Full wwPDB EM Validation Report ⓘ

Sep 28, 2022 – 03:38 pm BST

PDB ID	:	7Z6V
EMDB ID	:	EMD-14531
Title	:	CRYO-EM STRUCTURE OF SARS-COV-2 SPIKE : H11 nanobody complex
Authors	:	Weckener, M.; Naismith, J.H.; Vogirala, V.K.
Deposited on	:	2022-03-14
Resolution	:	3.10 Å(reported)
Based on initial model	:	6ZHD

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

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

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

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

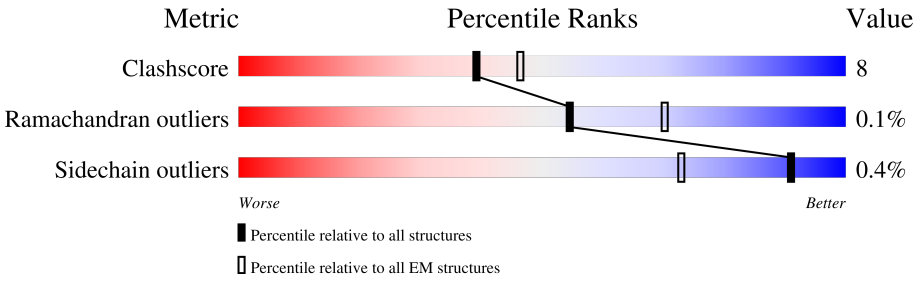
EMDB validation analysis	:	0.0.1.dev43
Mogul	:	1.8.4, CSD as541be (2020)
MolProbity	:	4.02b-467
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.9
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.31.2

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 3.10 Å.

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



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

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for >=3, 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions <=5% The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion < 40%). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	1260	68% 10% 21%
1	B	1260	69% 10% 21%
1	C	1260	66% 12% 21%
2	X	134	84% 86% 10%
2	Y	134	33% 88% 7%
2	Z	134	93% 87% 8%
3	D	2	100%
3	E	2	100%

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Mol	Chain	Length	Quality of chain
3	F	2	50% 50%
3	G	2	50% 50%
3	H	2	50% 50%
3	I	2	50% 50%
3	J	2	50% 50%
3	K	2	50% 100%
3	L	2	50% 50%
3	M	2	50% 50%
3	N	2	100%
3	O	2	100%
3	P	2	50% 100%
3	Q	2	100%
3	R	2	50% 50%
3	S	2	100%
3	T	2	50% 50% 50%
3	U	2	100%
3	V	2	100%

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

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
3	NAG	M	1	X	-	-	-
4	NAG	B	1311	X	-	-	-

2 Entry composition (i)

There are 4 unique types of molecules in this entry. The entry contains 27154 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	990	Total	C	N	O	S	0	0
			7732	4936	1282	1479	35		
1	B	994	Total	C	N	O	S	0	0
			7761	4960	1287	1479	35		
1	C	992	Total	C	N	O	S	0	0
			7749	4950	1285	1479	35		

There are 90 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	682	GLY	ARG	engineered mutation	UNP P0DTC2
A	683	SER	ARG	engineered mutation	UNP P0DTC2
A	685	SER	ARG	engineered mutation	UNP P0DTC2
A	986	PRO	LYS	engineered mutation	UNP P0DTC2
A	987	PRO	VAL	engineered mutation	UNP P0DTC2
A	1209	GLY	-	linker	UNP P0DTC2
A	1210	SER	-	linker	UNP P0DTC2
A	1232	LEU	PHE	conflict	UNP P10104
A	1239	LEU	-	expression tag	UNP P10104
A	1240	LEU	-	expression tag	UNP P10104
A	1241	ASN	-	expression tag	UNP P10104
A	1242	ASP	-	expression tag	UNP P10104
A	1243	ILE	-	expression tag	UNP P10104
A	1244	PHE	-	expression tag	UNP P10104
A	1245	GLU	-	expression tag	UNP P10104
A	1246	ALA	-	expression tag	UNP P10104
A	1247	GLN	-	expression tag	UNP P10104
A	1248	LYS	-	expression tag	UNP P10104
A	1249	ILE	-	expression tag	UNP P10104
A	1250	GLU	-	expression tag	UNP P10104
A	1251	TRP	-	expression tag	UNP P10104
A	1252	HIS	-	expression tag	UNP P10104
A	1253	GLU	-	expression tag	UNP P10104
A	1254	LYS	-	expression tag	UNP P10104

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Chain	Residue	Modelled	Actual	Comment	Reference
A	1255	HIS	-	expression tag	UNP P10104
A	1256	HIS	-	expression tag	UNP P10104
A	1257	HIS	-	expression tag	UNP P10104
A	1258	HIS	-	expression tag	UNP P10104
A	1259	HIS	-	expression tag	UNP P10104
A	1260	HIS	-	expression tag	UNP P10104
B	682	GLY	ARG	engineered mutation	UNP P0DTC2
B	683	SER	ARG	engineered mutation	UNP P0DTC2
B	685	SER	ARG	engineered mutation	UNP P0DTC2
B	986	PRO	LYS	engineered mutation	UNP P0DTC2
B	987	PRO	VAL	engineered mutation	UNP P0DTC2
B	1209	GLY	-	linker	UNP P0DTC2
B	1210	SER	-	linker	UNP P0DTC2
B	1232	LEU	PHE	conflict	UNP P10104
B	1239	LEU	-	expression tag	UNP P10104
B	1240	LEU	-	expression tag	UNP P10104
B	1241	ASN	-	expression tag	UNP P10104
B	1242	ASP	-	expression tag	UNP P10104
B	1243	ILE	-	expression tag	UNP P10104
B	1244	PHE	-	expression tag	UNP P10104
B	1245	GLU	-	expression tag	UNP P10104
B	1246	ALA	-	expression tag	UNP P10104
B	1247	GLN	-	expression tag	UNP P10104
B	1248	LYS	-	expression tag	UNP P10104
B	1249	ILE	-	expression tag	UNP P10104
B	1250	GLU	-	expression tag	UNP P10104
B	1251	TRP	-	expression tag	UNP P10104
B	1252	HIS	-	expression tag	UNP P10104
B	1253	GLU	-	expression tag	UNP P10104
B	1254	LYS	-	expression tag	UNP P10104
B	1255	HIS	-	expression tag	UNP P10104
B	1256	HIS	-	expression tag	UNP P10104
B	1257	HIS	-	expression tag	UNP P10104
B	1258	HIS	-	expression tag	UNP P10104
B	1259	HIS	-	expression tag	UNP P10104
B	1260	HIS	-	expression tag	UNP P10104
C	682	GLY	ARG	engineered mutation	UNP P0DTC2
C	683	SER	ARG	engineered mutation	UNP P0DTC2
C	685	SER	ARG	engineered mutation	UNP P0DTC2
C	986	PRO	LYS	engineered mutation	UNP P0DTC2
C	987	PRO	VAL	engineered mutation	UNP P0DTC2
C	1209	GLY	-	linker	UNP P0DTC2

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Chain	Residue	Modelled	Actual	Comment	Reference
C	1210	SER	-	linker	UNP P0DTC2
C	1232	LEU	PHE	conflict	UNP P10104
C	1239	LEU	-	expression tag	UNP P10104
C	1240	LEU	-	expression tag	UNP P10104
C	1241	ASN	-	expression tag	UNP P10104
C	1242	ASP	-	expression tag	UNP P10104
C	1243	ILE	-	expression tag	UNP P10104
C	1244	PHE	-	expression tag	UNP P10104
C	1245	GLU	-	expression tag	UNP P10104
C	1246	ALA	-	expression tag	UNP P10104
C	1247	GLN	-	expression tag	UNP P10104
C	1248	LYS	-	expression tag	UNP P10104
C	1249	ILE	-	expression tag	UNP P10104
C	1250	GLU	-	expression tag	UNP P10104
C	1251	TRP	-	expression tag	UNP P10104
C	1252	HIS	-	expression tag	UNP P10104
C	1253	GLU	-	expression tag	UNP P10104
C	1254	LYS	-	expression tag	UNP P10104
C	1255	HIS	-	expression tag	UNP P10104
C	1256	HIS	-	expression tag	UNP P10104
C	1257	HIS	-	expression tag	UNP P10104
C	1258	HIS	-	expression tag	UNP P10104
C	1259	HIS	-	expression tag	UNP P10104
C	1260	HIS	-	expression tag	UNP P10104

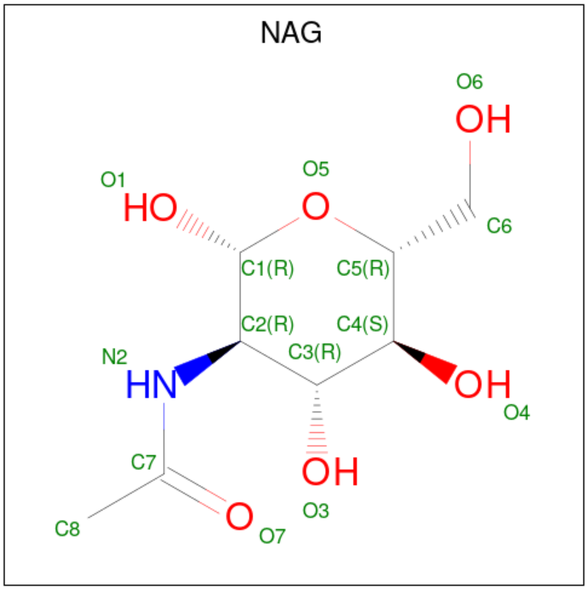
- Molecule 2 is a protein called Nanobody H11.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	X	128	Total	C	N	O	S	0	0
			996	627	175	189	5		
2	Y	128	Total	C	N	O	S	0	0
			996	627	175	189	5		
2	Z	128	Total	C	N	O	S	0	0
			996	627	175	189	5		

- Molecule 3 is an oligosaccharide called 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose.

Mol	Chain	Residues	Atoms				AltConf	Trace
3	D	2	Total	C	N	O	0	0
			28	16	2	10		
3	E	2	Total	C	N	O	0	0
			28	16	2	10		
3	F	2	Total	C	N	O	0	0
			28	16	2	10		
3	G	2	Total	C	N	O	0	0
			28	16	2	10		
3	H	2	Total	C	N	O	0	0
			28	16	2	10		
3	I	2	Total	C	N	O	0	0
			28	16	2	10		
3	J	2	Total	C	N	O	0	0
			28	16	2	10		
3	K	2	Total	C	N	O	0	0
			28	16	2	10		
3	L	2	Total	C	N	O	0	0
			28	16	2	10		
3	M	2	Total	C	N	O	0	0
			28	16	2	10		
3	N	2	Total	C	N	O	0	0
			28	16	2	10		
3	O	2	Total	C	N	O	0	0
			28	16	2	10		
3	P	2	Total	C	N	O	0	0
			28	16	2	10		
3	Q	2	Total	C	N	O	0	0
			28	16	2	10		
3	R	2	Total	C	N	O	0	0
			28	16	2	10		
3	S	2	Total	C	N	O	0	0
			28	16	2	10		
3	T	2	Total	C	N	O	0	0
			28	16	2	10		
3	U	2	Total	C	N	O	0	0
			28	16	2	10		
3	V	2	Total	C	N	O	0	0
			28	16	2	10		

- Molecule 4 is 2-acetamido-2-deoxy-beta-D-glucopyranose (three-letter code: NAG) (formula: $C_8H_{15}NO_6$).



Mol	Chain	Residues	Atoms	AltConf
4	A	1	Total C N O 112 64 8 40	0
4	A	1	Total C N O 112 64 8 40	0
4	A	1	Total C N O 112 64 8 40	0
4	A	1	Total C N O 112 64 8 40	0
4	A	1	Total C N O 112 64 8 40	0
4	A	1	Total C N O 112 64 8 40	0
4	A	1	Total C N O 112 64 8 40	0
4	A	1	Total C N O 112 64 8 40	0
4	B	1	Total C N O 154 88 11 55	0
4	B	1	Total C N O 154 88 11 55	0
4	B	1	Total C N O 154 88 11 55	0
4	B	1	Total C N O 154 88 11 55	0
4	B	1	Total C N O 154 88 11 55	0
4	B	1	Total C N O 154 88 11 55	0

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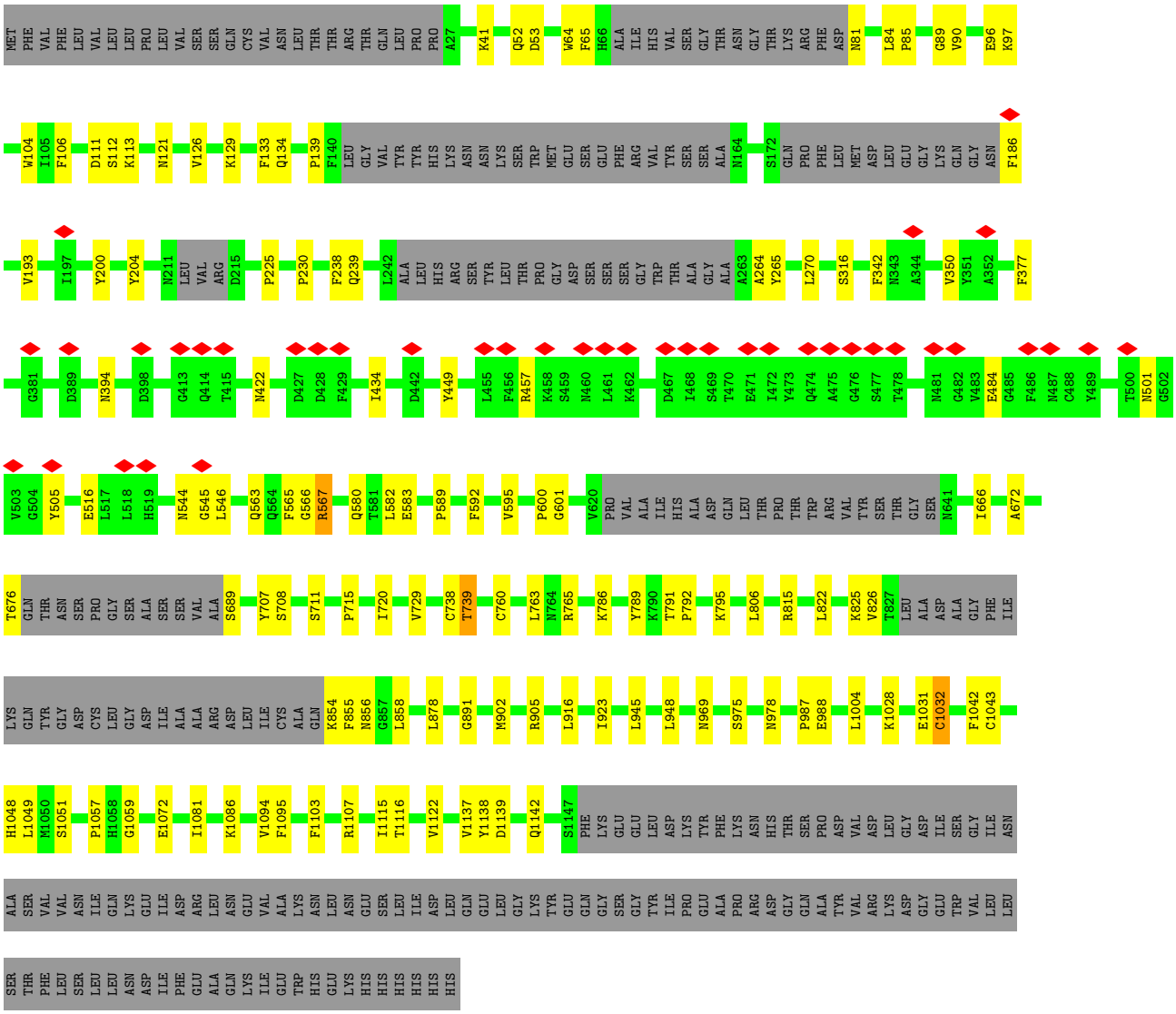
Mol	Chain	Residues	Atoms				AltConf
4	B	1	Total 154	C 88	N 11	O 55	0
4	B	1	Total 154	C 88	N 11	O 55	0
4	B	1	Total 154	C 88	N 11	O 55	0
4	B	1	Total 154	C 88	N 11	O 55	0
4	B	1	Total 154	C 88	N 11	O 55	0
4	C	1	Total 126	C 72	N 9	O 45	0
4	C	1	Total 126	C 72	N 9	O 45	0
4	C	1	Total 126	C 72	N 9	O 45	0
4	C	1	Total 126	C 72	N 9	O 45	0
4	C	1	Total 126	C 72	N 9	O 45	0
4	C	1	Total 126	C 72	N 9	O 45	0
4	C	1	Total 126	C 72	N 9	O 45	0
4	C	1	Total 126	C 72	N 9	O 45	0
4	C	1	Total 126	C 72	N 9	O 45	0

3 Residue-property plots (i)

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

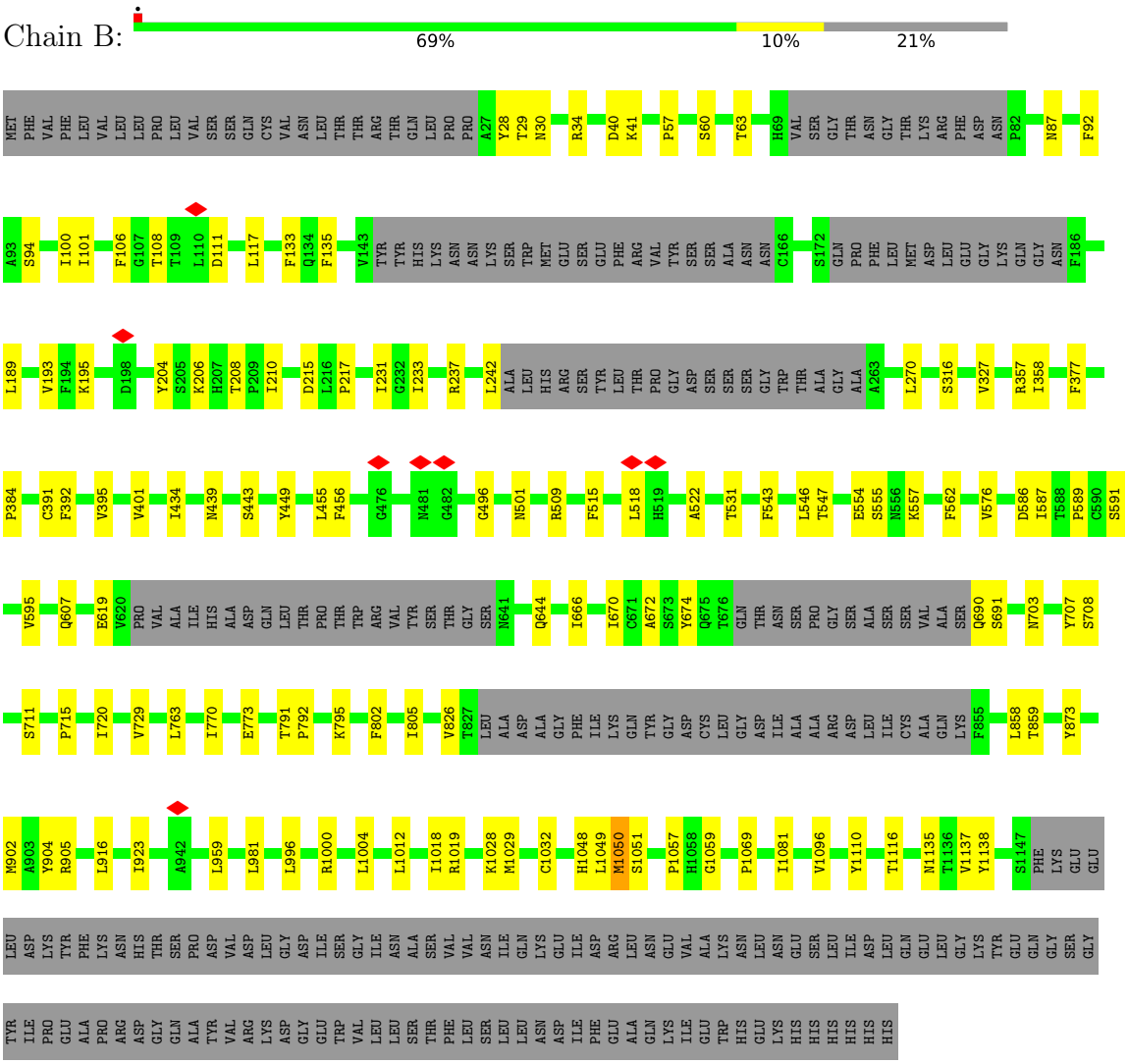
• Molecule 1: Spike glycoprotein,Fibritin

Chain A:



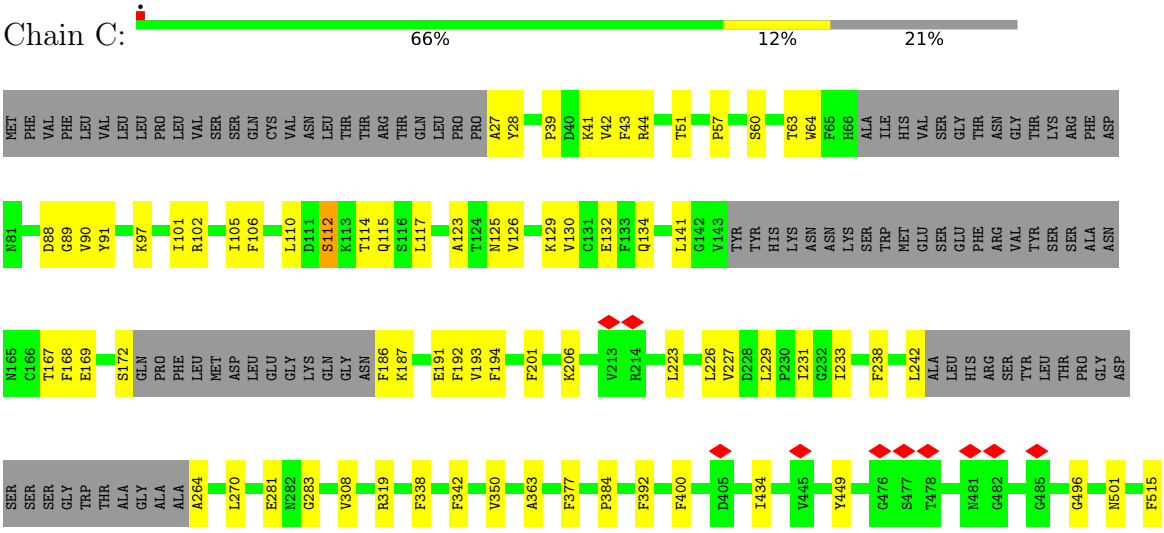
• Molecule 1: Spike glycoprotein,Fibritin

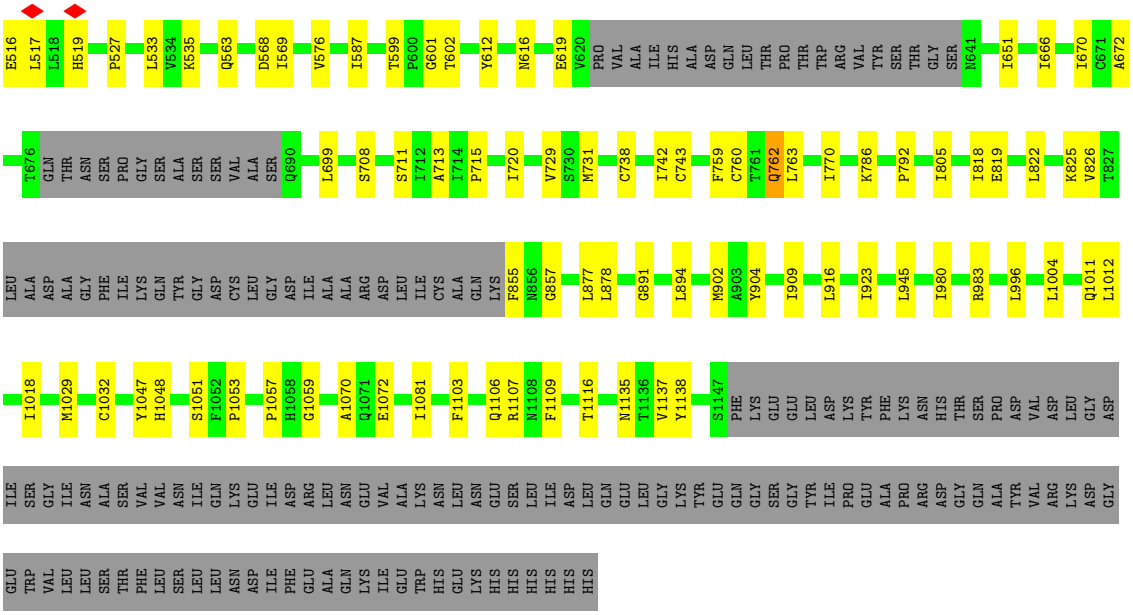
Chain B:



• Molecule 1: Spike glycoprotein,Fibritin

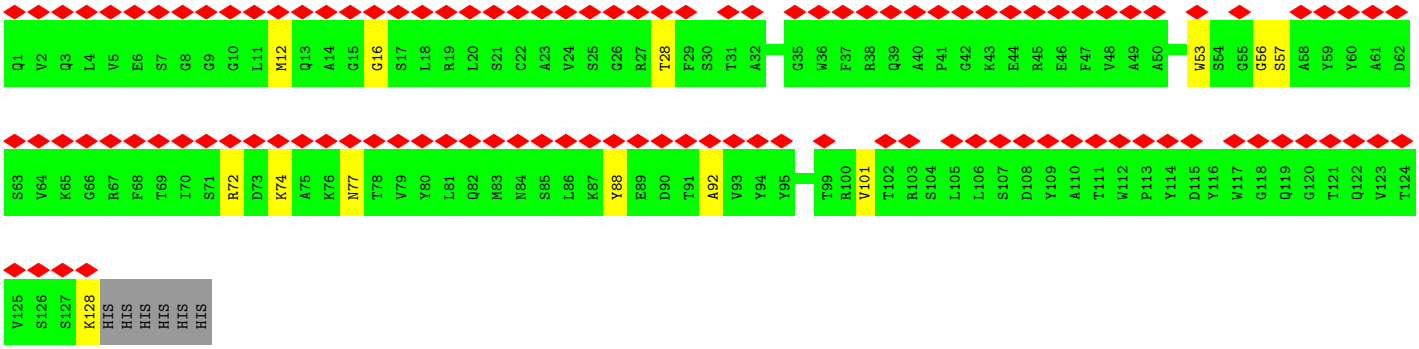
Chain C:





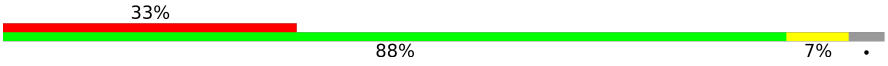
• Molecule 2: Nanobody H11

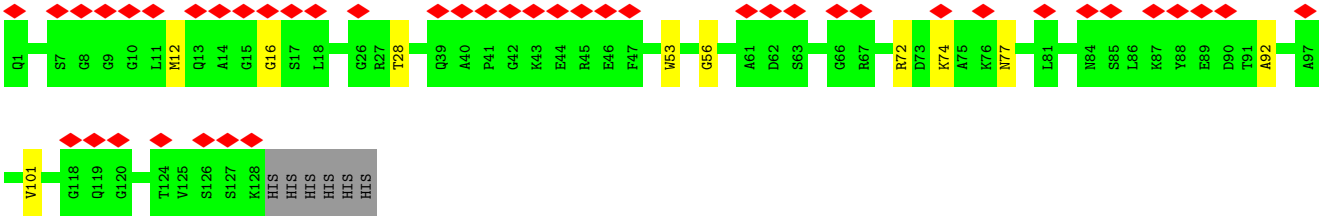
Chain X:



• Molecule 2: Nanobody H11

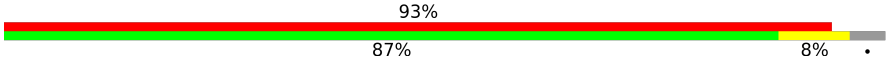
Chain Y:

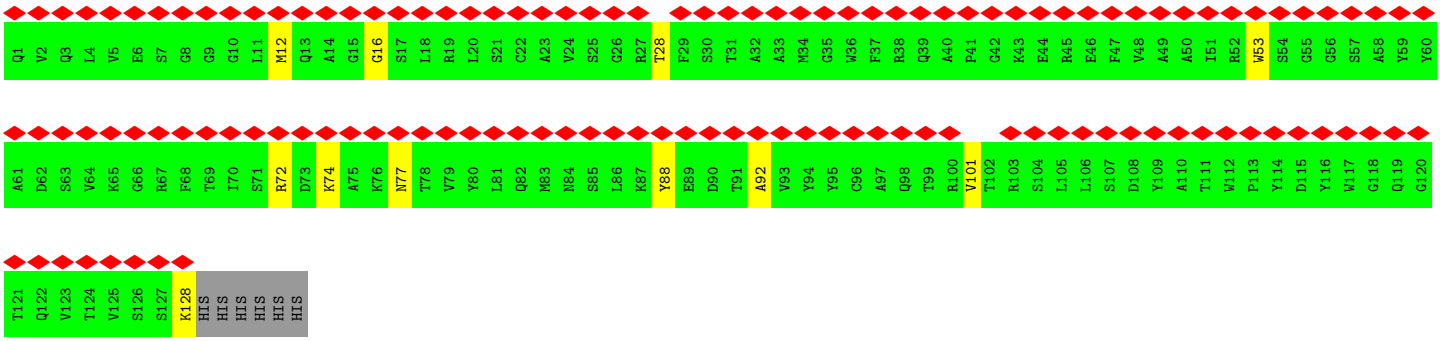




• Molecule 2: Nanobody H11

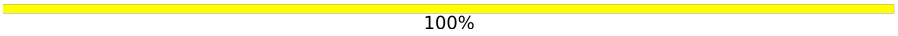
Chain Z:





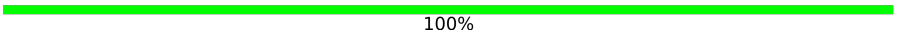
• Molecule 3: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain D:



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

Chain E:



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

Chain F:

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

Chain G:

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

Chain H:

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

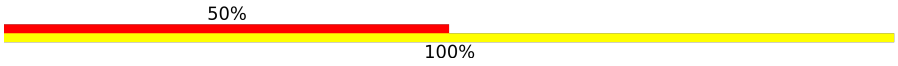
Chain I:

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

Chain J:

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

Chain K:



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

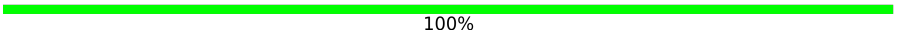
Chain L:

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

Chain M:

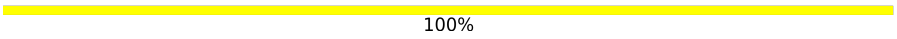
• Molecule 3: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain N:



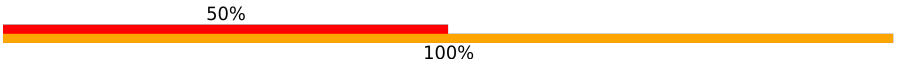
• Molecule 3: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain O:



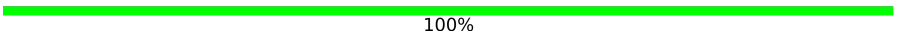
• Molecule 3: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain P:



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

Chain Q:



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

Chain R:

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

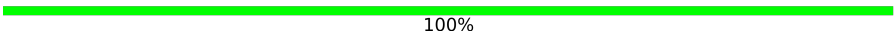
Chain S:

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

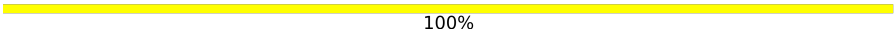
Chain T:

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

Chain U:



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

Chain V: 

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	432130	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	46.5	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	3000	Depositor
Magnification	81000	Depositor
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	0.181	Depositor
Minimum map value	-0.112	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.004	Depositor
Recommended contour level	0.01	Depositor
Map size (Å)	275.59998, 275.59998, 275.59998	wwPDB
Map dimensions	260, 260, 260	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.06, 1.06, 1.06	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	0.46	0/7905	0.83	4/10755 (0.0%)
1	B	0.45	0/7936	0.82	2/10799 (0.0%)
1	C	0.46	1/7923 (0.0%)	0.81	4/10782 (0.0%)
2	X	0.31	0/1018	0.67	0/1376
2	Y	0.31	0/1018	0.67	0/1376
2	Z	0.31	0/1018	0.67	0/1376
All	All	0.44	1/26818 (0.0%)	0.80	10/36464 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	1

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	C	819	GLU	CD-OE1	-5.49	1.19	1.25

All (10) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	C	1103	PHE	CB-CG-CD1	-7.41	115.61	120.80
1	C	1032	CYS	CA-CB-SG	-6.05	103.10	114.00
1	A	815	ARG	NE-CZ-NH2	-5.91	117.35	120.30
1	A	1032	CYS	CA-CB-SG	-5.60	103.92	114.00
1	A	457	ARG	NE-CZ-NH2	-5.38	117.61	120.30
1	B	1050	MET	CB-CG-SD	-5.29	96.52	112.40

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	C	1070	ALA	CB-CA-C	5.22	117.93	110.10
1	C	762	GLN	CB-CA-C	5.17	120.74	110.40
1	B	1000	ARG	NE-CZ-NH2	-5.15	117.72	120.30
1	A	765	ARG	CG-CD-NE	5.11	122.54	111.80

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	739	THR	Mainchain

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	7732	0	7523	104	0
1	B	7761	0	7571	124	0
1	C	7749	0	7553	160	0
2	X	996	0	967	20	0
2	Y	996	0	967	19	0
2	Z	996	0	967	18	0
3	D	28	0	25	0	0
3	E	28	0	25	0	0
3	F	28	0	25	0	0
3	G	28	0	25	0	0
3	H	28	0	25	0	0
3	I	28	0	25	1	0
3	J	28	0	25	0	0
3	K	28	0	25	0	0
3	L	28	0	25	0	0
3	M	28	0	25	0	0
3	N	28	0	25	0	0
3	O	28	0	25	0	0
3	P	28	0	25	5	0
3	Q	28	0	25	0	0
3	R	28	0	25	0	0
3	S	28	0	25	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	T	28	0	25	3	0
3	U	28	0	25	0	0
3	V	28	0	25	0	0
4	A	112	0	104	1	0
4	B	154	0	143	4	0
4	C	126	0	117	1	0
All	All	27154	0	26387	416	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 8.

All (416) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:101:ILE:HG13	1:B:242:LEU:CD2	1.36	1.53
1:B:101:ILE:HA	1:B:242:LEU:CD2	1.43	1.48
1:B:101:ILE:CG1	1:B:242:LEU:HD21	1.01	1.46
1:B:101:ILE:CA	1:B:242:LEU:CD2	1.93	1.44
1:C:101:ILE:CG1	1:C:242:LEU:HD21	1.50	1.39
1:C:226:LEU:CD1	1:C:227:VAL:HG23	1.54	1.35
1:C:101:ILE:HG13	1:C:242:LEU:CD2	1.56	1.34
1:C:101:ILE:CG1	1:C:242:LEU:CD2	2.06	1.33
1:B:101:ILE:CB	1:B:242:LEU:HD21	1.57	1.33
1:B:101:ILE:CA	1:B:242:LEU:HD23	1.58	1.29
1:C:786:LYS:NZ	1:C:891:GLY:HA2	1.50	1.25
1:B:101:ILE:CG1	1:B:242:LEU:CD2	1.96	1.23
3:P:1:NAG:C6	3:P:2:NAG:H82	1.74	1.17
3:P:1:NAG:H61	3:P:2:NAG:C8	1.75	1.15
2:X:53:TRP:O	2:X:72:ARG:CZ	1.96	1.14
1:C:226:LEU:HD12	1:C:227:VAL:HG23	1.12	1.12
2:Z:53:TRP:O	2:Z:72:ARG:CZ	1.97	1.11
2:Y:53:TRP:O	2:Y:72:ARG:CZ	1.96	1.10
1:C:738:CYS:SG	1:C:760:CYS:SG	1.07	1.07
1:C:101:ILE:HG12	1:C:242:LEU:HD21	1.12	1.06
2:X:72:ARG:NH1	2:X:74:LYS:HG3	1.72	1.05
2:Y:72:ARG:HH12	2:Y:74:LYS:HD2	1.21	1.05
2:Z:72:ARG:HH12	2:Z:74:LYS:HD2	1.21	1.05
1:C:28:TYR:CE1	1:C:63:THR:HG22	1.92	1.05
2:Y:72:ARG:NH1	2:Y:74:LYS:HG3	1.72	1.04
1:B:101:ILE:N	1:B:242:LEU:HD22	1.73	1.03
1:A:1107:ARG:HD3	1:C:904:TYR:CZ	1.93	1.03

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:Y:72:ARG:HH12	2:Y:74:LYS:CD	1.71	1.02
2:Z:72:ARG:NH1	2:Z:74:LYS:HG3	1.72	1.02
2:Z:72:ARG:HH12	2:Z:74:LYS:CD	1.71	1.02
2:X:72:ARG:HH12	2:X:74:LYS:CD	1.71	1.01
2:Y:72:ARG:NH1	2:Y:74:LYS:CG	2.24	1.01
2:X:72:ARG:NH1	2:X:74:LYS:CG	2.24	1.00
2:Z:72:ARG:NH1	2:Z:74:LYS:CG	2.24	0.99
2:X:72:ARG:HH12	2:X:74:LYS:HD2	1.21	0.99
1:C:101:ILE:HG13	1:C:242:LEU:HD22	1.40	0.98
2:Y:72:ARG:HH12	2:Y:74:LYS:CG	1.77	0.98
1:B:101:ILE:HG12	1:B:242:LEU:HD21	1.42	0.97
2:X:72:ARG:HH12	2:X:74:LYS:CG	1.77	0.97
2:Z:72:ARG:HH12	2:Z:74:LYS:CG	1.77	0.96
1:C:226:LEU:HD12	1:C:227:VAL:CG2	1.95	0.95
1:B:101:ILE:N	1:B:242:LEU:CD2	2.29	0.94
3:P:1:NAG:H61	3:P:2:NAG:H82	0.97	0.94
1:C:786:LYS:HZ1	1:C:891:GLY:HA2	1.10	0.93
1:B:108:THR:HG21	4:B:1311:NAG:O6	1.69	0.93
1:B:101:ILE:CB	1:B:242:LEU:CD2	2.30	0.92
1:C:101:ILE:HG12	1:C:242:LEU:CD2	1.82	0.92
1:C:226:LEU:CD1	1:C:227:VAL:CG2	2.48	0.90
1:C:786:LYS:HZ2	1:C:891:GLY:HA2	1.35	0.89
1:C:226:LEU:HD13	1:C:227:VAL:HG23	1.51	0.89
1:C:105:ILE:CG2	1:C:110:LEU:HD22	2.04	0.88
1:C:738:CYS:SG	1:C:760:CYS:CB	2.63	0.86
1:B:101:ILE:HG13	1:B:242:LEU:CG	2.05	0.85
1:A:1094:VAL:HG11	1:C:904:TYR:OH	1.77	0.84
1:C:101:ILE:HA	1:C:242:LEU:HD23	1.59	0.84
1:B:111:ASP:OD1	1:B:111:ASP:O	1.97	0.83
1:C:115:GLN:NE2	1:C:167:THR:HG21	1.94	0.83
1:B:858:LEU:HD12	1:B:858:LEU:O	1.80	0.81
1:C:1106:GLN:HE21	1:C:1109:PHE:HB3	1.46	0.81
2:Z:88:TYR:OH	2:Z:128:LYS:HE3	1.80	0.80
1:A:112:SER:O	1:A:113:LYS:HG2	1.81	0.80
1:A:1115:ILE:HG22	1:A:1137:VAL:HG13	1.62	0.79
1:C:97:LYS:HE3	1:C:186:PHE:HA	1.64	0.79
1:B:101:ILE:HG13	1:B:242:LEU:CD1	2.14	0.78
1:C:902:MET:HB3	1:C:916:LEU:HD11	1.67	0.77
1:C:168:PHE:O	1:C:169:GLU:HG3	1.85	0.76
1:A:90:VAL:HG21	1:A:238:PHE:CZ	2.21	0.76
1:C:770:ILE:HD11	1:C:1012:LEU:HD23	1.68	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:101:ILE:HG13	1:B:242:LEU:HD21	0.77	0.75
2:X:88:TYR:OH	2:X:128:LYS:HE3	1.87	0.75
1:B:902:MET:HB3	1:B:916:LEU:HD11	1.69	0.74
1:A:1081:ILE:HD11	1:A:1115:ILE:HG21	1.69	0.74
1:B:770:ILE:HD11	1:B:1012:LEU:HD23	1.67	0.74
1:A:902:MET:HB3	1:A:916:LEU:HD11	1.68	0.74
1:C:101:ILE:CG1	1:C:242:LEU:HD23	2.17	0.73
1:C:112:SER:HB3	1:C:134:GLN:HG2	1.70	0.73
1:A:139:PRO:HD2	1:A:239:GLN:HE22	1.53	0.73
1:C:377:PHE:HE2	1:C:384:PRO:HB3	1.52	0.72
1:A:41:LYS:NZ	1:B:562:PHE:HB2	2.06	0.71
1:B:644:GLN:NE2	4:B:1306:NAG:C8	2.54	0.71
1:B:111:ASP:HA	1:B:135:PHE:HD2	1.56	0.70
1:B:902:MET:HB3	1:B:916:LEU:CD1	2.22	0.69
2:Z:72:ARG:NH1	2:Z:74:LYS:HD2	2.04	0.69
1:B:111:ASP:HA	1:B:135:PHE:CD2	2.27	0.69
1:C:902:MET:HB3	1:C:916:LEU:CD1	2.23	0.69
1:A:563:GLN:HA	1:C:41:LYS:O	1.93	0.69
1:A:902:MET:HB3	1:A:916:LEU:CD1	2.23	0.69
1:A:858:LEU:HD12	1:A:858:LEU:O	1.91	0.68
1:B:101:ILE:CG1	1:B:242:LEU:CG	2.69	0.68
1:B:377:PHE:HE2	1:B:384:PRO:HB3	1.58	0.68
1:C:738:CYS:CB	1:C:760:CYS:HG	2.00	0.68
1:A:96:GLU:O	1:A:96:GLU:HG3	1.94	0.68
1:A:1107:ARG:CD	1:C:904:TYR:CZ	2.76	0.68
2:Y:72:ARG:NH1	2:Y:74:LYS:HD2	2.04	0.67
1:C:126:VAL:HG23	1:C:172:SER:OG	1.94	0.67
1:A:64:TRP:HE1	1:A:264:ALA:HB1	1.60	0.67
1:B:557:LYS:HE2	1:B:586:ASP:OD1	1.95	0.67
1:A:112:SER:HB2	1:A:134:GLN:HG2	1.75	0.67
1:C:117:LEU:HD21	1:C:231:ILE:HD13	1.75	0.67
1:A:41:LYS:HZ2	1:B:562:PHE:HB2	1.60	0.66
1:C:105:ILE:HG23	1:C:110:LEU:HD22	1.78	0.66
1:B:133:PHE:HB3	1:B:135:PHE:CZ	2.31	0.66
2:X:53:TRP:O	2:X:72:ARG:NH1	2.29	0.66
1:B:101:ILE:HA	1:B:242:LEU:HD23	0.70	0.65
1:C:599:THR:HG22	1:C:601:GLY:H	1.60	0.65
2:Y:53:TRP:O	2:Y:72:ARG:NH1	2.29	0.65
1:B:377:PHE:HD1	1:B:434:ILE:HG12	1.61	0.65
1:A:707:TYR:HB3	1:C:792:PRO:HG3	1.78	0.65
3:P:1:NAG:H61	3:P:2:NAG:C7	2.27	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:612:TYR:CE2	1:C:651:ILE:HD12	2.30	0.65
1:A:1139:ASP:OD2	1:A:1142:GLN:HG3	1.96	0.64
2:Z:53:TRP:O	2:Z:72:ARG:NH1	2.29	0.64
1:A:786:LYS:NZ	1:A:891:GLY:HA2	2.12	0.64
2:Z:72:ARG:HH11	2:Z:74:LYS:HG3	1.62	0.64
1:B:576:VAL:HG23	1:B:587:ILE:HD11	1.80	0.64
1:C:377:PHE:CD1	1:C:434:ILE:HG12	2.33	0.63
1:A:377:PHE:CD1	1:A:434:ILE:HG12	2.34	0.63
2:X:72:ARG:NH1	2:X:74:LYS:HD2	2.04	0.63
1:A:1081:ILE:HD11	1:A:1137:VAL:HG22	1.81	0.63
1:A:193:VAL:HG13	1:A:270:LEU:HD11	1.80	0.62
1:C:377:PHE:HD1	1:C:434:ILE:HG12	1.64	0.62
2:X:72:ARG:HH12	2:X:74:LYS:HG3	1.47	0.62
1:C:666:ILE:HD11	1:C:672:ALA:HB2	1.80	0.62
1:B:377:PHE:CD1	1:B:434:ILE:HG12	2.35	0.62
2:X:72:ARG:HH11	2:X:74:LYS:HG3	1.62	0.62
1:B:133:PHE:HB3	1:B:135:PHE:CE2	2.34	0.61
2:Z:72:ARG:NH1	2:Z:74:LYS:CD	2.53	0.61
1:B:29:THR:HG21	1:B:215:ASP:HB2	1.81	0.61
1:C:612:TYR:HE2	1:C:651:ILE:HD12	1.63	0.61
1:B:715:PRO:HB3	1:B:1069:PRO:HB3	1.83	0.61
1:C:786:LYS:HZ1	1:C:891:GLY:CA	2.00	0.61
1:B:101:ILE:HG13	1:B:242:LEU:HD22	1.66	0.61
1:C:226:LEU:HD12	1:C:227:VAL:N	2.16	0.61
1:C:377:PHE:CE2	1:C:384:PRO:HB3	2.35	0.60
1:B:644:GLN:NE2	4:B:1306:NAG:H83	2.16	0.60
1:C:496:GLY:O	1:C:501:ASN:ND2	2.35	0.60
2:X:28:THR:HG21	2:X:77:ASN:CG	2.22	0.60
2:Z:28:THR:HG21	2:Z:77:ASN:CG	2.22	0.60
2:Y:53:TRP:O	2:Y:72:ARG:NH2	2.35	0.59
1:C:308:VAL:HG22	1:C:602:THR:HG23	1.85	0.59
1:C:576:VAL:HG23	1:C:587:ILE:HD11	1.83	0.59
2:Y:72:ARG:HH11	2:Y:74:LYS:HG3	1.62	0.59
1:C:878:LEU:HD23	1:C:1053:PRO:HD2	1.83	0.59
1:C:126:VAL:HB	1:C:172:SER:OG	2.02	0.59
2:X:53:TRP:O	2:X:72:ARG:NH2	2.35	0.59
1:A:121:ASN:HA	1:A:126:VAL:HA	1.83	0.59
2:Z:53:TRP:O	2:Z:72:ARG:NH2	2.35	0.59
1:C:89:GLY:HA3	1:C:270:LEU:HD12	1.85	0.59
2:Y:28:THR:HG21	2:Y:77:ASN:CG	2.22	0.59
1:C:449:TYR:CD2	2:Z:101:VAL:HG22	2.38	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1048:HIS:HE1	1:A:1051:SER:HB3	1.68	0.58
1:B:496:GLY:O	1:B:501:ASN:ND2	2.36	0.58
1:A:501:ASN:HD21	1:A:505:TYR:HB3	1.68	0.58
1:C:193:VAL:HG13	1:C:270:LEU:HD11	1.86	0.58
1:C:28:TYR:CD1	1:C:63:THR:HG22	2.38	0.58
1:C:715:PRO:HA	1:C:1072:GLU:HA	1.86	0.58
1:C:129:LYS:HG2	1:C:169:GLU:HG2	1.84	0.57
1:C:1081:ILE:HD12	1:C:1135:ASN:HB3	1.86	0.57
1:A:112:SER:O	1:A:113:LYS:CG	2.50	0.57
1:C:126:VAL:CG2	1:C:172:SER:OG	2.53	0.57
2:X:72:ARG:HH11	2:X:74:LYS:CG	2.15	0.57
1:B:439:ASN:O	1:B:443:SER:OG	2.22	0.57
1:B:28:TYR:CE1	1:B:63:THR:HG22	2.40	0.56
1:C:101:ILE:CA	1:C:242:LEU:HD23	2.33	0.56
1:B:41:LYS:O	1:C:563:GLN:HA	2.04	0.56
1:B:554:GLU:N	1:B:554:GLU:OE1	2.37	0.56
1:B:377:PHE:CE2	1:B:384:PRO:HB3	2.41	0.56
1:A:666:ILE:HD11	1:A:672:ALA:HB2	1.87	0.56
1:A:987:PRO:HG2	1:A:988:GLU:OE1	2.04	0.56
1:A:52:GLN:O	1:A:53:ASP:OD1	2.24	0.56
1:A:792:PRO:HG3	1:B:707:TYR:HB3	1.87	0.56
1:C:713:ALA:HB1	3:T:1:NAG:O7	2.05	0.56
2:Y:72:ARG:HH11	2:Y:74:LYS:CG	2.15	0.56
1:B:41:LYS:HB3	1:C:519:HIS:CE1	2.41	0.56
1:A:377:PHE:HD1	1:A:434:ILE:HG12	1.71	0.55
1:C:805:ILE:HG22	1:C:818:ILE:HD12	1.87	0.55
1:C:713:ALA:CB	3:T:1:NAG:O7	2.55	0.55
1:B:106:PHE:HB2	1:B:117:LEU:HB3	1.88	0.55
1:C:112:SER:CB	1:C:134:GLN:HG2	2.35	0.55
1:C:786:LYS:HZ2	1:C:891:GLY:CA	2.13	0.55
1:B:193:VAL:HG13	1:B:270:LEU:HD11	1.87	0.55
1:C:90:VAL:HG11	1:C:238:PHE:CZ	2.42	0.55
1:C:97:LYS:HE3	1:C:186:PHE:CA	2.35	0.55
1:B:100:ILE:C	1:B:242:LEU:HD22	2.27	0.55
1:A:1107:ARG:CD	1:C:904:TYR:CE2	2.90	0.55
1:C:64:TRP:HE1	1:C:264:ALA:HB1	1.71	0.55
1:A:806:LEU:HD23	1:A:878:LEU:HD23	1.88	0.54
1:C:786:LYS:NZ	1:C:891:GLY:CA	2.45	0.54
1:A:501:ASN:ND2	1:A:505:TYR:HB3	2.22	0.54
1:B:591:SER:OG	1:B:619:GLU:OE1	2.21	0.54
1:C:102:ARG:NH1	1:C:123:ALA:H	2.06	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1081:ILE:CD1	1:A:1115:ILE:HG21	2.38	0.54
2:Y:72:ARG:NH1	2:Y:74:LYS:CD	2.53	0.54
1:A:806:LEU:HD23	1:A:878:LEU:CD2	2.38	0.54
1:B:449:TYR:CD2	2:Y:101:VAL:HG22	2.43	0.54
1:A:394:ASN:HB2	1:A:516:GLU:HB3	1.90	0.53
1:A:945:LEU:HD23	1:A:948:LEU:HD12	1.90	0.53
1:B:666:ILE:HD11	1:B:672:ALA:HB2	1.89	0.53
1:B:791:THR:CG2	1:B:795:LYS:HE3	2.38	0.53
2:Y:72:ARG:HH12	2:Y:74:LYS:HG3	1.47	0.53
1:A:1028:LYS:O	1:A:1032:CYS:HB2	2.08	0.53
1:B:902:MET:SD	1:B:1050:MET:CE	2.97	0.53
1:C:877:LEU:HD13	1:C:1029:MET:HE1	1.90	0.53
1:B:101:ILE:CG1	1:B:242:LEU:HD11	2.39	0.53
1:B:108:THR:HG21	4:B:1311:NAG:HO6	1.69	0.53
1:B:729:VAL:H	1:B:1059:GLY:HA2	1.74	0.53
1:B:101:ILE:HG13	1:B:242:LEU:HD11	1.89	0.52
1:A:1095:PHE:CE1	1:A:1115:ILE:HD12	2.45	0.52
1:A:1116:THR:HG22	1:A:1138:TYR:HD1	1.73	0.52
1:C:97:LYS:HG2	1:C:187:LYS:HG3	1.90	0.52
1:C:105:ILE:CG2	1:C:110:LEU:CD2	2.84	0.52
1:C:877:LEU:HD13	1:C:1029:MET:CE	2.38	0.52
1:A:1103:PHE:HZ	3:I:1:NAG:H62	1.75	0.52
1:B:773:GLU:OE2	1:B:1019:ARG:HD3	2.09	0.52
1:C:28:TYR:CE1	1:C:63:THR:CG2	2.82	0.52
1:A:139:PRO:HD2	1:A:239:GLN:NE2	2.25	0.52
1:C:126:VAL:CB	1:C:172:SER:OG	2.58	0.52
1:C:101:ILE:HG13	1:C:242:LEU:HD21	1.31	0.51
2:Z:72:ARG:HH11	2:Z:74:LYS:CG	2.15	0.51
1:B:1081:ILE:HD12	1:B:1135:ASN:HB3	1.92	0.51
1:B:101:ILE:HG12	1:B:242:LEU:CD2	2.18	0.51
1:A:566:GLY:HA2	1:C:43:PHE:HB3	1.91	0.51
1:A:739:THR:O	1:A:739:THR:HG22	2.10	0.51
1:A:822:LEU:HD22	1:A:945:LEU:HD21	1.92	0.51
1:B:1116:THR:HG22	1:B:1138:TYR:HD2	1.76	0.51
1:C:90:VAL:HG21	1:C:238:PHE:CE2	2.45	0.51
1:B:401:VAL:HG22	1:B:509:ARG:HG2	1.92	0.51
1:B:666:ILE:HD12	1:B:670:ILE:HG22	1.91	0.51
1:C:666:ILE:HD12	1:C:670:ILE:HG22	1.92	0.51
2:X:72:ARG:NH1	2:X:74:LYS:CD	2.53	0.51
1:C:106:PHE:C	1:C:110:LEU:HD21	2.31	0.51
1:C:742:ILE:HG22	1:C:743:CYS:SG	2.51	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:878:LEU:CD2	1:C:1053:PRO:HD2	2.40	0.51
1:B:904:TYR:CZ	1:C:1107:ARG:HD3	2.45	0.51
1:C:115:GLN:HE21	1:C:167:THR:HG21	1.71	0.51
1:C:759:PHE:HA	1:C:762:GLN:HE21	1.76	0.50
1:B:557:LYS:HE2	1:B:586:ASP:CG	2.32	0.50
1:A:200:TYR:HB2	1:A:230:PRO:HA	1.93	0.50
1:A:1086:LYS:HD3	1:A:1122:VAL:HG11	1.94	0.50
1:C:101:ILE:HA	1:C:242:LEU:CD2	2.37	0.50
1:A:791:THR:CG2	1:A:795:LYS:HE3	2.42	0.49
1:C:616:ASN:HB3	1:C:619:GLU:OE1	2.13	0.49
1:B:791:THR:HG23	1:B:795:LYS:HE3	1.94	0.49
1:C:115:GLN:HE22	1:C:167:THR:HG21	1.76	0.49
1:C:226:LEU:HD12	1:C:227:VAL:CB	2.41	0.49
1:C:763:LEU:HD13	1:C:1004:LEU:HG	1.94	0.49
2:Z:53:TRP:O	2:Z:72:ARG:NE	2.42	0.49
1:B:29:THR:HG22	1:B:30:ASN:H	1.77	0.49
1:C:319:ARG:O	1:C:319:ARG:HG3	2.13	0.49
1:A:763:LEU:HD13	1:A:1004:LEU:HG	1.95	0.49
1:A:484:GLU:HB2	2:X:57:SER:CB	2.43	0.48
1:A:1031:GLU:HB2	1:A:1042:PHE:HE2	1.77	0.48
1:C:57:PRO:HB2	1:C:60:SER:HB2	1.94	0.48
1:B:111:ASP:CB	1:B:135:PHE:HB2	2.43	0.48
1:B:1081:ILE:HD11	1:B:1137:VAL:HG22	1.95	0.48
1:B:904:TYR:CE2	1:C:1107:ARG:HD3	2.48	0.48
1:A:111:ASP:CG	1:A:112:SER:H	2.17	0.48
1:C:515:PHE:O	1:C:516:GLU:OE2	2.32	0.48
1:A:1107:ARG:HD2	1:C:904:TYR:CE2	2.49	0.48
1:C:115:GLN:N	1:C:132:GLU:HG2	2.28	0.48
1:B:576:VAL:CG2	1:B:587:ILE:HD11	2.42	0.47
1:B:763:LEU:HD13	1:B:1004:LEU:HG	1.95	0.47
1:A:589:PRO:HG2	1:C:855:PHE:HD1	1.79	0.47
1:A:826:VAL:HB	1:A:1057:PRO:HG2	1.96	0.47
1:B:858:LEU:HD22	1:B:959:LEU:HD22	1.96	0.47
1:C:1081:ILE:HD11	1:C:1137:VAL:HG22	1.96	0.47
2:X:53:TRP:O	2:X:72:ARG:NE	2.42	0.47
1:A:129:LYS:HB2	1:A:133:PHE:HZ	1.78	0.47
1:C:1048:HIS:HE1	1:C:1051:SER:HB3	1.79	0.47
1:B:206:LYS:HE3	1:B:208:THR:HB	1.96	0.47
1:B:327:VAL:H	1:B:531:THR:HG22	1.79	0.47
1:B:392:PHE:CD2	1:B:515:PHE:HB3	2.50	0.47
1:C:826:VAL:HB	1:C:1057:PRO:HG2	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:1072:GLU:HG2	3:T:1:NAG:H81	1.97	0.47
2:Y:53:TRP:O	2:Y:72:ARG:NE	2.42	0.47
1:B:826:VAL:HB	1:B:1057:PRO:HG2	1.96	0.47
1:C:731:MET:HG3	1:C:1018:ILE:HG13	1.95	0.47
1:C:980:ILE:HA	1:C:983:ARG:HH21	1.80	0.47
1:A:204:TYR:HA	1:A:225:PRO:HA	1.97	0.47
1:A:1107:ARG:HD3	1:C:904:TYR:CE2	2.42	0.47
1:B:715:PRO:CB	1:B:1069:PRO:HB3	2.45	0.47
1:B:1048:HIS:HE1	1:B:1051:SER:HB3	1.80	0.46
1:C:515:PHE:O	1:C:516:GLU:CG	2.63	0.46
1:B:674:TYR:CZ	1:B:690:GLN:HB2	2.50	0.46
1:B:34:ARG:HH21	1:B:217:PRO:HG2	1.79	0.46
1:B:57:PRO:HB2	1:B:60:SER:HB2	1.96	0.46
1:B:195:LYS:HE2	1:B:204:TYR:HE1	1.81	0.46
1:A:546:LEU:HD12	1:A:546:LEU:C	2.35	0.46
1:B:231:ILE:HD12	1:B:233:ILE:HB	1.98	0.46
1:C:191:GLU:HB2	1:C:206:LYS:H	1.81	0.46
1:A:85:PRO:O	1:A:238:PHE:CE2	2.69	0.46
1:A:1094:VAL:HG13	1:A:1107:ARG:HG2	1.96	0.46
1:B:720:ILE:HG13	1:B:923:ILE:HG23	1.98	0.46
1:C:231:ILE:HD12	1:C:233:ILE:HB	1.97	0.46
2:Z:12:MET:CE	2:Z:16:GLY:HA3	2.46	0.46
1:A:715:PRO:HD3	1:C:894:LEU:HD13	1.98	0.45
1:B:455:LEU:HD23	1:B:456:PHE:HE1	1.80	0.45
1:C:342:PHE:HE2	1:C:434:ILE:HG21	1.81	0.45
2:Y:12:MET:CE	2:Y:16:GLY:HA3	2.46	0.45
1:A:592:PHE:CE2	1:C:857:GLY:HA2	2.51	0.45
1:C:101:ILE:CA	1:C:242:LEU:CD2	2.94	0.45
1:A:350:VAL:HG22	1:A:422:ASN:HB3	1.98	0.45
1:A:342:PHE:HB2	4:A:1308:NAG:H82	1.98	0.45
1:C:1116:THR:HG22	1:C:1138:TYR:HD2	1.81	0.45
1:A:729:VAL:H	1:A:1059:GLY:HA2	1.82	0.45
1:C:805:ILE:CG2	1:C:818:ILE:HD12	2.46	0.45
1:C:44:ARG:O	1:C:283:GLY:HA2	2.16	0.45
1:C:106:PHE:HB2	1:C:117:LEU:HB2	1.98	0.45
1:C:720:ILE:HG13	1:C:923:ILE:HG23	1.99	0.45
1:A:789:TYR:HA	1:B:703:ASN:O	2.17	0.45
1:C:125:ASN:HD22	4:C:1403:NAG:H3	1.82	0.45
2:X:12:MET:CE	2:X:16:GLY:HA3	2.46	0.45
1:C:106:PHE:O	1:C:110:LEU:HD21	2.16	0.45
1:A:129:LYS:CB	1:A:133:PHE:HZ	2.29	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:515:PHE:O	1:C:516:GLU:CD	2.56	0.44
1:C:825:LYS:HA	1:C:825:LYS:HD3	1.79	0.44
1:C:39:PRO:HG3	1:C:51:THR:HG21	2.00	0.44
1:A:1081:ILE:CD1	1:A:1137:VAL:HG22	2.47	0.44
1:B:981:LEU:C	1:B:981:LEU:HD12	2.38	0.44
1:C:28:TYR:HE1	1:C:63:THR:HG22	1.70	0.44
1:A:501:ASN:ND2	1:A:505:TYR:CB	2.81	0.44
1:B:708:SER:HB3	1:B:711:SER:HB3	1.99	0.44
1:A:825:LYS:HA	1:A:825:LYS:HD3	1.79	0.44
1:B:101:ILE:CG1	1:B:242:LEU:CD1	2.88	0.44
1:B:391:CYS:HB3	1:B:522:ALA:HB1	2.00	0.44
1:B:518:LEU:HD23	1:B:518:LEU:HA	1.86	0.44
1:C:392:PHE:CD1	1:C:515:PHE:HB3	2.53	0.44
1:B:607:GLN:HE22	1:B:691:SER:HA	1.83	0.43
1:B:873:TYR:CZ	1:C:699:LEU:HD22	2.52	0.43
1:C:27:ALA:HB3	1:C:64:TRP:HB3	2.00	0.43
1:C:533:LEU:CD2	1:C:535:LYS:HG3	2.48	0.43
1:A:708:SER:HB3	1:A:711:SER:HB3	2.00	0.43
1:A:720:ILE:HG13	1:A:923:ILE:HG23	2.00	0.43
1:A:905:ARG:HD2	1:A:1049:LEU:O	2.19	0.43
1:B:92:PHE:CE1	1:B:94:SER:HB3	2.54	0.43
1:C:201:PHE:HB3	1:C:229:LEU:HB2	2.01	0.43
1:C:516:GLU:C	1:C:517:LEU:HD12	2.39	0.43
1:A:786:LYS:HZ2	1:A:891:GLY:HA2	1.80	0.43
1:A:1107:ARG:HD3	1:C:904:TYR:CE1	2.50	0.43
1:B:108:THR:HG23	1:B:237:ARG:HH12	1.83	0.43
1:B:111:ASP:OD1	1:B:111:ASP:C	2.53	0.43
1:A:81:ASN:N	1:A:265:TYR:HH	2.17	0.43
1:A:567:ARG:HB2	1:C:42:VAL:CG1	2.49	0.42
1:A:854:LYS:C	1:A:856:ASN:H	2.22	0.42
1:B:555:SER:CB	1:B:586:ASP:OD1	2.66	0.42
1:C:117:LEU:HG	1:C:130:VAL:HG12	2.01	0.42
1:B:40:ASP:OD1	1:B:41:LYS:N	2.43	0.42
1:C:102:ARG:HD2	1:C:141:LEU:HD22	2.00	0.42
1:C:281:GLU:HB2	3:P:1:NAG:H82	2.01	0.42
1:C:1011:GLN:HE21	1:C:1011:GLN:HB3	1.71	0.42
2:Z:88:TYR:HH	2:Z:128:LYS:HE3	1.82	0.42
1:C:568:ASP:CG	1:C:569:ILE:H	2.23	0.42
1:A:104:TRP:HB2	1:A:106:PHE:CE2	2.55	0.42
1:A:791:THR:OG1	1:A:792:PRO:HD2	2.19	0.42
1:A:544:ASN:OD1	1:A:545:GLY:N	2.53	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:91:TYR:CE1	1:C:191:GLU:OE1	2.72	0.42
1:C:363:ALA:O	1:C:527:PRO:HD3	2.20	0.42
1:C:1081:ILE:HD13	1:C:1081:ILE:HG21	1.70	0.42
1:B:996:LEU:HD23	1:B:996:LEU:HA	1.87	0.42
1:A:978:ASN:HB3	1:B:547:THR:OG1	2.20	0.42
1:B:92:PHE:HE1	1:B:94:SER:HB3	1.85	0.42
1:B:1096:VAL:HG21	1:B:1110:TYR:HE1	1.85	0.42
1:A:97:LYS:HB2	1:A:186:PHE:HA	2.01	0.41
1:B:40:ASP:CG	1:B:41:LYS:H	2.23	0.41
1:A:715:PRO:HA	1:A:1072:GLU:HA	2.02	0.41
1:B:41:LYS:O	1:C:563:GLN:HG2	2.20	0.41
2:X:56:GLY:HA2	2:X:72:ARG:HE	1.85	0.41
1:A:89:GLY:HA3	1:A:270:LEU:HD12	2.02	0.41
1:A:96:GLU:O	1:A:96:GLU:CG	2.63	0.41
1:A:600:PRO:O	1:A:601:GLY:C	2.57	0.41
1:A:855:PHE:HB3	1:B:589:PRO:HG2	2.02	0.41
1:B:543:PHE:O	1:B:546:LEU:HB3	2.20	0.41
1:B:905:ARG:HD2	1:B:1049:LEU:O	2.20	0.41
1:C:105:ILE:HG22	1:C:110:LEU:CD2	2.51	0.41
1:B:195:LYS:HE2	1:B:204:TYR:CE1	2.54	0.41
1:B:358:ILE:HB	1:B:395:VAL:HB	2.02	0.41
1:B:189:LEU:HB2	1:B:210:ILE:HD13	2.02	0.41
1:B:1028:LYS:O	1:B:1029:MET:C	2.58	0.41
1:C:729:VAL:H	1:C:1059:GLY:HA2	1.85	0.41
1:A:316:SER:HB3	1:A:595:VAL:HB	2.01	0.41
1:A:449:TYR:CD2	2:X:101:VAL:HG22	2.56	0.41
1:B:111:ASP:HB3	1:B:135:PHE:HB2	2.02	0.41
1:B:555:SER:HB2	1:B:586:ASP:OD1	2.21	0.41
1:C:731:MET:CG	1:C:1018:ILE:HG13	2.50	0.41
1:C:909:ILE:CG2	1:C:1047:TYR:HB3	2.50	0.41
2:Y:56:GLY:HA2	2:Y:72:ARG:HE	1.85	0.41
1:B:802:PHE:HD1	1:B:805:ILE:HD11	1.85	0.41
1:C:708:SER:HB3	1:C:711:SER:HB3	2.02	0.41
1:C:763:LEU:HD23	1:C:763:LEU:HA	1.89	0.41
1:A:65:PHE:CZ	1:A:84:LEU:HD21	2.56	0.41
1:A:676:THR:HG23	1:A:689:SER:HB3	2.02	0.41
1:B:29:THR:HG22	1:B:30:ASN:N	2.35	0.41
1:B:555:SER:CB	1:B:586:ASP:CG	2.89	0.41
1:B:791:THR:OG1	1:B:792:PRO:HD2	2.20	0.41
1:C:192:PHE:HB3	1:C:194:PHE:CZ	2.55	0.41
1:C:350:VAL:HA	1:C:400:PHE:HB2	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:996:LEU:HD23	1:C:996:LEU:HA	1.89	0.41
1:B:316:SER:HB3	1:B:595:VAL:HB	2.02	0.41
1:B:1018:ILE:HD13	1:B:1018:ILE:HA	1.78	0.41
1:C:576:VAL:CG2	1:C:587:ILE:HD11	2.49	0.40
1:A:230:PRO:HB2	1:B:357:ARG:CZ	2.51	0.40
1:A:377:PHE:CD2	1:A:377:PHE:O	2.74	0.40
1:A:791:THR:HG23	1:A:795:LYS:HE3	2.02	0.40
1:B:1081:ILE:HD13	1:B:1081:ILE:HG21	1.71	0.40
1:C:191:GLU:HB3	1:C:223:LEU:HD21	2.03	0.40
1:A:111:ASP:CG	1:A:112:SER:N	2.75	0.40
1:A:394:ASN:HD22	1:A:516:GLU:HG2	1.86	0.40
1:A:565:PHE:CE2	1:C:42:VAL:HG22	2.56	0.40
1:A:738:CYS:HB3	1:A:1004:LEU:HD21	2.03	0.40
1:A:969:ASN:HD22	1:A:975:SER:N	2.19	0.40
1:C:822:LEU:CD2	1:C:945:LEU:HD21	2.52	0.40
1:A:567:ARG:HA	1:A:567:ARG:HD3	1.71	0.40
1:B:904:TYR:CE1	1:C:1107:ARG:NH1	2.90	0.40
1:C:338:PHE:HE2	1:C:363:ALA:HB1	1.86	0.40
1:C:916:LEU:C	1:C:916:LEU:HD23	2.42	0.40
2:Y:72:ARG:NH1	2:Y:74:LYS:HG2	2.29	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	972/1260 (77%)	940 (97%)	32 (3%)	0	100	100
1	B	978/1260 (78%)	946 (97%)	32 (3%)	0	100	100
1	C	976/1260 (78%)	948 (97%)	28 (3%)	0	100	100
2	X	126/134 (94%)	124 (98%)	1 (1%)	1 (1%)	19	54

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
2	Y	126/134 (94%)	124 (98%)	1 (1%)	1 (1%)	19 54
2	Z	126/134 (94%)	125 (99%)	0	1 (1%)	19 54
All	All	3304/4182 (79%)	3207 (97%)	94 (3%)	3 (0%)	54 83

All (3) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	X	92	ALA
2	Y	92	ALA
2	Z	92	ALA

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	867/1098 (79%)	861 (99%)	6 (1%)	84 93
1	B	869/1098 (79%)	866 (100%)	3 (0%)	92 96
1	C	869/1098 (79%)	866 (100%)	3 (0%)	92 96
2	X	102/108 (94%)	102 (100%)	0	100 100
2	Y	102/108 (94%)	102 (100%)	0	100 100
2	Z	102/108 (94%)	102 (100%)	0	100 100
All	All	2911/3618 (80%)	2899 (100%)	12 (0%)	91 96

All (12) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	567	ARG
1	A	580	GLN
1	A	582	LEU
1	A	583	GLU
1	A	760	CYS
1	A	1043	CYS
1	B	87	ASN

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Mol	Chain	Res	Type
1	B	859	THR
1	B	1032	CYS
1	C	88	ASP
1	C	112	SER
1	C	114	THR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (31) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	52	GLN
1	A	239	GLN
1	A	580	GLN
1	A	675	GLN
1	A	914	ASN
1	A	969	ASN
1	A	1011	GLN
1	A	1048	HIS
1	B	115	GLN
1	B	121	ASN
1	B	125	ASN
1	B	134	GLN
1	B	207	HIS
1	B	388	ASN
1	B	607	GLN
1	B	644	GLN
1	B	690	GLN
1	B	762	GLN
1	B	1011	GLN
1	B	1048	HIS
1	C	66	HIS
1	C	115	GLN
1	C	125	ASN
1	C	207	HIS
1	C	762	GLN
1	C	935	GLN
1	C	954	GLN
1	C	957	GLN
1	C	1011	GLN
1	C	1036	GLN
1	C	1048	HIS

5.3.3 RNA

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates

38 monosaccharides are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
3	NAG	D	1	1,3	14,14,15	0.40	0	17,19,21	0.81	1 (5%)
3	NAG	D	2	3	14,14,15	0.36	0	17,19,21	0.75	1 (5%)
3	NAG	E	1	1,3	14,14,15	0.45	0	17,19,21	0.81	0
3	NAG	E	2	3	14,14,15	0.33	0	17,19,21	0.46	0
3	NAG	F	1	1,3	14,14,15	0.55	0	17,19,21	0.75	0
3	NAG	F	2	3	14,14,15	0.39	0	17,19,21	1.15	2 (11%)
3	NAG	G	1	1,3	14,14,15	1.20	1 (7%)	17,19,21	2.66	6 (35%)
3	NAG	G	2	3	14,14,15	0.31	0	17,19,21	0.78	0
3	NAG	H	1	1,3	14,14,15	0.46	0	17,19,21	1.07	1 (5%)
3	NAG	H	2	3	14,14,15	0.38	0	17,19,21	0.80	0
3	NAG	I	1	1,3	14,14,15	0.47	0	17,19,21	0.80	0
3	NAG	I	2	3	14,14,15	0.31	0	17,19,21	0.66	0
3	NAG	J	1	1,3	14,14,15	0.53	0	17,19,21	0.82	0
3	NAG	J	2	3	14,14,15	0.39	0	17,19,21	1.13	1 (5%)
3	NAG	K	1	1,3	14,14,15	0.61	0	17,19,21	1.52	3 (17%)
3	NAG	K	2	3	14,14,15	0.57	0	17,19,21	1.43	2 (11%)
3	NAG	L	1	1,3	14,14,15	0.61	0	17,19,21	1.62	4 (23%)
3	NAG	L	2	3	14,14,15	0.37	0	17,19,21	0.82	0
3	NAG	M	1	1,3	14,14,15	0.44	0	17,19,21	1.30	2 (11%)
3	NAG	M	2	3	14,14,15	0.31	0	17,19,21	0.95	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
3	NAG	N	1	1,3	14,14,15	0.42	0	17,19,21	0.64	0
3	NAG	N	2	3	14,14,15	0.32	0	17,19,21	0.57	0
3	NAG	O	1	1,3	14,14,15	0.48	0	17,19,21	0.96	1 (5%)
3	NAG	O	2	3	14,14,15	0.33	0	17,19,21	0.81	1 (5%)
3	NAG	P	1	1,3	14,14,15	0.41	0	17,19,21	0.94	1 (5%)
3	NAG	P	2	3	14,14,15	0.48	0	17,19,21	0.97	2 (11%)
3	NAG	Q	1	1,3	14,14,15	0.47	0	17,19,21	0.71	0
3	NAG	Q	2	3	14,14,15	0.34	0	17,19,21	0.72	0
3	NAG	R	1	1,3	14,14,15	0.51	0	17,19,21	1.38	1 (5%)
3	NAG	R	2	3	14,14,15	0.30	0	17,19,21	0.61	0
3	NAG	S	1	1,3	14,14,15	0.42	0	17,19,21	0.95	0
3	NAG	S	2	3	14,14,15	0.34	0	17,19,21	0.73	0
3	NAG	T	1	1,3	14,14,15	0.44	0	17,19,21	1.01	1 (5%)
3	NAG	T	2	3	14,14,15	0.40	0	17,19,21	1.13	1 (5%)
3	NAG	U	1	1,3	14,14,15	0.43	0	17,19,21	0.76	0
3	NAG	U	2	3	14,14,15	0.34	0	17,19,21	0.60	0
3	NAG	V	1	1,3	14,14,15	0.39	0	17,19,21	0.94	1 (5%)
3	NAG	V	2	3	14,14,15	0.39	0	17,19,21	0.98	1 (5%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	NAG	D	1	1,3	-	2/6/23/26	0/1/1/1
3	NAG	D	2	3	-	0/6/23/26	0/1/1/1
3	NAG	E	1	1,3	-	2/6/23/26	0/1/1/1
3	NAG	E	2	3	-	0/6/23/26	0/1/1/1
3	NAG	F	1	1,3	-	2/6/23/26	0/1/1/1
3	NAG	F	2	3	-	3/6/23/26	0/1/1/1
3	NAG	G	1	1,3	-	1/6/23/26	0/1/1/1
3	NAG	G	2	3	-	2/6/23/26	0/1/1/1
3	NAG	H	1	1,3	-	2/6/23/26	0/1/1/1
3	NAG	H	2	3	-	2/6/23/26	0/1/1/1
3	NAG	I	1	1,3	-	0/6/23/26	0/1/1/1
3	NAG	I	2	3	-	2/6/23/26	0/1/1/1
3	NAG	J	1	1,3	-	2/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	NAG	J	2	3	-	0/6/23/26	0/1/1/1
3	NAG	K	1	1,3	-	2/6/23/26	0/1/1/1
3	NAG	K	2	3	-	3/6/23/26	0/1/1/1
3	NAG	L	1	1,3	-	2/6/23/26	0/1/1/1
3	NAG	L	2	3	-	0/6/23/26	0/1/1/1
3	NAG	M	1	1,3	1/1/5/7	2/6/23/26	0/1/1/1
3	NAG	M	2	3	-	0/6/23/26	0/1/1/1
3	NAG	N	1	1,3	-	0/6/23/26	0/1/1/1
3	NAG	N	2	3	-	2/6/23/26	0/1/1/1
3	NAG	O	1	1,3	-	2/6/23/26	0/1/1/1
3	NAG	O	2	3	-	0/6/23/26	0/1/1/1
3	NAG	P	1	1,3	-	0/6/23/26	0/1/1/1
3	NAG	P	2	3	-	2/6/23/26	0/1/1/1
3	NAG	Q	1	1,3	-	2/6/23/26	0/1/1/1
3	NAG	Q	2	3	-	0/6/23/26	0/1/1/1
3	NAG	R	1	1,3	-	2/6/23/26	0/1/1/1
3	NAG	R	2	3	-	0/6/23/26	0/1/1/1
3	NAG	S	1	1,3	-	2/6/23/26	0/1/1/1
3	NAG	S	2	3	-	2/6/23/26	0/1/1/1
3	NAG	T	1	1,3	-	2/6/23/26	0/1/1/1
3	NAG	T	2	3	-	2/6/23/26	0/1/1/1
3	NAG	U	1	1,3	-	0/6/23/26	0/1/1/1
3	NAG	U	2	3	-	0/6/23/26	0/1/1/1
3	NAG	V	1	1,3	-	2/6/23/26	0/1/1/1
3	NAG	V	2	3	-	0/6/23/26	0/1/1/1

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	G	1	NAG	C2-N2	-3.16	1.40	1.46

All (33) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	G	1	NAG	C1-O5-C5	7.53	122.40	112.19
3	R	1	NAG	C2-N2-C7	-4.52	116.47	122.90
3	K	2	NAG	C2-N2-C7	4.43	129.21	122.90
3	G	1	NAG	C8-C7-N2	-4.41	108.64	116.10
3	L	1	NAG	C2-N2-C7	-4.16	116.98	122.90

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	J	2	NAG	C1-O5-C5	4.00	117.62	112.19
3	K	1	NAG	O5-C5-C6	3.70	113.00	107.20
3	T	2	NAG	C1-O5-C5	3.55	117.00	112.19
3	F	2	NAG	C1-O5-C5	3.24	116.58	112.19
3	L	1	NAG	O5-C1-C2	-3.09	106.41	111.29
3	G	1	NAG	O7-C7-C8	2.88	127.42	122.06
3	G	1	NAG	O5-C1-C2	2.88	115.83	111.29
3	F	2	NAG	C2-N2-C7	2.68	126.72	122.90
3	H	1	NAG	C8-C7-N2	-2.57	111.74	116.10
3	K	2	NAG	C1-O5-C5	2.54	115.64	112.19
3	M	1	NAG	O4-C4-C3	-2.48	104.62	110.35
3	P	2	NAG	C1-O5-C5	2.47	115.53	112.19
3	D	1	NAG	O5-C1-C2	-2.43	107.45	111.29
3	P	1	NAG	O5-C1-C2	-2.40	107.50	111.29
3	O	2	NAG	C1-O5-C5	2.39	115.43	112.19
3	K	1	NAG	O3-C3-C4	2.29	115.64	110.35
3	G	1	NAG	C4-C3-C2	2.28	114.36	111.02
3	V	1	NAG	O5-C5-C6	2.27	110.76	107.20
3	M	1	NAG	O5-C1-C2	2.26	114.86	111.29
3	L	1	NAG	C4-C3-C2	-2.21	107.78	111.02
3	P	2	NAG	C8-C7-N2	-2.19	112.38	116.10
3	G	1	NAG	C3-C4-C5	2.18	114.13	110.24
3	K	1	NAG	C3-C4-C5	-2.12	106.46	110.24
3	T	1	NAG	O4-C4-C3	-2.10	105.50	110.35
3	V	2	NAG	C1-O5-C5	2.04	114.96	112.19
3	O	1	NAG	C4-C3-C2	-2.03	108.05	111.02
3	L	1	NAG	C1-C2-N2	2.02	113.94	110.49
3	D	2	NAG	C1-O5-C5	2.01	114.92	112.19

All (1) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
3	M	1	NAG	C1

All (49) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	F	1	NAG	C8-C7-N2-C2
3	F	1	NAG	O7-C7-N2-C2
3	F	2	NAG	O7-C7-N2-C2
3	K	1	NAG	C8-C7-N2-C2
3	K	1	NAG	O7-C7-N2-C2

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Mol	Chain	Res	Type	Atoms
3	K	2	NAG	C3-C2-N2-C7
3	K	2	NAG	O7-C7-N2-C2
3	T	1	NAG	C8-C7-N2-C2
3	T	1	NAG	O7-C7-N2-C2
3	F	2	NAG	C8-C7-N2-C2
3	K	2	NAG	C8-C7-N2-C2
3	E	1	NAG	C8-C7-N2-C2
3	J	1	NAG	C8-C7-N2-C2
3	L	1	NAG	C8-C7-N2-C2
3	L	1	NAG	O7-C7-N2-C2
3	R	1	NAG	C8-C7-N2-C2
3	V	1	NAG	C8-C7-N2-C2
3	E	1	NAG	O7-C7-N2-C2
3	G	2	NAG	C8-C7-N2-C2
3	J	1	NAG	O7-C7-N2-C2
3	R	1	NAG	O7-C7-N2-C2
3	V	1	NAG	O7-C7-N2-C2
3	G	2	NAG	O7-C7-N2-C2
3	Q	1	NAG	C8-C7-N2-C2
3	S	1	NAG	C8-C7-N2-C2
3	S	2	NAG	C8-C7-N2-C2
3	P	2	NAG	C8-C7-N2-C2
3	O	1	NAG	C8-C7-N2-C2
3	Q	1	NAG	O7-C7-N2-C2
3	S	1	NAG	O7-C7-N2-C2
3	S	2	NAG	O7-C7-N2-C2
3	H	2	NAG	C8-C7-N2-C2
3	I	2	NAG	C8-C7-N2-C2
3	P	2	NAG	O7-C7-N2-C2
3	O	1	NAG	O7-C7-N2-C2
3	G	1	NAG	O5-C5-C6-O6
3	H	2	NAG	O7-C7-N2-C2
3	N	2	NAG	C8-C7-N2-C2
3	F	2	NAG	C3-C2-N2-C7
3	I	2	NAG	O7-C7-N2-C2
3	N	2	NAG	O7-C7-N2-C2
3	M	1	NAG	C8-C7-N2-C2
3	M	1	NAG	O7-C7-N2-C2
3	D	1	NAG	C8-C7-N2-C2
3	H	1	NAG	C8-C7-N2-C2
3	T	2	NAG	C8-C7-N2-C2
3	T	2	NAG	O7-C7-N2-C2

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Mol	Chain	Res	Type	Atoms
3	D	1	NAG	O7-C7-N2-C2
3	H	1	NAG	O7-C7-N2-C2

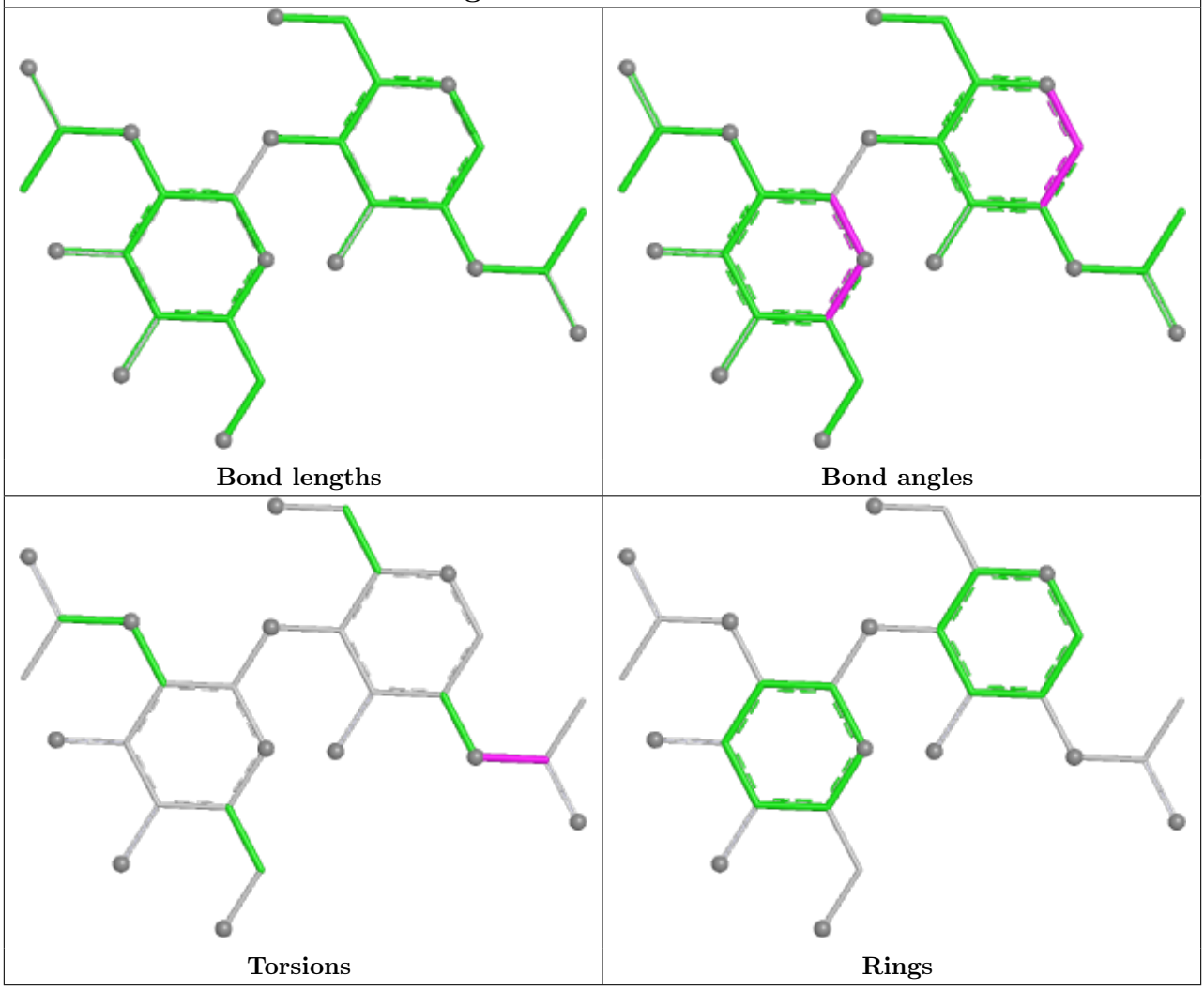
There are no ring outliers.

4 monomers are involved in 9 short contacts:

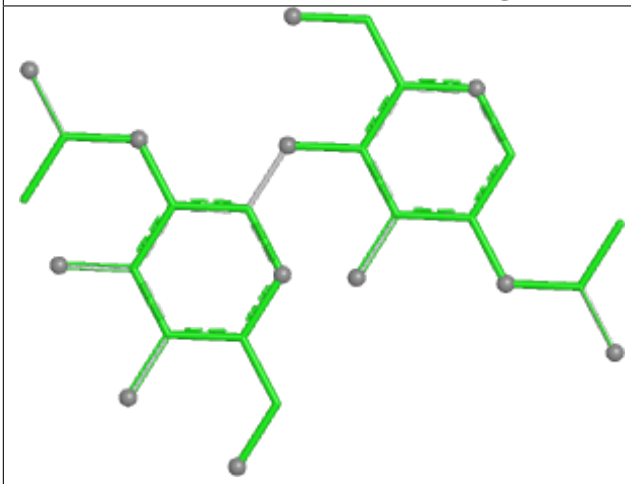
Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	P	1	NAG	5	0
3	P	2	NAG	4	0
3	I	1	NAG	1	0
3	T	1	NAG	3	0

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

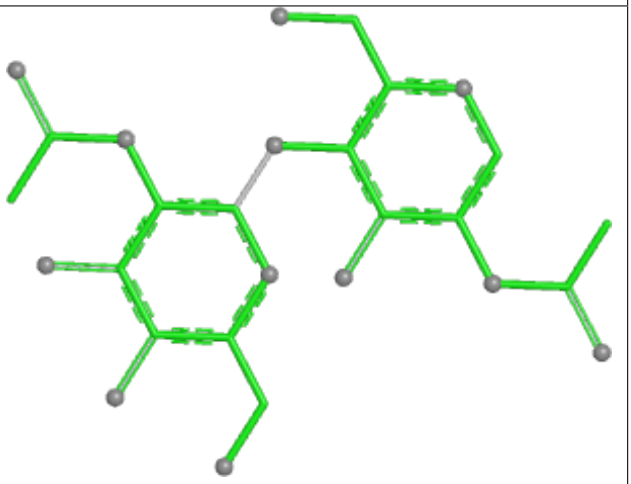
Oligosaccharide Chain D



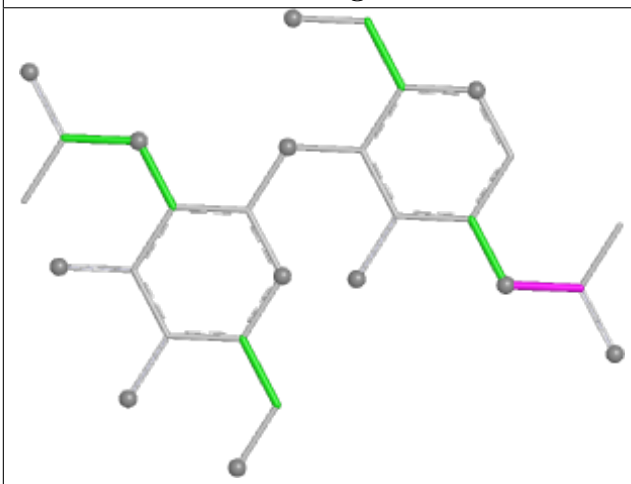
Oligosaccharide Chain E



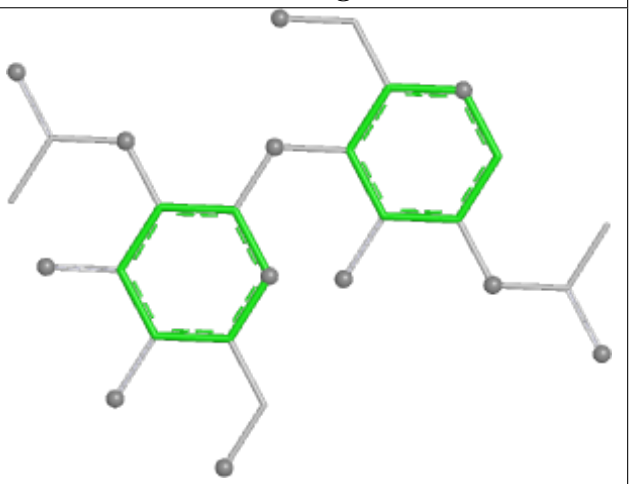
Bond lengths



Bond angles

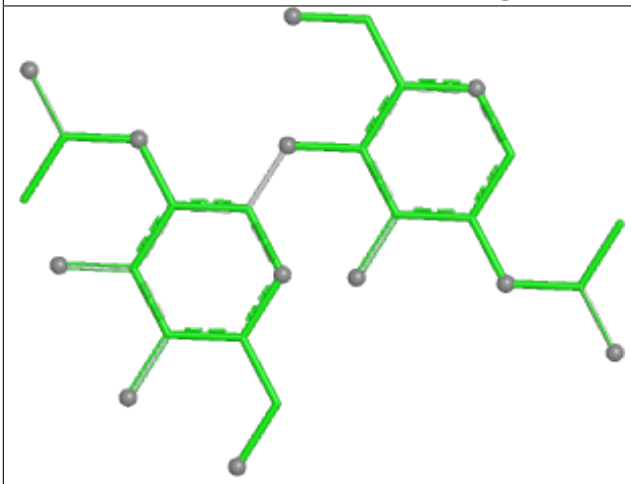


Torsions

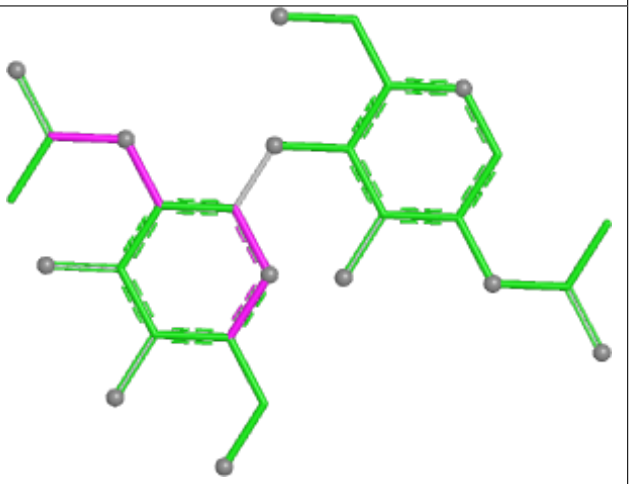


Rings

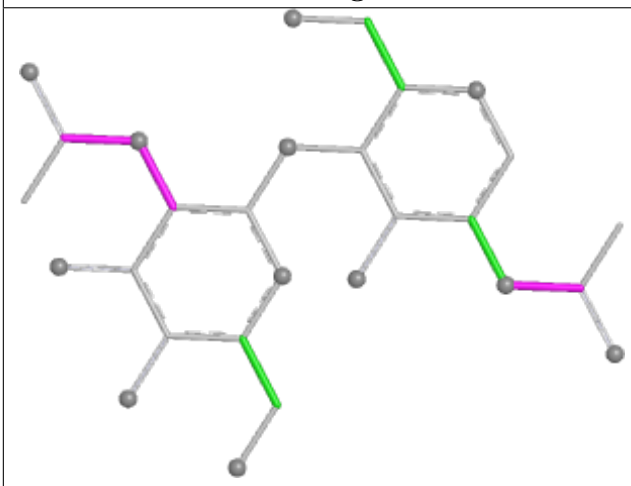
Oligosaccharide Chain F



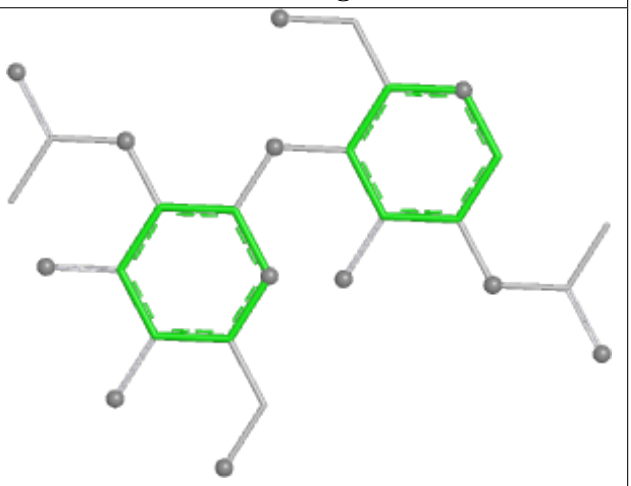
Bond lengths



Bond angles

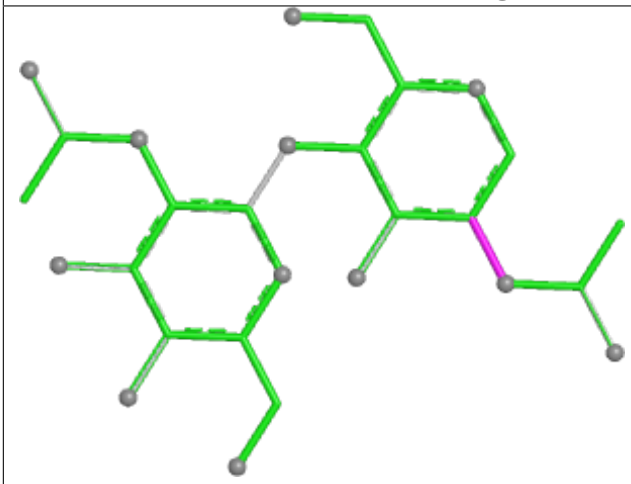


Torsions



Rings

Oligosaccharide Chain G



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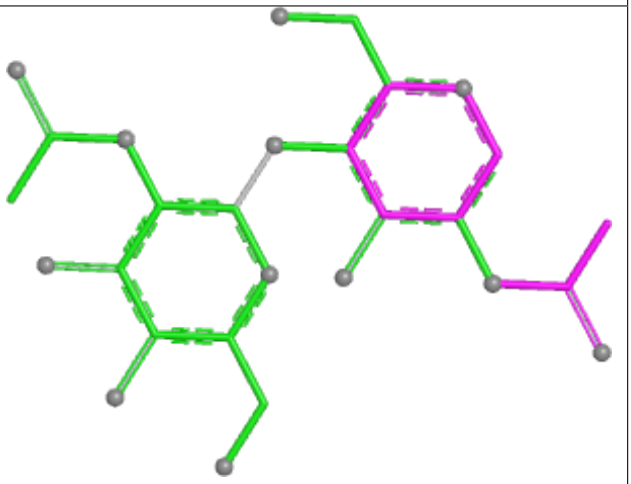
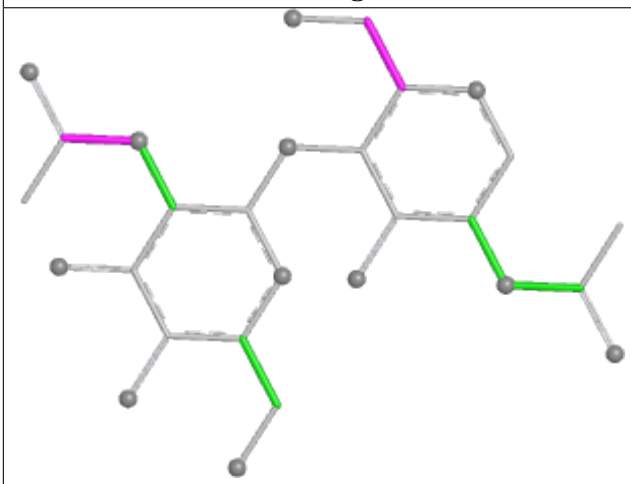


Bond angles



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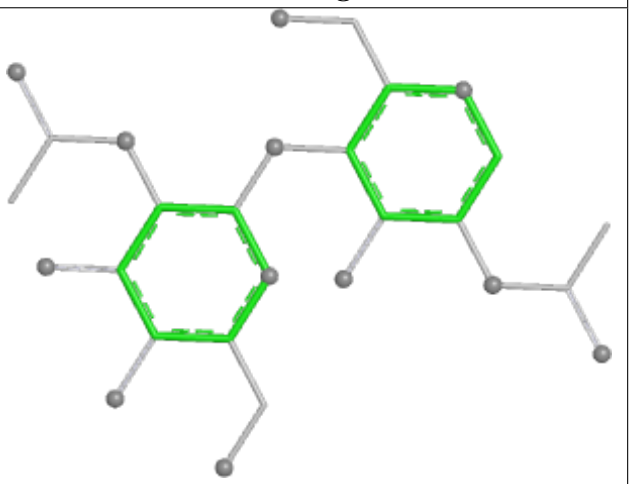
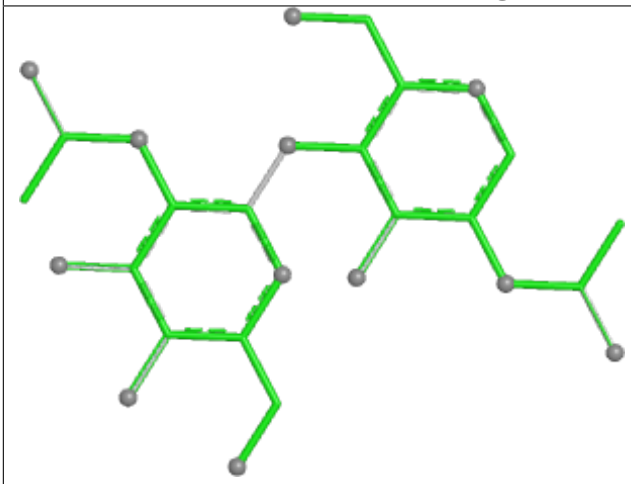


Rings

Oligosaccharide Chain H



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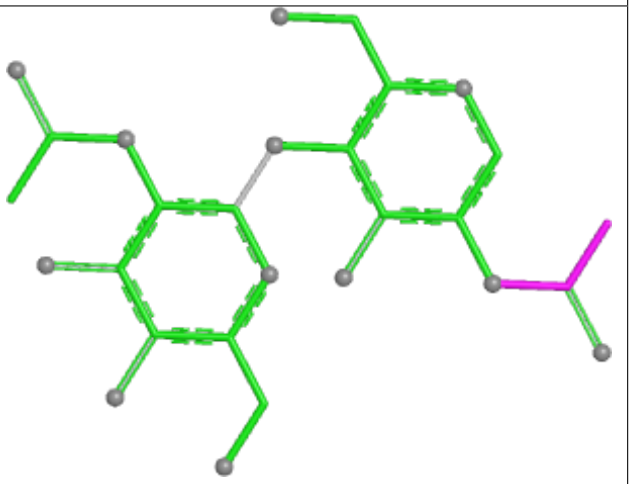
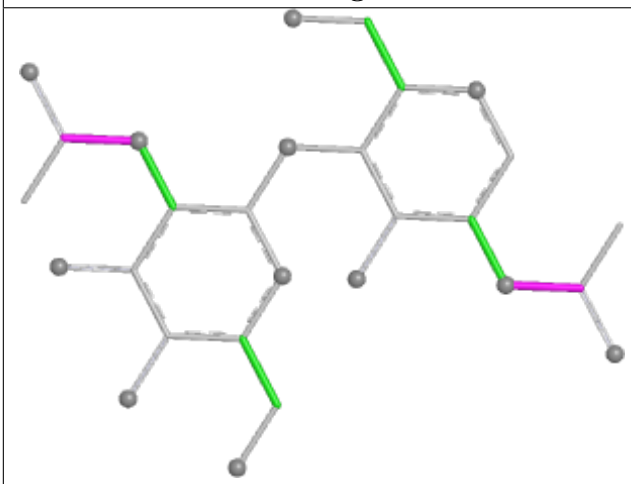
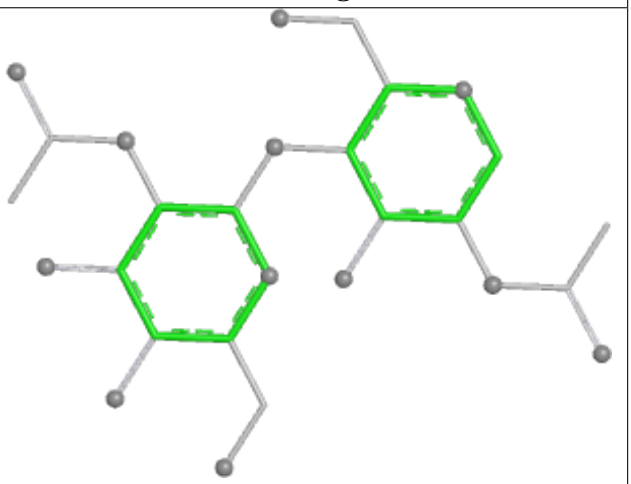


Bond angles

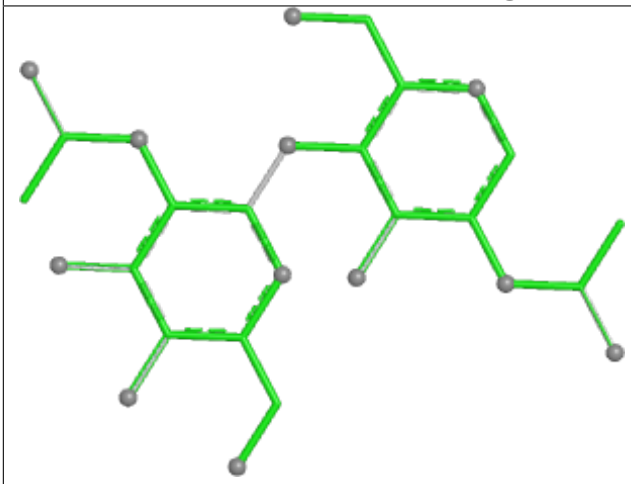


Torsions



Rings

Oligosaccharide Chain I



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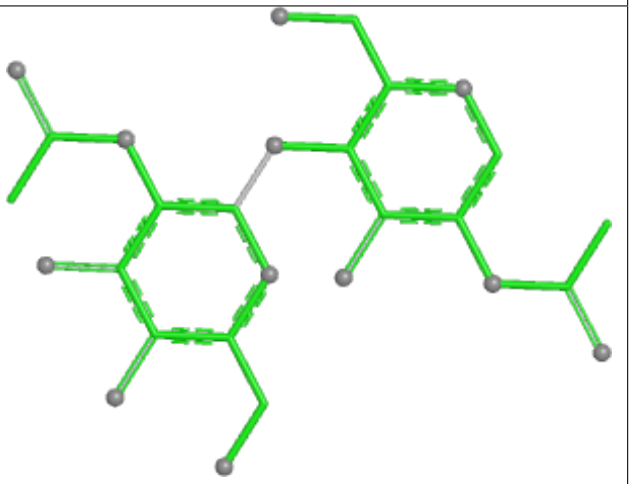

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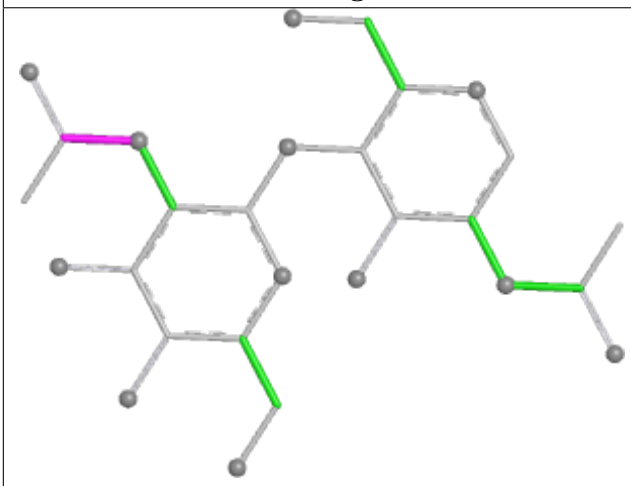

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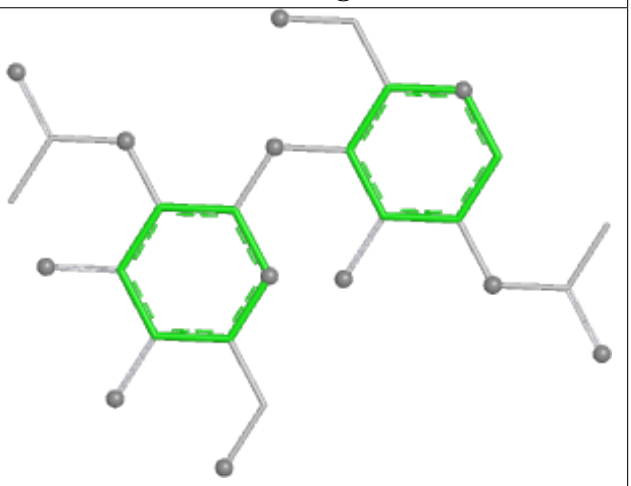
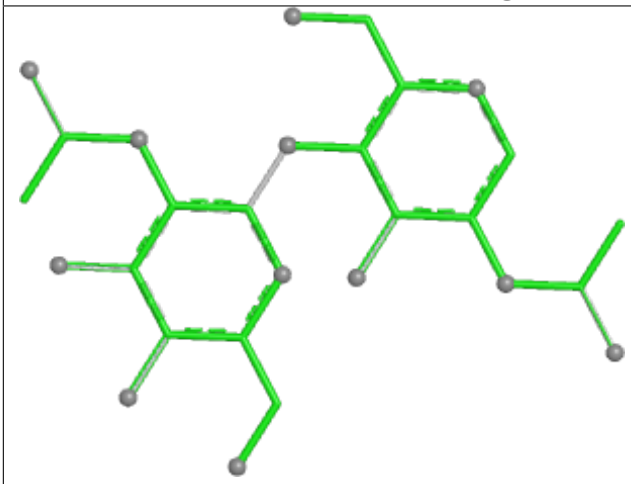


Rings

Oligosaccharide Chain J



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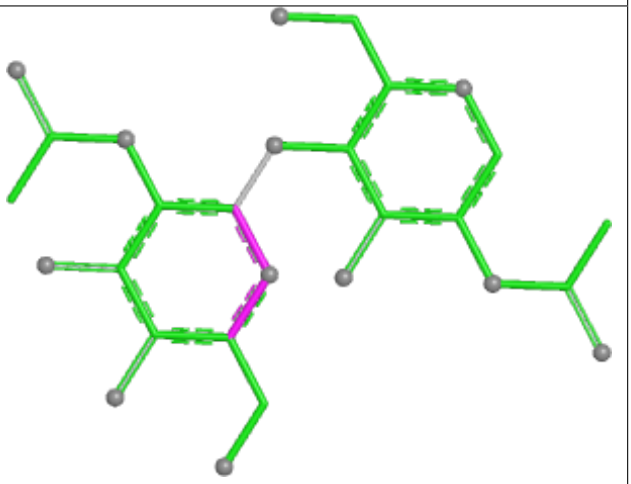
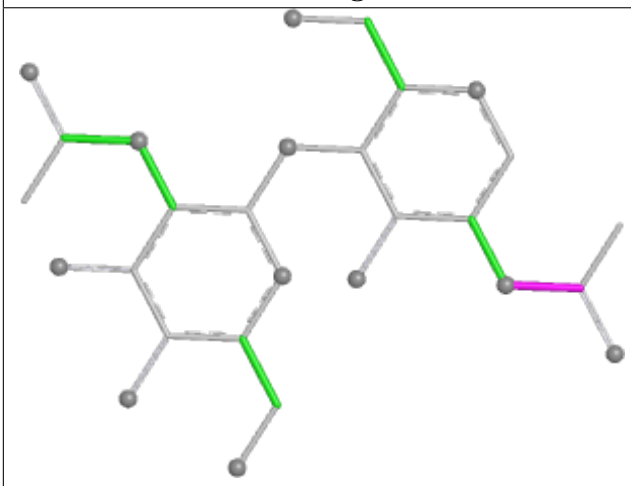


Bond angles



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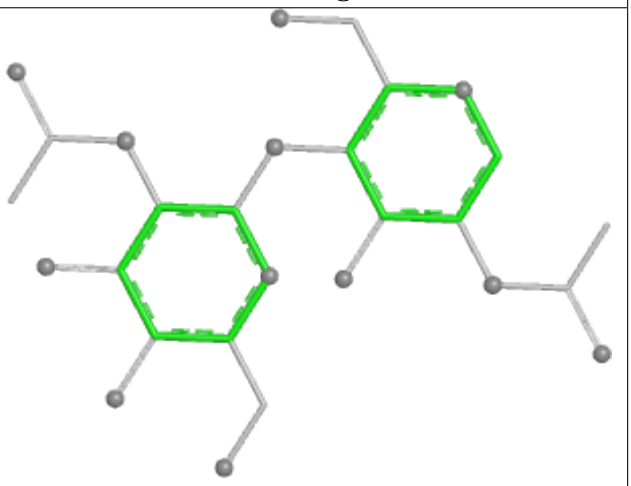
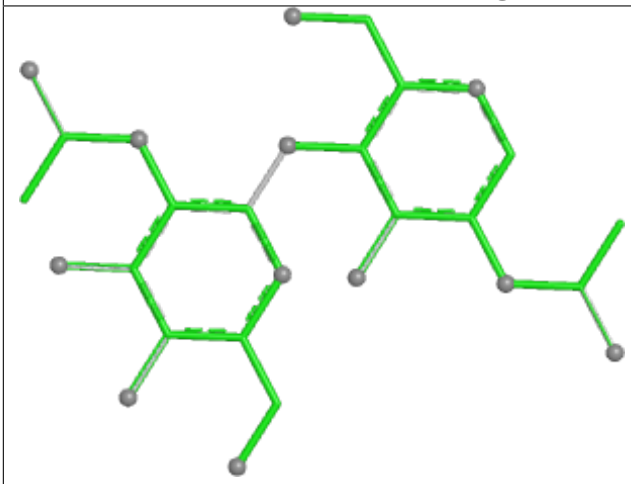
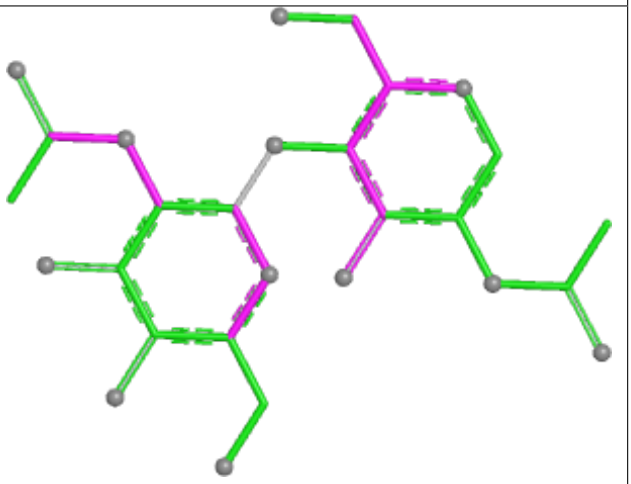
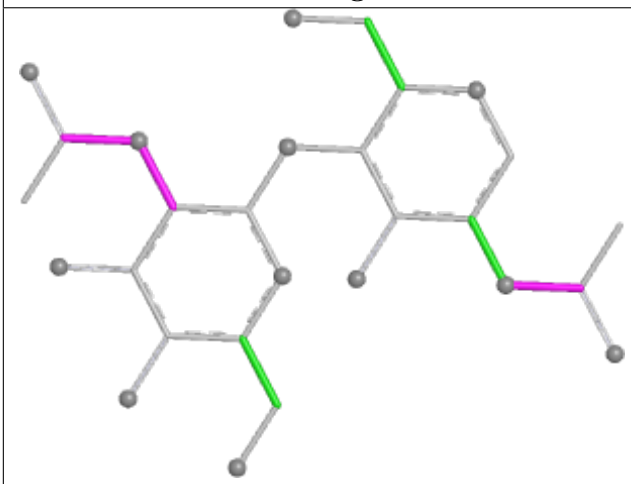
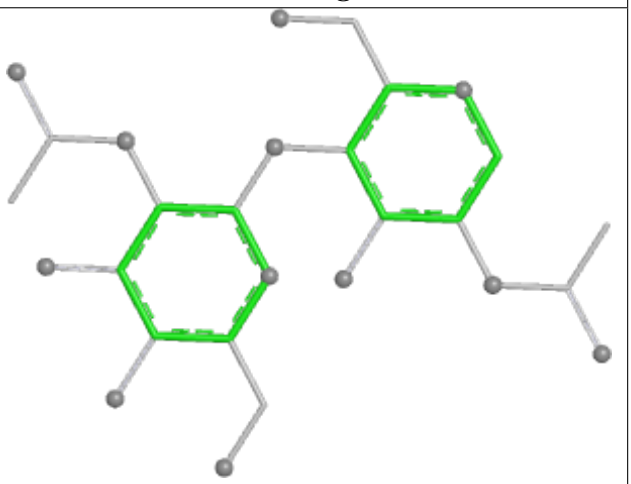
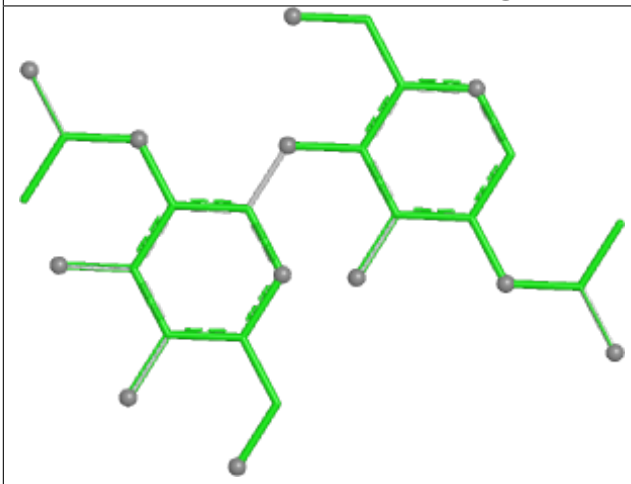


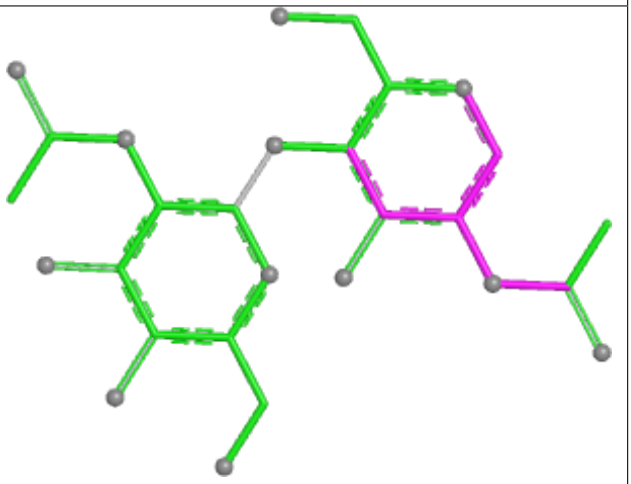
Rings

Oligosaccharide Chain K	
 Bond lengths	 Bond angles
 Torsions	 Rings

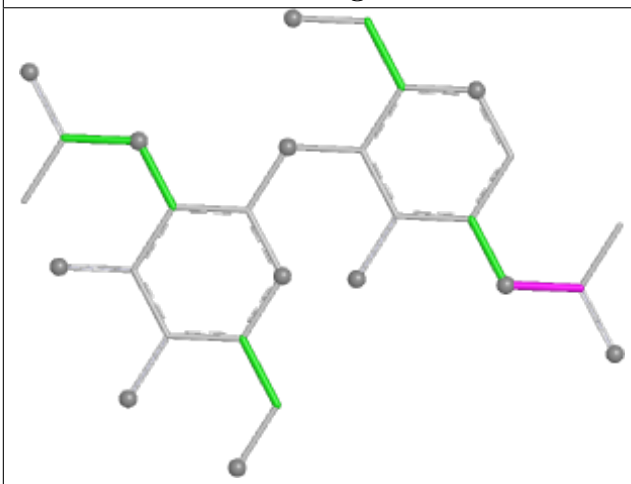
Oligosaccharide Chain L



Bond lengths



Bond angles



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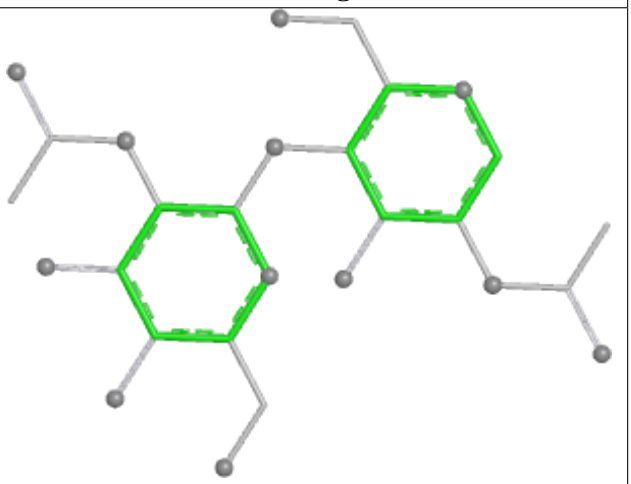
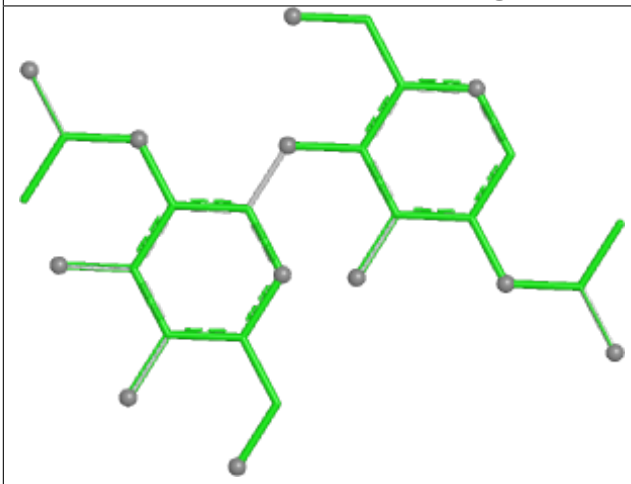


Rings

Oligosaccharide Chain M



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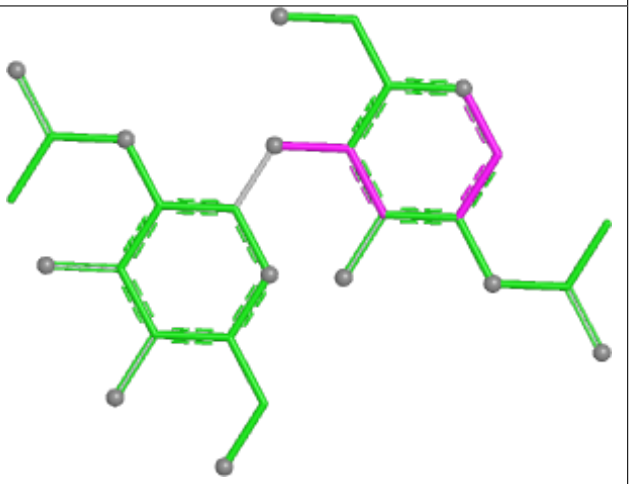
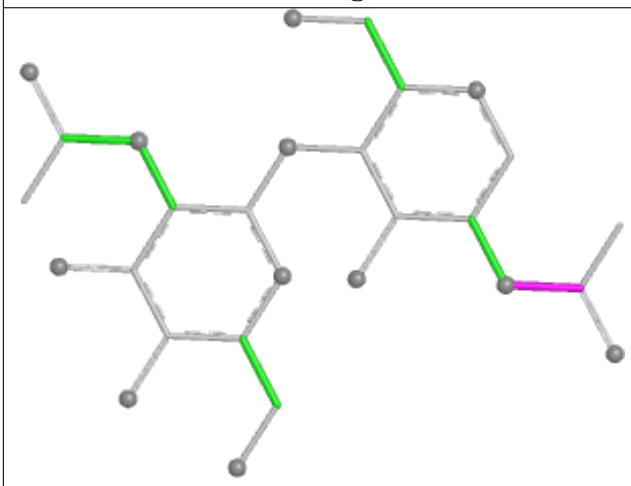


Bond angles



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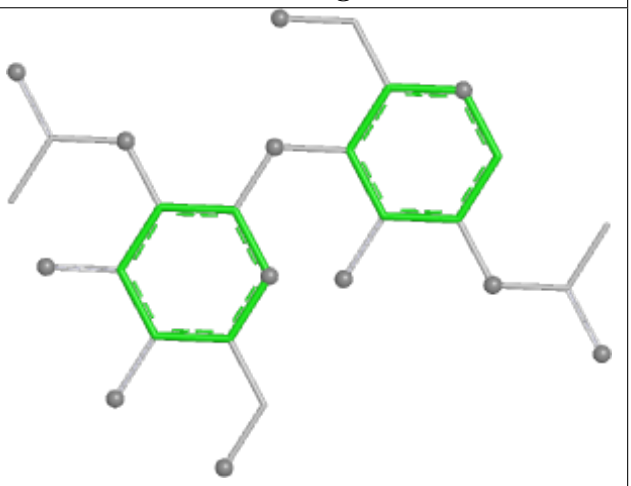
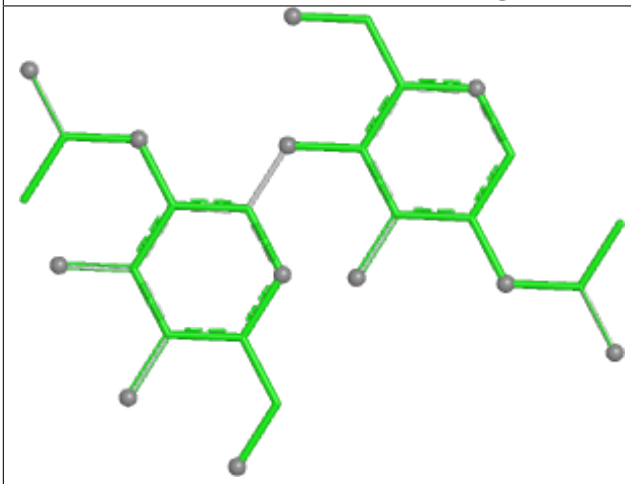


Rings

Oligosaccharide Chain N



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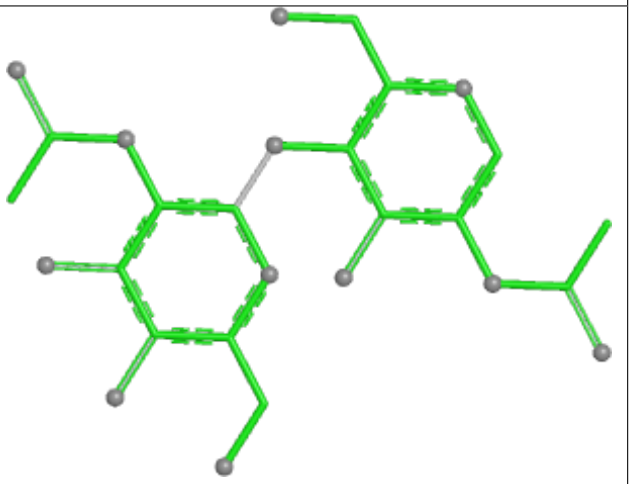
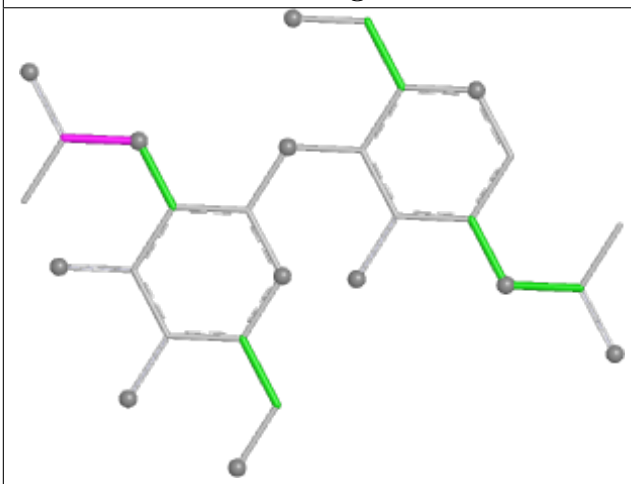


Bond angles



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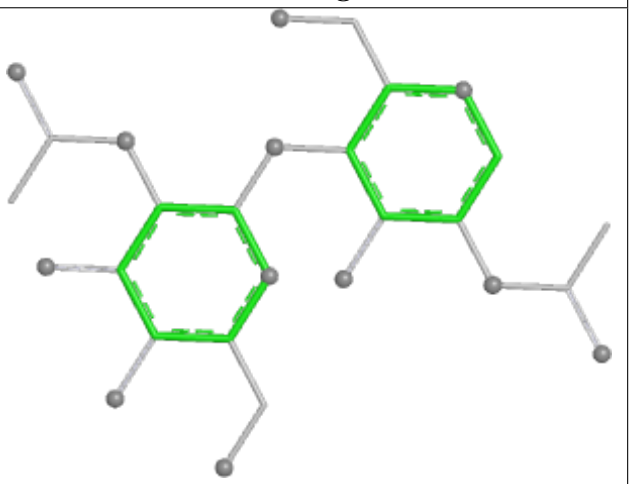
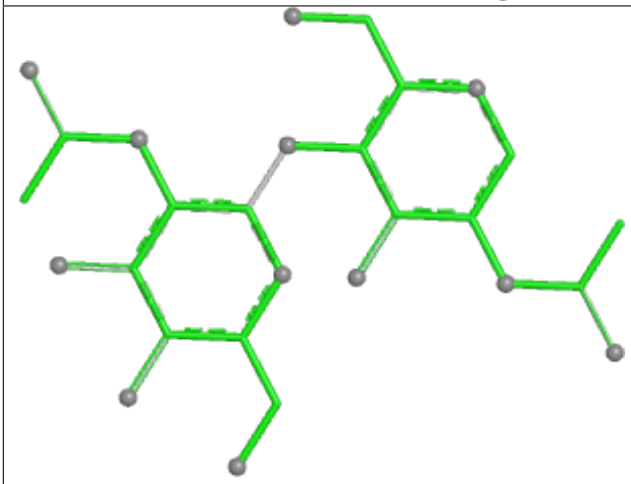


Rings

Oligosaccharide Chain O



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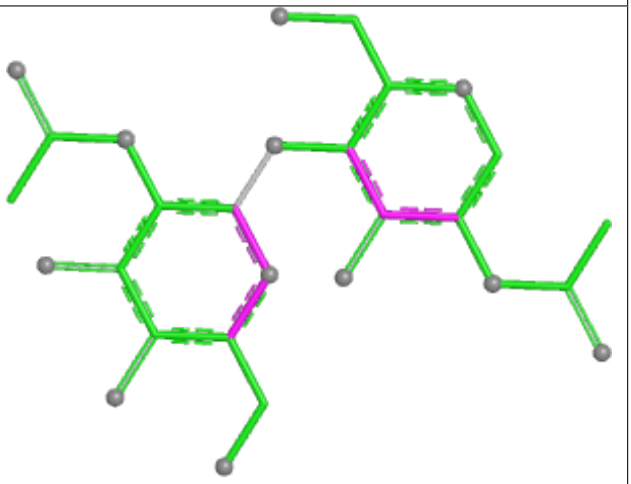
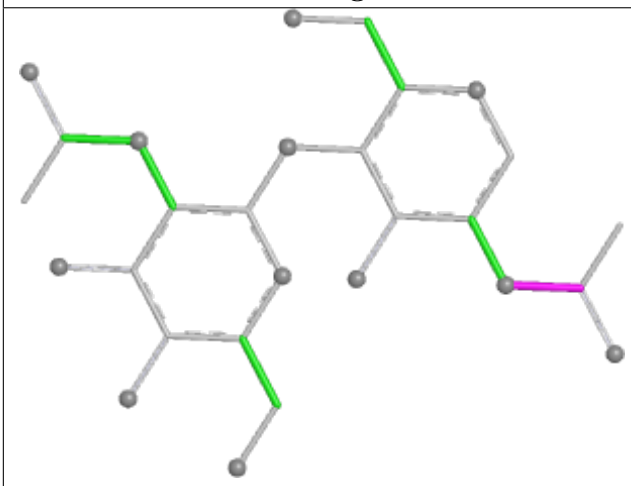


Bond angles



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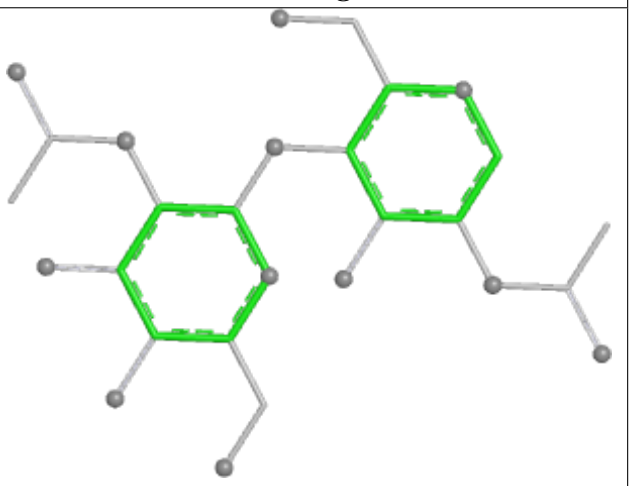
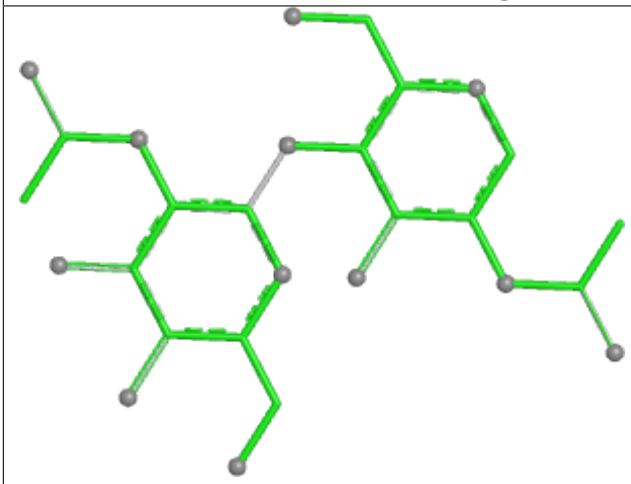


Rings

Oligosaccharide Chain P



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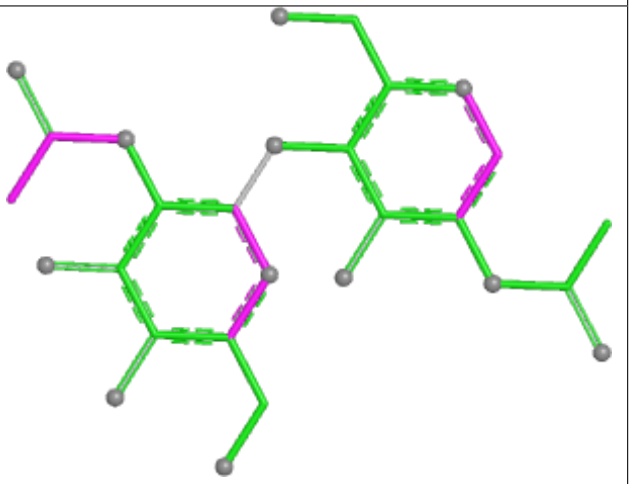
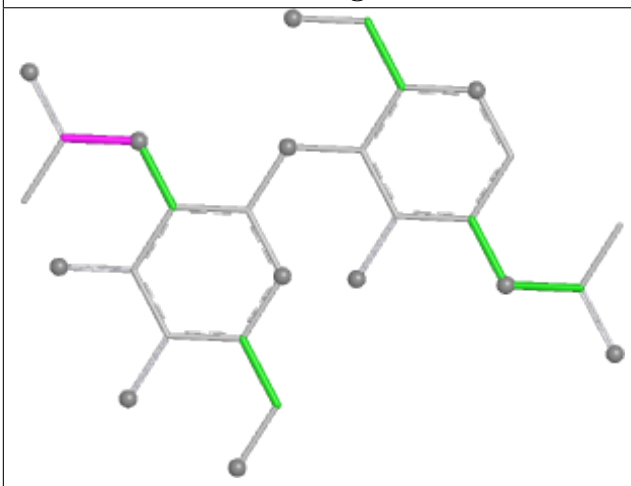
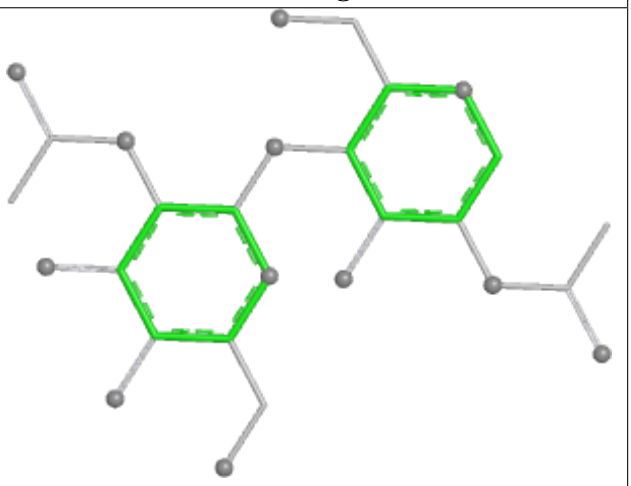


Bond angles

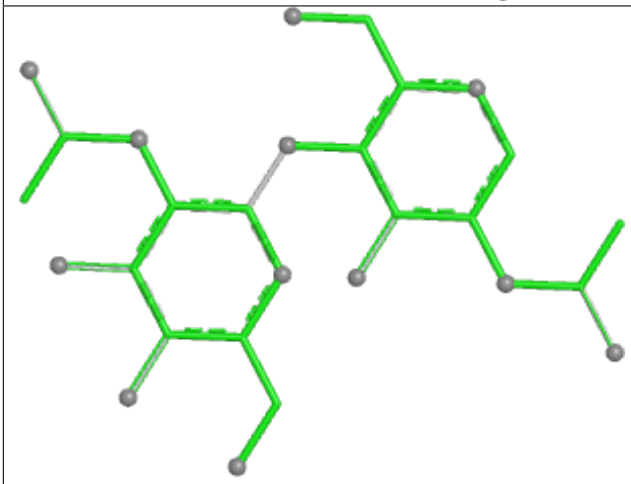


Torsions



Rings

Oligosaccharide Chain Q



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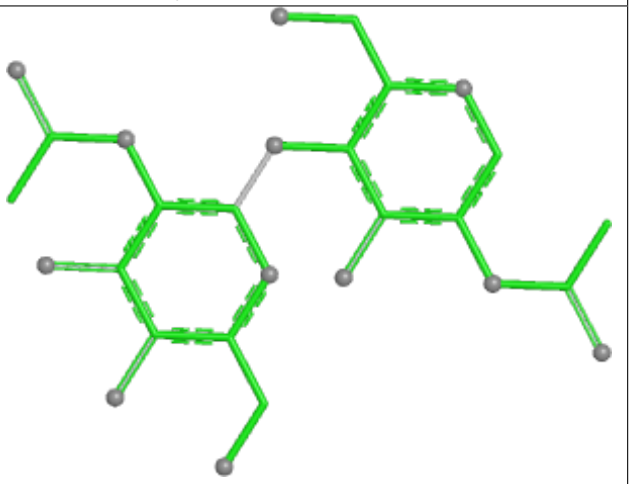
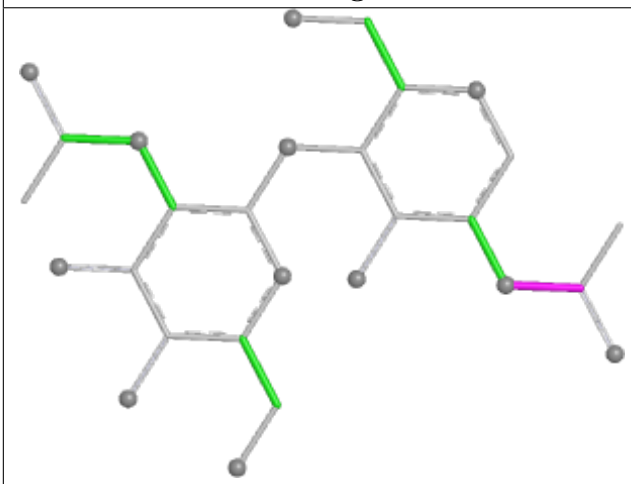


Bond angles



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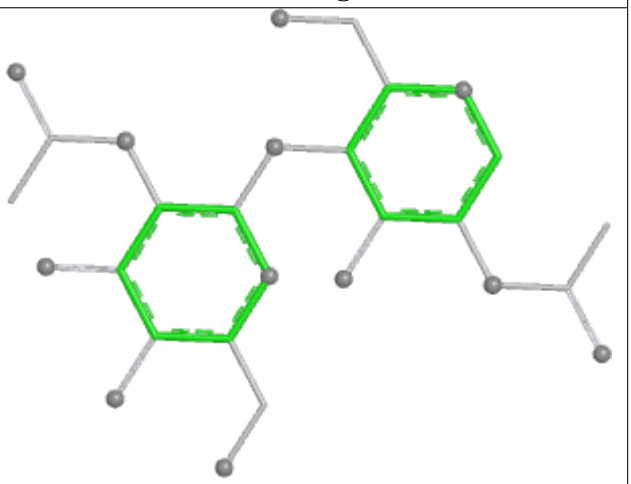
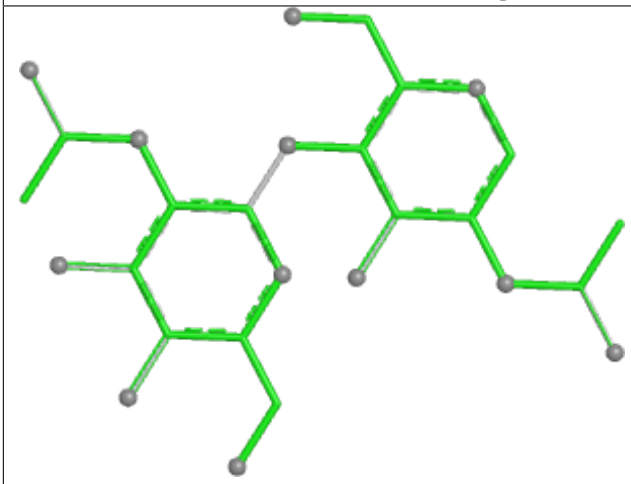
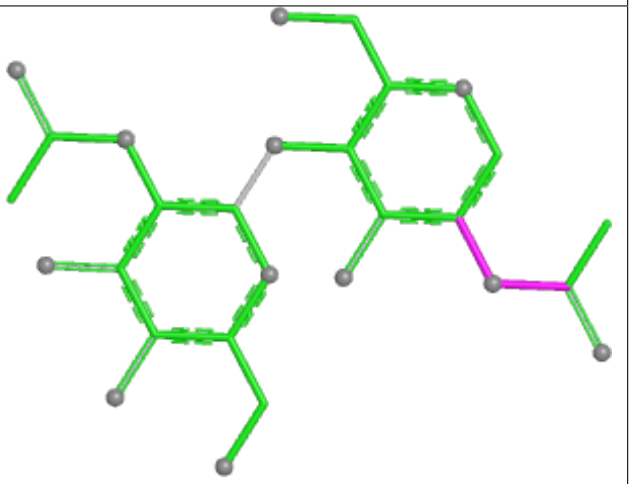


Rings

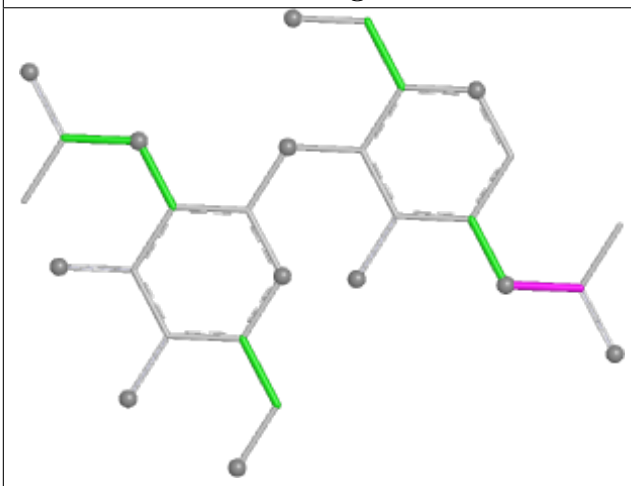
Oligosaccharide Chain R



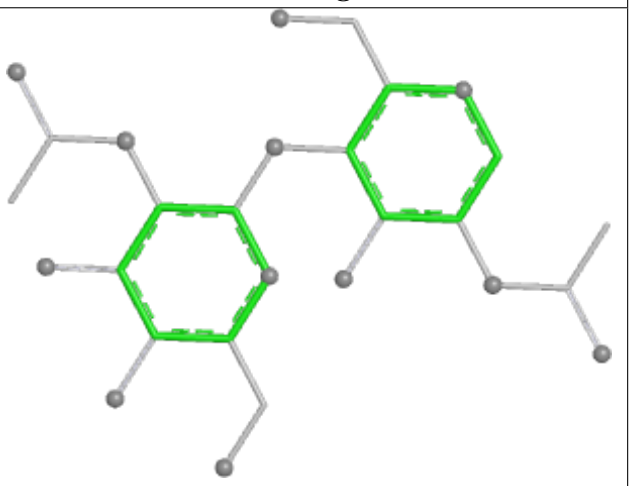
Bond lengths



Bond angles

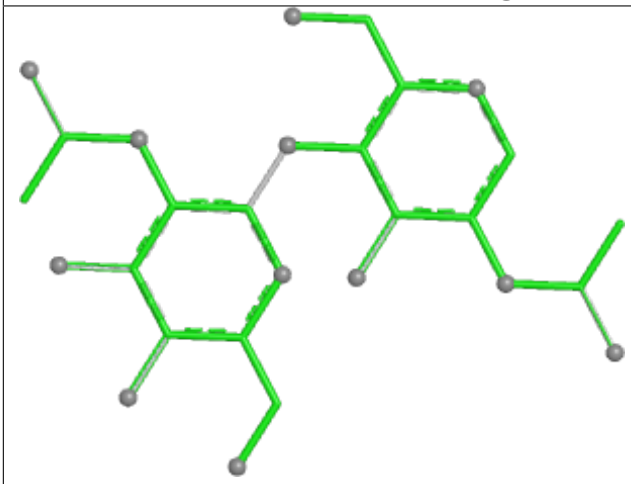


Torsions



Rings

Oligosaccharide Chain S



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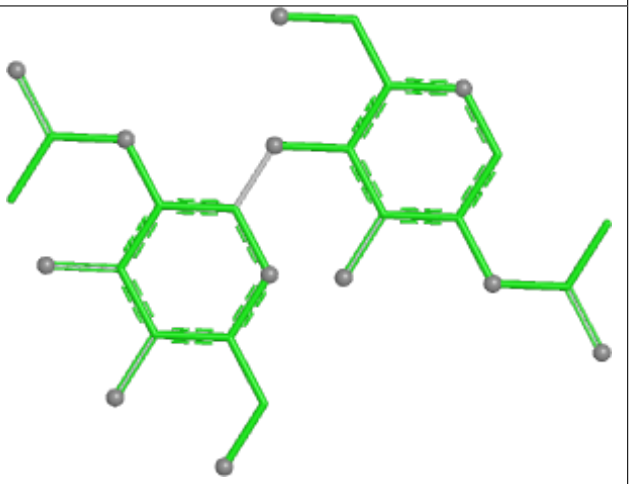
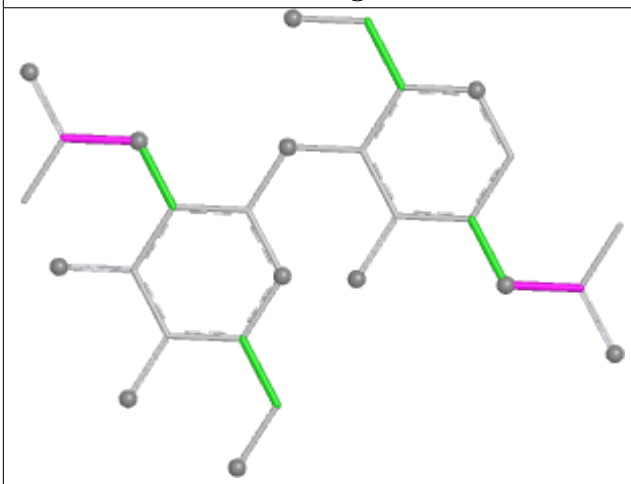
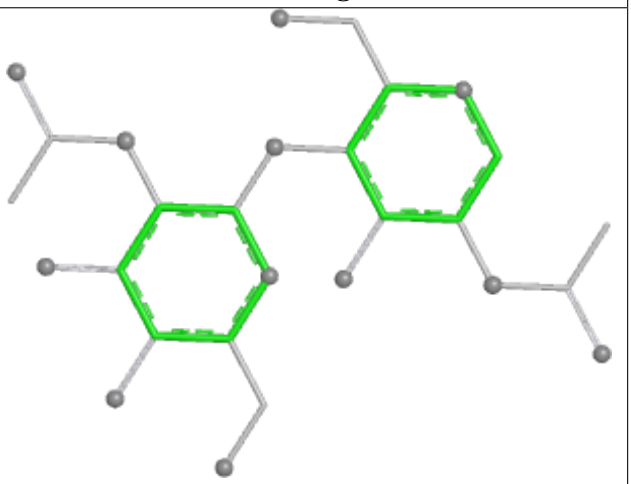


Bond angles

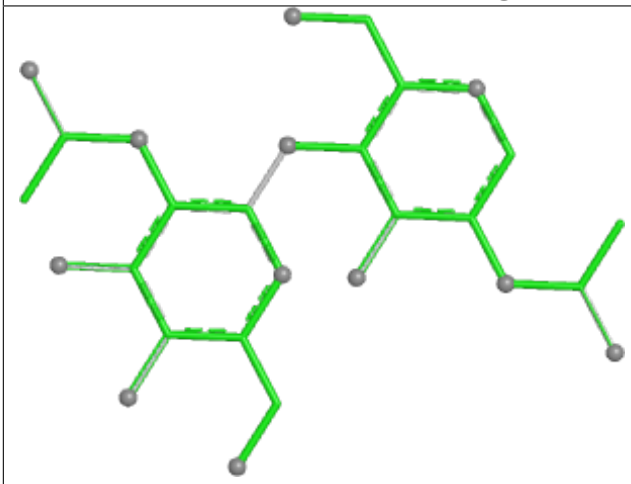


Torsions

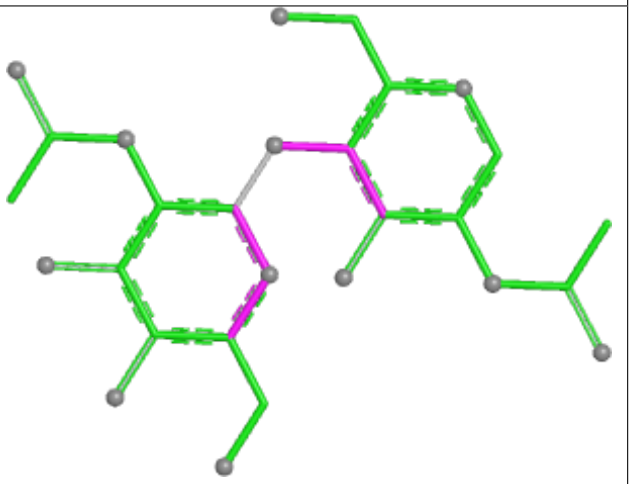


Rings

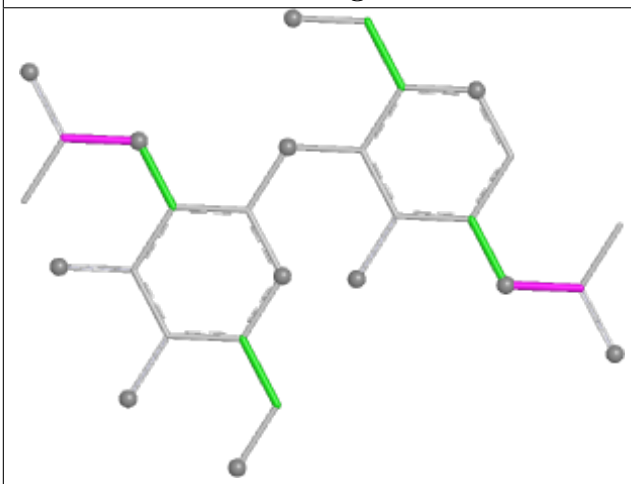
Oligosaccharide Chain T



Bond lengths



Bond angles



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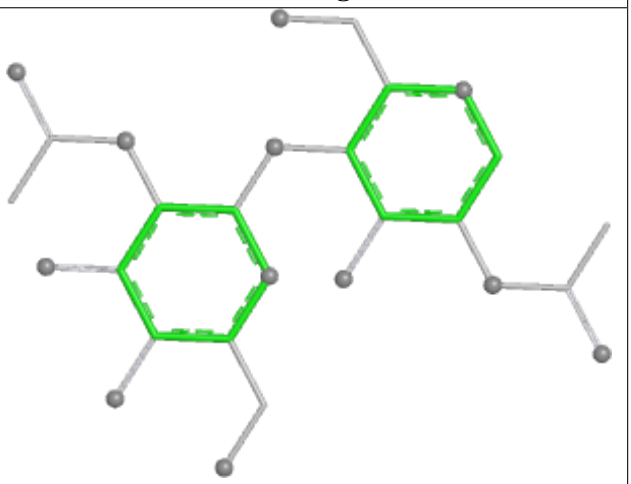
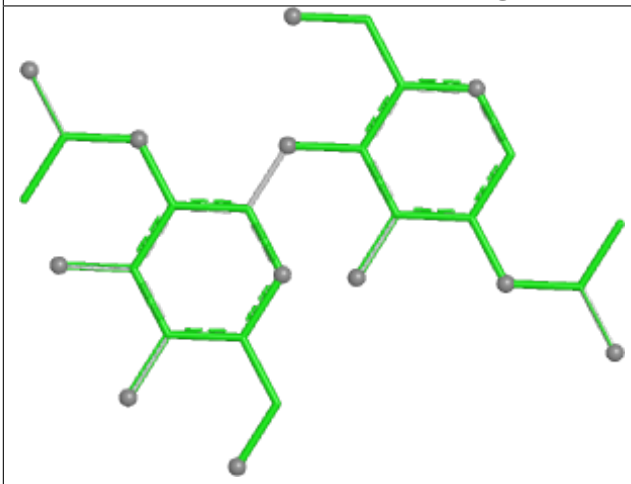
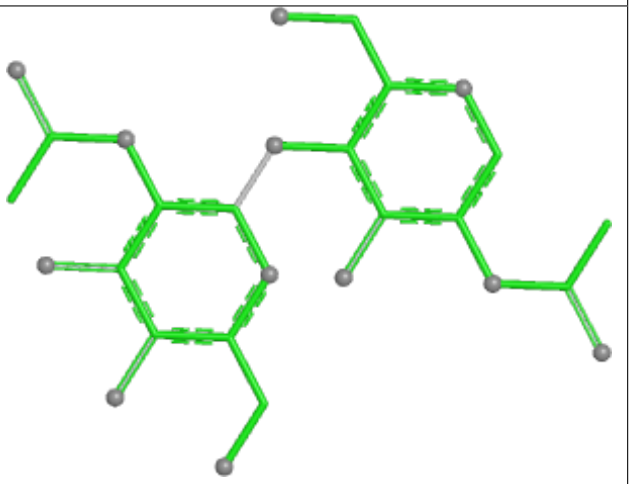


Rings

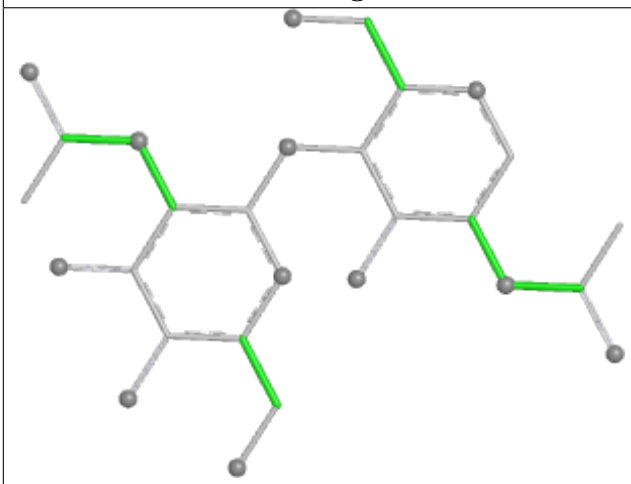
Oligosaccharide Chain U



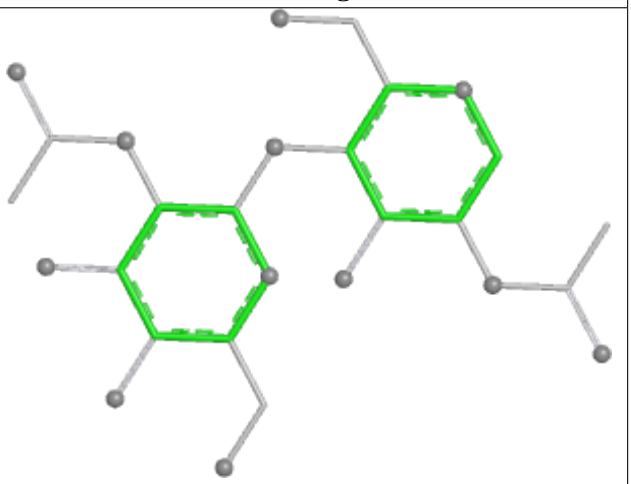
Bond lengths



Bond angles

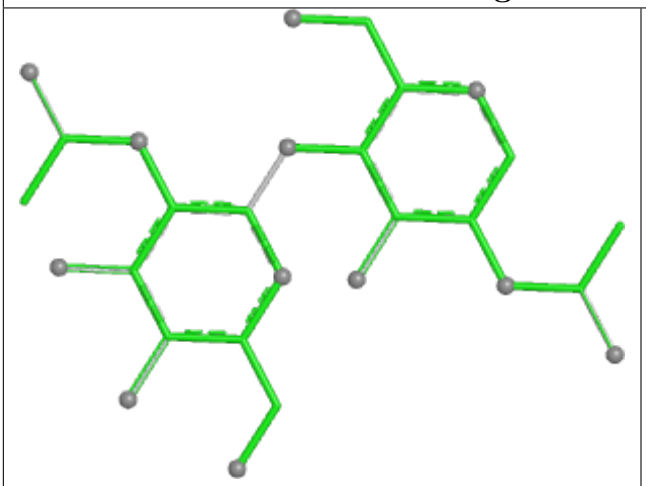


Torsions

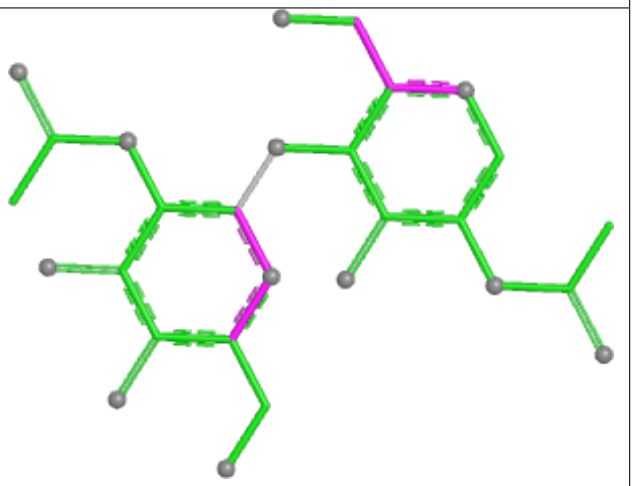


Rings

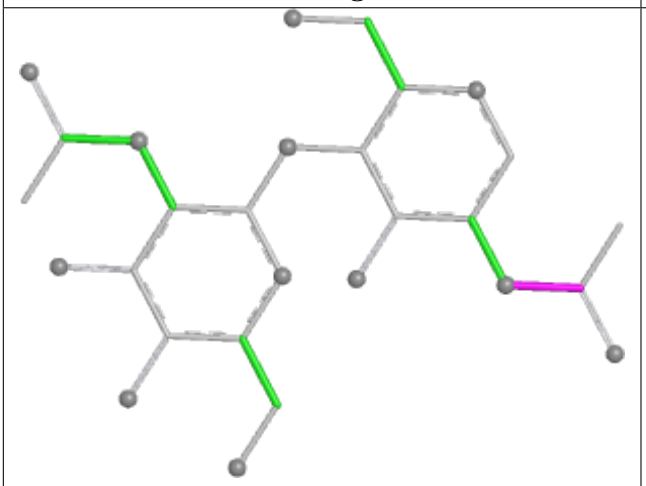
Oligosaccharide Chain V



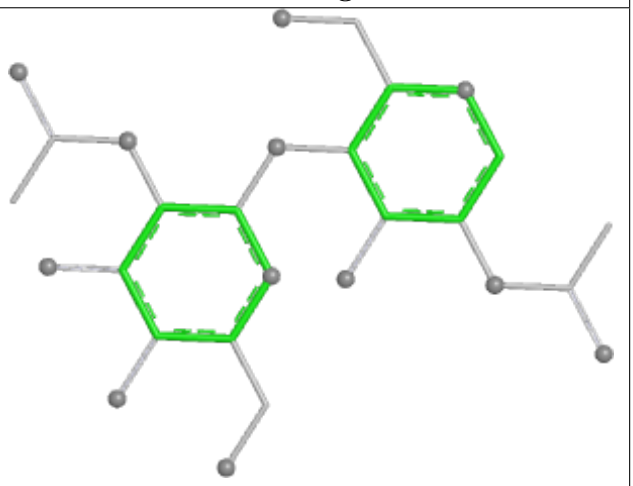
Bond lengths



Bond angles



Torsions



Rings

5.6 Ligand geometry (i)

28 ligands are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
4	NAG	A	1308	1	14,14,15	0.46	0	17,19,21	1.16	2 (11%)
4	NAG	C	1408	1	14,14,15	0.49	0	17,19,21	0.67	0
4	NAG	C	1407	1	14,14,15	0.45	0	17,19,21	1.10	1 (5%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
4	NAG	A	1304	1	14,14,15	0.57	0	17,19,21	1.08	1 (5%)
4	NAG	C	1409	1	14,14,15	0.51	0	17,19,21	1.09	1 (5%)
4	NAG	B	1310	1	14,14,15	0.43	0	17,19,21	0.91	1 (5%)
4	NAG	C	1406	1	14,14,15	0.61	0	17,19,21	1.28	3 (17%)
4	NAG	A	1305	1	14,14,15	0.48	0	17,19,21	0.78	1 (5%)
4	NAG	C	1405	1	14,14,15	0.54	0	17,19,21	1.29	2 (11%)
4	NAG	B	1304	1	14,14,15	0.46	0	17,19,21	1.29	1 (5%)
4	NAG	A	1306	1	14,14,15	0.52	0	17,19,21	0.64	0
4	NAG	A	1302	1	14,14,15	0.39	0	17,19,21	0.60	0
4	NAG	C	1401	1	14,14,15	0.44	0	17,19,21	1.07	2 (11%)
4	NAG	A	1301	1	14,14,15	0.44	0	17,19,21	0.70	1 (5%)
4	NAG	C	1403	1	14,14,15	0.41	0	17,19,21	0.97	1 (5%)
4	NAG	B	1311	1	14,14,15	0.65	0	17,19,21	1.82	4 (23%)
4	NAG	B	1306	1	14,14,15	0.52	0	17,19,21	0.61	0
4	NAG	B	1307	1	14,14,15	0.52	0	17,19,21	1.22	2 (11%)
4	NAG	B	1308	1	14,14,15	0.49	0	17,19,21	0.85	0
4	NAG	B	1305	1	14,14,15	0.53	0	17,19,21	0.64	0
4	NAG	A	1303	1	14,14,15	0.53	0	17,19,21	0.67	0
4	NAG	C	1404	1	14,14,15	0.49	0	17,19,21	0.82	1 (5%)
4	NAG	B	1301	1	14,14,15	0.50	0	17,19,21	1.02	1 (5%)
4	NAG	B	1309	1	14,14,15	0.53	0	17,19,21	1.45	1 (5%)
4	NAG	C	1402	1	14,14,15	0.43	0	17,19,21	1.29	1 (5%)
4	NAG	B	1302	1	14,14,15	0.52	0	17,19,21	0.76	1 (5%)
4	NAG	B	1303	1	14,14,15	0.44	0	17,19,21	0.82	1 (5%)
4	NAG	A	1307	1	14,14,15	0.62	0	17,19,21	1.32	3 (17%)

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	A	1308	1	-	0/6/23/26	0/1/1/1
4	NAG	C	1408	1	-	0/6/23/26	0/1/1/1
4	NAG	C	1407	1	-	4/6/23/26	0/1/1/1
4	NAG	A	1304	1	-	2/6/23/26	0/1/1/1
4	NAG	C	1409	1	-	3/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	NAG	B	1310	1	-	2/6/23/26	0/1/1/1
4	NAG	C	1406	1	-	3/6/23/26	0/1/1/1
4	NAG	A	1305	1	-	2/6/23/26	0/1/1/1
4	NAG	C	1405	1	-	3/6/23/26	0/1/1/1
4	NAG	B	1304	1	-	3/6/23/26	0/1/1/1
4	NAG	A	1306	1	-	2/6/23/26	0/1/1/1
4	NAG	A	1302	1	-	2/6/23/26	0/1/1/1
4	NAG	C	1401	1	-	4/6/23/26	0/1/1/1
4	NAG	A	1301	1	-	2/6/23/26	0/1/1/1
4	NAG	C	1403	1	-	2/6/23/26	0/1/1/1
4	NAG	B	1311	1	1/1/5/7	0/6/23/26	0/1/1/1
4	NAG	B	1306	1	-	2/6/23/26	0/1/1/1
4	NAG	B	1307	1	-	2/6/23/26	0/1/1/1
4	NAG	B	1308	1	-	2/6/23/26	0/1/1/1
4	NAG	B	1305	1	-	2/6/23/26	0/1/1/1
4	NAG	A	1303	1	-	2/6/23/26	0/1/1/1
4	NAG	C	1404	1	-	2/6/23/26	0/1/1/1
4	NAG	B	1301	1	-	2/6/23/26	0/1/1/1
4	NAG	B	1309	1	-	0/6/23/26	0/1/1/1
4	NAG	C	1402	1	-	2/6/23/26	0/1/1/1
4	NAG	B	1302	1	-	4/6/23/26	0/1/1/1
4	NAG	B	1303	1	-	0/6/23/26	0/1/1/1
4	NAG	A	1307	1	-	4/6/23/26	0/1/1/1

There are no bond length outliers.

All (32) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	B	1309	NAG	C1-O5-C5	5.05	119.03	112.19
4	C	1402	NAG	C1-O5-C5	4.73	118.60	112.19
4	B	1304	NAG	C1-O5-C5	4.25	117.95	112.19
4	B	1311	NAG	O5-C1-C2	4.05	117.68	111.29
4	B	1311	NAG	C1-O5-C5	4.03	117.65	112.19
4	C	1405	NAG	C1-O5-C5	3.85	117.40	112.19
4	B	1301	NAG	C1-O5-C5	3.56	117.02	112.19
4	A	1304	NAG	C1-O5-C5	3.37	116.75	112.19
4	A	1307	NAG	C1-O5-C5	3.36	116.74	112.19

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	C	1409	NAG	C1-O5-C5	3.19	116.51	112.19
4	C	1406	NAG	C2-N2-C7	3.17	127.42	122.90
4	B	1311	NAG	O5-C5-C6	3.14	112.13	107.20
4	C	1406	NAG	C1-C2-N2	2.95	115.53	110.49
4	C	1403	NAG	C1-O5-C5	2.88	116.10	112.19
4	B	1307	NAG	C1-O5-C5	2.88	116.09	112.19
4	A	1307	NAG	C2-N2-C7	2.82	126.92	122.90
4	C	1407	NAG	C1-O5-C5	2.76	115.93	112.19
4	B	1311	NAG	C3-C4-C5	2.72	115.09	110.24
4	A	1308	NAG	O5-C1-C2	-2.69	107.04	111.29
4	B	1310	NAG	C1-O5-C5	2.65	115.79	112.19
4	A	1305	NAG	C1-O5-C5	2.42	115.47	112.19
4	C	1404	NAG	C1-O5-C5	2.35	115.37	112.19
4	A	1308	NAG	C1-O5-C5	2.34	115.36	112.19
4	C	1406	NAG	C1-O5-C5	2.31	115.33	112.19
4	C	1405	NAG	O5-C1-C2	-2.30	107.66	111.29
4	B	1303	NAG	C1-O5-C5	2.25	115.24	112.19
4	B	1302	NAG	O5-C5-C6	2.16	110.59	107.20
4	C	1401	NAG	C2-N2-C7	2.10	125.90	122.90
4	C	1401	NAG	C1-O5-C5	2.10	115.03	112.19
4	A	1301	NAG	C1-O5-C5	2.09	115.02	112.19
4	B	1307	NAG	C3-C4-C5	2.03	113.86	110.24
4	A	1307	NAG	O3-C3-C4	-2.02	105.68	110.35

All (1) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
4	B	1311	NAG	C1

All (58) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	A	1301	NAG	C8-C7-N2-C2
4	A	1301	NAG	O7-C7-N2-C2
4	A	1302	NAG	C8-C7-N2-C2
4	A	1302	NAG	O7-C7-N2-C2
4	A	1307	NAG	C3-C2-N2-C7
4	A	1307	NAG	C8-C7-N2-C2
4	A	1307	NAG	O7-C7-N2-C2
4	B	1302	NAG	C8-C7-N2-C2
4	B	1302	NAG	O7-C7-N2-C2
4	B	1304	NAG	O7-C7-N2-C2

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Mol	Chain	Res	Type	Atoms
4	B	1307	NAG	C8-C7-N2-C2
4	B	1310	NAG	C8-C7-N2-C2
4	B	1310	NAG	O7-C7-N2-C2
4	C	1406	NAG	C8-C7-N2-C2
4	C	1406	NAG	O7-C7-N2-C2
4	C	1409	NAG	O7-C7-N2-C2
4	B	1304	NAG	C8-C7-N2-C2
4	B	1307	NAG	O7-C7-N2-C2
4	C	1405	NAG	O7-C7-N2-C2
4	C	1409	NAG	C8-C7-N2-C2
4	A	1304	NAG	C8-C7-N2-C2
4	A	1306	NAG	C8-C7-N2-C2
4	B	1301	NAG	C8-C7-N2-C2
4	C	1401	NAG	C8-C7-N2-C2
4	C	1402	NAG	C8-C7-N2-C2
4	C	1405	NAG	C8-C7-N2-C2
4	C	1407	NAG	C8-C7-N2-C2
4	B	1301	NAG	O7-C7-N2-C2
4	B	1308	NAG	C8-C7-N2-C2
4	C	1407	NAG	O7-C7-N2-C2
4	C	1406	NAG	C1-C2-N2-C7
4	A	1304	NAG	O7-C7-N2-C2
4	A	1306	NAG	O7-C7-N2-C2
4	B	1305	NAG	C8-C7-N2-C2
4	B	1308	NAG	O7-C7-N2-C2
4	C	1401	NAG	O7-C7-N2-C2
4	C	1402	NAG	O7-C7-N2-C2
4	B	1302	NAG	O5-C5-C6-O6
4	A	1305	NAG	C8-C7-N2-C2
4	C	1404	NAG	C8-C7-N2-C2
4	A	1303	NAG	C8-C7-N2-C2
4	B	1305	NAG	O7-C7-N2-C2
4	B	1306	NAG	C8-C7-N2-C2
4	C	1403	NAG	C8-C7-N2-C2
4	C	1403	NAG	O7-C7-N2-C2
4	C	1404	NAG	O7-C7-N2-C2
4	C	1409	NAG	O5-C5-C6-O6
4	A	1305	NAG	O7-C7-N2-C2
4	A	1307	NAG	C1-C2-N2-C7
4	C	1401	NAG	C1-C2-N2-C7
4	A	1303	NAG	O7-C7-N2-C2
4	C	1405	NAG	O5-C5-C6-O6

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Mol	Chain	Res	Type	Atoms
4	B	1306	NAG	O7-C7-N2-C2
4	B	1304	NAG	O5-C5-C6-O6
4	C	1401	NAG	C3-C2-N2-C7
4	C	1407	NAG	C4-C5-C6-O6
4	C	1407	NAG	O5-C5-C6-O6
4	B	1302	NAG	C4-C5-C6-O6

There are no ring outliers.

4 monomers are involved in 6 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	A	1308	NAG	1	0
4	C	1403	NAG	1	0
4	B	1311	NAG	2	0
4	B	1306	NAG	2	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.

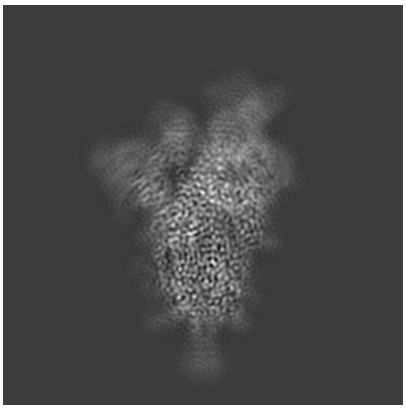
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-14531. These allow visual inspection of the internal detail of the map and identification of artifacts.

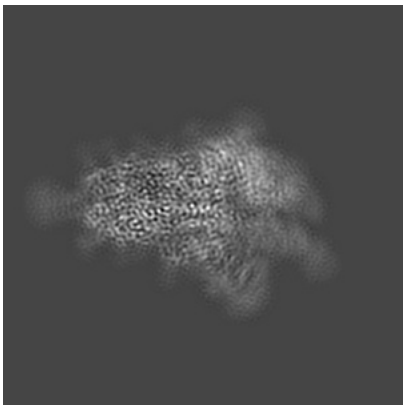
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

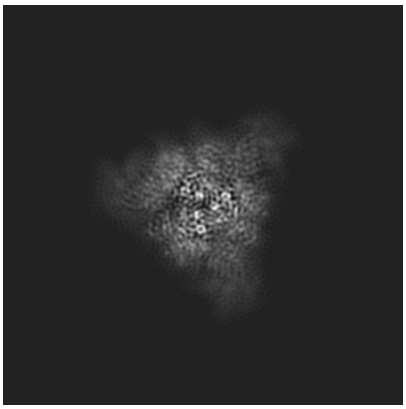
6.1.1 Primary map



X

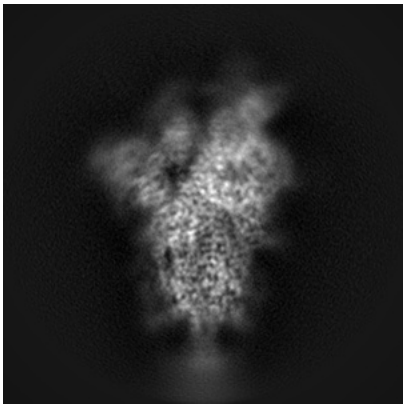


Y

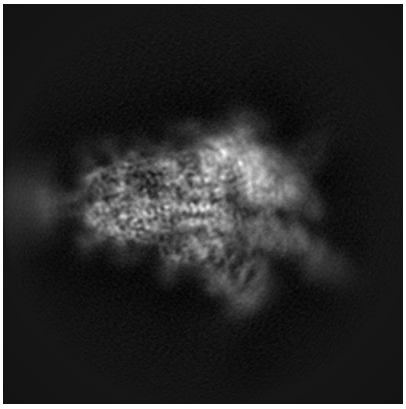


Z

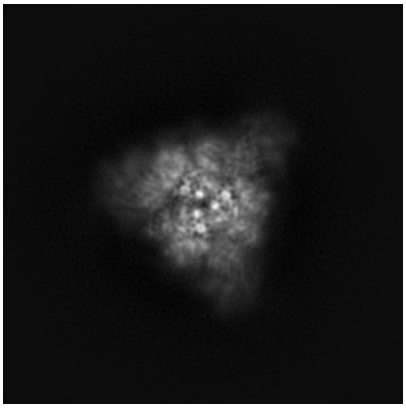
6.1.2 Raw map



X



Y

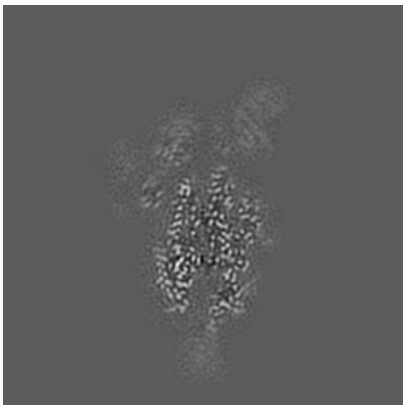


Z

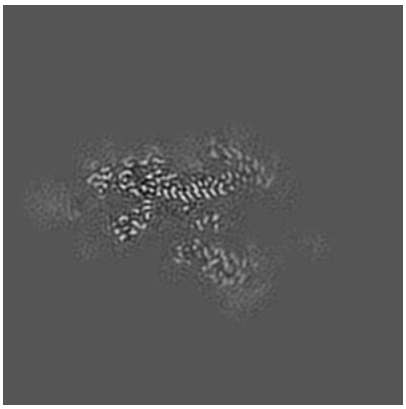
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

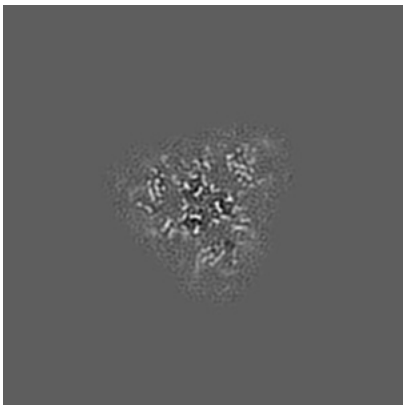
6.2.1 Primary map



X Index: 130

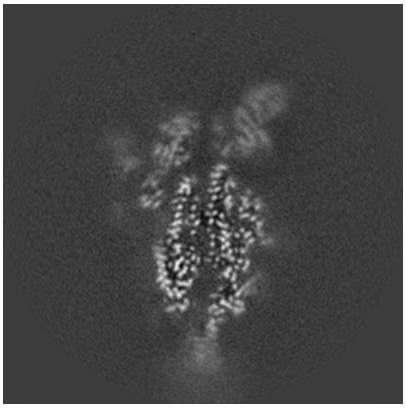


Y Index: 130

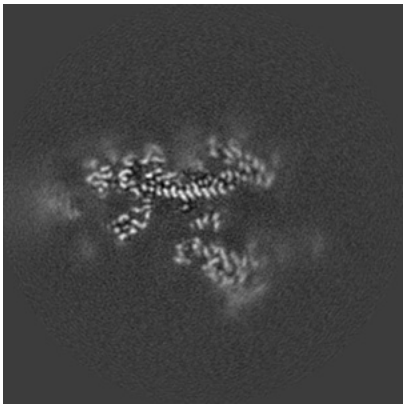


Z Index: 130

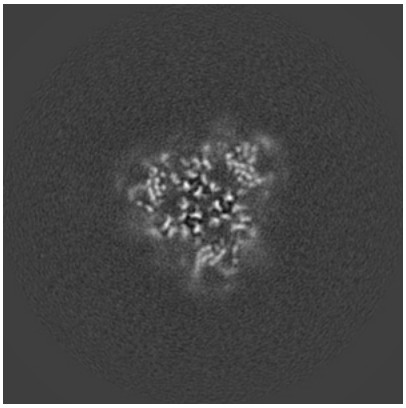
6.2.2 Raw map



X Index: 130



Y Index: 130

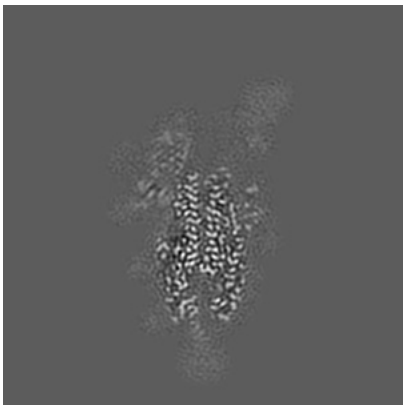


Z Index: 130

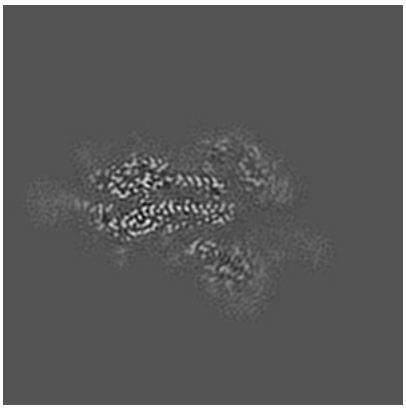
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

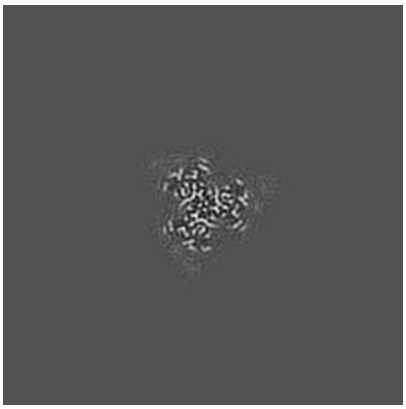
6.3.1 Primary map



X Index: 125

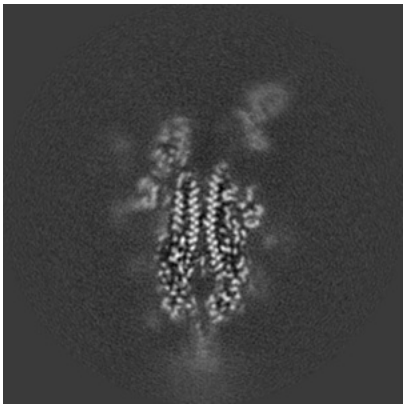


Y Index: 136

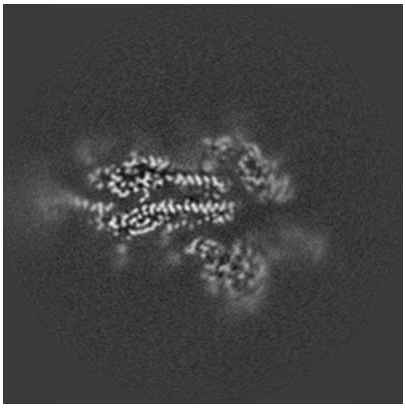


Z Index: 92

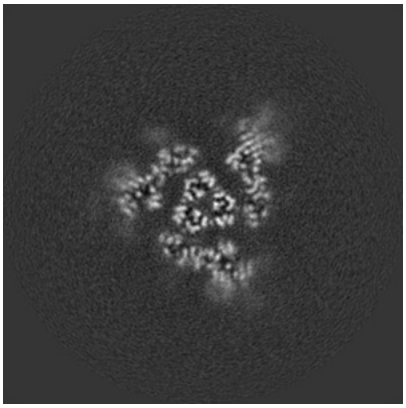
6.3.2 Raw map



X Index: 127



Y Index: 136

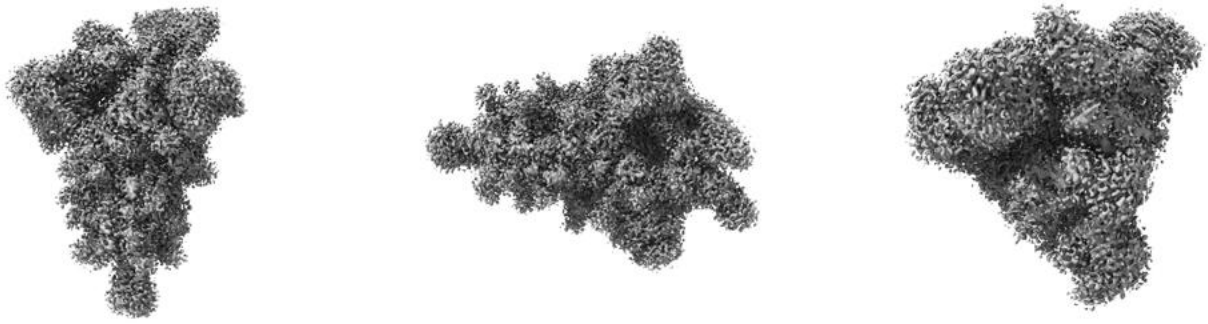


Z Index: 142

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

6.4 Orthogonal surface views (i)

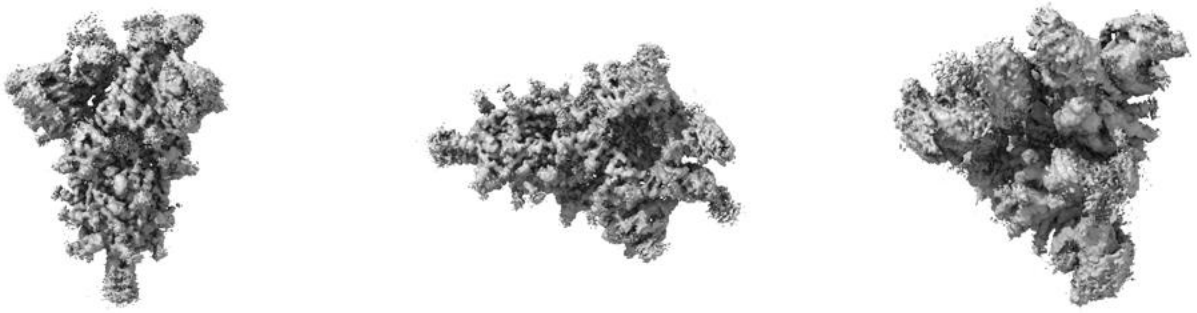
6.4.1 Primary map



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.01. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.4.2 Raw map



X Y Z

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

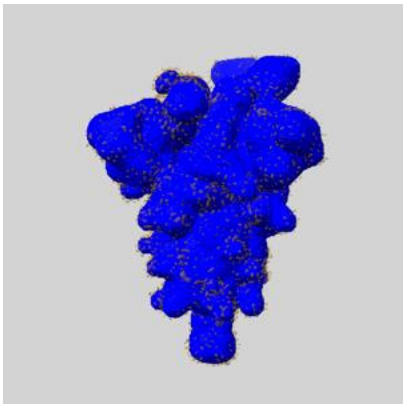
6.5 Mask visualisation (i)

This section shows the 3D surface view of the primary map at 50% transparency overlaid with the specified mask at 0% transparency

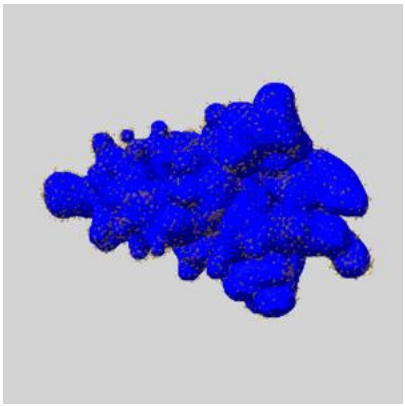
A mask typically either:

- Encompasses the whole structure
- Separates out a domain, a functional unit, a monomer or an area of interest from a larger structure

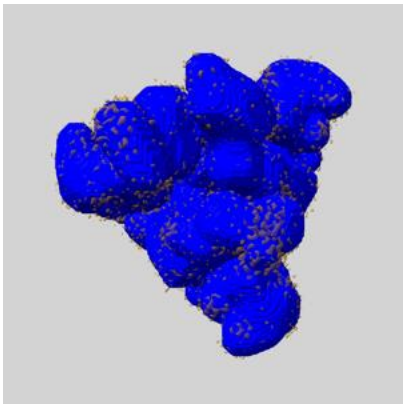
6.5.1 emd_14531_msk_1.map (i)



X



Y

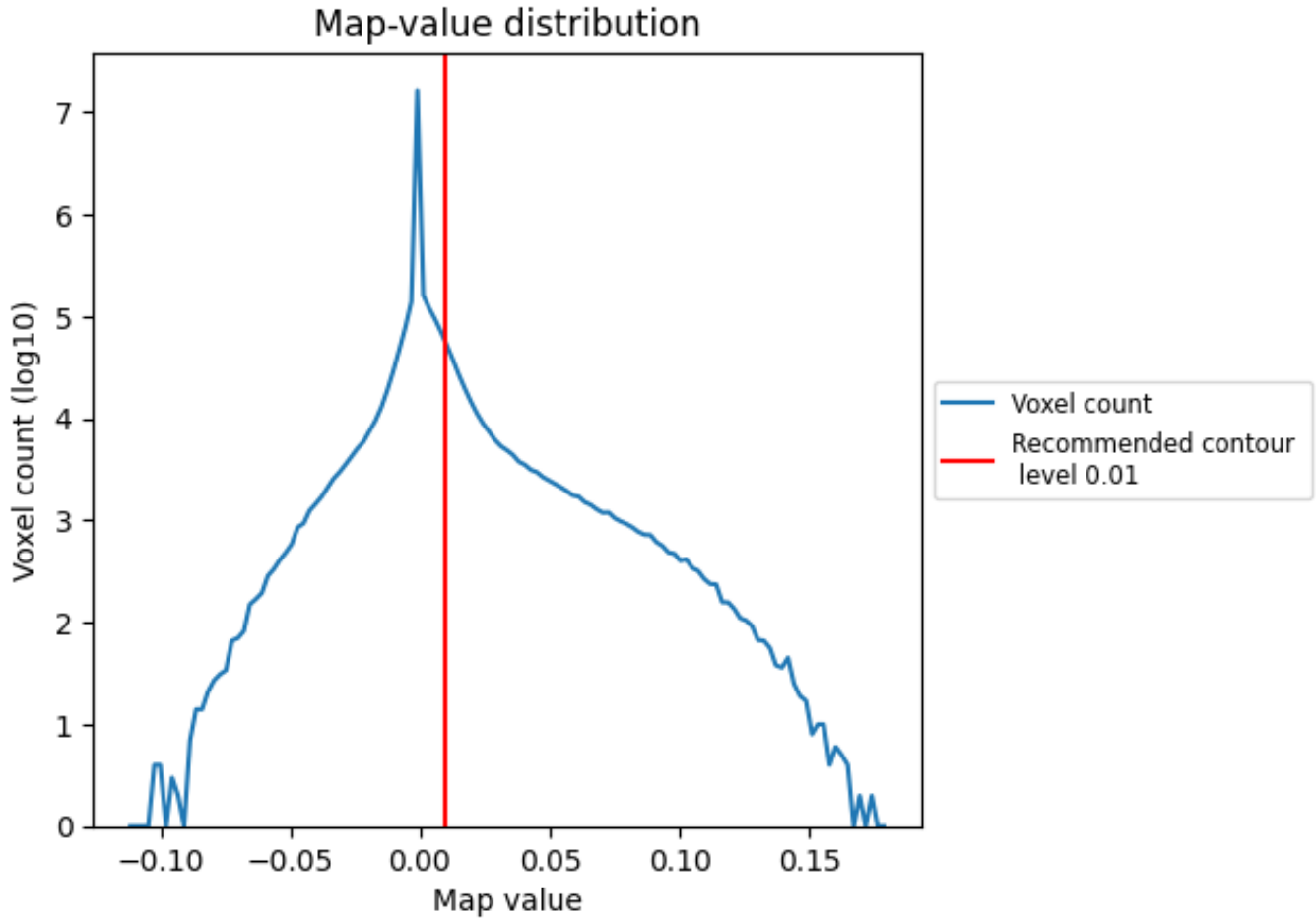


Z

7 Map analysis

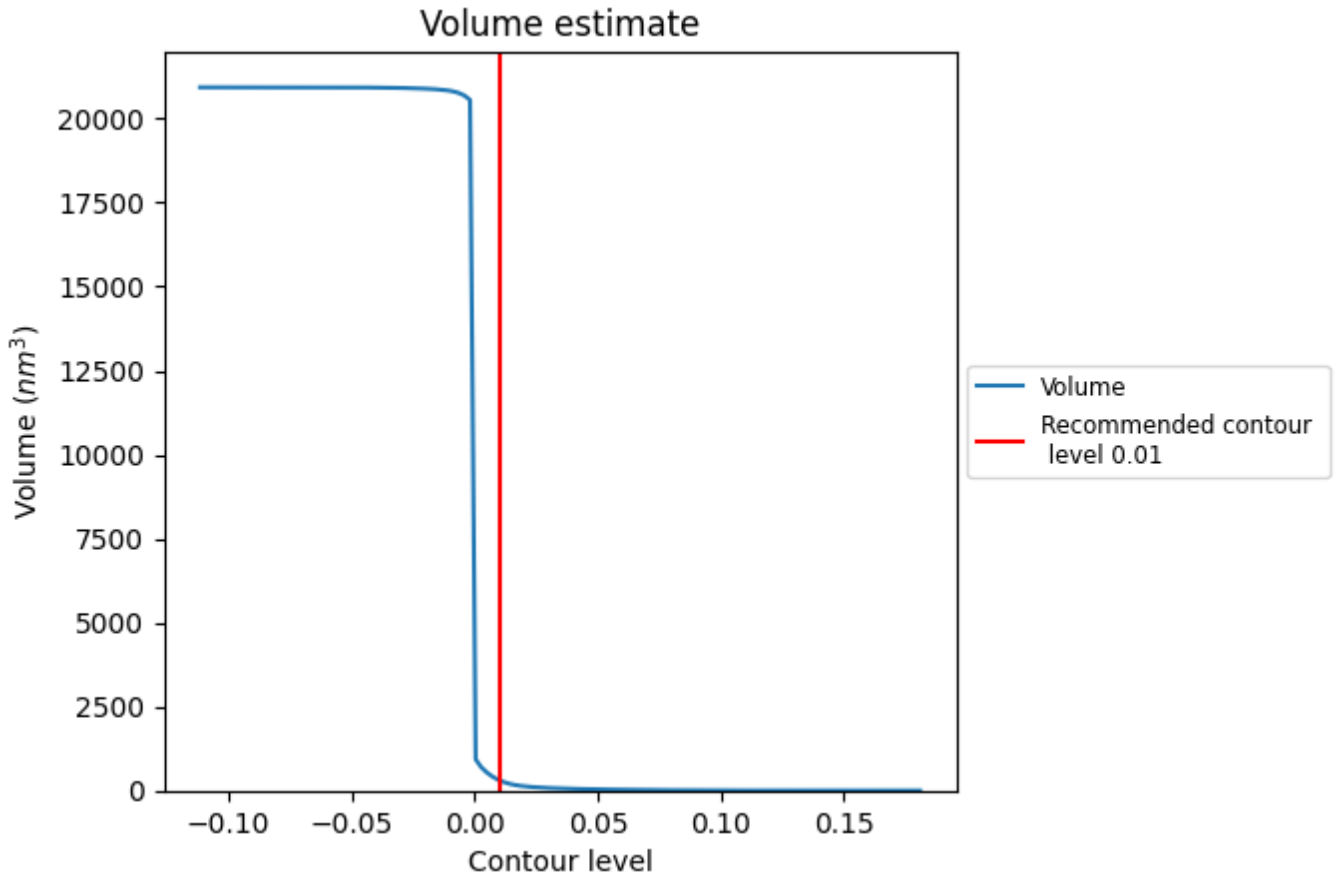
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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

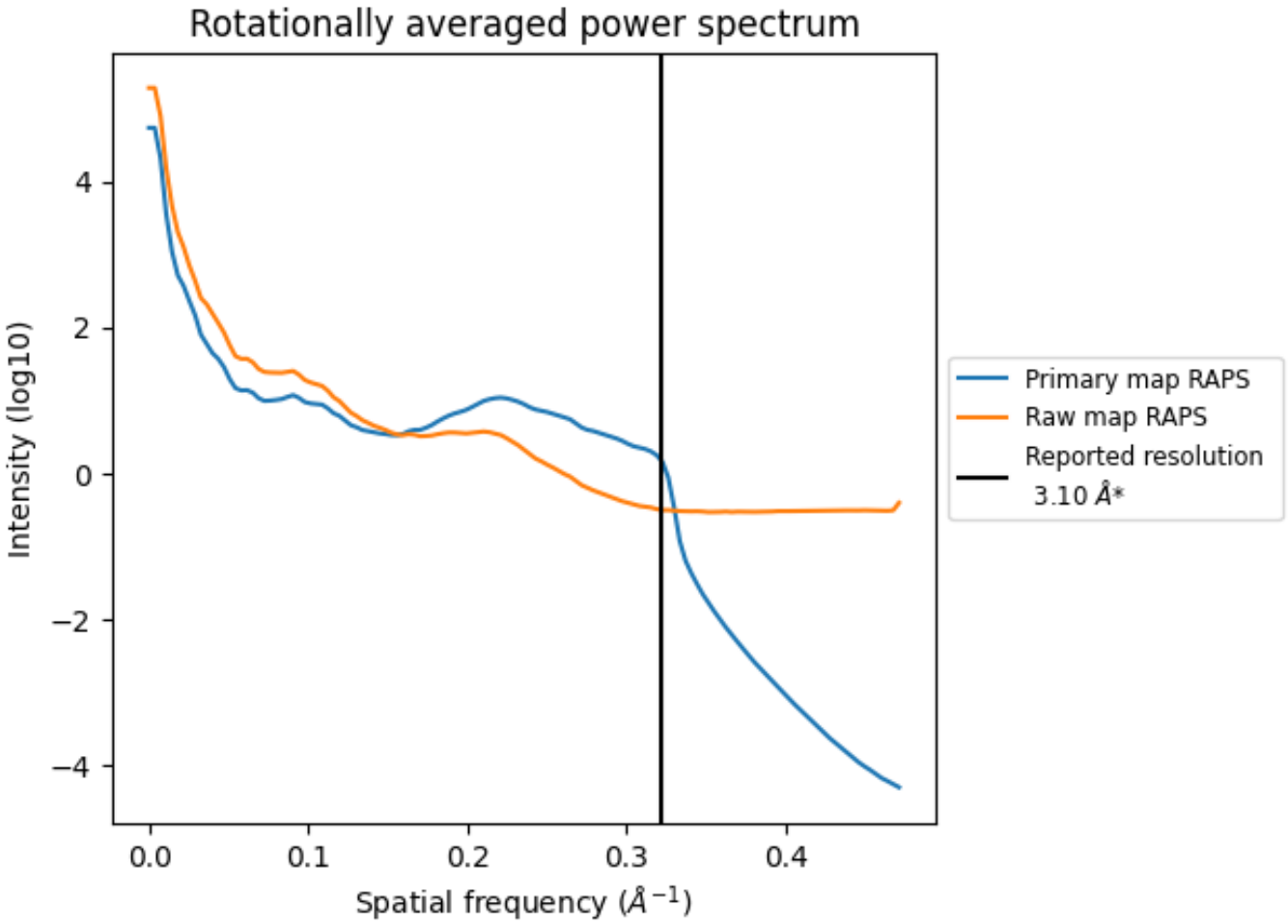
7.2 Volume estimate (i)



The volume at the recommended contour level is 308 nm^3; this corresponds to an approximate mass of 278 kDa.

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

7.3 Rotationally averaged power spectrum (i)

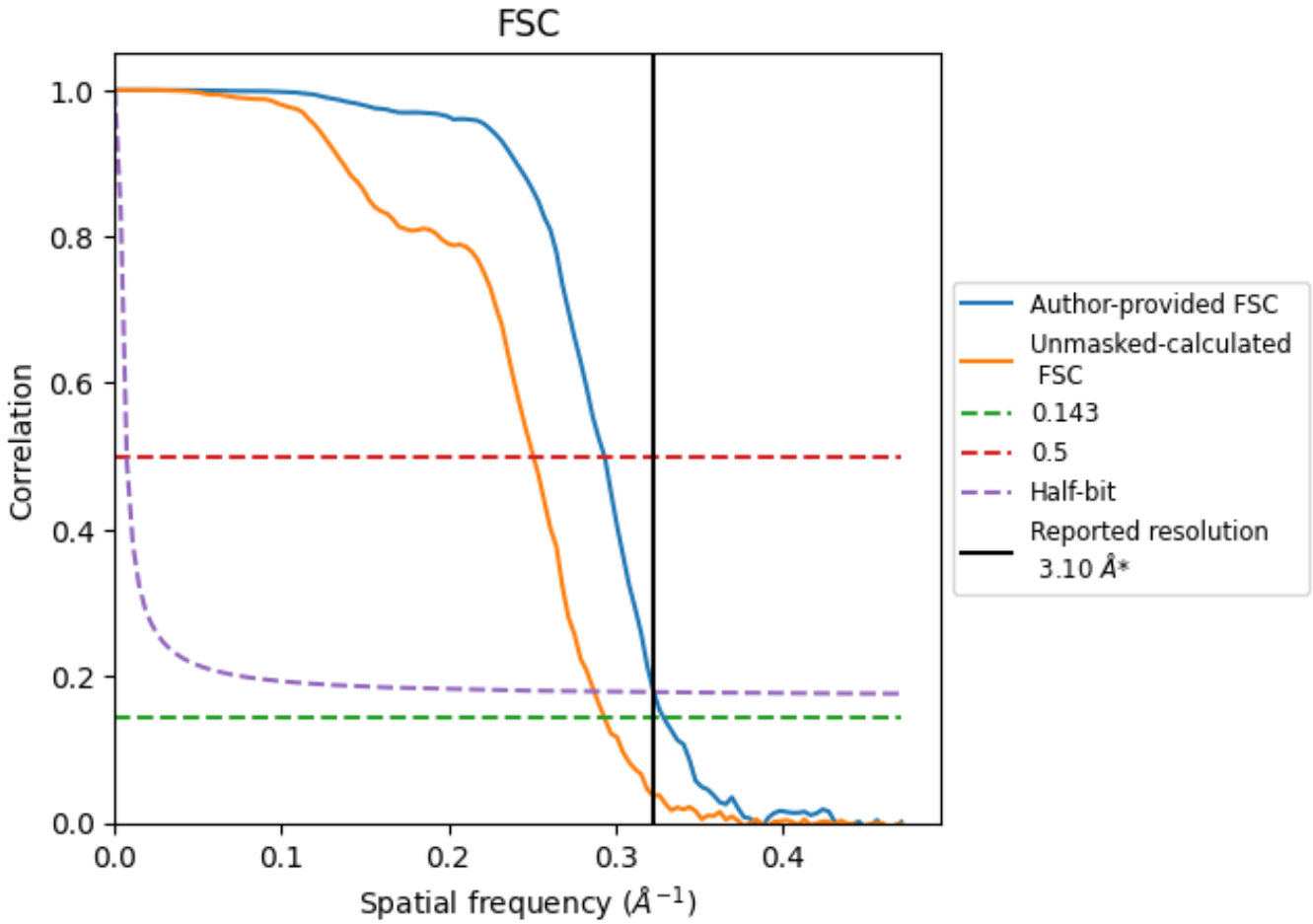


*Reported resolution corresponds to spatial frequency of 0.323 $Å^{-1}$

8 Fourier-Shell correlation

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

8.1 FSC



*Reported resolution corresponds to spatial frequency of 0.323 Å^{-1}

8.2 Resolution estimates (i)

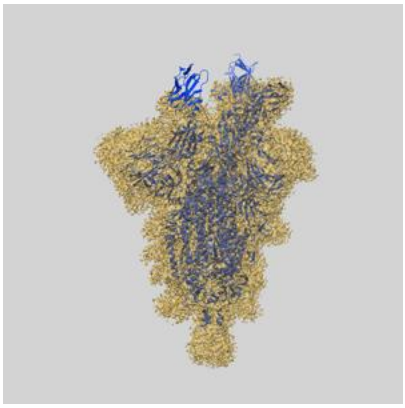
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.10	-	-
Author-provided FSC curve	3.04	3.40	3.09
Unmasked-calculated*	3.40	3.98	3.48

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

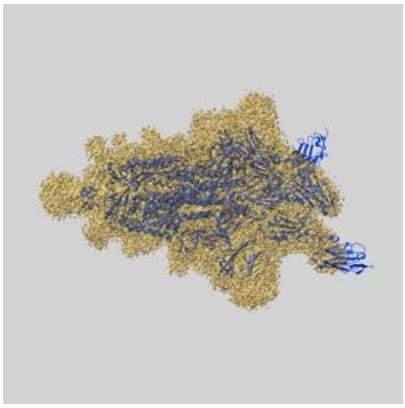
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-14531 and PDB model 7Z6V. Per-residue inclusion information can be found in section 3 on page 10.

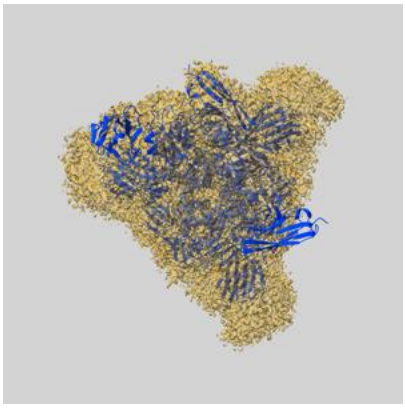
9.1 Map-model overlay



X



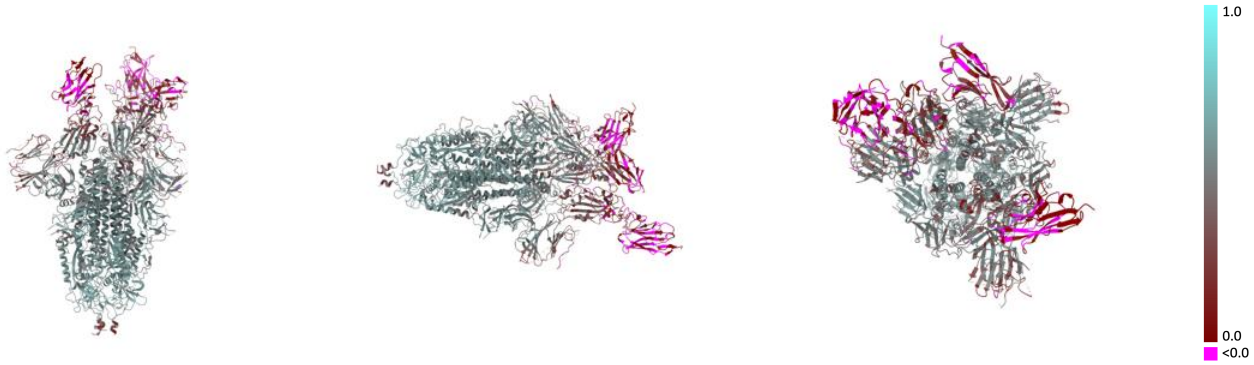
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.01 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

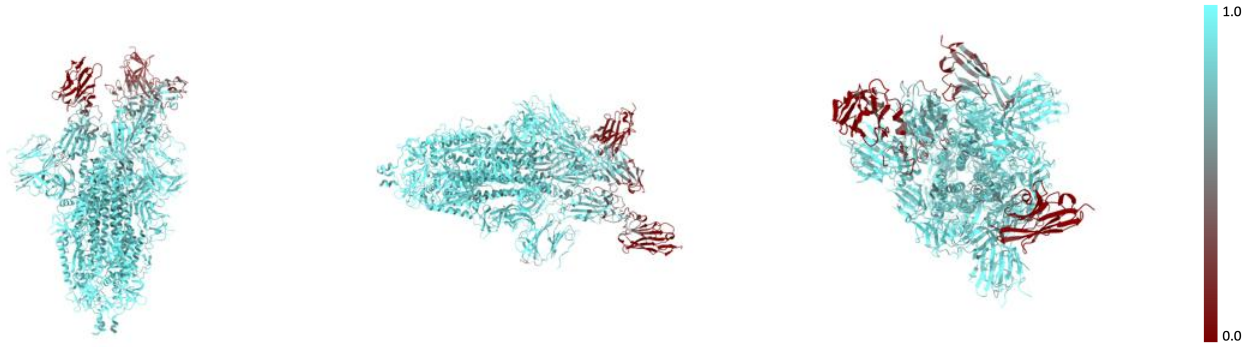
9.2 Q-score mapped to coordinate model (i)



X Y Z

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

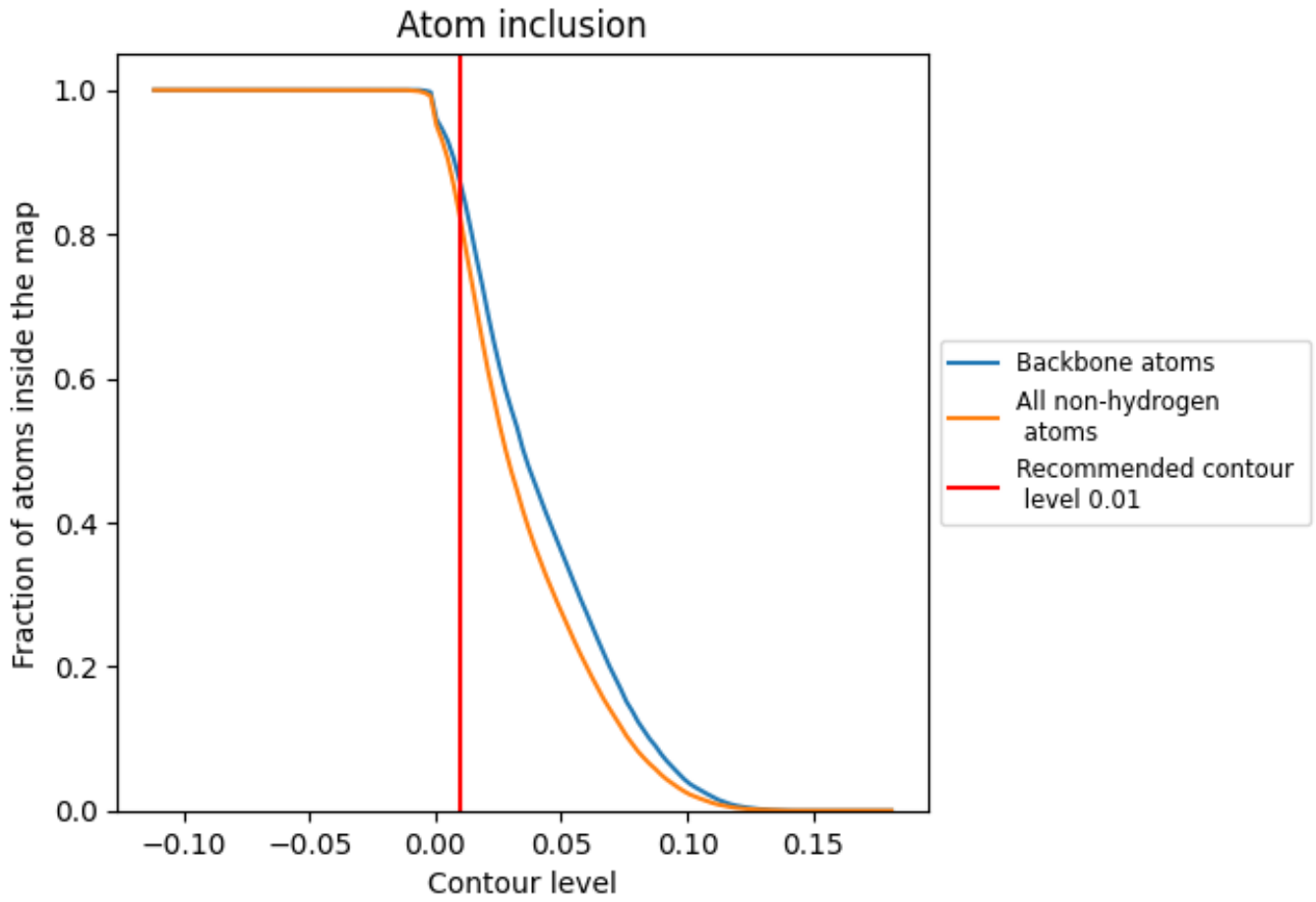
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.01).

9.4 Atom inclusion (i)



At the recommended contour level, 87% of all backbone atoms, 82% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.01) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8202	0.4340
A	0.8722	0.4700
B	0.9109	0.4970
C	0.8955	0.4860
D	0.7143	0.2120
E	0.7143	0.2620
F	0.6071	0.1890
G	0.7143	0.2200
H	0.8214	0.3550
I	0.8929	0.4000
J	0.7857	0.2870
K	0.4643	0.1450
L	0.9286	0.4750
M	0.6071	0.2210
N	0.8571	0.3800
O	0.9286	0.4020
P	0.5000	0.1670
Q	0.6786	0.2650
R	0.8929	0.4200
S	0.9286	0.4440
T	0.3929	0.1770
U	0.8929	0.3810
V	0.8571	0.3740
X	0.1161	-0.0050
Y	0.5544	0.1920
Z	0.0736	-0.0010