Full wwPDB EM Validation Report ⓘ

Mar 4, 2025 – 04:21 PM JST

PDB ID	:	7YEG
EMDB ID	:	EMD-33772
Title	:	SARS-CoV-2 Spike (6P) in complex with 3 R1-32 Fabs and 3 ACE2
Authors	:	Liu, B.; Gao, X.; Li, Z.; Chen, X.; He, J.; Chen, L.; Xiong, X.
Deposited on	:	2022-07-05
Resolution	:	3.73 Å(reported)

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

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/EMValidationReportHelp
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

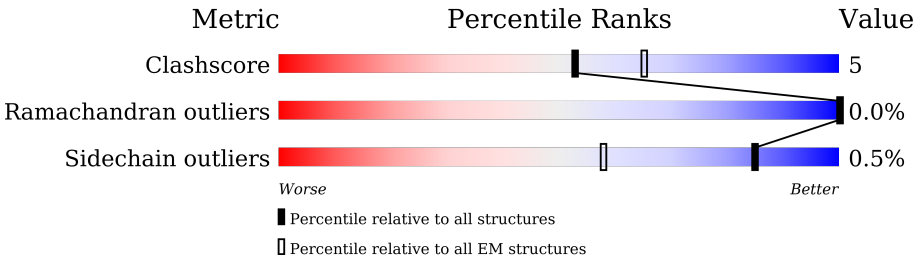
EMDB validation analysis	:	0.0.1.dev117
Mogul	:	1.8.5 (274361), CSD as541be (2020)
MolProbity	:	4.02b-467
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.41.2

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 3.73 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% The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion < 40%). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	1208	14% 77% 11% 12%
1	B	1208	14% 77% 12% 12%
1	C	1208	13% 76% 12% 12%
2	E	597	79% 90% 10%
2	J	597	79% 88% 11%
2	M	597	79% 88% 11%
3	G	228	83% 87% 12%
3	H	228	81% 86% 13%

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Mol	Chain	Length	Quality of chain
3	N	228	82% 83% 16%
4	I	214	84% 86% 13%
4	L	214	84% 80% 19%
4	O	214	85% 83% 16%
5	D	2	50% 50%
5	F	2	100%
5	K	2	50% 50%
5	P	2	100%
5	Q	2	50% 50%
5	R	2	100%

2 Entry composition (i)

There are 7 unique types of molecules in this entry. The entry contains 49974 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called Spike glycoprotein.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	1066	Total	C	N	O	S	0	0
			8344	5324	1394	1588	38		
1	B	1066	Total	C	N	O	S	0	0
			8344	5324	1394	1588	38		
1	C	1066	Total	C	N	O	S	0	0
			8344	5324	1394	1588	38		

There are 27 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	682	GLY	ARG	engineered mutation	UNP P0DTC2
A	683	SER	ARG	engineered mutation	UNP P0DTC2
A	685	SER	ARG	engineered mutation	UNP P0DTC2
A	817	PRO	PHE	engineered mutation	UNP P0DTC2
A	892	PRO	ALA	engineered mutation	UNP P0DTC2
A	899	PRO	ALA	engineered mutation	UNP P0DTC2
A	942	PRO	ALA	engineered mutation	UNP P0DTC2
A	986	PRO	LYS	engineered mutation	UNP P0DTC2
A	987	PRO	VAL	engineered mutation	UNP P0DTC2
B	682	GLY	ARG	engineered mutation	UNP P0DTC2
B	683	SER	ARG	engineered mutation	UNP P0DTC2
B	685	SER	ARG	engineered mutation	UNP P0DTC2
B	817	PRO	PHE	engineered mutation	UNP P0DTC2
B	892	PRO	ALA	engineered mutation	UNP P0DTC2
B	899	PRO	ALA	engineered mutation	UNP P0DTC2
B	942	PRO	ALA	engineered mutation	UNP P0DTC2
B	986	PRO	LYS	engineered mutation	UNP P0DTC2
B	987	PRO	VAL	engineered mutation	UNP P0DTC2
C	682	GLY	ARG	engineered mutation	UNP P0DTC2
C	683	SER	ARG	engineered mutation	UNP P0DTC2
C	685	SER	ARG	engineered mutation	UNP P0DTC2
C	817	PRO	PHE	engineered mutation	UNP P0DTC2
C	892	PRO	ALA	engineered mutation	UNP P0DTC2
C	899	PRO	ALA	engineered mutation	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
C	942	PRO	ALA	engineered mutation	UNP P0DTC2
C	986	PRO	LYS	engineered mutation	UNP P0DTC2
C	987	PRO	VAL	engineered mutation	UNP P0DTC2

- Molecule 2 is a protein called Angiotensin-converting enzyme 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	E	596	Total	C	N	O	S	0	0
			4865	3112	805	919	29		
2	J	596	Total	C	N	O	S	0	0
			4865	3112	805	919	29		
2	M	596	Total	C	N	O	S	0	0
			4865	3112	805	919	29		

- Molecule 3 is a protein called heavy chain of R1-32 Fab.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	H	227	Total	C	N	O	S	2	0
			1667	1049	277	332	9		
3	G	227	Total	C	N	O	S	2	0
			1667	1049	277	332	9		
3	N	227	Total	C	N	O	S	2	0
			1667	1049	277	332	9		

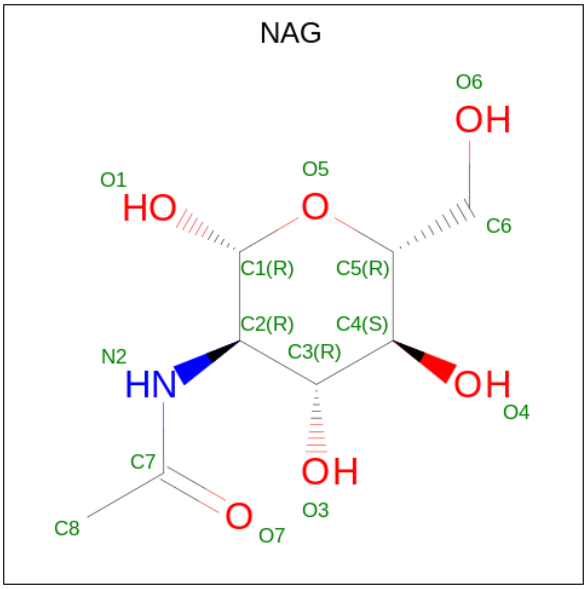
- Molecule 4 is a protein called light chain of R1-32 Fab.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	L	213	Total	C	N	O	S	0	0
			1557	971	261	321	4		
4	I	213	Total	C	N	O	S	0	0
			1557	971	261	321	4		
4	O	213	Total	C	N	O	S	0	0
			1557	971	261	321	4		

- Molecule 5 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
5	D	2	Total C N O 28 16 2 10	0	0
5	F	2	Total C N O 28 16 2 10	0	0
5	K	2	Total C N O 28 16 2 10	0	0
5	P	2	Total C N O 28 16 2 10	0	0
5	Q	2	Total C N O 28 16 2 10	0	0
5	R	2	Total C N O 28 16 2 10	0	0

- Molecule 6 is 2-acetamido-2-deoxy-beta-D-glucopyranose (three-letter code: NAG) (formula: $C_8H_{15}NO_6$) (labeled as "Ligand of Interest" by depositor).



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

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

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Mol	Chain	Residues	Atoms	AltConf
6	E	1	Total C N O 14 8 1 5	0
6	E	1	Total C N O 14 8 1 5	0
6	J	1	Total C N O 14 8 1 5	0
6	J	1	Total C N O 14 8 1 5	0
6	J	1	Total C N O 14 8 1 5	0
6	J	1	Total C N O 14 8 1 5	0
6	M	1	Total C N O 14 8 1 5	0
6	M	1	Total C N O 14 8 1 5	0
6	M	1	Total C N O 14 8 1 5	0
6	M	1	Total C N O 14 8 1 5	0

- Molecule 7 is ZINC ION (three-letter code: ZN) (formula: Zn) (labeled as "Ligand of Interest" by depositor).

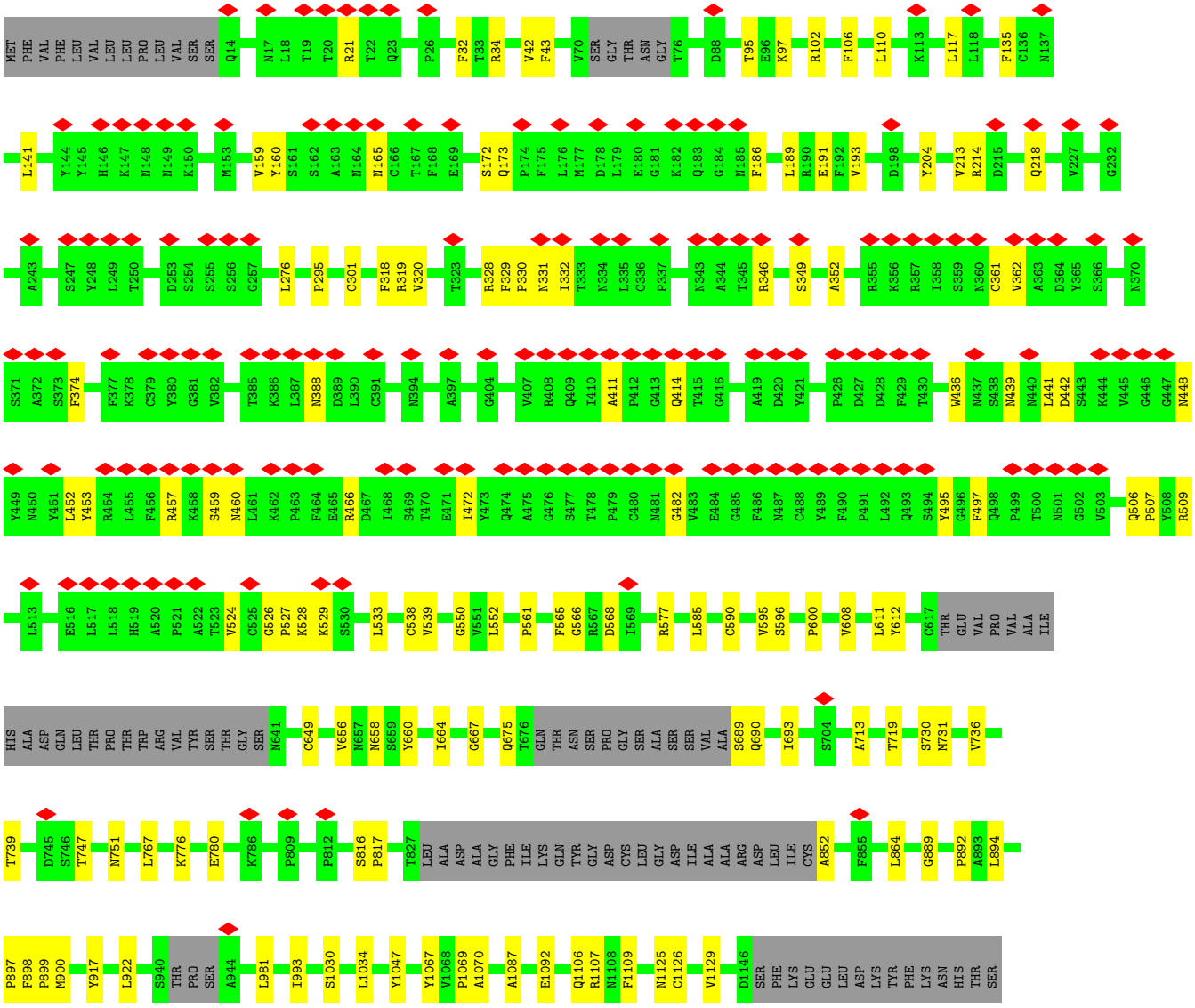
Mol	Chain	Residues	Atoms	AltConf
7	E	1	Total Zn 1 1	0
7	J	1	Total Zn 1 1	0
7	M	1	Total Zn 1 1	0

3 Residue-property plots (i)

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

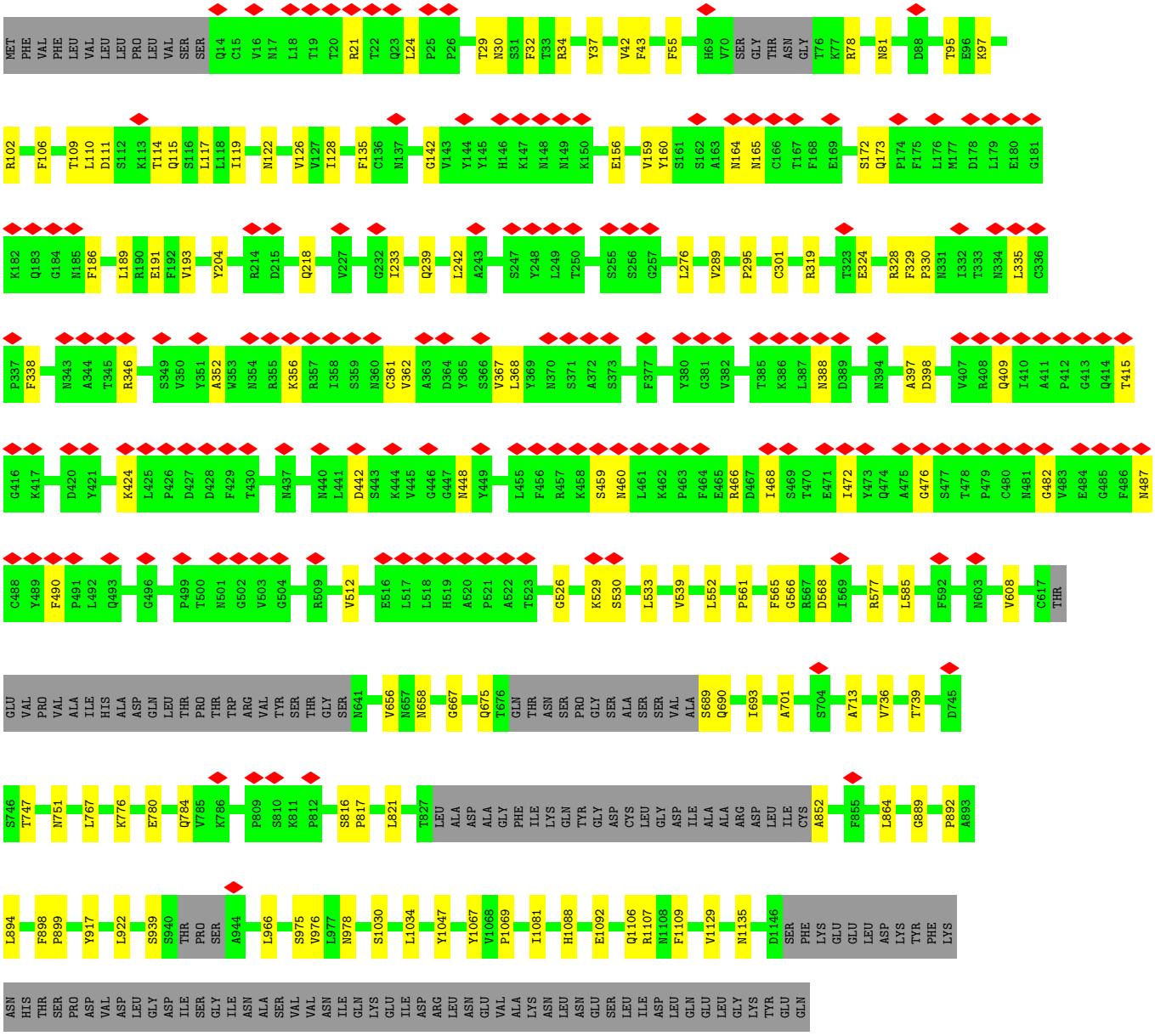
- Molecule 1: Spike glycoprotein

Chain A:



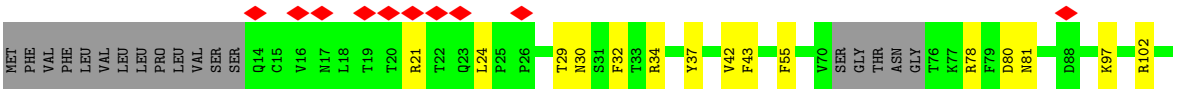
• Molecule 1: Spike glycoprotein

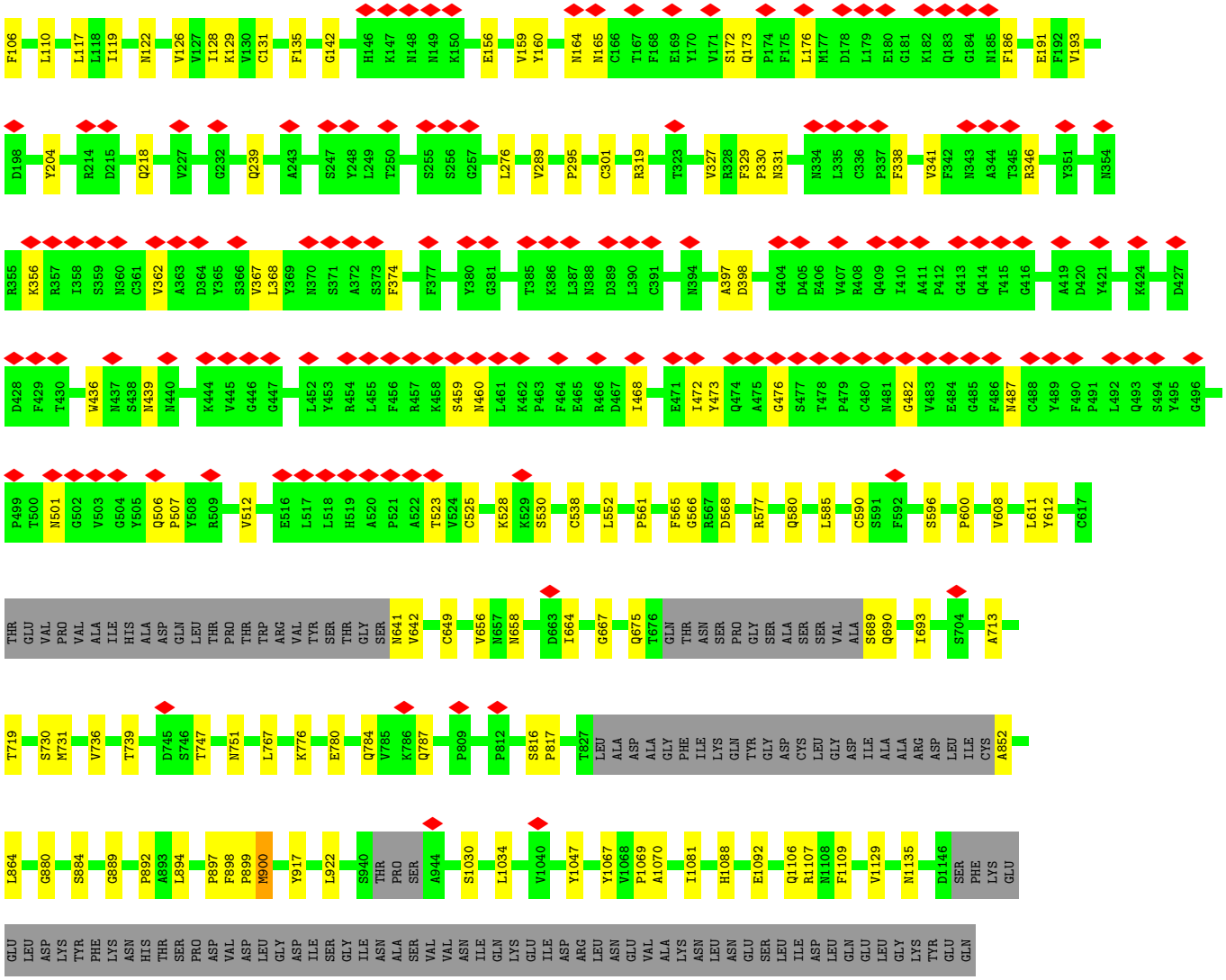
Chain B:



• Molecule 1: Spike glycoprotein

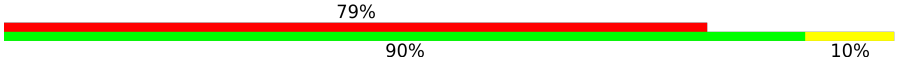
Chain C:

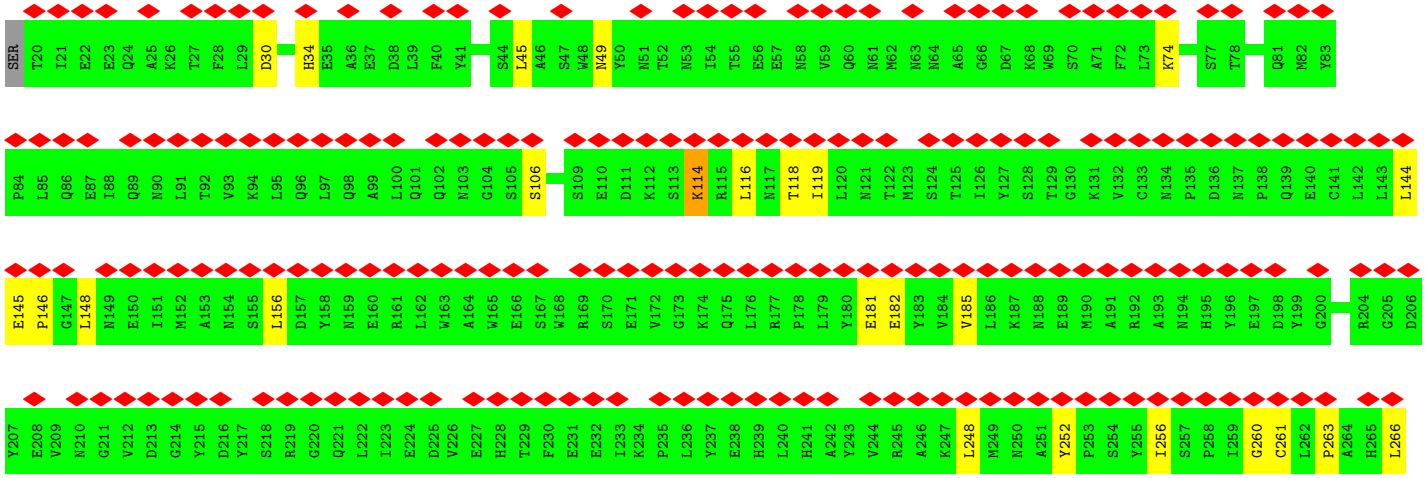


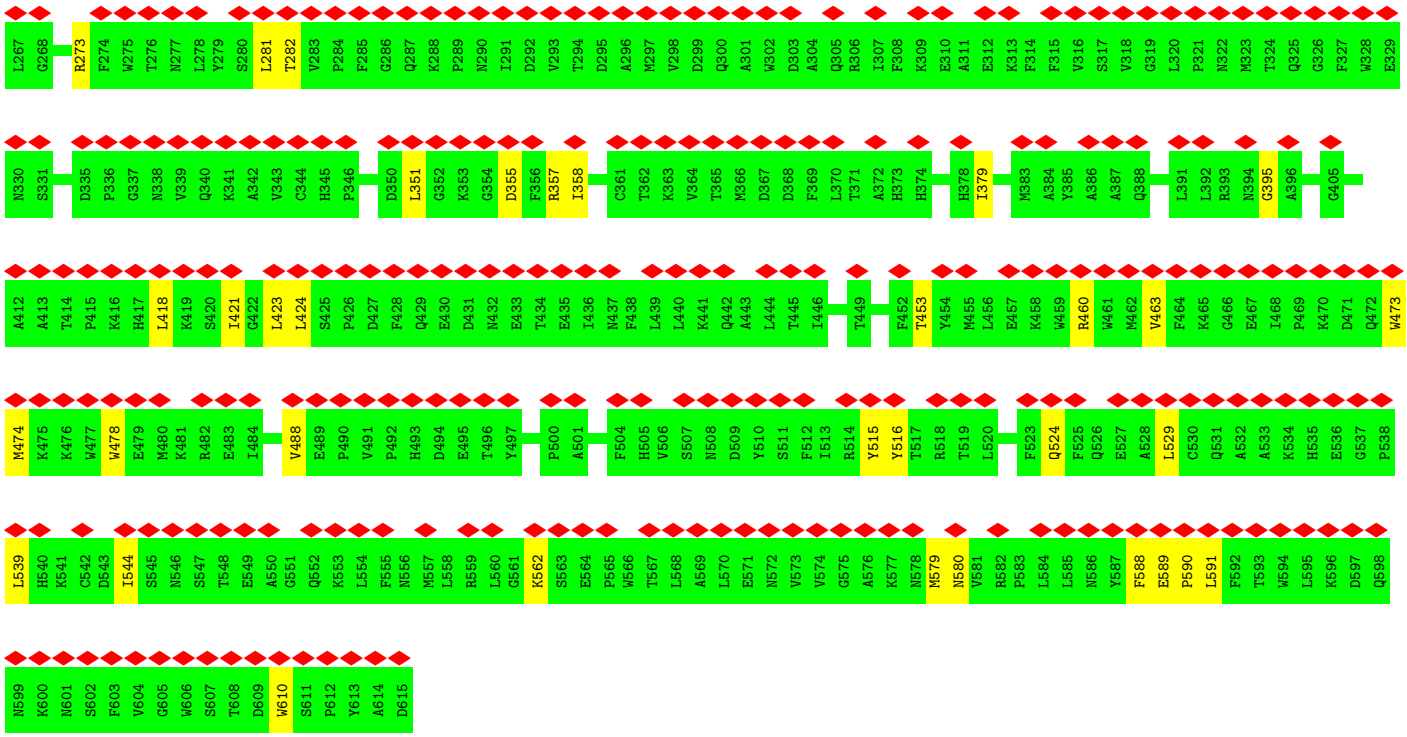


• Molecule 2: Angiotensin-converting enzyme 2

Chain E:

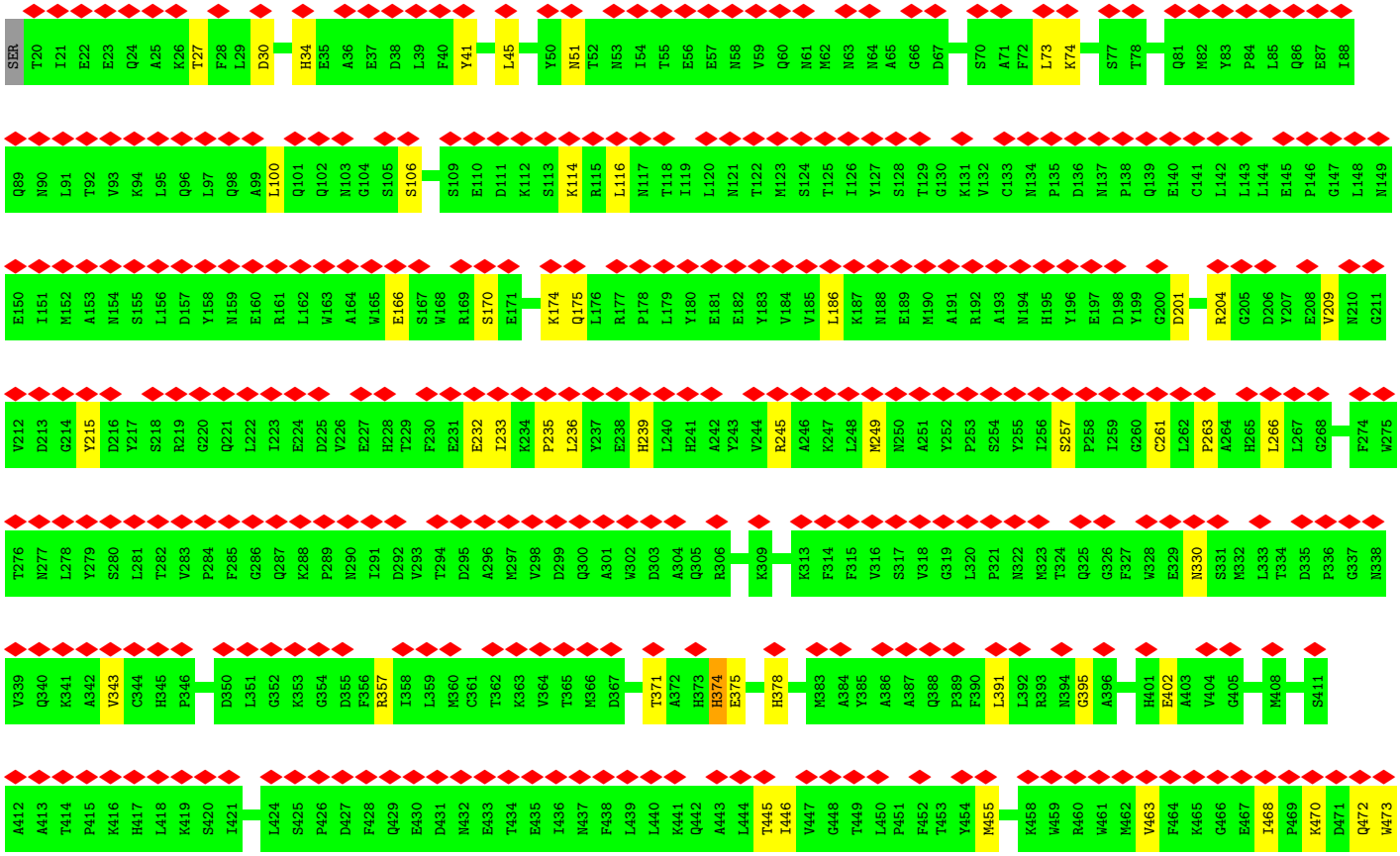


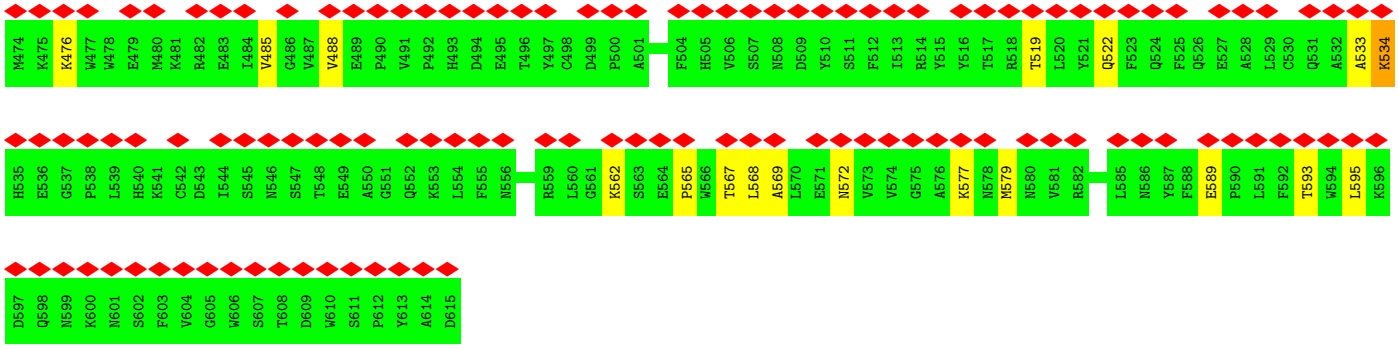




• Molecule 2: Angiotensin-converting enzyme 2

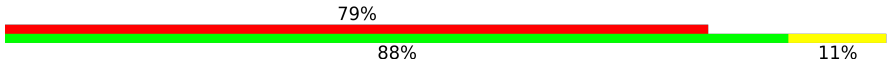
Chain J:

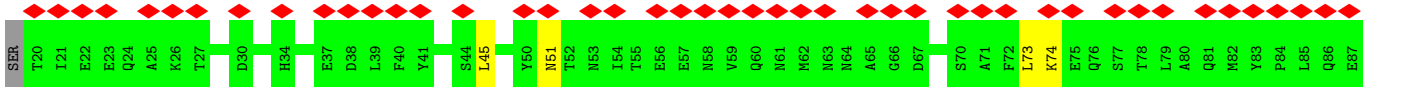


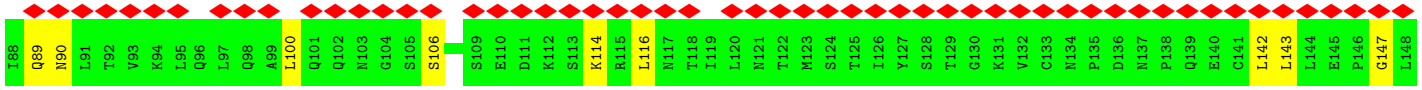


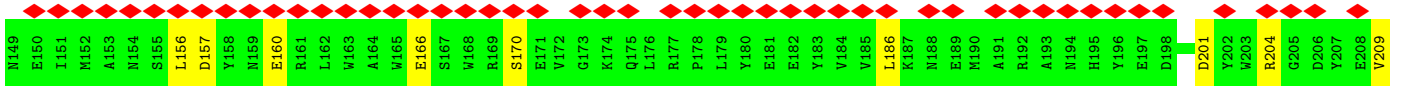
• Molecule 2: Angiotensin-converting enzyme 2

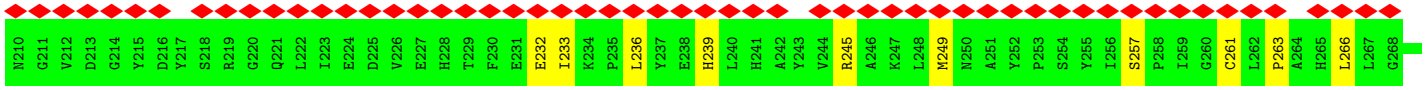
Chain M:

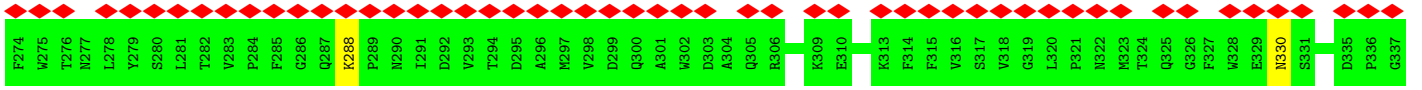


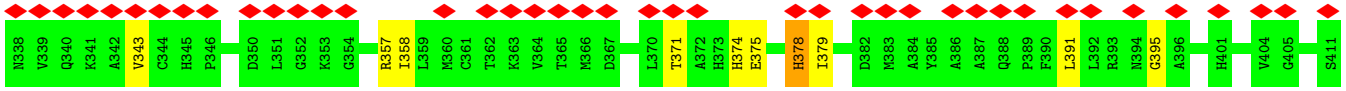


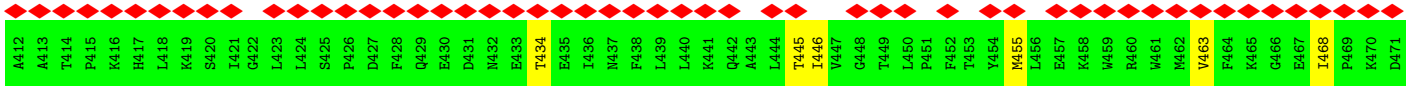


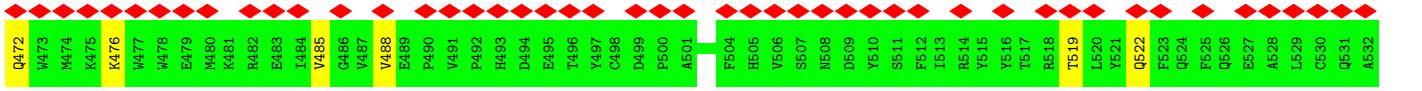


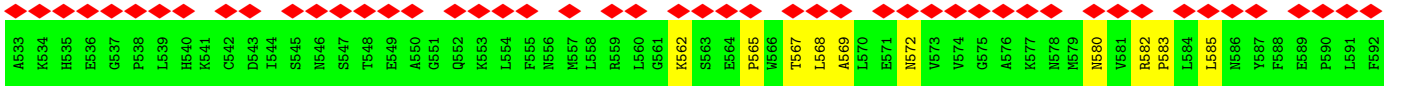






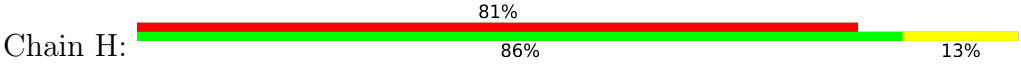


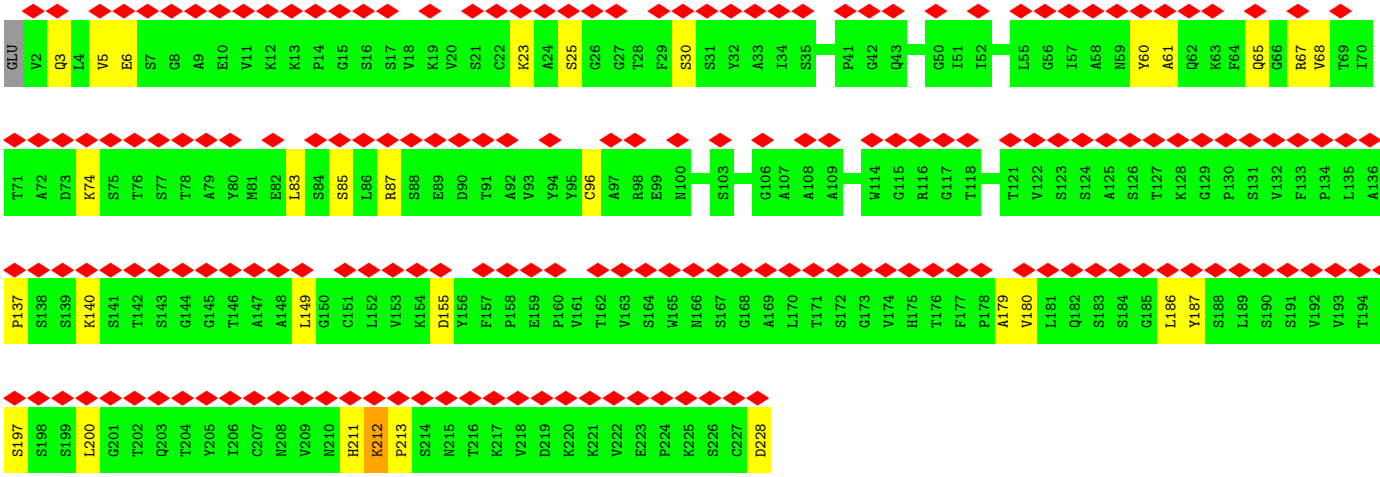




• Molecule 3: heavy chain of R1-32 Fab

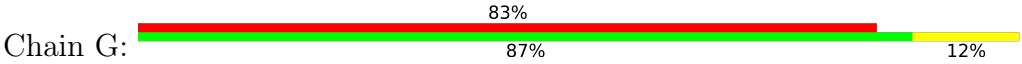
Chain H:

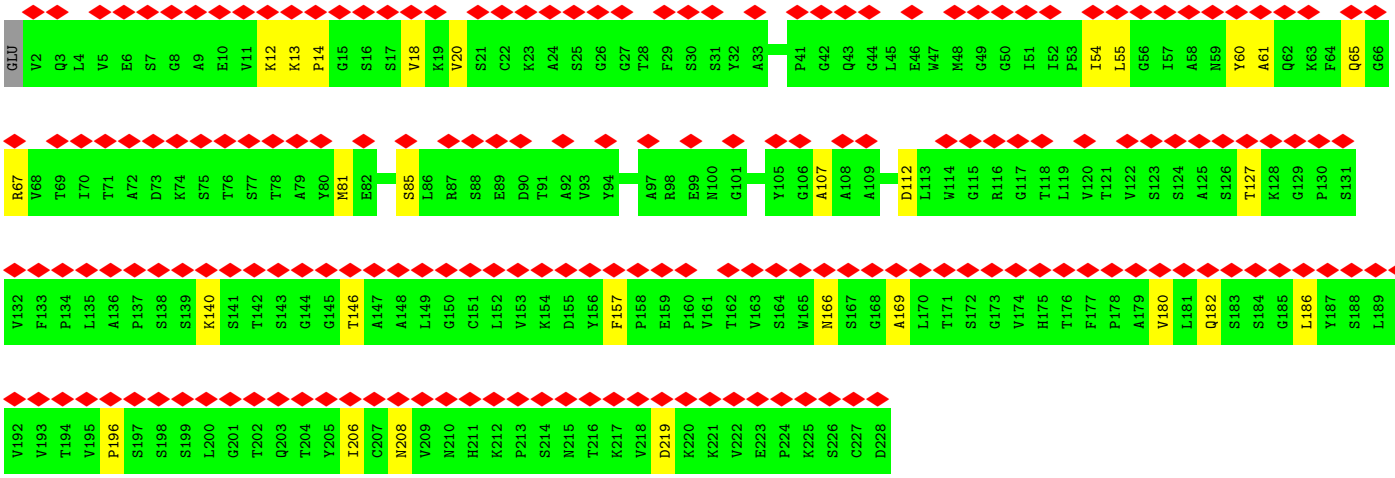




• Molecule 3: heavy chain of R1-32 Fab

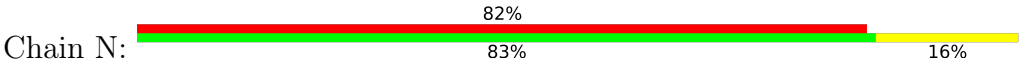
Chain G:

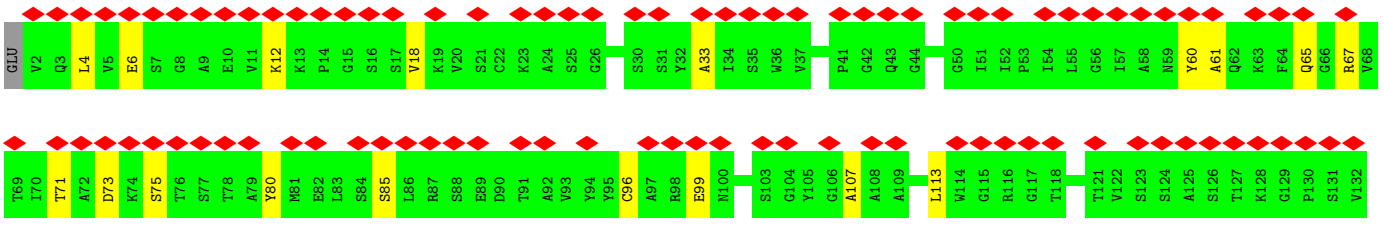


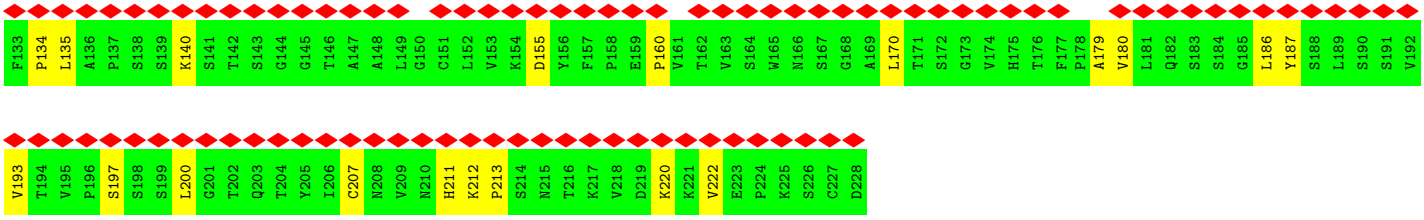


• Molecule 3: heavy chain of R1-32 Fab

Chain N:

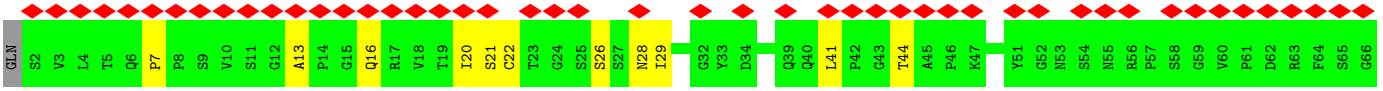






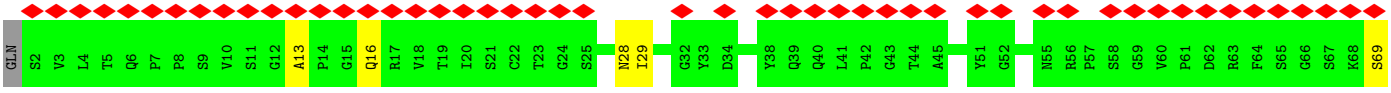
• Molecule 4: light chain of R1-32 Fab

Chain L:



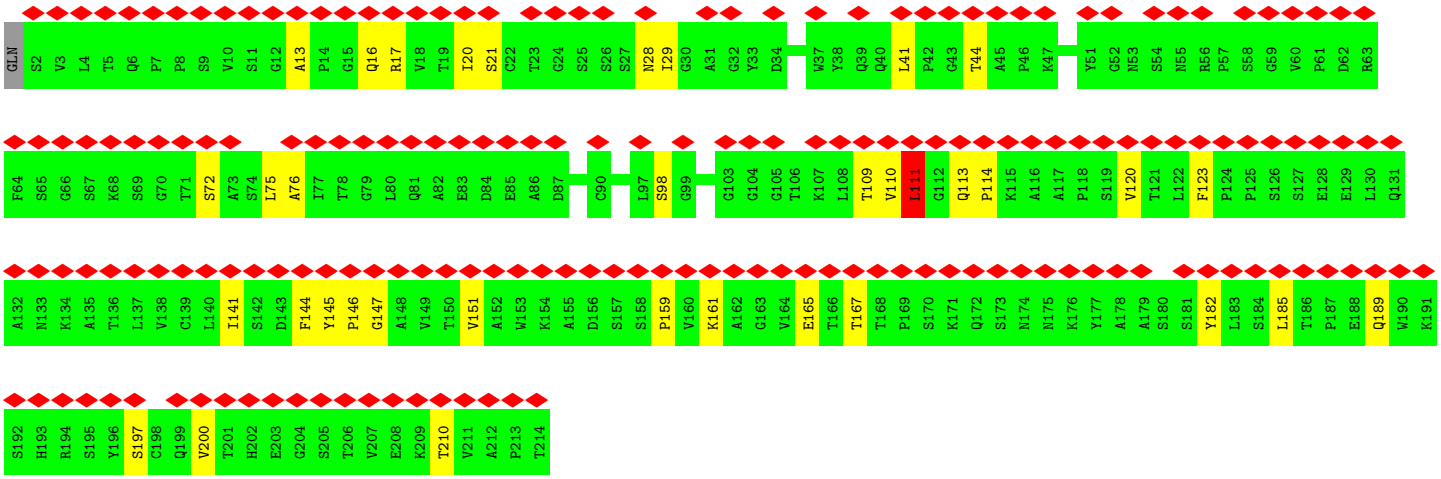
• Molecule 4: light chain of R1-32 Fab

Chain I:



• Molecule 4: light chain of R1-32 Fab

Chain O:

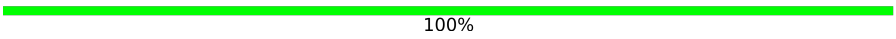


• Molecule 5: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain D:

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

Chain F:

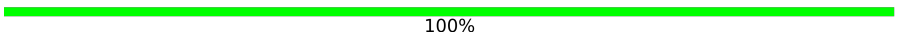


• Molecule 5: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain K:

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

Chain P:

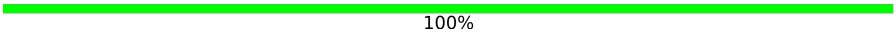


• Molecule 5: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain Q:

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

Chain R:



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	203698	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 ($e^-/Å^2$)	63	Depositor
Minimum defocus (nm)	800	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	45000	Depositor
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.232	Depositor
Minimum map value	-0.124	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.005	Depositor
Recommended contour level	0.02	Depositor
Map size (Å)	422.4, 422.4, 422.4	wwPDB
Map dimensions	300, 300, 300	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.408, 1.408, 1.408	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, ZN

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	0.25	0/8540	0.42	0/11624
1	B	0.25	0/8540	0.42	0/11624
1	C	0.25	0/8540	0.42	0/11624
2	E	0.23	0/5002	0.39	0/6795
2	J	0.23	0/5002	0.40	0/6795
2	M	0.23	0/5002	0.40	0/6795
3	G	0.25	0/1710	0.46	0/2328
3	H	0.24	0/1710	0.46	0/2328
3	N	0.25	0/1710	0.45	0/2328
4	I	0.24	0/1595	0.44	0/2181
4	L	0.25	0/1595	0.45	0/2181
4	O	0.25	0/1595	0.45	0/2181
All	All	0.24	0/50541	0.42	0/68784

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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	8344	0	8128	97	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	B	8344	0	8128	103	0
1	C	8344	0	8128	104	0
2	E	4865	0	4634	31	0
2	J	4865	0	4634	47	0
2	M	4865	0	4634	44	0
3	G	1667	0	1639	21	0
3	H	1667	0	1639	20	0
3	N	1667	0	1639	23	0
4	I	1557	0	1498	23	0
4	L	1557	0	1498	27	0
4	O	1557	0	1498	26	0
5	D	28	0	25	1	0
5	F	28	0	25	0	0
5	K	28	0	25	1	0
5	P	28	0	25	0	0
5	Q	28	0	25	1	0
5	R	28	0	25	0	0
6	A	112	0	104	0	0
6	B	112	0	104	0	0
6	C	112	0	104	0	0
6	E	56	0	52	0	0
6	J	56	0	52	0	0
6	M	56	0	52	0	0
7	E	1	0	0	0	0
7	J	1	0	0	0	0
7	M	1	0	0	0	0
All	All	49974	0	48315	501	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 (501) 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)
2:M:582:ARG:HG3	2:M:583:PRO:HD3	1.54	0.89
2:M:375:GLU:HA	2:M:378:HIS:CE1	2.11	0.85
2:M:375:GLU:HA	2:M:378:HIS:ND1	2.00	0.77
1:C:816:SER:HB3	1:C:817:PRO:HD2	1.67	0.76
1:A:816:SER:HB3	1:A:817:PRO:HD2	1.66	0.76
1:B:816:SER:HB3	1:B:817:PRO:HD2	1.65	0.76
1:A:331:ASN:OD1	1:A:332:ILE:N	2.19	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:356:LYS:HB2	1:C:397:ALA:HB3	1.69	0.74
2:E:248:LEU:HB3	2:E:256:ILE:HD13	1.69	0.73
4:O:111:LEU:HD13	4:O:113:GLN:H	1.53	0.73
1:A:892:PRO:HD2	1:C:1069:PRO:HG2	1.70	0.73
4:O:185:LEU:HD23	4:O:189:GLN:HE22	1.55	0.72
1:C:327:VAL:HB	1:C:528:LYS:HD3	1.72	0.72
3:N:170:LEU:HD21	3:N:193:VAL:HG11	1.73	0.71
2:M:261:CYS:HB2	2:M:488:VAL:HG13	1.73	0.70
3:H:155:ASP:HA	3:H:186:LEU:HD21	1.74	0.69
2:J:261:CYS:HB2	2:J:488:VAL:HG13	1.74	0.69
2:M:142:LEU:HD21	2:M:147:GLY:HA3	1.73	0.69
2:J:374:HIS:HD1	2:J:375:GLU:HG3	1.58	0.69
3:H:211:HIS:HD2	3:H:213:PRO:HD2	1.57	0.68
1:C:106:PHE:HB2	1:C:117:LEU:HB2	1.76	0.67
4:L:197:SER:HB2	4:L:210:THR:HG22	1.77	0.66
2:M:378:HIS:HD1	2:M:378:HIS:H	1.43	0.66
1:A:1069:PRO:HG2	1:B:892:PRO:HD2	1.79	0.65
1:B:1069:PRO:HG2	1:C:892:PRO:HD2	1.79	0.65
1:B:106:PHE:HB2	1:B:117:LEU:HB2	1.79	0.64
2:M:374:HIS:CD2	2:M:378:HIS:HE1	2.16	0.64
4:O:13:ALA:H	4:O:16:GLN:HE21	1.46	0.64
4:O:114:PRO:HD2	4:O:145:TYR:HE1	1.62	0.64
1:A:1087:ALA:HB2	1:A:1126:CYS:HA	1.80	0.64
4:L:13:ALA:H	4:L:16:GLN:HE21	1.46	0.63
1:B:324:GLU:HB2	1:B:539:VAL:HG23	1.81	0.63
2:M:74:LYS:HD2	2:M:106:SER:HB3	1.80	0.63
1:B:24:LEU:HB2	1:B:78:ARG:HD3	1.81	0.62
1:B:367:VAL:HG13	1:B:368:LEU:HD12	1.82	0.62
3:N:134:PRO:HD3	3:N:220:LYS:HD3	1.82	0.62
3:N:155:ASP:HA	3:N:186:LEU:HD21	1.81	0.62
1:A:276:LEU:HD22	1:A:301:CYS:HA	1.82	0.61
2:E:252:TYR:HB2	2:E:256:ILE:HD12	1.82	0.61
1:A:1047:TYR:HB2	1:A:1067:TYR:HB3	1.81	0.61
4:L:114:PRO:HD2	4:L:145:TYR:HE1	1.64	0.61
4:O:114:PRO:HD2	4:O:145:TYR:CE1	2.36	0.61
3:G:206:ILE:HD11	3:G:219:ASP:HB3	1.83	0.61
3:N:197:SER:HA	3:N:200:LEU:HD23	1.84	0.60
4:L:114:PRO:HD2	4:L:145:TYR:CE1	2.36	0.60
3:N:180:VAL:HB	4:O:167:THR:HG22	1.84	0.60
1:A:667:GLY:HA2	1:B:864:LEU:HA	1.83	0.60
1:B:346:ARG:NH2	4:O:98:SER:OG	2.35	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:346:ARG:NH2	3:H:60:TYR:O	2.35	0.60
1:A:736:VAL:H	1:A:767:LEU:HD13	1.66	0.60
3:N:212:LYS:HG2	3:N:213:PRO:HD3	1.84	0.60
4:I:120:VAL:HG12	4:I:141:ILE:HG12	1.84	0.59
1:A:165:ASN:HD22	4:I:72:SER:HB3	1.68	0.59
4:I:111:LEU:HD13	4:I:113:GLN:H	1.66	0.59
1:C:1047:TYR:HB2	1:C:1067:TYR:HB3	1.84	0.59
1:C:346:ARG:NH2	3:G:60:TYR:O	2.36	0.59
3:G:13:LYS:HE3	3:G:14:PRO:HD2	1.83	0.59
2:J:470:LYS:HD3	2:J:473:TRP:HE1	1.67	0.59
4:I:113:GLN:HB3	4:I:146:PRO:HG3	1.83	0.59
1:A:922:LEU:HD11	5:D:1:NAG:H3	1.84	0.59
2:E:351:LEU:HB2	2:E:355:ASP:HB3	1.84	0.59
3:G:182:GLN:HB2	3:G:186:LEU:H	1.68	0.59
4:I:185:LEU:HB3	4:I:189:GLN:NE2	2.18	0.59
1:C:276:LEU:HB3	1:C:289:VAL:HB	1.85	0.59
2:J:375:GLU:HA	2:J:378:HIS:CD2	2.38	0.59
4:L:141:ILE:HD11	4:L:200:VAL:HG11	1.84	0.59
1:B:1047:TYR:HB2	1:B:1067:TYR:HB3	1.85	0.59
1:A:346:ARG:NH2	4:L:98:SER:OG	2.36	0.58
4:L:120:VAL:HG12	4:L:141:ILE:HG12	1.84	0.58
4:O:197:SER:HB2	4:O:210:THR:HG22	1.84	0.58
1:B:361:CYS:SG	1:B:362:VAL:N	2.77	0.58
4:O:120:VAL:HG12	4:O:141:ILE:HG12	1.84	0.58
1:B:276:LEU:HD22	1:B:301:CYS:HA	1.84	0.58
1:B:1069:PRO:HG2	1:C:892:PRO:HG2	1.85	0.58
4:I:141:ILE:HD11	4:I:200:VAL:HG11	1.86	0.58
1:A:32:PHE:HB3	1:A:218:GLN:HG3	1.84	0.58
2:J:463:VAL:HG22	2:J:468:ILE:HD12	1.86	0.58
1:C:367:VAL:HG13	1:C:368:LEU:HD12	1.85	0.57
3:N:211:HIS:CD2	3:N:213:PRO:HD2	2.39	0.57
1:A:159:VAL:HG23	1:A:160:TYR:HD1	1.68	0.57
1:A:864:LEU:HA	1:C:667:GLY:HA2	1.86	0.57
1:B:159:VAL:HG23	1:B:160:TYR:HD1	1.68	0.57
1:C:81:ASN:HB3	1:C:239:GLN:HE21	1.69	0.57
1:C:159:VAL:HG23	1:C:160:TYR:HD1	1.69	0.57
1:B:32:PHE:HB3	1:B:218:GLN:HG3	1.86	0.57
1:A:1069:PRO:HG2	1:B:892:PRO:HG2	1.87	0.57
2:J:371:THR:HA	2:J:374:HIS:HB3	1.85	0.57
4:O:141:ILE:HD11	4:O:200:VAL:HG11	1.85	0.57
4:O:165:GLU:OE1	4:O:182:TYR:N	2.36	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:501:ASN:HB2	1:C:506:GLN:HE22	1.70	0.57
1:A:106:PHE:HB2	1:A:117:LEU:HB2	1.86	0.57
1:A:566:GLY:HA2	1:B:43:PHE:H	1.69	0.57
1:C:32:PHE:HB3	1:C:218:GLN:HG3	1.87	0.57
1:C:193:VAL:HB	1:C:204:TYR:HB2	1.87	0.57
1:B:398:ASP:HB2	1:B:512:VAL:HB	1.87	0.56
1:B:81:ASN:HB3	1:B:239:GLN:HE21	1.71	0.56
1:B:667:GLY:HA2	1:C:864:LEU:HA	1.88	0.56
1:A:361:CYS:SG	1:A:362:VAL:N	2.79	0.56
1:B:736:VAL:H	1:B:767:LEU:HD13	1.71	0.56
1:B:356:LYS:HB2	1:B:397:ALA:HB3	1.87	0.55
1:C:346:ARG:NH2	4:I:98:SER:OG	2.40	0.55
2:E:45:LEU:O	2:E:49:ASN:ND2	2.39	0.55
2:M:374:HIS:CD2	2:M:378:HIS:CE1	2.94	0.55
1:A:892:PRO:CD	1:C:1069:PRO:HG2	2.35	0.55
1:B:566:GLY:HA2	1:C:43:PHE:H	1.71	0.55
1:B:713:ALA:HB3	1:C:894:LEU:HB3	1.89	0.55
2:M:569:ALA:HA	2:M:572:ASN:HD21	1.72	0.55
1:C:736:VAL:H	1:C:767:LEU:HD13	1.72	0.55
3:H:180:VAL:HB	4:L:167:THR:HG22	1.89	0.55
3:G:180:VAL:HB	4:I:167:THR:HG22	1.89	0.55
1:B:442:ASP:O	1:B:448:ASN:ND2	2.41	0.54
1:B:164:ASN:HA	4:L:21:SER:OG	2.07	0.54
2:J:569:ALA:HA	2:J:572:ASN:HD21	1.73	0.54
1:A:193:VAL:HB	1:A:204:TYR:HB2	1.89	0.54
2:M:73:LEU:HD22	2:M:74:LYS:HZ3	1.72	0.54
1:A:1129:VAL:HG22	1:B:917:TYR:HB3	1.89	0.54
1:A:97:LYS:HB2	1:A:186:PHE:HA	1.90	0.54
1:C:561:PRO:HA	1:C:577:ARG:HH12	1.71	0.54
1:B:1129:VAL:HG22	1:C:917:TYR:HB3	1.88	0.54
1:A:917:TYR:HB3	1:C:1129:VAL:HG22	1.90	0.54
1:B:476:GLY:HA3	1:B:487:ASN:HD21	1.73	0.54
4:L:202:HIS:O	4:L:203:GLU:HG2	2.08	0.54
3:H:6:GLU:OE2	3:H:96:CYS:N	2.40	0.53
1:A:561:PRO:HA	1:A:577:ARG:HH12	1.73	0.53
3:G:65:GLN:HE21	3:G:67:ARG:HD3	1.72	0.53
2:J:378:HIS:CE1	2:J:402:GLU:OE1	2.61	0.53
1:B:119:ILE:HG23	1:B:128:ILE:HG12	1.90	0.53
1:C:501:ASN:OD1	2:J:41:TYR:OH	2.21	0.53
2:M:371:THR:HA	2:M:374:HIS:HB3	1.91	0.53
1:C:164:ASN:HA	4:O:21:SER:OG	2.09	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:181:GLU:HG2	2:E:473:TRP:HZ3	1.74	0.53
4:I:114:PRO:HD2	4:I:145:TYR:HE1	1.73	0.53
1:B:97:LYS:HB2	1:B:186:PHE:HA	1.91	0.53
1:C:119:ILE:HG23	1:C:128:ILE:HG12	1.91	0.53
1:A:713:ALA:HB3	1:B:894:LEU:HB3	1.90	0.53
4:I:114:PRO:HD2	4:I:145:TYR:CE1	2.44	0.53
1:B:346:ARG:NH2	3:N:60:TYR:O	2.43	0.52
1:B:142:GLY:HA3	1:B:156:GLU:HB2	1.90	0.52
1:C:142:GLY:HA3	1:C:156:GLU:HB2	1.89	0.52
2:E:395:GLY:HA2	2:E:562:LYS:HG3	1.91	0.52
2:J:472:GLN:HE22	2:J:476:LYS:HD3	1.74	0.52
1:A:43:PHE:H	1:C:566:GLY:HA2	1.73	0.52
1:C:439:ASN:HD22	1:C:507:PRO:HD2	1.74	0.52
4:L:185:LEU:HB3	4:L:189:GLN:NE2	2.24	0.52
1:A:892:PRO:HD2	1:C:1069:PRO:HD2	1.92	0.52
3:H:211:HIS:CD2	3:H:213:PRO:HD2	2.42	0.52
1:A:411:ALA:O	1:A:414:GLN:NE2	2.42	0.52
4:I:185:LEU:HB3	4:I:189:GLN:HE22	1.74	0.52
2:M:358:ILE:HD13	2:M:379:ILE:HD11	1.91	0.52
1:C:329:PHE:HB2	1:C:330:PRO:HD3	1.91	0.52
3:H:30:SER:HB2	3:H:74:LYS:HE2	1.92	0.52
3:N:160:PRO:HG2	3:N:212:LYS:HZ1	1.75	0.52
2:E:74:LYS:HD2	2:E:106:SER:HB3	1.90	0.52
3:H:65:GLN:HE21	3:H:67:ARG:HD3	1.74	0.51
1:C:97:LYS:HB2	1:C:186:PHE:HA	1.92	0.51
3:H:67:ARG:NH2	3:H:85:SER:O	2.43	0.51
1:B:329:PHE:HB2	1:B:330:PRO:HD3	1.93	0.51
4:I:197:SER:HB2	4:I:210:THR:HG22	1.92	0.51
4:L:113:GLN:HB3	4:L:146:PRO:HG3	1.92	0.51
1:B:561:PRO:HA	1:B:577:ARG:HH12	1.75	0.51
2:E:358:ILE:HD13	2:E:379:ILE:HD11	1.93	0.51
4:O:113:GLN:HB3	4:O:146:PRO:HB3	1.93	0.51
3:H:212:LYS:HG3	3:H:213:PRO:HD3	1.94	0.50
3:G:12:LYS:HG3	3:G:18:VAL:HG12	1.92	0.50
2:M:51:ASN:HD21	2:M:343:VAL:HB	1.75	0.50
2:M:288:LYS:HE2	2:M:434:THR:HA	1.92	0.50
1:A:892:PRO:HD2	1:C:1069:PRO:CG	2.38	0.50
1:B:1092:GLU:O	1:B:1107:ARG:NH2	2.45	0.50
3:H:6:GLU:OE2	3:H:96:CYS:HB2	2.11	0.50
1:A:892:PRO:CG	1:C:1069:PRO:HG2	2.41	0.50
1:A:110:LEU:HD22	1:A:135:PHE:HD1	1.77	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:G:67:ARG:NH2	3:G:85:SER:O	2.45	0.50
2:J:374:HIS:CE1	2:J:378:HIS:HE2	2.29	0.50
1:A:1069:PRO:HD2	1:B:892:PRO:HD2	1.94	0.50
1:C:110:LEU:HD22	1:C:135:PHE:HD1	1.76	0.50
2:M:233:ILE:HD12	2:M:236:LEU:HD13	1.93	0.50
3:N:65:GLN:HE21	3:N:67:ARG:HD3	1.76	0.50
1:A:1069:PRO:HG2	1:B:892:PRO:CD	2.41	0.50
1:B:966:LEU:O	1:B:975:SER:OG	2.30	0.50
1:B:1081:ILE:HG23	1:B:1135:ASN:HB3	1.94	0.50
2:J:445:THR:HG23	2:J:446:ILE:HG13	1.93	0.50
4:O:113:GLN:HB3	4:O:146:PRO:HG3	1.94	0.50
1:C:276:LEU:HD22	1:C:301:CYS:HA	1.93	0.49
1:C:1092:GLU:O	1:C:1107:ARG:NH2	2.45	0.49
1:B:1069:PRO:HG2	1:C:892:PRO:CG	2.42	0.49
4:L:20:ILE:HG22	4:L:75:LEU:HB3	1.94	0.49
4:L:165:GLU:OE1	4:L:182:TYR:N	2.42	0.49
4:O:159:PRO:HB2	4:O:161:LYS:HE3	1.94	0.49
1:C:1081:ILE:HG23	1:C:1135:ASN:HB3	1.94	0.49
2:J:263:PRO:HG2	2:J:266:LEU:HD12	1.94	0.49
2:J:374:HIS:ND1	2:J:375:GLU:HG3	2.27	0.49
1:A:776:LYS:NZ	1:A:780:GLU:OE1	2.45	0.49
1:A:892:PRO:HG2	1:C:1069:PRO:HG2	1.94	0.49
2:M:263:PRO:HG2	2:M:266:LEU:HD12	1.95	0.49
1:A:1092:GLU:O	1:A:1107:ARG:NH2	2.45	0.49
1:C:165:ASN:HD22	4:O:72:SER:HB3	1.77	0.49
2:M:45:LEU:HD23	2:M:357:ARG:HH22	1.77	0.49
1:A:1069:PRO:HG2	1:B:892:PRO:CG	2.41	0.49
1:B:1081:ILE:HB	1:B:1088:HIS:HB2	1.94	0.49
2:J:233:ILE:HD12	2:J:236:LEU:HD13	1.95	0.49
2:M:472:GLN:HE22	2:M:476:LYS:HD3	1.77	0.49
1:B:776:LYS:NZ	1:B:780:GLU:OE1	2.45	0.49
1:B:1069:PRO:HG2	1:C:892:PRO:CD	2.40	0.49
3:G:20:VAL:HB	3:G:81:MET:HB3	1.94	0.49
2:M:445:THR:HG23	2:M:446:ILE:HG13	1.93	0.49
2:J:201:ASP:OD1	2:J:204:ARG:NH2	2.46	0.48
4:I:114:PRO:O	4:I:145:TYR:HD1	1.95	0.48
4:O:20:ILE:HG22	4:O:75:LEU:HB3	1.93	0.48
1:A:898:PHE:N	1:A:899:PRO:HD2	2.28	0.48
1:B:34:ARG:NH1	1:B:191:GLU:OE2	2.46	0.48
1:B:656:VAL:HG22	1:B:658:ASN:H	1.77	0.48
4:O:41:LEU:HB3	4:O:44:THR:HG22	1.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:110:LEU:HD22	1:B:135:PHE:HD1	1.77	0.48
1:B:689:SER:OG	1:B:690:GLN:N	2.45	0.48
2:J:395:GLY:HA2	2:J:562:LYS:HG3	1.95	0.48
1:C:362:VAL:HG23	1:C:525:CYS:O	2.13	0.48
3:H:3:GLN:O	3:H:25:SER:OG	2.30	0.48
1:A:34:ARG:NH1	1:A:191:GLU:OE2	2.46	0.48
1:C:119:ILE:HG12	1:C:128:ILE:HG23	1.94	0.48
1:C:1081:ILE:HB	1:C:1088:HIS:HB2	1.95	0.48
2:E:453:THR:HG21	2:E:516:TYR:HB2	1.94	0.48
3:H:68:VAL:HB	3:H:83:LEU:HD13	1.96	0.48
2:M:395:GLY:HA2	2:M:562:LYS:HG3	1.95	0.48
3:N:4:LEU:HD13	3:N:113:LEU:HD21	1.95	0.48
1:B:328:ARG:HH12	1:B:533:LEU:HB2	1.79	0.48
4:L:41:LEU:HB3	4:L:44:THR:HG22	1.94	0.48
3:N:6:GLU:OE2	3:N:96:CYS:HB2	2.14	0.48
3:G:208:ASN:ND2	3:G:219:ASP:OD1	2.47	0.48
1:C:776:LYS:NZ	1:C:780:GLU:OE1	2.46	0.47
1:C:898:PHE:N	1:C:899:PRO:HD2	2.28	0.47
1:A:329:PHE:HB2	1:A:330:PRO:HD3	1.96	0.47
1:C:459:SER:OG	1:C:460:ASN:N	2.46	0.47
2:E:474:MET:SD	2:E:478:TRP:NE1	2.87	0.47
4:O:28:ASN:OD1	4:O:29:ILE:N	2.47	0.47
1:A:318:PHE:HB2	1:A:595:VAL:HG13	1.97	0.47
1:A:352:ALA:HA	1:A:466:ARG:HD3	1.96	0.47
1:A:568:ASP:OD2	1:B:852:ALA:N	2.48	0.47
1:B:328:ARG:HH22	1:B:533:LEU:HD13	1.80	0.47
1:B:898:PHE:N	1:B:899:PRO:HD2	2.29	0.47
1:C:164:ASN:OD1	1:C:165:ASN:N	2.43	0.47
1:C:1106:GLN:HE21	1:C:1109:PHE:HB3	1.78	0.47
2:J:74:LYS:HD2	2:J:106:SER:HB2	1.95	0.47
2:M:201:ASP:OD1	2:M:204:ARG:NH2	2.46	0.47
3:N:67:ARG:NH2	3:N:85:SER:O	2.47	0.47
1:A:442:ASP:O	1:A:448:ASN:ND2	2.48	0.47
1:B:1106:GLN:HE21	1:B:1109:PHE:HB3	1.78	0.47
1:C:34:ARG:NH1	1:C:191:GLU:OE2	2.47	0.47
2:E:45:LEU:HD23	2:E:357:ARG:HH22	1.79	0.47
2:J:73:LEU:HD22	2:J:74:LYS:NZ	2.29	0.47
2:J:533:ALA:O	2:J:534:LYS:HG3	2.15	0.47
3:H:5:VAL:HG13	3:H:23:LYS:HB2	1.96	0.47
1:A:328:ARG:HH22	1:A:533:LEU:HD13	1.79	0.47
1:A:656:VAL:HG22	1:A:658:ASN:H	1.79	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:352:ALA:HA	1:B:466:ARG:HD3	1.97	0.47
3:G:54:ILE:HG23	3:G:55:LEU:HG	1.96	0.47
3:N:179:ALA:HB1	3:N:187:TYR:HB3	1.97	0.47
1:A:453:TYR:HB3	1:A:495:TYR:CE1	2.50	0.47
1:C:552:LEU:HB3	1:C:585:LEU:HD13	1.97	0.47
2:E:30:ASP:O	2:E:34:HIS:ND1	2.47	0.47
1:A:689:SER:OG	1:A:690:GLN:N	2.48	0.47
4:L:13:ALA:HB3	4:L:16:GLN:HG2	1.97	0.47
1:A:739:THR:HB	1:C:319:ARG:HH22	1.79	0.47
1:B:193:VAL:HB	1:B:204:TYR:HB2	1.96	0.47
2:J:245:ARG:NH1	2:J:257:SER:O	2.47	0.47
1:B:328:ARG:HG2	1:B:530:SER:HA	1.97	0.46
2:E:418:LEU:HD23	2:E:424:LEU:HD13	1.95	0.46
2:M:209:VAL:HG11	2:M:565:PRO:HB3	1.96	0.46
1:B:119:ILE:HG12	1:B:128:ILE:HG23	1.98	0.46
1:C:295:PRO:HB2	1:C:608:VAL:HG21	1.97	0.46
2:E:156:LEU:O	2:E:252:TYR:OH	2.32	0.46
4:I:111:LEU:O	4:I:113:GLN:HG2	2.15	0.46
2:M:463:VAL:HG22	2:M:468:ILE:HD12	1.96	0.46
1:A:349:SER:OG	1:A:452:LEU:O	2.33	0.46
1:B:568:ASP:OD2	1:C:852:ALA:N	2.48	0.46
1:A:552:LEU:HB3	1:A:585:LEU:HD13	1.98	0.46
2:E:281:LEU:HD12	2:E:282:THR:HG23	1.98	0.46
4:I:28:ASN:OD1	4:I:29:ILE:N	2.47	0.46
2:M:73:LEU:HD22	2:M:74:LYS:NZ	2.30	0.46
2:M:239:HIS:HB3	2:M:595:LEU:HB3	1.97	0.46
1:B:172:SER:OG	1:B:173:GLN:N	2.48	0.46
1:C:126:VAL:HB	1:C:172:SER:HB3	1.96	0.46
1:C:538:CYS:HB2	1:C:590:CYS:HB3	1.74	0.46
1:C:596:SER:HB3	1:C:611:LEU:HB3	1.96	0.46
2:E:524:GLN:NE2	2:E:580:ASN:OD1	2.48	0.46
1:B:388:ASN:OD1	1:B:526:GLY:HA3	2.16	0.46
3:N:212:LYS:CG	3:N:213:PRO:HD3	2.46	0.46
4:O:13:ALA:HB3	4:O:16:GLN:HG2	1.97	0.46
4:O:144:PHE:HE1	4:O:147:GLY:HA2	1.81	0.46
1:B:976:VAL:HG22	1:B:978:ASN:H	1.81	0.46
2:J:116:LEU:HD12	2:J:186:LEU:HD22	1.97	0.46
3:N:135:LEU:HD21	4:O:123:PHE:CD2	2.51	0.46
1:B:295:PRO:HB2	1:B:608:VAL:HG21	1.98	0.46
1:B:335:LEU:HD11	1:B:338:PHE:CD1	2.50	0.46
1:C:689:SER:OG	1:C:690:GLN:N	2.48	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:L:28:ASN:OD1	4:L:29:ILE:N	2.47	0.46
1:B:424:LYS:HE3	1:B:460:ASN:HD21	1.81	0.46
4:L:22:CYS:O	4:L:72:SER:OG	2.30	0.46
3:G:112:ASP:OD1	3:G:112:ASP:N	2.46	0.46
1:C:468:ILE:HG12	3:G:107:ALA:HB1	1.98	0.46
4:I:144:PHE:HE1	4:I:147:GLY:HA2	1.81	0.46
2:J:374:HIS:CD2	2:J:378:HIS:HE2	2.34	0.46
1:B:126:VAL:HB	1:B:172:SER:HB3	1.97	0.45
2:J:239:HIS:HB3	2:J:595:LEU:HB3	1.98	0.45
1:C:172:SER:OG	1:C:173:GLN:N	2.48	0.45
4:L:135:ALA:N	4:L:185:LEU:O	2.46	0.45
2:J:330:ASN:HD22	2:J:357:ARG:HH11	1.64	0.45
1:C:719:THR:HG23	1:C:1070:ALA:HB2	1.98	0.45
2:E:116:LEU:HA	2:E:119:ILE:HG22	1.98	0.45
1:A:172:SER:OG	1:A:173:GLN:N	2.50	0.45
1:A:539:VAL:N	1:A:550:GLY:O	2.45	0.45
1:A:892:PRO:HD2	1:C:1069:PRO:CD	2.46	0.45
1:B:889:GLY:HA3	1:B:1034:LEU:HD22	1.98	0.45
3:H:179:ALA:HB1	3:H:187:TYR:HB3	1.99	0.45
4:L:26:SER:O	4:L:26:SER:OG	2.34	0.45
1:A:565:PHE:HB2	1:B:42:VAL:HG12	1.98	0.45
1:B:565:PHE:HB2	1:C:42:VAL:HG12	1.98	0.45
1:B:552:LEU:HB3	1:B:585:LEU:HD13	1.97	0.45
1:C:398:ASP:HB2	1:C:512:VAL:HB	1.99	0.45
2:J:174:LYS:HA	2:J:174:LYS:HD3	1.81	0.45
2:J:209:VAL:HG11	2:J:565:PRO:HB3	1.98	0.45
2:E:144:LEU:HD12	2:E:148:LEU:HB2	1.98	0.45
3:G:166:ASN:HB2	3:G:169:ALA:HB3	1.97	0.45
1:A:441:LEU:HD22	1:A:509:ARG:NH2	2.32	0.45
1:A:457:ARG:HD2	1:A:457:ARG:HA	1.72	0.45
1:A:747:THR:O	1:A:751:ASN:ND2	2.50	0.45
2:J:45:LEU:HD23	2:J:357:ARG:HH22	1.82	0.45
2:M:116:LEU:HD12	2:M:186:LEU:HD22	1.97	0.45
1:A:596:SER:HB3	1:A:611:LEU:HB3	1.97	0.45
2:M:580:ASN:ND2	2:M:582:ARG:HG2	2.31	0.45
1:C:472:ILE:HD12	1:C:482:GLY:HA2	1.99	0.45
1:C:80:ASP:OD1	1:C:80:ASP:N	2.49	0.44
3:H:197:SER:HA	3:H:200:LEU:HD23	1.98	0.44
1:B:922:LEU:HD11	5:K:1:NAG:H3	1.99	0.44
1:A:319:ARG:HH22	1:B:739:THR:HB	1.82	0.44
1:C:747:THR:O	1:C:751:ASN:ND2	2.50	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:889:GLY:HA3	1:C:1034:LEU:HD22	1.99	0.44
2:M:100:LEU:HD13	2:M:391:LEU:HD11	1.99	0.44
1:A:894:LEU:HB3	1:C:713:ALA:HB3	2.00	0.44
1:C:922:LEU:HD11	5:Q:1:NAG:H3	2.00	0.44
3:H:228:ASP:N	3:H:228:ASP:OD1	2.51	0.44
4:L:144:PHE:HE1	4:L:147:GLY:HA2	1.81	0.44
2:M:142:LEU:HD23	2:M:143:LEU:O	2.17	0.44
1:B:472:ILE:HG12	1:B:490:PHE:HD1	1.82	0.44
4:I:113:GLN:HB3	4:I:146:PRO:HB3	2.00	0.44
1:C:24:LEU:HB2	1:C:78:ARG:HD3	1.99	0.44
1:B:747:THR:O	1:B:751:ASN:ND2	2.50	0.44
1:C:880:GLY:O	1:C:884:SER:OG	2.28	0.44
2:J:245:ARG:O	2:J:249:MET:HG3	2.17	0.44
2:M:245:ARG:NH1	2:M:257:SER:O	2.47	0.44
1:A:889:GLY:HA3	1:A:1034:LEU:HD22	1.99	0.44
1:B:102:ARG:HH21	1:B:122:ASN:HA	1.82	0.44
1:B:276:LEU:HB3	1:B:289:VAL:HB	2.00	0.44
3:H:137:PRO:HD3	3:H:149:LEU:HB3	1.98	0.44
1:C:897:PRO:HB2	1:C:900:MET:HG3	1.99	0.44
1:A:538:CYS:HB2	1:A:590:CYS:HB3	1.89	0.43
1:C:656:VAL:HG22	1:C:658:ASN:H	1.82	0.43
2:E:261:CYS:HB2	2:E:488:VAL:HB	1.99	0.43
2:M:567:THR:HG23	2:M:568:LEU:HD12	2.00	0.43
4:O:151:VAL:HA	4:O:200:VAL:HG12	2.00	0.43
1:C:476:GLY:H	1:C:487:ASN:HB3	1.83	0.43
1:A:295:PRO:HB2	1:A:608:VAL:HG21	2.01	0.43
1:A:1069:PRO:CG	1:B:892:PRO:HD2	2.46	0.43
1:B:81:ASN:HD21	1:B:242:LEU:HB2	1.83	0.43
1:C:374:PHE:HD1	1:C:436:TRP:HB3	1.83	0.43
2:E:114:LYS:O	2:E:118:THR:HG23	2.18	0.43
2:E:273:ARG:NH1	2:E:515:TYR:OH	2.52	0.43
4:O:114:PRO:O	4:O:145:TYR:HD1	2.01	0.43
1:A:1125:ASN:OD1	1:A:1125:ASN:N	2.51	0.43
1:B:821:LEU:HD11	1:B:939:SER:HB3	2.01	0.43
1:C:331:ASN:OD1	1:C:331:ASN:N	2.48	0.43
3:H:67:ARG:HH22	3:H:87:ARG:HE	1.65	0.43
2:M:455:MET:HE2	2:M:485:VAL:HG21	2.00	0.43
1:C:612:TYR:HB2	1:C:649:CYS:HB2	2.01	0.43
3:G:127:THR:HA	3:G:157:PHE:HB3	1.99	0.43
1:B:409:GLN:NE2	1:B:415:THR:O	2.51	0.43
1:C:129:LYS:HG2	1:C:131:CYS:SG	2.59	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:460:ARG:HA	2:E:463:VAL:HG12	2.00	0.43
2:E:529:LEU:HD23	2:E:544:ILE:HG21	2.00	0.43
2:J:30:ASP:O	2:J:34:HIS:ND1	2.52	0.43
2:M:245:ARG:O	2:M:249:MET:HG3	2.17	0.43
2:M:594:TRP:HE3	2:M:595:LEU:HD22	1.83	0.43
1:A:102:ARG:HG3	1:A:141:LEU:HD12	2.01	0.43
1:A:472:ILE:HD12	1:A:482:GLY:HA2	2.01	0.43
1:A:497:PHE:CE2	1:A:507:PRO:HB3	2.54	0.43
1:A:981:LEU:HD21	1:A:993:ILE:HD11	2.00	0.43
1:B:109:THR:OG1	1:B:111:ASP:OD2	2.24	0.43
2:E:421:ILE:HG23	2:E:423:LEU:HD23	2.00	0.43
2:J:455:MET:HE2	2:J:485:VAL:HG21	2.00	0.43
1:C:675:GLN:HB2	1:C:693:ILE:HD11	2.01	0.43
1:B:319:ARG:NH2	1:C:739:THR:HB	2.34	0.42
1:B:675:GLN:HB2	1:B:693:ILE:HD11	2.00	0.42
1:C:37:TYR:H	1:C:55:PHE:HE1	1.67	0.42
1:C:102:ARG:HH21	1:C:122:ASN:HA	1.83	0.42
1:C:641:ASN:HB3	1:C:642:VAL:H	1.72	0.42
4:L:151:VAL:HA	4:L:200:VAL:HG12	2.01	0.42
4:I:13:ALA:HB3	4:I:16:GLN:HG2	2.01	0.42
1:A:600:PRO:HA	1:A:664:ILE:HD11	2.01	0.42
1:C:473:TYR:HE2	2:J:27:THR:HG21	1.84	0.42
4:L:114:PRO:O	4:L:145:TYR:HD1	2.02	0.42
3:N:71:THR:HG23	3:N:80:TYR:HB2	2.02	0.42
1:C:29:THR:OG1	1:C:30:ASN:N	2.53	0.42
1:C:338:PHE:O	1:C:341:VAL:HG12	2.20	0.42
4:L:20:ILE:HD12	4:L:20:ILE:HA	1.94	0.42
3:G:13:LYS:CE	3:G:14:PRO:HD2	2.47	0.42
4:I:135:ALA:N	4:I:185:LEU:O	2.51	0.42
2:J:100:LEU:HD13	2:J:391:LEU:HD11	2.00	0.42
2:J:567:THR:HG23	2:J:568:LEU:HD12	2.01	0.42
2:M:166:GLU:O	2:M:170:SER:OG	2.31	0.42
1:A:612:TYR:HB2	1:A:649:CYS:HB2	2.01	0.42
1:B:459:SER:OG	1:B:460:ASN:N	2.51	0.42
1:C:816:SER:HB3	1:C:817:PRO:CD	2.45	0.42
1:C:1030:SER:HA	1:C:1034:LEU:HB2	2.01	0.42
2:J:51:ASN:HD21	2:J:343:VAL:HB	1.85	0.42
3:N:12:LYS:HG3	3:N:18:VAL:HB	2.02	0.42
1:A:172:SER:HG	1:A:173:GLN:H	1.66	0.42
2:J:166:GLU:O	2:J:170:SER:OG	2.23	0.42
2:M:232:GLU:OE2	2:M:585:LEU:HD21	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:42:VAL:HG12	1:C:565:PHE:HB2	2.02	0.42
1:A:346:ARG:HH22	3:H:61:ALA:HA	1.83	0.42
1:A:388:ASN:OD1	1:A:526:GLY:HA3	2.20	0.42
1:A:658:ASN:ND2	1:A:660:TYR:OH	2.52	0.42
1:A:730:SER:OG	1:A:731:MET:N	2.53	0.42
1:A:852:ALA:N	1:C:568:ASP:OD2	2.52	0.42
2:E:588:PHE:HB3	2:E:591:LEU:HB3	2.02	0.42
3:G:146:THR:HA	3:G:196:PRO:HA	2.02	0.42
1:A:95:THR:HA	1:A:189:LEU:HA	2.01	0.42
1:A:1030:SER:HA	1:A:1034:LEU:HB2	2.00	0.42
1:A:1106:GLN:HE21	1:A:1109:PHE:HB3	1.84	0.42
1:B:346:ARG:HH22	3:N:61:ALA:HA	1.84	0.42
2:M:156:LEU:HD23	2:M:156:LEU:H	1.84	0.42
2:M:157:ASP:OD1	2:M:160:GLU:HB3	2.20	0.42
1:A:439:ASN:HD22	1:A:506:GLN:NE2	2.17	0.42
2:E:182:GLU:O	2:E:185:VAL:HG22	2.20	0.42
1:A:328:ARG:HH12	1:A:533:LEU:HB2	1.84	0.41
2:E:260:GLY:HA3	2:E:610:TRP:CD2	2.55	0.41
4:I:151:VAL:HA	4:I:200:VAL:HG12	2.02	0.41
2:M:374:HIS:O	2:M:378:HIS:CE1	2.73	0.41
2:M:330:ASN:HD22	2:M:357:ARG:HH11	1.67	0.41
1:B:37:TYR:H	1:B:55:PHE:HE1	1.68	0.41
1:C:730:SER:OG	1:C:731:MET:N	2.53	0.41
4:I:127:SER:O	4:I:131:GLN:NE2	2.49	0.41
1:A:897:PRO:HB2	1:A:900:MET:HG3	2.02	0.41
1:B:472:ILE:HD12	1:B:482:GLY:HA2	2.02	0.41
2:E:539:LEU:HD12	2:E:539:LEU:HA	1.95	0.41
3:G:206:ILE:HG12	3:G:208:ASN:HD21	1.85	0.41
2:J:175:GLN:H	2:J:175:GLN:HG2	1.73	0.41
2:J:215:TYR:HA	2:J:577:LYS:HE3	2.01	0.41
3:N:73:ASP:OD2	3:N:75:SER:OG	2.37	0.41
1:A:719:THR:HG23	1:A:1070:ALA:HB2	2.01	0.41
2:J:579:MET:H	2:J:579:MET:HG2	1.69	0.41
1:A:213:VAL:HG13	1:A:214:ARG:HG2	2.03	0.41
1:A:459:SER:OG	1:A:460:ASN:N	2.54	0.41
1:A:675:GLN:HB2	1:A:693:ILE:HD11	2.01	0.41
1:A:1069:PRO:CD	1:B:892:PRO:HD2	2.51	0.41
1:B:1030:SER:HA	1:B:1034:LEU:HD12	2.02	0.41
2:E:263:PRO:HG2	2:E:266:LEU:HD12	2.02	0.41
4:O:113:GLN:HB3	4:O:146:PRO:CG	2.50	0.41
1:B:29:THR:OG1	1:B:30:ASN:N	2.53	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:476:GLY:HA3	1:B:487:ASN:ND2	2.34	0.41
1:B:780:GLU:O	1:B:784:GLN:NE2	2.53	0.41
1:C:780:GLU:O	1:C:784:GLN:NE2	2.54	0.41
2:E:145:GLU:HA	2:E:146:PRO:HA	1.81	0.41
2:E:589:GLU:HB3	2:E:590:PRO:HD3	2.01	0.41
3:N:33:ALA:HB3	3:N:99:GLU:HB2	2.02	0.41
1:B:319:ARG:HH22	1:C:739:THR:HB	1.85	0.41
1:B:1047:TYR:HD1	1:B:1067:TYR:HD1	1.68	0.41
1:C:346:ARG:HH22	3:G:61:ALA:HA	1.86	0.41
1:A:1030:SER:HA	1:A:1034:LEU:HD12	2.03	0.41
1:B:95:THR:HA	1:B:189:LEU:HA	2.03	0.41
1:B:164:ASN:OD1	1:B:165:ASN:N	2.51	0.41
1:C:600:PRO:HA	1:C:664:ILE:HD11	2.02	0.41
2:J:232:GLU:O	2:J:235:PRO:HD2	2.21	0.41
2:J:330:ASN:ND2	2:J:357:ARG:HE	2.19	0.41
2:J:589:GLU:O	2:J:593:THR:HG23	2.21	0.41
2:M:519:THR:HA	2:M:522:GLN:HE21	1.86	0.41
4:O:17:ARG:HE	4:O:76:ALA:HB1	1.85	0.41
1:A:165:ASN:ND2	4:I:69:SER:O	2.54	0.41
1:B:1069:PRO:HD2	1:C:892:PRO:HD2	2.02	0.41
1:C:176:LEU:HD23	1:C:176:LEU:H	1.86	0.41
2:J:519:THR:HA	2:J:522:GLN:HE21	1.86	0.41
2:M:330:ASN:ND2	2:M:357:ARG:HE	2.19	0.41
3:N:134:PRO:HB2	3:N:222:VAL:HG23	2.02	0.41
1:A:319:ARG:NH2	1:B:739:THR:HB	2.36	0.40
1:B:701:ALA:H	1:C:787:GLN:HA	1.85	0.40
1:C:530:SER:OG	1:C:580:GLN:NE2	2.51	0.40
3:G:20:VAL:O	3:G:81:MET:N	2.51	0.40
4:I:183:LEU:HD23	4:I:185:LEU:HD11	2.03	0.40
2:M:89:GLN:NE2	2:M:90:ASN:OD1	2.54	0.40
1:B:114:THR:OG1	1:B:115:GLN:N	2.53	0.40
1:B:468:ILE:HG12	3:N:107:ALA:HB1	2.03	0.40
4:L:137:LEU:HD11	4:L:190:TRP:HZ3	1.87	0.40
3:G:206:ILE:HG12	3:G:208:ASN:ND2	2.36	0.40
2:J:73:LEU:HD22	2:J:74:LYS:HZ3	1.86	0.40
2:J:472:GLN:OE1	2:J:476:LYS:HB2	2.21	0.40
1:A:320:VAL:HB	1:A:590:CYS:SG	2.61	0.40
1:A:374:PHE:HD1	1:A:436:TRP:HB3	1.86	0.40
4:L:7:PRO:O	4:L:106:THR:HG22	2.22	0.40
4:L:168:THR:HA	4:L:169:PRO:HD3	1.93	0.40
2:J:374:HIS:O	2:J:378:HIS:CE1	2.75	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:J:476:LYS:HD2	2:J:476:LYS:HA	1.93	0.40
1:B:117:LEU:HD11	1:B:233:ILE:HD11	2.03	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	1054/1208 (87%)	1018 (97%)	35 (3%)	1 (0%)	48	78
1	B	1054/1208 (87%)	1030 (98%)	24 (2%)	0	100	100
1	C	1054/1208 (87%)	1025 (97%)	29 (3%)	0	100	100
2	E	594/597 (100%)	581 (98%)	13 (2%)	0	100	100
2	J	594/597 (100%)	575 (97%)	19 (3%)	0	100	100
2	M	594/597 (100%)	576 (97%)	18 (3%)	0	100	100
3	G	227/228 (100%)	219 (96%)	8 (4%)	0	100	100
3	H	227/228 (100%)	219 (96%)	8 (4%)	0	100	100
3	N	227/228 (100%)	219 (96%)	8 (4%)	0	100	100
4	I	211/214 (99%)	201 (95%)	10 (5%)	0	100	100
4	L	211/214 (99%)	199 (94%)	11 (5%)	1 (0%)	25	57
4	O	211/214 (99%)	199 (94%)	11 (5%)	1 (0%)	25	57
All	All	6258/6741 (93%)	6061 (97%)	194 (3%)	3 (0%)	100	100

All (3) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
4	O	111	LEU
1	A	527	PRO

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Mol	Chain	Res	Type
4	L	110	VAL

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	934/1056 (88%)	930 (100%)	4 (0%)	89 93
1	B	934/1056 (88%)	932 (100%)	2 (0%)	92 95
1	C	934/1056 (88%)	931 (100%)	3 (0%)	91 94
2	E	526/527 (100%)	524 (100%)	2 (0%)	89 93
2	J	526/527 (100%)	523 (99%)	3 (1%)	84 90
2	M	526/527 (100%)	524 (100%)	2 (0%)	89 93
3	G	186/186 (100%)	185 (100%)	1 (0%)	86 92
3	H	186/186 (100%)	184 (99%)	2 (1%)	70 80
3	N	186/186 (100%)	183 (98%)	3 (2%)	58 74
4	I	174/177 (98%)	172 (99%)	2 (1%)	70 80
4	L	174/177 (98%)	171 (98%)	3 (2%)	56 73
4	O	174/177 (98%)	171 (98%)	3 (2%)	56 73
All	All	5460/5838 (94%)	5430 (100%)	30 (0%)	85 92

All (30) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	21	ARG
1	A	524	VAL
1	A	528	LYS
1	A	529	LYS
1	B	21	ARG
1	B	529	LYS
1	C	21	ARG
1	C	523	THR
1	C	900	MET

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Mol	Chain	Res	Type
2	E	114	LYS
2	E	579	MET
3	H	140	LYS
3	H	212	LYS
4	L	110	VAL
4	L	111	LEU
4	L	194	ARG
3	G	140	LYS
4	I	109	THR
4	I	111	LEU
2	J	114	LYS
2	J	374	HIS
2	J	534	LYS
2	M	114	LYS
2	M	378	HIS
3	N	140	LYS
3	N	207[A]	CYS
3	N	207[B]	CYS
4	O	109	THR
4	O	110	VAL
4	O	111	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (99) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	52	GLN
1	A	137	ASN
1	A	165	ASN
1	A	183	GLN
1	A	218	GLN
1	A	271	GLN
1	A	474	GLN
1	A	493	GLN
1	A	506	GLN
1	A	613	GLN
1	A	703	ASN
1	A	751	ASN
1	A	762	GLN
1	A	920	GLN
1	A	926	GLN
1	A	1142	GLN
1	B	52	GLN

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Mol	Chain	Res	Type
1	B	81	ASN
1	B	137	ASN
1	B	165	ASN
1	B	183	GLN
1	B	196	ASN
1	B	218	GLN
1	B	271	GLN
1	B	460	ASN
1	B	532	ASN
1	B	580	GLN
1	B	613	GLN
1	B	703	ASN
1	B	751	ASN
1	B	762	GLN
1	B	926	GLN
1	B	1142	GLN
1	C	52	GLN
1	C	137	ASN
1	C	165	ASN
1	C	183	GLN
1	C	196	ASN
1	C	218	GLN
1	C	271	GLN
1	C	314	GLN
1	C	439	ASN
1	C	474	GLN
1	C	493	GLN
1	C	506	GLN
1	C	532	ASN
1	C	580	GLN
1	C	613	GLN
1	C	703	ASN
1	C	751	ASN
1	C	762	GLN
1	C	926	GLN
1	C	992	GLN
1	C	1054	GLN
1	C	1142	GLN
2	E	33	ASN
2	E	49	ASN
2	E	98	GLN
2	E	101	GLN

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Mol	Chain	Res	Type
2	E	134	ASN
2	E	188	ASN
2	E	325	GLN
2	E	345	HIS
2	E	432	ASN
2	E	442	GLN
3	H	208	ASN
3	H	210	ASN
4	L	16	GLN
3	G	39	GLN
3	G	208	ASN
3	G	210	ASN
4	I	55	ASN
2	J	51	ASN
2	J	63	ASN
2	J	98	GLN
2	J	101	GLN
2	J	134	ASN
2	J	325	GLN
2	J	432	ASN
2	J	442	GLN
2	J	522	GLN
2	J	572	ASN
2	J	599	ASN
2	M	33	ASN
2	M	51	ASN
2	M	63	ASN
2	M	98	GLN
2	M	101	GLN
2	M	188	ASN
2	M	325	GLN
2	M	442	GLN
2	M	522	GLN
2	M	572	ASN
2	M	599	ASN
3	N	3	GLN
3	N	166	ASN
3	N	208	ASN
4	O	16	GLN
4	O	189	GLN

5.3.3 RNA

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains

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

5.5 Carbohydrates

12 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	$\#\|Z\| > 2$
5	NAG	D	1	1,5	14,14,15	0.20	0	17,19,21	0.39	0
5	NAG	D	2	5	14,14,15	0.22	0	17,19,21	0.42	0
5	NAG	F	1	1,5	14,14,15	0.22	0	17,19,21	0.41	0
5	NAG	F	2	5	14,14,15	0.22	0	17,19,21	0.43	0
5	NAG	K	1	1,5	14,14,15	0.20	0	17,19,21	0.40	0
5	NAG	K	2	5	14,14,15	0.23	0	17,19,21	0.43	0
5	NAG	P	1	1,5	14,14,15	0.20	0	17,19,21	0.40	0
5	NAG	P	2	5	14,14,15	0.22	0	17,19,21	0.43	0
5	NAG	Q	1	1,5	14,14,15	0.20	0	17,19,21	0.39	0
5	NAG	Q	2	5	14,14,15	0.22	0	17,19,21	0.41	0
5	NAG	R	1	1,5	14,14,15	0.21	0	17,19,21	0.39	0
5	NAG	R	2	5	14,14,15	0.23	0	17,19,21	0.44	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
5	NAG	D	1	1,5	-	0/6/23/26	0/1/1/1
5	NAG	D	2	5	-	2/6/23/26	0/1/1/1
5	NAG	F	1	1,5	-	2/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
5	NAG	F	2	5	-	2/6/23/26	0/1/1/1
5	NAG	K	1	1,5	-	0/6/23/26	0/1/1/1
5	NAG	K	2	5	-	2/6/23/26	0/1/1/1
5	NAG	P	1	1,5	-	2/6/23/26	0/1/1/1
5	NAG	P	2	5	-	2/6/23/26	0/1/1/1
5	NAG	Q	1	1,5	-	0/6/23/26	0/1/1/1
5	NAG	Q	2	5	-	2/6/23/26	0/1/1/1
5	NAG	R	1	1,5	-	2/6/23/26	0/1/1/1
5	NAG	R	2	5	-	2/6/23/26	0/1/1/1

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (18) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	P	1	NAG	O5-C5-C6-O6
5	R	1	NAG	O5-C5-C6-O6
5	F	1	NAG	O5-C5-C6-O6
5	Q	2	NAG	O5-C5-C6-O6
5	K	2	NAG	O5-C5-C6-O6
5	P	1	NAG	C4-C5-C6-O6
5	R	1	NAG	C4-C5-C6-O6
5	F	1	NAG	C4-C5-C6-O6
5	D	2	NAG	O5-C5-C6-O6
5	K	2	NAG	C4-C5-C6-O6
5	Q	2	NAG	C4-C5-C6-O6
5	D	2	NAG	C4-C5-C6-O6
5	R	2	NAG	C4-C5-C6-O6
5	P	2	NAG	C4-C5-C6-O6
5	F	2	NAG	C4-C5-C6-O6
5	R	2	NAG	O5-C5-C6-O6
5	P	2	NAG	O5-C5-C6-O6
5	F	2	NAG	O5-C5-C6-O6

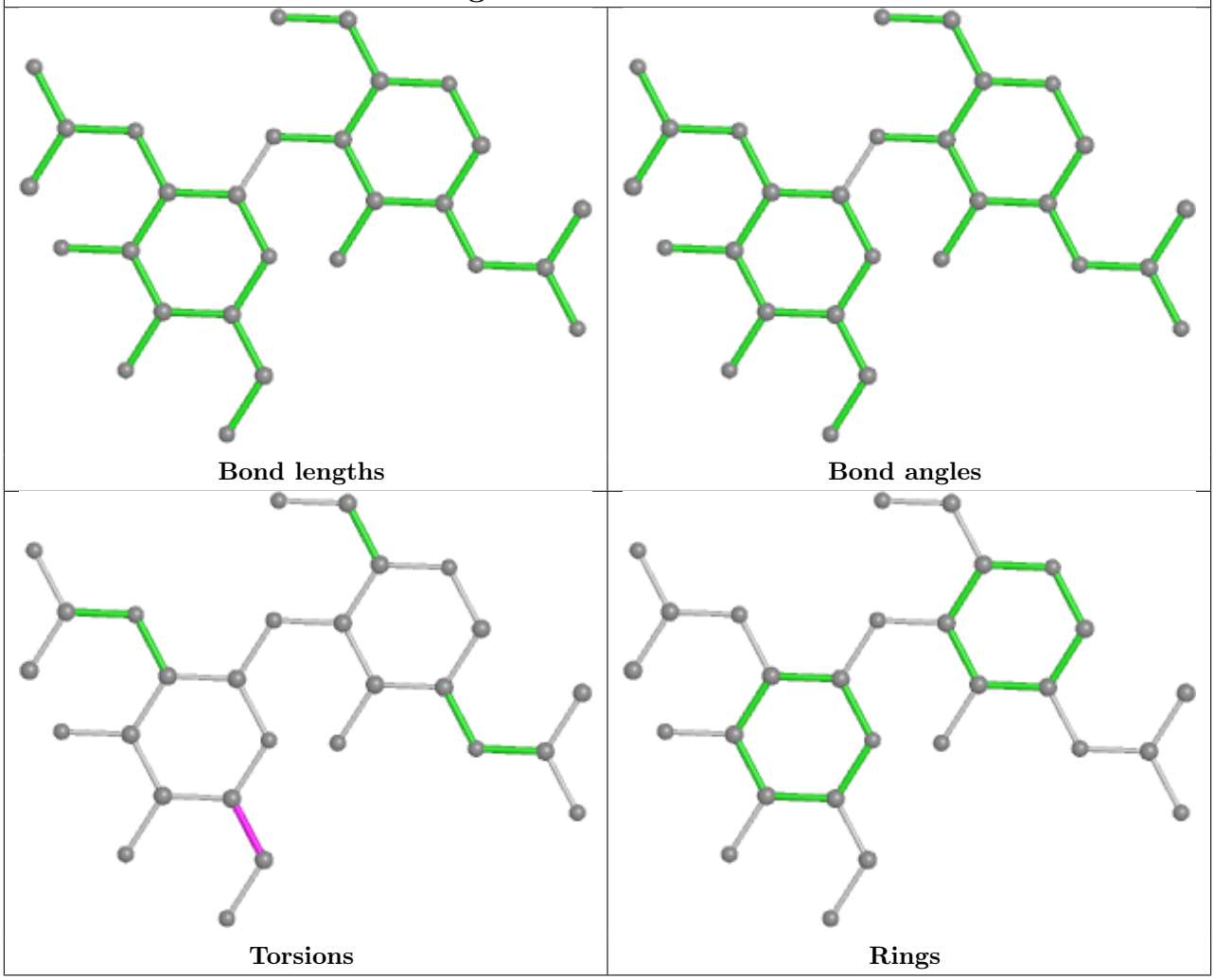
There are no ring outliers.

3 monomers are involved in 3 short contacts:

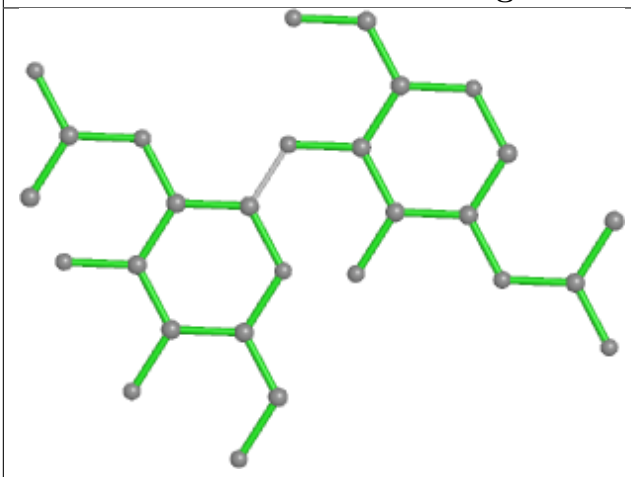
Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	K	1	NAG	1	0
5	D	1	NAG	1	0
5	Q	1	NAG	1	0

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

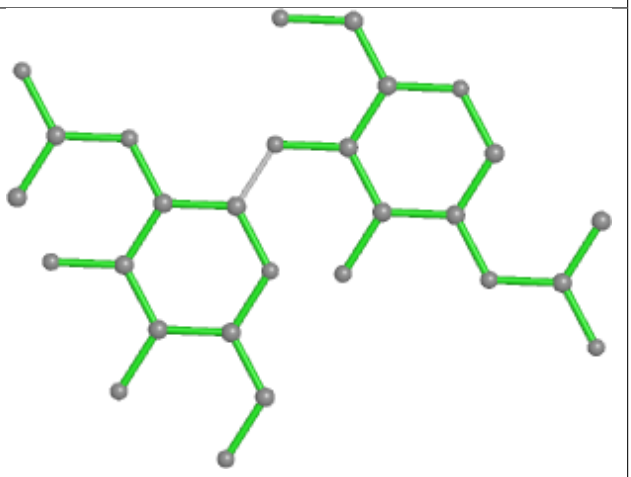
Oligosaccharide Chain D



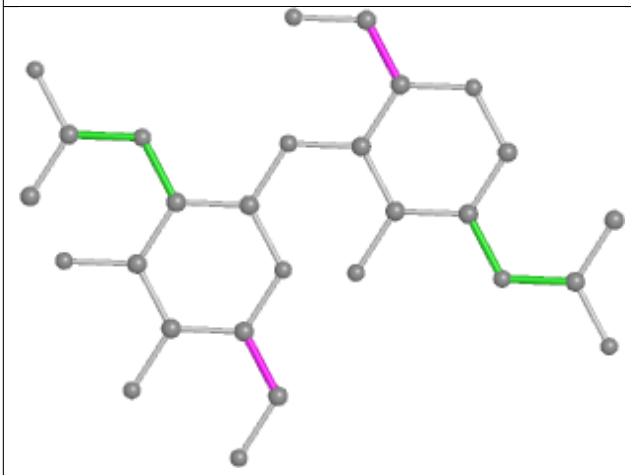
Oligosaccharide Chain F



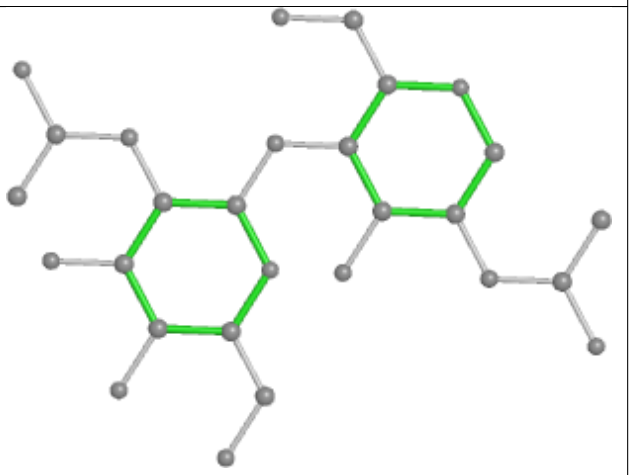
Bond lengths



Bond angles

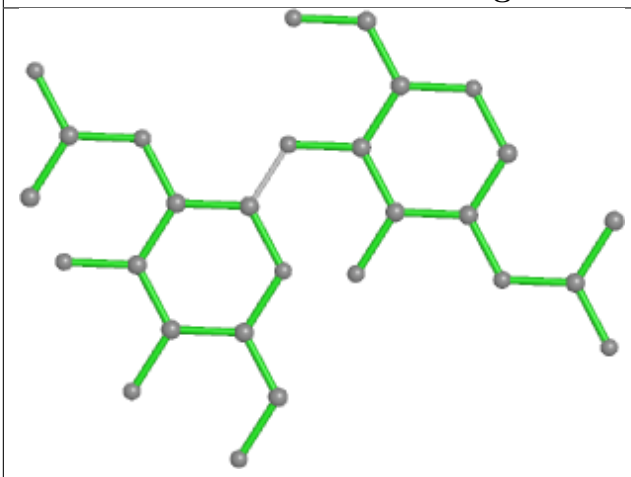


Torsions

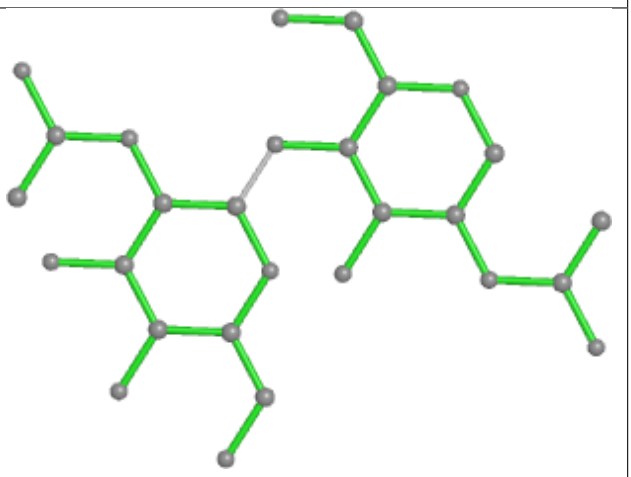


Rings

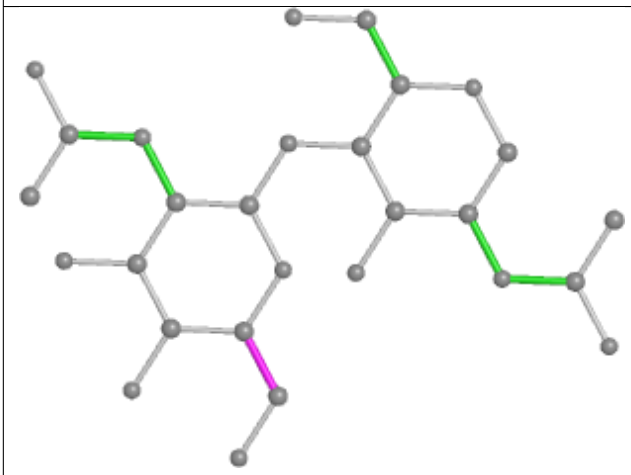
Oligosaccharide Chain K



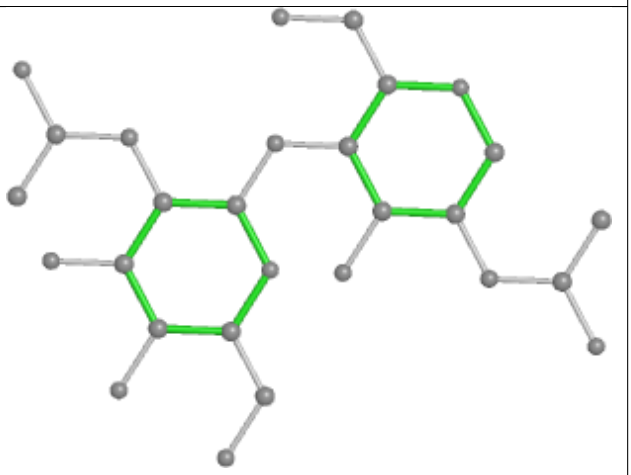
Bond lengths



Bond angles

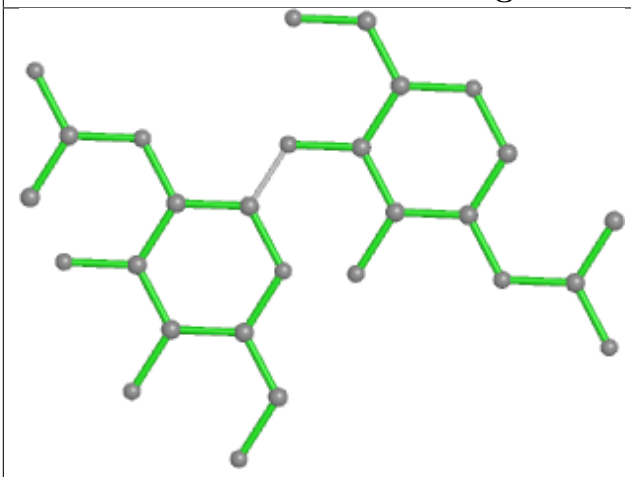


Torsions

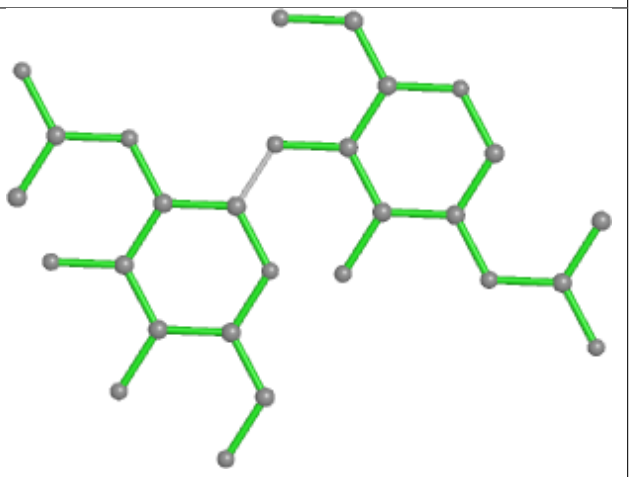


Rings

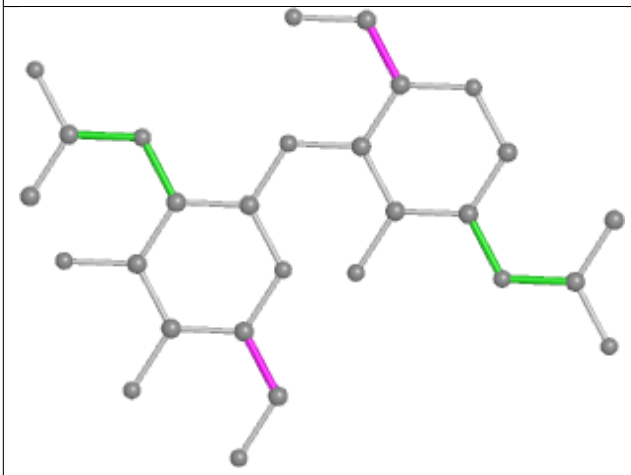
Oligosaccharide Chain P



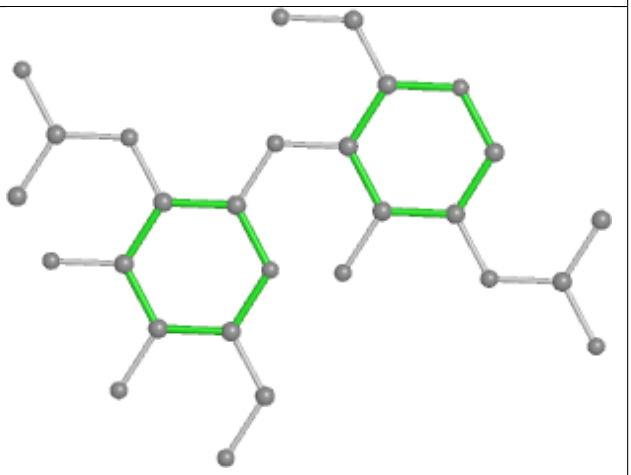
Bond lengths



Bond angles

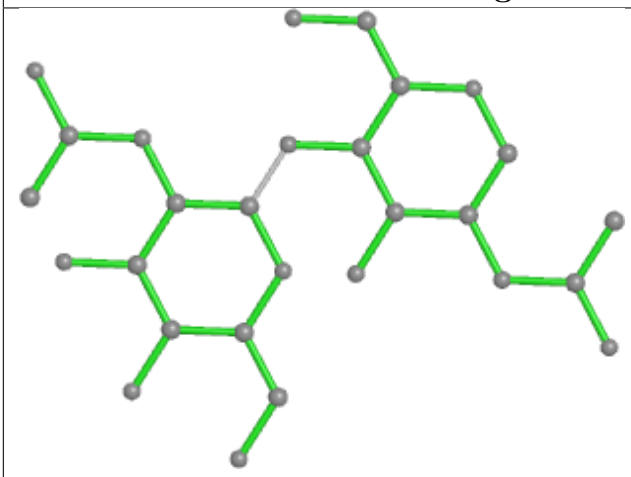


Torsions

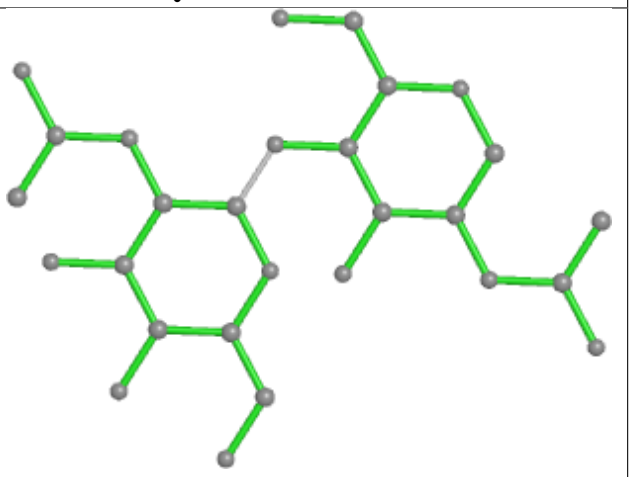


Rings

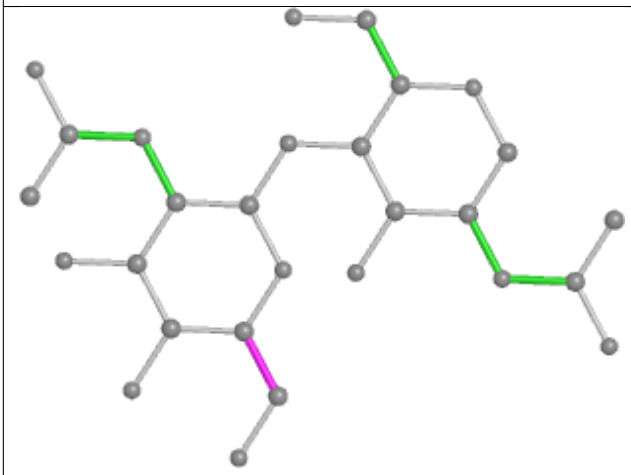
Oligosaccharide Chain Q



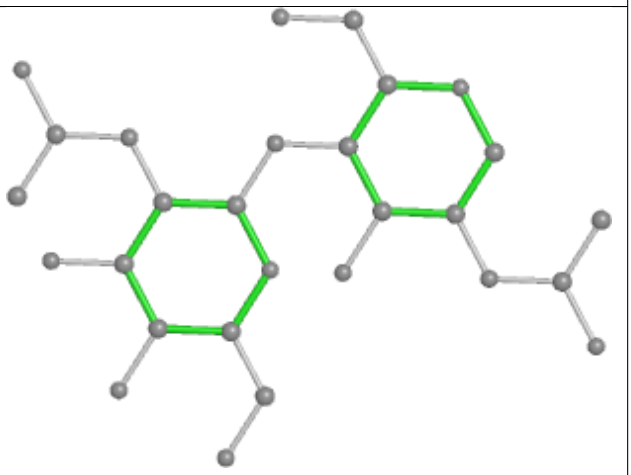
Bond lengths



Bond angles

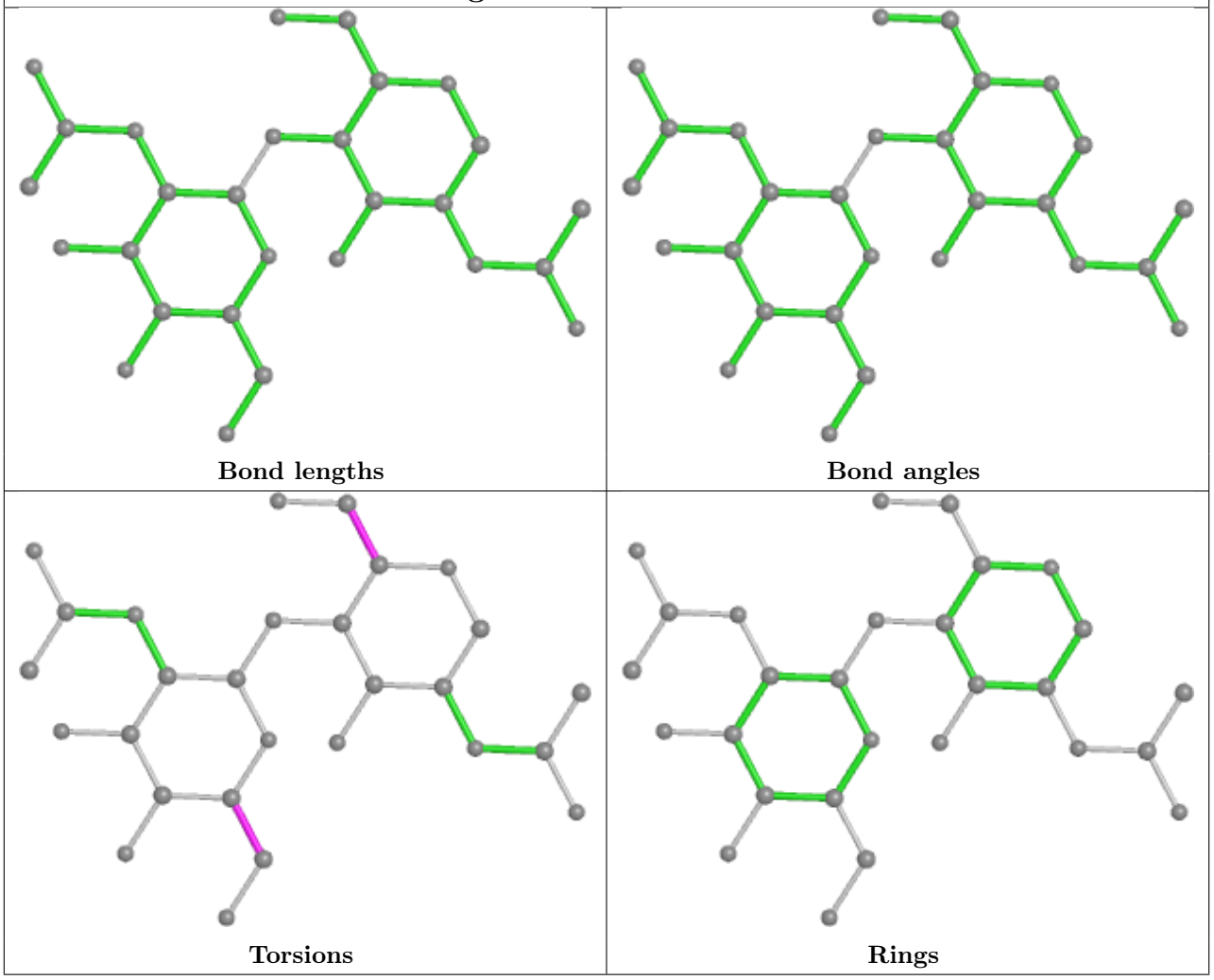


Torsions



Rings

Oligosaccharide Chain R



5.6 Ligand geometry (i)

Of 39 ligands modelled in this entry, 3 are monoatomic - leaving 36 for Mogul analysis.

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	$\#\|Z\| > 2$
6	NAG	C	1308	1	14,14,15	0.22	0	17,19,21	0.40	0
6	NAG	E	902	2	14,14,15	0.23	0	17,19,21	0.41	0
6	NAG	B	1305	1	14,14,15	0.24	0	17,19,21	0.43	0
6	NAG	B	1303	1	14,14,15	0.29	0	17,19,21	0.37	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
6	NAG	C	1305	1	14,14,15	0.25	0	17,19,21	0.41	0
6	NAG	J	903	2	14,14,15	0.24	0	17,19,21	0.44	0
6	NAG	A	1306	1	14,14,15	0.25	0	17,19,21	0.44	0
6	NAG	B	1308	1	14,14,15	0.23	0	17,19,21	0.40	0
6	NAG	E	903	2	14,14,15	0.23	0	17,19,21	0.45	0
6	NAG	C	1307	1	14,14,15	0.26	0	17,19,21	0.34	0
6	NAG	B	1301	1	14,14,15	0.26	0	17,19,21	0.48	0
6	NAG	C	1301	1	14,14,15	0.22	0	17,19,21	0.46	0
6	NAG	M	902	2	14,14,15	0.23	0	17,19,21	0.48	0
6	NAG	A	1305	1	14,14,15	0.23	0	17,19,21	0.43	0
6	NAG	J	902	2	14,14,15	0.22	0	17,19,21	0.47	0
6	NAG	J	905	2	14,14,15	0.25	0	17,19,21	0.42	0
6	NAG	C	1304	1	14,14,15	0.24	0	17,19,21	0.41	0
6	NAG	B	1306	1	14,14,15	0.22	0	17,19,21	0.41	0
6	NAG	C	1306	1	14,14,15	0.22	0	17,19,21	0.42	0
6	NAG	A	1304	1	14,14,15	0.45	0	17,19,21	0.43	0
6	NAG	E	905	2	14,14,15	0.23	0	17,19,21	0.41	0
6	NAG	M	905	2	14,14,15	0.24	0	17,19,21	0.43	0
6	NAG	A	1301	1	14,14,15	0.27	0	17,19,21	0.48	0
6	NAG	C	1302	1	14,14,15	0.25	0	17,19,21	0.45	0
6	NAG	C	1303	1	14,14,15	0.30	0	17,19,21	0.38	0
6	NAG	E	904	2	14,14,15	0.27	0	17,19,21	0.41	0
6	NAG	A	1302	1	14,14,15	0.23	0	17,19,21	0.63	0
6	NAG	B	1304	1	14,14,15	0.25	0	17,19,21	0.41	0
6	NAG	A	1308	1	14,14,15	0.23	0	17,19,21	0.41	0
6	NAG	M	903	2	14,14,15	0.25	0	17,19,21	0.42	0
6	NAG	A	1303	1	14,14,15	0.30	0	17,19,21	0.37	0
6	NAG	B	1307	1	14,14,15	0.26	0	17,19,21	0.33	0
6	NAG	B	1302	1	14,14,15	0.24	0	17,19,21	0.45	0
6	NAG	J	904	2	14,14,15	0.24	0	17,19,21	0.42	0
6	NAG	A	1307	1	14,14,15	0.26	0	17,19,21	0.33	0
6	NAG	M	904	2	14,14,15	0.24	0	17,19,21	0.43	0

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
6	NAG	C	1308	1	-	0/6/23/26	0/1/1/1
6	NAG	E	902	2	-	1/6/23/26	0/1/1/1
6	NAG	B	1305	1	-	2/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
6	NAG	B	1303	1	-	2/6/23/26	0/1/1/1
6	NAG	C	1305	1	-	2/6/23/26	0/1/1/1
6	NAG	J	903	2	-	2/6/23/26	0/1/1/1
6	NAG	A	1306	1	-	0/6/23/26	0/1/1/1
6	NAG	B	1308	1	-	0/6/23/26	0/1/1/1
6	NAG	E	903	2	-	2/6/23/26	0/1/1/1
6	NAG	C	1307	1	-	2/6/23/26	0/1/1/1
6	NAG	B	1301	1	-	2/6/23/26	0/1/1/1
6	NAG	C	1301	1	-	2/6/23/26	0/1/1/1
6	NAG	M	902	2	-	2/6/23/26	0/1/1/1
6	NAG	A	1305	1	-	2/6/23/26	0/1/1/1
6	NAG	J	902	2	-	2/6/23/26	0/1/1/1
6	NAG	J	905	2	-	0/6/23/26	0/1/1/1
6	NAG	C	1304	1	-	2/6/23/26	0/1/1/1
6	NAG	B	1306	1	-	0/6/23/26	0/1/1/1
6	NAG	C	1306	1	-	0/6/23/26	0/1/1/1
6	NAG	A	1304	1	-	2/6/23/26	0/1/1/1
6	NAG	E	905	2	-	0/6/23/26	0/1/1/1
6	NAG	M	905	2	-	0/6/23/26	0/1/1/1
6	NAG	A	1301	1	-	2/6/23/26	0/1/1/1
6	NAG	C	1302	1	-	4/6/23/26	0/1/1/1
6	NAG	C	1303	1	-	2/6/23/26	0/1/1/1
6	NAG	E	904	2	-	0/6/23/26	0/1/1/1
6	NAG	A	1302	1	-	4/6/23/26	0/1/1/1
6	NAG	B	1304	1	-	2/6/23/26	0/1/1/1
6	NAG	A	1308	1	-	0/6/23/26	0/1/1/1
6	NAG	M	903	2	-	2/6/23/26	0/1/1/1
6	NAG	A	1303	1	-	2/6/23/26	0/1/1/1
6	NAG	B	1307	1	-	2/6/23/26	0/1/1/1
6	NAG	B	1302	1	-	4/6/23/26	0/1/1/1
6	NAG	J	904	2	-	2/6/23/26	0/1/1/1
6	NAG	A	1307	1	-	2/6/23/26	0/1/1/1
6	NAG	M	904	2	-	2/6/23/26	0/1/1/1

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (57) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
6	J	904	NAG	O5-C5-C6-O6
6	M	904	NAG	O5-C5-C6-O6
6	J	902	NAG	O5-C5-C6-O6
6	M	902	NAG	O5-C5-C6-O6
6	B	1305	NAG	C4-C5-C6-O6
6	E	903	NAG	O5-C5-C6-O6
6	A	1305	NAG	O5-C5-C6-O6
6	B	1302	NAG	O5-C5-C6-O6
6	C	1302	NAG	O5-C5-C6-O6
6	C	1305	NAG	O5-C5-C6-O6
6	J	902	NAG	C4-C5-C6-O6
6	M	902	NAG	C4-C5-C6-O6
6	A	1302	NAG	C4-C5-C6-O6
6	B	1303	NAG	C4-C5-C6-O6
6	A	1303	NAG	C4-C5-C6-O6
6	C	1303	NAG	C4-C5-C6-O6
6	J	904	NAG	C4-C5-C6-O6
6	M	904	NAG	C4-C5-C6-O6
6	B	1305	NAG	O5-C5-C6-O6
6	C	1301	NAG	O5-C5-C6-O6
6	B	1303	NAG	O5-C5-C6-O6
6	C	1303	NAG	O5-C5-C6-O6
6	A	1302	NAG	O5-C5-C6-O6
6	A	1303	NAG	O5-C5-C6-O6
6	B	1307	NAG	O5-C5-C6-O6
6	B	1304	NAG	O5-C5-C6-O6
6	C	1304	NAG	O5-C5-C6-O6
6	C	1301	NAG	C4-C5-C6-O6
6	A	1302	NAG	C8-C7-N2-C2
6	A	1302	NAG	O7-C7-N2-C2
6	B	1302	NAG	C8-C7-N2-C2
6	B	1302	NAG	O7-C7-N2-C2
6	C	1302	NAG	C8-C7-N2-C2
6	C	1302	NAG	O7-C7-N2-C2
6	A	1307	NAG	O5-C5-C6-O6
6	E	903	NAG	C4-C5-C6-O6
6	B	1302	NAG	C4-C5-C6-O6
6	C	1307	NAG	O5-C5-C6-O6
6	M	903	NAG	O5-C5-C6-O6
6	J	903	NAG	O5-C5-C6-O6

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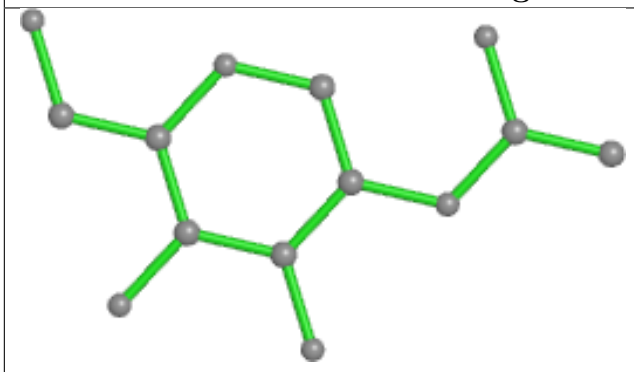
Mol	Chain	Res	Type	Atoms
6	C	1302	NAG	C4-C5-C6-O6
6	B	1304	NAG	C4-C5-C6-O6
6	C	1304	NAG	C4-C5-C6-O6
6	C	1305	NAG	C4-C5-C6-O6
6	A	1305	NAG	C4-C5-C6-O6
6	M	903	NAG	C4-C5-C6-O6
6	J	903	NAG	C4-C5-C6-O6
6	A	1304	NAG	O5-C5-C6-O6
6	A	1304	NAG	C4-C5-C6-O6
6	E	902	NAG	O5-C5-C6-O6
6	A	1301	NAG	C4-C5-C6-O6
6	B	1301	NAG	C4-C5-C6-O6
6	B	1307	NAG	C4-C5-C6-O6
6	A	1307	NAG	C4-C5-C6-O6
6	A	1301	NAG	O5-C5-C6-O6
6	B	1301	NAG	O5-C5-C6-O6
6	C	1307	NAG	C4-C5-C6-O6

There are no ring outliers.

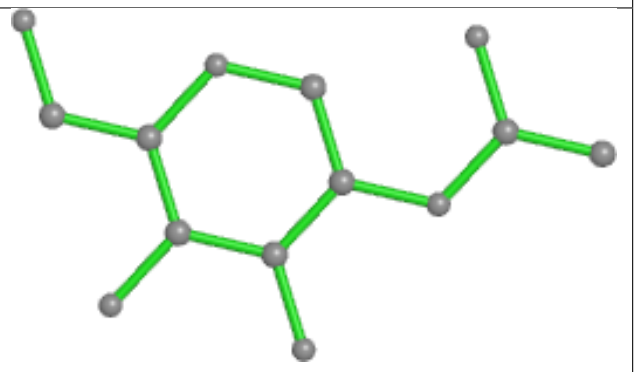
No monomer is involved in short contacts.

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

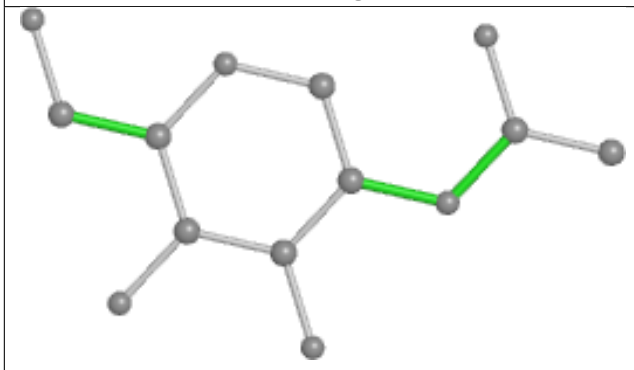
Ligand NAG C 1308



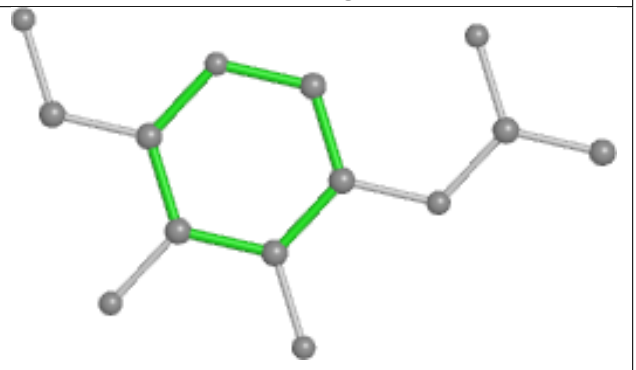
Bond lengths



Bond angles

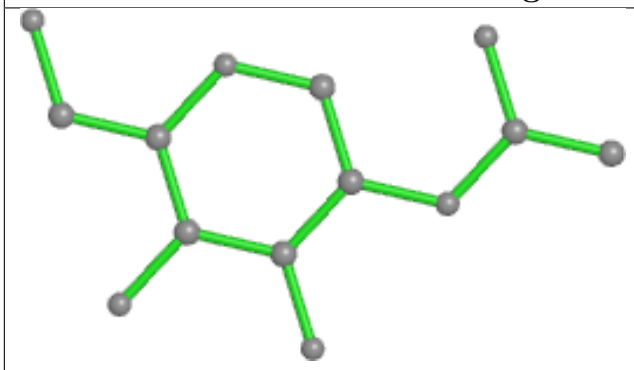


Torsions

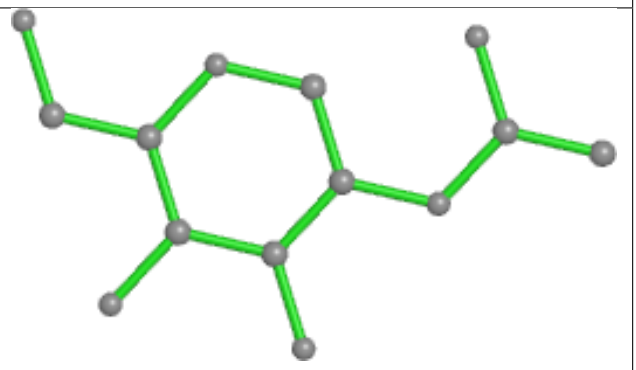


Rings

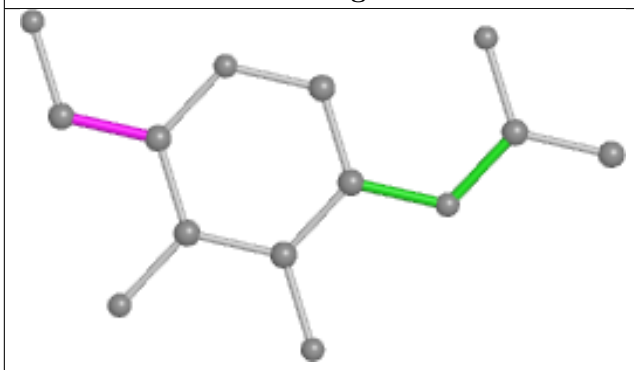
Ligand NAG E 902



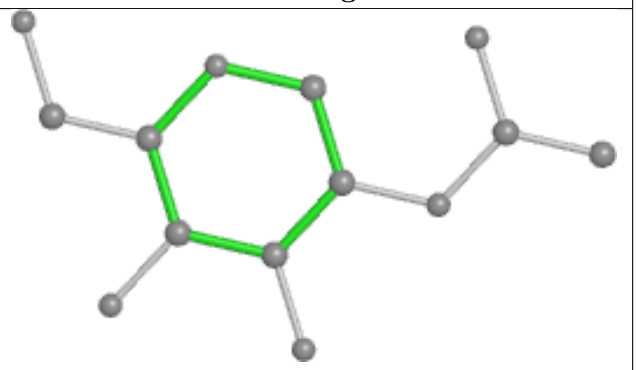
Bond lengths



Bond angles

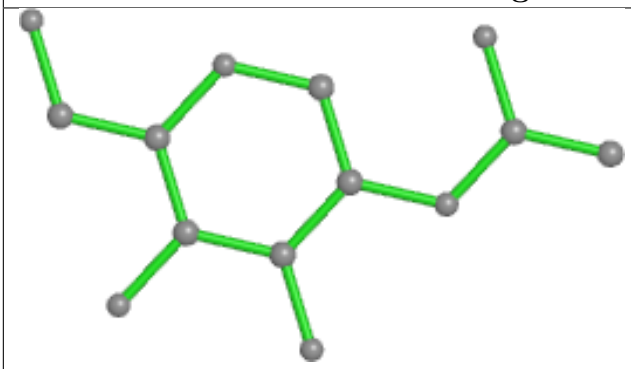


Torsions

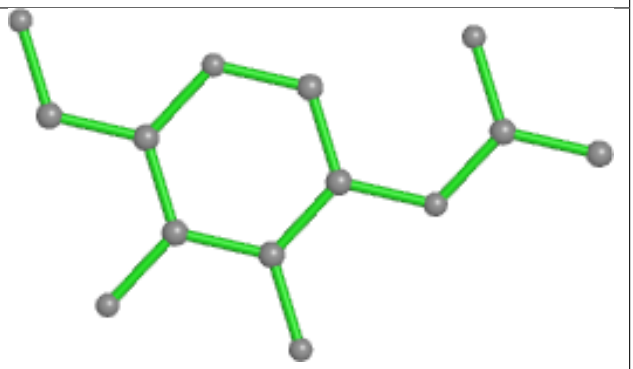


Rings

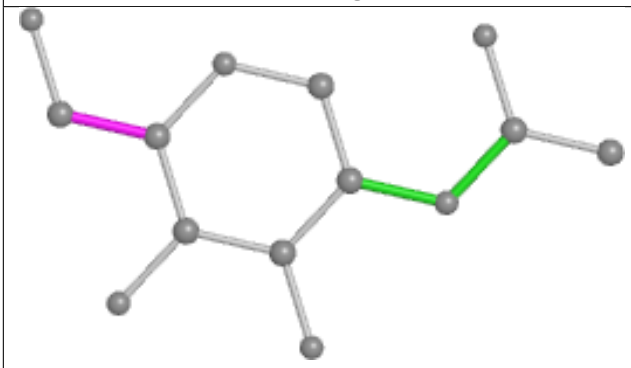
Ligand NAG B 1305



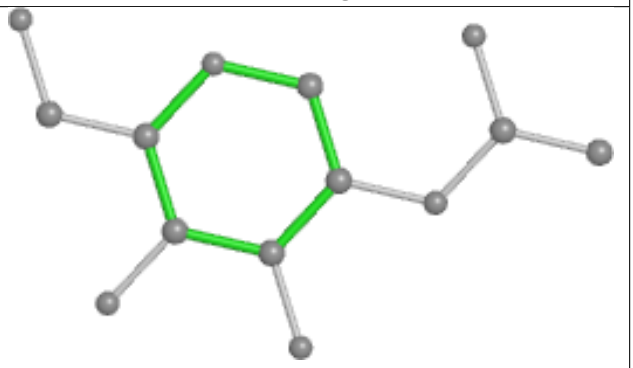
Bond lengths



Bond angles

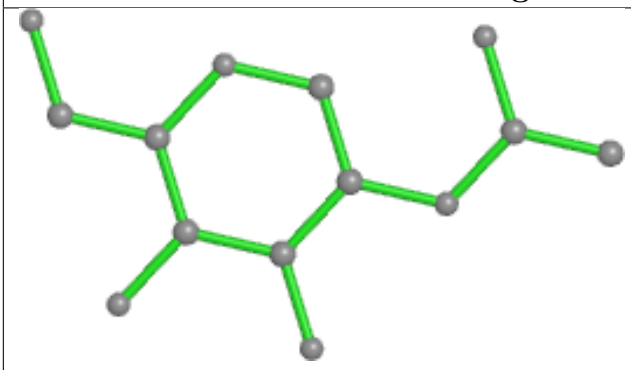


Torsions

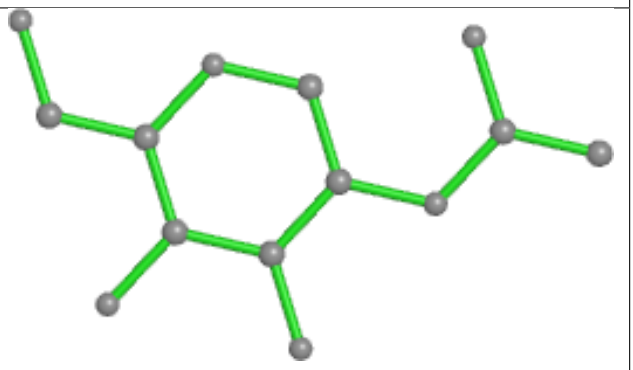


Rings

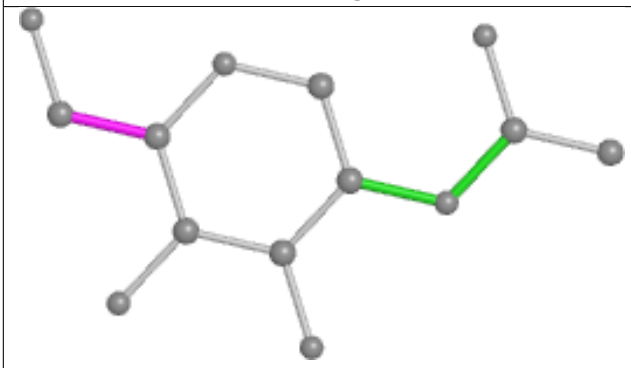
Ligand NAG B 1303



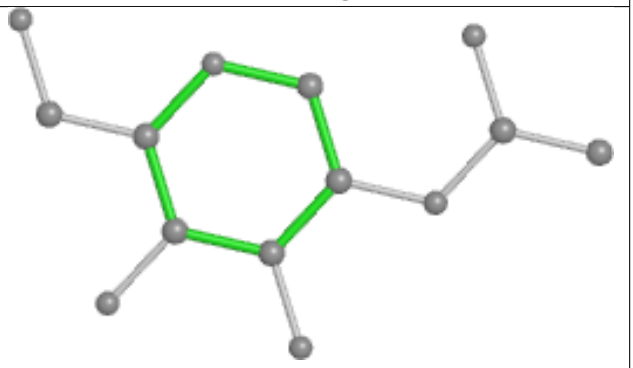
Bond lengths



Bond angles

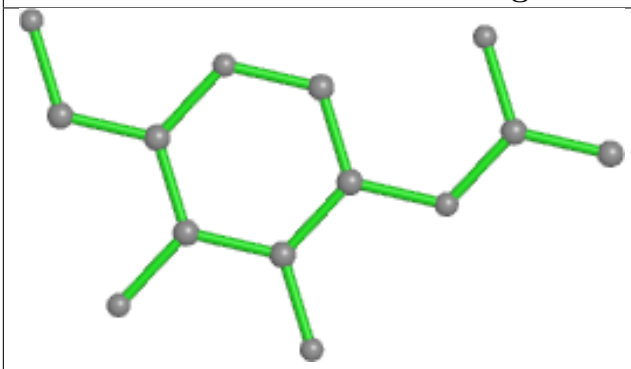


Torsions

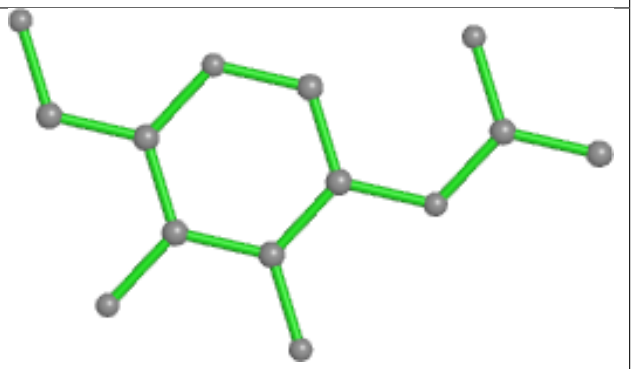


Rings

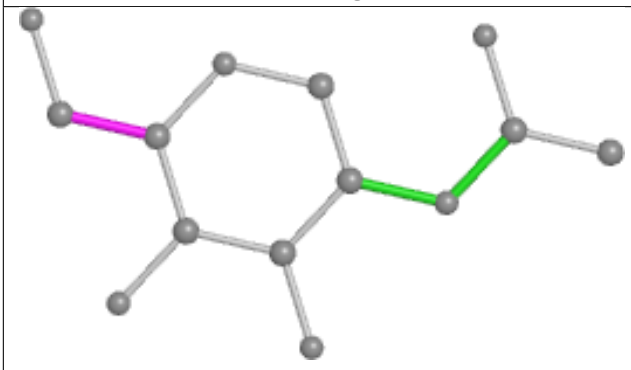
Ligand NAG C 1305



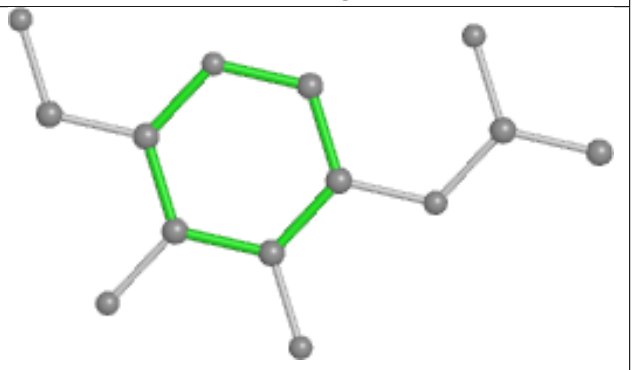
Bond lengths



Bond angles

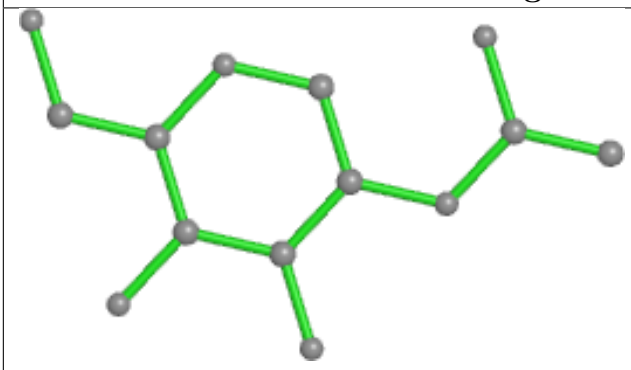


Torsions

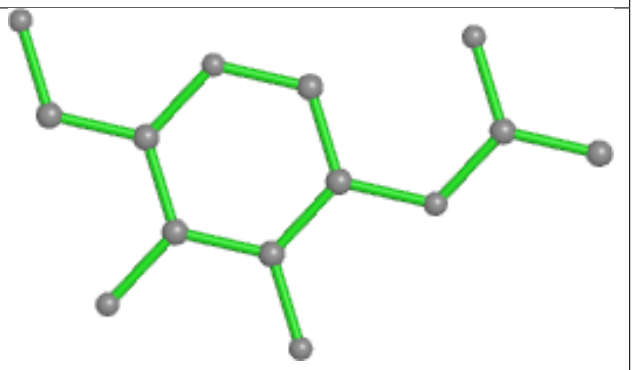


Rings

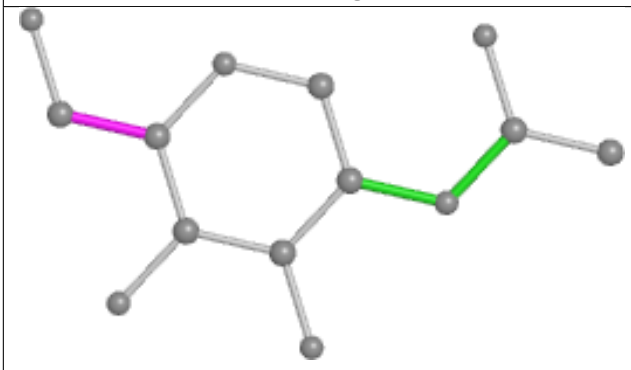
Ligand NAG J 903



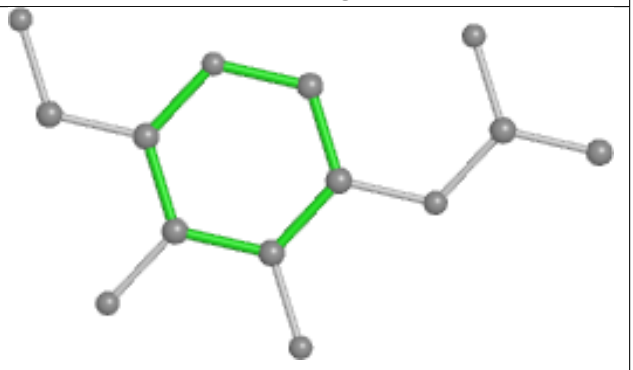
Bond lengths



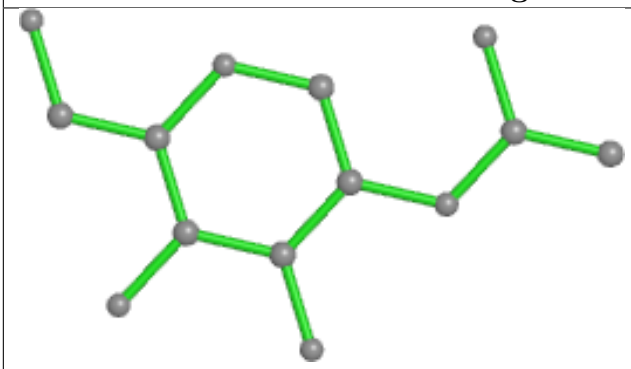
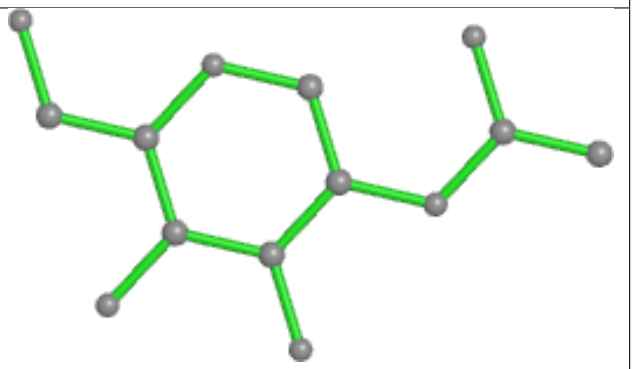
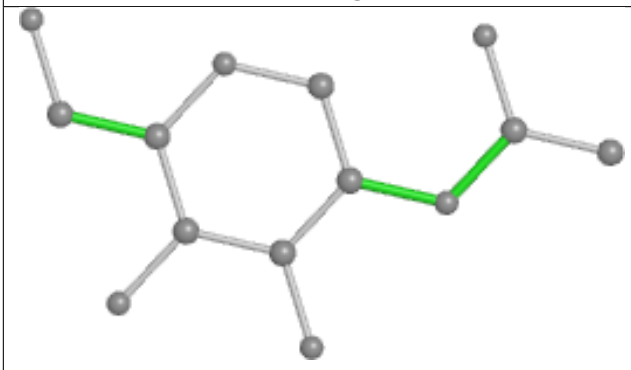
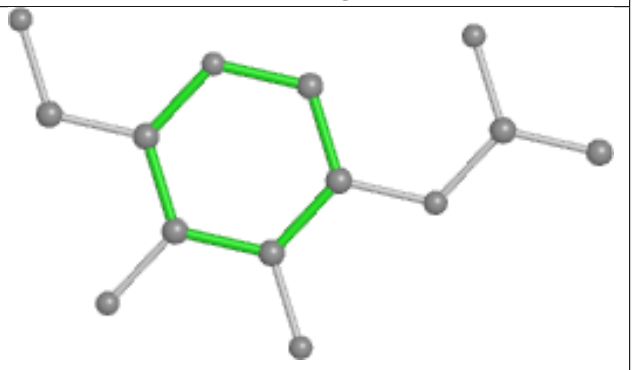
Bond angles

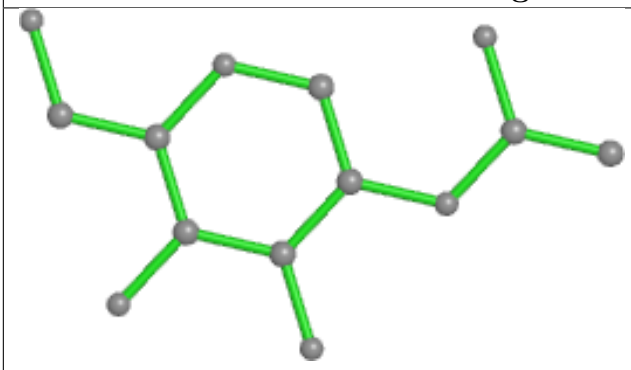
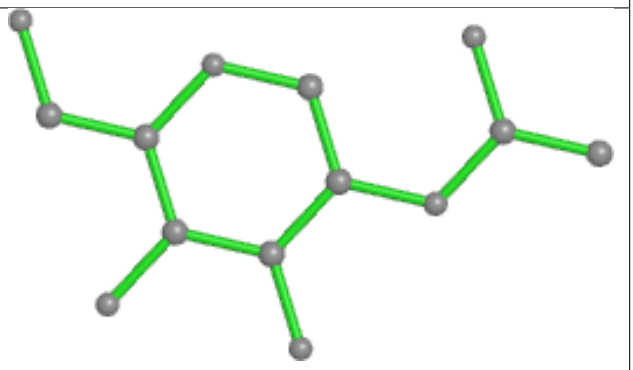
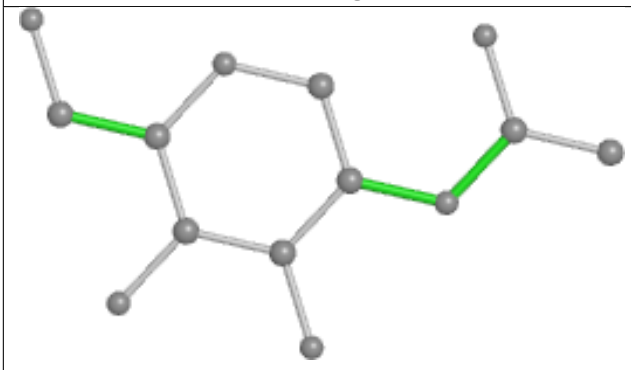
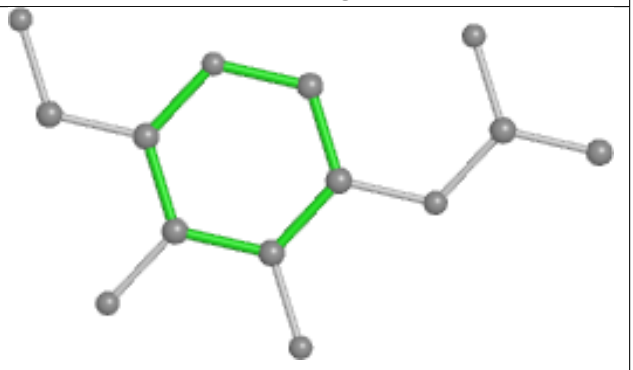


Torsions

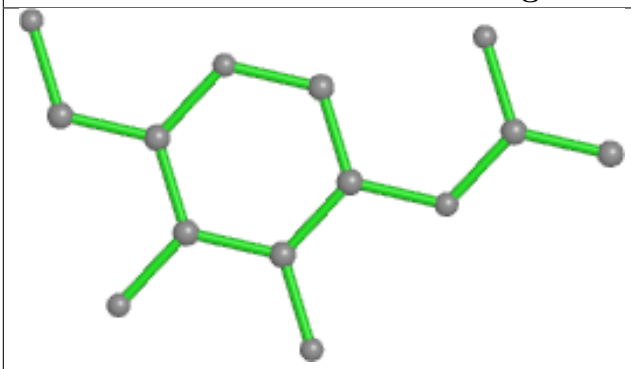


Rings

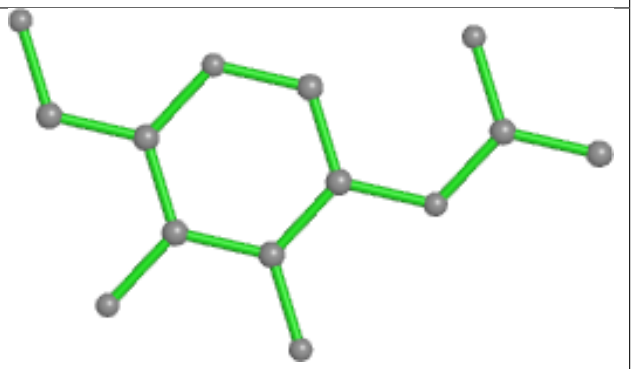
Ligand NAG A 1306	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand NAG B 1308	
 Bond lengths	 Bond angles
 Torsions	 Rings

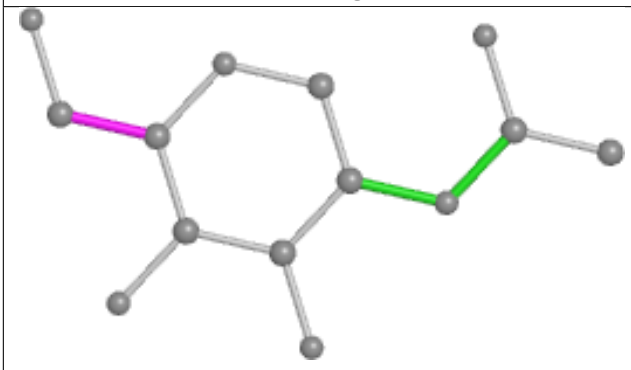
Ligand NAG E 903



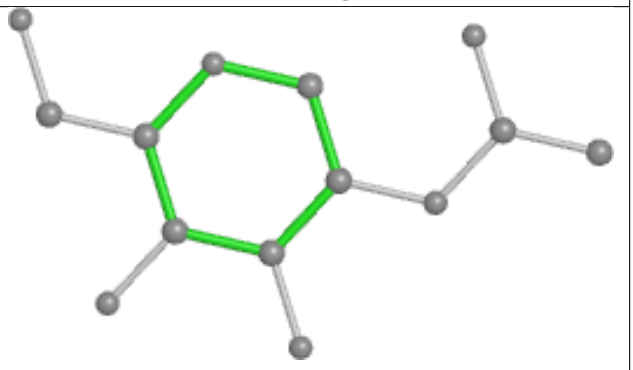
Bond lengths



Bond angles

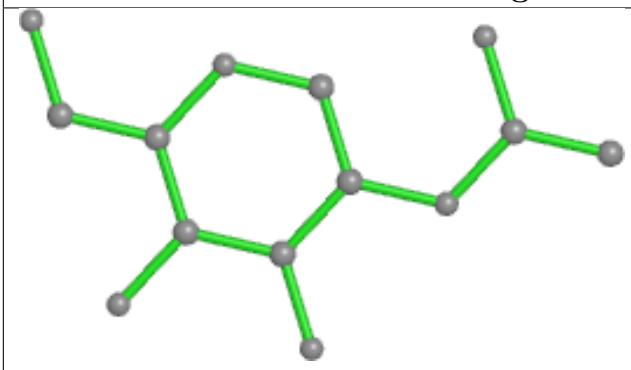


Torsions



Rings

Ligand NAG C 1307



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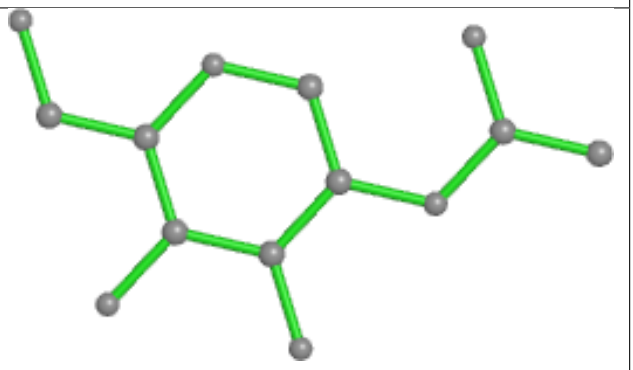
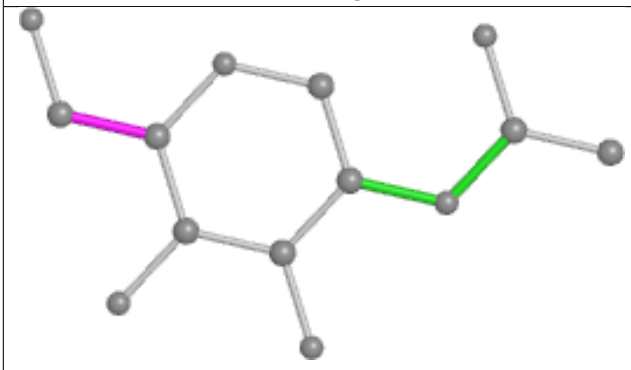


Bond angles



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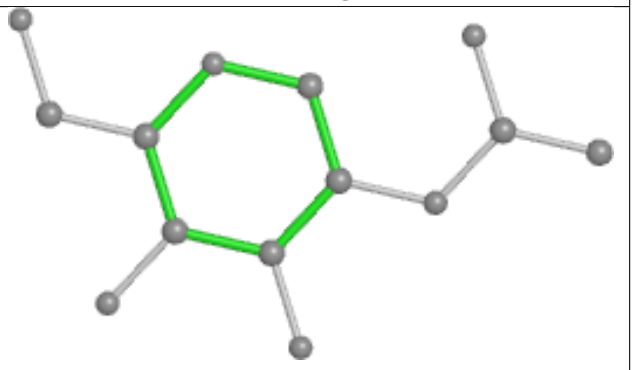
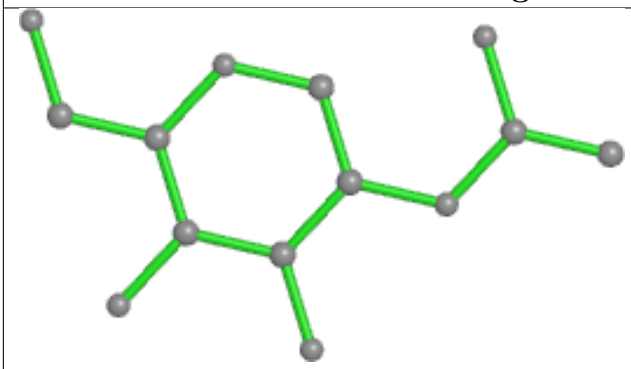


Rings

Ligand NAG B 1301



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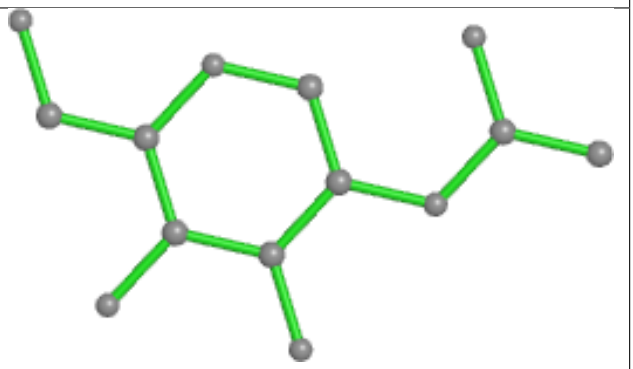
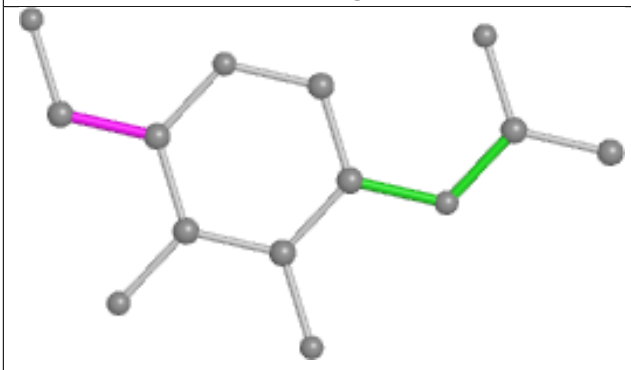


Bond angles



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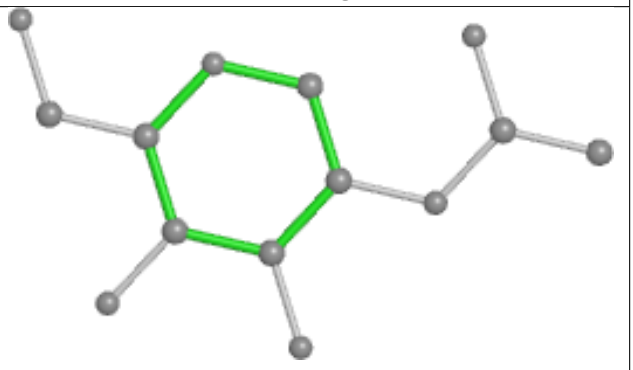
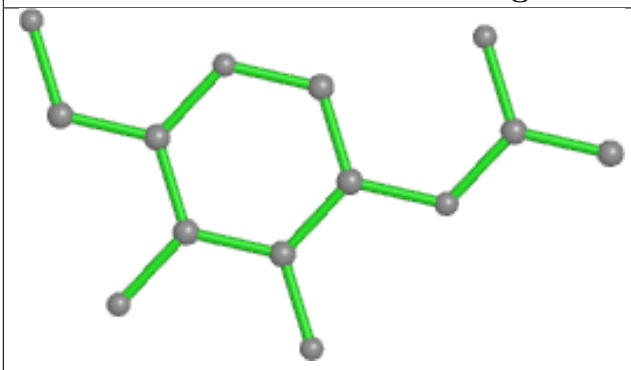


Rings

Ligand NAG C 1301



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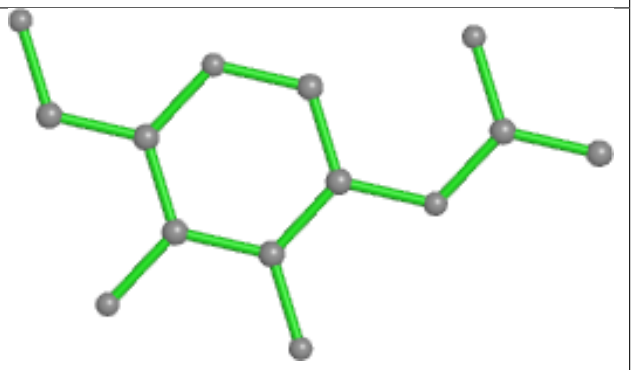
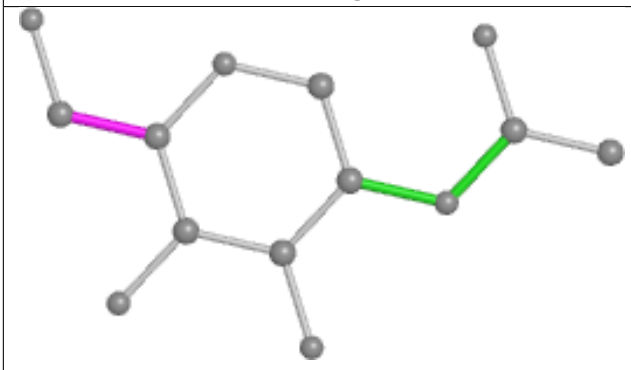
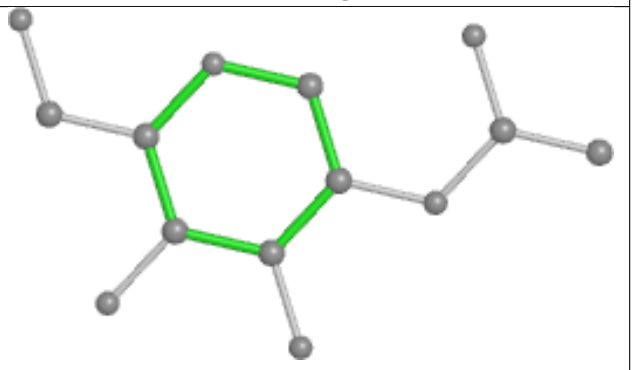


Bond angles

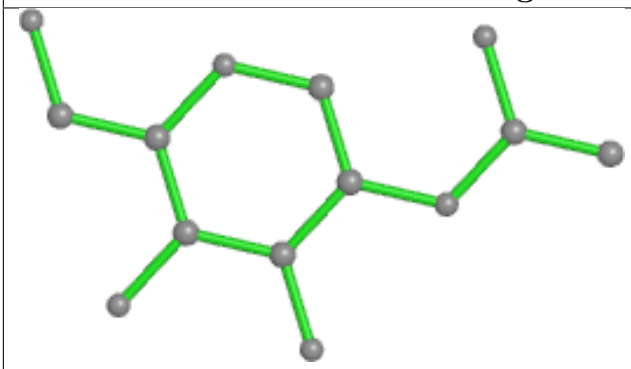


Torsions

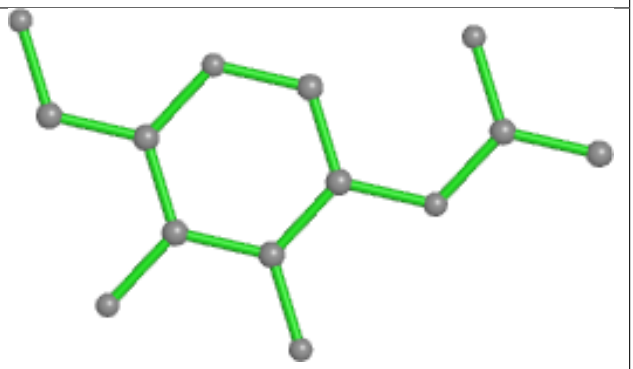


Rings

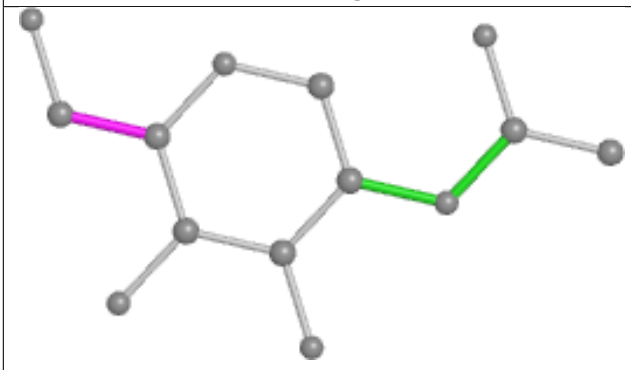
Ligand NAG M 902



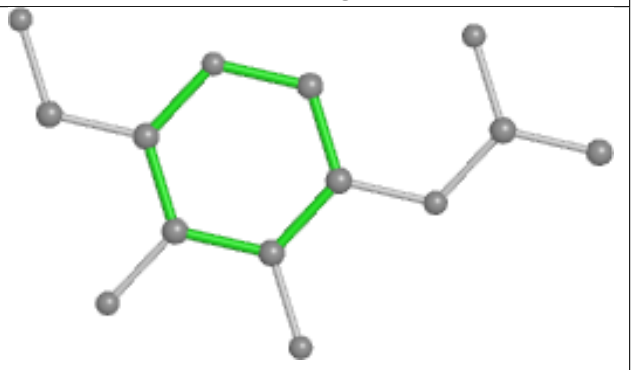
Bond lengths



Bond angles

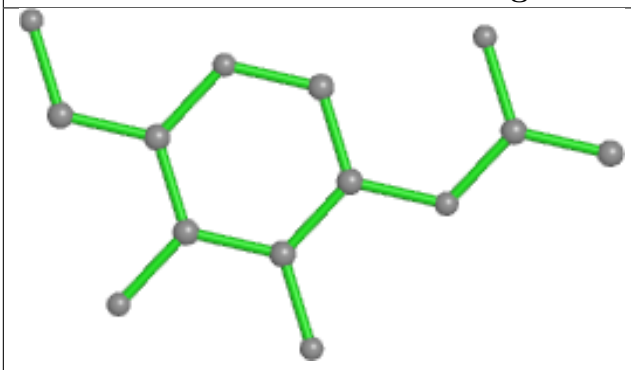


Torsions

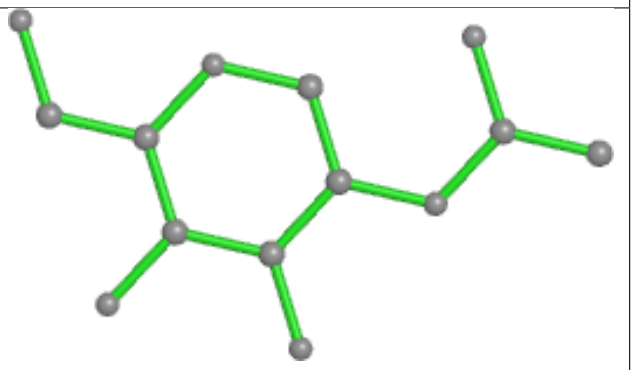


Rings

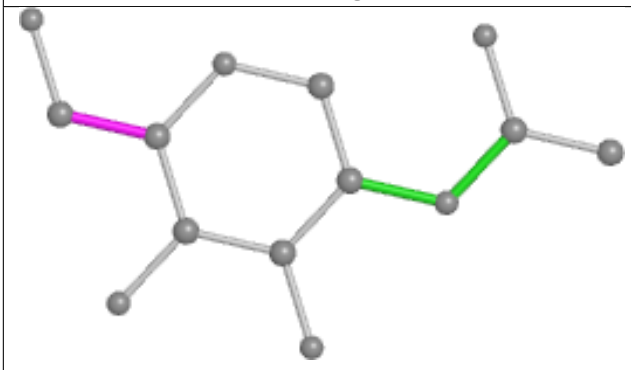
Ligand NAG A 1305



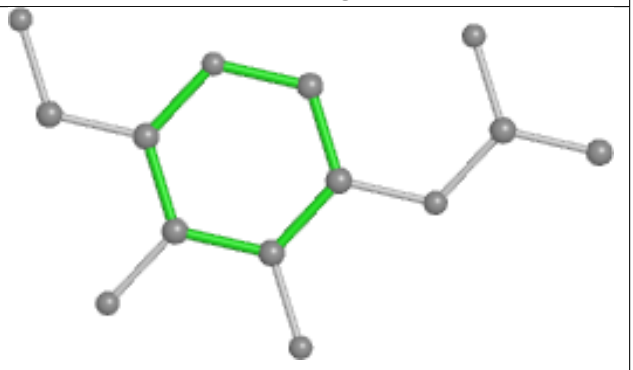
Bond lengths



Bond angles

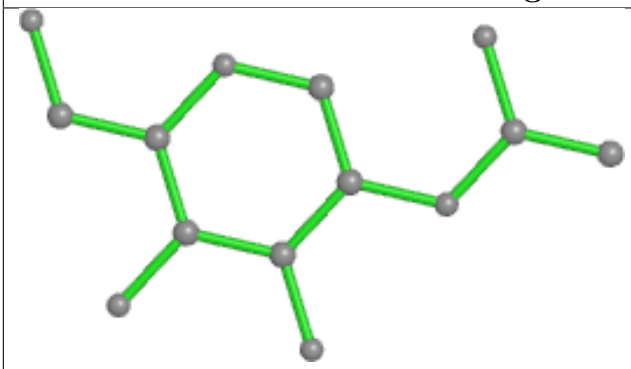


Torsions

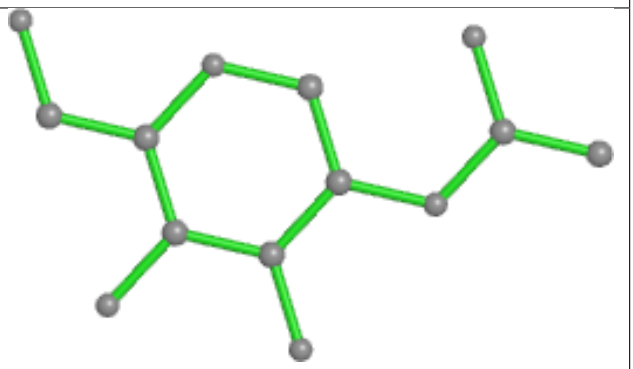


Rings

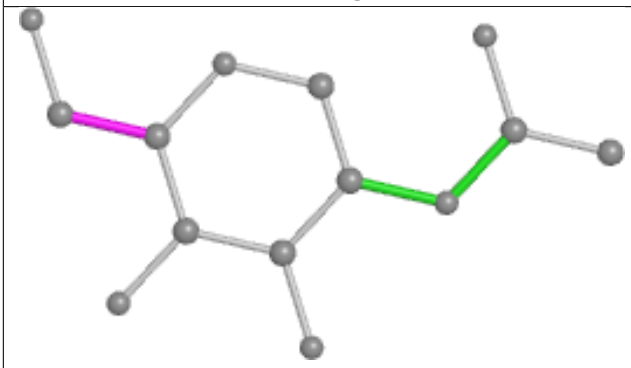
Ligand NAG J 902



Bond lengths



Bond angles



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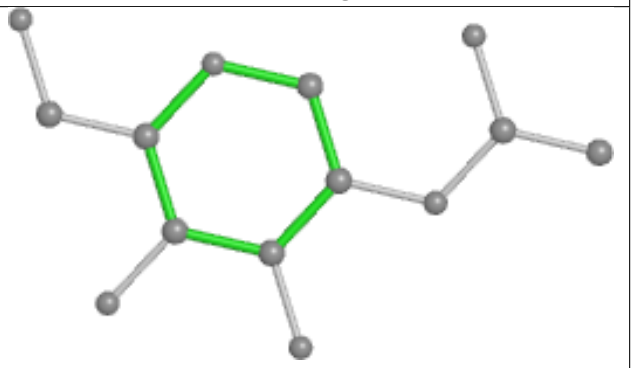
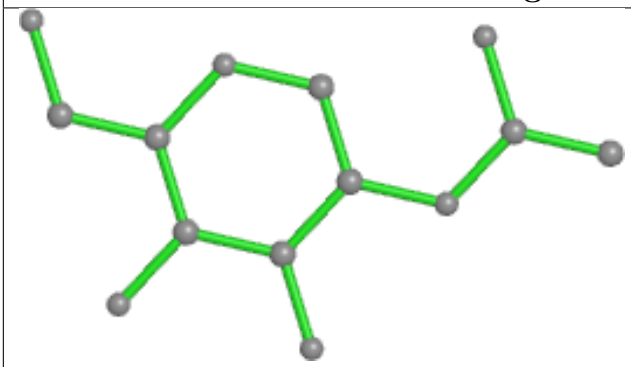


Rings

Ligand NAG J 905



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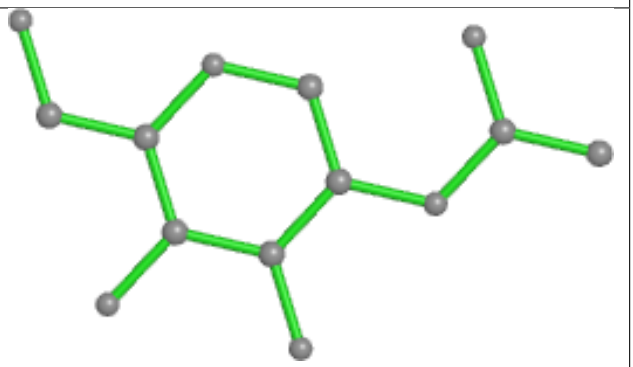
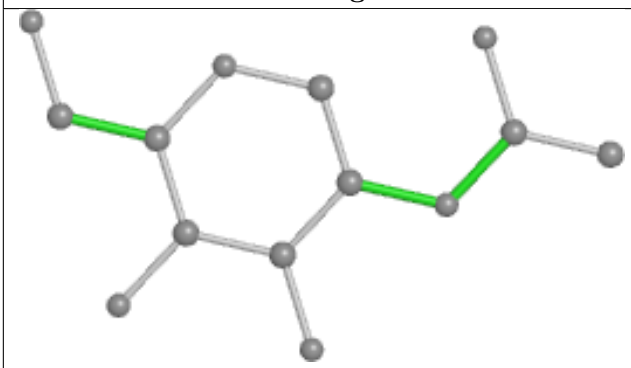
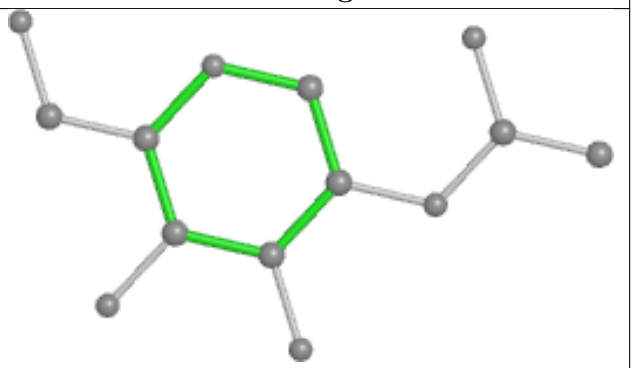


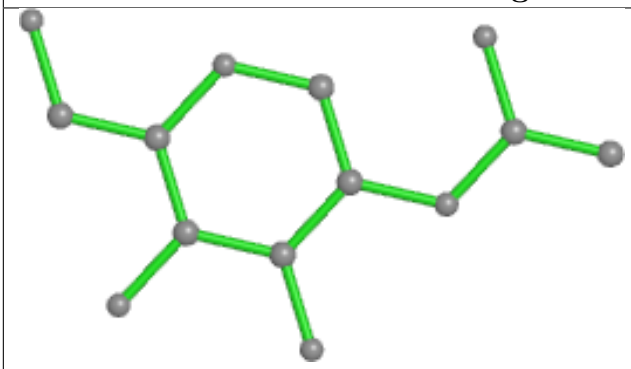
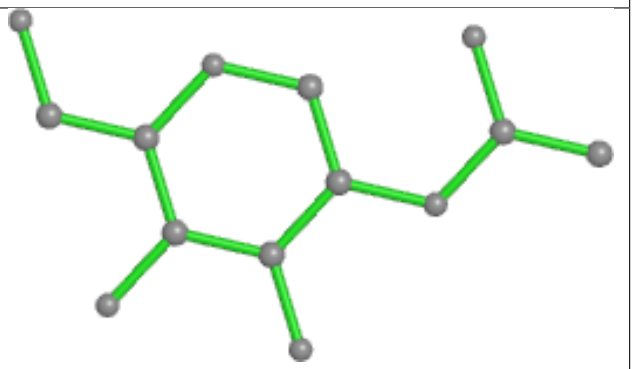
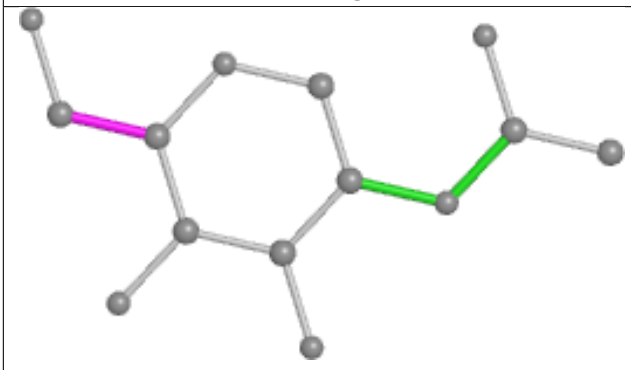
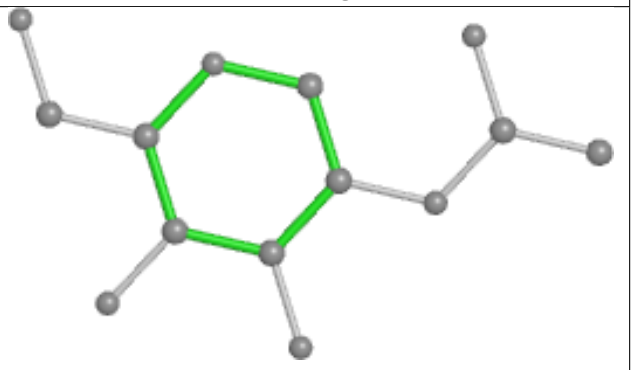
Bond angles

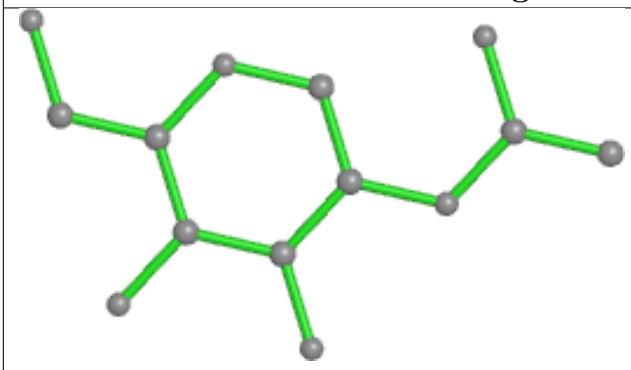
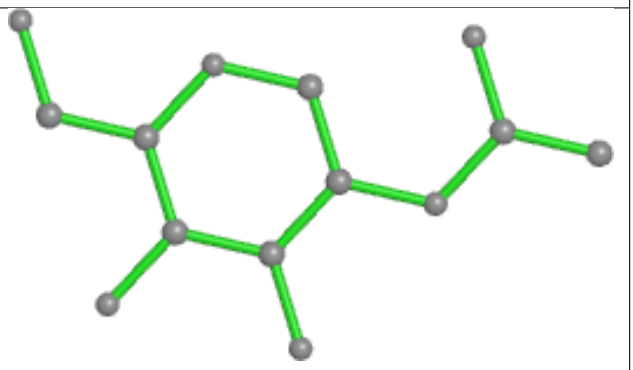
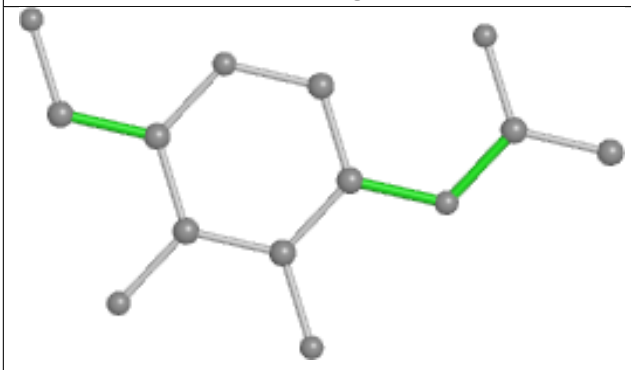
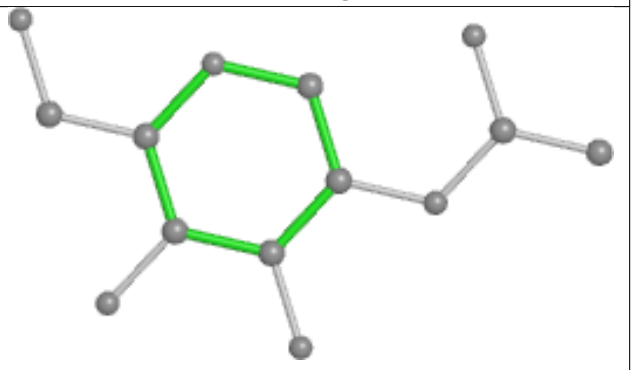


Torsions

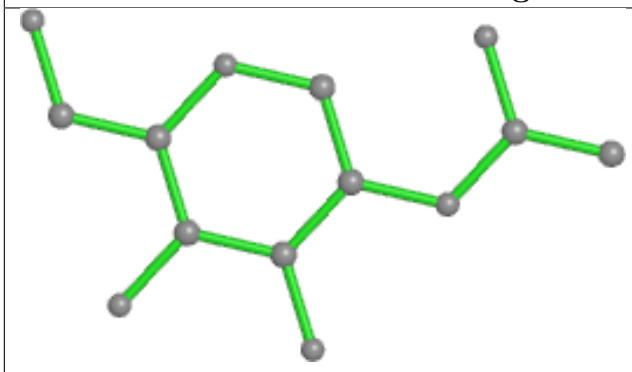


Rings

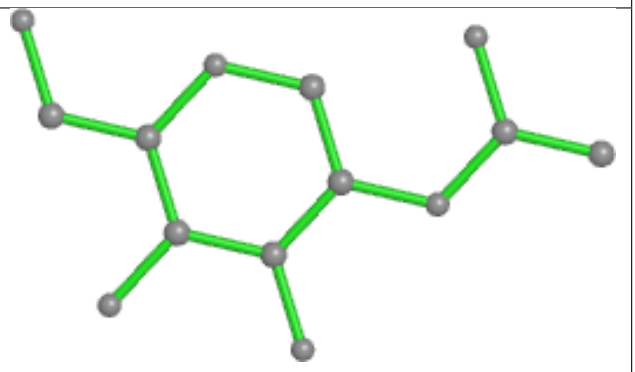
Ligand NAG C 1304	
	
Bond lengths	Bond angles
	
Torsions	Rings

Ligand NAG B 1306	
	
Bond lengths	Bond angles
	
Torsions	Rings

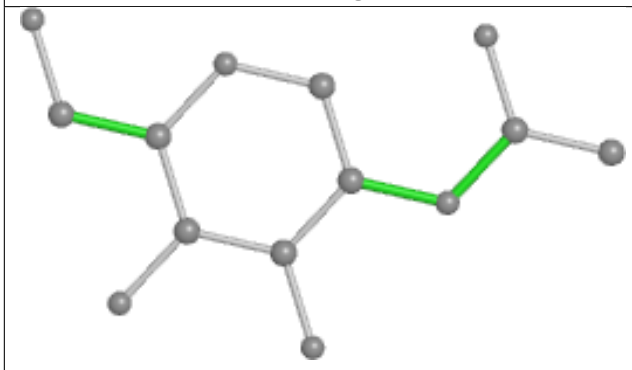
Ligand NAG C 1306



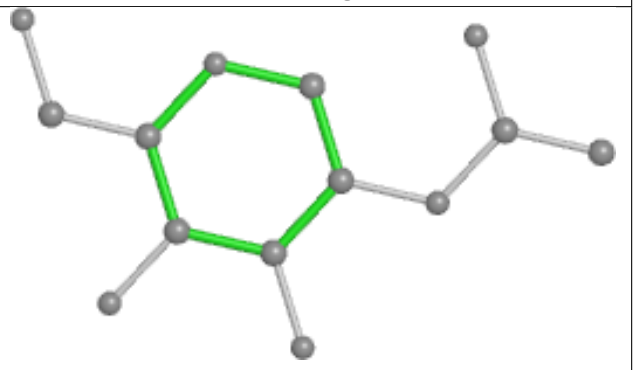
Bond lengths



Bond angles

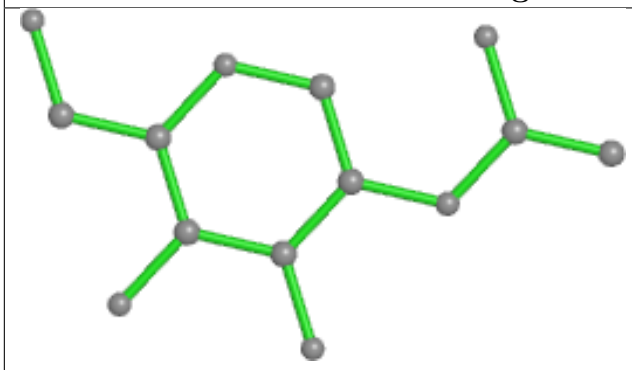


Torsions

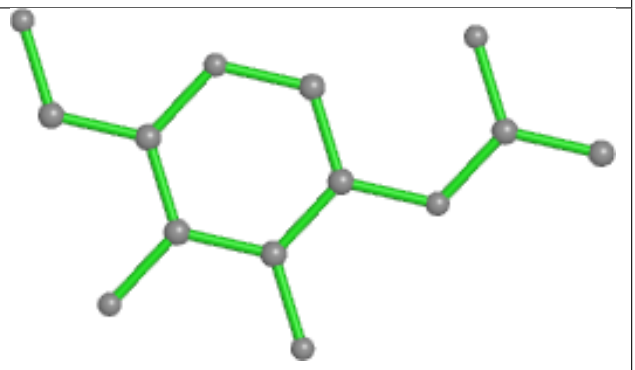


Rings

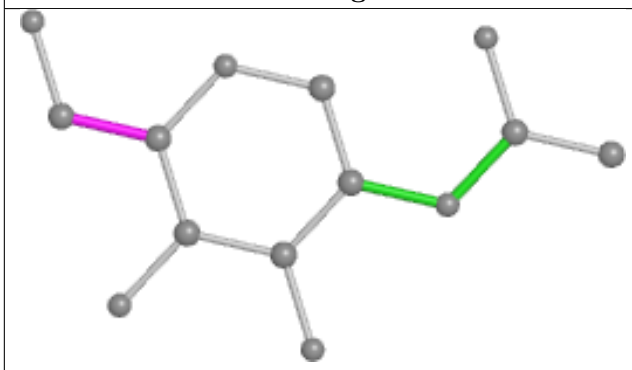
Ligand NAG A 1304



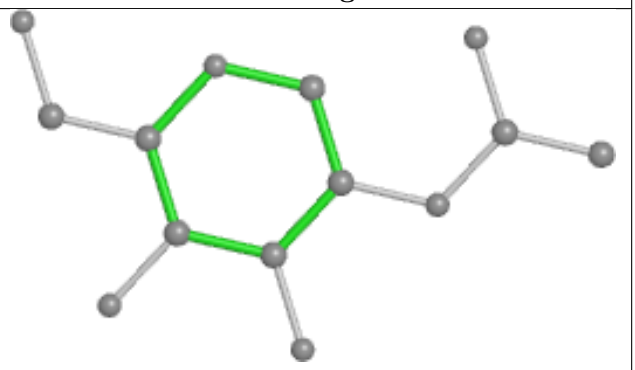
Bond lengths



Bond angles

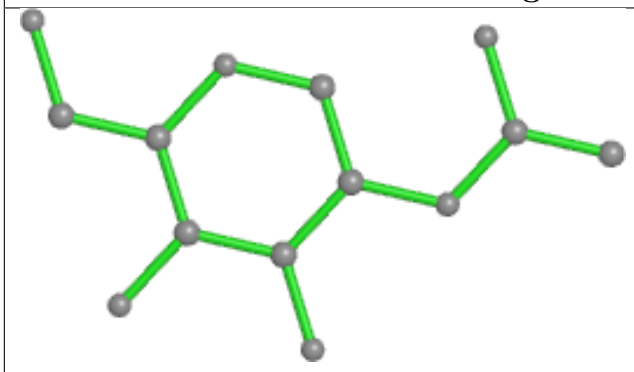


Torsions

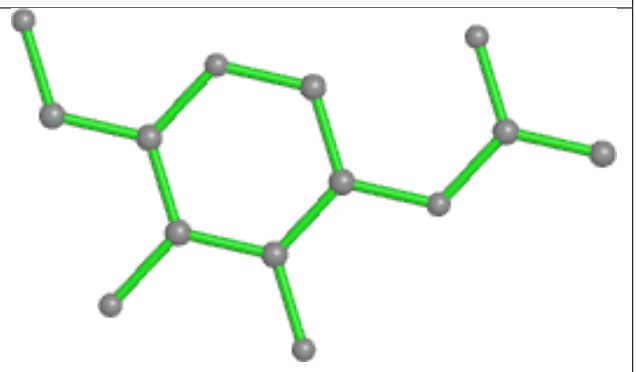


Rings

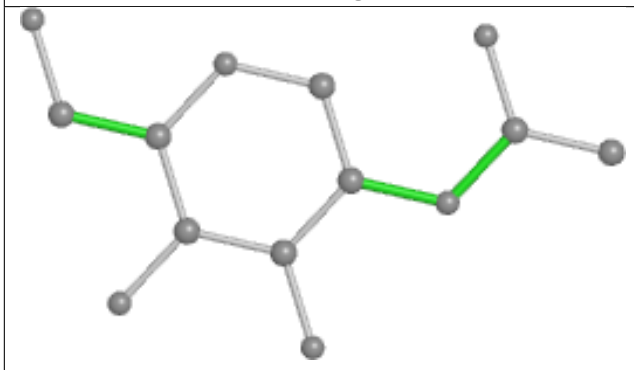
Ligand NAG E 905



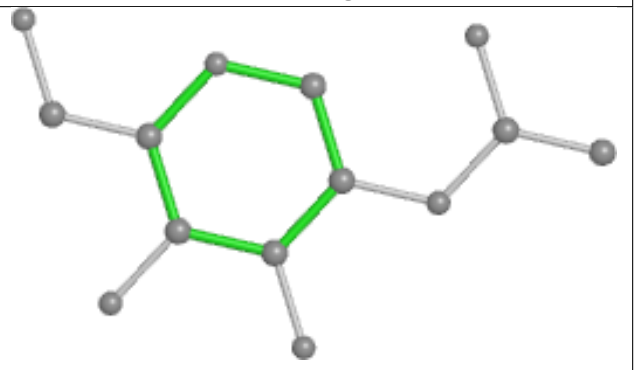
Bond lengths



Bond angles

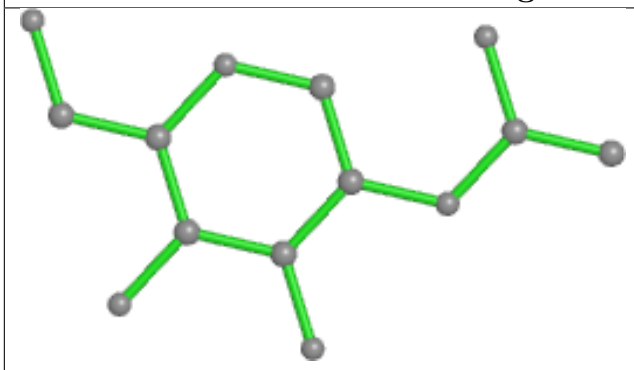


Torsions



Rings

Ligand NAG M 905



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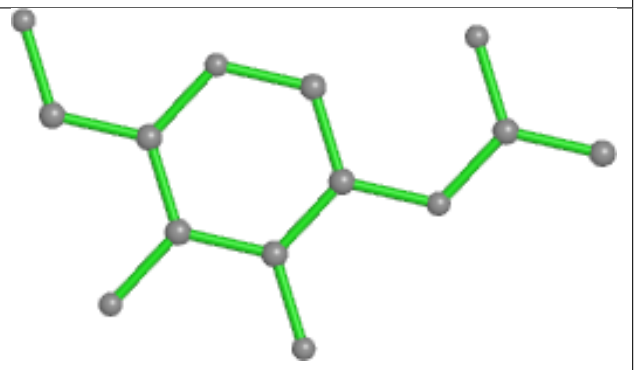
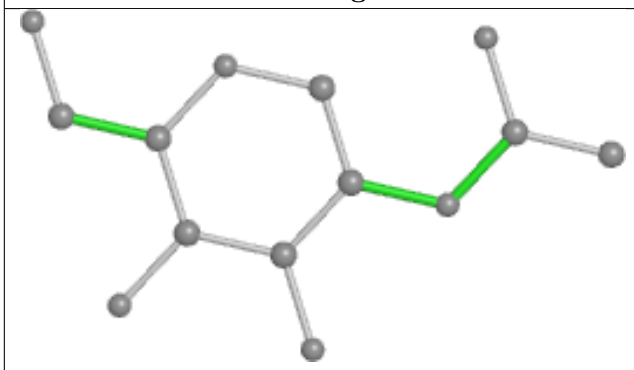
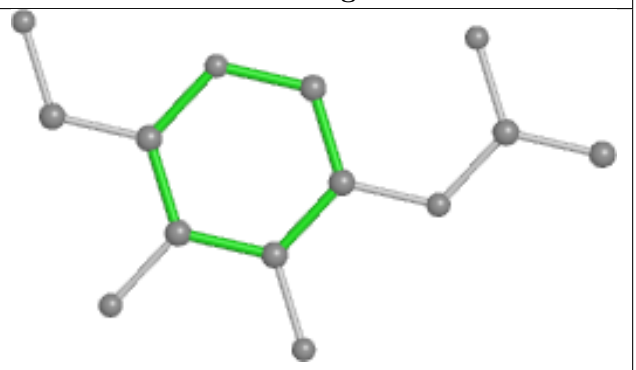


Bond angles

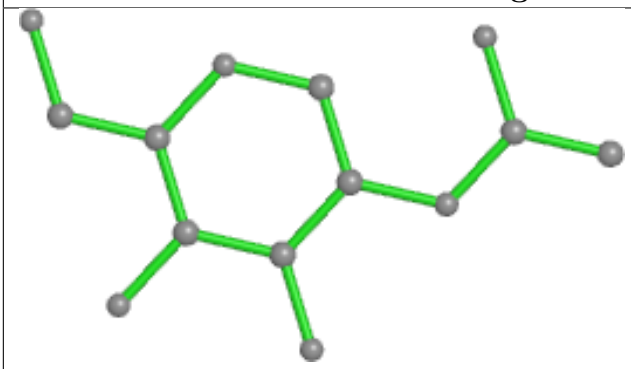


Torsions



Rings

Ligand NAG A 1301



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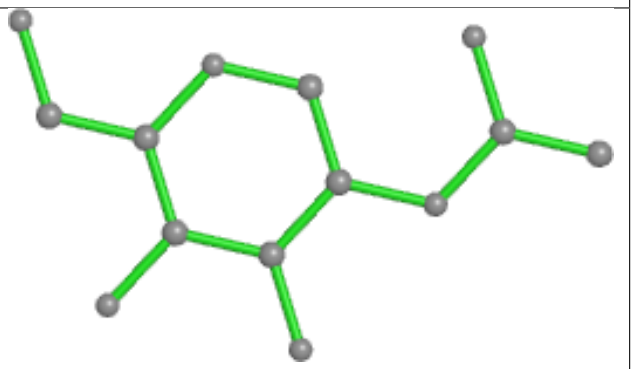
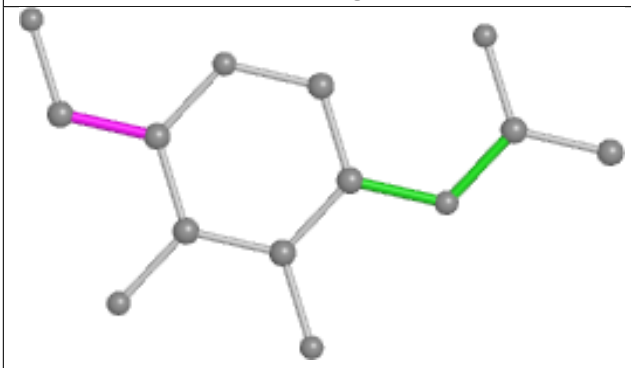
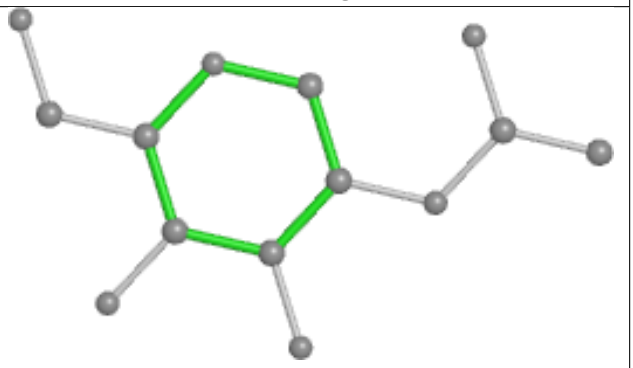


Bond angles

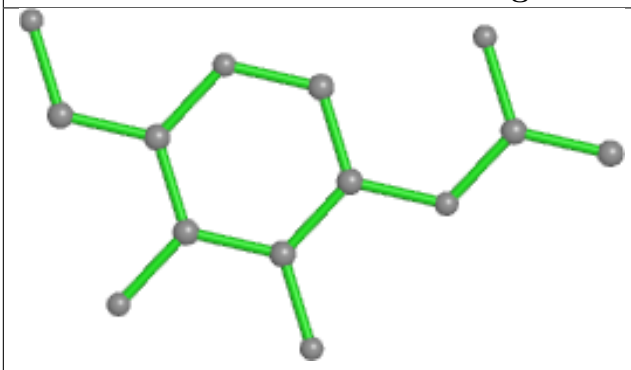


Torsions

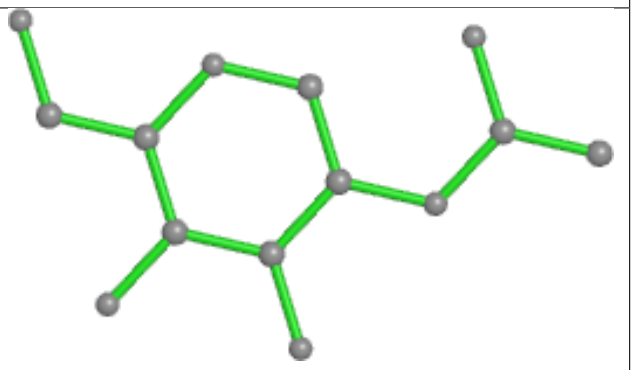


Rings

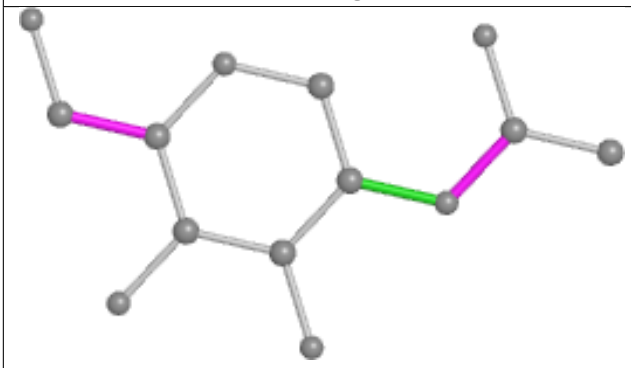
Ligand NAG C 1302



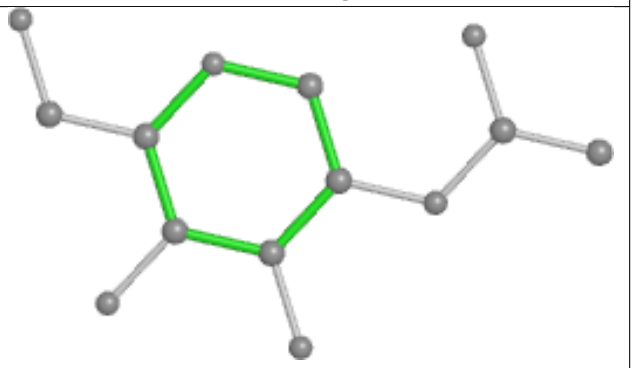
Bond lengths



Bond angles

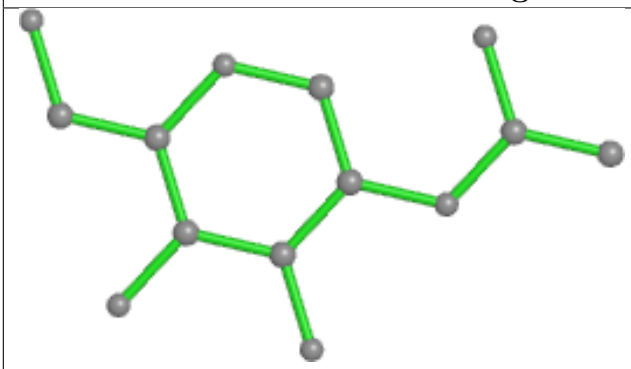


Torsions

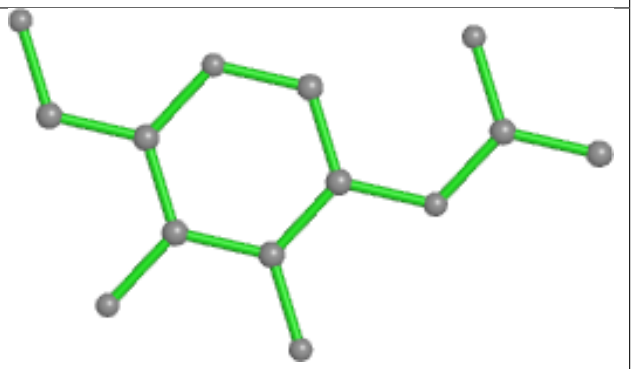


Rings

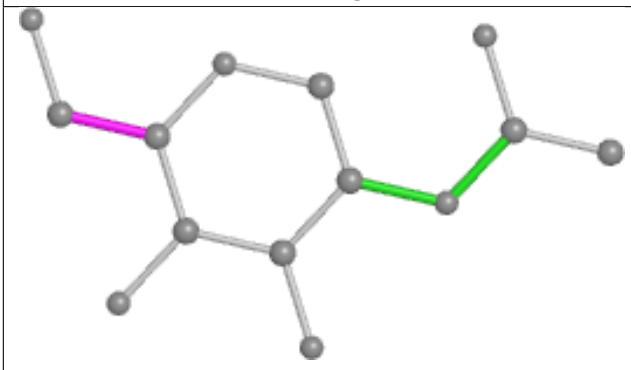
Ligand NAG C 1303



Bond lengths



Bond angles



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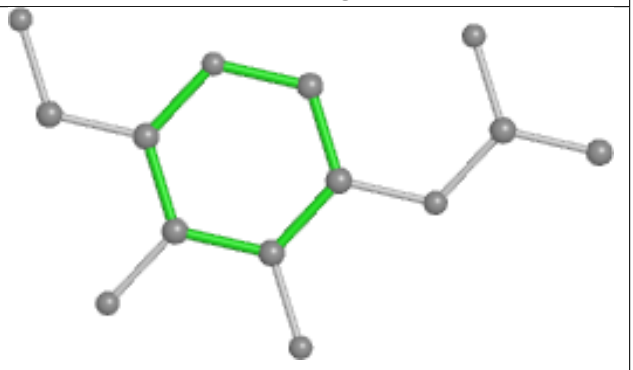
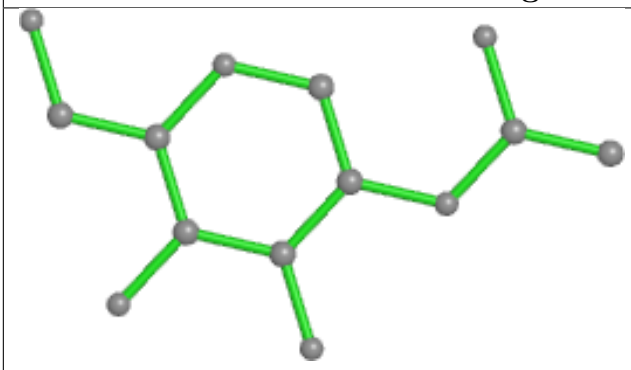
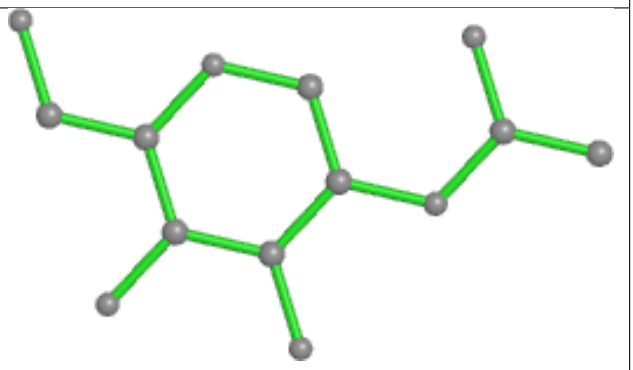


Rings

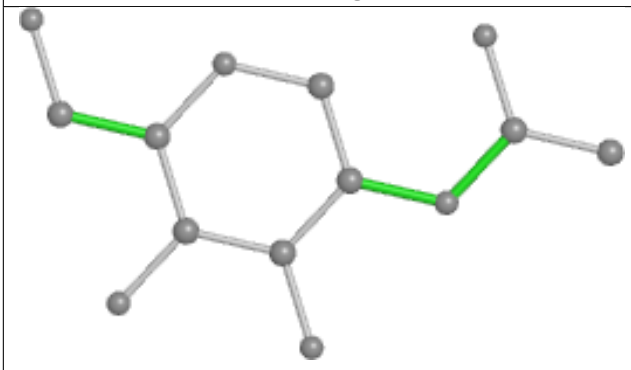
Ligand NAG E 904



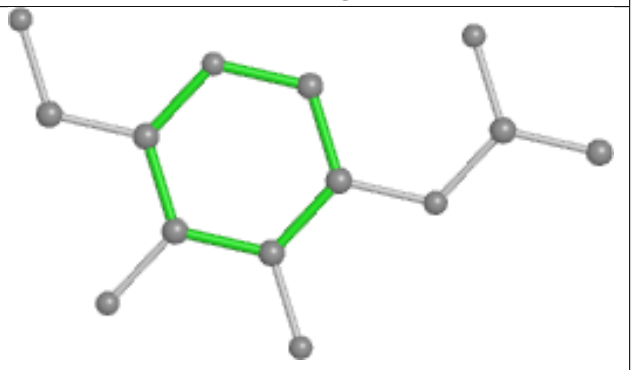
Bond lengths



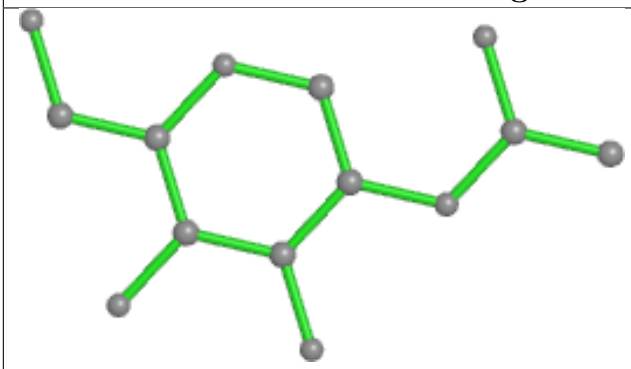
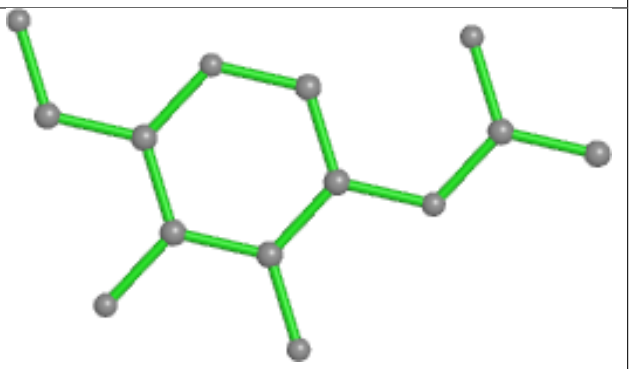
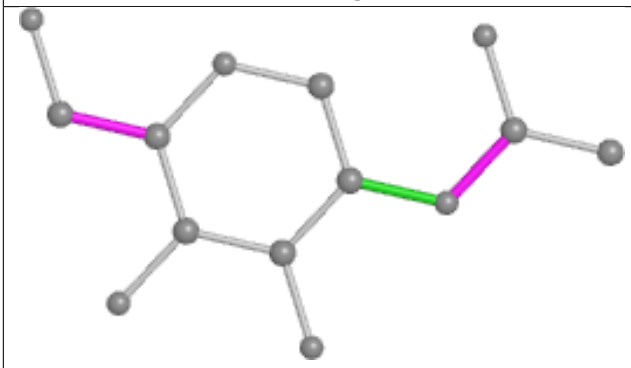
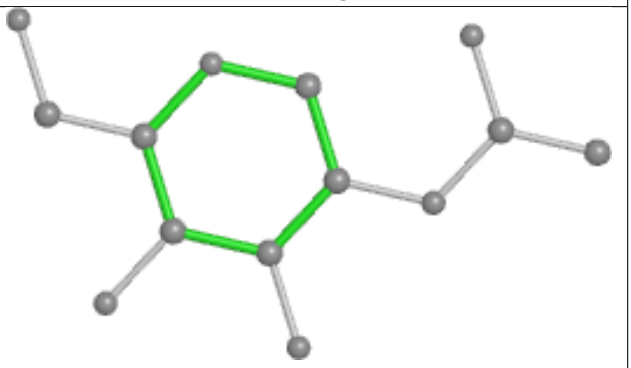
Bond angles

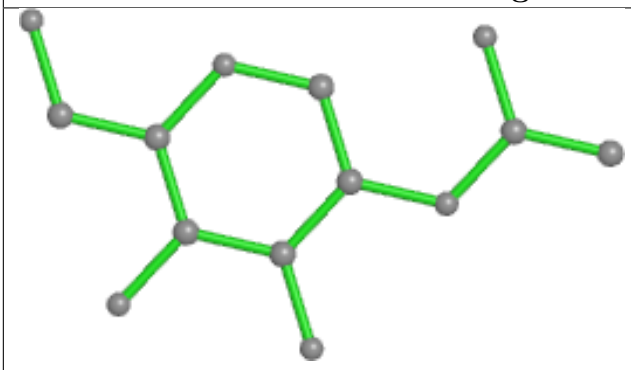
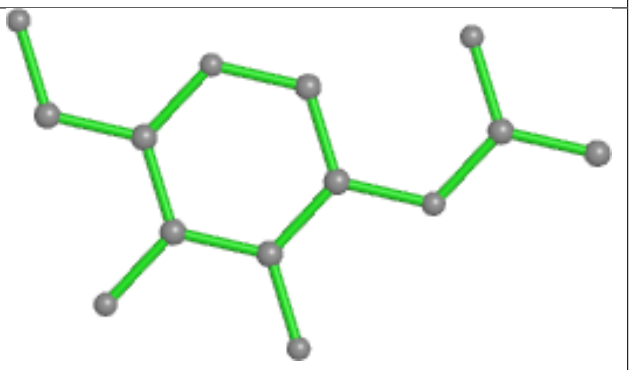
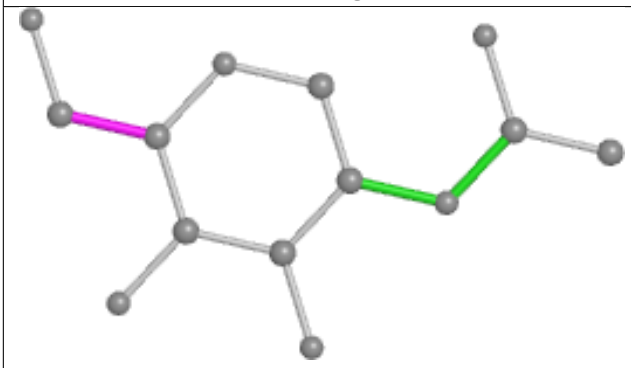
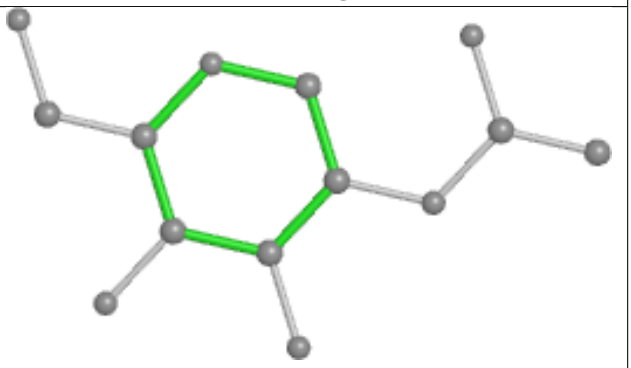


Torsions

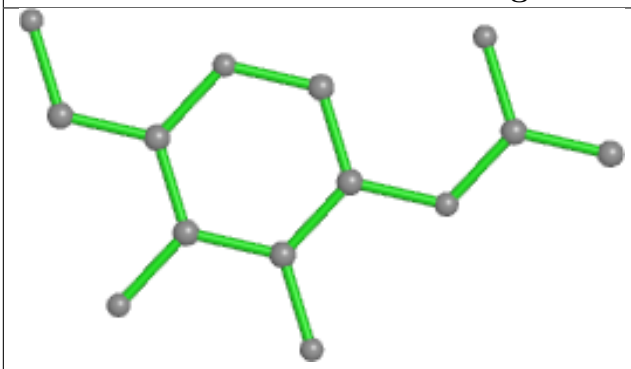


Rings

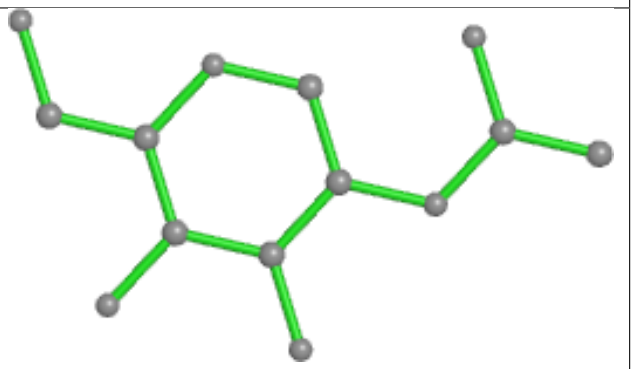
Ligand NAG A 1302	
 Bond lengths	 Bond angles
 Torsions	 Rings

Ligand NAG B 1304	
 Bond lengths	 Bond angles
 Torsions	 Rings

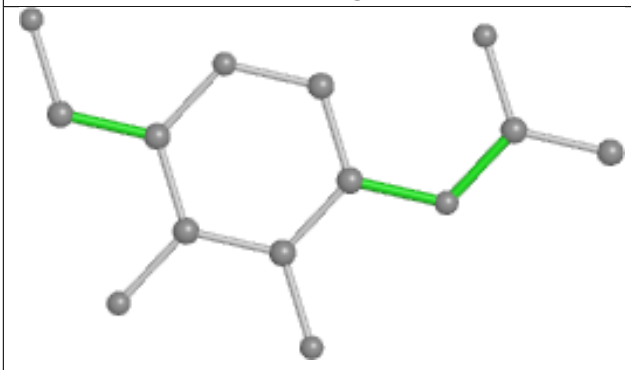
Ligand NAG A 1308



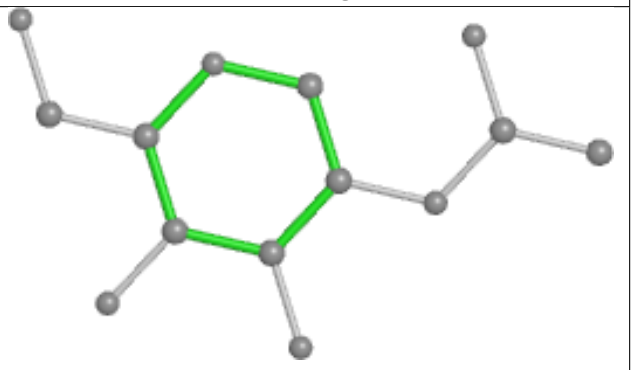
Bond lengths



Bond angles

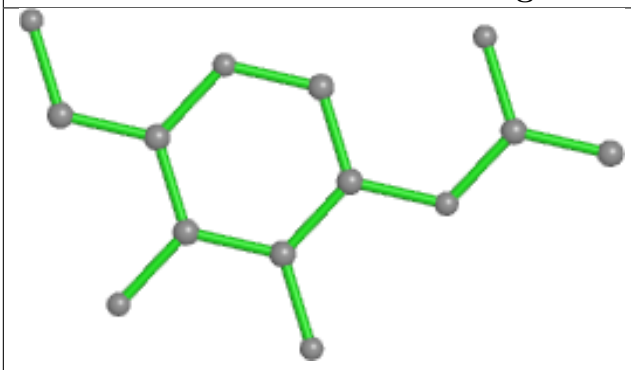


Torsions



Rings

Ligand NAG M 903



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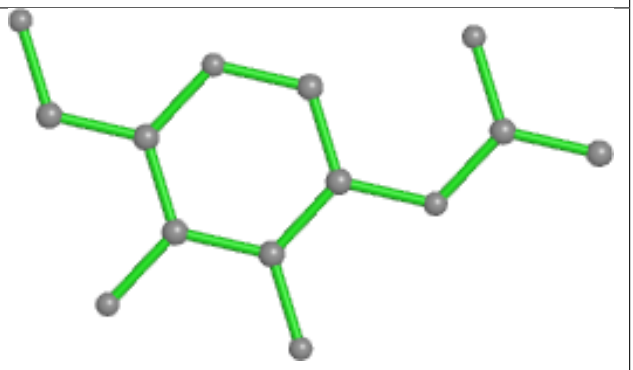
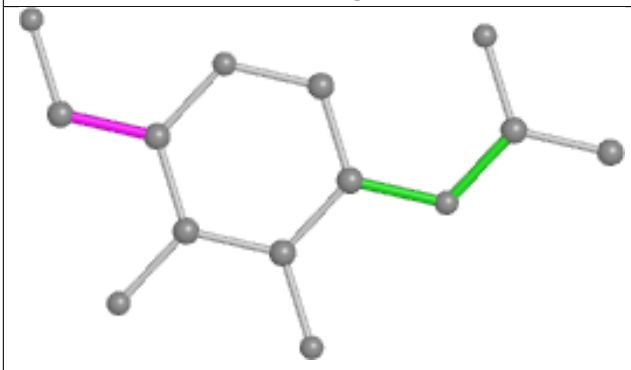
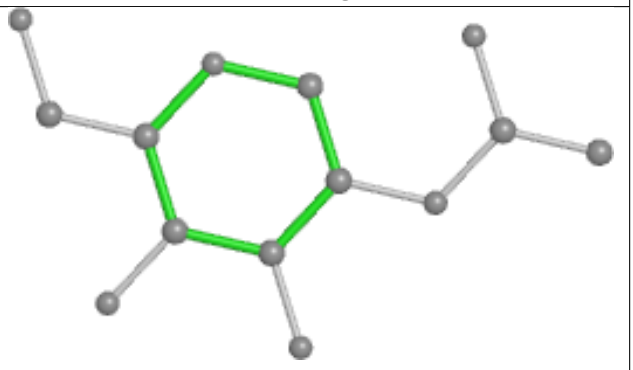


Bond angles

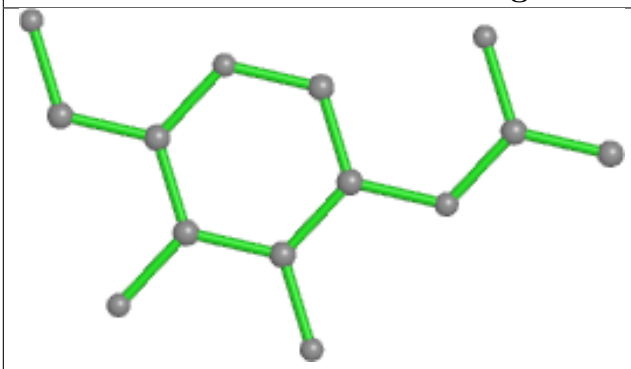


Torsions

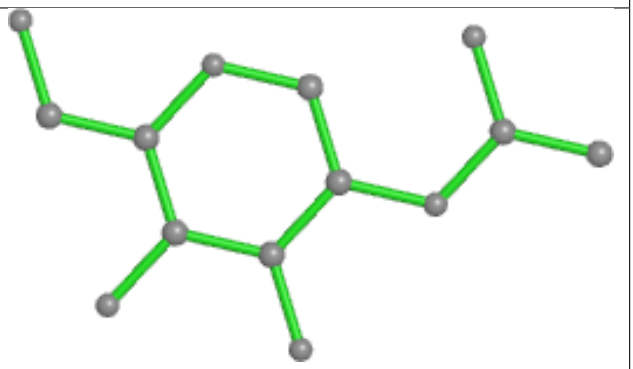


Rings

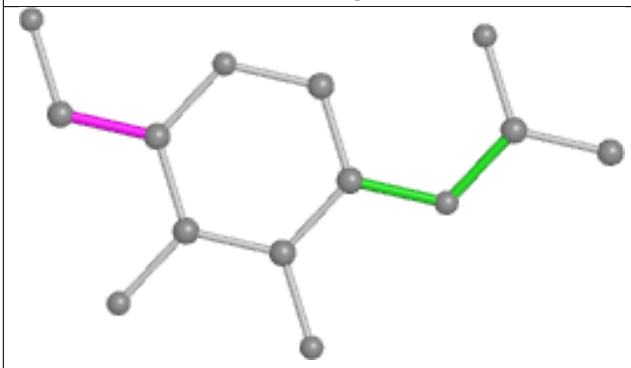
Ligand NAG A 1303



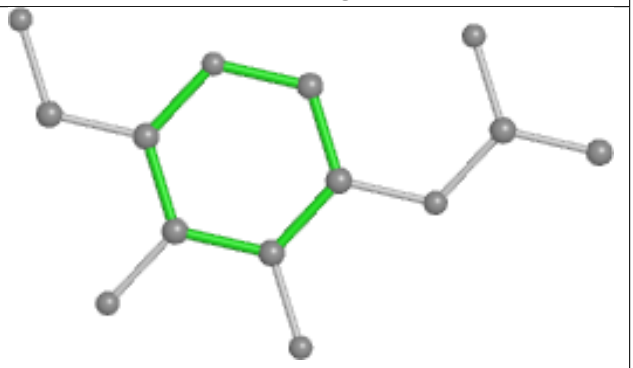
Bond lengths



Bond angles

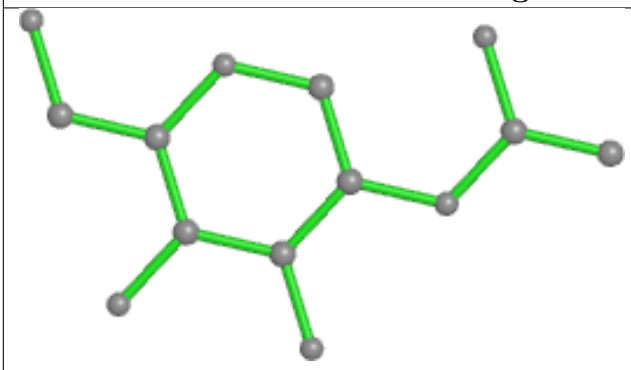


Torsions

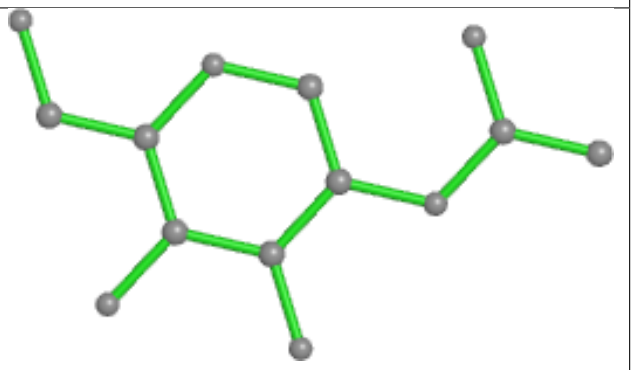


Rings

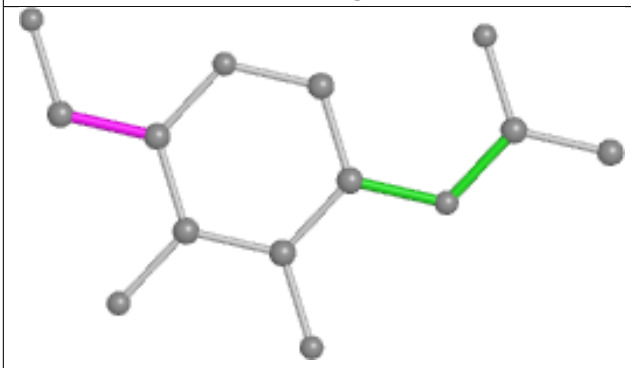
Ligand NAG B 1307



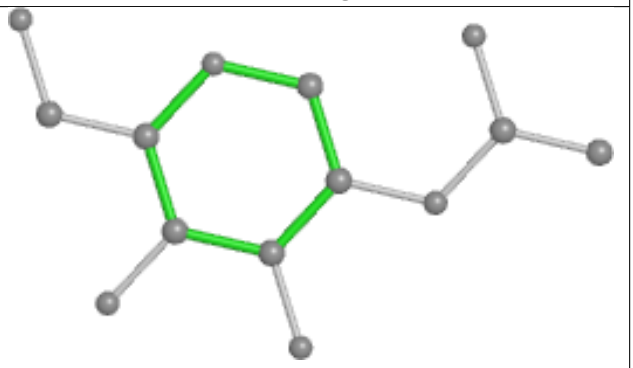
Bond lengths



Bond angles

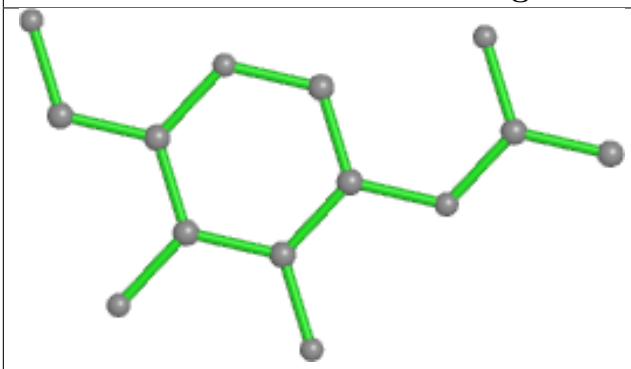


Torsions

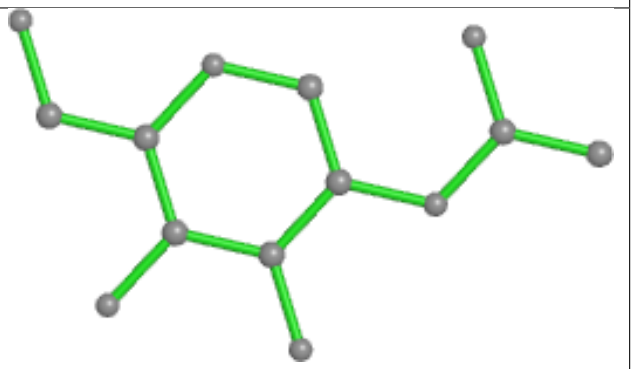


Rings

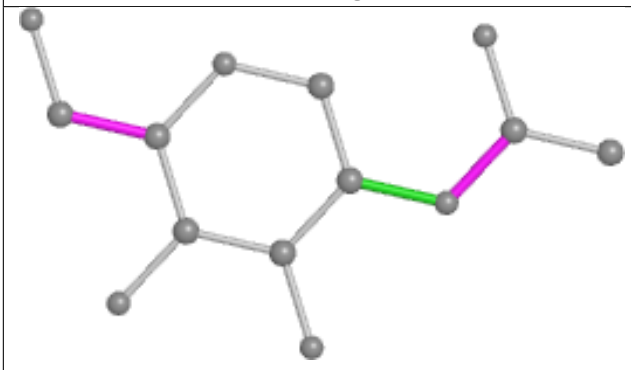
Ligand NAG B 1302



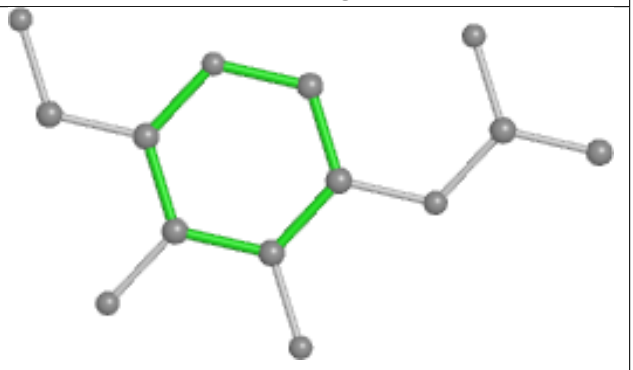
Bond lengths



Bond angles

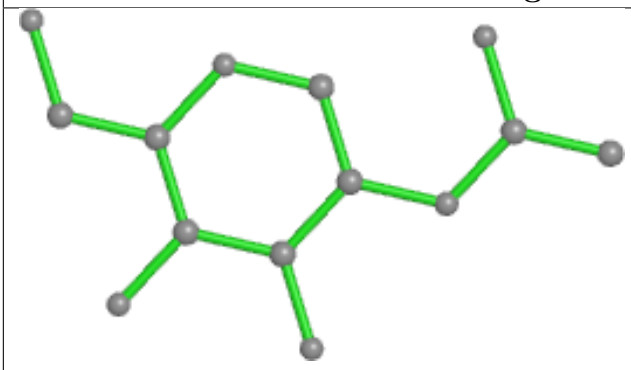


Torsions

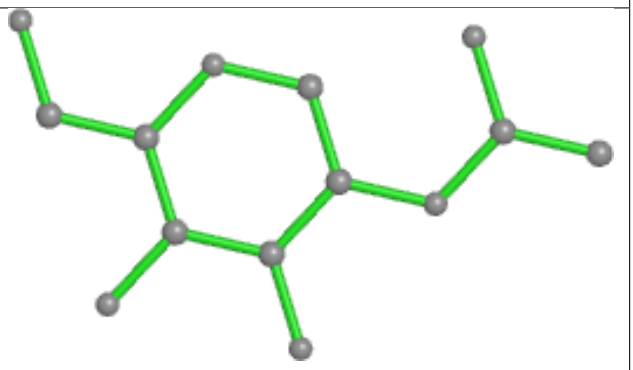


Rings

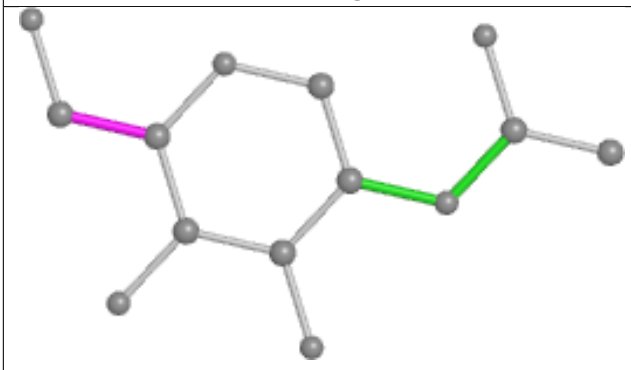
Ligand NAG J 904



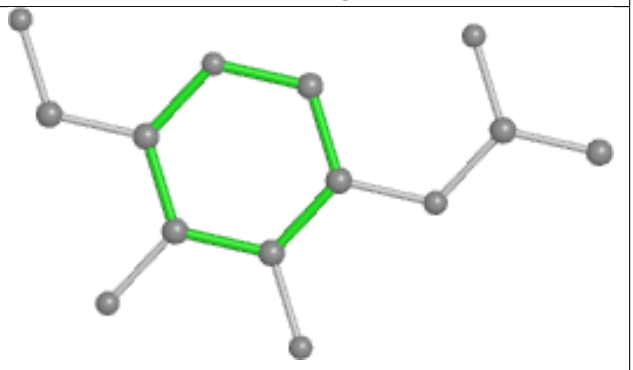
Bond lengths



Bond angles

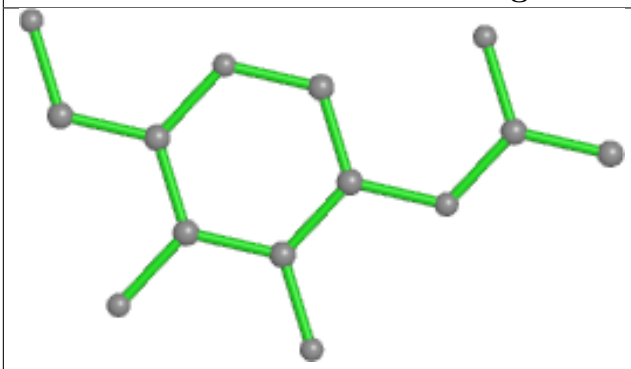


Torsions

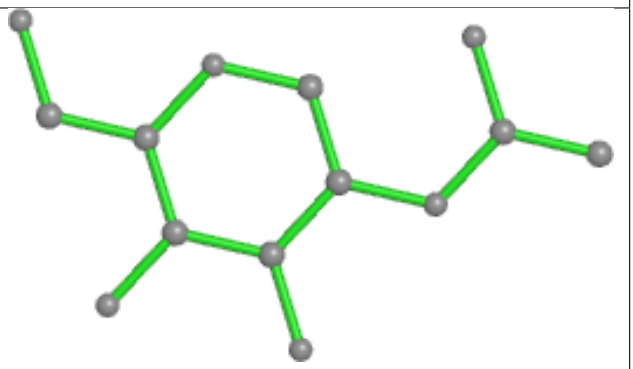


Rings

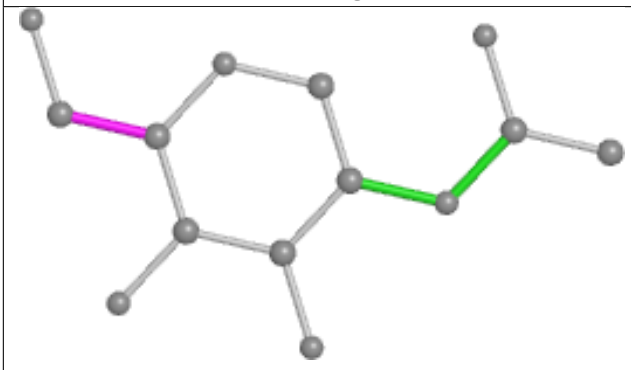
Ligand NAG A 1307



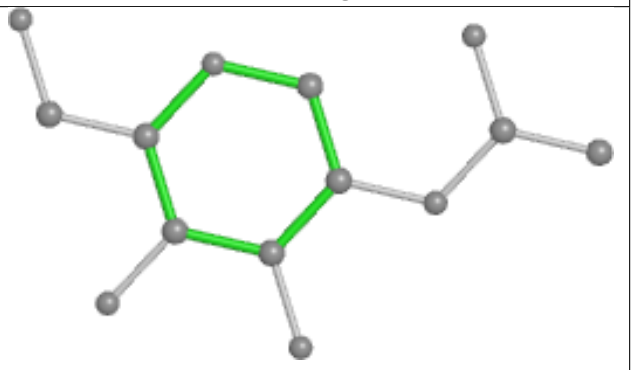
Bond lengths



Bond angles

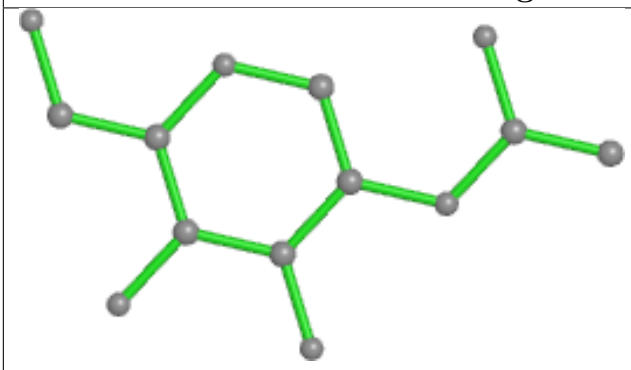


Torsions

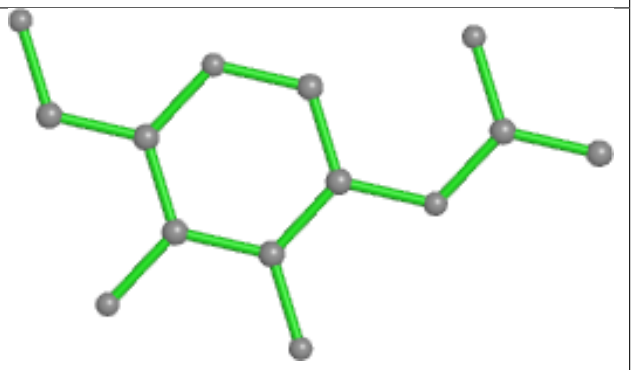


Rings

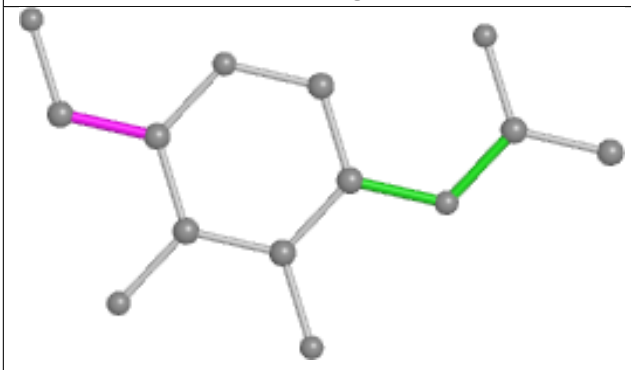
Ligand NAG M 904



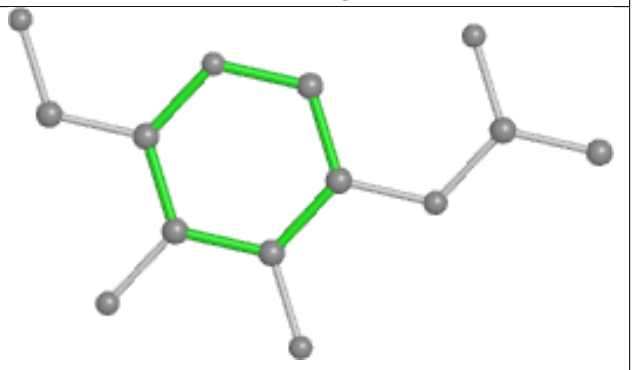
Bond lengths



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.

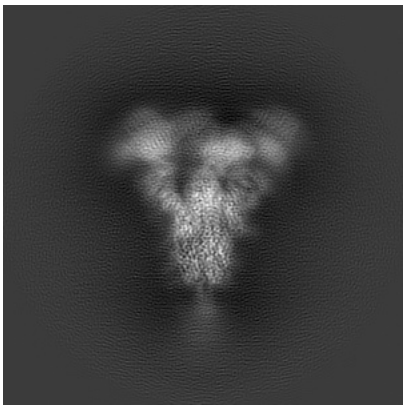
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-33772. These allow visual inspection of the internal detail of the map and identification of artifacts.

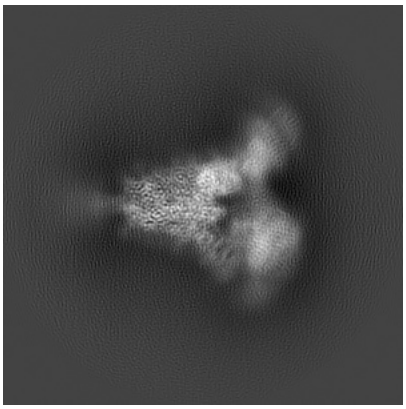
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

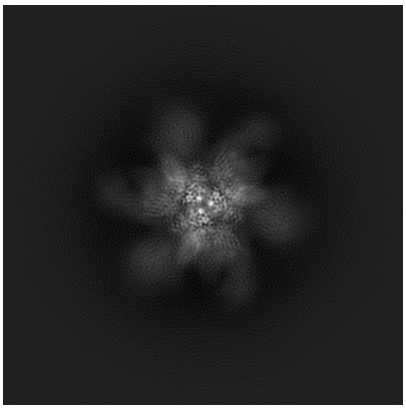
6.1.1 Primary map



X

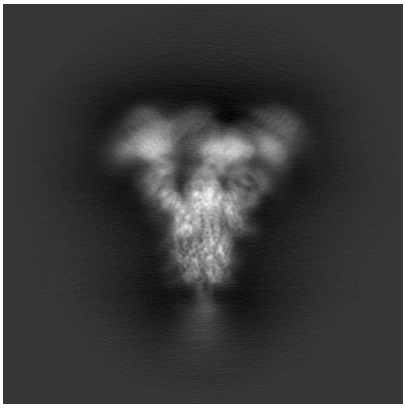


Y

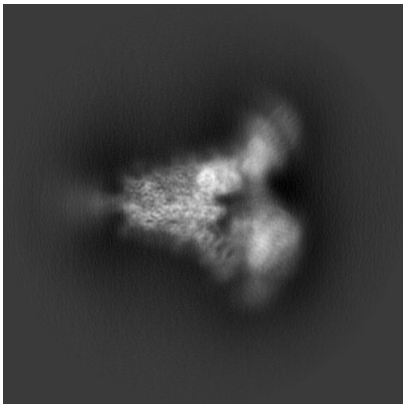


Z

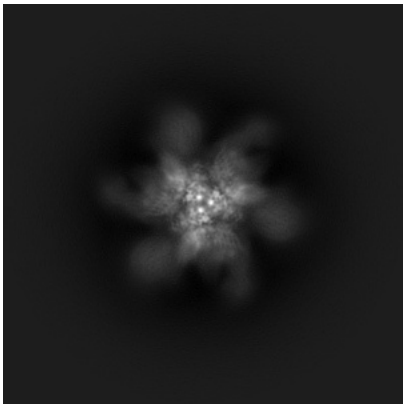
6.1.2 Raw map



X



Y

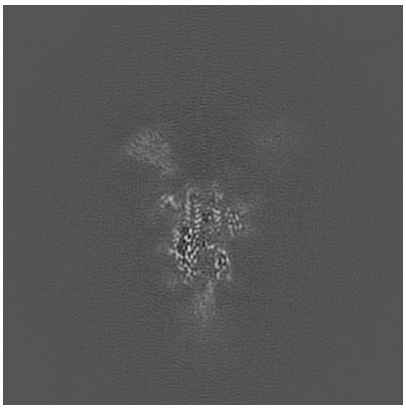


Z

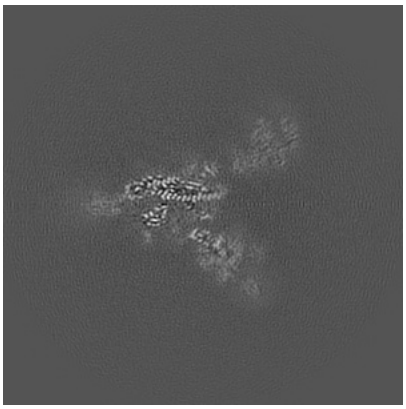
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

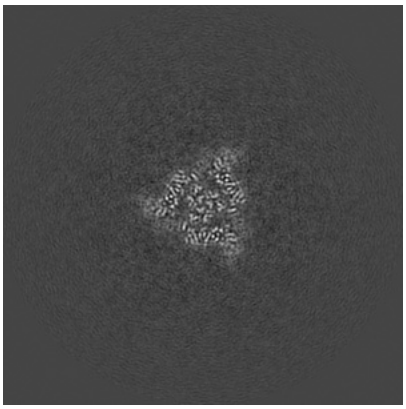
6.2.1 Primary map



X Index: 150

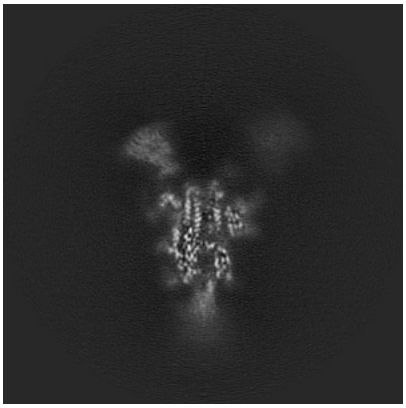


Y Index: 150

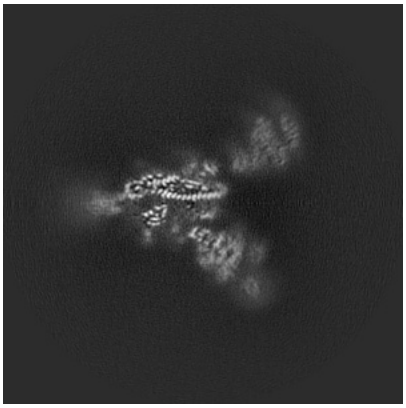


Z Index: 150

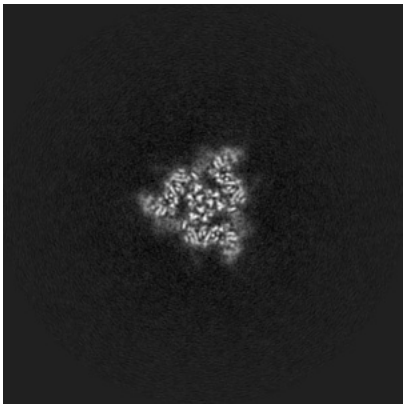
6.2.2 Raw map



X Index: 150



Y Index: 150

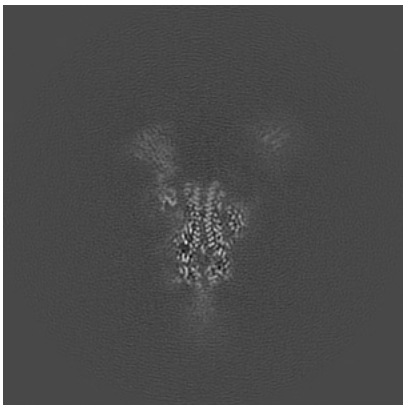


Z Index: 150

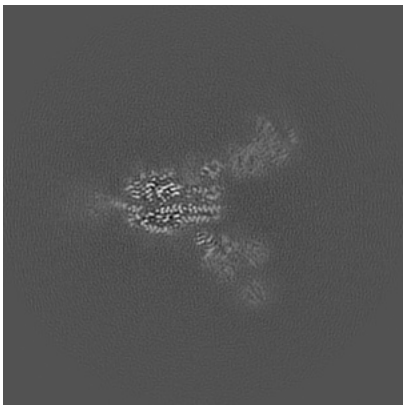
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

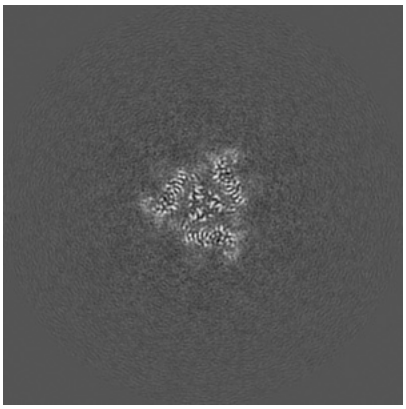
6.3.1 Primary map



X Index: 147

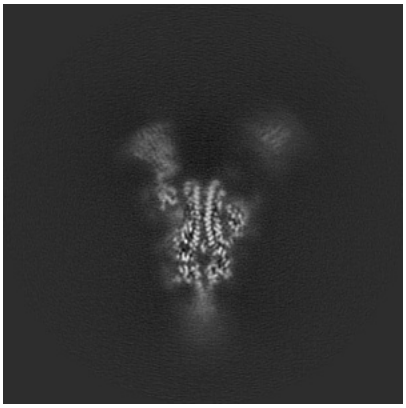


Y Index: 155

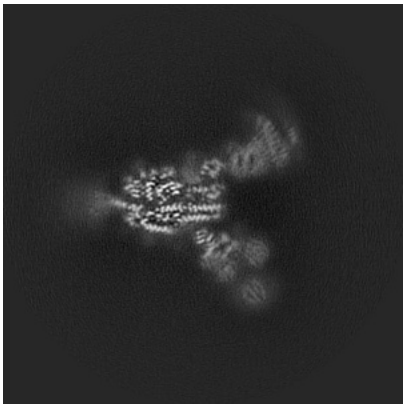


Z Index: 151

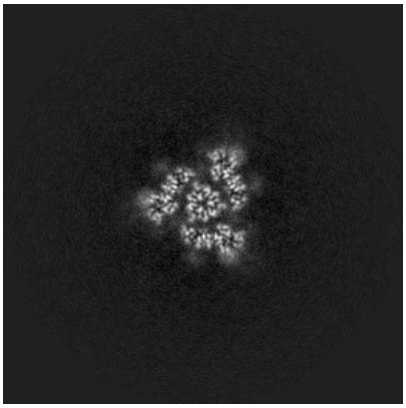
6.3.2 Raw map



X Index: 147



Y Index: 155

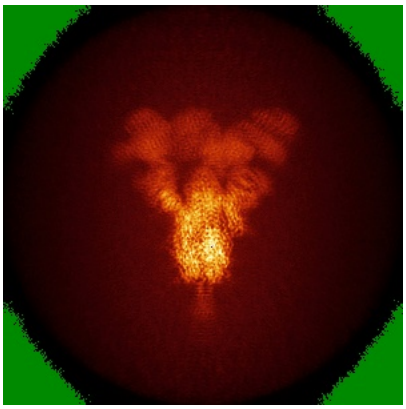


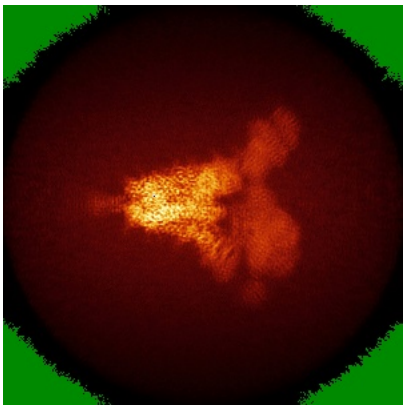
Z Index: 154

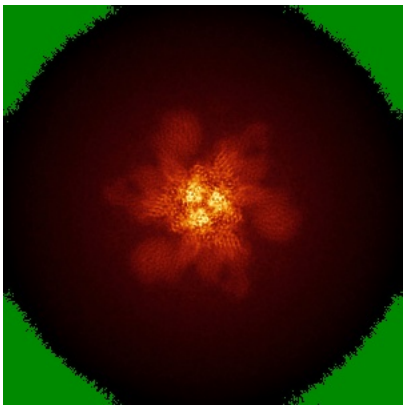
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) (i)

6.4.1 Primary map

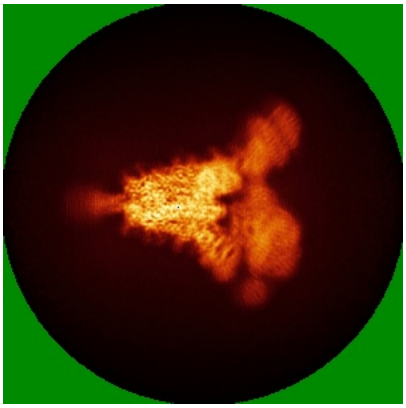

X

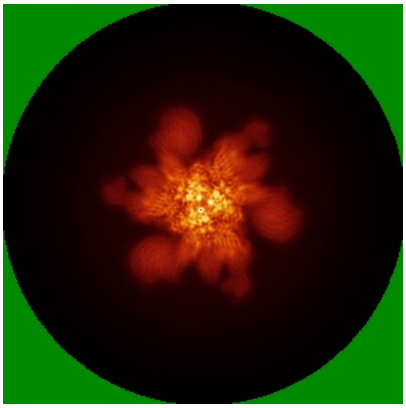

Y


Z

6.4.2 Raw map


X

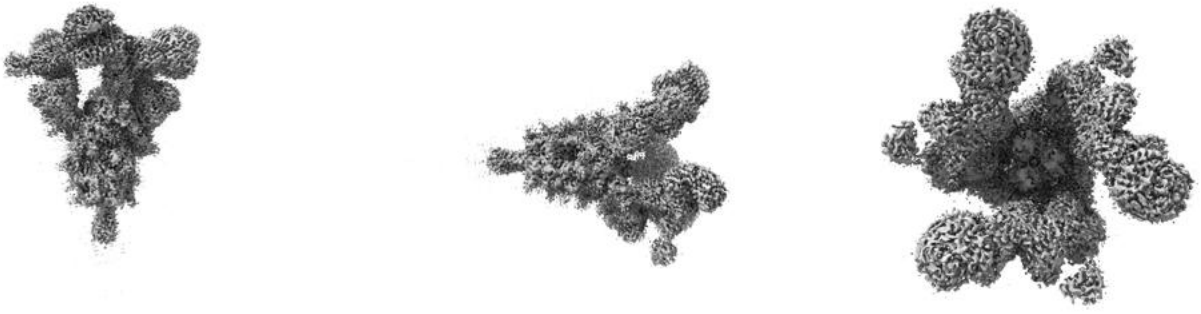

Y


Z

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

6.5 Orthogonal surface views (i)

6.5.1 Primary map



X Y Z

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

6.5.2 Raw map

X Y Z

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

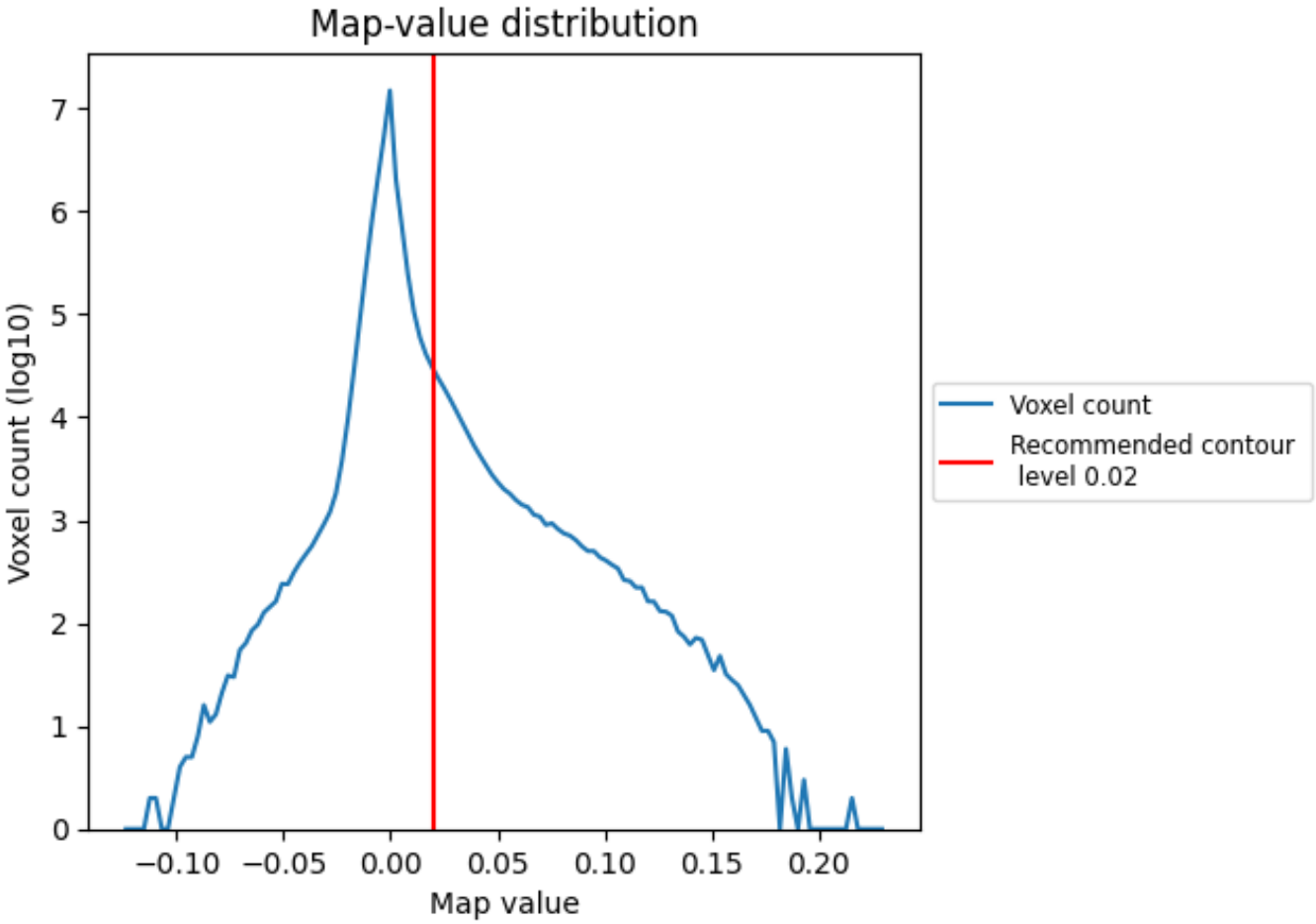
6.6 Mask visualisation (i)

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

7 Map analysis

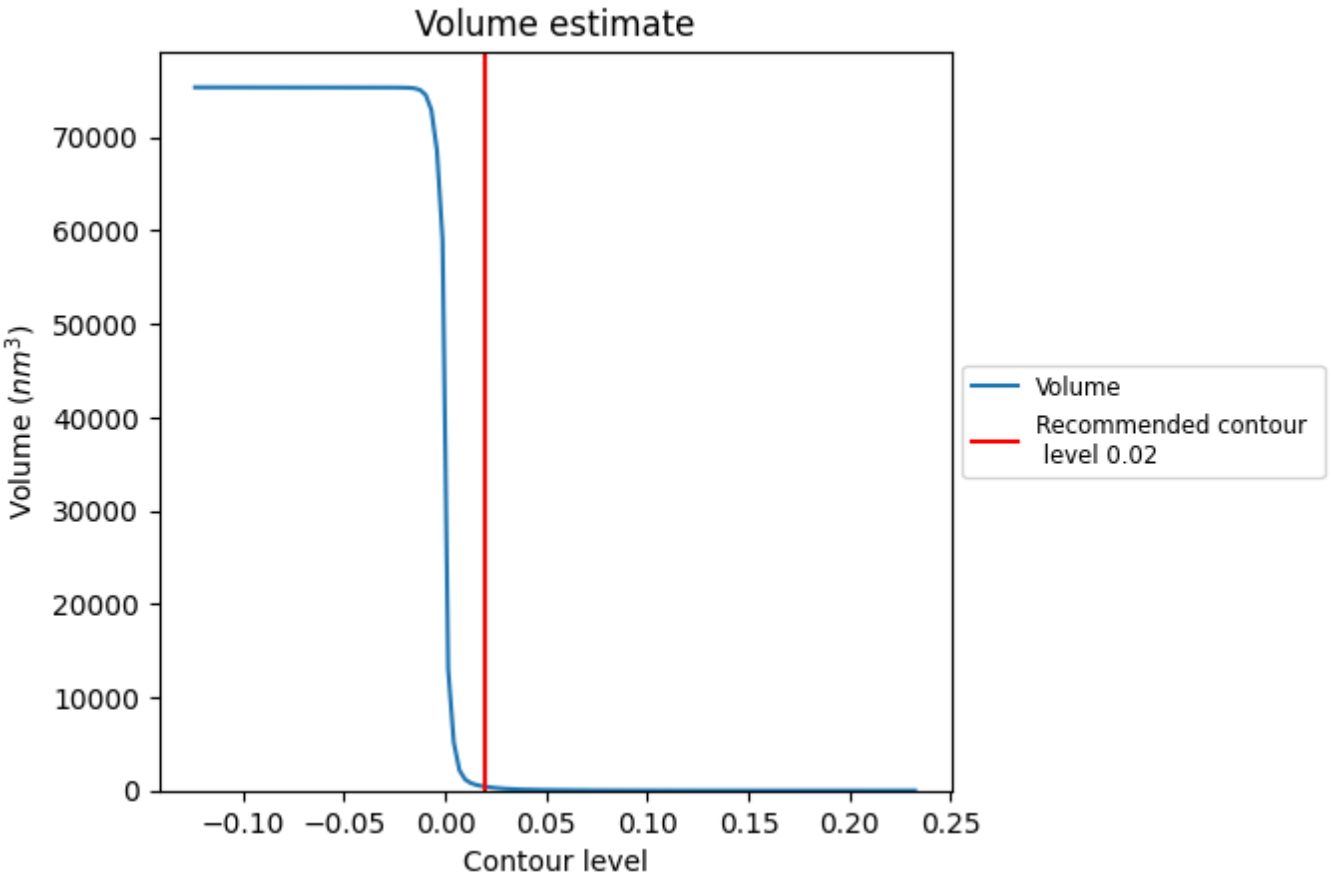
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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

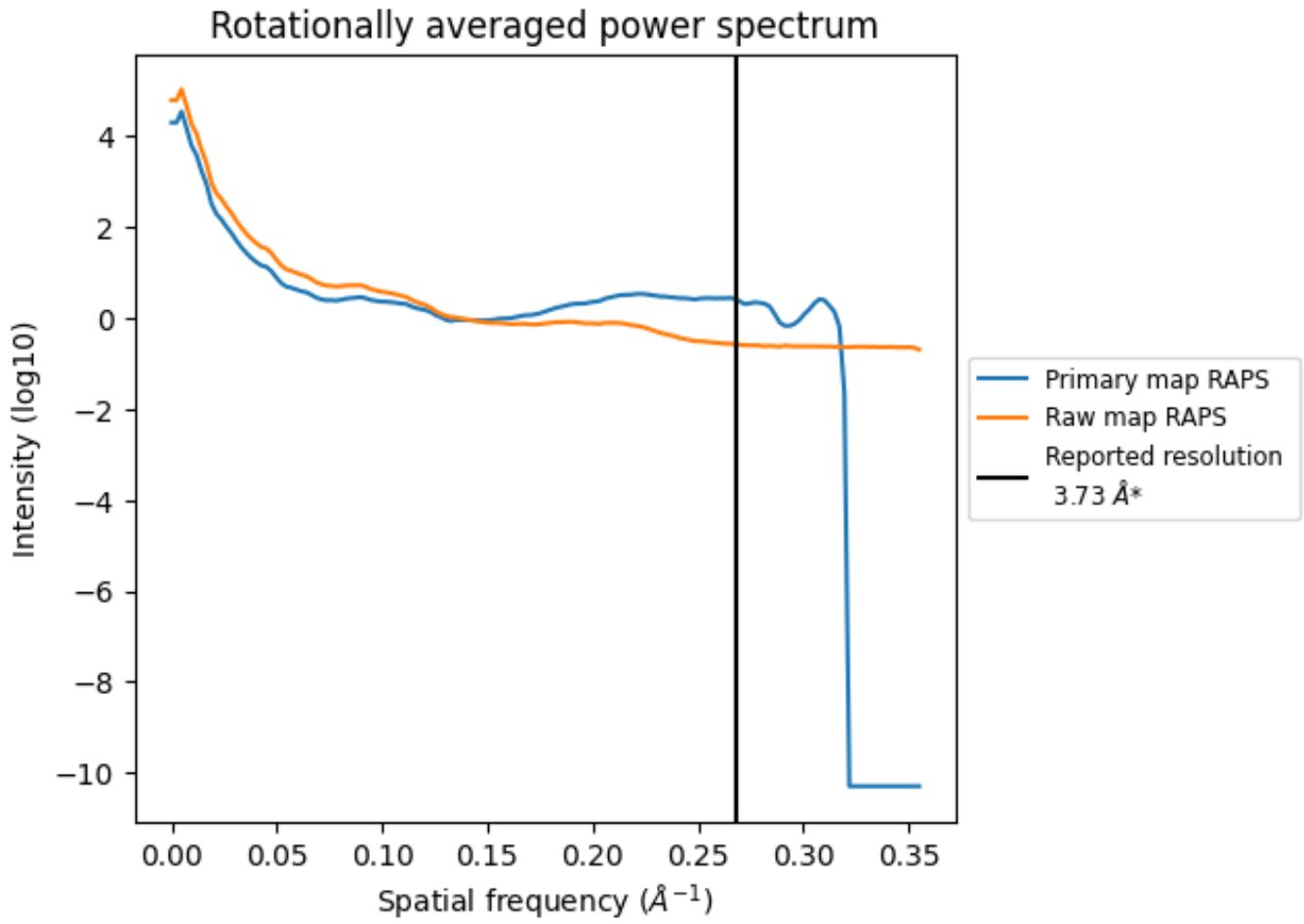
7.2 Volume estimate



The volume at the recommended contour level is 415 nm^3; this corresponds to an approximate mass of 375 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

7.3 Rotationally averaged power spectrum (i)

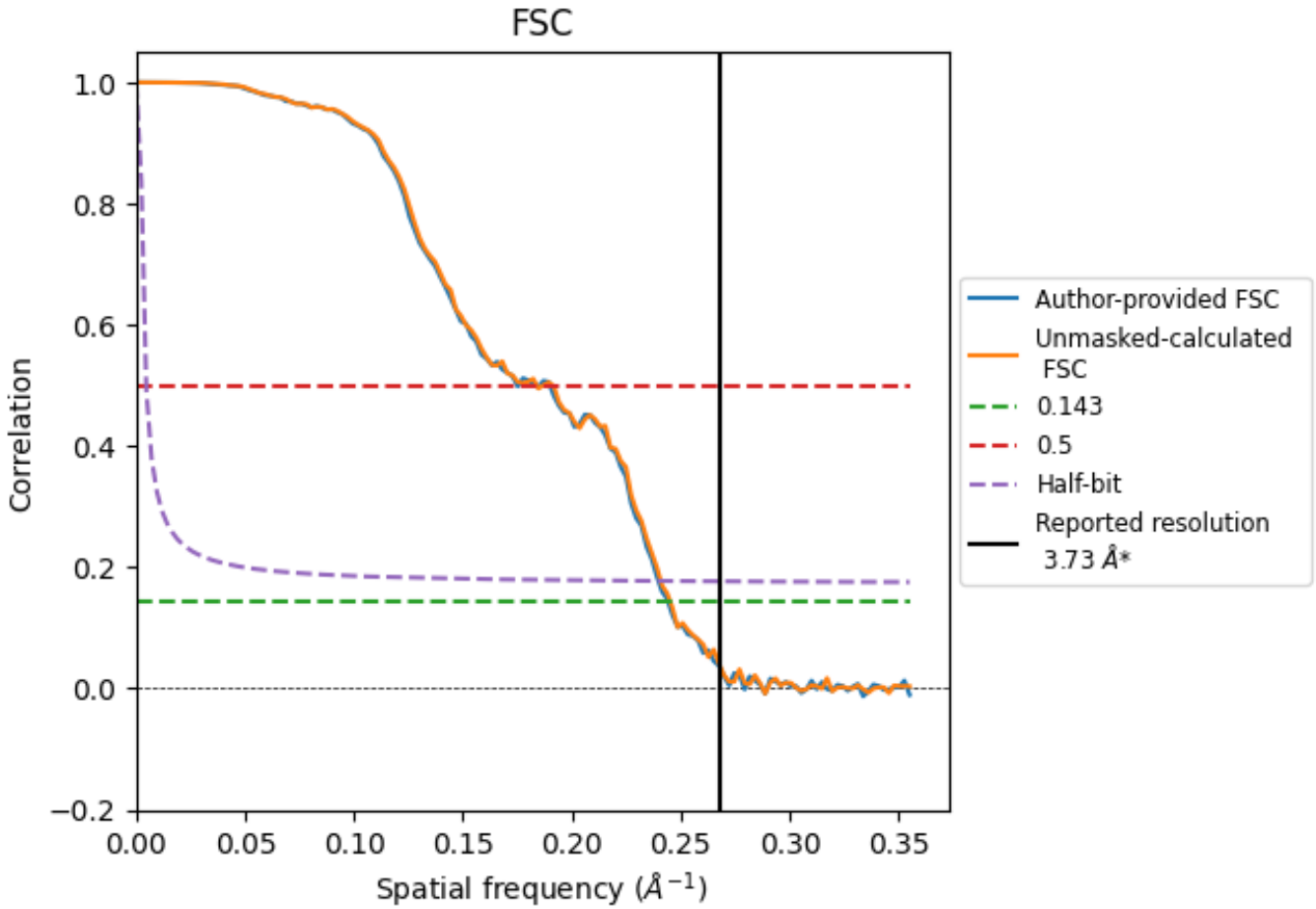


*Reported resolution corresponds to spatial frequency of 0.268 Å^{-1}

8 Fourier-Shell correlation

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

8.1 FSC



*Reported resolution corresponds to spatial frequency of 0.268 Å^{-1}

8.2 Resolution estimates (i)

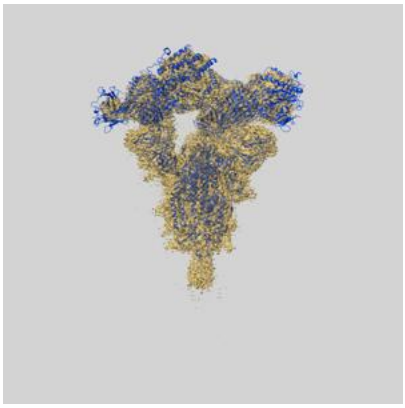
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.73	-	-
Author-provided FSC curve	4.09	5.71	4.17
Unmasked-calculated*	4.08	5.44	4.15

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

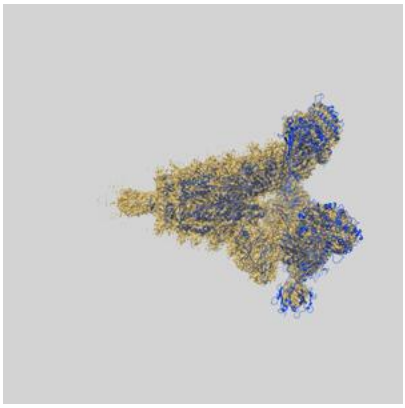
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-33772 and PDB model 7YEG. Per-residue inclusion information can be found in section 3 on page 9.

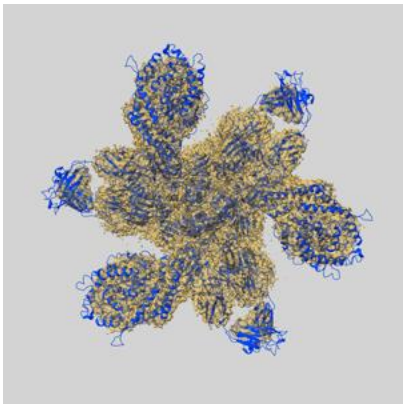
9.1 Map-model overlay



X



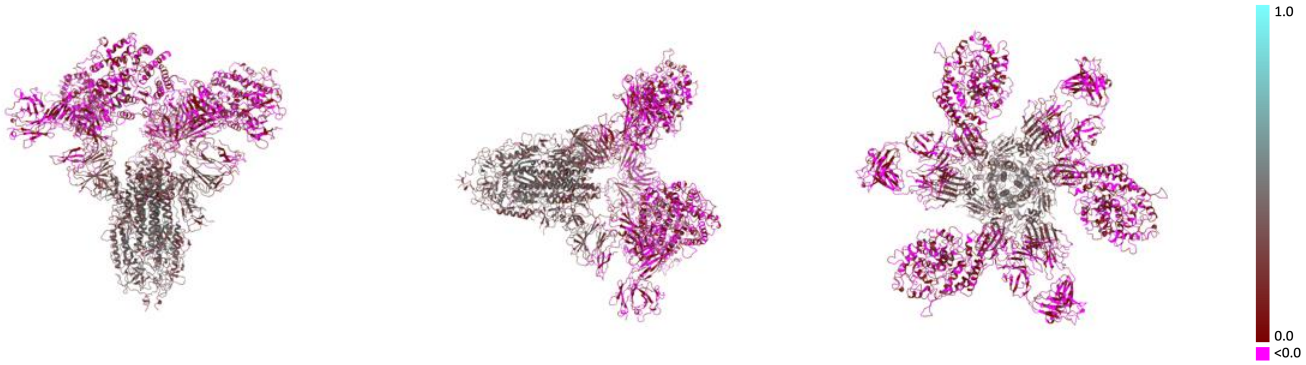
Y



Z

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

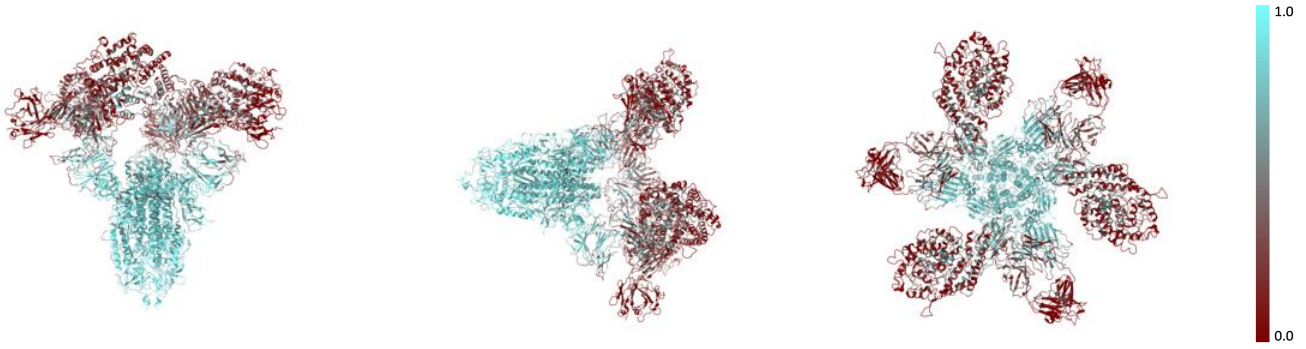
9.2 Q-score mapped to coordinate model (i)



X Y Z

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

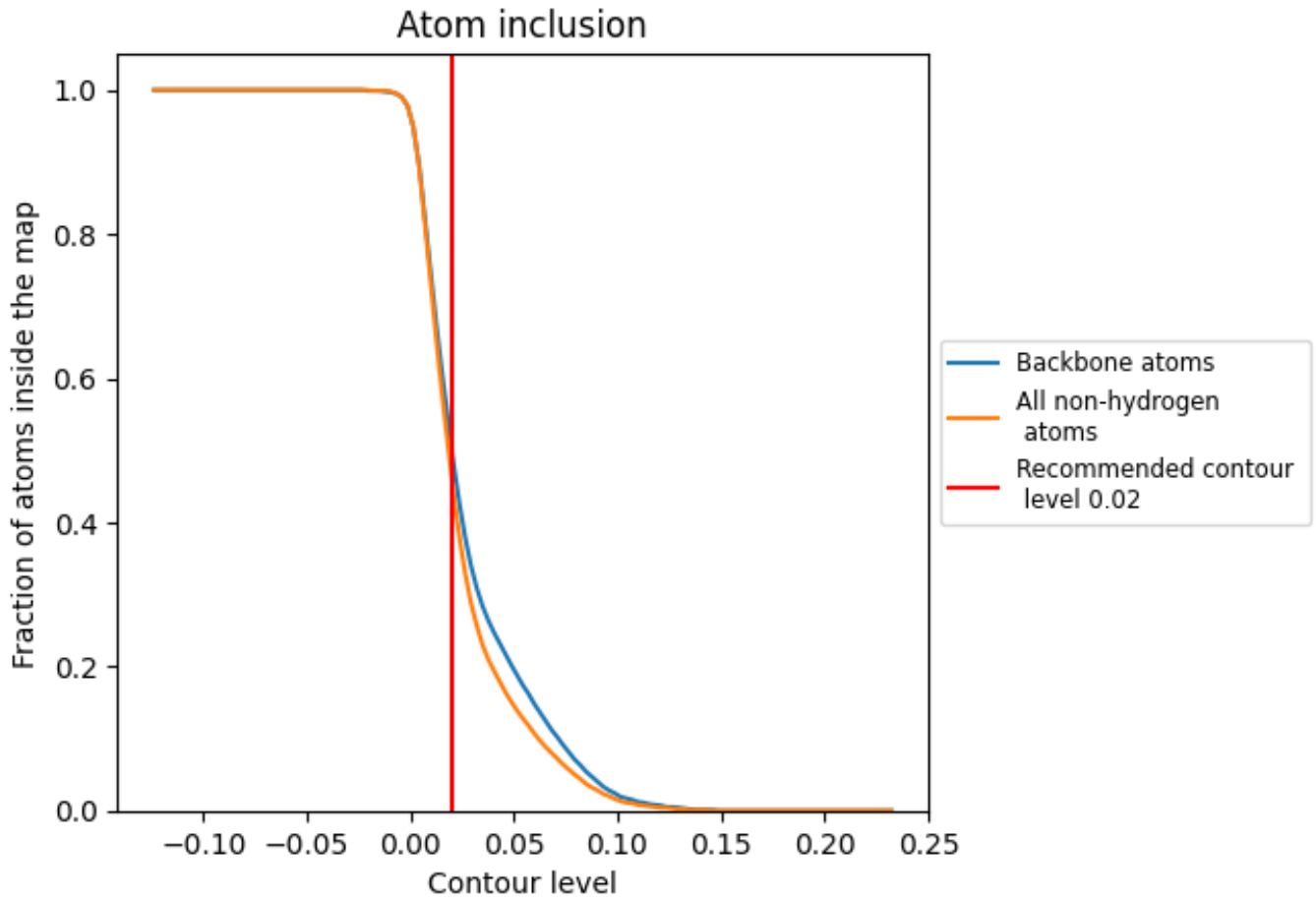
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.02).

9.4 Atom inclusion (i)



At the recommended contour level, 50% of all backbone atoms, 46% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.02) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.4600	0.1490
A	0.7050	0.2580
B	0.7060	0.2590
C	0.7110	0.2600
D	0.8210	0.3560
E	0.2110	0.0400
F	0.5710	0.1640
G	0.1910	0.0250
H	0.2050	0.0370
I	0.1560	0.0220
J	0.2130	0.0410
K	0.8210	0.4280
L	0.1520	0.0180
M	0.2170	0.0470
N	0.2030	0.0130
O	0.1600	0.0130
P	0.6430	0.2070
Q	0.8930	0.3920
R	0.6070	0.2030