Full wwPDB EM Validation Report ⓘ

Nov 5, 2024 – 11:48 AM JST

PDB ID	:	8ZHK
EMDB ID	:	EMD-60106
Title	:	SARS-CoV-2 spike trimer (6P) in complex with three H18 Fabs, head-to-head aggregate (C3 symmetry)
Authors	:	Yan, Q.; Gao, X.; Liu, B.; Hou, R.; He, P.; Li, Z.; Chen, Q.; Wang, J.; He, J.; Chen, L.; Zhao, J.; Xiong, X.
Deposited on	:	2024-05-11
Resolution	:	6.30 Å(reported)

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

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

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

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

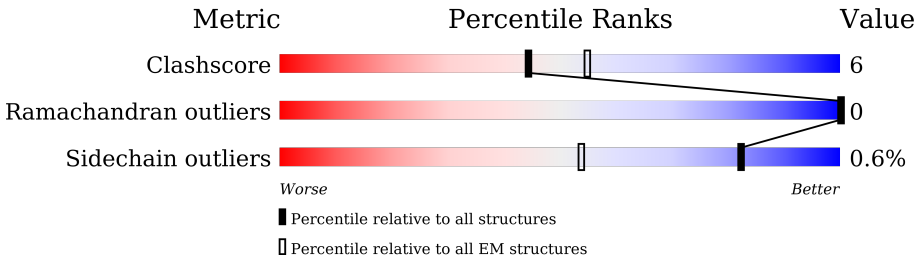
EMDB validation analysis	:	FAILED
Mogul	:	1.8.5 (274361), CSD as541be (2020)
MolProbity	:	4.02b-467
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
MapQ	:	FAILED
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.39

1 Overall quality at a glance

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

The reported resolution of this entry is 6.30 Å.

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



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

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

Mol	Chain	Length	Quality of chain
1	A	1278	67% 16% 17%
1	B	1278	69% 14% 17%
1	C	1278	71% 12% 17%
1	G	1278	68% 15% 17%
1	H	1278	70% 13% 17%
1	I	1278	70% 13% 17%
2	D	243	74% 14% 12%
2	F	243	75% 13% 12%
2	K	243	78% 10% 12%

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
2	L	243	73% 13% 12%
2	O	243	79% 9% 12%
2	Q	243	79% 8% 12%
3	E	243	78% 14% 8%
3	J	243	76% 16% 8%
3	M	243	77% 15% 8%
3	N	243	79% 12% 8%
3	P	243	78% 14% 8%
3	R	243	78% 14% 8%
4	S	2	100%
4	T	2	100%
4	U	2	100%
4	V	2	100%
4	W	2	50% 50%
4	X	2	100%
4	Y	2	50% 50%
4	Z	2	100%
4	a	2	100%
4	b	2	100%
4	c	2	100%
4	d	2	100%
4	e	2	100%
4	f	2	100%
4	g	2	100%
4	h	2	100%

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
4	i	2	100%
4	j	2	100%
4	k	2	100%
4	l	2	100%
4	m	2	100%
4	n	2	100%
4	o	2	100%
4	p	2	100%

2 Entry composition (i)

There are 5 unique types of molecules in this entry. The entry contains 71238 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called Spike glycoprotein,Fibritin,Expression Tag.

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		
1	G	1066	Total	C	N	O	S	0	0
			8344	5324	1394	1588	38		
1	H	1066	Total	C	N	O	S	0	0
			8344	5324	1394	1588	38		
1	I	1066	Total	C	N	O	S	0	0
			8344	5324	1394	1588	38		

There are 66 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	682	GLY	ARG	conflict	UNP P0DTC2
A	683	SER	ARG	conflict	UNP P0DTC2
A	685	SER	ARG	conflict	UNP P0DTC2
A	817	PRO	PHE	conflict	UNP P0DTC2
A	892	PRO	ALA	conflict	UNP P0DTC2
A	899	PRO	ALA	conflict	UNP P0DTC2
A	942	PRO	ALA	conflict	UNP P0DTC2
A	986	PRO	LYS	variant	UNP P0DTC2
A	987	PRO	VAL	variant	UNP P0DTC2
A	1209	GLY	-	linker	UNP P0DTC2
A	1210	SER	-	linker	UNP P0DTC2
B	682	GLY	ARG	conflict	UNP P0DTC2
B	683	SER	ARG	conflict	UNP P0DTC2
B	685	SER	ARG	conflict	UNP P0DTC2
B	817	PRO	PHE	conflict	UNP P0DTC2
B	892	PRO	ALA	conflict	UNP P0DTC2
B	899	PRO	ALA	conflict	UNP P0DTC2
B	942	PRO	ALA	conflict	UNP P0DTC2

Continued on next page...

Continued from previous page...

Chain	Residue	Modelled	Actual	Comment	Reference
B	986	PRO	LYS	variant	UNP P0DTC2
B	987	PRO	VAL	variant	UNP P0DTC2
B	1209	GLY	-	linker	UNP P0DTC2
B	1210	SER	-	linker	UNP P0DTC2
C	682	GLY	ARG	conflict	UNP P0DTC2
C	683	SER	ARG	conflict	UNP P0DTC2
C	685	SER	ARG	conflict	UNP P0DTC2
C	817	PRO	PHE	conflict	UNP P0DTC2
C	892	PRO	ALA	conflict	UNP P0DTC2
C	899	PRO	ALA	conflict	UNP P0DTC2
C	942	PRO	ALA	conflict	UNP P0DTC2
C	986	PRO	LYS	variant	UNP P0DTC2
C	987	PRO	VAL	variant	UNP P0DTC2
C	1209	GLY	-	linker	UNP P0DTC2
C	1210	SER	-	linker	UNP P0DTC2
G	682	GLY	ARG	conflict	UNP P0DTC2
G	683	SER	ARG	conflict	UNP P0DTC2
G	685	SER	ARG	conflict	UNP P0DTC2
G	817	PRO	PHE	conflict	UNP P0DTC2
G	892	PRO	ALA	conflict	UNP P0DTC2
G	899	PRO	ALA	conflict	UNP P0DTC2
G	942	PRO	ALA	conflict	UNP P0DTC2
G	986	PRO	LYS	variant	UNP P0DTC2
G	987	PRO	VAL	variant	UNP P0DTC2
G	1209	GLY	-	linker	UNP P0DTC2
G	1210	SER	-	linker	UNP P0DTC2
H	682	GLY	ARG	conflict	UNP P0DTC2
H	683	SER	ARG	conflict	UNP P0DTC2
H	685	SER	ARG	conflict	UNP P0DTC2
H	817	PRO	PHE	conflict	UNP P0DTC2
H	892	PRO	ALA	conflict	UNP P0DTC2
H	899	PRO	ALA	conflict	UNP P0DTC2
H	942	PRO	ALA	conflict	UNP P0DTC2
H	986	PRO	LYS	variant	UNP P0DTC2
H	987	PRO	VAL	variant	UNP P0DTC2
H	1209	GLY	-	linker	UNP P0DTC2
H	1210	SER	-	linker	UNP P0DTC2
I	682	GLY	ARG	conflict	UNP P0DTC2
I	683	SER	ARG	conflict	UNP P0DTC2
I	685	SER	ARG	conflict	UNP P0DTC2
I	817	PRO	PHE	conflict	UNP P0DTC2
I	892	PRO	ALA	conflict	UNP P0DTC2

Continued on next page...

Continued from previous page...

Chain	Residue	Modelled	Actual	Comment	Reference
I	899	PRO	ALA	conflict	UNP P0DTC2
I	942	PRO	ALA	conflict	UNP P0DTC2
I	986	PRO	LYS	variant	UNP P0DTC2
I	987	PRO	VAL	variant	UNP P0DTC2
I	1209	GLY	-	linker	UNP P0DTC2
I	1210	SER	-	linker	UNP P0DTC2

- Molecule 2 is a protein called Light chain of H18 Fab.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	D	213	Total	C	N	O	S	0	0
			1593	989	264	335	5		
2	F	213	Total	C	N	O	S	0	0
			1593	989	264	335	5		
2	K	213	Total	C	N	O	S	0	0
			1593	989	264	335	5		
2	L	213	Total	C	N	O	S	0	0
			1593	989	264	335	5		
2	O	213	Total	C	N	O	S	0	0
			1593	989	264	335	5		
2	Q	213	Total	C	N	O	S	0	0
			1593	989	264	335	5		

- Molecule 3 is a protein called Heavy chain of H18 Fab.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	E	224	Total	C	N	O	S	0	0
			1670	1058	276	330	6		
3	J	224	Total	C	N	O	S	0	0
			1670	1058	276	330	6		
3	M	224	Total	C	N	O	S	0	0
			1670	1058	276	330	6		
3	N	224	Total	C	N	O	S	0	0
			1670	1058	276	330	6		
3	P	224	Total	C	N	O	S	0	0
			1670	1058	276	330	6		
3	R	224	Total	C	N	O	S	0	0
			1670	1058	276	330	6		

- Molecule 4 is an oligosaccharide called 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose.

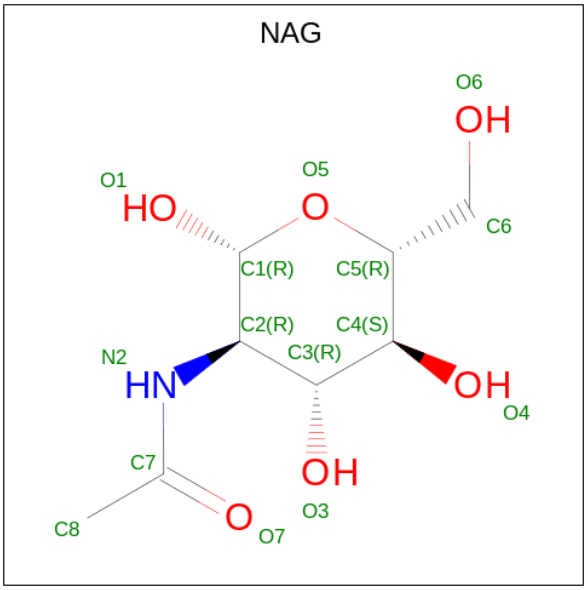
Mol	Chain	Residues	Atoms				AltConf	Trace
4	S	2	Total	C	N	O	0	0
			28	16	2	10		
4	T	2	Total	C	N	O	0	0
			28	16	2	10		
4	U	2	Total	C	N	O	0	0
			28	16	2	10		
4	V	2	Total	C	N	O	0	0
			28	16	2	10		
4	W	2	Total	C	N	O	0	0
			28	16	2	10		
4	X	2	Total	C	N	O	0	0
			28	16	2	10		
4	Y	2	Total	C	N	O	0	0
			28	16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

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms	AltConf	Trace
4	l	2	Total C N O 28 16 2 10	0	0
4	m	2	Total C N O 28 16 2 10	0	0
4	n	2	Total C N O 28 16 2 10	0	0
4	o	2	Total C N O 28 16 2 10	0	0
4	p	2	Total C N O 28 16 2 10	0	0

- Molecule 5 is 2-acetamido-2-deoxy-beta-D-glucopyranose (three-letter code: NAG) (formula: $C_8H_{15}NO_6$).



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

Continued on next page...

Continued from previous page...

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

Continued on next page...

Continued from previous page...

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

Continued on next page...

Continued from previous page...

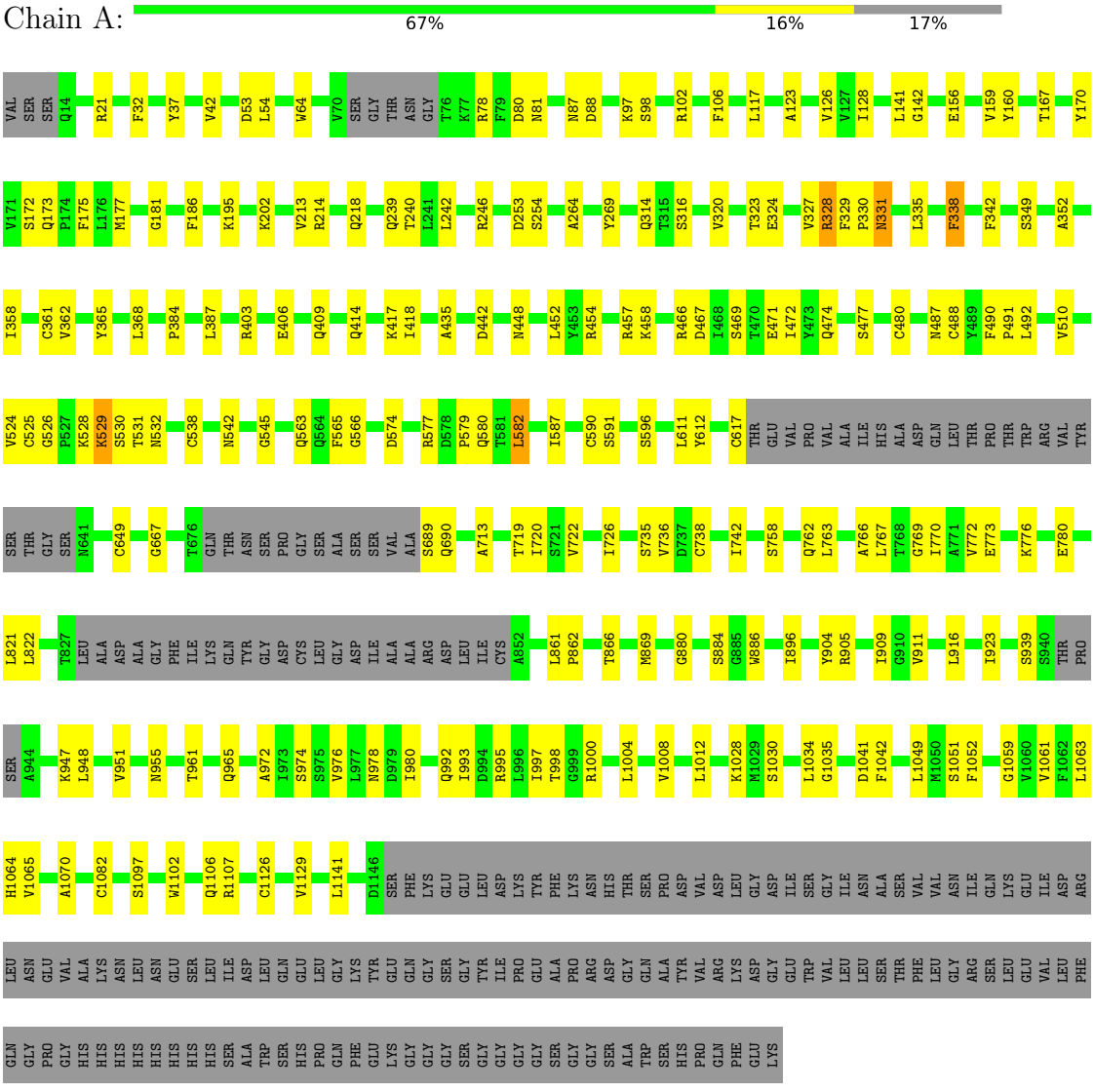
Mol	Chain	Residues	Atoms				AltConf
5	H	1	Total 14	C 8	N 1	O 5	0
5	H	1	Total 14	C 8	N 1	O 5	0
5	H	1	Total 14	C 8	N 1	O 5	0
5	H	1	Total 14	C 8	N 1	O 5	0
5	H	1	Total 14	C 8	N 1	O 5	0
5	H	1	Total 14	C 8	N 1	O 5	0
5	H	1	Total 14	C 8	N 1	O 5	0
5	I	1	Total 14	C 8	N 1	O 5	0
5	I	1	Total 14	C 8	N 1	O 5	0
5	I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

3 Residue-property plots (i)

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

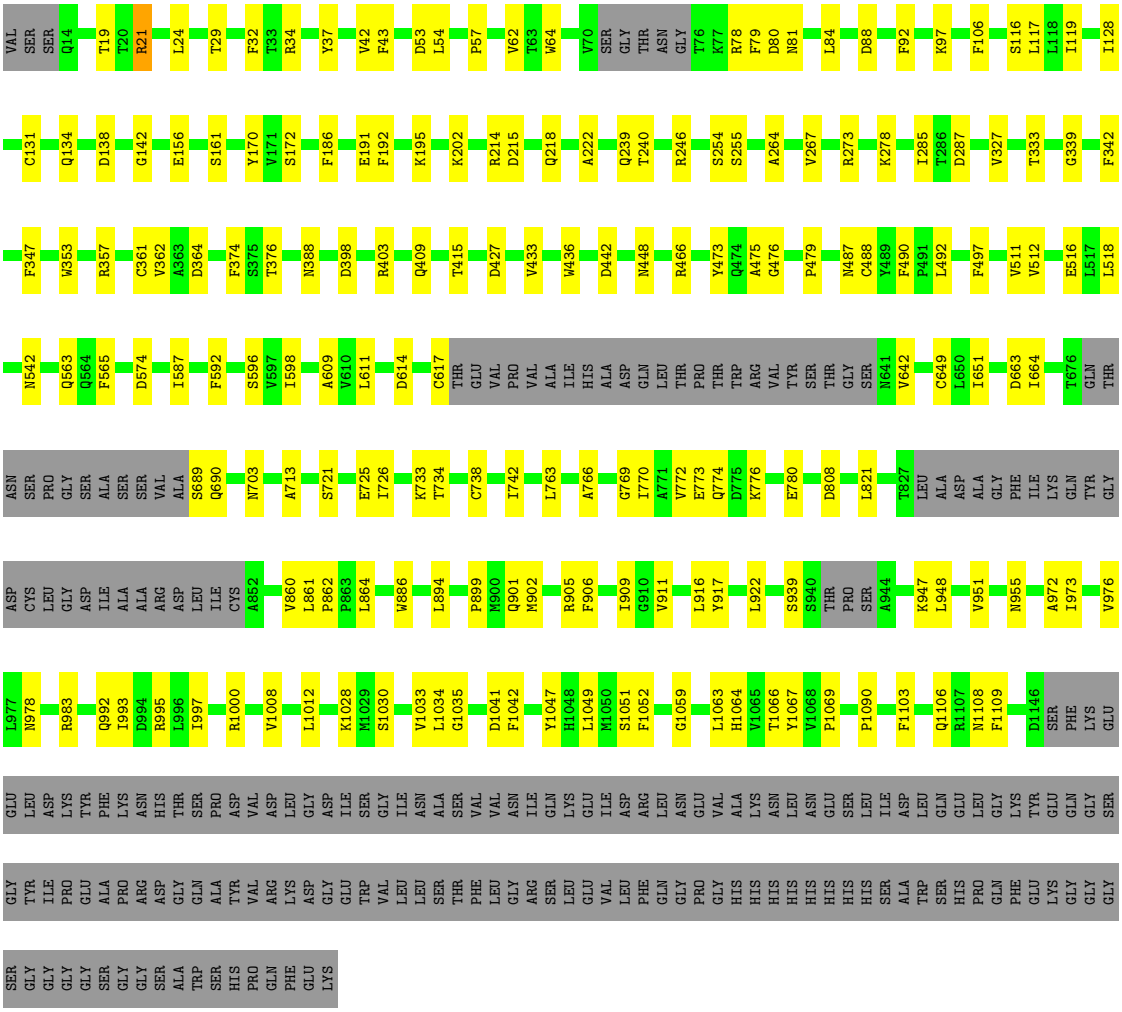
- Molecule 1: Spike glycoprotein,Fibritin,Expression Tag

Chain A:



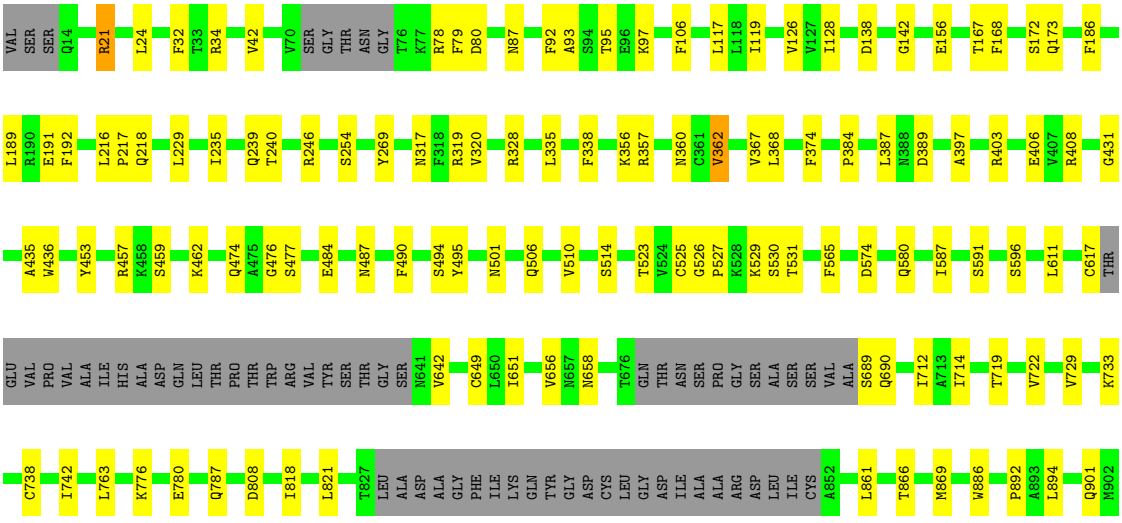
- Molecule 1: Spike glycoprotein,Fibritin,Expression Tag

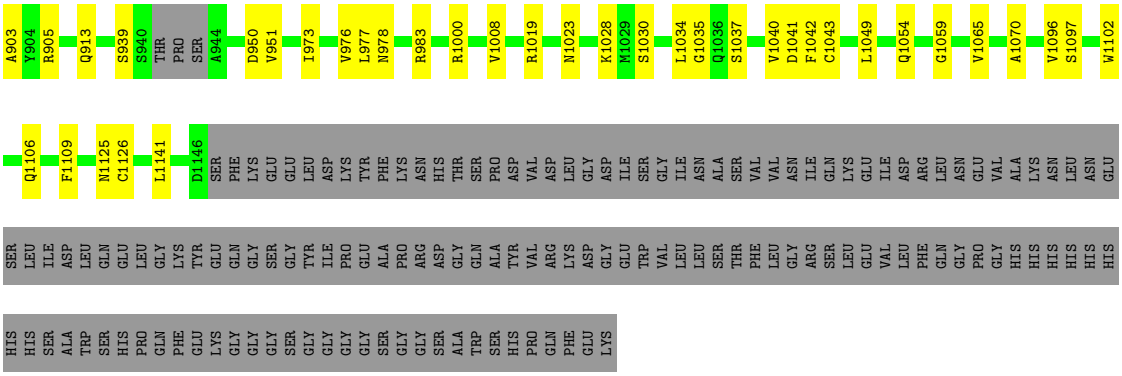
Chain B:



• Molecule 1: Spike glycoprotein,Fibritin,Expression Tag

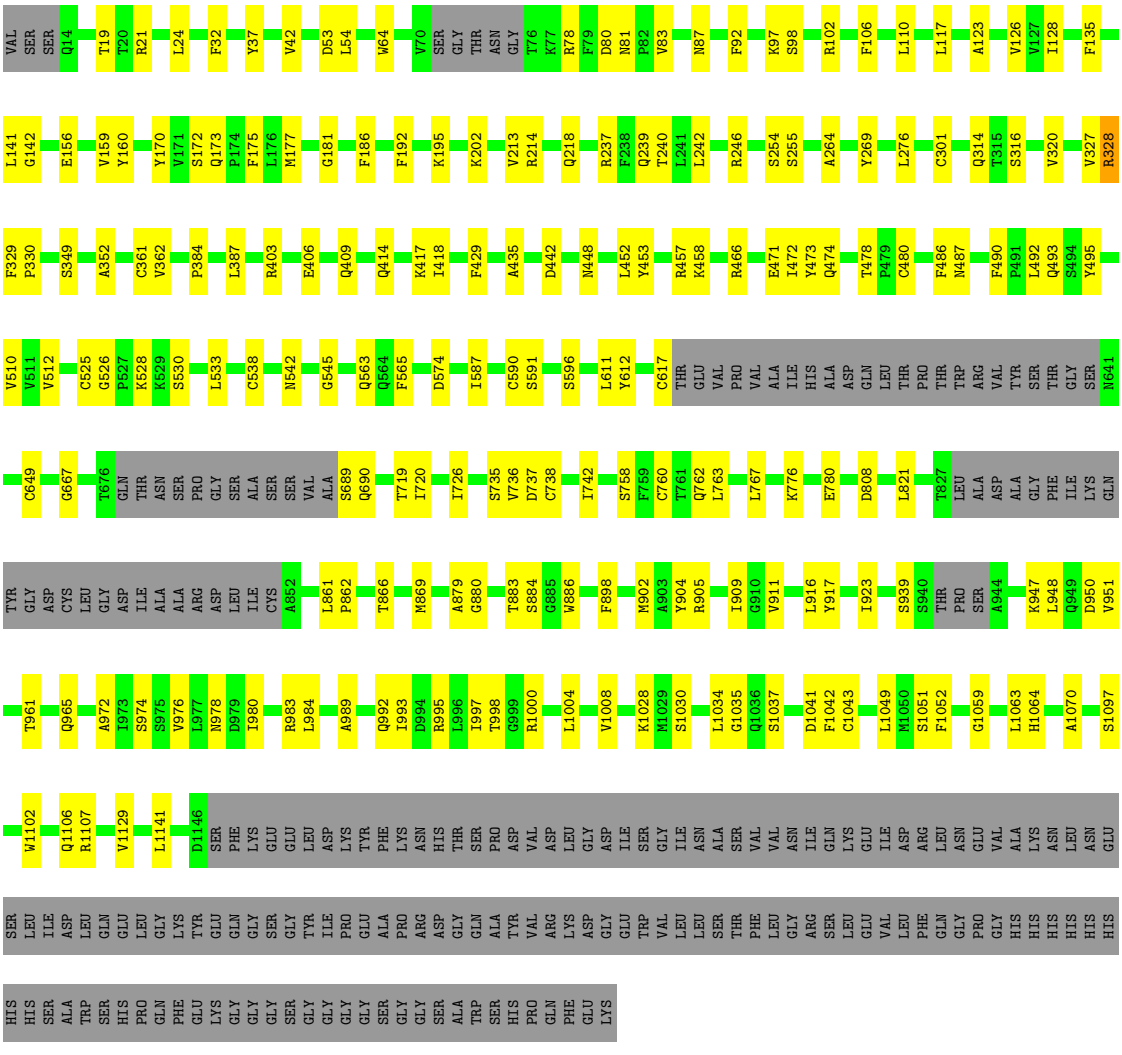
Chain C:





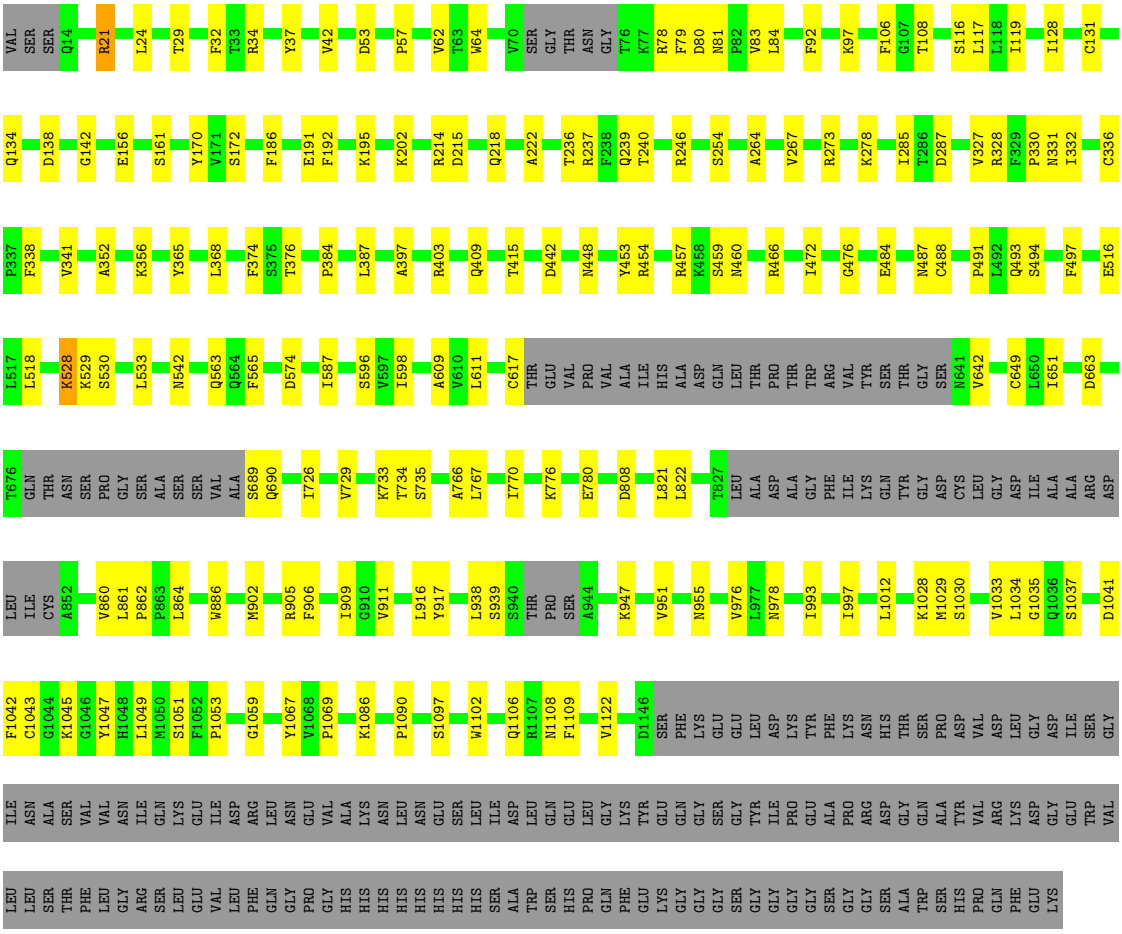
• Molecule 1: Spike glycoprotein,Fibritin,Expression Tag

Chain G:



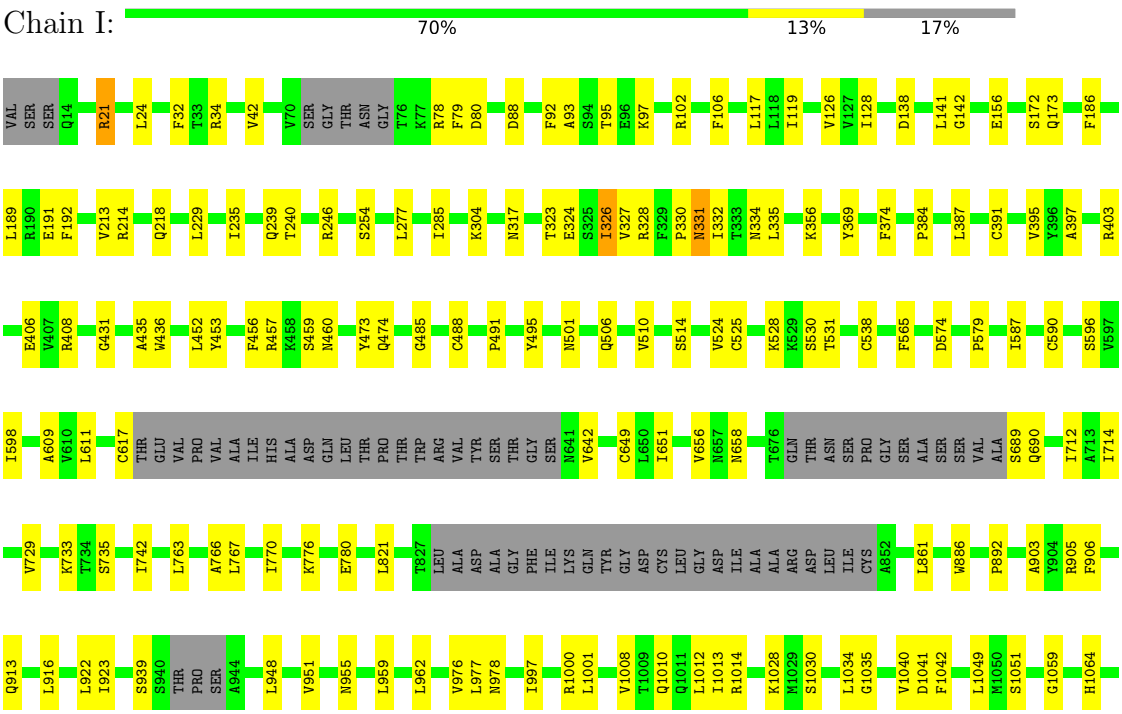
• Molecule 1: Spike glycoprotein,Fibritin,Expression Tag

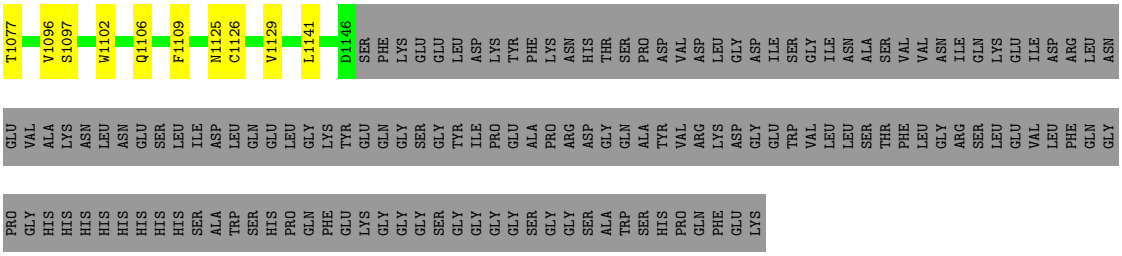
Chain H:



• Molecule 1: Spike glycoprotein,Fibritin,Expression Tag

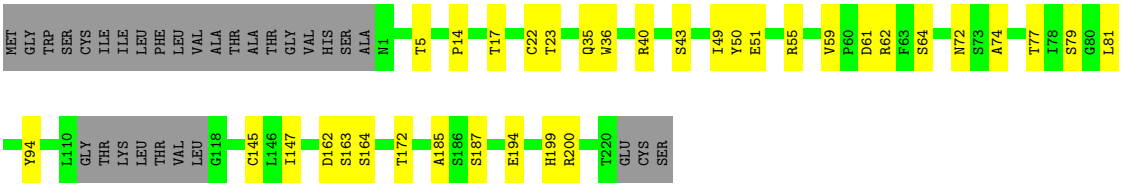
Chain I:





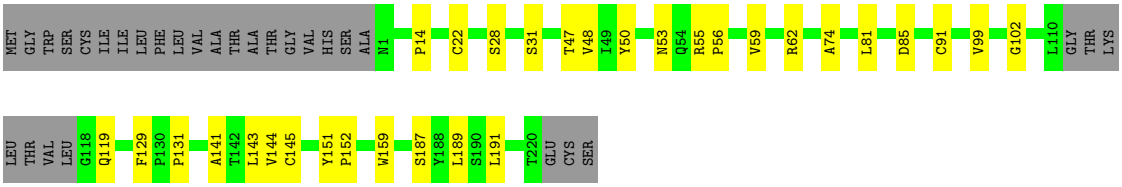
• Molecule 2: Light chain of H18 Fab

Chain D:



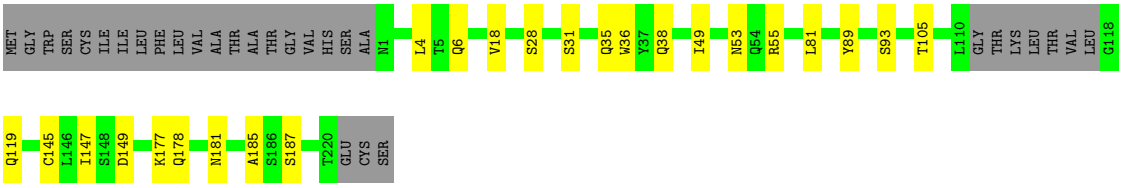
• Molecule 2: Light chain of H18 Fab

Chain F:



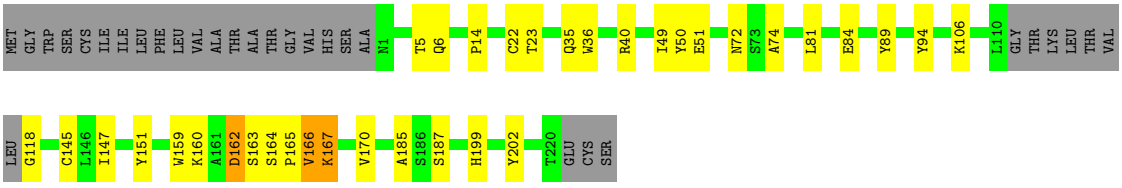
• Molecule 2: Light chain of H18 Fab

Chain K:



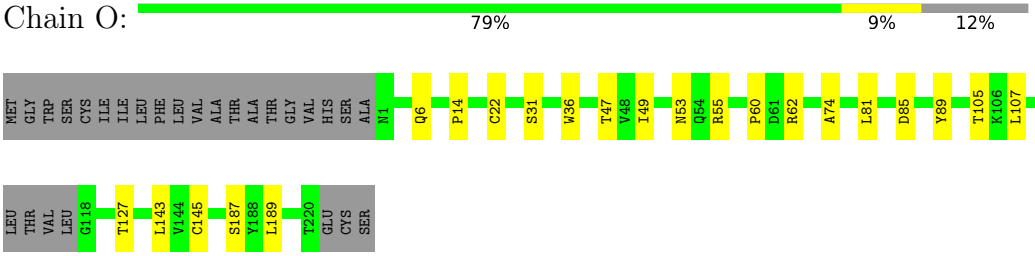
• Molecule 2: Light chain of H18 Fab

Chain L:



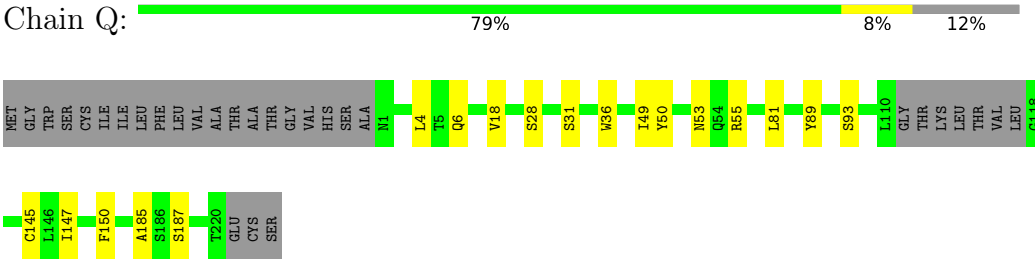
• Molecule 2: Light chain of H18 Fab

Chain O:



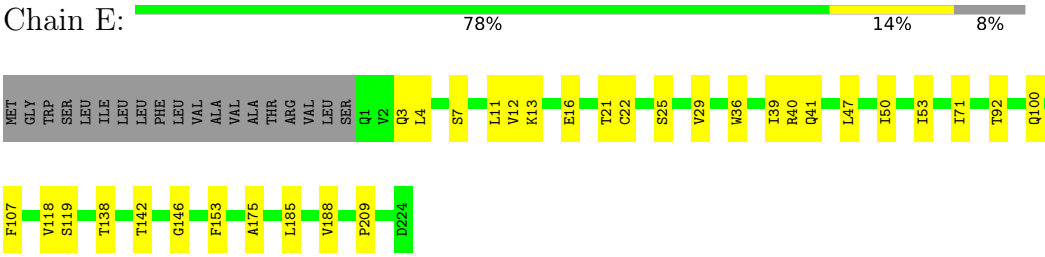
• Molecule 2: Light chain of H18 Fab

Chain Q:



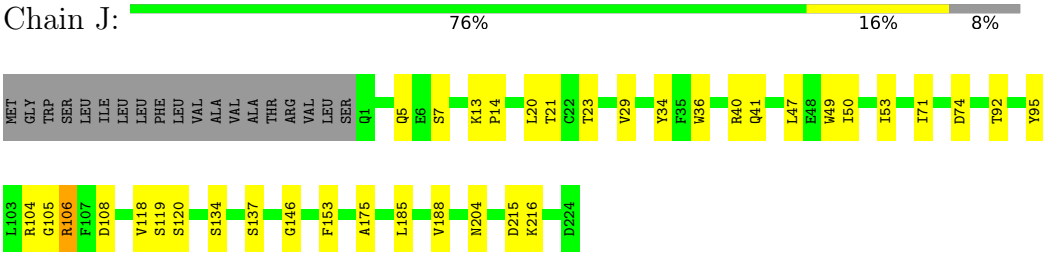
• Molecule 3: Heavy chain of H18 Fab

Chain E:



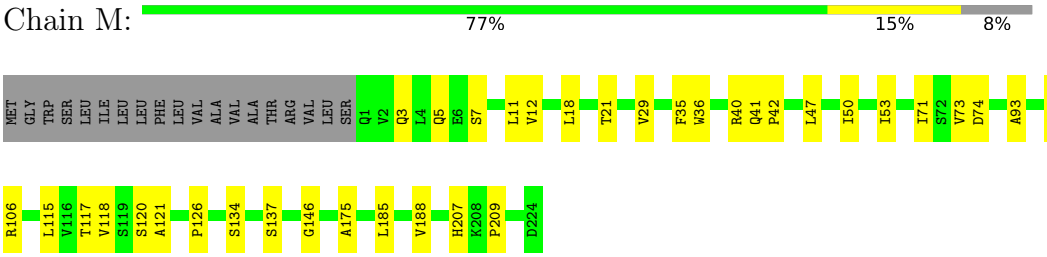
• Molecule 3: Heavy chain of H18 Fab

Chain J:



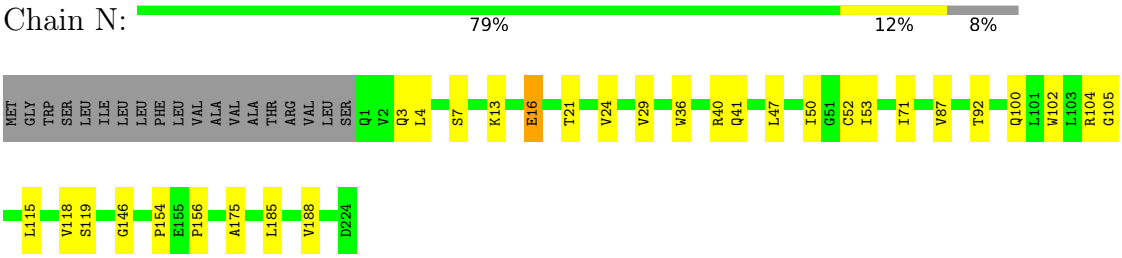
• Molecule 3: Heavy chain of H18 Fab

Chain M:



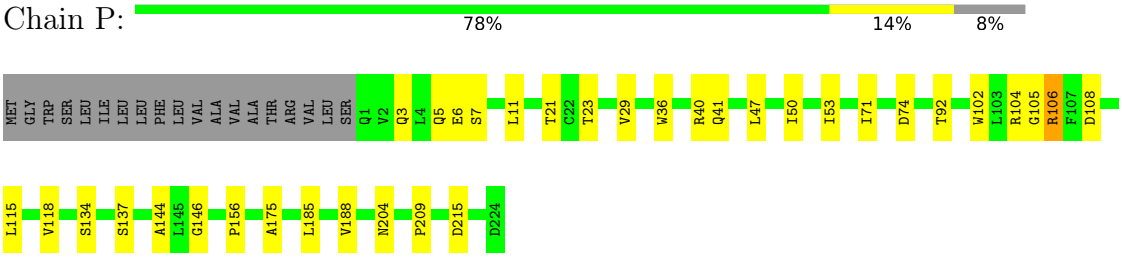
• Molecule 3: Heavy chain of H18 Fab

Chain N:



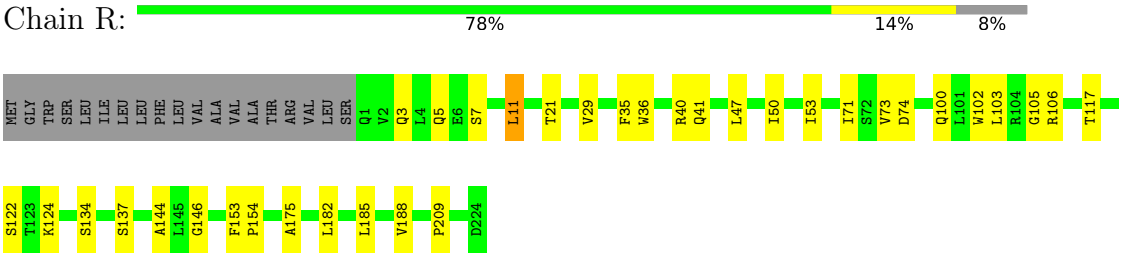
• Molecule 3: Heavy chain of H18 Fab

Chain P:



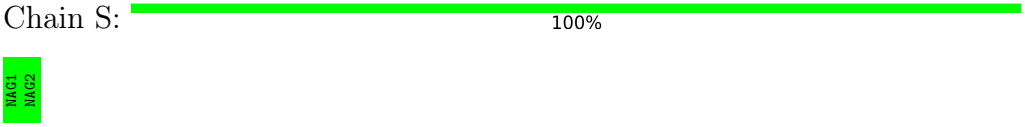
• Molecule 3: Heavy chain of H18 Fab

Chain R:



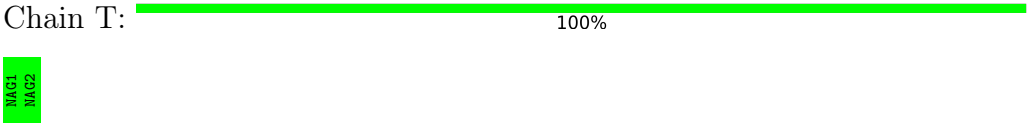
• Molecule 4: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain S:



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

Chain T:

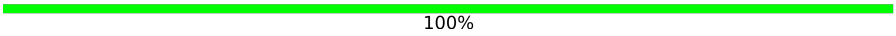


• Molecule 4: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain U:

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

Chain V:

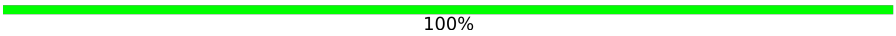


• Molecule 4: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain W:

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

Chain X:

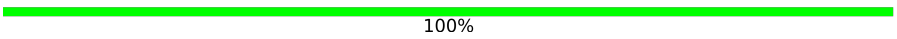


• Molecule 4: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain Y:

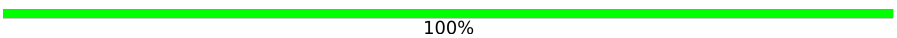
• Molecule 4: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain Z:



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

Chain a:



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

Chain b: 100%

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

Chain c: 100%

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

Chain d: 100%

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

Chain e: 100%

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

Chain f: 100%

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

Chain g: 100%

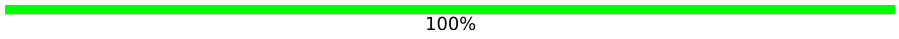
• Molecule 4: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain h: 100%

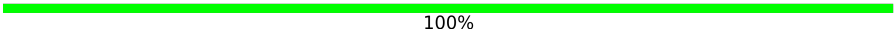
• Molecule 4: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain i:

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

Chain j: 

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

Chain k: 

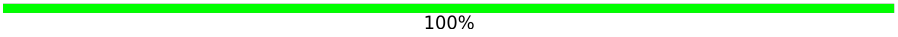
• Molecule 4: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain l: 

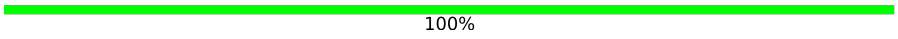
• Molecule 4: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain m: 

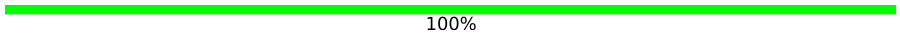
• Molecule 4: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain n: 

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

Chain o: 

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

Chain p: 

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	16440	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TALOS ARCTICA	Depositor
Voltage (kV)	200	Depositor
Electron dose ($e^-/Å^2$)	60	Depositor
Minimum defocus (nm)	800	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	45000	Depositor
Image detector	GATAN K3 (6k x 4k)	Depositor

5 Model quality

5.1 Standard geometry

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

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	0.27	0/8540	0.50	0/11624
1	B	0.26	0/8540	0.50	0/11624
1	C	0.27	0/8540	0.50	0/11624
1	G	0.26	0/8540	0.51	0/11624
1	H	0.27	0/8540	0.51	0/11624
1	I	0.27	0/8540	0.51	0/11624
2	D	0.25	0/1630	0.50	0/2225
2	F	0.25	0/1630	0.51	0/2225
2	K	0.25	0/1630	0.48	0/2225
2	L	0.25	0/1630	0.49	0/2225
2	O	0.25	0/1630	0.48	0/2225
2	Q	0.25	0/1630	0.48	0/2225
3	E	0.25	0/1713	0.52	0/2339
3	J	0.25	0/1713	0.50	0/2339
3	M	0.25	0/1713	0.51	0/2339
3	N	0.26	0/1713	0.52	0/2339
3	P	0.25	0/1713	0.49	0/2339
3	R	0.25	0/1713	0.51	0/2339
All	All	0.26	0/71298	0.50	0/97128

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	8123	122	0
1	B	8344	0	8123	126	0
1	C	8344	0	8123	100	0
1	G	8344	0	8123	119	0
1	H	8344	0	8123	108	0
1	I	8344	0	8123	105	0
2	D	1593	0	1524	23	0
2	F	1593	0	1524	20	0
2	K	1593	0	1524	15	0
2	L	1593	0	1524	27	0
2	O	1593	0	1524	15	0
2	Q	1593	0	1524	13	0
3	E	1670	0	1643	19	0
3	J	1670	0	1643	29	0
3	M	1670	0	1643	23	0
3	N	1670	0	1643	21	0
3	P	1670	0	1643	22	0
3	R	1670	0	1643	22	0
4	S	28	0	25	0	0
4	T	28	0	25	0	0
4	U	28	0	25	0	0
4	V	28	0	25	0	0
4	W	28	0	25	1	0
4	X	28	0	25	0	0
4	Y	28	0	25	1	0
4	Z	28	0	25	0	0
4	a	28	0	25	0	0
4	b	28	0	25	0	0
4	c	28	0	25	0	0
4	d	28	0	25	0	0
4	e	28	0	25	0	0
4	f	28	0	25	0	0
4	g	28	0	25	0	0
4	h	28	0	25	0	0
4	i	28	0	25	0	0
4	j	28	0	25	0	0
4	k	28	0	25	0	0
4	l	28	0	25	0	0
4	m	28	0	25	0	0
4	n	28	0	25	0	0
4	o	28	0	25	0	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
4	p	28	0	25	0	0
5	A	154	0	143	0	0
5	B	154	0	143	0	0
5	C	154	0	143	1	0
5	G	154	0	143	0	0
5	H	154	0	143	1	0
5	I	154	0	143	0	0
All	All	71238	0	69198	861	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 6.

All (861) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:330:PRO:HG2	1:I:579:PRO:HB2	1.50	0.93
1:A:577:ARG:HD3	1:A:582:LEU:HD12	1.64	0.80
1:C:738:CYS:HB3	1:C:742:ILE:HD12	1.61	0.80
3:P:11:LEU:HD22	3:P:209:PRO:HB3	1.62	0.79
1:H:902:MET:HG3	1:H:916:LEU:HD11	1.65	0.78
1:A:331:ASN:HB3	1:A:580:GLN:HA	1.65	0.77
3:J:102:TRP:HB3	3:J:105:GLY:HA3	1.66	0.76
1:B:902:MET:HG3	1:B:916:LEU:HD11	1.67	0.74
1:A:480:CYS:HA	1:A:487:ASN:HB3	1.71	0.73
3:P:102:TRP:HB3	3:P:105:GLY:HA3	1.71	0.72
1:H:770:ILE:HD11	1:H:1012:LEU:HD23	1.73	0.71
1:G:328:ARG:HH21	1:G:533:LEU:HB2	1.56	0.71
1:A:328:ARG:HB3	1:A:531:THR:HG23	1.73	0.70
1:B:106:PHE:HB2	1:B:117:LEU:HB2	1.73	0.70
1:H:106:PHE:HB2	1:H:117:LEU:HB2	1.74	0.70
2:L:163:SER:H	2:L:199:HIS:CD2	2.10	0.69
1:B:333:THR:HG23	1:B:362:VAL:HG22	1.73	0.69
1:C:374:PHE:O	3:E:104:ARG:NH2	2.26	0.69
1:I:374:PHE:O	3:N:104:ARG:NH2	2.26	0.69
1:C:106:PHE:HB2	1:C:117:LEU:HB2	1.75	0.69
2:L:145:CYS:HB3	2:L:187:SER:HB3	1.75	0.69
1:C:362:VAL:HG23	1:C:526:GLY:HA2	1.75	0.68
2:L:163:SER:H	2:L:199:HIS:HD2	1.39	0.68
1:I:106:PHE:HB2	1:I:117:LEU:HB2	1.76	0.68
2:L:118:GLY:N	2:L:151:TYR:HH	1.92	0.68
1:G:758:SER:O	1:G:762:GLN:NE2	2.27	0.68

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:N:119:SER:HB3	3:N:154:PRO:HG3	1.75	0.68
3:M:146:GLY:HA3	3:M:188:VAL:HG12	1.76	0.67
3:P:3:GLN:HE22	3:P:5:GLN:HB2	1.59	0.67
3:R:11:LEU:HD22	3:R:209:PRO:HB3	1.74	0.67
1:B:357:ARG:HH22	1:C:168:PHE:HB2	1.60	0.67
3:E:3:GLN:HE21	3:E:25:SER:HB2	1.60	0.66
3:M:29:VAL:HG13	3:M:36:TRP:HE1	1.61	0.66
1:A:328:ARG:HG3	1:A:531:THR:H	1.61	0.66
2:D:145:CYS:HB3	2:D:187:SER:HB3	1.75	0.66
3:R:146:GLY:HA3	3:R:188:VAL:HG12	1.77	0.66
2:K:145:CYS:HB3	2:K:187:SER:HB3	1.77	0.65
3:R:29:VAL:HG13	3:R:36:TRP:HE1	1.60	0.65
1:A:758:SER:O	1:A:762:GLN:NE2	2.29	0.65
1:G:742:ILE:O	1:G:1000:ARG:NH1	2.30	0.65
2:Q:145:CYS:HB3	2:Q:187:SER:HB3	1.79	0.65
3:E:146:GLY:HA3	3:E:188:VAL:HG12	1.78	0.65
2:F:143:LEU:HB2	2:F:189:LEU:HB3	1.80	0.64
1:A:87:ASN:HD21	1:A:269:TYR:HB3	1.62	0.64
3:N:146:GLY:HA3	3:N:188:VAL:HG12	1.78	0.64
3:R:11:LEU:HB2	3:R:117:THR:HB	1.80	0.64
3:R:35:PHE:HB2	3:R:100:GLN:HB3	1.79	0.64
1:C:459:SER:HA	1:G:487:ASN:H	1.63	0.64
1:B:479:PRO:HD2	1:H:494:SER:HB3	1.79	0.63
1:A:770:ILE:HD11	1:A:1012:LEU:HD23	1.80	0.63
1:C:356:LYS:HB2	1:C:397:ALA:HB3	1.81	0.63
1:G:442:ASP:O	1:G:448:ASN:ND2	2.32	0.63
1:A:742:ILE:O	1:A:1000:ARG:NH1	2.31	0.63
3:P:41:GLN:HB2	3:P:47:LEU:HD23	1.82	0.62
1:B:1052:PHE:HB2	1:B:1063:LEU:HB3	1.80	0.62
1:A:64:TRP:HE1	1:A:264:ALA:HB1	1.64	0.62
1:A:213:VAL:HG13	1:A:214:ARG:HG2	1.82	0.62
2:O:14:PRO:HA	2:O:81:LEU:HB3	1.81	0.62
1:B:473:TYR:HE2	1:H:484:GLU:HB2	1.65	0.61
1:A:1030:SER:HB3	1:C:1041:ASP:HB3	1.82	0.61
3:J:41:GLN:HB2	3:J:47:LEU:HD23	1.83	0.61
1:C:763:LEU:HD22	1:C:1008:VAL:HG21	1.83	0.61
1:G:1030:SER:HB3	1:I:1041:ASP:HB3	1.81	0.61
1:I:977:LEU:HD23	1:I:1000:ARG:HH12	1.66	0.61
1:I:742:ILE:O	1:I:1000:ARG:NH1	2.33	0.61
1:A:770:ILE:O	1:A:773:GLU:HG2	2.02	0.60
1:C:977:LEU:HD23	1:C:1000:ARG:HH12	1.66	0.60

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:356:LYS:HB2	1:I:397:ALA:HB3	1.81	0.60
3:J:40:ARG:HB3	3:J:50:ILE:HD11	1.84	0.60
1:B:1047:TYR:HB2	1:B:1067:TYR:HB3	1.83	0.60
1:G:173:GLN:HE22	1:G:175:PHE:HD2	1.50	0.60
1:H:442:ASP:O	1:H:448:ASN:ND2	2.35	0.60
3:N:175:ALA:HB2	3:N:185:LEU:HD23	1.83	0.60
3:E:41:GLN:HB2	3:E:47:LEU:HD23	1.84	0.60
1:G:458:LYS:NZ	1:G:471:GLU:OE1	2.34	0.60
1:H:1047:TYR:HB2	1:H:1067:TYR:HB3	1.84	0.60
1:B:64:TRP:HE1	1:B:264:ALA:HB1	1.66	0.59
2:F:14:PRO:HA	2:F:81:LEU:HB3	1.84	0.59
1:B:951:VAL:O	1:B:955:ASN:ND2	2.35	0.59
3:M:35:PHE:HB2	3:M:100:GLN:HB3	1.83	0.59
1:I:474:GLN:HE21	1:I:488:CYS:HB2	1.67	0.59
1:A:1041:ASP:HB3	1:B:1030:SER:HB3	1.84	0.59
1:B:239:GLN:NE2	1:B:240:THR:O	2.36	0.59
3:J:92:THR:HG22	3:J:118:VAL:H	1.66	0.59
3:J:146:GLY:HA3	3:J:188:VAL:HG12	1.84	0.59
1:G:983:ARG:HG3	1:G:984:LEU:HG	1.85	0.59
1:H:97:LYS:HB2	1:H:186:PHE:HA	1.83	0.59
1:H:776:LYS:NZ	1:H:780:GLU:OE2	2.36	0.59
3:R:175:ALA:HB2	3:R:185:LEU:HD23	1.84	0.59
1:B:776:LYS:NZ	1:B:780:GLU:OE2	2.36	0.59
3:R:11:LEU:HD13	3:R:154:PRO:HG3	1.85	0.59
1:B:466:ARG:HD2	5:C:1303:NAG:H82	1.84	0.59
1:C:742:ILE:O	1:C:1000:ARG:NH1	2.35	0.59
3:E:92:THR:HG22	3:E:118:VAL:H	1.68	0.59
1:I:328:ARG:HA	1:I:530:SER:HA	1.83	0.59
3:N:13:LYS:O	3:N:16:GLU:HB2	2.03	0.59
1:B:278:LYS:HB3	1:B:287:ASP:H	1.68	0.59
1:H:278:LYS:HB3	1:H:287:ASP:H	1.68	0.59
1:I:119:ILE:HG12	1:I:128:ILE:HG23	1.85	0.59
1:A:173:GLN:HE22	1:A:175:PHE:HD2	1.49	0.59
1:B:922:LEU:HD11	4:W:1:NAG:H3	1.84	0.59
2:D:36:TRP:HB2	2:D:49:ILE:HG22	1.85	0.59
1:A:97:LYS:HB2	1:A:186:PHE:HA	1.85	0.58
1:B:773:GLU:OE2	1:B:774:GLN:NE2	2.33	0.58
1:A:861:LEU:HD12	1:A:862:PRO:HD2	1.85	0.58
1:B:905:ARG:NH1	1:B:1049:LEU:O	2.35	0.58
1:C:239:GLN:NE2	1:C:240:THR:O	2.36	0.58
1:G:861:LEU:HD12	1:G:862:PRO:HD2	1.84	0.58

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:329:PHE:HB2	1:A:330:PRO:HD3	1.85	0.58
1:H:951:VAL:O	1:H:955:ASN:ND2	2.37	0.58
1:A:442:ASP:O	1:A:448:ASN:ND2	2.36	0.58
1:H:239:GLN:NE2	1:H:240:THR:O	2.36	0.58
1:H:64:TRP:HE1	1:H:264:ALA:HB1	1.67	0.58
1:H:330:PRO:HD2	1:H:528:LYS:HE2	1.84	0.58
1:B:770:ILE:HD11	1:B:1012:LEU:HD23	1.86	0.58
1:I:770:ILE:HD11	1:I:1012:LEU:HD13	1.84	0.58
1:B:442:ASP:O	1:B:448:ASN:ND2	2.37	0.58
1:G:736:VAL:HG11	1:G:1004:LEU:HD11	1.86	0.58
1:H:905:ARG:NH1	1:H:1049:LEU:O	2.35	0.58
1:I:239:GLN:NE2	1:I:240:THR:O	2.37	0.58
2:Q:28:SER:OG	2:Q:31:SER:OG	2.21	0.58
2:K:28:SER:OG	2:K:31:SER:OG	2.21	0.57
1:H:119:ILE:HG23	1:H:128:ILE:HG12	1.86	0.57
2:L:160:LYS:HA	2:L:165:PRO:HA	1.85	0.57
2:Q:127:THR:HG21	3:R:144:ALA:HB3	1.86	0.57
1:H:246:ARG:HH22	1:H:254:SER:HB3	1.69	0.57
3:E:175:ALA:HB2	3:E:185:LEU:HD23	1.84	0.57
3:P:40:ARG:HB3	3:P:50:ILE:HD11	1.84	0.57
3:P:146:GLY:HA3	3:P:188:VAL:HG12	1.86	0.57
3:R:41:GLN:HB2	3:R:47:LEU:HD23	1.86	0.57
1:C:142:GLY:HA3	1:C:156:GLU:HB2	1.86	0.57
2:L:36:TRP:HB2	2:L:49:ILE:HG22	1.85	0.57
3:M:41:GLN:HB2	3:M:47:LEU:HD23	1.85	0.57
1:B:119:ILE:HG23	1:B:128:ILE:HG12	1.87	0.57
1:I:142:GLY:HA3	1:I:156:GLU:HB2	1.86	0.57
1:A:365:TYR:HA	1:A:368:LEU:HD13	1.86	0.57
1:H:142:GLY:HA3	1:H:156:GLU:HB2	1.87	0.57
2:F:28:SER:HG	2:F:31:SER:HG	1.49	0.57
1:H:336:CYS:HB2	1:H:338:PHE:HD1	1.69	0.57
1:G:327:VAL:HG23	1:G:542:ASN:HB3	1.87	0.57
1:H:24:LEU:HB2	1:H:78:ARG:HD3	1.87	0.56
1:A:352:ALA:HA	1:A:466:ARG:HD3	1.86	0.56
1:B:246:ARG:HH22	1:B:254:SER:HB3	1.69	0.56
2:K:119:GLN:HE21	2:K:177:LYS:HD2	1.70	0.56
1:B:726:ILE:HB	1:B:947:LYS:HE2	1.87	0.56
3:M:175:ALA:HB2	3:M:185:LEU:HD23	1.87	0.56
1:G:246:ARG:HH22	1:G:254:SER:HB3	1.69	0.56
1:B:361:CYS:SG	1:B:362:VAL:N	2.79	0.56
2:D:162:ASP:HB2	2:D:199:HIS:HD2	1.70	0.56

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:N:7:SER:OG	3:N:21:THR:OG1	2.23	0.56
3:R:7:SER:OG	3:R:21:THR:OG1	2.24	0.56
1:A:32:PHE:HB3	1:A:218:GLN:HG3	1.87	0.56
1:A:246:ARG:HH22	1:A:254:SER:HB3	1.70	0.56
1:A:763:LEU:HD22	1:A:1008:VAL:HG21	1.88	0.56
3:P:92:THR:HG22	3:P:118:VAL:H	1.70	0.56
1:A:474:GLN:HA	1:A:488:CYS:HA	1.88	0.56
3:M:134:SER:H	3:M:137:SER:HB3	1.71	0.56
1:G:32:PHE:HB3	1:G:218:GLN:HG3	1.88	0.56
3:N:41:GLN:HB2	3:N:47:LEU:HD23	1.88	0.56
3:R:134:SER:H	3:R:137:SER:HB3	1.70	0.56
1:A:123:ALA:HA	1:A:177:MET:HB3	1.88	0.55
1:A:327:VAL:HG23	1:A:542:ASN:HB3	1.88	0.55
3:E:7:SER:OG	3:E:21:THR:OG1	2.23	0.55
3:J:175:ALA:HB2	3:J:185:LEU:HD23	1.88	0.55
1:G:667:GLY:HA2	1:H:864:LEU:HA	1.88	0.55
1:I:1010:GLN:OE1	1:I:1014:ARG:NH2	2.40	0.55
1:A:98:SER:HB3	1:A:181:GLY:HA2	1.87	0.55
1:C:526:GLY:N	1:C:527:PRO:HD2	2.21	0.55
1:B:119:ILE:HG12	1:B:128:ILE:HG23	1.89	0.55
1:G:1041:ASP:HB3	1:H:1030:SER:HB3	1.88	0.55
1:H:1030:SER:HA	1:H:1034:LEU:HD12	1.88	0.55
2:L:40:ARG:NH2	2:L:84:GLU:O	2.40	0.55
1:B:1030:SER:HA	1:B:1034:LEU:HD12	1.87	0.55
1:G:97:LYS:HB2	1:G:186:PHE:HA	1.88	0.55
1:H:1041:ASP:HB3	1:I:1030:SER:HB3	1.88	0.55
1:I:128:ILE:HG21	1:I:229:LEU:HD21	1.88	0.55
1:A:1051:SER:HG	1:A:1064:HIS:HD1	1.53	0.55
1:G:78:ARG:HE	1:G:80:ASP:HB2	1.71	0.55
1:I:763:LEU:HG	1:I:1008:VAL:HG21	1.89	0.55
2:O:143:LEU:HB2	2:O:189:LEU:HB3	1.87	0.55
1:B:81:ASN:HB3	1:B:239:GLN:HE21	1.72	0.55
3:M:11:LEU:HD22	3:M:118:VAL:HB	1.88	0.55
3:P:7:SER:OG	3:P:21:THR:OG1	2.24	0.55
3:P:175:ALA:HB2	3:P:185:LEU:HD23	1.89	0.55
1:C:119:ILE:HG12	1:C:128:ILE:HG23	1.88	0.55
2:D:5:THR:HB	2:D:23:THR:HB	1.88	0.55
3:N:52:CYS:SG	3:N:100:GLN:NE2	2.80	0.55
1:A:195:LYS:HB2	1:A:202:LYS:HB2	1.89	0.55
1:C:246:ARG:HH22	1:C:254:SER:HB3	1.71	0.55
1:B:398:ASP:HB2	1:B:512:VAL:HB	1.89	0.55

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:24:LEU:HB2	1:B:78:ARG:HD3	1.88	0.54
1:B:1090:PRO:O	1:C:913:GLN:NE2	2.40	0.54
1:H:328:ARG:HH21	1:H:533:LEU:HD13	1.73	0.54
3:N:4:LEU:HG	3:N:24:VAL:HG22	1.88	0.54
1:B:142:GLY:HA3	1:B:156:GLU:HB2	1.89	0.54
1:B:763:LEU:HD22	1:B:1008:VAL:HG21	1.89	0.54
1:G:102:ARG:HG3	1:G:141:LEU:HD12	1.89	0.54
1:G:525:CYS:SG	1:G:526:GLY:N	2.81	0.54
1:C:87:ASN:HD21	1:C:269:TYR:HB3	1.72	0.54
2:F:62:ARG:NH2	2:F:85:ASP:OD2	2.40	0.54
2:K:36:TRP:HB2	2:K:49:ILE:HG22	1.87	0.54
1:G:352:ALA:HA	1:G:466:ARG:HD3	1.88	0.54
1:A:102:ARG:HG3	1:A:141:LEU:HD12	1.90	0.54
1:G:195:LYS:HB2	1:G:202:LYS:HB2	1.89	0.54
2:L:35:GLN:NE2	3:N:105:GLY:O	2.40	0.54
2:Q:36:TRP:HB2	2:Q:49:ILE:HG22	1.90	0.54
1:C:818:ILE:HD11	1:C:1054:GLN:HE21	1.71	0.54
2:D:35:GLN:NE2	3:E:105:GLY:O	2.41	0.54
3:M:7:SER:OG	3:M:21:THR:OG1	2.25	0.54
2:D:55:ARG:NH1	2:D:59:VAL:O	2.40	0.54
1:H:472:ILE:HD12	1:H:488:CYS:HB2	1.90	0.54
1:A:1028:LYS:NZ	1:A:1042:PHE:O	2.41	0.54
1:B:37:TYR:OH	1:B:54:LEU:O	2.26	0.54
1:C:97:LYS:HB2	1:C:186:PHE:HA	1.88	0.54
3:J:7:SER:OG	3:J:21:THR:OG1	2.25	0.54
1:H:119:ILE:HG12	1:H:128:ILE:HG23	1.89	0.54
1:A:417:LYS:HG3	1:A:418:ILE:HG12	1.90	0.54
1:A:769:GLY:O	1:A:772:VAL:HG12	2.08	0.54
1:B:32:PHE:HB3	1:B:218:GLN:HG3	1.89	0.54
1:C:384:PRO:HA	1:C:387:LEU:HD23	1.90	0.54
1:G:42:VAL:HG12	1:I:565:PHE:HB2	1.89	0.54
1:C:319:ARG:NE	1:C:591:SER:OG	2.34	0.53
1:H:32:PHE:HB3	1:H:218:GLN:HG3	1.90	0.53
1:I:97:LYS:HB2	1:I:186:PHE:HA	1.88	0.53
1:I:246:ARG:HH22	1:I:254:SER:HB3	1.71	0.53
1:A:667:GLY:HA2	1:B:864:LEU:HA	1.91	0.53
1:B:1041:ASP:HB3	1:C:1030:SER:HB3	1.88	0.53
1:H:1028:LYS:NZ	1:H:1042:PHE:O	2.42	0.53
1:G:1028:LYS:NZ	1:G:1042:PHE:O	2.42	0.53
3:P:134:SER:H	3:P:137:SER:HB3	1.73	0.53
2:D:40:ARG:HB2	2:D:43:SER:HB2	1.90	0.53

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:980:ILE:HA	1:G:983:ARG:HG2	1.89	0.53
2:O:145:CYS:HB3	2:O:187:SER:HB3	1.91	0.53
1:B:29:THR:HG23	1:B:62:VAL:HG13	1.91	0.53
1:I:32:PHE:HB3	1:I:218:GLN:HG3	1.91	0.53
1:G:87:ASN:HD21	1:G:269:TYR:HB3	1.73	0.53
1:G:98:SER:HB3	1:G:181:GLY:HA2	1.89	0.53
1:G:574:ASP:HA	1:G:587:ILE:HB	1.91	0.53
1:B:689:SER:OG	1:B:690:GLN:N	2.42	0.53
1:B:766:ALA:O	1:B:770:ILE:HG12	2.09	0.53
1:C:32:PHE:HB3	1:C:218:GLN:HG3	1.90	0.53
1:C:408:ARG:NH2	2:D:72:ASN:OD1	2.42	0.53
1:G:417:LYS:HG3	1:G:418:ILE:HG12	1.90	0.53
1:H:821:LEU:HD21	1:H:939:SER:HA	1.91	0.53
1:H:365:TYR:HA	1:H:368:LEU:HD13	1.91	0.53
1:H:1090:PRO:O	1:I:913:GLN:NE2	2.42	0.53
1:I:776:LYS:NZ	1:I:780:GLU:OE2	2.42	0.53
2:O:62:ARG:NH2	2:O:85:ASP:OD2	2.42	0.53
2:O:127:THR:HG21	3:P:144:ALA:HB3	1.91	0.53
1:A:736:VAL:HG11	1:A:1004:LEU:HD11	1.90	0.52
1:G:110:LEU:HB3	1:G:135:PHE:HB2	1.90	0.52
3:P:29:VAL:HA	3:P:36:TRP:HZ2	1.74	0.52
3:R:122:SER:O	3:R:124:LYS:NZ	2.42	0.52
1:B:476:GLY:N	1:B:487:ASN:O	2.36	0.52
1:A:128:ILE:HB	1:A:170:TYR:HB3	1.92	0.52
1:C:866:THR:N	1:C:869:MET:SD	2.82	0.52
1:I:501:ASN:HB2	1:I:506:GLN:HE22	1.75	0.52
1:I:951:VAL:O	1:I:955:ASN:ND2	2.42	0.52
3:P:115:LEU:HD23	3:P:156:PRO:HG3	1.92	0.52
1:A:314:GLN:NE2	1:A:316:SER:O	2.42	0.52
1:H:689:SER:OG	1:H:690:GLN:N	2.41	0.52
1:I:408:ARG:NH2	2:L:72:ASN:OD1	2.42	0.52
1:C:501:ASN:HB2	1:C:506:GLN:HE22	1.75	0.52
1:H:29:THR:HG23	1:H:62:VAL:HG13	1.91	0.52
1:C:128:ILE:HG21	1:C:229:LEU:HD21	1.92	0.52
1:A:951:VAL:O	1:A:955:ASN:ND2	2.43	0.52
1:B:1106:GLN:HE21	1:B:1109:PHE:HB3	1.75	0.52
1:C:689:SER:OG	1:C:690:GLN:N	2.42	0.52
1:G:64:TRP:HE1	1:G:264:ALA:HB1	1.75	0.52
1:A:766:ALA:O	1:A:770:ILE:HG12	2.10	0.52
1:A:776:LYS:NZ	1:A:780:GLU:OE2	2.43	0.52
1:B:353:TRP:O	1:B:466:ARG:NH2	2.43	0.52

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:906:PHE:HE2	1:I:916:LEU:HD13	1.74	0.52
2:L:94:TYR:CG	3:N:104:ARG:HG2	2.44	0.52
1:B:97:LYS:HB2	1:B:186:PHE:HA	1.91	0.51
1:B:861:LEU:HD12	1:B:862:PRO:HD2	1.91	0.51
1:H:906:PHE:HE1	1:H:1049:LEU:HD21	1.75	0.51
1:G:314:GLN:NE2	1:G:316:SER:O	2.43	0.51
1:H:565:PHE:HB2	1:I:42:VAL:HG12	1.93	0.51
1:B:374:PHE:HB2	3:J:104:ARG:NH2	2.26	0.51
2:D:94:TYR:CG	3:E:104:ARG:HG2	2.44	0.51
1:B:821:LEU:HD21	1:B:939:SER:HA	1.92	0.51
1:C:973:ILE:HD12	1:C:983:ARG:HH12	1.74	0.51
3:J:108:ASP:OD1	3:J:108:ASP:N	2.43	0.51
1:G:776:LYS:NZ	1:G:780:GLU:OE2	2.44	0.51
1:G:866:THR:H	1:G:869:MET:HE2	1.75	0.51
3:R:3:GLN:HE22	3:R:5:GLN:HB3	1.76	0.51
1:G:128:ILE:HB	1:G:170:TYR:HB3	1.91	0.51
1:I:327:VAL:HB	1:I:528:LYS:HG2	1.93	0.51
1:A:349:SER:OG	1:A:452:LEU:O	2.29	0.51
1:B:906:PHE:HE1	1:B:1049:LEU:HD21	1.75	0.51
1:H:37:TYR:OH	1:H:53:ASP:OD2	2.29	0.51
1:A:42:VAL:HG12	1:C:565:PHE:HB2	1.93	0.51
1:B:973:ILE:HD12	1:B:983:ARG:HH12	1.76	0.51
2:F:99:VAL:HB	3:J:49:TRP:CG	2.46	0.51
1:H:356:LYS:HB2	1:H:397:ALA:HB3	1.91	0.51
2:D:55:ARG:NE	2:D:61:ASP:HA	2.26	0.51
2:L:5:THR:HB	2:L:23:THR:HB	1.92	0.51
1:A:689:SER:OG	1:A:690:GLN:N	2.44	0.51
1:C:821:LEU:HD21	1:C:939:SER:HA	1.93	0.51
1:I:689:SER:OG	1:I:690:GLN:N	2.42	0.51
1:B:565:PHE:HB2	1:C:42:VAL:HG12	1.93	0.50
1:C:776:LYS:NZ	1:C:780:GLU:OE2	2.42	0.50
1:H:574:ASP:HA	1:H:587:ILE:HB	1.93	0.50
3:N:92:THR:HG22	3:N:118:VAL:H	1.75	0.50
1:A:167:THR:HB	1:C:357:ARG:HD3	1.93	0.50
1:I:959:LEU:HD13	1:I:962:LEU:HD12	1.93	0.50
1:A:1052:PHE:HB2	1:A:1063:LEU:HB2	1.94	0.50
1:B:376:THR:HG22	2:F:31:SER:HB3	1.94	0.50
3:J:29:VAL:HA	3:J:36:TRP:HZ2	1.77	0.50
1:H:81:ASN:HB3	1:H:239:GLN:HE21	1.75	0.50
3:M:12:VAL:H	3:M:118:VAL:HG11	1.77	0.50
1:G:689:SER:OG	1:G:690:GLN:N	2.44	0.50

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:729:VAL:H	1:H:1059:GLY:HA2	1.77	0.50
1:A:735:SER:HA	1:A:767:LEU:HD13	1.94	0.50
1:B:339:GLY:HA2	1:B:342:PHE:CD2	2.47	0.50
1:G:349:SER:OG	1:G:452:LEU:O	2.30	0.50
1:G:992:GLN:OE1	1:G:995:ARG:NH2	2.42	0.50
3:P:108:ASP:OD1	3:P:108:ASP:N	2.44	0.50
1:B:37:TYR:OH	1:B:53:ASP:OD2	2.29	0.50
1:B:563:GLN:NE2	1:C:42:VAL:O	2.44	0.50
1:G:1051:SER:OG	1:G:1064:HIS:ND1	2.39	0.50
1:H:1106:GLN:HE21	1:H:1109:PHE:HB3	1.75	0.50
1:A:384:PRO:HA	1:A:387:LEU:HD23	1.92	0.50
1:B:427:ASP:OD1	1:B:427:ASP:N	2.45	0.50
2:D:50:TYR:HD2	2:D:51:GLU:HG3	1.77	0.50
1:I:729:VAL:H	1:I:1059:GLY:HA2	1.77	0.50
1:B:598:ILE:HB	1:B:609:ALA:HB3	1.94	0.50
1:G:821:LEU:HD21	1:G:939:SER:HA	1.94	0.50
2:Q:53:ASN:O	2:Q:55:ARG:NH1	2.45	0.50
1:A:454:ARG:NH1	1:A:469:SER:O	2.39	0.49
1:A:545:GLY:HA3	1:A:565:PHE:HZ	1.76	0.49
3:M:3:GLN:HE22	3:M:5:GLN:HB3	1.76	0.49
3:M:100:GLN:NE2	3:M:103:LEU:O	2.45	0.49
1:H:331:ASN:OD1	1:H:332:ILE:N	2.35	0.49
1:H:598:ILE:HB	1:H:609:ALA:HB3	1.94	0.49
1:A:126:VAL:HB	1:A:172:SER:HB3	1.94	0.49
1:A:328:ARG:HA	1:A:528:LYS:HG2	1.94	0.49
1:A:574:ASP:HA	1:A:587:ILE:HB	1.93	0.49
2:K:53:ASN:O	2:K:55:ARG:NH1	2.45	0.49
3:M:126:PRO:HG3	3:M:207:HIS:HB2	1.95	0.49
1:C:903:ALA:HB1	1:C:913:GLN:HB2	1.94	0.49
1:H:861:LEU:HD12	1:H:862:PRO:HD2	1.93	0.49
1:I:903:ALA:HB1	1:I:913:GLN:HB2	1.94	0.49
1:A:821:LEU:HD21	1:A:939:SER:HA	1.94	0.49
1:G:916:LEU:HD12	1:G:923:ILE:HD12	1.95	0.49
1:H:352:ALA:HA	1:H:466:ARG:HD3	1.94	0.49
2:L:159:TRP:CD1	2:L:170:VAL:HG13	2.47	0.49
2:F:56:PRO:HB3	3:J:106:ARG:HH21	1.77	0.49
1:G:83:VAL:HG22	1:G:239:GLN:HG3	1.94	0.49
1:G:126:VAL:HB	1:G:172:SER:HB3	1.94	0.49
1:G:213:VAL:HG22	1:G:214:ARG:HD2	1.93	0.49
2:L:50:TYR:HD2	2:L:51:GLU:HG3	1.78	0.49
1:C:106:PHE:HB3	1:C:235:ILE:HG21	1.94	0.49

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:M:40:ARG:HB3	3:M:50:ILE:HD11	1.94	0.49
1:G:726:ILE:HB	1:G:947:LYS:HE2	1.93	0.49
1:G:763:LEU:HD22	1:G:1008:VAL:HG21	1.93	0.49
1:A:37:TYR:OH	1:A:54:LEU:O	2.29	0.49
1:A:472:ILE:HD12	1:A:488:CYS:SG	2.52	0.49
1:I:374:PHE:HD1	1:I:436:TRP:HB3	1.78	0.49
1:I:574:ASP:HA	1:I:587:ILE:HB	1.94	0.49
1:H:376:THR:HG22	2:O:31:SER:HB3	1.94	0.49
1:I:1010:GLN:HA	1:I:1013:ILE:HG12	1.95	0.49
1:A:403:ARG:NH2	1:A:406:GLU:OE2	2.46	0.49
1:B:1028:LYS:NZ	1:B:1042:PHE:O	2.44	0.49
1:B:574:ASP:HA	1:B:587:ILE:HB	1.94	0.49
1:G:490:PHE:O	1:G:493:GLN:NE2	2.46	0.49
1:H:195:LYS:HB2	1:H:202:LYS:HB2	1.94	0.49
3:N:16:GLU:H	3:N:87:VAL:HG12	1.76	0.49
3:R:100:GLN:NE2	3:R:103:LEU:O	2.45	0.49
1:B:92:PHE:O	1:B:192:PHE:N	2.40	0.48
1:C:335:LEU:HD22	1:C:338:PHE:CD1	2.48	0.48
1:A:361:CYS:SG	1:A:362:VAL:N	2.86	0.48
1:H:976:VAL:HG22	1:H:978:ASN:H	1.78	0.48
1:A:617:CYS:N	1:A:649:CYS:SG	2.86	0.48
3:J:36:TRP:HB2	3:J:53:ILE:HG22	1.96	0.48
1:G:403:ARG:NH2	1:G:406:GLU:OE2	2.46	0.48
2:L:145:CYS:HB2	2:L:159:TRP:CH2	2.48	0.48
2:L:199:HIS:HB2	2:L:202:TYR:CE1	2.48	0.48
1:C:574:ASP:HA	1:C:587:ILE:HB	1.94	0.48
1:G:19:THR:OG1	1:G:255:SER:O	2.31	0.48
2:Q:6:GLN:NE2	2:Q:89:TYR:O	2.46	0.48
1:B:357:ARG:NH2	1:C:167:THR:HG22	2.28	0.48
1:B:973:ILE:HG12	1:B:992:GLN:HE21	1.79	0.48
2:K:38:GLN:NE2	2:K:89:TYR:OH	2.45	0.48
1:G:37:TYR:OH	1:G:54:LEU:O	2.29	0.48
2:Q:147:ILE:O	2:Q:185:ALA:N	2.41	0.48
1:A:905:ARG:NH1	1:A:1049:LEU:O	2.46	0.48
1:C:328:ARG:NH1	1:C:531:THR:O	2.36	0.48
1:G:361:CYS:SG	1:G:362:VAL:N	2.87	0.48
1:G:384:PRO:HA	1:G:387:LEU:HD23	1.94	0.48
1:G:738:CYS:HB3	1:G:760:CYS:HB2	1.59	0.48
1:H:57:PRO:HG3	1:H:273:ARG:HD2	1.96	0.48
1:H:663:ASP:OD1	1:H:663:ASP:N	2.44	0.48
1:I:92:PHE:O	1:I:192:PHE:N	2.43	0.48

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:320:VAL:H	1:A:591:SER:HB2	1.79	0.48
1:B:596:SER:HB2	1:B:611:LEU:HB3	1.95	0.48
1:H:409:GLN:NE2	1:H:415:THR:O	2.47	0.48
1:I:459:SER:OG	1:I:460:ASN:N	2.47	0.48
1:I:485:GLY:H	1:I:488:CYS:HB3	1.78	0.48
3:P:204:ASN:ND2	3:P:215:ASP:OD1	2.40	0.48
3:R:74:ASP:OD1	3:R:74:ASP:N	2.47	0.48
1:H:596:SER:HB2	1:H:611:LEU:HB3	1.95	0.48
1:I:384:PRO:HA	1:I:387:LEU:HD23	1.96	0.48
1:I:916:LEU:HD12	1:I:923:ILE:HD12	1.95	0.48
3:N:53:ILE:HD12	3:N:71:ILE:HG23	1.96	0.48
1:B:976:VAL:HG22	1:B:978:ASN:H	1.79	0.47
1:C:172:SER:OG	1:C:173:GLN:N	2.47	0.47
1:C:389:ASP:HA	1:C:527:PRO:HG3	1.94	0.47
3:J:204:ASN:ND2	3:J:215:ASP:OD1	2.39	0.47
1:H:134:GLN:HB2	1:H:161:SER:HB2	1.95	0.47
3:P:36:TRP:HB2	3:P:53:ILE:HG22	1.96	0.47
2:Q:50:TYR:HB3	3:R:106:ARG:HG3	1.96	0.47
1:I:34:ARG:NH1	1:I:191:GLU:OE2	2.48	0.47
1:B:725:GLU:HG2	1:B:1064:HIS:HE2	1.78	0.47
1:B:993:ILE:O	1:B:997:ILE:HG12	2.14	0.47
1:C:484:GLU:HG2	1:C:490:PHE:HB2	1.95	0.47
3:M:74:ASP:OD1	3:M:74:ASP:N	2.47	0.47
1:G:1035:GLY:HA3	1:I:1040:VAL:HG11	1.97	0.47
3:R:153:PHE:HB2	3:R:182:LEU:HD22	1.97	0.47
1:A:477:SER:HB3	1:I:452:LEU:HG	1.96	0.47
1:B:948:LEU:HD11	1:B:1059:GLY:HA3	1.96	0.47
1:G:490:PHE:HD2	1:G:492:LEU:H	1.62	0.47
1:H:735:SER:HA	1:H:767:LEU:HD13	1.97	0.47
1:A:722:VAL:HG22	1:A:1065:VAL:HG22	1.96	0.47
1:A:916:LEU:HD12	1:A:923:ILE:HD12	1.97	0.47
1:B:899:PRO:HA	1:B:902:MET:HG2	1.97	0.47
1:C:374:PHE:HD1	1:C:436:TRP:HB3	1.78	0.47
1:C:733:LYS:O	1:C:861:LEU:N	2.43	0.47
1:A:37:TYR:OH	1:A:53:ASP:OD1	2.33	0.47
1:B:134:GLN:HB2	1:B:161:SER:HB2	1.96	0.47
1:C:1028:LYS:NZ	1:C:1042:PHE:O	2.48	0.47
3:E:53:ILE:HD12	3:E:71:ILE:HG23	1.95	0.47
1:G:320:VAL:H	1:G:591:SER:HB2	1.79	0.47
1:G:435:ALA:HB2	1:G:510:VAL:HG23	1.95	0.47
1:G:617:CYS:N	1:G:649:CYS:SG	2.87	0.47

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:974:SER:HB3	1:G:980:ILE:HG23	1.97	0.47
1:G:993:ILE:O	1:G:997:ILE:HG12	2.15	0.47
1:I:106:PHE:HB3	1:I:235:ILE:HG21	1.96	0.47
2:L:159:TRP:HD1	2:L:170:VAL:HG13	1.80	0.47
1:A:335:LEU:HB3	1:A:338:PHE:HE1	1.80	0.47
1:A:435:ALA:HB2	1:A:510:VAL:HG23	1.96	0.47
1:G:948:LEU:HD21	1:G:1059:GLY:HA3	1.96	0.47
1:C:95:THR:HA	1:C:189:LEU:HA	1.96	0.47
1:C:1030:SER:HA	1:C:1034:LEU:HD12	1.97	0.47
1:G:239:GLN:NE2	1:G:240:THR:O	2.48	0.47
1:G:493:GLN:N	1:G:493:GLN:OE1	2.48	0.47
2:O:81:LEU:HD11	2:O:107:LEU:HD11	1.97	0.47
2:O:89:TYR:HB2	2:O:105:THR:HB	1.97	0.47
1:A:880:GLY:O	1:A:884:SER:OG	2.30	0.47
1:B:433:VAL:HG22	1:B:512:VAL:HG22	1.96	0.47
1:C:476:GLY:HA3	1:C:487:ASN:HB3	1.97	0.47
1:G:565:PHE:HB2	1:H:42:VAL:HG12	1.97	0.47
2:L:160:LYS:HE2	2:L:165:PRO:HB3	1.97	0.47
2:Q:147:ILE:HB	2:Q:185:ALA:HB3	1.97	0.47
1:B:721:SER:OG	1:B:1066:THR:OG1	2.32	0.46
1:B:742:ILE:HG12	1:B:1000:ARG:HB3	1.97	0.46
3:J:5:GLN:OE1	3:J:23:THR:OG1	2.32	0.46
1:I:453:TYR:HB3	1:I:495:TYR:HE1	1.81	0.46
1:I:457:ARG:HD2	1:I:457:ARG:HA	1.72	0.46
1:I:976:VAL:HG22	1:I:978:ASN:H	1.80	0.46
2:Q:145:CYS:O	2:Q:187:SER:N	2.48	0.46
1:A:490:PHE:CE2	1:A:492:LEU:HB2	2.49	0.46
1:C:34:ARG:NH1	1:C:191:GLU:OE2	2.48	0.46
1:H:476:GLY:HA3	1:H:487:ASN:HD21	1.80	0.46
1:I:403:ARG:NH2	1:I:406:GLU:OE2	2.48	0.46
1:A:948:LEU:HD21	1:A:1059:GLY:HA3	1.97	0.46
1:B:475:ALA:H	1:B:488:CYS:HA	1.81	0.46
1:B:703:ASN:ND2	1:C:787:GLN:OE1	2.45	0.46
1:G:92:PHE:O	1:G:192:PHE:N	2.41	0.46
1:H:886:TRP:HB3	1:H:1035:GLY:HA2	1.97	0.46
1:I:538:CYS:HB2	1:I:590:CYS:HB3	1.78	0.46
1:C:92:PHE:O	1:C:192:PHE:N	2.43	0.46
3:J:53:ILE:HD12	3:J:71:ILE:HG23	1.98	0.46
1:G:905:ARG:NH1	1:G:1049:LEU:O	2.44	0.46
3:N:115:LEU:HD23	3:N:156:PRO:HG3	1.98	0.46
1:C:431:GLY:HA2	1:C:514:SER:HA	1.97	0.46

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:886:TRP:HB3	1:C:1035:GLY:HA2	1.97	0.46
3:J:102:TRP:HB3	3:J:105:GLY:CA	2.41	0.46
2:K:145:CYS:O	2:K:187:SER:N	2.48	0.46
1:H:1033:VAL:HG22	1:H:1051:SER:HB2	1.97	0.46
1:I:886:TRP:HB3	1:I:1035:GLY:HA2	1.97	0.46
1:A:457:ARG:NH1	1:A:467:ASP:OD2	2.48	0.46
1:A:529:LYS:HB2	1:A:529:LYS:HE2	1.59	0.46
1:A:565:PHE:HB2	1:B:42:VAL:HG12	1.97	0.46
1:A:992:GLN:OE1	1:A:995:ARG:NH2	2.45	0.46
1:B:116:SER:N	1:B:131:CYS:O	2.46	0.46
1:B:409:GLN:NE2	1:B:415:THR:O	2.47	0.46
1:B:1103:PHE:HZ	4:Y:1:NAG:H62	1.80	0.46
1:G:329:PHE:CG	1:G:330:PRO:HD3	2.51	0.46
1:G:808:ASP:OD1	1:G:808:ASP:N	2.43	0.46
1:I:431:GLY:HA2	1:I:514:SER:HA	1.97	0.46
1:I:474:GLN:HB2	1:I:488:CYS:SG	2.56	0.46
1:B:886:TRP:HB3	1:B:1035:GLY:HA2	1.96	0.46
1:C:403:ARG:NH2	1:C:406:GLU:OE2	2.49	0.46
1:I:172:SER:OG	1:I:173:GLN:N	2.49	0.46
1:I:948:LEU:HD21	1:I:1059:GLY:HA3	1.98	0.46
3:P:74:ASP:OD1	3:P:74:ASP:N	2.49	0.46
1:A:563:GLN:NE2	1:B:42:VAL:O	2.49	0.46
3:E:13:LYS:HB2	3:E:16:GLU:HG3	1.98	0.46
1:H:734:THR:HG22	1:H:860:VAL:HG22	1.98	0.46
1:B:734:THR:HG22	1:B:860:VAL:HG22	1.97	0.46
2:D:22:CYS:HB3	2:D:74:ALA:HB3	1.98	0.46
2:F:48:VAL:HA	2:F:59:VAL:HG11	1.98	0.46
2:K:6:GLN:NE2	2:K:89:TYR:O	2.49	0.46
1:G:142:GLY:HA3	1:G:156:GLU:HB2	1.97	0.46
1:H:766:ALA:O	1:H:770:ILE:HG12	2.16	0.46
1:H:993:ILE:O	1:H:997:ILE:HG12	2.15	0.46
1:B:403:ARG:HG2	1:B:497:PHE:HE1	1.81	0.46
3:J:74:ASP:OD1	3:J:74:ASP:N	2.48	0.46
1:H:516:GLU:HG2	1:H:518:LEU:HD22	1.97	0.46
1:B:19:THR:OG1	1:B:255:SER:O	2.33	0.45
1:B:738:CYS:HB3	1:B:742:ILE:HD12	1.98	0.45
2:D:62:ARG:NE	2:D:79:SER:O	2.48	0.45
1:I:95:THR:HA	1:I:189:LEU:HA	1.97	0.45
1:A:974:SER:HB3	1:A:980:ILE:HG23	1.98	0.45
2:D:147:ILE:HB	2:D:185:ALA:HB3	1.98	0.45
1:A:972:ALA:HA	1:A:995:ARG:HH22	1.82	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:1028:LYS:NZ	1:I:1042:PHE:O	2.49	0.45
1:G:474:GLN:HA	1:G:480:CYS:HB3	1.98	0.45
1:I:596:SER:N	1:I:611:LEU:O	2.50	0.45
2:L:162:ASP:HB2	2:L:199:HIS:HB3	1.97	0.45
1:C:78:ARG:NH2	1:C:80:ASP:OD2	2.40	0.45
1:C:596:SER:N	1:C:611:LEU:O	2.50	0.45
2:K:149:ASP:OD1	2:K:178:GLN:NE2	2.38	0.45
1:H:563:GLN:NE2	1:I:42:VAL:O	2.49	0.45
1:H:911:VAL:HG22	1:H:1108:ASN:HB2	1.99	0.45
1:I:733:LYS:O	1:I:861:LEU:N	2.46	0.45
1:A:961:THR:O	1:A:965:GLN:HG2	2.17	0.45
1:G:37:TYR:OH	1:G:53:ASP:OD1	2.33	0.45
1:G:545:GLY:HA3	1:G:565:PHE:HZ	1.80	0.45
1:A:78:ARG:HE	1:A:80:ASP:HB2	1.81	0.45
1:A:821:LEU:HD11	1:A:939:SER:HB3	1.98	0.45
1:A:993:ILE:O	1:A:997:ILE:HG12	2.16	0.45
1:B:80:ASP:N	1:B:80:ASP:OD1	2.48	0.45
1:B:592:PHE:HB3	1:B:614:ASP:HB3	1.98	0.45
1:C:320:VAL:H	1:C:591:SER:HB2	1.82	0.45
2:F:131:PRO:HD3	2:F:143:LEU:HD13	1.97	0.45
1:G:106:PHE:HB2	1:G:117:LEU:HB2	1.98	0.45
1:G:563:GLN:NE2	1:H:42:VAL:O	2.49	0.45
1:H:331:ASN:OD1	5:H:1306:NAG:N2	2.50	0.45
2:L:6:GLN:NE2	2:L:89:TYR:O	2.50	0.45
1:A:253:ASP:OD1	1:A:253:ASP:N	2.45	0.45
3:E:29:VAL:HA	3:E:36:TRP:HZ2	1.82	0.45
1:H:214:ARG:HH11	1:H:215:ASP:H	1.64	0.45
1:I:1030:SER:HA	1:I:1034:LEU:HD12	1.98	0.45
1:A:142:GLY:HA3	1:A:156:GLU:HB2	1.98	0.45
1:G:961:THR:O	1:G:965:GLN:HG2	2.17	0.45
1:G:1129:VAL:HG13	1:H:917:TYR:HB3	1.99	0.45
1:I:905:ARG:NH1	1:I:1049:LEU:O	2.50	0.45
3:P:53:ILE:HD12	3:P:71:ILE:HG23	1.97	0.45
1:A:525:CYS:SG	1:A:526:GLY:N	2.90	0.45
1:B:34:ARG:NH1	1:B:191:GLU:OE2	2.49	0.45
1:C:494:SER:OG	1:C:495:TYR:N	2.50	0.45
1:G:917:TYR:HB3	1:I:1129:VAL:HG13	1.99	0.45
1:I:735:SER:HA	1:I:767:LEU:HD13	1.97	0.45
2:L:14:PRO:HA	2:L:81:LEU:HB2	1.99	0.45
1:A:1129:VAL:HG13	1:B:917:TYR:HB3	1.99	0.44
1:G:821:LEU:HD11	1:G:939:SER:HB3	1.98	0.44

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:34:ARG:NH1	1:H:191:GLU:OE2	2.49	0.44
1:H:403:ARG:HG2	1:H:497:PHE:HE1	1.81	0.44
1:H:617:CYS:N	1:H:649:CYS:SG	2.90	0.44
3:P:5:GLN:OE1	3:P:23:THR:OG1	2.32	0.44
1:A:866:THR:H	1:A:869:MET:HE2	1.82	0.44
1:B:214:ARG:HH11	1:B:215:ASP:H	1.66	0.44
1:G:1141:LEU:HD13	1:I:1141:LEU:HD11	1.99	0.44
1:H:80:ASP:OD1	1:H:80:ASP:N	2.50	0.44
1:C:1037:SER:OG	1:C:1043:CYS:SG	2.68	0.44
1:G:1030:SER:HA	1:G:1034:LEU:HD12	1.99	0.44
1:H:909:ILE:HG13	1:H:911:VAL:HG23	2.00	0.44
1:I:766:ALA:O	1:I:770:ILE:HG12	2.18	0.44
1:A:538:CYS:HB2	1:A:590:CYS:HB3	1.70	0.44
1:A:738:CYS:HB3	1:A:742:ILE:HD12	2.00	0.44
1:A:1141:LEU:HD13	1:C:1141:LEU:HD11	1.99	0.44
1:B:57:PRO:HG3	1:B:273:ARG:HD2	1.98	0.44
1:B:195:LYS:HB2	1:B:202:LYS:HB2	1.98	0.44
1:B:374:PHE:HB2	3:J:104:ARG:HH22	1.81	0.44
1:B:909:ILE:HG13	1:B:911:VAL:HG23	1.99	0.44
2:F:91:CYS:O	2:F:102:GLY:N	2.51	0.44
2:K:147:ILE:O	2:K:185:ALA:N	2.42	0.44
1:I:656:VAL:HG22	1:I:658:ASN:H	1.83	0.44
1:A:529:LYS:H	1:A:529:LYS:HZ3	1.66	0.44
1:B:327:VAL:HG23	1:B:542:ASN:HB2	2.00	0.44
1:H:821:LEU:HD11	1:H:939:SER:HB3	2.00	0.44
1:I:328:ARG:HG2	1:I:531:THR:H	1.82	0.44
1:I:331:ASN:OD1	1:I:331:ASN:N	2.50	0.44
1:I:1106:GLN:HE21	1:I:1109:PHE:HB3	1.82	0.44
2:D:145:CYS:O	2:D:187:SER:N	2.50	0.44
1:G:720:ILE:HG13	1:G:923:ILE:HG23	2.00	0.44
1:A:106:PHE:HB2	1:A:117:LEU:HB2	1.99	0.44
1:A:1035:GLY:HA3	1:C:1040:VAL:HG11	2.00	0.44
1:A:1082:CYS:HB2	1:A:1126:CYS:HB2	1.94	0.44
1:B:911:VAL:HG22	1:B:1108:ASN:HB2	1.98	0.44
1:B:1033:VAL:HG22	1:B:1051:SER:HB2	2.00	0.44
1:G:596:SER:N	1:G:611:LEU:O	2.51	0.44
1:I:712:ILE:HB	1:I:1077:THR:HG21	1.99	0.44
3:R:40:ARG:HB3	3:R:50:ILE:HD11	1.99	0.44
3:R:53:ILE:HD12	3:R:71:ILE:HG23	2.00	0.44
1:B:642:VAL:HG22	1:B:651:ILE:HG22	1.99	0.44
1:C:729:VAL:H	1:C:1059:GLY:HA2	1.82	0.44

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:145:CYS:O	2:F:187:SER:N	2.43	0.44
1:G:1052:PHE:HB2	1:G:1063:LEU:HB2	2.00	0.44
1:A:596:SER:N	1:A:611:LEU:O	2.51	0.43
1:A:886:TRP:HH2	1:A:904:TYR:HB3	1.83	0.43
2:D:22:CYS:N	2:D:74:ALA:O	2.51	0.43
2:D:162:ASP:HB2	2:D:199:HIS:CD2	2.51	0.43
1:H:459:SER:OG	1:H:460:ASN:N	2.51	0.43
1:I:395:VAL:HG23	1:I:524:VAL:HG21	2.00	0.43
1:C:976:VAL:HG22	1:C:978:ASN:H	1.82	0.43
1:C:1106:GLN:HE21	1:C:1109:PHE:HB3	1.83	0.43
2:F:129:PHE:HB2	2:F:144:VAL:HB	2.00	0.43
1:G:528:LYS:HA	1:G:528:LYS:HD2	1.79	0.43
1:G:879:ALA:O	1:G:883:THR:OG1	2.29	0.43
1:I:213:VAL:O	1:I:214:ARG:HD3	2.19	0.43
2:O:6:GLN:NE2	2:O:89:TYR:O	2.49	0.43
1:A:976:VAL:HG22	1:A:978:ASN:H	1.83	0.43
1:C:656:VAL:HG22	1:C:658:ASN:H	1.83	0.43
1:G:886:TRP:HH2	1:G:904:TYR:HB3	1.83	0.43
1:G:1097:SER:HB3	1:G:1102:TRP:CD2	2.54	0.43
3:N:29:VAL:HA	3:N:36:TRP:HZ2	1.83	0.43
3:R:36:TRP:HB2	3:R:53:ILE:HG22	2.00	0.43
1:A:1030:SER:HA	1:A:1034:LEU:HD12	1.99	0.43
1:B:906:PHE:CD2	1:B:916:LEU:HD12	2.53	0.43
1:B:1069:PRO:HG2	1:C:892:PRO:HD2	2.00	0.43
3:M:53:ILE:HD12	3:M:71:ILE:HG23	1.99	0.43
1:G:453:TYR:HB3	1:G:495:TYR:CE1	2.54	0.43
1:H:83:VAL:HG11	1:H:237:ARG:HE	1.84	0.43
1:H:138:ASP:N	1:H:138:ASP:OD1	2.52	0.43
1:H:1029:MET:HE1	1:H:1053:PRO:HG3	2.00	0.43
1:A:726:ILE:HB	1:A:947:LYS:HE2	2.00	0.43
1:C:138:ASP:OD1	1:C:138:ASP:N	2.51	0.43
1:C:617:CYS:N	1:C:649:CYS:SG	2.91	0.43
3:M:36:TRP:HB2	3:M:53:ILE:HG22	2.01	0.43
1:G:972:ALA:HA	1:G:995:ARG:HH22	1.83	0.43
1:H:822:LEU:HB3	1:H:938:LEU:HD21	1.99	0.43
3:N:13:LYS:HD2	3:N:119:SER:OG	2.17	0.43
1:C:80:ASP:OD1	1:C:80:ASP:N	2.52	0.43
2:D:14:PRO:HA	2:D:81:LEU:HB2	2.01	0.43
2:K:4:LEU:HD11	2:K:93:SER:HB2	2.01	0.43
3:M:120:SER:OG	3:M:121:ALA:N	2.51	0.43
1:G:24:LEU:HB2	1:G:78:ARG:HH11	1.84	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:642:VAL:HG22	1:H:651:ILE:HG22	2.00	0.43
1:H:726:ILE:HB	1:H:947:LYS:HE2	1.99	0.43
1:I:391:CYS:HB3	1:I:525:CYS:HB3	1.65	0.43
2:L:159:TRP:O	2:L:166:VAL:N	2.51	0.43
1:B:901:GLN:O	1:B:905:ARG:HG2	2.18	0.43
2:F:47:THR:HG21	3:J:106:ARG:HG3	2.01	0.43
3:J:134:SER:H	3:J:137:SER:HB3	1.84	0.43
1:H:453:TYR:O	1:H:493:GLN:N	2.48	0.43
1:I:821:LEU:HD11	1:I:939:SER:HB3	1.99	0.43
1:B:138:ASP:OD1	1:B:138:ASP:N	2.52	0.43
1:B:342:PHE:CD1	1:B:511:VAL:HG11	2.54	0.43
2:F:141:ALA:HB3	2:F:191:LEU:HB3	2.01	0.43
1:G:719:THR:HG23	1:G:1070:ALA:HB2	1.99	0.43
1:H:116:SER:N	1:H:131:CYS:O	2.47	0.43
1:A:328:ARG:HB2	1:A:530:SER:HA	2.00	0.43
1:A:719:THR:HG23	1:A:1070:ALA:HB2	2.00	0.43
1:B:342:PHE:HA	1:B:347:PHE:HZ	1.83	0.43
1:B:516:GLU:HG2	1:B:518:LEU:HD22	2.01	0.43
1:G:457:ARG:HA	1:G:457:ARG:HD2	1.65	0.43
1:I:456:PHE:HB2	1:I:491:PRO:HB3	2.00	0.43
1:I:617:CYS:N	1:I:649:CYS:SG	2.91	0.43
1:A:458:LYS:NZ	1:A:471:GLU:OE1	2.52	0.43
1:C:905:ARG:NH1	1:C:1049:LEU:O	2.50	0.43
1:G:538:CYS:HB2	1:G:590:CYS:HB3	1.69	0.43
1:I:277:LEU:HD12	1:I:285:ILE:HD13	2.01	0.43
1:C:126:VAL:HB	1:C:172:SER:HB3	2.01	0.42
2:F:22:CYS:HB3	2:F:74:ALA:HB3	2.01	0.42
2:K:35:GLN:HG2	3:M:106:ARG:HB3	2.01	0.42
1:G:328:ARG:HB2	1:G:530:SER:HA	2.00	0.42
1:A:358:ILE:HG22	1:A:524:VAL:HG21	2.01	0.42
1:C:1097:SER:HB3	1:C:1102:TRP:CD2	2.54	0.42
3:E:12:VAL:HG13	3:E:118:VAL:HG13	2.00	0.42
1:G:409:GLN:O	1:G:414:GLN:NE2	2.52	0.42
1:G:735:SER:HA	1:G:767:LEU:HD13	2.01	0.42
1:G:909:ILE:HG13	1:G:911:VAL:HG23	2.01	0.42
1:H:84:LEU:HD22	1:H:267:VAL:HG11	2.02	0.42
1:I:93:ALA:HA	1:I:191:GLU:HA	2.02	0.42
2:L:22:CYS:N	2:L:74:ALA:O	2.53	0.42
2:Q:4:LEU:HD11	2:Q:93:SER:HB2	2.01	0.42
1:A:1097:SER:HB3	1:A:1102:TRP:CD2	2.54	0.42
2:D:17:THR:HA	2:D:79:SER:HA	2.01	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:976:VAL:HG22	1:G:978:ASN:H	1.84	0.42
1:H:1037:SER:OG	1:H:1043:CYS:SG	2.72	0.42
1:B:364:ASP:HA	1:B:388:ASN:HD21	1.85	0.42
2:F:119:GLN:HG2	2:F:151:TYR:CD1	2.54	0.42
3:M:12:VAL:HG11	3:M:18:LEU:HD12	2.02	0.42
1:G:110:LEU:HD22	1:G:135:PHE:HD2	1.84	0.42
1:G:478:THR:HG21	1:G:486:PHE:HB2	2.01	0.42
1:G:880:GLY:O	1:G:884:SER:OG	2.31	0.42
1:H:808:ASP:OD1	1:H:808:ASP:N	2.53	0.42
1:H:1045:LYS:HB2	1:H:1045:LYS:HE2	1.80	0.42
1:I:78:ARG:NH2	1:I:80:ASP:OD2	2.40	0.42
1:I:138:ASP:OD1	1:I:138:ASP:N	2.51	0.42
2:L:147:ILE:HB	2:L:185:ALA:HB3	2.01	0.42
1:A:720:ILE:HG13	1:A:923:ILE:HG23	2.01	0.42
1:A:909:ILE:HG13	1:A:911:VAL:HG23	2.02	0.42
1:B:342:PHE:HB3	1:B:436:TRP:CH2	2.55	0.42
1:C:93:ALA:HA	1:C:191:GLU:HA	2.02	0.42
1:G:886:TRP:HB3	1:G:1035:GLY:HA2	2.01	0.42
1:I:906:PHE:CE2	1:I:916:LEU:HD13	2.54	0.42
2:O:36:TRP:HB2	2:O:49:ILE:HG22	2.01	0.42
1:A:239:GLN:NE2	1:A:240:THR:O	2.52	0.42
1:A:323:THR:OG1	1:A:324:GLU:OE1	2.31	0.42
1:A:472:ILE:HA	1:A:491:PRO:HD3	2.02	0.42
1:B:733:LYS:O	1:B:861:LEU:N	2.47	0.42
1:C:24:LEU:HB2	1:C:78:ARG:HH11	1.84	0.42
1:C:722:VAL:HG22	1:C:1065:VAL:HG22	2.02	0.42
2:F:50:TYR:HE1	3:J:105:GLY:HA2	1.84	0.42
1:H:1069:PRO:HG2	1:I:892:PRO:HD2	2.01	0.42
1:I:642:VAL:HG13	1:I:651:ILE:HG22	2.01	0.42
2:L:167:LYS:HD2	2:L:167:LYS:N	2.35	0.42
1:C:328:ARG:HE	1:C:580:GLN:HG3	1.85	0.42
1:C:642:VAL:HG13	1:C:651:ILE:HG22	2.01	0.42
2:F:53:ASN:O	2:F:55:ARG:NH1	2.53	0.42
3:M:207:HIS:CD2	3:M:209:PRO:HD2	2.55	0.42
1:H:170:TYR:CE2	1:H:172:SER:HB3	2.55	0.42
1:H:214:ARG:NH1	1:H:215:ASP:H	2.18	0.42
1:H:222:ALA:HB2	1:H:285:ILE:HB	2.01	0.42
1:I:126:VAL:HB	1:I:172:SER:HB3	2.00	0.42
2:Q:124:PRO:HA	2:Q:150:PHE:HB3	2.02	0.42
1:A:566:GLY:HA2	1:B:43:PHE:H	1.84	0.42
1:A:822:LEU:HD11	1:A:1061:VAL:HG11	2.02	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:435:ALA:HB2	1:C:510:VAL:HG22	2.02	0.42
2:K:119:GLN:HG3	2:K:181:ASN:OD1	2.20	0.42
1:H:1097:SER:HB3	1:H:1102:TRP:CD2	2.55	0.42
2:O:47:THR:HG21	3:P:106:ARG:NE	2.35	0.42
1:A:81:ASN:HD21	1:A:242:LEU:HD12	1.85	0.42
1:C:1019:ARG:NH1	1:C:1023:ASN:OD1	2.53	0.42
1:G:763:LEU:HD13	1:G:1004:LEU:HD23	2.02	0.42
1:I:714:ILE:HD12	1:I:1096:VAL:HG11	2.02	0.42
3:N:102:TRP:HD1	3:N:105:GLY:N	2.18	0.42
3:R:53:ILE:HD13	3:R:73:VAL:HG23	2.02	0.42
1:B:222:ALA:HB2	1:B:285:ILE:HB	2.01	0.41
1:B:476:GLY:HA3	1:B:487:ASN:HB3	2.01	0.41
1:B:808:ASP:OD1	1:B:808:ASP:N	2.53	0.41
1:B:972:ALA:HB2	1:B:995:ARG:HD2	2.02	0.41
1:C:216:LEU:HA	1:C:217:PRO:HD3	1.95	0.41
3:J:13:LYS:HA	3:J:13:LYS:HD3	1.74	0.41
1:G:612:TYR:HD2	1:G:649:CYS:HB2	1.85	0.41
1:H:733:LYS:HE2	1:H:861:LEU:HD23	2.00	0.41
1:I:1097:SER:HB3	1:I:1102:TRP:CD2	2.54	0.41
1:A:579:PRO:HA	1:A:582:LEU:HD13	2.01	0.41
1:C:21:ARG:HH21	1:C:79:PHE:HB3	1.85	0.41
2:F:151:TYR:CD1	2:F:152:PRO:HA	2.55	0.41
3:J:119:SER:HB2	3:J:153:PHE:HZ	1.85	0.41
1:G:995:ARG:HA	1:G:998:THR:HG22	2.01	0.41
1:H:92:PHE:O	1:H:192:PHE:N	2.40	0.41
2:L:22:CYS:HB3	2:L:74:ALA:HB3	2.01	0.41
2:L:145:CYS:O	2:L:187:SER:N	2.51	0.41
2:O:22:CYS:HB3	2:O:74:ALA:HB3	2.03	0.41
1:A:713:ALA:HB3	1:B:894:LEU:HB3	2.02	0.41
1:A:886:TRP:HB3	1:A:1035:GLY:HA2	2.01	0.41
2:D:172:THR:HA	2:D:187:SER:HA	2.03	0.41
3:J:20:LEU:HD12	3:J:95:TYR:HD2	1.85	0.41
2:K:18:VAL:HG12	2:K:81:LEU:HD21	2.02	0.41
1:G:737:ASP:OD2	1:I:317:ASN:ND2	2.50	0.41
1:G:1037:SER:OG	1:G:1043:CYS:SG	2.68	0.41
1:H:108:THR:HG22	1:H:236:THR:HG22	2.02	0.41
1:H:327:VAL:HG22	1:H:542:ASN:H	1.85	0.41
1:I:997:ILE:O	1:I:1001:LEU:HG	2.20	0.41
3:R:102:TRP:HD1	3:R:105:GLY:HA3	1.84	0.41
1:A:159:VAL:HG23	1:A:160:TYR:CD1	2.56	0.41
1:A:409:GLN:O	1:A:414:GLN:NE2	2.54	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:821:LEU:HD11	1:C:939:SER:HB3	2.02	0.41
2:D:64:SER:O	2:D:77:THR:N	2.49	0.41
3:J:34:TYR:HB2	3:J:99:ARG:NH2	2.35	0.41
1:H:338:PHE:O	1:H:341:VAL:HG12	2.20	0.41
1:I:1051:SER:OG	1:I:1064:HIS:ND1	2.38	0.41
1:A:770:ILE:HA	1:A:773:GLU:CD	2.41	0.41
1:B:733:LYS:HE2	1:B:861:LEU:HD23	2.02	0.41
1:C:453:TYR:HB3	1:C:495:TYR:HE1	1.86	0.41
1:C:901:GLN:O	1:C:905:ARG:HG2	2.20	0.41
3:E:4:LEU:HD22	3:E:22:CYS:SG	2.60	0.41
3:E:11:LEU:HD21	3:E:209:PRO:HB3	2.02	0.41
3:E:40:ARG:HB3	3:E:50:ILE:HD11	2.02	0.41
1:H:454:ARG:HG3	1:H:491:PRO:HB2	2.01	0.41
1:A:480:CYS:HB2	1:A:488:CYS:HB3	1.82	0.41
1:A:612:TYR:HD2	1:A:649:CYS:HB2	1.85	0.41
1:A:995:ARG:HA	1:A:998:THR:HG22	2.02	0.41
1:B:84:LEU:HD22	1:B:267:VAL:HG11	2.01	0.41
1:B:342:PHE:HD1	1:B:511:VAL:HG11	1.85	0.41
3:J:216:LYS:HB2	3:J:216:LYS:HE2	1.87	0.41
2:K:89:TYR:HB2	2:K:105:THR:HB	2.02	0.41
1:H:1086:LYS:HD2	1:H:1122:VAL:HG11	2.03	0.41
1:I:473:TYR:H	1:I:491:PRO:HD3	1.86	0.41
2:O:53:ASN:O	2:O:55:ARG:NH1	2.53	0.41
1:G:472:ILE:HG13	1:G:480:CYS:SG	2.61	0.41
1:H:21:ARG:HH21	1:H:79:PHE:HB3	1.86	0.41
1:H:457:ARG:HD2	1:H:457:ARG:HA	1.70	0.41
1:H:472:ILE:HG23	1:H:488:CYS:HB2	2.02	0.41
1:I:21:ARG:HH21	1:I:79:PHE:HB3	1.86	0.41
1:I:24:LEU:HB2	1:I:78:ARG:HH11	1.85	0.41
1:I:102:ARG:HG3	1:I:141:LEU:HG	2.03	0.41
3:N:40:ARG:HB3	3:N:50:ILE:HD11	2.03	0.41
1:B:490:PHE:CE2	1:B:492:LEU:HB2	2.56	0.41
2:D:162:ASP:CG	2:D:200:ARG:H	2.24	0.41
3:J:14:PRO:HG2	3:J:120:SER:HA	2.02	0.41
3:M:42:PRO:HA	3:M:93:ALA:HA	2.02	0.41
1:I:326:ILE:H	1:I:326:ILE:HG13	1.72	0.41
2:O:22:CYS:N	2:O:74:ALA:O	2.53	0.41
3:P:5:GLN:NE2	3:P:6:GLU:O	2.50	0.41
2:Q:18:VAL:HG12	2:Q:81:LEU:HD21	2.02	0.41
1:A:88:ASP:OD1	1:A:88:ASP:N	2.53	0.41
1:B:88:ASP:OD1	1:B:88:ASP:N	2.54	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:170:TYR:CE2	1:B:172:SER:HB3	2.55	0.41
1:B:214:ARG:NH1	1:B:215:ASP:H	2.18	0.41
1:C:317:ASN:HB3	1:C:319:ARG:NH1	2.36	0.41
1:C:714:ILE:HD12	1:C:1096:VAL:HG11	2.03	0.41
1:C:808:ASP:OD1	1:C:808:ASP:N	2.51	0.41
3:E:138:THR:OG1	3:E:142:THR:O	2.30	0.41
2:F:143:LEU:HB3	2:F:159:TRP:CZ3	2.56	0.41
3:M:53:ILE:HD13	3:M:73:VAL:HG23	2.01	0.41
3:M:115:LEU:HD21	3:M:117:THR:HG22	2.03	0.41
1:G:81:ASN:HD21	1:G:242:LEU:HD12	1.86	0.41
1:G:159:VAL:HG23	1:G:160:TYR:CD1	2.56	0.41
1:G:429:PHE:HZ	1:G:512:VAL:HG11	1.85	0.41
1:G:974:SER:HB2	1:G:983:ARG:HH12	1.86	0.41
1:G:984:LEU:HB2	1:G:989:ALA:HB2	2.02	0.41
1:H:733:LYS:O	1:H:861:LEU:N	2.50	0.41
1:I:323:THR:OG1	1:I:324:GLU:OE1	2.33	0.41
1:I:332:ILE:H	1:I:332:ILE:HG12	1.69	0.41
1:I:369:TYR:HH	3:N:104:ARG:H	1.69	0.41
1:I:598:ILE:HB	1:I:609:ALA:HB3	2.03	0.41
2:O:60:PRO:HB2	2:O:62:ARG:HG2	2.03	0.41
1:B:342:PHE:HA	1:B:347:PHE:CZ	2.56	0.41
1:B:769:GLY:HA2	1:B:772:VAL:HG12	2.02	0.41
3:E:39:ILE:HD11	3:E:107:PHE:CZ	2.56	0.41
3:E:119:SER:HB2	3:E:153:PHE:HE2	1.85	0.41
1:H:374:PHE:HB2	3:P:104:ARG:NH2	2.36	0.41
1:H:1090:PRO:HG2	1:I:913:GLN:HE22	1.86	0.41
1:B:21:ARG:HH21	1:B:79:PHE:HB3	1.86	0.40
1:C:950:ASP:OD1	1:C:951:VAL:N	2.55	0.40
1:G:123:ALA:HA	1:G:177:MET:HB3	2.03	0.40
1:I:88:ASP:OD1	1:I:88:ASP:N	2.55	0.40
1:I:172:SER:HG	1:I:173:GLN:H	1.69	0.40
1:A:896:ILE:HG13	1:C:712:ILE:HG13	2.03	0.40
1:B:357:ARG:NH2	1:C:168:PHE:HB2	2.33	0.40
1:C:474:GLN:HB3	1:C:477:SER:OG	2.21	0.40
2:D:194:GLU:OE2	2:D:194:GLU:N	2.36	0.40
1:G:458:LYS:HA	1:G:473:TYR:CE1	2.55	0.40
1:I:304:LYS:HE2	1:I:304:LYS:HB3	1.90	0.40
1:B:1090:PRO:HG2	1:C:913:GLN:HE22	1.86	0.40
1:C:457:ARG:HD2	1:C:457:ARG:HA	1.70	0.40
1:C:1125:ASN:OD1	1:C:1126:CYS:N	2.54	0.40
1:G:83:VAL:HG11	1:G:237:ARG:CZ	2.51	0.40

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:G:276:LEU:HD22	1:G:301:CYS:HA	2.03	0.40
1:H:384:PRO:HA	1:H:387:LEU:HD23	2.03	0.40
1:I:1125:ASN:OD1	1:I:1126:CYS:N	2.54	0.40
2:L:162:ASP:HB2	2:L:199:HIS:CD2	2.56	0.40
1:B:663:ASP:OD1	1:B:664:ILE:N	2.54	0.40
1:C:367:VAL:HG13	1:C:368:LEU:HD12	2.04	0.40
3:J:119:SER:HB2	3:J:153:PHE:CZ	2.56	0.40
1:G:898:PHE:O	1:G:902:MET:HG2	2.21	0.40
1:G:950:ASP:OD1	1:G:951:VAL:N	2.55	0.40
3:N:13:LYS:HB2	3:N:16:GLU:OE1	2.20	0.40
1:B:617:CYS:N	1:B:649:CYS:SG	2.95	0.40
1:B:713:ALA:HB3	1:C:894:LEU:HB3	2.03	0.40
1:C:719:THR:HG23	1:C:1070:ALA:HB2	2.04	0.40
1:H:906:PHE:CD2	1:H:916:LEU:HD12	2.56	0.40
1:I:435:ALA:HB2	1:I:510:VAL:HG22	2.02	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	1054/1278 (82%)	1012 (96%)	42 (4%)	0	100	100
1	B	1054/1278 (82%)	1017 (96%)	37 (4%)	0	100	100
1	C	1054/1278 (82%)	1011 (96%)	43 (4%)	0	100	100
1	G	1054/1278 (82%)	1012 (96%)	42 (4%)	0	100	100
1	H	1054/1278 (82%)	1018 (97%)	36 (3%)	0	100	100
1	I	1054/1278 (82%)	1022 (97%)	32 (3%)	0	100	100
2	D	209/243 (86%)	197 (94%)	12 (6%)	0	100	100
2	F	209/243 (86%)	199 (95%)	10 (5%)	0	100	100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	K	209/243 (86%)	197 (94%)	12 (6%)	0	100	100
2	L	209/243 (86%)	197 (94%)	12 (6%)	0	100	100
2	O	209/243 (86%)	198 (95%)	11 (5%)	0	100	100
2	Q	209/243 (86%)	199 (95%)	10 (5%)	0	100	100
3	E	222/243 (91%)	218 (98%)	4 (2%)	0	100	100
3	J	222/243 (91%)	215 (97%)	7 (3%)	0	100	100
3	M	222/243 (91%)	214 (96%)	8 (4%)	0	100	100
3	N	222/243 (91%)	216 (97%)	6 (3%)	0	100	100
3	P	222/243 (91%)	216 (97%)	6 (3%)	0	100	100
3	R	222/243 (91%)	215 (97%)	7 (3%)	0	100	100
All	All	8910/10584 (84%)	8573 (96%)	337 (4%)	0	100	100

There are no Ramachandran outliers to report.

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	934/1106 (84%)	924 (99%)	10 (1%)	70	80
1	B	934/1106 (84%)	933 (100%)	1 (0%)	92	95
1	C	934/1106 (84%)	926 (99%)	8 (1%)	75	83
1	G	934/1106 (84%)	930 (100%)	4 (0%)	89	91
1	H	934/1106 (84%)	930 (100%)	4 (0%)	89	91
1	I	934/1106 (84%)	928 (99%)	6 (1%)	84	88
2	D	184/208 (88%)	182 (99%)	2 (1%)	70	80
2	F	184/208 (88%)	184 (100%)	0	100	100
2	K	184/208 (88%)	184 (100%)	0	100	100
2	L	184/208 (88%)	179 (97%)	5 (3%)	40	58
2	O	184/208 (88%)	184 (100%)	0	100	100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
2	Q	184/208 (88%)	184 (100%)	0	100 100
3	E	192/209 (92%)	191 (100%)	1 (0%)	86 89
3	J	192/209 (92%)	191 (100%)	1 (0%)	86 89
3	M	192/209 (92%)	192 (100%)	0	100 100
3	N	192/209 (92%)	190 (99%)	2 (1%)	73 82
3	P	192/209 (92%)	191 (100%)	1 (0%)	86 89
3	R	192/209 (92%)	191 (100%)	1 (0%)	86 89
All	All	7860/9138 (86%)	7814 (99%)	46 (1%)	82 88

All (46) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	21	ARG
1	A	328	ARG
1	A	331	ASN
1	A	338	PHE
1	A	342	PHE
1	A	529	LYS
1	A	532	ASN
1	A	582	LEU
1	A	1106	GLN
1	A	1107	ARG
1	B	21	ARG
1	C	21	ARG
1	C	360	ASN
1	C	362	VAL
1	C	462	LYS
1	C	523	THR
1	C	525	CYS
1	C	529	LYS
1	C	530	SER
2	D	163	SER
2	D	164	SER
3	E	100	GLN
3	J	106	ARG
1	G	21	ARG
1	G	328	ARG
1	G	1106	GLN
1	G	1107	ARG
1	H	21	ARG

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	H	528	LYS
1	H	529	LYS
1	H	530	SER
1	I	21	ARG
1	I	326	ILE
1	I	331	ASN
1	I	334	ASN
1	I	335	LEU
1	I	922	LEU
2	L	106	LYS
2	L	162	ASP
2	L	164	SER
2	L	166	VAL
2	L	167	LYS
3	N	3	GLN
3	N	16	GLU
3	P	106	ARG
3	R	11	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (23) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	173	GLN
1	A	955	ASN
1	A	1106	GLN
1	B	239	GLN
1	B	955	ASN
1	C	439	ASN
1	C	506	GLN
3	E	3	GLN
2	F	39	GLN
3	J	41	GLN
3	M	3	GLN
1	G	448	ASN
1	G	1106	GLN
1	H	239	GLN
1	H	448	ASN
1	H	955	ASN
1	I	439	ASN
1	I	474	GLN
1	I	506	GLN
1	I	955	ASN

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
3	N	100	GLN
3	P	3	GLN
3	R	3	GLN

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates (i)

48 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	$\#\|Z\| > 2$
4	NAG	S	1	4,1	14,14,15	0.25	0	17,19,21	0.43	0
4	NAG	S	2	4	14,14,15	0.28	0	17,19,21	0.44	0
4	NAG	T	1	4,1	14,14,15	0.25	0	17,19,21	0.46	0
4	NAG	T	2	4	14,14,15	0.26	0	17,19,21	0.39	0
4	NAG	U	1	4,1	14,14,15	0.18	0	17,19,21	0.41	0
4	NAG	U	2	4	14,14,15	0.26	0	17,19,21	0.42	0
4	NAG	V	1	4,1	14,14,15	0.24	0	17,19,21	0.47	0
4	NAG	V	2	4	14,14,15	0.34	0	17,19,21	0.45	0
4	NAG	W	1	4,1	14,14,15	0.24	0	17,19,21	0.43	0
4	NAG	W	2	4	14,14,15	0.30	0	17,19,21	0.43	0
4	NAG	X	1	4,1	14,14,15	0.25	0	17,19,21	0.49	0
4	NAG	X	2	4	14,14,15	0.25	0	17,19,21	0.41	0
4	NAG	Y	1	4,1	14,14,15	0.25	0	17,19,21	0.45	0
4	NAG	Y	2	4	14,14,15	0.28	0	17,19,21	0.40	0
4	NAG	Z	1	4,1	14,14,15	0.28	0	17,19,21	0.49	0
4	NAG	Z	2	4	14,14,15	0.27	0	17,19,21	0.43	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
4	NAG	a	1	4,1	14,14,15	0.24	0	17,19,21	0.44	0
4	NAG	a	2	4	14,14,15	0.25	0	17,19,21	0.43	0
4	NAG	b	1	4,1	14,14,15	0.25	0	17,19,21	0.46	0
4	NAG	b	2	4	14,14,15	0.26	0	17,19,21	0.41	0
4	NAG	c	1	4,1	14,14,15	0.21	0	17,19,21	0.45	0
4	NAG	c	2	4	14,14,15	0.27	0	17,19,21	0.42	0
4	NAG	d	1	4,1	14,14,15	0.27	0	17,19,21	0.49	0
4	NAG	d	2	4	14,14,15	0.30	0	17,19,21	0.42	0
4	NAG	e	1	4,1	14,14,15	0.25	0	17,19,21	0.44	0
4	NAG	e	2	4	14,14,15	0.25	0	17,19,21	0.43	0
4	NAG	f	1	4,1	14,14,15	0.25	0	17,19,21	0.46	0
4	NAG	f	2	4	14,14,15	0.26	0	17,19,21	0.41	0
4	NAG	g	1	4,1	14,14,15	0.20	0	17,19,21	0.41	0
4	NAG	g	2	4	14,14,15	0.26	0	17,19,21	0.43	0
4	NAG	h	1	4,1	14,14,15	0.25	0	17,19,21	0.46	0
4	NAG	h	2	4	14,14,15	0.27	0	17,19,21	0.43	0
4	NAG	i	1	4,1	14,14,15	0.25	0	17,19,21	0.43	0
4	NAG	i	2	4	14,14,15	0.25	0	17,19,21	0.44	0
4	NAG	j	1	4,1	14,14,15	0.23	0	17,19,21	0.48	0
4	NAG	j	2	4	14,14,15	0.25	0	17,19,21	0.42	0
4	NAG	k	1	4,1	14,14,15	0.25	0	17,19,21	0.44	0
4	NAG	k	2	4	14,14,15	0.27	0	17,19,21	0.41	0
4	NAG	l	1	4,1	14,14,15	0.28	0	17,19,21	0.49	0
4	NAG	l	2	4	14,14,15	0.26	0	17,19,21	0.42	0
4	NAG	m	1	4,1	14,14,15	0.26	0	17,19,21	0.44	0
4	NAG	m	2	4	14,14,15	0.25	0	17,19,21	0.43	0
4	NAG	n	1	4,1	14,14,15	0.25	0	17,19,21	0.46	0
4	NAG	n	2	4	14,14,15	0.25	0	17,19,21	0.42	0
4	NAG	o	1	4,1	14,14,15	0.20	0	17,19,21	0.45	0
4	NAG	o	2	4	14,14,15	0.27	0	17,19,21	0.43	0
4	NAG	p	1	4,1	14,14,15	0.26	0	17,19,21	0.49	0
4	NAG	p	2	4	14,14,15	0.26	0	17,19,21	0.42	0

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	NAG	S	1	4,1	-	0/6/23/26	0/1/1/1
4	NAG	S	2	4	-	2/6/23/26	0/1/1/1
4	NAG	T	1	4,1	-	2/6/23/26	0/1/1/1

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	NAG	T	2	4	-	0/6/23/26	0/1/1/1
4	NAG	U	1	4,1	-	0/6/23/26	0/1/1/1
4	NAG	U	2	4	-	2/6/23/26	0/1/1/1
4	NAG	V	1	4,1	-	2/6/23/26	0/1/1/1
4	NAG	V	2	4	-	2/6/23/26	0/1/1/1
4	NAG	W	1	4,1	-	0/6/23/26	0/1/1/1
4	NAG	W	2	4	-	2/6/23/26	0/1/1/1
4	NAG	X	1	4,1	-	2/6/23/26	0/1/1/1
4	NAG	X	2	4	-	2/6/23/26	0/1/1/1
4	NAG	Y	1	4,1	-	0/6/23/26	0/1/1/1
4	NAG	Y	2	4	-	2/6/23/26	0/1/1/1
4	NAG	Z	1	4,1	-	2/6/23/26	0/1/1/1
4	NAG	Z	2	4	-	2/6/23/26	0/1/1/1
4	NAG	a	1	4,1	-	0/6/23/26	0/1/1/1
4	NAG	a	2	4	-	2/6/23/26	0/1/1/1
4	NAG	b	1	4,1	-	2/6/23/26	0/1/1/1
4	NAG	b	2	4	-	2/6/23/26	0/1/1/1
4	NAG	c	1	4,1	-	0/6/23/26	0/1/1/1
4	NAG	c	2	4	-	2/6/23/26	0/1/1/1
4	NAG	d	1	4,1	-	2/6/23/26	0/1/1/1
4	NAG	d	2	4	-	2/6/23/26	0/1/1/1
4	NAG	e	1	4,1	-	0/6/23/26	0/1/1/1
4	NAG	e	2	4	-	2/6/23/26	0/1/1/1
4	NAG	f	1	4,1	-	2/6/23/26	0/1/1/1
4	NAG	f	2	4	-	0/6/23/26	0/1/1/1
4	NAG	g	1	4,1	-	0/6/23/26	0/1/1/1
4	NAG	g	2	4	-	2/6/23/26	0/1/1/1
4	NAG	h	1	4,1	-	2/6/23/26	0/1/1/1
4	NAG	h	2	4	-	2/6/23/26	0/1/1/1
4	NAG	i	1	4,1	-	0/6/23/26	0/1/1/1
4	NAG	i	2	4	-	2/6/23/26	0/1/1/1
4	NAG	j	1	4,1	-	2/6/23/26	0/1/1/1
4	NAG	j	2	4	-	2/6/23/26	0/1/1/1
4	NAG	k	1	4,1	-	0/6/23/26	0/1/1/1
4	NAG	k	2	4	-	2/6/23/26	0/1/1/1
4	NAG	l	1	4,1	-	2/6/23/26	0/1/1/1

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	NAG	l	2	4	-	2/6/23/26	0/1/1/1
4	NAG	m	1	4,1	-	0/6/23/26	0/1/1/1
4	NAG	m	2	4	-	2/6/23/26	0/1/1/1
4	NAG	n	1	4,1	-	2/6/23/26	0/1/1/1
4	NAG	n	2	4	-	2/6/23/26	0/1/1/1
4	NAG	o	1	4,1	-	0/6/23/26	0/1/1/1
4	NAG	o	2	4	-	2/6/23/26	0/1/1/1
4	NAG	p	1	4,1	-	2/6/23/26	0/1/1/1
4	NAG	p	2	4	-	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 (68) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	V	2	NAG	O5-C5-C6-O6
4	d	2	NAG	O5-C5-C6-O6
4	h	2	NAG	O5-C5-C6-O6
4	p	2	NAG	O5-C5-C6-O6
4	Z	2	NAG	O5-C5-C6-O6
4	l	2	NAG	O5-C5-C6-O6
4	Y	2	NAG	C4-C5-C6-O6
4	k	2	NAG	C4-C5-C6-O6
4	V	2	NAG	C4-C5-C6-O6
4	c	2	NAG	C4-C5-C6-O6
4	h	2	NAG	C4-C5-C6-O6
4	o	2	NAG	C4-C5-C6-O6
4	T	1	NAG	O5-C5-C6-O6
4	f	1	NAG	O5-C5-C6-O6
4	j	1	NAG	O5-C5-C6-O6
4	Z	2	NAG	C4-C5-C6-O6
4	l	2	NAG	C4-C5-C6-O6
4	d	1	NAG	O5-C5-C6-O6
4	p	1	NAG	O5-C5-C6-O6
4	X	1	NAG	O5-C5-C6-O6
4	b	1	NAG	O5-C5-C6-O6
4	Z	1	NAG	O5-C5-C6-O6
4	l	1	NAG	O5-C5-C6-O6

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
4	n	1	NAG	O5-C5-C6-O6
4	p	2	NAG	C4-C5-C6-O6
4	S	2	NAG	O5-C5-C6-O6
4	U	2	NAG	O5-C5-C6-O6
4	a	2	NAG	O5-C5-C6-O6
4	e	2	NAG	O5-C5-C6-O6
4	g	2	NAG	O5-C5-C6-O6
4	m	2	NAG	O5-C5-C6-O6
4	d	2	NAG	C4-C5-C6-O6
4	S	2	NAG	C4-C5-C6-O6
4	Z	1	NAG	C4-C5-C6-O6
4	a	2	NAG	C4-C5-C6-O6
4	e	2	NAG	C4-C5-C6-O6
4	l	1	NAG	C4-C5-C6-O6
4	m	2	NAG	C4-C5-C6-O6
4	d	1	NAG	C4-C5-C6-O6
4	j	1	NAG	C4-C5-C6-O6
4	p	1	NAG	C4-C5-C6-O6
4	T	1	NAG	C4-C5-C6-O6
4	X	1	NAG	C4-C5-C6-O6
4	f	1	NAG	C4-C5-C6-O6
4	W	2	NAG	O5-C5-C6-O6
4	Y	2	NAG	O5-C5-C6-O6
4	i	2	NAG	O5-C5-C6-O6
4	k	2	NAG	O5-C5-C6-O6
4	n	1	NAG	C4-C5-C6-O6
4	b	1	NAG	C4-C5-C6-O6
4	U	2	NAG	C4-C5-C6-O6
4	g	2	NAG	C4-C5-C6-O6
4	W	2	NAG	C4-C5-C6-O6
4	i	2	NAG	C4-C5-C6-O6
4	c	2	NAG	O5-C5-C6-O6
4	o	2	NAG	O5-C5-C6-O6
4	h	1	NAG	O5-C5-C6-O6
4	V	1	NAG	O5-C5-C6-O6
4	h	1	NAG	C4-C5-C6-O6
4	V	1	NAG	C4-C5-C6-O6
4	n	2	NAG	C4-C5-C6-O6
4	b	2	NAG	C4-C5-C6-O6
4	j	2	NAG	C4-C5-C6-O6
4	X	2	NAG	C4-C5-C6-O6
4	n	2	NAG	O5-C5-C6-O6

Continued on next page...

Continued from previous page...

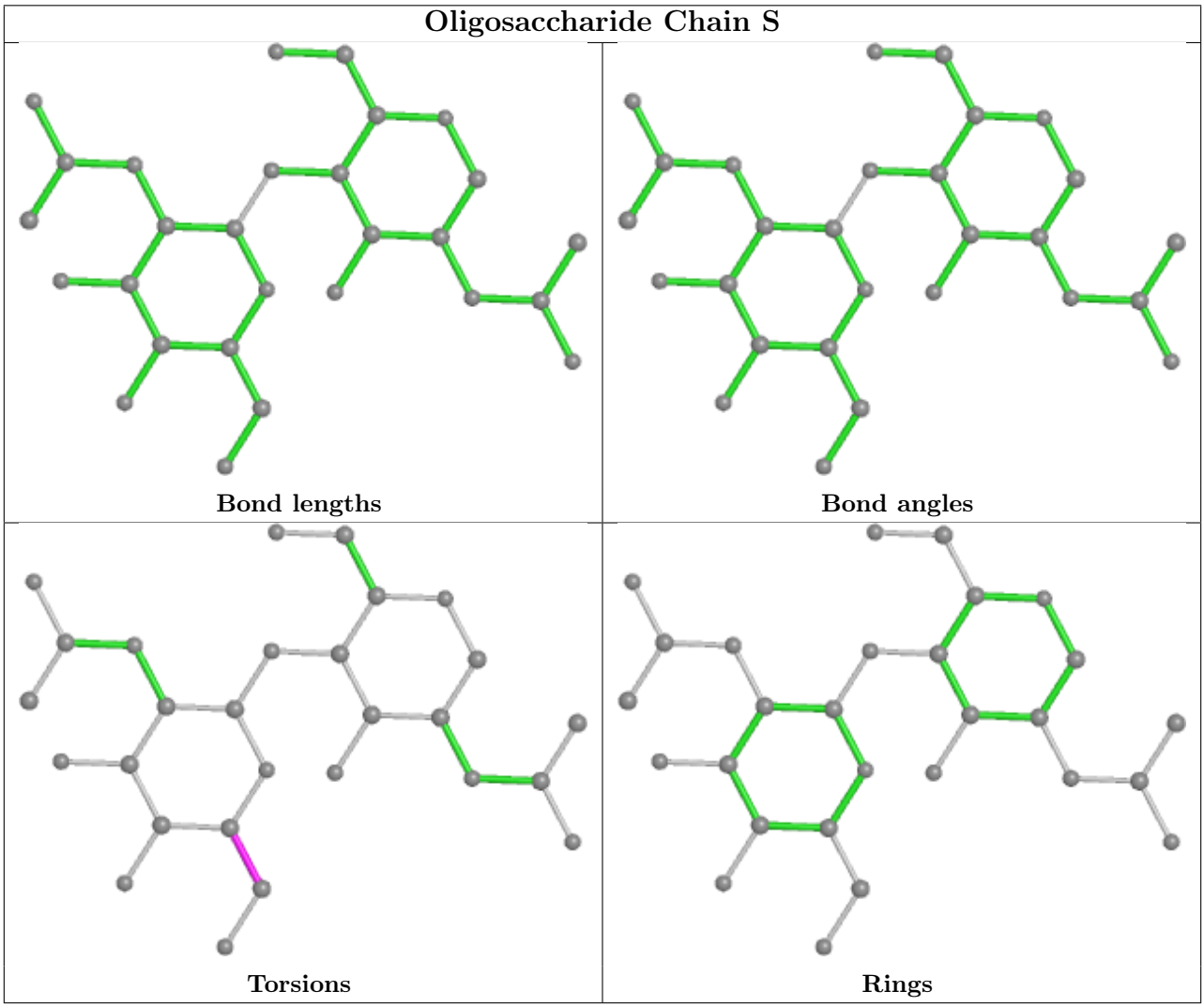
Mol	Chain	Res	Type	Atoms
4	b	2	NAG	O5-C5-C6-O6
4	j	2	NAG	O5-C5-C6-O6
4	X	2	NAG	O5-C5-C6-O6

There are no ring outliers.

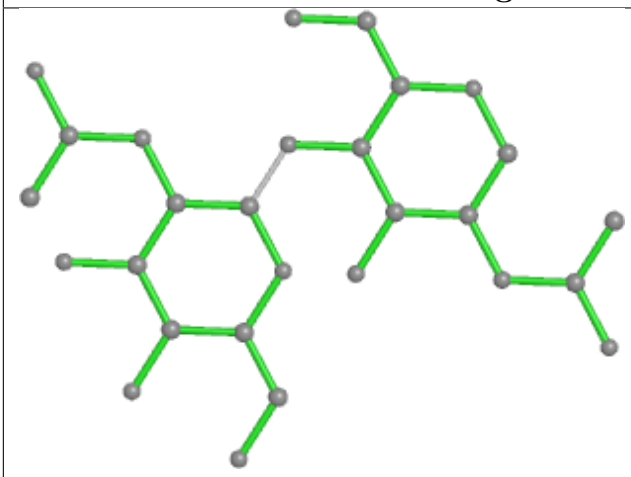
2 monomers are involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	Y	1	NAG	1	0
4	W	1	NAG	1	0

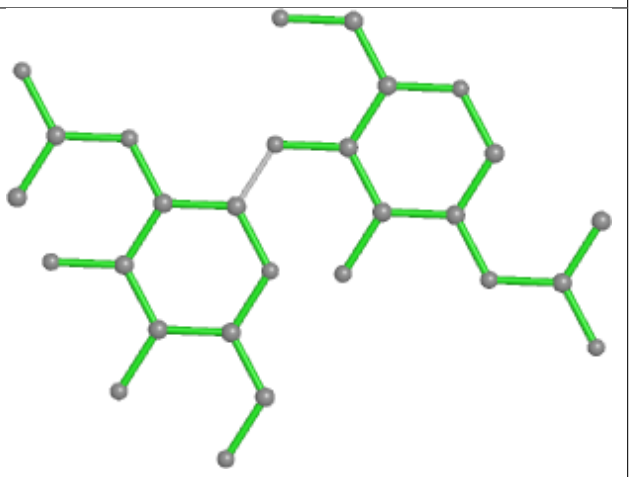
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for oligosaccharide.



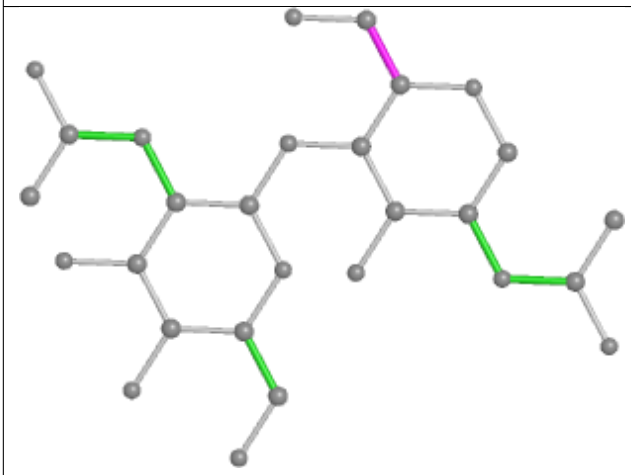
Oligosaccharide Chain T



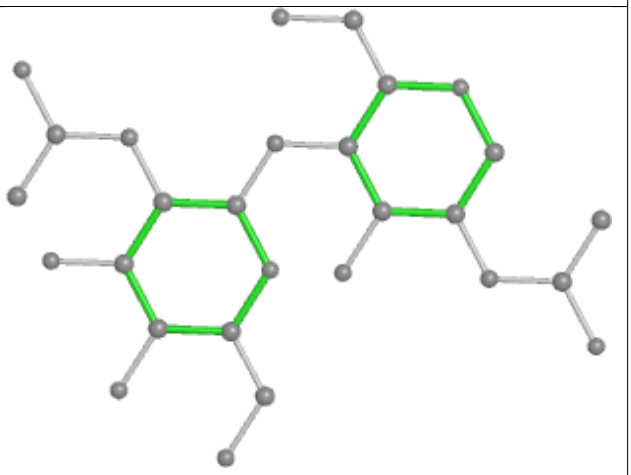
Bond lengths



Bond angles

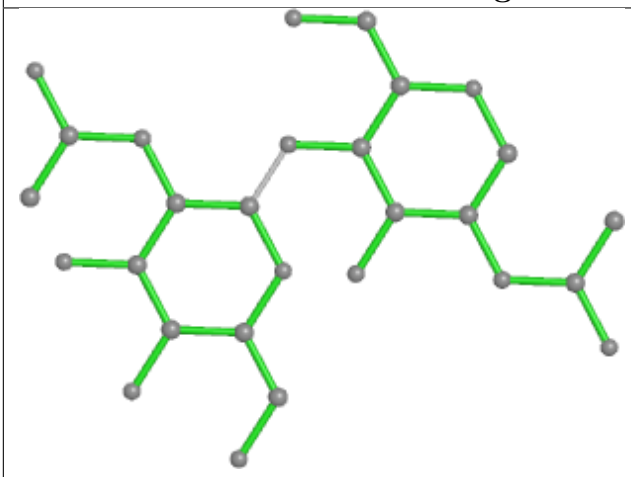


Torsions

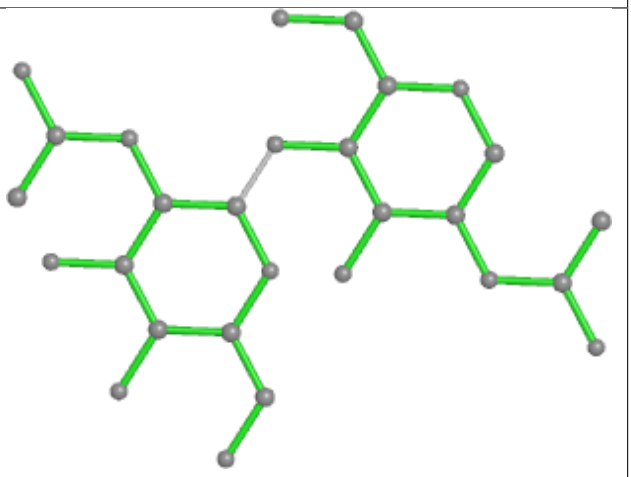


Rings

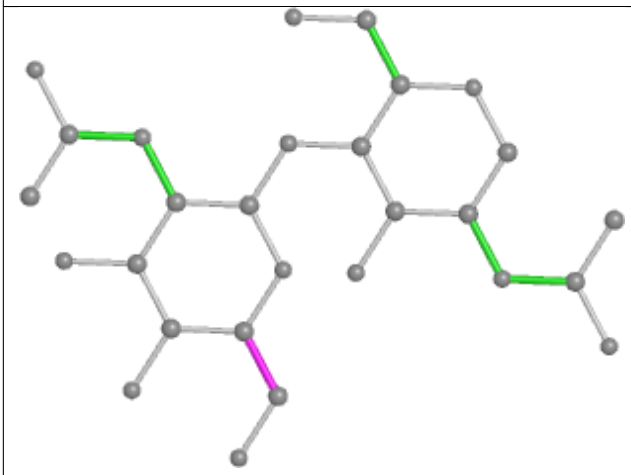
Oligosaccharide Chain U



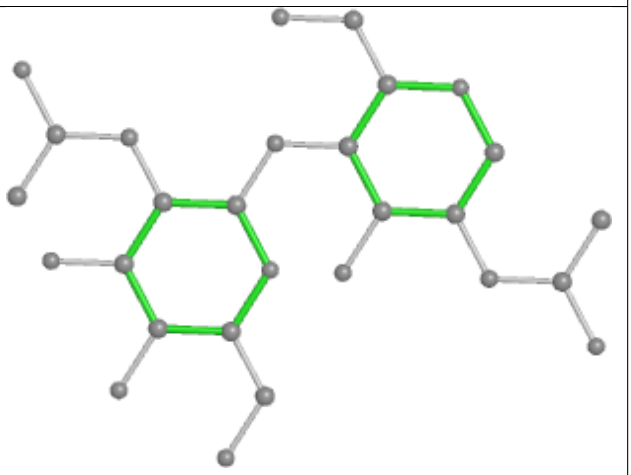
Bond lengths



Bond angles

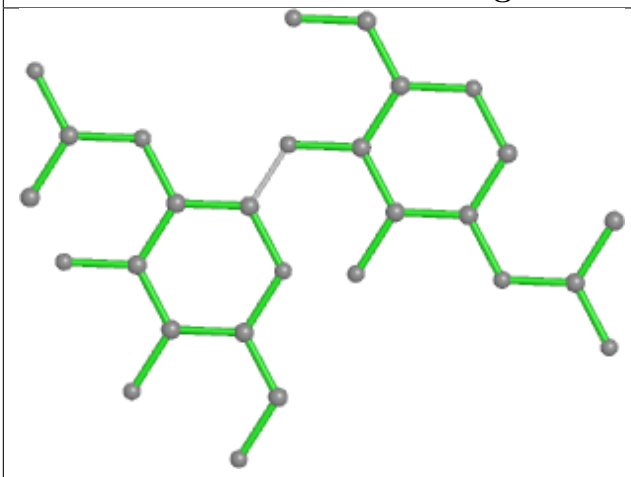


Torsions

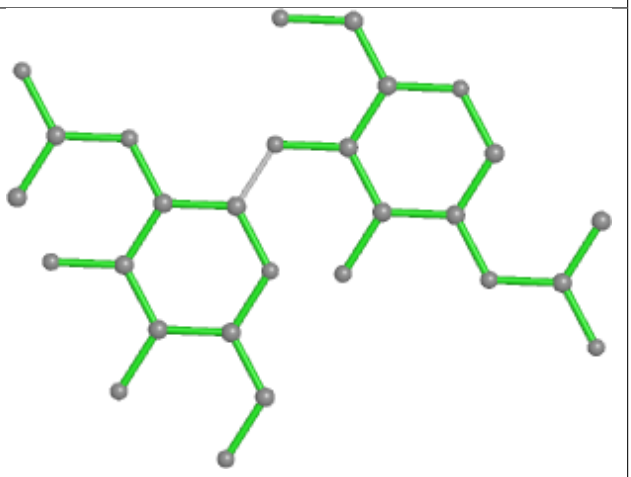


Rings

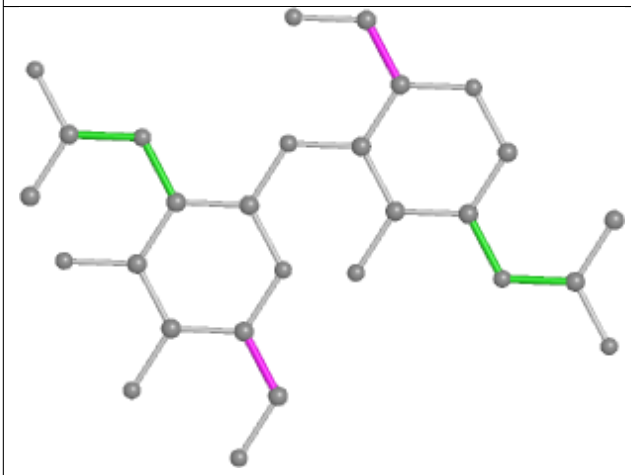
Oligosaccharide Chain V



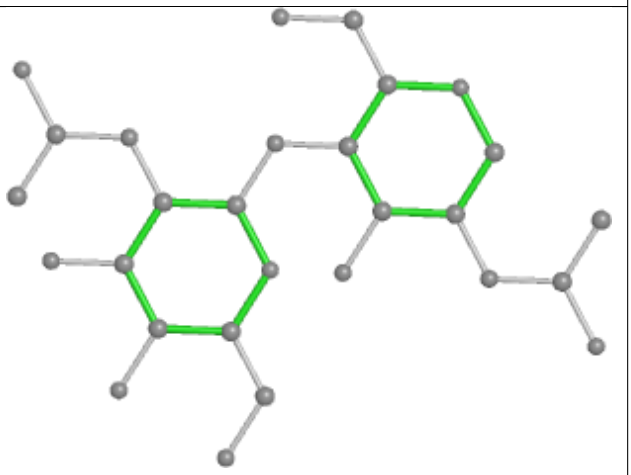
Bond lengths



Bond angles

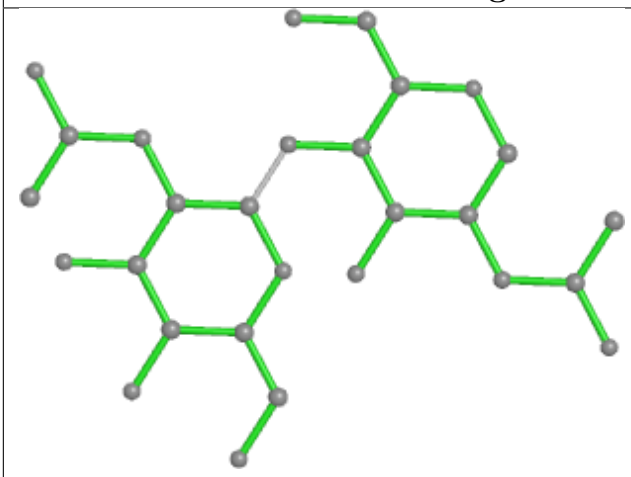


Torsions

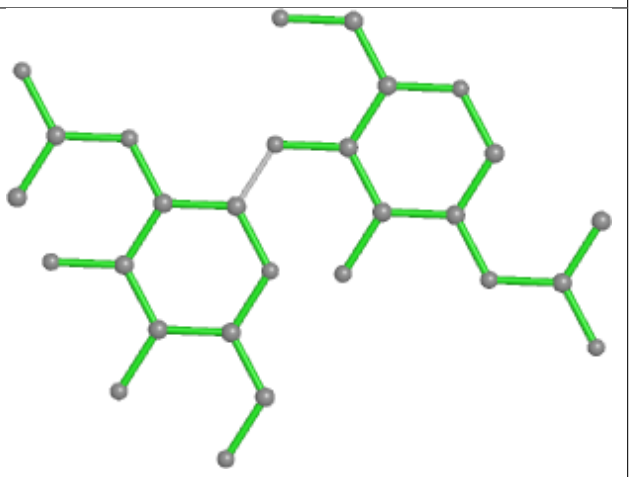


Rings

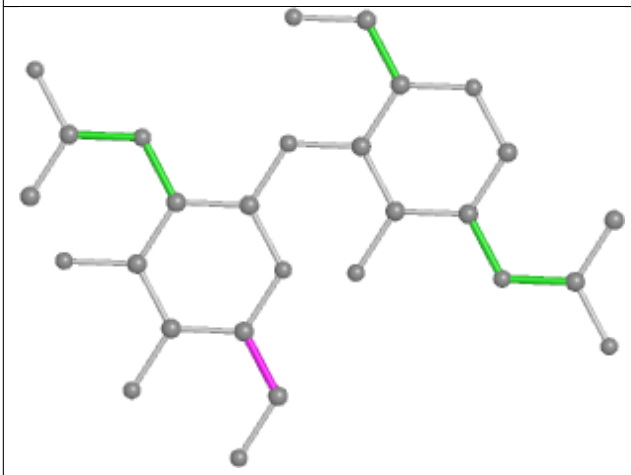
Oligosaccharide Chain W



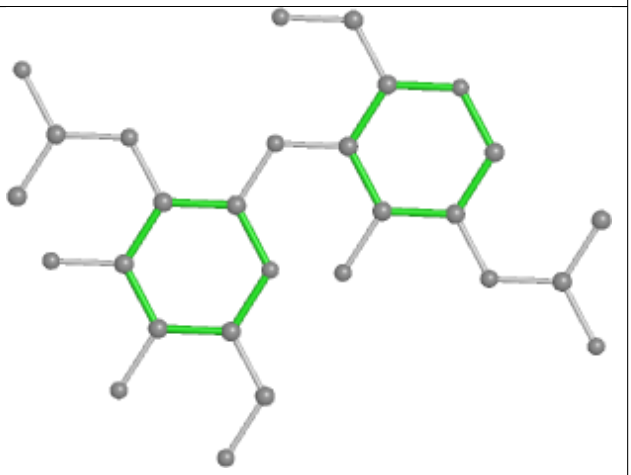
Bond lengths



Bond angles

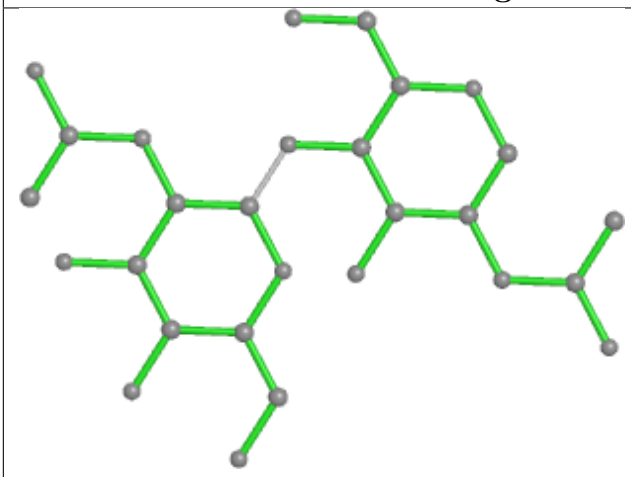


Torsions

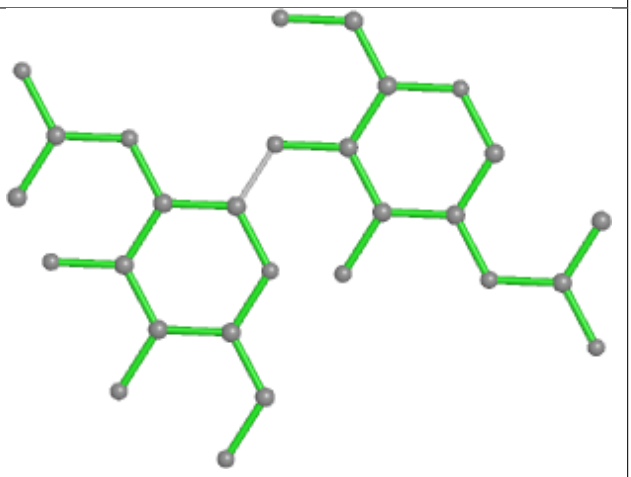


Rings

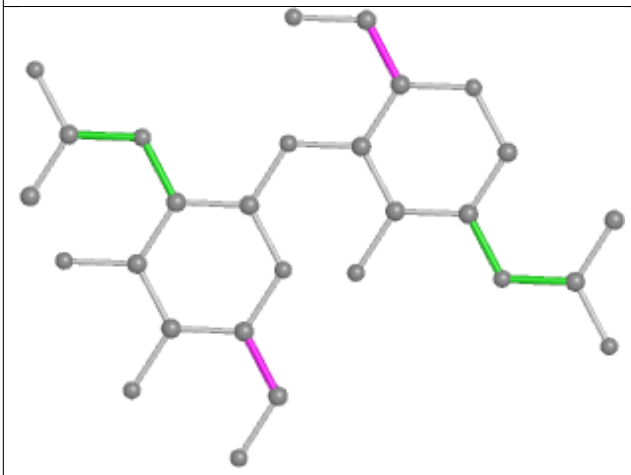
Oligosaccharide Chain X



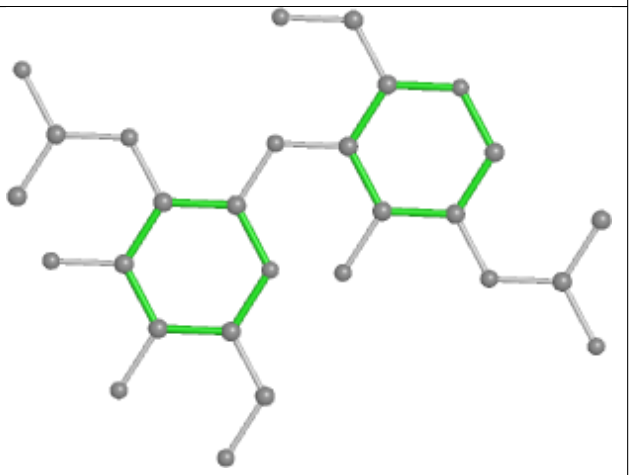
Bond lengths



Bond angles

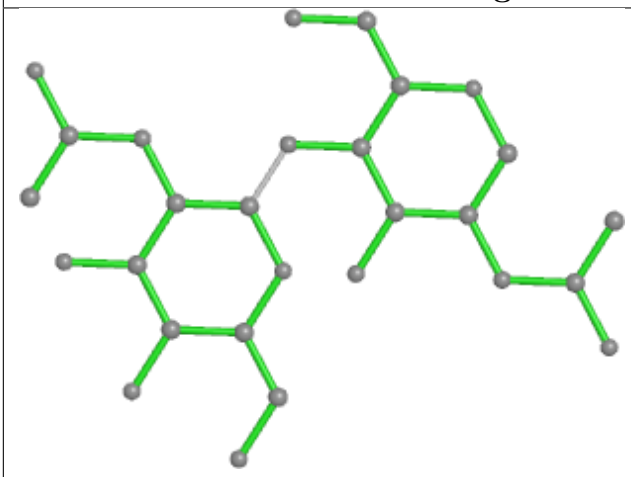


Torsions

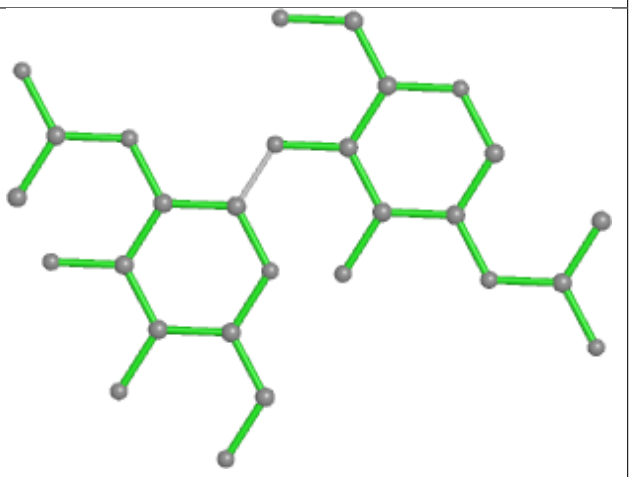


Rings

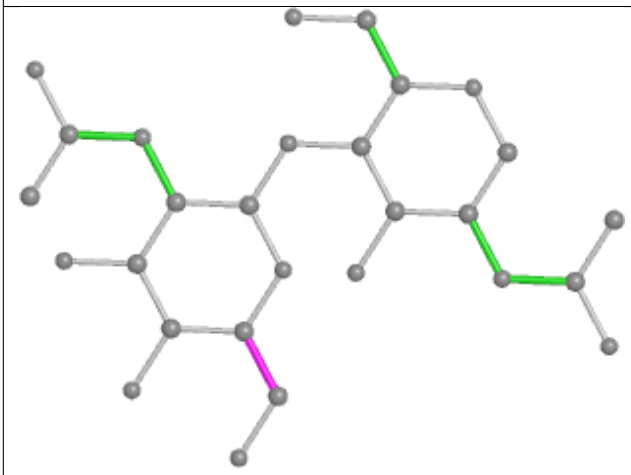
Oligosaccharide Chain Y



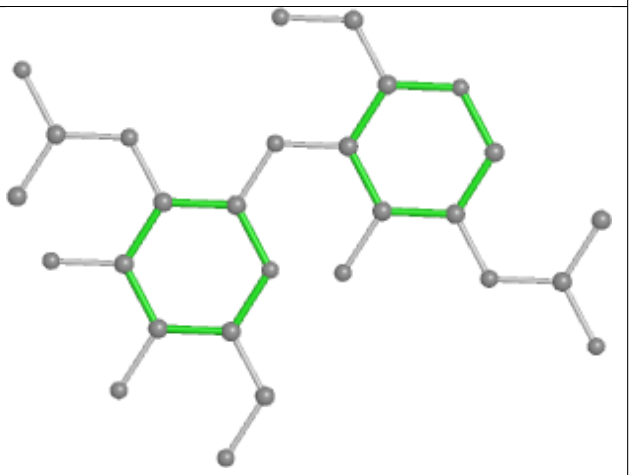
Bond lengths



Bond angles

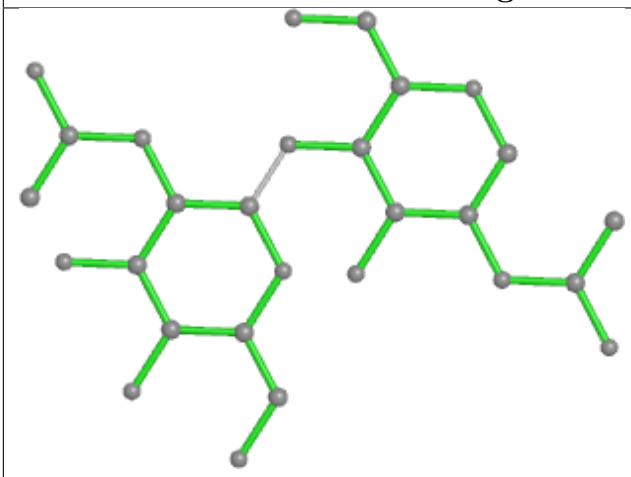


Torsions

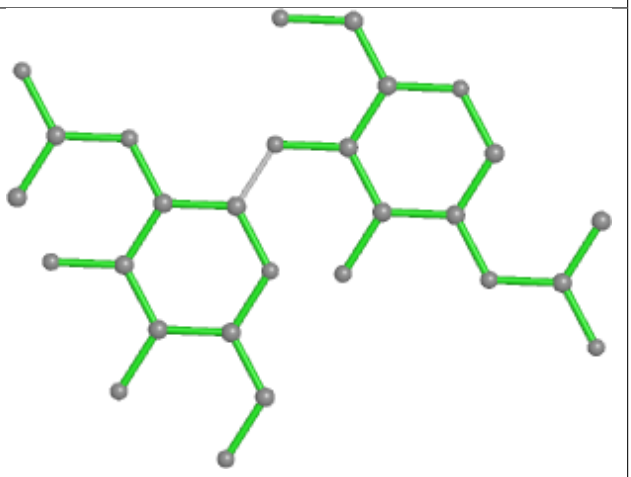


Rings

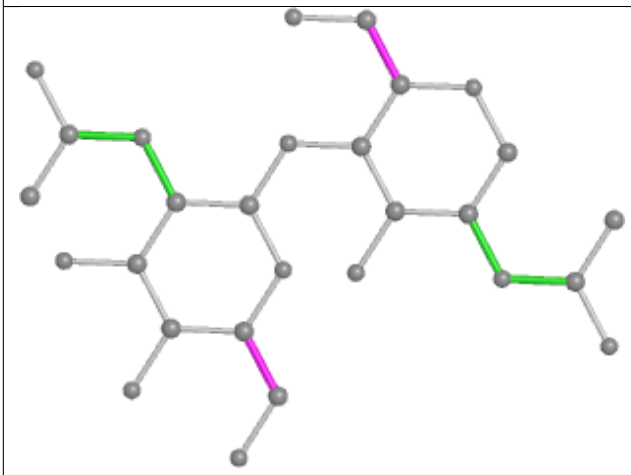
Oligosaccharide Chain Z



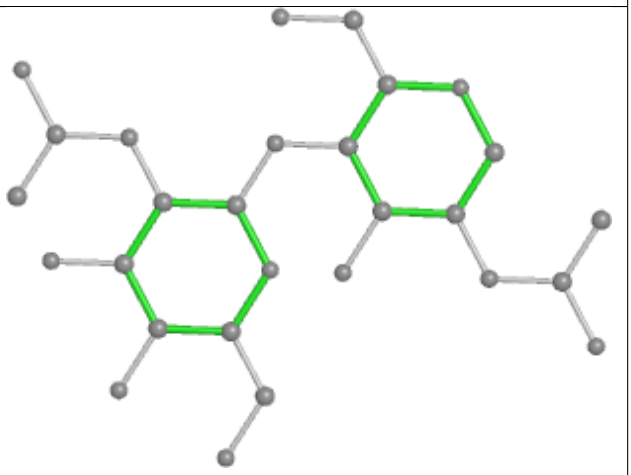
Bond lengths



Bond angles

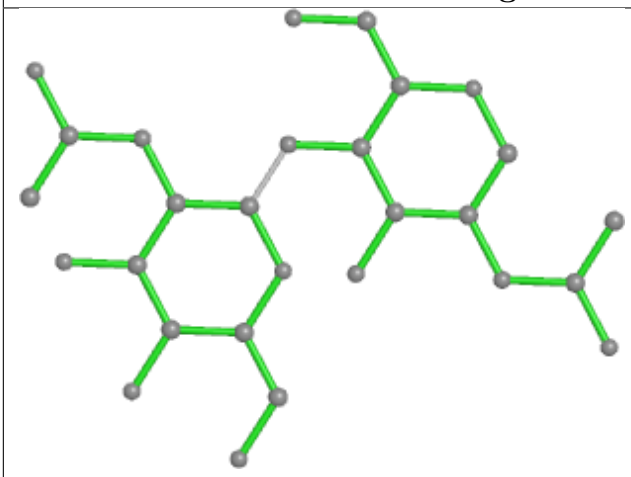


Torsions

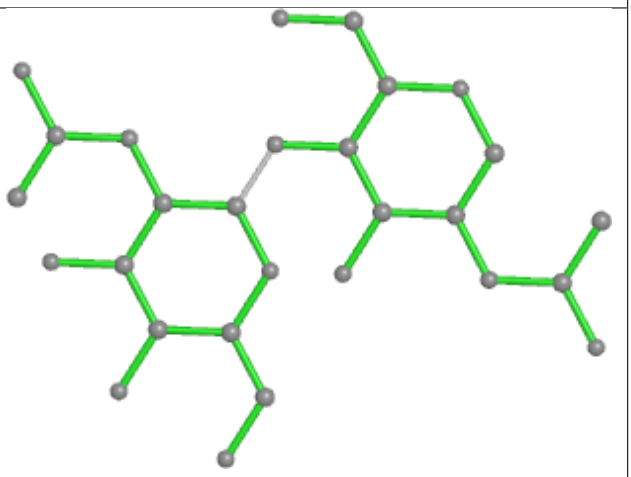


Rings

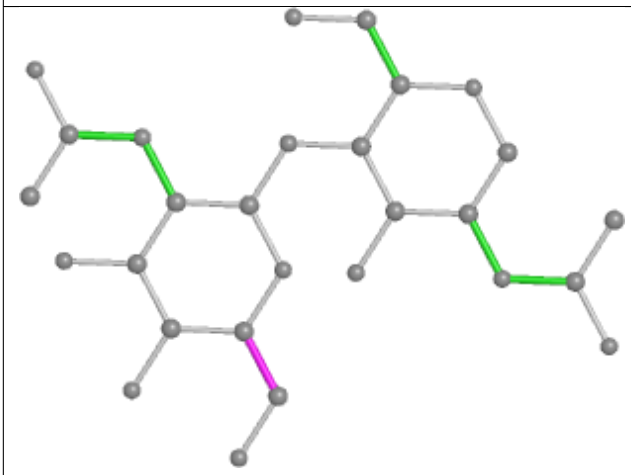
Oligosaccharide Chain a



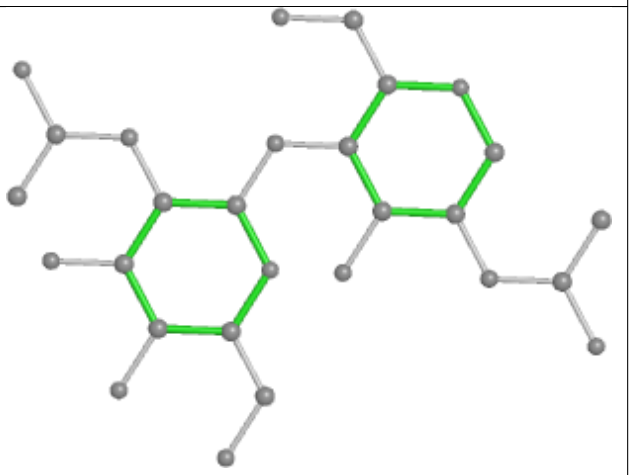
Bond lengths



Bond angles

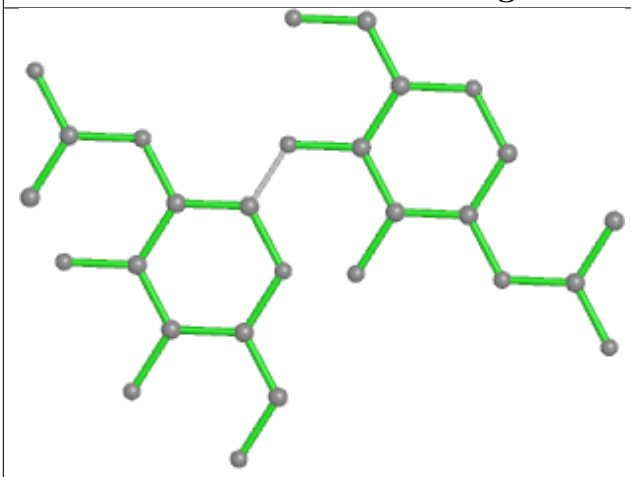


Torsions

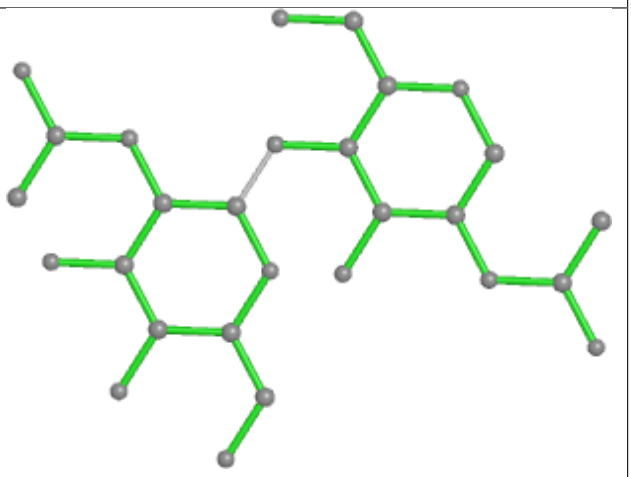


Rings

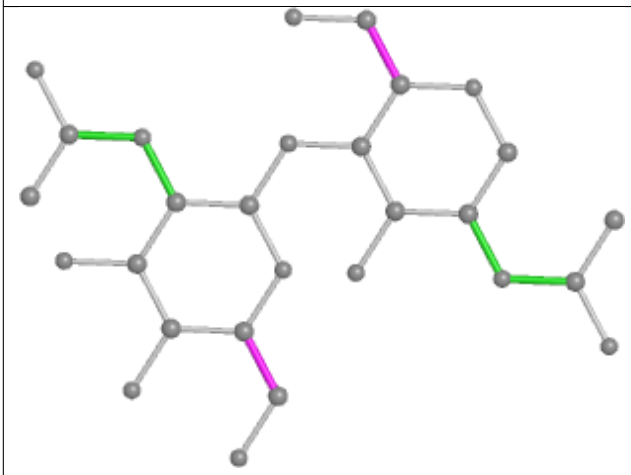
Oligosaccharide Chain b



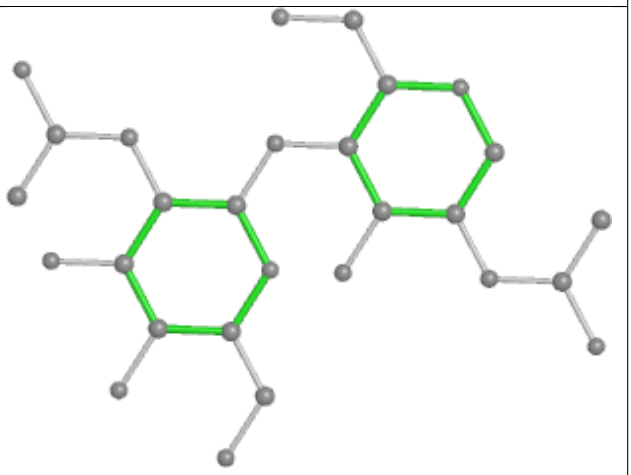
Bond lengths



Bond angles

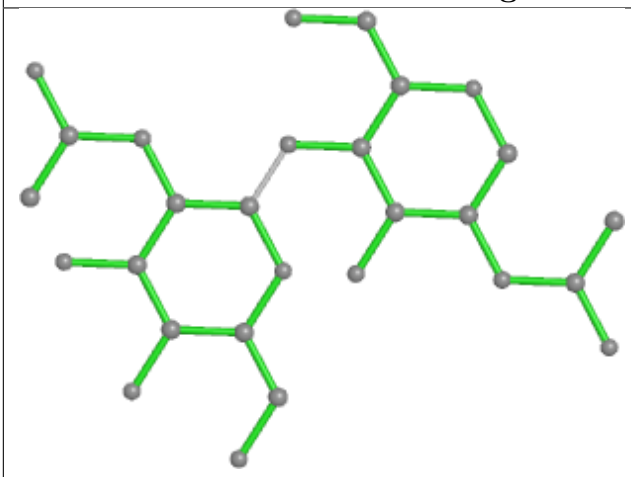


Torsions

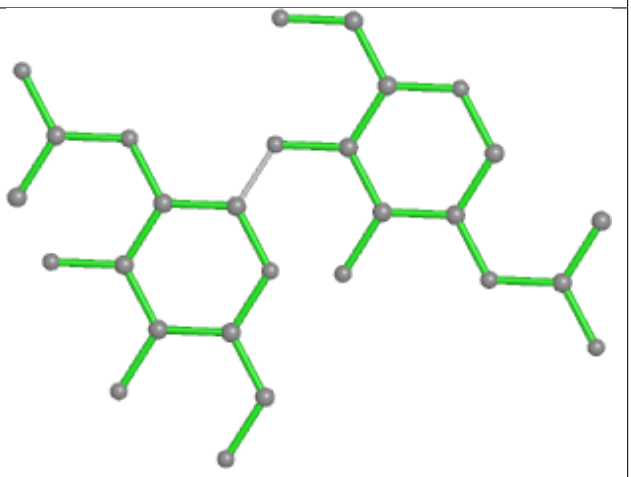


Rings

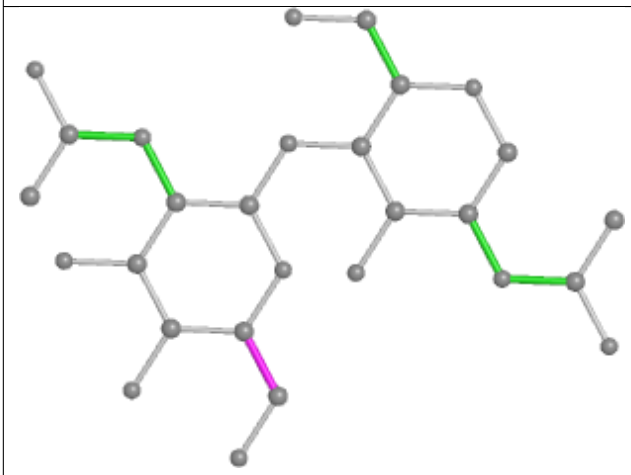
Oligosaccharide Chain c



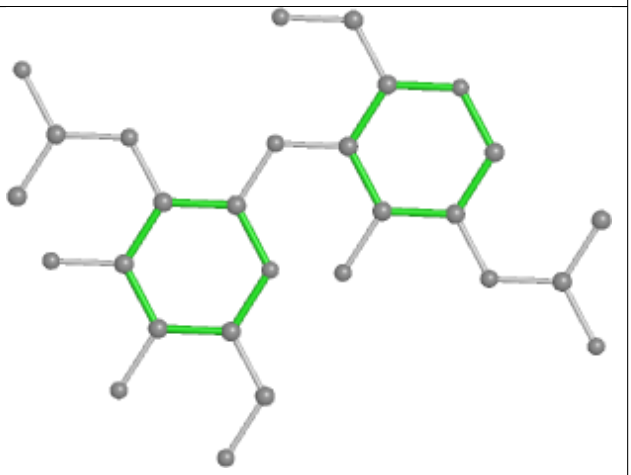
Bond lengths



Bond angles

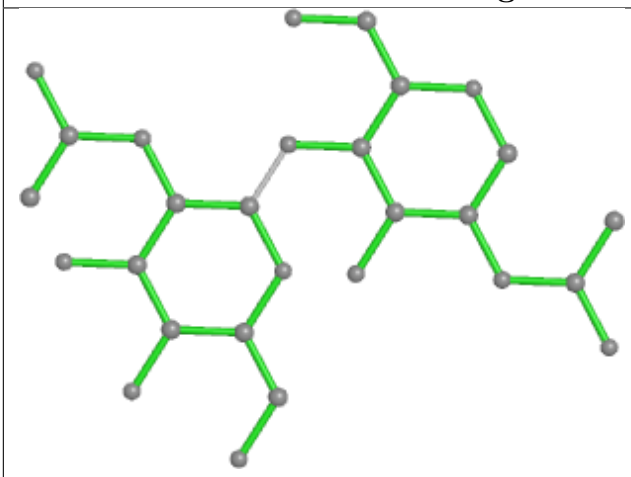


Torsions

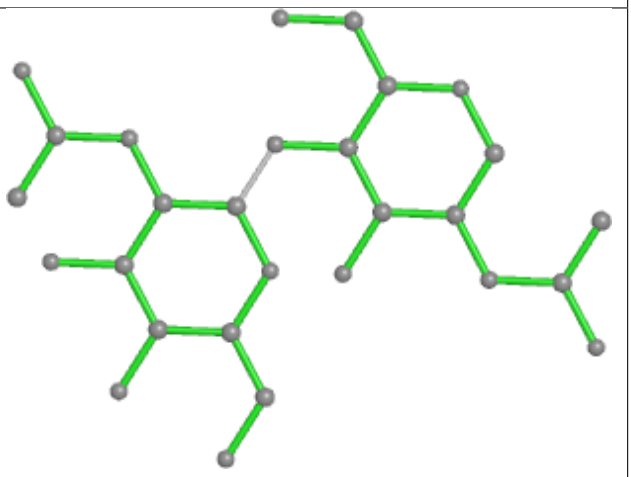


Rings

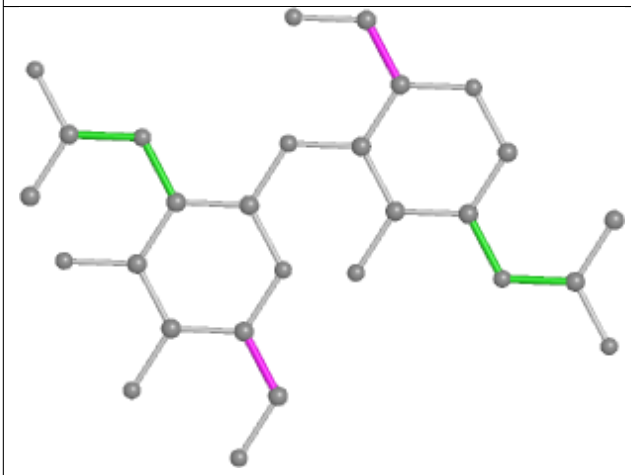
Oligosaccharide Chain d



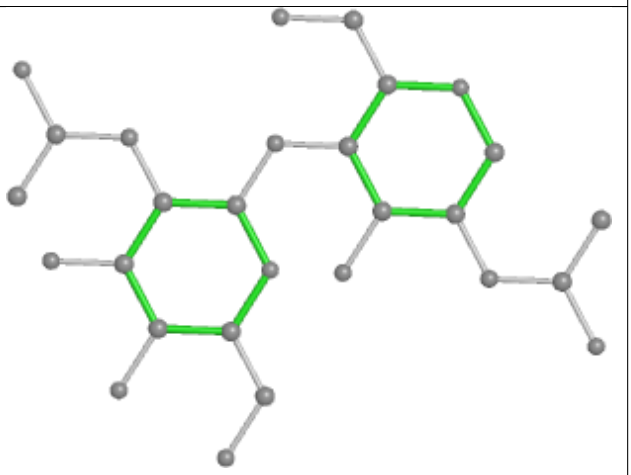
Bond lengths



Bond angles

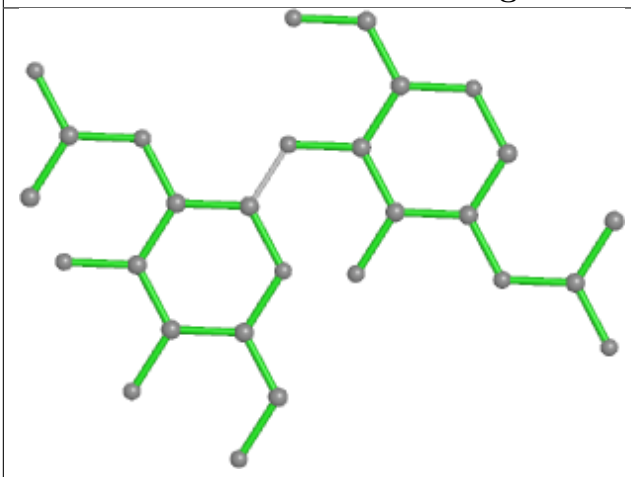


Torsions

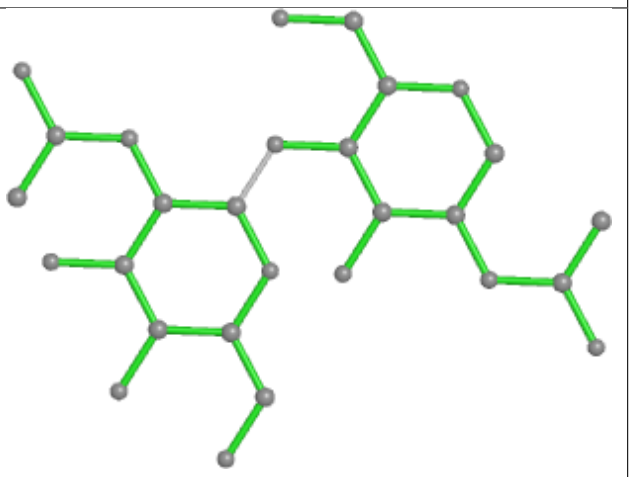


Rings

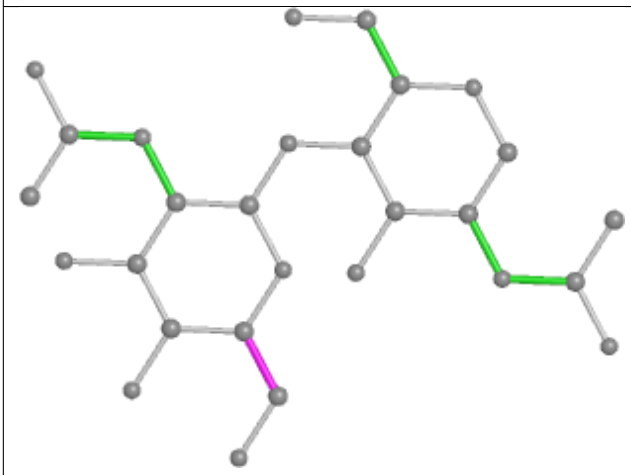
Oligosaccharide Chain e



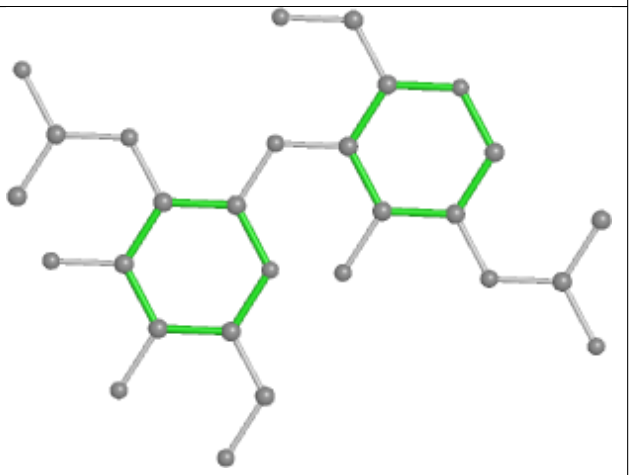
Bond lengths



Bond angles

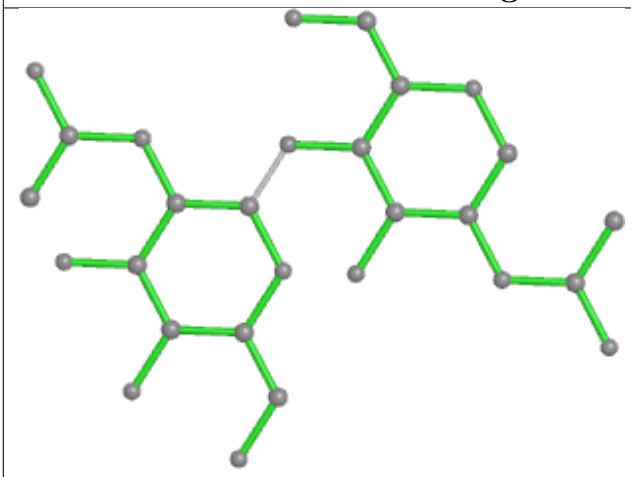


Torsions

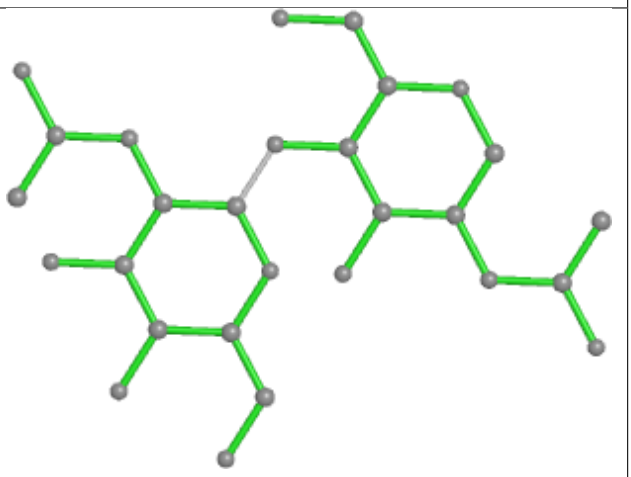


Rings

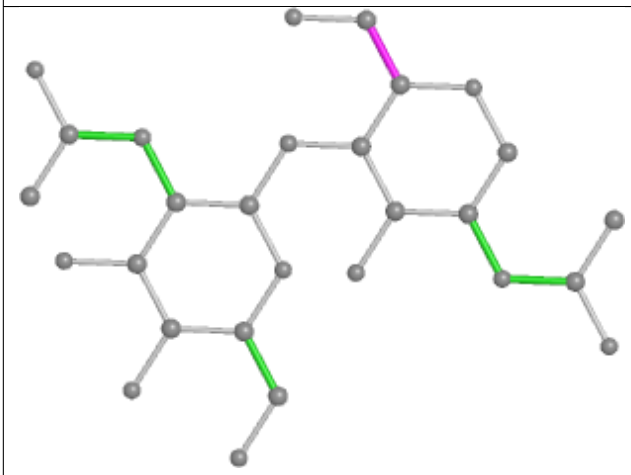
Oligosaccharide Chain f



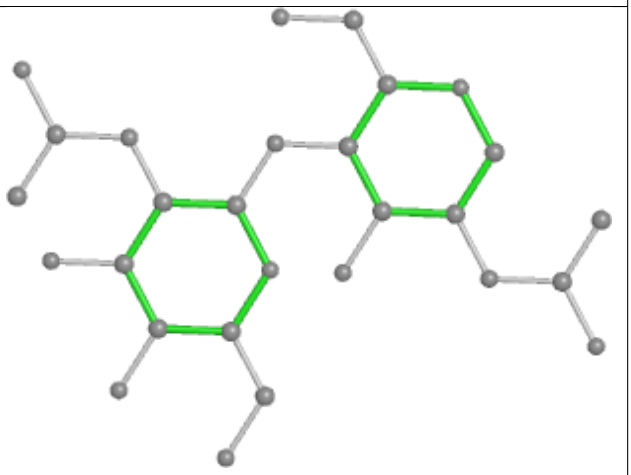
Bond lengths



Bond angles

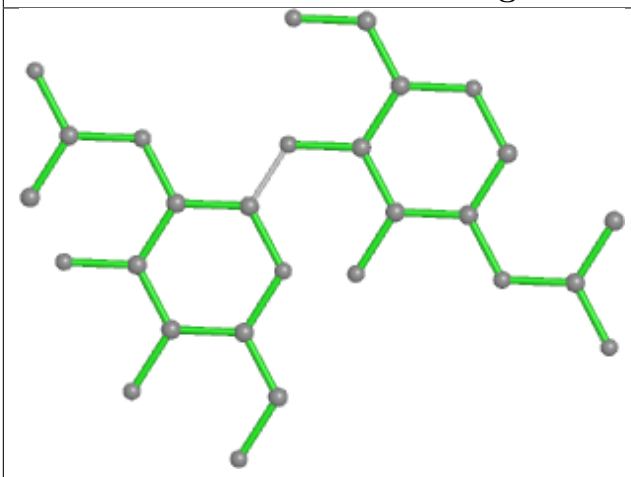


Torsions

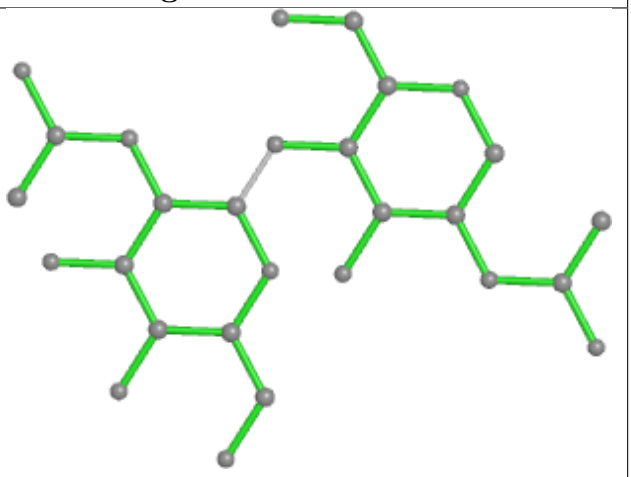


Rings

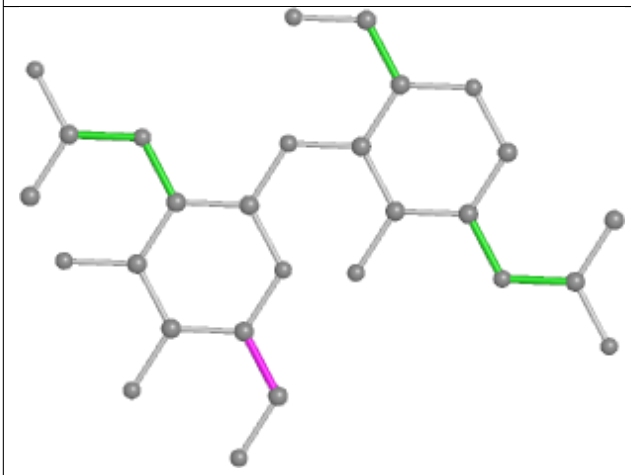
Oligosaccharide Chain g



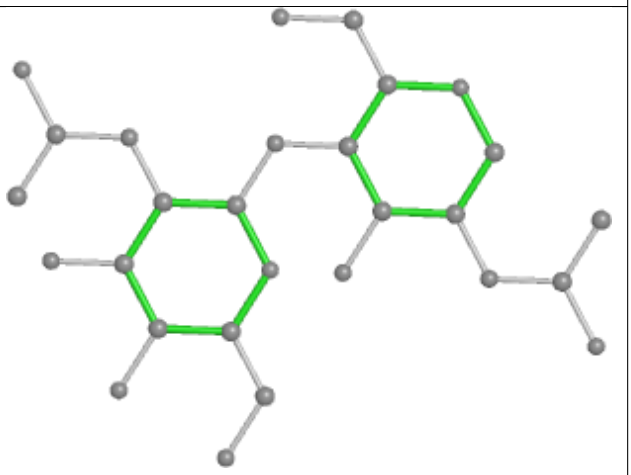
Bond lengths



Bond angles

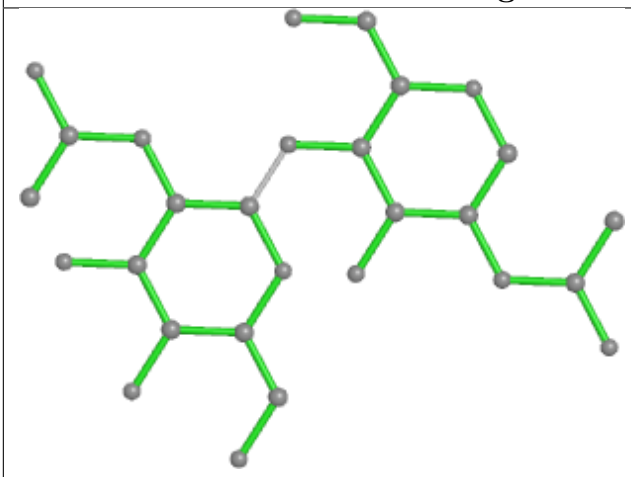


Torsions

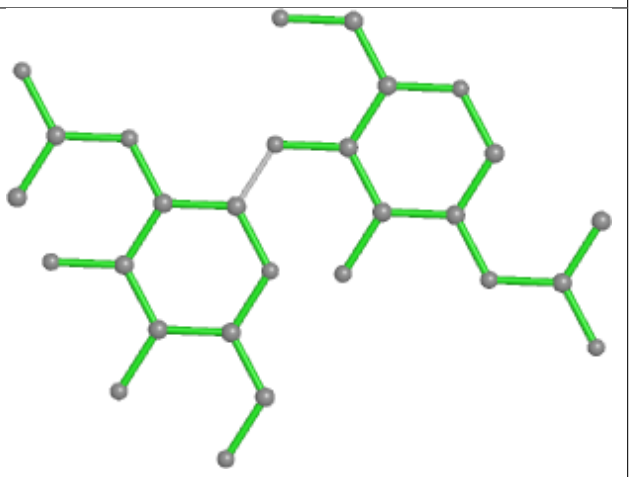


Rings

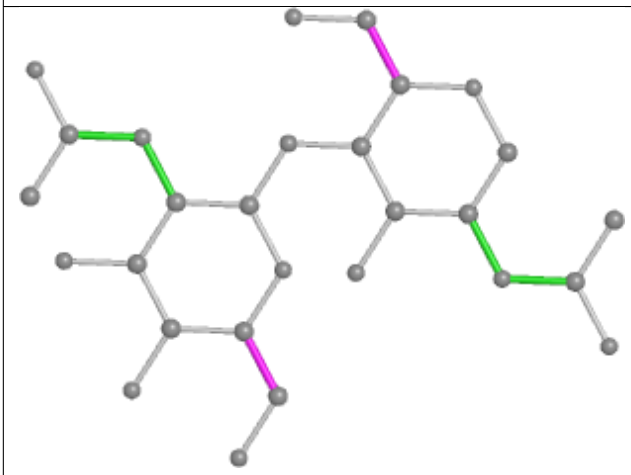
Oligosaccharide Chain h



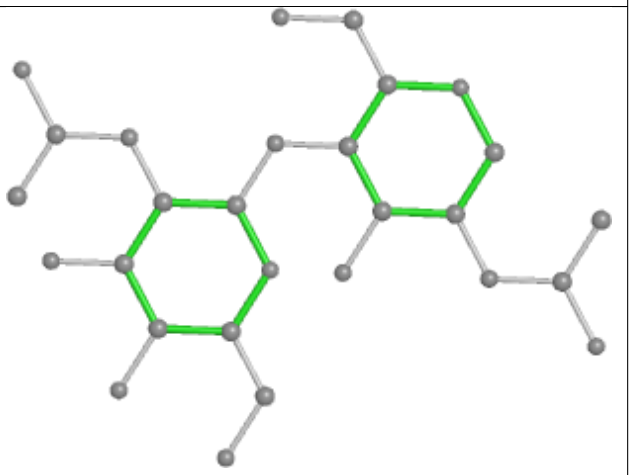
Bond lengths



Bond angles

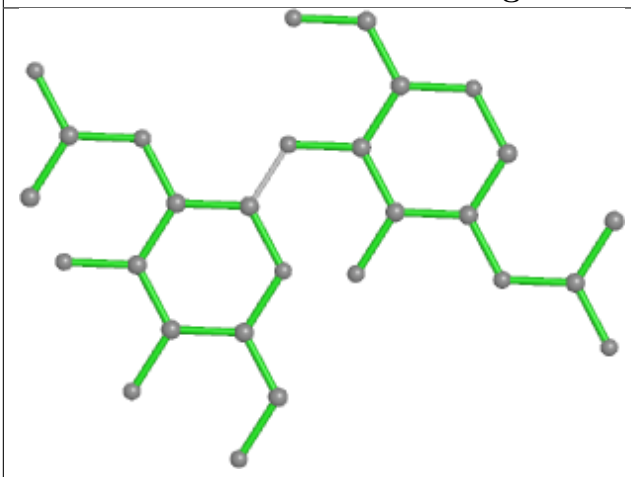


Torsions

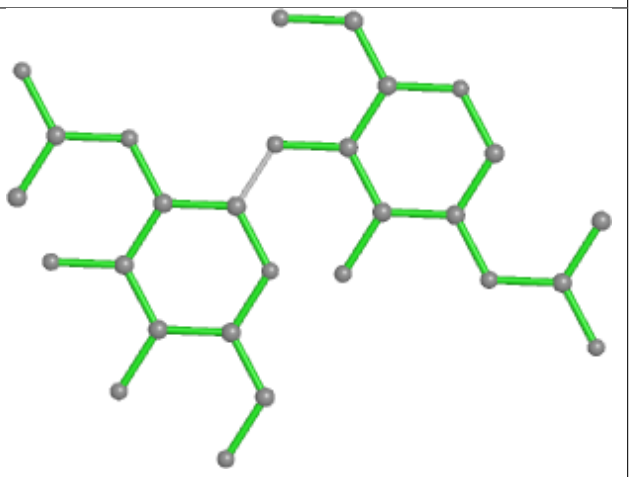


Rings

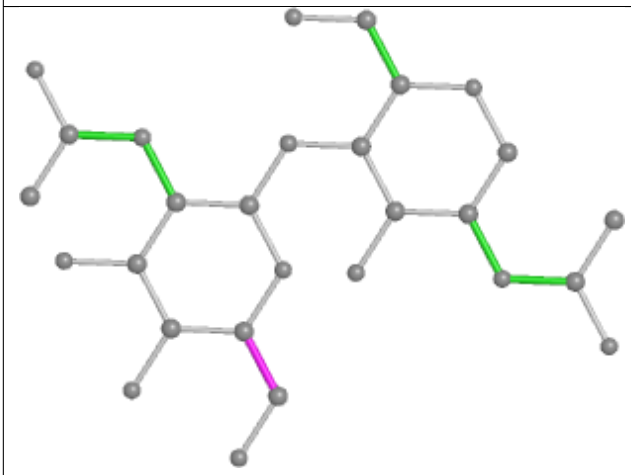
Oligosaccharide Chain i



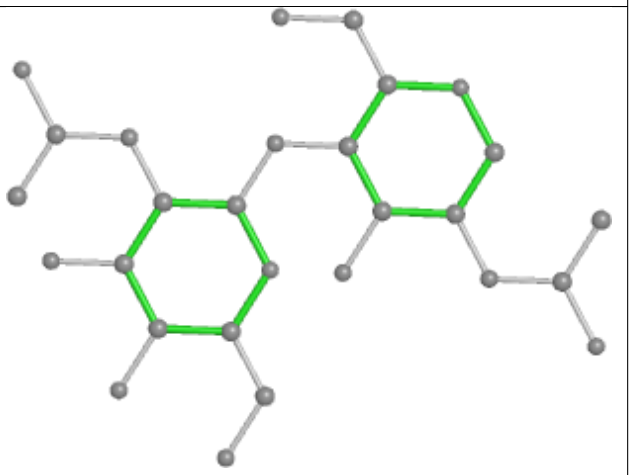
Bond lengths



Bond angles

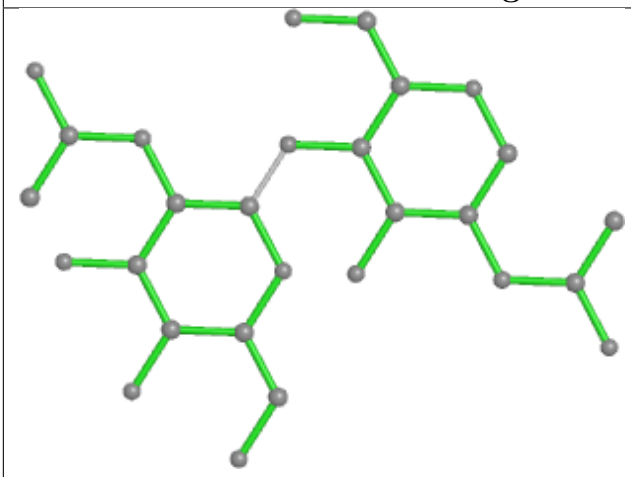


Torsions

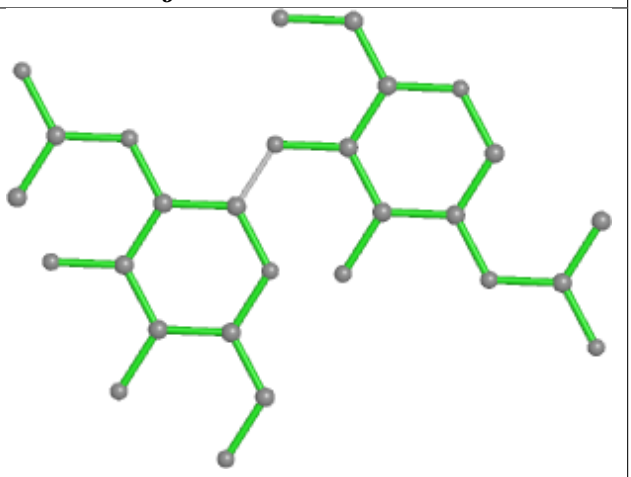


Rings

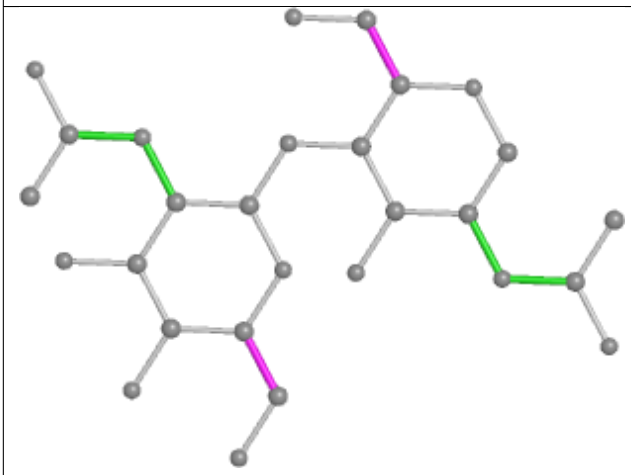
Oligosaccharide Chain j



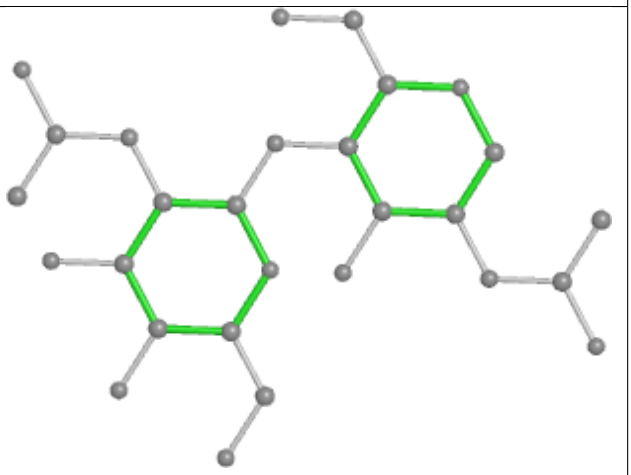
Bond lengths



Bond angles

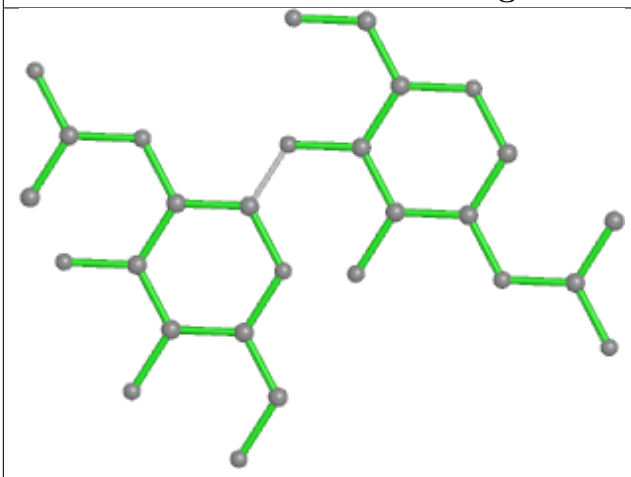


Torsions

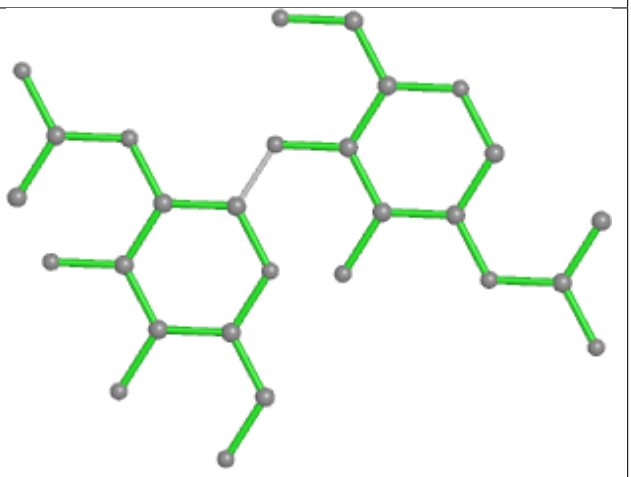


Rings

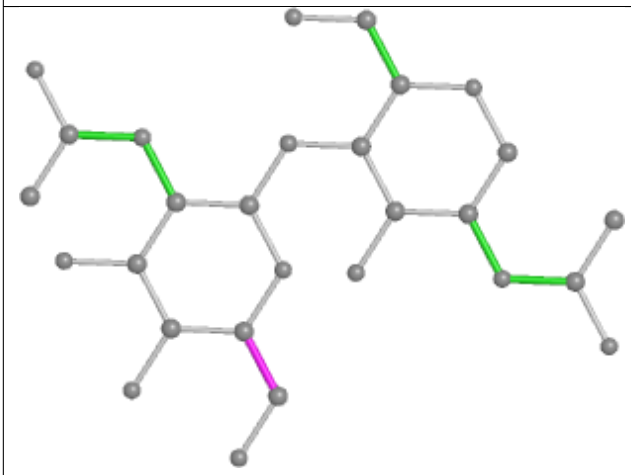
Oligosaccharide Chain k



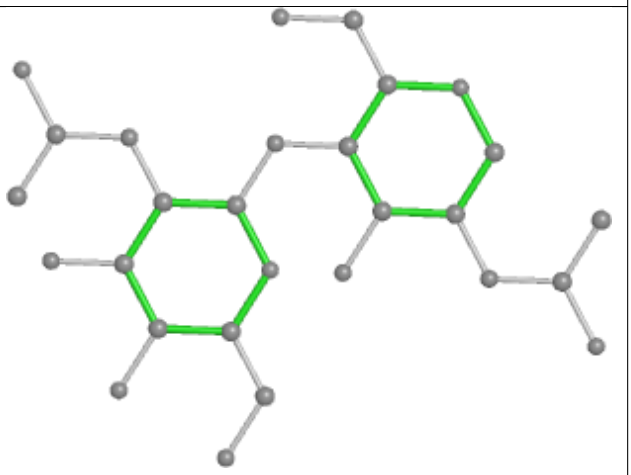
Bond lengths



Bond angles

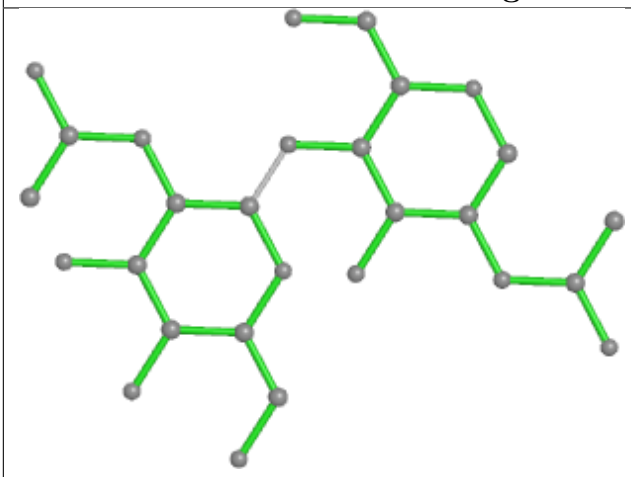


Torsions

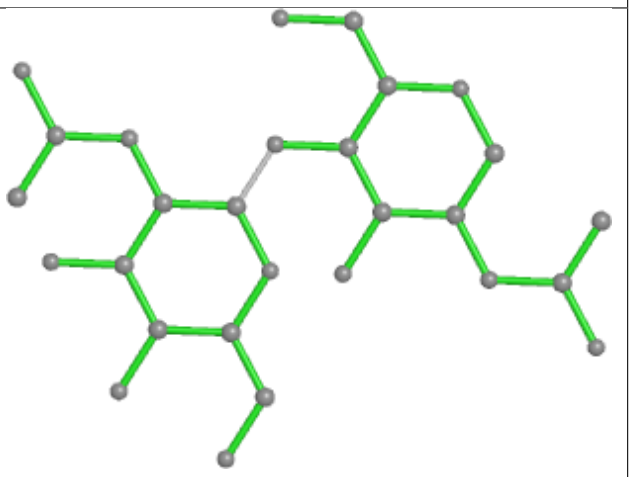


Rings

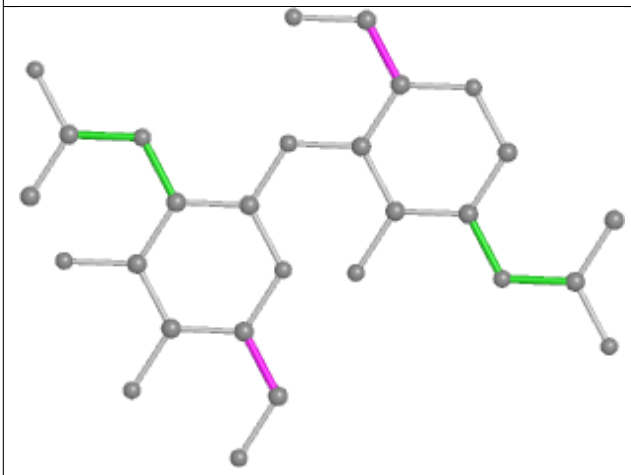
Oligosaccharide Chain l



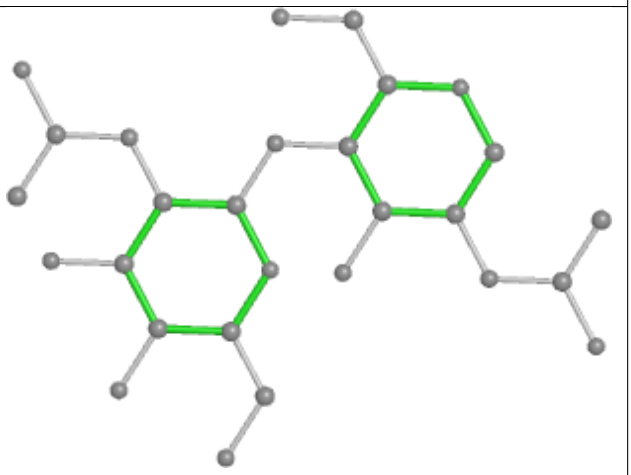
Bond lengths



Bond angles

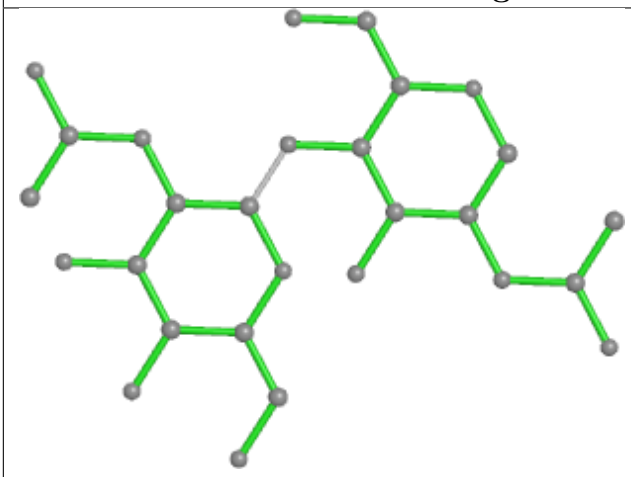


Torsions

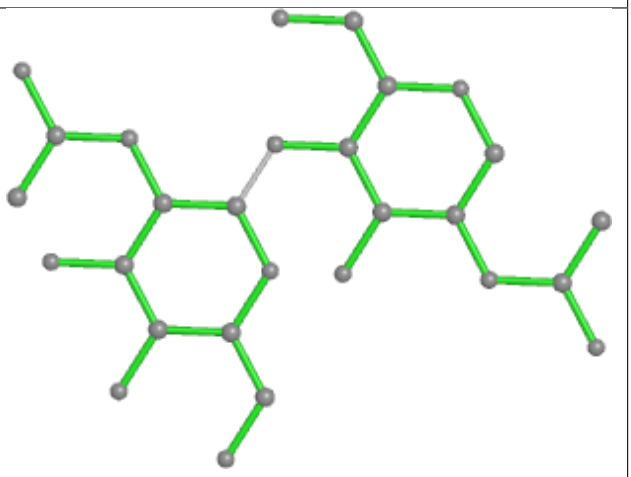


Rings

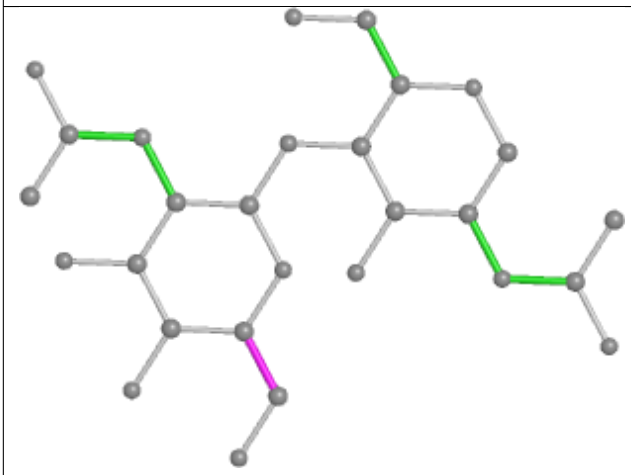
Oligosaccharide Chain m



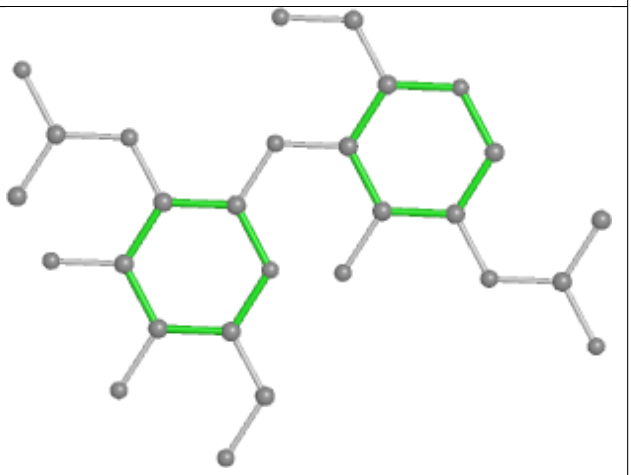
Bond lengths



Bond angles

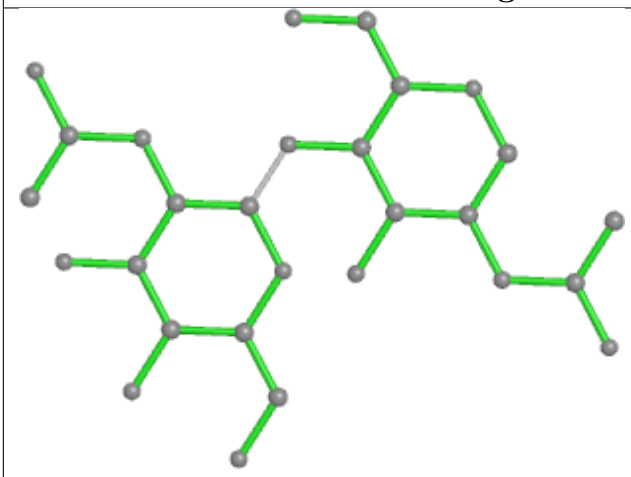


Torsions

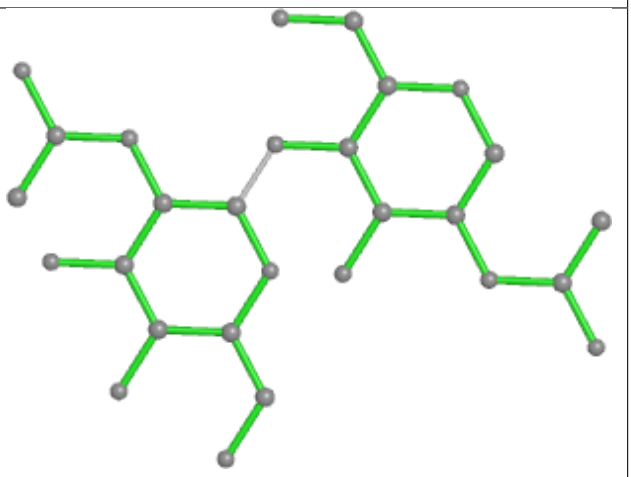


Rings

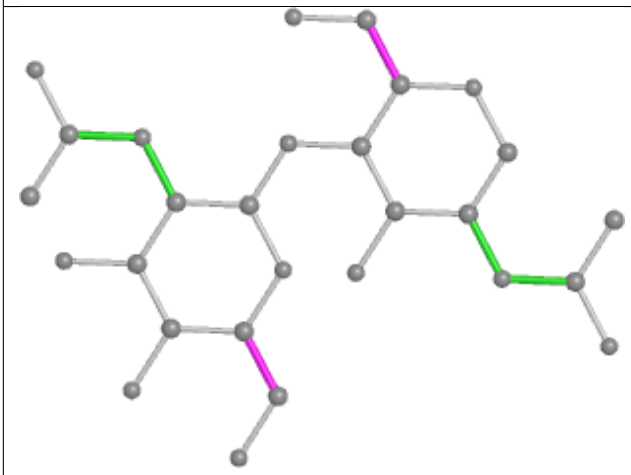
Oligosaccharide Chain n



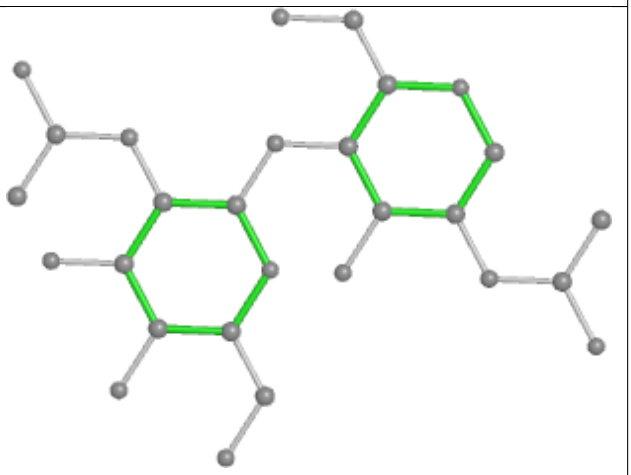
Bond lengths



Bond angles

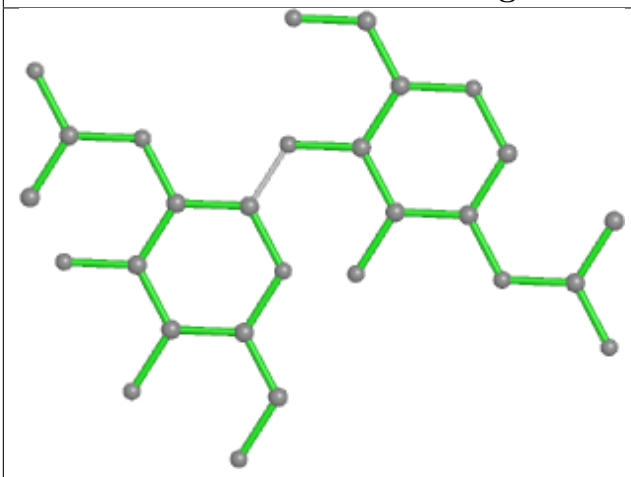


Torsions

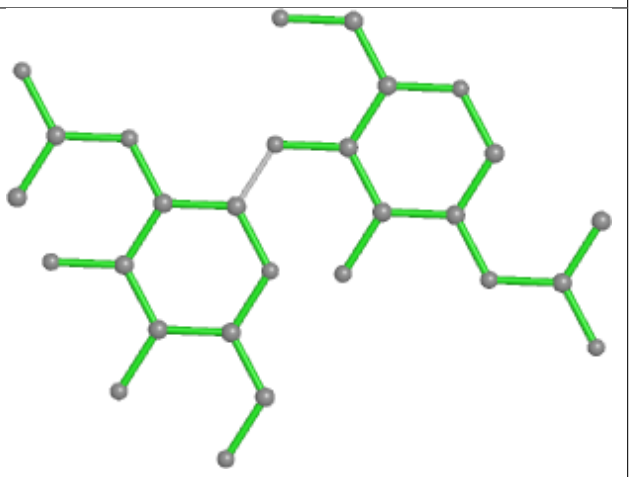


Rings

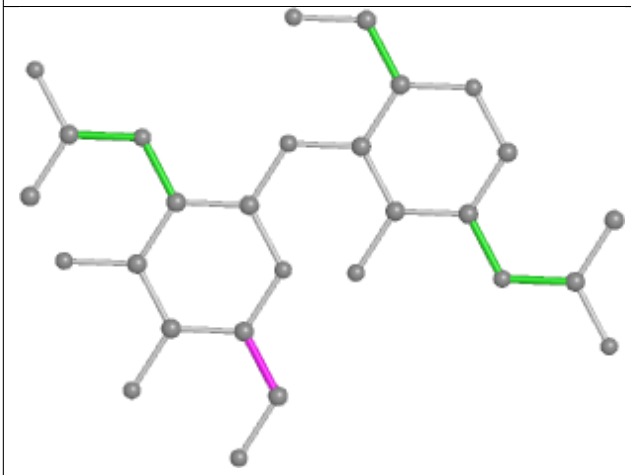
Oligosaccharide Chain o



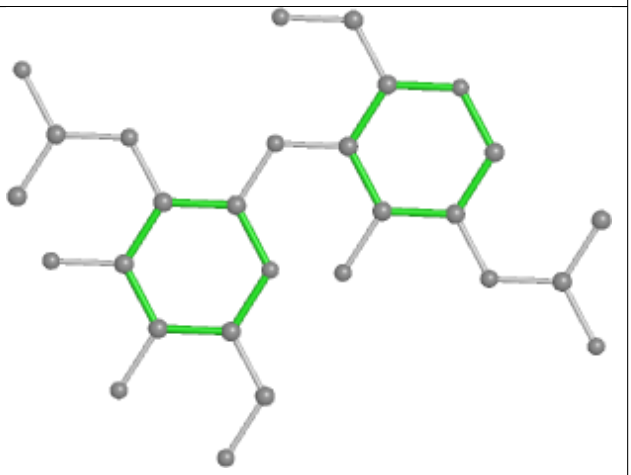
Bond lengths



Bond angles

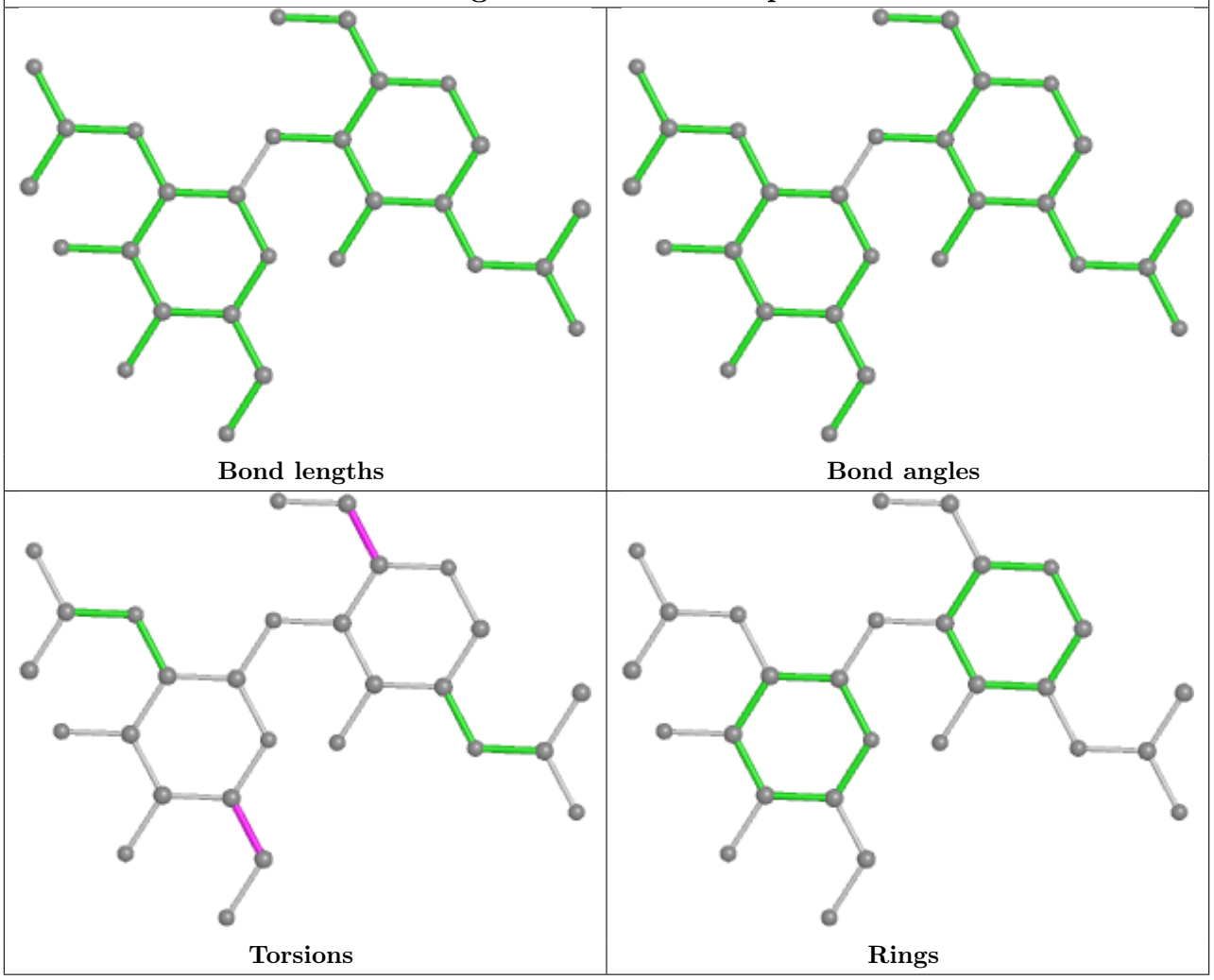


Torsions



Rings

Oligosaccharide Chain p



5.6 Ligand geometry (i)

66 ligands are modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
5	NAG	C	1304	1	14,14,15	0.35	0	17,19,21	0.47	0
5	NAG	G	1303	1	14,14,15	0.50	0	17,19,21	0.52	0
5	NAG	C	1309	1	14,14,15	0.28	0	17,19,21	0.45	0
5	NAG	I	1309	1	14,14,15	0.28	0	17,19,21	0.45	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
5	NAG	C	1302	1	14,14,15	0.39	0	17,19,21	0.33	0
5	NAG	B	1308	1	14,14,15	0.27	0	17,19,21	0.43	0
5	NAG	H	1309	1	14,14,15	0.28	0	17,19,21	0.43	0
5	NAG	H	1310	1	14,14,15	0.26	0	17,19,21	0.46	0
5	NAG	G	1308	1	14,14,15	0.27	0	17,19,21	0.42	0
5	NAG	C	1303	1	14,14,15	0.41	0	17,19,21	0.42	0
5	NAG	A	1308	1	14,14,15	0.27	0	17,19,21	0.43	0
5	NAG	A	1310	1	14,14,15	0.25	0	17,19,21	0.45	0
5	NAG	G	1306	1	14,14,15	0.25	0	17,19,21	0.42	0
5	NAG	C	1307	1	14,14,15	0.37	0	17,19,21	0.72	0
5	NAG	C	1306	1	14,14,15	0.26	0	17,19,21	0.43	0
5	NAG	C	1310	1	14,14,15	0.24	0	17,19,21	0.44	0
5	NAG	B	1307	1	14,14,15	0.48	0	17,19,21	0.95	1 (5%)
5	NAG	I	1305	1	14,14,15	0.30	0	17,19,21	0.43	0
5	NAG	B	1310	1	14,14,15	0.25	0	17,19,21	0.45	0
5	NAG	G	1305	1	14,14,15	0.24	0	17,19,21	0.42	0
5	NAG	I	1301	1	14,14,15	0.26	0	17,19,21	0.44	0
5	NAG	A	1304	1	14,14,15	0.23	0	17,19,21	0.40	0
5	NAG	H	1301	1	14,14,15	0.40	0	17,19,21	0.38	0
5	NAG	H	1306	1	14,14,15	0.55	0	17,19,21	0.62	0
5	NAG	A	1309	1	14,14,15	0.27	0	17,19,21	0.44	0
5	NAG	I	1311	1	14,14,15	0.53	0	17,19,21	0.72	1 (5%)
5	NAG	H	1305	1	14,14,15	0.25	0	17,19,21	0.43	0
5	NAG	H	1311	1	14,14,15	0.28	0	17,19,21	0.48	0
5	NAG	A	1301	1	14,14,15	0.29	0	17,19,21	0.46	0
5	NAG	G	1301	1	14,14,15	0.28	0	17,19,21	0.47	0
5	NAG	I	1308	1	14,14,15	0.28	0	17,19,21	0.43	0
5	NAG	G	1311	1	14,14,15	0.24	0	17,19,21	0.45	0
5	NAG	B	1304	1	14,14,15	0.32	0	17,19,21	0.56	0
5	NAG	H	1308	1	14,14,15	0.24	0	17,19,21	0.43	0
5	NAG	G	1307	1	14,14,15	0.36	0	17,19,21	0.72	0
5	NAG	H	1302	1	14,14,15	0.22	0	17,19,21	0.50	0
5	NAG	B	1303	1	14,14,15	0.25	0	17,19,21	0.40	0
5	NAG	C	1311	1	14,14,15	0.52	0	17,19,21	0.72	1 (5%)
5	NAG	A	1303	1	14,14,15	0.47	0	17,19,21	0.52	0
5	NAG	B	1306	1	14,14,15	0.21	0	17,19,21	0.43	0
5	NAG	B	1309	1	14,14,15	0.27	0	17,19,21	0.43	0
5	NAG	B	1302	1	14,14,15	0.23	0	17,19,21	0.50	0
5	NAG	I	1303	1	14,14,15	0.39	0	17,19,21	0.34	0
5	NAG	C	1305	1	14,14,15	0.30	0	17,19,21	0.43	0
5	NAG	G	1309	1	14,14,15	0.28	0	17,19,21	0.45	0
5	NAG	A	1302	1	14,14,15	0.23	0	17,19,21	0.48	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
5	NAG	C	1301	1	14,14,15	0.30	0	17,19,21	0.46	0
5	NAG	I	1304	1	14,14,15	0.36	0	17,19,21	0.48	0
5	NAG	A	1306	1	14,14,15	0.35	0	17,19,21	0.48	0
5	NAG	H	1304	1	14,14,15	0.34	0	17,19,21	0.57	0
5	NAG	H	1307	1	14,14,15	0.55	0	17,19,21	0.80	1 (5%)
5	NAG	I	1307	1	14,14,15	0.38	0	17,19,21	0.72	0
5	NAG	I	1310	1	14,14,15	0.23	0	17,19,21	0.42	0
5	NAG	A	1305	1	14,14,15	0.25	0	17,19,21	0.43	0
5	NAG	B	1301	1	14,14,15	0.41	0	17,19,21	0.38	0
5	NAG	G	1310	1	14,14,15	0.25	0	17,19,21	0.44	0
5	NAG	A	1311	1	14,14,15	0.25	0	17,19,21	0.45	0
5	NAG	G	1302	1	14,14,15	0.24	0	17,19,21	0.48	0
5	NAG	A	1307	1	14,14,15	0.35	0	17,19,21	0.72	0
5	NAG	B	1311	1	14,14,15	0.28	0	17,19,21	0.48	0
5	NAG	H	1303	1	14,14,15	0.24	0	17,19,21	0.39	0
5	NAG	B	1305	1	14,14,15	0.25	0	17,19,21	0.43	0
5	NAG	I	1306	1	14,14,15	0.30	0	17,19,21	0.54	0
5	NAG	I	1302	1	14,14,15	0.40	0	17,19,21	0.33	0
5	NAG	G	1304	1	14,14,15	0.23	0	17,19,21	0.41	0
5	NAG	C	1308	1	14,14,15	0.28	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	C	1304	1	-	0/6/23/26	0/1/1/1
5	NAG	G	1303	1	-	0/6/23/26	0/1/1/1
5	NAG	C	1309	1	-	1/6/23/26	0/1/1/1
5	NAG	I	1309	1	-	1/6/23/26	0/1/1/1
5	NAG	C	1302	1	-	1/6/23/26	0/1/1/1
5	NAG	B	1308	1	-	2/6/23/26	0/1/1/1
5	NAG	H	1309	1	-	2/6/23/26	0/1/1/1
5	NAG	H	1310	1	-	0/6/23/26	0/1/1/1
5	NAG	G	1308	1	-	2/6/23/26	0/1/1/1
5	NAG	C	1303	1	-	0/6/23/26	0/1/1/1
5	NAG	A	1308	1	-	2/6/23/26	0/1/1/1
5	NAG	A	1310	1	-	0/6/23/26	0/1/1/1
5	NAG	G	1306	1	-	2/6/23/26	0/1/1/1
5	NAG	C	1307	1	-	1/6/23/26	0/1/1/1

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
5	NAG	C	1306	1	-	2/6/23/26	0/1/1/1
5	NAG	C	1310	1	-	0/6/23/26	0/1/1/1
5	NAG	B	1307	1	-	3/6/23/26	0/1/1/1
5	NAG	I	1305	1	-	2/6/23/26	0/1/1/1
5	NAG	B	1310	1	-	0/6/23/26	0/1/1/1
5	NAG	G	1305	1	-	2/6/23/26	0/1/1/1
5	NAG	I	1301	1	-	2/6/23/26	0/1/1/1
5	NAG	A	1304	1	-	2/6/23/26	0/1/1/1
5	NAG	H	1301	1	-	2/6/23/26	0/1/1/1
5	NAG	H	1306	1	-	4/6/23/26	0/1/1/1
5	NAG	A	1309	1	-	1/6/23/26	0/1/1/1
5	NAG	I	1311	1	-	0/6/23/26	0/1/1/1
5	NAG	H	1305	1	-	0/6/23/26	0/1/1/1
5	NAG	H	1311	1	-	2/6/23/26	0/1/1/1
5	NAG	A	1301	1	-	2/6/23/26	0/1/1/1
5	NAG	G	1301	1	-	2/6/23/26	0/1/1/1
5	NAG	I	1308	1	-	2/6/23/26	0/1/1/1
5	NAG	G	1311	1	-	2/6/23/26	0/1/1/1
5	NAG	B	1304	1	-	2/6/23/26	0/1/1/1
5	NAG	H	1308	1	-	2/6/23/26	0/1/1/1
5	NAG	G	1307	1	-	3/6/23/26	0/1/1/1
5	NAG	H	1302	1	-	0/6/23/26	0/1/1/1
5	NAG	B	1303	1	-	2/6/23/26	0/1/1/1
5	NAG	C	1311	1	-	0/6/23/26	0/1/1/1
5	NAG	A	1303	1	-	0/6/23/26	0/1/1/1
5	NAG	B	1306	1	-	3/6/23/26	0/1/1/1
5	NAG	B	1309	1	-	2/6/23/26	0/1/1/1
5	NAG	B	1302	1	-	0/6/23/26	0/1/1/1
5	NAG	I	1303	1	-	0/6/23/26	0/1/1/1
5	NAG	C	1305	1	-	2/6/23/26	0/1/1/1
5	NAG	G	1309	1	-	1/6/23/26	0/1/1/1
5	NAG	A	1302	1	-	2/6/23/26	0/1/1/1
5	NAG	C	1301	1	-	2/6/23/26	0/1/1/1
5	NAG	I	1304	1	-	0/6/23/26	0/1/1/1
5	NAG	A	1306	1	-	2/6/23/26	0/1/1/1
5	NAG	H	1304	1	-	2/6/23/26	0/1/1/1

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
5	NAG	H	1307	1	-	3/6/23/26	0/1/1/1
5	NAG	I	1307	1	-	1/6/23/26	0/1/1/1
5	NAG	I	1310	1	-	0/6/23/26	0/1/1/1
5	NAG	A	1305	1	-	2/6/23/26	0/1/1/1
5	NAG	B	1301	1	-	2/6/23/26	0/1/1/1
5	NAG	G	1310	1	-	0/6/23/26	0/1/1/1
5	NAG	A	1311	1	-	2/6/23/26	0/1/1/1
5	NAG	G	1302	1	-	2/6/23/26	0/1/1/1
5	NAG	A	1307	1	-	3/6/23/26	0/1/1/1
5	NAG	B	1311	1	-	2/6/23/26	0/1/1/1
5	NAG	H	1303	1	-	2/6/23/26	0/1/1/1
5	NAG	B	1305	1	-	0/6/23/26	0/1/1/1
5	NAG	I	1306	1	-	2/6/23/26	0/1/1/1
5	NAG	I	1302	1	-	2/6/23/26	0/1/1/1
5	NAG	G	1304	1	-	2/6/23/26	0/1/1/1
5	NAG	C	1308	1	-	2/6/23/26	0/1/1/1

There are no bond length outliers.

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
5	B	1307	NAG	C1-O5-C5	2.63	115.75	112.19
5	I	1311	NAG	C1-O5-C5	2.62	115.75	112.19
5	C	1311	NAG	C1-O5-C5	2.61	115.73	112.19
5	H	1307	NAG	C1-O5-C5	2.08	115.02	112.19

There are no chirality outliers.

All (96) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	A	1302	NAG	C4-C5-C6-O6
5	G	1302	NAG	C4-C5-C6-O6
5	A	1301	NAG	O5-C5-C6-O6
5	G	1301	NAG	O5-C5-C6-O6
5	B	1307	NAG	O5-C5-C6-O6
5	I	1301	NAG	O5-C5-C6-O6
5	G	1301	NAG	C4-C5-C6-O6
5	A	1308	NAG	O5-C5-C6-O6

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
5	G	1308	NAG	O5-C5-C6-O6
5	A	1301	NAG	C4-C5-C6-O6
5	B	1308	NAG	O5-C5-C6-O6
5	B	1309	NAG	O5-C5-C6-O6
5	G	1307	NAG	O5-C5-C6-O6
5	H	1309	NAG	O5-C5-C6-O6
5	I	1308	NAG	O5-C5-C6-O6
5	A	1302	NAG	O5-C5-C6-O6
5	C	1308	NAG	O5-C5-C6-O6
5	G	1302	NAG	O5-C5-C6-O6
5	H	1308	NAG	O5-C5-C6-O6
5	B	1303	NAG	C4-C5-C6-O6
5	A	1304	NAG	O5-C5-C6-O6
5	A	1307	NAG	O5-C5-C6-O6
5	B	1311	NAG	O5-C5-C6-O6
5	C	1301	NAG	O5-C5-C6-O6
5	G	1304	NAG	O5-C5-C6-O6
5	H	1303	NAG	C4-C5-C6-O6
5	B	1303	NAG	O5-C5-C6-O6
5	H	1303	NAG	O5-C5-C6-O6
5	H	1311	NAG	O5-C5-C6-O6
5	B	1301	NAG	O5-C5-C6-O6
5	H	1301	NAG	O5-C5-C6-O6
5	C	1301	NAG	C4-C5-C6-O6
5	I	1301	NAG	C4-C5-C6-O6
5	C	1305	NAG	C4-C5-C6-O6
5	H	1308	NAG	C4-C5-C6-O6
5	I	1305	NAG	C4-C5-C6-O6
5	B	1308	NAG	C4-C5-C6-O6
5	G	1307	NAG	C4-C5-C6-O6
5	H	1301	NAG	C4-C5-C6-O6
5	I	1308	NAG	C4-C5-C6-O6
5	A	1307	NAG	C4-C5-C6-O6
5	B	1307	NAG	C4-C5-C6-O6
5	C	1308	NAG	C4-C5-C6-O6
5	A	1306	NAG	C8-C7-N2-C2
5	A	1306	NAG	O7-C7-N2-C2
5	B	1306	NAG	C8-C7-N2-C2
5	B	1306	NAG	O7-C7-N2-C2
5	C	1306	NAG	C8-C7-N2-C2
5	C	1306	NAG	O7-C7-N2-C2
5	G	1306	NAG	C8-C7-N2-C2

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
5	G	1306	NAG	O7-C7-N2-C2
5	H	1306	NAG	C8-C7-N2-C2
5	H	1306	NAG	O7-C7-N2-C2
5	I	1306	NAG	C8-C7-N2-C2
5	I	1306	NAG	O7-C7-N2-C2
5	A	1304	NAG	C4-C5-C6-O6
5	G	1304	NAG	C4-C5-C6-O6
5	H	1306	NAG	O5-C5-C6-O6
5	A	1308	NAG	C4-C5-C6-O6
5	B	1301	NAG	C4-C5-C6-O6
5	G	1308	NAG	C4-C5-C6-O6
5	B	1304	NAG	O5-C5-C6-O6
5	H	1311	NAG	C4-C5-C6-O6
5	H	1304	NAG	O5-C5-C6-O6
5	B	1311	NAG	C4-C5-C6-O6
5	C	1309	NAG	O5-C5-C6-O6
5	I	1309	NAG	O5-C5-C6-O6
5	I	1302	NAG	O5-C5-C6-O6
5	H	1306	NAG	C4-C5-C6-O6
5	I	1305	NAG	O5-C5-C6-O6
5	C	1305	NAG	O5-C5-C6-O6
5	C	1302	NAG	O5-C5-C6-O6
5	B	1309	NAG	C4-C5-C6-O6
5	H	1309	NAG	C4-C5-C6-O6
5	H	1307	NAG	O5-C5-C6-O6
5	G	1309	NAG	O5-C5-C6-O6
5	A	1309	NAG	O5-C5-C6-O6
5	H	1307	NAG	C4-C5-C6-O6
5	B	1304	NAG	C4-C5-C6-O6
5	G	1305	NAG	C4-C5-C6-O6
5	H	1304	NAG	C4-C5-C6-O6
5	A	1305	NAG	C4-C5-C6-O6
5	G	1305	NAG	O5-C5-C6-O6
5	A	1305	NAG	O5-C5-C6-O6
5	G	1311	NAG	C4-C5-C6-O6
5	A	1311	NAG	C4-C5-C6-O6
5	G	1311	NAG	O5-C5-C6-O6
5	A	1307	NAG	C3-C2-N2-C7
5	B	1307	NAG	C3-C2-N2-C7
5	C	1307	NAG	C3-C2-N2-C7
5	G	1307	NAG	C3-C2-N2-C7
5	H	1307	NAG	C3-C2-N2-C7

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms
5	I	1307	NAG	C3-C2-N2-C7
5	A	1311	NAG	O5-C5-C6-O6
5	I	1302	NAG	C4-C5-C6-O6
5	B	1306	NAG	C4-C5-C6-O6

There are no ring outliers.

2 monomers are involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	C	1303	NAG	1	0
5	H	1306	NAG	1	0

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.