Full wwPDB EM Validation Report

Jul 17, 2025 – 10:24 PM JST

PDB ID	:	9JMF / pdb_00009jmf
EMDB ID	:	EMD-61600
Title	:	Cryo-EM structure of SA-BatCoV (Neoromicia/PML-PHE1/RSA/2011) S-trimer
Authors	:	Yuan, H.; Xiong, X.
Deposited on	:	2024-09-20
Resolution	:	3.10 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:

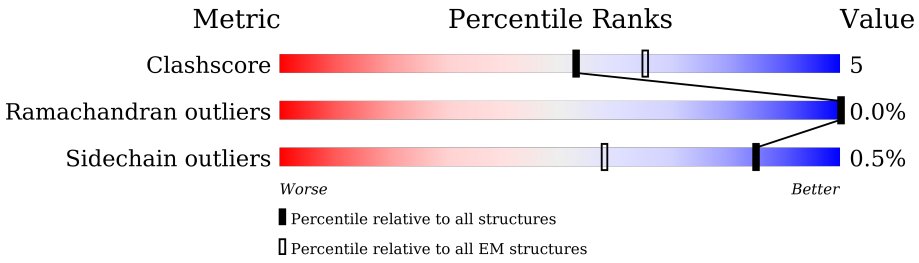
EMDB validation analysis	:	FAILED
Mogul	:	1.8.5 (274361), CSD as541be (2020)
MolProbity	:	4-5-2 with Phenix2.0rc1
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	FAILED
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal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

1 Overall quality at a glance

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

The reported resolution of this entry is 3.10 Å.

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



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

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5%

Mol	Chain	Length	Quality of chain
1	A	1366	76% 8% 16%
1	B	1366	77% 7% 16%
1	C	1366	75% 9% 16%
2	D	2	50% 50%
2	E	2	100%
2	F	2	100%
2	G	2	50% 50%
2	H	2	50% 50%
2	I	2	50% 50%

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Mol	Chain	Length	Quality of chain
2	J	2	100%
2	K	2	100%
2	L	2	100%
2	M	2	100%
2	N	2	50% 50%
2	O	2	100%
2	P	2	100%
2	Q	2	100%
2	R	2	100%

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	EIC	A	1412	-	-	X	-
4	EIC	B	1412	-	-	X	-
4	EIC	C	1412	-	-	X	-

2 Entry composition (i)

There are 4 unique types of molecules in this entry. The entry contains 27750 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,Fibritin.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	1147	Total	C	N	O	S	0	0
			8936	5675	1490	1723	48		
1	B	1147	Total	C	N	O	S	0	0
			8936	5675	1490	1723	48		
1	C	1147	Total	C	N	O	S	0	0
			8936	5675	1490	1723	48		

There are 159 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	1288	GLY	-	linker	UNP U5NJG5
A	1289	SER	-	linker	UNP U5NJG5
A	1311	LEU	PHE	conflict	UNP P10104
A	1317	LEU	-	expression tag	UNP P10104
A	1318	GLU	-	expression tag	UNP P10104
A	1319	VAL	-	expression tag	UNP P10104
A	1320	LEU	-	expression tag	UNP P10104
A	1321	PHE	-	expression tag	UNP P10104
A	1322	GLN	-	expression tag	UNP P10104
A	1323	GLY	-	expression tag	UNP P10104
A	1324	PRO	-	expression tag	UNP P10104
A	1325	GLY	-	expression tag	UNP P10104
A	1326	HIS	-	expression tag	UNP P10104
A	1327	HIS	-	expression tag	UNP P10104
A	1328	HIS	-	expression tag	UNP P10104
A	1329	HIS	-	expression tag	UNP P10104
A	1330	HIS	-	expression tag	UNP P10104
A	1331	HIS	-	expression tag	UNP P10104
A	1332	HIS	-	expression tag	UNP P10104
A	1333	HIS	-	expression tag	UNP P10104
A	1334	SER	-	expression tag	UNP P10104
A	1335	ALA	-	expression tag	UNP P10104
A	1336	TRP	-	expression tag	UNP P10104
A	1337	SER	-	expression tag	UNP P10104

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Chain	Residue	Modelled	Actual	Comment	Reference
A	1338	HIS	-	expression tag	UNP P10104
A	1339	PRO	-	expression tag	UNP P10104
A	1340	GLN	-	expression tag	UNP P10104
A	1341	PHE	-	expression tag	UNP P10104
A	1342	GLU	-	expression tag	UNP P10104
A	1343	LYS	-	expression tag	UNP P10104
A	1344	GLY	-	expression tag	UNP P10104
A	1345	GLY	-	expression tag	UNP P10104
A	1346	GLY	-	expression tag	UNP P10104
A	1347	SER	-	expression tag	UNP P10104
A	1348	GLY	-	expression tag	UNP P10104
A	1349	GLY	-	expression tag	UNP P10104
A	1350	GLY	-	expression tag	UNP P10104
A	1351	GLY	-	expression tag	UNP P10104
A	1352	SER	-	expression tag	UNP P10104
A	1353	GLY	-	expression tag	UNP P10104
A	1354	GLY	-	expression tag	UNP P10104
A	1355	SER	-	expression tag	UNP P10104
A	1356	ALA	-	expression tag	UNP P10104
A	1357	TRP	-	expression tag	UNP P10104
A	1358	SER	-	expression tag	UNP P10104
A	1359	HIS	-	expression tag	UNP P10104
A	1360	PRO	-	expression tag	UNP P10104
A	1361	GLN	-	expression tag	UNP P10104
A	1362	PHE	-	expression tag	UNP P10104
A	1363	GLU	-	expression tag	UNP P10104
A	1364	LYS	-	expression tag	UNP P10104
A	1365	SER	-	expression tag	UNP P10104
A	1366	ALA	-	expression tag	UNP P10104
B	1288	GLY	-	linker	UNP U5NJG5
B	1289	SER	-	linker	UNP U5NJG5
B	1311	LEU	PHE	conflict	UNP P10104
B	1317	LEU	-	expression tag	UNP P10104
B	1318	GLU	-	expression tag	UNP P10104
B	1319	VAL	-	expression tag	UNP P10104
B	1320	LEU	-	expression tag	UNP P10104
B	1321	PHE	-	expression tag	UNP P10104
B	1322	GLN	-	expression tag	UNP P10104
B	1323	GLY	-	expression tag	UNP P10104
B	1324	PRO	-	expression tag	UNP P10104
B	1325	GLY	-	expression tag	UNP P10104
B	1326	HIS	-	expression tag	UNP P10104

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Chain	Residue	Modelled	Actual	Comment	Reference
B	1327	HIS	-	expression tag	UNP P10104
B	1328	HIS	-	expression tag	UNP P10104
B	1329	HIS	-	expression tag	UNP P10104
B	1330	HIS	-	expression tag	UNP P10104
B	1331	HIS	-	expression tag	UNP P10104
B	1332	HIS	-	expression tag	UNP P10104
B	1333	HIS	-	expression tag	UNP P10104
B	1334	SER	-	expression tag	UNP P10104
B	1335	ALA	-	expression tag	UNP P10104
B	1336	TRP	-	expression tag	UNP P10104
B	1337	SER	-	expression tag	UNP P10104
B	1338	HIS	-	expression tag	UNP P10104
B	1339	PRO	-	expression tag	UNP P10104
B	1340	GLN	-	expression tag	UNP P10104
B	1341	PHE	-	expression tag	UNP P10104
B	1342	GLU	-	expression tag	UNP P10104
B	1343	LYS	-	expression tag	UNP P10104
B	1344	GLY	-	expression tag	UNP P10104
B	1345	GLY	-	expression tag	UNP P10104
B	1346	GLY	-	expression tag	UNP P10104
B	1347	SER	-	expression tag	UNP P10104
B	1348	GLY	-	expression tag	UNP P10104
B	1349	GLY	-	expression tag	UNP P10104
B	1350	GLY	-	expression tag	UNP P10104
B	1351	GLY	-	expression tag	UNP P10104
B	1352	SER	-	expression tag	UNP P10104
B	1353	GLY	-	expression tag	UNP P10104
B	1354	GLY	-	expression tag	UNP P10104
B	1355	SER	-	expression tag	UNP P10104
B	1356	ALA	-	expression tag	UNP P10104
B	1357	TRP	-	expression tag	UNP P10104
B	1358	SER	-	expression tag	UNP P10104
B	1359	HIS	-	expression tag	UNP P10104
B	1360	PRO	-	expression tag	UNP P10104
B	1361	GLN	-	expression tag	UNP P10104
B	1362	PHE	-	expression tag	UNP P10104
B	1363	GLU	-	expression tag	UNP P10104
B	1364	LYS	-	expression tag	UNP P10104
B	1365	SER	-	expression tag	UNP P10104
B	1366	ALA	-	expression tag	UNP P10104
C	1288	GLY	-	linker	UNP U5NJG5
C	1289	SER	-	linker	UNP U5NJG5

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Chain	Residue	Modelled	Actual	Comment	Reference
C	1311	LEU	PHE	conflict	UNP P10104
C	1317	LEU	-	expression tag	UNP P10104
C	1318	GLU	-	expression tag	UNP P10104
C	1319	VAL	-	expression tag	UNP P10104
C	1320	LEU	-	expression tag	UNP P10104
C	1321	PHE	-	expression tag	UNP P10104
C	1322	GLN	-	expression tag	UNP P10104
C	1323	GLY	-	expression tag	UNP P10104
C	1324	PRO	-	expression tag	UNP P10104
C	1325	GLY	-	expression tag	UNP P10104
C	1326	HIS	-	expression tag	UNP P10104
C	1327	HIS	-	expression tag	UNP P10104
C	1328	HIS	-	expression tag	UNP P10104
C	1329	HIS	-	expression tag	UNP P10104
C	1330	HIS	-	expression tag	UNP P10104
C	1331	HIS	-	expression tag	UNP P10104
C	1332	HIS	-	expression tag	UNP P10104
C	1333	HIS	-	expression tag	UNP P10104
C	1334	SER	-	expression tag	UNP P10104
C	1335	ALA	-	expression tag	UNP P10104
C	1336	TRP	-	expression tag	UNP P10104
C	1337	SER	-	expression tag	UNP P10104
C	1338	HIS	-	expression tag	UNP P10104
C	1339	PRO	-	expression tag	UNP P10104
C	1340	GLN	-	expression tag	UNP P10104
C	1341	PHE	-	expression tag	UNP P10104
C	1342	GLU	-	expression tag	UNP P10104
C	1343	LYS	-	expression tag	UNP P10104
C	1344	GLY	-	expression tag	UNP P10104
C	1345	GLY	-	expression tag	UNP P10104
C	1346	GLY	-	expression tag	UNP P10104
C	1347	SER	-	expression tag	UNP P10104
C	1348	GLY	-	expression tag	UNP P10104
C	1349	GLY	-	expression tag	UNP P10104
C	1350	GLY	-	expression tag	UNP P10104
C	1351	GLY	-	expression tag	UNP P10104
C	1352	SER	-	expression tag	UNP P10104
C	1353	GLY	-	expression tag	UNP P10104
C	1354	GLY	-	expression tag	UNP P10104
C	1355	SER	-	expression tag	UNP P10104
C	1356	ALA	-	expression tag	UNP P10104
C	1357	TRP	-	expression tag	UNP P10104

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Chain	Residue	Modelled	Actual	Comment	Reference
C	1358	SER	-	expression tag	UNP P10104
C	1359	HIS	-	expression tag	UNP P10104
C	1360	PRO	-	expression tag	UNP P10104
C	1361	GLN	-	expression tag	UNP P10104
C	1362	PHE	-	expression tag	UNP P10104
C	1363	GLU	-	expression tag	UNP P10104
C	1364	LYS	-	expression tag	UNP P10104
C	1365	SER	-	expression tag	UNP P10104
C	1366	ALA	-	expression tag	UNP P10104

- Molecule 2 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
2	D	2	Total	C	N	O	0	0
			28	16	2	10		
2	E	2	Total	C	N	O	0	0
			28	16	2	10		
2	F	2	Total	C	N	O	0	0
			28	16	2	10		
2	G	2	Total	C	N	O	0	0
			28	16	2	10		
2	H	2	Total	C	N	O	0	0
			28	16	2	10		
2	I	2	Total	C	N	O	0	0
			28	16	2	10		
2	J	2	Total	C	N	O	0	0
			28	16	2	10		
2	K	2	Total	C	N	O	0	0
			28	16	2	10		
2	L	2	Total	C	N	O	0	0
			28	16	2	10		
2	M	2	Total	C	N	O	0	0
			28	16	2	10		
2	N	2	Total	C	N	O	0	0
			28	16	2	10		
2	O	2	Total	C	N	O	0	0
			28	16	2	10		

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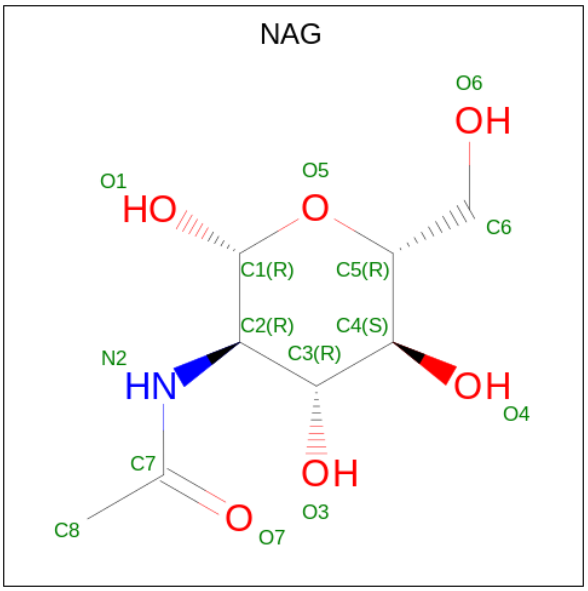
Mol	Chain	Residues	Atoms	AltConf	Trace
2	P	2	Total C N O 28 16 2 10	0	0
2	Q	2	Total C N O 28 16 2 10	0	0
2	R	2	Total C N O 28 16 2 10	0	0

- Molecule 3 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
3	A	1	Total C N O 14 8 1 5	0
3	A	1	Total C N O 14 8 1 5	0
3	A	1	Total C N O 14 8 1 5	0
3	A	1	Total C N O 14 8 1 5	0
3	A	1	Total C N O 14 8 1 5	0
3	A	1	Total C N O 14 8 1 5	0
3	A	1	Total C N O 14 8 1 5	0
3	A	1	Total C N O 14 8 1 5	0

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

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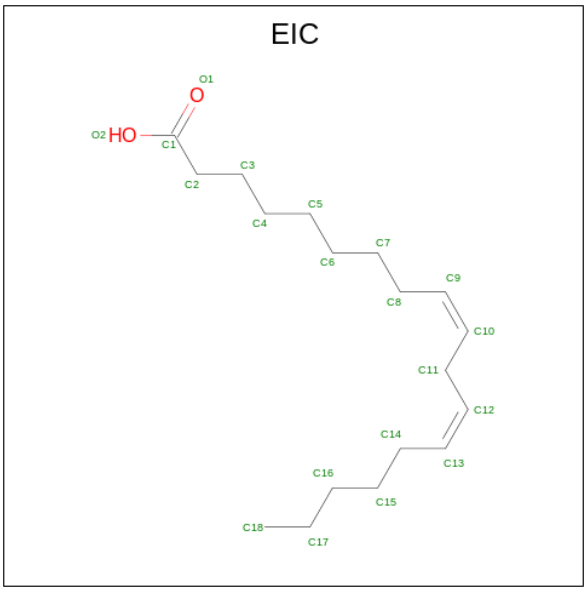
Mol	Chain	Residues	Atoms	AltConf
3	C	1	Total C N O 14 8 1 5	0
3	C	1	Total C N O 14 8 1 5	0
3	C	1	Total C N O 14 8 1 5	0
3	C	1	Total C N O 14 8 1 5	0

- Molecule 4 is LINOLEIC ACID (CCD ID: EIC) (formula: $C_{18}H_{32}O_2$) (labeled as "Ligand of Interest" by depositor).



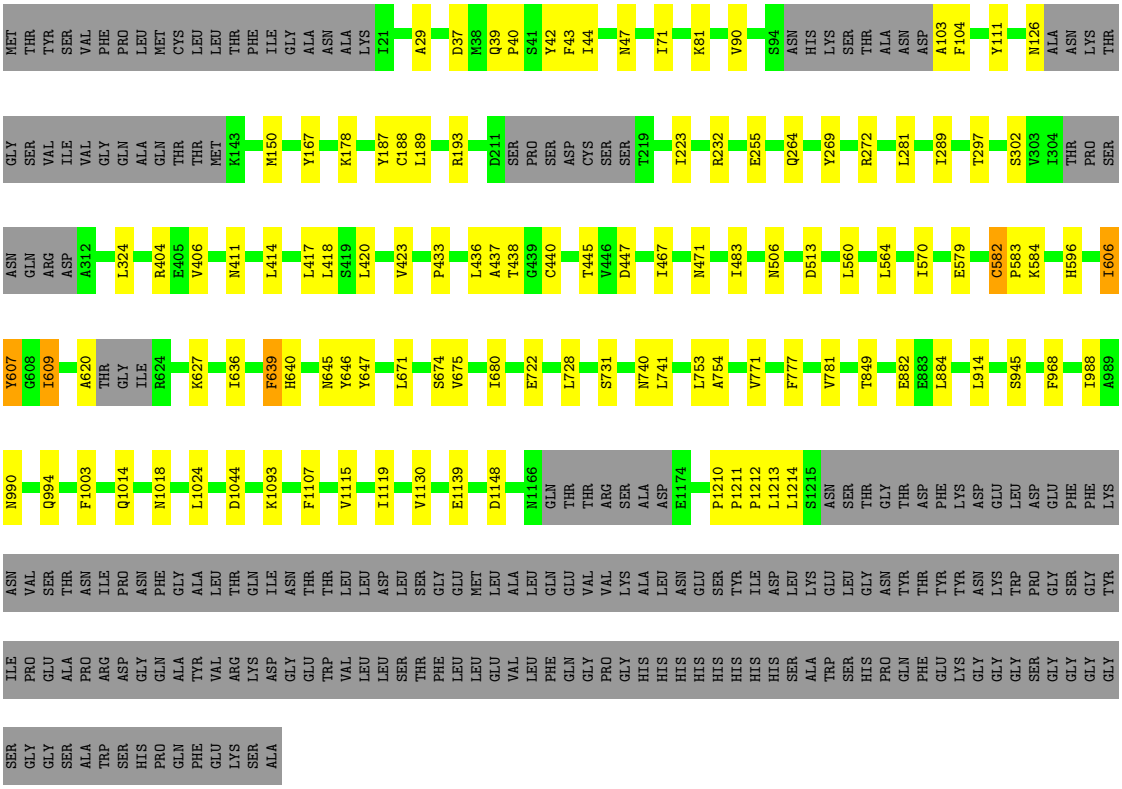
Mol	Chain	Residues	Atoms	AltConf
4	A	1	Total C O 20 18 2	0
4	B	1	Total C O 20 18 2	0
4	C	1	Total C O 20 18 2	0

3 Residue-property plots (i)

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

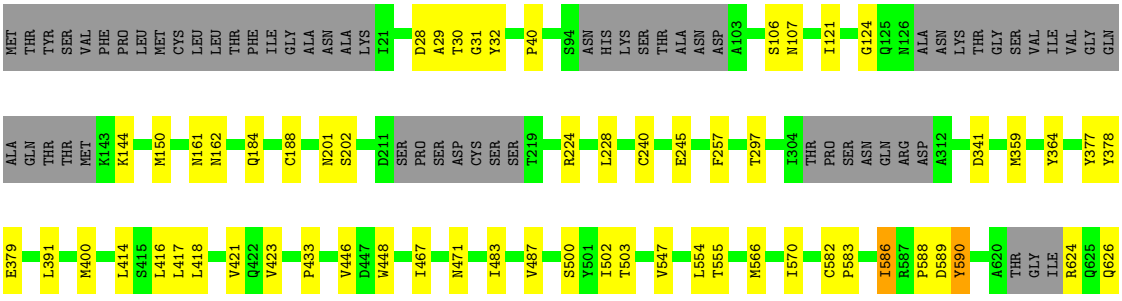
- Molecule 1: Spike glycoprotein,Fibritin

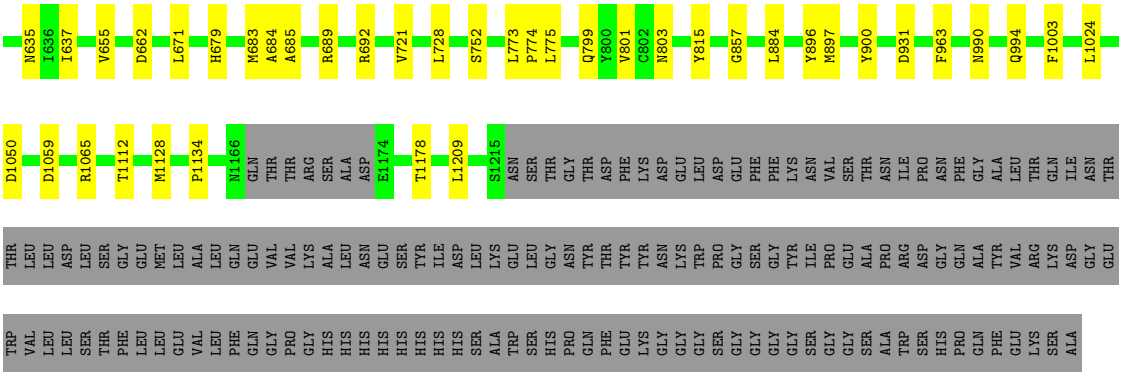
Chain A:



- Molecule 1: Spike glycoprotein,Fibritin

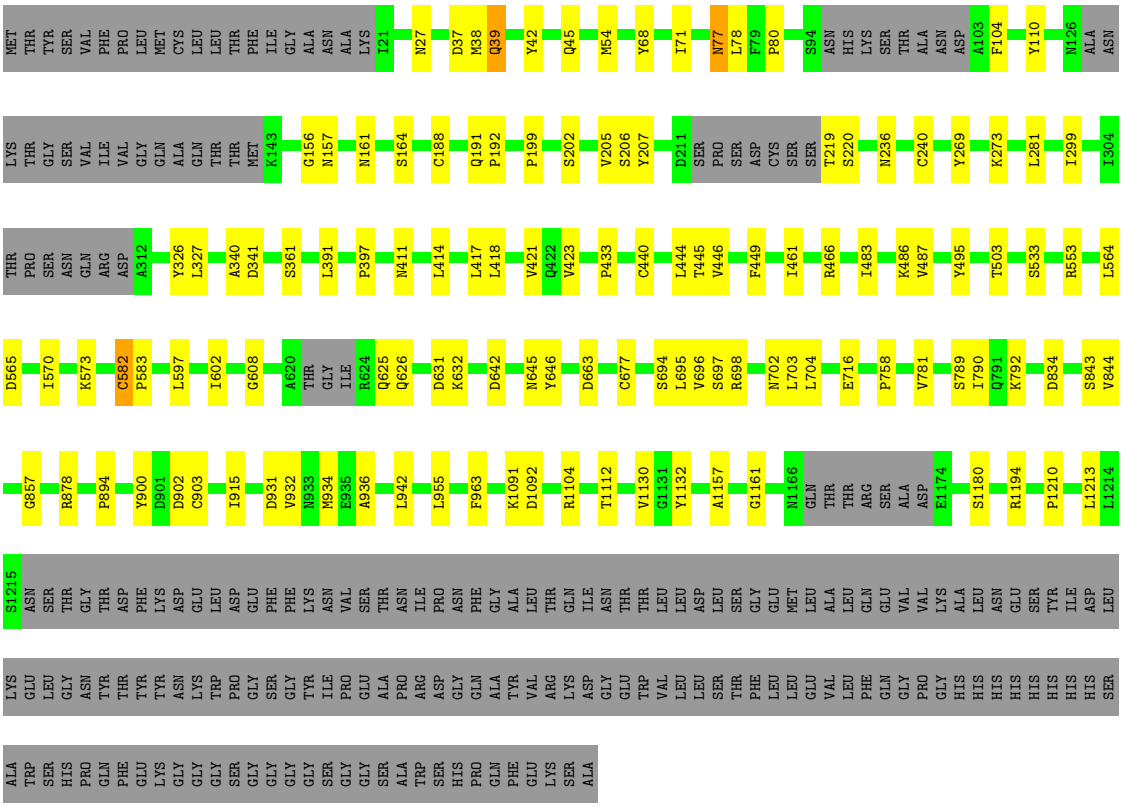
Chain B:





• Molecule 1: Spike glycoprotein,Fibritin

Chain C:

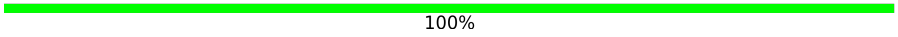


• Molecule 2: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain D:

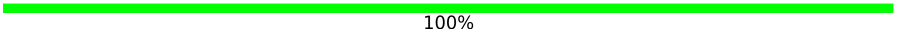
• Molecule 2: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain E:



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

Chain F:



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

Chain G:

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

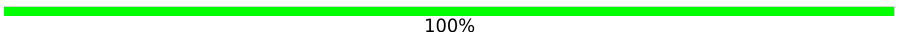
Chain H:

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

Chain I:

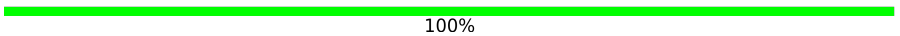
• Molecule 2: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain J:



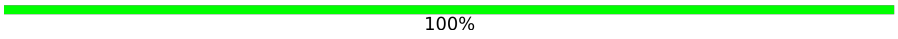
• Molecule 2: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain K:



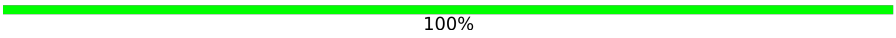
• Molecule 2: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain L:



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

Chain M:

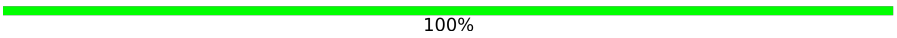


• Molecule 2: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain N:

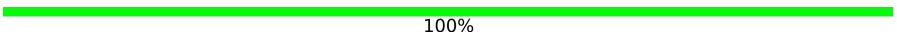
• Molecule 2: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain O:



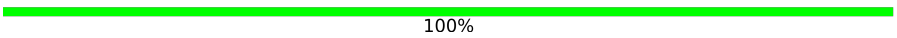
• Molecule 2: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain P:



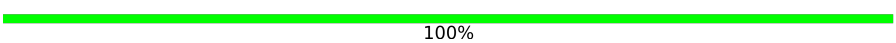
• Molecule 2: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain Q:



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

Chain R:




NAG1
NAG2

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	196103	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TALOS ARCTICA	Depositor
Voltage (kV)	200	Depositor
Electron dose ($e^-/Å^2$)	60	Depositor
Minimum defocus (nm)	800	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor

5 Model quality

5.1 Standard geometry

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

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	0.32	1/9146 (0.0%)	0.44	0/12446
1	B	0.34	2/9146 (0.0%)	0.49	7/12446 (0.1%)
1	C	0.36	3/9146 (0.0%)	0.46	6/12446 (0.0%)
All	All	0.34	6/27438 (0.0%)	0.46	13/37338 (0.0%)

All (6) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	900	TYR	CA-C	-7.75	1.43	1.52
1	B	900	TYR	CA-C	-6.19	1.45	1.52
1	B	582	CYS	C-O	-6.09	1.18	1.24
1	A	607	TYR	CA-C	-5.90	1.47	1.53
1	C	1092	ASP	CA-C	-5.65	1.45	1.52
1	C	582	CYS	C-O	-5.59	1.18	1.24

All (13) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	C	694	SER	N-CA-C	10.00	122.18	111.28
1	B	590	TYR	N-CA-C	9.53	123.67	110.24
1	B	588	PRO	N-CA-C	7.54	123.50	113.40
1	C	789	SER	N-CA-C	7.08	119.62	108.79
1	B	31	GLY	N-CA-C	6.90	121.38	112.54
1	C	695	LEU	N-CA-C	-6.41	104.57	112.38
1	B	684	ALA	N-CA-C	6.35	119.01	111.33
1	B	897	MET	N-CA-C	6.08	117.91	111.28
1	B	589	ASP	N-CA-C	5.40	117.25	111.36
1	C	583	PRO	N-CA-C	5.29	119.80	111.38
1	B	583	PRO	CA-C-O	-5.16	115.37	121.67
1	C	39	GLN	CA-C-N	-5.11	114.71	120.89

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	C	39	GLN	C-N-CA	-5.11	114.71	120.89

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	8936	0	8572	100	0
1	B	8936	0	8575	75	0
1	C	8936	0	8575	98	0
2	D	28	0	25	0	0
2	E	28	0	25	0	0
2	F	28	0	25	0	0
2	G	28	0	25	0	0
2	H	28	0	25	0	0
2	I	28	0	25	0	0
2	J	28	0	25	0	0
2	K	28	0	25	0	0
2	L	28	0	24	0	0
2	M	28	0	25	0	0
2	N	28	0	25	0	0
2	O	28	0	25	0	0
2	P	28	0	25	0	0
2	Q	28	0	25	0	0
2	R	28	0	25	0	0
3	A	154	0	143	1	0
3	B	154	0	143	2	0
3	C	154	0	143	2	0
4	A	20	0	31	33	0
4	B	20	0	31	22	0
4	C	20	0	31	33	0
All	All	27750	0	26618	275	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 5.

All (275) 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:418:LEU:CD2	4:A:1412:EIC:H81	1.11	1.56
1:C:414:LEU:CD1	4:C:1412:EIC:H181	1.38	1.50
1:A:418:LEU:CD2	4:A:1412:EIC:C8	1.91	1.46
1:C:414:LEU:HD13	4:C:1412:EIC:C18	1.47	1.43
1:A:414:LEU:CD1	4:A:1412:EIC:H183	1.49	1.40
1:A:418:LEU:HD21	4:A:1412:EIC:C7	1.49	1.40
1:C:414:LEU:CD1	4:C:1412:EIC:C18	1.99	1.36
1:A:418:LEU:HD21	4:A:1412:EIC:C8	1.54	1.25
1:C:414:LEU:CD1	4:C:1412:EIC:C17	2.18	1.21
1:C:418:LEU:CD2	4:C:1412:EIC:H71	1.70	1.20
1:C:414:LEU:HD12	4:C:1412:EIC:C17	1.73	1.18
1:A:418:LEU:HD23	4:A:1412:EIC:C8	1.62	1.15
1:C:414:LEU:HD12	4:C:1412:EIC:H171	1.17	1.14
1:B:418:LEU:HD23	4:B:1412:EIC:H82	1.22	1.14
1:A:414:LEU:HD13	4:A:1412:EIC:H183	1.13	1.12
1:C:418:LEU:HD21	4:C:1412:EIC:H71	1.15	1.10
1:A:418:LEU:HD21	4:A:1412:EIC:H72	1.26	1.08
1:B:414:LEU:HD13	4:B:1412:EIC:H172	1.31	1.08
1:B:418:LEU:CD2	4:B:1412:EIC:H82	1.84	1.06
1:B:418:LEU:HD21	4:B:1412:EIC:H62	1.11	1.06
1:B:418:LEU:HD21	4:B:1412:EIC:C6	1.87	1.04
1:A:414:LEU:HD13	4:A:1412:EIC:C18	1.89	1.01
1:B:414:LEU:HD13	4:B:1412:EIC:C17	1.94	0.98
1:A:417:LEU:HD23	4:A:1412:EIC:H131	1.46	0.98
1:C:417:LEU:HD22	4:C:1412:EIC:C14	1.93	0.97
1:A:418:LEU:CD2	4:A:1412:EIC:C7	2.34	0.95
1:C:418:LEU:HD21	4:C:1412:EIC:C7	1.97	0.95
1:C:54:MET:HE1	1:C:341:ASP:HB2	1.45	0.94
1:C:417:LEU:HD22	4:C:1412:EIC:H141	1.48	0.93
1:A:414:LEU:HD12	4:A:1412:EIC:H183	1.48	0.92
1:C:414:LEU:CD1	4:C:1412:EIC:H171	1.91	0.89
1:A:414:LEU:CD1	4:A:1412:EIC:C18	2.45	0.88
1:A:609:ILE:HD12	1:A:636:ILE:HD13	1.55	0.88
1:C:417:LEU:CD2	4:C:1412:EIC:H142	2.03	0.88
1:A:39:GLN:HB2	1:A:104:PHE:CE1	2.09	0.88
1:C:417:LEU:CD2	4:C:1412:EIC:C14	2.52	0.87
1:C:414:LEU:HD11	4:C:1412:EIC:H181	1.54	0.87
1:A:418:LEU:HD23	4:A:1412:EIC:H81	0.87	0.86
1:C:414:LEU:HD11	4:C:1412:EIC:C18	2.03	0.85
1:A:39:GLN:HB2	1:A:104:PHE:HE1	1.41	0.85

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:54:MET:CE	1:C:341:ASP:HB2	2.11	0.80
1:A:423:VAL:HG21	4:A:1412:EIC:H21	1.61	0.79
1:C:414:LEU:HD13	4:C:1412:EIC:C17	2.01	0.78
1:A:417:LEU:CD2	4:A:1412:EIC:H151	2.14	0.78
1:A:417:LEU:HD23	4:A:1412:EIC:C13	2.14	0.77
1:A:418:LEU:HD22	4:A:1412:EIC:H81	1.54	0.76
1:A:418:LEU:HD23	4:A:1412:EIC:C9	2.16	0.75
1:C:418:LEU:CD2	4:C:1412:EIC:C7	2.59	0.73
1:B:483:ILE:HG21	4:B:1412:EIC:H42	1.71	0.73
1:B:418:LEU:CD2	4:B:1412:EIC:C8	2.65	0.72
1:C:414:LEU:HD13	4:C:1412:EIC:H181	0.73	0.72
1:C:188:CYS:HB3	1:C:240:CYS:HA	1.71	0.71
1:A:417:LEU:CD2	4:A:1412:EIC:H131	2.20	0.70
1:B:418:LEU:CD2	4:B:1412:EIC:H62	2.06	0.70
1:A:438:THR:HA	1:A:583:PRO:HG3	1.74	0.70
1:B:418:LEU:HD23	4:B:1412:EIC:C8	2.12	0.70
1:C:696:VAL:HG12	1:C:697:SER:H	1.56	0.69
1:C:77:ASN:HD22	1:C:78:LEU:H	1.41	0.68
4:A:1412:EIC:H72	4:A:1412:EIC:H32	1.76	0.68
1:C:570:ILE:HD13	4:C:1412:EIC:H152	1.77	0.67
1:C:433:PRO:HB3	4:C:1412:EIC:H51	1.78	0.66
1:B:418:LEU:HD21	4:B:1412:EIC:C7	2.26	0.65
1:C:696:VAL:HG12	1:C:697:SER:N	2.10	0.65
1:A:639:PHE:CE1	1:A:647:TYR:HD2	2.16	0.64
1:A:467:ILE:HA	1:A:471:ASN:HD22	1.62	0.63
1:B:570:ILE:HD11	4:B:1412:EIC:H111	1.78	0.63
1:B:433:PRO:HB3	4:B:1412:EIC:H52	1.80	0.63
1:C:417:LEU:HD21	4:C:1412:EIC:H142	1.81	0.63
1:A:417:LEU:HD23	4:A:1412:EIC:C15	2.28	0.63
1:C:417:LEU:HD22	4:C:1412:EIC:H142	1.66	0.63
1:A:417:LEU:HD23	4:A:1412:EIC:H151	1.80	0.62
1:A:433:PRO:HB3	4:A:1412:EIC:H31	1.82	0.62
1:C:1161:GLY:HA2	1:C:1180:SER:HB3	1.82	0.61
1:C:857:GLY:HA2	1:C:963:PHE:HB3	1.82	0.61
1:C:417:LEU:CD2	4:C:1412:EIC:H112	2.31	0.60
1:B:655:VAL:HG21	1:B:683:MET:HE1	1.84	0.60
1:C:790:ILE:HG13	1:C:790:ILE:O	2.00	0.60
1:A:1211:PRO:HA	1:A:1214:LEU:HD12	1.83	0.59
1:C:417:LEU:HD23	4:C:1412:EIC:H112	1.84	0.59
1:A:433:PRO:HB3	4:A:1412:EIC:H52	1.85	0.58
1:A:189:LEU:HD12	1:A:189:LEU:H	1.67	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:188:CYS:HB3	1:B:240:CYS:HA	1.85	0.58
1:B:184:GLN:HE22	1:B:228:LEU:HB2	1.68	0.58
1:B:590:TYR:CD1	1:B:590:TYR:N	2.71	0.58
1:C:844:VAL:HG13	1:C:942:LEU:HD22	1.86	0.58
1:B:590:TYR:H	1:B:590:TYR:HD1	1.49	0.57
1:C:54:MET:HE1	1:C:341:ASP:CB	2.25	0.57
1:A:29:ALA:O	1:A:193:ARG:NH1	2.37	0.57
1:A:40:PRO:HB2	3:A:1402:NAG:H62	1.86	0.57
1:A:483:ILE:CD1	4:A:1412:EIC:H61	2.35	0.56
1:A:483:ILE:HD11	4:A:1412:EIC:H51	1.86	0.56
1:A:570:ILE:HD13	4:A:1412:EIC:H161	1.88	0.56
1:A:582:CYS:SG	1:A:583:PRO:HD2	2.46	0.55
1:C:433:PRO:HB3	4:C:1412:EIC:C5	2.36	0.55
1:B:378:TYR:CE2	1:B:586:ILE:HG22	2.40	0.55
1:C:1157:ALA:O	1:C:1194:ARG:HG2	2.07	0.55
1:A:417:LEU:HD21	4:A:1412:EIC:H151	1.88	0.55
1:A:483:ILE:HD13	4:A:1412:EIC:H61	1.87	0.55
1:A:42:TYR:CD1	1:A:104:PHE:HZ	2.25	0.55
1:C:781:VAL:HG22	1:C:1130:VAL:HG12	1.88	0.55
1:C:533:SER:HB3	1:C:553:ARG:HD3	1.88	0.54
1:B:150:MET:HB3	1:B:297:THR:HG22	1.90	0.54
1:B:418:LEU:HD21	4:B:1412:EIC:C8	2.36	0.54
1:B:799:GLN:NE2	1:B:803:ASN:OD1	2.40	0.54
1:A:627:LYS:NZ	1:A:640:HIS:O	2.37	0.54
1:C:161:ASN:HB3	1:C:202:SER:HA	1.89	0.54
1:C:625:GLN:HG3	1:C:626:GLN:HG2	1.90	0.54
1:C:1210:PRO:HD2	1:C:1213:LEU:HD12	1.90	0.53
1:A:437:ALA:O	1:A:583:PRO:HB3	2.08	0.53
1:A:639:PHE:HE1	1:A:647:TYR:HD2	1.54	0.53
1:C:192:PRO:HB3	1:C:199:PRO:HB2	1.90	0.53
1:B:341:ASP:OD2	1:B:689:ARG:NH2	2.41	0.53
1:A:884:LEU:HD22	1:A:1003:PHE:HD2	1.74	0.53
1:A:1014:GLN:O	1:A:1018:ASN:ND2	2.42	0.53
1:A:44:ILE:O	1:A:47:ASN:ND2	2.42	0.53
1:C:495:TYR:HB3	1:C:564:LEU:HD11	1.91	0.53
1:A:39:GLN:CB	1:A:104:PHE:HE1	2.18	0.52
1:C:1112:THR:HB	1:C:1132:TYR:HB3	1.90	0.52
1:C:327:LEU:HB3	1:C:340:ALA:HB3	1.91	0.52
1:A:103:ALA:HB3	1:A:302:SER:CB	2.40	0.52
1:B:418:LEU:HD21	4:B:1412:EIC:H82	1.82	0.52
1:C:191:GLN:HB2	1:C:236:ASN:HB2	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1093:LYS:NZ	1:A:1107:PHE:O	2.38	0.51
1:B:421:VAL:HG12	1:B:487:VAL:HG22	1.92	0.51
1:B:184:GLN:NE2	1:B:228:LEU:HB2	2.25	0.51
1:B:417:LEU:CD2	4:B:1412:EIC:H161	2.40	0.51
1:B:224:ARG:NH1	1:B:245:GLU:OE2	2.34	0.51
1:C:110:TYR:OH	1:C:205:VAL:O	2.26	0.51
1:C:645:ASN:OD1	1:C:646:TYR:N	2.44	0.51
1:B:662:ASP:N	1:B:662:ASP:OD1	2.44	0.51
1:C:486:LYS:NZ	1:C:565:ASP:OD2	2.43	0.51
1:C:631:ASP:OD1	1:C:632:LYS:N	2.44	0.50
1:C:704:LEU:HD13	1:C:716:GLU:HG2	1.93	0.50
1:A:1148:ASP:OD1	1:A:1148:ASP:N	2.34	0.50
1:C:38:MET:HE3	1:C:206:SER:HB2	1.93	0.50
1:C:207:TYR:HE1	1:C:299:ILE:HG12	1.76	0.50
1:B:500:SER:HB3	1:B:555:THR:HG22	1.93	0.50
1:A:740:ASN:OD1	1:A:741:LEU:N	2.44	0.50
1:A:1210:PRO:HB2	1:A:1212:PRO:HD2	1.94	0.50
4:A:1412:EIC:H41	4:A:1412:EIC:H82	1.94	0.50
1:C:27:ASN:OD1	1:C:27:ASN:N	2.44	0.50
1:C:219:THR:OG1	1:C:220:SER:N	2.44	0.50
1:A:37:ASP:OD1	1:A:37:ASP:N	2.43	0.50
1:A:849:THR:HG22	1:C:758:PRO:HB2	1.92	0.50
1:C:696:VAL:CG1	1:C:697:SER:H	2.24	0.50
1:C:42:TYR:O	1:C:45:GLN:NE2	2.45	0.50
1:A:269:TYR:HB3	1:A:281:LEU:HB3	1.92	0.49
1:A:570:ILE:CD1	4:A:1412:EIC:H142	2.42	0.49
1:A:560:LEU:HD13	1:A:564:LEU:HD11	1.94	0.49
1:A:722:GLU:HG2	1:A:754:ALA:HB3	1.93	0.49
1:B:418:LEU:CD2	4:B:1412:EIC:C7	2.89	0.49
1:B:774:PRO:HB3	1:B:1134:PRO:HB3	1.93	0.49
1:B:685:ALA:HA	1:B:692:ARG:HE	1.77	0.49
1:A:433:PRO:CB	4:A:1412:EIC:H31	2.42	0.49
1:B:448:TRP:HD1	1:B:566:MET:HE1	1.77	0.49
1:C:843:SER:OG	1:C:1091:LYS:NZ	2.40	0.49
1:A:777:PHE:HZ	1:A:988:ILE:HG22	1.78	0.49
1:B:161:ASN:ND2	1:B:201:ASN:O	2.41	0.49
1:A:1210:PRO:HD2	1:A:1213:LEU:HD12	1.94	0.49
1:A:671:LEU:HD22	1:A:728:LEU:HD22	1.94	0.48
1:A:255:GLU:OE1	1:A:272:ARG:HG2	2.11	0.48
1:A:189:LEU:HD12	1:A:189:LEU:N	2.28	0.48
1:A:639:PHE:HE1	1:A:647:TYR:CD2	2.31	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:606:ILE:HG22	1:A:607:TYR:H	1.78	0.48
1:C:361:SER:OG	1:C:663:ASP:OD1	2.31	0.48
1:C:269:TYR:HB3	1:C:281:LEU:HB3	1.96	0.48
1:C:696:VAL:CG1	1:C:697:SER:N	2.77	0.48
1:C:421:VAL:HG12	1:C:487:VAL:HG22	1.95	0.47
1:B:990:ASN:O	1:B:994:GLN:HG3	2.14	0.47
1:B:423:VAL:HG21	4:B:1412:EIC:H22	1.95	0.47
1:A:264:GLN:OE1	1:C:445:THR:OG1	2.32	0.47
1:A:81:LYS:HG2	1:A:324:LEU:HD11	1.97	0.47
1:B:40:PRO:HB2	3:B:1402:NAG:H62	1.96	0.47
1:B:391:LEU:HD21	1:B:446:VAL:HG11	1.96	0.47
4:C:1412:EIC:H81	4:C:1412:EIC:H111	1.51	0.47
1:A:103:ALA:HB3	1:A:302:SER:HB3	1.96	0.47
1:A:1044:ASP:OD1	1:A:1044:ASP:N	2.48	0.46
1:B:124:GLY:HA3	1:B:144:LYS:HG3	1.96	0.46
1:C:697:SER:OG	1:C:698:ARG:N	2.38	0.46
1:C:894:PRO:HB3	1:C:915:ILE:HD12	1.98	0.46
1:B:503:THR:HG21	1:B:554:LEU:HD12	1.97	0.46
1:C:68:TYR:HD2	1:C:71:ILE:HD11	1.80	0.46
1:C:642:ASP:OD1	1:C:642:ASP:N	2.49	0.46
1:A:433:PRO:HA	1:A:436:LEU:HD12	1.97	0.46
1:A:609:ILE:HD12	1:A:636:ILE:CD1	2.38	0.46
1:A:968:PHE:HE1	1:A:988:ILE:HD11	1.80	0.46
1:A:404:ARG:NH2	1:A:447:ASP:OD2	2.49	0.46
1:B:467:ILE:HA	1:B:471:ASN:HD22	1.81	0.46
1:B:378:TYR:HB2	1:B:590:TYR:CD2	2.51	0.45
1:B:400:MET:HG3	1:B:502:ILE:HG13	1.98	0.45
1:B:931:ASP:OD1	1:B:931:ASP:N	2.45	0.45
1:C:156:GLY:HA2	3:C:1403:NAG:H82	1.98	0.45
1:C:161:ASN:HA	3:C:1404:NAG:H82	1.97	0.45
1:C:573:LYS:HE3	1:C:573:LYS:HB3	1.72	0.45
1:C:483:ILE:HD13	4:C:1412:EIC:H72	1.97	0.45
1:A:43:PHE:HD2	1:A:90:VAL:HG13	1.82	0.45
1:A:406:VAL:HG22	1:A:445:THR:HG23	1.98	0.45
1:B:121:ILE:HD12	1:B:257:PHE:HD2	1.82	0.45
1:B:359:MET:HE2	1:B:364:TYR:CZ	2.51	0.45
1:C:792:LYS:NZ	1:C:834:ASP:OD1	2.43	0.45
1:A:1115:VAL:HG12	1:A:1130:VAL:HB	2.00	0.44
1:A:178:LYS:HG3	1:A:223:ILE:HG22	1.99	0.44
1:A:781:VAL:HG22	1:A:1130:VAL:HG22	2.00	0.44
1:B:590:TYR:N	1:B:590:TYR:HD1	2.12	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:902:ASP:O	1:C:903:CYS:C	2.60	0.44
1:C:423:VAL:HG11	4:C:1412:EIC:H31	1.99	0.44
1:A:506:ASN:ND2	1:A:513:ASP:OD1	2.51	0.44
1:A:596:HIS:H	1:A:596:HIS:CD2	2.36	0.44
1:B:1050:ASP:HB2	1:C:461:ILE:HG12	2.00	0.44
1:B:635:ASN:O	1:B:637:ILE:HG23	2.18	0.43
1:B:655:VAL:HG21	1:B:683:MET:CE	2.46	0.43
1:B:414:LEU:HD13	4:B:1412:EIC:H171	1.92	0.43
1:C:417:LEU:CD2	4:C:1412:EIC:H141	2.27	0.43
4:C:1412:EIC:H21	4:C:1412:EIC:H52	1.80	0.43
1:A:675:VAL:HG21	1:A:680:ILE:HD11	1.99	0.43
1:C:39:GLN:HB2	1:C:104:PHE:CE1	2.53	0.43
1:C:80:PRO:O	1:C:326:TYR:OH	2.25	0.43
1:C:440:CYS:HB2	1:C:608:GLY:HA3	2.00	0.43
1:A:411:ASN:HB3	1:A:584:LYS:HG2	2.01	0.43
1:B:416:LEU:HD12	1:B:416:LEU:HA	1.87	0.43
1:C:444:LEU:HD21	4:C:1412:EIC:H162	2.01	0.43
1:B:483:ILE:CG2	4:B:1412:EIC:H42	2.42	0.43
1:C:466:ARG:HD2	1:C:503:THR:HG23	2.01	0.43
1:A:882:GLU:HG2	1:A:1119:ILE:HB	2.01	0.43
1:B:377:TYR:OH	1:B:379:GLU:OE1	2.32	0.43
4:B:1412:EIC:H41	4:B:1412:EIC:H71	1.54	0.43
1:C:1104:ARG:H	1:C:1104:ARG:HG2	1.62	0.42
1:A:620:ALA:C	1:A:646:TYR:CD2	2.97	0.42
1:B:1024:LEU:HD23	1:B:1024:LEU:HA	1.80	0.42
1:C:411:ASN:HA	1:C:582:CYS:O	2.20	0.42
1:A:731:SER:HA	1:A:753:LEU:HD13	2.01	0.42
1:A:914:LEU:HD11	1:A:1024:LEU:HB3	2.00	0.42
4:B:1412:EIC:H112	4:B:1412:EIC:H81	1.73	0.42
1:C:931:ASP:OD1	1:C:932:VAL:N	2.51	0.42
1:B:721:VAL:HG22	1:B:752:SER:HB3	2.01	0.42
1:B:857:GLY:HA2	1:B:963:PHE:HB3	2.01	0.42
1:B:1209:LEU:HD23	1:B:1209:LEU:HA	1.92	0.42
1:A:1024:LEU:HD23	1:A:1024:LEU:HA	1.88	0.42
1:B:161:ASN:HB3	1:B:202:SER:HA	2.01	0.42
4:C:1412:EIC:H141	4:C:1412:EIC:H112	1.83	0.42
1:A:945:SER:O	1:A:945:SER:OG	2.38	0.42
1:C:597:LEU:HB3	1:C:602:ILE:HG21	2.02	0.42
1:C:677:CYS:HB3	1:C:703:LEU:HD13	2.02	0.42
1:A:111:TYR:O	1:A:297:THR:HG22	2.20	0.42
1:A:990:ASN:O	1:A:994:GLN:HG3	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:28:ASP:OD1	1:B:29:ALA:N	2.52	0.41
1:A:187:TYR:CE1	1:A:289:ILE:HD12	2.55	0.41
1:B:773:LEU:HA	1:B:774:PRO:HD3	1.94	0.41
1:B:815:TYR:OH	1:B:1059:ASP:OD1	2.29	0.41
1:C:702:ASN:OD1	1:C:702:ASN:N	2.53	0.41
1:A:150:MET:HG2	1:A:167:TYR:CD2	2.56	0.41
1:C:878:ARG:HG2	1:C:936:ALA:HB2	2.03	0.41
1:B:162:ASN:ND2	3:B:1404:NAG:O7	2.53	0.41
1:B:884:LEU:HD22	1:B:1003:PHE:HD2	1.84	0.41
1:C:934:MET:HE3	1:C:934:MET:HB2	1.86	0.41
1:A:674:SER:CB	1:B:896:TYR:O	2.69	0.41
1:A:777:PHE:CZ	1:A:988:ILE:HG22	2.56	0.41
1:B:1112:THR:HG22	1:C:955:LEU:H	1.85	0.41
1:C:157:ASN:HA	1:C:164:SER:HA	2.01	0.41
1:A:126:ASN:OD1	1:A:126:ASN:N	2.54	0.41
1:B:671:LEU:HD22	1:B:728:LEU:HD22	2.02	0.41
1:B:106:SER:OG	1:B:107:ASN:N	2.54	0.41
1:B:773:LEU:HD21	1:B:1178:THR:HG21	2.04	0.41
1:A:771:VAL:O	1:A:1139:GLU:HA	2.20	0.40
1:B:679:HIS:ND1	1:B:683:MET:HE2	2.36	0.40
1:B:801:VAL:O	1:B:1065:ARG:NH1	2.50	0.40
1:C:37:ASP:OD1	1:C:37:ASP:N	2.44	0.40
1:C:391:LEU:HD21	1:C:446:VAL:HG11	2.02	0.40
1:C:397:PRO:HG2	1:C:449:PHE:HA	2.03	0.40
1:A:440:CYS:HB3	1:A:579:GLU:HB3	2.03	0.40
1:A:968:PHE:CE1	1:A:988:ILE:HD11	2.57	0.40
1:B:624:ARG:HG3	1:B:626:GLN:O	2.21	0.40
1:B:655:VAL:CG2	1:B:683:MET:HE1	2.50	0.40
1:B:1128:MET:HE2	1:B:1128:MET:HB2	1.87	0.40
1:C:273:LYS:HE3	1:C:273:LYS:HB3	1.88	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	1133/1366 (83%)	1088 (96%)	44 (4%)	1 (0%)	48 79
1	B	1133/1366 (83%)	1082 (96%)	51 (4%)	0	100 100
1	C	1133/1366 (83%)	1091 (96%)	42 (4%)	0	100 100
All	All	3399/4098 (83%)	3261 (96%)	137 (4%)	1 (0%)	100 100

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	606	ILE

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	981/1163 (84%)	973 (99%)	8 (1%)	79 89
1	B	981/1163 (84%)	976 (100%)	5 (0%)	86 92
1	C	981/1163 (84%)	980 (100%)	1 (0%)	92 97
All	All	2943/3489 (84%)	2929 (100%)	14 (0%)	85 92

All (14) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	71	ILE
1	A	188	CYS
1	A	232	ARG
1	A	420	LEU
1	A	582	CYS
1	A	609	ILE
1	A	639	PHE
1	A	645	ASN
1	B	30	THR

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Mol	Chain	Res	Type
1	B	32	TYR
1	B	547	VAL
1	B	586	ILE
1	B	775	LEU
1	C	77	ASN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (46) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	702	ASN
1	A	730	GLN
1	A	783	GLN
1	A	839	ASN
1	A	918	GLN
1	A	972	ASN
1	A	1018	ASN
1	A	1095	ASN
1	A	1133	HIS
1	B	39	GLN
1	B	184	GLN
1	B	322	HIS
1	B	338	GLN
1	B	349	GLN
1	B	585	GLN
1	B	635	ASN
1	B	666	ASN
1	B	776	ASN
1	B	824	GLN
1	B	898	GLN
1	B	972	ASN
1	B	978	GLN
1	B	984	ASN
1	B	1011	GLN
1	B	1101	GLN
1	B	1154	ASN
1	B	1199	GLN
1	B	1203	GLN
1	C	39	GLN
1	C	77	ASN
1	C	201	ASN
1	C	478	ASN
1	C	506	ASN

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Mol	Chain	Res	Type
1	C	525	GLN
1	C	640	HIS
1	C	783	GLN
1	C	839	ASN
1	C	861	ASN
1	C	876	ASN
1	C	979	GLN
1	C	985	GLN
1	C	1014	GLN
1	C	1057	GLN
1	C	1070	ASN
1	C	1203	GLN
1	C	1208	ASN

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)

30 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	$\#\|Z\| > 2$
2	NAG	D	1	2,1	14,14,15	0.28	0	17,19,21	0.67	1 (5%)
2	NAG	D	2	2	14,14,15	0.25	0	17,19,21	0.45	0
2	NAG	E	1	2,1	14,14,15	0.20	0	17,19,21	0.58	0
2	NAG	E	2	2	14,14,15	0.28	0	17,19,21	0.44	0
2	NAG	F	1	2,1	14,14,15	0.24	0	17,19,21	0.47	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
2	NAG	F	2	2	14,14,15	0.24	0	17,19,21	0.47	0
2	NAG	G	1	2,1	14,14,15	0.36	0	17,19,21	0.70	1 (5%)
2	NAG	G	2	2	14,14,15	0.39	0	17,19,21	0.52	0
2	NAG	H	1	2,1	14,14,15	0.50	0	17,19,21	0.90	1 (5%)
2	NAG	H	2	2	14,14,15	0.31	0	17,19,21	0.63	0
2	NAG	I	1	2,1	14,14,15	0.28	0	17,19,21	0.66	1 (5%)
2	NAG	I	2	2	14,14,15	0.26	0	17,19,21	0.46	0
2	NAG	J	1	2,1	14,14,15	0.19	0	17,19,21	0.60	0
2	NAG	J	2	2	14,14,15	0.25	0	17,19,21	0.44	0
2	NAG	K	1	2,1	14,14,15	0.32	0	17,19,21	0.51	0
2	NAG	K	2	2	14,14,15	0.25	0	17,19,21	0.47	0
2	NAG	L	1	2,1	14,14,15	0.28	0	17,19,21	0.58	0
2	NAG	L	2	2	14,14,15	0.29	0	17,19,21	0.45	0
2	NAG	M	1	2,1	14,14,15	0.43	0	17,19,21	0.59	0
2	NAG	M	2	2	14,14,15	0.27	0	17,19,21	0.44	0
2	NAG	N	1	2,1	14,14,15	0.32	0	17,19,21	0.69	1 (5%)
2	NAG	N	2	2	14,14,15	0.26	0	17,19,21	0.48	0
2	NAG	O	1	2,1	14,14,15	0.23	0	17,19,21	0.54	0
2	NAG	O	2	2	14,14,15	0.27	0	17,19,21	0.46	0
2	NAG	P	1	2,1	14,14,15	0.22	0	17,19,21	0.47	0
2	NAG	P	2	2	14,14,15	0.25	0	17,19,21	0.44	0
2	NAG	Q	1	2,1	14,14,15	0.28	0	17,19,21	0.53	0
2	NAG	Q	2	2	14,14,15	0.27	0	17,19,21	0.44	0
2	NAG	R	1	2,1	14,14,15	0.40	0	17,19,21	0.62	0
2	NAG	R	2	2	14,14,15	0.29	0	17,19,21	0.36	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
2	NAG	D	1	2,1	-	2/6/23/26	0/1/1/1
2	NAG	D	2	2	-	0/6/23/26	0/1/1/1
2	NAG	E	1	2,1	-	2/6/23/26	0/1/1/1
2	NAG	E	2	2	-	0/6/23/26	0/1/1/1
2	NAG	F	1	2,1	-	1/6/23/26	0/1/1/1
2	NAG	F	2	2	-	4/6/23/26	0/1/1/1
2	NAG	G	1	2,1	-	4/6/23/26	0/1/1/1
2	NAG	G	2	2	-	4/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	NAG	H	1	2,1	-	4/6/23/26	0/1/1/1
2	NAG	H	2	2	-	4/6/23/26	0/1/1/1
2	NAG	I	1	2,1	-	2/6/23/26	0/1/1/1
2	NAG	I	2	2	-	0/6/23/26	0/1/1/1
2	NAG	J	1	2,1	-	2/6/23/26	0/1/1/1
2	NAG	J	2	2	-	2/6/23/26	0/1/1/1
2	NAG	K	1	2,1	-	2/6/23/26	0/1/1/1
2	NAG	K	2	2	-	2/6/23/26	0/1/1/1
2	NAG	L	1	2,1	-	0/6/23/26	0/1/1/1
2	NAG	L	2	2	-	2/6/23/26	0/1/1/1
2	NAG	M	1	2,1	-	0/6/23/26	0/1/1/1
2	NAG	M	2	2	-	2/6/23/26	0/1/1/1
2	NAG	N	1	2,1	-	4/6/23/26	0/1/1/1
2	NAG	N	2	2	-	0/6/23/26	0/1/1/1
2	NAG	O	1	2,1	-	0/6/23/26	0/1/1/1
2	NAG	O	2	2	-	0/6/23/26	0/1/1/1
2	NAG	P	1	2,1	-	0/6/23/26	0/1/1/1
2	NAG	P	2	2	-	2/6/23/26	0/1/1/1
2	NAG	Q	1	2,1	-	0/6/23/26	0/1/1/1
2	NAG	Q	2	2	-	0/6/23/26	0/1/1/1
2	NAG	R	1	2,1	-	0/6/23/26	0/1/1/1
2	NAG	R	2	2	-	1/6/23/26	0/1/1/1

There are no bond length outliers.

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	D	1	NAG	C1-O5-C5	2.32	115.33	112.19
2	I	1	NAG	C1-O5-C5	2.29	115.30	112.19
2	N	1	NAG	C1-O5-C5	2.26	115.26	112.19
2	G	1	NAG	C1-O5-C5	2.23	115.22	112.19
2	H	1	NAG	C1-O5-C5	2.05	114.98	112.19

There are no chirality outliers.

All (46) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	H	1	NAG	C8-C7-N2-C2

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Mol	Chain	Res	Type	Atoms
2	H	1	NAG	O7-C7-N2-C2
2	H	2	NAG	C8-C7-N2-C2
2	H	2	NAG	O7-C7-N2-C2
2	K	2	NAG	O5-C5-C6-O6
2	M	2	NAG	O5-C5-C6-O6
2	F	2	NAG	C4-C5-C6-O6
2	K	1	NAG	O5-C5-C6-O6
2	P	2	NAG	O5-C5-C6-O6
2	M	2	NAG	C4-C5-C6-O6
2	F	2	NAG	O5-C5-C6-O6
2	K	2	NAG	C4-C5-C6-O6
2	L	2	NAG	C4-C5-C6-O6
2	P	2	NAG	C4-C5-C6-O6
2	K	1	NAG	C4-C5-C6-O6
2	E	1	NAG	C8-C7-N2-C2
2	E	1	NAG	O7-C7-N2-C2
2	F	2	NAG	C8-C7-N2-C2
2	F	2	NAG	O7-C7-N2-C2
2	G	1	NAG	C8-C7-N2-C2
2	G	1	NAG	O7-C7-N2-C2
2	G	2	NAG	C8-C7-N2-C2
2	G	2	NAG	O7-C7-N2-C2
2	J	1	NAG	C8-C7-N2-C2
2	J	1	NAG	O7-C7-N2-C2
2	N	1	NAG	C8-C7-N2-C2
2	N	1	NAG	O7-C7-N2-C2
2	G	2	NAG	O5-C5-C6-O6
2	H	1	NAG	C4-C5-C6-O6
2	L	2	NAG	O5-C5-C6-O6
2	R	2	NAG	O5-C5-C6-O6
2	H	1	NAG	O5-C5-C6-O6
2	G	1	NAG	C4-C5-C6-O6
2	F	1	NAG	O5-C5-C6-O6
2	G	1	NAG	O5-C5-C6-O6
2	N	1	NAG	O5-C5-C6-O6
2	N	1	NAG	C4-C5-C6-O6
2	I	1	NAG	C4-C5-C6-O6
2	I	1	NAG	O5-C5-C6-O6
2	D	1	NAG	O5-C5-C6-O6
2	J	2	NAG	C4-C5-C6-O6
2	D	1	NAG	C4-C5-C6-O6
2	H	2	NAG	C4-C5-C6-O6

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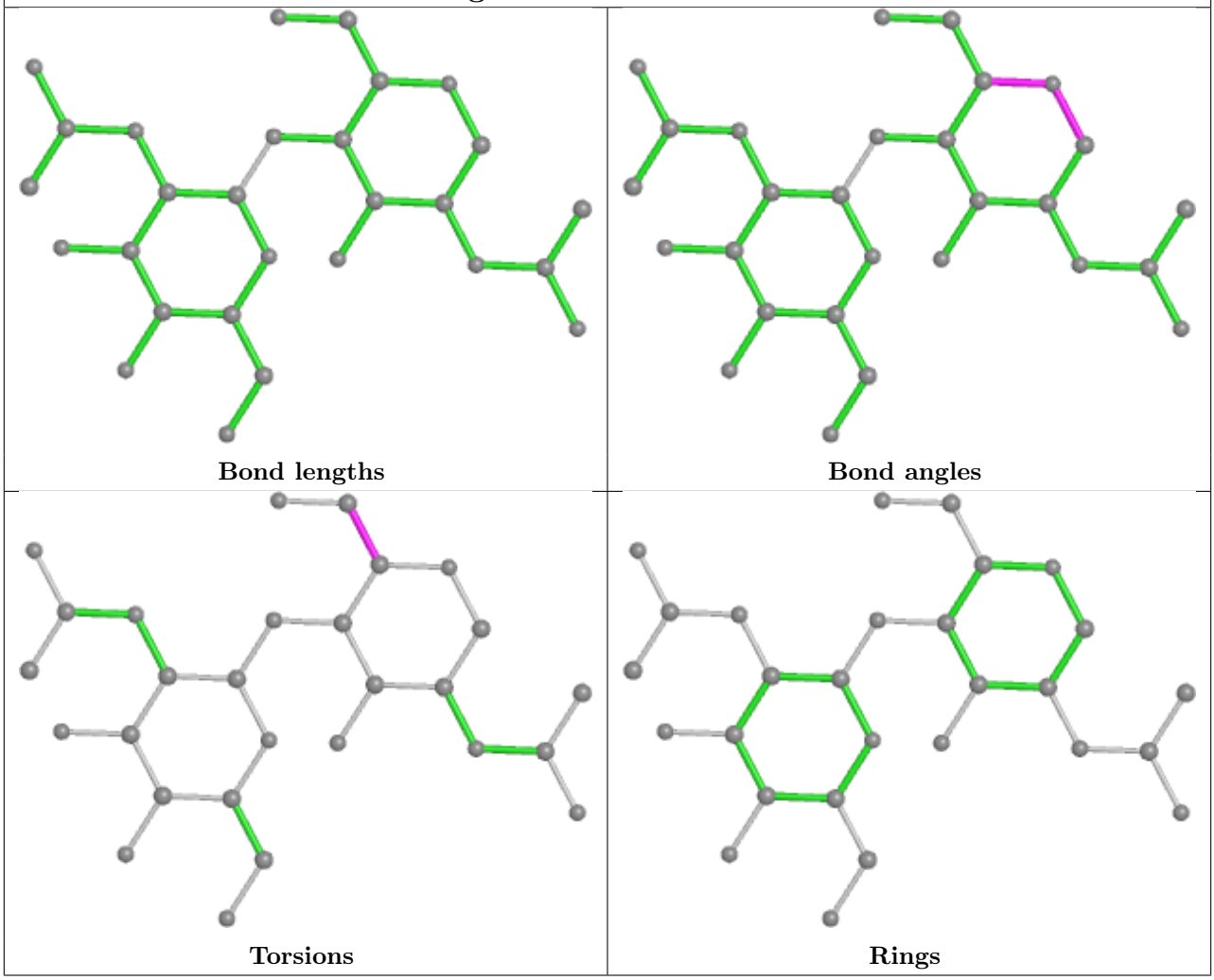
Mol	Chain	Res	Type	Atoms
2	J	2	NAG	O5-C5-C6-O6
2	H	2	NAG	O5-C5-C6-O6
2	G	2	NAG	C4-C5-C6-O6

There are no ring outliers.

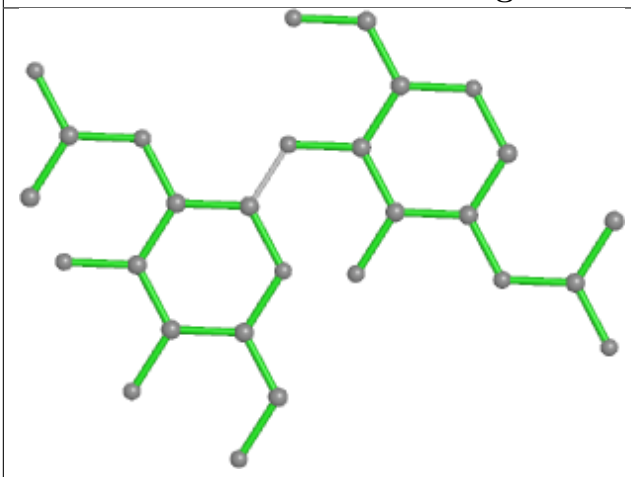
No monomer is involved in short contacts.

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

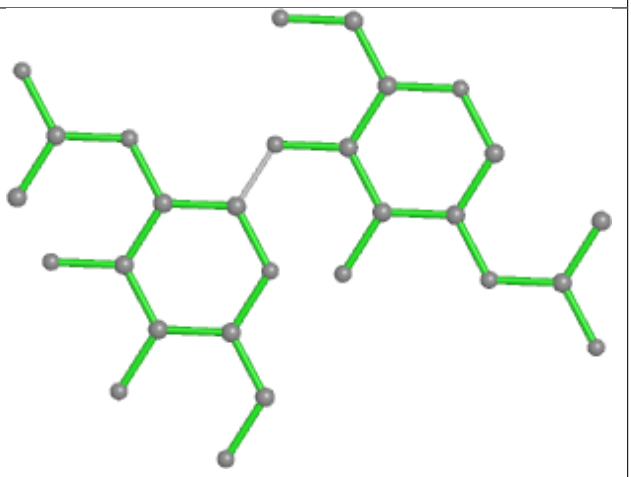
Oligosaccharide Chain D



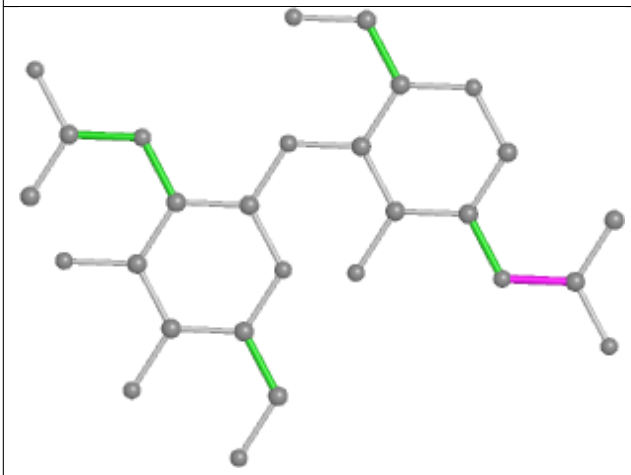
Oligosaccharide Chain E



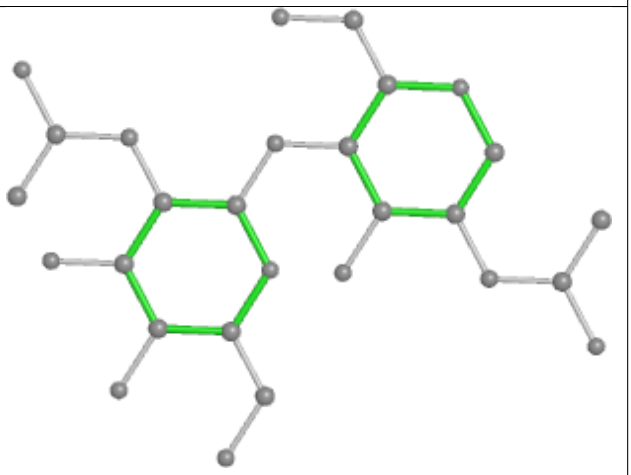
Bond lengths



Bond angles

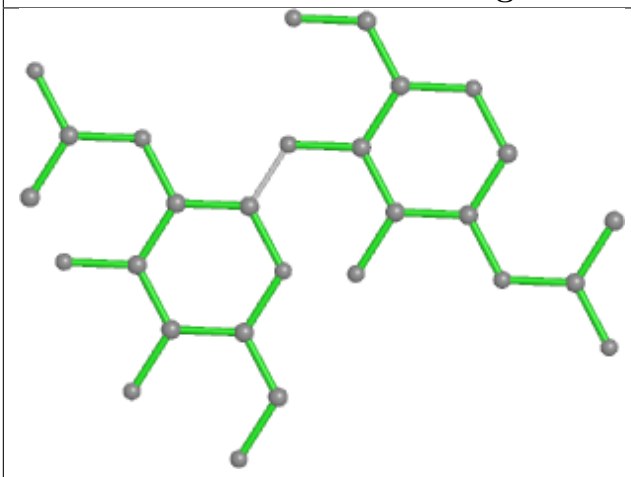


Torsions

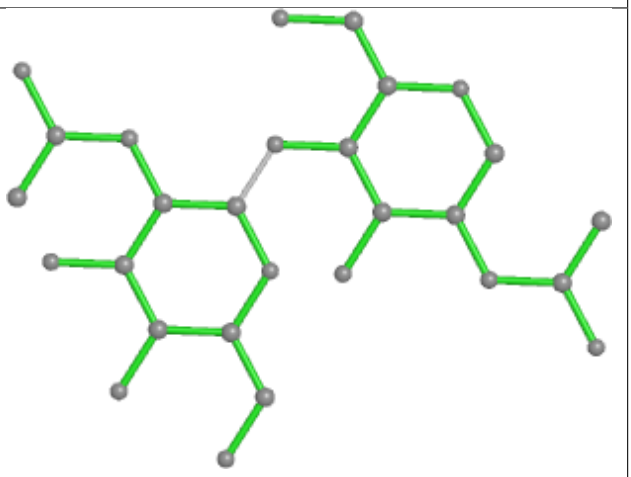


Rings

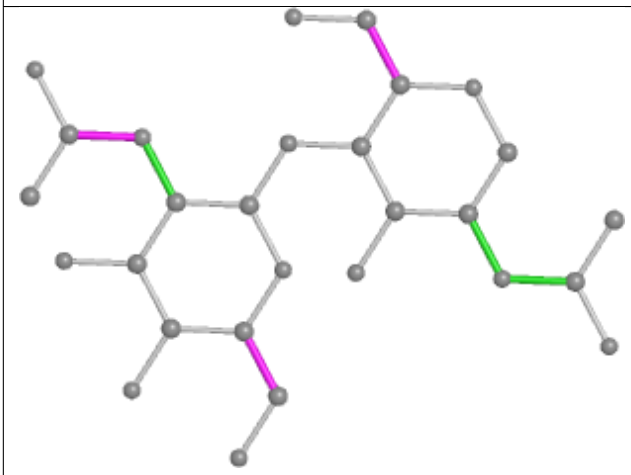
Oligosaccharide Chain F



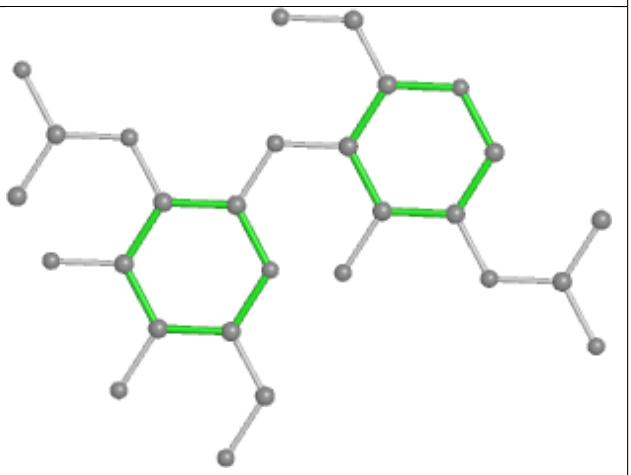
Bond lengths



Bond angles

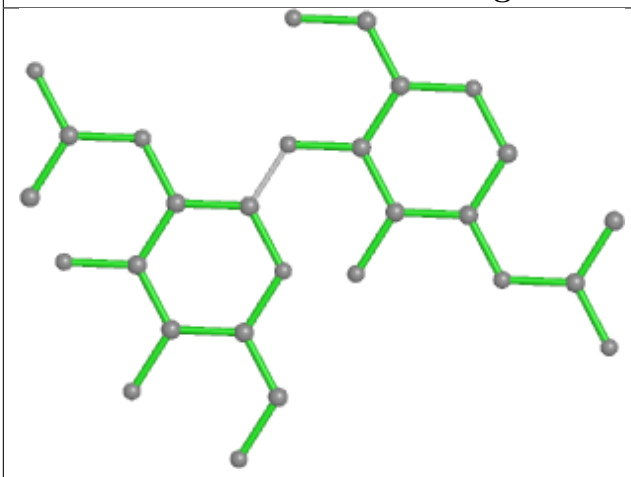


Torsions

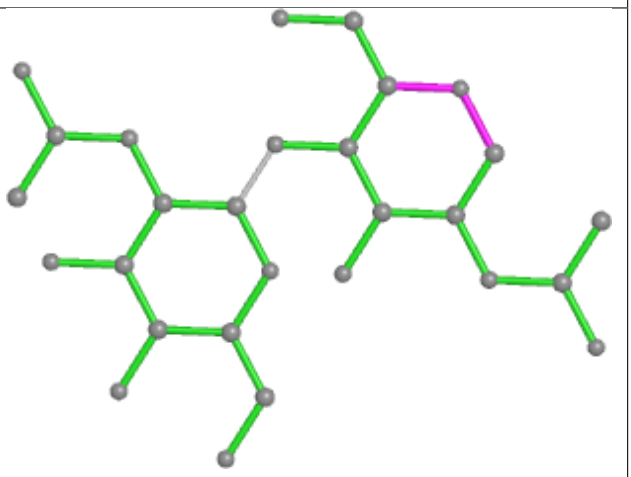


Rings

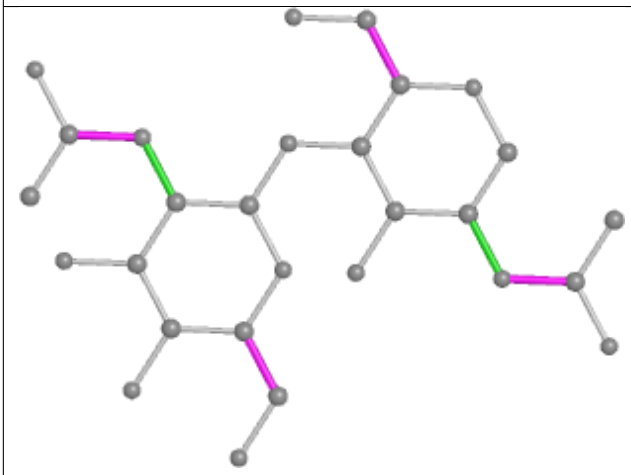
Oligosaccharide Chain G



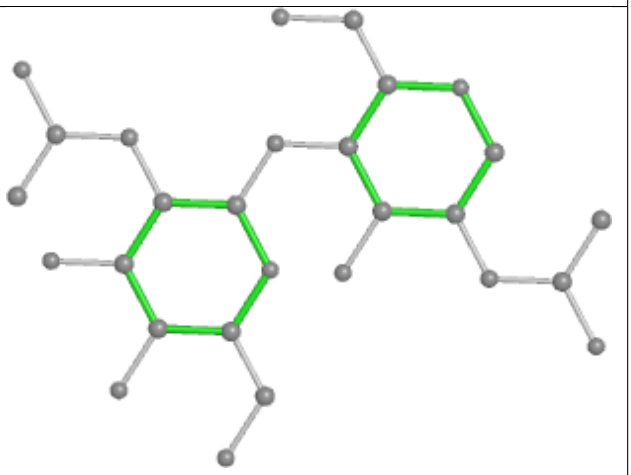
Bond lengths



Bond angles

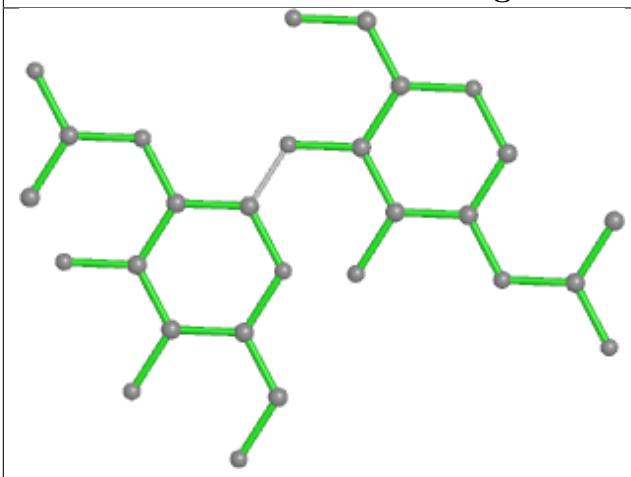


Torsions

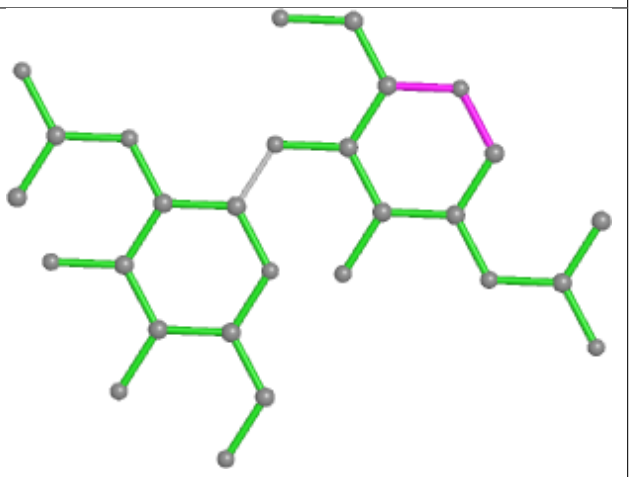


Rings

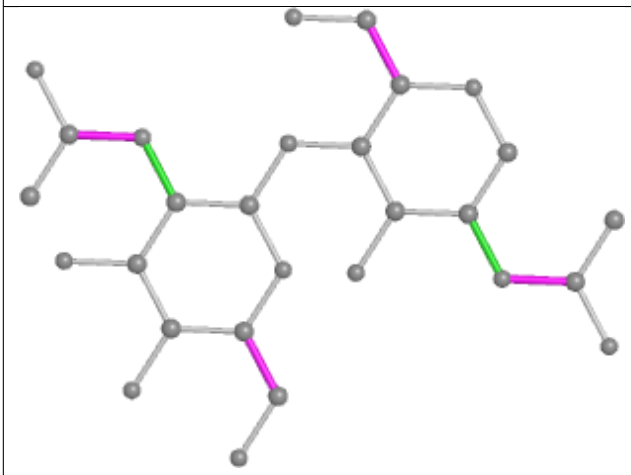
Oligosaccharide Chain H



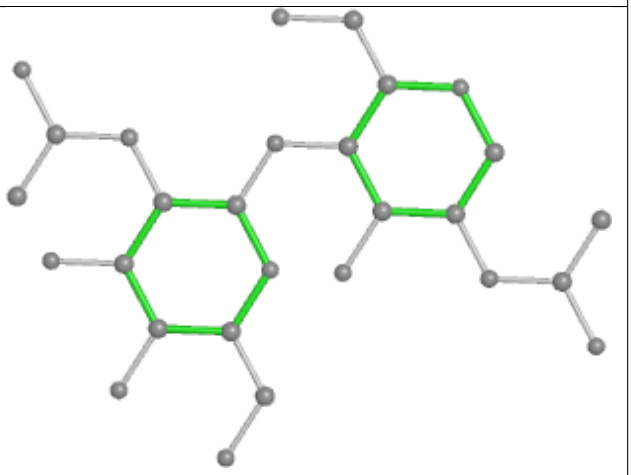
Bond lengths



Bond angles

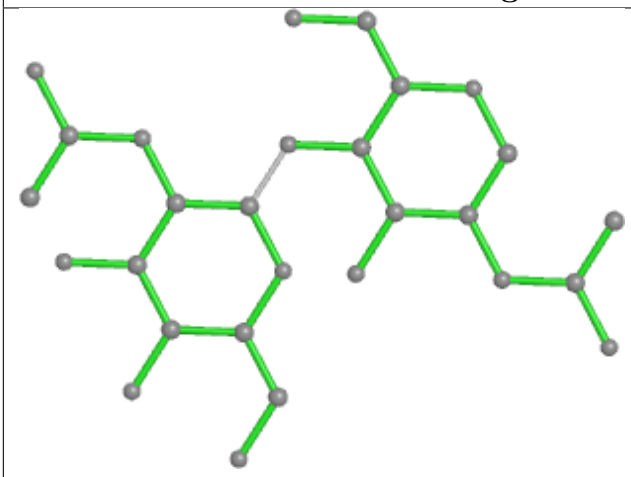


Torsions

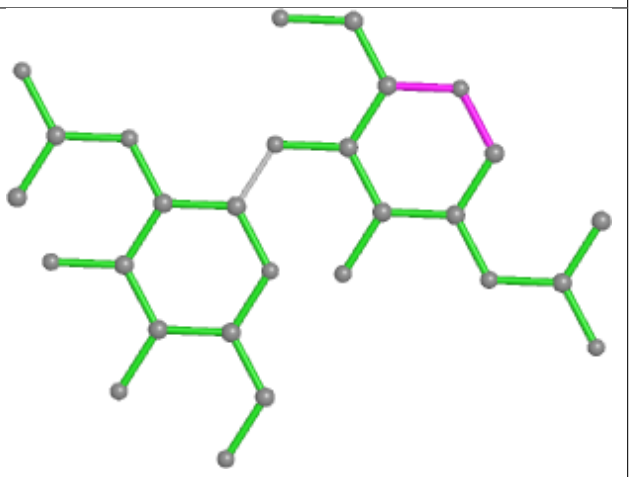


Rings

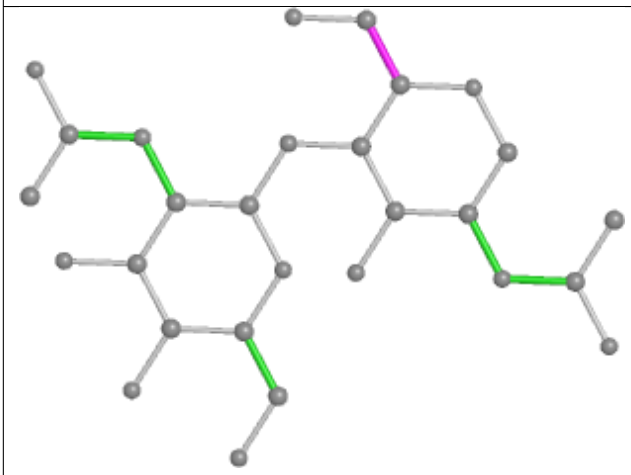
Oligosaccharide Chain I



Bond lengths



Bond angles



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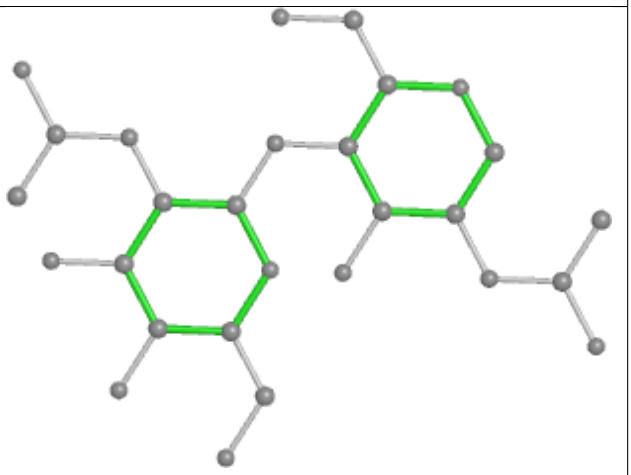
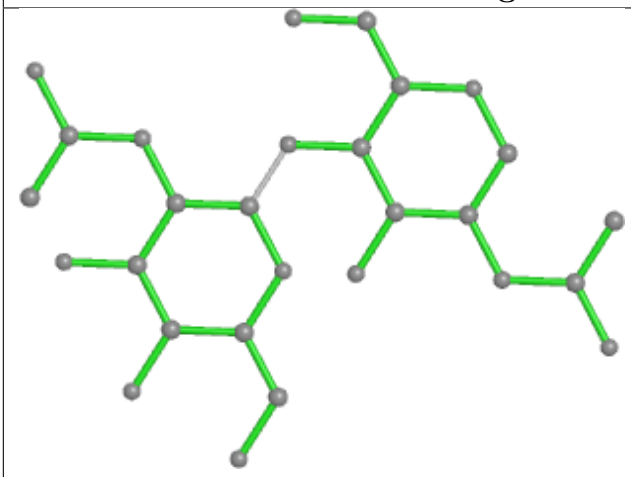
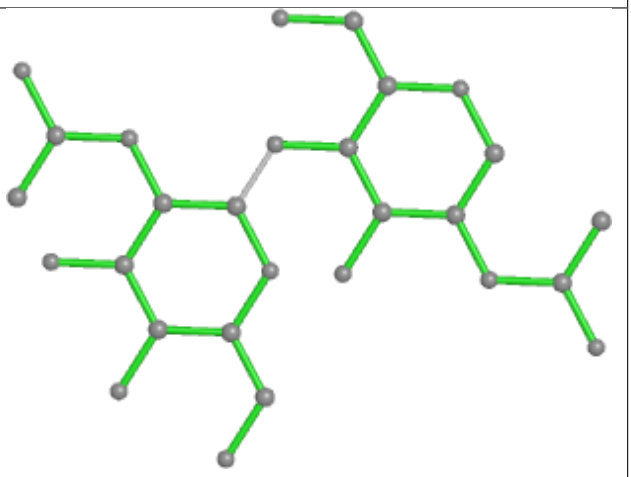


Rings

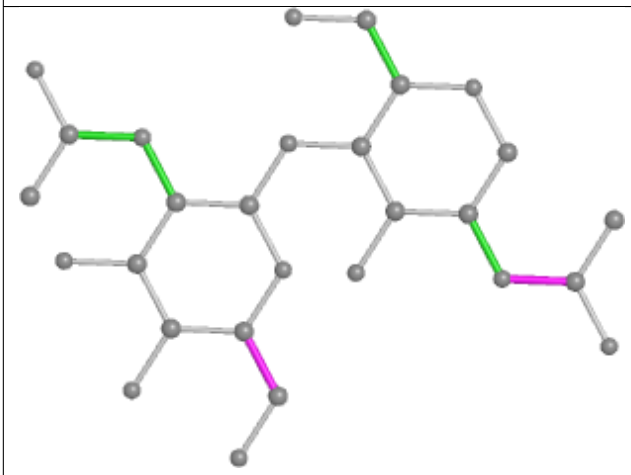
Oligosaccharide Chain J



Bond lengths



Bond angles



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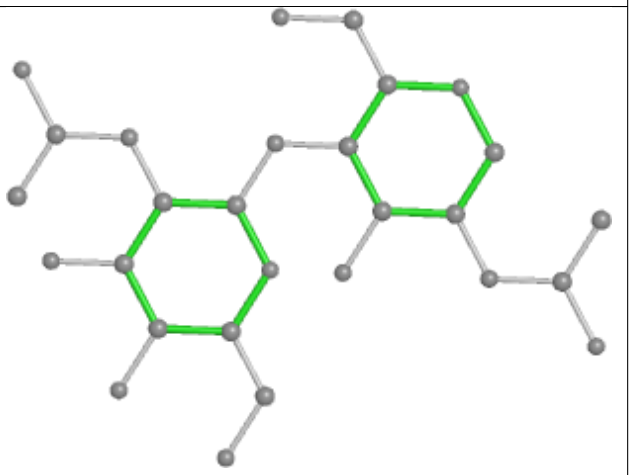
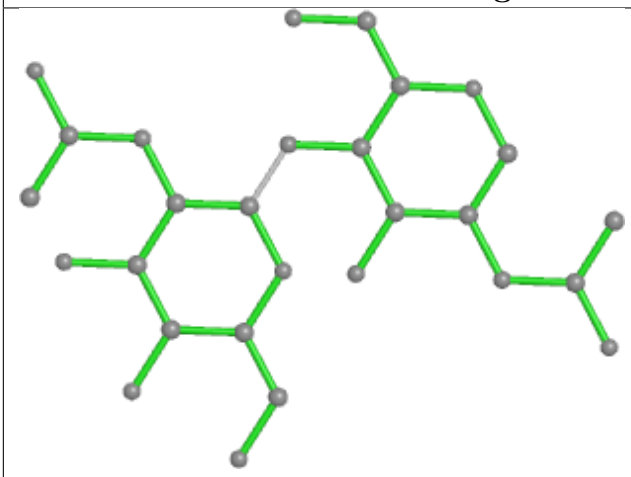
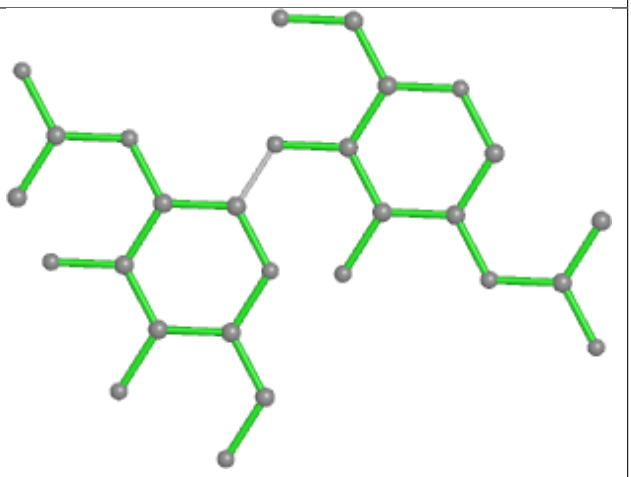


Rings

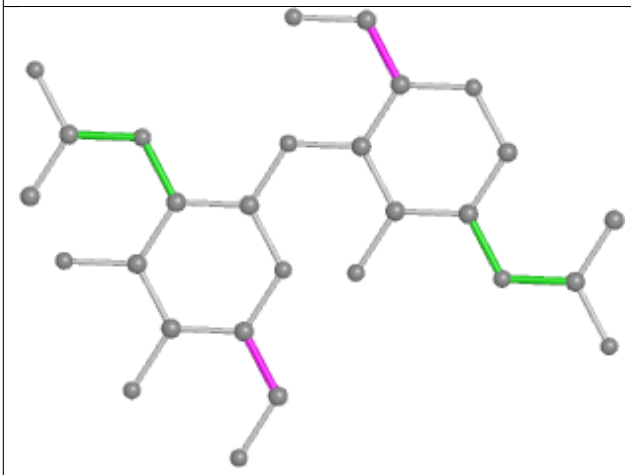
Oligosaccharide Chain K



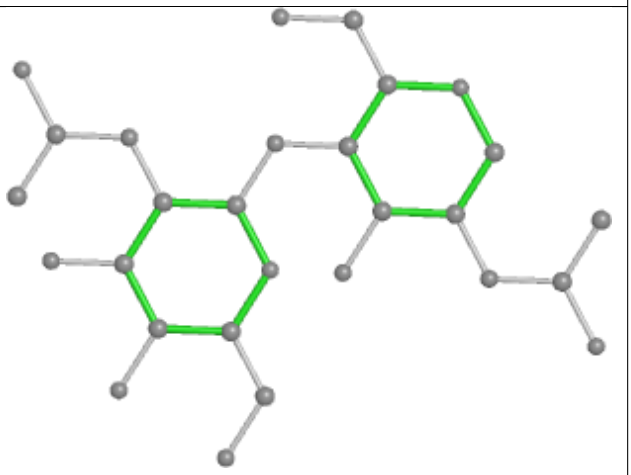
Bond lengths



Bond angles

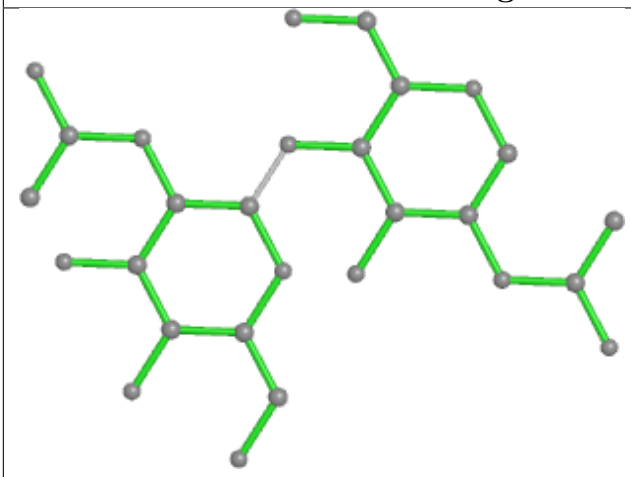


Torsions

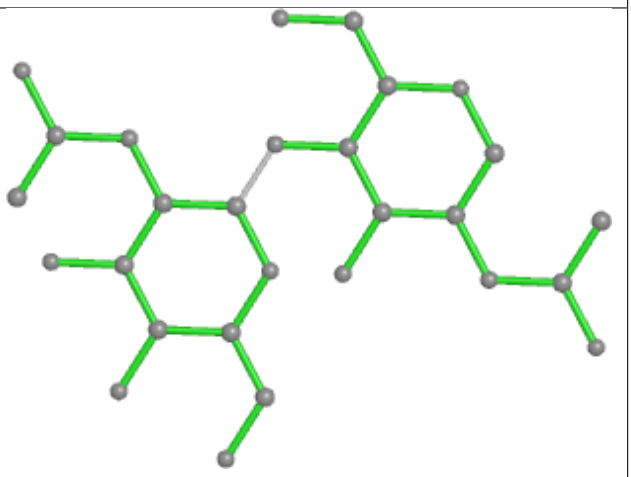


Rings

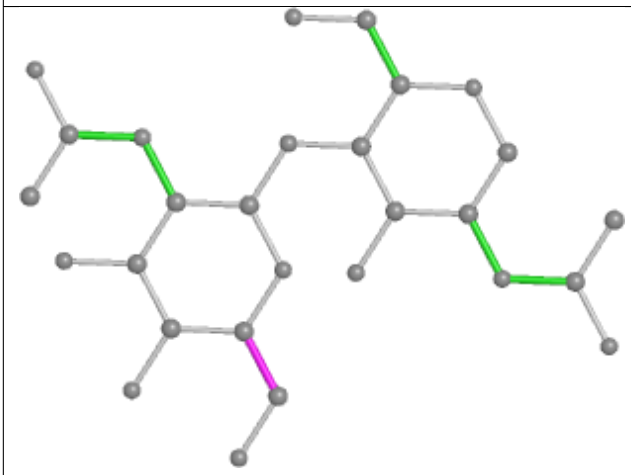
Oligosaccharide Chain L



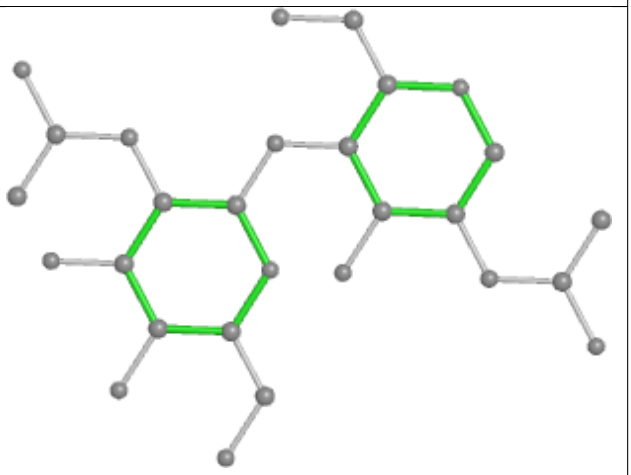
Bond lengths



Bond angles

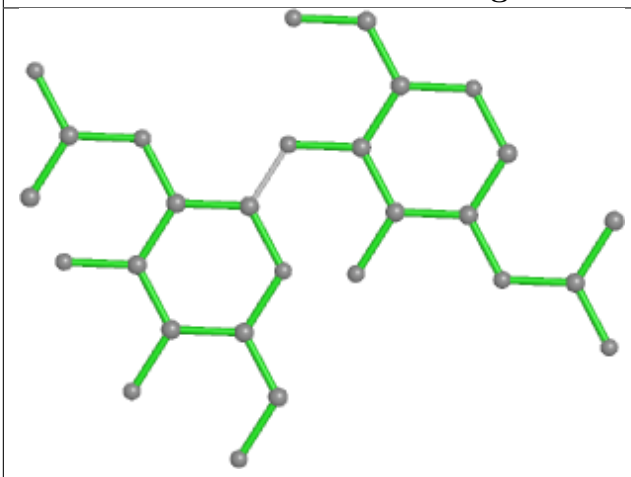


Torsions

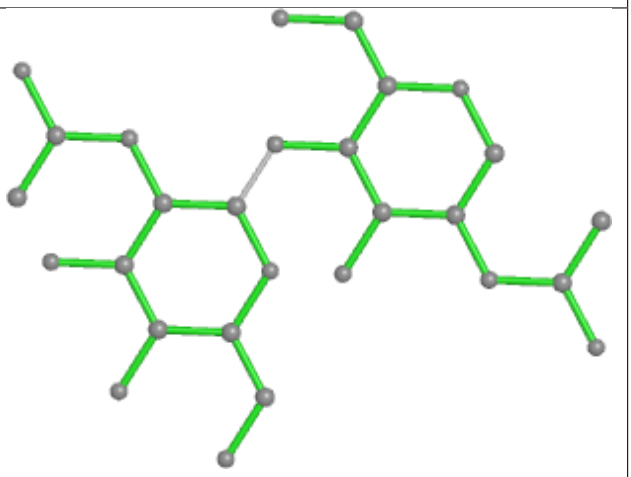


Rings

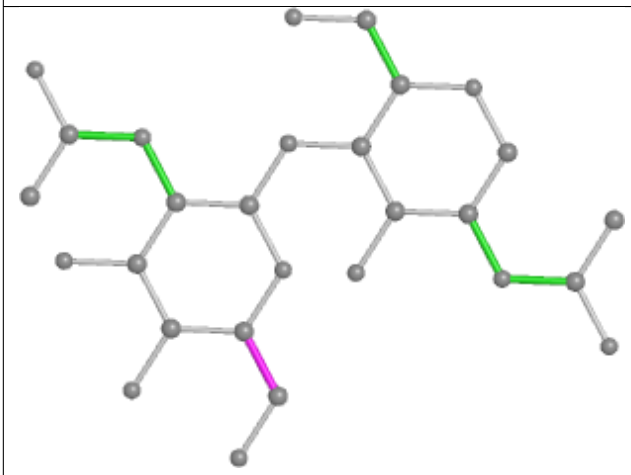
Oligosaccharide Chain M



Bond lengths



Bond angles



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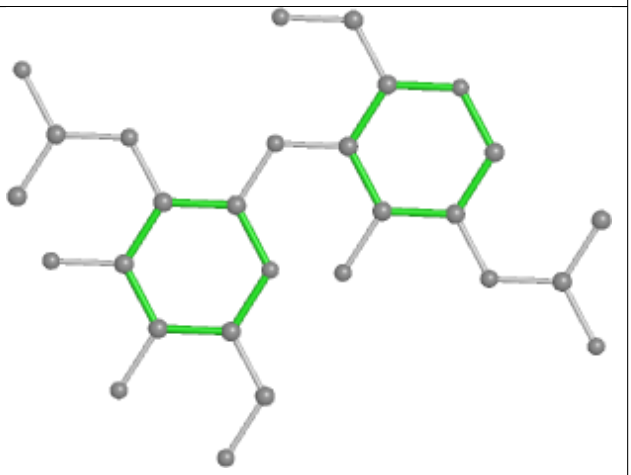
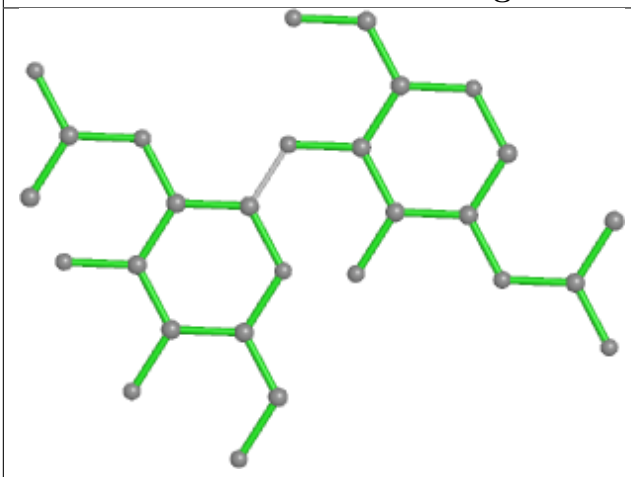
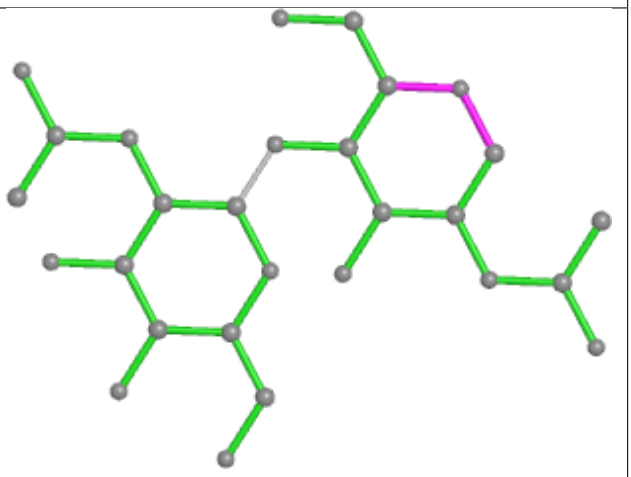


Rings

Oligosaccharide Chain N



Bond lengths



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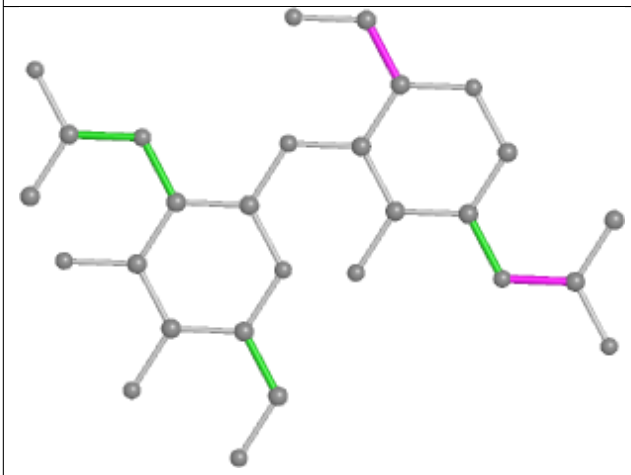
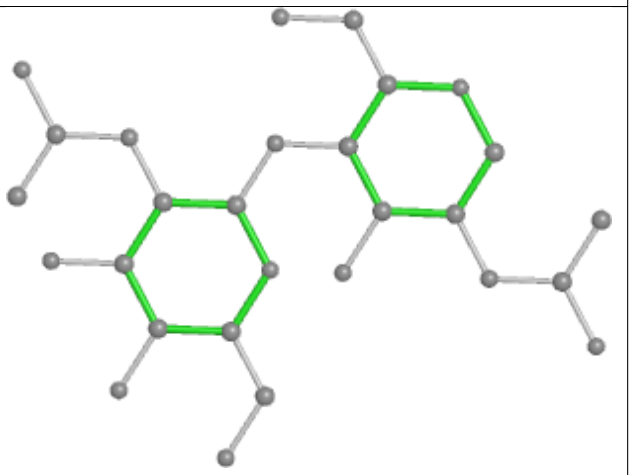
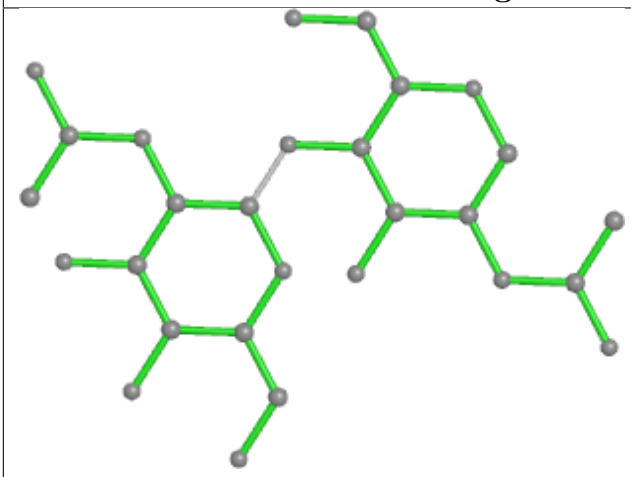


Torsions

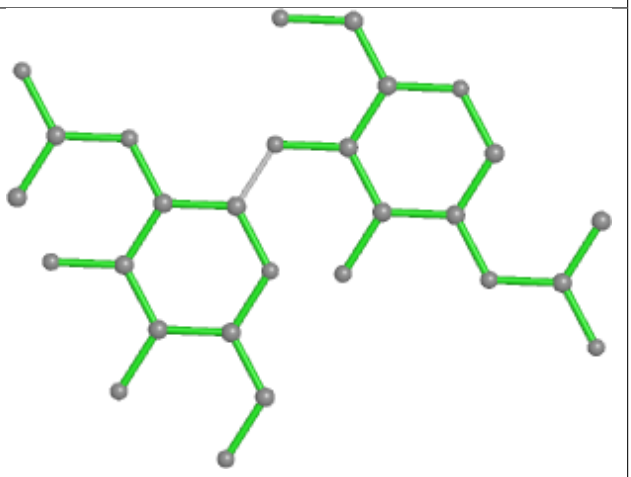


Rings

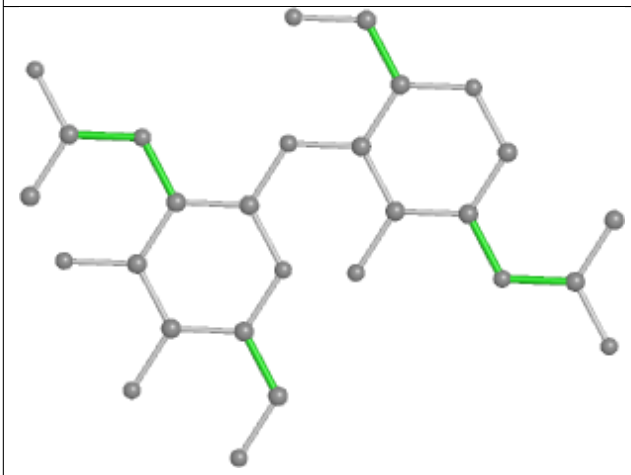
Oligosaccharide Chain O



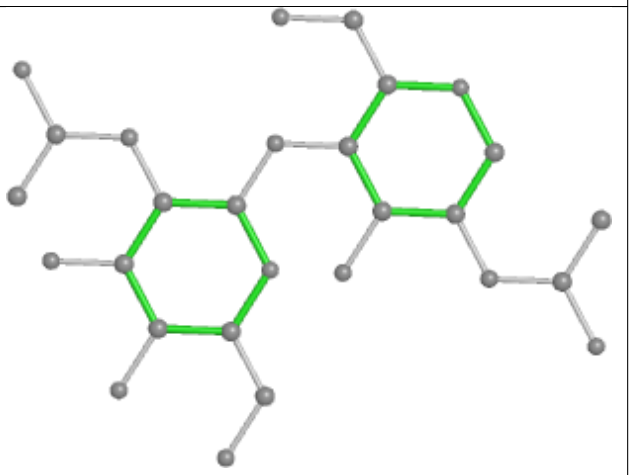
Bond lengths



Bond angles

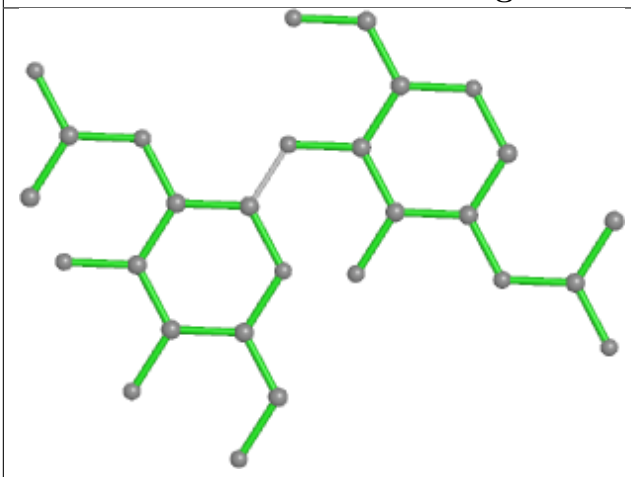


Torsions

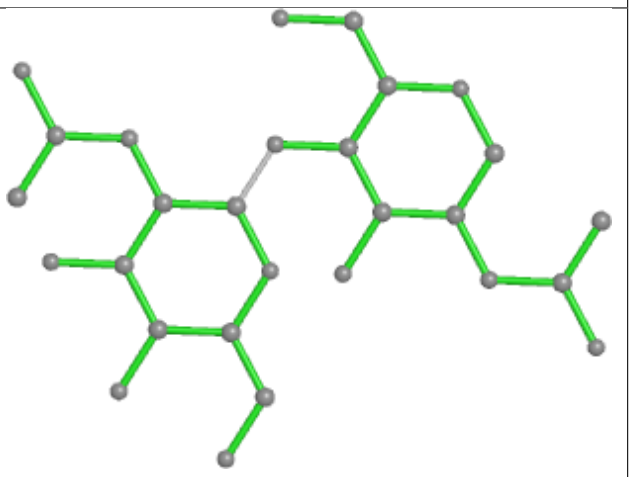


Rings

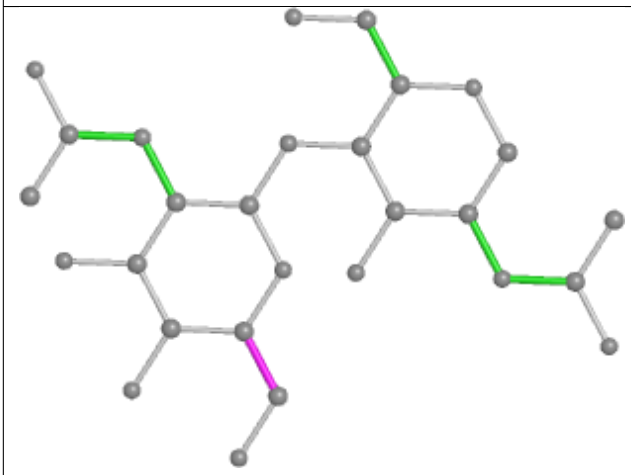
Oligosaccharide Chain P



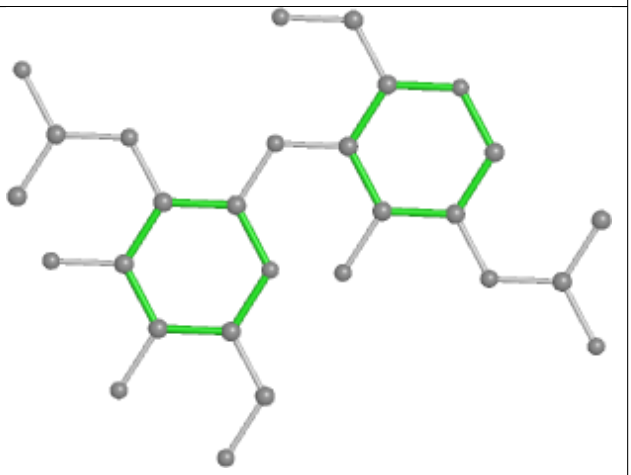
Bond lengths



Bond angles

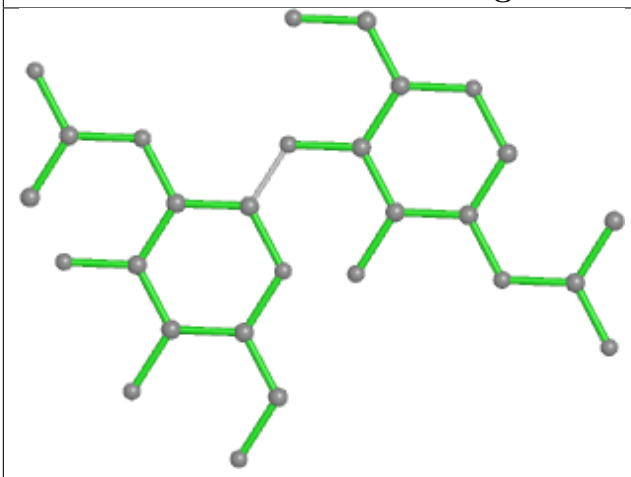


Torsions

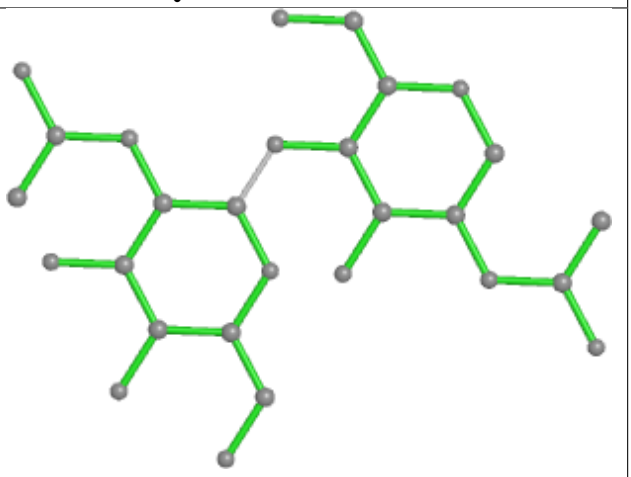


Rings

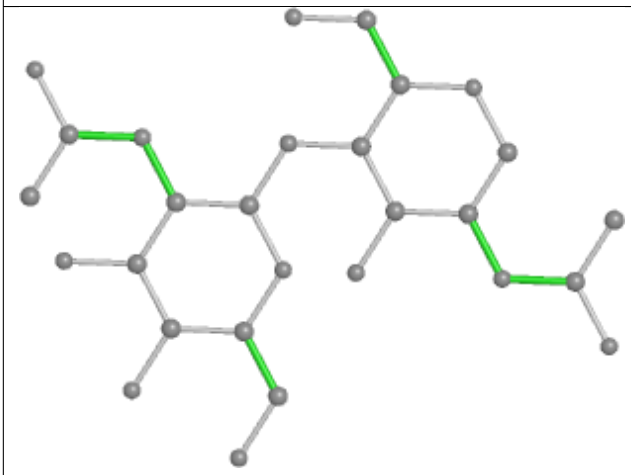
Oligosaccharide Chain Q



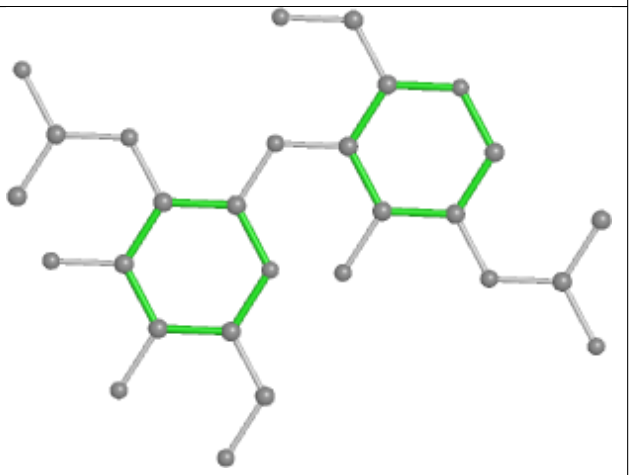
Bond lengths



Bond angles

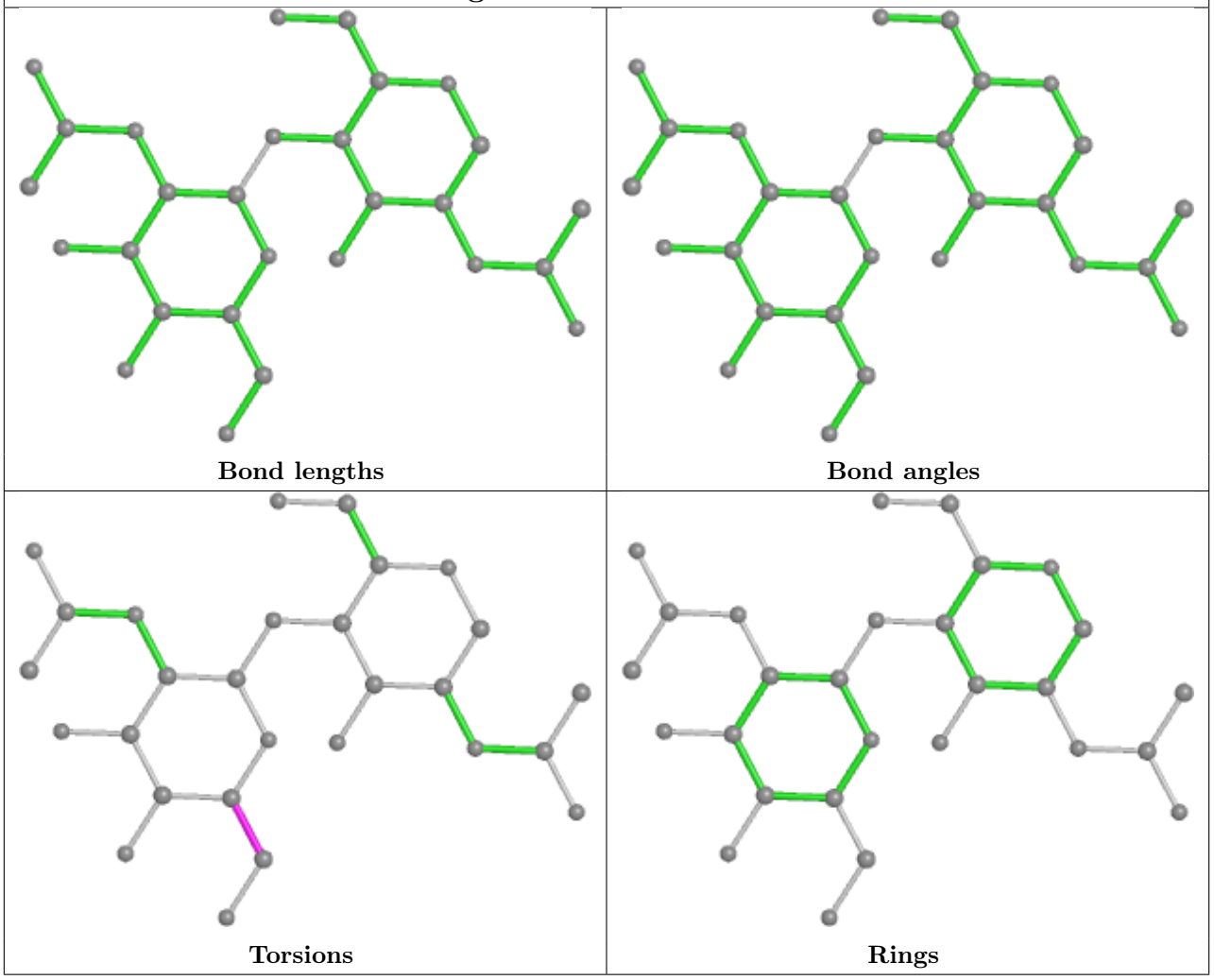


Torsions



Rings

Oligosaccharide Chain R



5.6 Ligand geometry (i)

36 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	$\#\|Z\| > 2$
3	NAG	C	1409	1	14,14,15	0.27	0	17,19,21	0.47	0
3	NAG	C	1402	1	14,14,15	0.24	0	17,19,21	0.48	0
3	NAG	B	1401	1	14,14,15	0.38	0	17,19,21	0.34	0
3	NAG	C	1407	1	14,14,15	0.28	0	17,19,21	0.41	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
3	NAG	B	1410	-	14,14,15	0.23	0	17,19,21	0.45	0
3	NAG	A	1402	1	14,14,15	0.25	0	17,19,21	0.44	0
3	NAG	A	1409	1	14,14,15	0.33	0	17,19,21	0.47	0
3	NAG	B	1408	1	14,14,15	0.27	0	17,19,21	0.40	0
3	NAG	C	1401	1	14,14,15	0.25	0	17,19,21	0.39	0
3	NAG	C	1403	1	14,14,15	0.25	0	17,19,21	0.50	0
3	NAG	A	1410	1	14,14,15	0.28	0	17,19,21	0.50	0
4	EIC	A	1412	-	19,19,19	0.47	0	19,19,19	0.88	1 (5%)
4	EIC	C	1412	-	19,19,19	0.44	0	19,19,19	0.95	0
3	NAG	A	1401	1	14,14,15	0.29	0	17,19,21	0.41	0
3	NAG	A	1406	1	14,14,15	0.27	0	17,19,21	0.44	0
3	NAG	A	1407	1	14,14,15	0.23	0	17,19,21	0.48	0
3	NAG	A	1408	1	14,14,15	0.24	0	17,19,21	0.48	0
3	NAG	C	1406	1	14,14,15	0.21	0	17,19,21	0.43	0
3	NAG	B	1405	1	14,14,15	0.20	0	17,19,21	0.46	0
3	NAG	B	1411	1	14,14,15	0.31	0	17,19,21	0.50	0
3	NAG	B	1406	1	14,14,15	0.25	0	17,19,21	0.48	0
3	NAG	B	1404	-	14,14,15	0.19	0	17,19,21	0.48	0
3	NAG	A	1403	1	14,14,15	0.26	0	17,19,21	0.53	0
3	NAG	B	1407	1	14,14,15	0.28	0	17,19,21	0.46	0
3	NAG	A	1411	1	14,14,15	0.34	0	17,19,21	0.51	0
3	NAG	A	1405	1	14,14,15	0.31	0	17,19,21	0.51	0
3	NAG	C	1411	1	14,14,15	0.34	0	17,19,21	0.49	0
3	NAG	C	1405	1	14,14,15	0.23	0	17,19,21	0.48	0
3	NAG	C	1410	-	14,14,15	0.24	0	17,19,21	0.42	0
4	EIC	B	1412	-	19,19,19	0.45	0	19,19,19	0.83	0
3	NAG	B	1403	1	14,14,15	0.22	0	17,19,21	0.52	0
3	NAG	C	1404	1	14,14,15	0.41	0	17,19,21	0.45	0
3	NAG	C	1408	1	14,14,15	0.27	0	17,19,21	0.42	0
3	NAG	B	1402	1	14,14,15	0.29	0	17,19,21	0.52	0
3	NAG	B	1409	-	14,14,15	0.20	0	17,19,21	0.49	0
3	NAG	A	1404	1	14,14,15	0.22	0	17,19,21	0.46	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	1409	1	-	2/6/23/26	0/1/1/1
3	NAG	C	1402	1	-	4/6/23/26	0/1/1/1
3	NAG	B	1401	1	-	1/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	NAG	C	1407	1	-	1/6/23/26	0/1/1/1
3	NAG	B	1410	-	-	0/6/23/26	0/1/1/1
3	NAG	A	1402	1	-	2/6/23/26	0/1/1/1
3	NAG	A	1409	1	-	2/6/23/26	0/1/1/1
3	NAG	B	1408	1	-	2/6/23/26	0/1/1/1
3	NAG	C	1401	1	-	2/6/23/26	0/1/1/1
3	NAG	C	1403	1	-	2/6/23/26	0/1/1/1
3	NAG	A	1410	1	-	4/6/23/26	0/1/1/1
4	EIC	A	1412	-	-	3/17/17/17	-
4	EIC	C	1412	-	-	7/17/17/17	-
3	NAG	A	1401	1	-	2/6/23/26	0/1/1/1
3	NAG	A	1406	1	-	2/6/23/26	0/1/1/1
3	NAG	A	1407	1	-	4/6/23/26	0/1/1/1
3	NAG	A	1408	1	-	2/6/23/26	0/1/1/1
3	NAG	C	1406	1	-	2/6/23/26	0/1/1/1
3	NAG	B	1405	1	-	0/6/23/26	0/1/1/1
3	NAG	B	1411	1	-	2/6/23/26	0/1/1/1
3	NAG	B	1406	1	-	2/6/23/26	0/1/1/1
3	NAG	B	1404	-	-	2/6/23/26	0/1/1/1
3	NAG	A	1403	1	-	2/6/23/26	0/1/1/1
3	NAG	B	1407	1	-	3/6/23/26	0/1/1/1
3	NAG	A	1411	1	-	1/6/23/26	0/1/1/1
3	NAG	A	1405	1	-	2/6/23/26	0/1/1/1
3	NAG	C	1411	1	-	4/6/23/26	0/1/1/1
3	NAG	C	1405	1	-	0/6/23/26	0/1/1/1
3	NAG	C	1410	-	-	1/6/23/26	0/1/1/1
4	EIC	B	1412	-	-	7/17/17/17	-
3	NAG	B	1403	1	-	2/6/23/26	0/1/1/1
3	NAG	C	1404	1	-	1/6/23/26	0/1/1/1
3	NAG	C	1408	1	-	2/6/23/26	0/1/1/1
3	NAG	B	1402	1	-	2/6/23/26	0/1/1/1
3	NAG	B	1409	-	-	2/6/23/26	0/1/1/1
3	NAG	A	1404	1	-	2/6/23/26	0/1/1/1

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	A	1412	EIC	C3-C2-C1	-2.61	107.89	114.47

There are no chirality outliers.

All (81) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	C	1412	EIC	C10-C11-C12-C13
3	A	1409	NAG	O5-C5-C6-O6
3	A	1402	NAG	C4-C5-C6-O6
3	A	1403	NAG	O5-C5-C6-O6
3	A	1406	NAG	O5-C5-C6-O6
3	C	1409	NAG	O5-C5-C6-O6
3	A	1402	NAG	O5-C5-C6-O6
3	B	1402	NAG	C4-C5-C6-O6
3	B	1408	NAG	C4-C5-C6-O6
3	C	1402	NAG	C4-C5-C6-O6
3	C	1408	NAG	C4-C5-C6-O6
3	A	1410	NAG	O5-C5-C6-O6
3	B	1403	NAG	O5-C5-C6-O6
3	C	1403	NAG	O5-C5-C6-O6
3	C	1409	NAG	C4-C5-C6-O6
3	A	1403	NAG	C4-C5-C6-O6
3	C	1403	NAG	C4-C5-C6-O6
3	C	1401	NAG	O5-C5-C6-O6
3	A	1406	NAG	C4-C5-C6-O6
3	B	1403	NAG	C4-C5-C6-O6
3	B	1406	NAG	C4-C5-C6-O6
3	C	1408	NAG	O5-C5-C6-O6
3	A	1405	NAG	C4-C5-C6-O6
3	A	1404	NAG	O5-C5-C6-O6
3	B	1402	NAG	O5-C5-C6-O6
3	B	1408	NAG	O5-C5-C6-O6
3	B	1404	NAG	O5-C5-C6-O6
3	A	1409	NAG	C4-C5-C6-O6
3	A	1404	NAG	C4-C5-C6-O6
3	A	1410	NAG	C4-C5-C6-O6
3	A	1407	NAG	C8-C7-N2-C2
3	A	1407	NAG	O7-C7-N2-C2
3	A	1410	NAG	C8-C7-N2-C2
3	A	1410	NAG	O7-C7-N2-C2
3	B	1407	NAG	C8-C7-N2-C2
3	B	1407	NAG	O7-C7-N2-C2
3	B	1409	NAG	C8-C7-N2-C2

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Mol	Chain	Res	Type	Atoms
3	B	1409	NAG	O7-C7-N2-C2
3	C	1402	NAG	C8-C7-N2-C2
3	C	1402	NAG	O7-C7-N2-C2
3	C	1411	NAG	C8-C7-N2-C2
3	C	1411	NAG	O7-C7-N2-C2
3	B	1404	NAG	C4-C5-C6-O6
3	A	1401	NAG	O5-C5-C6-O6
3	C	1411	NAG	C4-C5-C6-O6
3	A	1407	NAG	O5-C5-C6-O6
3	A	1408	NAG	O5-C5-C6-O6
3	C	1402	NAG	O5-C5-C6-O6
3	C	1406	NAG	O5-C5-C6-O6
3	B	1407	NAG	O5-C5-C6-O6
3	A	1408	NAG	C4-C5-C6-O6
3	B	1406	NAG	O5-C5-C6-O6
4	B	1412	EIC	C3-C4-C5-C6
4	C	1412	EIC	C4-C5-C6-C7
3	C	1411	NAG	O5-C5-C6-O6
3	A	1405	NAG	O5-C5-C6-O6
4	B	1412	EIC	C4-C5-C6-C7
3	C	1401	NAG	C4-C5-C6-O6
4	A	1412	EIC	C5-C6-C7-C8
4	A	1412	EIC	C3-C4-C5-C6
3	C	1407	NAG	O5-C5-C6-O6
4	B	1412	EIC	C13-C14-C15-C16
3	B	1411	NAG	C4-C5-C6-O6
3	A	1407	NAG	C4-C5-C6-O6
3	B	1401	NAG	O5-C5-C6-O6
3	C	1406	NAG	C4-C5-C6-O6
4	A	1412	EIC	C4-C5-C6-C7
3	C	1410	NAG	O5-C5-C6-O6
3	A	1401	NAG	C4-C5-C6-O6
4	B	1412	EIC	C10-C11-C12-C13
4	C	1412	EIC	C6-C7-C8-C9
3	B	1411	NAG	O5-C5-C6-O6
4	B	1412	EIC	C9-C10-C11-C12
4	C	1412	EIC	C9-C10-C11-C12
4	B	1412	EIC	O2-C1-C2-C3
4	C	1412	EIC	O2-C1-C2-C3
3	C	1404	NAG	C4-C5-C6-O6
4	B	1412	EIC	O1-C1-C2-C3
3	A	1411	NAG	C4-C5-C6-O6

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Mol	Chain	Res	Type	Atoms
4	C	1412	EIC	O1-C1-C2-C3
4	C	1412	EIC	C7-C8-C9-C10

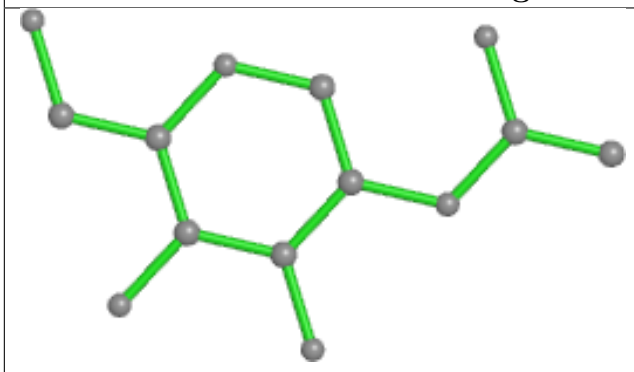
There are no ring outliers.

8 monomers are involved in 93 short contacts:

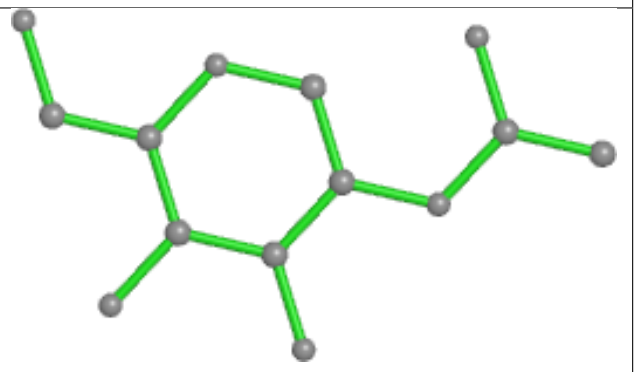
Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	A	1402	NAG	1	0
3	C	1403	NAG	1	0
4	A	1412	EIC	33	0
4	C	1412	EIC	33	0
3	B	1404	NAG	1	0
4	B	1412	EIC	22	0
3	C	1404	NAG	1	0
3	B	1402	NAG	1	0

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 then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

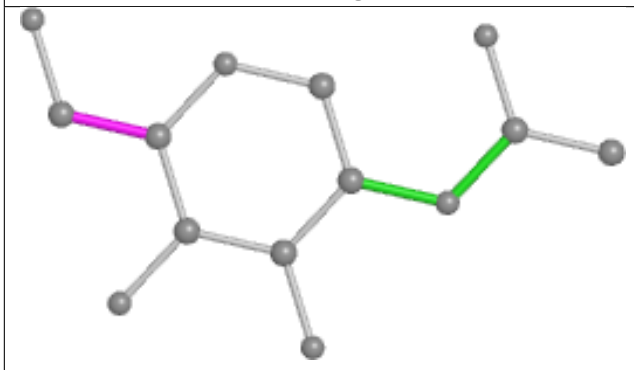
Ligand NAG C 1409



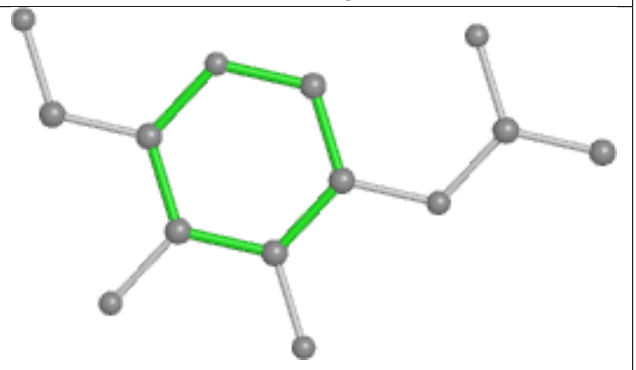
Bond lengths



Bond angles

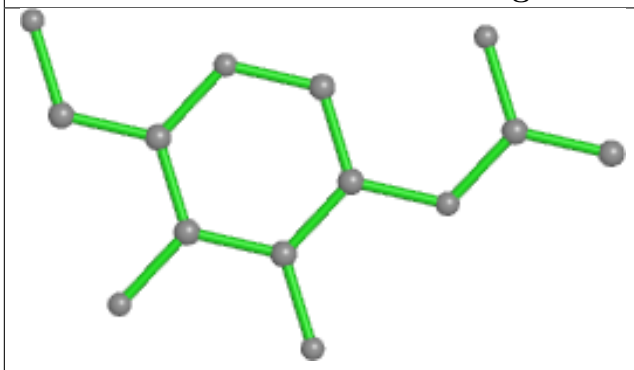


Torsions

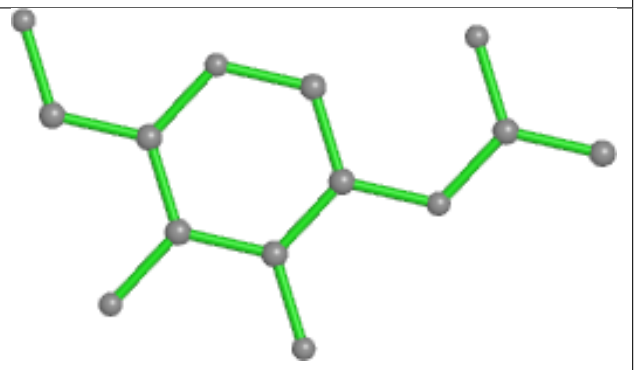


Rings

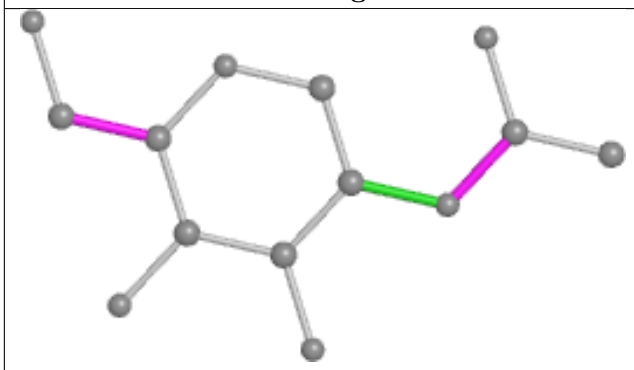
Ligand NAG C 1402



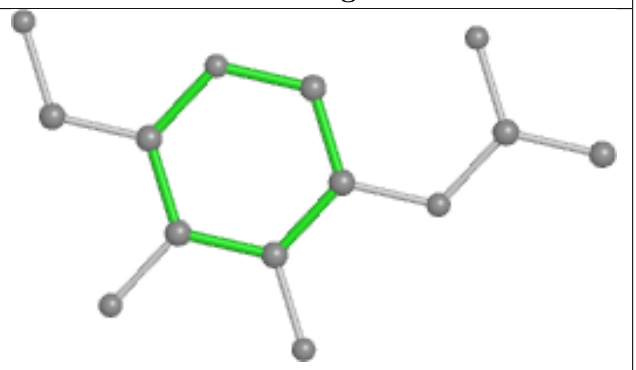
Bond lengths



Bond angles

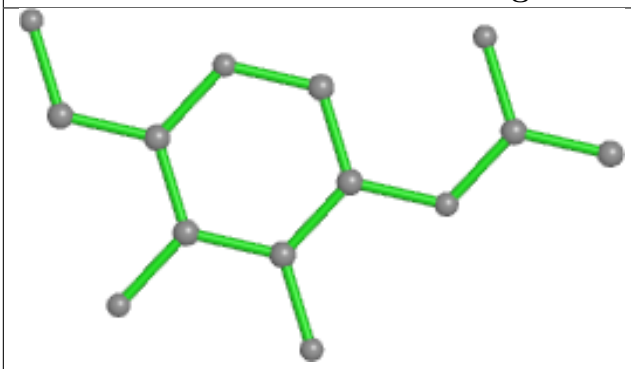


Torsions

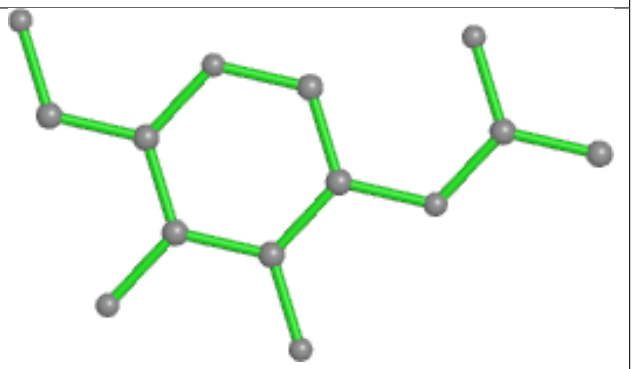


Rings

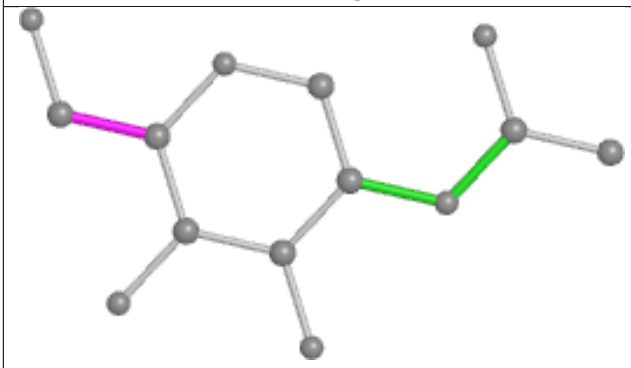
Ligand NAG B 1401



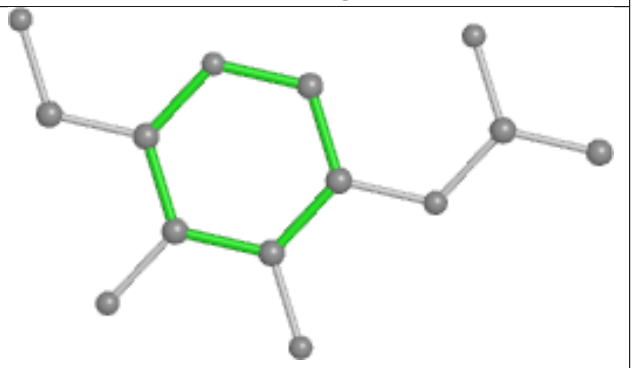
Bond lengths



Bond angles

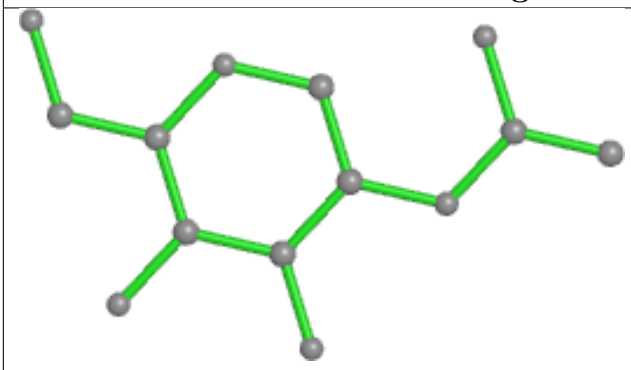


Torsions

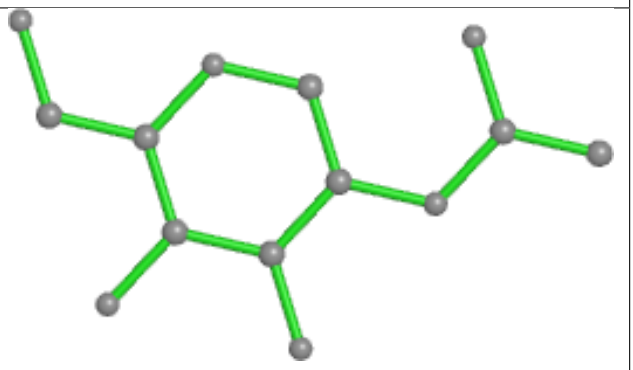


Rings

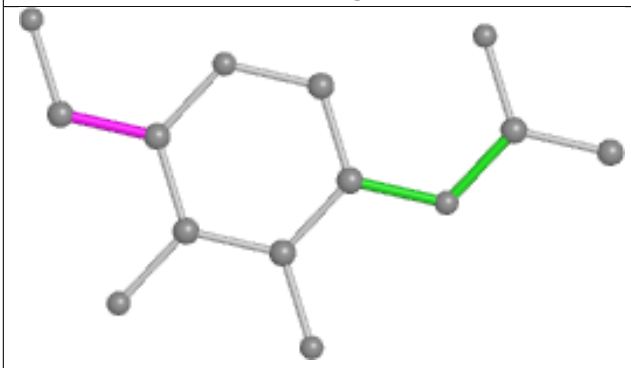
Ligand NAG C 1407



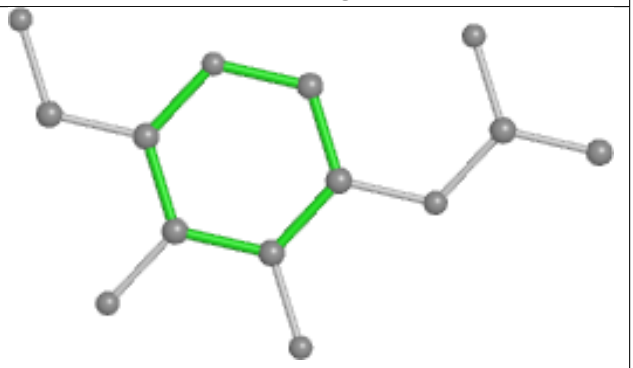
Bond lengths



Bond angles

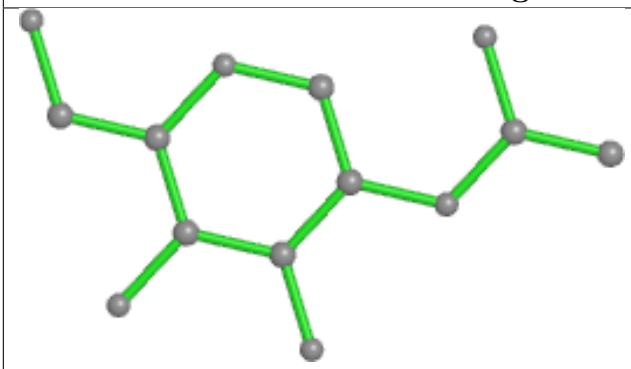


Torsions

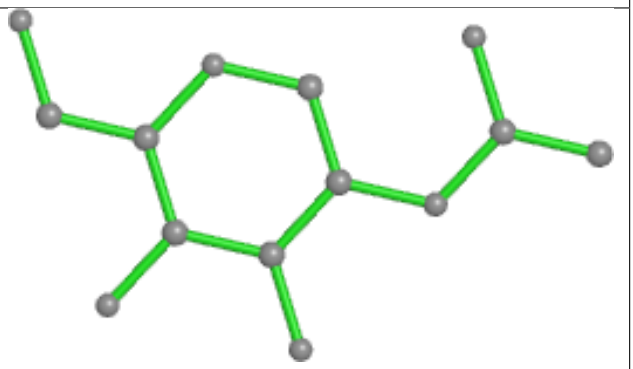


Rings

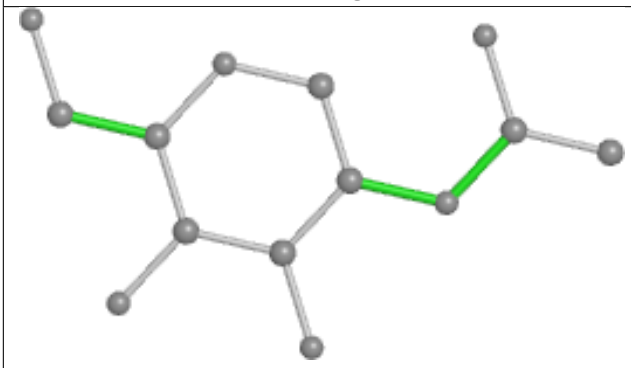
Ligand NAG B 1410



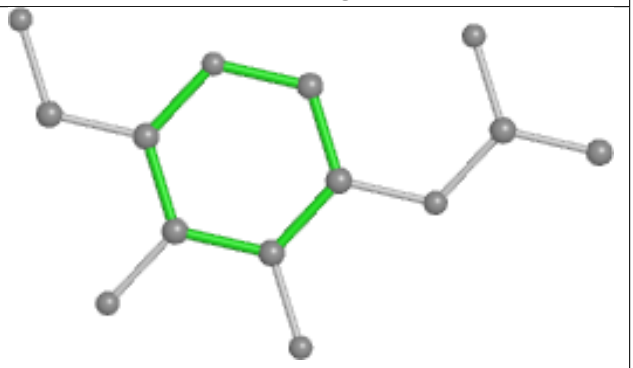
Bond lengths



Bond angles

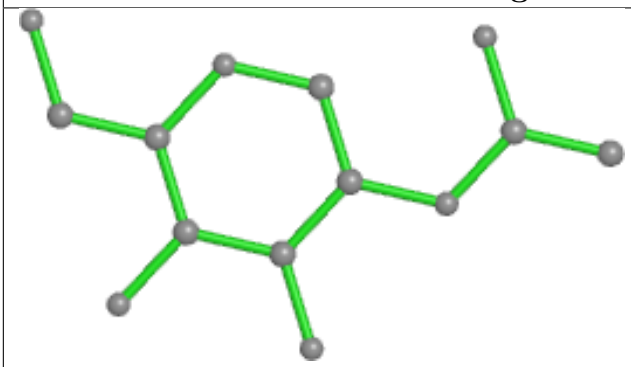


Torsions

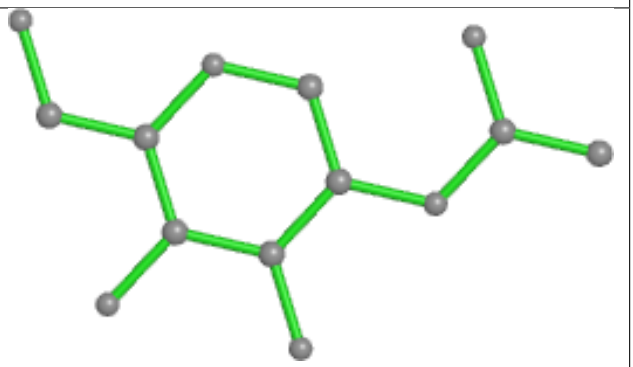


Rings

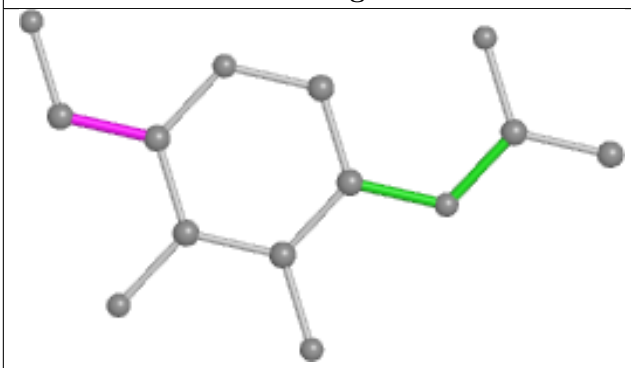
Ligand NAG A 1402



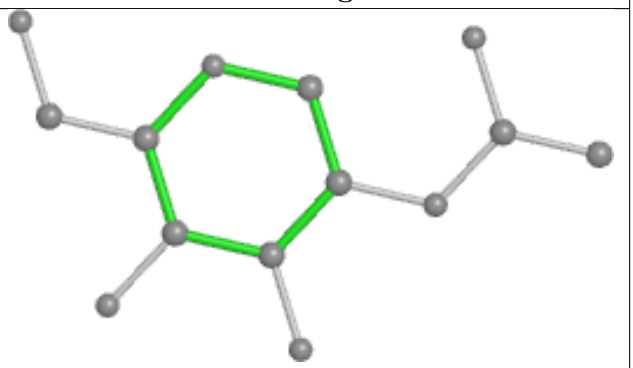
Bond lengths



Bond angles

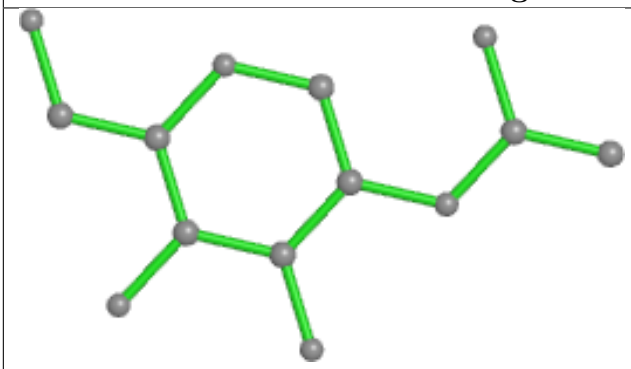


Torsions

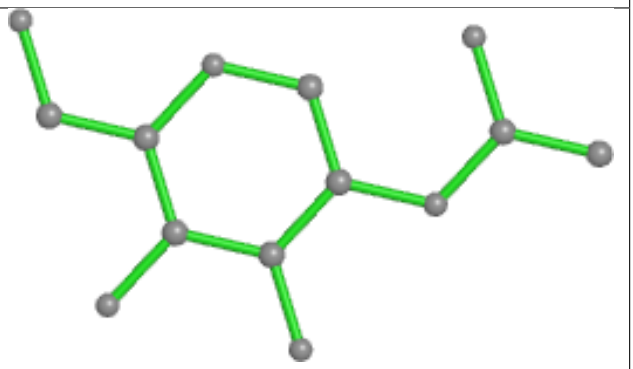


Rings

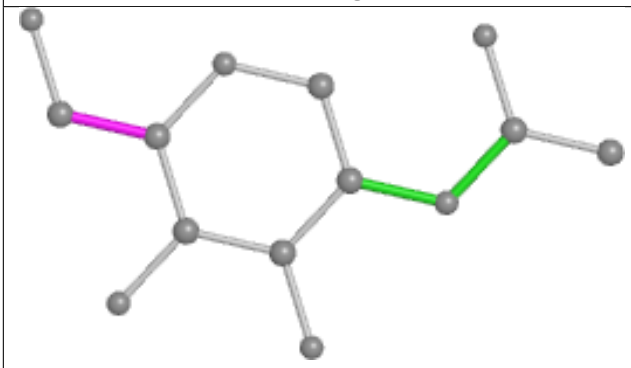
Ligand NAG A 1409



Bond lengths



Bond angles



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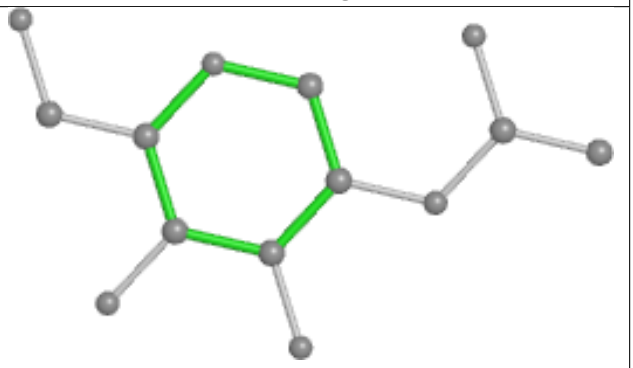
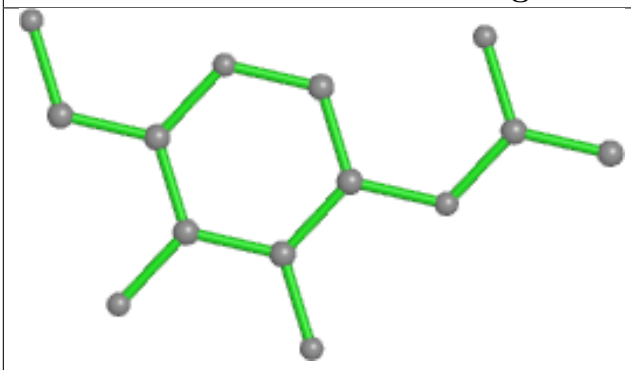


Rings

Ligand NAG B 1408



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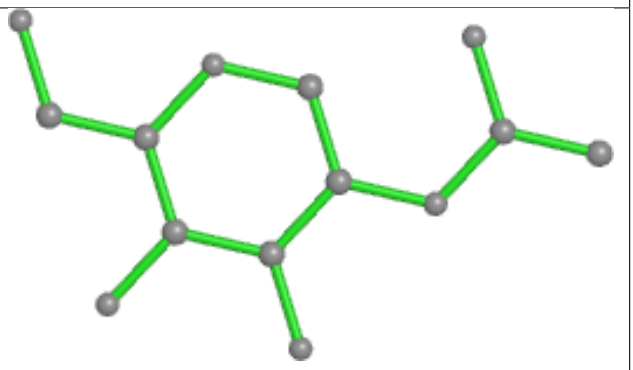
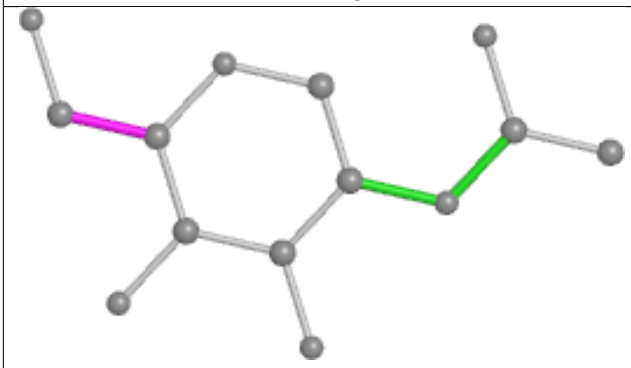


Bond angles



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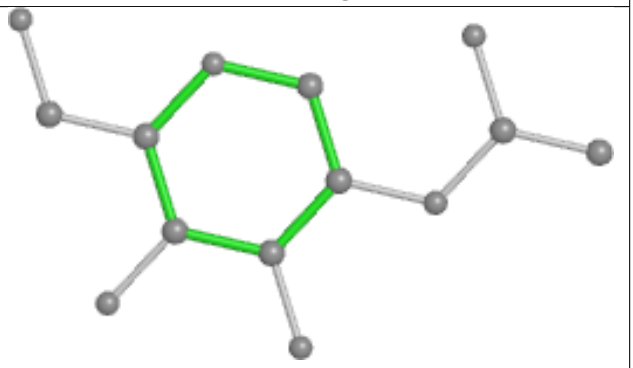
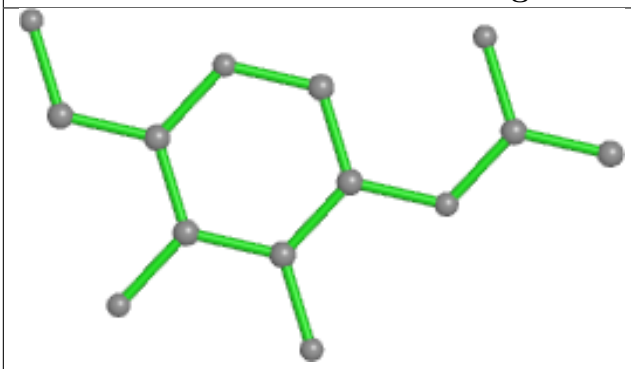
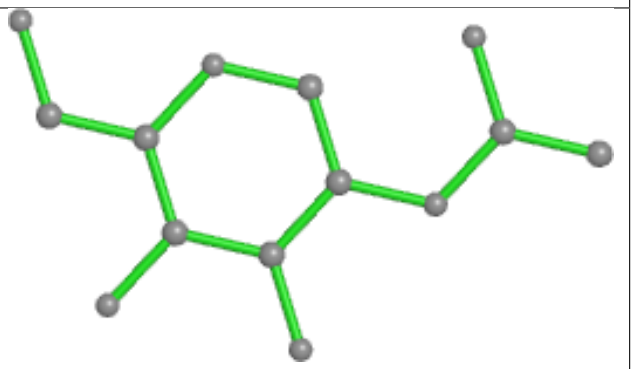


Rings

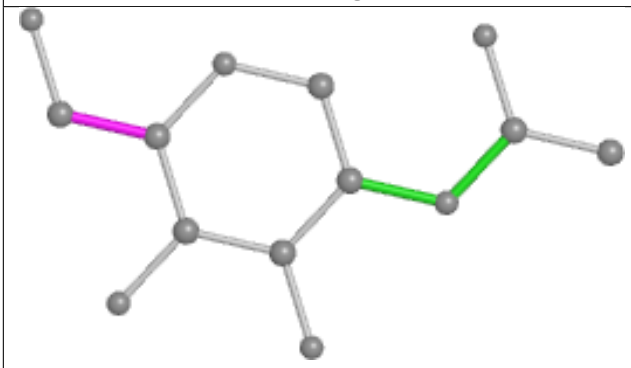
Ligand NAG C 1401



Bond lengths



Bond angles



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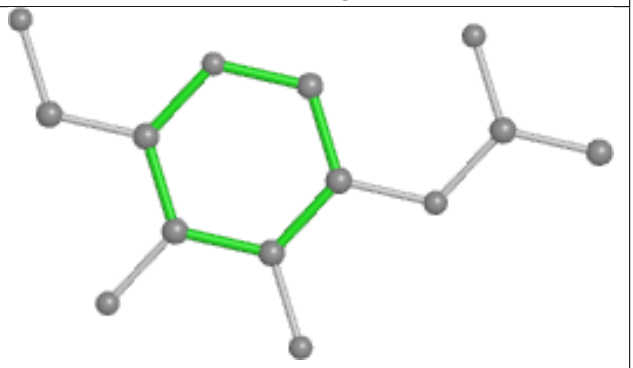
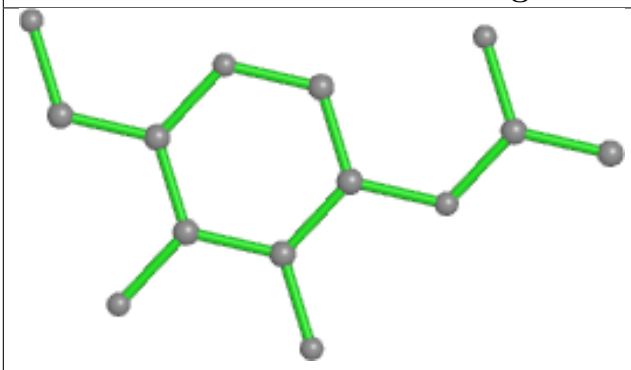
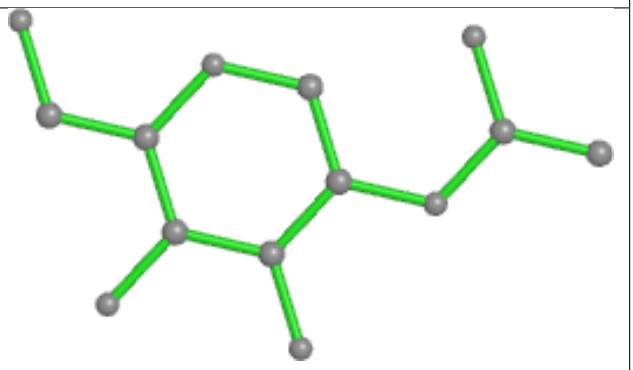


Rings

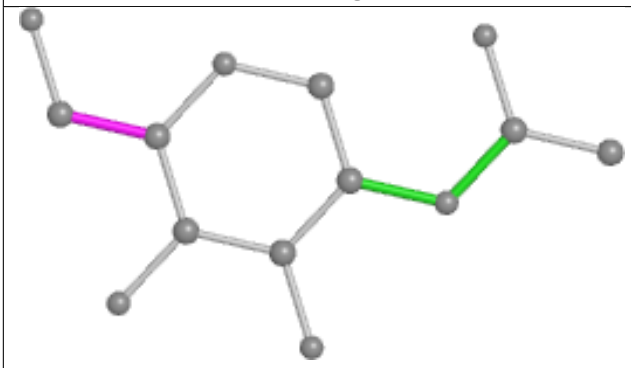
Ligand NAG C 1403



Bond lengths



Bond angles



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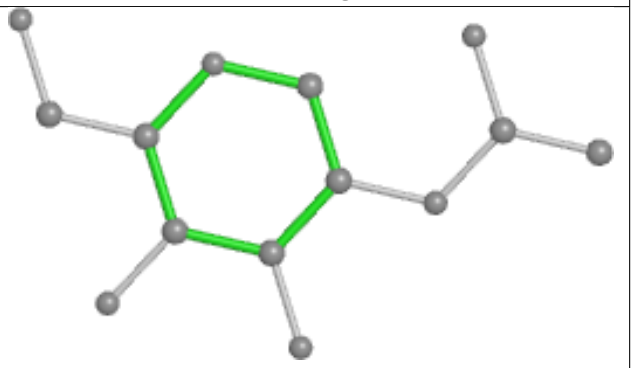
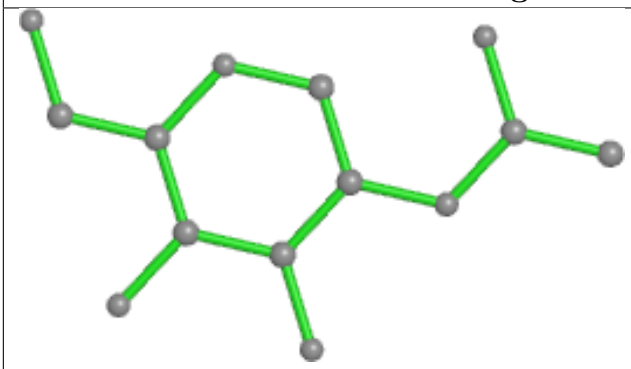


Rings

Ligand NAG A 1410



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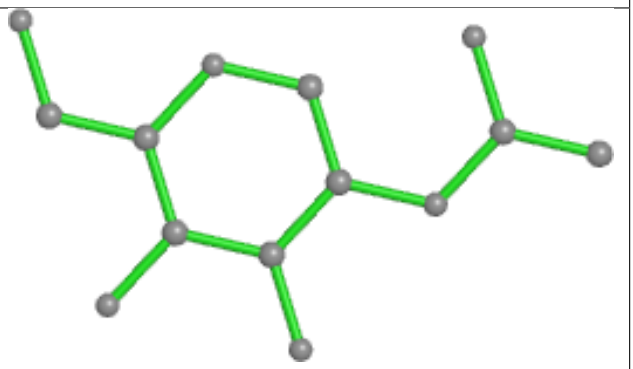
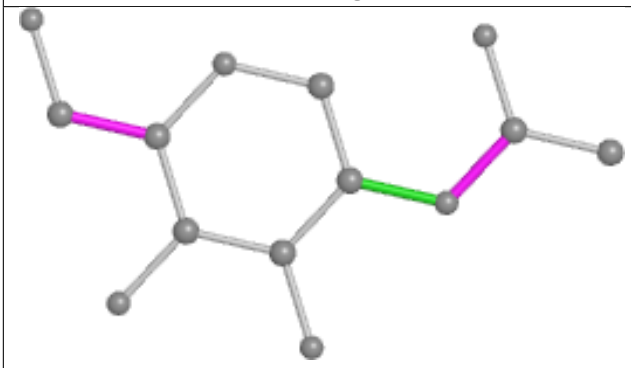


Bond angles



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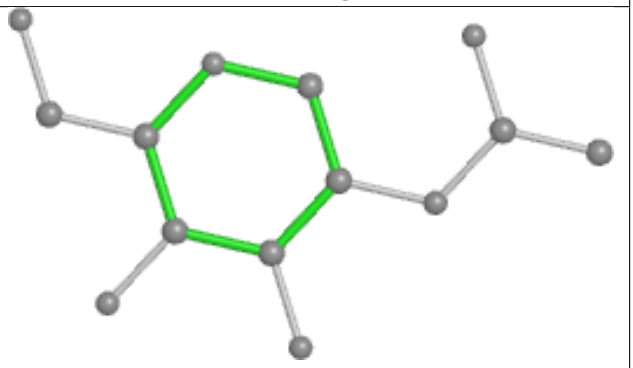
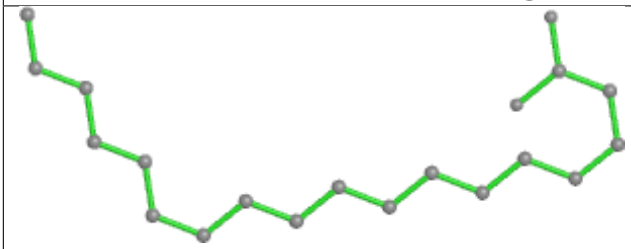
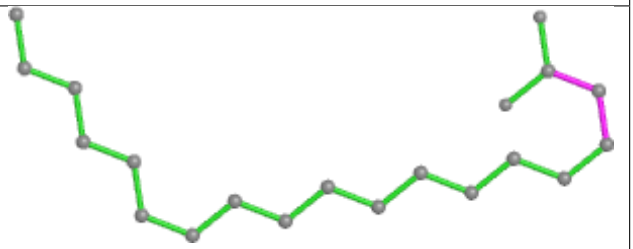


Rings

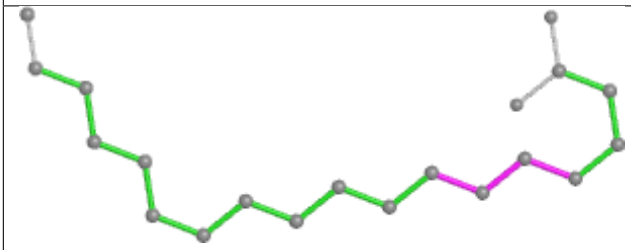
Ligand EIC A 1412



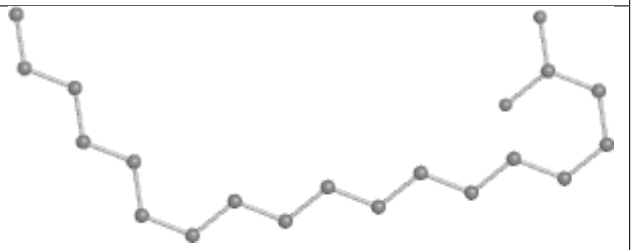
Bond lengths



Bond angles

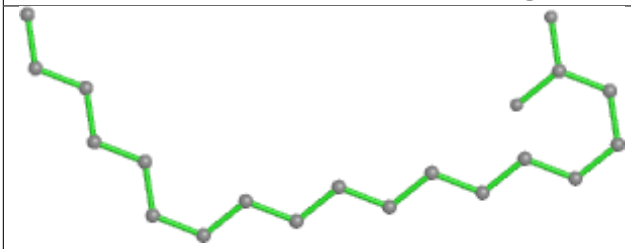


Torsions

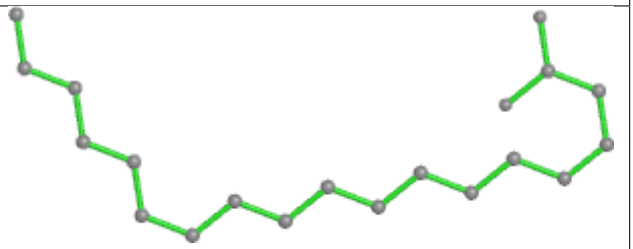


Rings

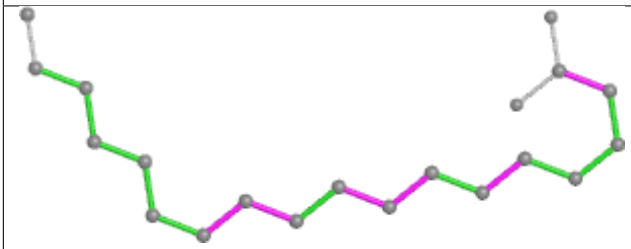
Ligand EIC C 1412



Bond lengths



Bond angles



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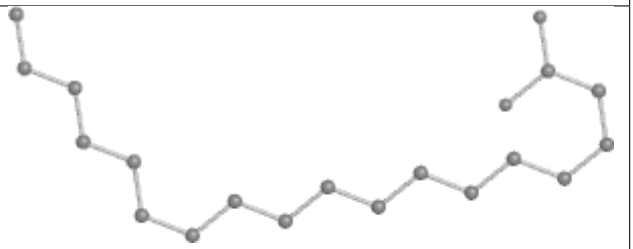
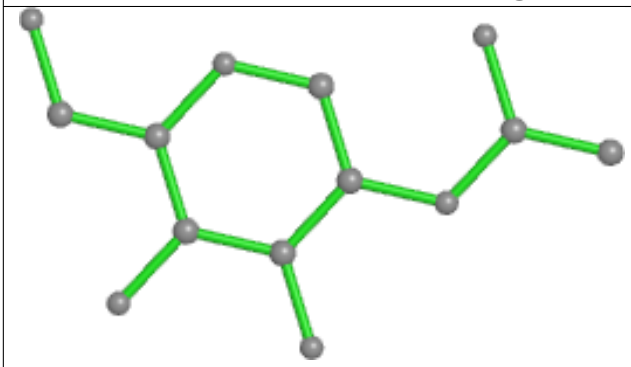
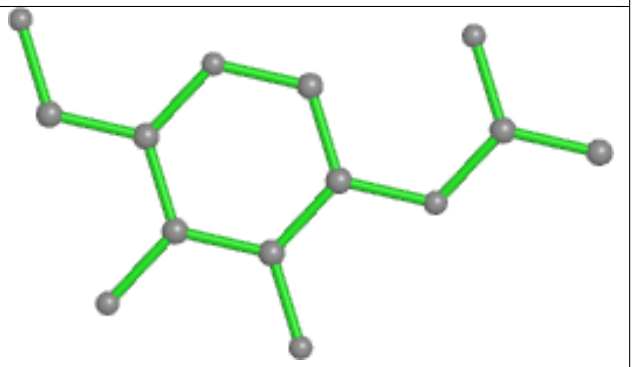


Rings

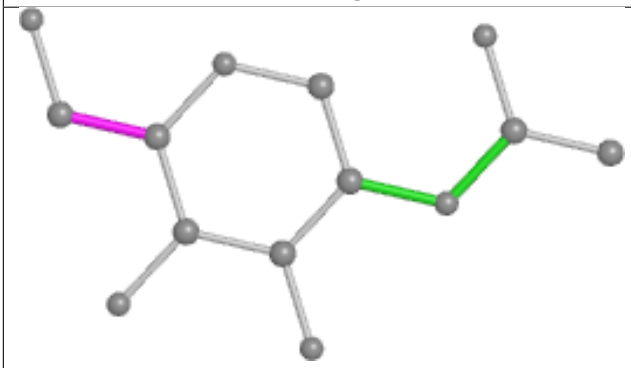
Ligand NAG A 1401



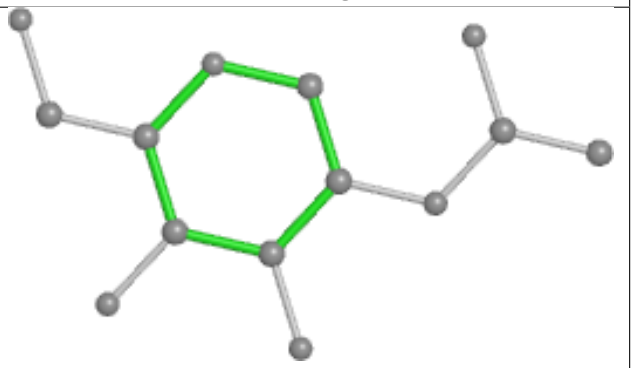
Bond lengths



Bond angles

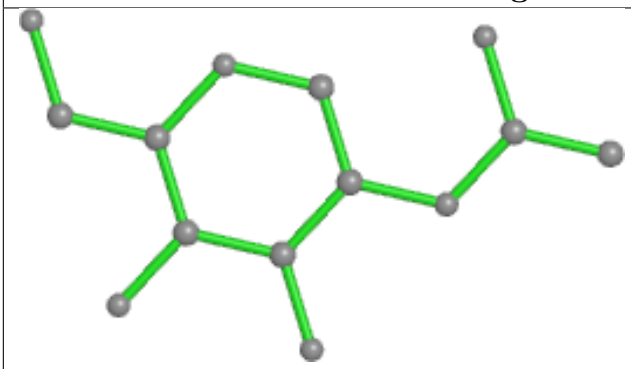


Torsions

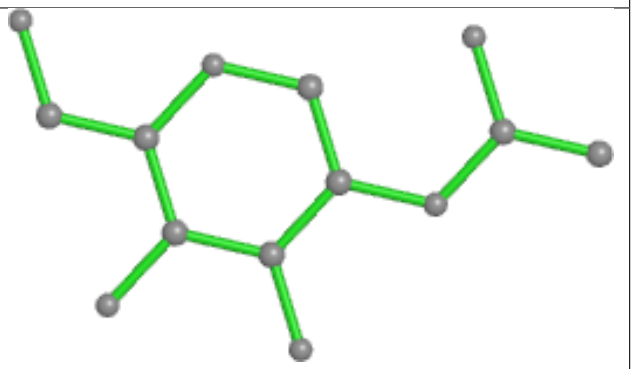


Rings

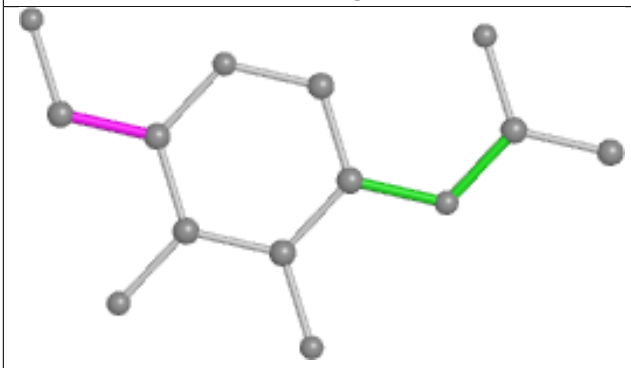
Ligand NAG A 1406



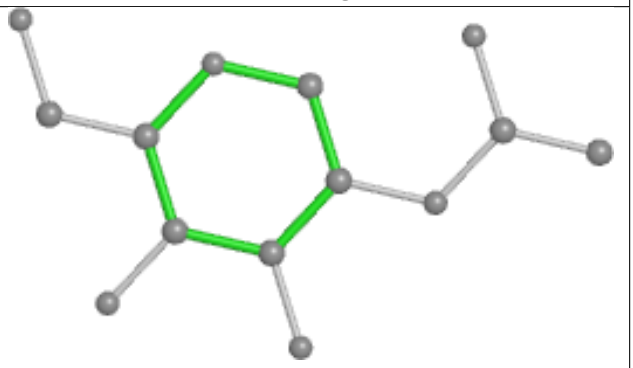
Bond lengths



Bond angles

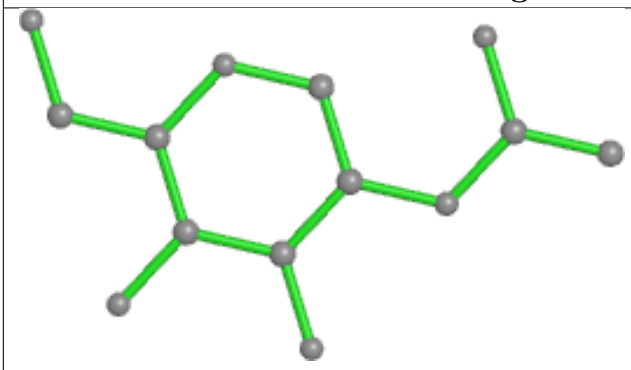


Torsions

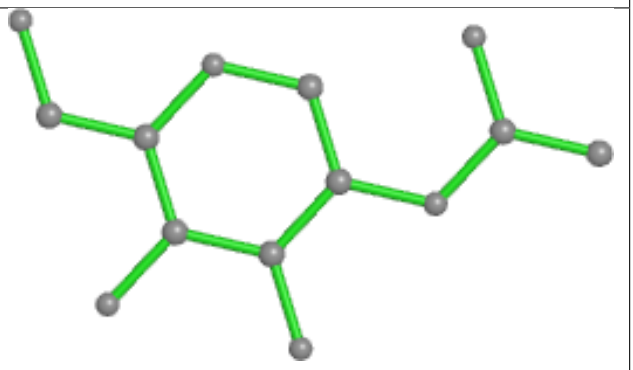


Rings

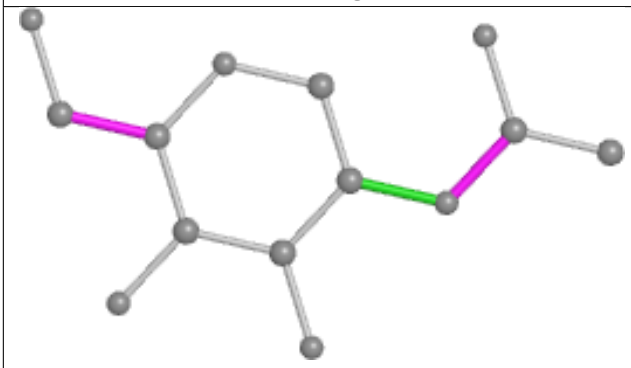
Ligand NAG A 1407



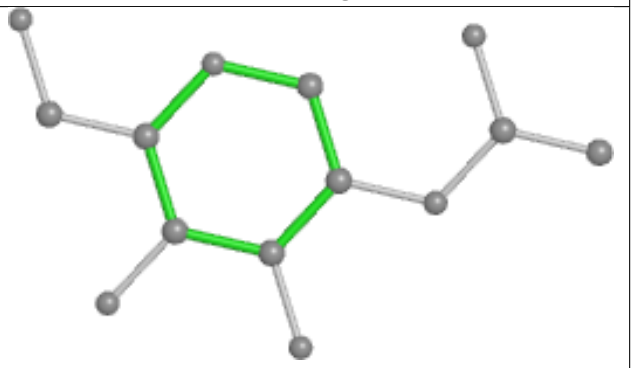
Bond lengths



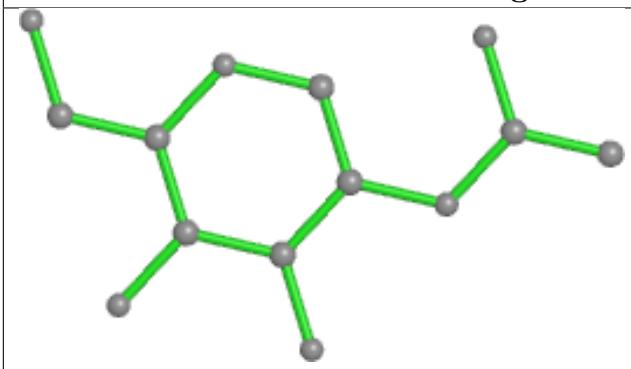
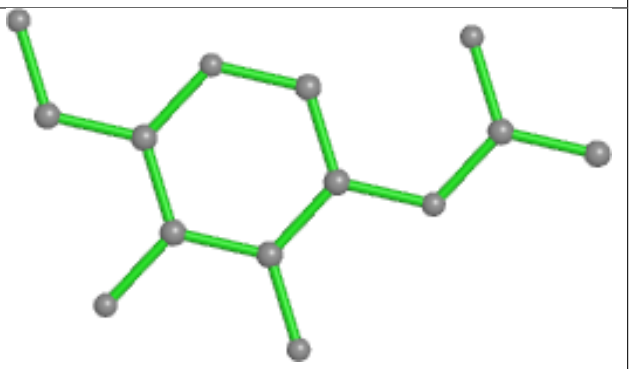
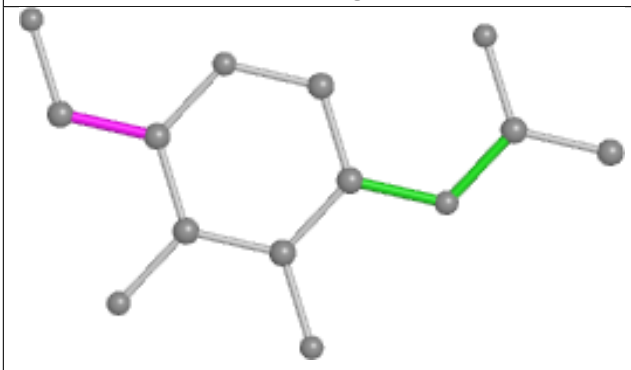
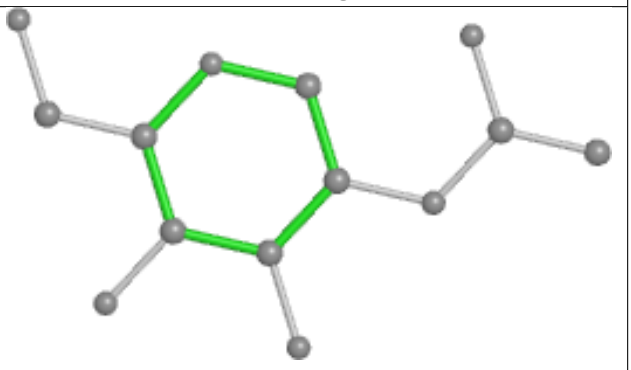
Bond angles

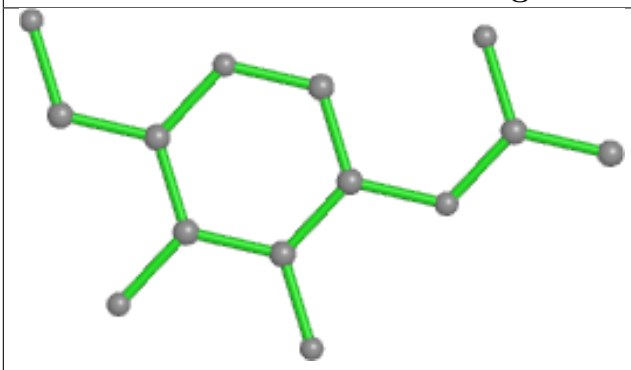
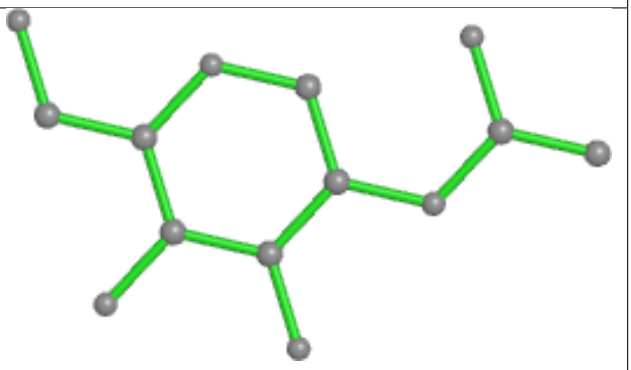
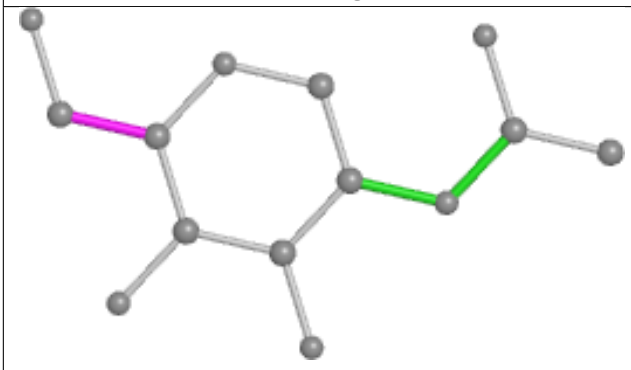
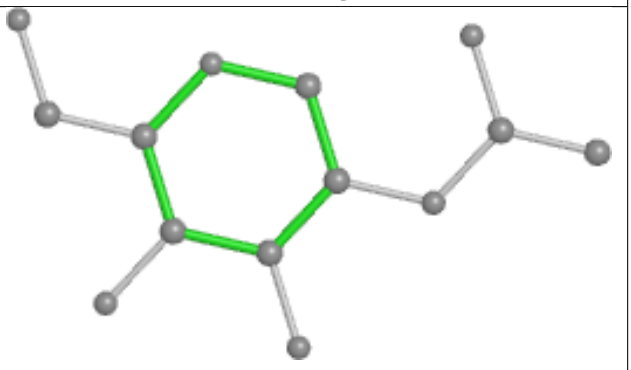


Torsions

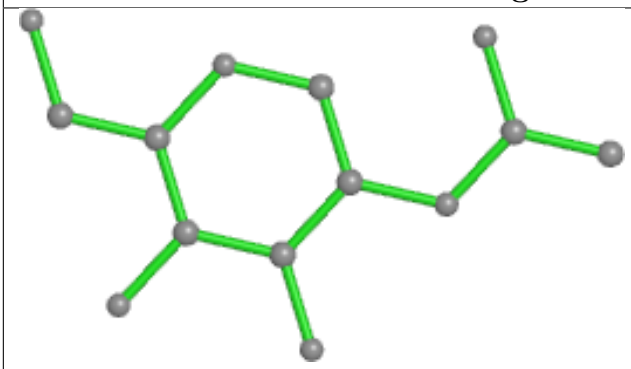


Rings

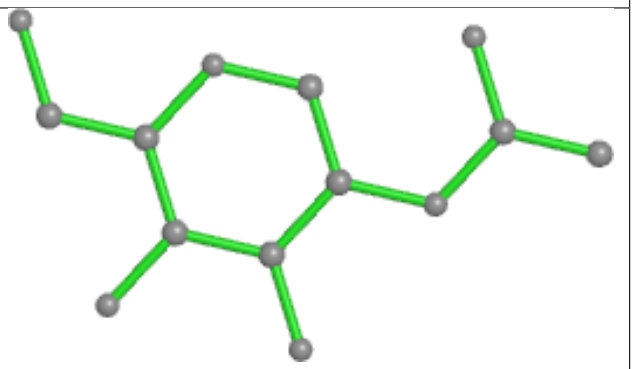
Ligand NAG A 1408	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand NAG C 1406	
 Bond lengths	 Bond angles
 Torsions	 Rings

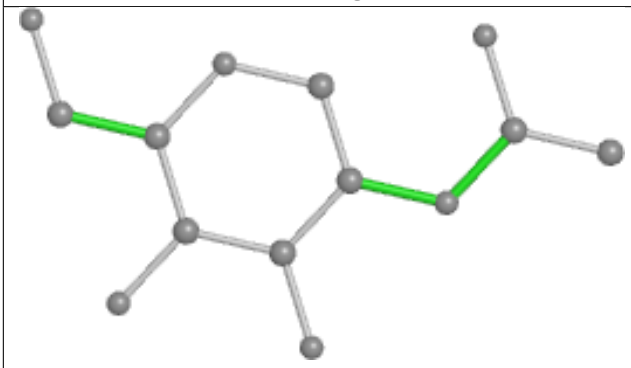
Ligand NAG B 1405



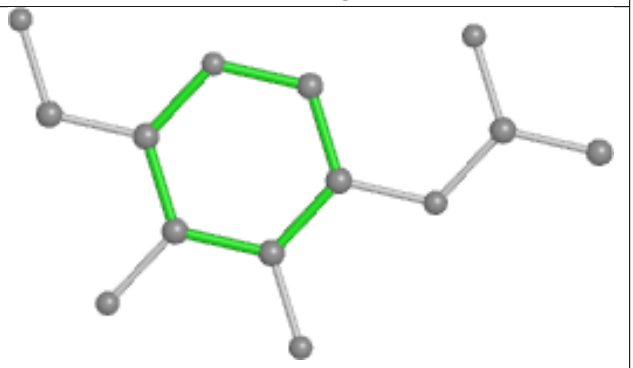
Bond lengths



Bond angles

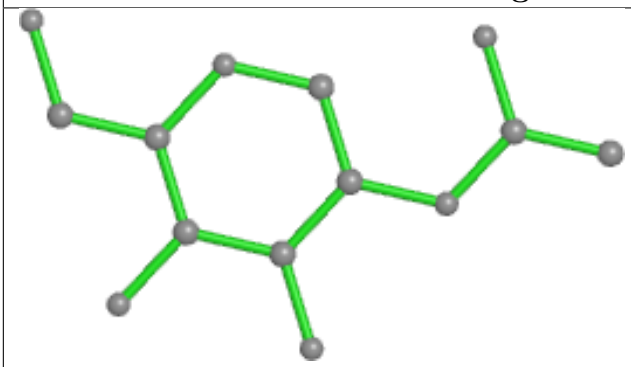


Torsions



Rings

Ligand NAG B 1411



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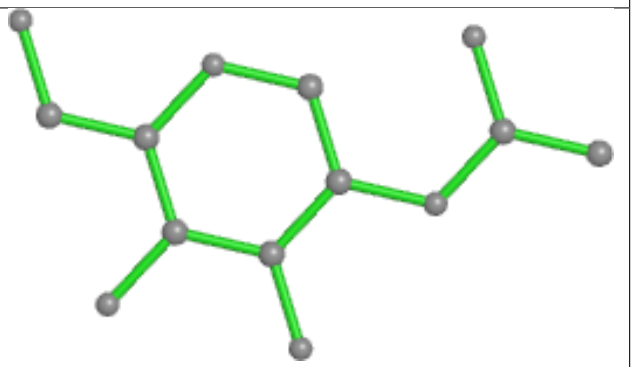
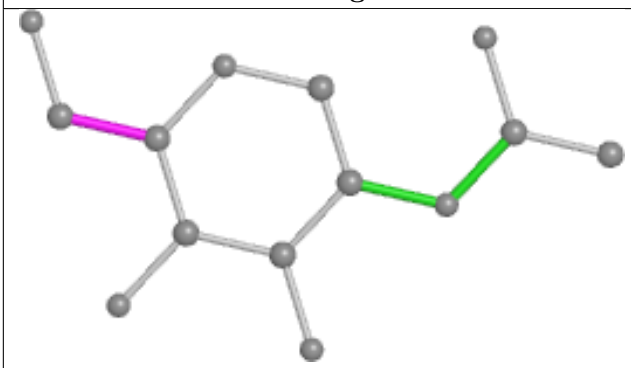
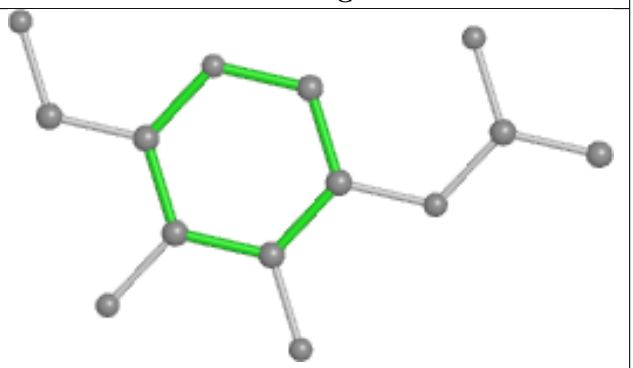


Bond angles

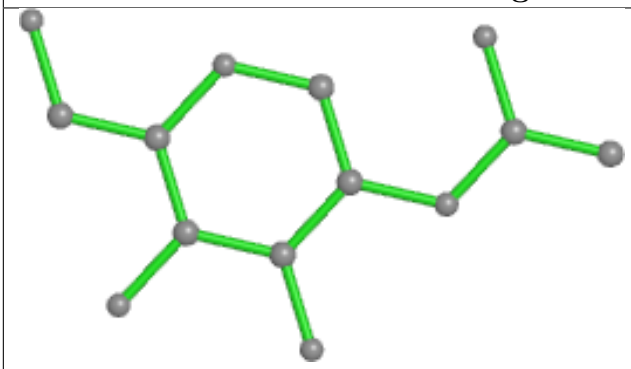


Torsions

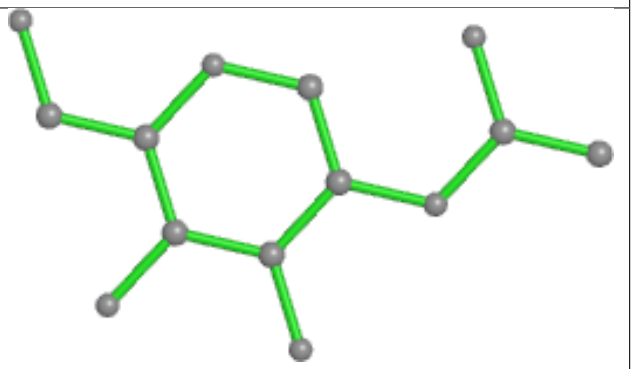


Rings

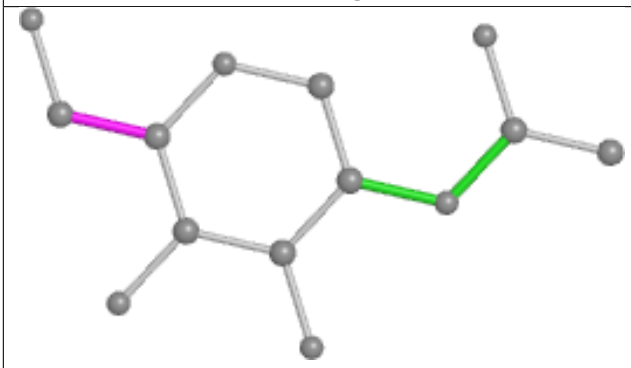
Ligand NAG B 1406



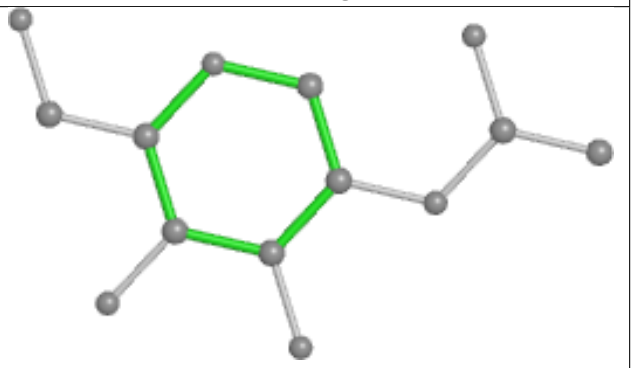
Bond lengths



Bond angles

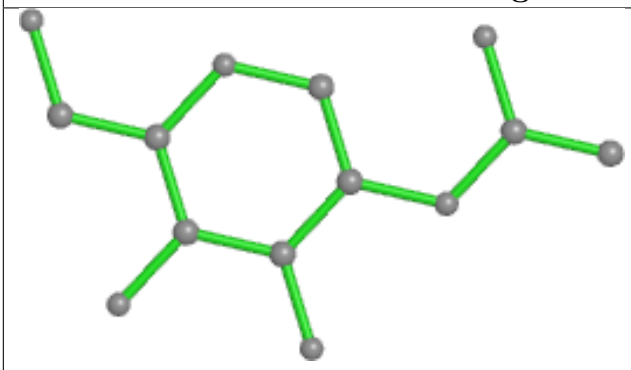


Torsions



Rings

Ligand NAG B 1404



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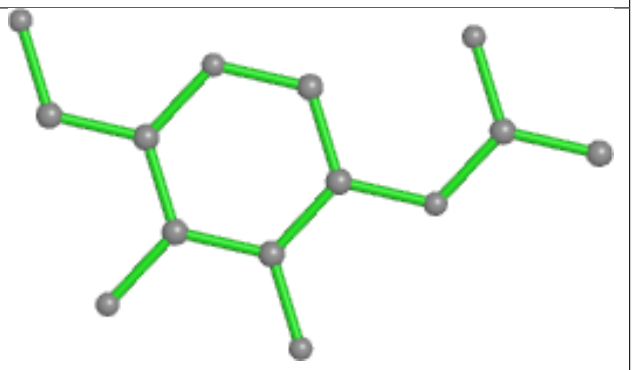
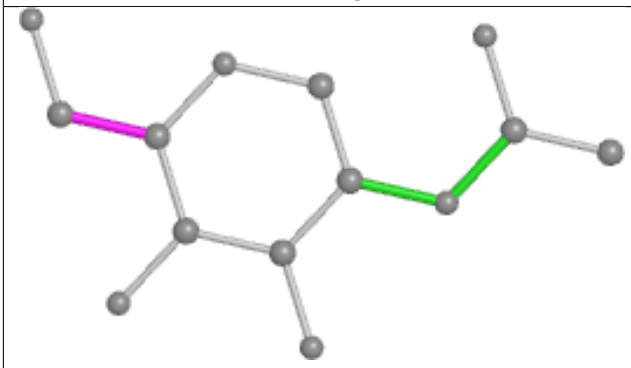
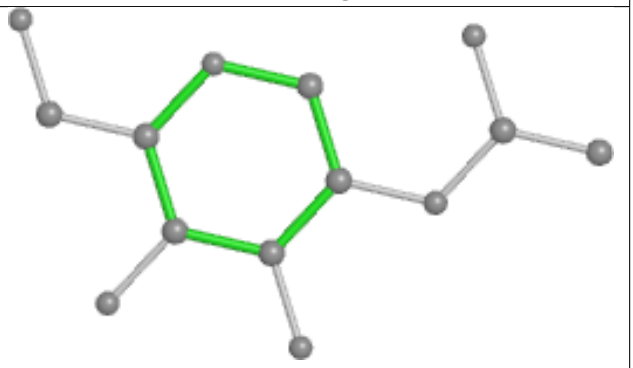


Bond angles

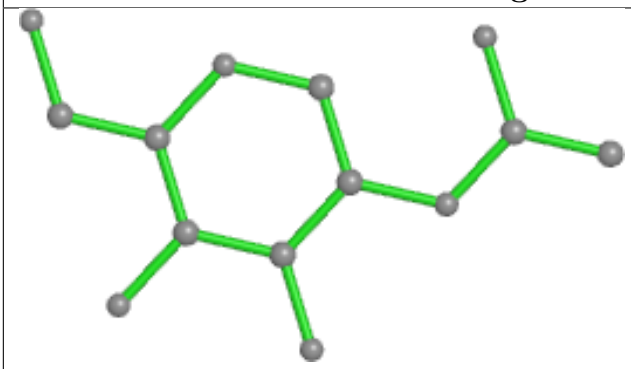


Torsions

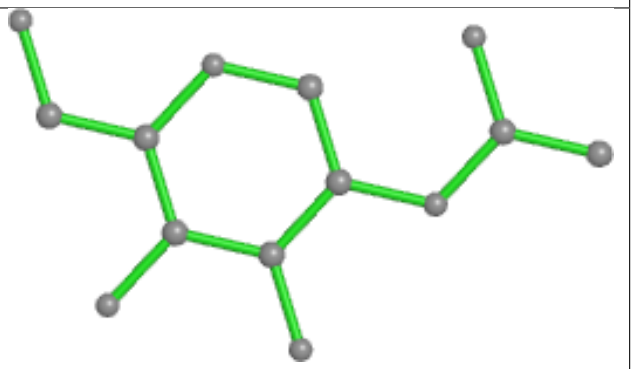


Rings

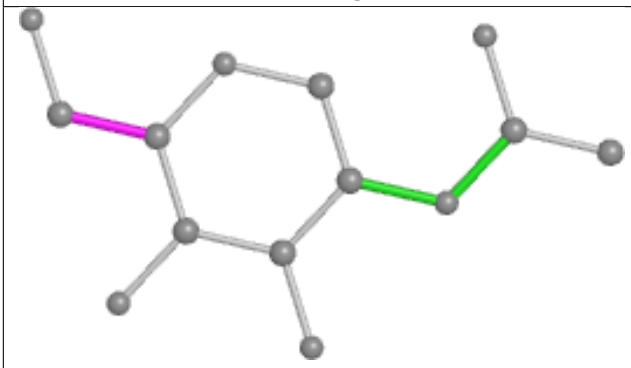
Ligand NAG A 1403



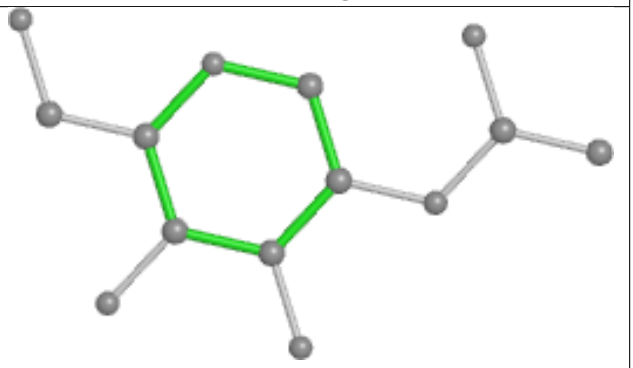
Bond lengths



Bond angles

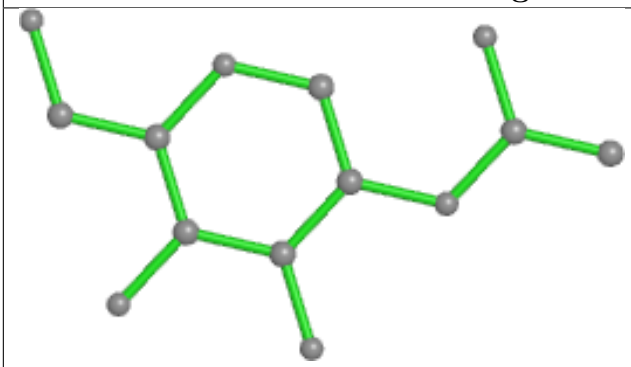


Torsions



Rings

Ligand NAG B 1407



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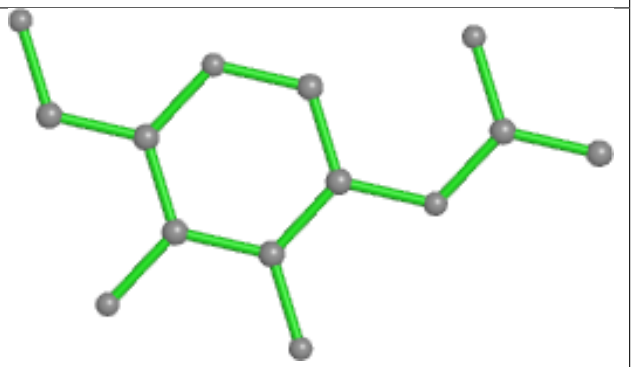
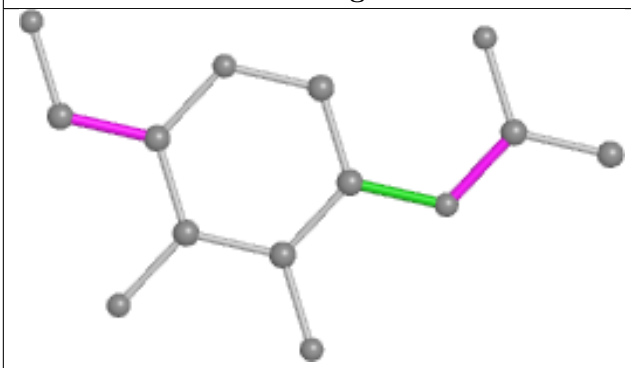
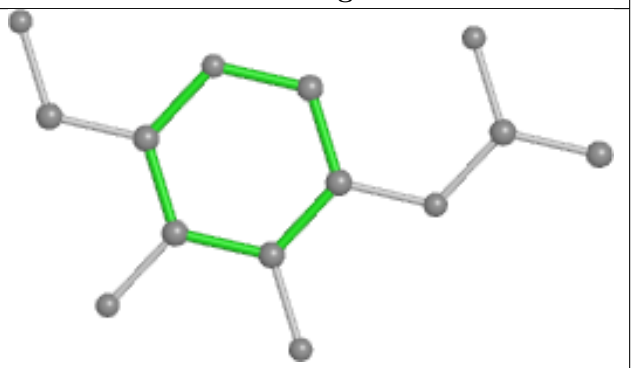


Bond angles

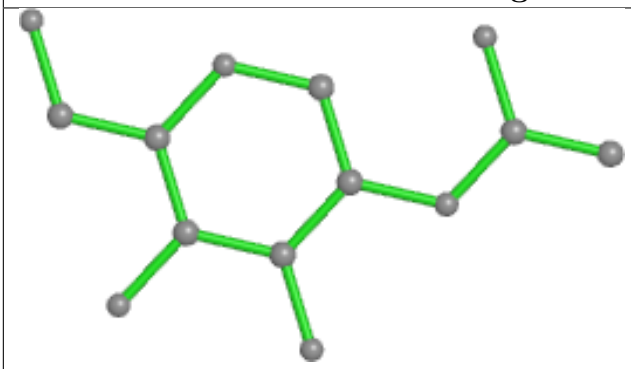


Torsions



Rings

Ligand NAG A 1411



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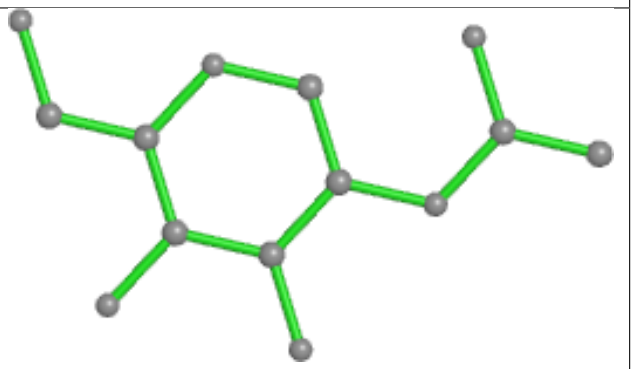
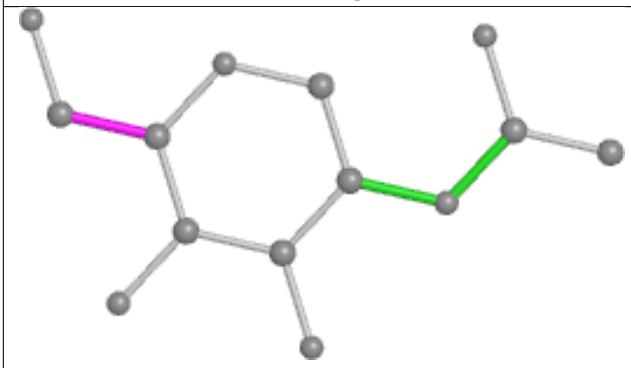
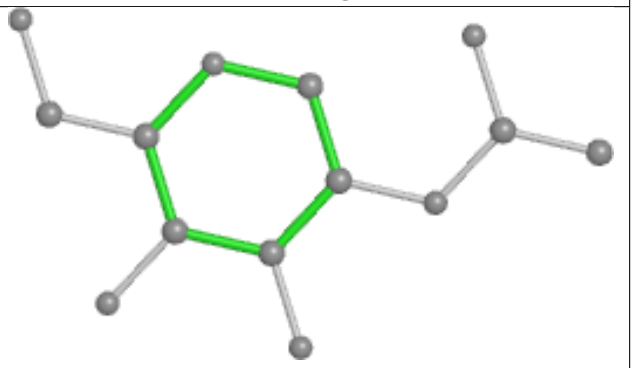


Bond angles

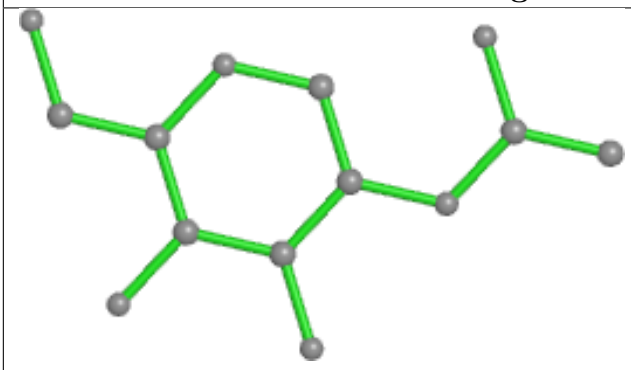


Torsions



Rings

Ligand NAG A 1405



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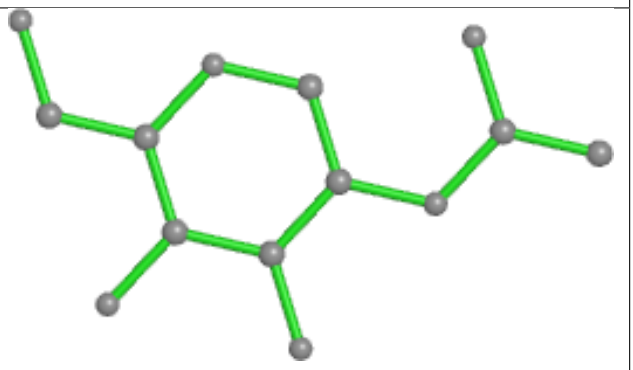
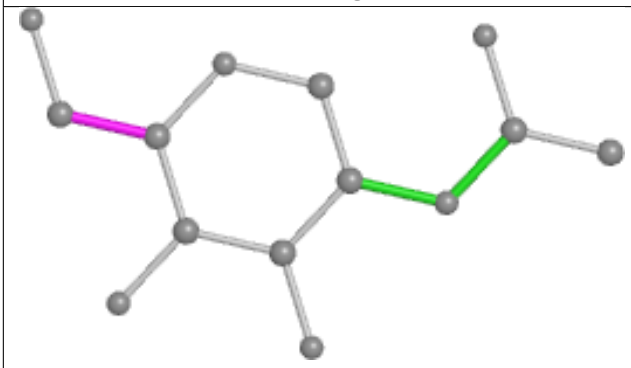
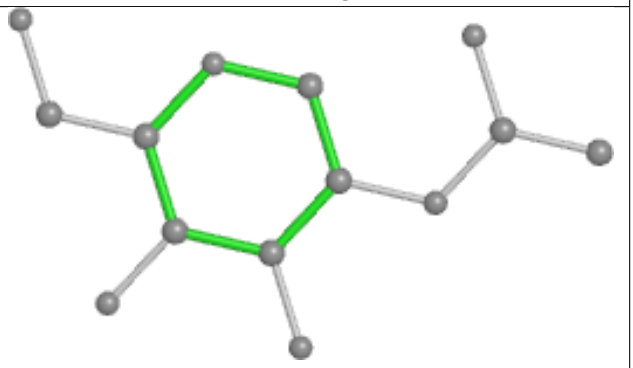


Bond angles

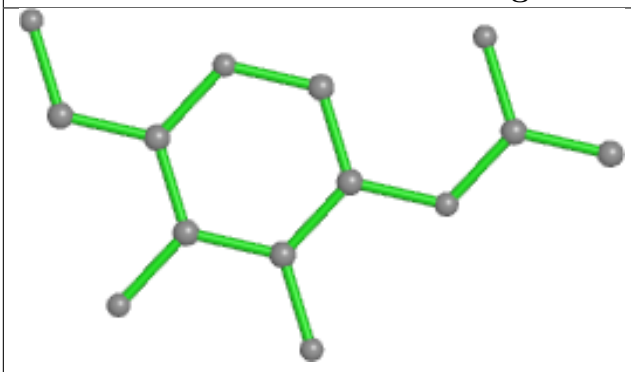


Torsions



Rings

Ligand NAG C 1411



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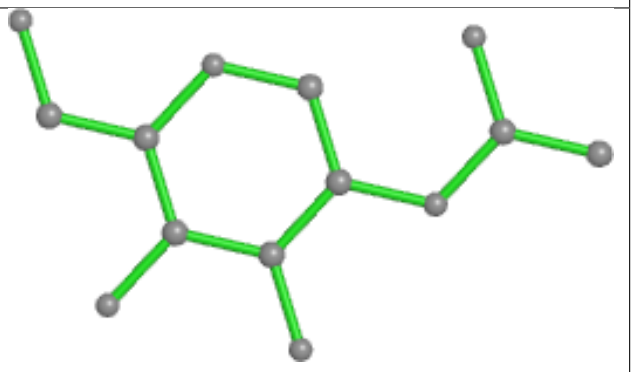
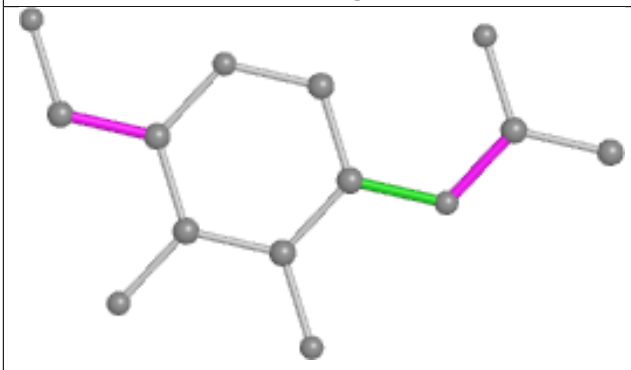
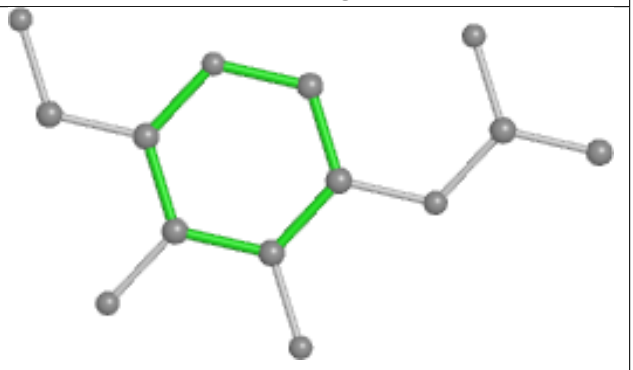


Bond angles

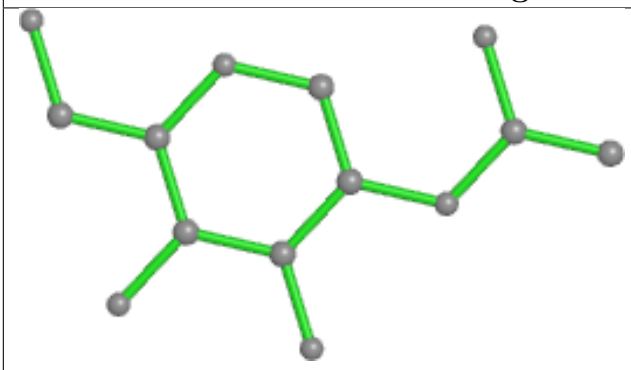


Torsions



Rings

Ligand NAG C 1405



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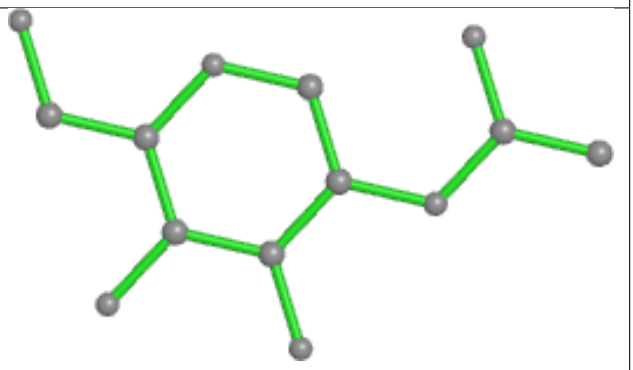
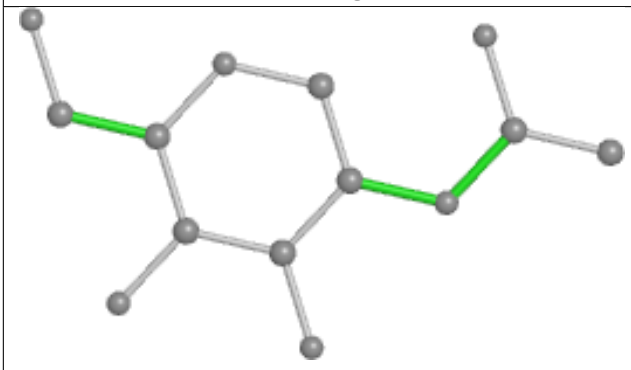
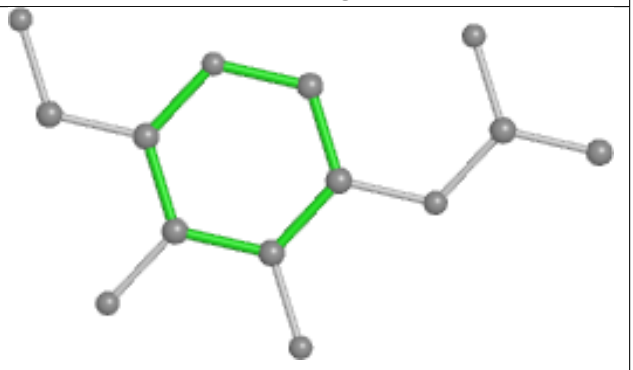


Bond angles

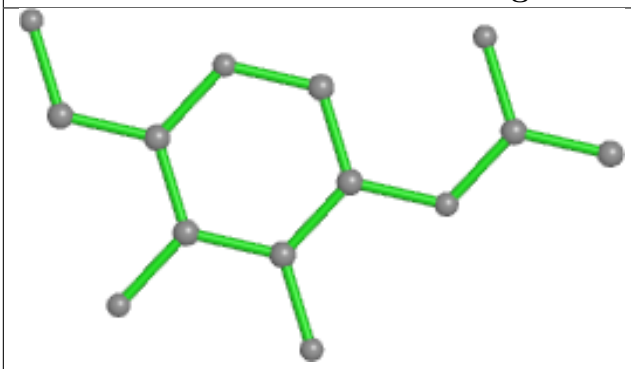


Torsions



Rings

Ligand NAG C 1410



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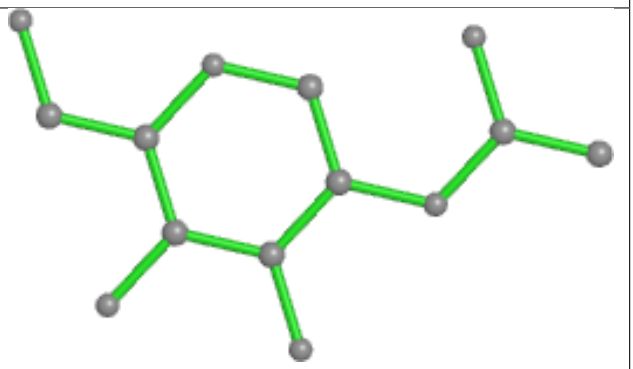
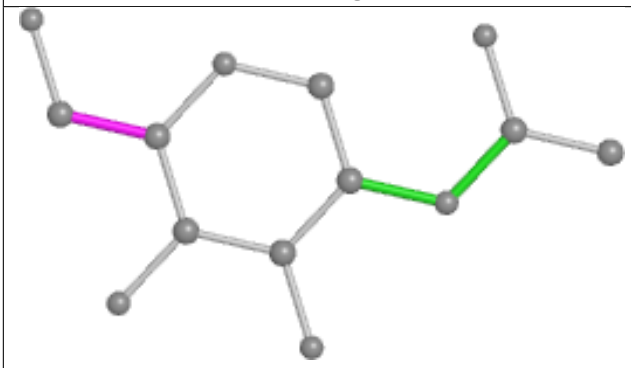
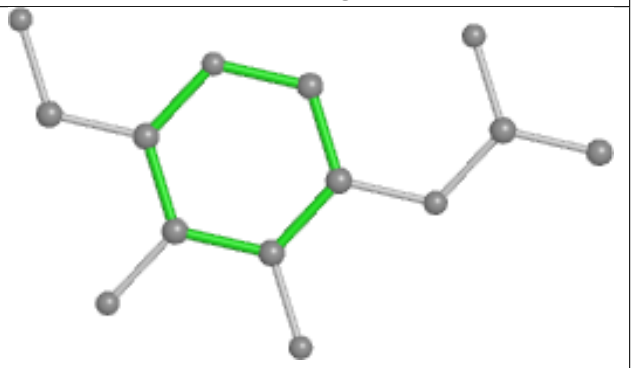


Bond angles

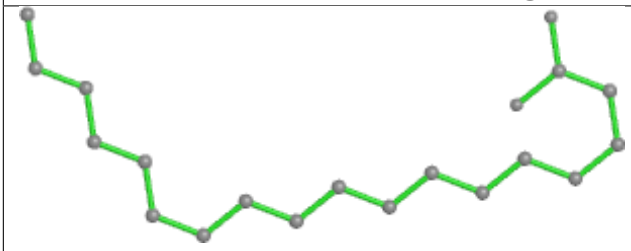


Torsions

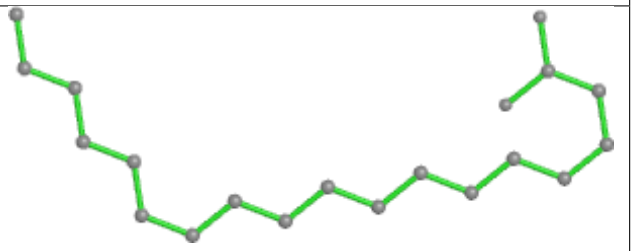


Rings

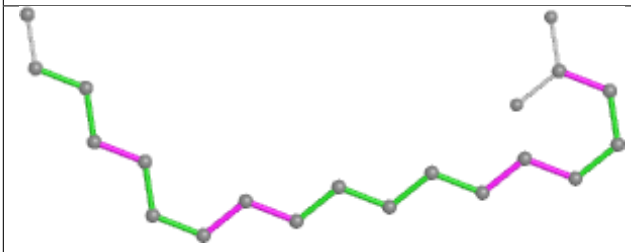
Ligand EIC B 1412



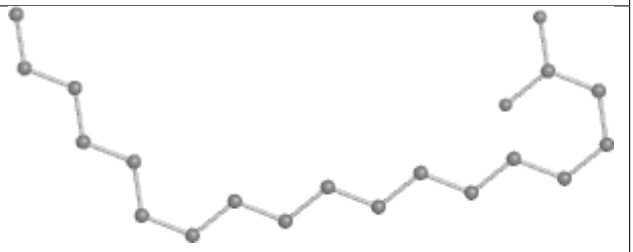
Bond lengths



Bond angles

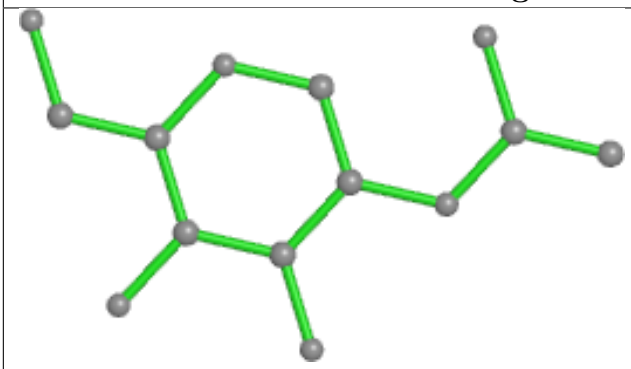


Torsions

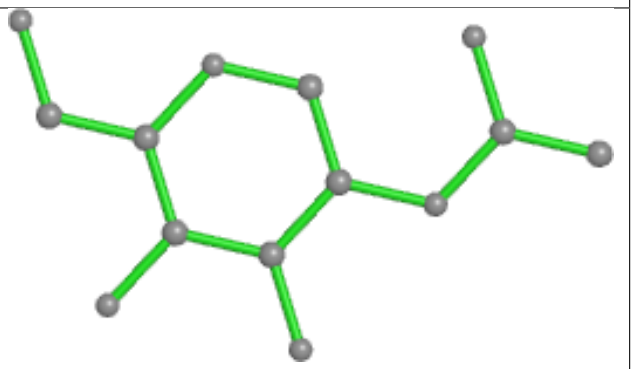


Rings

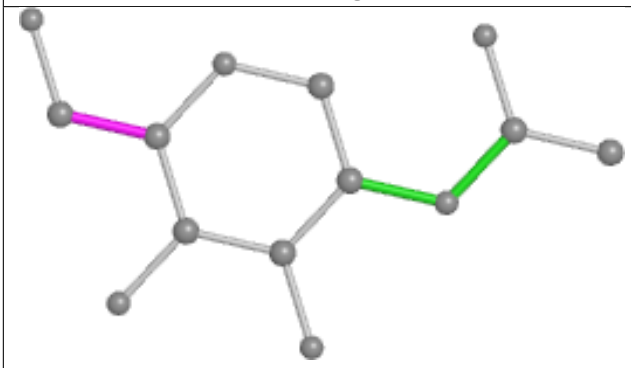
Ligand NAG B 1403



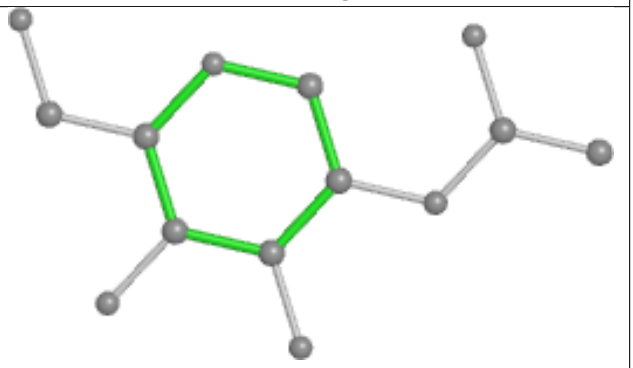
Bond lengths



Bond angles

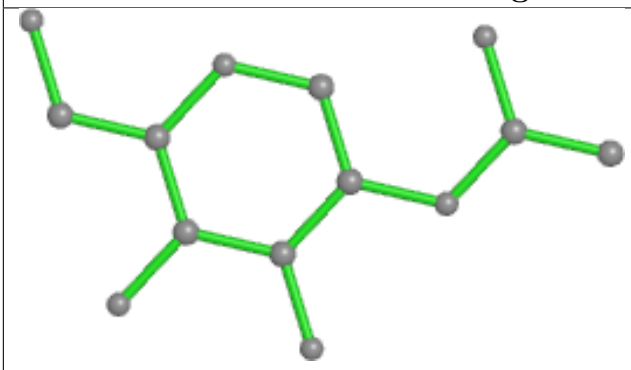


Torsions

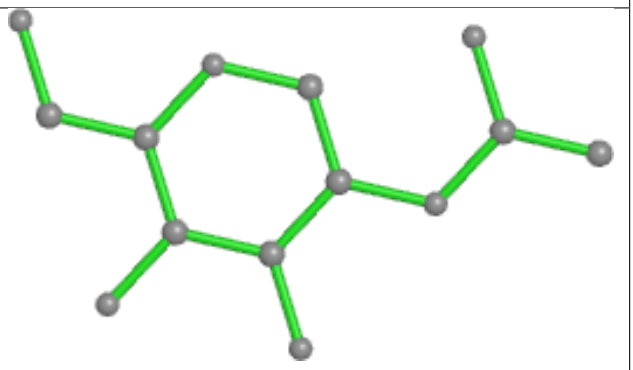


Rings

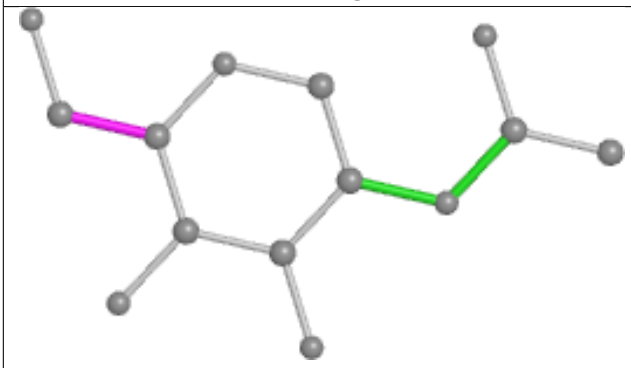
Ligand NAG C 1404



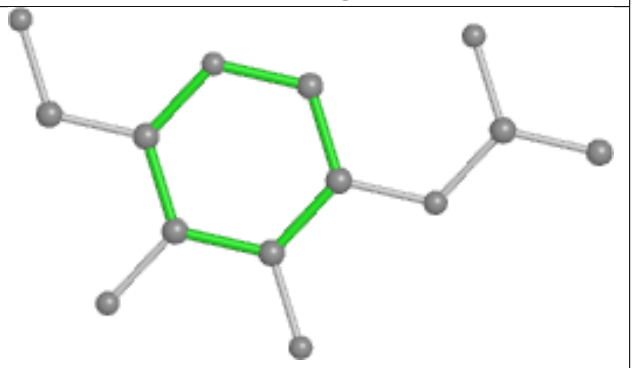
Bond lengths



Bond angles

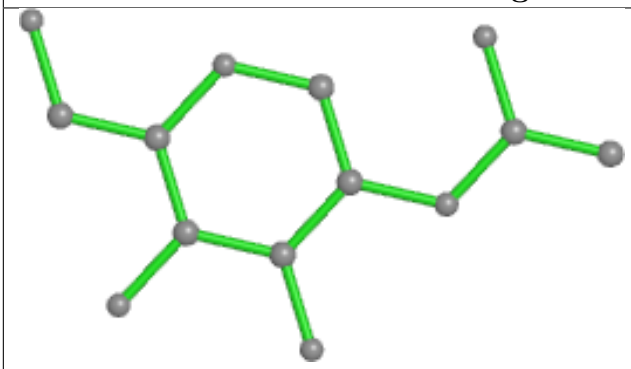


Torsions

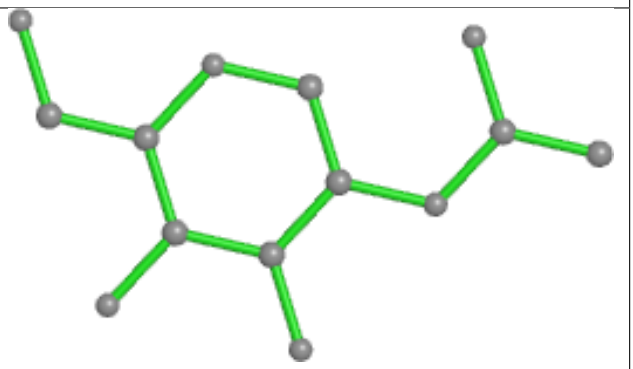


Rings

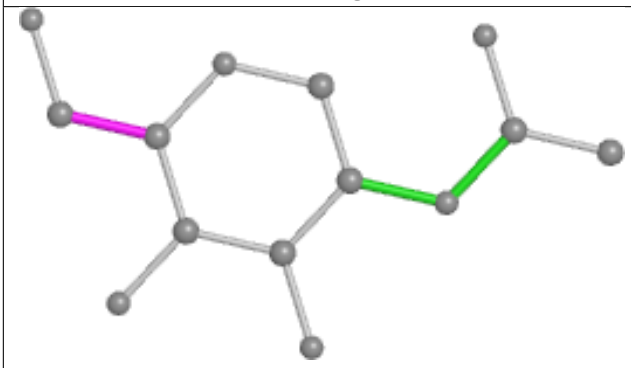
Ligand NAG C 1408



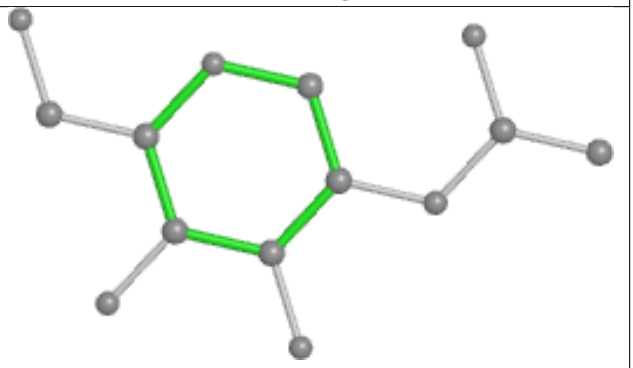
Bond lengths



Bond angles

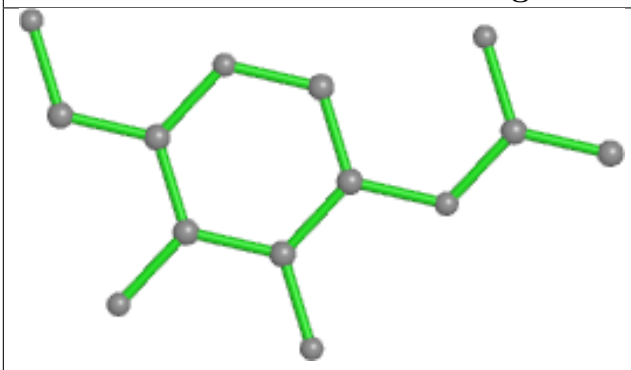


Torsions

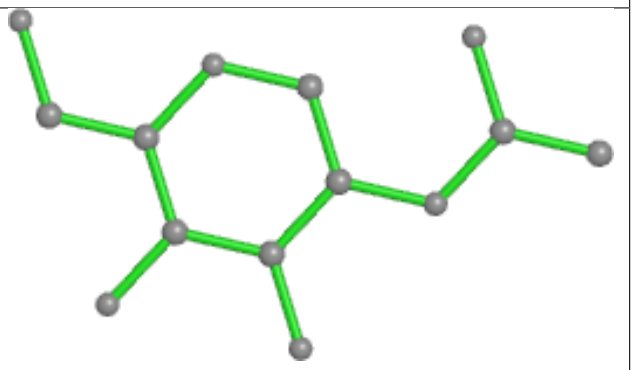


Rings

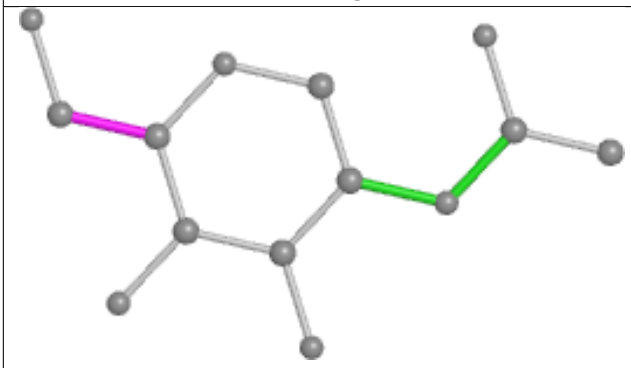
Ligand NAG B 1402



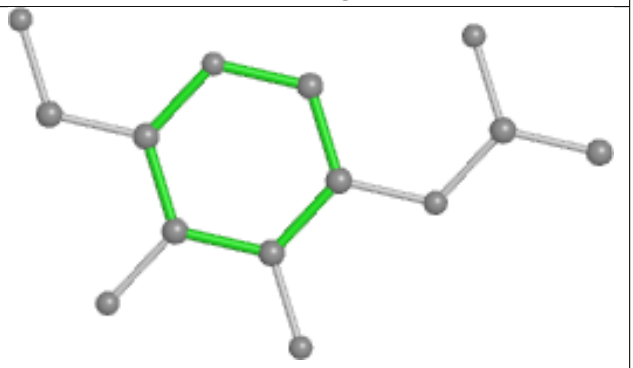
Bond lengths



Bond angles

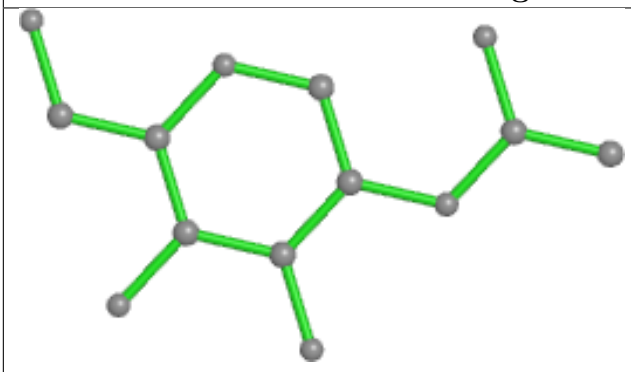


Torsions

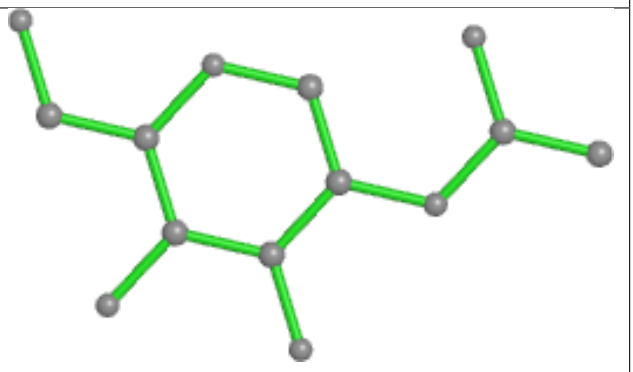


Rings

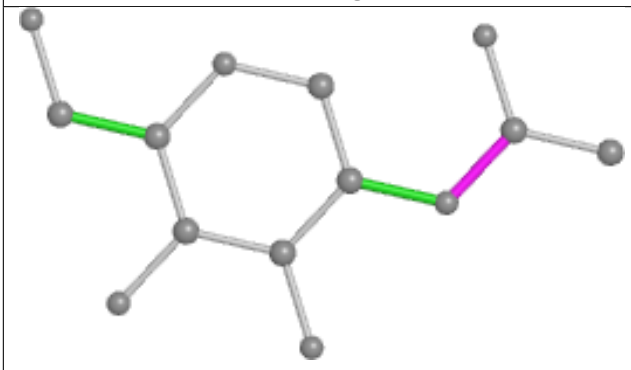
Ligand NAG B 1409



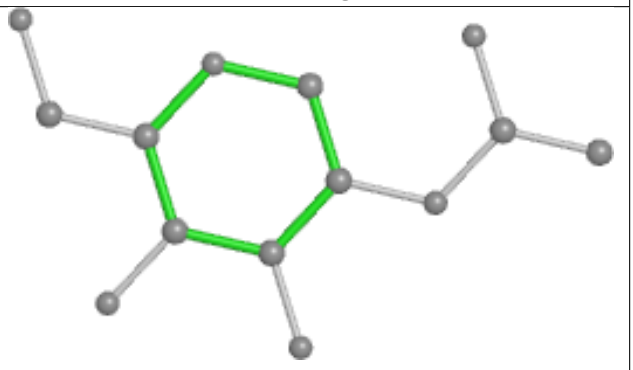
Bond lengths



Bond angles

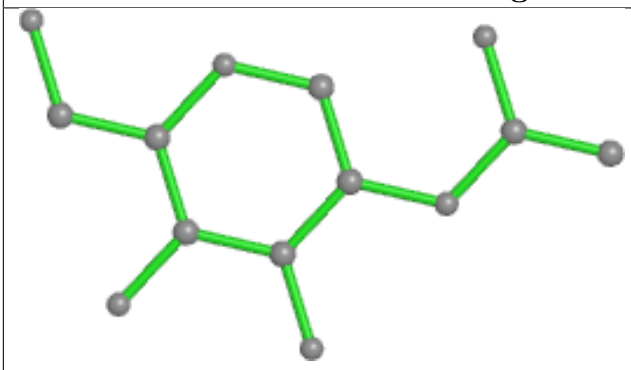


Torsions

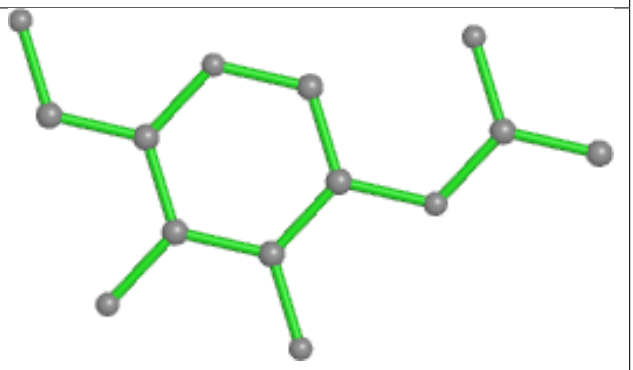


Rings

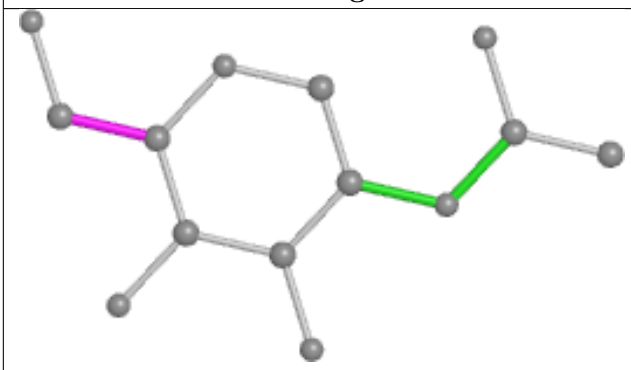
Ligand NAG A 1404



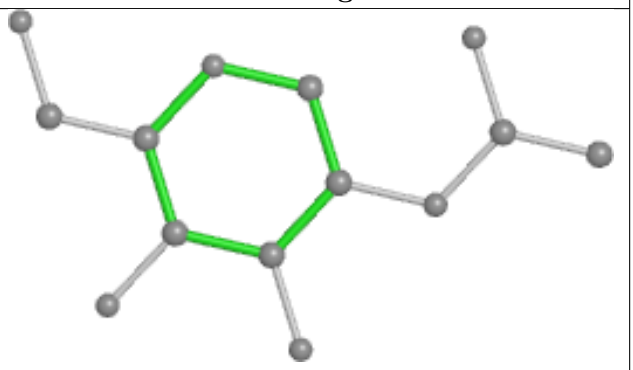
Bond lengths



Bond angles



Torsions



Rings

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.