



Full wwPDB EM Validation Report ⓘ

Mar 9, 2026 – 03:09 PM UTC

PDB ID : 8DXS / pdb_00008dxs
EMDB ID : EMD-27775
Title : Cryo-EM structure of RBD-directed neutralizing antibody P2B4 in complex with prefusion SARS-CoV-2 spike glycoprotein
Authors : Reddem, E.R.; Shapiro, L.
Deposited on : 2022-08-03
Resolution : 3.76 Å(reported)

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

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

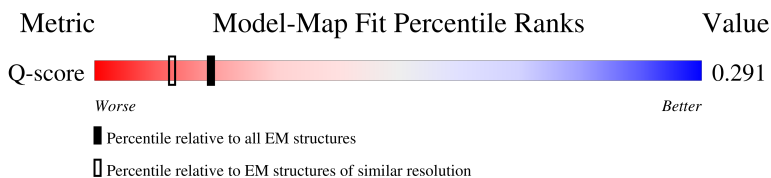
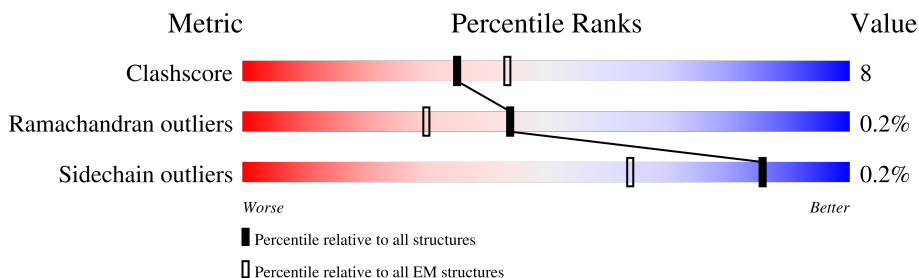
EMDB validation analysis : 0.0.1.dev132
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0
Buster-report : wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

1 Overall quality at a glance

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

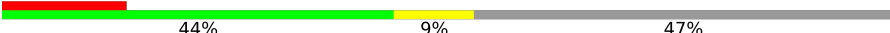
The reported resolution of this entry is 3.76 Å.

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)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
Q-score	-	25397	10214 (3.26 - 4.26)

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	1288	 65% 14% 21%
1	B	1288	 68% 13% 19%
1	C	1288	 67% 13% 20%
2	F	231	 14% 44% 9% 47%

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Mol	Chain	Length	Quality of chain
2	G	231	
2	H	231	
3	I	212	
3	J	212	
3	L	212	

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
4	NAG	A	1315	X	-	-	-
4	NAG	B	1304	-	-	X	-

2 Entry composition

There are 4 unique types of molecules in this entry. The entry contains 30131 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
1	A	1021	Total	C	N	O	S	2	0
			7999	5105	1333	1526	35		
1	B	1047	Total	C	N	O	S	2	0
			8205	5234	1369	1565	37		
1	C	1033	Total	C	N	O	S	2	0
			8097	5167	1351	1543	36		

There are 255 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	682	GLY	ARG	conflict	UNP P0DTC2
A	683	SER	ARG	conflict	UNP P0DTC2
A	685	SER	ARG	conflict	UNP P0DTC2
A	986	PRO	LYS	conflict	UNP P0DTC2
A	987	PRO	VAL	conflict	UNP P0DTC2
A	1209	GLY	-	expression tag	UNP P0DTC2
A	1210	SER	-	expression tag	UNP P0DTC2
A	1211	GLY	-	expression tag	UNP P0DTC2
A	1212	TYR	-	expression tag	UNP P0DTC2
A	1213	ILE	-	expression tag	UNP P0DTC2
A	1214	PRO	-	expression tag	UNP P0DTC2
A	1215	GLU	-	expression tag	UNP P0DTC2
A	1216	ALA	-	expression tag	UNP P0DTC2
A	1217	PRO	-	expression tag	UNP P0DTC2
A	1218	ARG	-	expression tag	UNP P0DTC2
A	1219	ASP	-	expression tag	UNP P0DTC2
A	1220	GLY	-	expression tag	UNP P0DTC2
A	1221	GLN	-	expression tag	UNP P0DTC2
A	1222	ALA	-	expression tag	UNP P0DTC2
A	1223	TYR	-	expression tag	UNP P0DTC2
A	1224	VAL	-	expression tag	UNP P0DTC2
A	1225	ARG	-	expression tag	UNP P0DTC2
A	1226	LYS	-	expression tag	UNP P0DTC2
A	1227	ASP	-	expression tag	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
A	1228	GLY	-	expression tag	UNP P0DTC2
A	1229	GLU	-	expression tag	UNP P0DTC2
A	1230	TRP	-	expression tag	UNP P0DTC2
A	1231	VAL	-	expression tag	UNP P0DTC2
A	1232	LEU	-	expression tag	UNP P0DTC2
A	1233	LEU	-	expression tag	UNP P0DTC2
A	1234	SER	-	expression tag	UNP P0DTC2
A	1235	THR	-	expression tag	UNP P0DTC2
A	1236	PHE	-	expression tag	UNP P0DTC2
A	1237	LEU	-	expression tag	UNP P0DTC2
A	1238	GLY	-	expression tag	UNP P0DTC2
A	1239	ARG	-	expression tag	UNP P0DTC2
A	1240	SER	-	expression tag	UNP P0DTC2
A	1241	LEU	-	expression tag	UNP P0DTC2
A	1242	GLU	-	expression tag	UNP P0DTC2
A	1243	VAL	-	expression tag	UNP P0DTC2
A	1244	LEU	-	expression tag	UNP P0DTC2
A	1245	PHE	-	expression tag	UNP P0DTC2
A	1246	GLN	-	expression tag	UNP P0DTC2
A	1247	GLY	-	expression tag	UNP P0DTC2
A	1248	PRO	-	expression tag	UNP P0DTC2
A	1249	GLY	-	expression tag	UNP P0DTC2
A	1250	HIS	-	expression tag	UNP P0DTC2
A	1251	HIS	-	expression tag	UNP P0DTC2
A	1252	HIS	-	expression tag	UNP P0DTC2
A	1253	HIS	-	expression tag	UNP P0DTC2
A	1254	HIS	-	expression tag	UNP P0DTC2
A	1255	HIS	-	expression tag	UNP P0DTC2
A	1256	HIS	-	expression tag	UNP P0DTC2
A	1257	HIS	-	expression tag	UNP P0DTC2
A	1258	SER	-	expression tag	UNP P0DTC2
A	1259	ALA	-	expression tag	UNP P0DTC2
A	1260	TRP	-	expression tag	UNP P0DTC2
A	1261	SER	-	expression tag	UNP P0DTC2
A	1262	HIS	-	expression tag	UNP P0DTC2
A	1263	PRO	-	expression tag	UNP P0DTC2
A	1264	GLN	-	expression tag	UNP P0DTC2
A	1265	PHE	-	expression tag	UNP P0DTC2
A	1266	GLU	-	expression tag	UNP P0DTC2
A	1267	LYS	-	expression tag	UNP P0DTC2
A	1268	GLY	-	expression tag	UNP P0DTC2
A	1269	GLY	-	expression tag	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
A	1270	GLY	-	expression tag	UNP P0DTC2
A	1271	SER	-	expression tag	UNP P0DTC2
A	1272	GLY	-	expression tag	UNP P0DTC2
A	1273	GLY	-	expression tag	UNP P0DTC2
A	1274	GLY	-	expression tag	UNP P0DTC2
A	1275	GLY	-	expression tag	UNP P0DTC2
A	1276	SER	-	expression tag	UNP P0DTC2
A	1277	GLY	-	expression tag	UNP P0DTC2
A	1278	GLY	-	expression tag	UNP P0DTC2
A	1279	SER	-	expression tag	UNP P0DTC2
A	1280	ALA	-	expression tag	UNP P0DTC2
A	1281	TRP	-	expression tag	UNP P0DTC2
A	1282	SER	-	expression tag	UNP P0DTC2
A	1283	HIS	-	expression tag	UNP P0DTC2
A	1284	PRO	-	expression tag	UNP P0DTC2
A	1285	GLN	-	expression tag	UNP P0DTC2
A	1286	PHE	-	expression tag	UNP P0DTC2
A	1287	GLU	-	expression tag	UNP P0DTC2
A	1288	LYS	-	expression tag	UNP P0DTC2
B	682	GLY	ARG	conflict	UNP P0DTC2
B	683	SER	ARG	conflict	UNP P0DTC2
B	685	SER	ARG	conflict	UNP P0DTC2
B	986	PRO	LYS	conflict	UNP P0DTC2
B	987	PRO	VAL	conflict	UNP P0DTC2
B	1209	GLY	-	expression tag	UNP P0DTC2
B	1210	SER	-	expression tag	UNP P0DTC2
B	1211	GLY	-	expression tag	UNP P0DTC2
B	1212	TYR	-	expression tag	UNP P0DTC2
B	1213	ILE	-	expression tag	UNP P0DTC2
B	1214	PRO	-	expression tag	UNP P0DTC2
B	1215	GLU	-	expression tag	UNP P0DTC2
B	1216	ALA	-	expression tag	UNP P0DTC2
B	1217	PRO	-	expression tag	UNP P0DTC2
B	1218	ARG	-	expression tag	UNP P0DTC2
B	1219	ASP	-	expression tag	UNP P0DTC2
B	1220	GLY	-	expression tag	UNP P0DTC2
B	1221	GLN	-	expression tag	UNP P0DTC2
B	1222	ALA	-	expression tag	UNP P0DTC2
B	1223	TYR	-	expression tag	UNP P0DTC2
B	1224	VAL	-	expression tag	UNP P0DTC2
B	1225	ARG	-	expression tag	UNP P0DTC2
B	1226	LYS	-	expression tag	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
B	1227	ASP	-	expression tag	UNP P0DTC2
B	1228	GLY	-	expression tag	UNP P0DTC2
B	1229	GLU	-	expression tag	UNP P0DTC2
B	1230	TRP	-	expression tag	UNP P0DTC2
B	1231	VAL	-	expression tag	UNP P0DTC2
B	1232	LEU	-	expression tag	UNP P0DTC2
B	1233	LEU	-	expression tag	UNP P0DTC2
B	1234	SER	-	expression tag	UNP P0DTC2
B	1235	THR	-	expression tag	UNP P0DTC2
B	1236	PHE	-	expression tag	UNP P0DTC2
B	1237	LEU	-	expression tag	UNP P0DTC2
B	1238	GLY	-	expression tag	UNP P0DTC2
B	1239	ARG	-	expression tag	UNP P0DTC2
B	1240	SER	-	expression tag	UNP P0DTC2
B	1241	LEU	-	expression tag	UNP P0DTC2
B	1242	GLU	-	expression tag	UNP P0DTC2
B	1243	VAL	-	expression tag	UNP P0DTC2
B	1244	LEU	-	expression tag	UNP P0DTC2
B	1245	PHE	-	expression tag	UNP P0DTC2
B	1246	GLN	-	expression tag	UNP P0DTC2
B	1247	GLY	-	expression tag	UNP P0DTC2
B	1248	PRO	-	expression tag	UNP P0DTC2
B	1249	GLY	-	expression tag	UNP P0DTC2
B	1250	HIS	-	expression tag	UNP P0DTC2
B	1251	HIS	-	expression tag	UNP P0DTC2
B	1252	HIS	-	expression tag	UNP P0DTC2
B	1253	HIS	-	expression tag	UNP P0DTC2
B	1254	HIS	-	expression tag	UNP P0DTC2
B	1255	HIS	-	expression tag	UNP P0DTC2
B	1256	HIS	-	expression tag	UNP P0DTC2
B	1257	HIS	-	expression tag	UNP P0DTC2
B	1258	SER	-	expression tag	UNP P0DTC2
B	1259	ALA	-	expression tag	UNP P0DTC2
B	1260	TRP	-	expression tag	UNP P0DTC2
B	1261	SER	-	expression tag	UNP P0DTC2
B	1262	HIS	-	expression tag	UNP P0DTC2
B	1263	PRO	-	expression tag	UNP P0DTC2
B	1264	GLN	-	expression tag	UNP P0DTC2
B	1265	PHE	-	expression tag	UNP P0DTC2
B	1266	GLU	-	expression tag	UNP P0DTC2
B	1267	LYS	-	expression tag	UNP P0DTC2
B	1268	GLY	-	expression tag	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
B	1269	GLY	-	expression tag	UNP P0DTC2
B	1270	GLY	-	expression tag	UNP P0DTC2
B	1271	SER	-	expression tag	UNP P0DTC2
B	1272	GLY	-	expression tag	UNP P0DTC2
B	1273	GLY	-	expression tag	UNP P0DTC2
B	1274	GLY	-	expression tag	UNP P0DTC2
B	1275	GLY	-	expression tag	UNP P0DTC2
B	1276	SER	-	expression tag	UNP P0DTC2
B	1277	GLY	-	expression tag	UNP P0DTC2
B	1278	GLY	-	expression tag	UNP P0DTC2
B	1279	SER	-	expression tag	UNP P0DTC2
B	1280	ALA	-	expression tag	UNP P0DTC2
B	1281	TRP	-	expression tag	UNP P0DTC2
B	1282	SER	-	expression tag	UNP P0DTC2
B	1283	HIS	-	expression tag	UNP P0DTC2
B	1284	PRO	-	expression tag	UNP P0DTC2
B	1285	GLN	-	expression tag	UNP P0DTC2
B	1286	PHE	-	expression tag	UNP P0DTC2
B	1287	GLU	-	expression tag	UNP P0DTC2
B	1288	LYS	-	expression tag	UNP P0DTC2
C	682	GLY	ARG	conflict	UNP P0DTC2
C	683	SER	ARG	conflict	UNP P0DTC2
C	685	SER	ARG	conflict	UNP P0DTC2
C	986	PRO	LYS	conflict	UNP P0DTC2
C	987	PRO	VAL	conflict	UNP P0DTC2
C	1209	GLY	-	expression tag	UNP P0DTC2
C	1210	SER	-	expression tag	UNP P0DTC2
C	1211	GLY	-	expression tag	UNP P0DTC2
C	1212	TYR	-	expression tag	UNP P0DTC2
C	1213	ILE	-	expression tag	UNP P0DTC2
C	1214	PRO	-	expression tag	UNP P0DTC2
C	1215	GLU	-	expression tag	UNP P0DTC2
C	1216	ALA	-	expression tag	UNP P0DTC2
C	1217	PRO	-	expression tag	UNP P0DTC2
C	1218	ARG	-	expression tag	UNP P0DTC2
C	1219	ASP	-	expression tag	UNP P0DTC2
C	1220	GLY	-	expression tag	UNP P0DTC2
C	1221	GLN	-	expression tag	UNP P0DTC2
C	1222	ALA	-	expression tag	UNP P0DTC2
C	1223	TYR	-	expression tag	UNP P0DTC2
C	1224	VAL	-	expression tag	UNP P0DTC2
C	1225	ARG	-	expression tag	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
C	1226	LYS	-	expression tag	UNP P0DTC2
C	1227	ASP	-	expression tag	UNP P0DTC2
C	1228	GLY	-	expression tag	UNP P0DTC2
C	1229	GLU	-	expression tag	UNP P0DTC2
C	1230	TRP	-	expression tag	UNP P0DTC2
C	1231	VAL	-	expression tag	UNP P0DTC2
C	1232	LEU	-	expression tag	UNP P0DTC2
C	1233	LEU	-	expression tag	UNP P0DTC2
C	1234	SER	-	expression tag	UNP P0DTC2
C	1235	THR	-	expression tag	UNP P0DTC2
C	1236	PHE	-	expression tag	UNP P0DTC2
C	1237	LEU	-	expression tag	UNP P0DTC2
C	1238	GLY	-	expression tag	UNP P0DTC2
C	1239	ARG	-	expression tag	UNP P0DTC2
C	1240	SER	-	expression tag	UNP P0DTC2
C	1241	LEU	-	expression tag	UNP P0DTC2
C	1242	GLU	-	expression tag	UNP P0DTC2
C	1243	VAL	-	expression tag	UNP P0DTC2
C	1244	LEU	-	expression tag	UNP P0DTC2
C	1245	PHE	-	expression tag	UNP P0DTC2
C	1246	GLN	-	expression tag	UNP P0DTC2
C	1247	GLY	-	expression tag	UNP P0DTC2
C	1248	PRO	-	expression tag	UNP P0DTC2
C	1249	GLY	-	expression tag	UNP P0DTC2
C	1250	HIS	-	expression tag	UNP P0DTC2
C	1251	HIS	-	expression tag	UNP P0DTC2
C	1252	HIS	-	expression tag	UNP P0DTC2
C	1253	HIS	-	expression tag	UNP P0DTC2
C	1254	HIS	-	expression tag	UNP P0DTC2
C	1255	HIS	-	expression tag	UNP P0DTC2
C	1256	HIS	-	expression tag	UNP P0DTC2
C	1257	HIS	-	expression tag	UNP P0DTC2
C	1258	SER	-	expression tag	UNP P0DTC2
C	1259	ALA	-	expression tag	UNP P0DTC2
C	1260	TRP	-	expression tag	UNP P0DTC2
C	1261	SER	-	expression tag	UNP P0DTC2
C	1262	HIS	-	expression tag	UNP P0DTC2
C	1263	PRO	-	expression tag	UNP P0DTC2
C	1264	GLN	-	expression tag	UNP P0DTC2
C	1265	PHE	-	expression tag	UNP P0DTC2
C	1266	GLU	-	expression tag	UNP P0DTC2
C	1267	LYS	-	expression tag	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
C	1268	GLY	-	expression tag	UNP P0DTC2
C	1269	GLY	-	expression tag	UNP P0DTC2
C	1270	GLY	-	expression tag	UNP P0DTC2
C	1271	SER	-	expression tag	UNP P0DTC2
C	1272	GLY	-	expression tag	UNP P0DTC2
C	1273	GLY	-	expression tag	UNP P0DTC2
C	1274	GLY	-	expression tag	UNP P0DTC2
C	1275	GLY	-	expression tag	UNP P0DTC2
C	1276	SER	-	expression tag	UNP P0DTC2
C	1277	GLY	-	expression tag	UNP P0DTC2
C	1278	GLY	-	expression tag	UNP P0DTC2
C	1279	SER	-	expression tag	UNP P0DTC2
C	1280	ALA	-	expression tag	UNP P0DTC2
C	1281	TRP	-	expression tag	UNP P0DTC2
C	1282	SER	-	expression tag	UNP P0DTC2
C	1283	HIS	-	expression tag	UNP P0DTC2
C	1284	PRO	-	expression tag	UNP P0DTC2
C	1285	GLN	-	expression tag	UNP P0DTC2
C	1286	PHE	-	expression tag	UNP P0DTC2
C	1287	GLU	-	expression tag	UNP P0DTC2
C	1288	LYS	-	expression tag	UNP P0DTC2

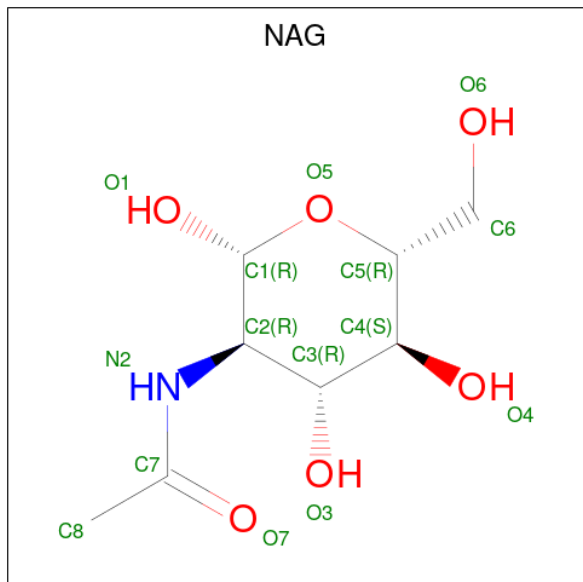
- Molecule 2 is a protein called P2B4 Heavy chain.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	H	123	Total	C	N	O	S	1	0
			923	574	163	181	5		
2	F	123	Total	C	N	O	S	1	0
			923	574	163	181	5		
2	G	123	Total	C	N	O	S	1	0
			923	574	163	181	5		

- Molecule 3 is a protein called P2B4 Light chain.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	L	107	Total	C	N	O	S	0	0
			815	519	133	160	3		
3	I	107	Total	C	N	O	S	0	0
			815	519	133	160	3		
3	J	107	Total	C	N	O	S	0	0
			815	519	133	160	3		

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



Mol	Chain	Residues	Atoms				AltConf
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	

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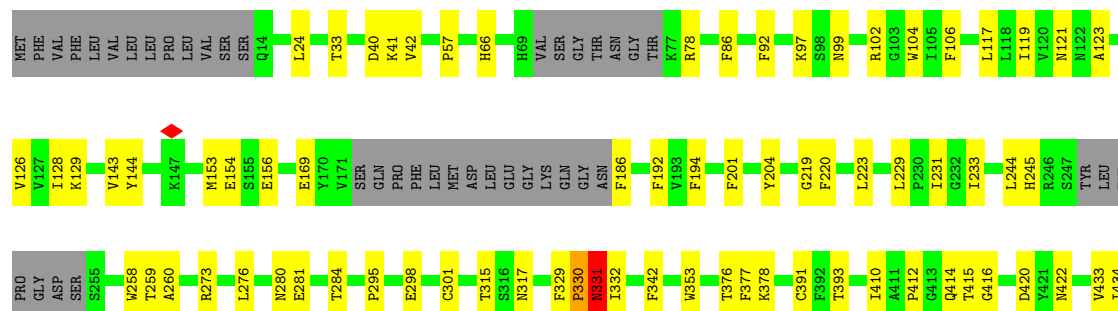
Mol	Chain	Residues	Atoms				AltConf
4	A	1	Total 14	C 8	N 1	O 5	0
4	A	1	Total 14	C 8	N 1	O 5	0
4	A	1	Total 14	C 8	N 1	O 5	0
4	A	1	Total 14	C 8	N 1	O 5	0
4	B	1	Total 14	C 8	N 1	O 5	0
4	B	1	Total 14	C 8	N 1	O 5	0
4	B	1	Total 14	C 8	N 1	O 5	0
4	B	1	Total 14	C 8	N 1	O 5	0
4	B	1	Total 14	C 8	N 1	O 5	0
4	B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

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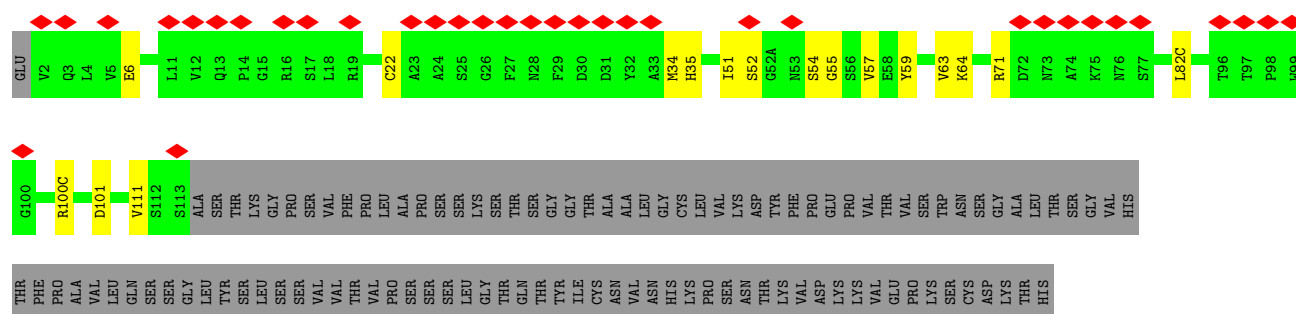
Mol	Chain	Residues	Atoms				AltConf
4	C	1	Total	C	N	O	0
			14	8	1	5	
4	C	1	Total	C	N	O	0
			14	8	1	5	
4	C	1	Total	C	N	O	0
			14	8	1	5	
4	C	1	Total	C	N	O	0
			14	8	1	5	
4	C	1	Total	C	N	O	0
			14	8	1	5	
4	C	1	Total	C	N	O	0
			14	8	1	5	
4	C	1	Total	C	N	O	0
			14	8	1	5	
4	C	1	Total	C	N	O	0
			14	8	1	5	
4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

Chain B: 68% 13% 19%

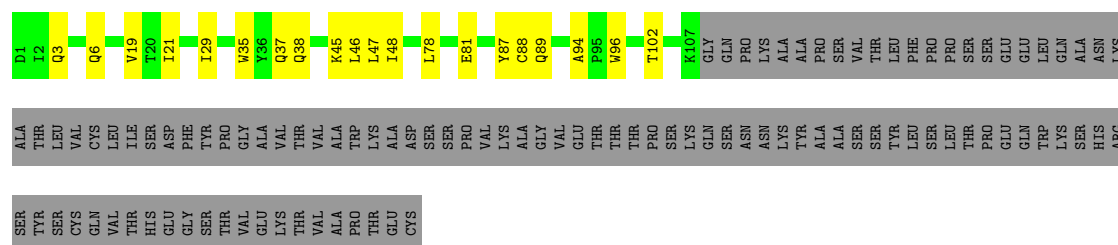


THR
HIS

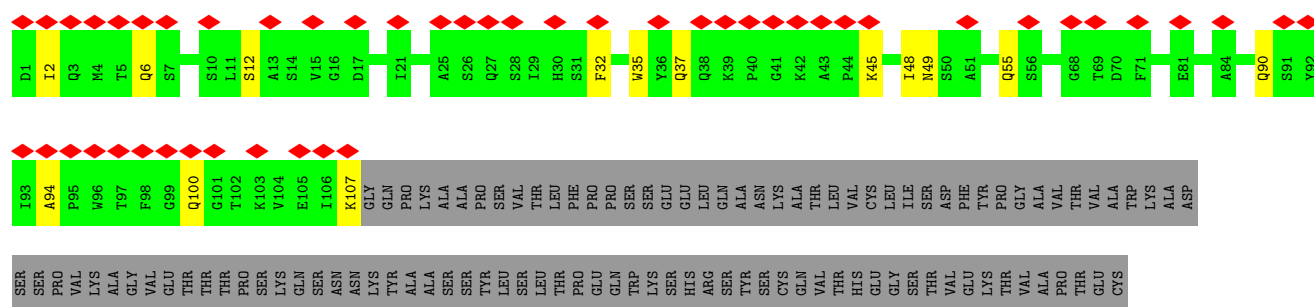
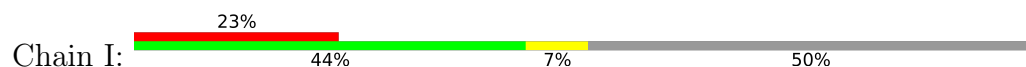
- Molecule 2: P2B4 Heavy chain



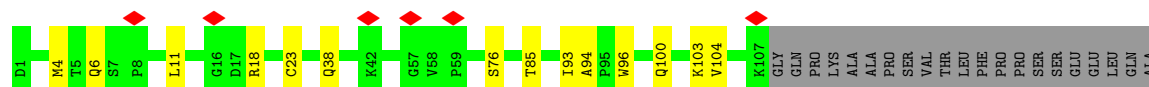
- Molecule 3: P2B4 Light chain



- Molecule 3: P2B4 Light chain



- Molecule 3: P2B4 Light chain



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	93569	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 ($e^-/\text{\AA}^2$)	42	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	0.443	Depositor
Minimum map value	-0.247	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	0.010	Depositor
Recommended contour level	0.02	Depositor
Map size ($\text{\AA}$)	365.19897, 365.19897, 365.19897	wwPDB
Map dimensions	392, 392, 392	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing ($\text{\AA}$)	0.93163, 0.93163, 0.93163	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	5/8187 (0.1%)	0.59	6/11137 (0.1%)
1	B	0.32	1/8396 (0.0%)	0.46	5/11419 (0.0%)
1	C	0.46	3/8286 (0.0%)	0.47	6/11272 (0.1%)
2	F	0.17	0/942	0.44	0/1275
2	G	0.15	0/942	0.40	0/1275
2	H	0.22	0/942	0.51	0/1275
3	I	0.11	0/837	0.35	0/1139
3	J	0.16	0/837	0.43	0/1139
3	L	0.22	0/837	0.46	0/1139
All	All	0.35	9/30206 (0.0%)	0.50	17/41070 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	1
1	B	0	1
3	I	0	1
3	J	0	1
3	L	0	1
All	All	0	5

All (9) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	987	PRO	N-CD	37.23	1.99	1.47
1	B	463	PRO	N-CD	22.41	1.79	1.47
1	A	322	PRO	CB-CG	19.09	2.45	1.49
1	A	322	PRO	CG-CD	-12.74	1.07	1.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	331	ASN	CG-OD1	-7.88	1.08	1.23
1	A	322	PRO	N-CA	-7.25	1.38	1.47
1	A	322	PRO	N-CD	6.87	1.57	1.47
1	C	986	PRO	C-N	5.74	1.38	1.33
1	A	321	GLN	C-N	5.30	1.46	1.33

All (17) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	322	PRO	CB-CG-CD	-33.14	0.05	106.10
1	C	987	PRO	CA-N-CD	-18.51	86.08	112.00
1	A	322	PRO	N-CA-CB	-15.62	86.84	103.25
1	B	463	PRO	CA-N-CD	-14.97	91.04	112.00
1	A	322	PRO	CA-N-CD	-14.26	92.03	112.00
1	C	987	PRO	N-CD-CG	-9.22	89.36	103.20
1	C	330	PRO	CA-C-N	7.39	133.42	123.00
1	C	330	PRO	C-N-CA	7.39	133.42	123.00
1	B	463	PRO	N-CD-CG	-6.84	92.95	103.20
1	A	321	GLN	C-N-CD	6.26	150.69	125.00
1	C	331	ASN	CB-CA-C	6.04	120.19	110.16
1	B	343	ASN	CA-CB-CG	6.03	118.63	112.60
1	A	322	PRO	N-CA-C	5.77	124.36	112.47
1	A	738	CYS	CA-CB-SG	5.72	127.56	114.40
1	C	331	ASN	CB-CG-ND2	5.57	124.76	116.40
1	B	343	ASN	CB-CA-C	-5.11	104.68	111.88
1	B	738	CYS	N-CA-C	5.09	117.23	111.02

There are no chirality outliers.

All (5) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	329	PHE	Peptide
1	B	1097	SER	Peptide
3	I	94	ALA	Peptide
3	J	94	ALA	Peptide
3	L	94	ALA	Peptide

5.2 Too-close contacts

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	7999	0	7769	125	0
1	B	8205	0	7983	169	0
1	C	8097	0	7876	124	0
2	F	923	0	878	14	0
2	G	923	0	878	13	0
2	H	923	0	878	20	0
3	I	815	0	789	7	0
3	J	815	0	789	12	0
3	L	815	0	789	20	0
4	A	224	0	208	6	0
4	B	182	0	169	9	0
4	C	210	0	195	2	0
All	All	30131	0	29201	470	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 8.

All (470) 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:343:ASN:HD21	4:B:1304:NAG:C1	1.45	1.30
1:B:463:PRO:N	1:B:463:PRO:CD	1.79	1.28
1:B:343:ASN:ND2	4:B:1304:NAG:C1	2.02	1.22
1:C:987:PRO:N	1:C:987:PRO:CD	1.99	1.18
1:B:287:ASP:OD2	1:B:306:PHE:CE2	2.07	1.07
2:G:51:ILE:HG12	2:G:57:VAL:HG22	1.42	1.00
1:B:85:PRO:HA	1:B:237:ARG:HD3	1.45	0.96
3:L:47:LEU:N	3:L:47:LEU:HD22	1.82	0.94
1:B:343:ASN:ND2	4:B:1304:NAG:O5	1.99	0.94
1:B:236:THR:HB	1:B:237:ARG:HH22	1.33	0.94
1:B:236:THR:HB	1:B:237:ARG:NH2	1.83	0.92
1:B:902:MET:HE1	1:B:1050:MET:HE1	1.52	0.91
1:C:987:PRO:HD2	1:C:988:GLU:CG	2.02	0.90
1:A:52:GLN:OE1	1:A:273:ARG:C	2.15	0.90
1:B:85:PRO:HA	1:B:237:ARG:CD	2.03	0.88
1:B:236:THR:O	1:B:237:ARG:NE	2.08	0.86
1:B:480:CYS:O	1:B:483:VAL:HG12	1.76	0.86
4:A:1312:NAG:H5	1:B:796:ASP:OD1	1.76	0.85
1:B:237:ARG:HH11	1:B:237:ARG:HG2	1.42	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:424:LYS:HG3	1:B:463:PRO:HD3	1.61	0.83
1:C:987:PRO:HD2	1:C:988:GLU:HG3	1.61	0.82
1:B:119:ILE:HG12	1:B:128:ILE:HD12	1.63	0.81
1:B:85:PRO:CA	1:B:237:ARG:HD3	2.10	0.80
1:B:1129:VAL:CG1	1:B:1132:ILE:HD11	2.12	0.80
1:B:343:ASN:CG	4:B:1304:NAG:C1	2.55	0.80
1:A:402:ILE:HD12	1:A:406:GLU:HG2	1.65	0.79
1:B:1129:VAL:HG12	1:B:1132:ILE:HD11	1.64	0.79
1:B:236:THR:C	1:B:237:ARG:CZ	2.55	0.78
1:B:552:LEU:HD12	1:B:585:LEU:HD11	1.65	0.77
1:B:119:ILE:HG23	1:B:128:ILE:CD1	2.14	0.76
2:G:51:ILE:CG1	2:G:57:VAL:HG22	2.14	0.76
1:B:85:PRO:HA	1:B:237:ARG:NE	2.01	0.75
1:B:236:THR:O	1:B:237:ARG:CZ	2.34	0.75
1:A:132:GLU:HB2	1:A:164:ASN:HB3	1.67	0.75
1:A:473:TYR:HD1	1:A:474:GLN:NE2	1.85	0.74
1:C:985:ASP:HB2	1:C:988:GLU:HG3	1.69	0.74
1:C:987:PRO:HD2	1:C:988:GLU:HG2	1.70	0.72
1:B:1129:VAL:HG22	1:C:917:TYR:CB	2.20	0.70
1:A:52:GLN:OE1	1:A:274:THR:N	2.24	0.70
3:L:45:LYS:HD2	3:L:47:LEU:HD11	1.73	0.70
1:B:236:THR:CB	1:B:237:ARG:NH2	2.54	0.70
2:H:45:LEU:HD11	3:L:38:GLN:HE21	1.56	0.69
1:B:237:ARG:HG2	1:B:237:ARG:NH1	2.04	0.69
1:C:329:PHE:HD2	1:C:330:PRO:HD2	1.57	0.69
1:C:987:PRO:CD	1:C:987:PRO:C	2.64	0.69
1:C:987:PRO:CD	1:C:988:GLU:HG3	2.23	0.69
1:C:919:ASN:HB3	1:C:922:LEU:HD23	1.75	0.68
1:B:85:PRO:HA	1:B:237:ARG:HE	1.59	0.68
1:B:1129:VAL:HG22	1:C:917:TYR:CG	2.28	0.68
3:L:3:GLN:N	3:L:3:GLN:OE1	2.27	0.68
1:B:119:ILE:HG23	1:B:128:ILE:HD11	1.75	0.67
1:B:236:THR:O	1:B:237:ARG:NH2	2.27	0.67
2:H:40:VAL:HG12	2:H:43:LYS:HE3	1.77	0.67
3:L:45:LYS:CD	3:L:47:LEU:HD11	2.25	0.66
1:B:287:ASP:OD2	1:B:306:PHE:CZ	2.48	0.66
1:C:897:PRO:HG2	1:C:900:MET:HE1	1.77	0.65
1:A:558:LYS:HE2	1:B:282:ASN:CG	2.21	0.65
1:B:738:CYS:HG	1:B:760:CYS:HG	0.65	0.65
1:B:309:GLU:N	1:B:309:GLU:OE2	2.29	0.65
1:C:987:PRO:HD2	1:C:988:GLU:N	2.13	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:104:TRP:HA	1:A:240:THR:HA	1.79	0.64
1:B:236:THR:C	1:B:237:ARG:NH2	2.56	0.64
1:B:796:ASP:O	1:B:796:ASP:OD2	2.15	0.64
1:A:129:LYS:HG2	1:A:133:PHE:CZ	2.32	0.64
1:C:24:LEU:HB2	1:C:78:ARG:HG3	1.79	0.63
2:H:13:GLN:OE1	2:H:14:PRO:HD2	1.97	0.63
3:L:47:LEU:HD22	3:L:47:LEU:H	1.63	0.63
1:C:778:THR:HG22	1:C:865:LEU:HD12	1.81	0.62
3:L:81:GLU:OE2	3:L:81:GLU:N	2.32	0.62
1:A:125:ASN:HB3	1:A:171:VAL:HG13	1.82	0.62
1:C:143:VAL:HG22	1:C:154:GLU:HG2	1.82	0.62
1:A:121:ASN:HA	1:A:126:VAL:HA	1.82	0.62
1:B:707:TYR:HE1	1:C:897:PRO:HA	1.65	0.62
1:A:922:LEU:HD11	4:A:1313:NAG:HN2	1.64	0.61
1:B:455:LEU:HD21	1:B:493:GLN:HB2	1.82	0.61
1:C:987:PRO:HD2	1:C:987:PRO:C	2.25	0.61
1:A:129:LYS:HD2	1:A:133:PHE:HE1	1.66	0.61
2:G:59:TYR:HB2	2:G:64:LYS:HD3	1.83	0.61
2:G:51:ILE:CD1	2:G:57:VAL:HG22	2.32	0.60
1:A:92:PHE:HB3	1:A:192:PHE:HB2	1.83	0.60
1:A:897:PRO:HG2	1:A:900:MET:HG3	1.82	0.60
1:B:236:THR:CA	1:B:237:ARG:NH2	2.65	0.60
1:A:93:ALA:HB3	1:A:266:TYR:HB2	1.83	0.60
1:A:117:LEU:HD13	1:A:130:VAL:HG22	1.84	0.60
1:B:902:MET:HB3	1:B:916:LEU:HD21	1.84	0.59
1:A:1102:TRP:H	1:A:1135:ASN:ND2	2.00	0.59
3:I:37:GLN:HB3	3:I:45:LYS:HB2	1.85	0.59
1:A:1107:ARG:HH12	1:B:894:LEU:HD23	1.68	0.59
1:C:119:ILE:HG22	1:C:128:ILE:HG23	1.85	0.58
1:C:410:ILE:HD12	1:C:433:VAL:HG21	1.85	0.58
2:H:36:TRP:HD1	2:H:49:SER:HB3	1.69	0.58
2:F:68:ALA:HB3	2:F:81:GLU:HB3	1.85	0.58
1:C:342:PHE:HZ	1:C:434:ILE:HG12	1.69	0.58
1:B:393:THR:HA	1:B:522:ALA:HA	1.84	0.58
1:A:105:ILE:HA	1:A:118:LEU:HA	1.85	0.58
1:A:645:THR:HB	1:A:670:ILE:HD13	1.85	0.57
1:B:351:TYR:HE2	1:B:452:LEU:HB3	1.68	0.57
1:B:902:MET:HE1	1:B:1050:MET:CE	2.32	0.57
1:C:462:LYS:HG3	1:C:465:GLU:HG3	1.85	0.57
1:A:737:ASP:OD2	1:C:317:ASN:ND2	2.38	0.57
2:H:40:VAL:CG1	2:H:43:LYS:HE3	2.34	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:357:ARG:HH22	1:B:200:TYR:HE1	1.53	0.57
2:F:87:THR:HG23	2:F:110:THR:HA	1.87	0.57
1:B:279:TYR:HB3	1:B:283:GLY:HA2	1.86	0.57
1:C:598:ILE:HG23	1:C:664:ILE:HD13	1.87	0.57
1:A:912:THR:OG1	1:A:1106:GLN:NE2	2.38	0.56
2:H:43:LYS:HD2	2:H:44:GLY:N	2.20	0.56
1:B:1129:VAL:HG22	1:C:917:TYR:HB3	1.86	0.56
1:C:722:VAL:HG22	1:C:930:ALA:HB1	1.87	0.56
1:B:643:PHE:CZ	1:B:645:THR:HG22	2.41	0.56
1:C:295:PRO:HB2	1:C:608:VAL:HG11	1.88	0.56
1:C:451:TYR:HB3	1:C:495:TYR:HD1	1.70	0.56
1:A:558:LYS:HE2	1:B:282:ASN:ND2	2.20	0.56
4:A:1306:NAG:H82	1:C:558:LYS:HG2	1.87	0.56
1:B:1080:ALA:HB3	1:B:1132:ILE:HD12	1.86	0.56
1:C:905:ARG:NH1	1:C:1050:MET:SD	2.78	0.56
1:A:1116:THR:HG22	1:A:1118:ASP:H	1.71	0.56
1:B:725:GLU:OE2	1:B:1028:LYS:NZ	2.33	0.56
1:B:1129:VAL:HG11	1:B:1132:ILE:HD11	1.86	0.56
1:B:480:CYS:O	1:B:483:VAL:CG1	2.50	0.56
1:A:332:ILE:HD12	4:A:1307:NAG:H62	1.88	0.55
1:B:426:PRO:HA	1:B:463:PRO:HG3	1.86	0.55
1:B:607:GLN:HB3	1:B:692:ILE:HD11	1.89	0.55
1:C:987:PRO:CD	1:C:988:GLU:N	2.69	0.55
2:G:101:ASP:N	2:G:101:ASP:OD1	2.37	0.55
1:A:96:GLU:OE2	1:A:99:ASN:N	2.38	0.55
1:C:342:PHE:CZ	1:C:434:ILE:HG12	2.42	0.55
1:A:452:LEU:HB3	1:A:492:LEU:HG	1.88	0.55
2:H:12:VAL:HG23	2:H:16:ARG:HH21	1.70	0.55
1:A:201:PHE:HB3	1:A:229:LEU:HB2	1.89	0.55
1:B:932:GLY:O	1:B:936:ASP:OD1	2.25	0.55
1:C:376:THR:OG1	1:C:378:LYS:NZ	2.39	0.55
1:B:236:THR:HB	1:B:237:ARG:CZ	2.36	0.55
2:H:94:LYS:H	2:H:102:VAL:HG22	1.72	0.54
1:A:310:LYS:HG3	1:A:600:PRO:HA	1.88	0.54
1:C:506:GLN:NE2	1:C:507:PRO:O	2.40	0.54
2:F:20:LEU:HD11	2:F:80:LEU:HD23	1.89	0.54
2:F:69:MET:HE3	2:F:78:LEU:HD11	1.90	0.54
1:A:346:ARG:NH2	1:A:442:ASP:OD2	2.40	0.54
1:C:391:CYS:HB2	1:C:525:CYS:HA	1.89	0.54
2:F:101:ASP:OD1	2:F:101:ASP:N	2.41	0.54
1:A:780:GLU:O	1:A:784:GLN:NE2	2.41	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:707:TYR:CE1	1:C:897:PRO:HA	2.43	0.54
1:C:329:PHE:HD2	1:C:330:PRO:CD	2.19	0.54
2:H:4:LEU:O	2:H:105:GLN:NE2	2.41	0.54
1:B:566:GLY:HA2	1:C:42:VAL:HG23	1.89	0.54
1:A:193:VAL:HG23	1:A:223:LEU:HD22	1.89	0.54
1:A:598:ILE:HG23	1:A:664:ILE:HG21	1.90	0.53
1:A:809:PRO:HA	1:A:814:LYS:HD2	1.89	0.53
1:C:914:ASN:ND2	1:C:1111:GLU:OE2	2.40	0.53
2:G:51:ILE:HG22	2:G:71:ARG:HH21	1.73	0.53
1:A:374:PHE:HD1	1:A:436:TRP:HB3	1.73	0.53
1:C:353:TRP:O	1:C:466:ARG:NH1	2.41	0.53
1:A:755:GLN:O	1:C:968:SER:OG	2.25	0.53
1:A:811:LYS:NZ	1:A:820:ASP:OD2	2.41	0.53
1:B:85:PRO:CA	1:B:237:ARG:HE	2.22	0.53
1:B:351:TYR:HE2	1:B:452:LEU:CB	2.22	0.53
3:J:103:LYS:NZ	3:J:104:VAL:O	2.42	0.53
1:B:1101:HIS:CE1	4:B:1312:NAG:H5	2.44	0.53
1:C:329:PHE:CD2	1:C:330:PRO:HD2	2.42	0.53
2:G:54:SER:OG	2:G:55:GLY:N	2.42	0.53
1:A:742:ILE:O	1:A:1000:ARG:NH1	2.41	0.53
1:B:355:ARG:HD2	1:B:396:TYR:HD2	1.74	0.53
2:F:34:MET:HE3	2:F:78:LEU:HD22	1.91	0.53
1:A:204:TYR:HB3	1:A:223:LEU:HB3	1.91	0.53
1:A:644:GLN:NE2	1:A:645:THR:O	2.41	0.53
1:B:886:TRP:HB3	1:B:1035:GLY:HA2	1.90	0.52
1:A:353:TRP:HZ3	1:A:355:ARG:HD2	1.73	0.52
1:B:236:THR:C	1:B:237:ARG:NE	2.66	0.52
1:B:603:ASN:O	1:B:603:ASN:ND2	2.43	0.52
1:C:816:SER:OG	1:C:817:PHE:N	2.42	0.52
1:A:819:GLU:HA	1:A:822:LEU:HD12	1.92	0.52
1:B:441:LEU:HB3	1:B:509:ARG:HH21	1.73	0.52
1:C:129:LYS:HG2	1:C:169:GLU:HA	1.91	0.52
1:C:733:LYS:HE3	1:C:771:ALA:HB1	1.91	0.52
1:C:92:PHE:HB3	1:C:192:PHE:HB2	1.91	0.52
1:C:984:LEU:HB3	1:C:989:ALA:HB2	1.91	0.52
2:H:3:GLN:OE1	2:H:105:GLN:NE2	2.43	0.52
2:H:69:MET:HE3	2:H:70:SER:N	2.25	0.52
3:I:49:ASN:HB2	3:I:55:GLN:NE2	2.24	0.52
1:B:393:THR:OG1	1:B:394:ASN:N	2.43	0.52
1:B:1013:ILE:HG21	1:C:1012:LEU:HG	1.91	0.52
1:C:104:TRP:HB2	1:C:106:PHE:HE1	1.74	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:50:SER:HB3	1:B:276:LEU:HD12	1.91	0.52
1:C:601:GLY:O	1:C:604:THR:OG1	2.24	0.52
2:H:68:ALA:HB3	2:H:81:GLU:HB3	1.92	0.52
3:L:37:GLN:HB3	3:L:45:LYS:HE3	1.92	0.52
1:C:1009:THR:O	1:C:1013:ILE:HG13	2.10	0.52
1:B:127:VAL:O	1:B:128:ILE:HD13	2.10	0.51
1:B:317:ASN:ND2	1:C:737:ASP:OD2	2.44	0.51
1:A:117:LEU:HG	1:A:119:ILE:HG12	1.92	0.51
1:A:856:ASN:HD21	1:A:963:VAL:HG12	1.74	0.51
1:A:52:GLN:OE1	1:A:274:THR:CA	2.59	0.51
1:A:719:THR:HG23	1:A:1070:ALA:HB2	1.91	0.51
1:A:27:ALA:HB3	1:A:64:TRP:HB3	1.91	0.51
1:B:343:ASN:OD1	4:B:1304:NAG:C1	2.57	0.51
1:B:68:ILE:HG22	1:B:262:ALA:HA	1.92	0.51
1:B:213:VAL:HG12	1:B:214:ARG:HG2	1.92	0.51
1:B:738:CYS:CB	1:B:760:CYS:SG	2.98	0.51
1:B:738:CYS:HB2	1:B:760:CYS:SG	2.50	0.51
1:A:330:PRO:HG3	1:A:544:ASN:HA	1.91	0.51
3:L:47:LEU:C	3:L:48:ILE:HD13	2.36	0.51
1:A:62:VAL:HG12	1:A:268:GLY:HA2	1.93	0.51
1:C:40:ASP:N	1:C:40:ASP:OD1	2.44	0.51
1:C:898:PHE:HA	1:C:901:GLN:HB3	1.91	0.51
2:G:52:SER:OG	2:G:100(C):ARG:NH1	2.44	0.51
1:A:1107:ARG:HH22	1:B:894:LEU:HB3	1.74	0.51
3:L:19:VAL:HG12	3:L:78:LEU:HD11	1.93	0.51
2:F:32:TYR:HA	2:F:98:PRO:HG3	1.92	0.51
1:B:85:PRO:CA	1:B:237:ARG:CD	2.76	0.50
1:B:415:THR:OG1	1:B:416:GLY:N	2.44	0.50
1:C:725:GLU:OE1	1:C:1064:HIS:NE2	2.44	0.50
2:G:6:GLU:HG3	2:G:22:CYS:HB3	1.92	0.50
1:B:712:ILE:HD11	1:B:1094:VAL:HG21	1.93	0.50
1:C:900:MET:SD	1:C:900:MET:N	2.83	0.50
3:J:6:GLN:O	3:J:100:GLN:NE2	2.44	0.50
1:A:893:ALA:HB1	1:C:705:VAL:HG23	1.93	0.50
1:B:1142:GLN:HG3	1:B:1143:PRO:HD3	1.92	0.50
1:C:909:ILE:O	1:C:1108:ASN:ND2	2.45	0.50
3:J:93:ILE:O	3:J:96:TRP:NE1	2.44	0.50
1:A:725:GLU:OE2	1:A:1028:LYS:NZ	2.39	0.50
3:L:47:LEU:N	3:L:47:LEU:CD2	2.61	0.50
1:A:729:VAL:HG21	1:A:781:VAL:HG11	1.94	0.50
1:B:736:VAL:HG21	1:B:1004:LEU:HD11	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:L:35:TRP:HZ3	3:L:88:CYS:SG	2.35	0.50
2:G:59:TYR:HB3	2:G:63:VAL:HG23	1.93	0.50
1:B:483:VAL:HG22	1:B:484:GLU:N	2.27	0.50
1:B:738:CYS:SG	1:B:739:THR:N	2.83	0.50
1:C:204:TYR:HB3	1:C:223:LEU:HG	1.94	0.50
1:A:711:SER:HB2	1:B:895:GLN:HE21	1.76	0.50
1:A:1115:ILE:HG22	1:A:1137:VAL:HG13	1.93	0.50
1:B:725:GLU:OE1	1:B:1064:HIS:NE2	2.39	0.50
1:A:364:ASP:HA	1:A:527:PRO:HG3	1.93	0.49
1:A:473:TYR:HD1	1:A:474:GLN:HE21	1.58	0.49
1:C:980:ILE:HD11	1:C:992:GLN:HB2	1.94	0.49
1:B:125:ASN:ND2	1:B:172:SER:O	2.45	0.49
1:B:357:ARG:C	1:B:358:ILE:HD13	2.37	0.49
1:B:811:LYS:NZ	1:B:813:SER:O	2.43	0.49
1:A:454:ARG:NH2	1:A:469:SER:O	2.46	0.49
1:C:331:ASN:C	1:C:331:ASN:OD1	2.56	0.49
1:A:1073:LYS:HG3	1:A:1075:PHE:CE2	2.48	0.49
1:B:462:LYS:HG3	1:B:465:GLU:HG3	1.93	0.49
1:C:201:PHE:HB3	1:C:229:LEU:HB2	1.95	0.49
1:A:991:VAL:HG12	1:C:995:ARG:NH2	2.27	0.49
1:C:244:LEU:HB3	1:C:258:TRP:HB3	1.94	0.49
1:A:196:ASN:HD21	1:A:235:ILE:HD12	1.78	0.49
1:A:473:TYR:CD1	1:A:474:GLN:N	2.81	0.49
1:B:246:ARG:NH1	1:B:257:GLY:O	2.44	0.49
1:B:353:TRP:O	1:B:466:ARG:NH1	2.46	0.49
1:A:40:ASP:OD1	1:A:40:ASP:N	2.45	0.49
1:A:106:PHE:HB3	1:A:235:ILE:HD13	1.94	0.49
1:A:883:THR:HB	1:C:707:TYR:HB2	1.95	0.49
1:B:343:ASN:OD1	4:B:1304:NAG:H2	2.12	0.49
1:C:725:GLU:OE2	1:C:1028:LYS:NZ	2.38	0.49
1:B:332:ILE:HG12	1:B:580:GLN:HA	1.95	0.48
1:C:415:THR:OG1	1:C:416:GLY:N	2.45	0.48
2:H:96:THR:O	2:H:96:THR:OG1	2.22	0.48
1:A:991:VAL:HG12	1:C:995:ARG:HH22	1.77	0.48
1:A:1098:ASN:HB3	1:A:1103:PHE:HZ	1.79	0.48
1:A:1139:ASP:N	1:A:1142:GLN:HE22	2.11	0.48
1:B:643:PHE:CE2	1:B:645:THR:HG22	2.49	0.48
1:B:720:ILE:HD12	1:B:923:ILE:HB	1.96	0.48
3:J:4:MET:HE1	3:J:23:CYS:HB2	1.94	0.48
1:A:133:PHE:HB2	1:A:135:PHE:CE1	2.48	0.48
1:B:443:SER:O	1:B:443:SER:OG	2.32	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:809:PRO:HA	1:B:814:LYS:HD2	1.95	0.48
1:B:106:PHE:O	1:B:116:SER:OG	2.29	0.48
1:B:236:THR:CB	1:B:237:ARG:CZ	2.91	0.48
2:H:12:VAL:HB	2:H:18:LEU:HD13	1.95	0.48
1:A:29:THR:HA	4:A:1302:NAG:H82	1.96	0.48
1:A:188:ASN:HB3	1:A:190:ARG:HE	1.79	0.48
1:A:349:SER:OG	1:A:452:LEU:O	2.32	0.48
1:A:969:ASN:OD1	1:A:972:ALA:N	2.47	0.48
1:C:1077:THR:HG22	1:C:1096:VAL:HG12	1.95	0.48
1:B:902:MET:CE	1:B:1050:MET:HE1	2.35	0.48
1:A:52:GLN:OE1	1:A:273:ARG:O	2.32	0.47
1:B:808:ASP:HB3	1:B:811:LYS:HG2	1.94	0.47
1:B:882:ILE:HG23	1:B:883:THR:HG23	1.94	0.47
1:C:86:PHE:HZ	1:C:194:PHE:HB2	1.79	0.47
3:I:35:TRP:HB2	3:I:48:ILE:HB	1.96	0.47
1:C:948:LEU:HD21	1:C:1059:GLY:HA3	1.95	0.47
1:B:575:ALA:CB	1:B:586:ASP:OD2	2.63	0.47
1:B:643:PHE:CD1	1:B:644:GLN:N	2.82	0.47
2:G:82(C):LEU:HD11	2:G:111:VAL:HG21	1.95	0.47
1:C:377:PHE:HE2	1:C:434:ILE:HD13	1.79	0.47
1:C:422:ASN:HD21	1:C:454:ARG:H	1.63	0.47
1:C:553:THR:HG23	1:C:586:ASP:HB3	1.95	0.47
1:B:142:GLY:HA3	1:B:156:GLU:HG2	1.96	0.47
1:C:153:MET:HA	1:C:153:MET:HE2	1.96	0.47
1:C:599:THR:HB	1:C:608:VAL:HG22	1.97	0.47
1:A:129:LYS:HG2	1:A:133:PHE:CE1	2.49	0.47
1:C:33:THR:OG1	1:C:219:GLY:O	2.33	0.47
1:C:99:ASN:O	1:C:102:ARG:NE	2.45	0.47
1:C:718:PHE:HA	1:C:1069:PRO:HA	1.96	0.47
1:C:97:LYS:HD2	1:C:186:PHE:HA	1.97	0.47
1:C:760:CYS:HA	1:C:763:LEU:HG	1.96	0.47
1:C:802:PHE:HB3	1:C:806:LEU:HD23	1.97	0.47
2:G:51:ILE:CD1	2:G:57:VAL:CG2	2.93	0.47
1:B:66:HIS:HB3	1:B:68:ILE:HG12	1.97	0.46
2:F:8:GLY:HA3	2:F:20:LEU:HA	1.96	0.46
1:A:129:LYS:CD	1:A:133:PHE:HE1	2.27	0.46
1:B:738:CYS:SG	1:B:753:LEU:HD21	2.55	0.46
1:B:936:ASP:OD1	1:B:936:ASP:N	2.48	0.46
2:F:49:SER:OG	2:F:50:GLY:N	2.48	0.46
1:A:553:THR:OG1	1:A:586:ASP:O	2.28	0.46
1:B:21:ARG:NE	1:B:79:PHE:O	2.48	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:598:ILE:HB	1:B:609:ALA:HB3	1.97	0.46
1:C:66:HIS:HB2	1:C:78:ARG:HD2	1.98	0.46
1:C:412:PRO:O	1:C:414:GLN:NE2	2.48	0.46
3:I:32:PHE:O	3:I:90:GLN:NE2	2.44	0.46
1:A:557:LYS:HB2	1:A:584:ILE:HG21	1.96	0.46
1:B:85:PRO:HA	1:B:237:ARG:HA	1.96	0.46
1:B:85:PRO:CA	1:B:237:ARG:NE	2.76	0.46
1:B:424:LYS:CG	1:B:463:PRO:HD3	2.40	0.46
1:B:1084:ASP:N	1:B:1084:ASP:OD1	2.47	0.46
3:L:35:TRP:CZ3	3:L:88:CYS:SG	3.08	0.46
1:A:339:GLY:HA2	4:A:1308:NAG:O7	2.15	0.46
1:C:280:ASN:OD1	1:C:284:THR:N	2.44	0.46
3:L:38:GLN:HG3	3:L:87:TYR:HE2	1.80	0.46
1:A:122:ASN:HD22	1:A:125:ASN:HD22	1.64	0.46
1:C:762:GLN:HE21	1:C:762:GLN:HB2	1.54	0.46
1:A:1084:ASP:OD1	1:A:1084:ASP:N	2.47	0.46
1:B:985:ASP:HB3	1:B:987:PRO:HD2	1.98	0.46
1:C:714:ILE:HG22	1:C:1107:ARG:HH12	1.80	0.46
1:B:444:LYS:HE3	1:B:444:LYS:HB3	1.75	0.46
1:C:144:TYR:HE2	1:C:156:GLU:HB2	1.80	0.46
1:C:1052:PHE:HB2	1:C:1063:LEU:HB2	1.97	0.46
1:A:41:LYS:HB3	1:C:563:GLN:HA	1.98	0.45
1:B:483:VAL:HG22	1:B:485:GLY:H	1.81	0.45
1:A:708:SER:OG	1:A:709:ASN:N	2.50	0.45
1:A:877:LEU:HD23	1:A:1034:LEU:HD21	1.98	0.45
1:B:40:ASP:OD1	1:B:40:ASP:N	2.49	0.45
1:B:643:PHE:HE2	1:B:670:ILE:HG21	1.80	0.45
1:C:743:CYS:HB3	1:C:749:CYS:HB3	1.72	0.45
1:C:121:ASN:HA	1:C:126:VAL:HA	1.99	0.45
1:A:473:TYR:CG	1:A:474:GLN:N	2.85	0.45
1:C:452:LEU:HD12	1:C:492:LEU:HB3	1.98	0.45
1:A:384:PRO:HD2	1:B:985:ASP:OD2	2.17	0.45
1:B:643:PHE:CD1	1:B:643:PHE:C	2.94	0.45
1:C:393:THR:HA	1:C:522:ALA:HA	1.98	0.45
1:A:671:CYS:SG	1:A:697:MET:HE3	2.56	0.45
1:A:976:VAL:HB	1:A:979:ASP:HB2	1.99	0.45
1:C:661:GLU:O	1:C:695:TYR:OH	2.29	0.45
2:H:99:TRP:HD1	2:H:100(A):ILE:H	1.65	0.45
1:A:151:SER:HB2	1:A:153:MET:HE2	1.99	0.45
1:B:483:VAL:HG22	1:B:485:GLY:N	2.32	0.45
1:B:598:ILE:HG23	1:B:664:ILE:HG21	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:965:GLN:NE2	1:C:756:TYR:O	2.49	0.45
1:B:328:ARG:O	1:B:544:ASN:N	2.50	0.45
1:C:281:GLU:HG2	4:C:1304:NAG:H82	1.99	0.45
1:C:420:ASP:OD1	1:C:420:ASP:N	2.48	0.45
2:F:59:TYR:HB3	2:F:63:VAL:HG23	1.99	0.45
1:A:33:THR:HB	1:A:220:PHE:HD1	1.83	0.44
2:H:89:LEU:HA	2:H:108:THR:HA	1.98	0.44
1:B:777:ASN:OD1	1:B:1019:ARG:NH1	2.50	0.44
3:J:11:LEU:HD23	3:J:11:LEU:HA	1.89	0.44
1:A:973:ILE:HD12	1:A:983:ARG:HH12	1.82	0.44
1:B:99:ASN:O	1:B:102:ARG:NE	2.46	0.44
2:F:36:TRP:CZ3	2:F:90:TYR:HB3	2.52	0.44
1:A:1047:TYR:HB2	1:A:1067:TYR:HB3	1.99	0.44
1:A:105:ILE:HG23	1:A:118:LEU:HB3	2.00	0.44
1:A:492:LEU:HD12	1:A:492:LEU:HA	1.84	0.44
1:B:412:PRO:O	1:B:414:GLN:NE2	2.50	0.44
1:B:1091:ARG:HG2	1:B:1121:PHE:HD1	1.83	0.44
1:C:693:ILE:HD12	1:C:693:ILE:HA	1.81	0.44
3:J:18:ARG:HH21	3:J:76:SER:HA	1.82	0.44
1:A:725:GLU:OE1	1:A:1064:HIS:NE2	2.50	0.44
1:C:791:THR:HG21	1:C:806:LEU:HD11	2.00	0.44
2:H:14:PRO:HD3	2:H:111:VAL:HG12	2.00	0.44
2:H:99:TRP:CD1	2:H:100(A):ILE:H	2.36	0.44
3:I:6:GLN:O	3:I:100:GLN:NE2	2.51	0.44
3:I:12:SER:HB3	3:I:107:LYS:HB3	2.00	0.44
1:A:449:TYR:HD2	1:A:496:GLY:HA2	1.82	0.44
1:A:905:ARG:NE	1:A:1050:MET:HB3	2.33	0.44
1:B:584:ILE:HD12	1:B:584:ILE:HA	1.81	0.44
1:B:604:THR:HA	4:B:1305:NAG:H83	1.98	0.44
1:A:658:ASN:OD1	1:A:658:ASN:N	2.48	0.44
1:B:195:LYS:HD2	1:B:195:LYS:HA	1.70	0.44
1:B:299:THR:HG21	1:B:599:THR:HG21	1.99	0.44
1:A:864:LEU:HD22	1:C:665:PRO:HB3	1.99	0.44
1:B:128:ILE:HG12	1:B:170:TYR:HD2	1.82	0.44
1:B:343:ASN:OD1	4:B:1304:NAG:C2	2.66	0.43
1:B:391:CYS:HA	1:B:525:CYS:HA	2.00	0.43
1:B:426:PRO:HG2	1:B:429:PHE:HB2	1.98	0.43
1:B:575:ALA:HB2	1:B:586:ASP:OD2	2.18	0.43
2:F:34:MET:CE	2:F:78:LEU:HD22	2.48	0.43
1:A:611:LEU:HD13	1:A:666:ILE:HD12	2.00	0.43
1:C:244:LEU:HD23	1:C:260:ALA:HB2	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:L:29:ILE:HD12	3:L:29:ILE:HA	1.87	0.43
1:A:317:ASN:ND2	1:B:737:ASP:OD1	2.51	0.43
1:C:786:LYS:H	1:C:786:LYS:HG2	1.54	0.43
1:B:281:GLU:OE1	1:B:282:ASN:OD1	2.36	0.43
1:B:68:ILE:HG13	1:B:78:ARG:H	1.84	0.43
1:B:739:THR:OG1	1:B:740:MET:SD	2.77	0.43
1:C:869:MET:HA	1:C:872:GLN:HB2	2.01	0.43
1:A:111:ASP:OD1	1:A:111:ASP:N	2.50	0.43
1:B:346:ARG:HA	1:B:346:ARG:NE	2.34	0.43
1:C:1083:HIS:HB2	1:C:1137:VAL:HG23	2.00	0.43
2:H:46:GLU:N	2:H:46:GLU:OE2	2.51	0.43
3:L:6:GLN:OE1	3:L:102:THR:OG1	2.31	0.43
3:J:11:LEU:N	3:J:103:LYS:O	2.49	0.43
1:A:280:ASN:ND2	1:A:284:THR:OG1	2.48	0.43
1:C:129:LYS:HE2	1:C:129:LYS:HB3	1.87	0.43
1:A:129:LYS:HG2	1:A:133:PHE:HZ	1.81	0.43
1:A:1114:ILE:HD12	1:A:1114:ILE:HA	1.90	0.43
2:F:95:GLU:HB3	2:F:100(F):GLY:HA3	2.00	0.43
1:A:971:GLY:HA3	1:A:995:ARG:HH21	1.84	0.42
1:A:1013:ILE:HD13	1:B:1012:LEU:HB3	2.01	0.42
1:C:33:THR:HB	1:C:220:PHE:HD1	1.83	0.42
1:C:276:LEU:HD11	1:C:301:CYS:HA	2.01	0.42
1:A:584:ILE:HD13	1:A:584:ILE:HA	1.80	0.42
1:B:106:PHE:HB2	1:B:117:LEU:HB3	2.00	0.42
1:C:231:ILE:HG13	1:C:233:ILE:H	1.84	0.42
3:I:2:ILE:HG12	3:I:90:GLN:HB3	2.01	0.42
1:A:790:LYS:NZ	1:C:702:GLU:OE2	2.48	0.42
1:C:1047:TYR:HB2	1:C:1067:TYR:HB3	2.01	0.42
1:B:825:LYS:HE3	1:B:942:ALA:HA	2.01	0.42
2:G:34:MET:SD	2:G:35:HIS:N	2.93	0.42
1:A:1031:GLU:HA	1:C:1040:VAL:HG23	2.02	0.42
1:B:483:VAL:CG2	1:B:484:GLU:N	2.82	0.42
3:J:93:ILE:H	3:J:96:TRP:HE1	1.68	0.42
3:J:103:LYS:HA	3:J:103:LYS:HD2	1.77	0.42
1:A:34:ARG:HH21	1:A:217:PRO:HB2	1.84	0.42
1:A:988:GLU:OE1	1:A:988:GLU:N	2.53	0.42
1:B:856:ASN:OD1	1:B:856:ASN:N	2.52	0.42
1:B:331:ASN:HD22	1:B:331:ASN:HA	1.59	0.42
1:B:697:MET:SD	1:C:869:MET:HE1	2.59	0.42
1:C:298:GLU:HG2	1:C:315:THR:HB	2.01	0.42
1:C:864:LEU:HD12	1:C:864:LEU:HA	1.88	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:28:TYR:HB3	1:A:61:ASN:HD22	1.83	0.42
1:B:335:LEU:HD12	1:B:336:CYS:H	1.85	0.42
1:B:358:ILE:HB	1:B:395:VAL:CG1	2.50	0.42
1:A:565:PHE:N	1:A:577:ARG:HH21	2.17	0.41
1:C:245:HIS:ND1	1:C:259:THR:O	2.53	0.41
1:C:1102:TRP:HB2	1:C:1135:ASN:HD22	1.85	0.41
3:J:38:GLN:HE21	3:J:85:THR:HG23	1.85	0.41
1:A:52:GLN:OE1	1:A:274:THR:HA	2.20	0.41
1:A:126:VAL:HG23	1:A:172:SER:OG	2.19	0.41
1:B:767:LEU:HD23	1:B:767:LEU:HA	1.93	0.41
1:B:934:ILE:H	1:B:934:ILE:HG13	1.71	0.41
1:C:57:PRO:HB3	1:C:273:ARG:NH1	2.35	0.41
3:J:6:GLN:H	3:J:100:GLN:HE22	1.69	0.41
1:C:331:ASN:OD1	4:C:1305:NAG:H2	2.20	0.41
3:J:93:ILE:N	3:J:96:TRP:HE1	2.18	0.41
1:C:106:PHE:HB2	1:C:117:LEU:HB3	2.03	0.41
2:H:36:TRP:CD1	2:H:49:SER:HB3	2.53	0.41
1:A:434:ILE:HD12	1:A:434:ILE:HA	1.94	0.41
3:L:35:TRP:O	3:L:47:LEU:HD23	2.20	0.41
2:F:69:MET:HE1	2:F:78:LEU:HD21	2.01	0.41
1:A:386:LYS:NZ	1:B:984:LEU:O	2.50	0.41
3:L:21:ILE:HD13	3:L:21:ILE:HA	1.89	0.41
1:A:216:LEU:HA	1:A:217:PRO:HD3	1.92	0.40
1:A:412:PRO:O	1:A:414:GLN:NE2	2.54	0.40
1:B:580:GLN:OE1	1:B:581:THR:OG1	2.37	0.40
1:B:816:SER:OG	1:B:817:PHE:N	2.54	0.40
1:B:913:GLN:H	1:B:913:GLN:HG2	1.57	0.40
1:A:726:ILE:HD11	1:A:948:LEU:HD21	2.02	0.40
1:B:563:GLN:HA	1:C:41:LYS:HB3	2.02	0.40
1:B:770:ILE:HD11	1:B:1012:LEU:HD23	2.02	0.40
1:B:212:LEU:HD23	1:B:212:LEU:HA	1.96	0.40
1:B:912:THR:OG1	1:B:1106:GLN:OE1	2.28	0.40
1:C:813:SER:OG	1:C:814:LYS:N	2.53	0.40
3:L:46:LEU:C	3:L:47:LEU:HD22	2.45	0.40
1:A:353:TRP:O	1:A:466:ARG:NH2	2.54	0.40
1:A:816:SER:OG	1:A:817:PHE:N	2.55	0.40
1:B:85:PRO:N	1:B:237:ARG:HD3	2.35	0.40
1:B:1006:THR:HG23	1:C:1005:GLN:HE22	1.87	0.40
1:C:856:ASN:OD1	1:C:966:LEU:HD21	2.20	0.40
3:L:89:GLN:OE1	3:L:96:TRP:HB3	2.22	0.40
1:A:319:ARG:HD3	1:B:740:MET:HE1	2.03	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	943/1288 (73%)	891 (94%)	47 (5%)	5 (0%)	24	56
1	B	1031/1288 (80%)	980 (95%)	51 (5%)	0	100	100
1	C	1017/1288 (79%)	975 (96%)	40 (4%)	2 (0%)	43	72
2	F	121/231 (52%)	113 (93%)	8 (7%)	0	100	100
2	G	121/231 (52%)	112 (93%)	9 (7%)	0	100	100
2	H	121/231 (52%)	111 (92%)	10 (8%)	0	100	100
3	I	105/212 (50%)	97 (92%)	8 (8%)	0	100	100
3	J	105/212 (50%)	98 (93%)	7 (7%)	0	100	100
3	L	105/212 (50%)	95 (90%)	10 (10%)	0	100	100
All	All	3669/5193 (71%)	3472 (95%)	190 (5%)	7 (0%)	44	72

All (7) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	126	VAL
1	A	159	VAL
1	A	331	ASN
1	C	123	ALA
1	C	332	ILE
1	A	235	ILE
1	A	322	PRO

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	892/1113 (80%)	889 (100%)	3 (0%)	86	84
1	B	916/1113 (82%)	914 (100%)	2 (0%)	87	87
1	C	904/1113 (81%)	903 (100%)	1 (0%)	88	89
2	F	96/192 (50%)	96 (100%)	0	100	100
2	G	96/192 (50%)	96 (100%)	0	100	100
2	H	96/192 (50%)	95 (99%)	1 (1%)	68	73
3	I	92/183 (50%)	92 (100%)	0	100	100
3	J	92/183 (50%)	92 (100%)	0	100	100
3	L	92/183 (50%)	92 (100%)	0	100	100
All	All	3276/4464 (73%)	3269 (100%)	7 (0%)	85	87

All (7) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	365[A]	TYR
1	A	365[B]	TYR
1	A	428	ASP
1	B	451	TYR
1	B	608	VAL
1	C	331	ASN
2	H	16	ARG

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

Mol	Chain	Res	Type
1	A	125	ASN
1	A	196	ASN
1	A	644	GLN
1	A	777	ASN
1	A	784	GLN
1	A	1011	GLN
1	A	1106	GLN
1	B	115	GLN
1	B	493	GLN
1	B	544	ASN
1	B	613	GLN

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Mol	Chain	Res	Type
1	B	655	HIS
1	B	755	GLN
1	B	913	GLN
1	C	69	HIS
1	C	148	ASN
1	C	762	GLN
1	C	901	GLN
1	C	1005	GLN
1	C	1058	HIS
1	C	1088	HIS
2	H	53	ASN
3	L	38	GLN
3	L	49	ASN
3	I	30	HIS
3	I	37	GLN
2	G	13	GLN
3	J	30	HIS

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

44 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	1302	1	14,14,15	0.39	0	17,19,21	0.42	0
4	NAG	B	1312	1	14,14,15	0.79	1 (7%)	17,19,21	0.64	0
4	NAG	A	1312	1	14,14,15	0.39	0	17,19,21	0.50	0
4	NAG	C	1302	1	14,14,15	0.64	1 (7%)	17,19,21	0.60	0
4	NAG	B	1305	1	14,14,15	0.63	1 (7%)	17,19,21	0.83	1 (5%)
4	NAG	C	1308	1	14,14,15	0.31	0	17,19,21	0.45	0
4	NAG	A	1307	1	14,14,15	0.51	0	17,19,21	0.92	1 (5%)
4	NAG	A	1308	1	14,14,15	0.60	0	17,19,21	1.42	2 (11%)
4	NAG	A	1301	1	14,14,15	0.37	0	17,19,21	0.58	0
4	NAG	B	1308	1	14,14,15	0.47	0	17,19,21	0.84	1 (5%)
4	NAG	B	1304	-	14,14,15	1.35	2 (14%)	17,19,21	1.31	3 (17%)
4	NAG	A	1311	1	14,14,15	0.28	0	17,19,21	0.51	0
4	NAG	C	1312	1	14,14,15	0.28	0	17,19,21	0.45	0
4	NAG	B	1311	1	14,14,15	0.40	0	17,19,21	0.48	0
4	NAG	C	1304	1	14,14,15	0.42	0	17,19,21	0.50	0
4	NAG	C	1305	1	14,14,15	3.78	2 (14%)	17,19,21	2.60	3 (17%)
4	NAG	A	1316	1	14,14,15	0.36	0	17,19,21	0.50	0
4	NAG	A	1313	1	14,14,15	0.28	0	17,19,21	0.47	0
4	NAG	C	1311	1	14,14,15	0.34	0	17,19,21	0.45	0
4	NAG	A	1315	1	14,14,15	1.34	1 (7%)	17,19,21	1.13	1 (5%)
4	NAG	C	1309	1	14,14,15	0.44	0	17,19,21	0.68	1 (5%)
4	NAG	B	1303	1	14,14,15	0.34	0	17,19,21	0.56	0
4	NAG	A	1302	1	14,14,15	1.03	1 (7%)	17,19,21	0.88	1 (5%)
4	NAG	B	1306	1	14,14,15	0.49	0	17,19,21	0.89	1 (5%)
4	NAG	A	1303	1	14,14,15	0.25	0	17,19,21	0.53	0
4	NAG	C	1310	1	14,14,15	0.26	0	17,19,21	0.49	0
4	NAG	A	1306	1	14,14,15	0.48	0	17,19,21	0.56	0
4	NAG	B	1301	1	14,14,15	0.41	0	17,19,21	0.55	0
4	NAG	A	1310	1	14,14,15	0.27	0	17,19,21	0.87	1 (5%)
4	NAG	B	1310	1	14,14,15	0.38	0	17,19,21	0.47	0
4	NAG	B	1313	1	14,14,15	0.40	0	17,19,21	0.51	0
4	NAG	C	1303	1	14,14,15	0.38	0	17,19,21	0.50	0
4	NAG	C	1315	1	14,14,15	0.66	0	17,19,21	2.06	2 (11%)
4	NAG	C	1306	1	14,14,15	0.28	0	17,19,21	0.76	1 (5%)
4	NAG	B	1307	1	14,14,15	0.73	1 (7%)	17,19,21	2.09	2 (11%)
4	NAG	C	1307	1	14,14,15	0.60	1 (7%)	17,19,21	0.41	0
4	NAG	C	1313	1	14,14,15	0.54	0	17,19,21	0.56	0
4	NAG	A	1314	1	14,14,15	0.26	0	17,19,21	0.46	0
4	NAG	C	1301	1	14,14,15	0.34	0	17,19,21	0.50	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
4	NAG	A	1305	1	14,14,15	0.29	0	17,19,21	0.55	0
4	NAG	B	1309	1	14,14,15	0.56	0	17,19,21	0.56	0
4	NAG	A	1304	1	14,14,15	0.95	1 (7%)	17,19,21	1.32	1 (5%)
4	NAG	A	1309	1	14,14,15	0.27	0	17,19,21	0.61	0
4	NAG	C	1314	1	14,14,15	0.31	0	17,19,21	0.48	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	1302	1	-	4/6/23/26	0/1/1/1
4	NAG	B	1312	1	-	4/6/23/26	0/1/1/1
4	NAG	A	1312	1	-	1/6/23/26	0/1/1/1
4	NAG	C	1302	1	-	0/6/23/26	0/1/1/1
4	NAG	B	1305	1	-	2/6/23/26	0/1/1/1
4	NAG	C	1308	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	1308	1	-	3/6/23/26	0/1/1/1
4	NAG	A	1301	1	-	0/6/23/26	0/1/1/1
4	NAG	B	1308	1	-	2/6/23/26	0/1/1/1
4	NAG	B	1304	-	-	2/6/23/26	0/1/1/1
4	NAG	A	1311	1	-	0/6/23/26	0/1/1/1
4	NAG	C	1312	1	-	1/6/23/26	0/1/1/1
4	NAG	B	1311	1	-	1/6/23/26	0/1/1/1
4	NAG	C	1304	1	-	0/6/23/26	0/1/1/1
4	NAG	C	1305	1	-	2/6/23/26	0/1/1/1
4	NAG	A	1316	1	-	0/6/23/26	0/1/1/1
4	NAG	A	1313	1	-	1/6/23/26	0/1/1/1
4	NAG	C	1311	1	-	1/6/23/26	0/1/1/1
4	NAG	A	1315	1	1/1/5/7	0/6/23/26	0/1/1/1
4	NAG	C	1309	1	-	0/6/23/26	0/1/1/1
4	NAG	B	1303	1	-	1/6/23/26	0/1/1/1
4	NAG	A	1302	1	-	1/6/23/26	0/1/1/1
4	NAG	B	1306	1	-	3/6/23/26	0/1/1/1
4	NAG	A	1303	1	-	1/6/23/26	0/1/1/1
4	NAG	C	1310	1	-	0/6/23/26	0/1/1/1
4	NAG	A	1306	1	-	1/6/23/26	0/1/1/1
4	NAG	B	1301	1	-	0/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	NAG	A	1310	1	-	3/6/23/26	0/1/1/1
4	NAG	B	1310	1	-	1/6/23/26	0/1/1/1
4	NAG	B	1313	1	-	3/6/23/26	0/1/1/1
4	NAG	C	1303	1	-	0/6/23/26	0/1/1/1
4	NAG	C	1315	1	-	5/6/23/26	0/1/1/1
4	NAG	C	1306	1	-	3/6/23/26	0/1/1/1
4	NAG	B	1307	1	-	5/6/23/26	0/1/1/1
4	NAG	C	1307	1	-	2/6/23/26	0/1/1/1
4	NAG	C	1313	1	-	4/6/23/26	0/1/1/1
4	NAG	A	1314	1	-	2/6/23/26	0/1/1/1
4	NAG	C	1301	1	-	0/6/23/26	0/1/1/1
4	NAG	A	1305	1	-	2/6/23/26	0/1/1/1
4	NAG	B	1309	1	-	2/6/23/26	0/1/1/1
4	NAG	A	1304	1	-	1/6/23/26	0/1/1/1
4	NAG	A	1309	1	-	2/6/23/26	0/1/1/1
4	NAG	C	1314	1	-	3/6/23/26	0/1/1/1

All (12) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	C	1305	NAG	C1-C2	13.31	1.70	1.52
4	B	1304	NAG	C1-C2	4.51	1.58	1.52
4	A	1315	NAG	O5-C1	-4.46	1.36	1.43
4	C	1305	NAG	O5-C1	-4.19	1.36	1.43
4	A	1302	NAG	C1-C2	3.33	1.56	1.52
4	A	1304	NAG	C1-C2	2.88	1.56	1.52
4	B	1312	NAG	O5-C1	-2.74	1.39	1.43
4	B	1307	NAG	C1-C2	2.19	1.55	1.52
4	C	1302	NAG	C1-C2	2.16	1.55	1.52
4	B	1305	NAG	C1-C2	2.15	1.55	1.52
4	C	1307	NAG	C1-C2	2.06	1.55	1.52
4	B	1304	NAG	O5-C1	2.00	1.47	1.43

All (22) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	C	1305	NAG	C2-N2-C7	8.67	134.52	122.90
4	C	1315	NAG	C2-N2-C7	7.31	132.69	122.90
4	B	1307	NAG	C2-N2-C7	7.31	132.69	122.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	A	1304	NAG	C1-O5-C5	4.96	118.83	112.19
4	A	1308	NAG	C1-O5-C5	4.46	118.16	112.19
4	C	1305	NAG	C1-C2-N2	4.37	117.31	110.43
4	B	1304	NAG	C1-O5-C5	3.64	117.06	112.19
4	B	1307	NAG	C1-C2-N2	3.42	115.81	110.43
4	C	1315	NAG	C1-C2-N2	3.39	115.78	110.43
4	A	1315	NAG	C3-C4-C5	3.16	115.95	110.23
4	A	1302	NAG	C1-O5-C5	2.84	115.99	112.19
4	B	1304	NAG	C2-N2-C7	2.82	126.68	122.90
4	A	1308	NAG	C1-C2-N2	2.79	114.82	110.43
4	A	1310	NAG	C2-N2-C7	2.65	126.46	122.90
4	B	1308	NAG	C2-N2-C7	2.58	126.36	122.90
4	B	1306	NAG	C2-N2-C7	2.53	126.30	122.90
4	A	1307	NAG	C2-N2-C7	2.53	126.29	122.90
4	B	1305	NAG	C2-N2-C7	2.50	126.25	122.90
4	C	1306	NAG	C1-O5-C5	2.46	115.49	112.19
4	C	1305	NAG	O3-C3-C2	-2.20	104.83	109.40
4	C	1309	NAG	C1-O5-C5	2.17	115.09	112.19
4	B	1304	NAG	C1-C2-N2	2.13	113.80	110.43

All (1) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
4	A	1315	NAG	C1

All (71) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	B	1312	NAG	O5-C5-C6-O6
4	A	1305	NAG	O5-C5-C6-O6
4	B	1309	NAG	O5-C5-C6-O6
4	B	1309	NAG	C4-C5-C6-O6
4	C	1307	NAG	O5-C5-C6-O6
4	B	1312	NAG	C4-C5-C6-O6
4	C	1307	NAG	C4-C5-C6-O6
4	A	1309	NAG	C8-C7-N2-C2
4	A	1309	NAG	O7-C7-N2-C2
4	A	1314	NAG	C8-C7-N2-C2
4	A	1314	NAG	O7-C7-N2-C2
4	B	1302	NAG	C8-C7-N2-C2
4	B	1302	NAG	O7-C7-N2-C2
4	B	1307	NAG	C8-C7-N2-C2

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Mol	Chain	Res	Type	Atoms
4	B	1307	NAG	O7-C7-N2-C2
4	B	1312	NAG	C8-C7-N2-C2
4	B	1312	NAG	O7-C7-N2-C2
4	B	1313	NAG	C8-C7-N2-C2
4	B	1313	NAG	O7-C7-N2-C2
4	C	1306	NAG	C8-C7-N2-C2
4	C	1306	NAG	O7-C7-N2-C2
4	C	1313	NAG	C8-C7-N2-C2
4	C	1313	NAG	O7-C7-N2-C2
4	C	1315	NAG	C8-C7-N2-C2
4	C	1315	NAG	O7-C7-N2-C2
4	B	1303	NAG	O5-C5-C6-O6
4	C	1313	NAG	O5-C5-C6-O6
4	C	1305	NAG	O5-C5-C6-O6
4	A	1302	NAG	O5-C5-C6-O6
4	A	1304	NAG	O5-C5-C6-O6
4	A	1308	NAG	C4-C5-C6-O6
4	C	1314	NAG	C4-C5-C6-O6
4	C	1306	NAG	O5-C5-C6-O6
4	A	1308	NAG	O5-C5-C6-O6
4	B	1304	NAG	O5-C5-C6-O6
4	A	1313	NAG	O5-C5-C6-O6
4	B	1313	NAG	O5-C5-C6-O6
4	B	1307	NAG	O5-C5-C6-O6
4	B	1302	NAG	C4-C5-C6-O6
4	C	1315	NAG	O5-C5-C6-O6
4	A	1310	NAG	O5-C5-C6-O6
4	C	1313	NAG	C4-C5-C6-O6
4	B	1311	NAG	O5-C5-C6-O6
4	C	1311	NAG	O5-C5-C6-O6
4	A	1303	NAG	O5-C5-C6-O6
4	B	1310	NAG	O5-C5-C6-O6
4	B	1306	NAG	O5-C5-C6-O6
4	C	1312	NAG	O5-C5-C6-O6
4	A	1305	NAG	C4-C5-C6-O6
4	C	1314	NAG	O5-C5-C6-O6
4	A	1312	NAG	C4-C5-C6-O6
4	A	1310	NAG	C1-C2-N2-C7
4	B	1308	NAG	C1-C2-N2-C7
4	C	1305	NAG	C1-C2-N2-C7
4	B	1302	NAG	O5-C5-C6-O6
4	A	1307	NAG	C3-C2-N2-C7

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Mol	Chain	Res	Type	Atoms
4	B	1304	NAG	C3-C2-N2-C7
4	B	1305	NAG	C3-C2-N2-C7
4	B	1306	NAG	C3-C2-N2-C7
4	B	1307	NAG	C3-C2-N2-C7
4	A	1306	NAG	C1-C2-N2-C7
4	A	1307	NAG	C1-C2-N2-C7
4	A	1308	NAG	C1-C2-N2-C7
4	B	1305	NAG	C1-C2-N2-C7
4	B	1306	NAG	C1-C2-N2-C7
4	B	1307	NAG	C1-C2-N2-C7
4	C	1314	NAG	C1-C2-N2-C7
4	C	1315	NAG	C1-C2-N2-C7
4	A	1310	NAG	C3-C2-N2-C7
4	B	1308	NAG	C3-C2-N2-C7
4	C	1315	NAG	C3-C2-N2-C7

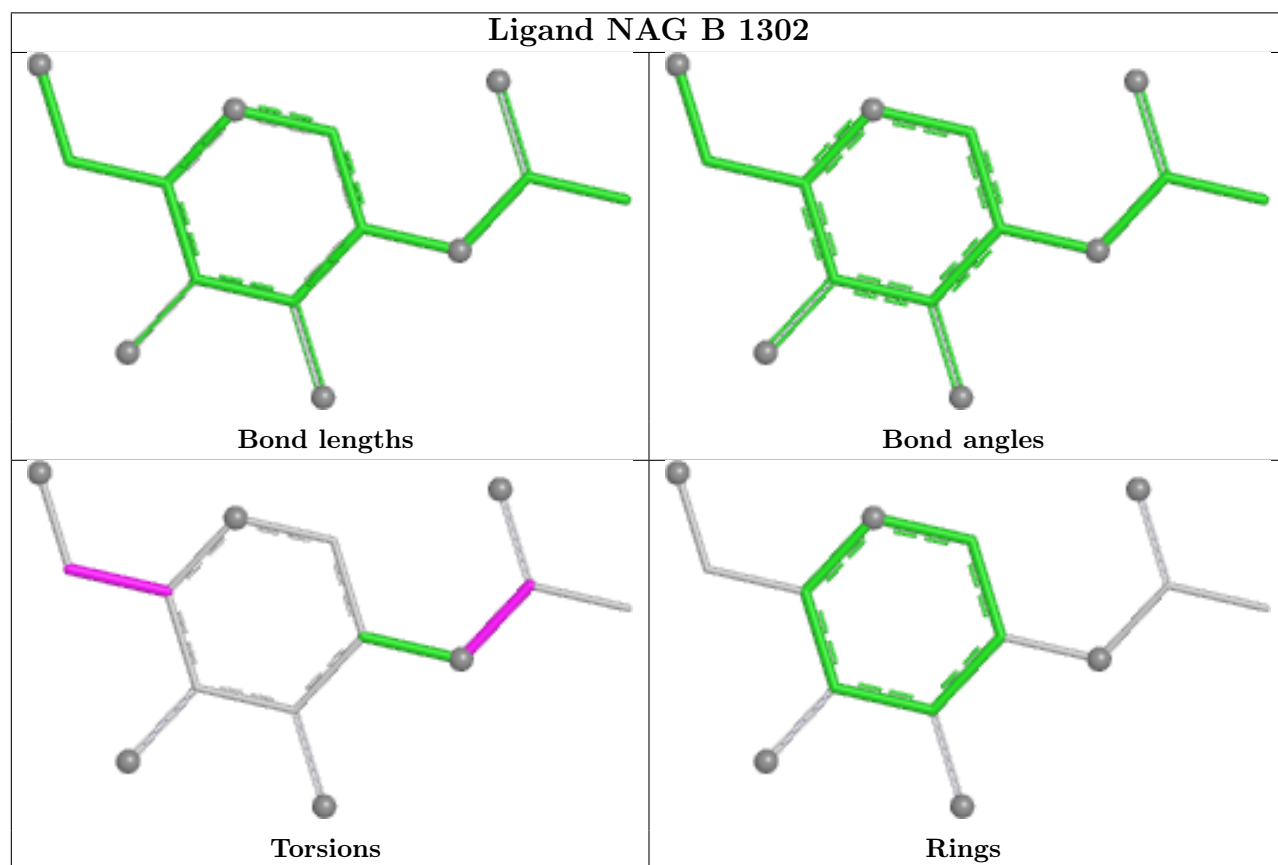
There are no ring outliers.

11 monomers are involved in 17 short contacts:

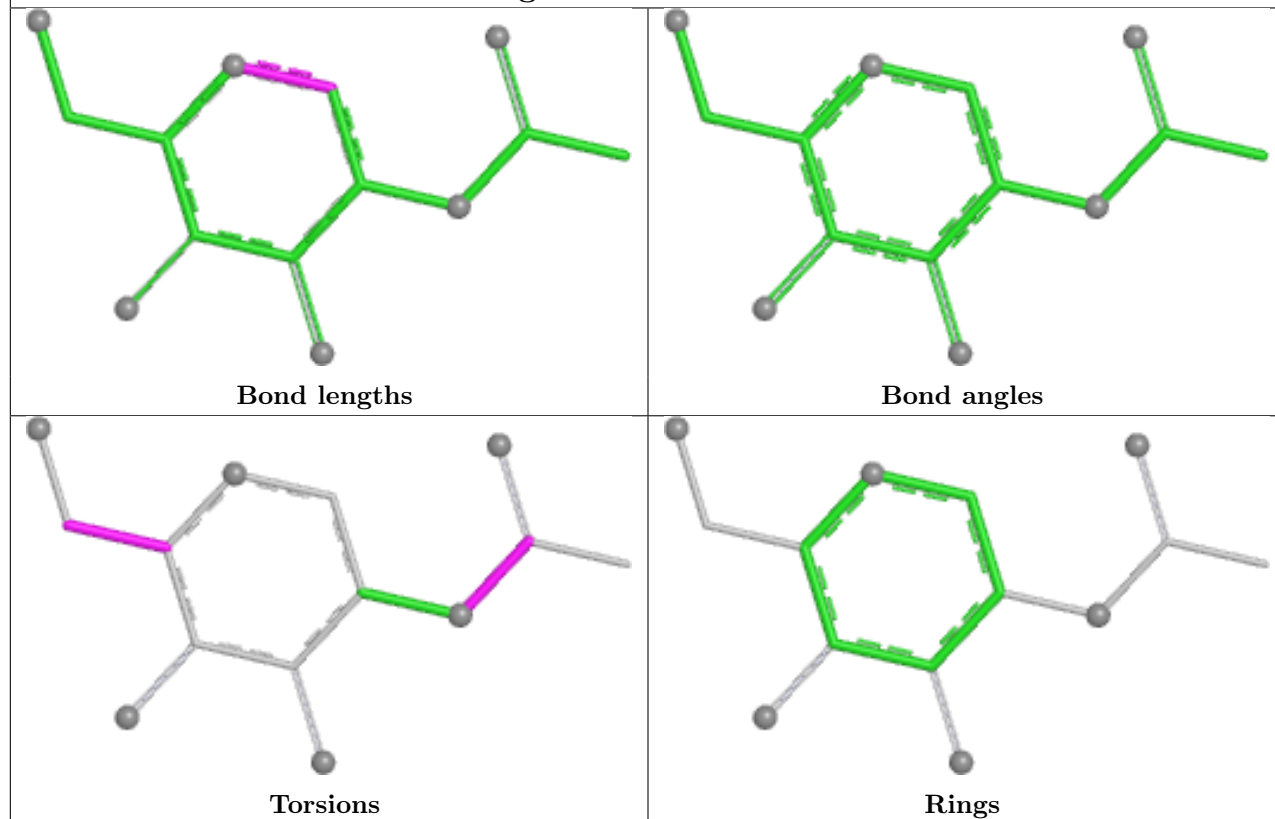
Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	B	1312	NAG	1	0
4	A	1312	NAG	1	0
4	B	1305	NAG	1	0
4	A	1307	NAG	1	0
4	A	1308	NAG	1	0
4	B	1304	NAG	7	0
4	C	1304	NAG	1	0
4	C	1305	NAG	1	0
4	A	1313	NAG	1	0
4	A	1302	NAG	1	0
4	A	1306	NAG	1	0

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.

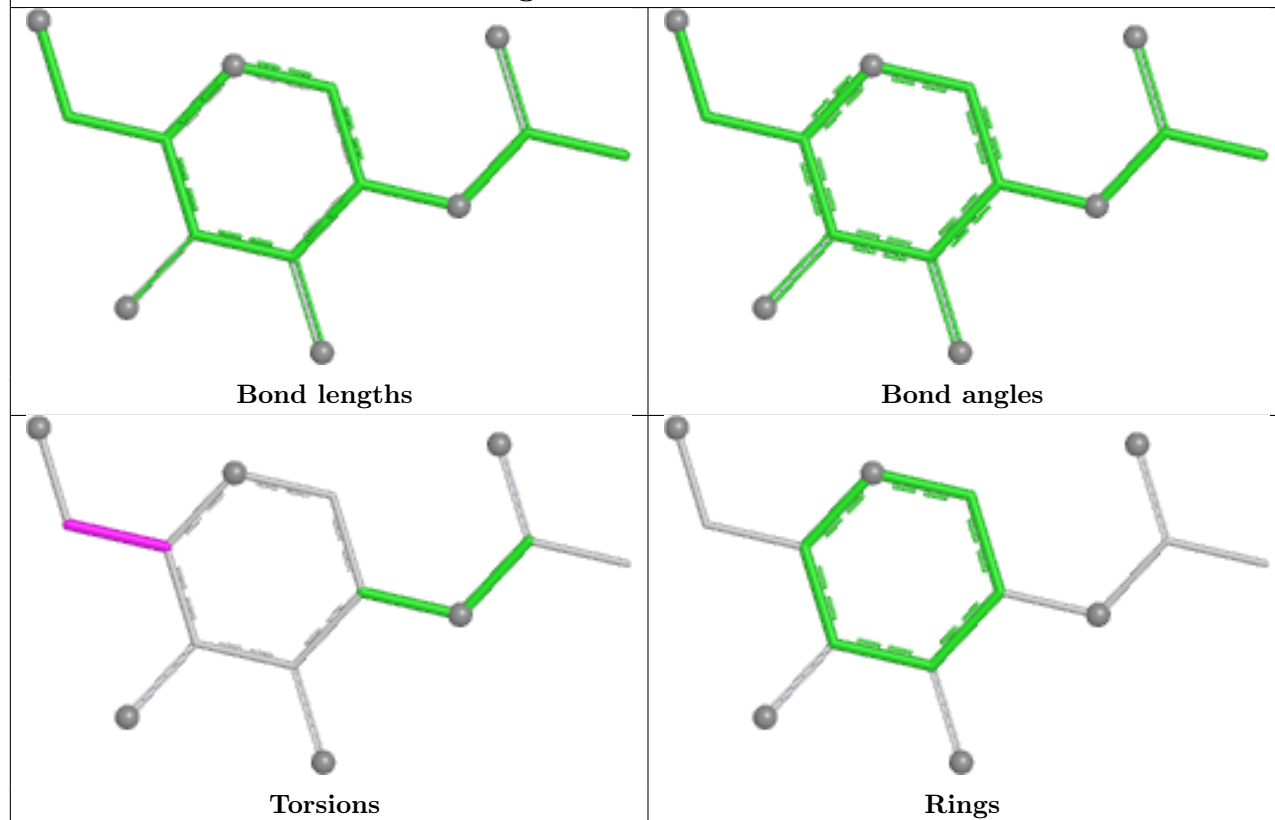
The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.



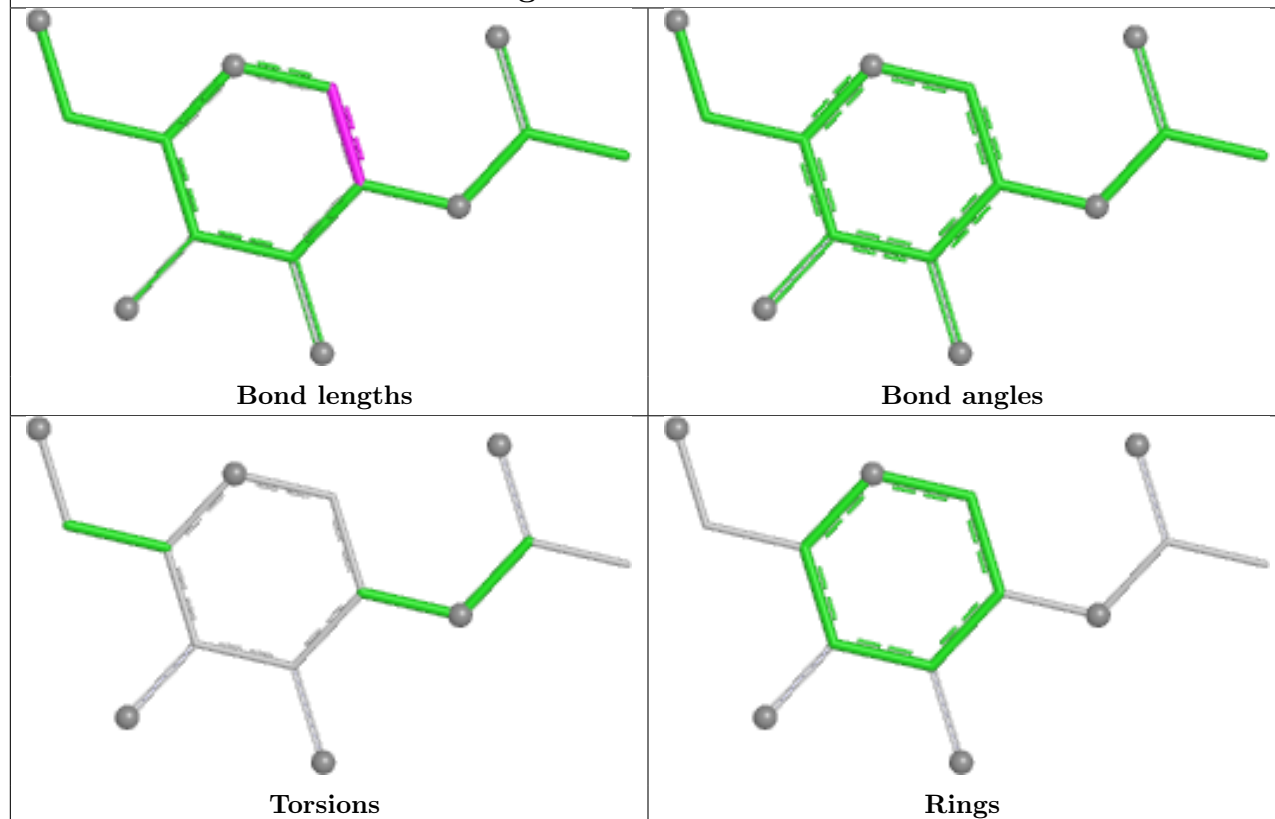
Ligand NAG B 1312



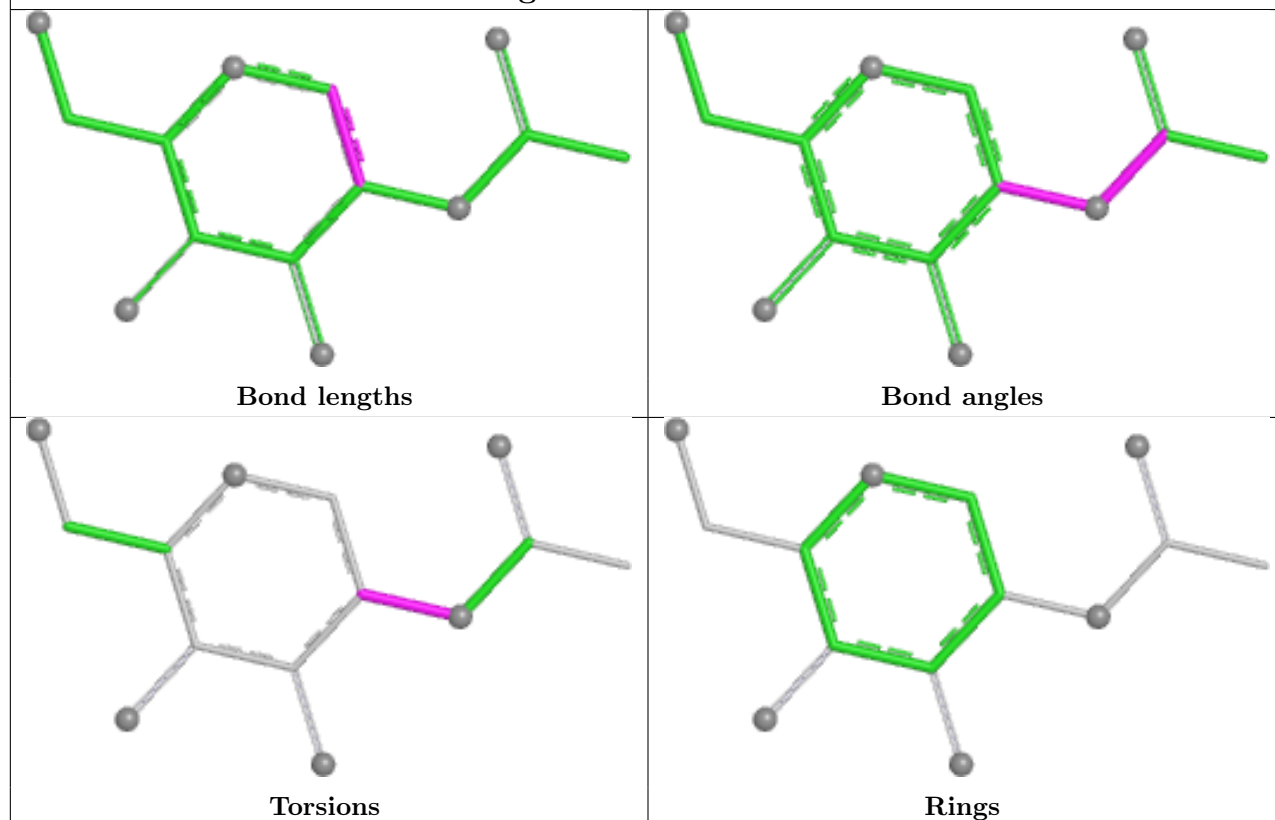
Ligand NAG A 1312

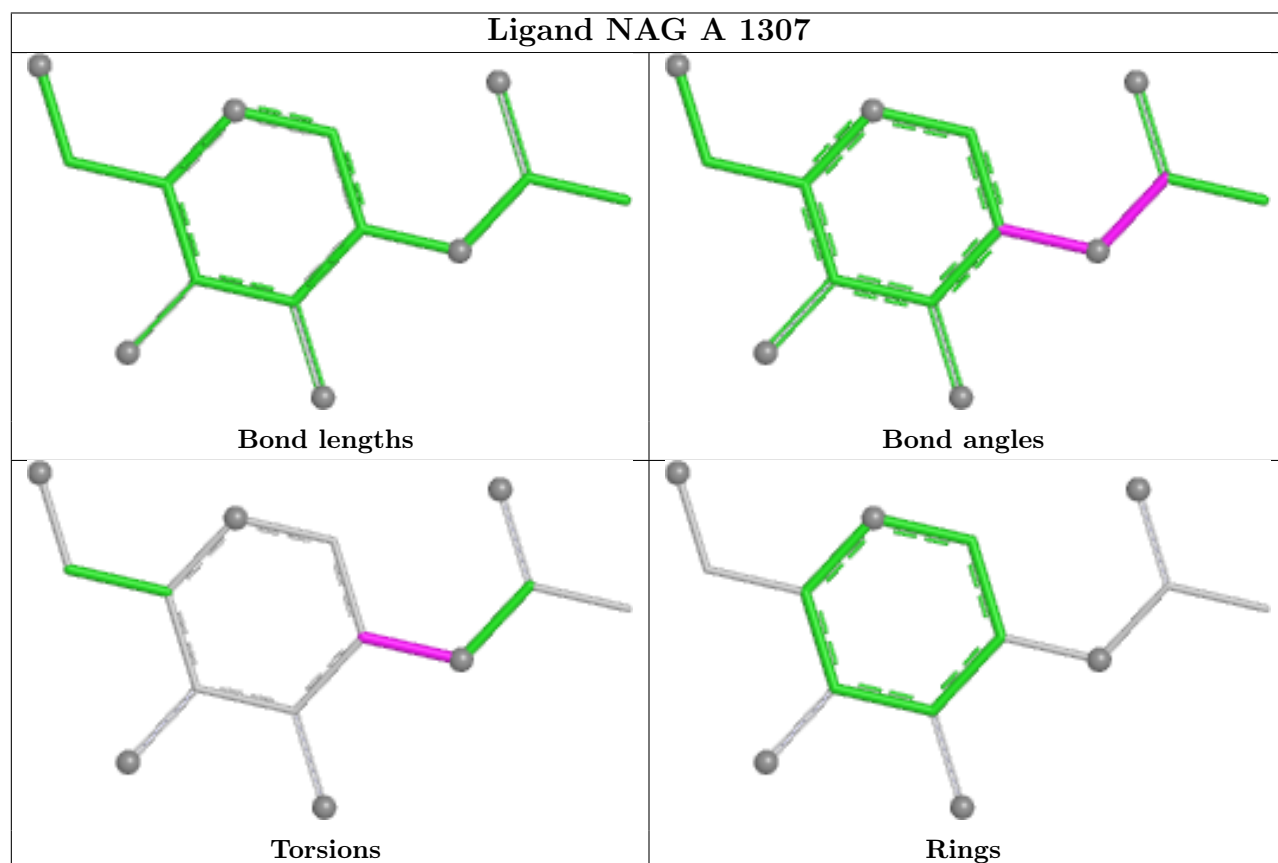
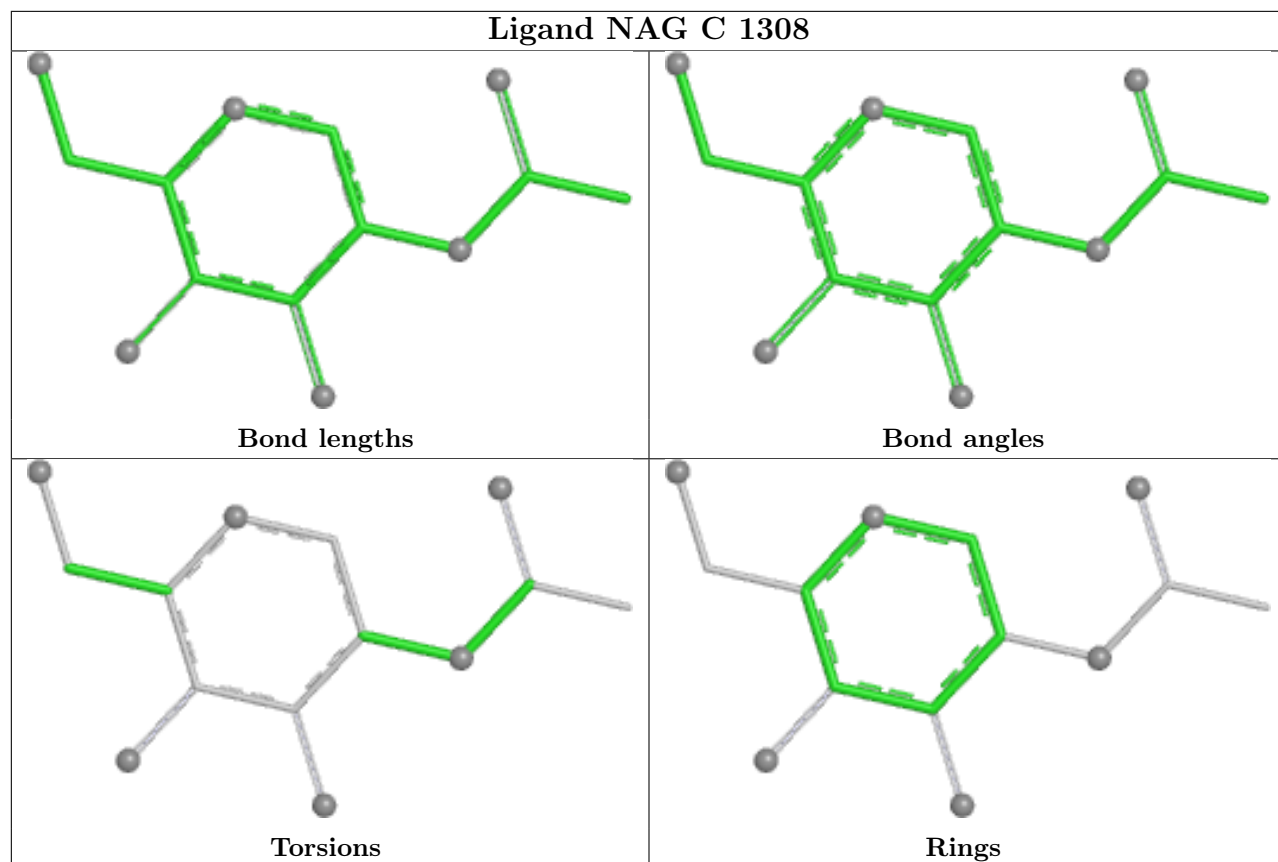


Ligand NAG C 1302

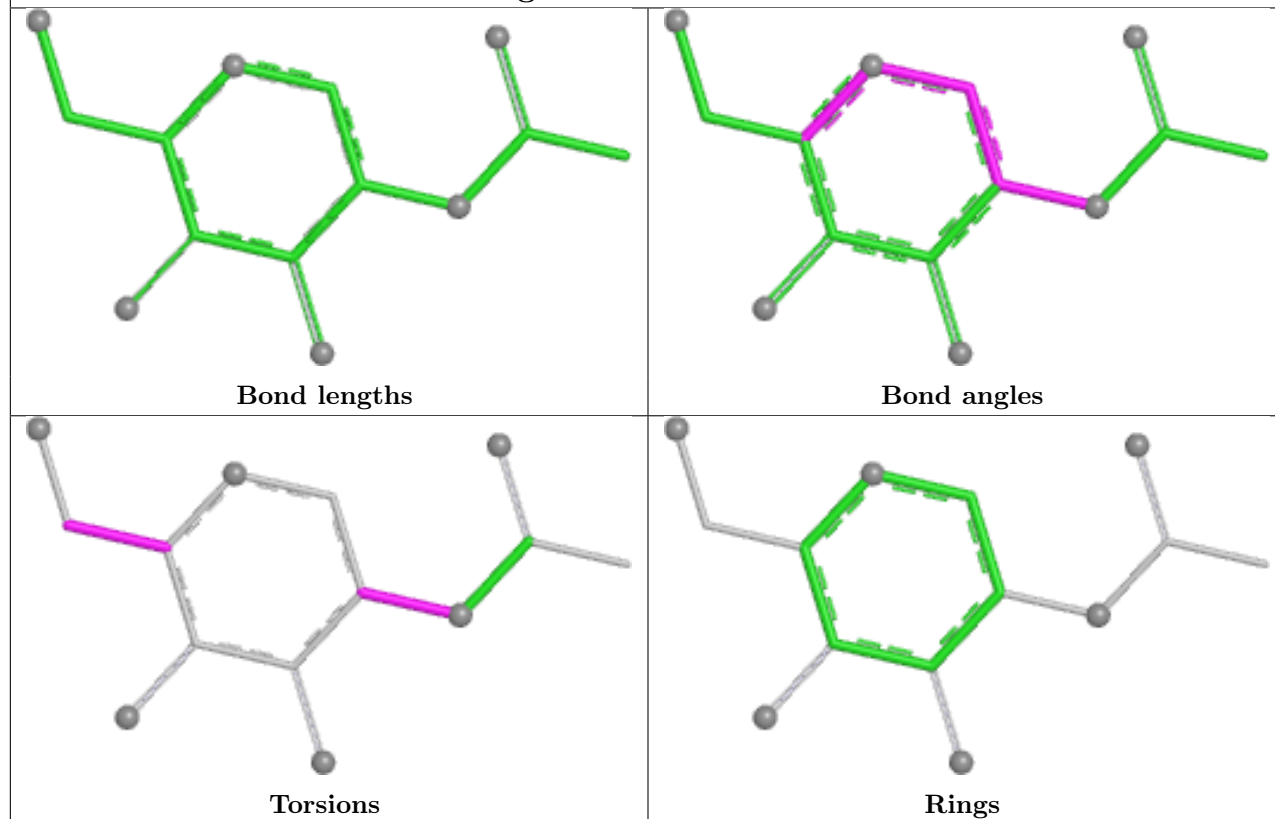


Ligand NAG B 1305

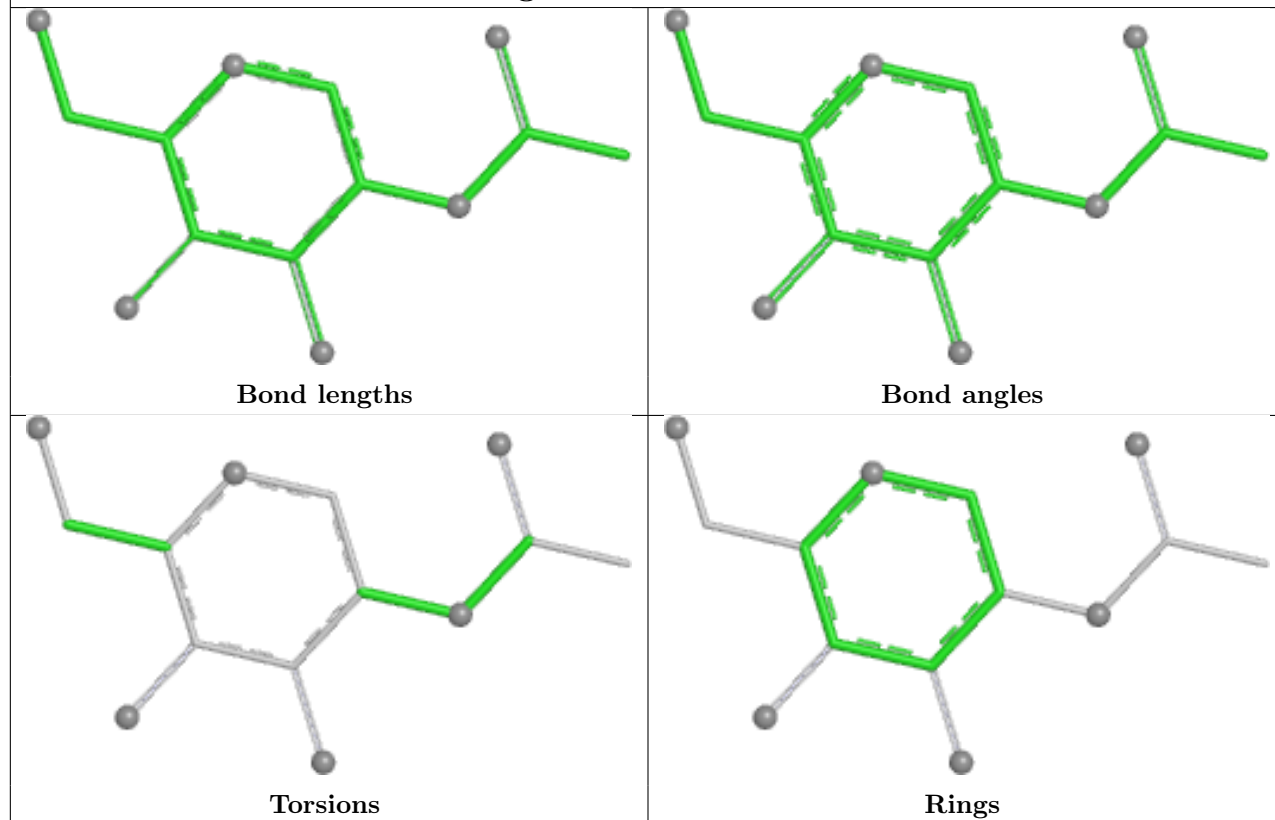


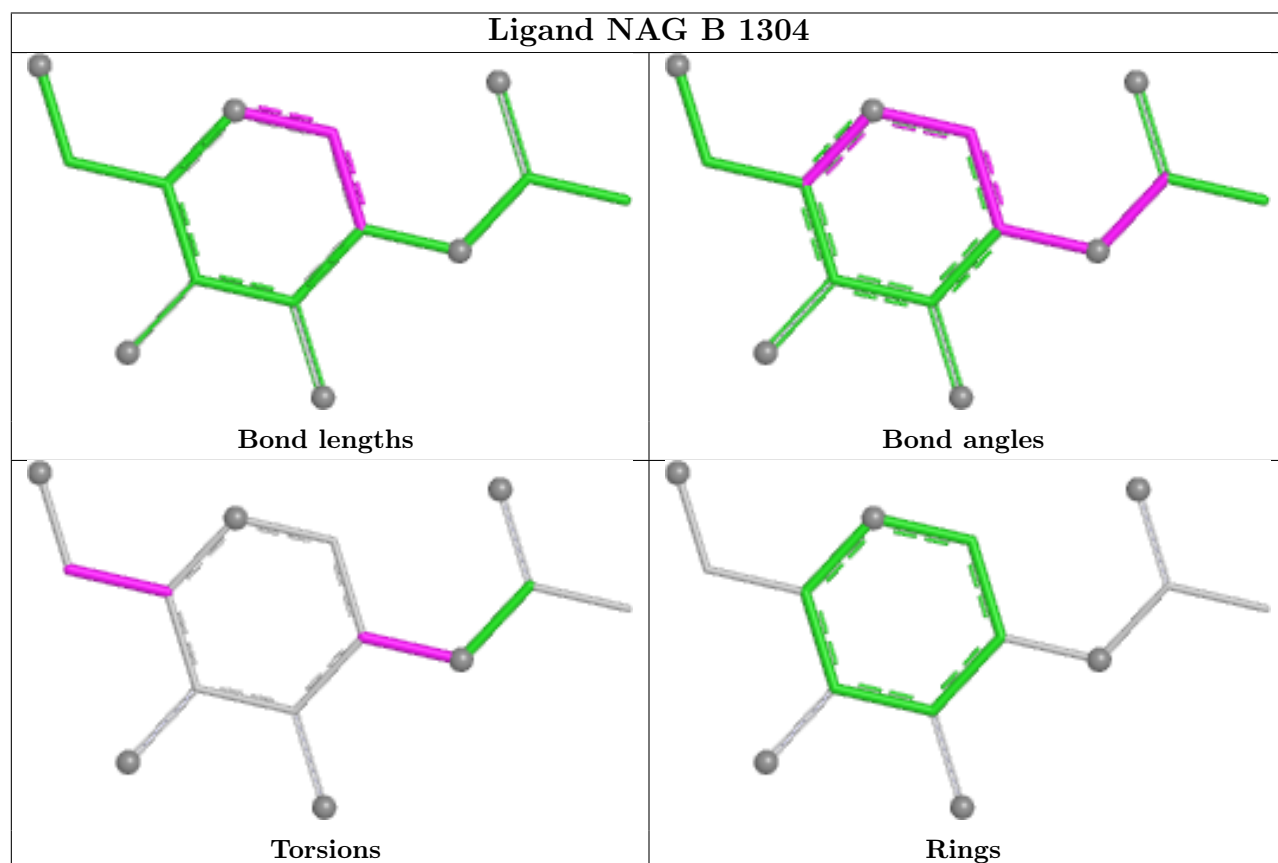
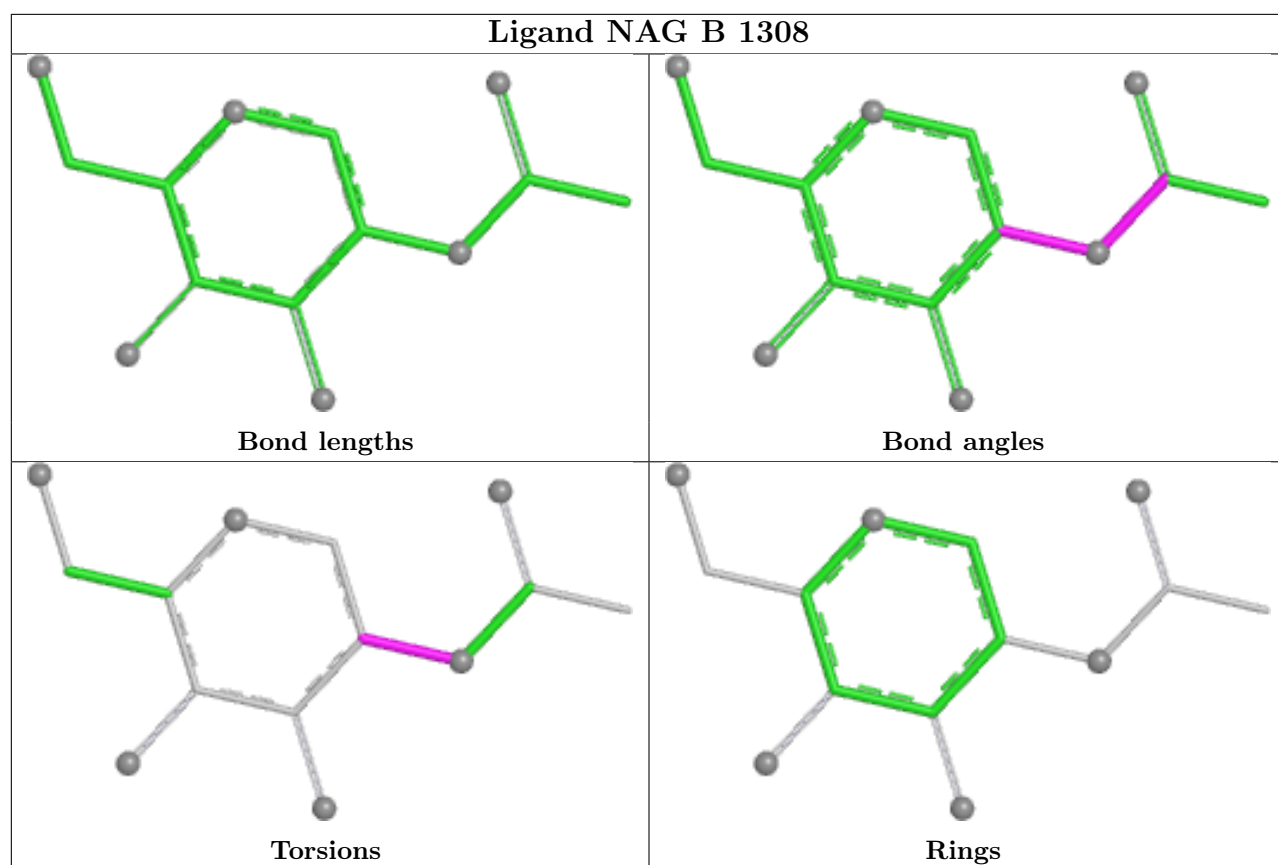


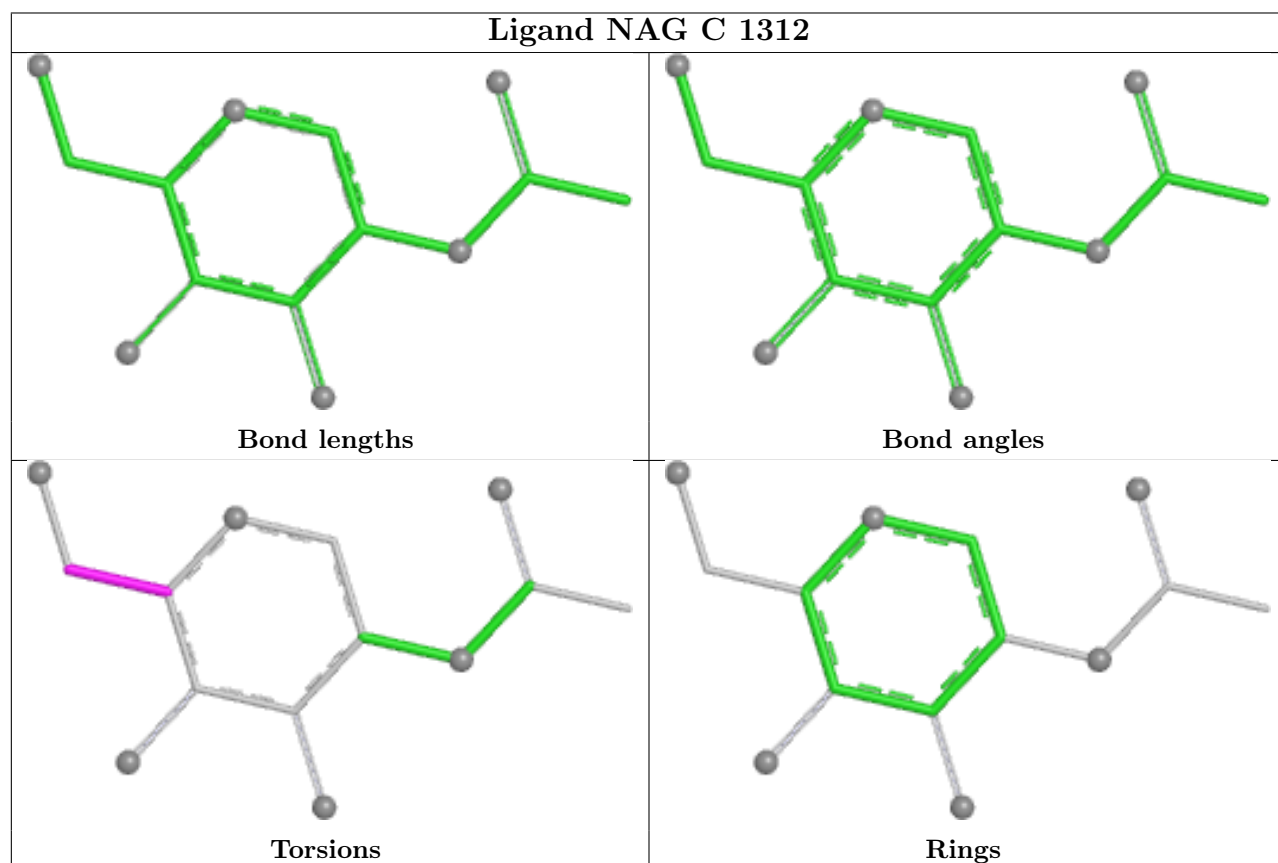
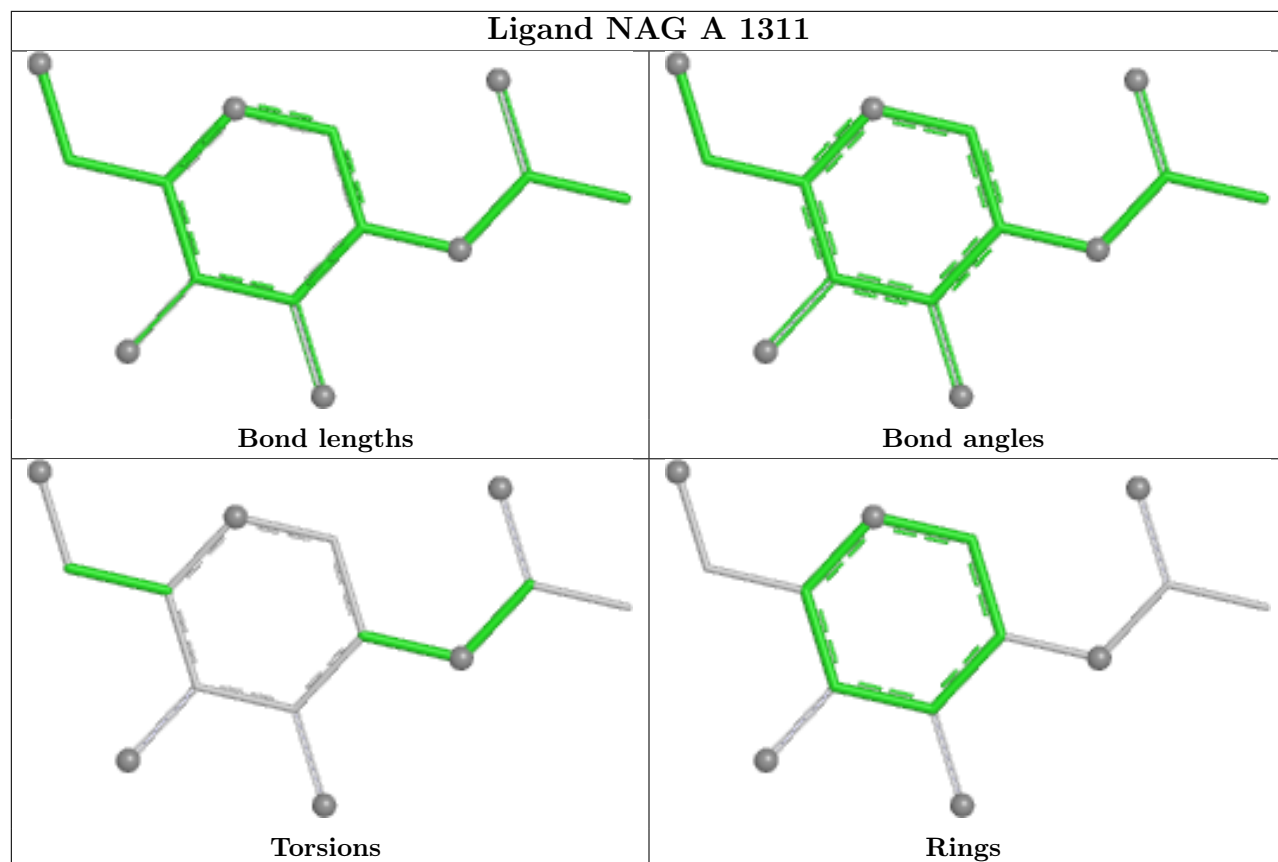
Ligand NAG A 1308



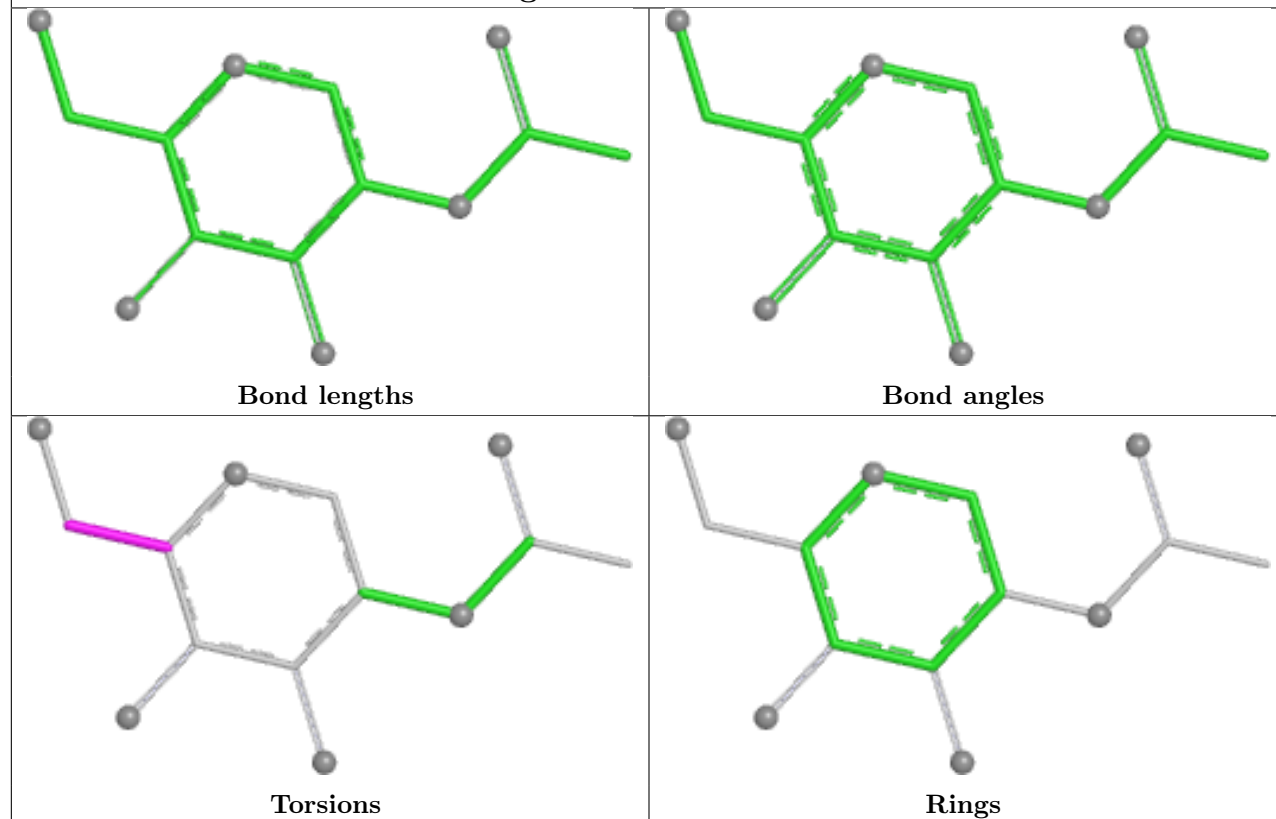
Ligand NAG A 1301



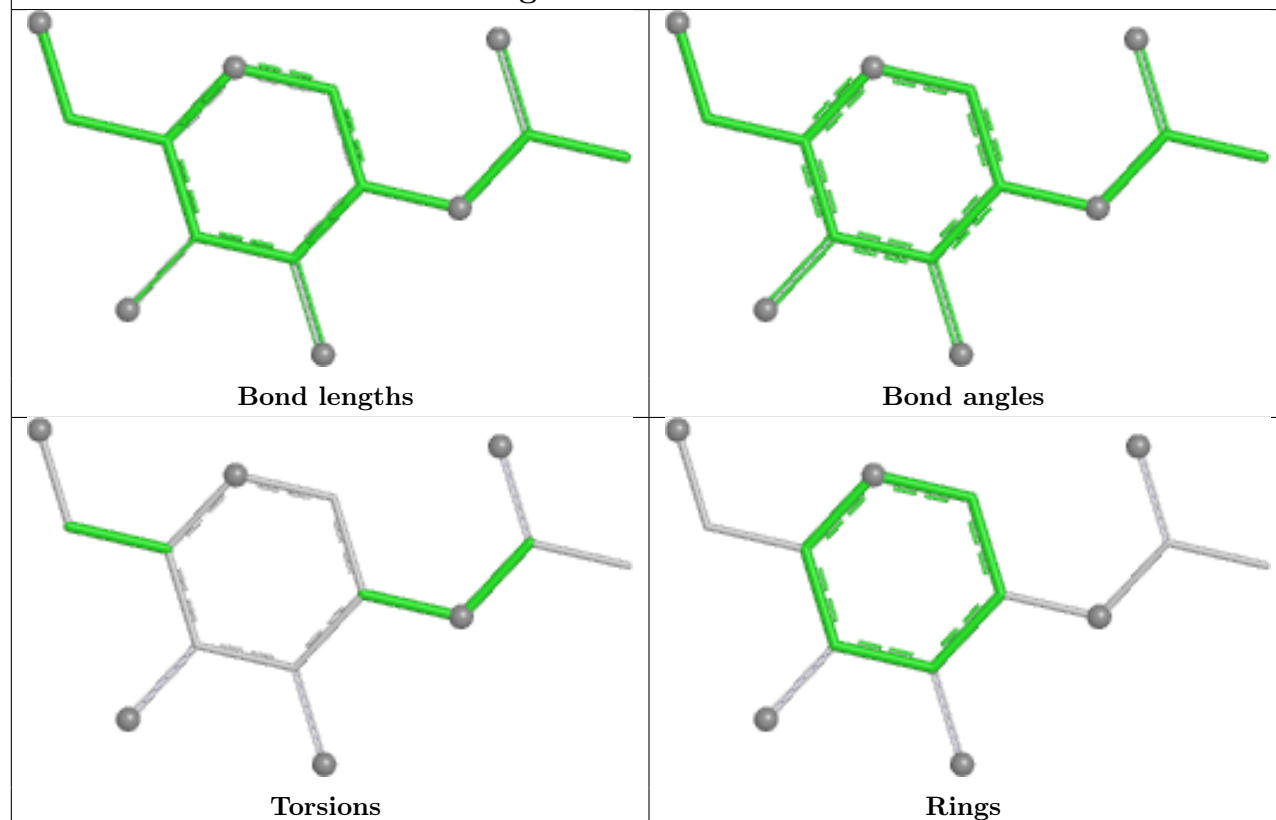




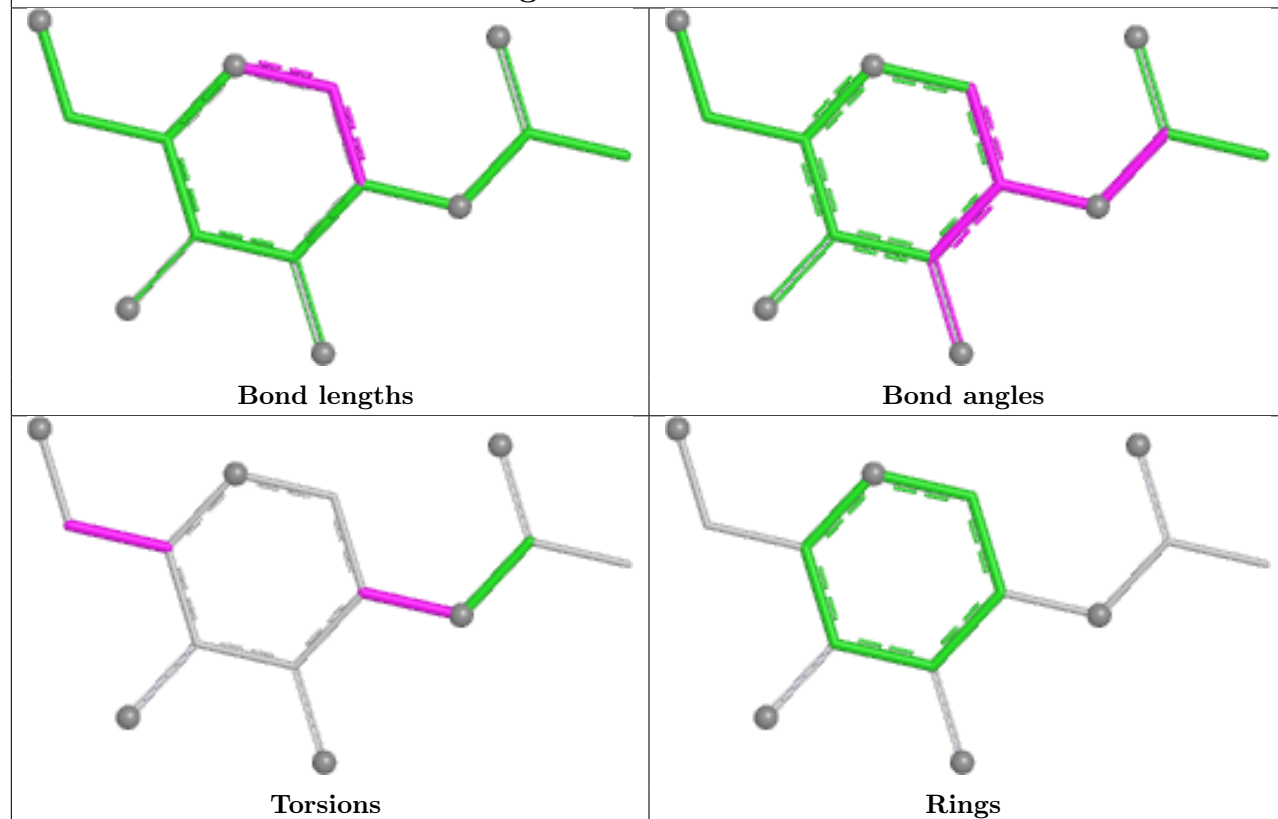
Ligand NAG B 1311



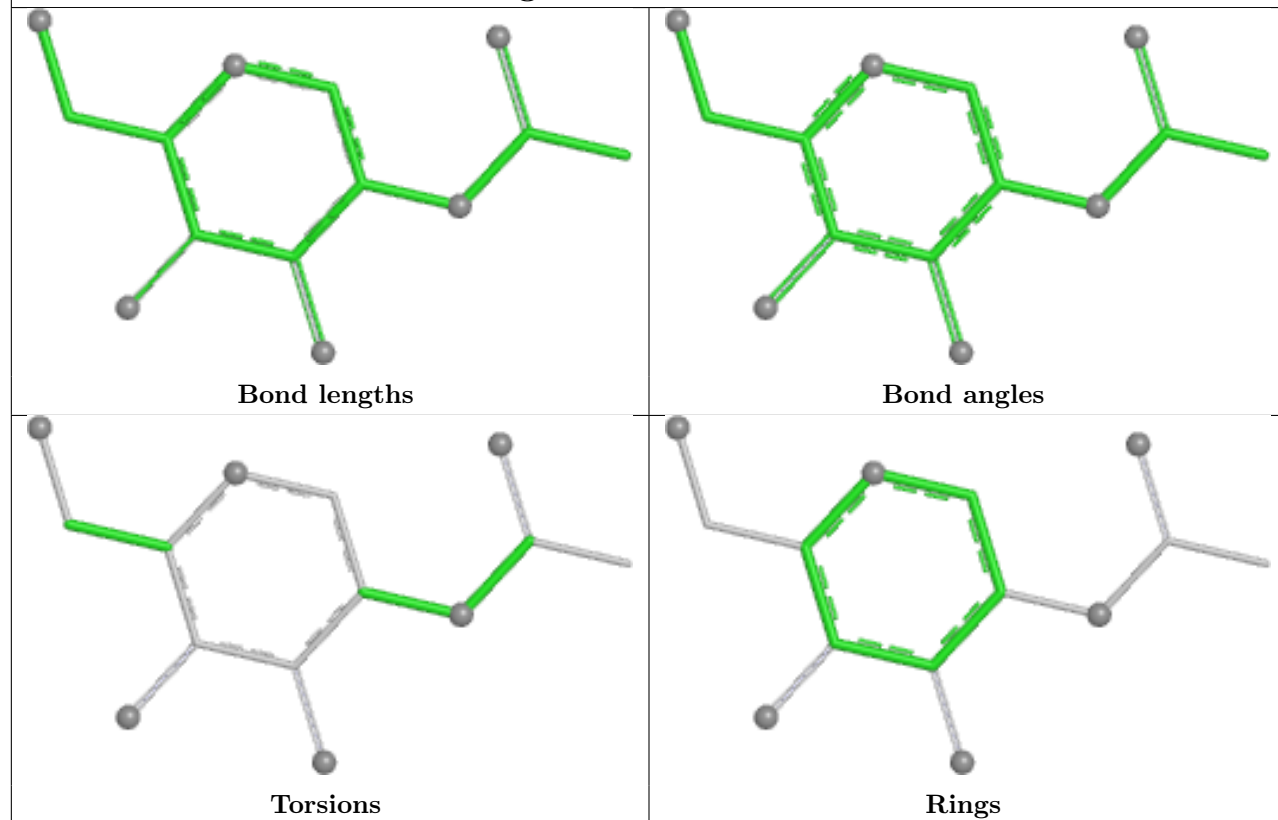
Ligand NAG C 1304



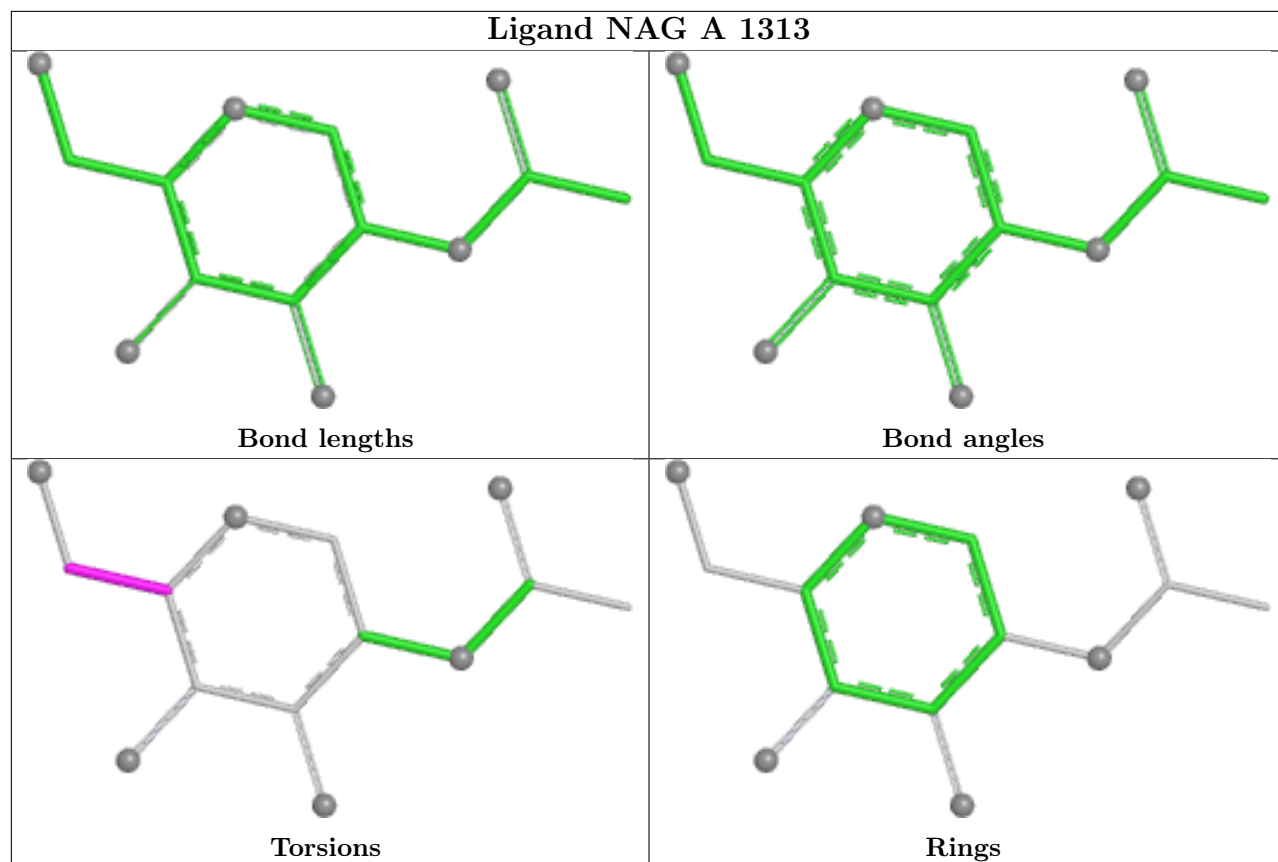
Ligand NAG C 1305



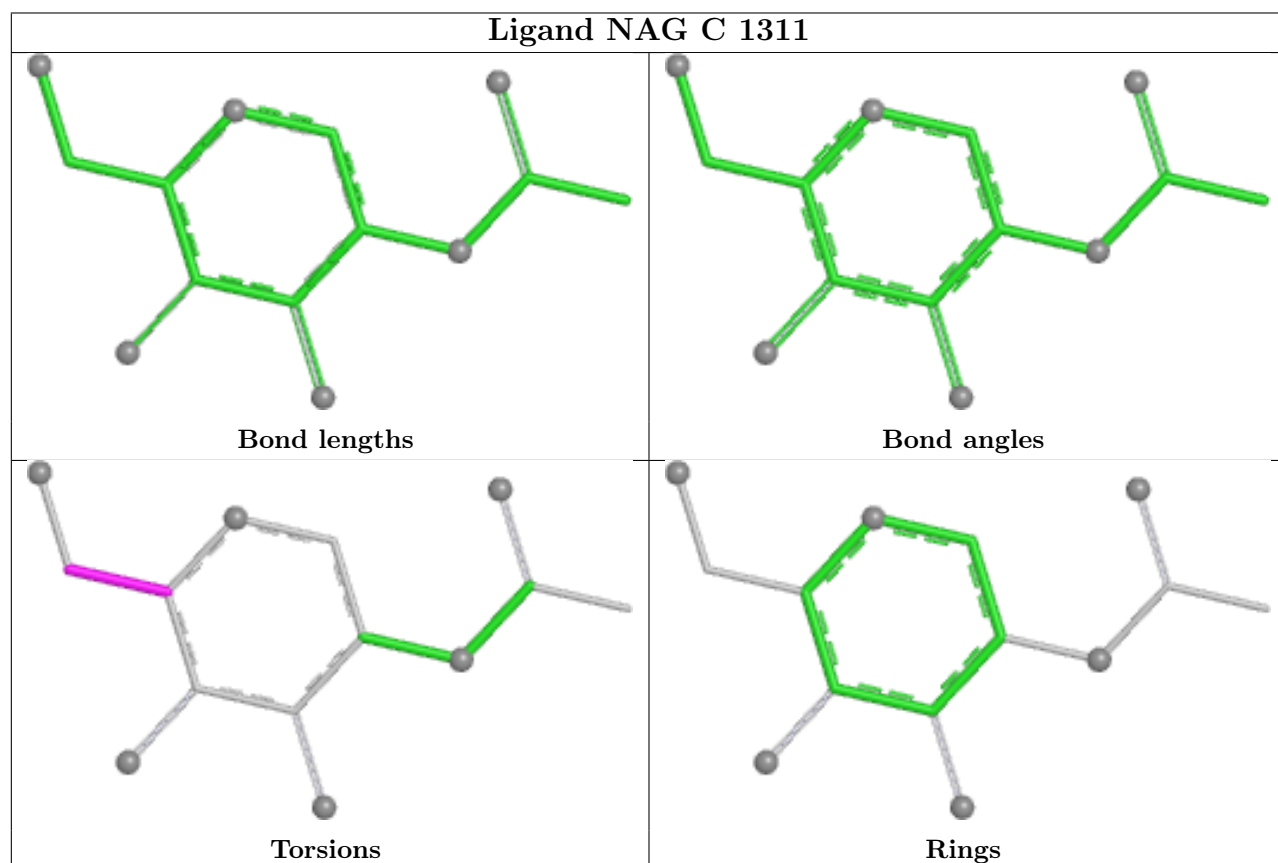
Ligand NAG A 1316



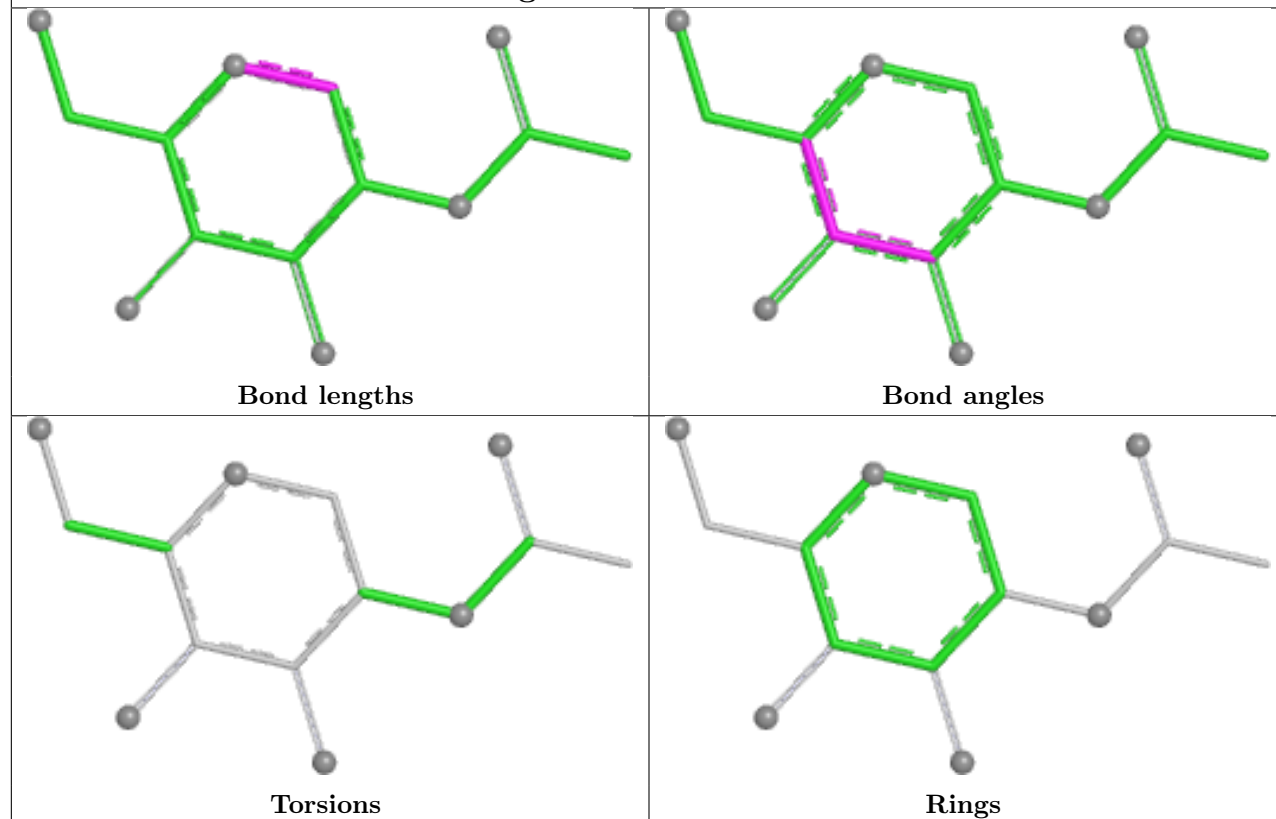
Ligand NAG A 1313



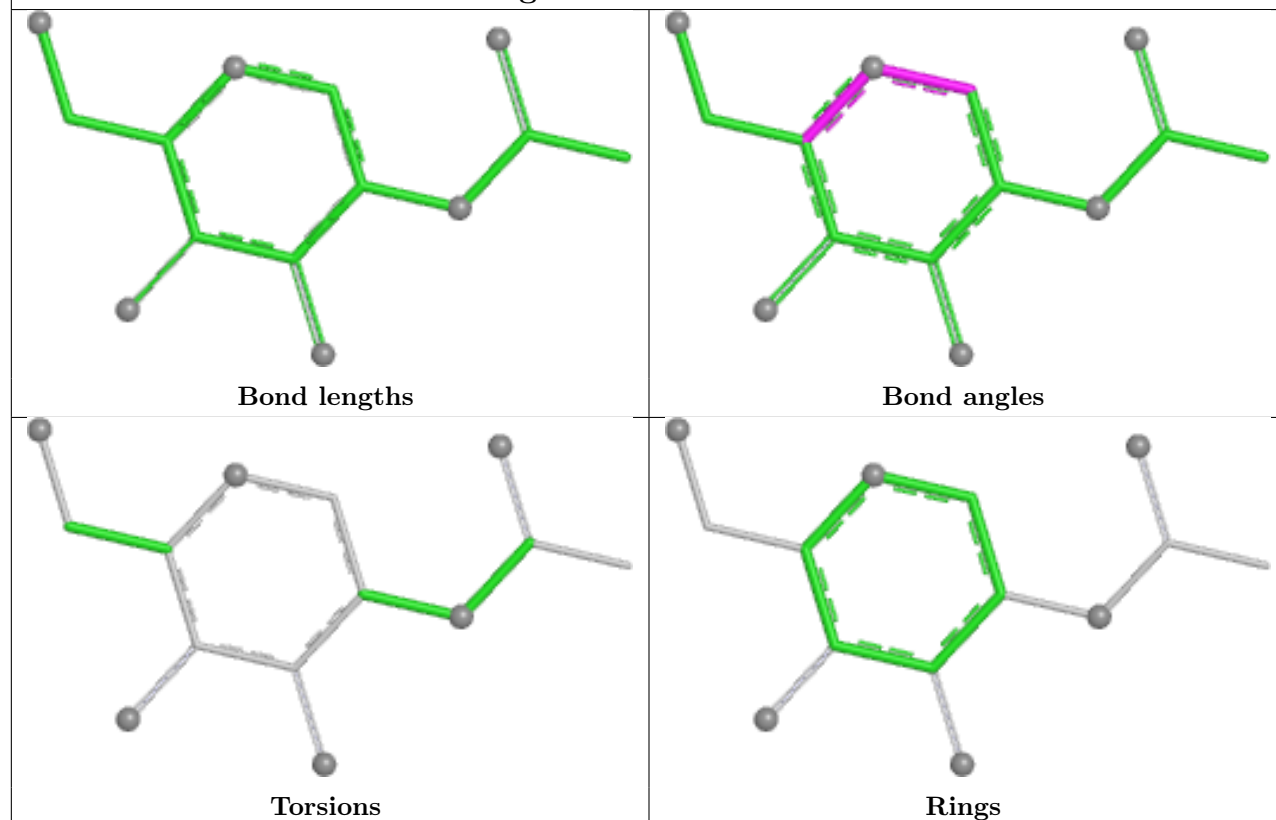
Ligand NAG C 1311



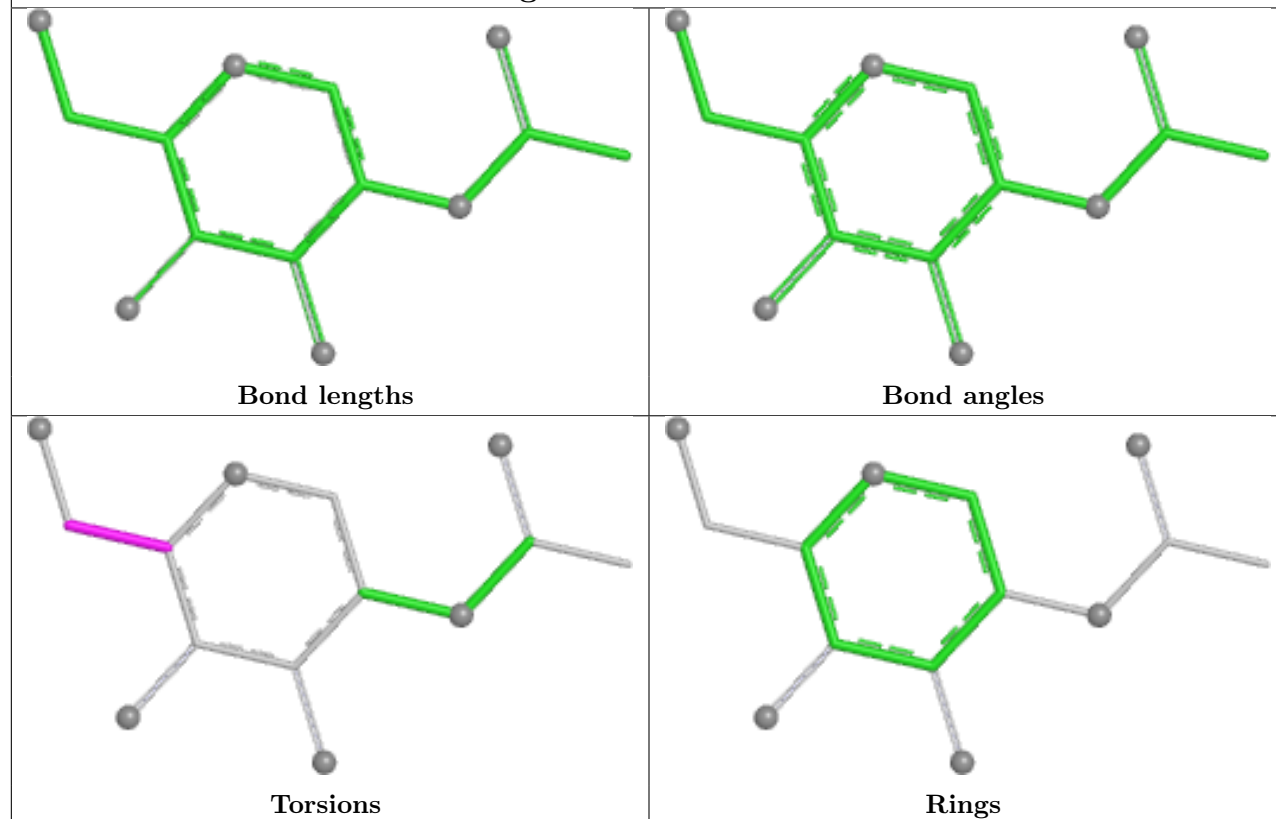
Ligand NAG A 1315



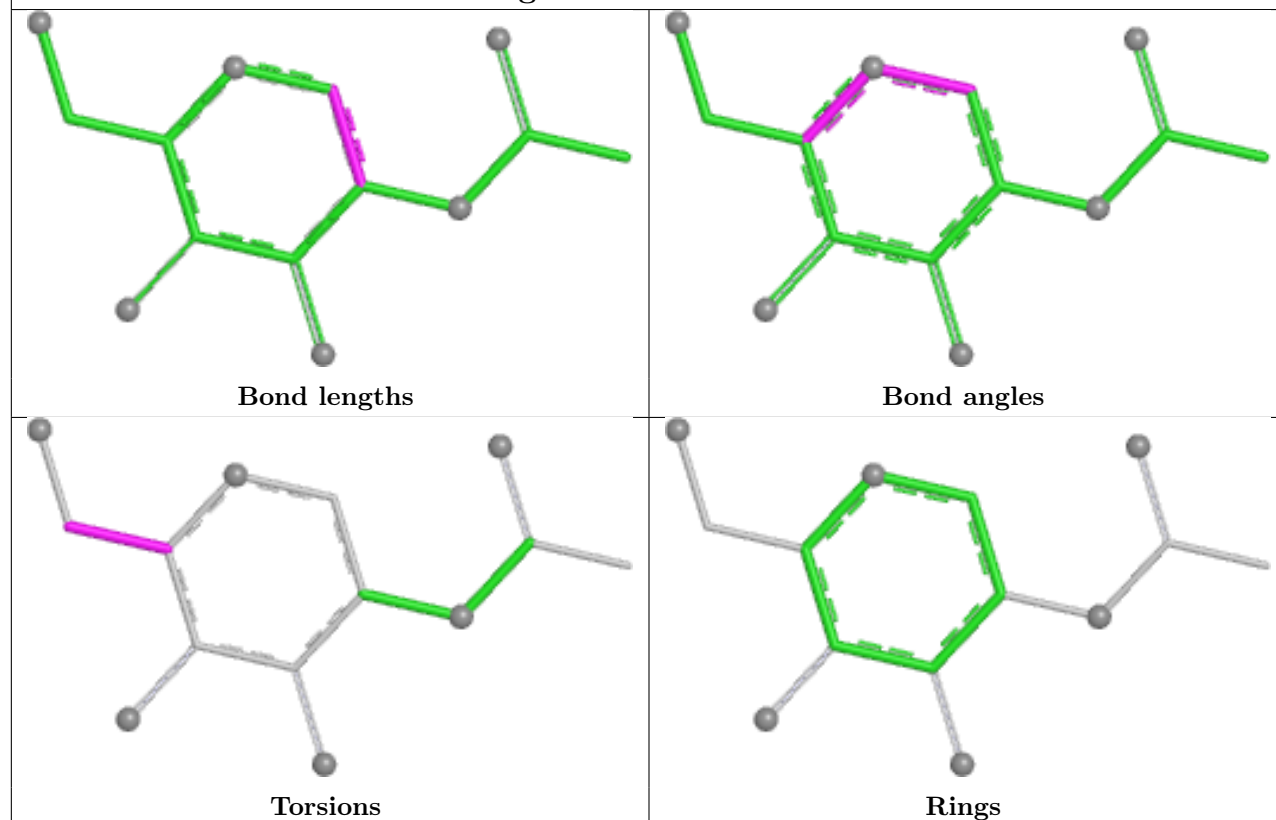
Ligand NAG C 1309



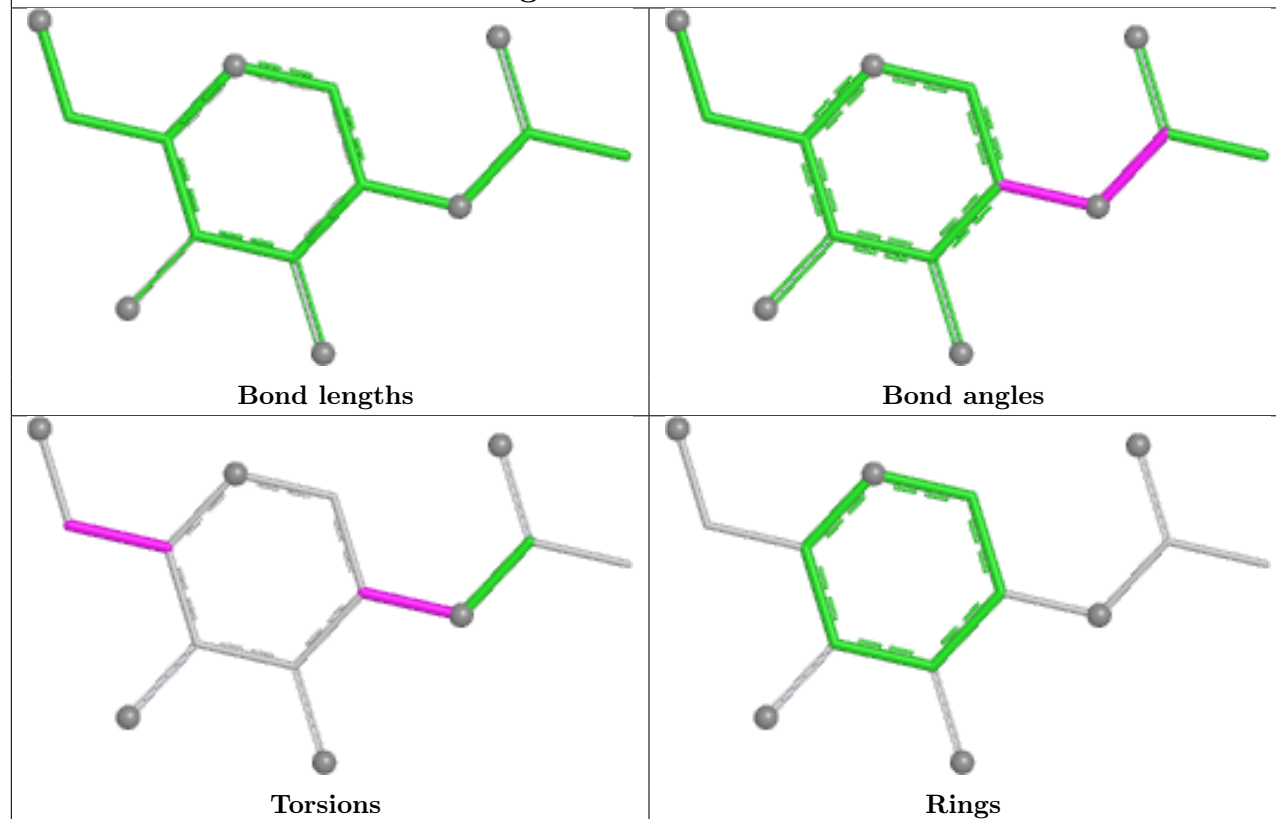
Ligand NAG B 1303



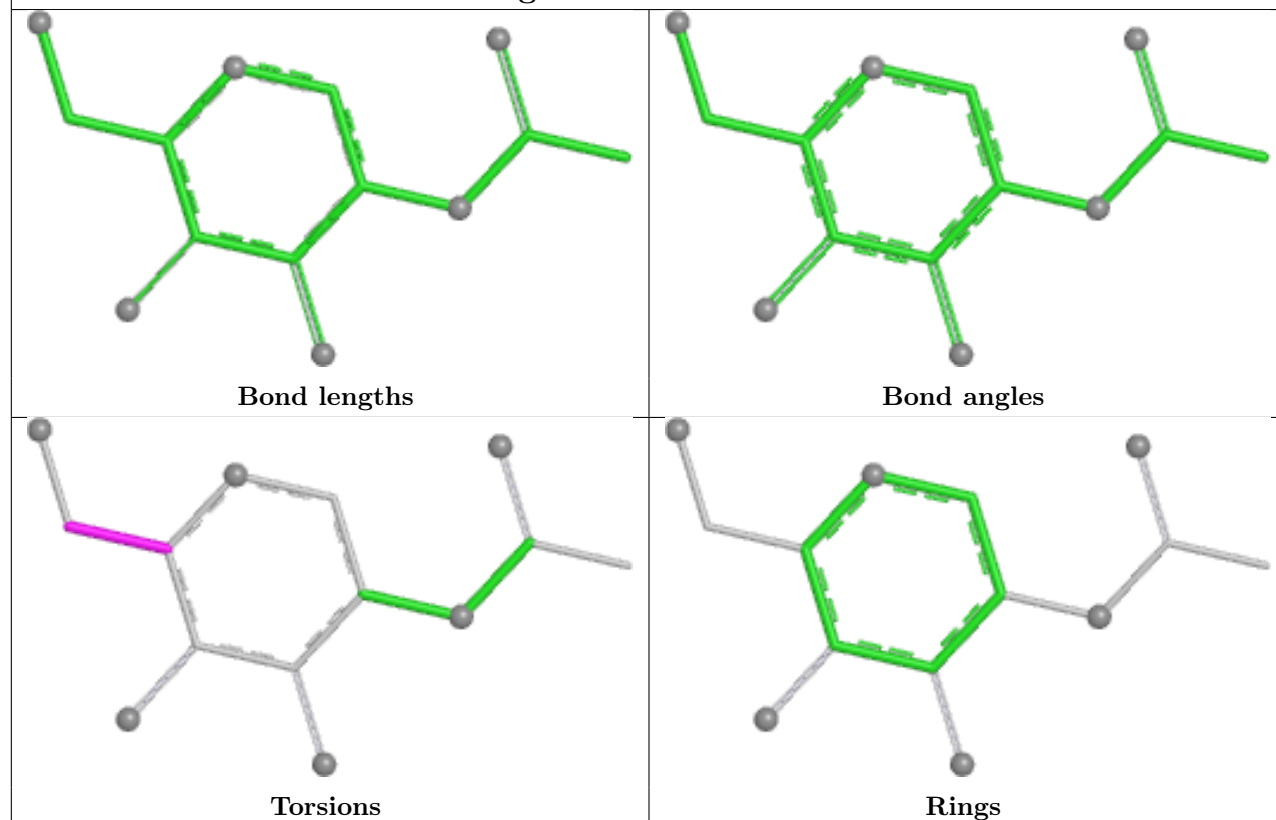
Ligand NAG A 1302

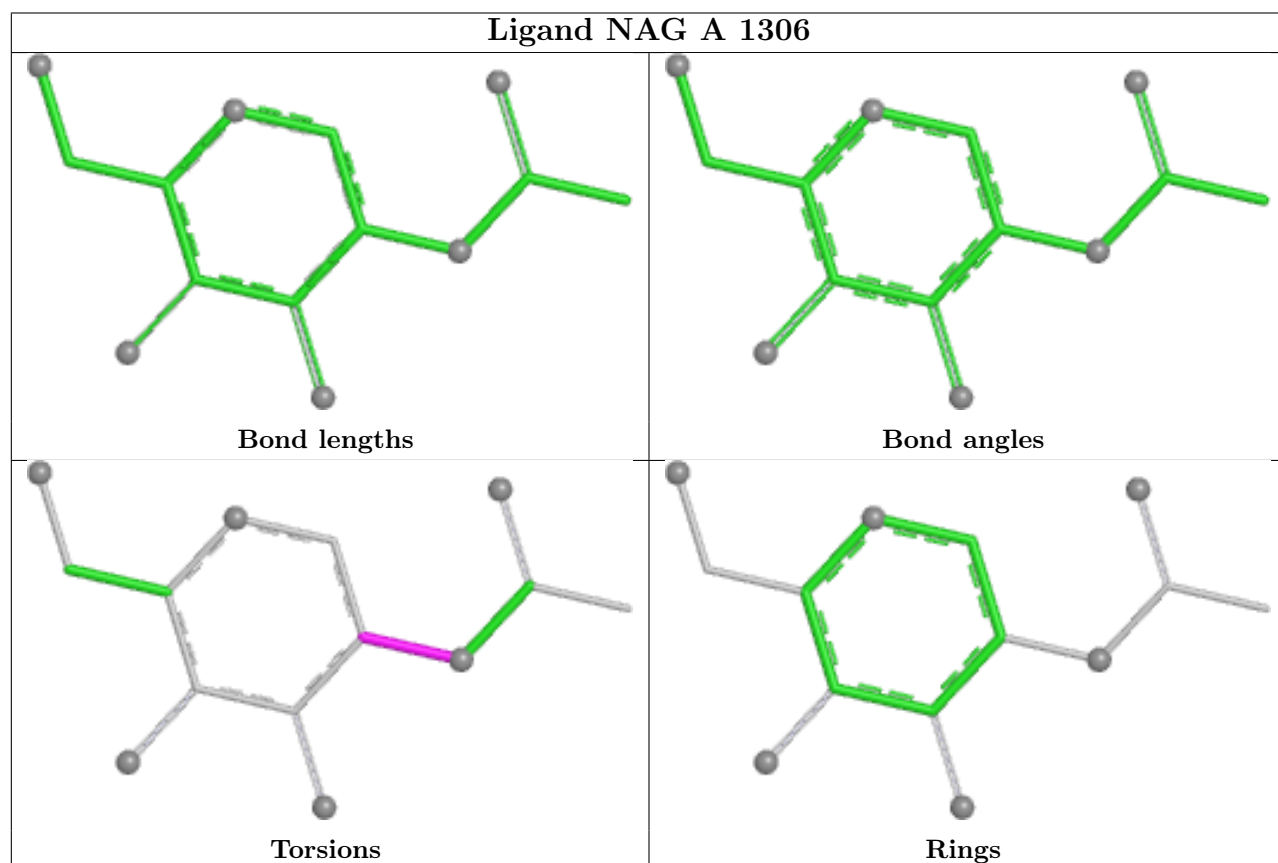
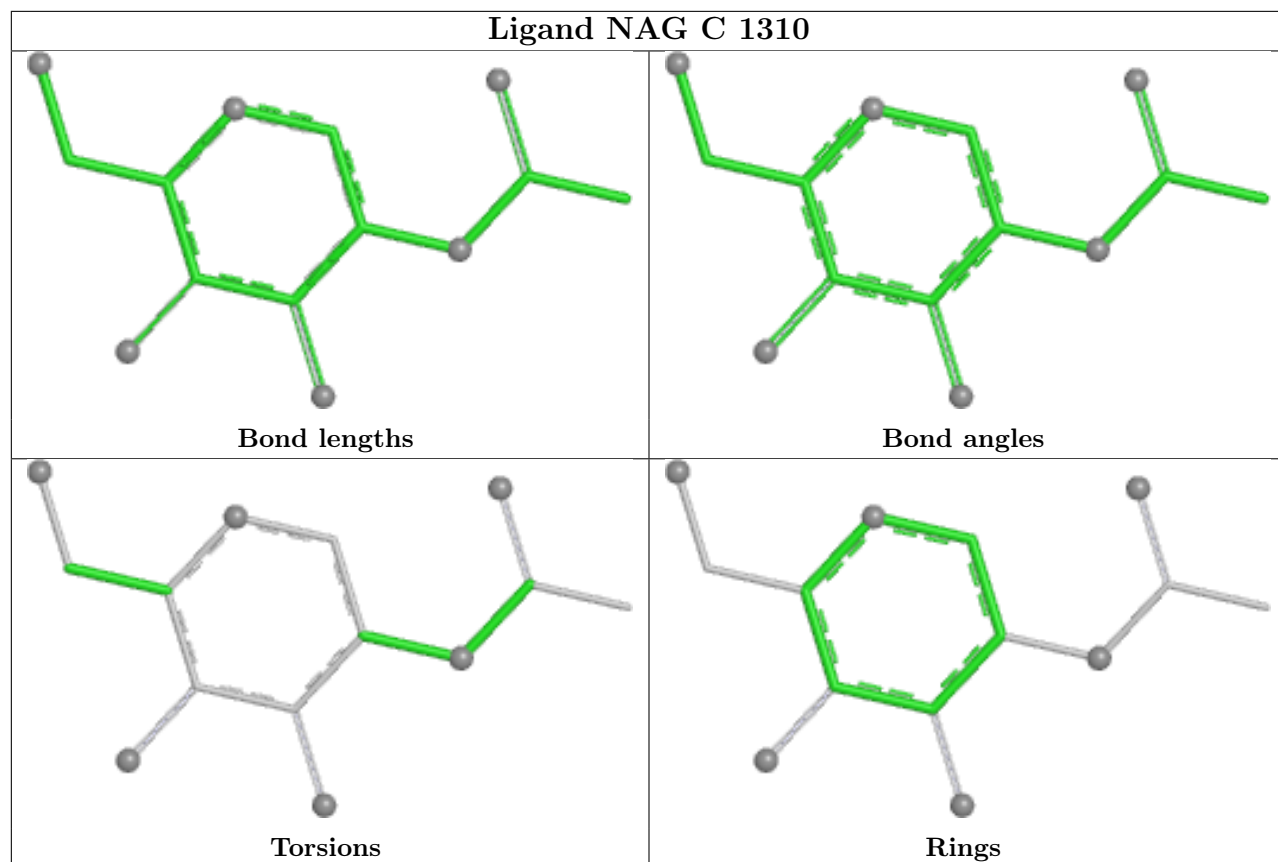


Ligand NAG B 1306

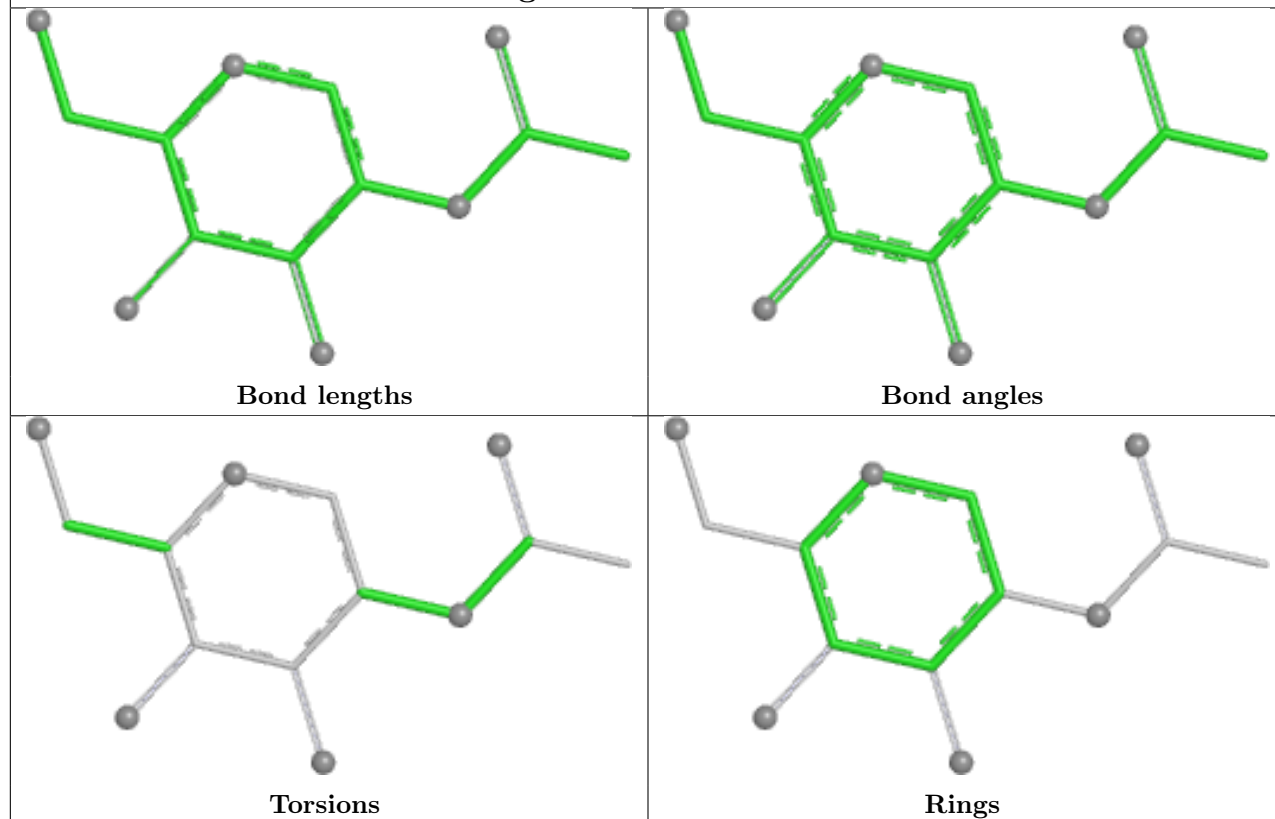


Ligand NAG A 1303

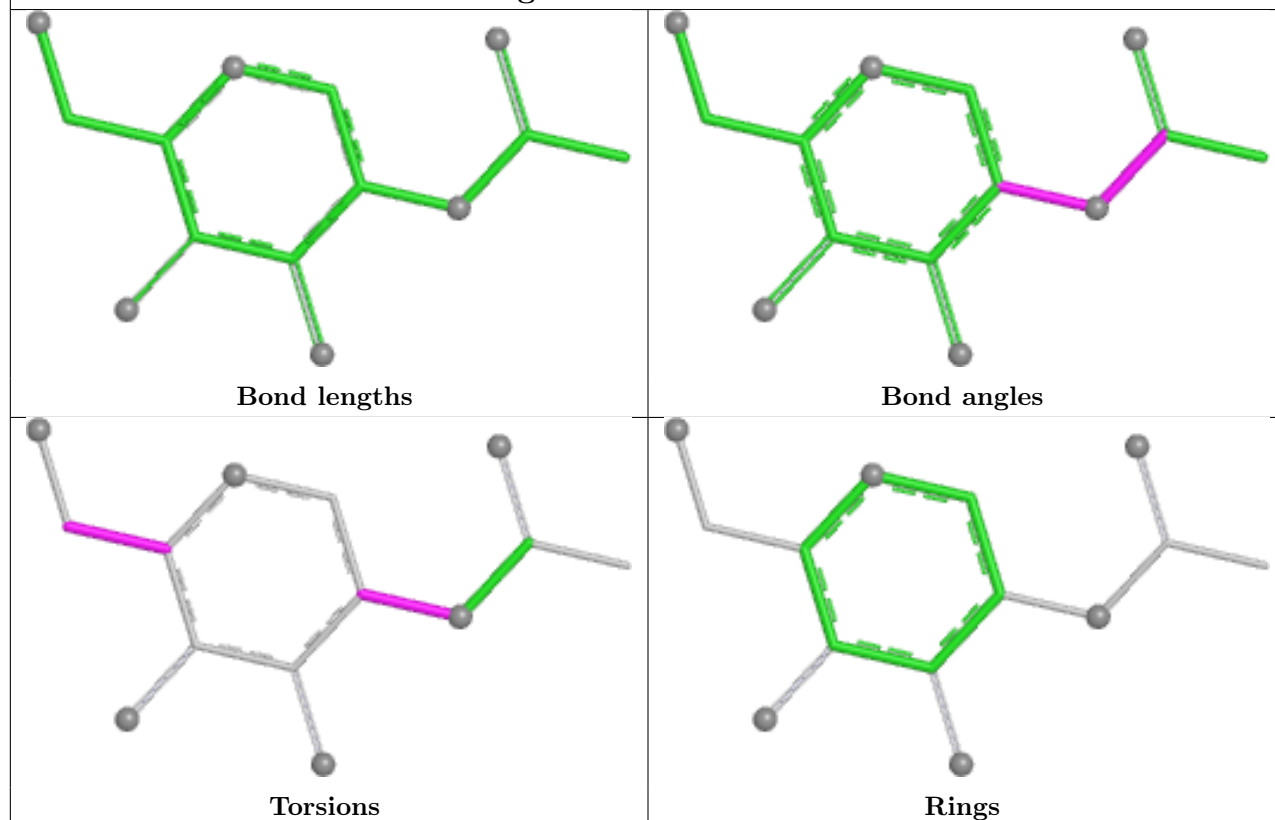


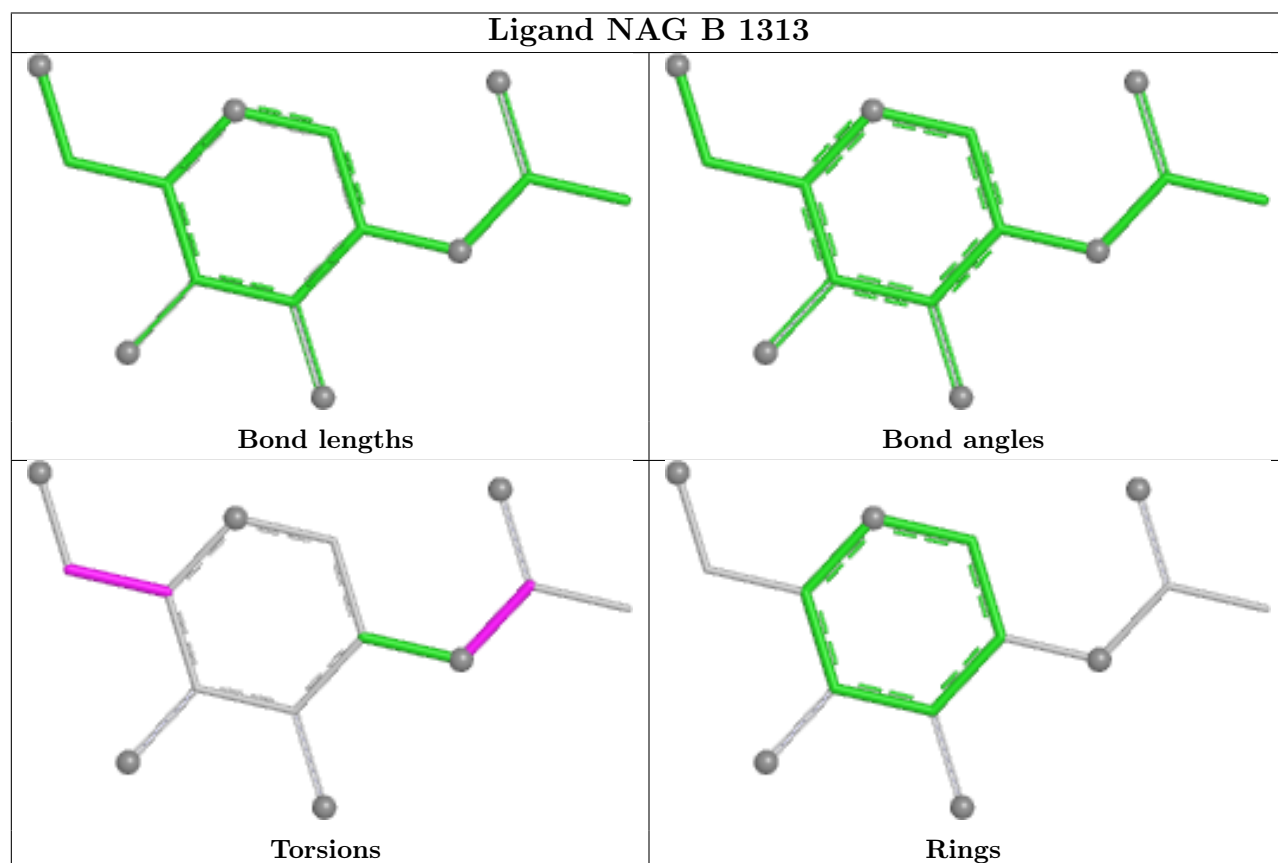
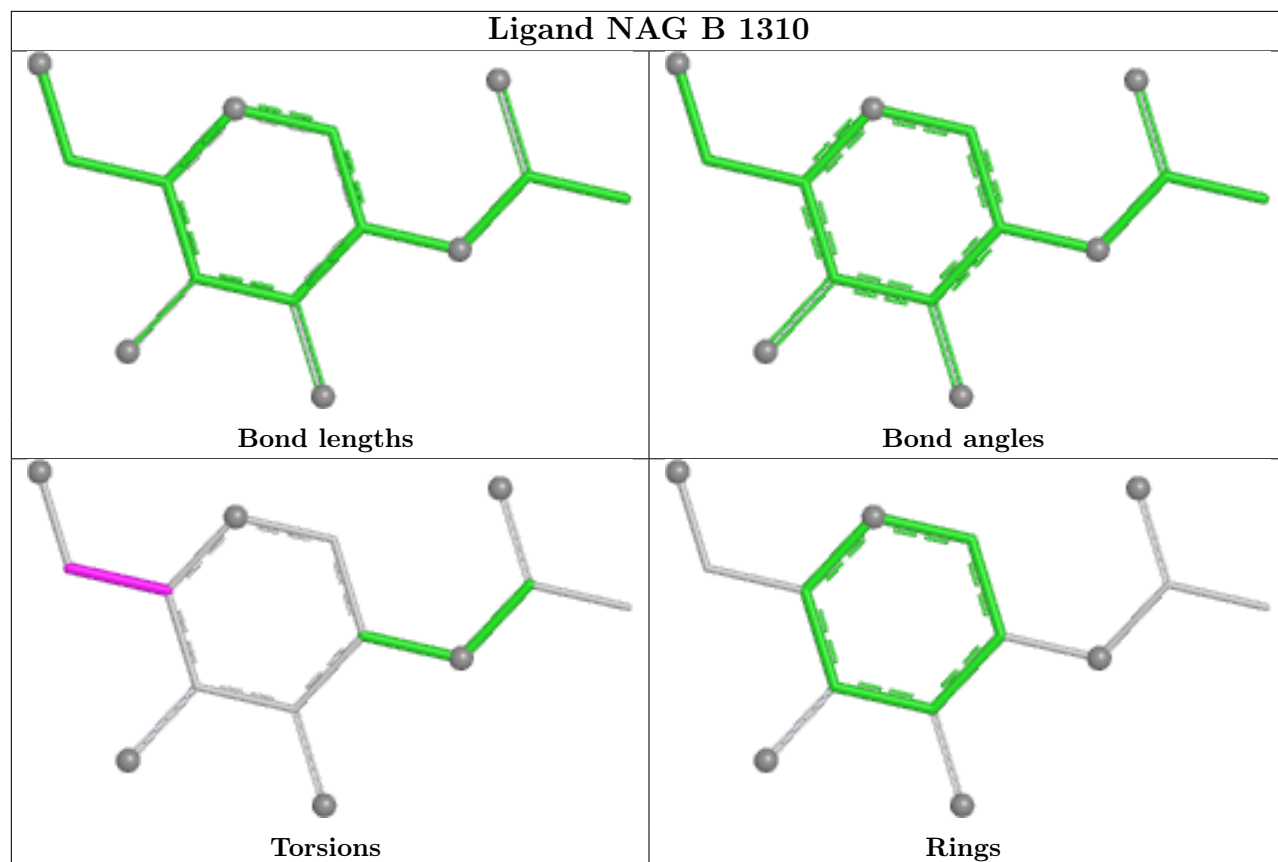


Ligand NAG B 1301

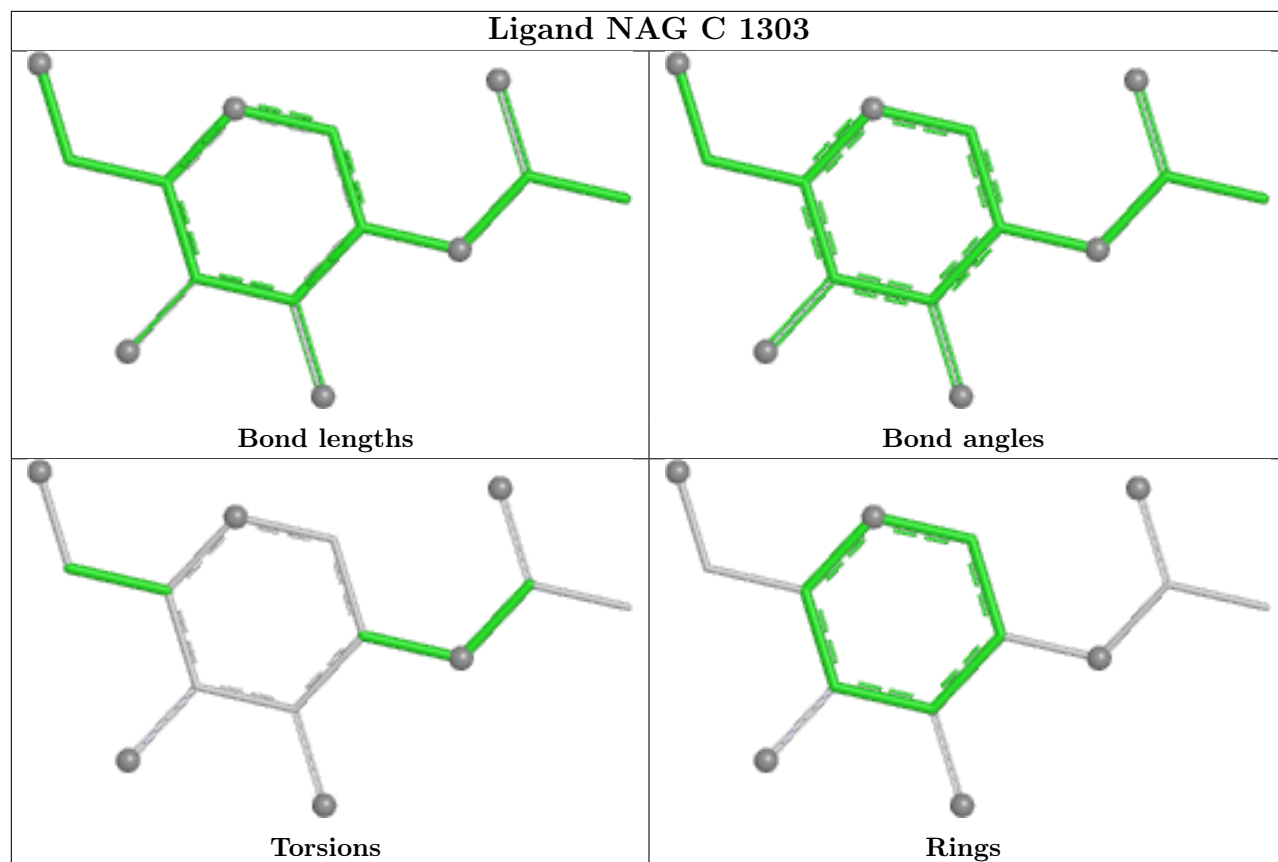


Ligand NAG A 1310

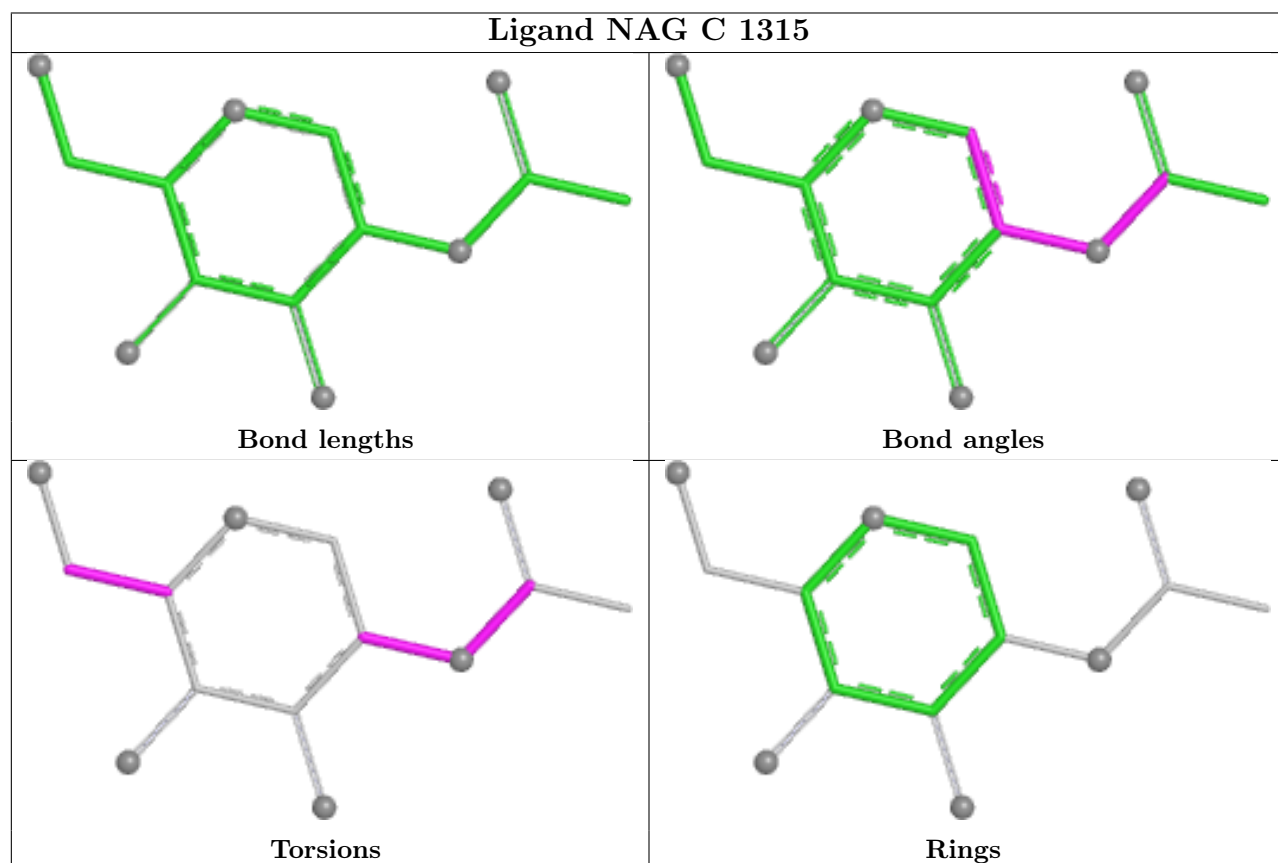




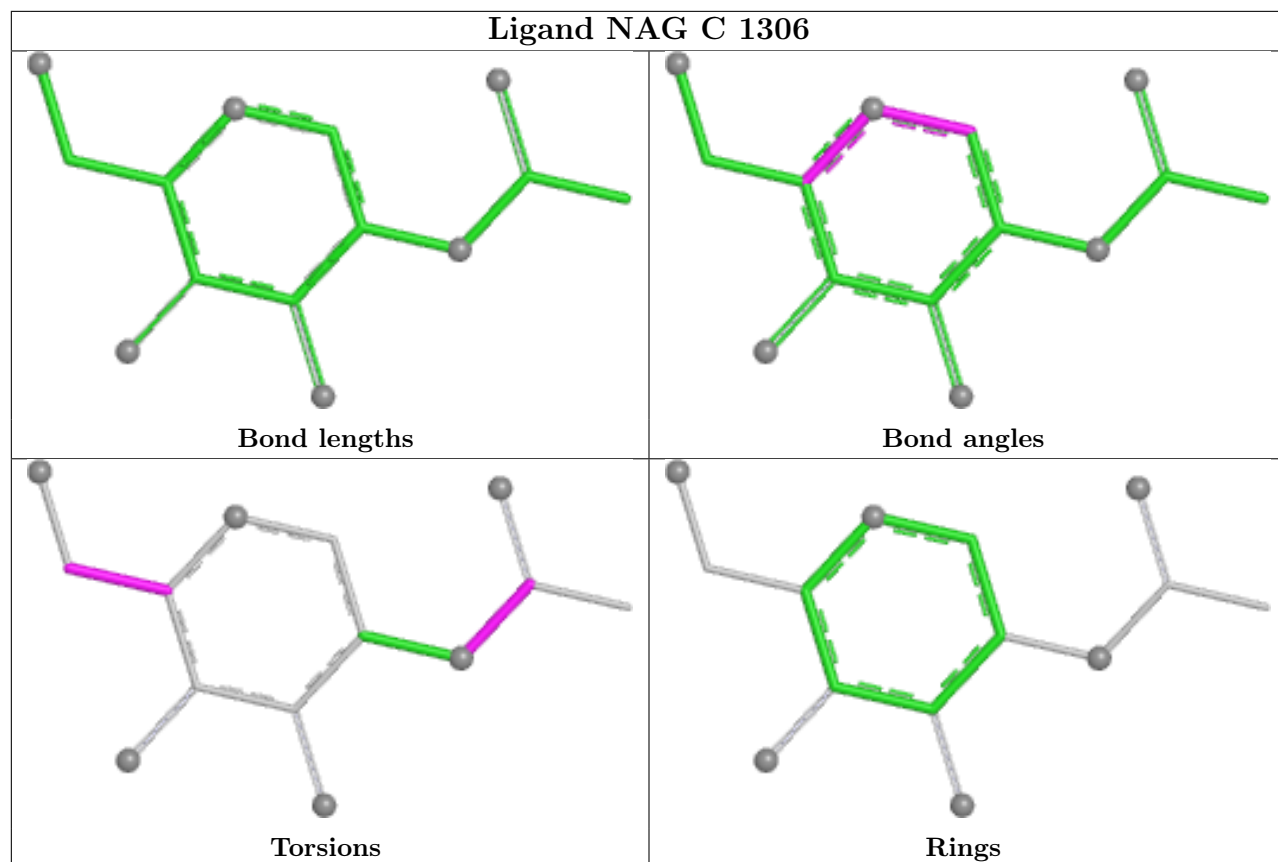
Ligand NAG C 1303



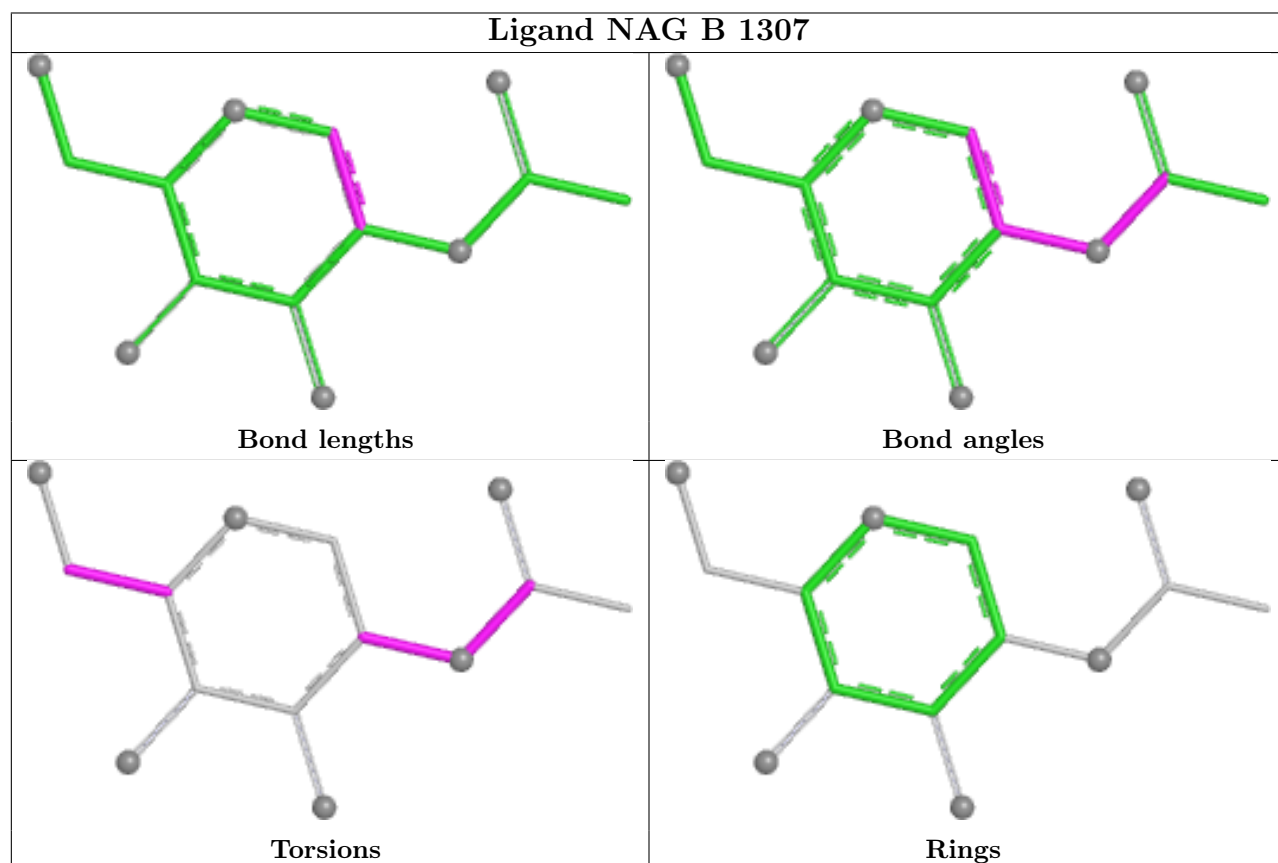
Ligand NAG C 1315



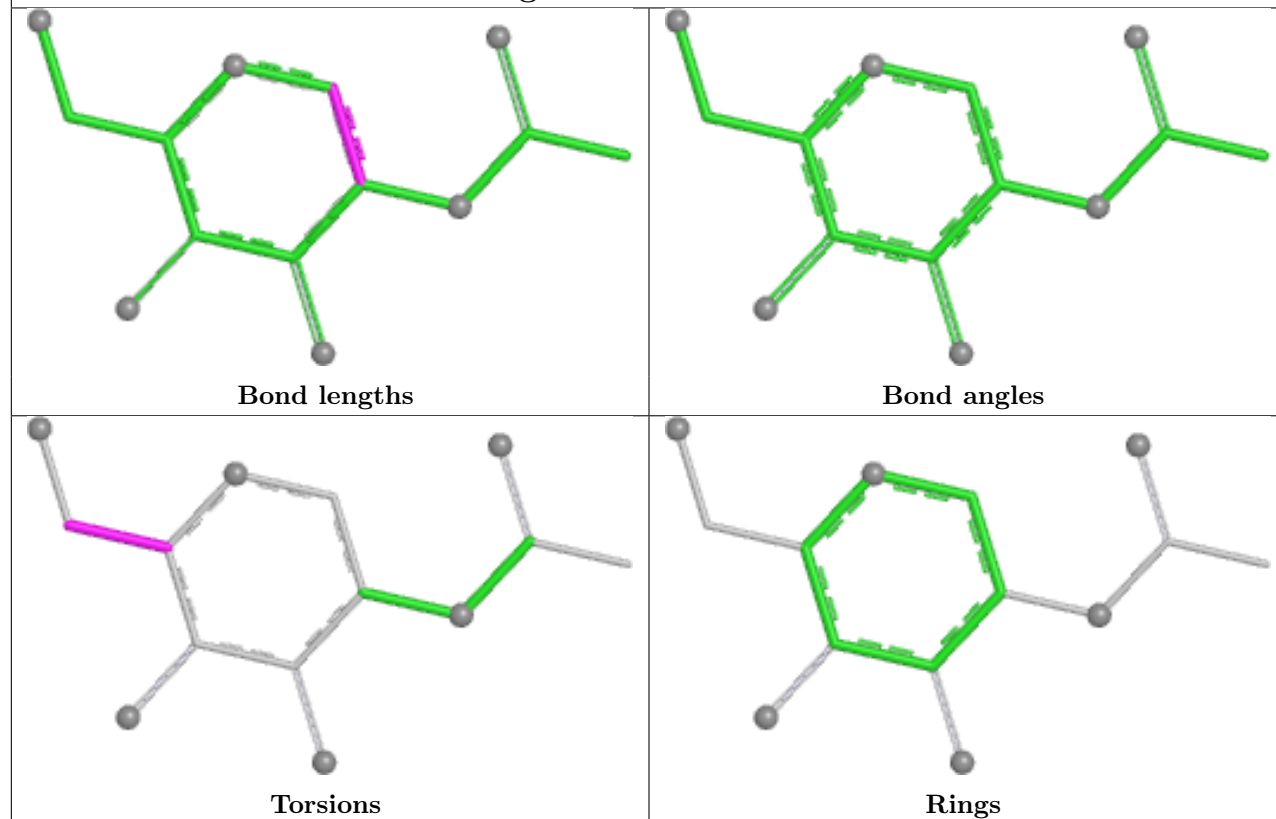
Ligand NAG C 1306



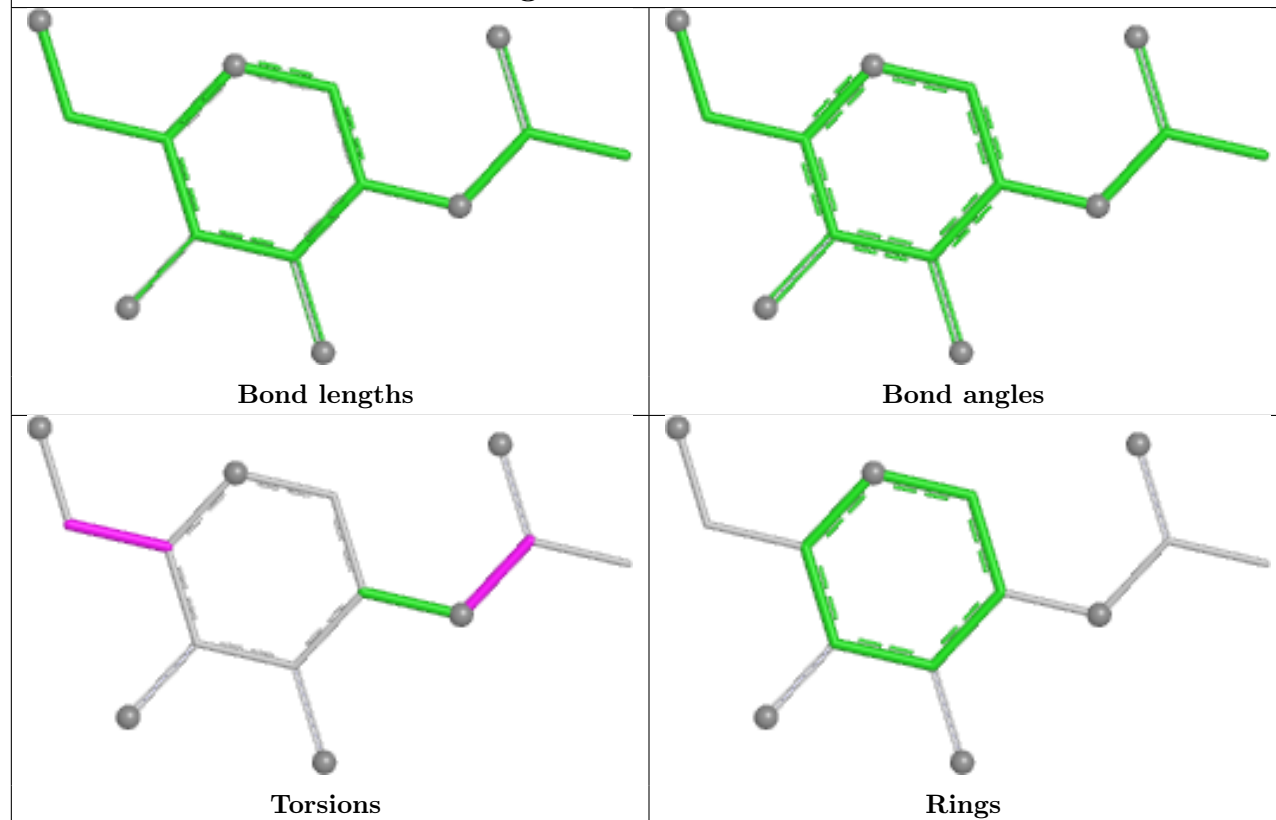
Ligand NAG B 1307



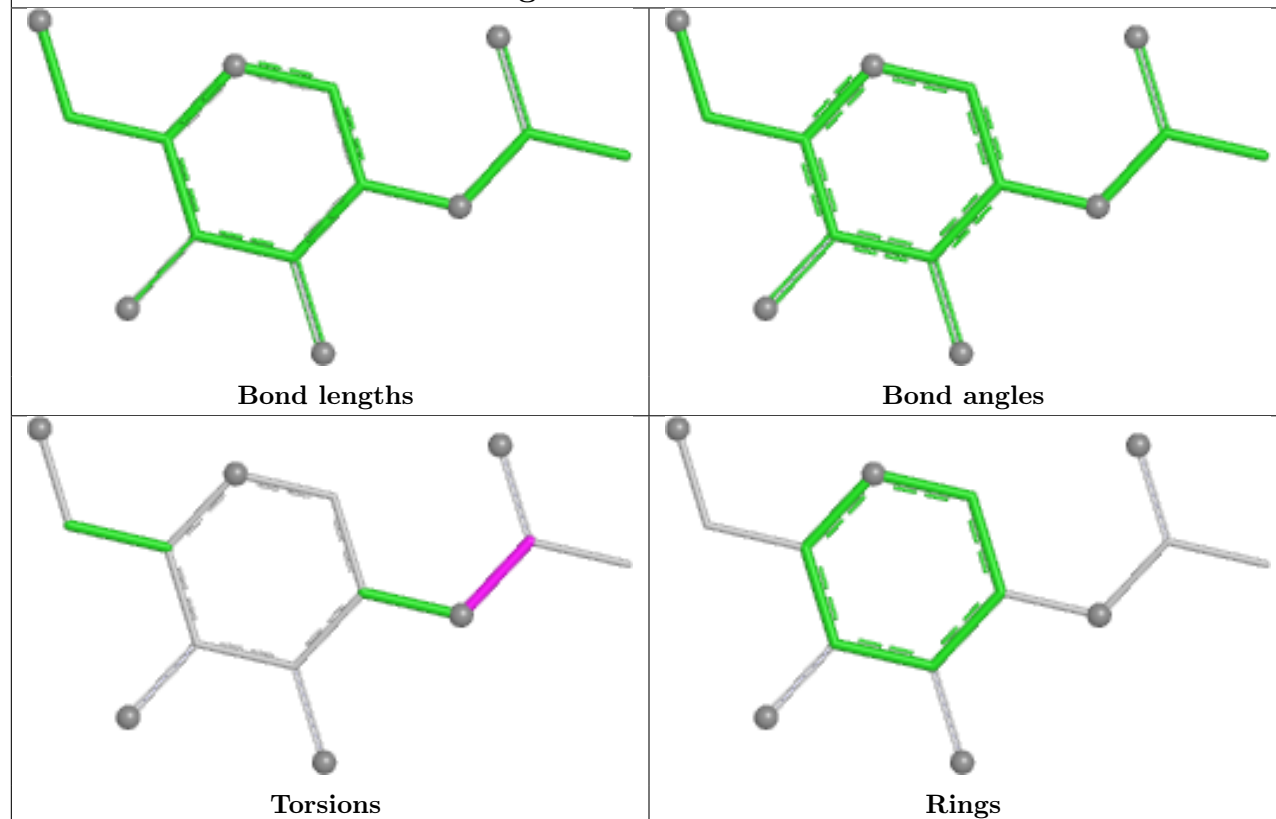
Ligand NAG C 1307



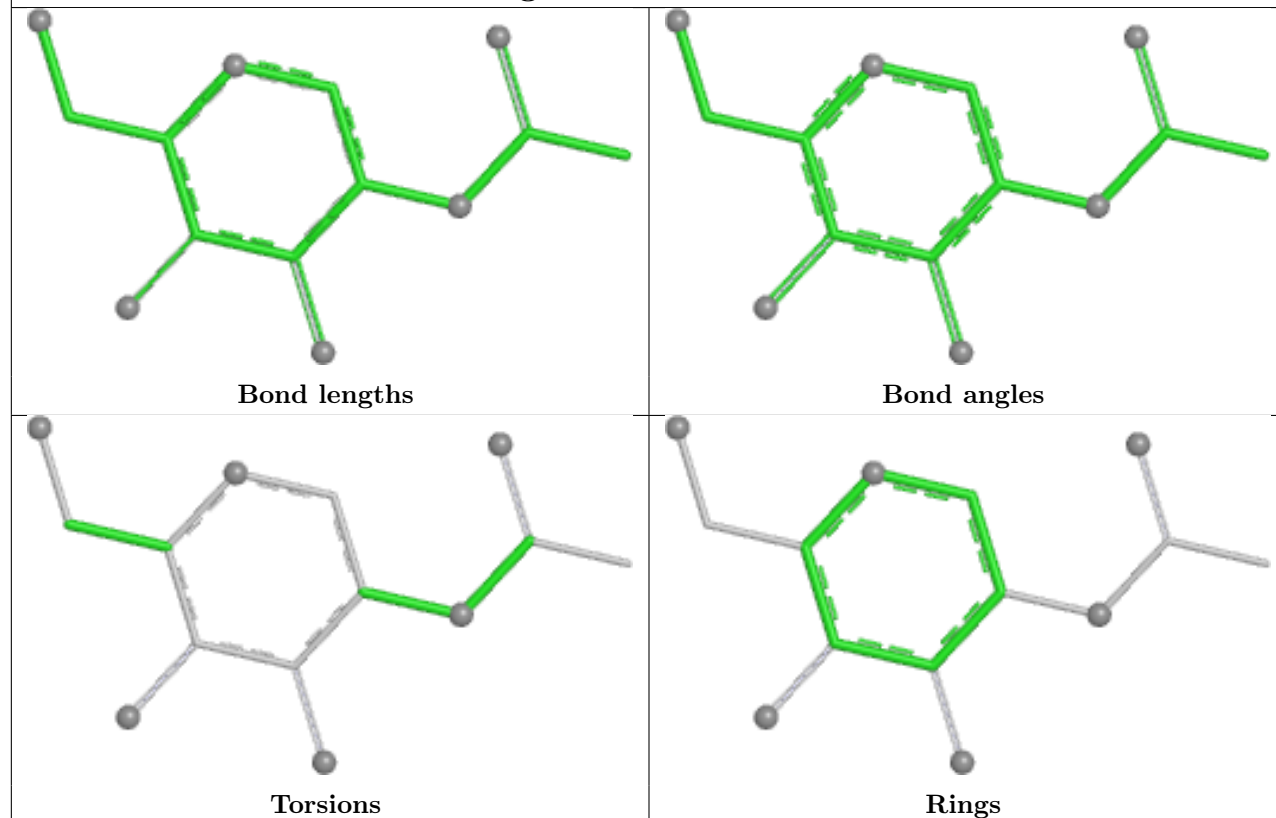
Ligand NAG C 1313



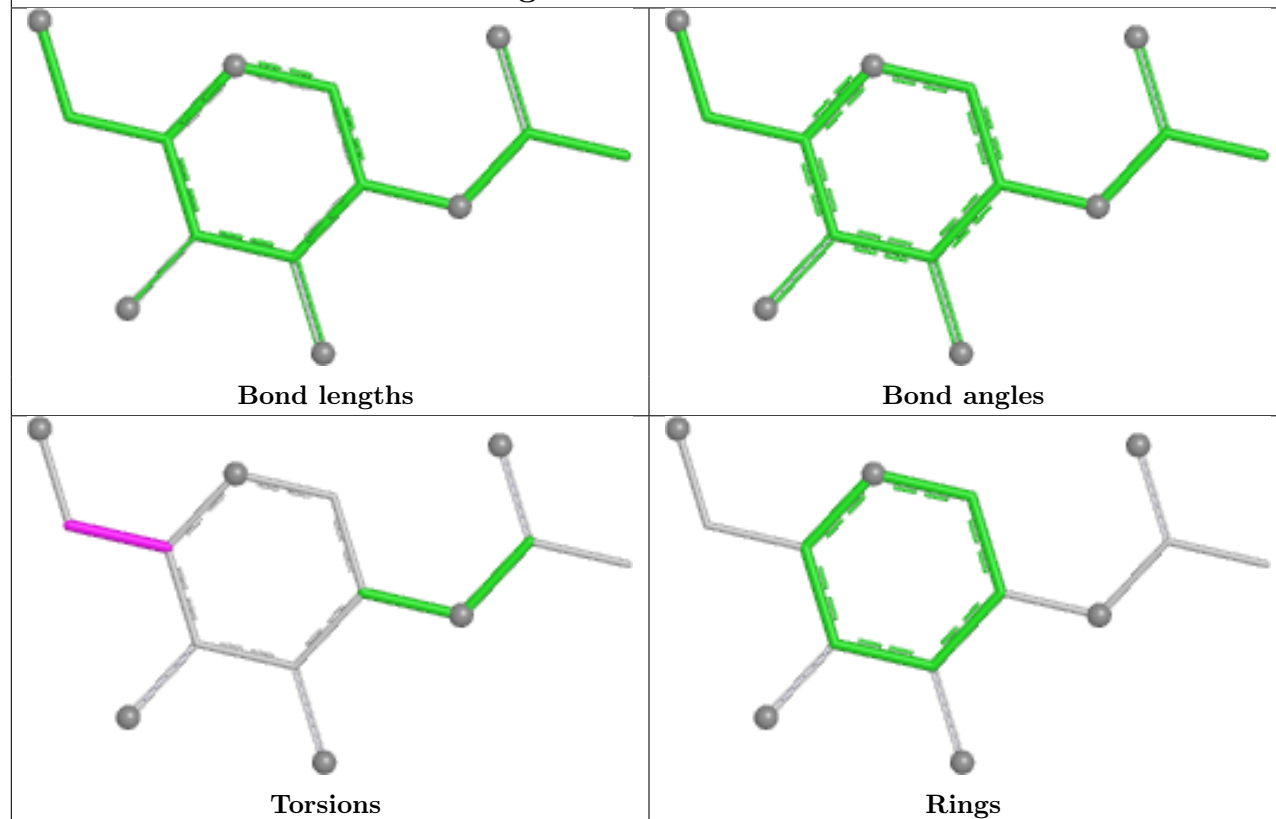
Ligand NAG A 1314



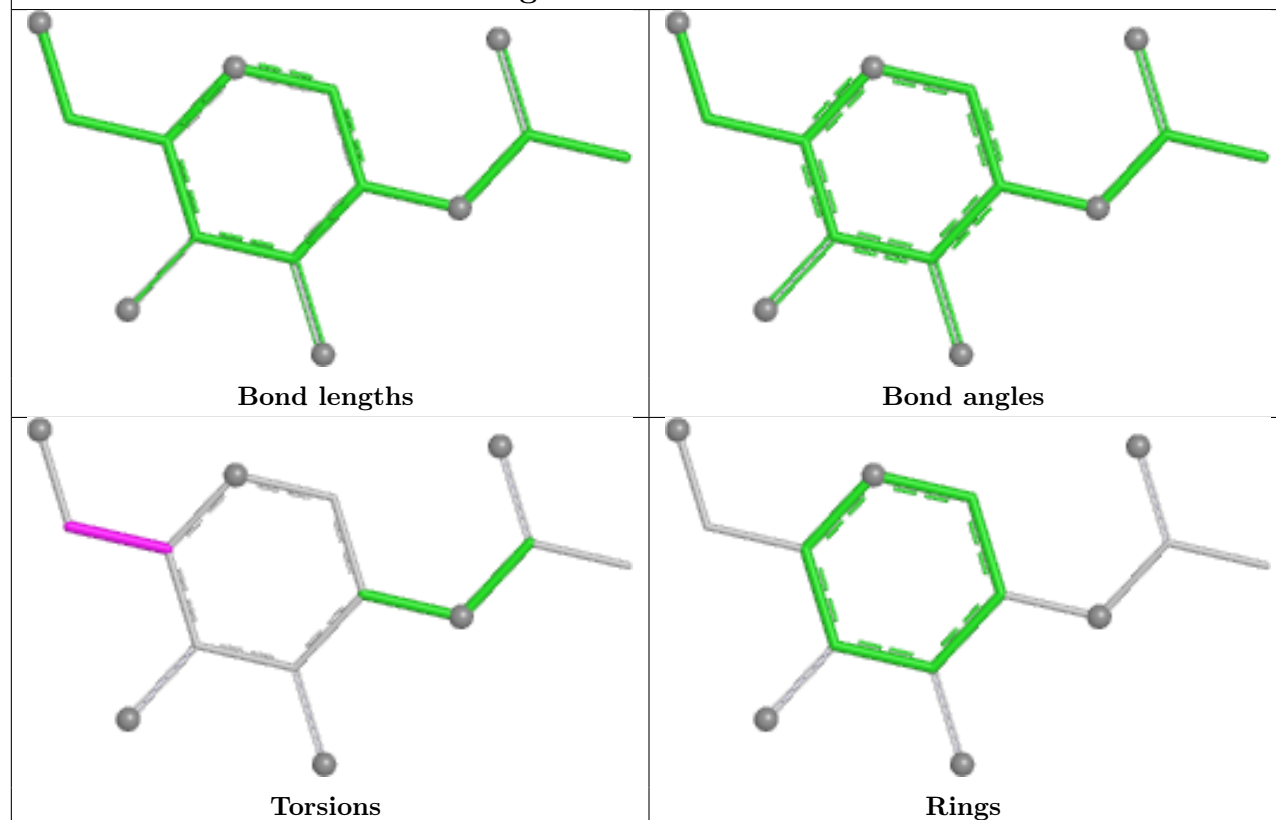
Ligand NAG C 1301



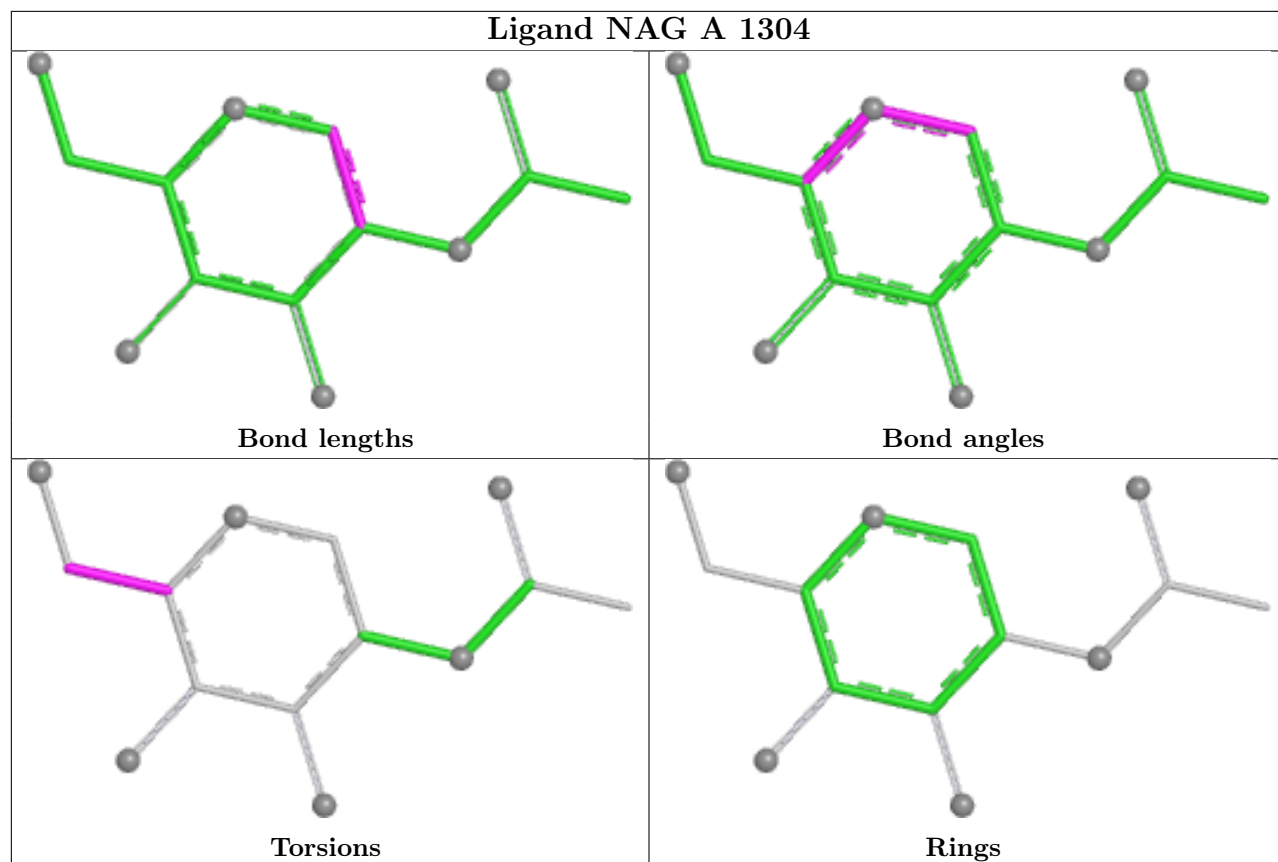
Ligand NAG A 1305



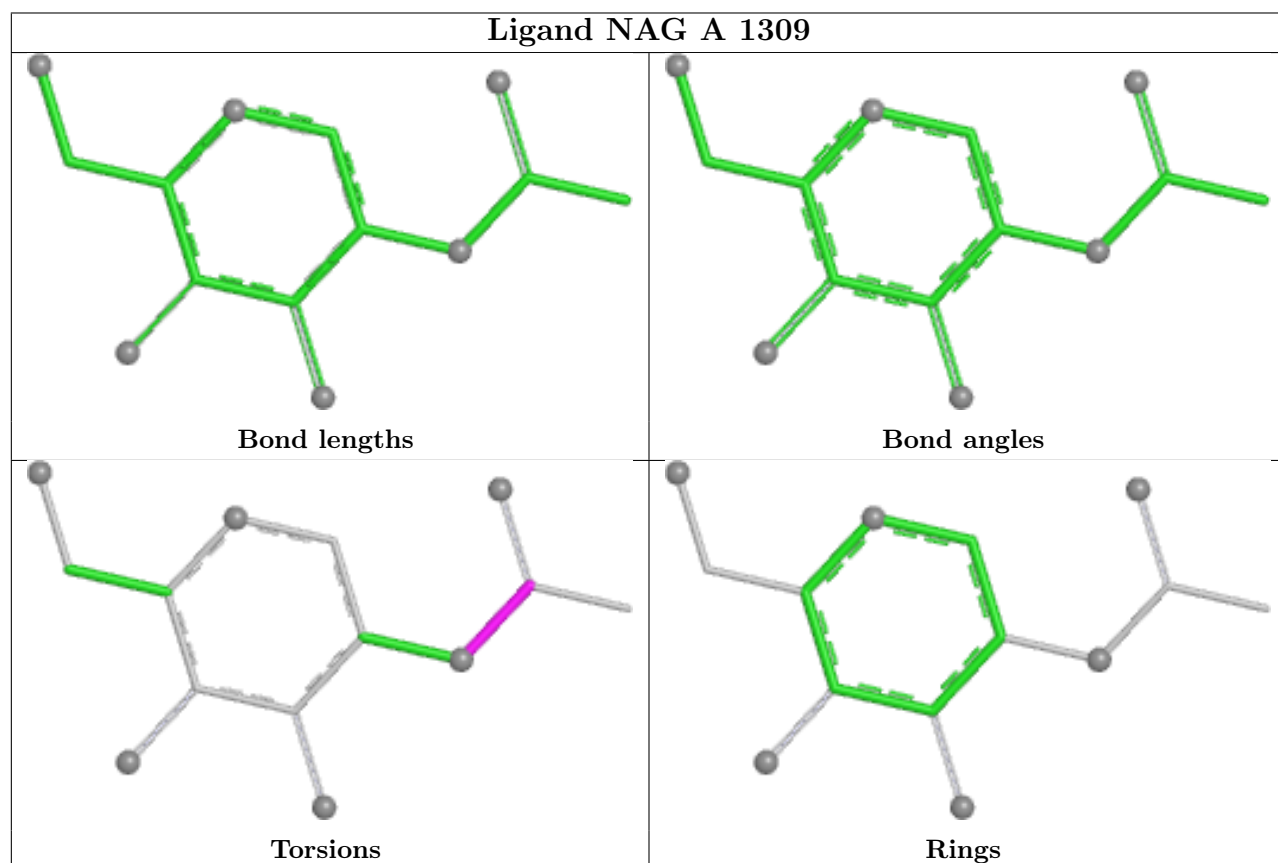
Ligand NAG B 1309

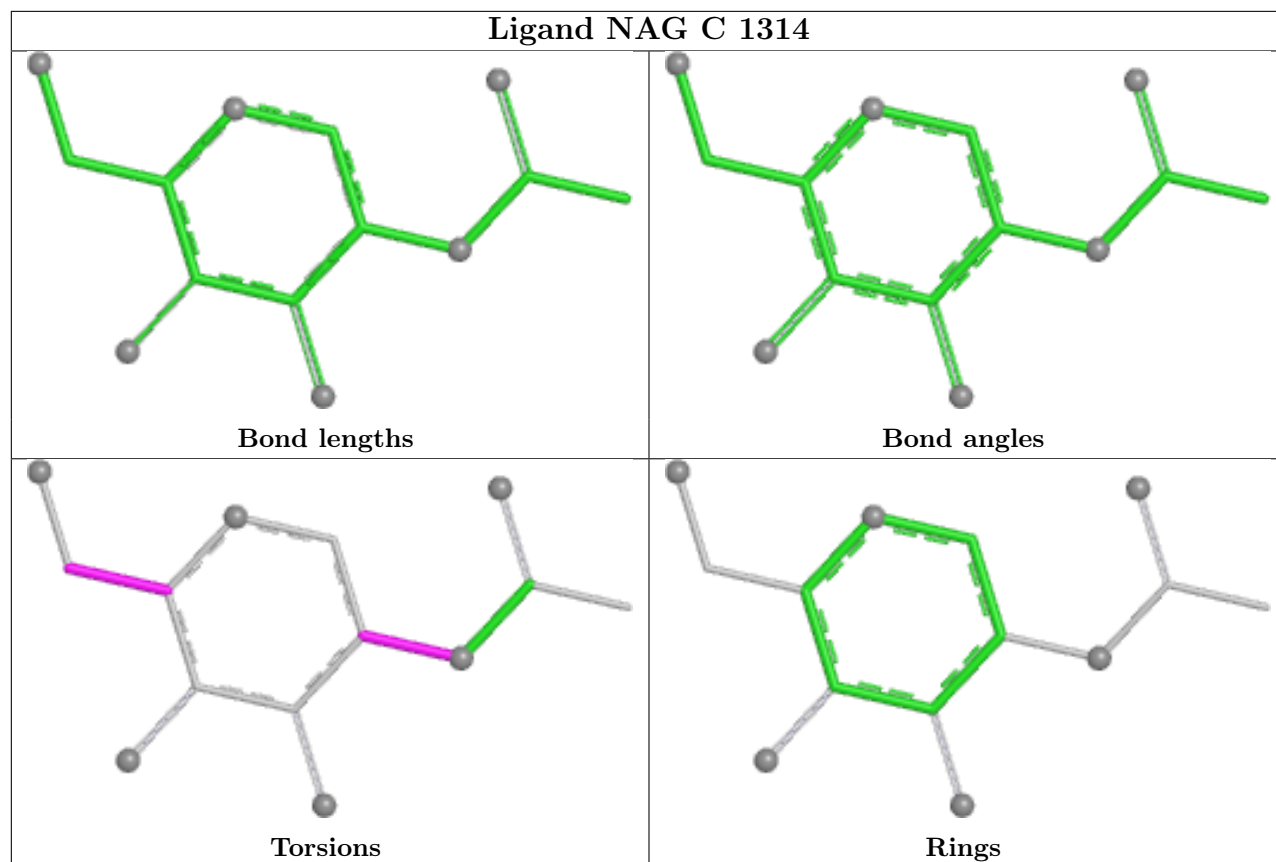


Ligand NAG A 1304



Ligand NAG A 1309





5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
1	B	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	B	328:ARG	C	329:PHE	N	4.86

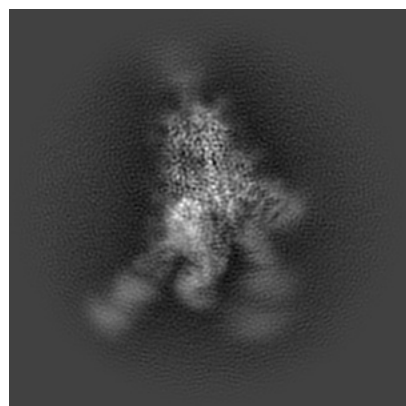
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-27775. These allow visual inspection of the internal detail of the map and identification of artifacts.

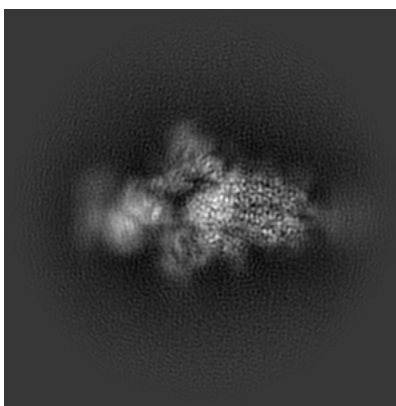
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

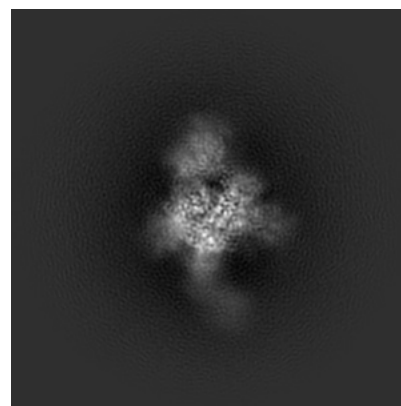
6.1.1 Primary map



X

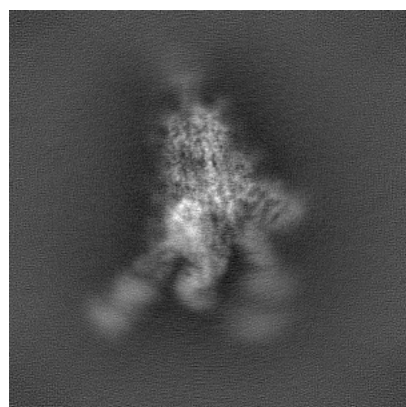


Y

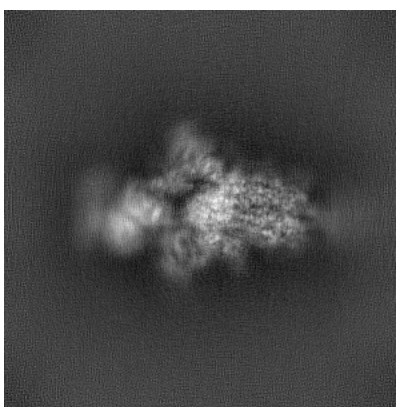


Z

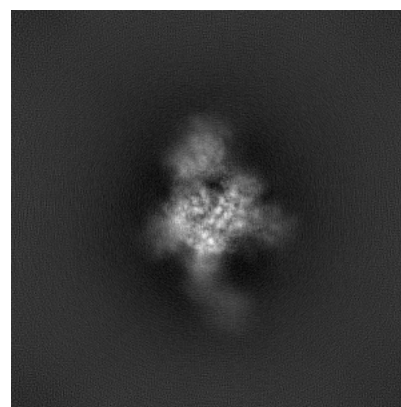
6.1.2 Raw map



X



Y

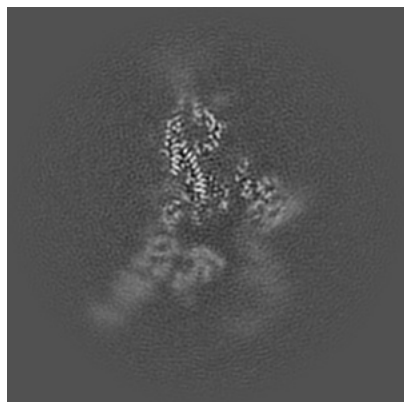


Z

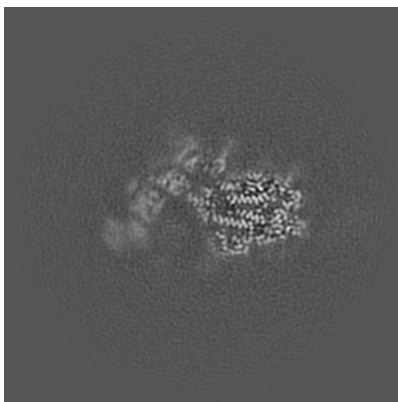
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

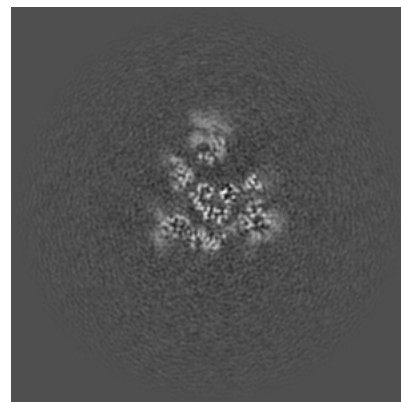
6.2.1 Primary map



X Index: 196

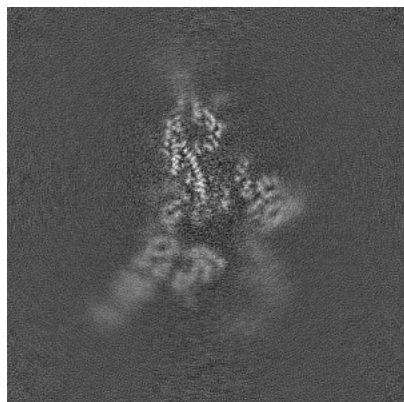


Y Index: 196

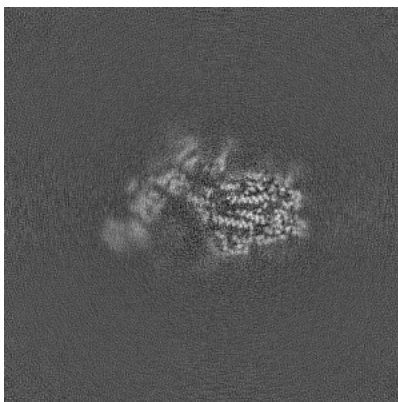


Z Index: 196

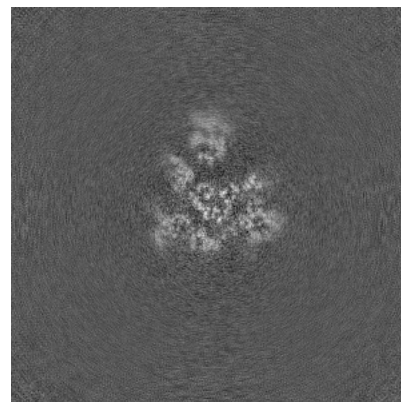
6.2.2 Raw map



X Index: 196



Y Index: 196

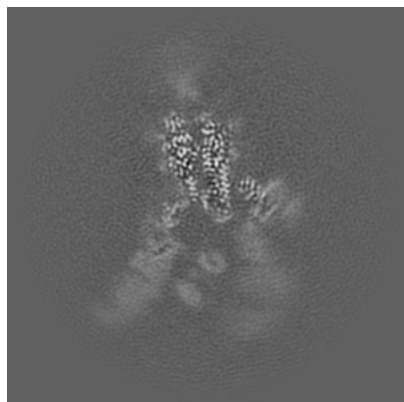


Z Index: 196

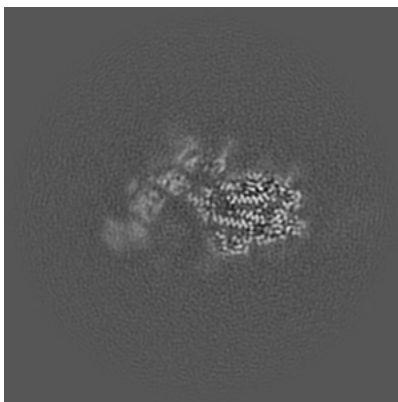
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

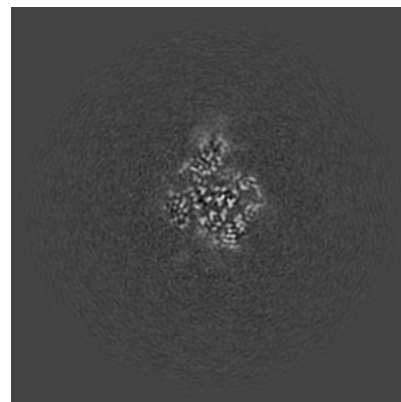
6.3.1 Primary map



X Index: 187

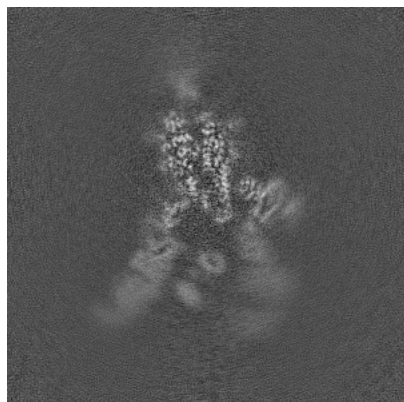


Y Index: 196

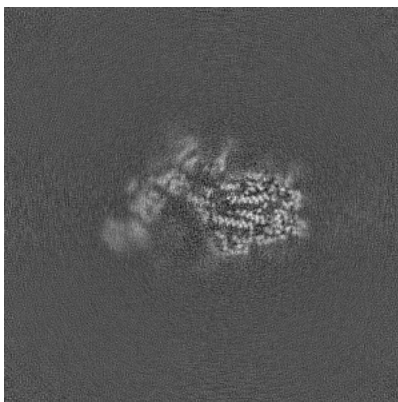


Z Index: 213

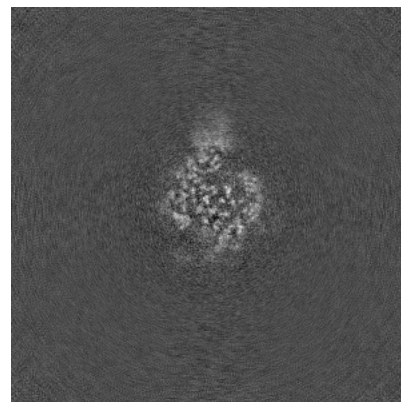
6.3.2 Raw map



X Index: 187



Y Index: 196

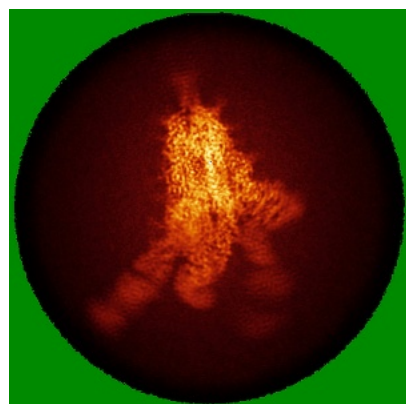


Z Index: 210

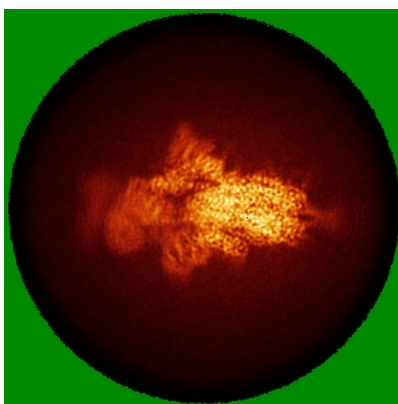
The images above show the largest variance slices of the map in three orthogonal directions.

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

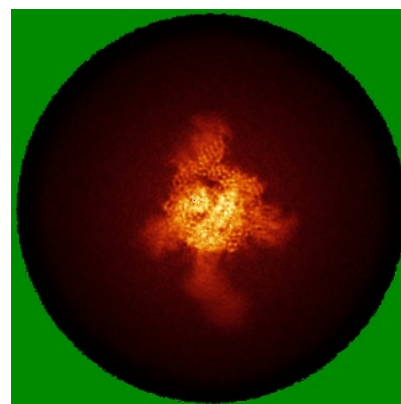
6.4.1 Primary map



X

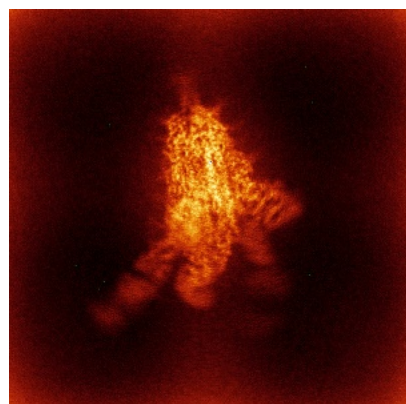


Y

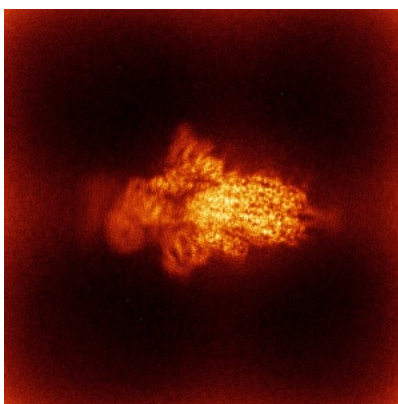


Z

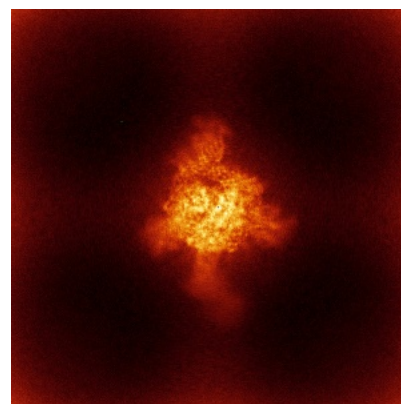
6.4.2 Raw map



X



Y

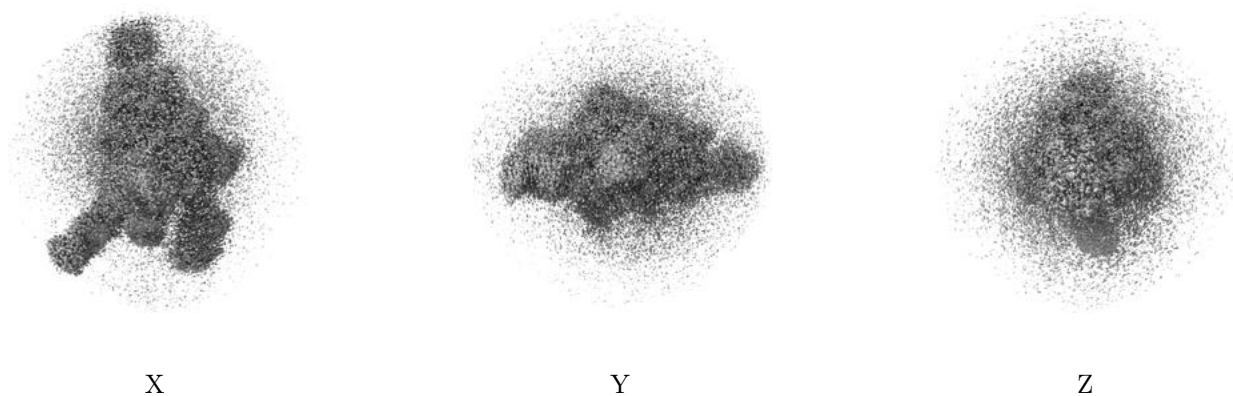


Z

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

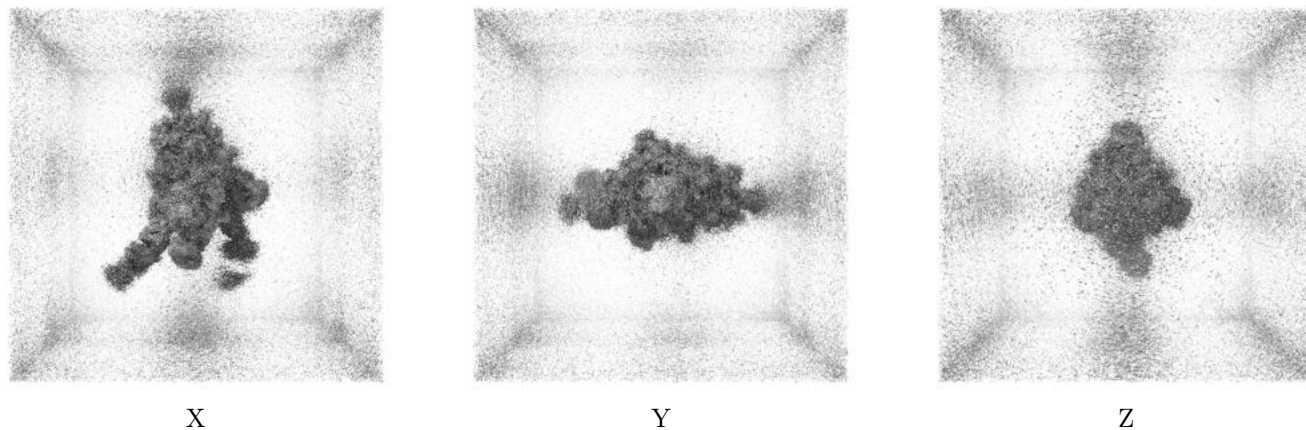
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



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

6.5.2 Raw map



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.

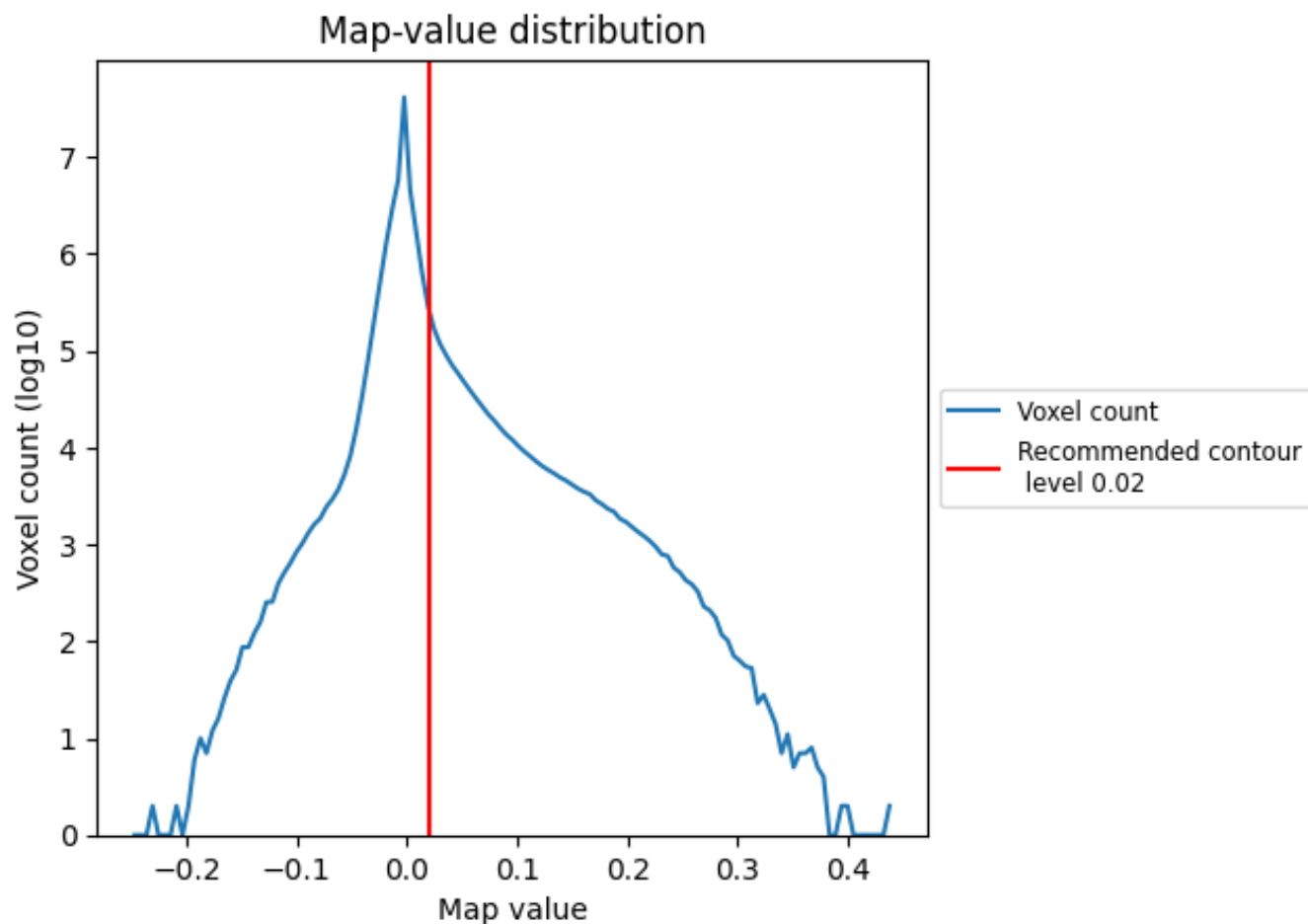
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

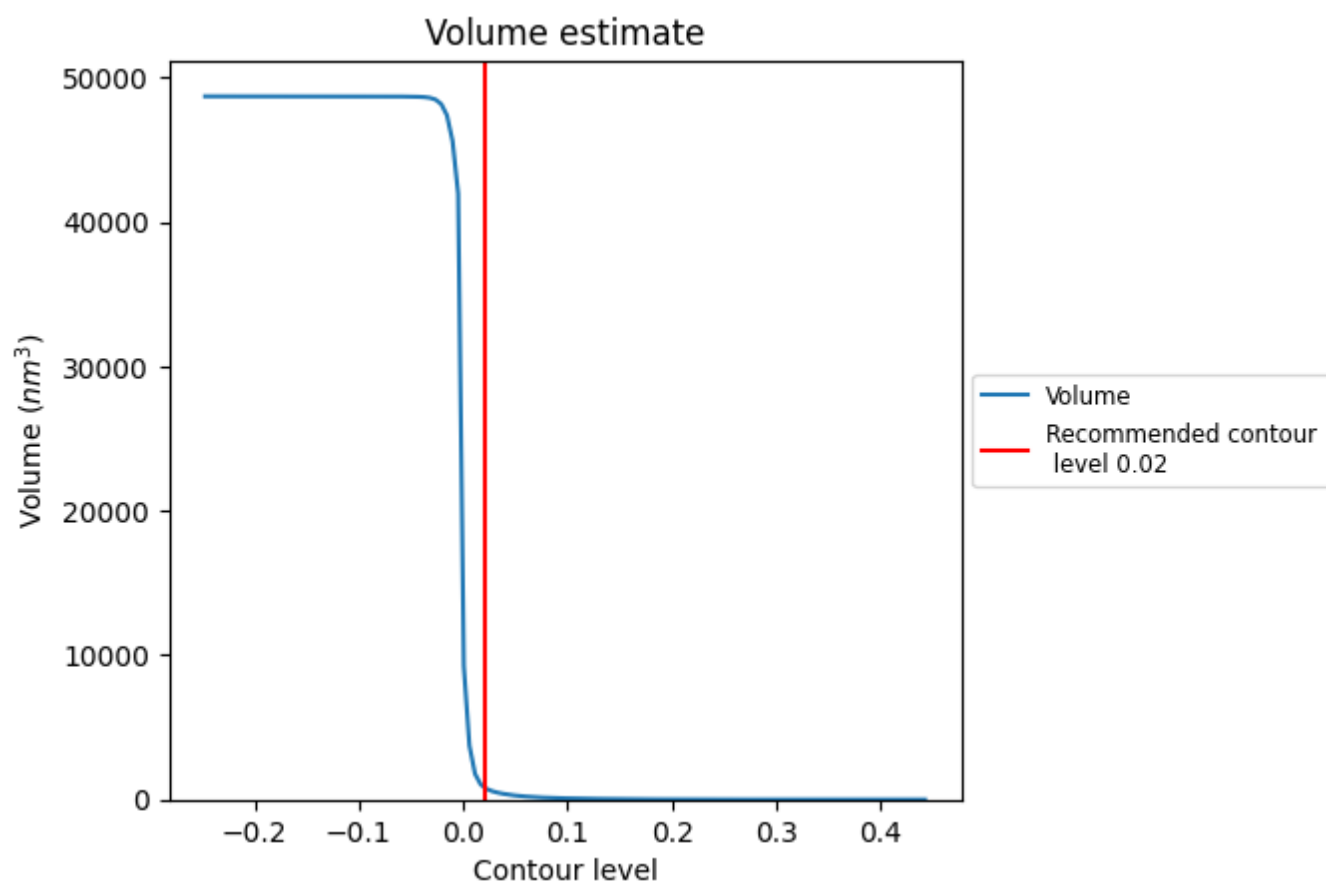
This section contains the results of statistical analysis of the map.

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.

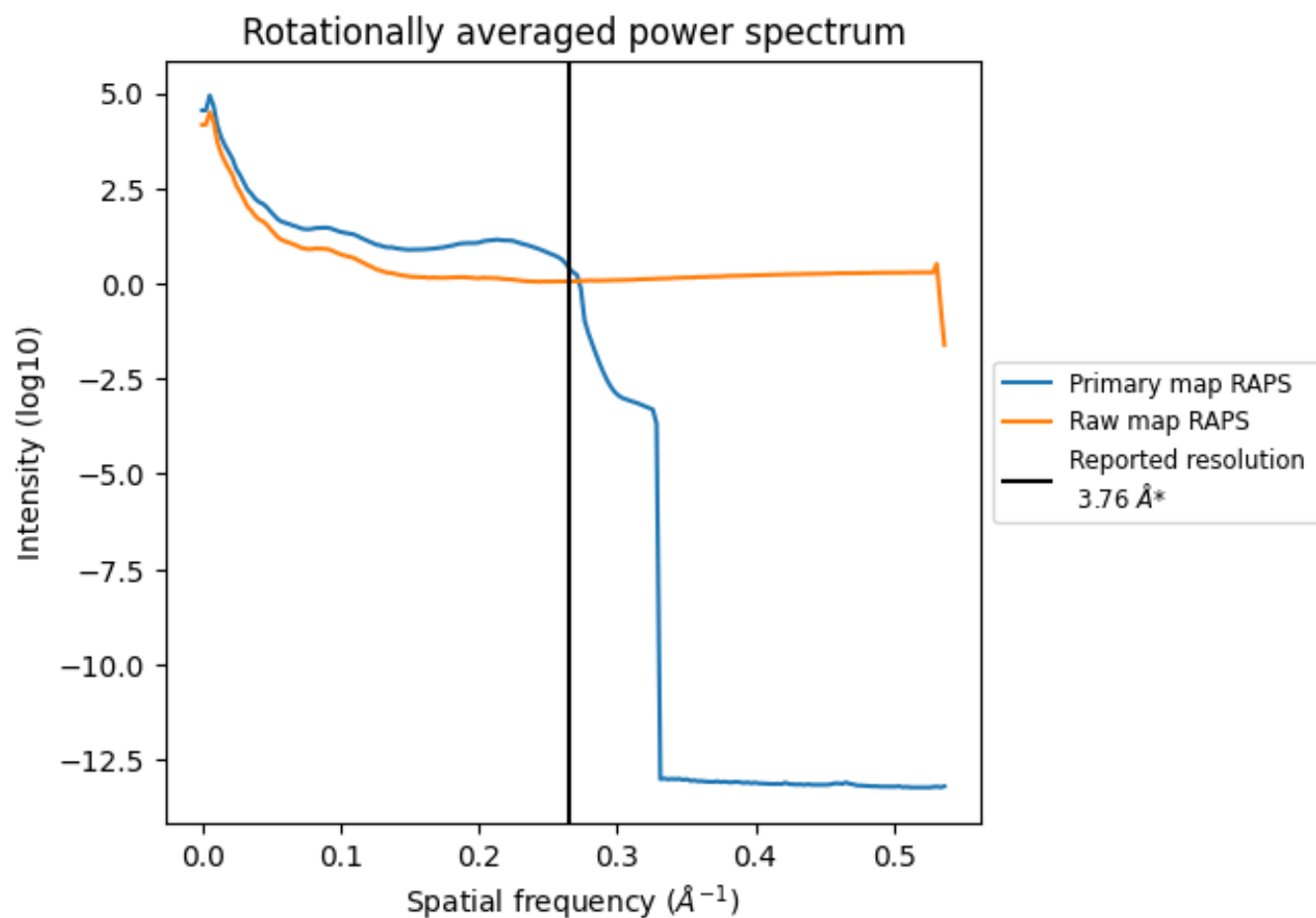
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 873 nm^3 ; this corresponds to an approximate mass of 788 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 ⓘ

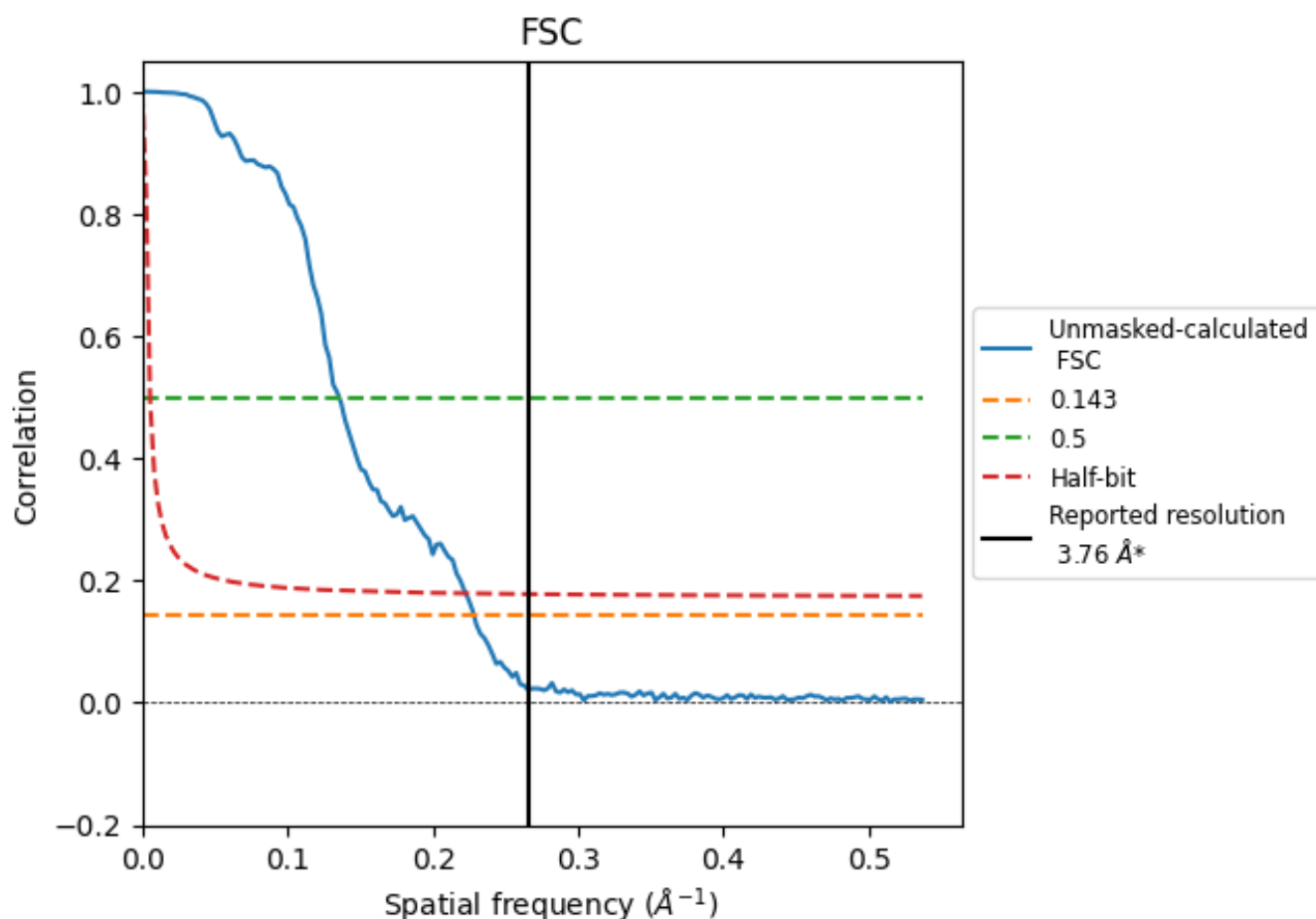


*Reported resolution corresponds to spatial frequency of 0.266 Å⁻¹

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 0.266 Å⁻¹

8.2 Resolution estimates [i](#)

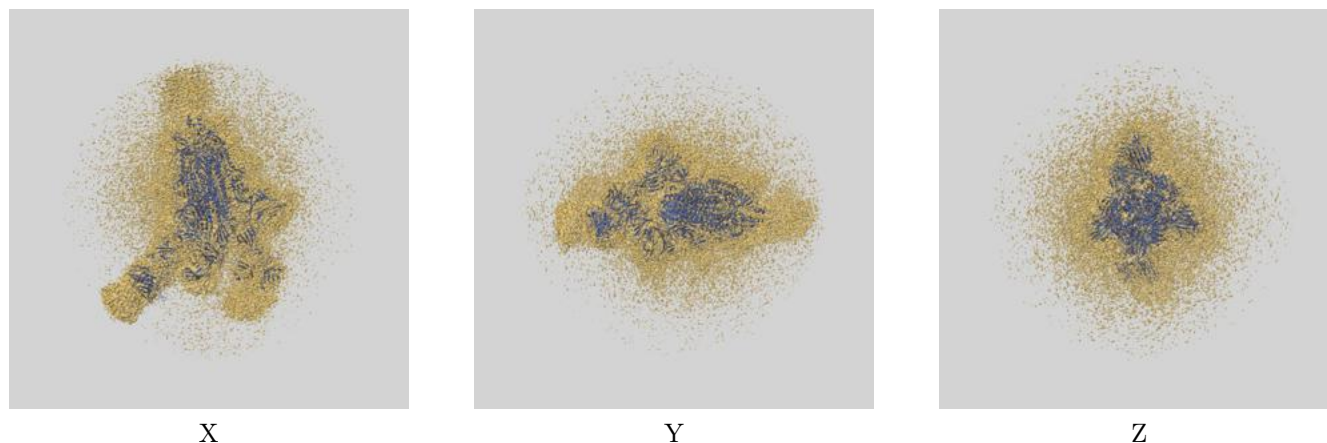
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.76	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	4.38	7.39	4.49

*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 4.38 differs from the reported value 3.76 by more than 10 %

9 Map-model fit [i](#)

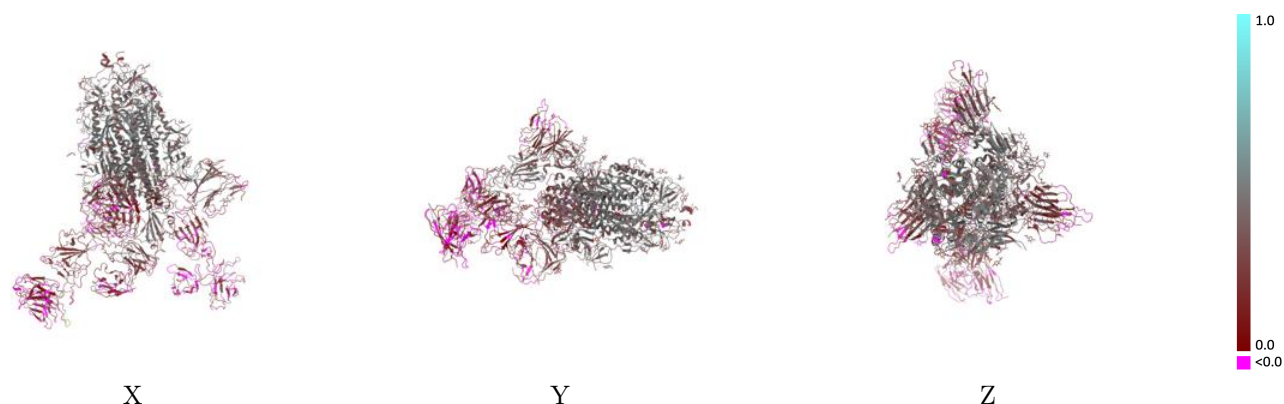
This section contains information regarding the fit between EMDB map EMD-27775 and PDB model 8DXS. Per-residue inclusion information can be found in [section 3](#) on [page 14](#).

9.1 Map-model overlay [i](#)



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

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

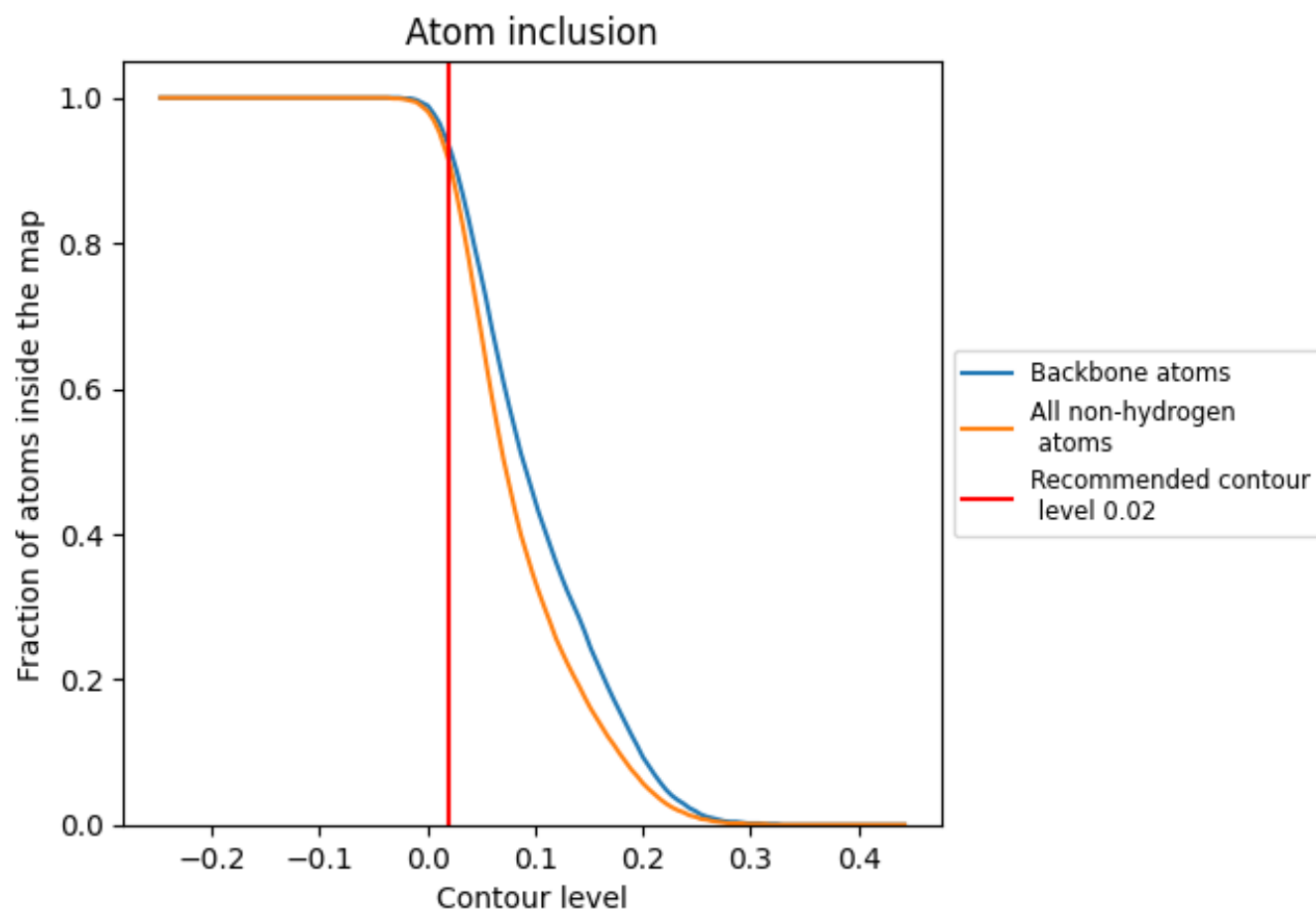


The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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

This section was not generated.

9.4 Atom inclusion [i](#)



At the recommended contour level, 93% of all backbone atoms, 91% 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 (0.02) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.9140	0.2910
A	0.9640	0.3740
B	0.9410	0.3140
C	0.9440	0.3060
F	0.5900	0.0920
G	0.6270	0.0260
H	0.9400	0.1530
I	0.4570	0.0220
J	0.8830	0.0700
L	0.9690	0.2450

1.0

0.0

<0.0