
MAG2

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

Chain h:  50%

MAG1
MAG2

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

Chain i:  100%

MAG1
MAG2

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

Chain j:  100%

MAG1
MAG2

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	953630	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 ($e^-/\text{\AA}^2$)	1.0	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	4.211	Depositor
Minimum map value	-2.596	Depositor
Average map value	-0.002	Depositor
Map value standard deviation	0.062	Depositor
Recommended contour level	0.2	Depositor
Map size (Å)	422.40002, 422.40002, 422.40002	wwPDB
Map dimensions	384, 384, 384	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.1, 1.1, 1.1	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: NAG

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	0.35	0/8298	0.51	0/11296
1	B	0.34	0/8298	0.50	0/11296
1	C	0.33	0/8298	0.50	0/11296
2	D	0.25	0/4999	0.45	0/6792
2	E	0.24	0/4999	0.43	0/6792
2	F	0.24	0/4999	0.44	0/6792
All	All	0.31	0/39891	0.48	0/54264

There are no bond length outliers.

There are no bond angle outliers.

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	8110	0	7892	142	0
1	B	8110	0	7891	136	0
1	C	8110	0	7892	158	0
2	D	4862	0	4633	131	0
2	E	4862	0	4639	101	0
2	F	4862	0	4639	114	0
3	G	28	0	25	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	H	28	0	25	0	0
3	I	28	0	25	0	0
3	J	28	0	25	0	0
3	K	28	0	25	1	0
3	L	28	0	25	0	0
3	M	28	0	25	0	0
3	N	28	0	25	0	0
3	O	28	0	25	0	0
3	P	28	0	25	1	0
3	Q	28	0	25	1	0
3	R	28	0	25	1	0
3	S	28	0	25	0	0
3	T	28	0	25	0	0
3	U	28	0	25	1	0
3	V	28	0	25	0	0
3	W	28	0	25	0	0
3	X	28	0	25	0	0
3	Y	28	0	25	0	0
3	Z	28	0	25	0	0
3	a	28	0	25	0	0
3	b	28	0	25	0	0
3	c	28	0	25	0	0
3	d	28	0	25	0	0
3	e	28	0	25	0	0
3	f	28	0	25	0	0
3	g	28	0	25	0	0
3	h	28	0	25	0	0
3	i	28	0	25	0	0
3	j	28	0	25	0	0
4	A	112	0	101	2	0
4	B	98	0	89	1	0
4	C	112	0	104	4	0
4	D	84	0	78	3	0
All	All	40162	0	38708	766	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 10.

The worst 5 of 766 close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:164:ASN:HB2	3:R:1:NAG:H83	1.54	0.89
1:A:65:PHE:O	1:A:264:ALA:HA	1.80	0.82
1:C:65:PHE:O	1:C:264:ALA:HA	1.79	0.81
1:C:346:ARG:NH1	1:C:347:PHE:O	2.15	0.79
1:C:25:PRO:HD2	1:C:66:HIS:HB2	1.64	0.79

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	1022/1283 (80%)	965 (94%)	57 (6%)	0	100	100
1	B	1022/1283 (80%)	956 (94%)	66 (6%)	0	100	100
1	C	1022/1283 (80%)	968 (95%)	54 (5%)	0	100	100
2	D	594/861 (69%)	560 (94%)	34 (6%)	0	100	100
2	E	594/861 (69%)	562 (95%)	32 (5%)	0	100	100
2	F	594/861 (69%)	561 (94%)	33 (6%)	0	100	100
All	All	4848/6432 (75%)	4572 (94%)	276 (6%)	0	100	100

There are no Ramachandran outliers to report.

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	906/1115 (81%)	906 (100%)	0	100	100
1	B	906/1115 (81%)	906 (100%)	0	100	100
1	C	906/1115 (81%)	904 (100%)	2 (0%)	93	98
2	D	526/752 (70%)	525 (100%)	1 (0%)	93	98
2	E	526/752 (70%)	526 (100%)	0	100	100
2	F	526/752 (70%)	525 (100%)	1 (0%)	93	98
All	All	4296/5601 (77%)	4292 (100%)	4 (0%)	93	98

All (4) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	C	346	ARG
1	C	529	LYS
2	D	114	LYS
2	F	114	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 10 such sidechains are listed below:

Mol	Chain	Res	Type
2	E	290	ASN
2	E	378	HIS
2	F	340	GLN
1	C	774	GLN
2	D	81	GLN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

60 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	G	1	3,1	14,14,15	0.24	0	17,19,21	0.39	0
3	NAG	G	2	3	14,14,15	0.19	0	17,19,21	0.41	0
3	NAG	H	1	3,1	14,14,15	0.20	0	17,19,21	0.57	0
3	NAG	H	2	3	14,14,15	0.19	0	17,19,21	0.42	0
3	NAG	I	1	3,1	14,14,15	0.31	0	17,19,21	0.46	0
3	NAG	I	2	3	14,14,15	0.29	0	17,19,21	0.41	0
3	NAG	J	1	3,1	14,14,15	0.20	0	17,19,21	0.50	0
3	NAG	J	2	3	14,14,15	0.19	0	17,19,21	0.40	0
3	NAG	K	1	3,1	14,14,15	0.53	0	17,19,21	1.25	1 (5%)
3	NAG	K	2	3	14,14,15	0.24	0	17,19,21	0.47	0
3	NAG	L	1	3,1	14,14,15	0.23	0	17,19,21	0.54	0
3	NAG	L	2	3	14,14,15	0.17	0	17,19,21	0.48	0
3	NAG	M	1	3,1	14,14,15	0.28	0	17,19,21	0.50	0
3	NAG	M	2	3	14,14,15	0.18	0	17,19,21	0.45	0
3	NAG	N	1	3,1	14,14,15	0.22	0	17,19,21	0.48	0
3	NAG	N	2	3	14,14,15	0.21	0	17,19,21	0.40	0
3	NAG	O	1	3,1	14,14,15	0.22	0	17,19,21	0.44	0
3	NAG	O	2	3	14,14,15	0.22	0	17,19,21	0.40	0
3	NAG	P	1	3,1	14,14,15	0.53	0	17,19,21	1.40	1 (5%)
3	NAG	P	2	3	14,14,15	0.25	0	17,19,21	0.48	0
3	NAG	Q	1	3,1	14,14,15	0.22	0	17,19,21	0.46	0
3	NAG	Q	2	3	14,14,15	0.27	0	17,19,21	0.58	0
3	NAG	R	1	3,1	14,14,15	0.44	0	17,19,21	0.54	0
3	NAG	R	2	3	14,14,15	0.21	0	17,19,21	0.40	0
3	NAG	S	1	3,1	14,14,15	0.30	0	17,19,21	0.66	0
3	NAG	S	2	3	14,14,15	0.19	0	17,19,21	0.43	0
3	NAG	T	1	3,1	14,14,15	0.26	0	17,19,21	0.40	0
3	NAG	T	2	3	14,14,15	0.19	0	17,19,21	0.39	0
3	NAG	U	1	3,1	14,14,15	0.19	0	17,19,21	0.42	0
3	NAG	U	2	3	14,14,15	0.40	0	17,19,21	1.23	1 (5%)
3	NAG	V	1	3,1	14,14,15	0.51	0	17,19,21	0.34	0
3	NAG	V	2	3	14,14,15	0.23	0	17,19,21	0.40	0
3	NAG	W	1	3,1	14,14,15	0.32	0	17,19,21	0.49	0
3	NAG	W	2	3	14,14,15	0.18	0	17,19,21	0.44	0
3	NAG	X	1	3,1	14,14,15	0.25	0	17,19,21	0.43	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
3	NAG	X	2	3	14,14,15	0.18	0	17,19,21	0.47	0
3	NAG	Y	1	3,1	14,14,15	0.34	0	17,19,21	0.70	1 (5%)
3	NAG	Y	2	3	14,14,15	0.26	0	17,19,21	0.38	0
3	NAG	Z	1	3,1	14,14,15	0.27	0	17,19,21	0.39	0
3	NAG	Z	2	3	14,14,15	0.17	0	17,19,21	0.41	0
3	NAG	a	1	3,1	14,14,15	0.30	0	17,19,21	0.40	0
3	NAG	a	2	3	14,14,15	0.38	0	17,19,21	1.22	1 (5%)
3	NAG	b	1	3,1	14,14,15	0.37	0	17,19,21	0.44	0
3	NAG	b	2	3	14,14,15	0.19	0	17,19,21	0.38	0
3	NAG	c	1	3,1	14,14,15	0.21	0	17,19,21	0.39	0
3	NAG	c	2	3	14,14,15	0.19	0	17,19,21	0.40	0
3	NAG	d	1	3,1	14,14,15	0.22	0	17,19,21	0.43	0
3	NAG	d	2	3	14,14,15	0.22	0	17,19,21	0.42	0
3	NAG	e	1	3,1	14,14,15	0.28	0	17,19,21	0.40	0
3	NAG	e	2	3	14,14,15	0.22	0	17,19,21	0.41	0
3	NAG	f	1	3,1	14,14,15	0.29	0	17,19,21	0.47	0
3	NAG	f	2	3	14,14,15	0.20	0	17,19,21	0.45	0
3	NAG	g	1	3,1	14,14,15	0.26	0	17,19,21	0.42	0
3	NAG	g	2	3	14,14,15	0.19	0	17,19,21	0.44	0
3	NAG	h	1	3,1	14,14,15	0.34	0	17,19,21	0.68	1 (5%)
3	NAG	h	2	3	14,14,15	0.33	0	17,19,21	0.43	0
3	NAG	i	1	3,1	14,14,15	0.34	0	17,19,21	0.46	0
3	NAG	i	2	3	14,14,15	0.20	0	17,19,21	0.53	0
3	NAG	j	1	3,1	14,14,15	0.28	0	17,19,21	0.55	0
3	NAG	j	2	3	14,14,15	0.22	0	17,19,21	0.50	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	G	1	3,1	-	2/6/23/26	0/1/1/1
3	NAG	G	2	3	-	4/6/23/26	0/1/1/1
3	NAG	H	1	3,1	-	1/6/23/26	0/1/1/1
3	NAG	H	2	3	-	0/6/23/26	0/1/1/1
3	NAG	I	1	3,1	-	2/6/23/26	0/1/1/1
3	NAG	I	2	3	-	2/6/23/26	0/1/1/1
3	NAG	J	1	3,1	-	0/6/23/26	0/1/1/1
3	NAG	J	2	3	-	2/6/23/26	0/1/1/1
3	NAG	K	1	3,1	-	4/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	NAG	K	2	3	-	0/6/23/26	0/1/1/1
3	NAG	L	1	3,1	-	2/6/23/26	0/1/1/1
3	NAG	L	2	3	-	2/6/23/26	0/1/1/1
3	NAG	M	1	3,1	-	2/6/23/26	0/1/1/1
3	NAG	M	2	3	-	0/6/23/26	0/1/1/1
3	NAG	N	1	3,1	-	2/6/23/26	0/1/1/1
3	NAG	N	2	3	-	2/6/23/26	0/1/1/1
3	NAG	O	1	3,1	-	2/6/23/26	0/1/1/1
3	NAG	O	2	3	-	0/6/23/26	0/1/1/1
3	NAG	P	1	3,1	-	1/6/23/26	0/1/1/1
3	NAG	P	2	3	-	2/6/23/26	0/1/1/1
3	NAG	Q	1	3,1	-	0/6/23/26	0/1/1/1
3	NAG	Q	2	3	-	3/6/23/26	0/1/1/1
3	NAG	R	1	3,1	-	3/6/23/26	0/1/1/1
3	NAG	R	2	3	-	0/6/23/26	0/1/1/1
3	NAG	S	1	3,1	-	3/6/23/26	0/1/1/1
3	NAG	S	2	3	-	0/6/23/26	0/1/1/1
3	NAG	T	1	3,1	-	0/6/23/26	0/1/1/1
3	NAG	T	2	3	-	1/6/23/26	0/1/1/1
3	NAG	U	1	3,1	-	2/6/23/26	0/1/1/1
3	NAG	U	2	3	-	5/6/23/26	0/1/1/1
3	NAG	V	1	3,1	-	2/6/23/26	0/1/1/1
3	NAG	V	2	3	-	1/6/23/26	0/1/1/1
3	NAG	W	1	3,1	-	0/6/23/26	0/1/1/1
3	NAG	W	2	3	-	0/6/23/26	0/1/1/1
3	NAG	X	1	3,1	-	2/6/23/26	0/1/1/1
3	NAG	X	2	3	-	0/6/23/26	0/1/1/1
3	NAG	Y	1	3,1	-	2/6/23/26	0/1/1/1
3	NAG	Y	2	3	-	2/6/23/26	0/1/1/1
3	NAG	Z	1	3,1	-	2/6/23/26	0/1/1/1
3	NAG	Z	2	3	-	2/6/23/26	0/1/1/1
3	NAG	a	1	3,1	-	2/6/23/26	0/1/1/1
3	NAG	a	2	3	-	3/6/23/26	0/1/1/1
3	NAG	b	1	3,1	-	2/6/23/26	0/1/1/1
3	NAG	b	2	3	-	1/6/23/26	0/1/1/1
3	NAG	c	1	3,1	-	2/6/23/26	0/1/1/1
3	NAG	c	2	3	-	0/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	NAG	d	1	3,1	-	2/6/23/26	0/1/1/1
3	NAG	d	2	3	-	2/6/23/26	0/1/1/1
3	NAG	e	1	3,1	-	2/6/23/26	0/1/1/1
3	NAG	e	2	3	-	2/6/23/26	0/1/1/1
3	NAG	f	1	3,1	-	0/6/23/26	0/1/1/1
3	NAG	f	2	3	-	0/6/23/26	0/1/1/1
3	NAG	g	1	3,1	-	0/6/23/26	0/1/1/1
3	NAG	g	2	3	-	0/6/23/26	0/1/1/1
3	NAG	h	1	3,1	-	0/6/23/26	0/1/1/1
3	NAG	h	2	3	-	1/6/23/26	0/1/1/1
3	NAG	i	1	3,1	-	0/6/23/26	0/1/1/1
3	NAG	i	2	3	-	1/6/23/26	0/1/1/1
3	NAG	j	1	3,1	-	3/6/23/26	0/1/1/1
3	NAG	j	2	3	-	3/6/23/26	0/1/1/1

There are no bond length outliers.

The worst 5 of 6 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	P	1	NAG	C1-O5-C5	5.49	119.63	112.19
3	K	1	NAG	C1-O5-C5	4.74	118.62	112.19
3	U	2	NAG	C2-N2-C7	4.28	129.00	122.90
3	a	2	NAG	C2-N2-C7	4.22	128.92	122.90
3	Y	1	NAG	C1-O5-C5	2.48	115.56	112.19

There are no chirality outliers.

5 of 88 torsion outliers are listed below:

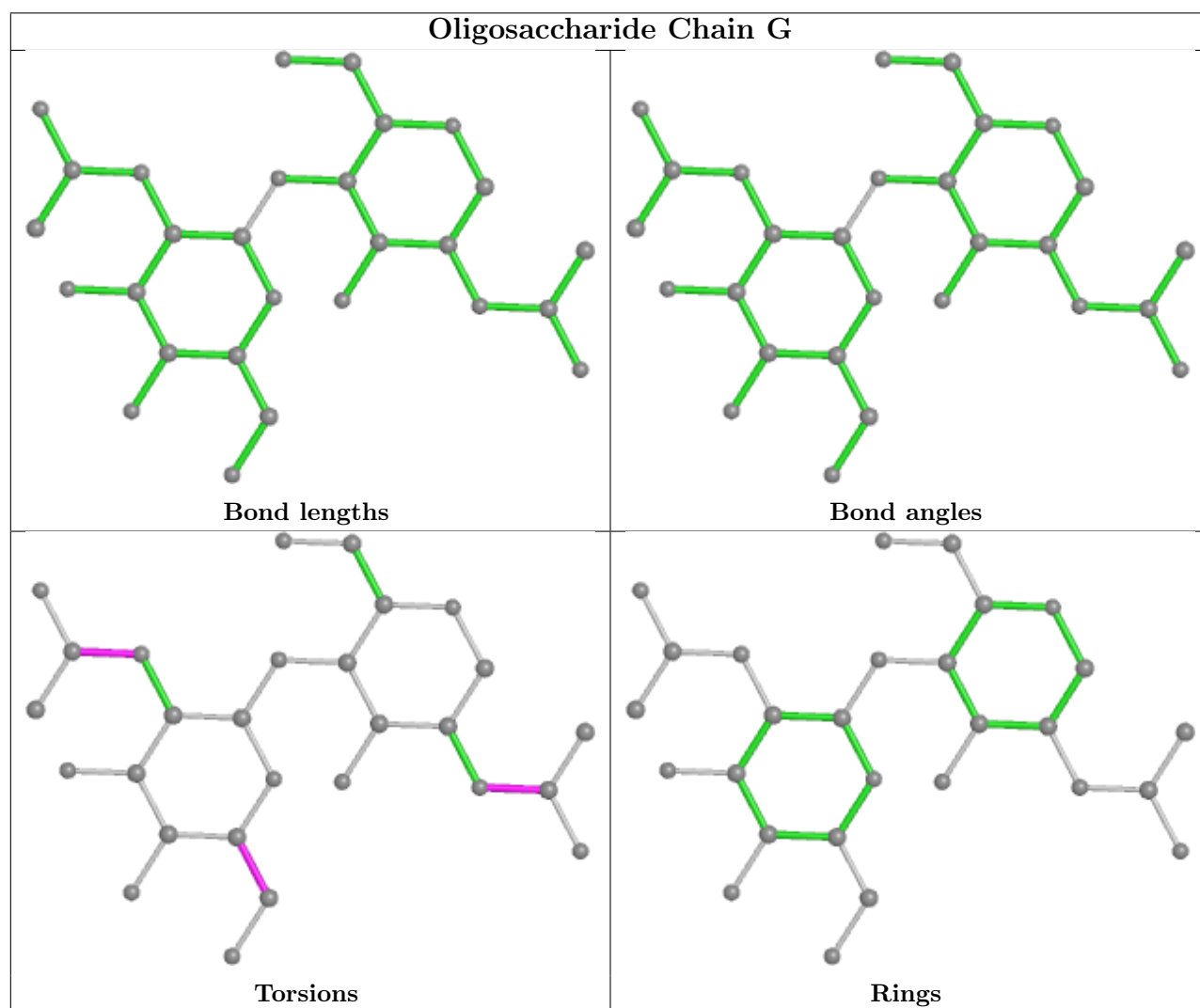
Mol	Chain	Res	Type	Atoms
3	d	1	NAG	O5-C5-C6-O6
3	N	2	NAG	C4-C5-C6-O6
3	J	2	NAG	O5-C5-C6-O6
3	K	1	NAG	O5-C5-C6-O6
3	V	1	NAG	O5-C5-C6-O6

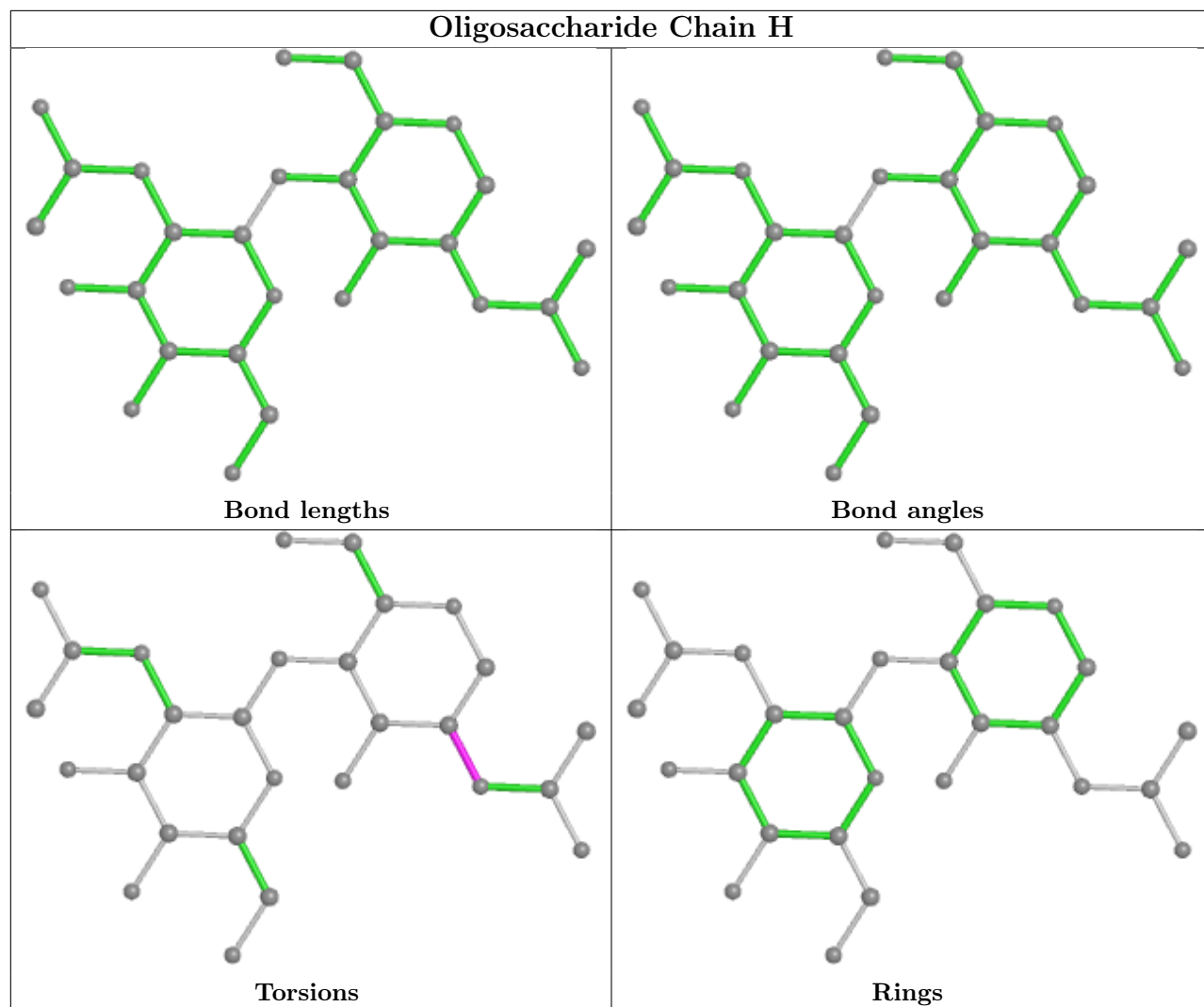
There are no ring outliers.

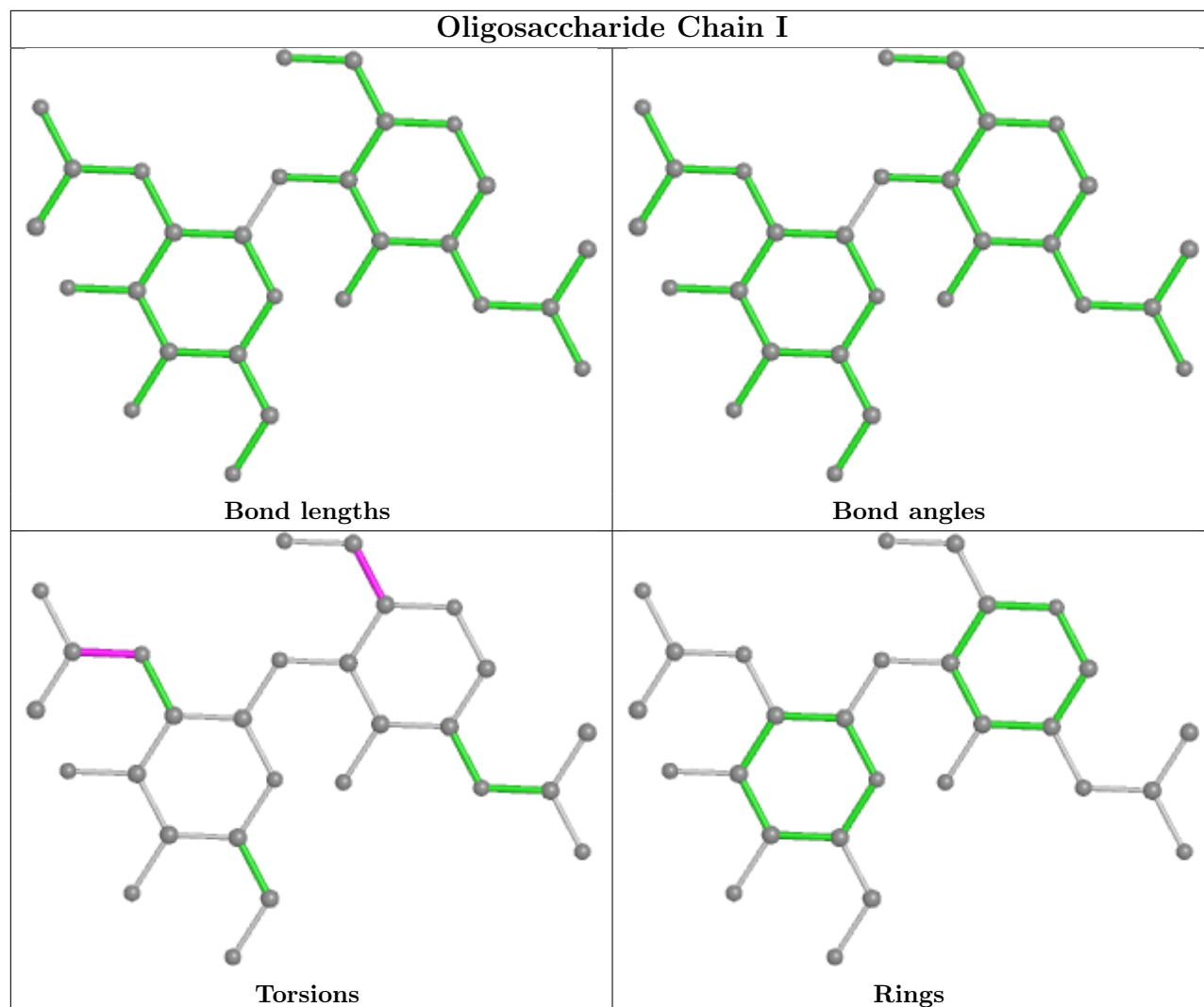
6 monomers are involved in 5 short contacts:

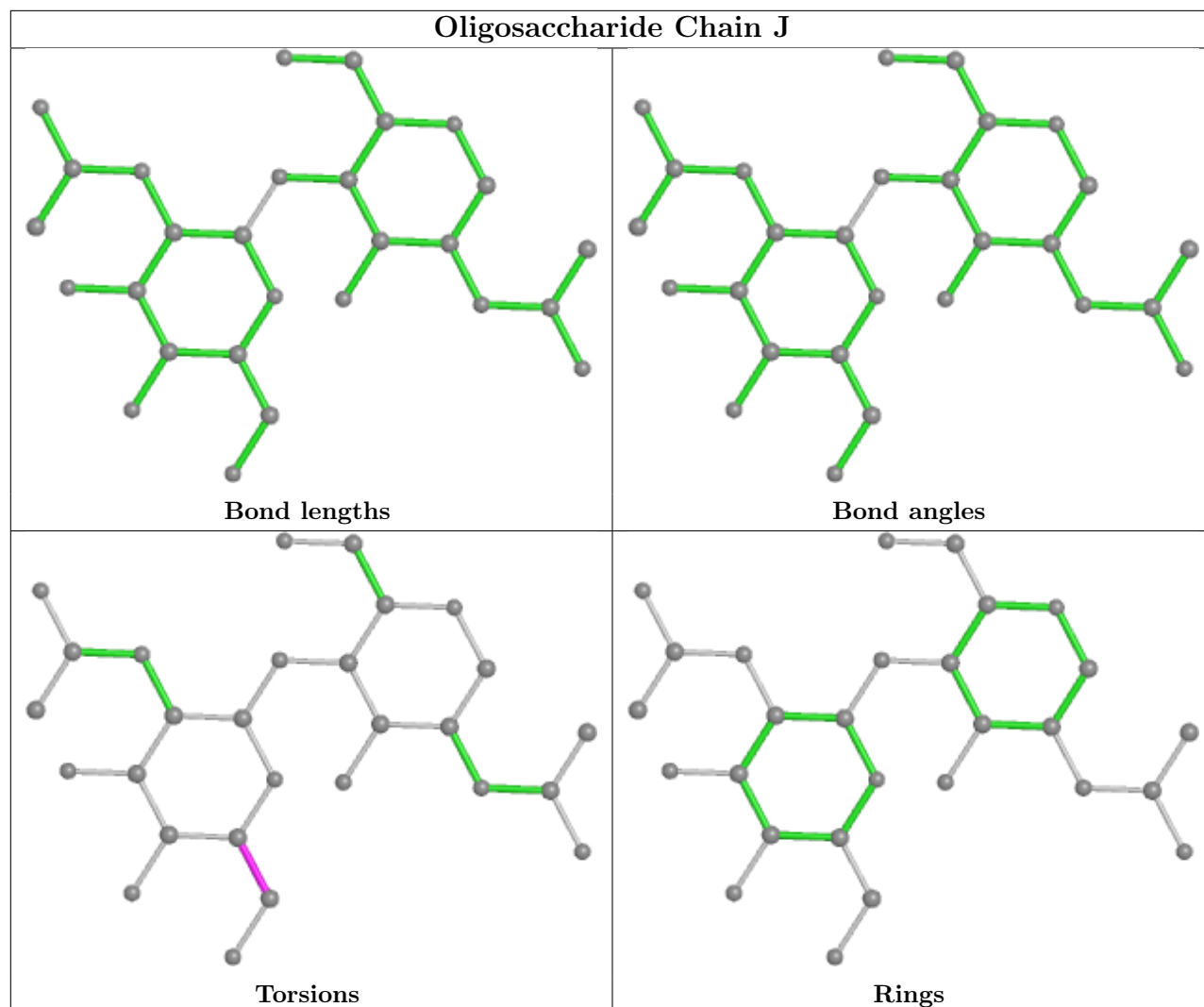
Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	U	2	NAG	1	0
3	P	2	NAG	1	0
3	R	1	NAG	1	0
3	K	1	NAG	1	0
3	Q	1	NAG	1	0
3	P	1	NAG	1	0

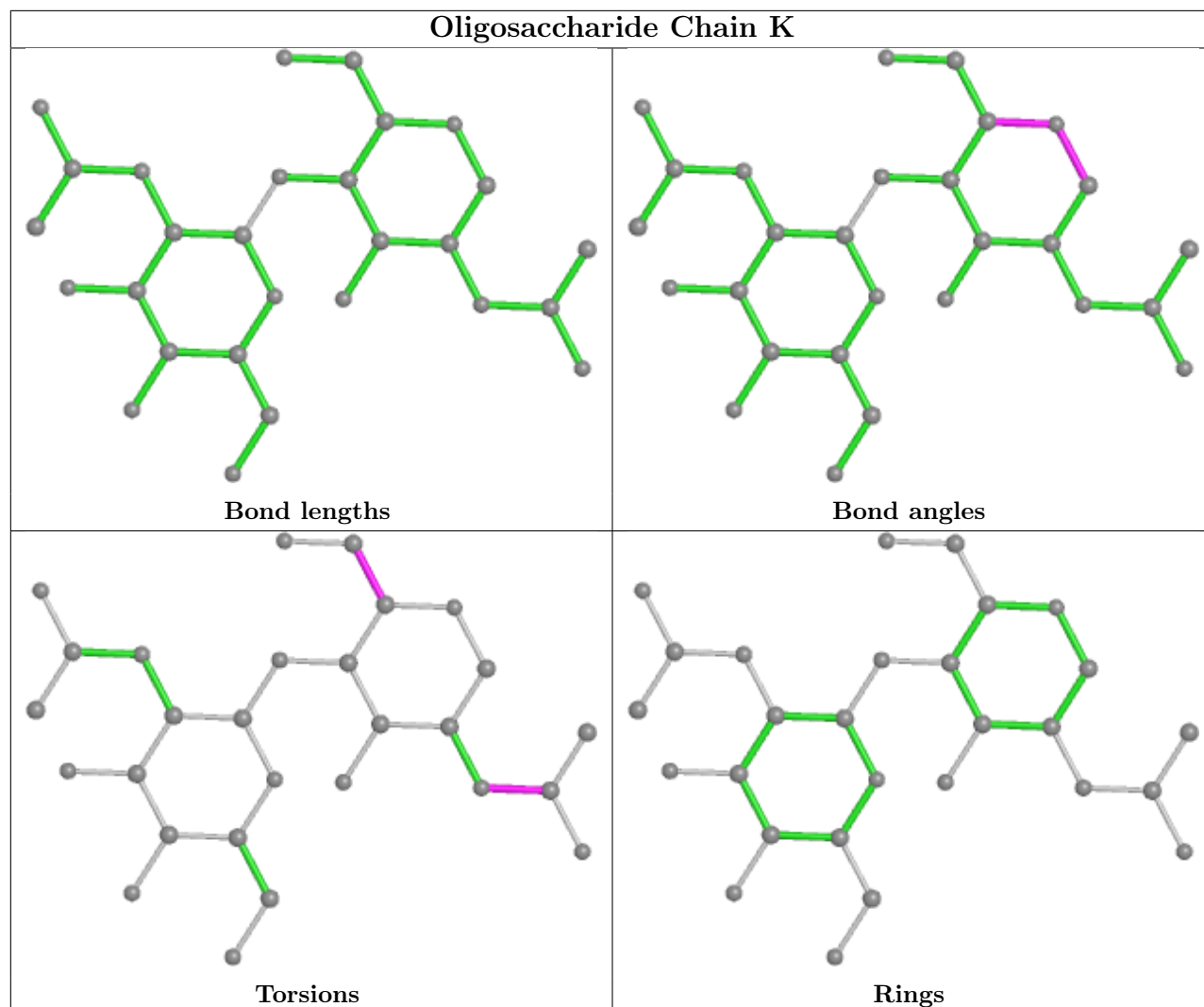
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for oligosaccharide.

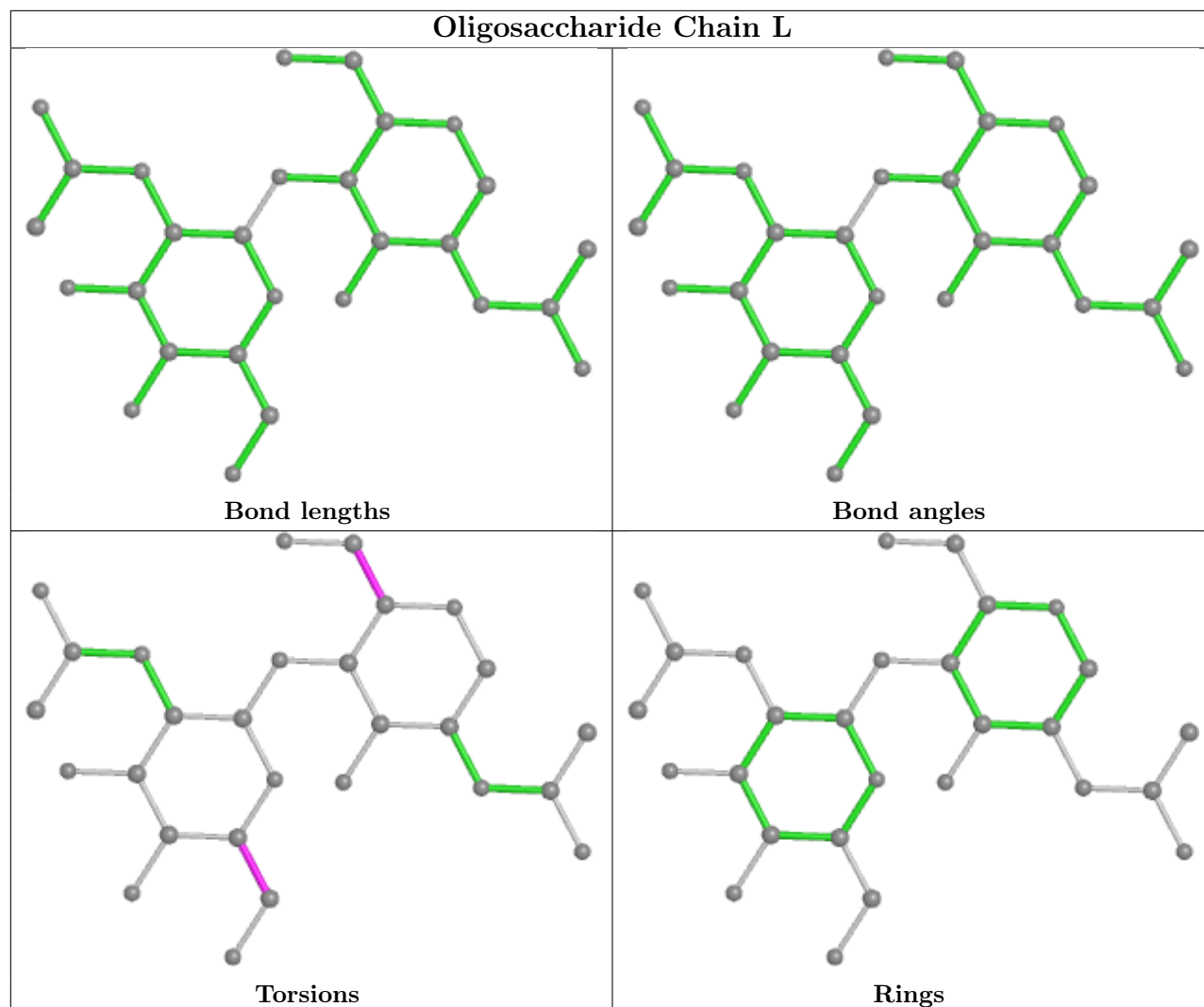


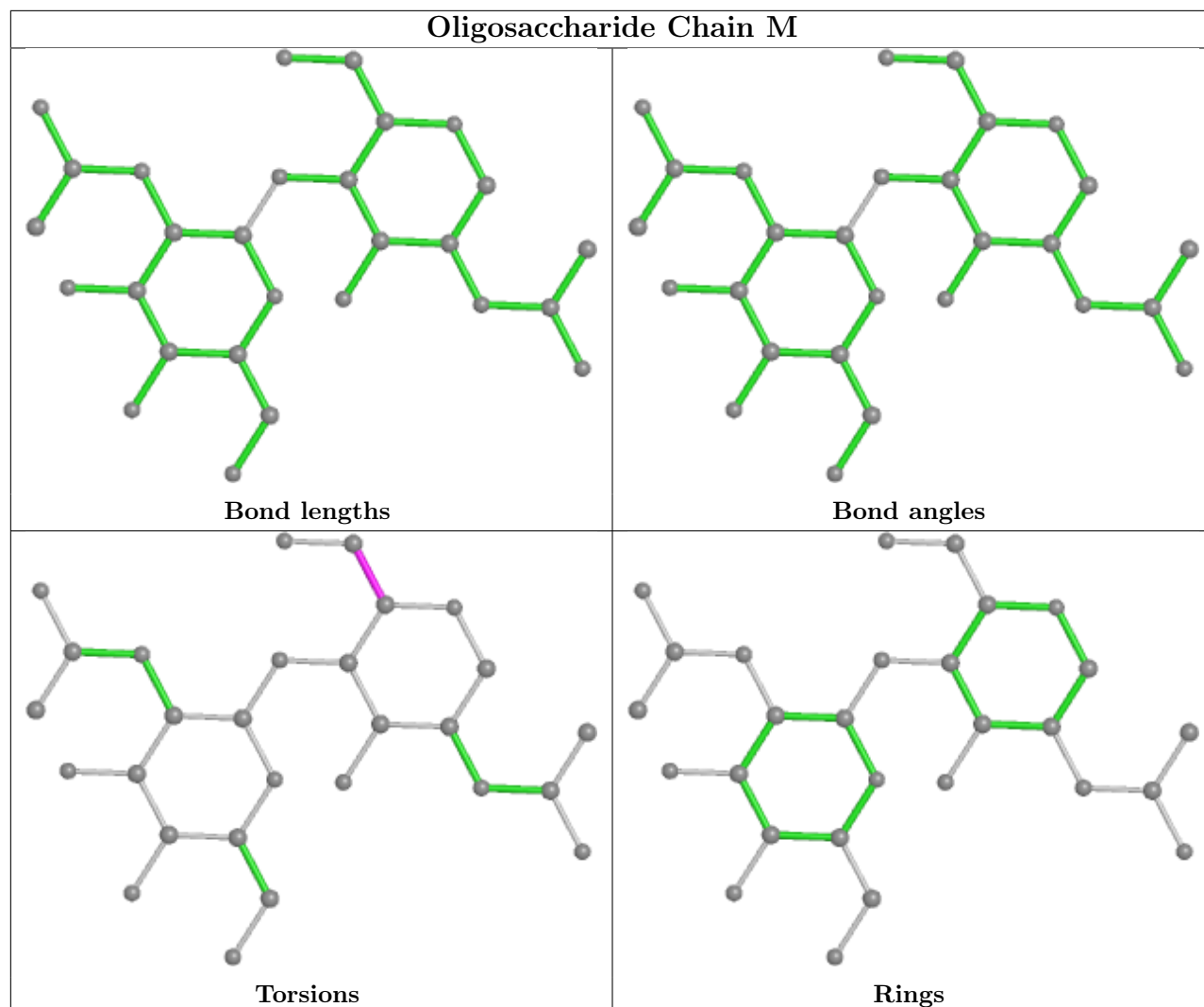


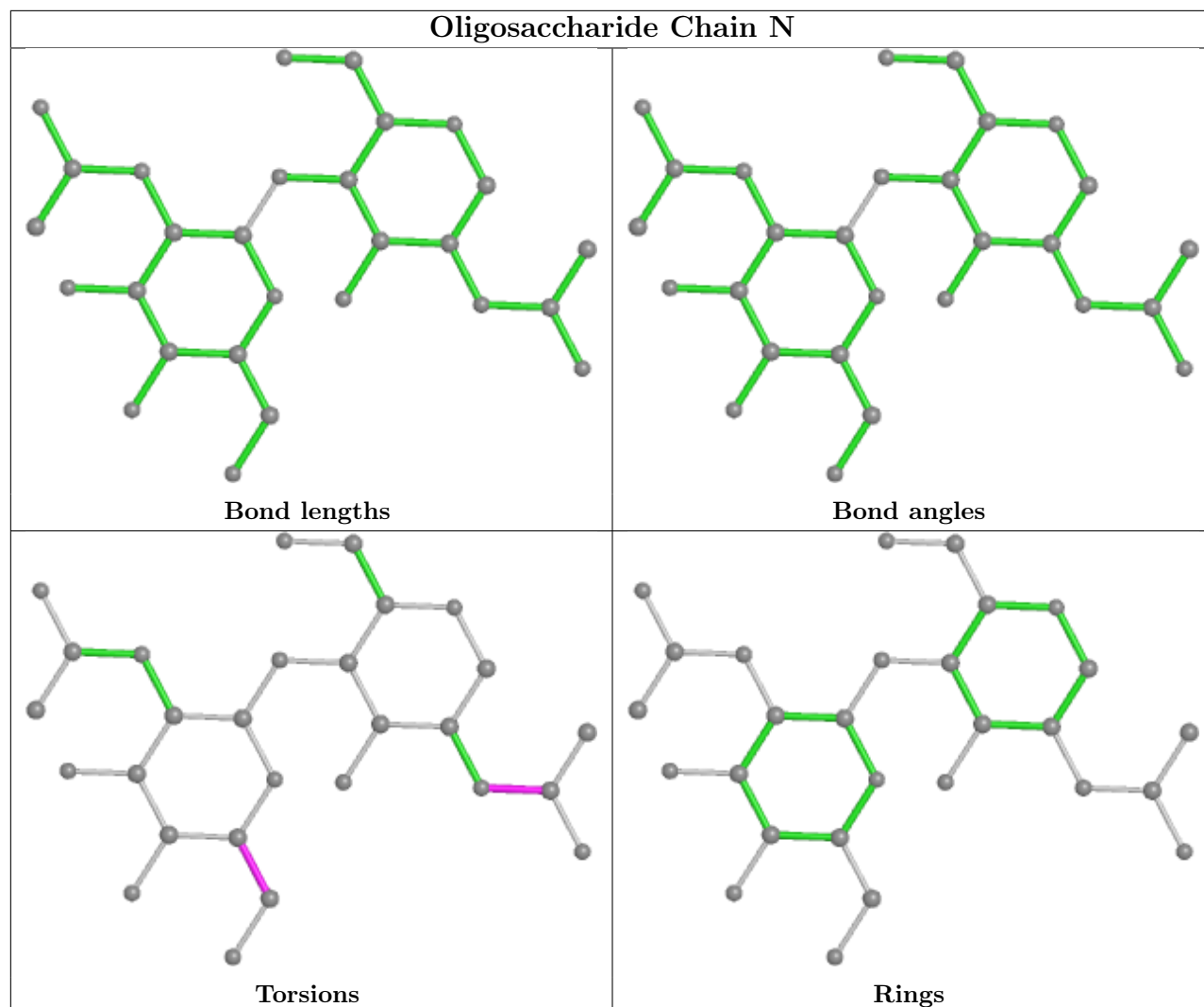


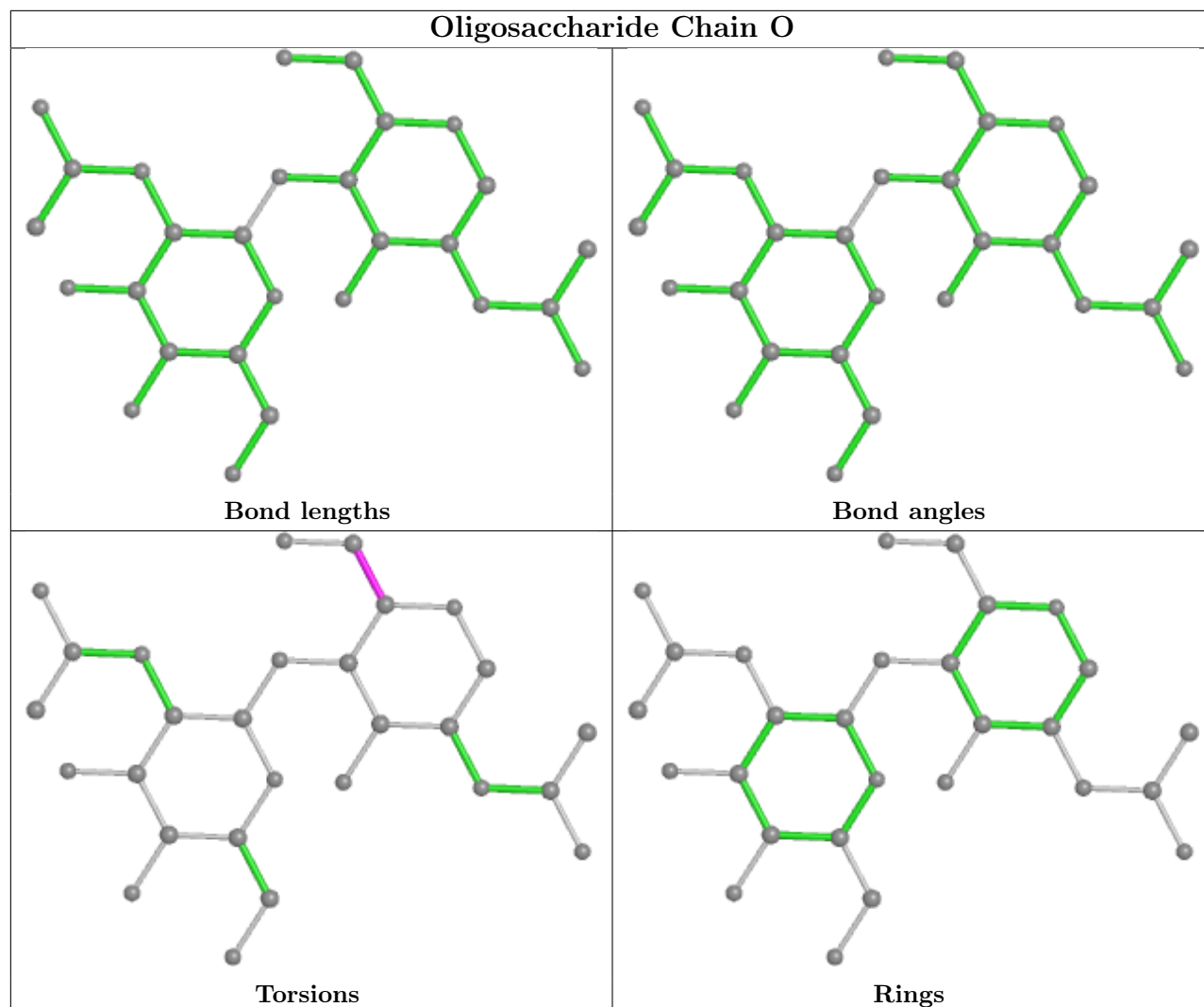


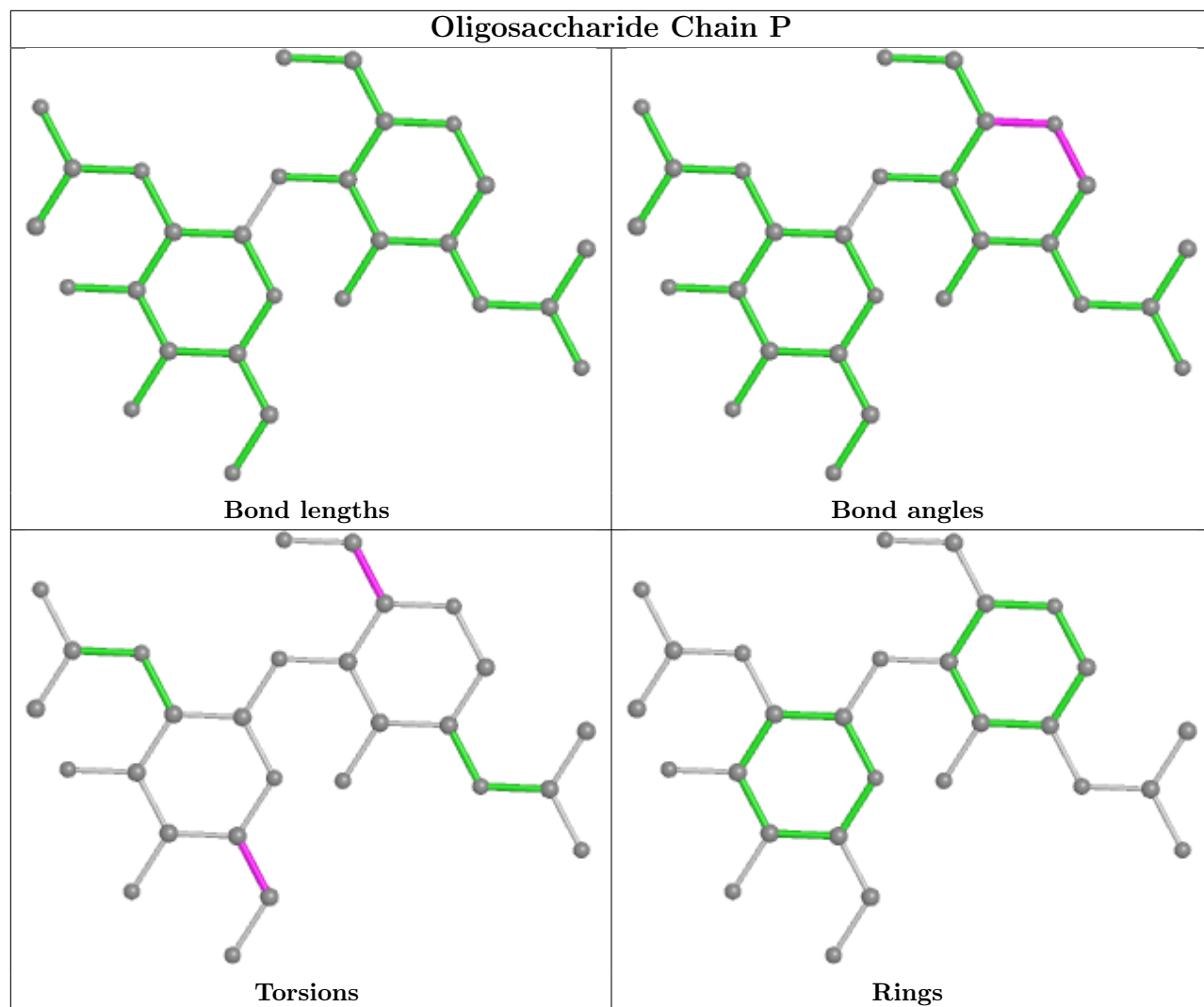


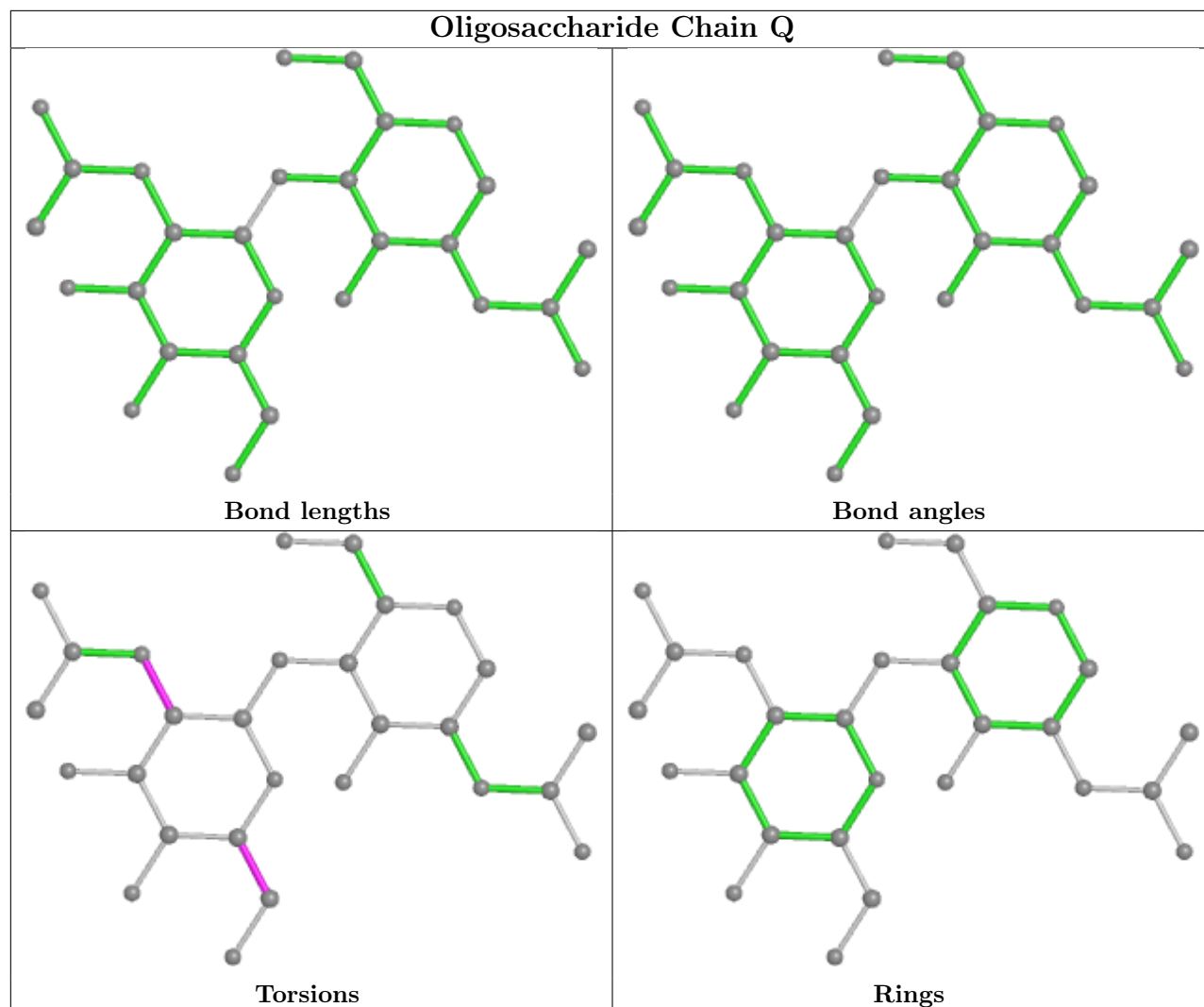


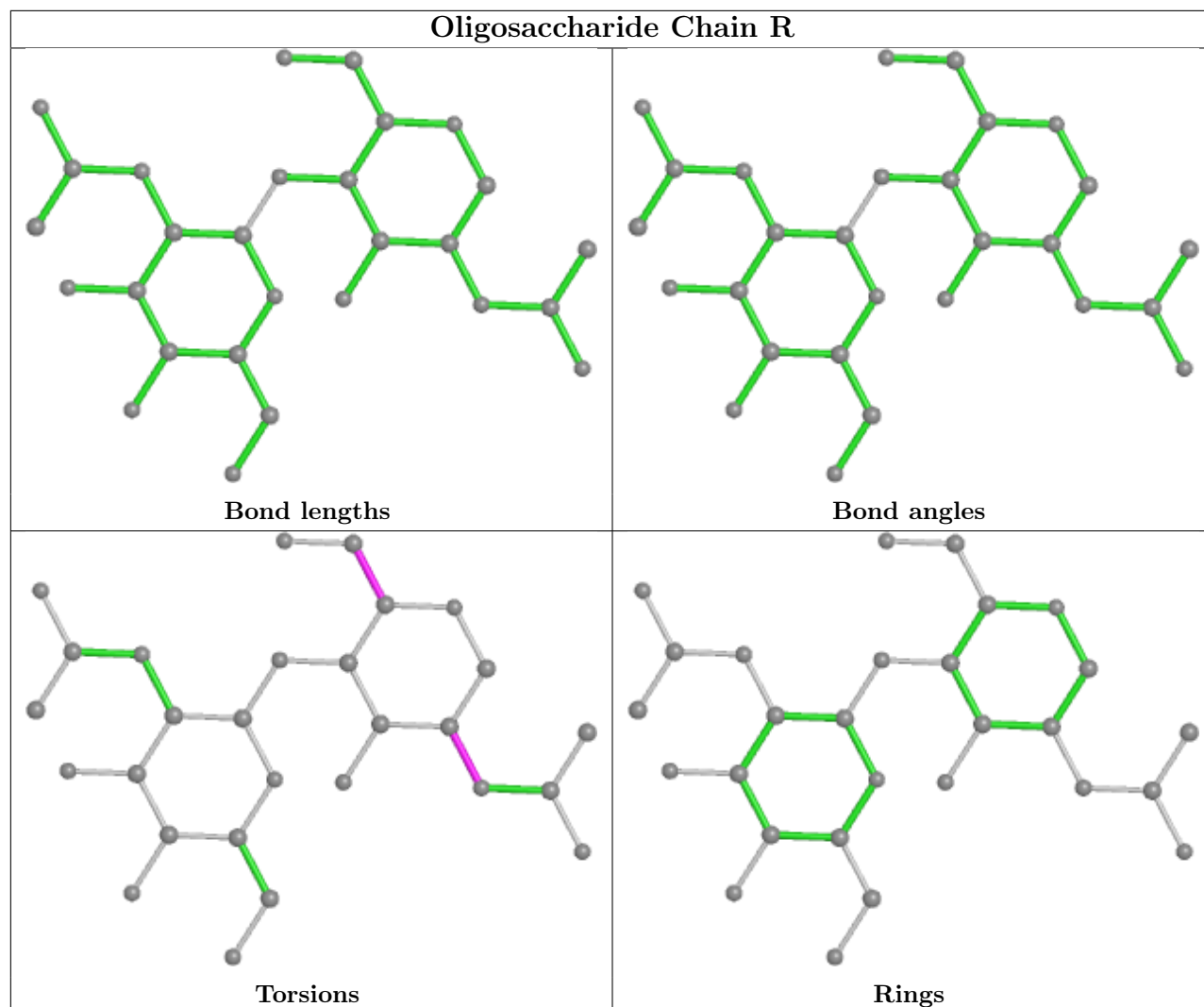


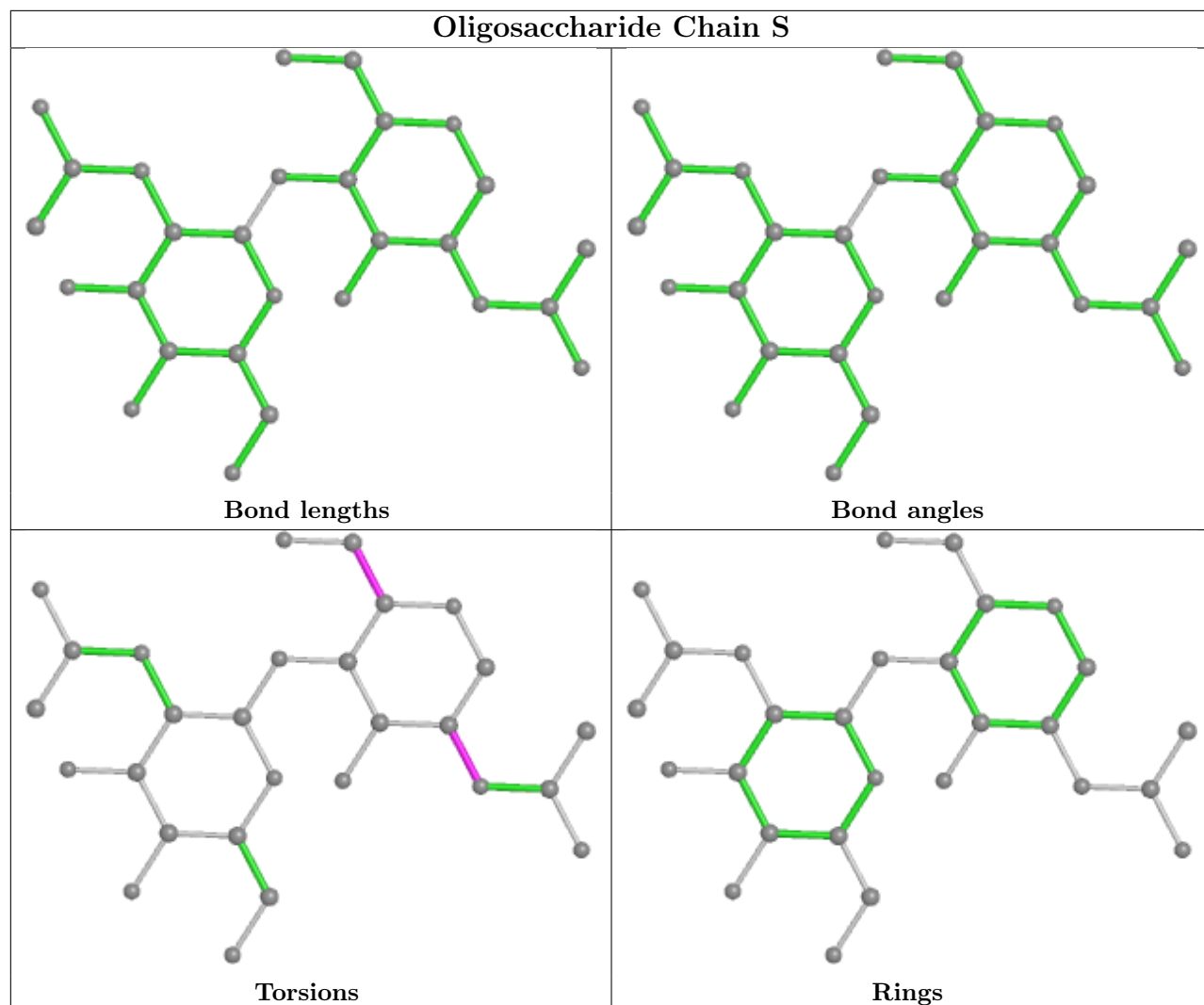


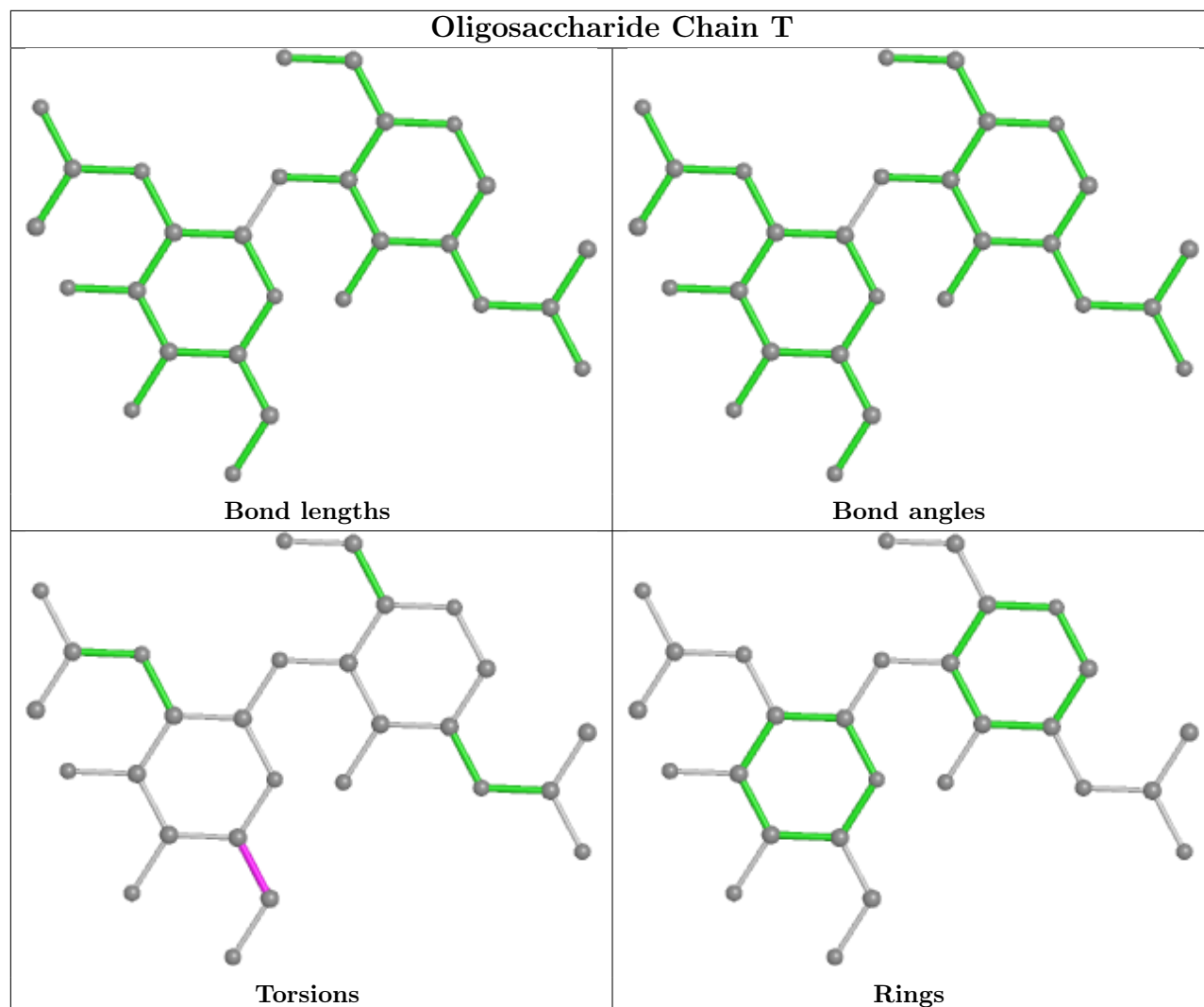


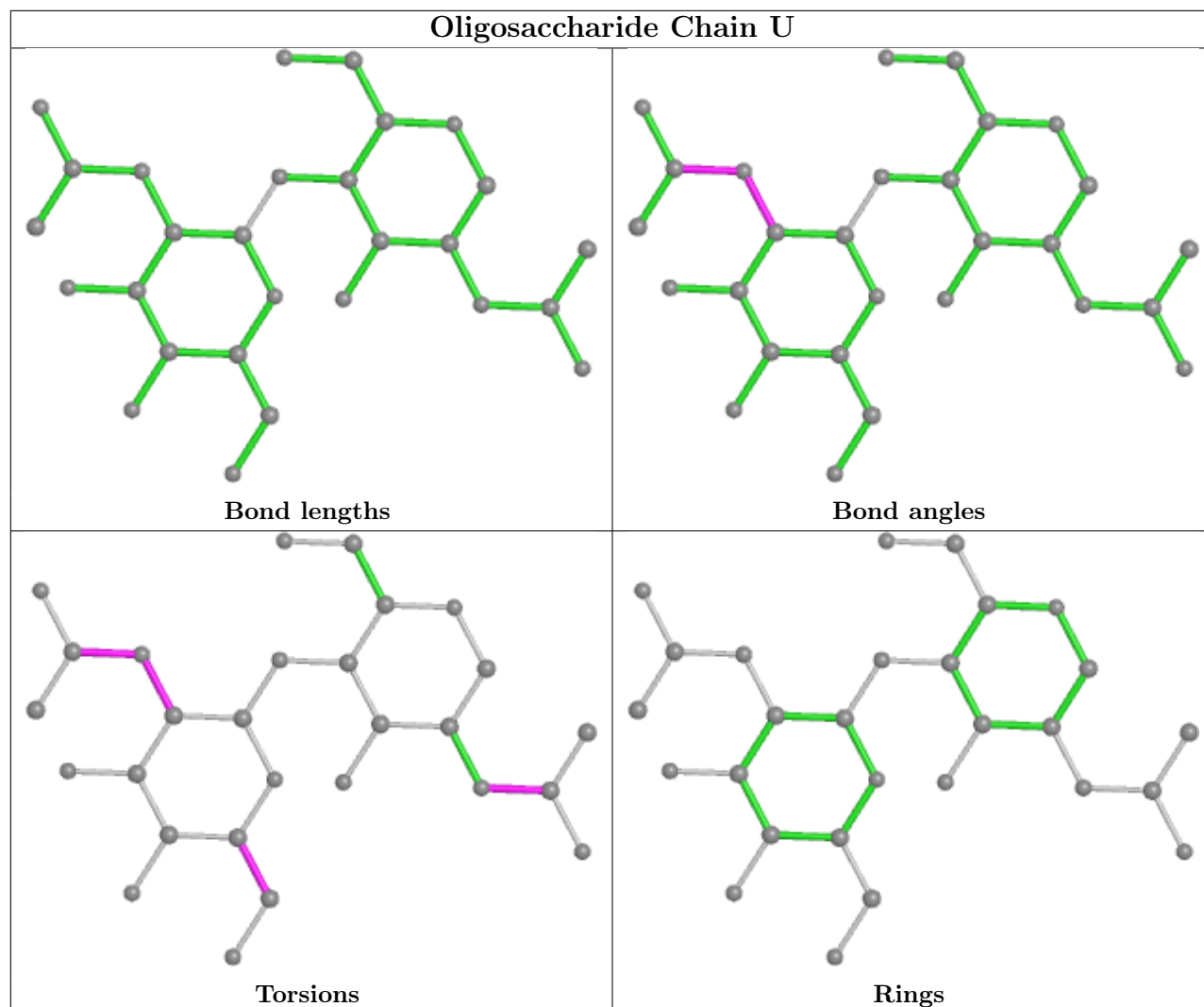


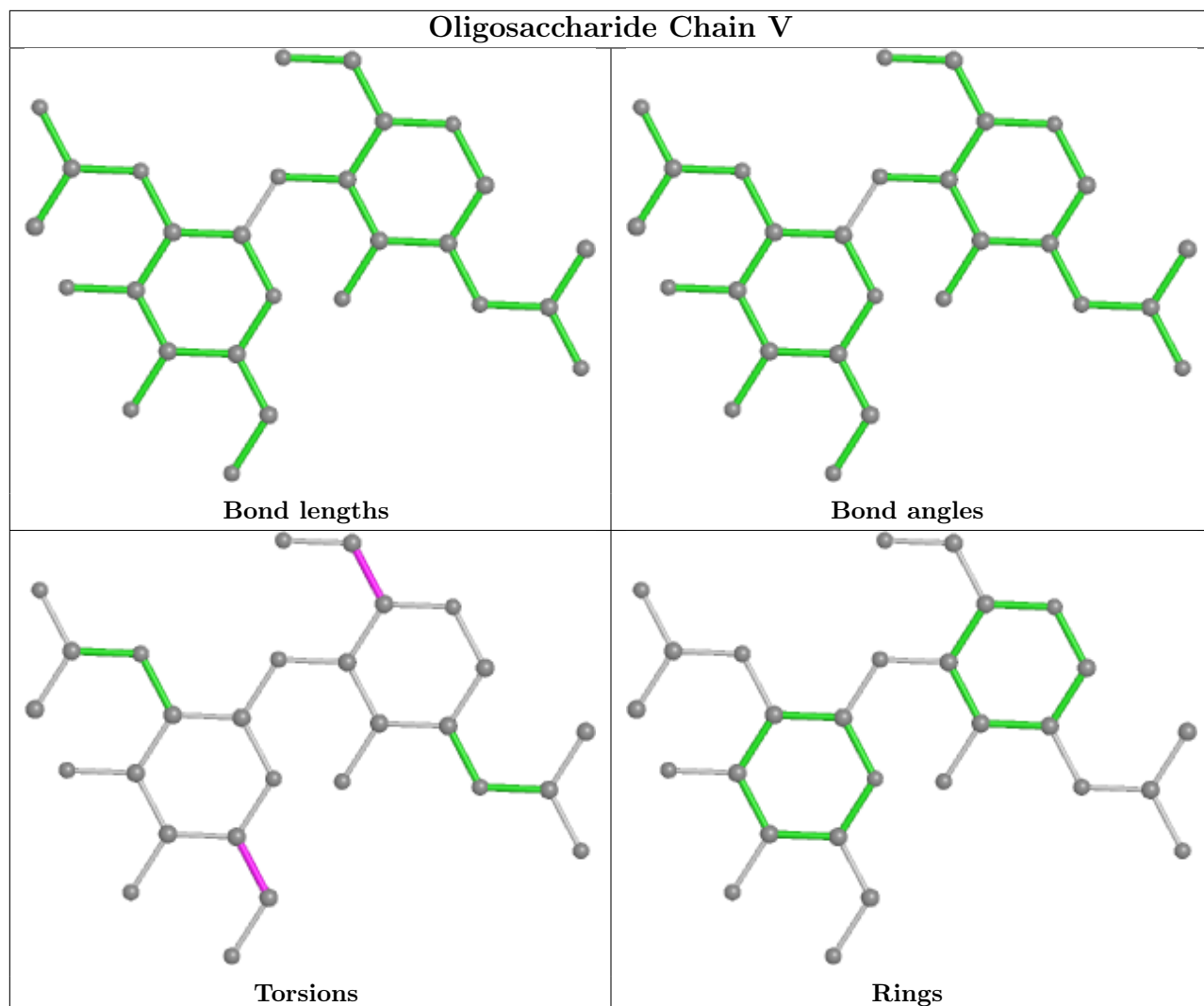


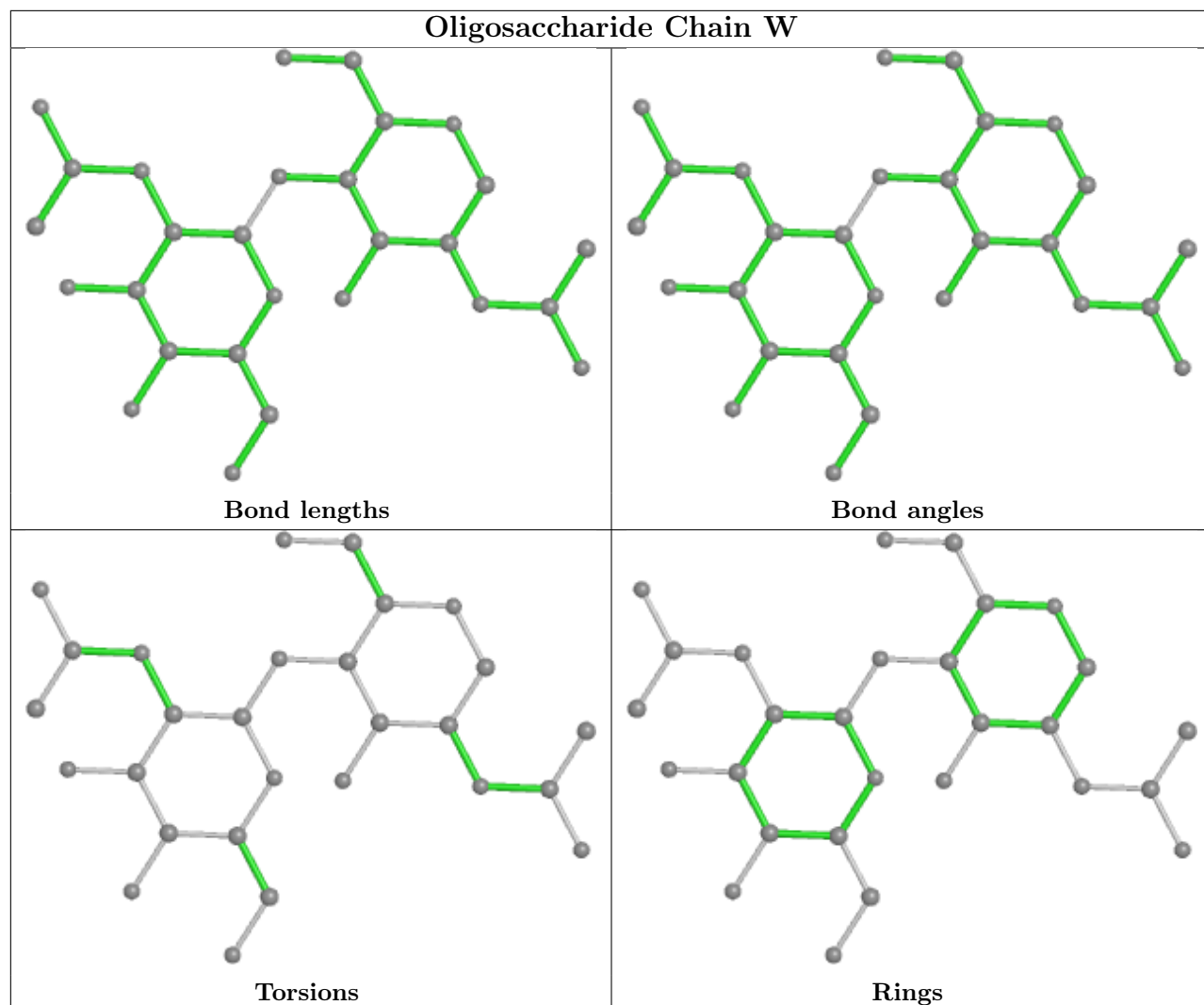


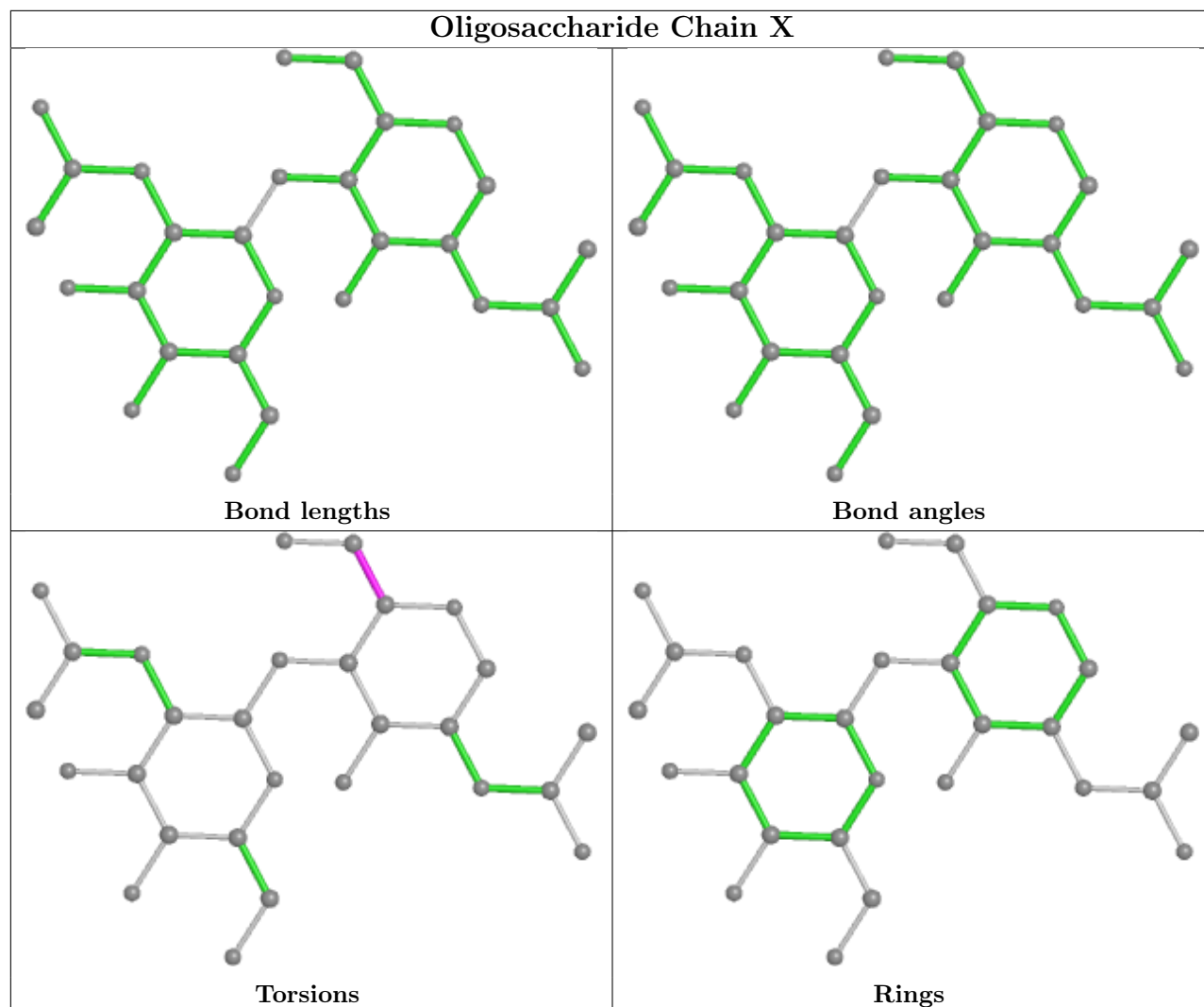


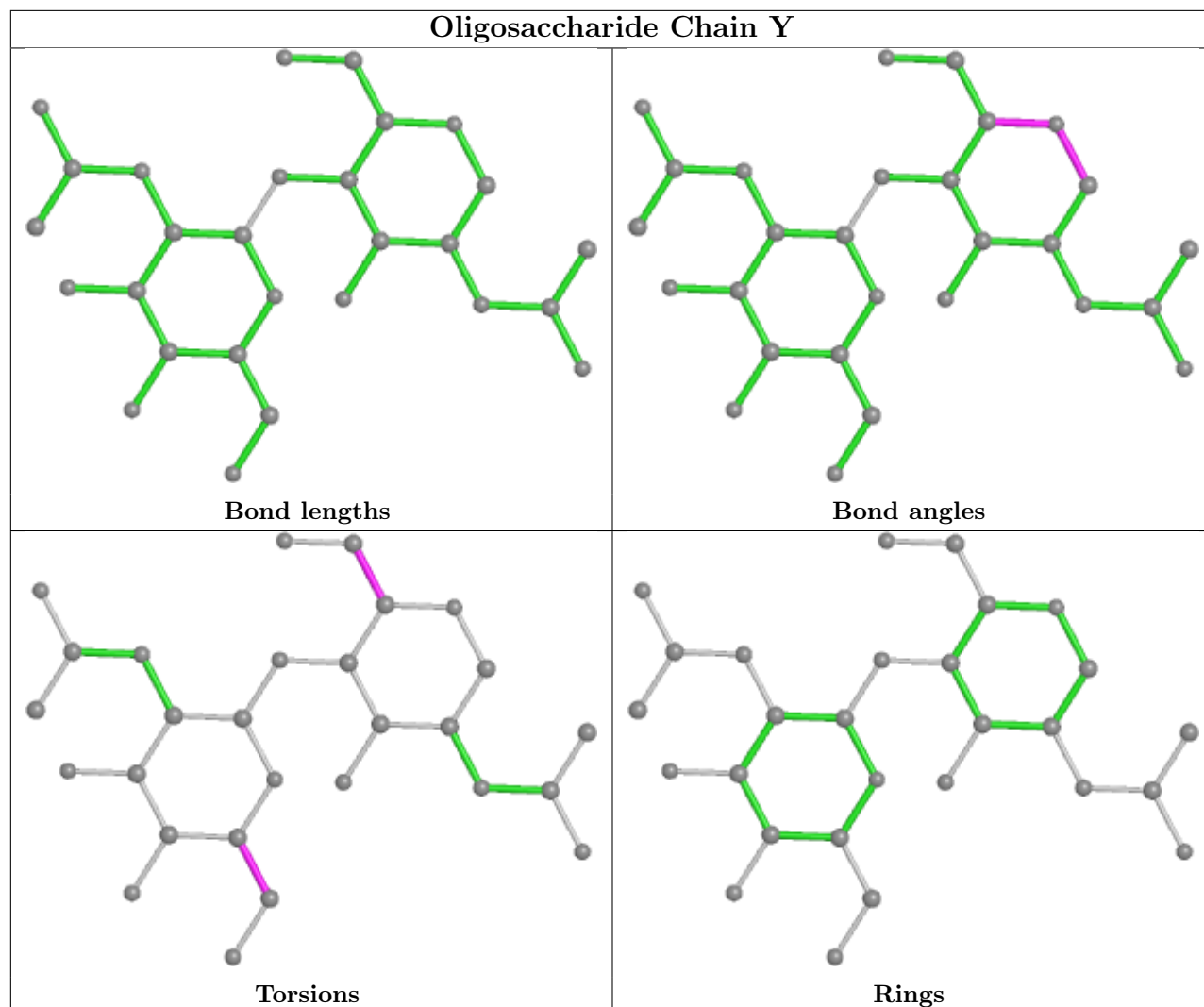


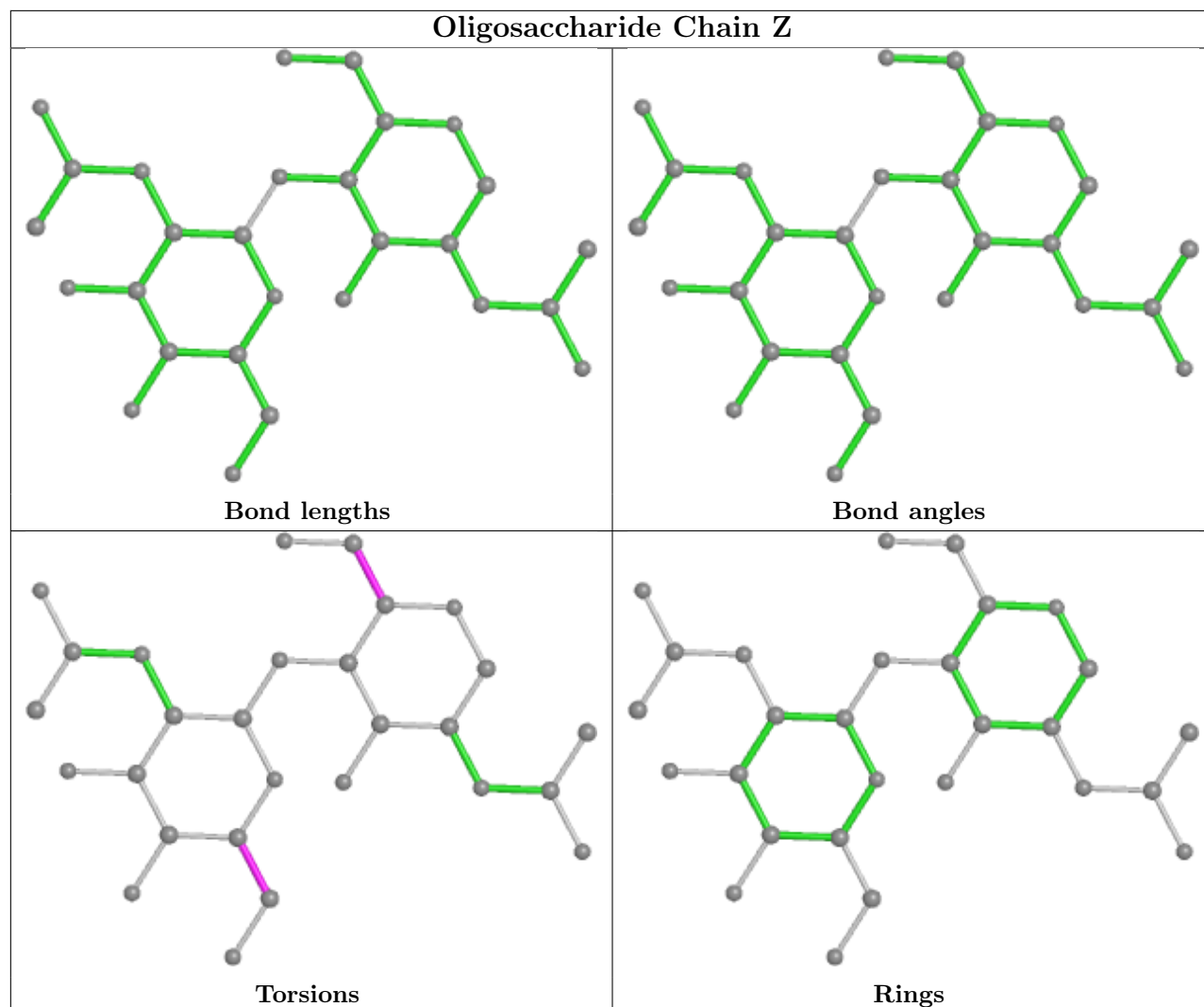


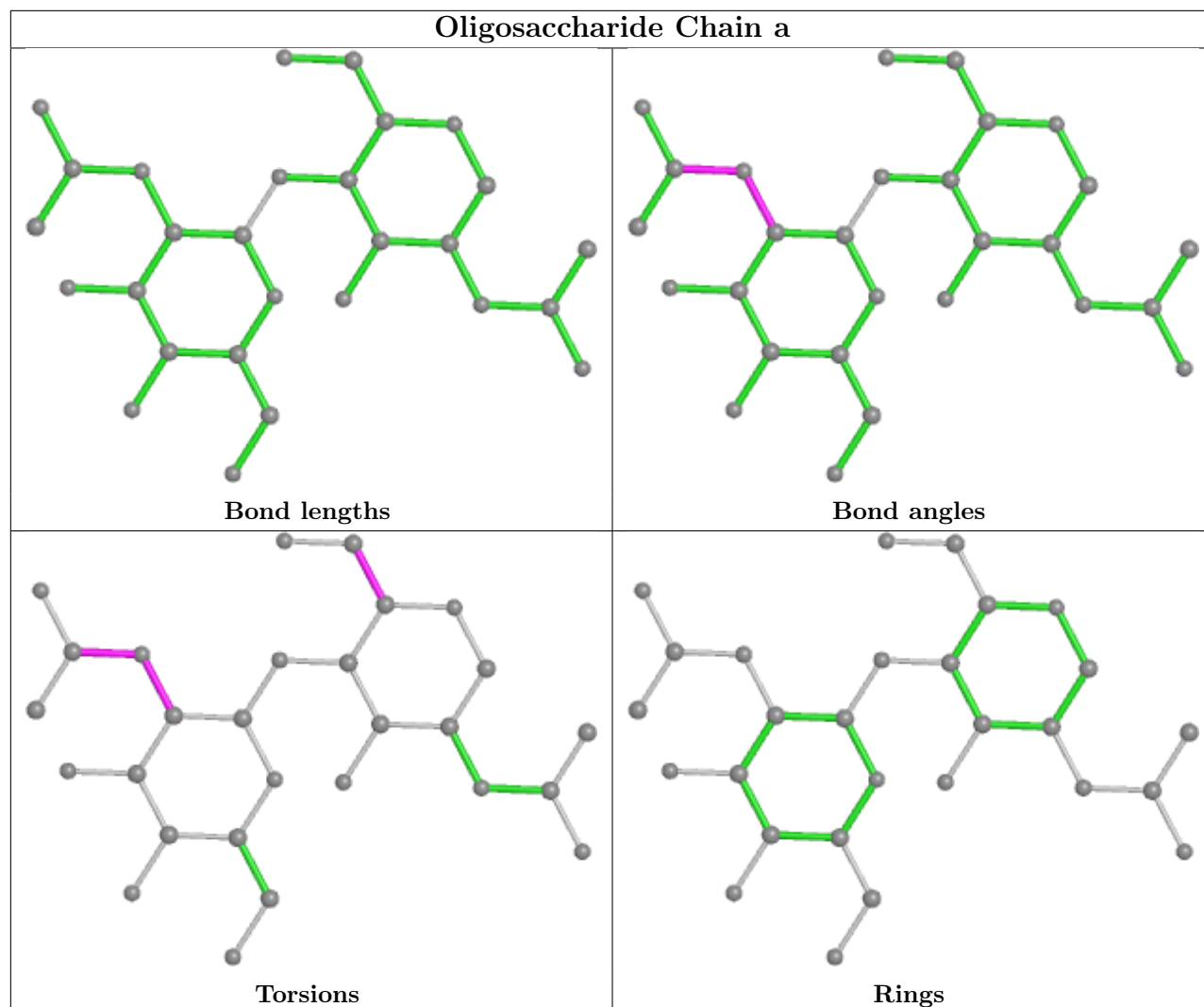


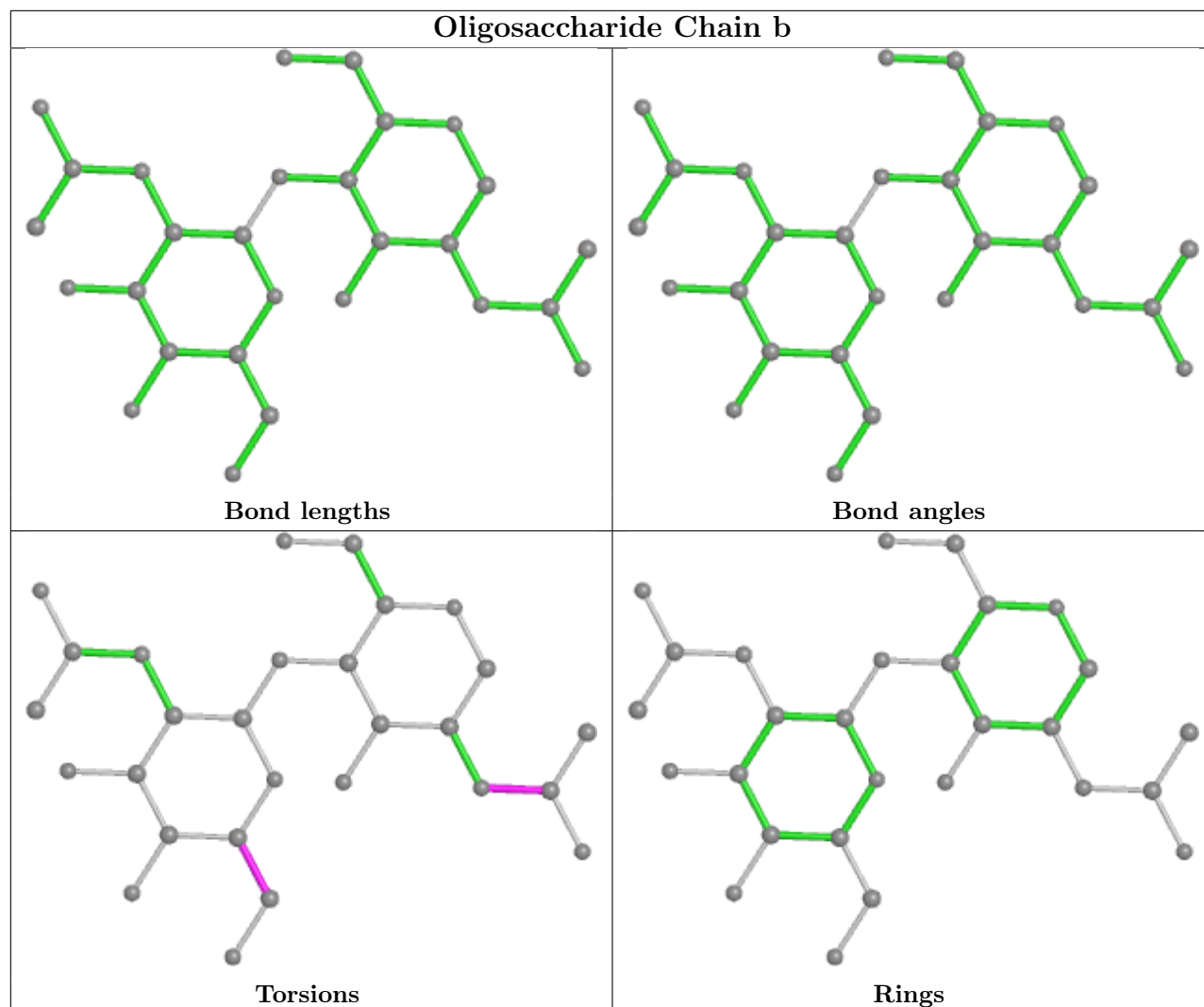


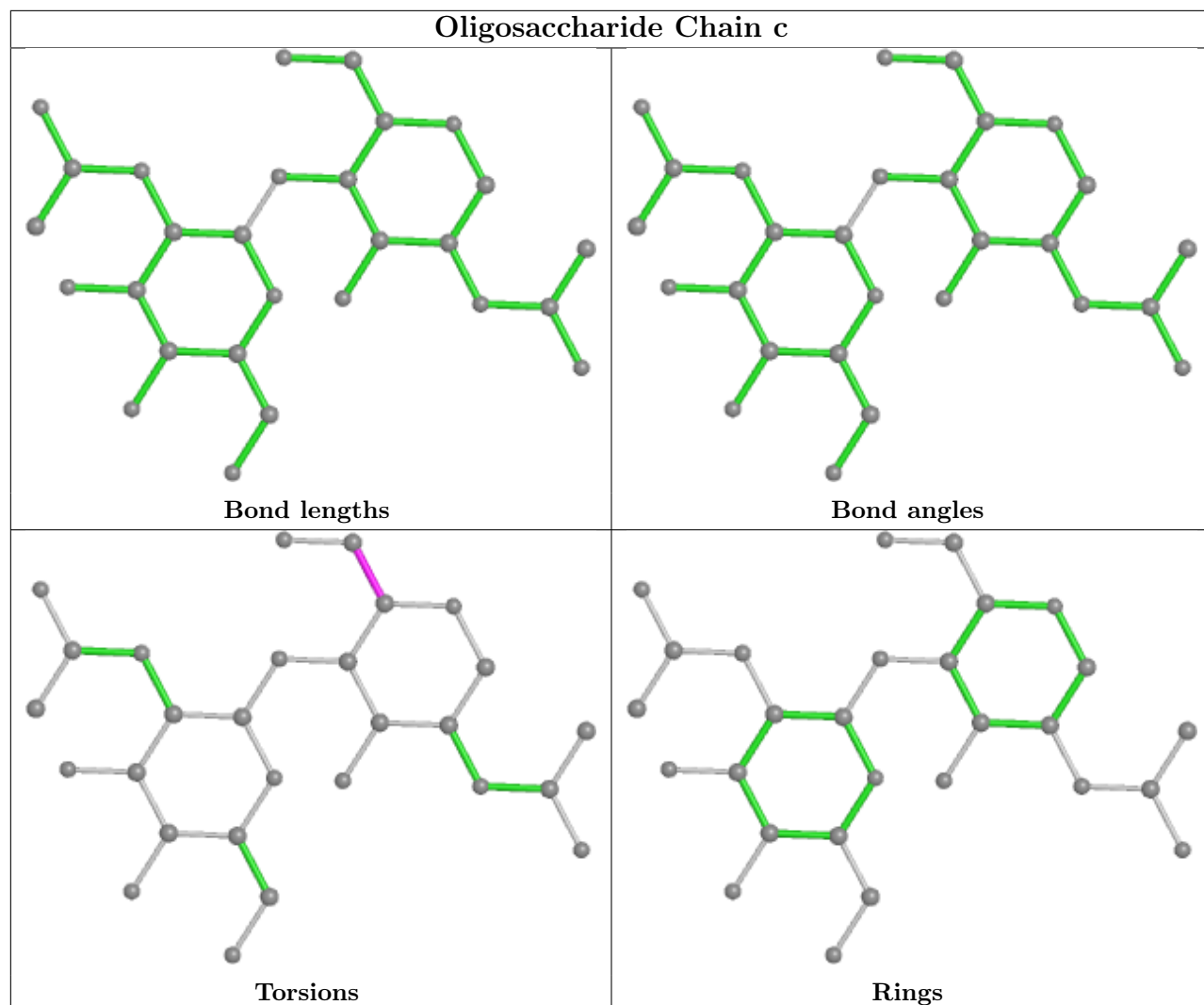


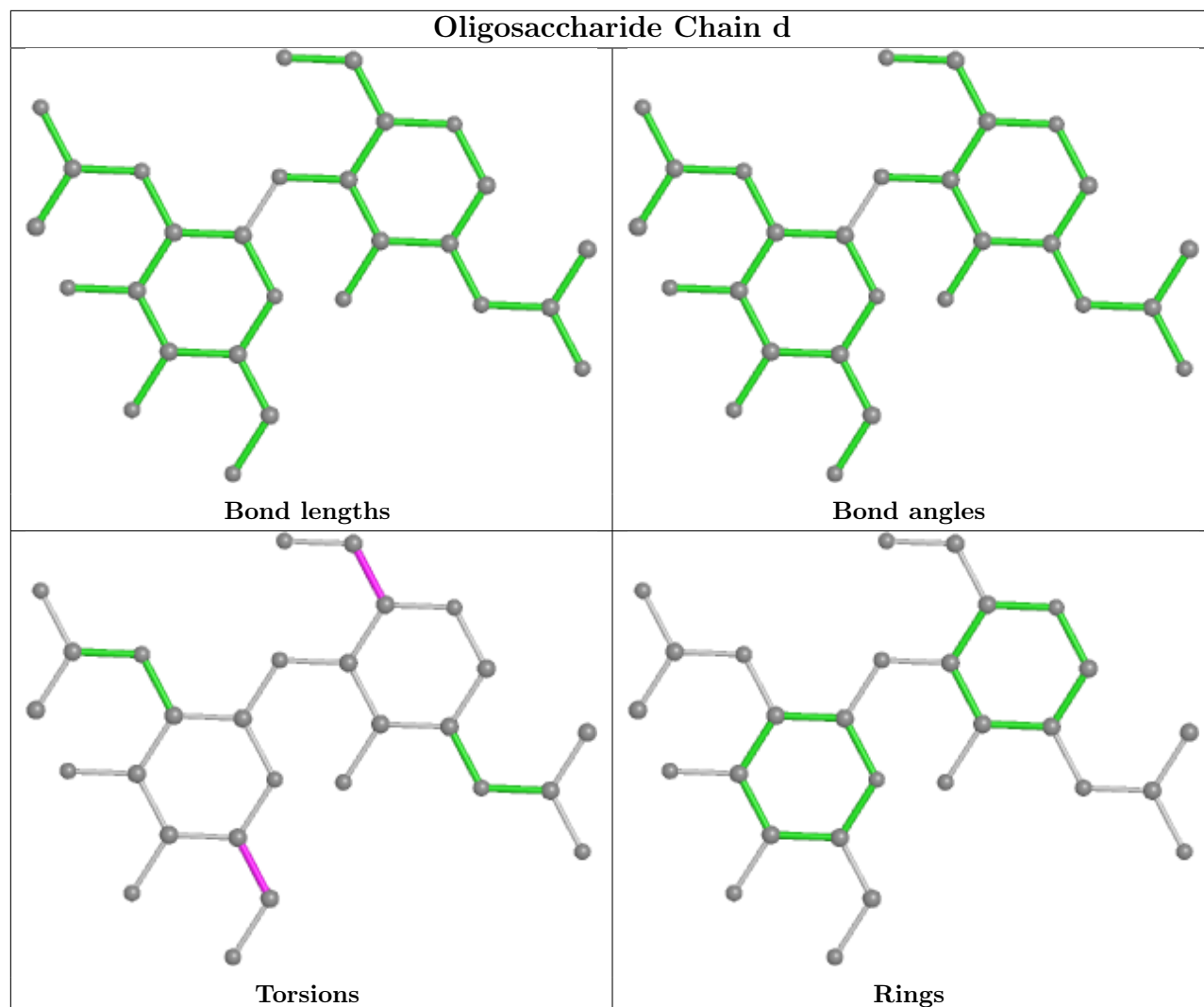


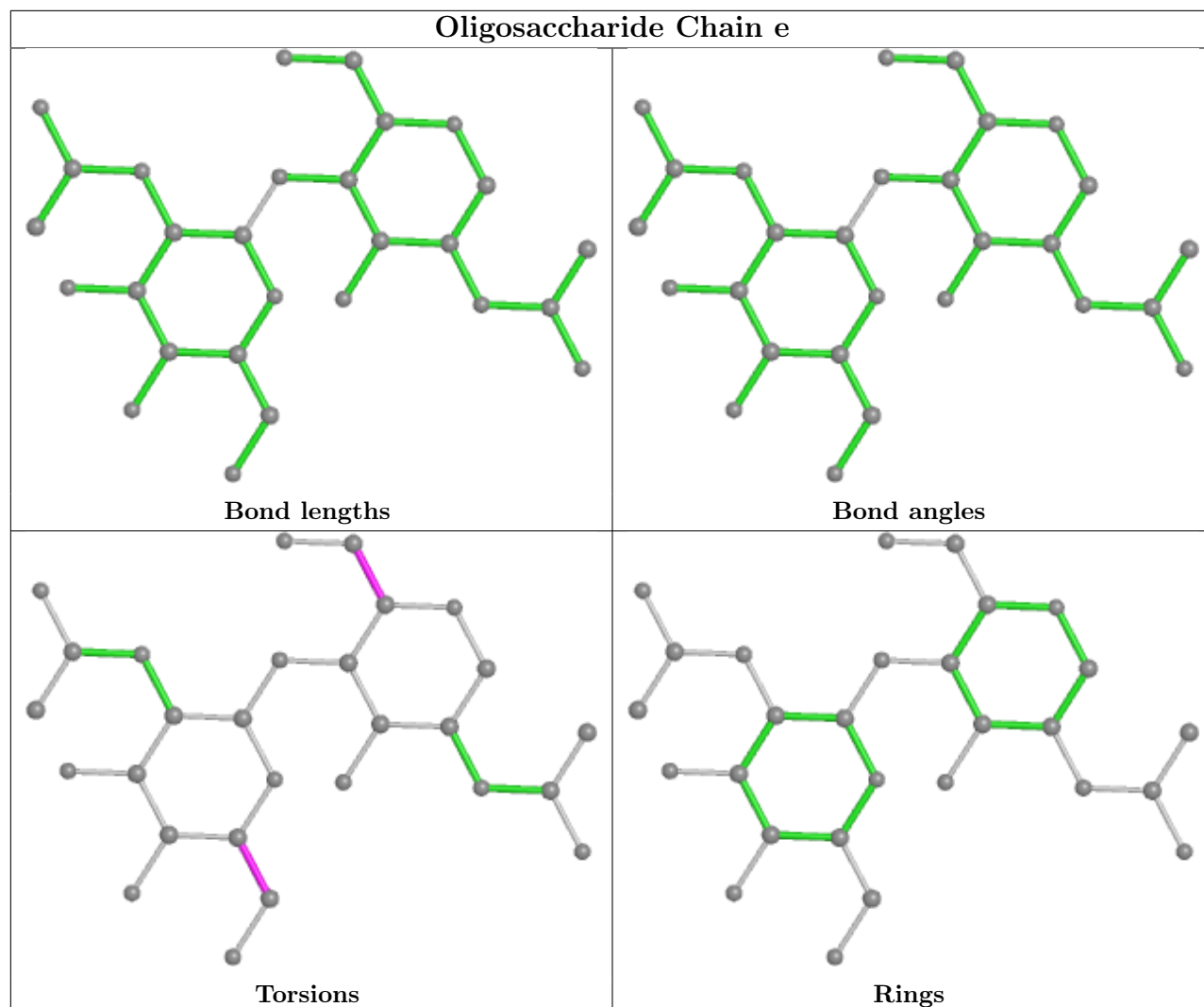


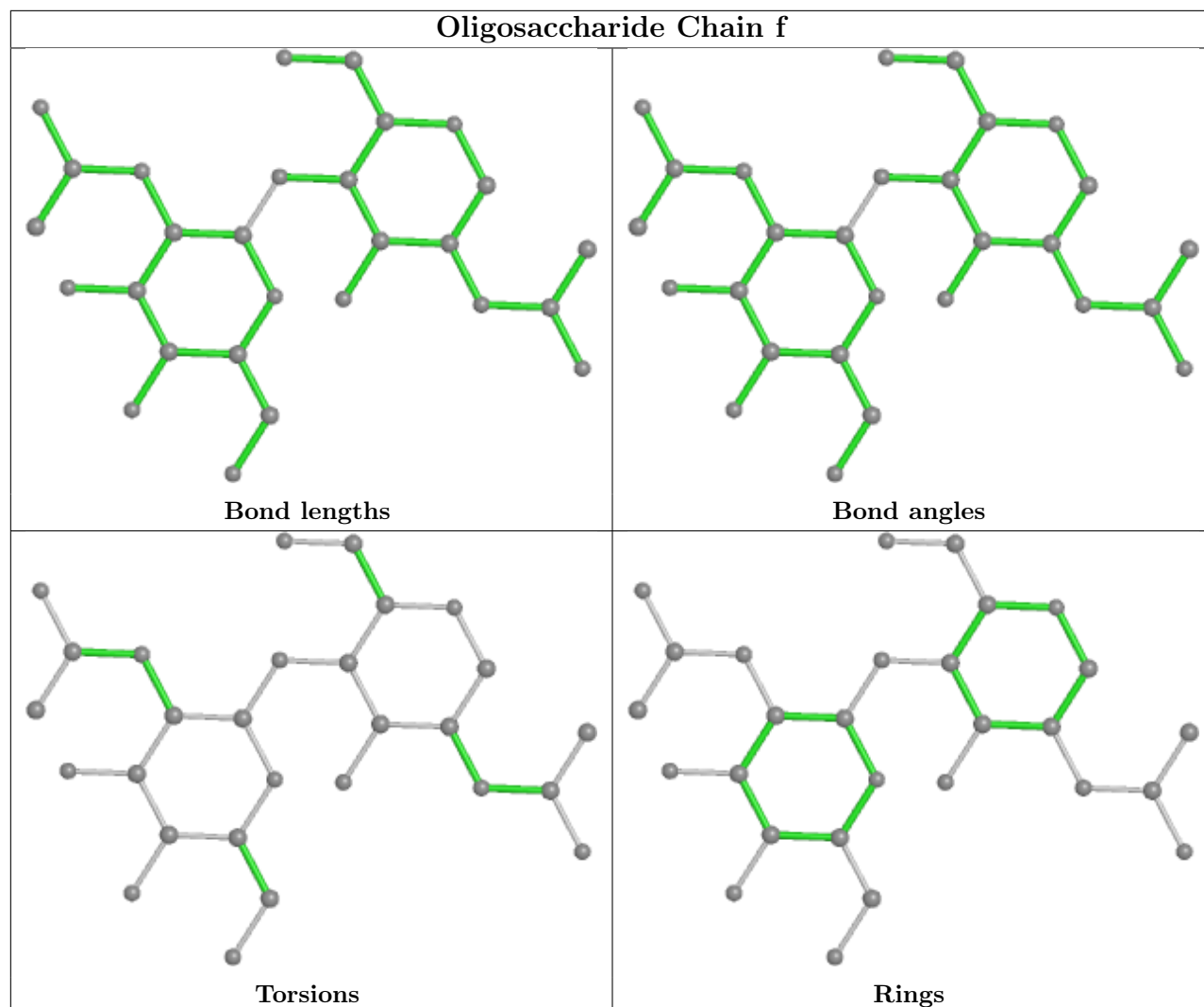


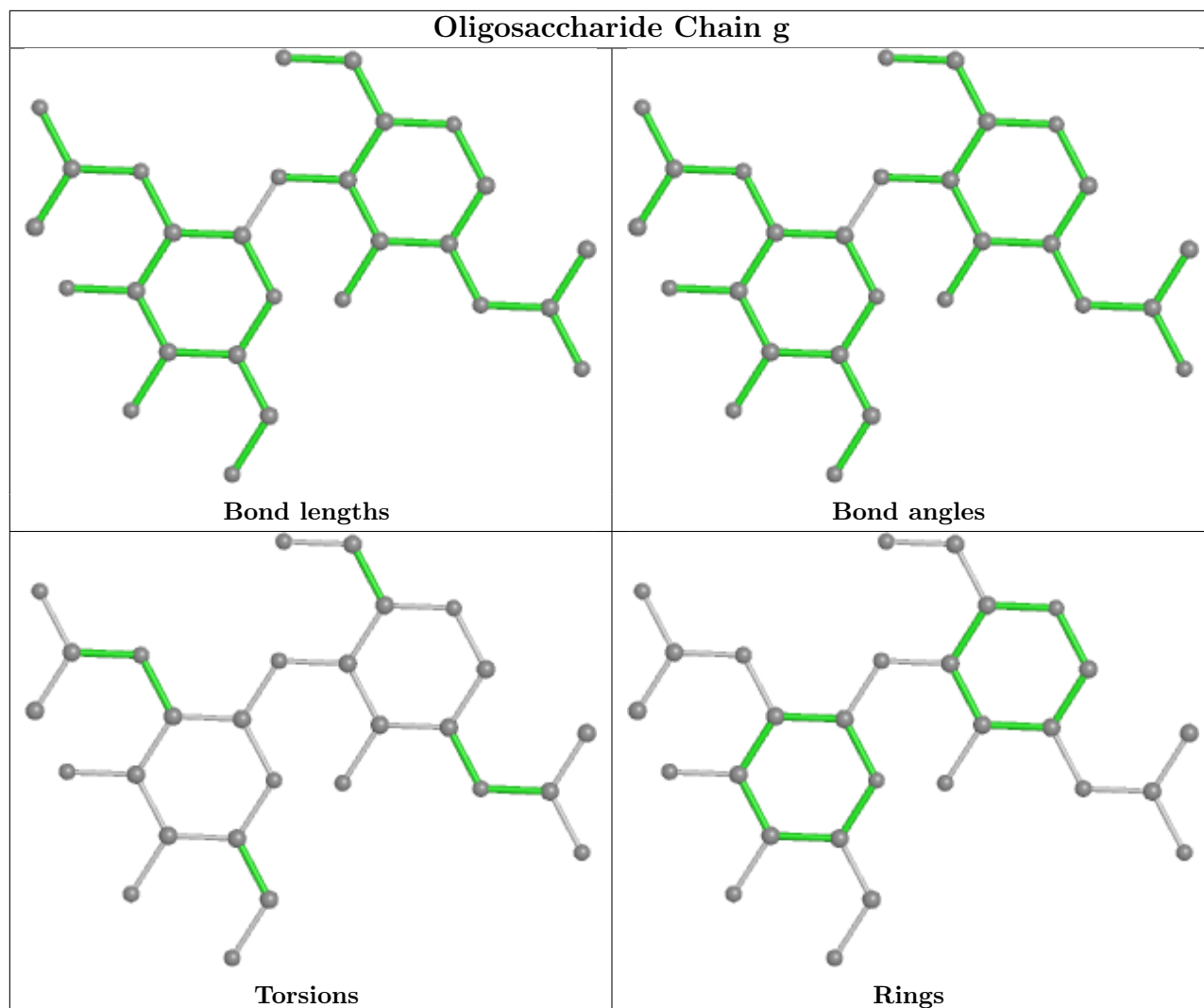


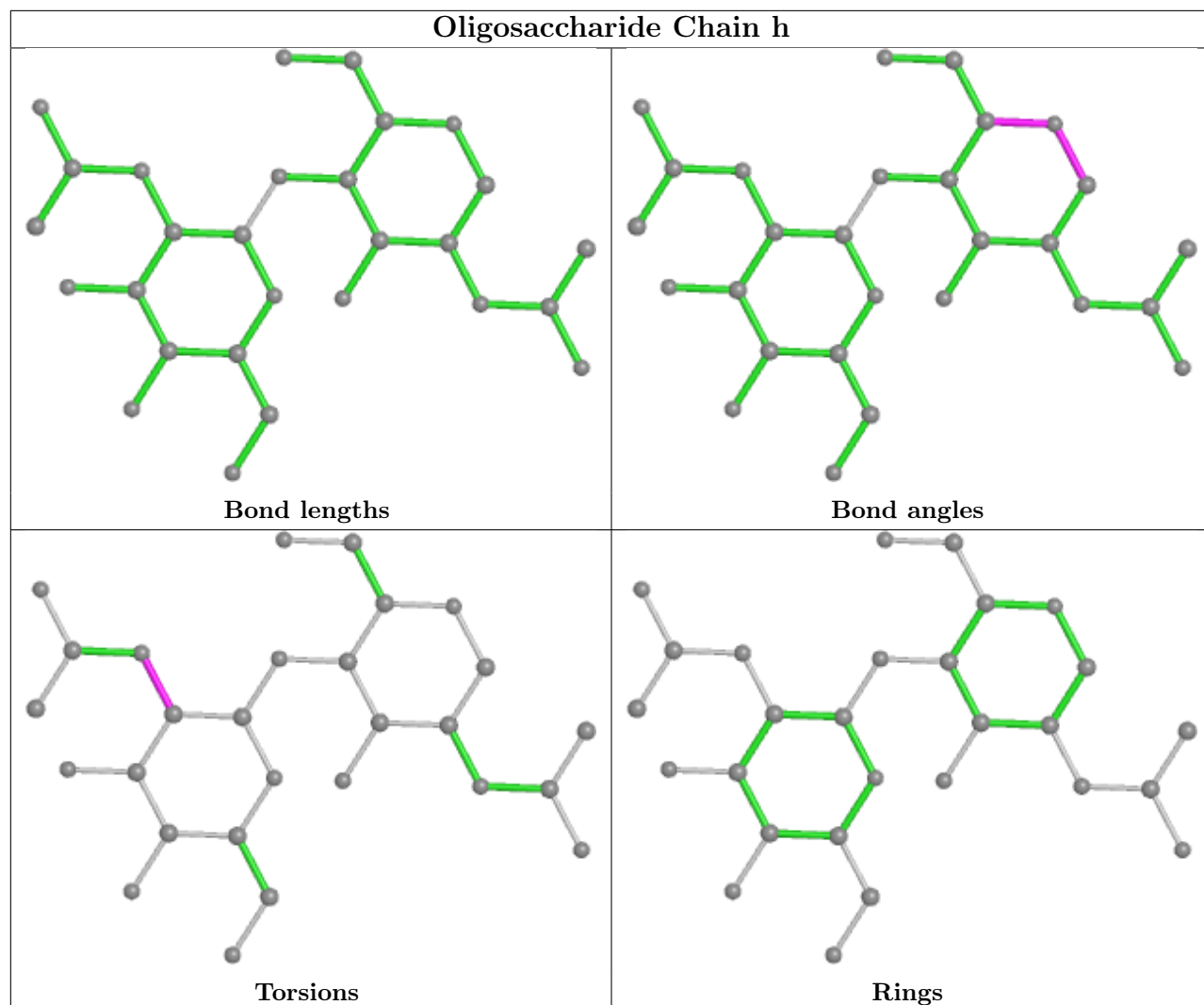


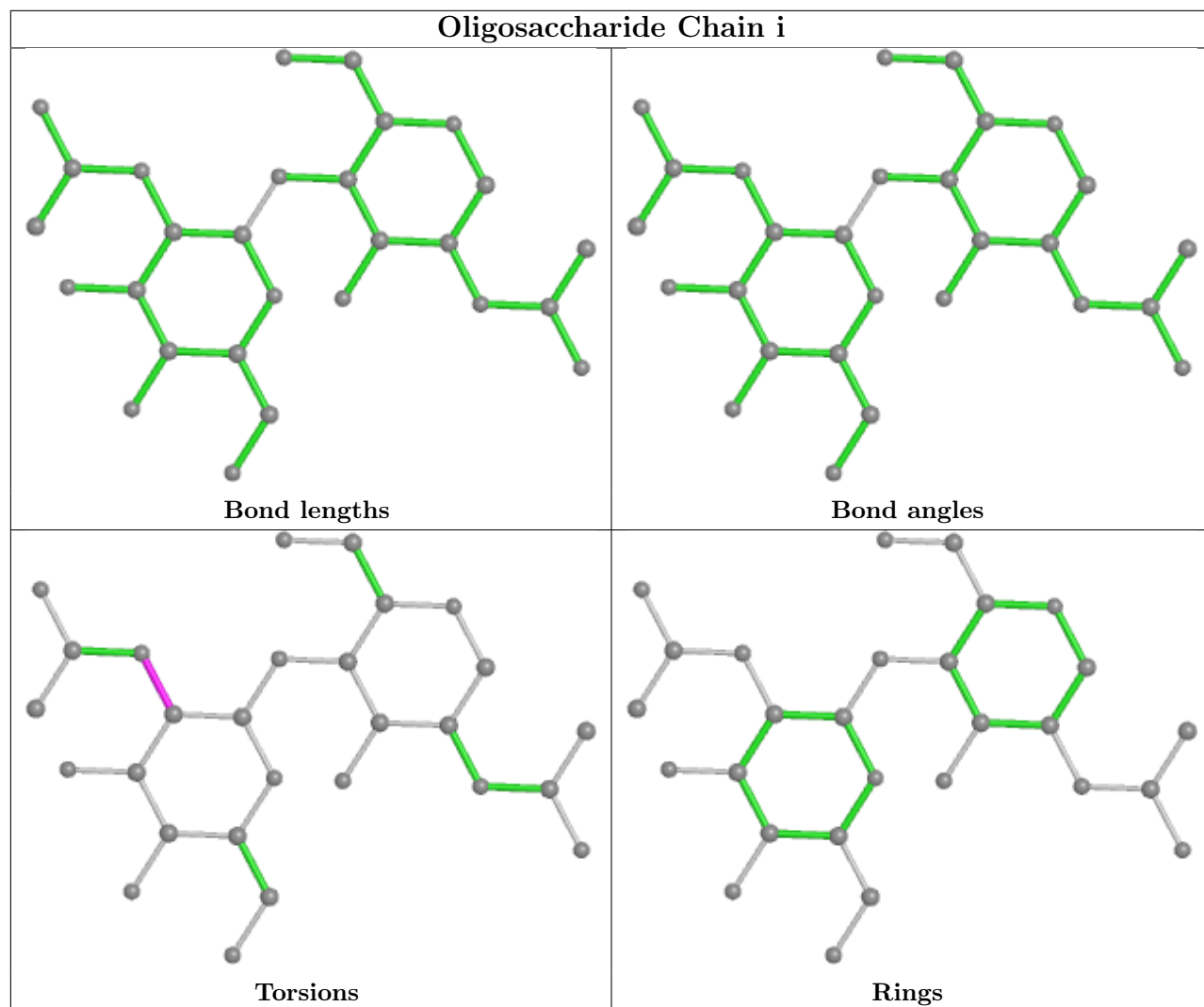


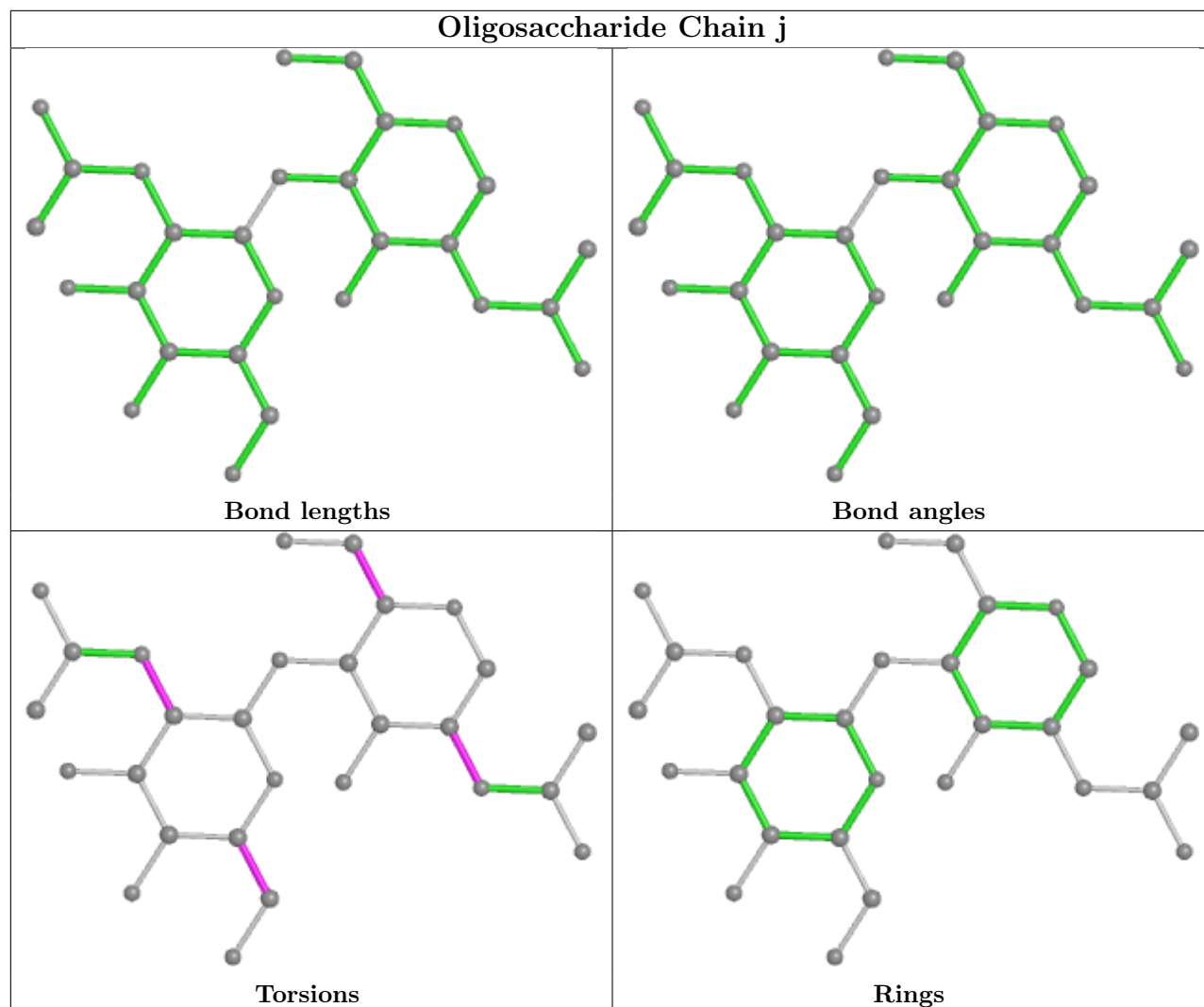












5.6 Ligand geometry [i](#)

29 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	$\# Z > 2$
4	NAG	B	2002	1	14,14,15	0.19	0	17,19,21	0.40	0
4	NAG	C	2002	1	14,14,15	0.16	0	17,19,21	0.49	0
4	NAG	C	2003	1	14,14,15	0.25	0	17,19,21	0.47	0
4	NAG	A	2004	1	14,14,15	0.20	0	17,19,21	0.42	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
4	NAG	D	1004	2	14,14,15	0.21	0	17,19,21	0.36	0
4	NAG	A	2007	1	14,14,15	0.18	0	17,19,21	0.41	0
4	NAG	D	1002	2	14,14,15	0.18	0	17,19,21	0.40	0
4	NAG	A	2001	1	14,14,15	0.29	0	17,19,21	0.31	0
4	NAG	B	2005	1	14,14,15	0.22	0	17,19,21	0.39	0
4	NAG	C	2005	1	14,14,15	0.19	0	17,19,21	0.43	0
4	NAG	A	2005	1	14,14,15	0.18	0	17,19,21	0.40	0
4	NAG	A	2002	-	14,14,15	0.23	0	17,19,21	0.41	0
4	NAG	A	2003	1	14,14,15	0.24	0	17,19,21	0.41	0
4	NAG	A	2008	1	14,14,15	0.24	0	17,19,21	0.45	0
4	NAG	B	2006	1	14,14,15	0.20	0	17,19,21	0.43	0
4	NAG	B	2003	1	14,14,15	0.30	0	17,19,21	0.46	0
4	NAG	C	2006	1	14,14,15	0.17	0	17,19,21	0.40	0
4	NAG	B	2007	1	14,14,15	0.24	0	17,19,21	0.46	0
4	NAG	A	2006	1	14,14,15	0.22	0	17,19,21	0.49	0
4	NAG	B	2001	1	14,14,15	0.21	0	17,19,21	0.48	0
4	NAG	C	2001	1	14,14,15	0.19	0	17,19,21	0.41	0
4	NAG	D	1005	2	14,14,15	0.21	0	17,19,21	0.45	0
4	NAG	C	2007	1	14,14,15	0.24	0	17,19,21	0.48	0
4	NAG	B	2004	1	14,14,15	0.25	0	17,19,21	0.39	0
4	NAG	C	2004	1	14,14,15	0.24	0	17,19,21	0.42	0
4	NAG	D	1006	2	14,14,15	0.20	0	17,19,21	0.45	0
4	NAG	C	2008	1	14,14,15	0.42	0	17,19,21	1.26	1 (5%)
4	NAG	D	1001	2	14,14,15	0.21	0	17,19,21	0.41	0
4	NAG	D	1003	2	14,14,15	0.21	0	17,19,21	0.39	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	B	2002	1	-	4/6/23/26	0/1/1/1
4	NAG	C	2002	1	-	2/6/23/26	0/1/1/1
4	NAG	C	2003	1	-	3/6/23/26	0/1/1/1
4	NAG	A	2004	1	-	2/6/23/26	0/1/1/1
4	NAG	D	1004	2	-	1/6/23/26	0/1/1/1
4	NAG	A	2007	1	-	3/6/23/26	0/1/1/1
4	NAG	D	1002	2	-	2/6/23/26	0/1/1/1
4	NAG	A	2001	1	-	2/6/23/26	0/1/1/1
4	NAG	B	2005	1	-	0/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	NAG	C	2005	1	-	2/6/23/26	0/1/1/1
4	NAG	A	2005	1	-	0/6/23/26	0/1/1/1
4	NAG	A	2002	-	-	0/6/23/26	0/1/1/1
4	NAG	A	2003	1	-	2/6/23/26	0/1/1/1
4	NAG	A	2008	1	-	2/6/23/26	0/1/1/1
4	NAG	B	2006	1	-	0/6/23/26	0/1/1/1
4	NAG	B	2003	1	-	2/6/23/26	0/1/1/1
4	NAG	C	2006	1	-	0/6/23/26	0/1/1/1
4	NAG	B	2007	1	-	0/6/23/26	0/1/1/1
4	NAG	A	2006	1	-	2/6/23/26	0/1/1/1
4	NAG	B	2001	1	-	4/6/23/26	0/1/1/1
4	NAG	C	2001	1	-	2/6/23/26	0/1/1/1
4	NAG	D	1005	2	-	2/6/23/26	0/1/1/1
4	NAG	C	2007	1	-	3/6/23/26	0/1/1/1
4	NAG	B	2004	1	-	0/6/23/26	0/1/1/1
4	NAG	C	2004	1	-	2/6/23/26	0/1/1/1
4	NAG	D	1006	2	-	0/6/23/26	0/1/1/1
4	NAG	C	2008	1	-	3/6/23/26	0/1/1/1
4	NAG	D	1001	2	-	2/6/23/26	0/1/1/1
4	NAG	D	1003	2	-	4/6/23/26	0/1/1/1

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	C	2008	NAG	C2-N2-C7	4.27	128.99	122.90

There are no chirality outliers.

5 of 51 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	D	1002	NAG	C4-C5-C6-O6
4	C	2001	NAG	O5-C5-C6-O6
4	B	2001	NAG	O5-C5-C6-O6
4	B	2003	NAG	O5-C5-C6-O6
4	D	1002	NAG	O5-C5-C6-O6

There are no ring outliers.

9 monomers are involved in 10 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	C	2002	NAG	2	0
4	A	2007	NAG	1	0
4	D	1002	NAG	1	0
4	C	2005	NAG	1	0
4	A	2003	NAG	1	0
4	B	2003	NAG	1	0
4	D	1005	NAG	1	0
4	D	1006	NAG	1	0
4	C	2008	NAG	1	0

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.

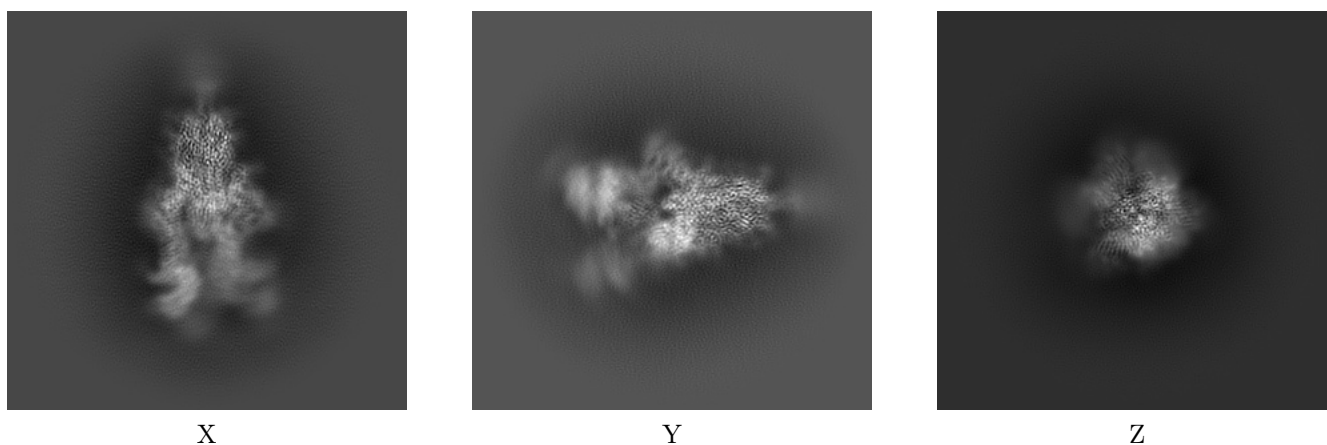
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-31788. 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](#)

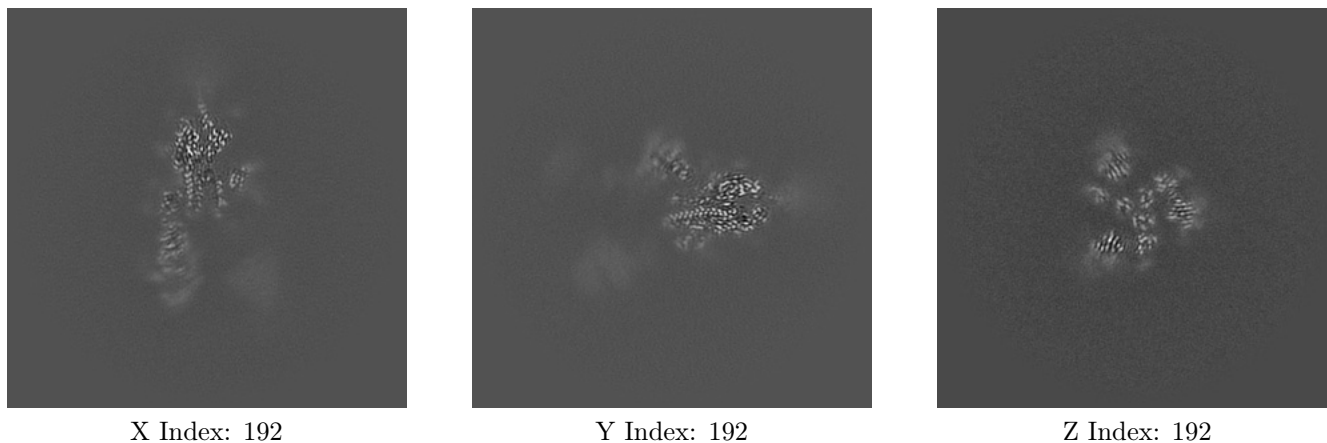
6.1.1 Primary map



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

6.2 Central slices [i](#)

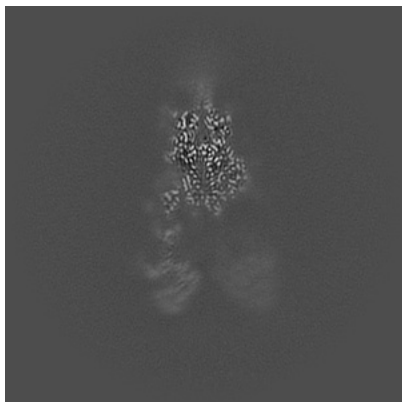
6.2.1 Primary map



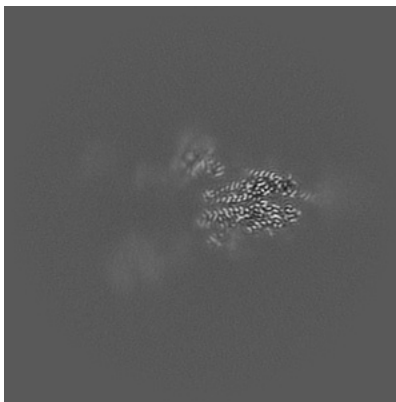
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

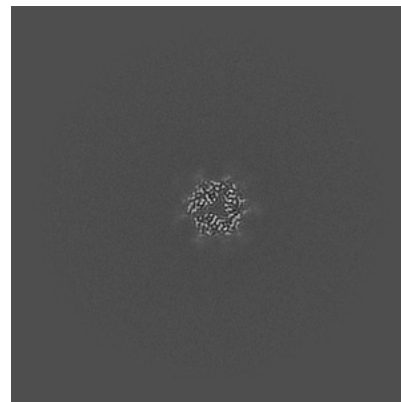
6.3.1 Primary map



X Index: 202



Y Index: 194

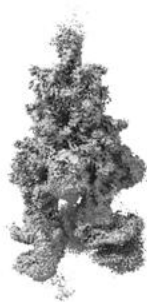


Z Index: 260

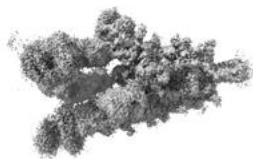
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal surface views [i](#)

6.4.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.2. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

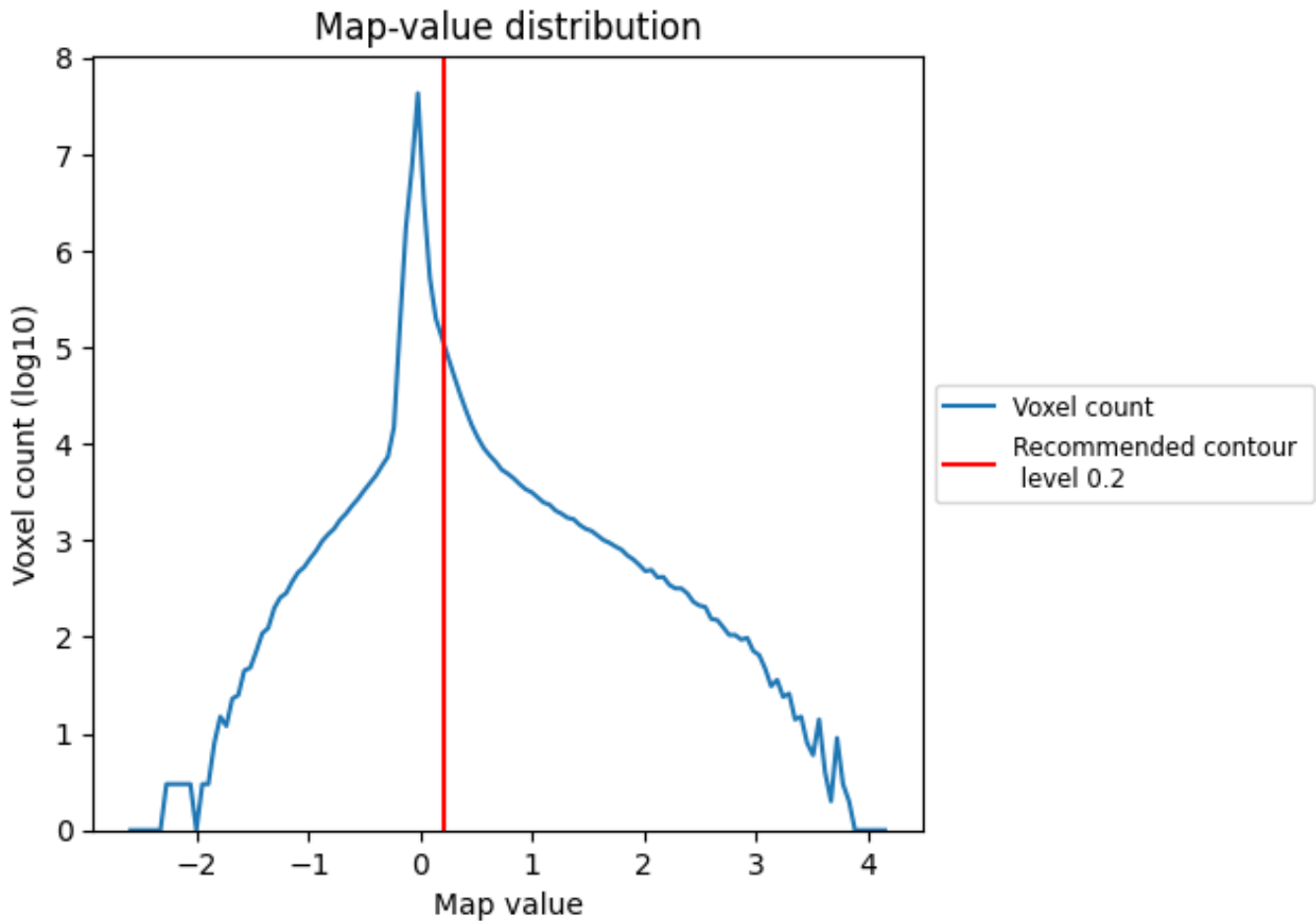
6.5 Mask visualisation

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

7 Map analysis [i](#)

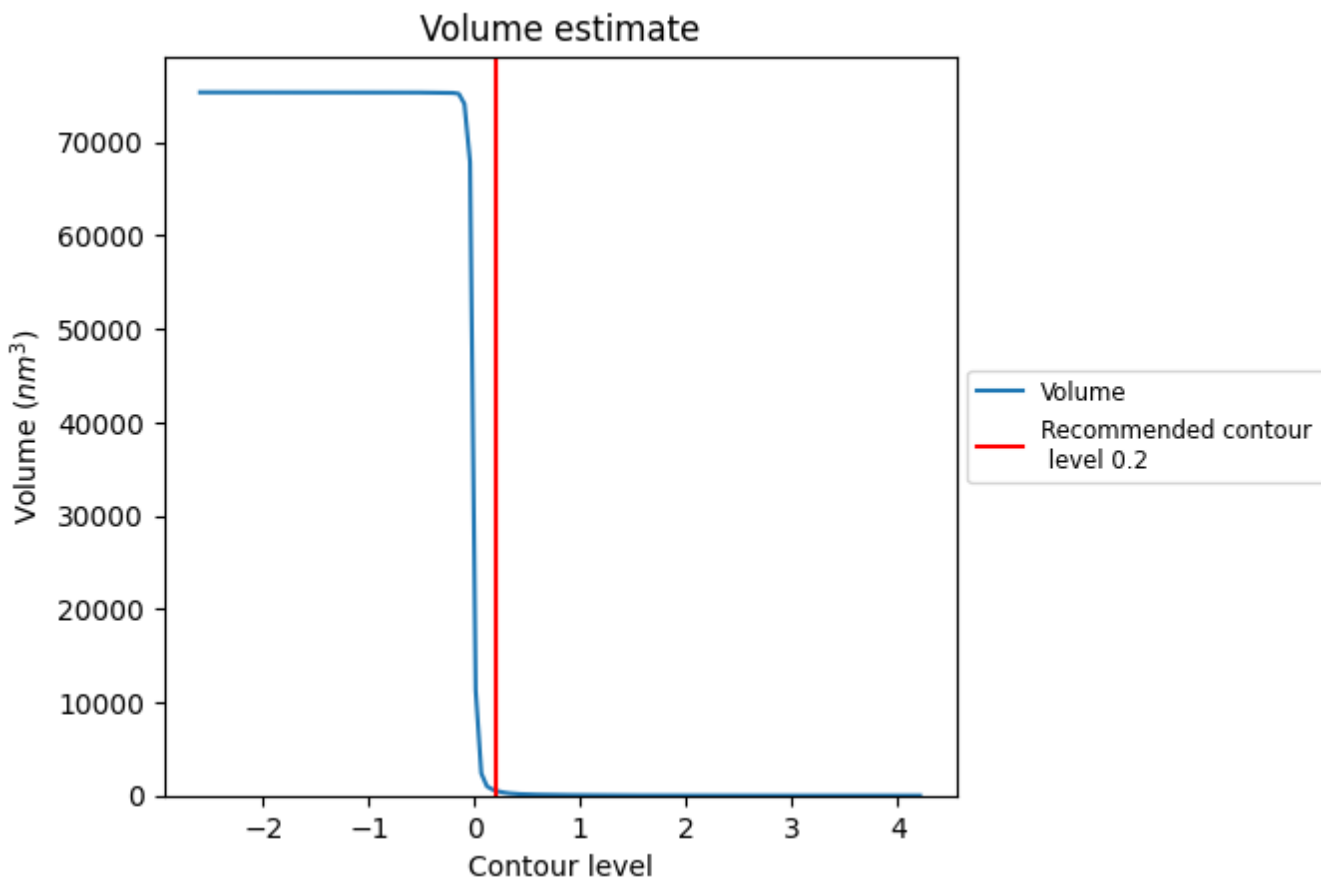
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

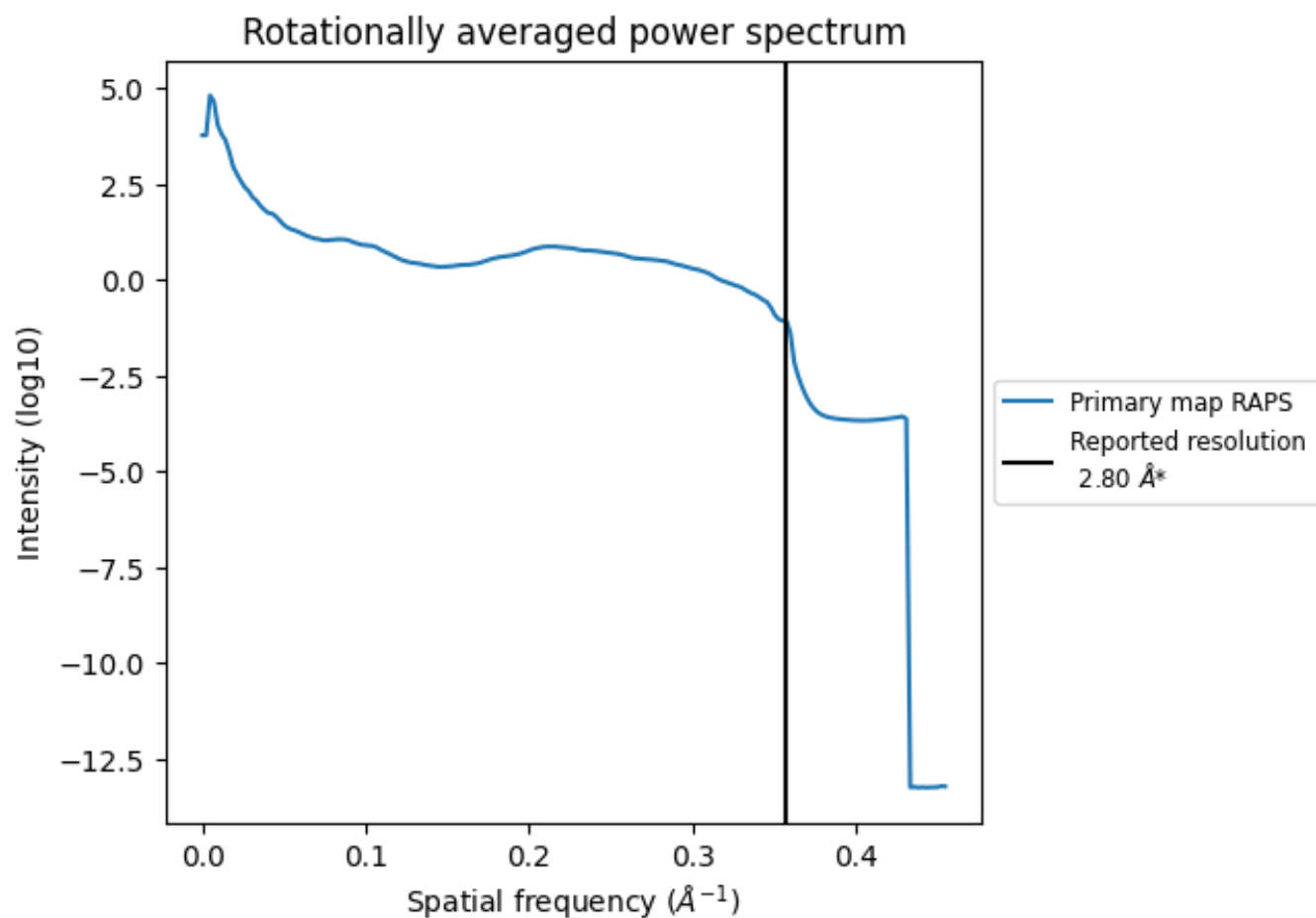
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 535 nm³; this corresponds to an approximate mass of 484 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 0.357\AA^{-1}

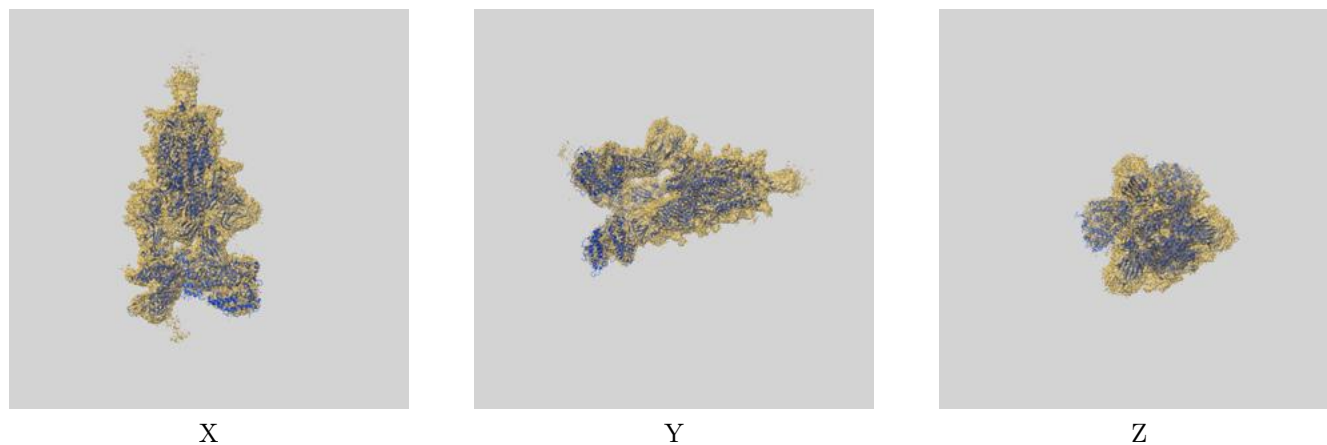
8 Fourier-Shell correlation

This section was not generated. No FSC curve or half-maps provided.

9 Map-model fit [i](#)

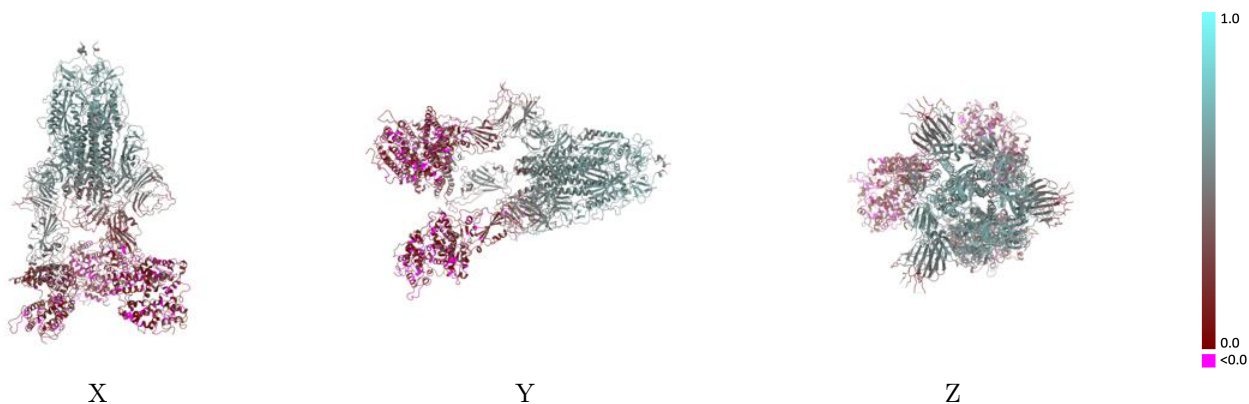
This section contains information regarding the fit between EMDB map EMD-31788 and PDB model 7V83. Per-residue inclusion information can be found in section 3 on page 16.

9.1 Map-model overlay [i](#)



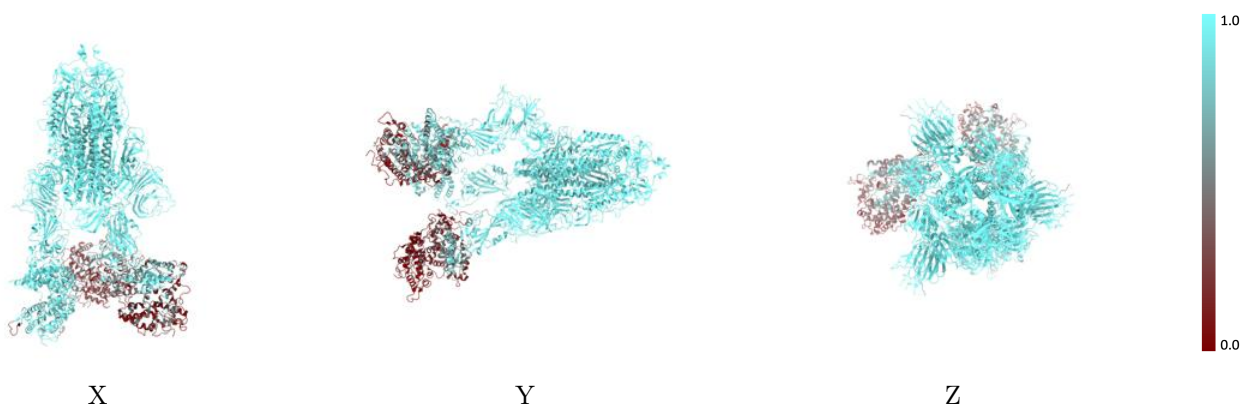
The images above show the 3D surface view of the map at the recommended contour level 0.2 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



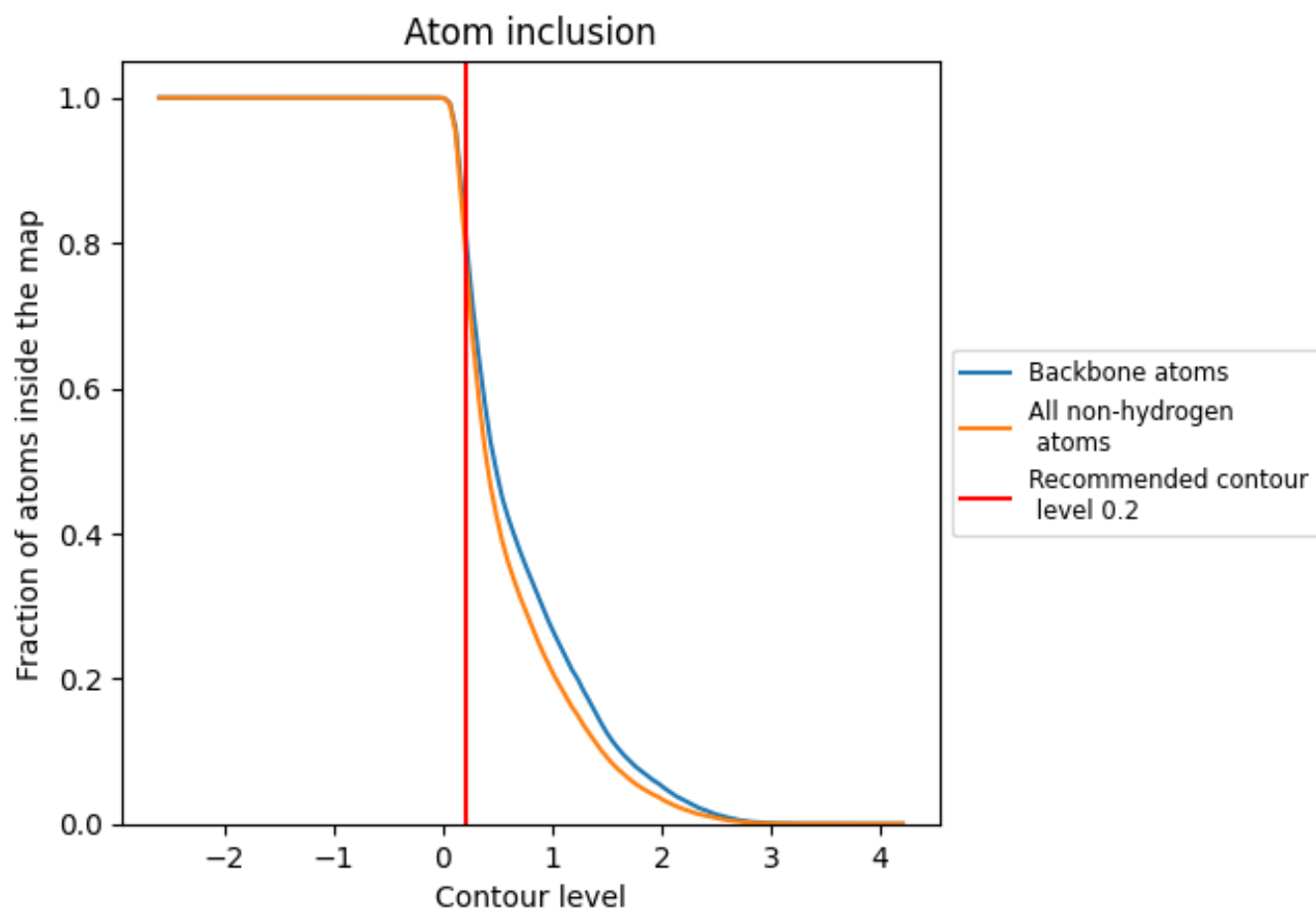
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.2).







































































9.4 Atom inclusion [i](#)



At the recommended contour level, 83% of all backbone atoms, 80% 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 (0.2) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8015	 0.3550
A	 0.9820	 0.4980
B	 0.9488	 0.4620
C	 0.9600	 0.4570
D	 0.8970	 0.2120
E	 0.2472	 0.1070
F	 0.4077	 0.1340
G	 0.9286	 0.3640
H	 0.9643	 0.5010
I	 0.9643	 0.4320
J	 0.9643	 0.4360
K	 0.9286	 0.3760
L	 1.0000	 0.5020
M	 1.0000	 0.4790
N	 0.9286	 0.4590
O	 1.0000	 0.5160
P	 0.8571	 0.2740
Q	 0.8571	 0.3300
R	 0.9286	 0.3600
S	 1.0000	 0.4210
T	 0.9643	 0.3980
U	 1.0000	 0.4940
V	 0.9286	 0.4190
W	 1.0000	 0.5220
X	 1.0000	 0.5060
Y	 0.9286	 0.3940
Z	 1.0000	 0.5480
a	 0.9643	 0.5060
b	 0.9286	 0.3440
c	 0.9643	 0.4060
d	 0.9286	 0.4500
e	 0.9286	 0.4580
f	 1.0000	 0.5170
g	 1.0000	 0.4480
h	 0.8571	 0.2900



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Chain	Atom inclusion	Q-score
i	 1.0000	 0.5460
j	 1.0000	 0.4650