



wwPDB EM Validation Summary Report ⓘ

Feb 12, 2024 – 01:18 PM EST

PDB ID : 8G77
EMDB ID : EMD-29799
Title : SARS-CoV-2 spike/Nb6 complex
Authors : Ye, G.; Bu, F.; Liu, B.; Li, F.
Deposited on : 2023-02-16
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.dev70
Mogul : 1.8.5 (274361), CSD as541be (2020)
MolProbity : 4.02b-467
buster-report : 1.1.7 (2018)
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.9
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.36

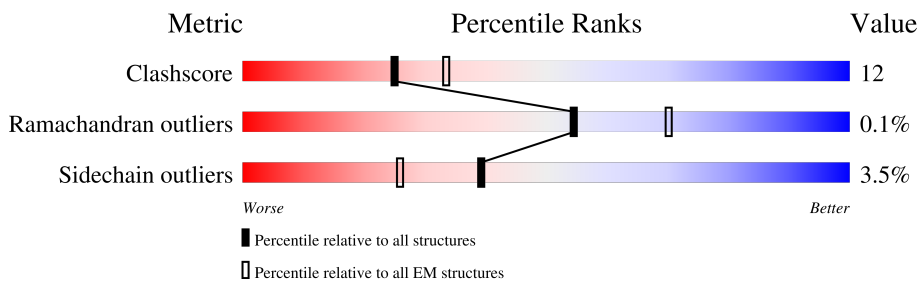
1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 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.




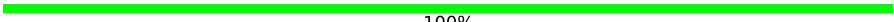


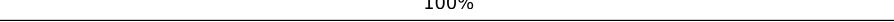
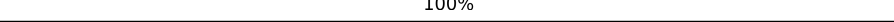
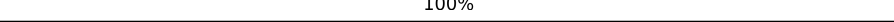


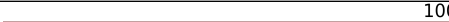





Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826

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	1234	
1	B	1234	
1	D	1234	
2	F	141	
2	G	141	
2	K	141	
3	C	2	
3	E	2	

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Mol	Chain	Length	Quality of chain
3	H	2	 100%
3	I	2	 100%
3	J	2	 100%
3	L	2	 50%  100%
3	M	2	 100%
3	N	2	 100%
3	O	2	 50%  100%
3	P	2	 50%  50%  50%
3	Q	2	 100%  50%  50%

2 Entry composition [i](#)

There are 4 unique types of molecules in this entry. The entry contains 28942 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	1082	8447	5387	1410	1612	38	0	0
1	B	1086	8483	5411	1416	1618	38	0	0
1	D	1086	8480	5409	1416	1617	38	0	0

There are 135 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	614	GLY	ASP	conflict	UNP P0DTC2
A	682	ALA	ARG	conflict	UNP P0DTC2
A	683	GLY	ARG	conflict	UNP P0DTC2
A	817	PRO	PHE	conflict	UNP P0DTC2
A	892	PRO	ALA	conflict	UNP P0DTC2
A	899	PRO	ALA	conflict	UNP P0DTC2
A	942	PRO	ALA	conflict	UNP P0DTC2
A	986	PRO	LYS	conflict	UNP P0DTC2
A	987	PRO	VAL	conflict	UNP P0DTC2
A	1212	GLY	-	expression tag	UNP P0DTC2
A	1213	SER	-	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
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

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Chain	Residue	Modelled	Actual	Comment	Reference
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	GLY	-	expression tag	UNP P0DTC2
A	1242	HIS	-	expression tag	UNP P0DTC2
A	1243	HIS	-	expression tag	UNP P0DTC2
A	1244	HIS	-	expression tag	UNP P0DTC2
A	1245	HIS	-	expression tag	UNP P0DTC2
A	1246	HIS	-	expression tag	UNP P0DTC2
A	1247	HIS	-	expression tag	UNP P0DTC2
B	614	GLY	ASP	conflict	UNP P0DTC2
B	682	ALA	ARG	conflict	UNP P0DTC2
B	683	GLY	ARG	conflict	UNP P0DTC2
B	817	PRO	PHE	conflict	UNP P0DTC2
B	892	PRO	ALA	conflict	UNP P0DTC2
B	899	PRO	ALA	conflict	UNP P0DTC2
B	942	PRO	ALA	conflict	UNP P0DTC2
B	986	PRO	LYS	conflict	UNP P0DTC2
B	987	PRO	VAL	conflict	UNP P0DTC2
B	1212	GLY	-	expression tag	UNP P0DTC2
B	1213	SER	-	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

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Chain	Residue	Modelled	Actual	Comment	Reference
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	GLY	-	expression tag	UNP P0DTC2
B	1242	HIS	-	expression tag	UNP P0DTC2
B	1243	HIS	-	expression tag	UNP P0DTC2
B	1244	HIS	-	expression tag	UNP P0DTC2
B	1245	HIS	-	expression tag	UNP P0DTC2
B	1246	HIS	-	expression tag	UNP P0DTC2
B	1247	HIS	-	expression tag	UNP P0DTC2
D	614	GLY	ASP	conflict	UNP P0DTC2
D	682	ALA	ARG	conflict	UNP P0DTC2
D	683	GLY	ARG	conflict	UNP P0DTC2
D	817	PRO	PHE	conflict	UNP P0DTC2
D	892	PRO	ALA	conflict	UNP P0DTC2
D	899	PRO	ALA	conflict	UNP P0DTC2
D	942	PRO	ALA	conflict	UNP P0DTC2
D	986	PRO	LYS	conflict	UNP P0DTC2
D	987	PRO	VAL	conflict	UNP P0DTC2
D	1212	GLY	-	expression tag	UNP P0DTC2
D	1213	SER	-	expression tag	UNP P0DTC2
D	1214	GLY	-	expression tag	UNP P0DTC2
D	1215	TYR	-	expression tag	UNP P0DTC2
D	1216	ILE	-	expression tag	UNP P0DTC2
D	1217	PRO	-	expression tag	UNP P0DTC2
D	1218	GLU	-	expression tag	UNP P0DTC2
D	1219	ALA	-	expression tag	UNP P0DTC2
D	1220	PRO	-	expression tag	UNP P0DTC2

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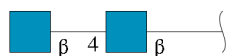
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Chain	Residue	Modelled	Actual	Comment	Reference
D	1221	ARG	-	expression tag	UNP P0DTC2
D	1222	ASP	-	expression tag	UNP P0DTC2
D	1223	GLY	-	expression tag	UNP P0DTC2
D	1224	GLN	-	expression tag	UNP P0DTC2
D	1225	ALA	-	expression tag	UNP P0DTC2
D	1226	TYR	-	expression tag	UNP P0DTC2
D	1227	VAL	-	expression tag	UNP P0DTC2
D	1228	ARG	-	expression tag	UNP P0DTC2
D	1229	LYS	-	expression tag	UNP P0DTC2
D	1230	ASP	-	expression tag	UNP P0DTC2
D	1231	GLY	-	expression tag	UNP P0DTC2
D	1232	GLU	-	expression tag	UNP P0DTC2
D	1233	TRP	-	expression tag	UNP P0DTC2
D	1234	VAL	-	expression tag	UNP P0DTC2
D	1235	LEU	-	expression tag	UNP P0DTC2
D	1236	LEU	-	expression tag	UNP P0DTC2
D	1237	SER	-	expression tag	UNP P0DTC2
D	1238	THR	-	expression tag	UNP P0DTC2
D	1239	PHE	-	expression tag	UNP P0DTC2
D	1240	LEU	-	expression tag	UNP P0DTC2
D	1241	GLY	-	expression tag	UNP P0DTC2
D	1242	HIS	-	expression tag	UNP P0DTC2
D	1243	HIS	-	expression tag	UNP P0DTC2
D	1244	HIS	-	expression tag	UNP P0DTC2
D	1245	HIS	-	expression tag	UNP P0DTC2
D	1246	HIS	-	expression tag	UNP P0DTC2
D	1247	HIS	-	expression tag	UNP P0DTC2

- Molecule 2 is a protein called Nanosota-6.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	G	118	Total	C	N	O	S	0	0
			893	559	158	172	4		
2	F	118	Total	C	N	O	S	0	0
			893	559	158	172	4		
2	K	118	Total	C	N	O	S	0	0
			893	559	158	172	4		

- 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
			Total	C	N	O		
3	J	2	28	16	2	10	0	0
3	C	2	28	16	2	10	0	0
3	E	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	L	2	28	16	2	10	0	0
3	M	2	28	16	2	10	0	0
3	N	2	28	16	2	10	0	0
3	O	2	28	16	2	10	0	0
3	P	2	28	16	2	10	0	0
3	Q	2	28	16	2	10	0	0

- Molecule 4 is 2-acetamido-2-deoxy-beta-D-glucopyranose (three-letter code: NAG) (formula: $C_8H_{15}NO_6$) (labeled as "Ligand of Interest" by depositor).



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

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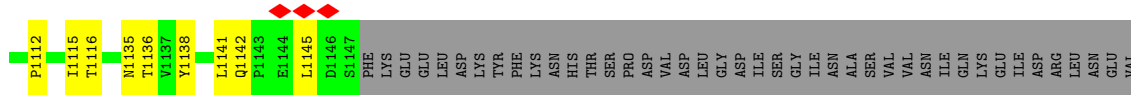
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Mol	Chain	Residues	Atoms				AltConf
			Total	C	N	O	
4	B	1	Total 14	8	1	5	0
4	B	1	Total 14	8	1	5	0
4	B	1	Total 14	8	1	5	0
4	B	1	Total 14	8	1	5	0
4	B	1	Total 14	8	1	5	0
4	B	1	Total 14	8	1	5	0
4	B	1	Total 14	8	1	5	0
4	B	1	Total 13	8	1	4	0
4	B	1	Total 14	8	1	5	0
4	B	1	Total 14	8	1	5	0
4	B	1	Total 14	8	1	5	0
4	B	1	Total 14	8	1	5	0
4	B	1	Total 14	8	1	5	0
4	B	1	Total 14	8	1	5	0
4	B	1	Total 14	8	1	5	0
4	D	1	Total 14	8	1	5	0
4	D	1	Total 14	8	1	5	0
4	D	1	Total 14	8	1	5	0
4	D	1	Total 14	8	1	5	0
4	D	1	Total 14	8	1	5	0
4	D	1	Total 14	8	1	5	0
4	D	1	Total 14	8	1	5	0
4	D	1	Total 14	8	1	5	0

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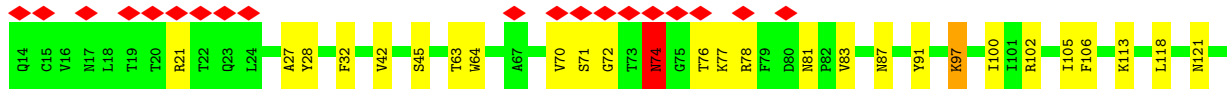
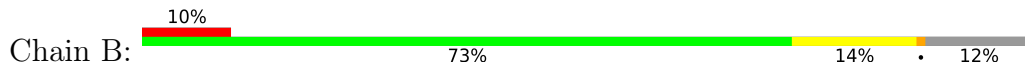
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Mol	Chain	Residues	Atoms				AltConf
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			14	8	1	5	
4	D	1	Total	C	N	O	0
			14	8	1	5	
4	D	1	Total	C	N	O	0
			14	8	1	5	
4	D	1	Total	C	N	O	0
			14	8	1	5	



ALA	LYS	GLU	GLY	LEU	ASP	ASP	GLY	LEU	VAL	ASP	ILE	GLY	GLN	GLY	ASN	THR	VAL	THR	PHE	LEU	GLN	HIS	HIS	HIS	HIS	HIS	HIS	VAL
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• Molecule 1: Spike glycoprotein



T124	M125	V126	L127	C131	L141	G142	V143	Y144	Y145	H146	K147	M148	N149	K150	S151	W152	M153	E154	C166	V171	S172	Q173	P174	F175	L176	M177	D178	L179	E180	G184	M185	F186	K187	M188	E191	K206	H207	T208	P209	N211	L212	V213	R214	Q218	S221	A222
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L226	V227	D228	L229	P230	I231	I235	T236	R237	F238	Q239	L244	H245	R246	L249	P251	G252	D253	S254	R255	S256	G257	W258	T259	A260	G261	A262	N280	E281	N282	D294	K310	F318	R319	V320	T323	E324	I332	E340	A344	T345	R346	F347	Y351	A352	W353
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D364	V367	L368	A372	S373	F374	T376	F377	K378	C379	D389	V395	I402	R403	G404	D405	E406	W407	Q409	K417	I418	A419	G420	Y421	M422	T430	G431	C432	A435	W436	N437	S438	N439	M440	L441	D442	S443	K444	V445	G446	N448	Y449	N450	L451	L452	Y453	R454	L455	F456
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R457	K458	S459	M460	L461	R466	D467	I468	S469	T470	E471	I472	Y473	Q474	A475	G476	S477	T478	P479	C480	N481	G482	V483	E484	G485	F486	M487	C488	Y489	F490	P491	L492	G496	F497	Q498	P499	T500	N501	G502	V503	G504	Y505	Q506	F515	L518	H519	A520	P521	V524	F541	L552	S555
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N556	Q564	D568	I569	A570	D571	D574	A575	I584	L585	D586	S591	P600	M603	Y612	M616	V620	P621	V622	A623	I624	HIS	ALA	ASP	GLM	TYR	GLY	LEU	PRO	T632	W633	R634	V635	Y636	S637	T638	G639	S640	I651	M658	S659	Y660	Q675	T676	GLN	THR	ASN	SER
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PRO	ALA	GLY	ALA	ARG	VAL	ALA	S689	E702	N703	S704	V705	C743	C749	D796	K814	L821	T827	LEU	ALA	ASP	GLM	ALA	ALA	GLY	PHE	ILE	LYS	GLM	TYR	ASP	CYS	LEU	GLY	ASP	ILE	ALA	ALA	ARG	ASP	LEU	ILE	CYS	ALA	GLM	K854	P892	A893	L894	L916
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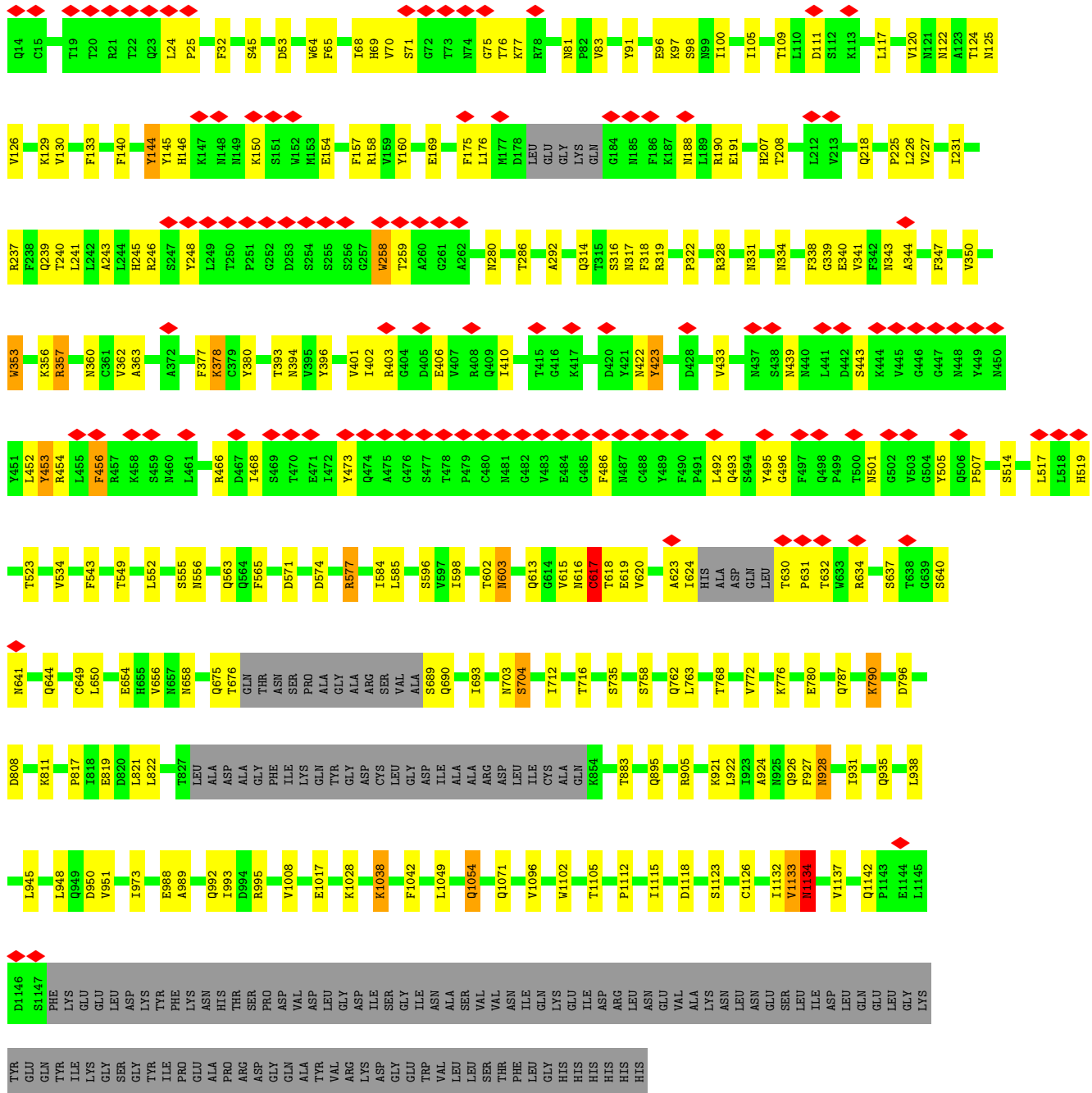
K921	I931	Q935	S939	L977	K1028	F1042	M1074	P1090	R1091	F1095	V1104	I1115	T1116	T1117	D1118	Y1138	P1143	E1144	L1145	D1146	S1147	PHE	LYS	GLU	GLY	LEU	LEU	LYS	TYR	PHE	LYS	ASN	ASN	PRO	THR	SER	ASP	PRO	ASP	VAL	VAL	ASP	LEU	GLY	ASP	ILE	GLY	ILE	GLY	ILE
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ASN	VAL	LEU	VAL	ASN	ILE	GLN	LYS	GLU	ILE	HIS	HIS	HIS	HIS	HIS	HIS	ASN	ASN	VAL	VAL	ALA	LYS	ASN	LEU	ASN	GLU	GLY	TYR	GLM	TYR	ILE	LYS	GLY	SER	GLY	TYR	ILE	PRO	ALA	ALA	PRO	ARG	ASP	GLY	GLM	TYR	VAL	ASP	VAL	ARG	LYS	ASP	GLY	GLU
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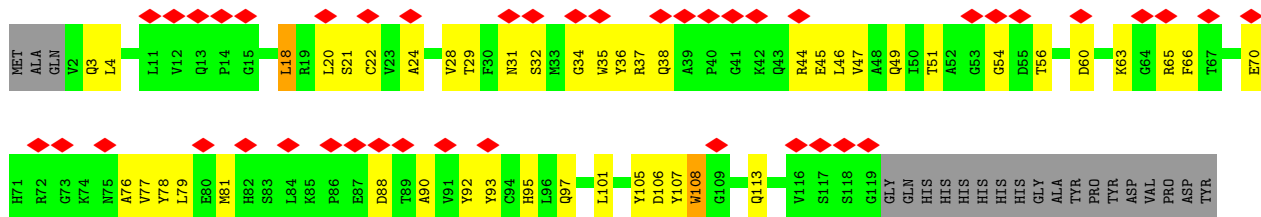
TRP	VAL	LEU	LEU	THR	SER	PHE	LEU	GLY	HIS	HIS	HIS	HIS	HIS	HIS
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• Molecule 1: Spike glycoprotein



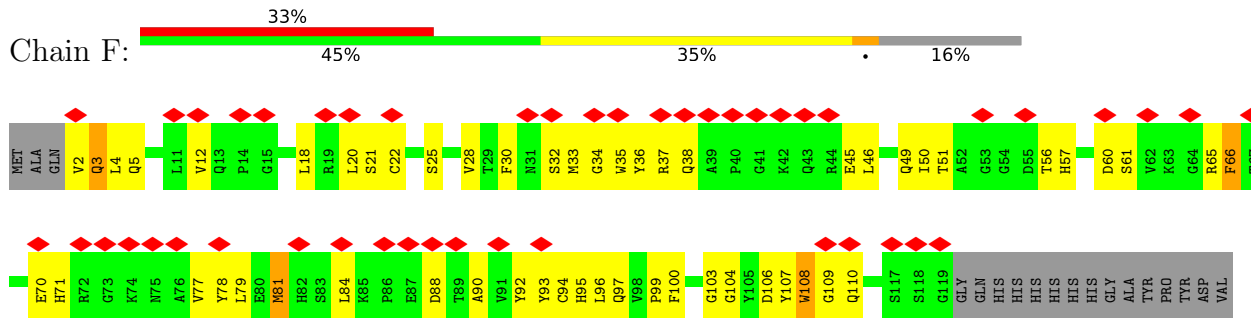


• Molecule 2: Nanosota-6



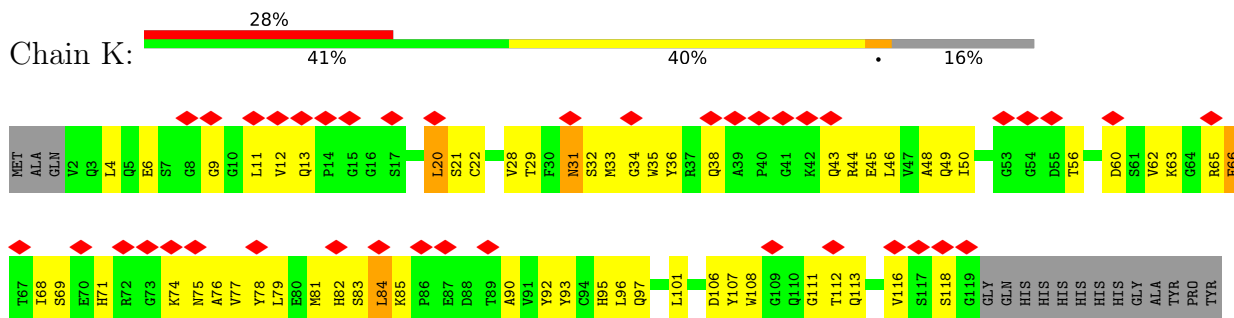
ALA
SER

• Molecule 2: Nanosota-6



PRO
ASP
TYR
ALA
SER

• Molecule 2: Nanosota-6



ASP
VAL
PRO
TYR
ALA
SER

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



MAG1
MAG2

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



MAG1
MAG2

• 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 H:  100%



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

Chain I:  100%



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

Chain L:  50% 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:  50% 100%



- 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



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	189562	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 ($e^-/\text{\AA}^2$)	50	Depositor
Minimum defocus (nm)	800	Depositor
Maximum defocus (nm)	2400	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	2.556	Depositor
Minimum map value	-1.693	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.047	Depositor
Recommended contour level	0.146	Depositor
Map size (Å)	339.968, 339.968, 339.968	wwPDB
Map dimensions	384, 384, 384	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.8853333, 0.8853333, 0.8853333	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	0.33	1/8647 (0.0%)	0.59	6/11777 (0.1%)
1	B	0.28	0/8685	0.62	7/11829 (0.1%)
1	D	0.29	0/8683	0.54	4/11828 (0.0%)
2	F	0.28	0/914	0.58	0/1237
2	G	0.30	0/914	0.64	0/1237
2	K	0.31	0/914	0.69	1/1237 (0.1%)
All	All	0.30	1/28757 (0.0%)	0.59	18/39145 (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	D	0	3

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	330	PRO	CG-CD	-14.71	1.02	1.50

The worst 5 of 18 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	74	ASN	CB-CG-OD1	29.19	179.98	121.60
1	A	330	PRO	N-CD-CG	-20.05	73.13	103.20
1	B	74	ASN	CB-CG-ND2	-19.28	70.42	116.70
1	A	330	PRO	CA-CB-CG	-12.04	81.12	104.00
1	A	432	CYS	CA-CB-SG	10.61	133.09	114.00

There are no chirality outliers.

All (3) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	D	1133	VAL	Peptide
1	D	602	THR	Peptide
1	D	617	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	8447	0	8220	206	0
1	B	8483	0	8256	137	0
1	D	8480	0	8252	182	0
2	F	893	0	851	52	0
2	G	893	0	851	38	0
2	K	893	0	851	72	0
3	C	28	0	25	1	0
3	E	28	0	25	1	0
3	H	28	0	25	0	0
3	I	28	0	25	0	0
3	J	28	0	25	0	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	2	0
3	Q	28	0	25	1	0
4	A	182	0	169	5	0
4	B	195	0	180	3	0
4	D	168	0	156	3	0
All	All	28942	0	28061	659	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 12.

The worst 5 of 659 close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:983:ARG:NH1	1:D:517:LEU:CD1	1.72	1.51
1:A:983:ARG:NH1	1:D:517:LEU:HD11	1.27	1.35
1:B:131:CYS:SG	1:B:166:CYS:SG	1.38	1.34
1:A:983:ARG:CZ	1:D:517:LEU:HD13	1.57	1.31
1:B:131:CYS:SG	1:B:166:CYS:CB	2.16	1.30

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	1072/1234 (87%)	1016 (95%)	55 (5%)	1 (0%)	51	81
1	B	1076/1234 (87%)	1036 (96%)	39 (4%)	1 (0%)	51	81
1	D	1076/1234 (87%)	1037 (96%)	38 (4%)	1 (0%)	51	81
2	F	116/141 (82%)	111 (96%)	4 (3%)	1 (1%)	17	46
2	G	116/141 (82%)	111 (96%)	4 (3%)	1 (1%)	17	46
2	K	116/141 (82%)	110 (95%)	6 (5%)	0	100	100
All	All	3572/4125 (87%)	3421 (96%)	146 (4%)	5 (0%)	54	81

All (5) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	G	3	GLN
1	B	520	ALA
2	F	3	GLN
1	A	320	VAL
1	D	353	TRP

5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	947/1073 (88%)	919 (97%)	28 (3%)	41	75
1	B	951/1073 (89%)	922 (97%)	29 (3%)	41	75
1	D	951/1073 (89%)	915 (96%)	36 (4%)	33	67
2	F	93/111 (84%)	89 (96%)	4 (4%)	29	62
2	G	93/111 (84%)	88 (95%)	5 (5%)	22	53
2	K	93/111 (84%)	86 (92%)	7 (8%)	13	37
All	All	3128/3552 (88%)	3019 (96%)	109 (4%)	39	70

5 of 109 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	D	45	SER
1	D	486	PHE
2	F	66	PHE
1	D	144	TYR
1	D	362	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 14 such sidechains are listed below:

Mol	Chain	Res	Type
1	B	394	ASN
1	D	69	HIS
2	F	95	HIS
1	D	1054	GLN
2	F	49	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](#)

22 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	C	1	1,3	14,14,15	0.29	0	17,19,21	0.56	0
3	NAG	C	2	3	14,14,15	0.27	0	17,19,21	0.46	0
3	NAG	E	1	1,3	14,14,15	0.24	0	17,19,21	0.40	0
3	NAG	E	2	3	14,14,15	0.25	0	17,19,21	0.40	0
3	NAG	H	1	1,3	14,14,15	0.22	0	17,19,21	0.46	0
3	NAG	H	2	3	14,14,15	0.23	0	17,19,21	0.44	0
3	NAG	I	1	1,3	14,14,15	0.23	0	17,19,21	0.43	0
3	NAG	I	2	3	14,14,15	0.26	0	17,19,21	0.43	0
3	NAG	J	1	1,3	14,14,15	0.20	0	17,19,21	0.45	0
3	NAG	J	2	3	14,14,15	0.23	0	17,19,21	0.43	0
3	NAG	L	1	1,3	14,14,15	0.18	0	17,19,21	0.42	0
3	NAG	L	2	3	14,14,15	0.25	0	17,19,21	0.43	0
3	NAG	M	1	1,3	14,14,15	0.22	0	17,19,21	0.44	0
3	NAG	M	2	3	14,14,15	0.24	0	17,19,21	0.43	0
3	NAG	N	1	1,3	14,14,15	0.21	0	17,19,21	0.41	0
3	NAG	N	2	3	14,14,15	0.24	0	17,19,21	0.42	0
3	NAG	O	1	1,3	14,14,15	0.20	0	17,19,21	0.43	0
3	NAG	O	2	3	14,14,15	0.27	0	17,19,21	0.37	0
3	NAG	P	1	1,3	14,14,15	1.11	1 (7%)	17,19,21	1.29	1 (5%)
3	NAG	P	2	3	14,14,15	0.31	0	17,19,21	0.42	0
3	NAG	Q	1	1,3	14,14,15	0.63	0	17,19,21	0.89	1 (5%)
3	NAG	Q	2	3	14,14,15	0.27	0	17,19,21	0.43	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	C	1	1,3	-	0/6/23/26	0/1/1/1
3	NAG	C	2	3	-	2/6/23/26	0/1/1/1
3	NAG	E	1	1,3	-	2/6/23/26	0/1/1/1
3	NAG	E	2	3	-	2/6/23/26	0/1/1/1
3	NAG	H	1	1,3	-	2/6/23/26	0/1/1/1
3	NAG	H	2	3	-	1/6/23/26	0/1/1/1
3	NAG	I	1	1,3	-	0/6/23/26	0/1/1/1
3	NAG	I	2	3	-	0/6/23/26	0/1/1/1
3	NAG	J	1	1,3	-	0/6/23/26	0/1/1/1
3	NAG	J	2	3	-	2/6/23/26	0/1/1/1
3	NAG	L	1	1,3	-	0/6/23/26	0/1/1/1
3	NAG	L	2	3	-	0/6/23/26	0/1/1/1
3	NAG	M	1	1,3	-	2/6/23/26	0/1/1/1
3	NAG	M	2	3	-	2/6/23/26	0/1/1/1
3	NAG	N	1	1,3	-	0/6/23/26	0/1/1/1
3	NAG	N	2	3	-	2/6/23/26	0/1/1/1
3	NAG	O	1	1,3	-	0/6/23/26	0/1/1/1
3	NAG	O	2	3	-	2/6/23/26	0/1/1/1
3	NAG	P	1	1,3	-	2/6/23/26	0/1/1/1
3	NAG	P	2	3	-	0/6/23/26	0/1/1/1
3	NAG	Q	1	1,3	-	2/6/23/26	0/1/1/1
3	NAG	Q	2	3	-	0/6/23/26	0/1/1/1

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	P	1	NAG	C1-C2	3.86	1.58	1.52

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	P	1	NAG	C1-O5-C5	4.00	117.61	112.19
3	Q	1	NAG	C1-O5-C5	3.31	116.68	112.19

There are no chirality outliers.

5 of 23 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	C	2	NAG	O5-C5-C6-O6
3	P	1	NAG	O5-C5-C6-O6

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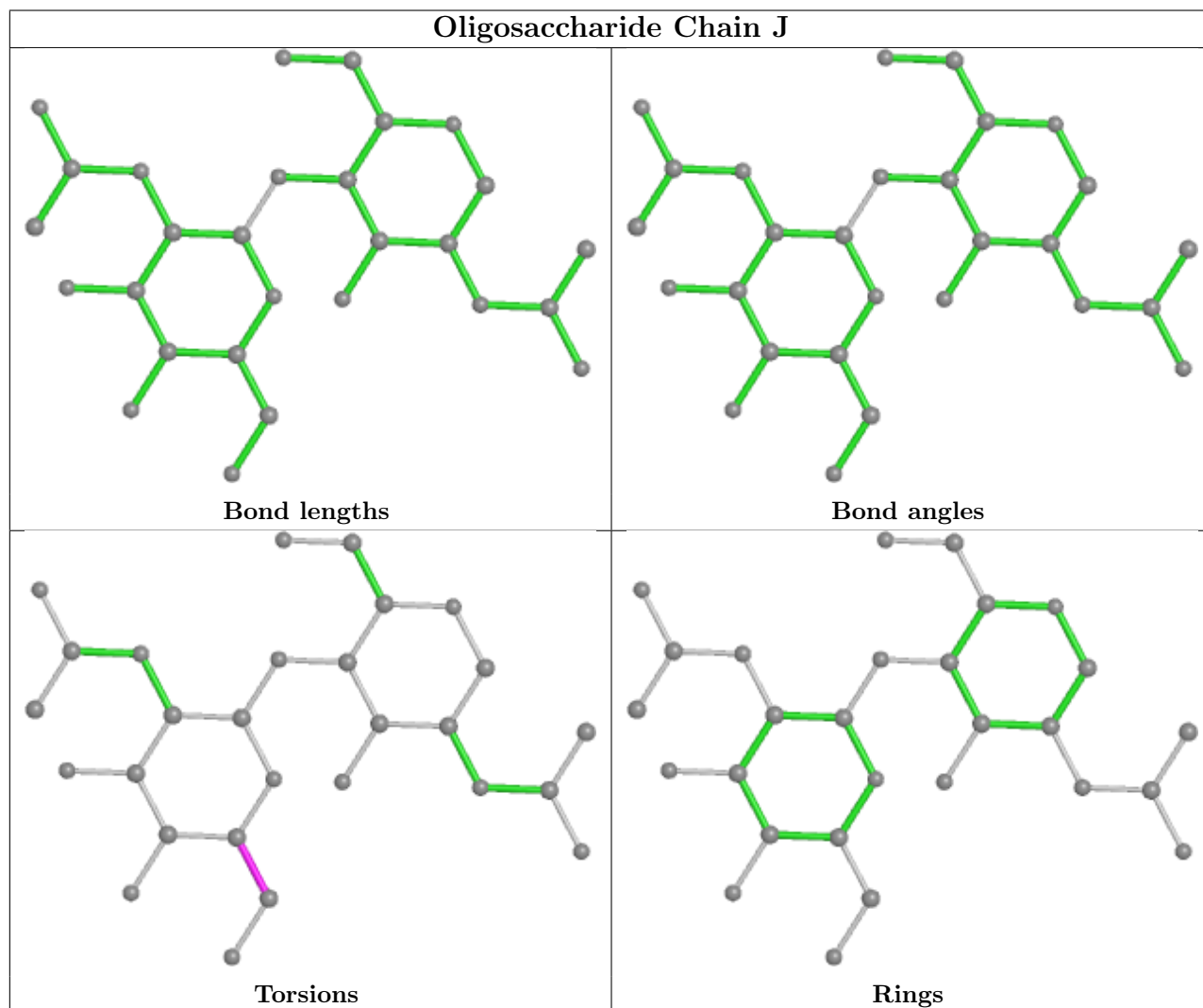
Mol	Chain	Res	Type	Atoms
3	E	2	NAG	C4-C5-C6-O6
3	Q	1	NAG	C4-C5-C6-O6
3	N	2	NAG	O5-C5-C6-O6

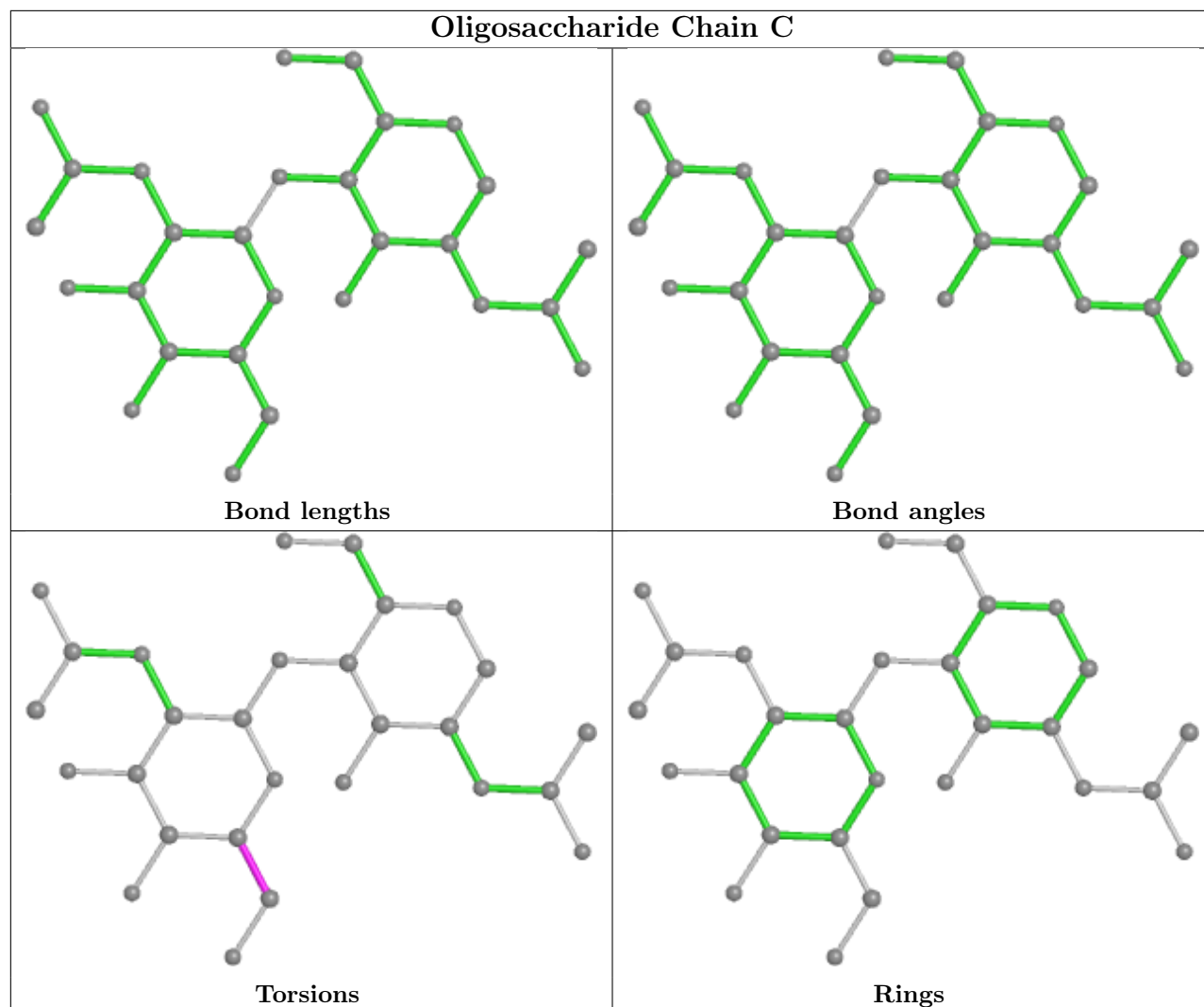
There are no ring outliers.

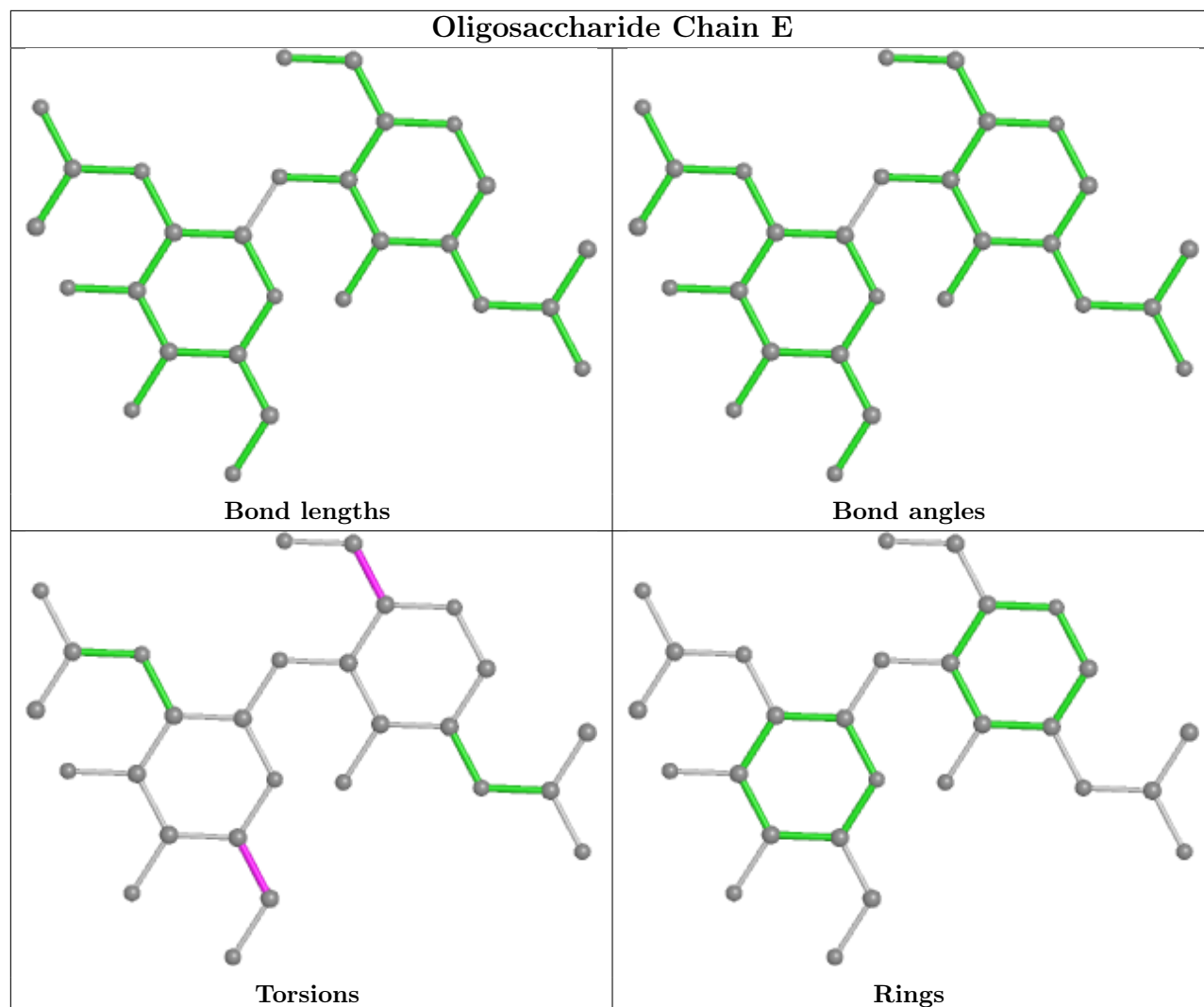
4 monomers are involved in 5 short contacts:

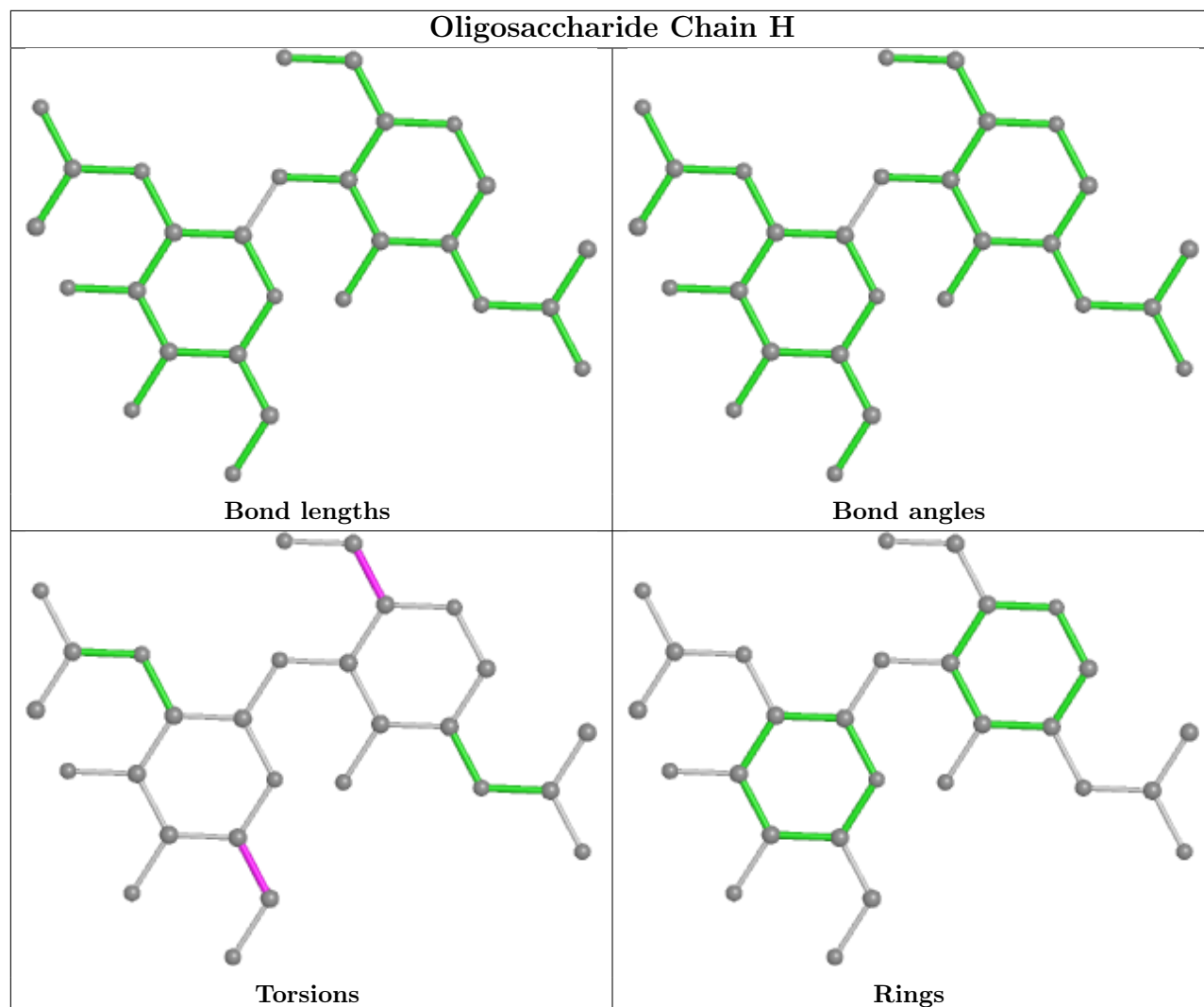
Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	P	1	NAG	2	0
3	Q	1	NAG	1	0
3	C	1	NAG	1	0
3	E	1	NAG	1	0

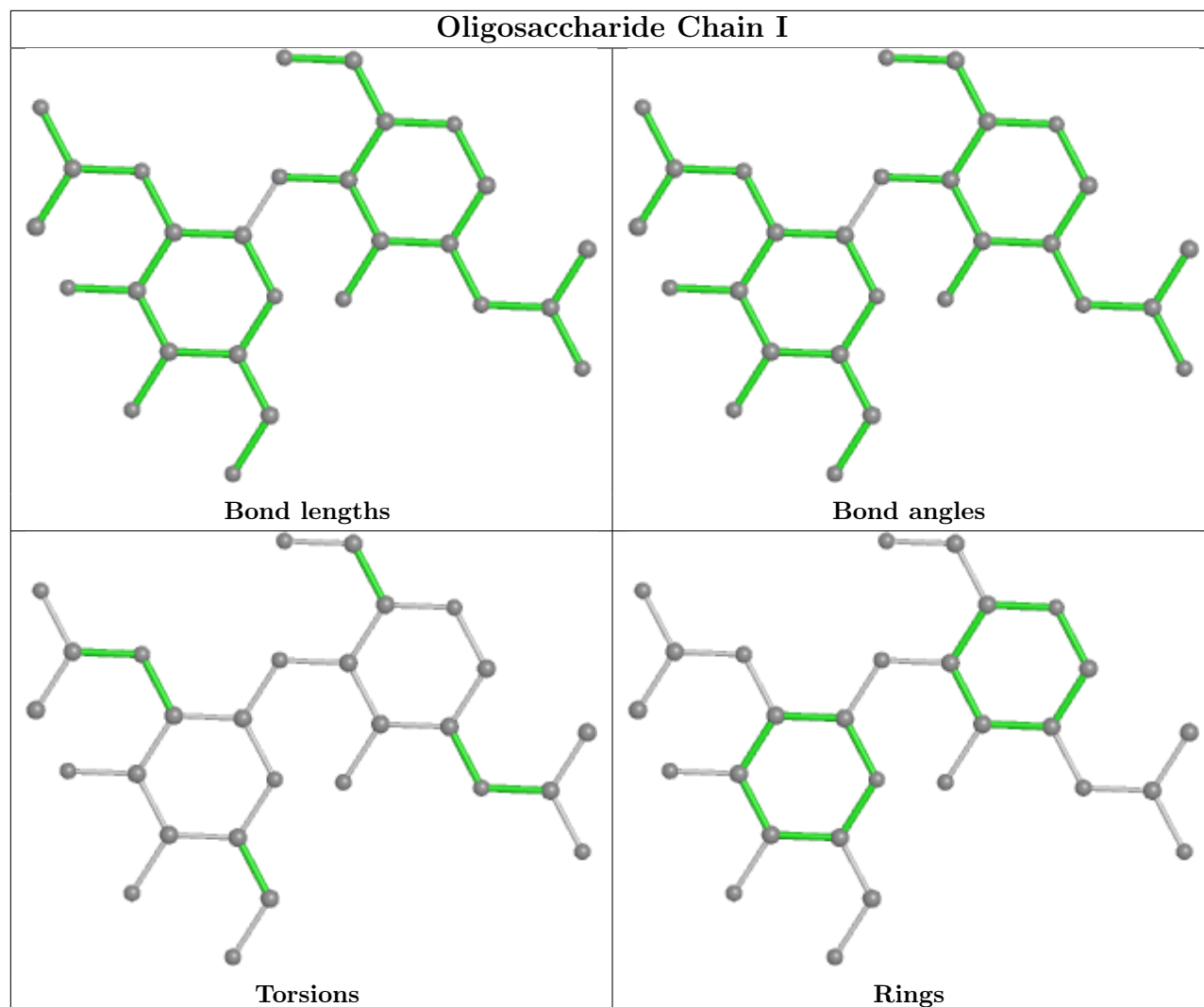
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for oligosaccharide.

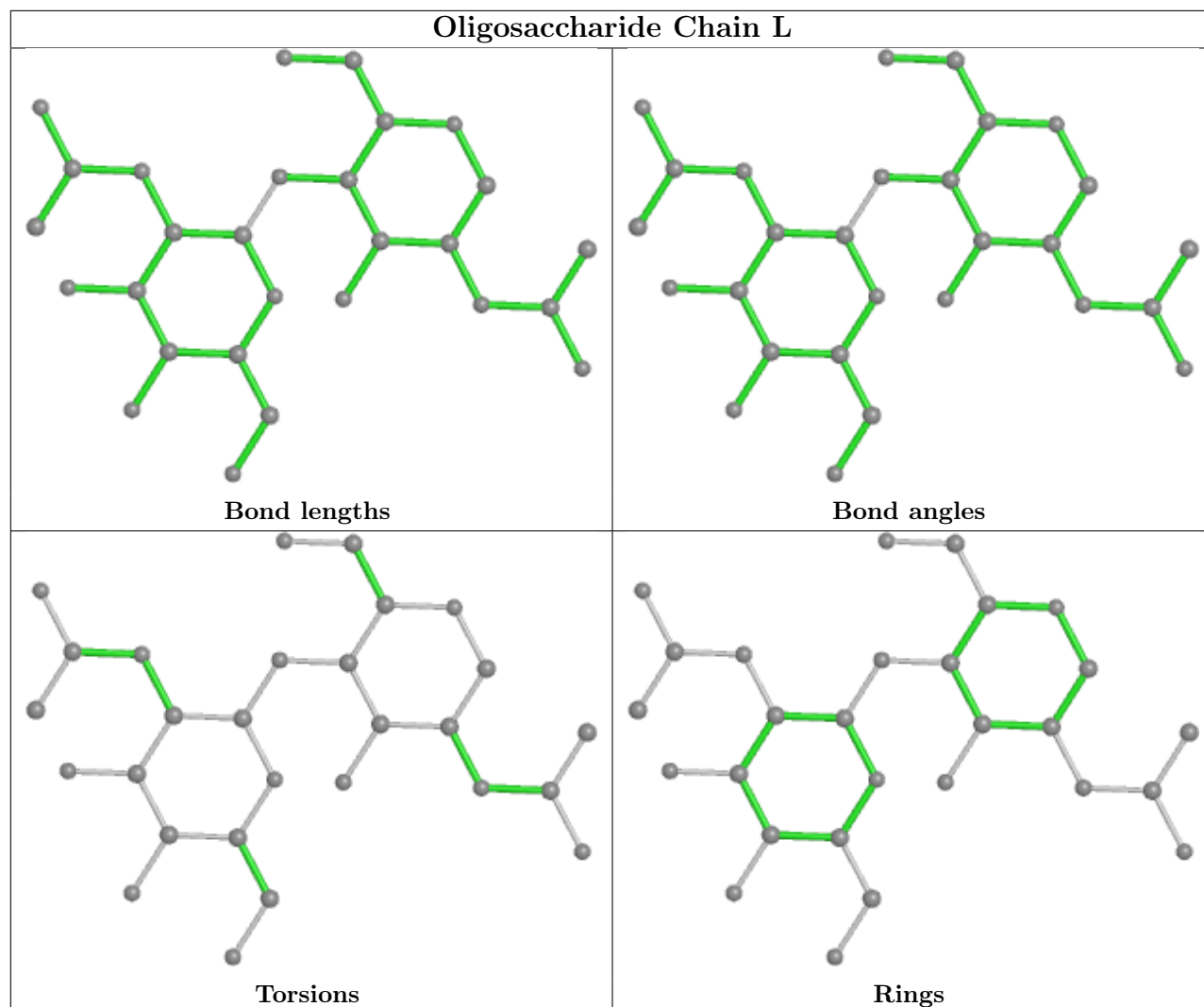


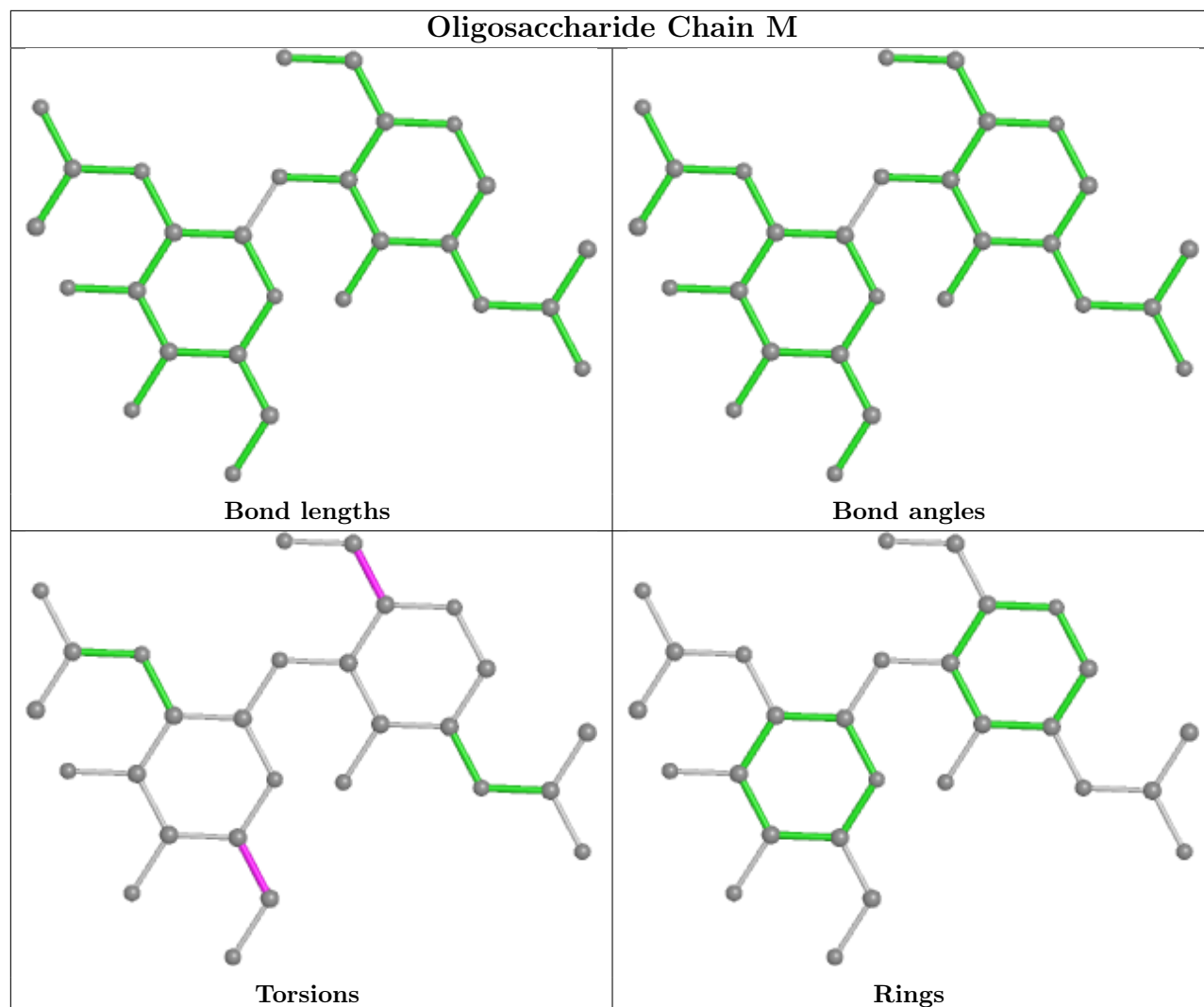


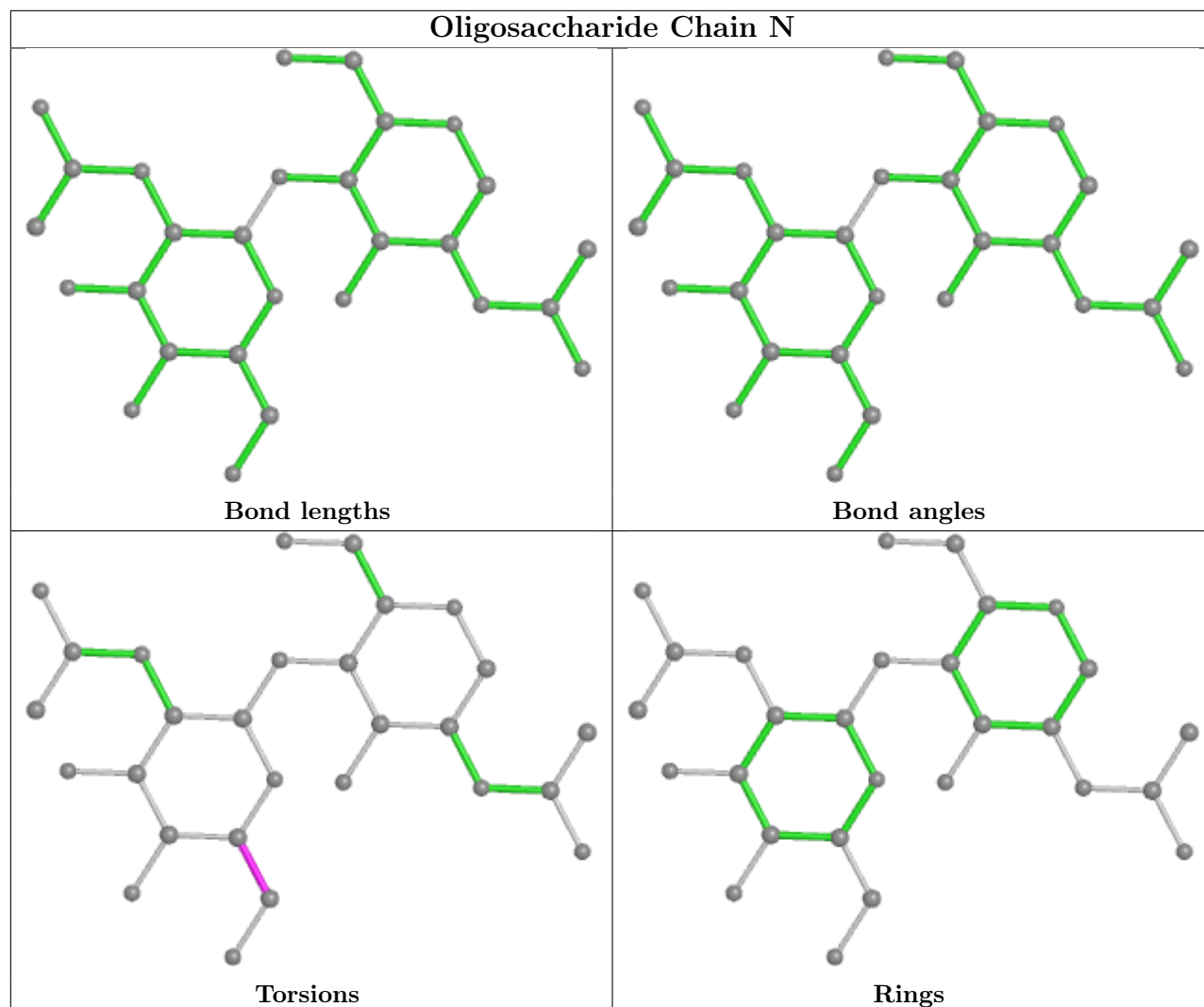


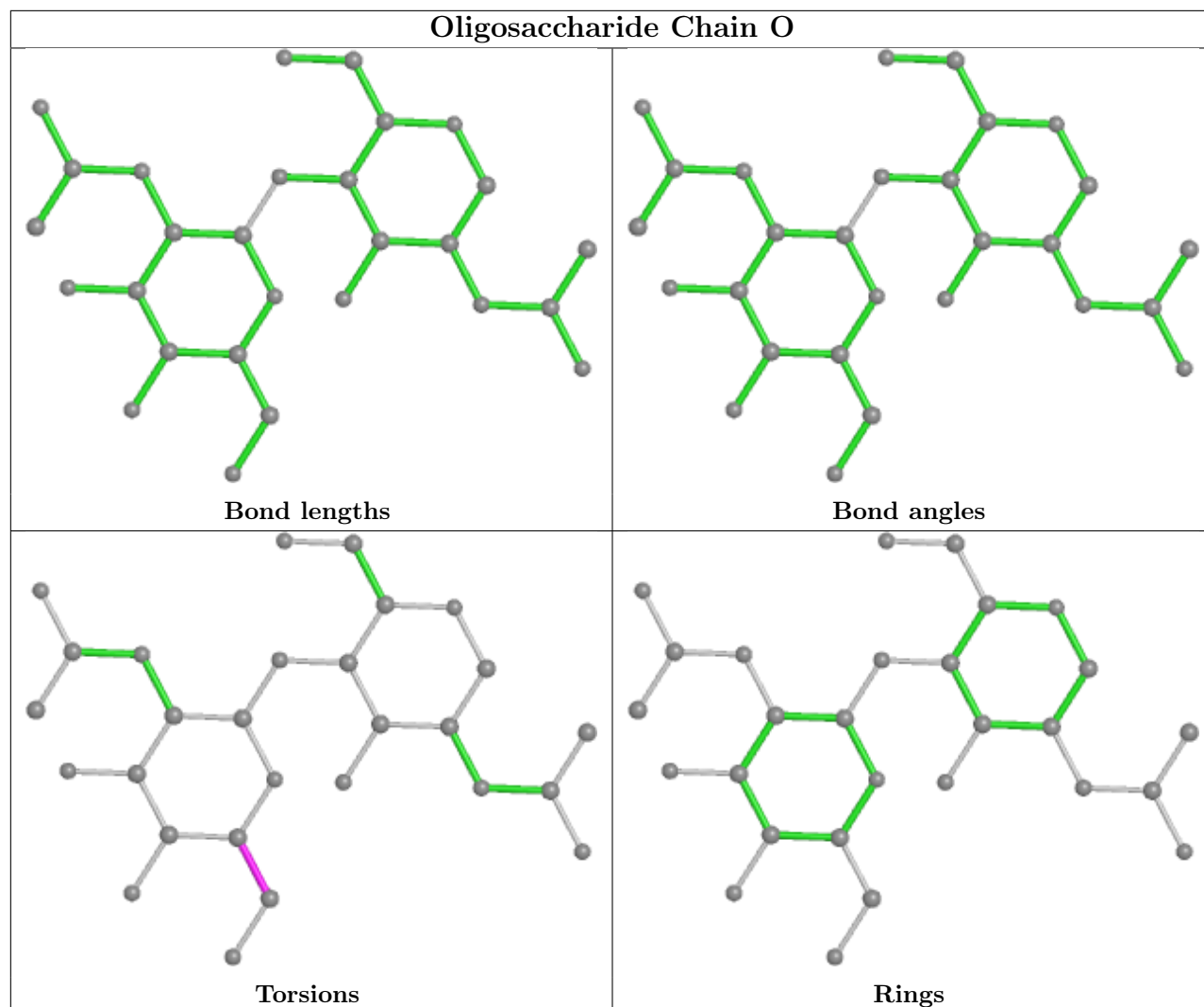


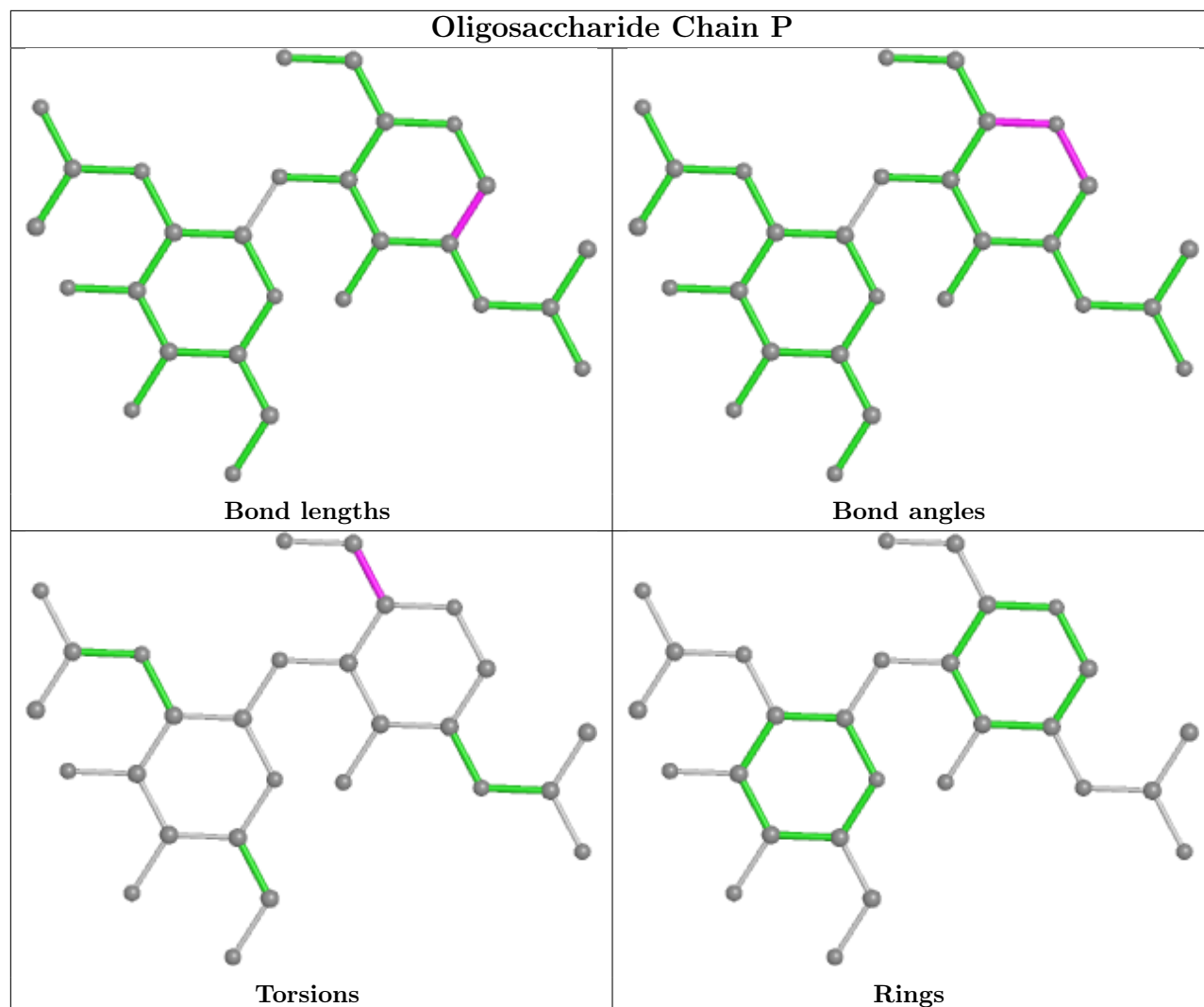


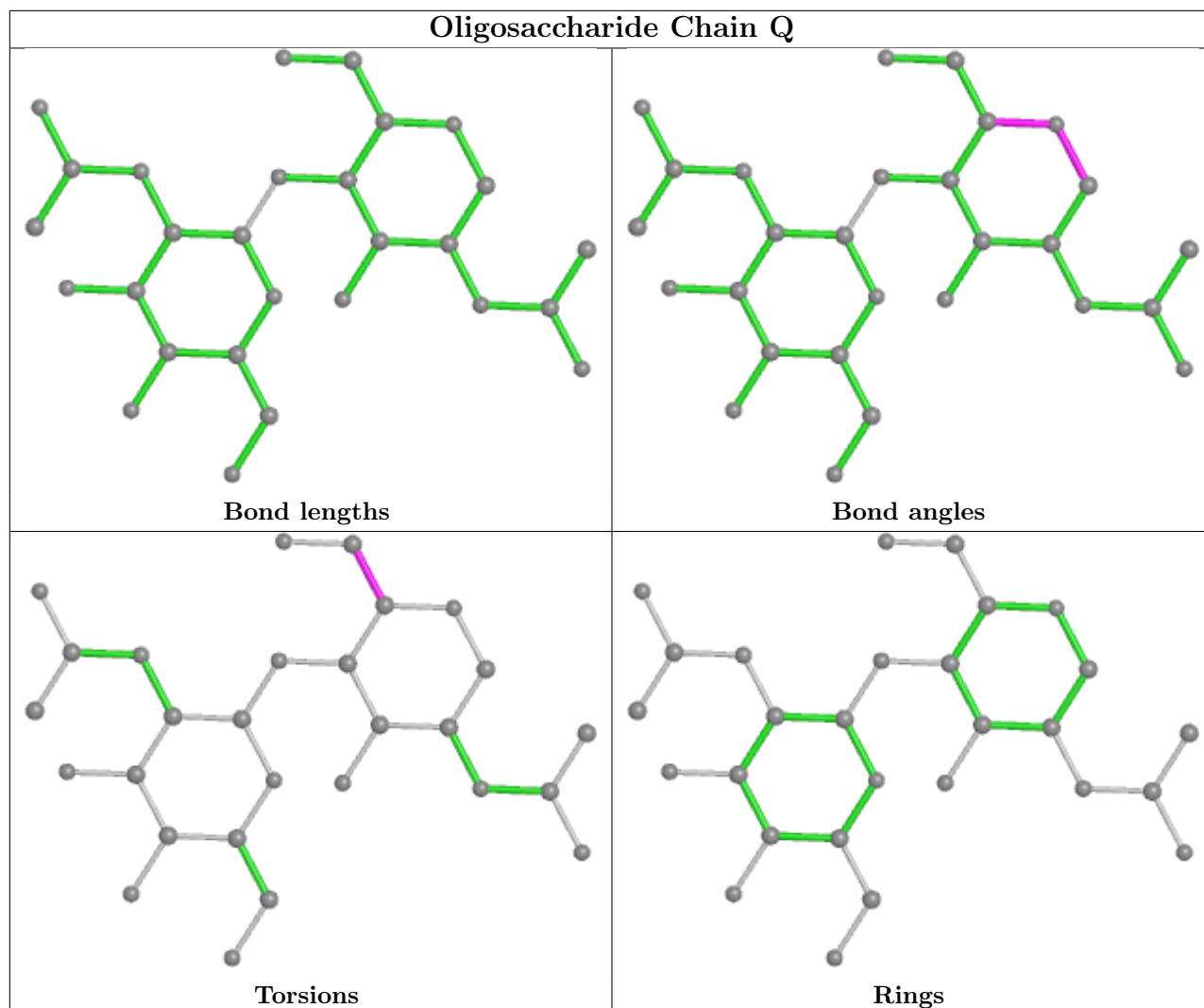












5.6 Ligand geometry [i](#)

39 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	D	1306	1	14,14,15	0.20	0	17,19,21	0.41	0
4	NAG	A	1310	1	14,14,15	0.22	0	17,19,21	0.36	0
4	NAG	D	1309	1	14,14,15	0.23	0	17,19,21	0.38	0
4	NAG	A	1302	1	14,14,15	0.41	0	17,19,21	0.44	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
4	NAG	B	1307	1	14,14,15	0.22	0	17,19,21	0.47	0
4	NAG	B	1312	1	14,14,15	0.27	0	17,19,21	0.51	0
4	NAG	B	1308	1	14,14,15	0.27	0	17,19,21	0.32	0
4	NAG	D	1308	1	14,14,15	0.20	0	17,19,21	0.53	0
4	NAG	B	1303	1	14,14,15	0.36	0	17,19,21	0.53	0
4	NAG	B	1311	1	14,14,15	3.48	5 (35%)	17,19,21	2.06	7 (41%)
4	NAG	B	1305	1	14,14,15	0.24	0	17,19,21	0.43	0
4	NAG	B	1306	1	14,14,15	0.22	0	17,19,21	0.36	0
4	NAG	D	1311	1	14,14,15	0.32	0	17,19,21	0.51	0
4	NAG	D	1303	1	14,14,15	0.25	0	17,19,21	0.42	0
4	NAG	A	1305	1	14,14,15	0.24	0	17,19,21	0.50	0
4	NAG	B	1309	1	13,13,15	0.29	0	14,17,21	0.38	0
4	NAG	D	1305	1	14,14,15	0.23	0	17,19,21	0.33	0
4	NAG	A	1313	1	14,14,15	0.30	0	17,19,21	0.48	0
4	NAG	B	1301	1	14,14,15	0.19	0	17,19,21	0.46	0
4	NAG	A	1309	1	14,14,15	0.22	0	17,19,21	0.44	0
4	NAG	A	1303	1	14,14,15	0.32	0	17,19,21	0.48	0
4	NAG	D	1310	1	14,14,15	0.23	0	17,19,21	0.40	0
4	NAG	A	1301	1	14,14,15	0.81	2 (14%)	17,19,21	1.20	1 (5%)
4	NAG	D	1301	1	14,14,15	0.24	0	17,19,21	0.47	0
4	NAG	A	1307	1	14,14,15	1.99	1 (7%)	17,19,21	0.85	0
4	NAG	A	1312	1	14,14,15	0.23	0	17,19,21	0.41	0
4	NAG	B	1314	1	14,14,15	0.24	0	17,19,21	0.58	0
4	NAG	A	1308	1	14,14,15	0.35	0	17,19,21	0.39	0
4	NAG	A	1311	1	14,14,15	0.21	0	17,19,21	0.38	0
4	NAG	B	1313	1	14,14,15	0.29	0	17,19,21	0.48	0
4	NAG	D	1307	1	14,14,15	0.23	0	17,19,21	0.34	0
4	NAG	D	1312	1	14,14,15	2.35	1 (7%)	17,19,21	1.18	1 (5%)
4	NAG	B	1304	1	14,14,15	0.25	0	17,19,21	0.38	0
4	NAG	D	1304	1	14,14,15	0.38	0	17,19,21	0.49	0
4	NAG	D	1302	1	14,14,15	0.18	0	17,19,21	0.39	0
4	NAG	A	1306	1	14,14,15	0.22	0	17,19,21	0.37	0
4	NAG	A	1304	1	14,14,15	0.22	0	17,19,21	0.43	0
4	NAG	B	1310	1	14,14,15	0.20	0	17,19,21	0.37	0
4	NAG	B	1302	1	14,14,15	0.23	0	17,19,21	0.54	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
4	NAG	D	1306	1	-	0/6/23/26	0/1/1/1
4	NAG	A	1310	1	-	0/6/23/26	0/1/1/1
4	NAG	D	1309	1	-	2/6/23/26	0/1/1/1
4	NAG	A	1302	1	-	2/6/23/26	0/1/1/1
4	NAG	B	1307	1	-	0/6/23/26	0/1/1/1
4	NAG	B	1312	1	-	2/6/23/26	0/1/1/1
4	NAG	B	1308	1	-	0/6/23/26	0/1/1/1
4	NAG	D	1308	1	-	1/6/23/26	0/1/1/1
4	NAG	B	1303	1	-	2/6/23/26	0/1/1/1
4	NAG	B	1311	1	-	0/6/23/26	0/1/1/1
4	NAG	B	1305	1	-	2/6/23/26	0/1/1/1
4	NAG	B	1306	1	-	1/6/23/26	0/1/1/1
4	NAG	D	1311	1	-	2/6/23/26	0/1/1/1
4	NAG	D	1303	1	-	2/6/23/26	0/1/1/1
4	NAG	A	1305	1	-	0/6/23/26	0/1/1/1
4	NAG	B	1309	1	-	2/6/19/26	0/1/1/1
4	NAG	D	1305	1	-	0/6/23/26	0/1/1/1
4	NAG	A	1313	1	-	2/6/23/26	0/1/1/1
4	NAG	B	1301	1	-	0/6/23/26	0/1/1/1
4	NAG	A	1309	1	-	0/6/23/26	0/1/1/1
4	NAG	A	1303	1	-	2/6/23/26	0/1/1/1
4	NAG	D	1310	1	-	2/6/23/26	0/1/1/1
4	NAG	A	1301	1	-	3/6/23/26	0/1/1/1
4	NAG	D	1301	1	-	0/6/23/26	0/1/1/1
4	NAG	A	1307	1	-	2/6/23/26	0/1/1/1
4	NAG	A	1312	1	-	0/6/23/26	0/1/1/1
4	NAG	B	1314	1	-	0/6/23/26	0/1/1/1
4	NAG	A	1308	1	-	2/6/23/26	0/1/1/1
4	NAG	A	1311	1	-	2/6/23/26	0/1/1/1
4	NAG	B	1313	1	-	2/6/23/26	0/1/1/1
4	NAG	D	1307	1	-	0/6/23/26	0/1/1/1
4	NAG	D	1312	1	-	2/6/23/26	0/1/1/1
4	NAG	B	1304	1	-	2/6/23/26	0/1/1/1
4	NAG	D	1304	1	-	2/6/23/26	0/1/1/1
4	NAG	D	1302	1	-	2/6/23/26	0/1/1/1
4	NAG	A	1306	1	-	0/6/23/26	0/1/1/1
4	NAG	A	1304	1	-	2/6/23/26	0/1/1/1
4	NAG	B	1310	1	-	1/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	NAG	B	1302	1	-	3/6/23/26	0/1/1/1

The worst 5 of 9 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	B	1311	NAG	O5-C1	11.94	1.62	1.43
4	D	1312	NAG	O5-C1	8.66	1.57	1.43
4	A	1307	NAG	O5-C1	7.31	1.55	1.43
4	B	1311	NAG	O7-C7	2.79	1.29	1.23
4	B	1311	NAG	C1-C2	2.36	1.55	1.52

The worst 5 of 9 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	B	1311	NAG	C2-N2-C7	4.79	129.72	122.90
4	A	1301	NAG	C1-O5-C5	4.12	117.77	112.19
4	D	1312	NAG	C1-O5-C5	3.95	117.55	112.19
4	B	1311	NAG	C3-C4-C5	-3.18	104.57	110.24
4	B	1311	NAG	O4-C4-C3	2.80	116.83	110.35

There are no chirality outliers.

5 of 49 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	B	1309	NAG	C4-C5-C6-O6
4	B	1309	NAG	O5-C5-C6-O6
4	A	1303	NAG	O5-C5-C6-O6
4	D	1311	NAG	O5-C5-C6-O6
4	A	1302	NAG	O5-C5-C6-O6

There are no ring outliers.

10 monomers are involved in 11 short contacts:

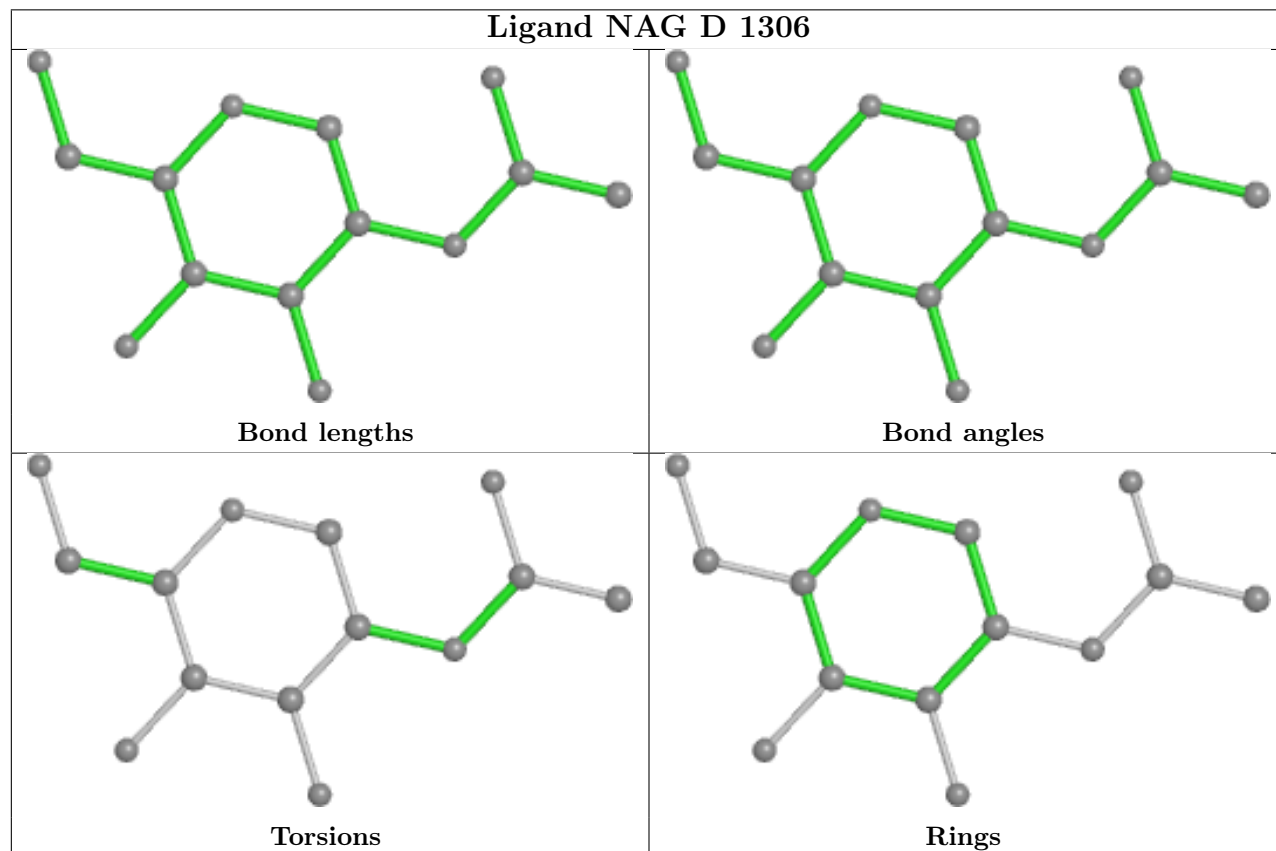
Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	A	1302	NAG	1	0
4	B	1303	NAG	1	0
4	B	1311	NAG	1	0
4	D	1311	NAG	1	0
4	A	1309	NAG	1	0
4	A	1307	NAG	1	0
4	B	1314	NAG	1	0

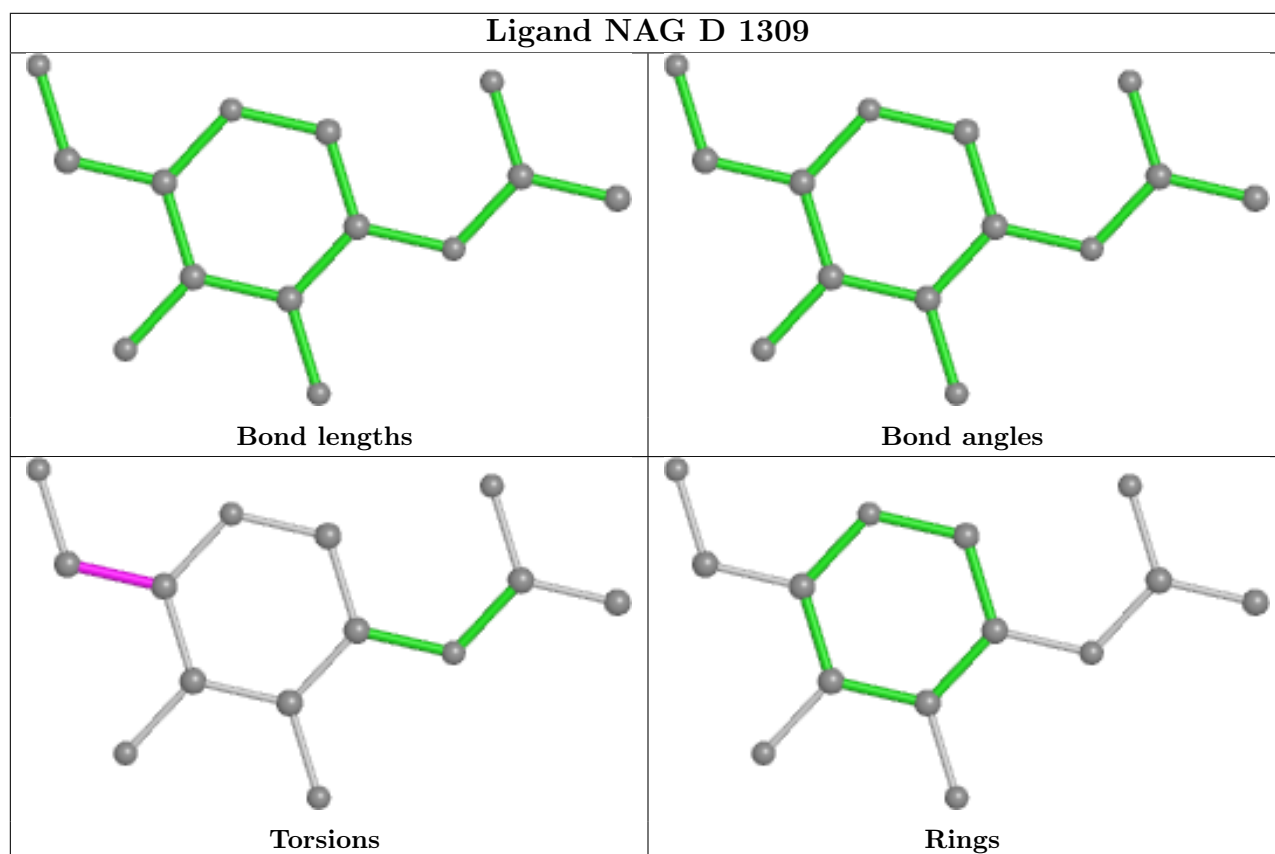
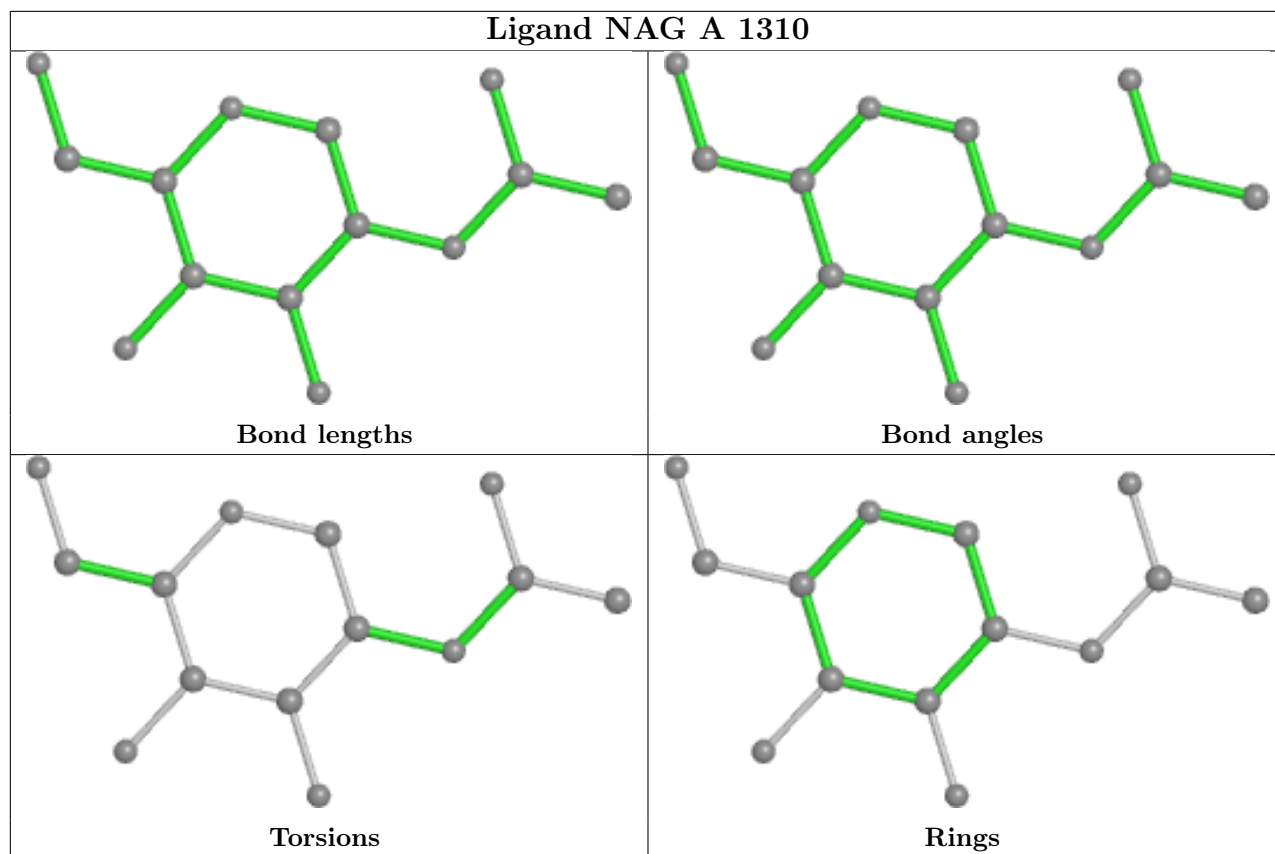
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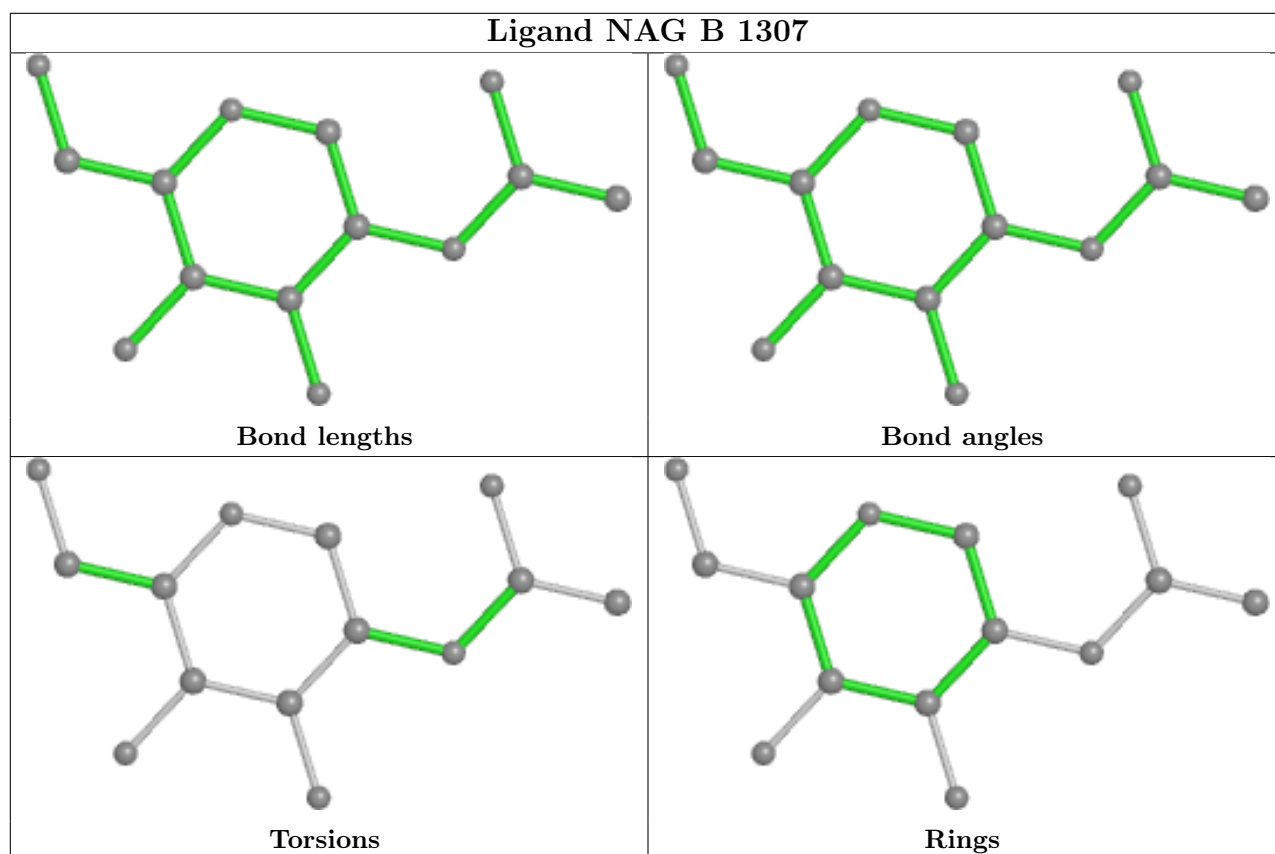
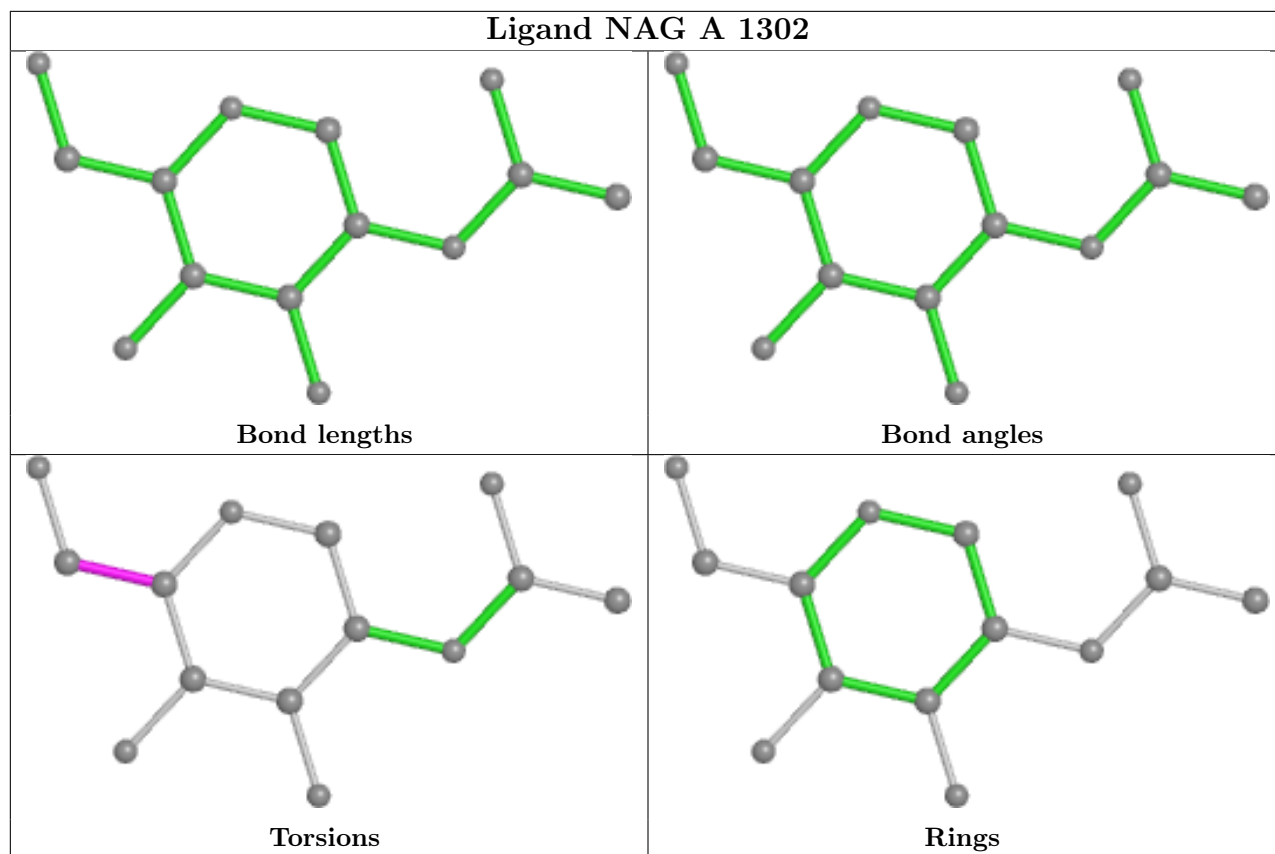
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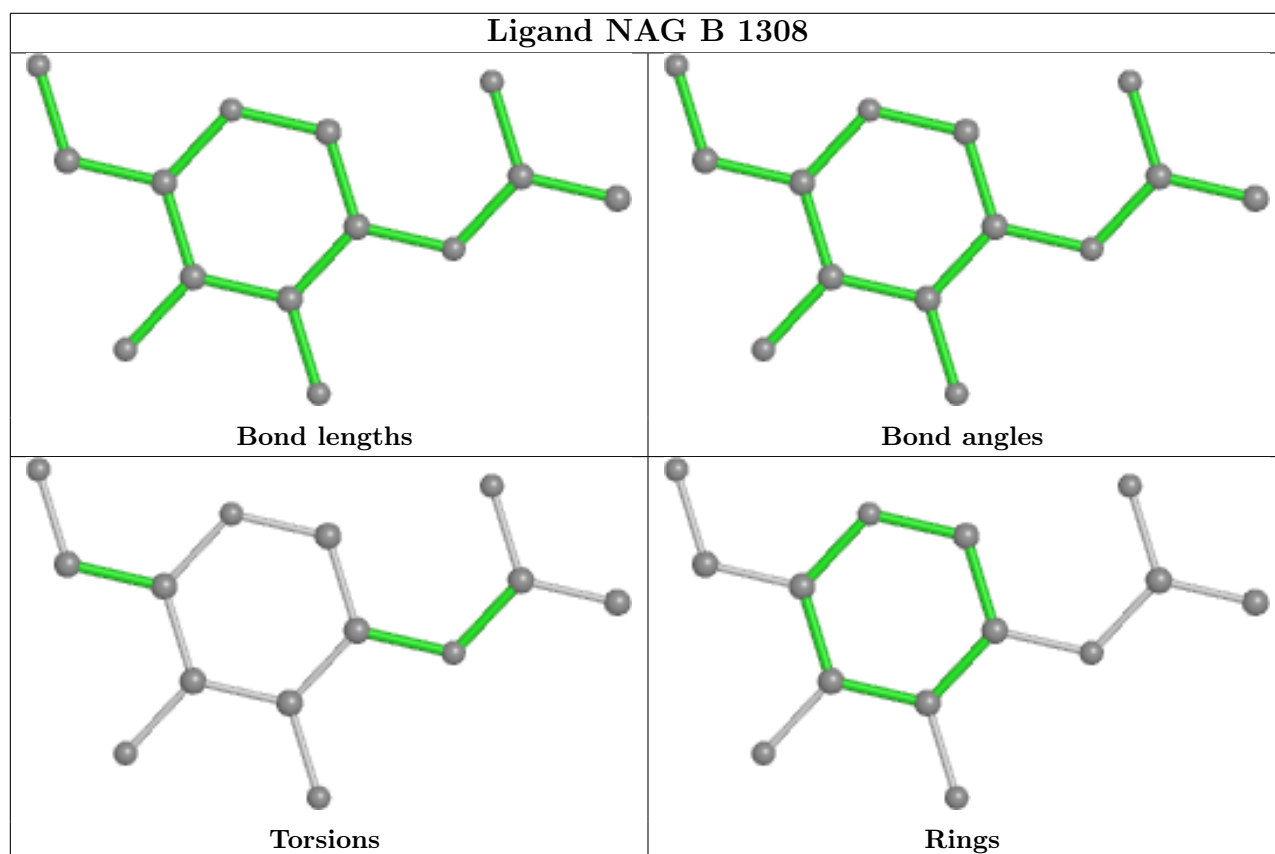
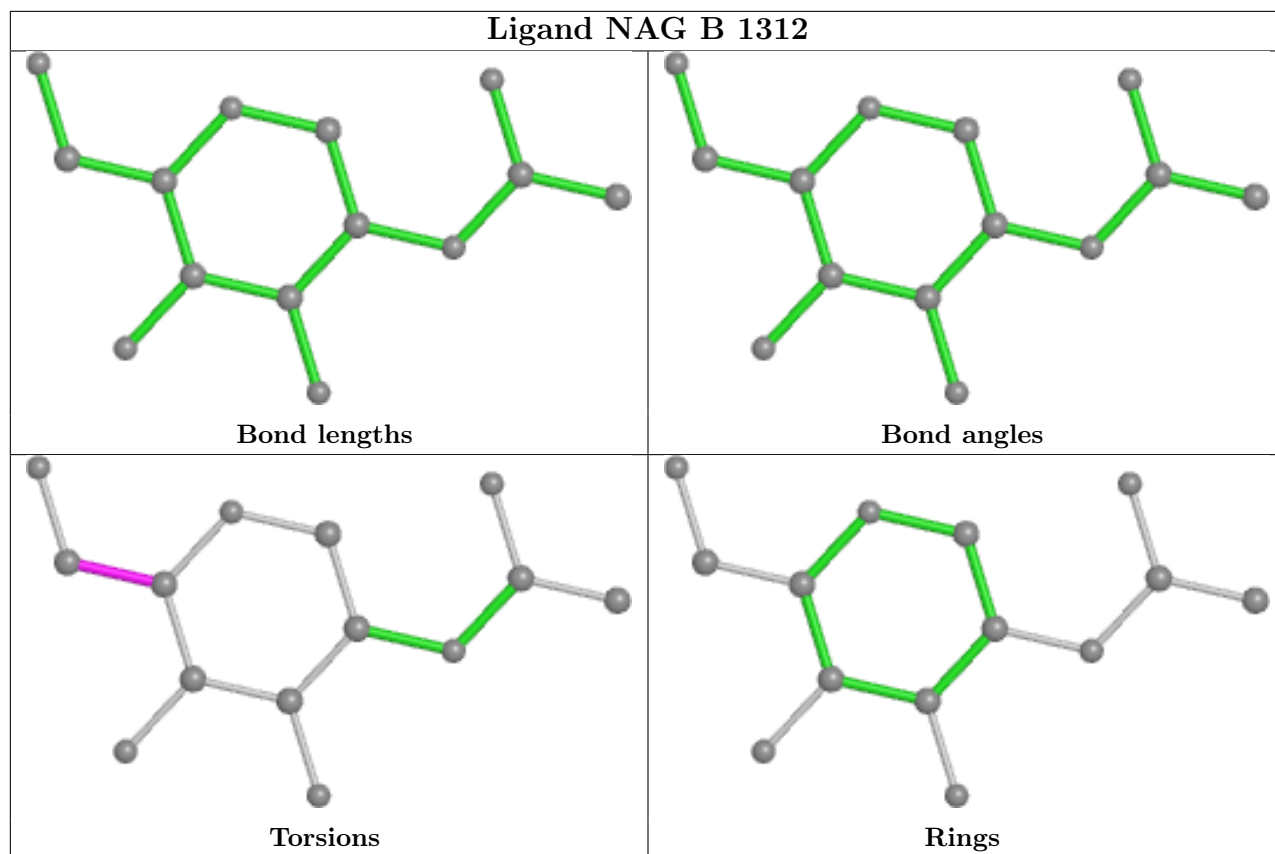
Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	A	1308	NAG	2	0
4	D	1312	NAG	1	0
4	D	1304	NAG	1	0

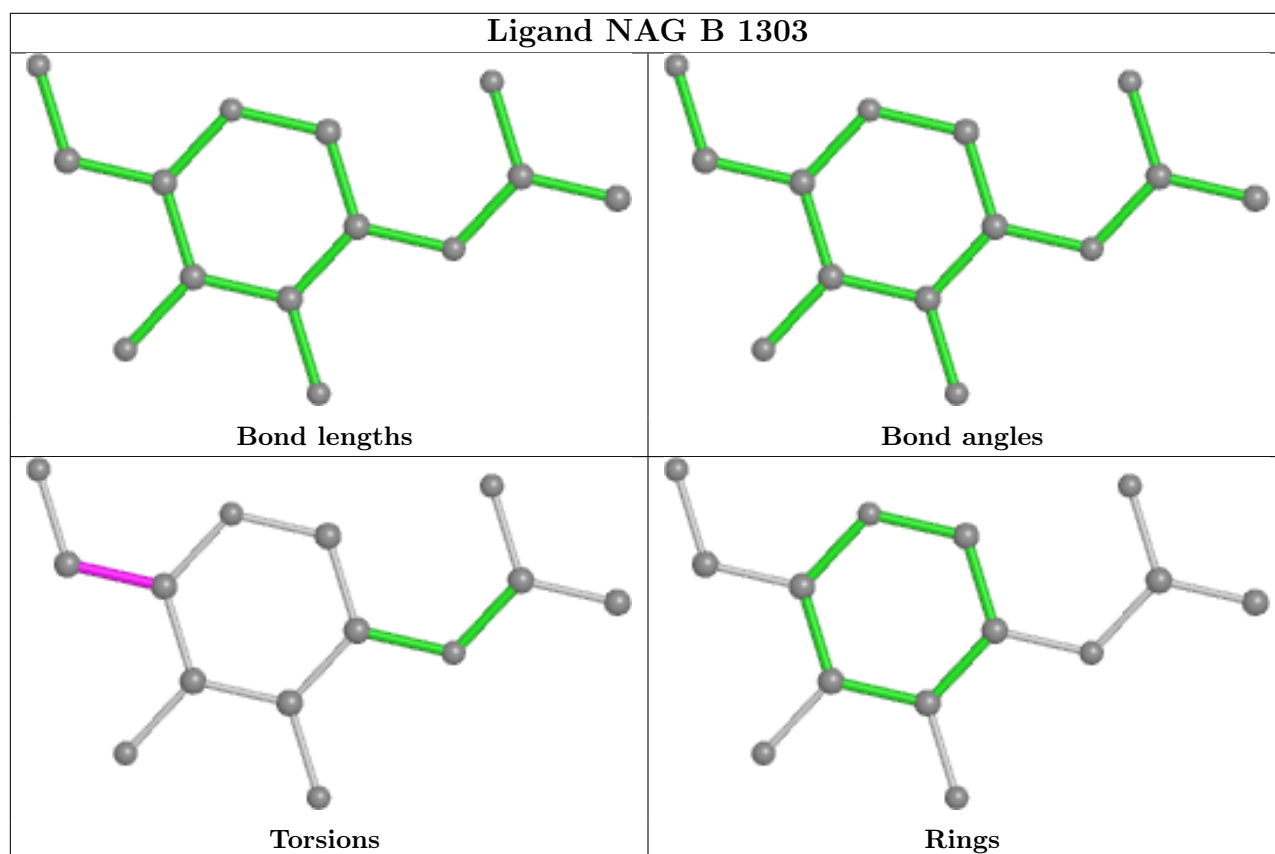
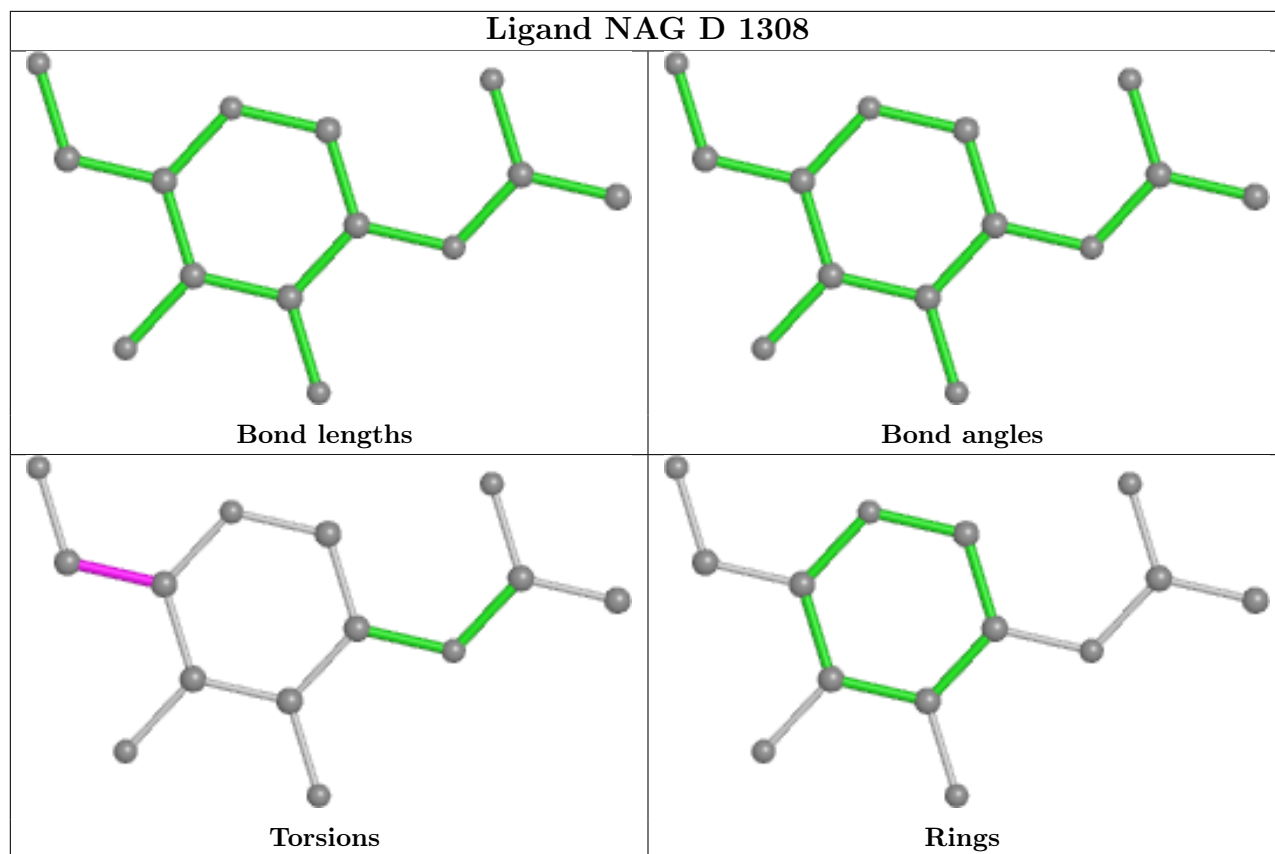
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

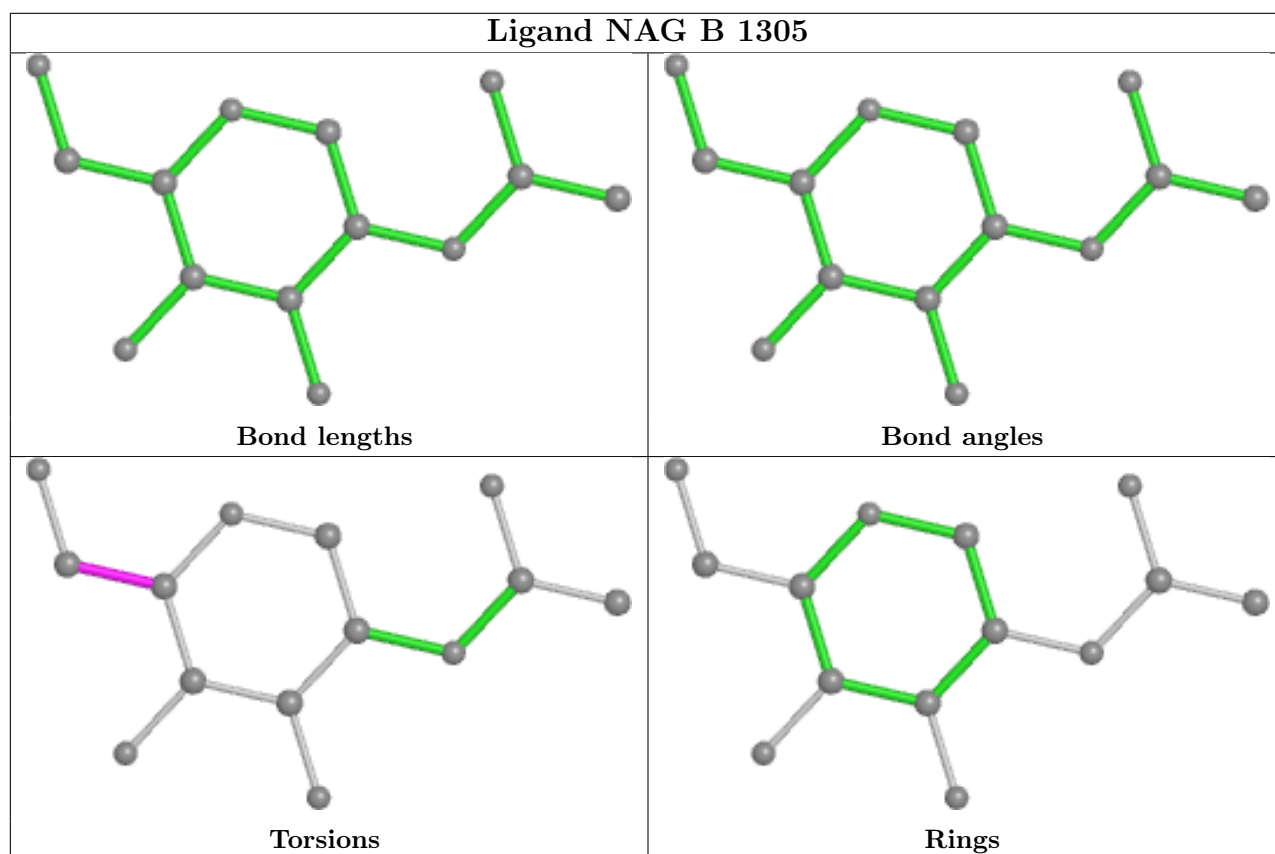
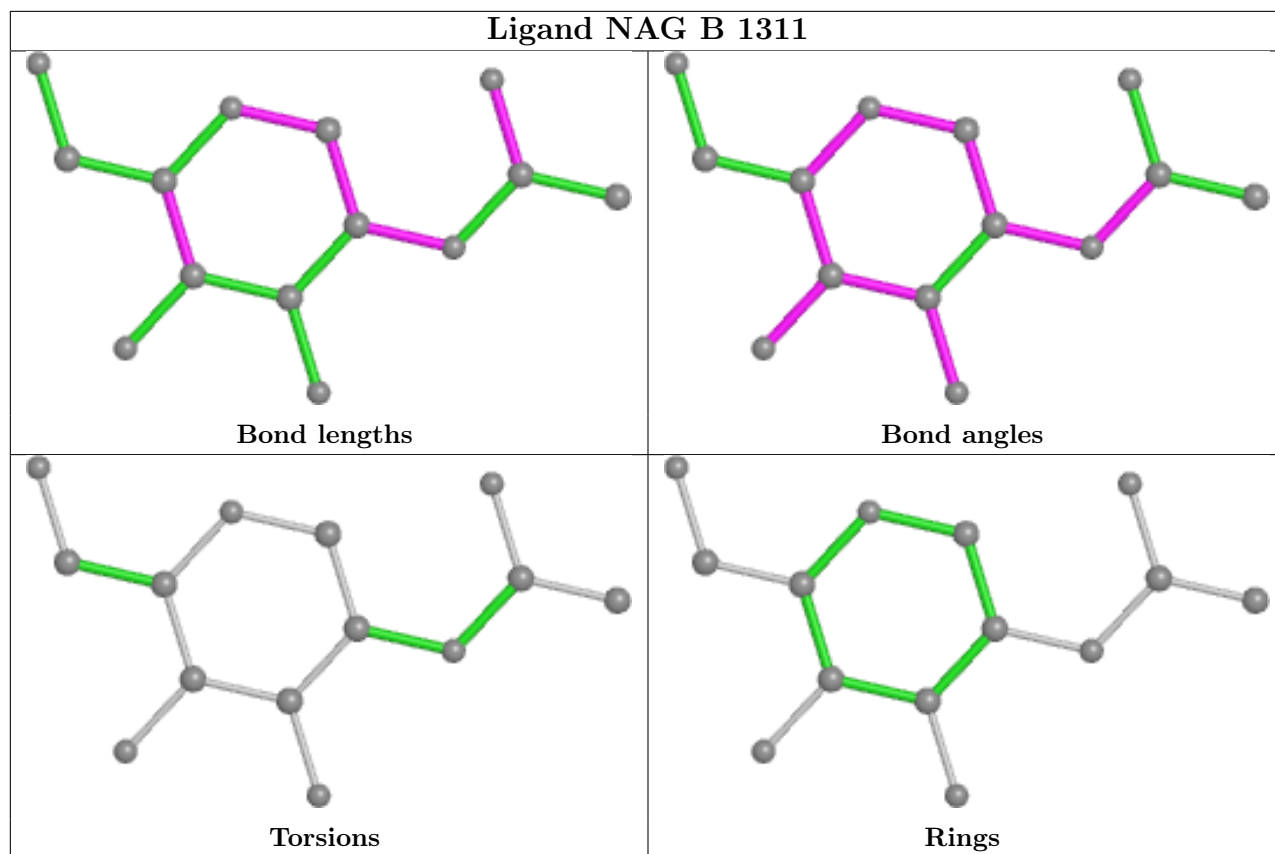


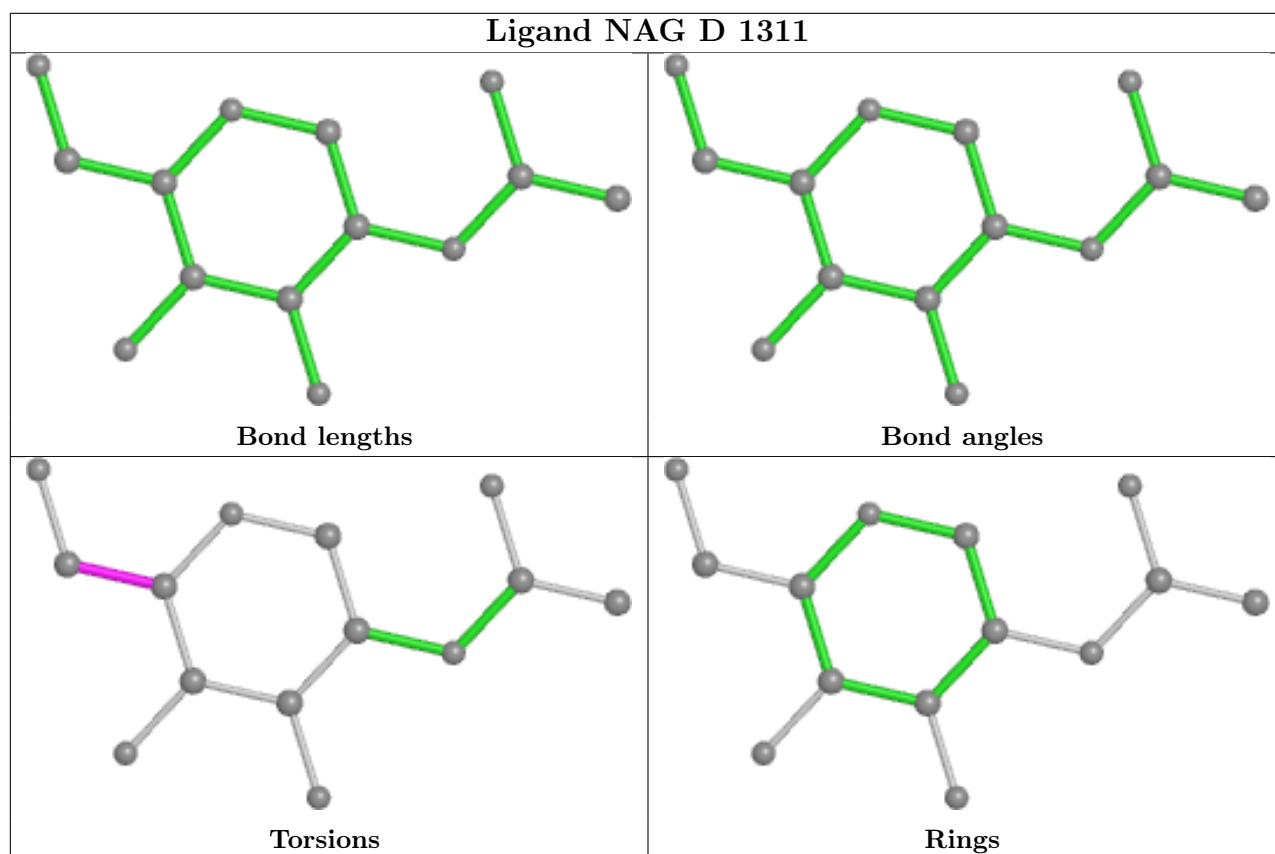
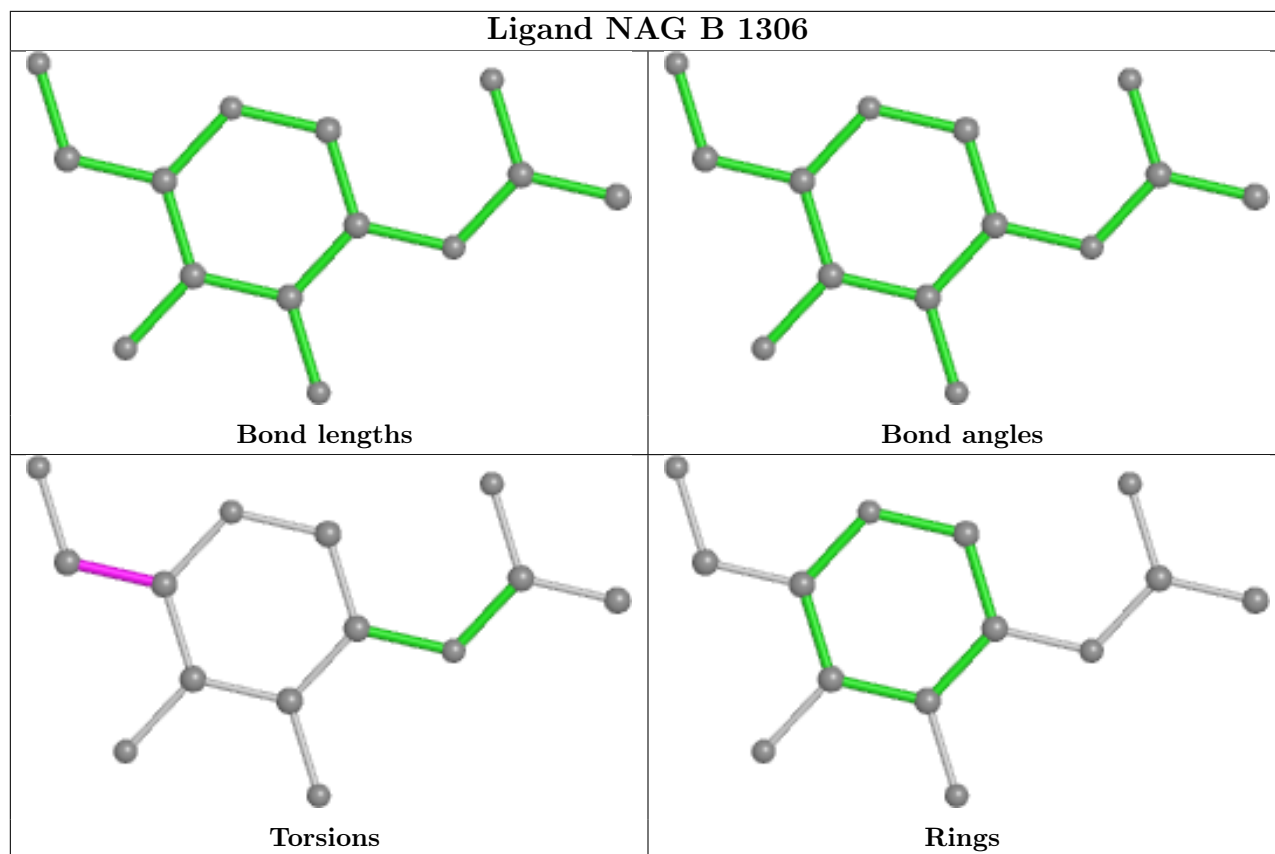


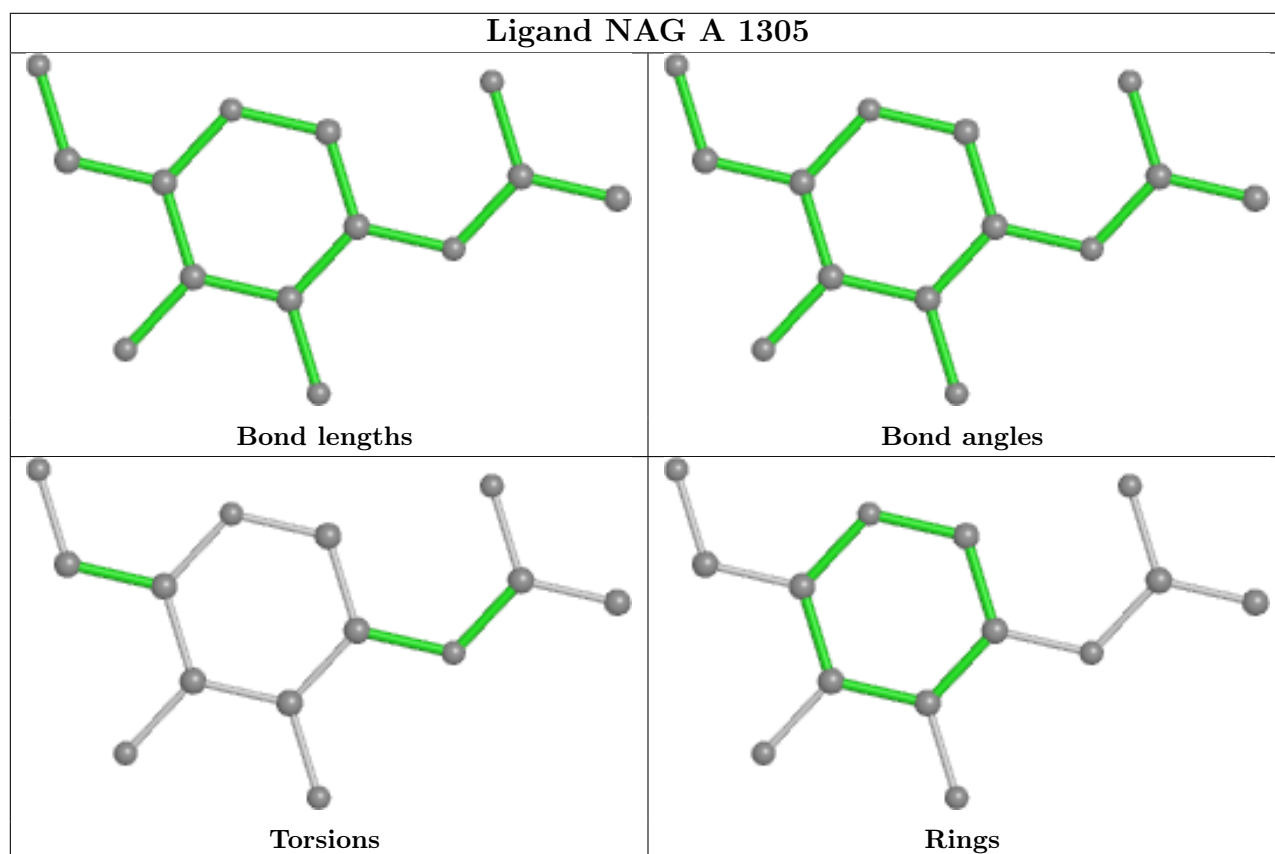
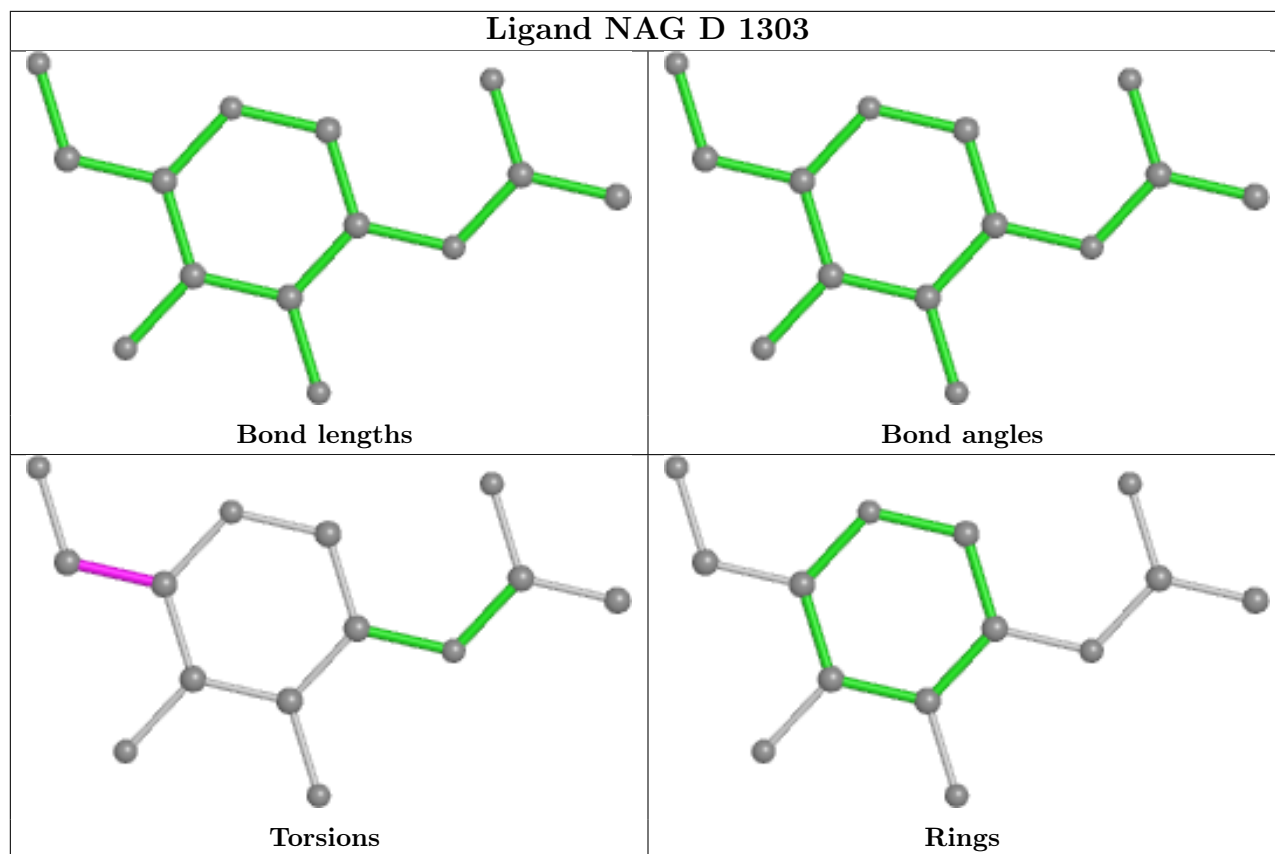


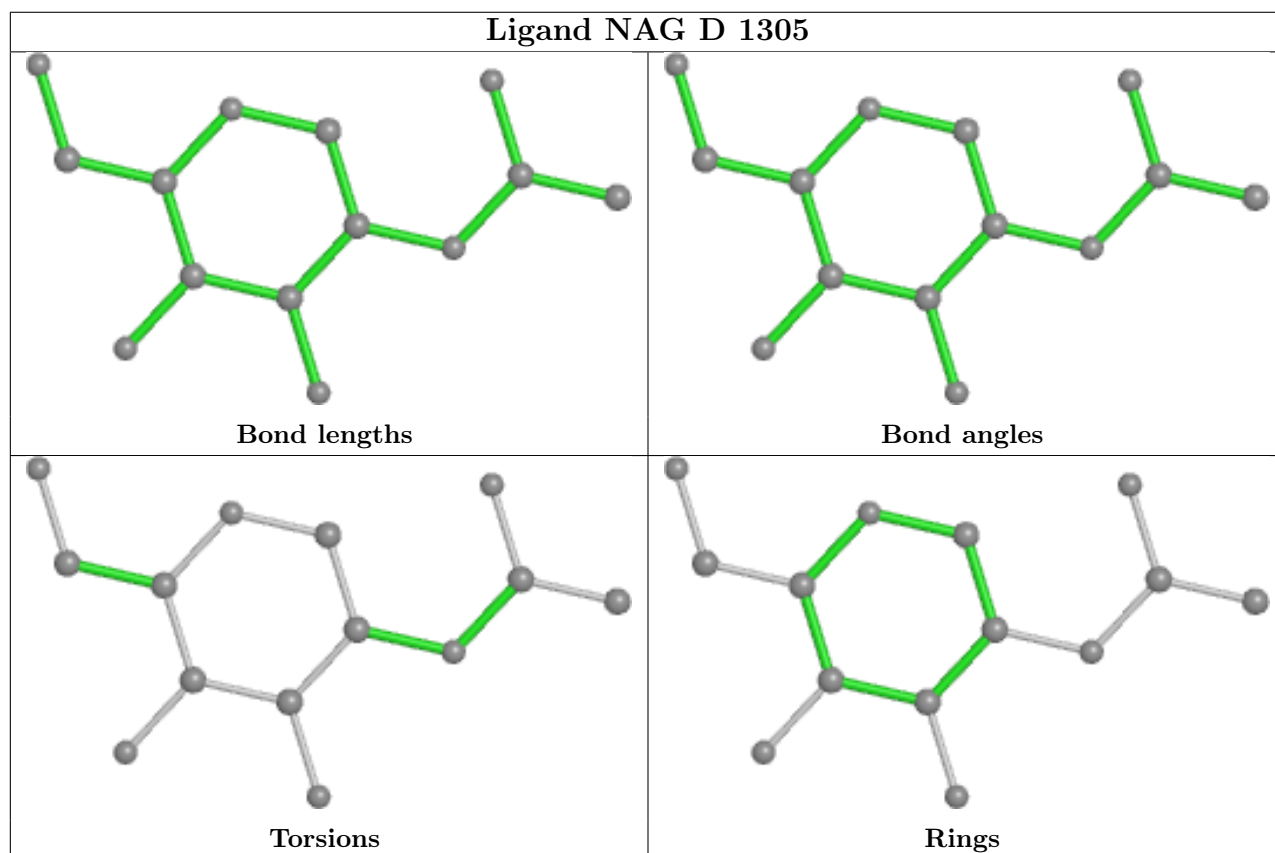
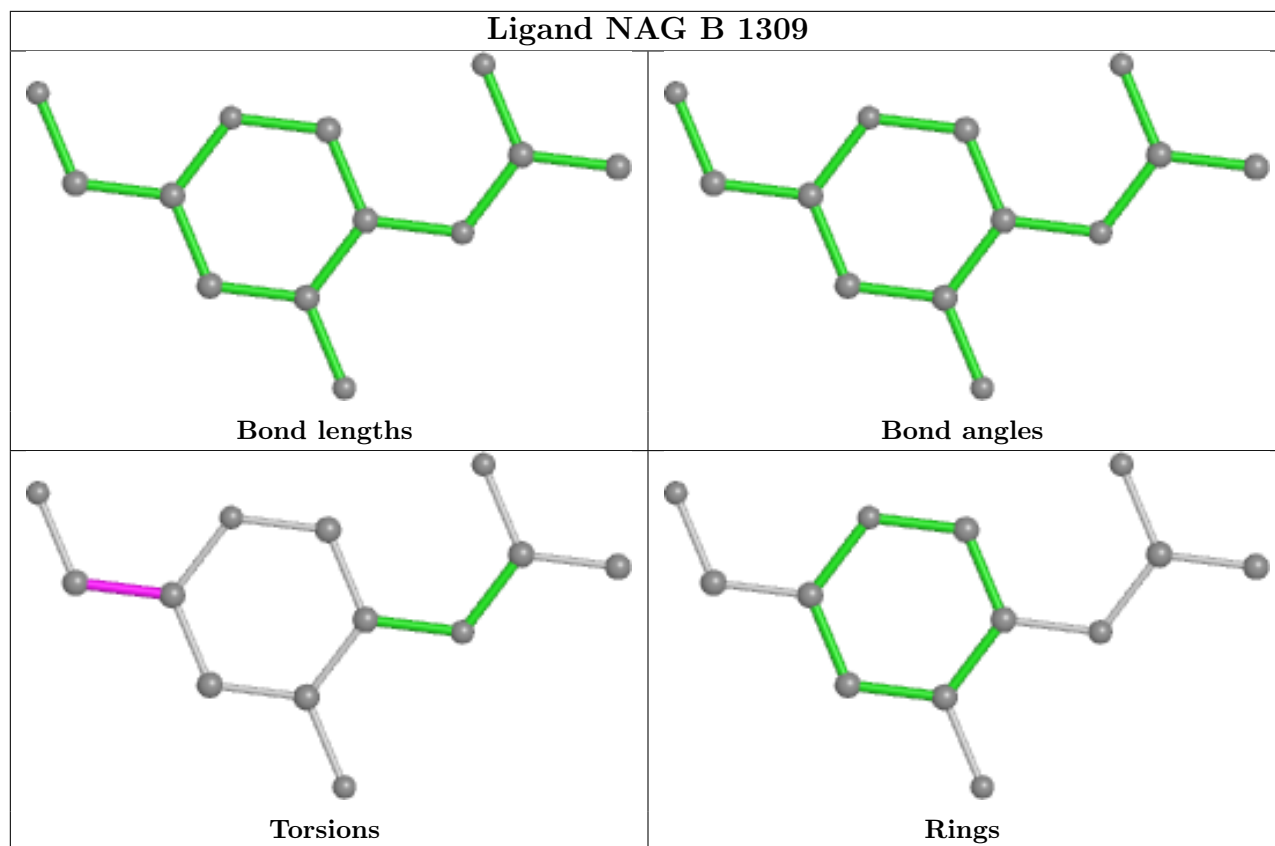


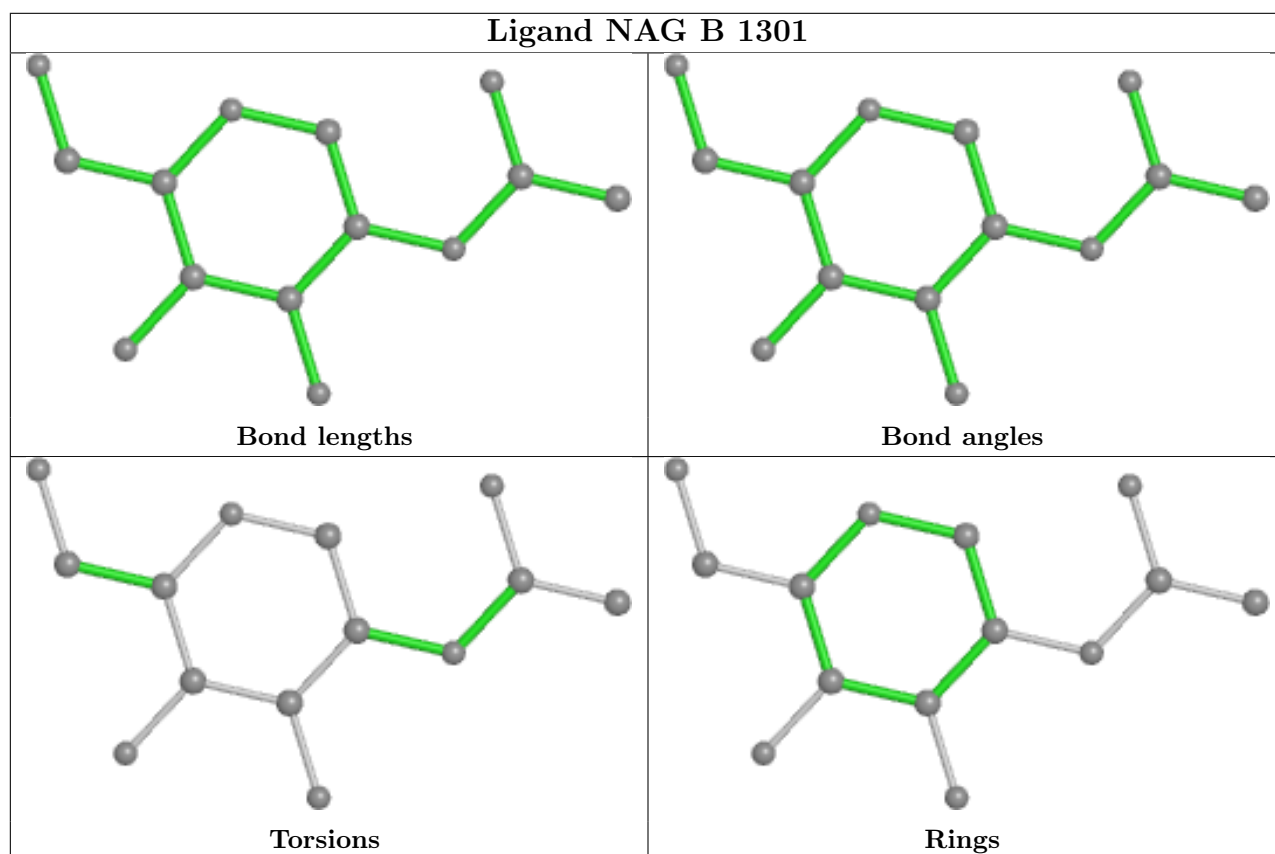
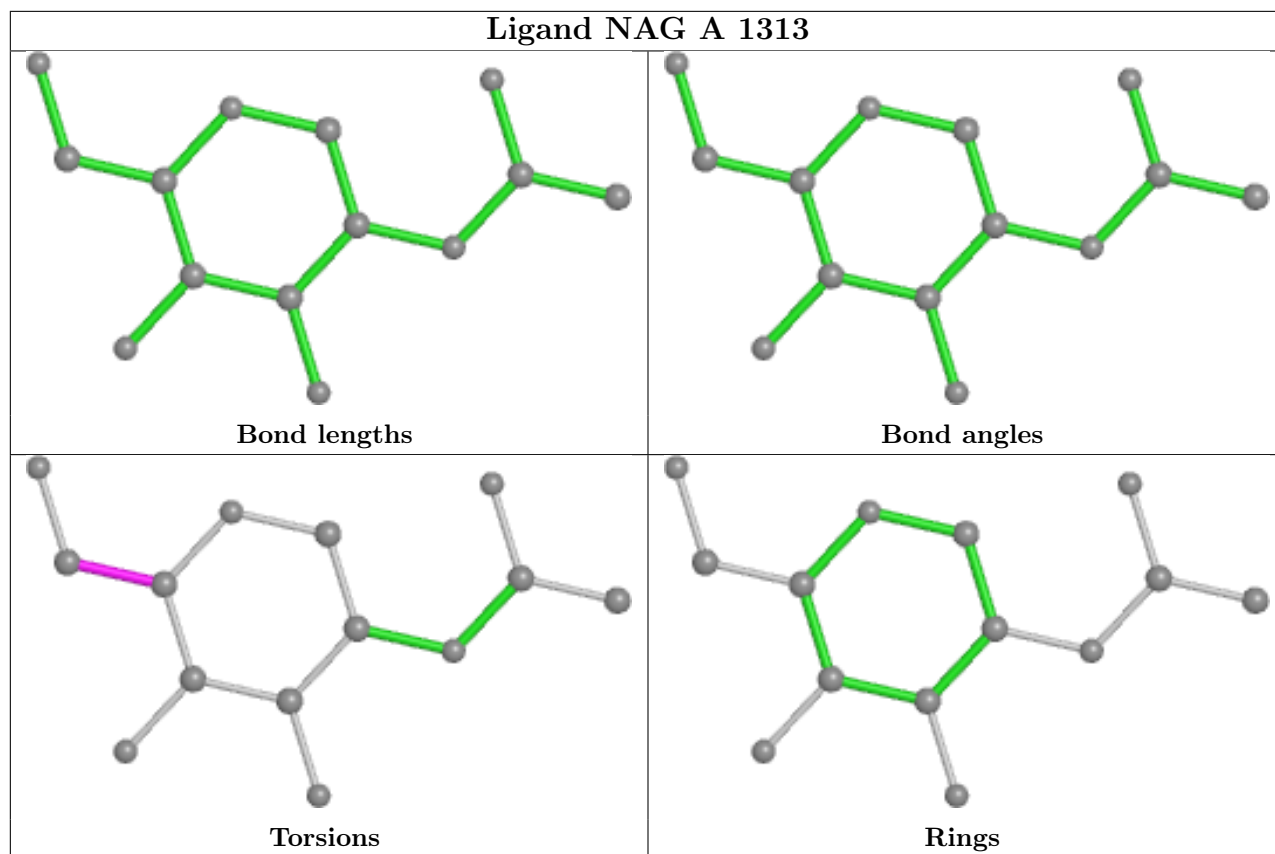


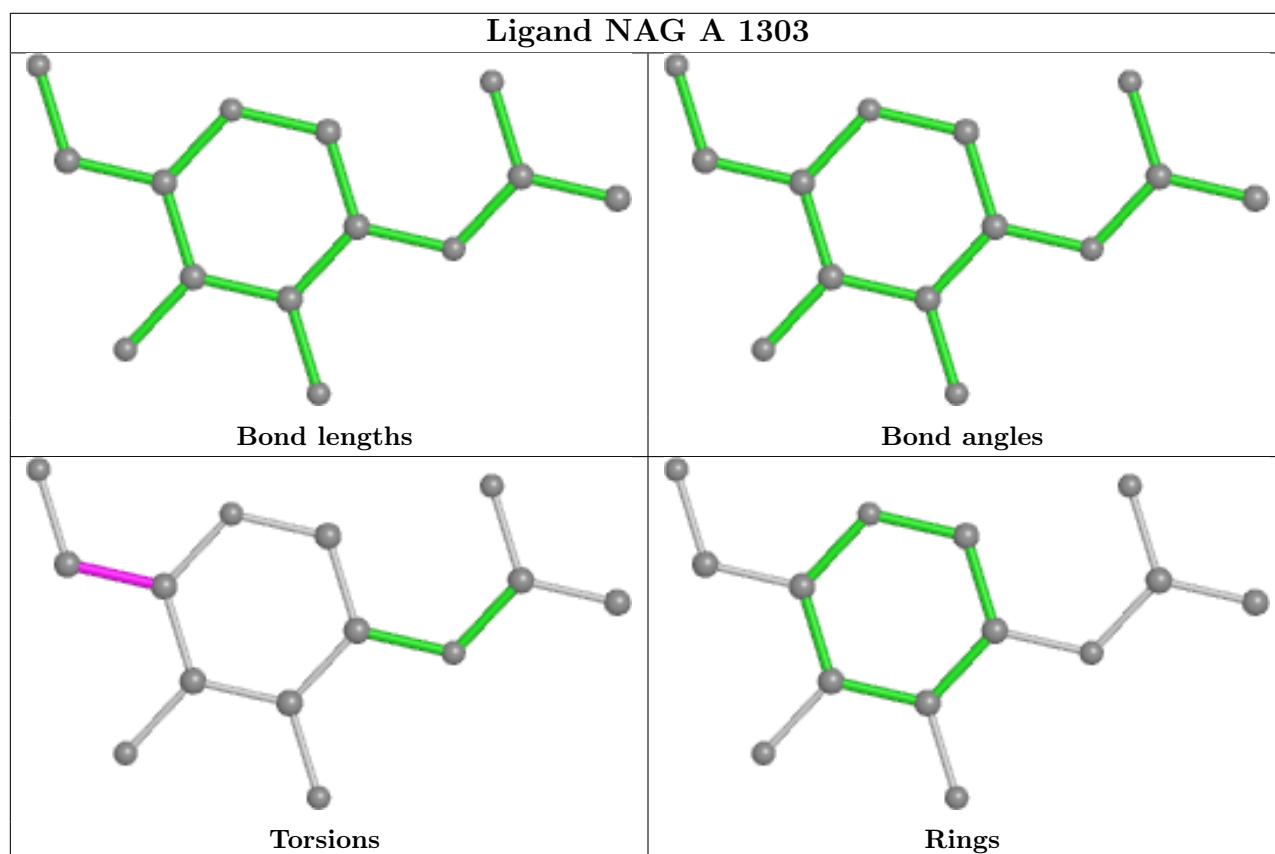
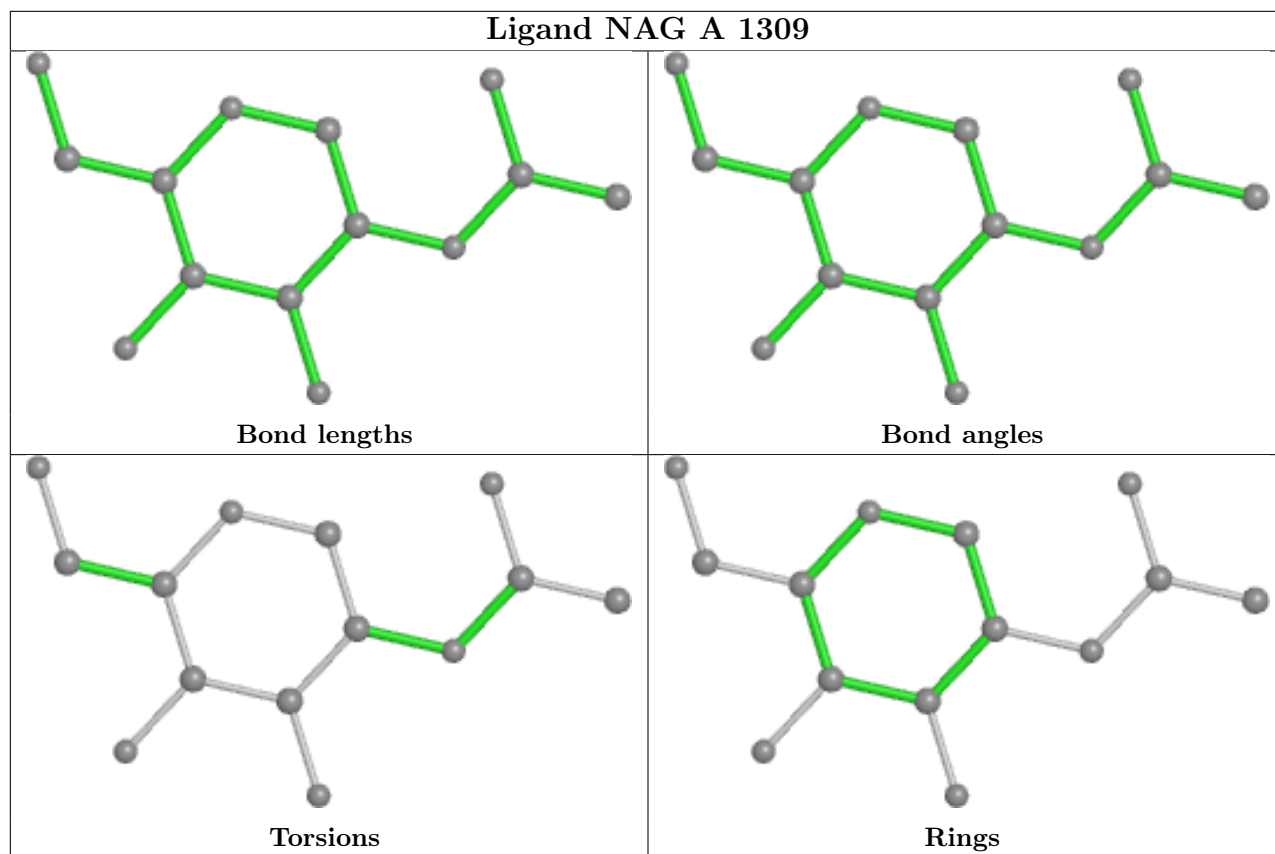


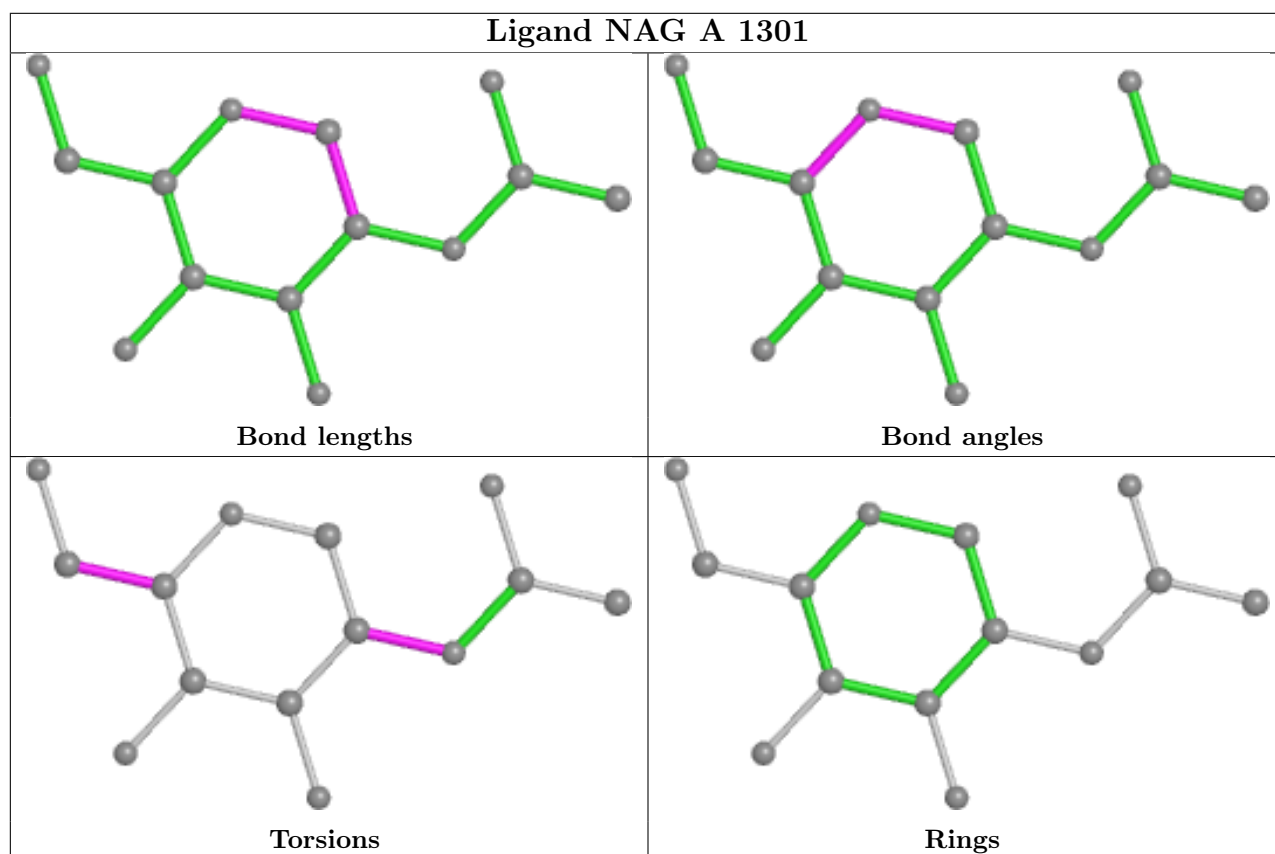
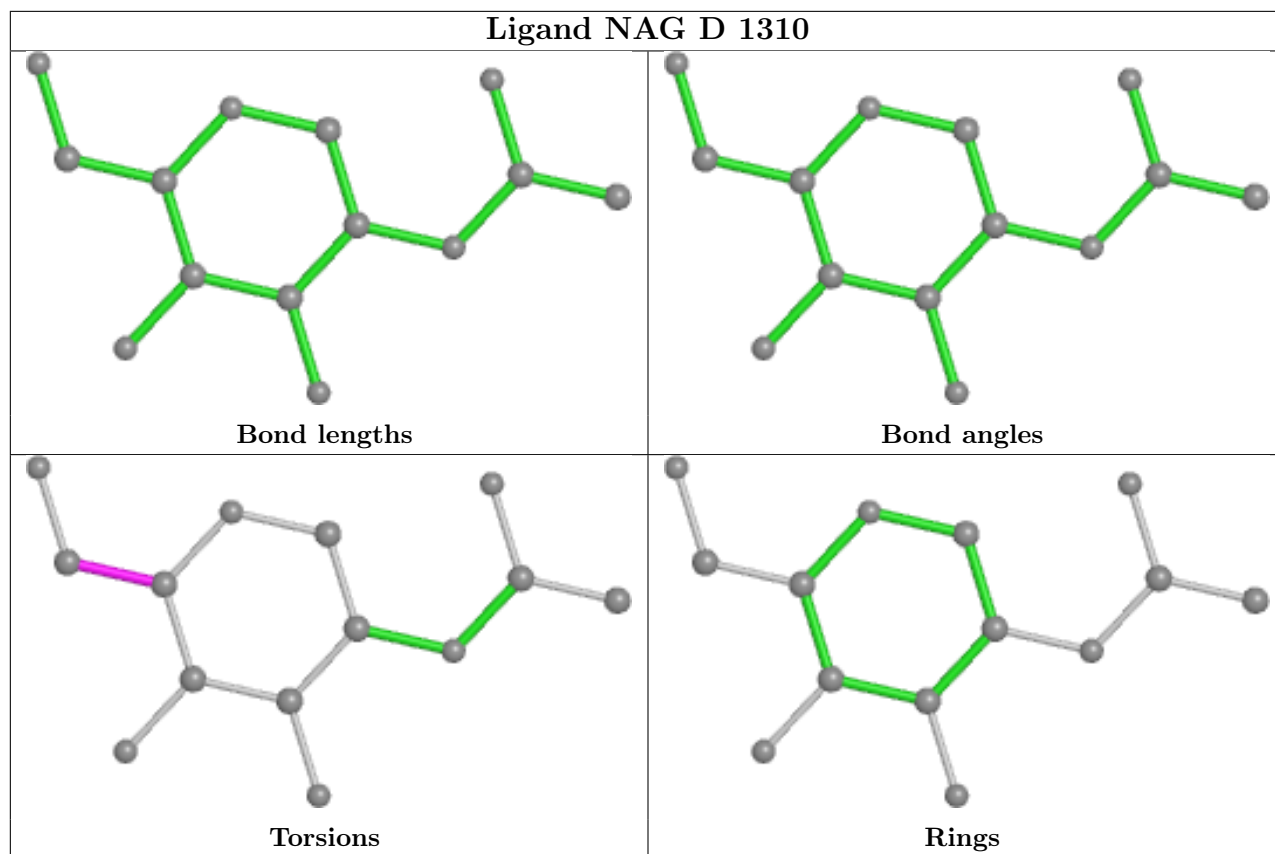


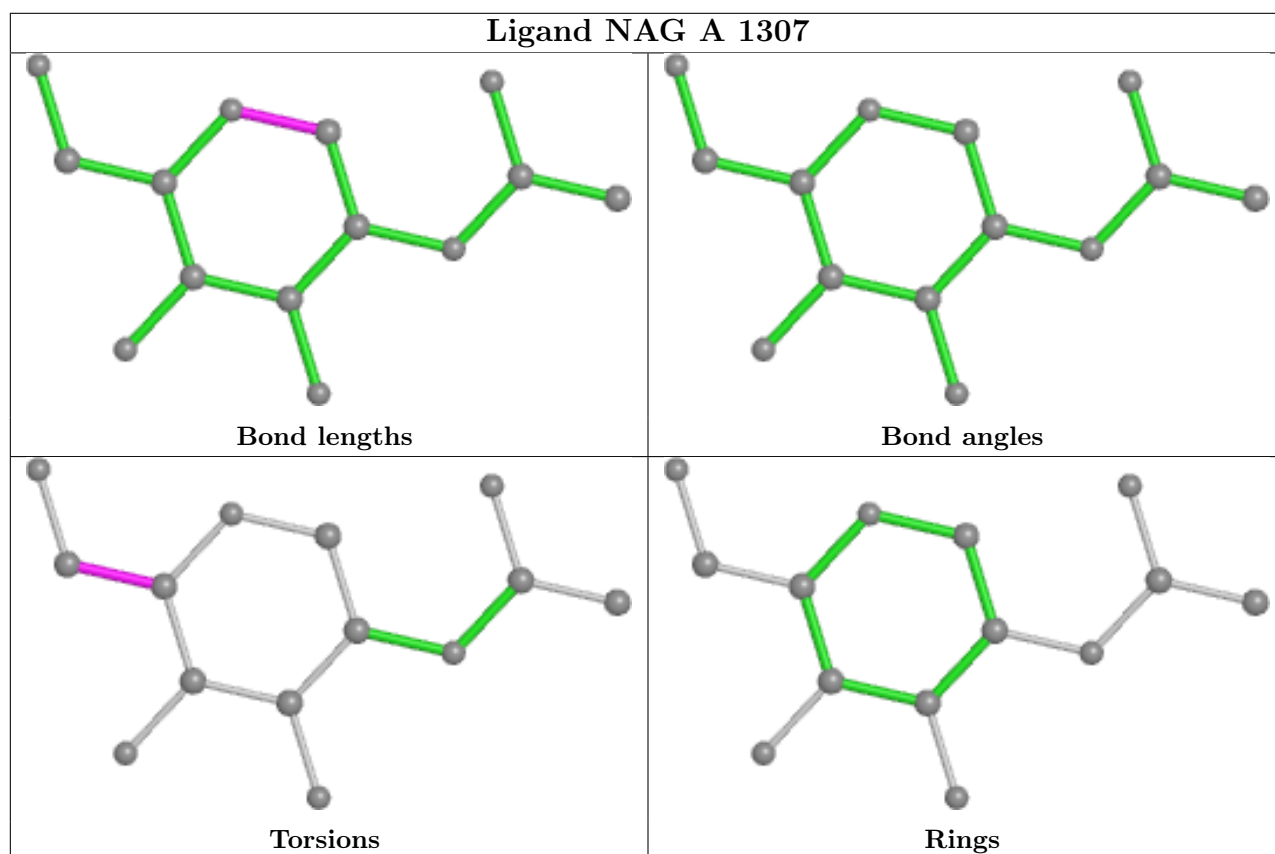
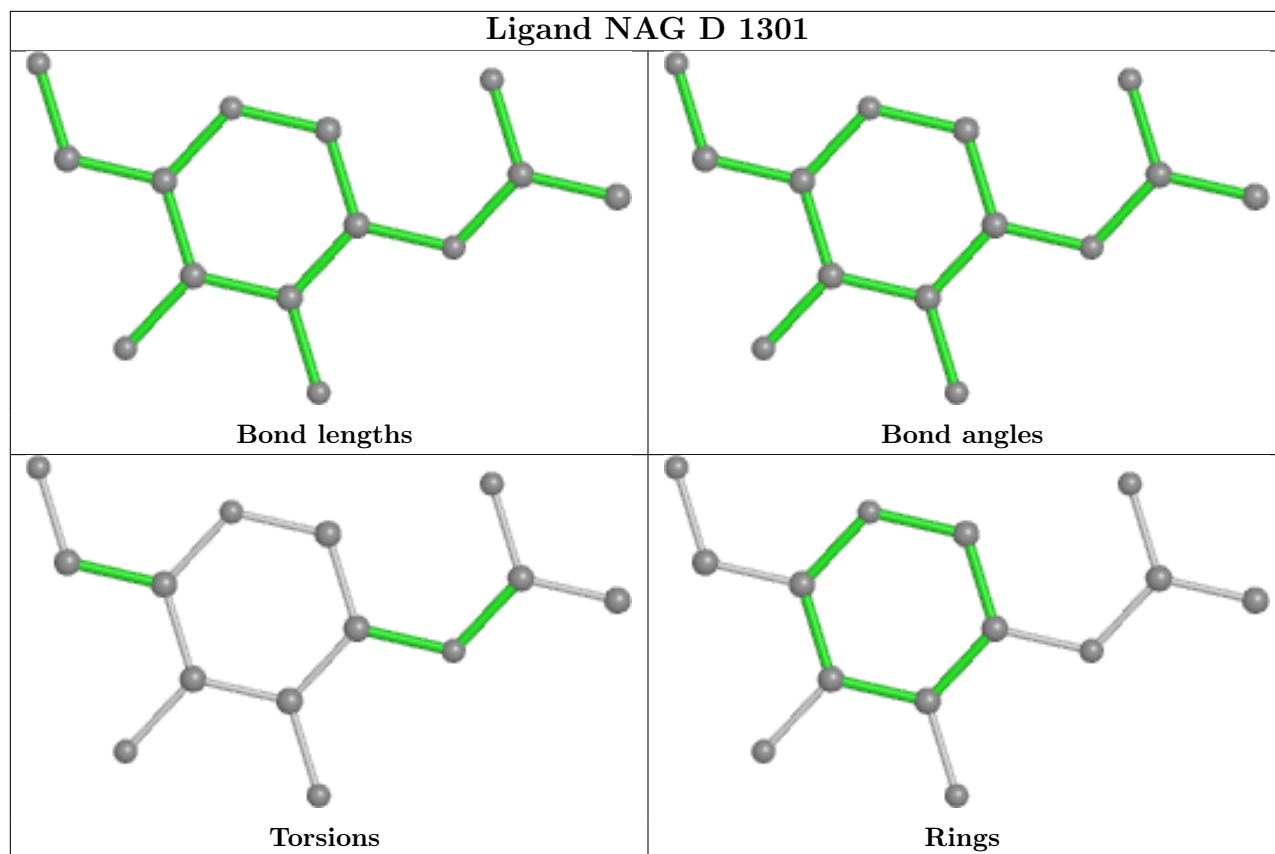


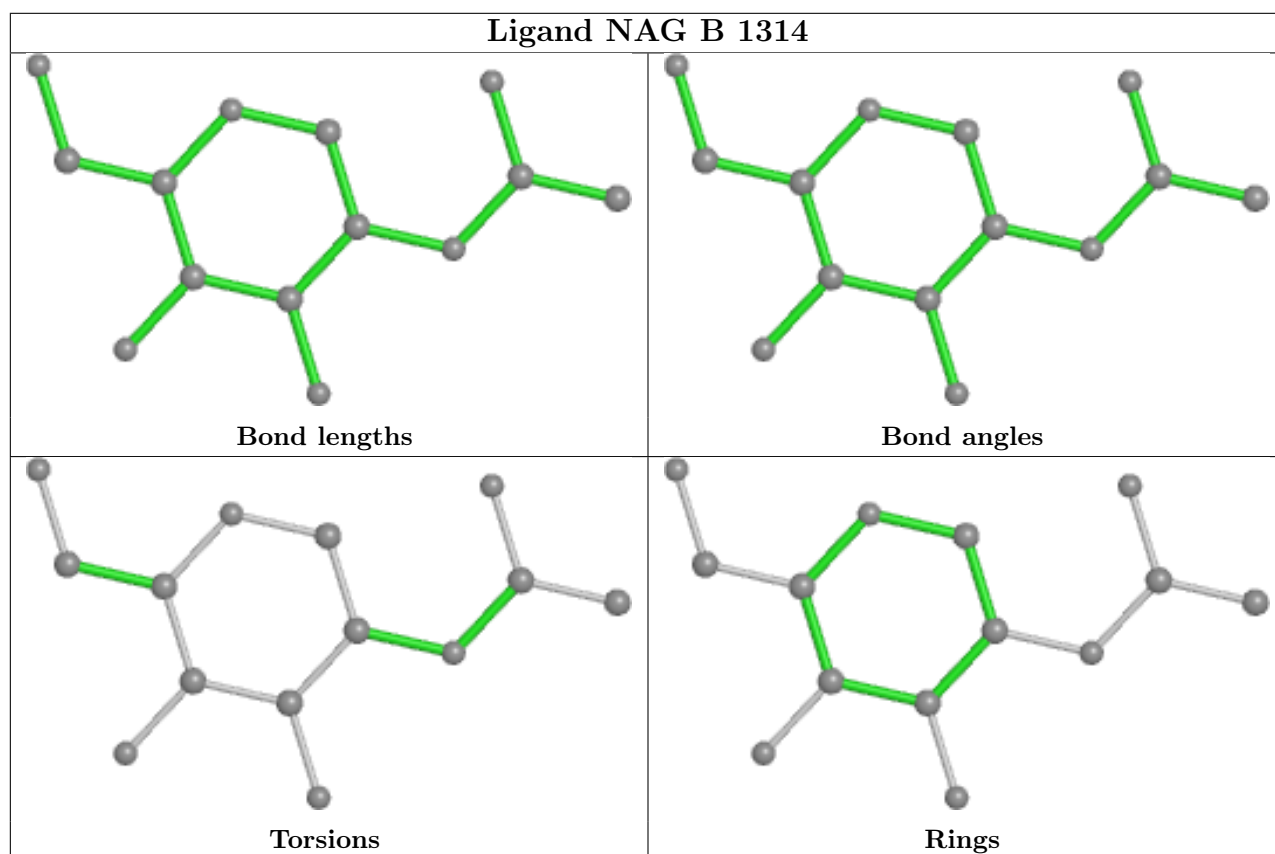
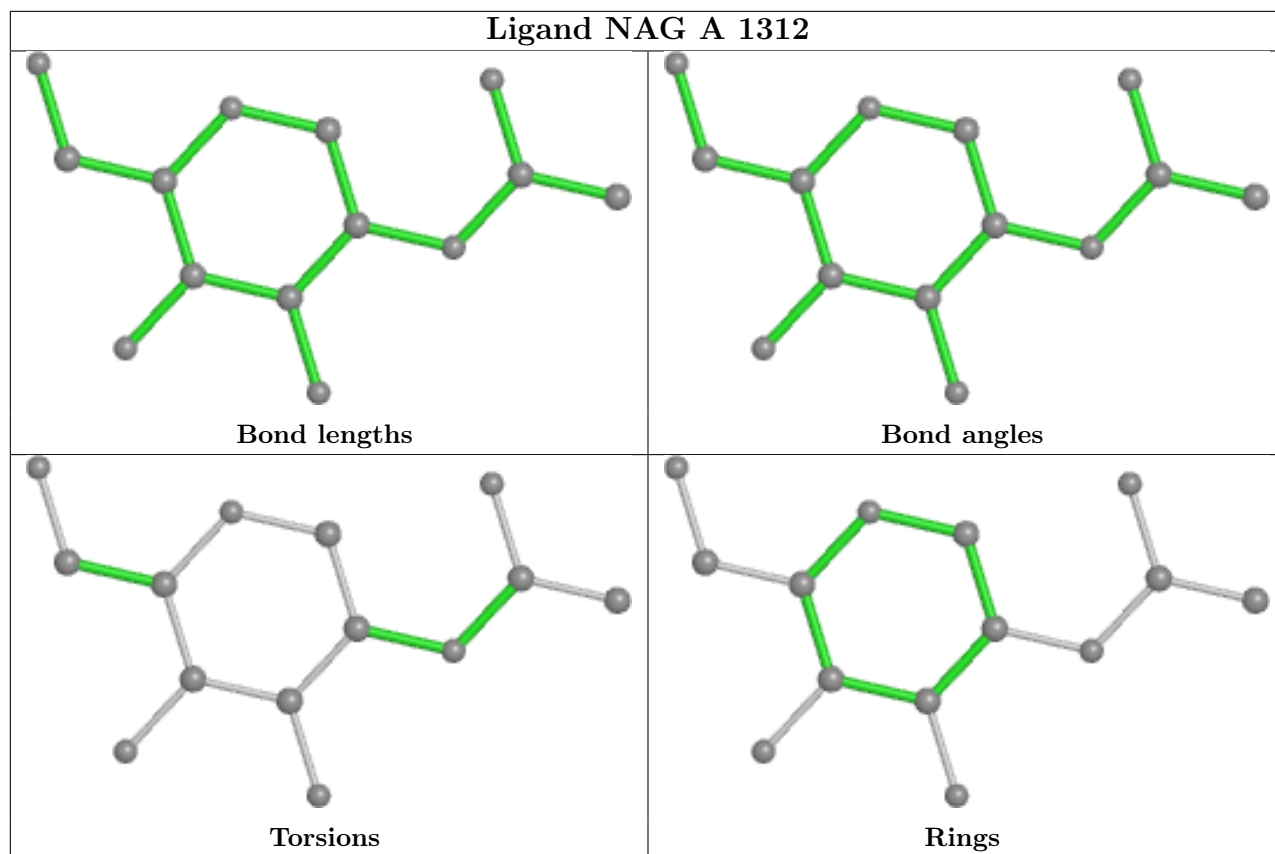


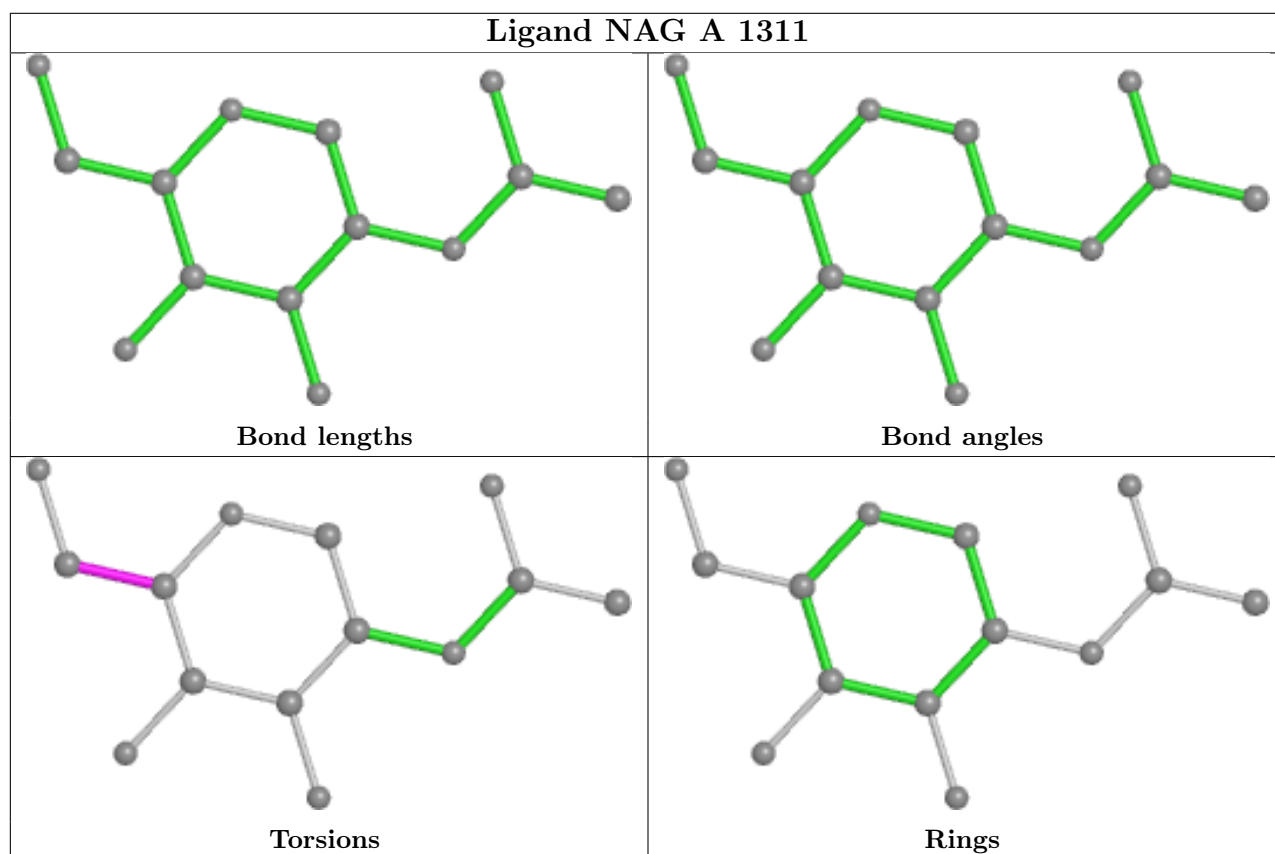
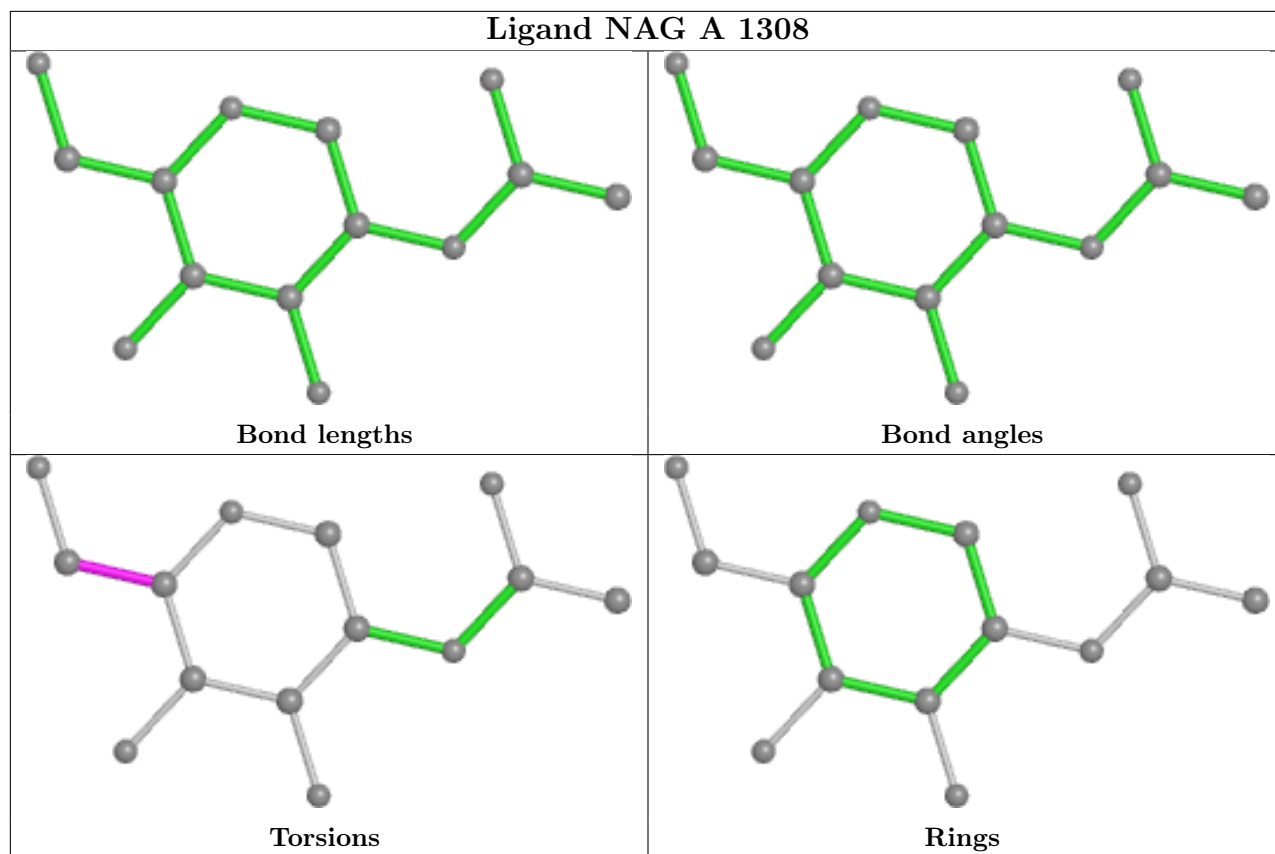


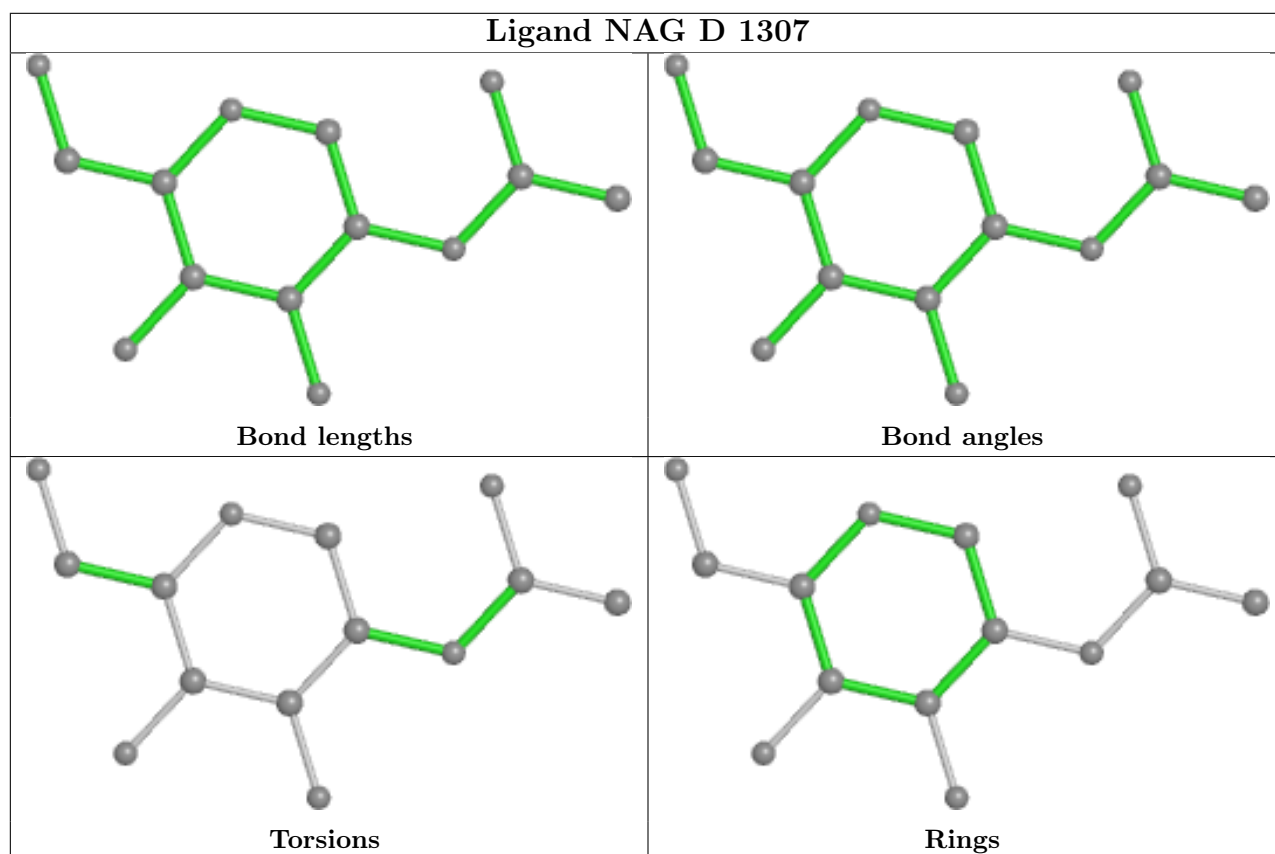
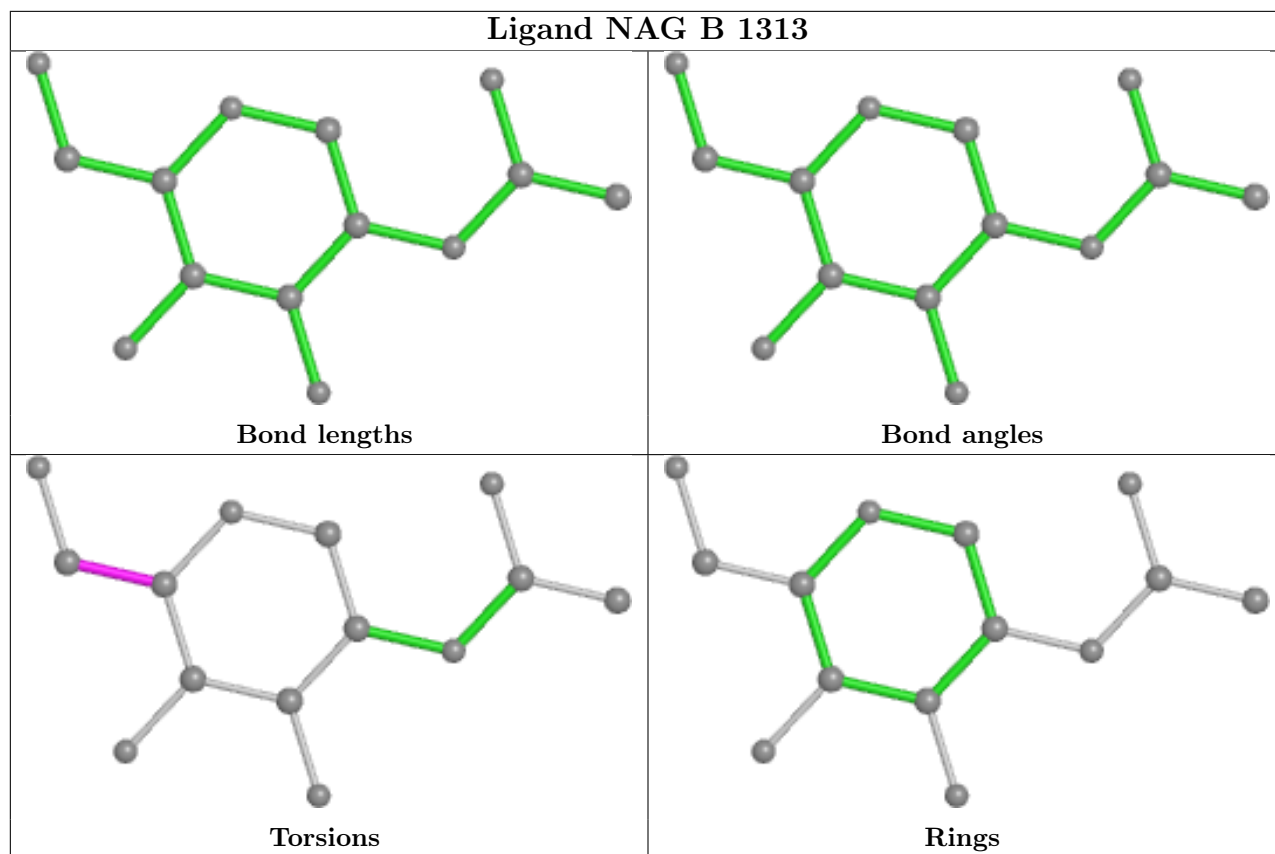


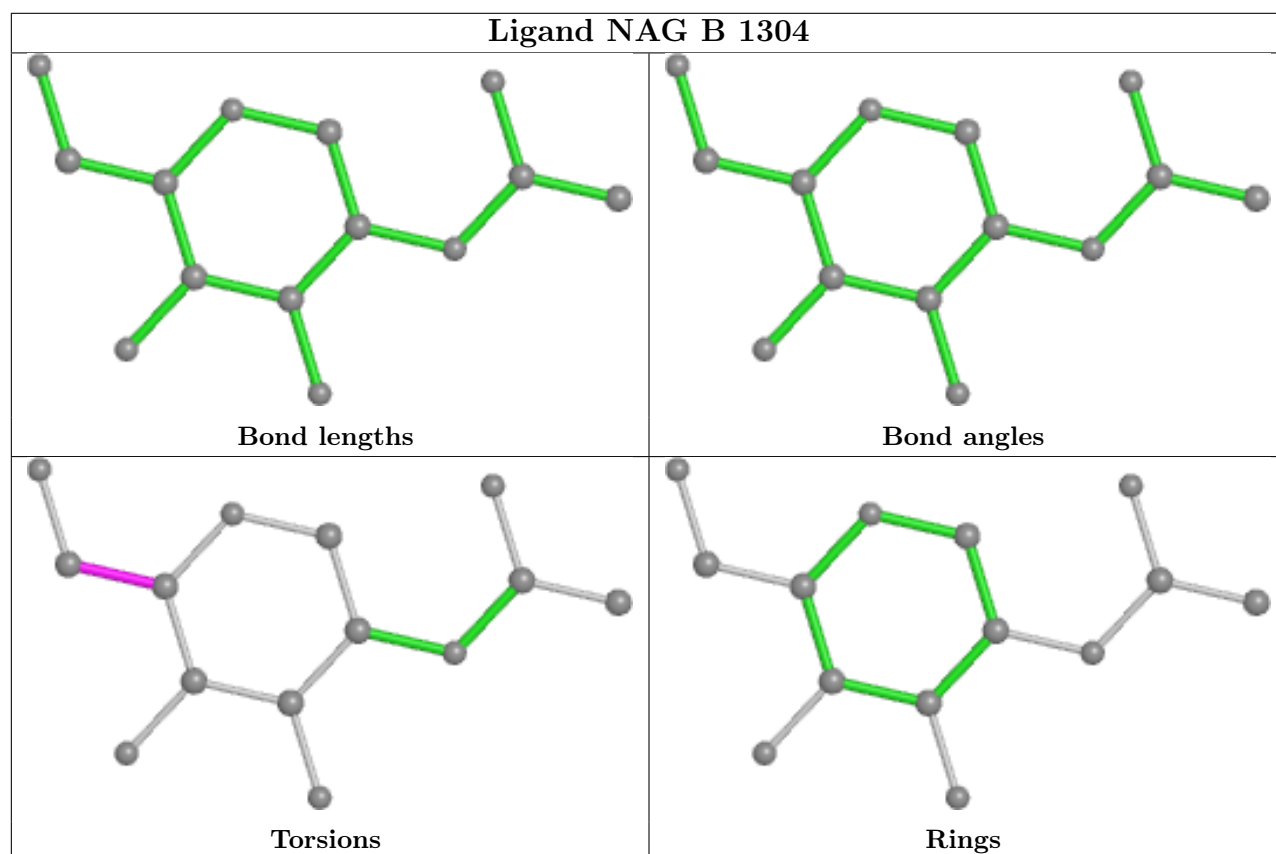
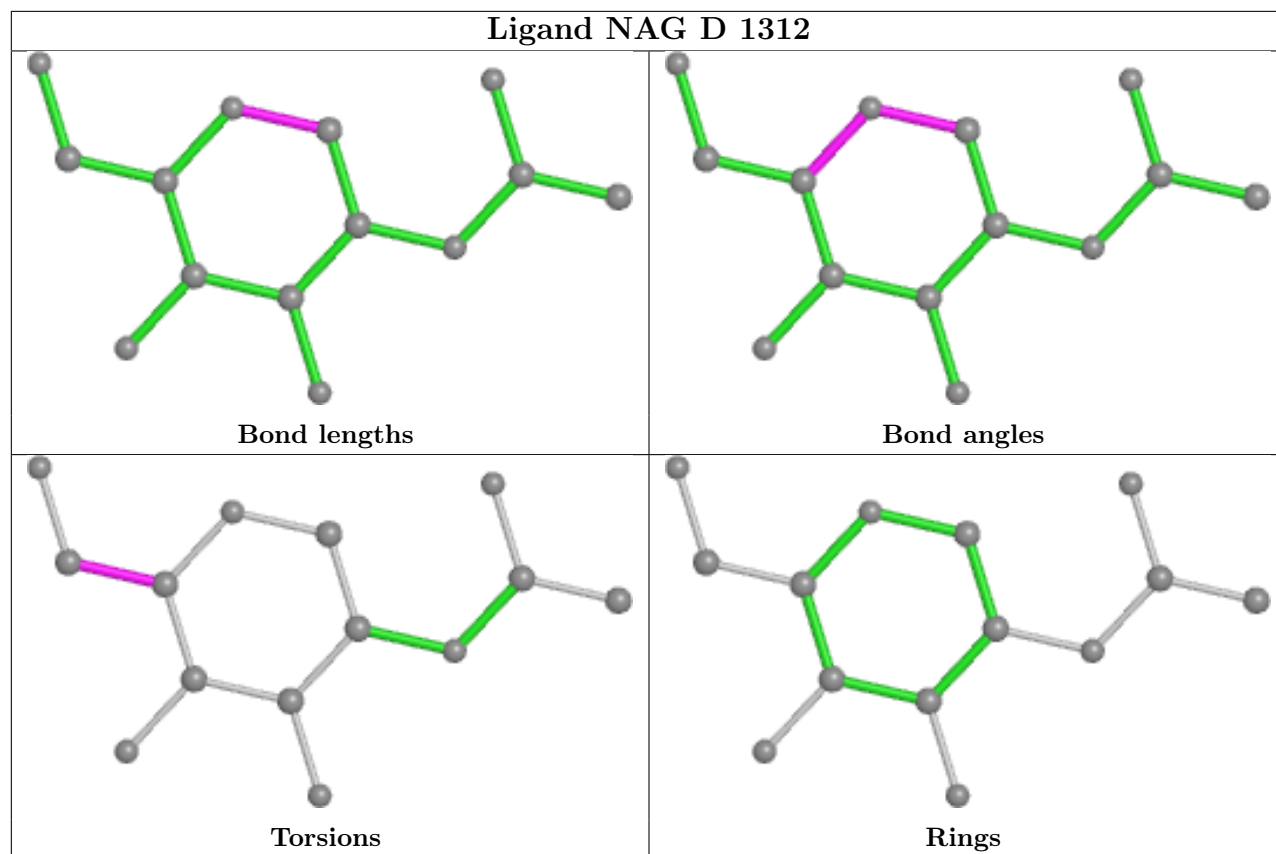


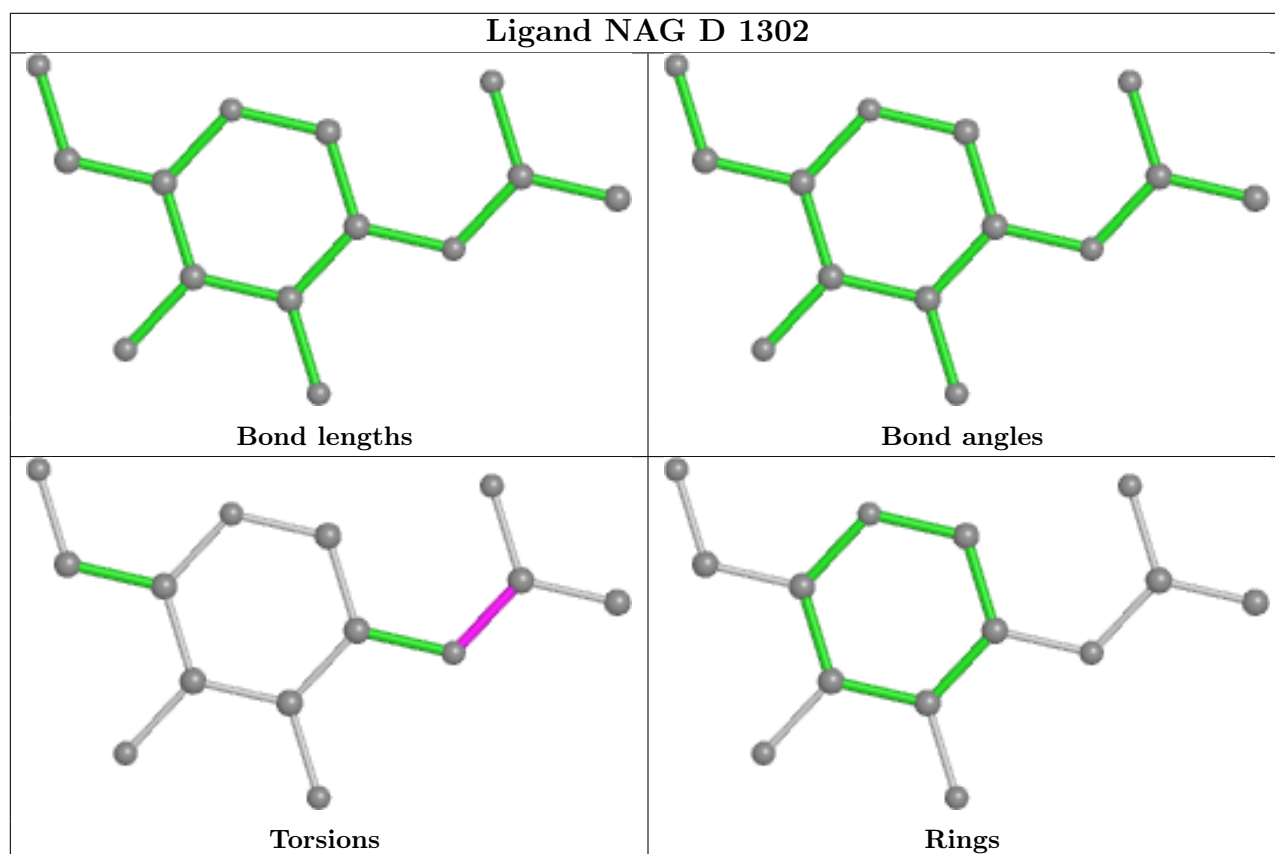
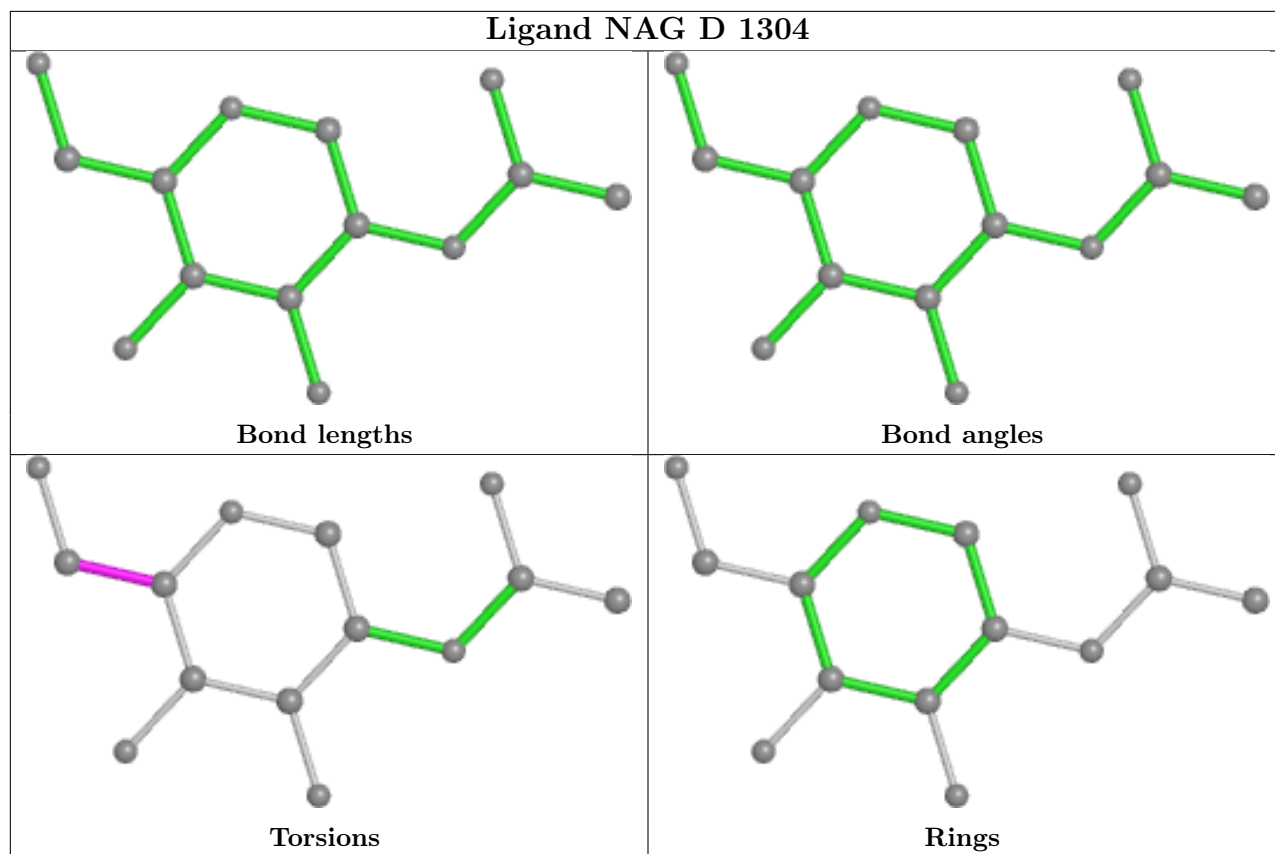


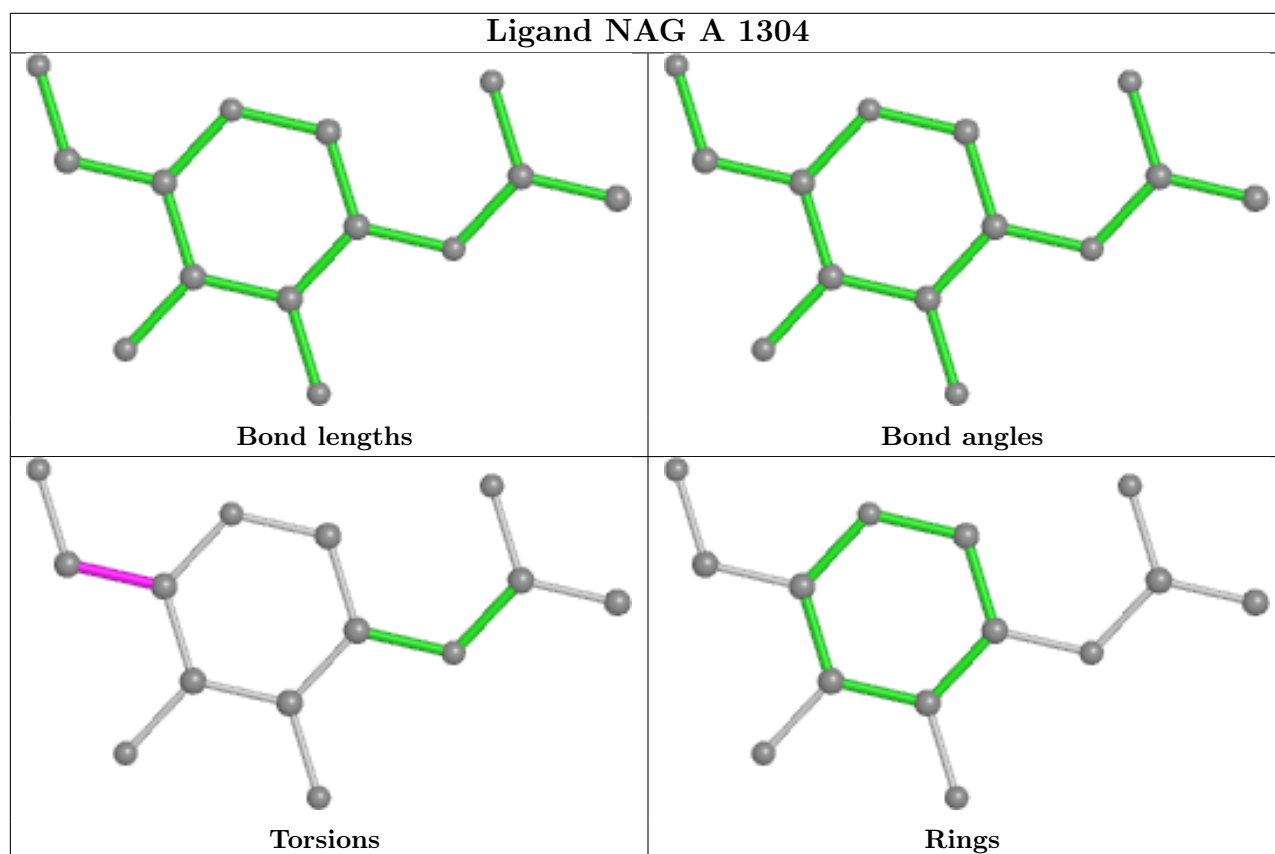
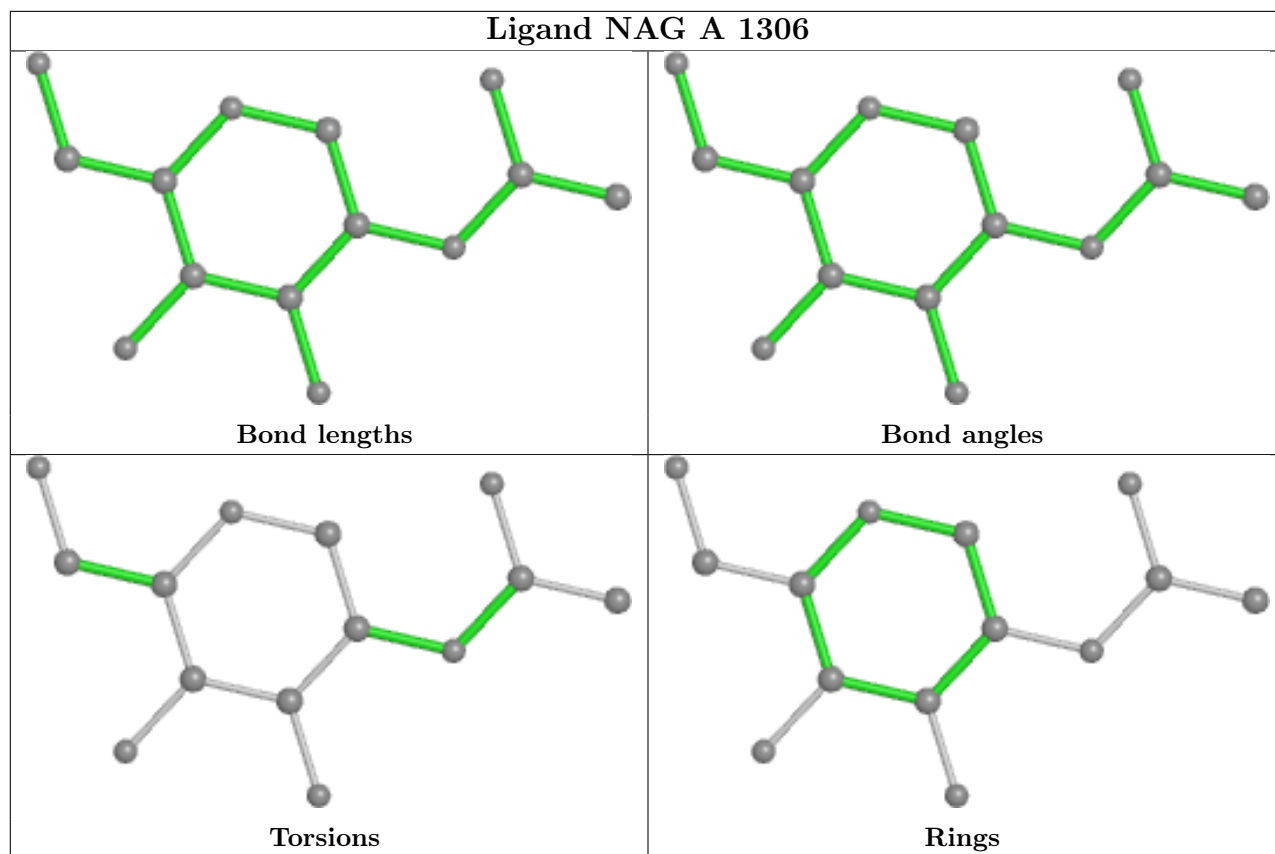


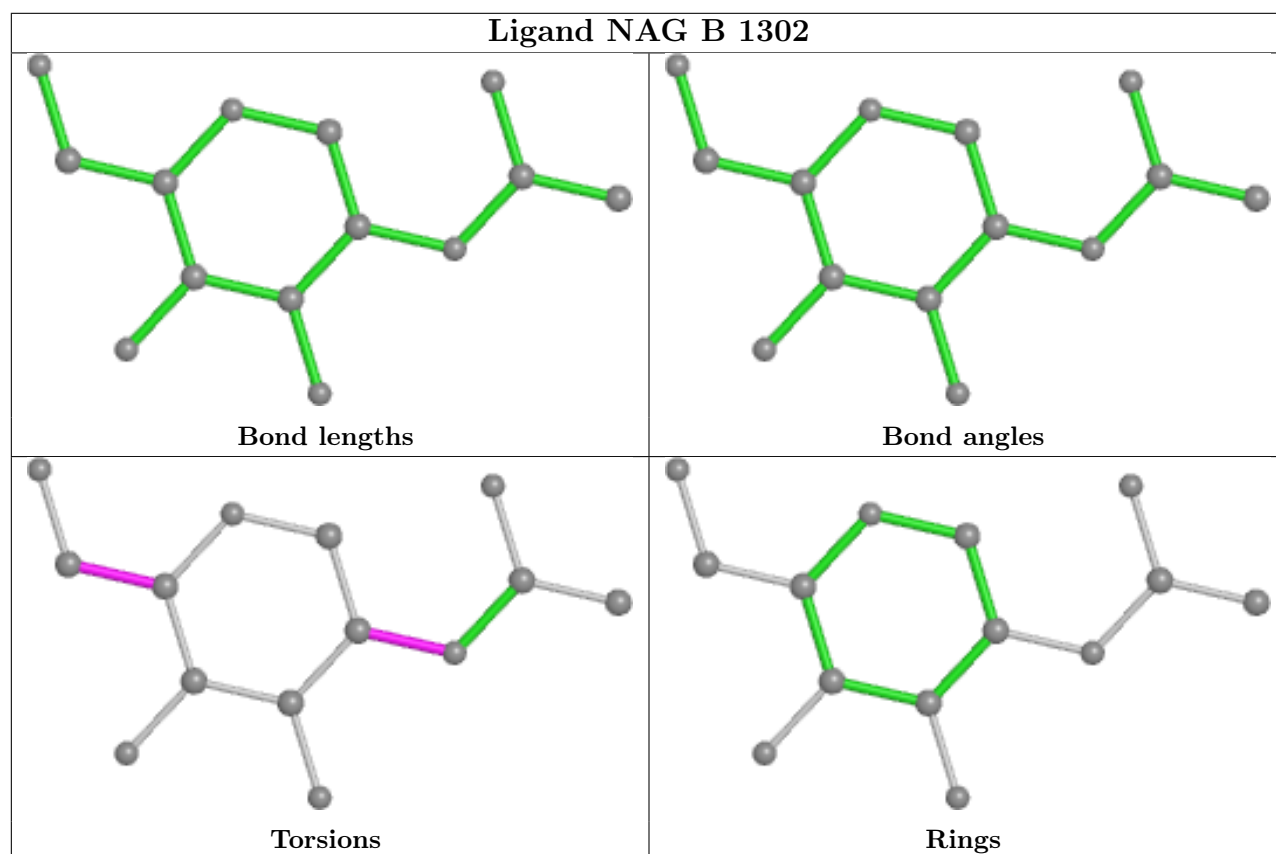
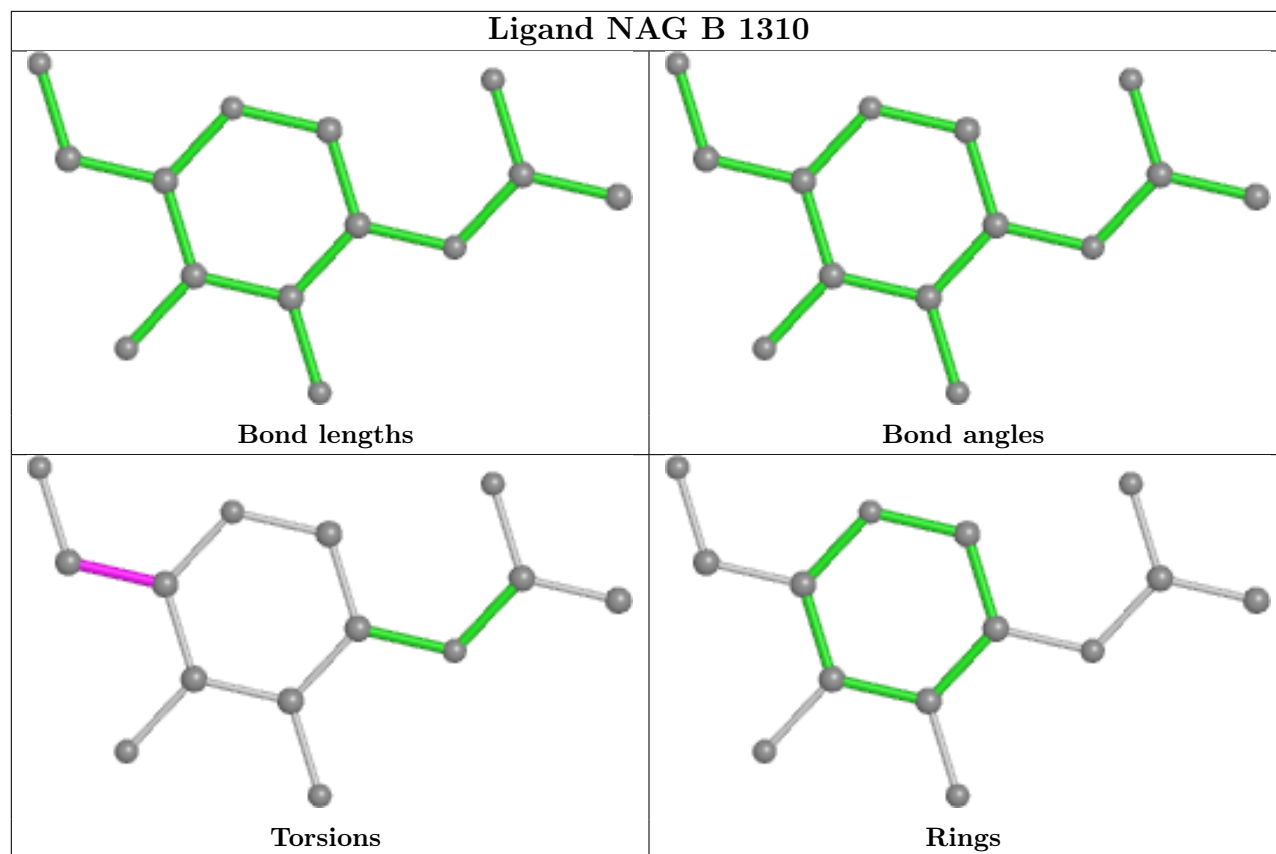












5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

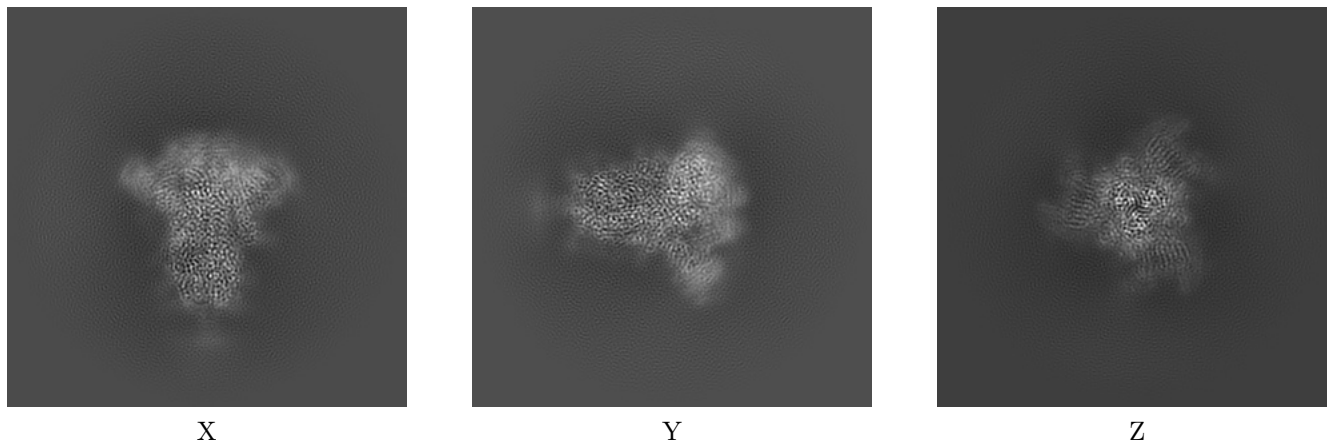
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-29799. These allow visual inspection of the internal detail of the map and identification of artifacts.

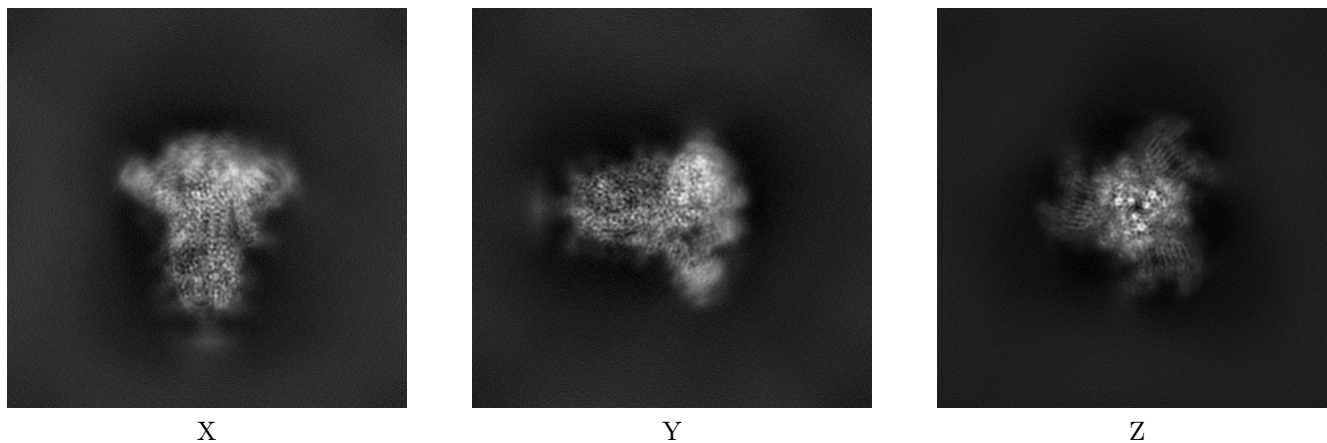
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

6.1.1 Primary map



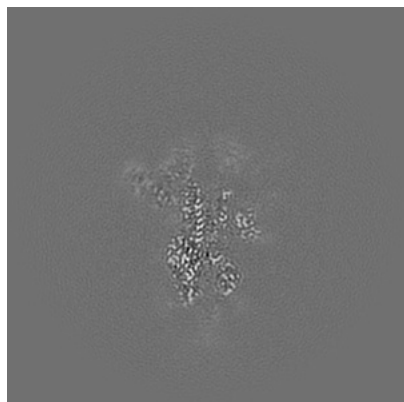
6.1.2 Raw map



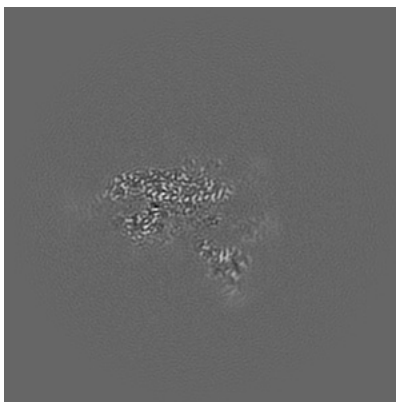
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

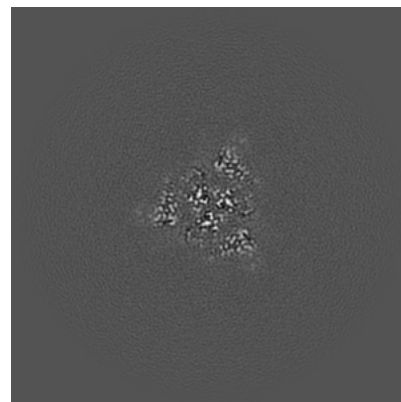
6.2.1 Primary map



X Index: 192

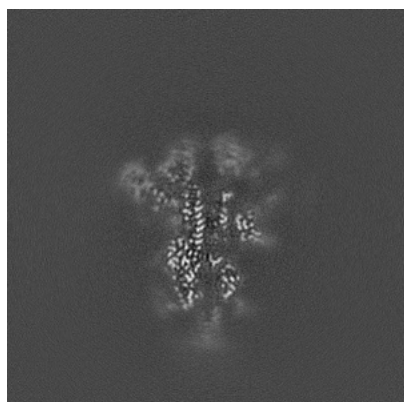


Y Index: 192

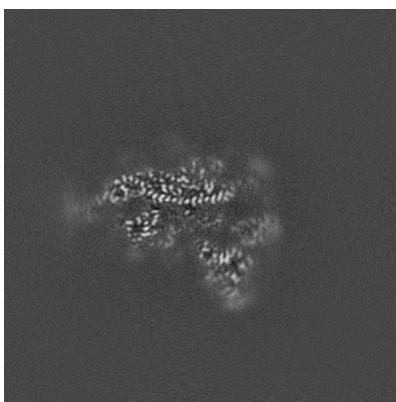


Z Index: 192

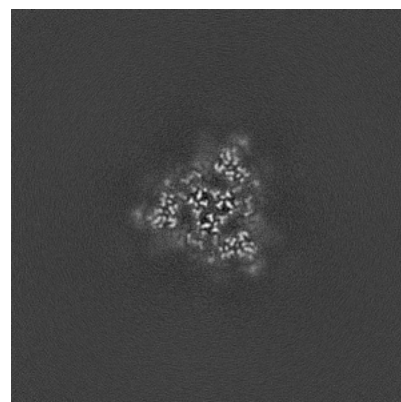
6.2.2 Raw map



X Index: 192



Y Index: 192

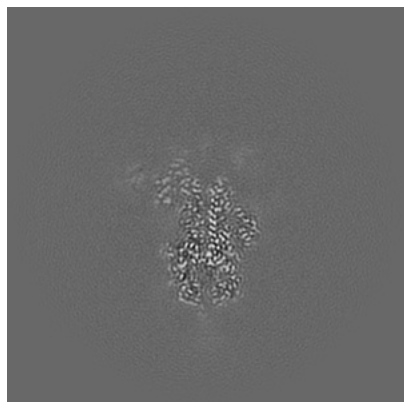


Z Index: 192

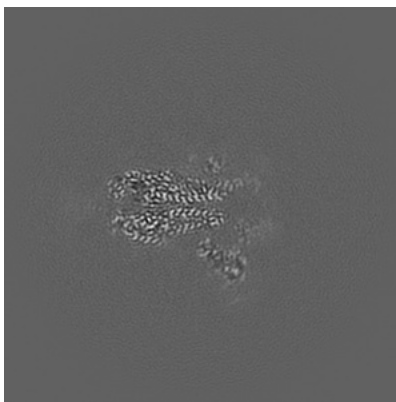
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

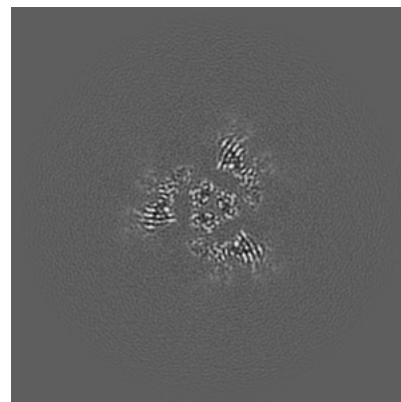
6.3.1 Primary map



X Index: 185

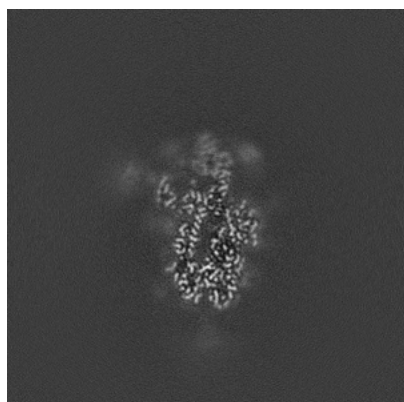


Y Index: 196

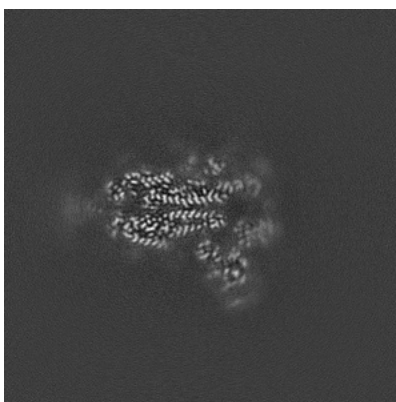


Z Index: 205

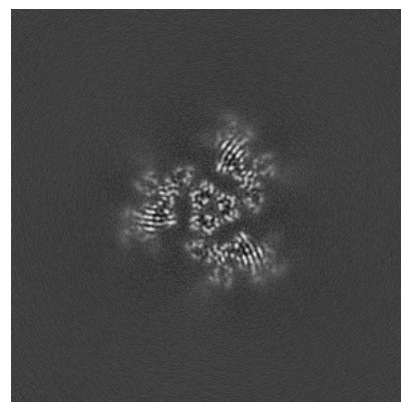
6.3.2 Raw map



X Index: 178



Y Index: 196

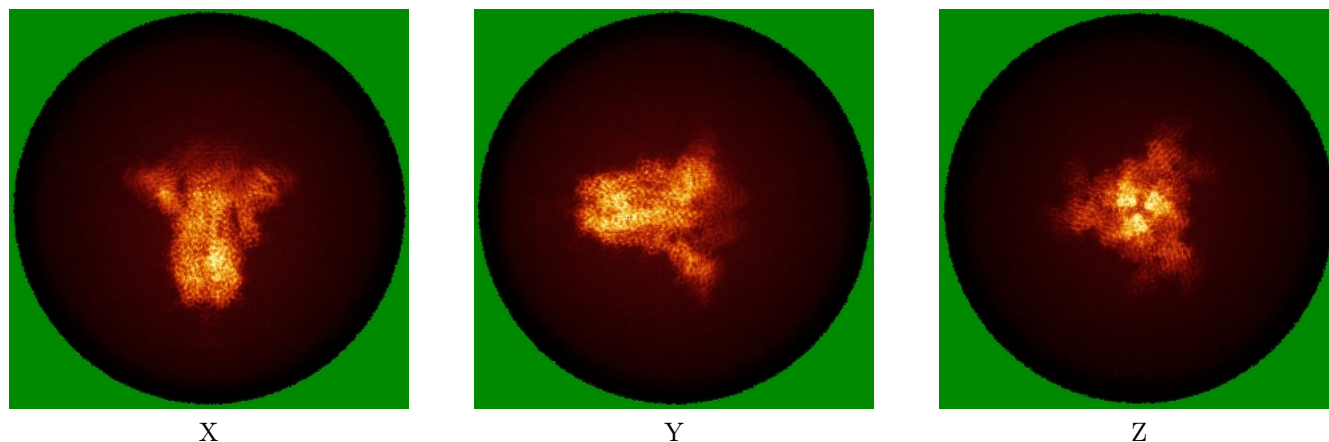


Z Index: 205

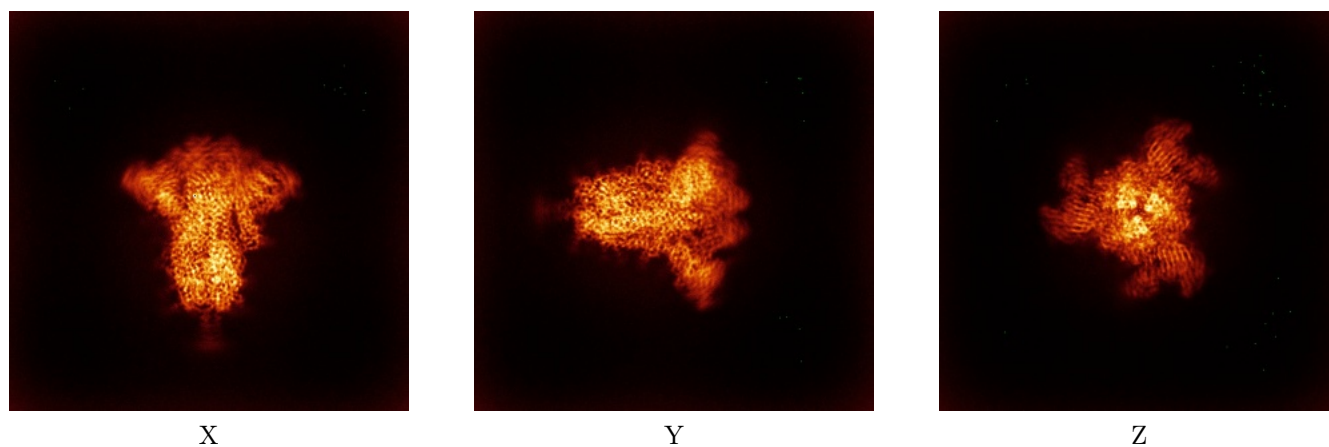
The images above show the largest variance slices of the map in three orthogonal directions.

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

6.4.1 Primary map



6.4.2 Raw map



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



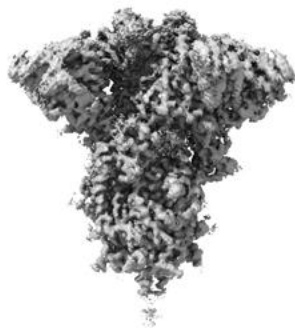
Y



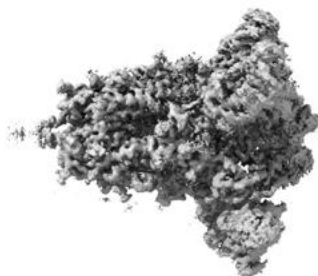
Z

The images above show the 3D surface view of the map at the recommended contour level 0.146. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

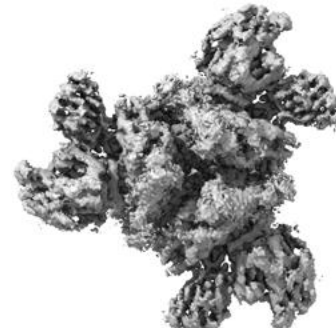
6.5.2 Raw map



X



Y



Z

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

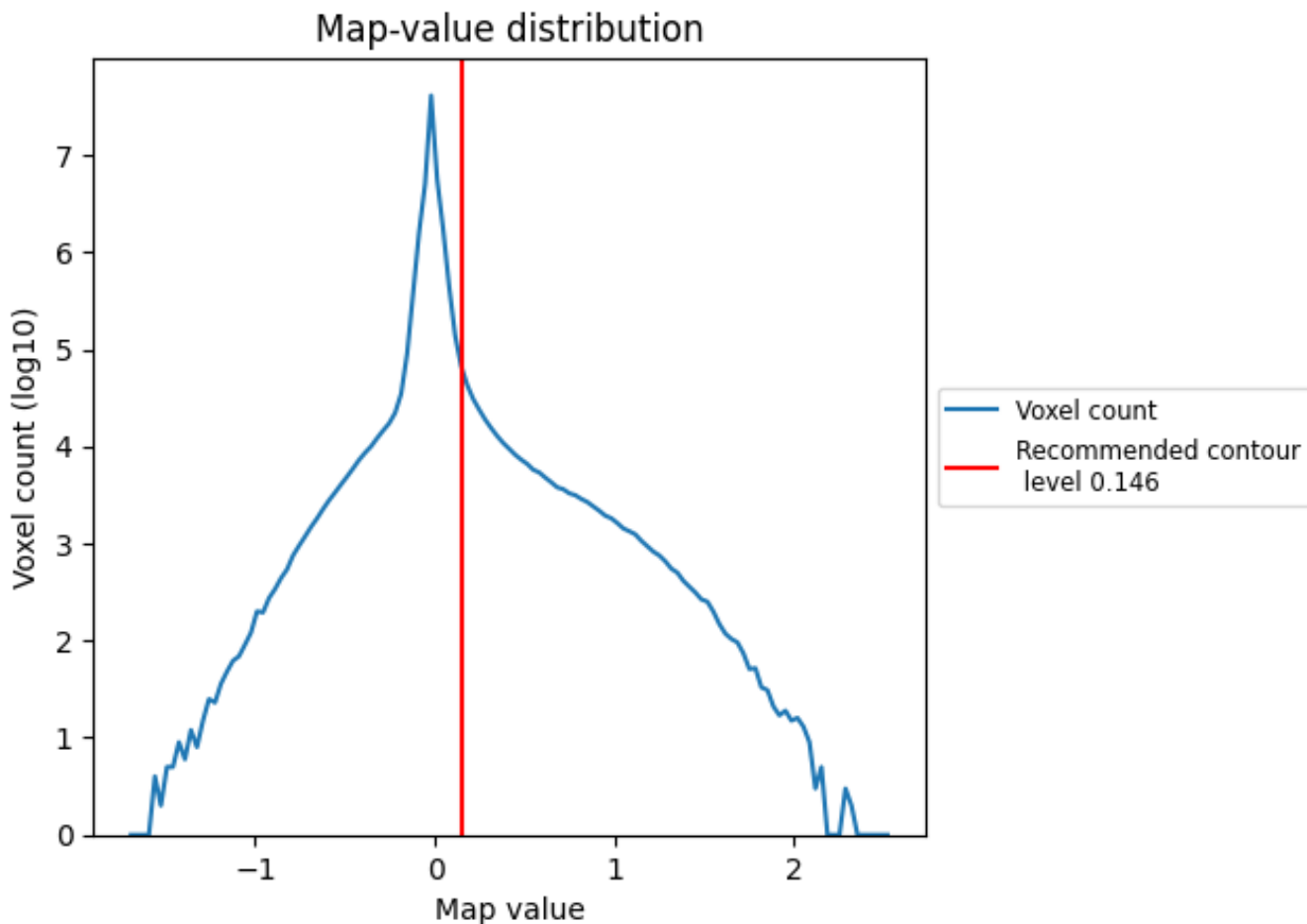
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

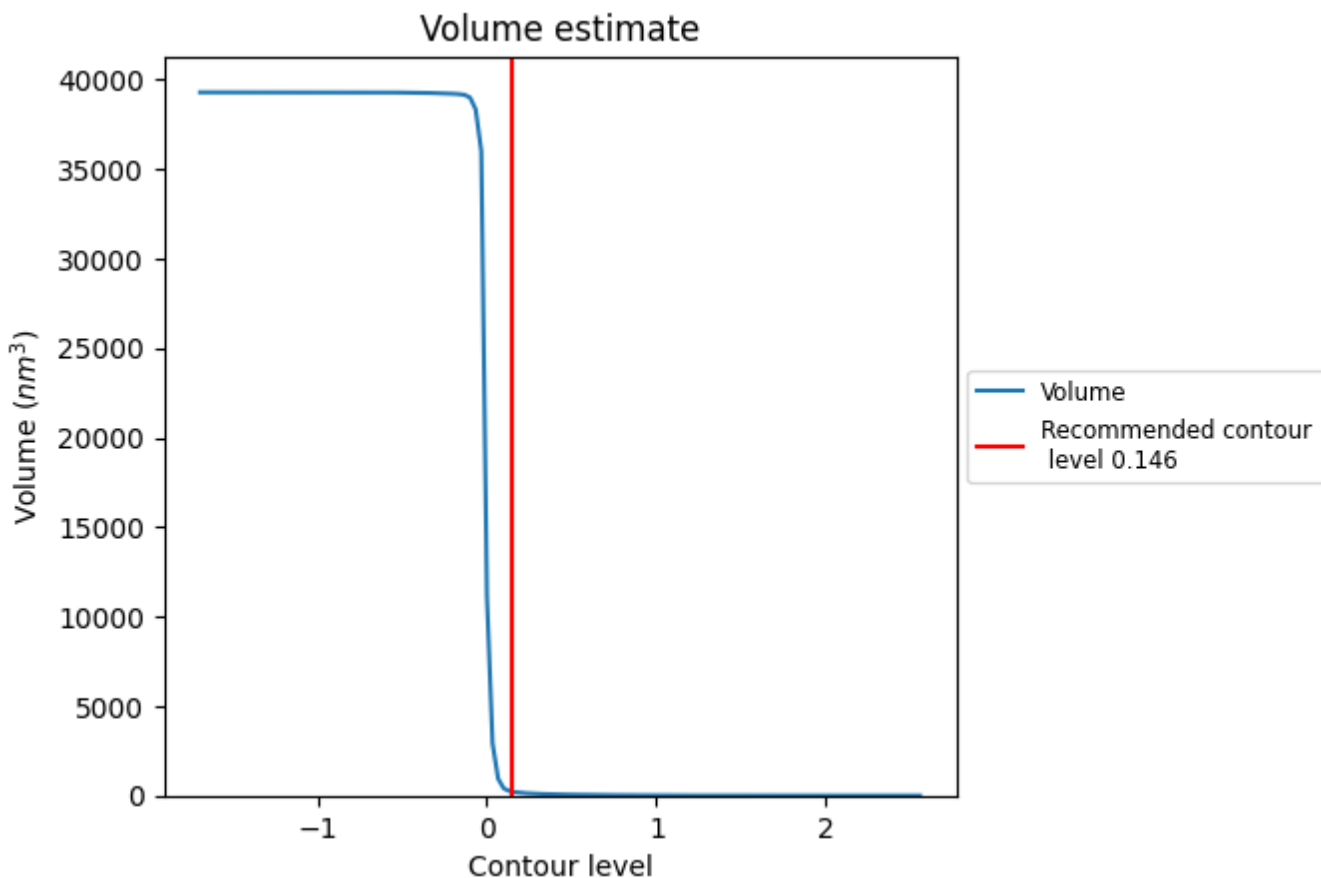
This section contains the results of statistical analysis of the map.

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.

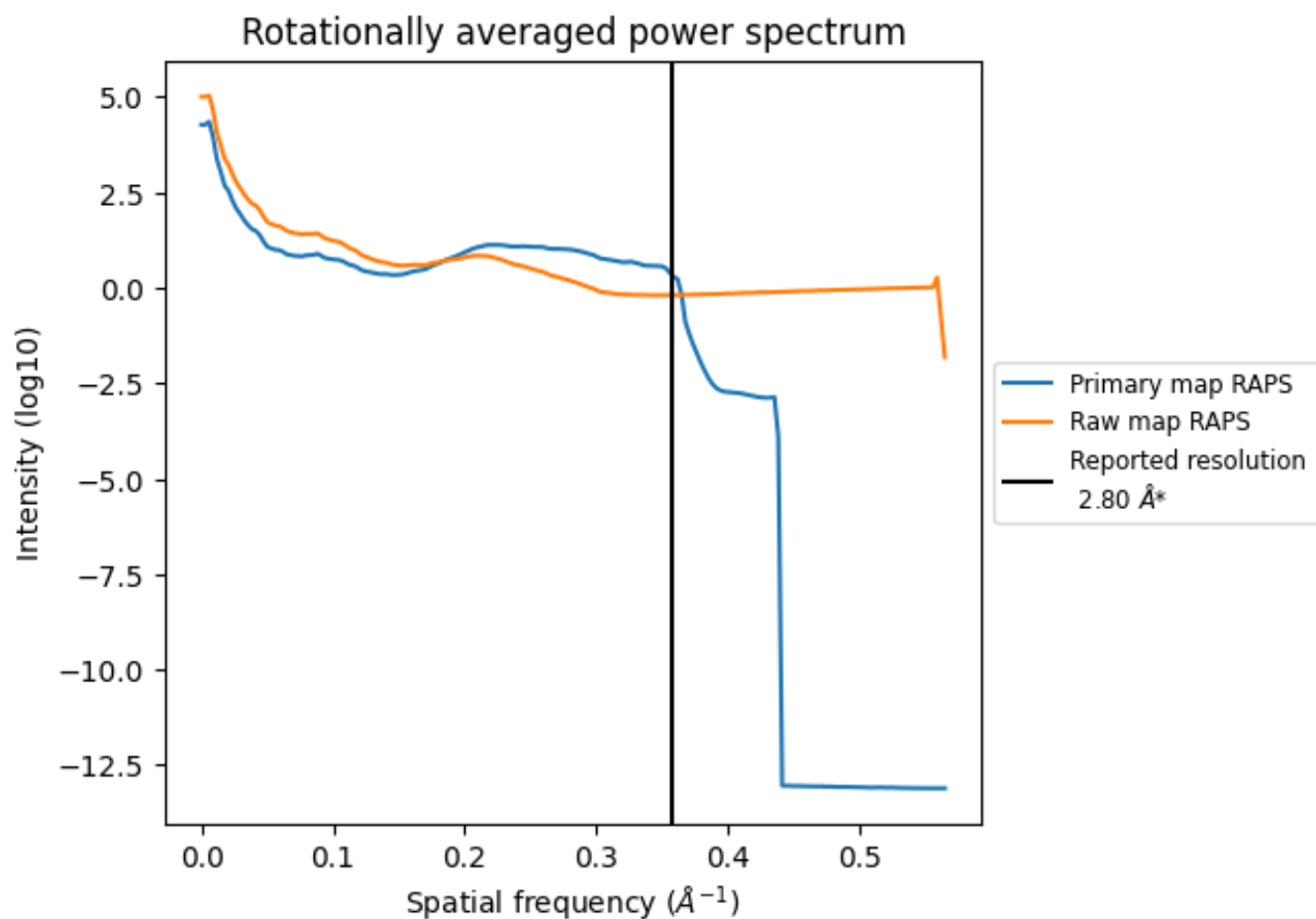
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 226 nm³; this corresponds to an approximate mass of 205 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](#)

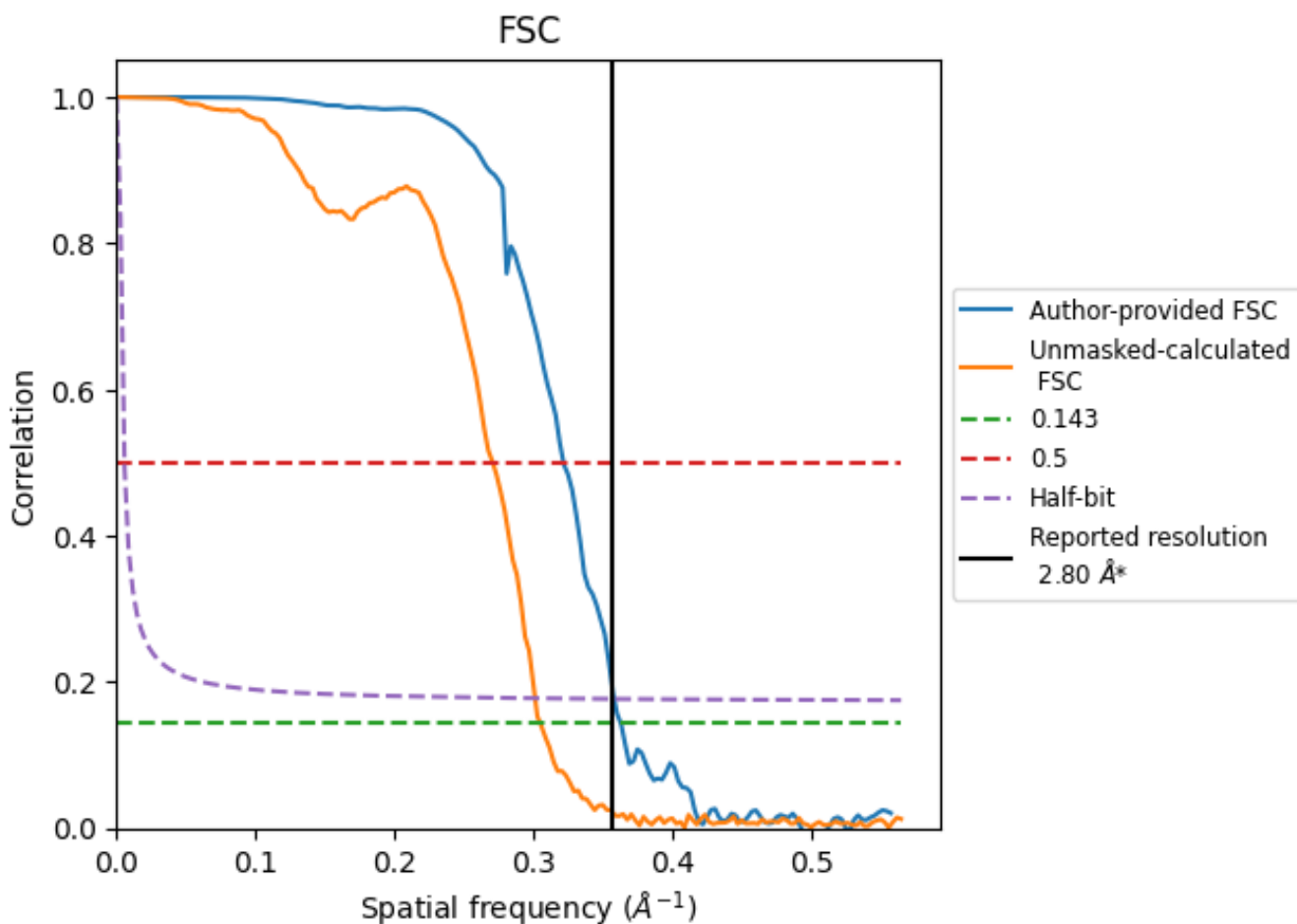


*Reported resolution corresponds to spatial frequency of 0.357 Å⁻¹

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 0.357 Å⁻¹

8.2 Resolution estimates [i](#)

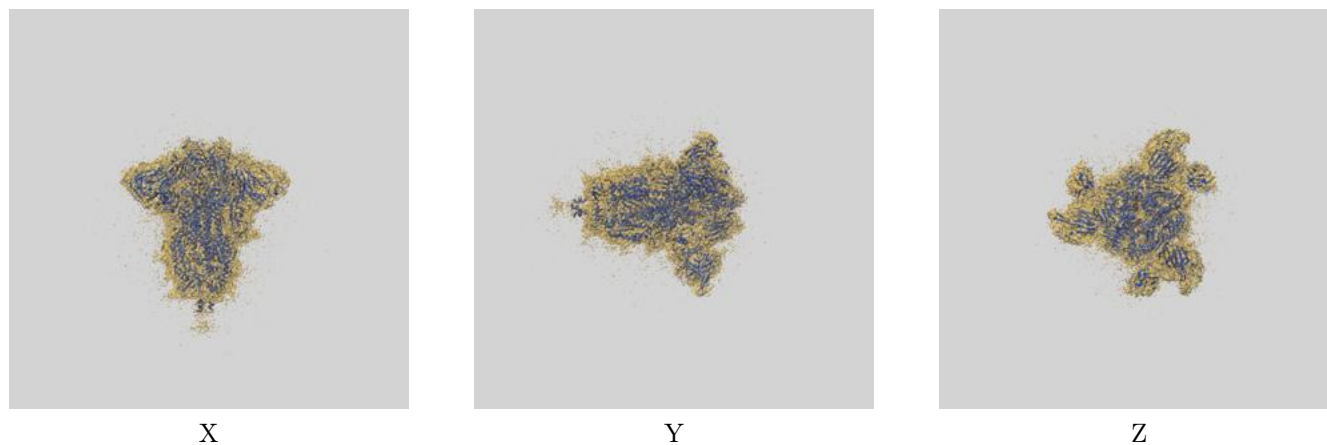
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.80	-	-
Author-provided FSC curve	2.75	3.11	2.79
Unmasked-calculated*	3.28	3.69	3.32

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.28 differs from the reported value 2.8 by more than 10 %

9 Map-model fit [i](#)

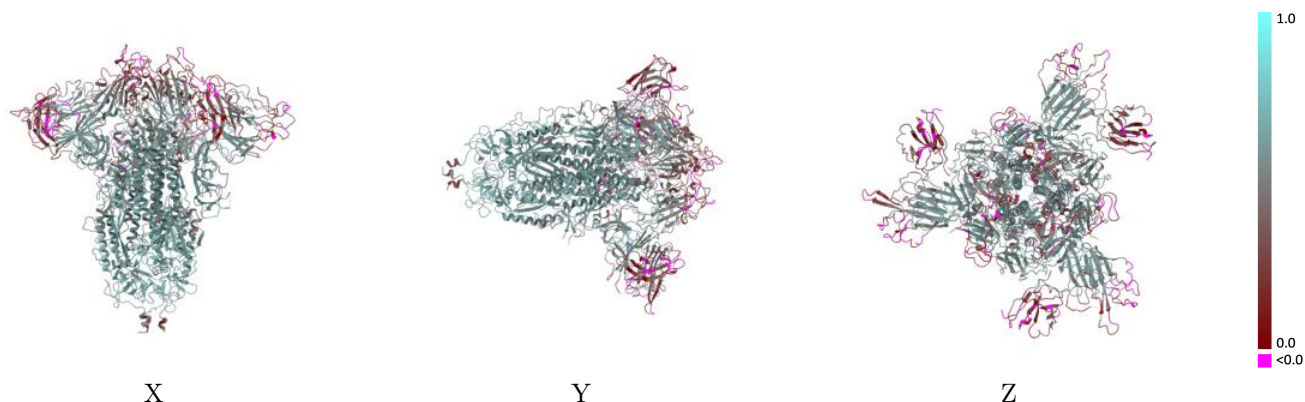
This section contains information regarding the fit between EMDB map EMD-29799 and PDB model 8G77. Per-residue inclusion information can be found in section [3](#) on page [12](#).

9.1 Map-model overlay [i](#)



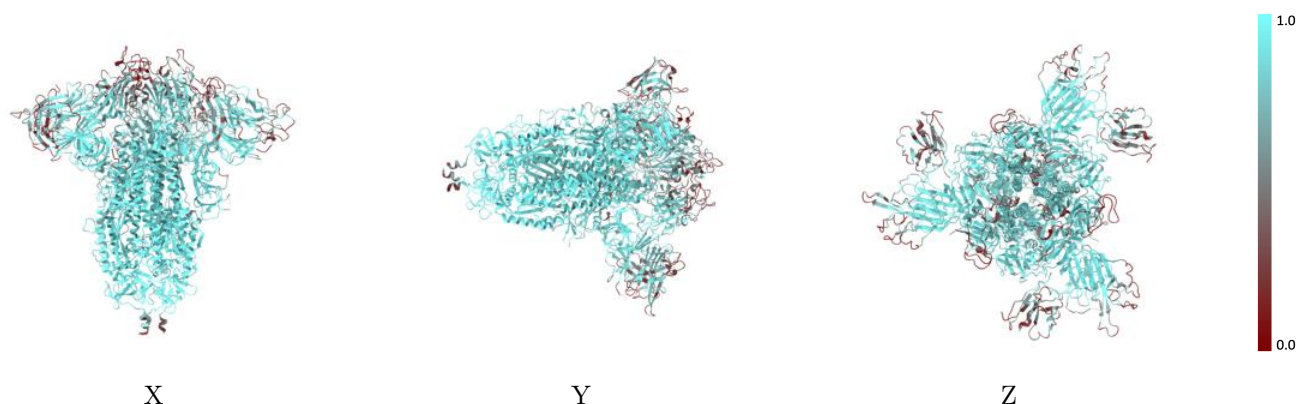
The images above show the 3D surface view of the map at the recommended contour level 0.146 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



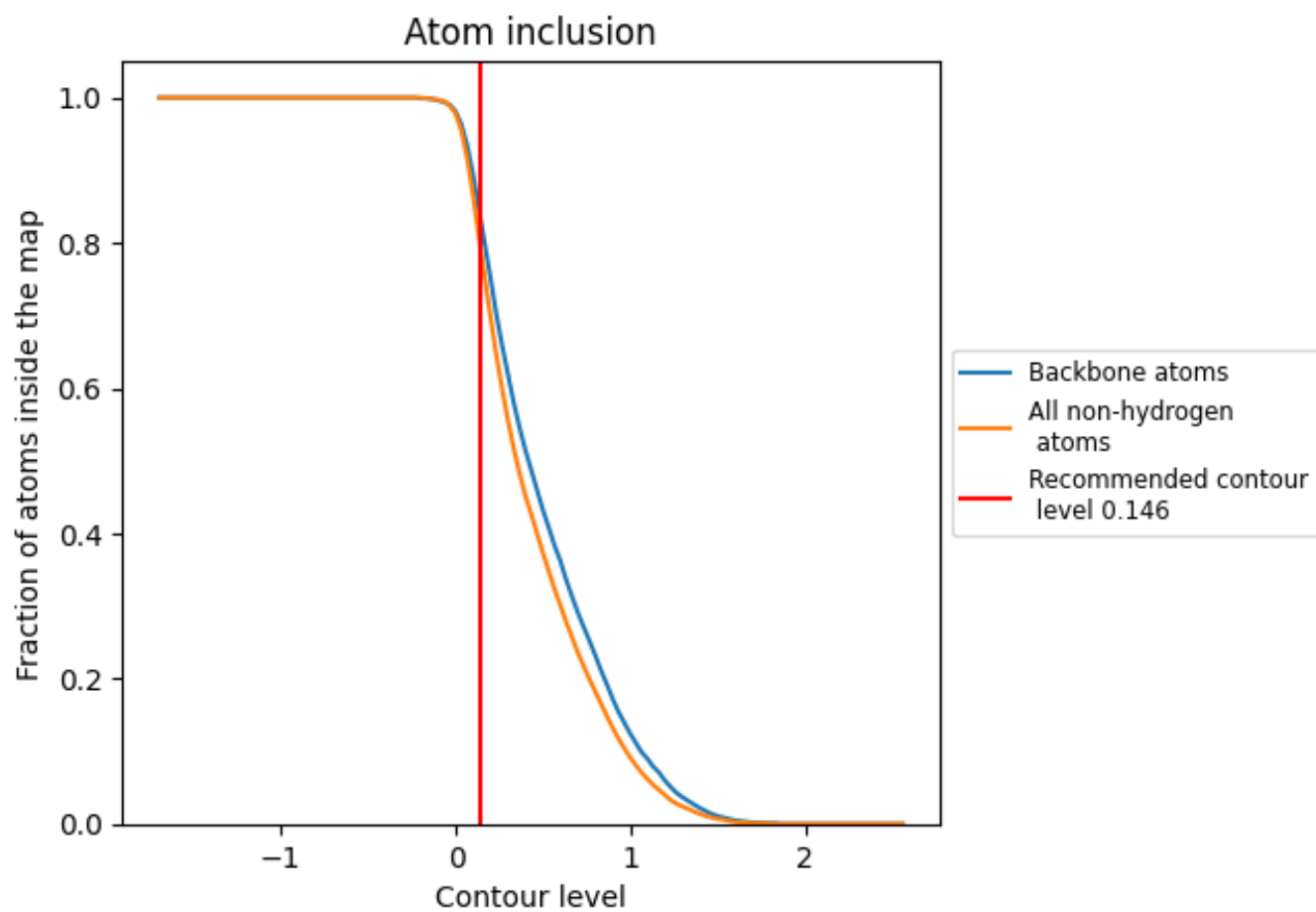
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.146).





































9.4 Atom inclusion [i](#)



At the recommended contour level, 83% of all backbone atoms, 79% 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 (0.146) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.7870	 0.4720
A	 0.8200	 0.5000
B	 0.8080	 0.4950
C	 0.7140	 0.4090
D	 0.8150	 0.4950
E	 0.6070	 0.3540
F	 0.5180	 0.2370
G	 0.5450	 0.2430
H	 0.7860	 0.3740
I	 0.7140	 0.4390
J	 0.8210	 0.5360
K	 0.5610	 0.2730
L	 0.4290	 0.2170
M	 0.8210	 0.4850
N	 0.7500	 0.4240
O	 0.6070	 0.3310
P	 0.4290	 0.2540
Q	 0.3570	 0.0950

