Full wwPDB EM Validation Report ⓘ

Oct 30, 2023 – 04:25 PM EDT

PDB ID	:	8CZZ
EMDB ID	:	EMD-27103
Title	:	Cryo-EM structure of T/F100 SOSIP.664 HIV-1 Env trimer with LMHS mutations in complex with Temsavir, 8ANC195, and 10-1074
Authors	:	Chen, Y.; Pozharski, E.; Tolbert, W.; Pazgier, M.
Deposited on	:	2022-05-25
Resolution	:	3.14 Å(reported)
Based on initial models	:	6NQD, 4FQ2

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:

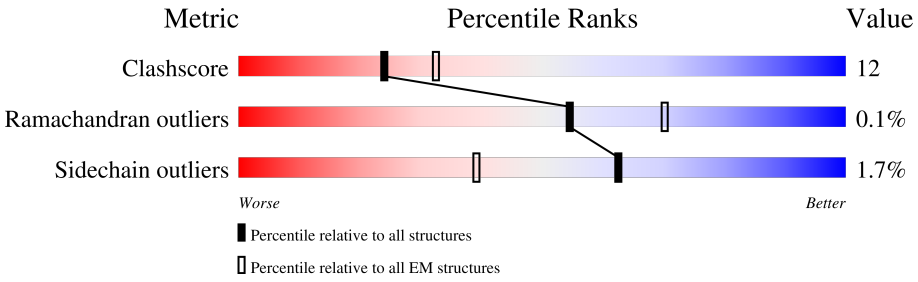
EMDB validation analysis	:	0.0.1.dev70
Mogul	:	1.8.5 (274361), CSD as541be (2020)
MolProbity	:	4.02b-467
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.9
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36

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 3.14 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	486	68% 21% • 9%
1	E	486	71% 18% • 10%
1	I	486	70% 17% • 10%
2	B	155	64% 16% • 19%
2	F	155	63% 14% 23%
2	J	155	69% 14% 17%
3	C	238	38% 15% • 45%
3	G	238	45% 9% 45%

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Mol	Chain	Length	Quality of chain
3	K	238	41% 13% 45%
4	D	215	42% 7% 50%
4	H	215	47% 50%
4	L	215	44% 6% 50%
5	M	238	42% 33% 22% 45%
5	O	238	40% 37% 18% 45%
5	Q	238	40% 37% 18% 45%
6	N	214	34% 36% 14% 50%
6	P	214	32% 36% 14% 50%
6	R	214	32% 36% 14% 50%
7	S	9	33% 44% 22%
7	j	9	33% 67%
8	T	6	50% 50% 50%
8	b	6	33% 50% 50%
8	k	6	50% 50% 50%
9	U	4	75% 25%
9	d	4	100%
9	n	4	100%
10	V	2	100%
10	W	2	50% 100%
10	X	2	50% 50%
10	c	2	100%
10	e	2	100%
10	f	2	50% 100%
10	g	2	100%

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Mol	Chain	Length	Quality of chain
10	l	2	50% 50%
10	m	2	100%
10	o	2	100%
10	p	2	100%
10	q	2	100%
11	Y	3	100%
11	Z	3	67% 33%
11	h	3	100%
11	i	3	100%
11	r	3	100%
12	a	10	20% 80%
13	s	4	25% 75% 25%

2 Entry composition (i)

There are 15 unique types of molecules in this entry. The entry contains 26288 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 CRF01_AE T/F100 HIV-1 gp120.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	440	Total 3479	C 2197	N 612	O 642	S 28	0	0
1	E	438	Total 3462	C 2186	N 610	O 638	S 28	0	0
1	I	437	Total 3455	C 2182	N 609	O 636	S 28	0	0

There are 42 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	61	TYR	HIS	engineered mutation	UNP A0A6C0ZY47
A	105	HIS	GLN	engineered mutation	UNP A0A6C0ZY47
A	108	ILE	VAL	engineered mutation	UNP A0A6C0ZY47
A	375	SER	HIS	conflict	UNP A0A6C0ZY47
A	474	ASP	ASN	engineered mutation	UNP A0A6C0ZY47
A	475	MET	ILE	engineered mutation	UNP A0A6C0ZY47
A	476	ARG	LYS	engineered mutation	UNP A0A6C0ZY47
A	501	CYS	ALA	conflict	UNP A0A6C0ZY47
A	508	ARG	-	expression tag	UNP A0A6C0ZY47
A	509	ARG	-	expression tag	UNP A0A6C0ZY47
A	510	ARG	-	expression tag	UNP A0A6C0ZY47
A	511	ARG	-	expression tag	UNP A0A6C0ZY47
A	512	ARG	-	expression tag	UNP A0A6C0ZY47
A	513	ARG	-	expression tag	UNP A0A6C0ZY47
E	61	TYR	HIS	engineered mutation	UNP A0A6C0ZY47
E	105	HIS	GLN	engineered mutation	UNP A0A6C0ZY47
E	108	ILE	VAL	engineered mutation	UNP A0A6C0ZY47
E	375	SER	HIS	conflict	UNP A0A6C0ZY47
E	474	ASP	ASN	engineered mutation	UNP A0A6C0ZY47
E	475	MET	ILE	engineered mutation	UNP A0A6C0ZY47
E	476	ARG	LYS	engineered mutation	UNP A0A6C0ZY47
E	501	CYS	ALA	conflict	UNP A0A6C0ZY47
E	508	ARG	-	expression tag	UNP A0A6C0ZY47
E	509	ARG	-	expression tag	UNP A0A6C0ZY47

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Chain	Residue	Modelled	Actual	Comment	Reference
E	510	ARG	-	expression tag	UNP A0A6C0ZY47
E	511	ARG	-	expression tag	UNP A0A6C0ZY47
E	512	ARG	-	expression tag	UNP A0A6C0ZY47
E	513	ARG	-	expression tag	UNP A0A6C0ZY47
I	61	TYR	HIS	engineered mutation	UNP A0A6C0ZY47
I	105	HIS	GLN	engineered mutation	UNP A0A6C0ZY47
I	108	ILE	VAL	engineered mutation	UNP A0A6C0ZY47
I	375	SER	HIS	conflict	UNP A0A6C0ZY47
I	474	ASP	ASN	engineered mutation	UNP A0A6C0ZY47
I	475	MET	ILE	engineered mutation	UNP A0A6C0ZY47
I	476	ARG	LYS	engineered mutation	UNP A0A6C0ZY47
I	501	CYS	ALA	conflict	UNP A0A6C0ZY47
I	508	ARG	-	expression tag	UNP A0A6C0ZY47
I	509	ARG	-	expression tag	UNP A0A6C0ZY47
I	510	ARG	-	expression tag	UNP A0A6C0ZY47
I	511	ARG	-	expression tag	UNP A0A6C0ZY47
I	512	ARG	-	expression tag	UNP A0A6C0ZY47
I	513	ARG	-	expression tag	UNP A0A6C0ZY47

- Molecule 2 is a protein called CRF-1_AE T/F100 HIV-1 gp41.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	B	125	Total	C	N	O	S	0	0
			999	638	167	189	5		
2	F	119	Total	C	N	O	S	0	0
			956	610	160	181	5		
2	J	128	Total	C	N	O	S	0	0
			1034	660	174	195	5		

There are 12 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	559	PRO	ILE	conflict	UNP A0A6C0ZY47
B	605	CYS	THR	conflict	UNP A0A6C0ZY47
B	665	ALA	-	expression tag	UNP A0A6C0ZY47
B	666	ALA	-	expression tag	UNP A0A6C0ZY47
F	559	PRO	ILE	conflict	UNP A0A6C0ZY47
F	605	CYS	THR	conflict	UNP A0A6C0ZY47
F	665	ALA	-	expression tag	UNP A0A6C0ZY47
F	666	ALA	-	expression tag	UNP A0A6C0ZY47
J	559	PRO	ILE	conflict	UNP A0A6C0ZY47
J	605	CYS	THR	conflict	UNP A0A6C0ZY47

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Chain	Residue	Modelled	Actual	Comment	Reference
J	665	ALA	-	expression tag	UNP A0A6C0ZY47
J	666	ALA	-	expression tag	UNP A0A6C0ZY47

- Molecule 3 is a protein called Heavy chain of 8ANC195 Fab.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	C	130	Total	C	N	O	S	0	0
			1003	636	174	190	3		
3	G	130	Total	C	N	O	S	0	0
			1003	636	174	190	3		
3	K	130	Total	C	N	O	S	0	0
			1003	636	174	190	3		

- Molecule 4 is a protein called Light chain of 8ANC195 Fab.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	D	107	Total	C	N	O	S	0	0
			814	510	143	158	3		
4	H	108	Total	C	N	O	S	0	0
			823	516	145	159	3		
4	L	108	Total	C	N	O	S	0	0
			823	516	145	159	3		

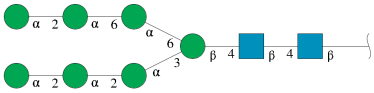
- Molecule 5 is a protein called Heavy chain of 10-1074 Fab.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	M	131	Total	C	N	O	S	0	0
			1030	651	173	202	4		
5	O	131	Total	C	N	O	S	0	0
			1030	651	173	202	4		
5	Q	131	Total	C	N	O	S	0	0
			1030	651	173	202	4		

- Molecule 6 is a protein called Light chain of 10-1074 Fab.

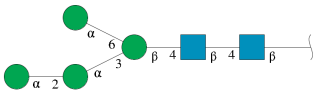
Mol	Chain	Residues	Atoms					AltConf	Trace
6	N	107	Total	C	N	O	S	0	0
			824	515	152	154	3		
6	P	107	Total	C	N	O	S	0	0
			824	515	152	154	3		
6	R	107	Total	C	N	O	S	0	0
			824	515	152	154	3		

- Molecule 7 is an oligosaccharide called alpha-D-mannopyranose-(1-2)-alpha-D-mannopyranose-(1-2)-alpha-D-mannopyranose-(1-3)-[alpha-D-mannopyranose-(1-2)-alpha-D-mannopyranose-(1-6)-alpha-D-mannopyranose-(1-6)]beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose.



Mol	Chain	Residues	Atoms				AltConf	Trace
7	S	9	Total	C	N	O	0	0
			105	58	2	45		
7	j	9	Total	C	N	O	0	0
			105	58	2	45		

- Molecule 8 is an oligosaccharide called alpha-D-mannopyranose-(1-2)-alpha-D-mannopyranose-(1-3)-[alpha-D-mannopyranose-(1-6)]beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose.



Mol	Chain	Residues	Atoms				AltConf	Trace
8	T	6	Total	C	N	O	0	0
			72	40	2	30		
8	b	6	Total	C	N	O	0	0
			72	40	2	30		
8	k	6	Total	C	N	O	0	0
			72	40	2	30		

- Molecule 9 is an oligosaccharide called 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose.

Mol	Chain	Residues	Atoms				AltConf	Trace
9	U	4	Total	C	N	O	0	0
			56	32	4	20		
9	d	4	Total	C	N	O	0	0
			56	32	4	20		

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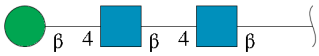
Mol	Chain	Residues	Atoms				AltConf	Trace
9	n	4	Total	C	N	O	0	0
			56	32	4	20		

- Molecule 10 is an oligosaccharide called 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose.

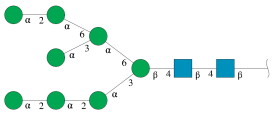
Mol	Chain	Residues	Atoms				AltConf	Trace
10	V	2	Total	C	N	O	0	0
			28	16	2	10		
10	W	2	Total	C	N	O	0	0
			28	16	2	10		
10	X	2	Total	C	N	O	0	0
			28	16	2	10		
10	c	2	Total	C	N	O	0	0
			28	16	2	10		
10	e	2	Total	C	N	O	0	0
			28	16	2	10		
10	f	2	Total	C	N	O	0	0
			28	16	2	10		
10	g	2	Total	C	N	O	0	0
			28	16	2	10		
10	l	2	Total	C	N	O	0	0
			28	16	2	10		
10	m	2	Total	C	N	O	0	0
			28	16	2	10		
10	o	2	Total	C	N	O	0	0
			28	16	2	10		
10	p	2	Total	C	N	O	0	0
			28	16	2	10		
10	q	2	Total	C	N	O	0	0
			28	16	2	10		

- Molecule 11 is an oligosaccharide called beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose.



Mol	Chain	Residues	Atoms				AltConf	Trace
11	Y	3	Total	C	N	O	0	0
			39	22	2	15		
11	Z	3	Total	C	N	O	0	0
			39	22	2	15		
11	h	3	Total	C	N	O	0	0
			39	22	2	15		
11	i	3	Total	C	N	O	0	0
			39	22	2	15		
11	r	3	Total	C	N	O	0	0
			39	22	2	15		

- Molecule 12 is an oligosaccharide called alpha-D-mannopyranose-(1-2)-alpha-D-mannopyranose-(1-2)-alpha-D-mannopyranose-(1-3)-[alpha-D-mannopyranose-(1-2)-alpha-D-mannopyranose-(1-6)-[alpha-D-mannopyranose-(1-3)]alpha-D-mannopyranose-(1-6)]beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose.

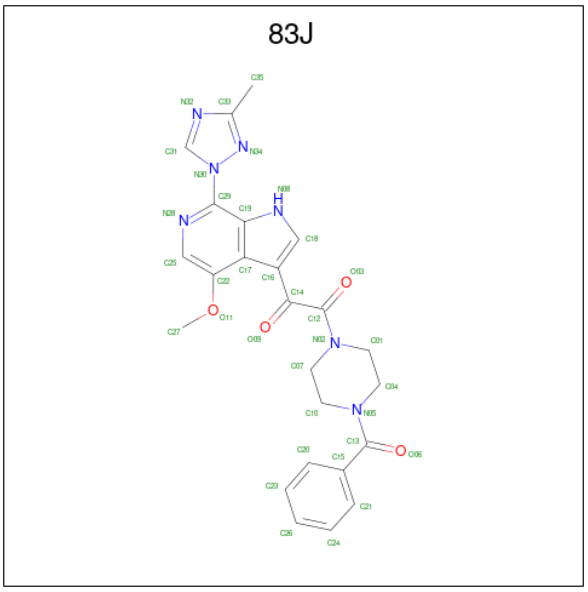


Mol	Chain	Residues	Atoms				AltConf	Trace
12	a	10	Total	C	N	O	0	0
			116	64	2	50		

- Molecule 13 is an oligosaccharide called alpha-D-mannopyranose-(1-3)-beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose.

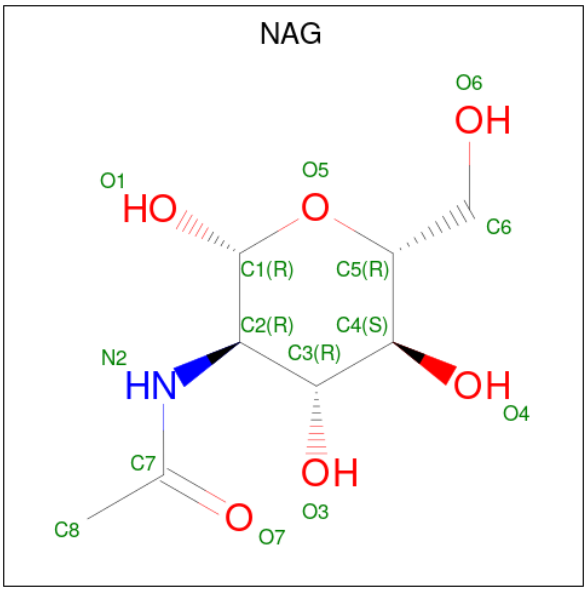
Mol	Chain	Residues	Atoms				AltConf	Trace
13	s	4	Total	C	N	O	0	0
			50	28	2	20		

- Molecule 14 is 1-[4-(benzenecarbonyl)piperazin-1-yl]-2-[4-methoxy-7-(3-methyl-1H-1,2,4-triazol-1-yl)-1H-pyrrolo[2,3-c]pyridin-3-yl]ethane-1,2-dione (three-letter code: 83J) (formula: $C_{24}H_{23}N_7O_4$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms				AltConf
14	A	1	Total	C	N	O	0
			35	24	7	4	
14	E	1	Total	C	N	O	0
			35	24	7	4	
14	I	1	Total	C	N	O	0
			35	24	7	4	

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



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

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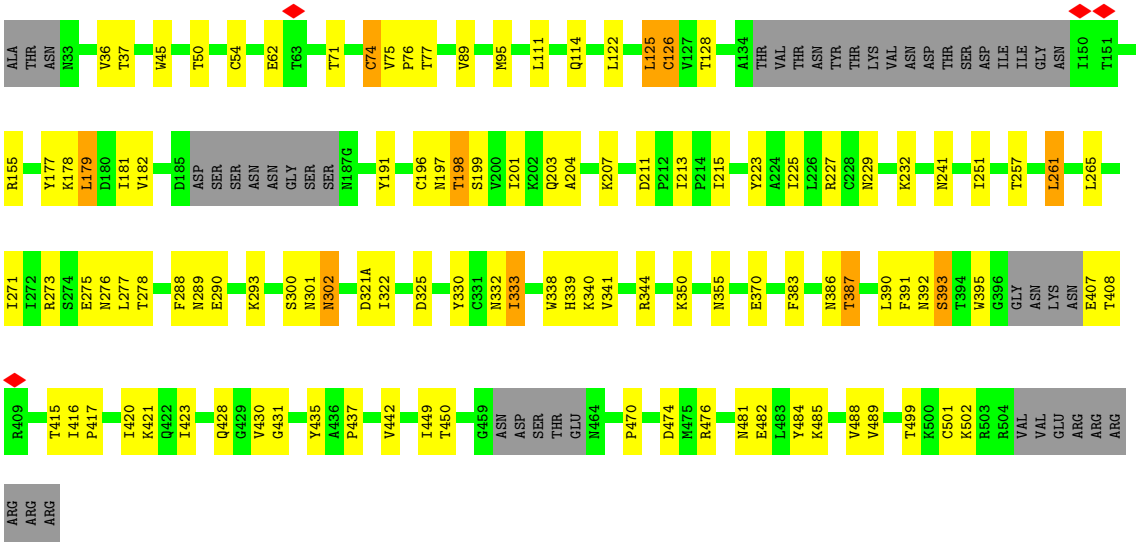
Mol	Chain	Residues	Atoms				AltConf
15	G	1	Total 14	C 8	N 1	O 5	0
15	I	1	Total 14	C 8	N 1	O 5	0
15	I	1	Total 14	C 8	N 1	O 5	0
15	I	1	Total 14	C 8	N 1	O 5	0
15	I	1	Total 14	C 8	N 1	O 5	0
15	I	1	Total 14	C 8	N 1	O 5	0
15	I	1	Total 14	C 8	N 1	O 5	0
15	I	1	Total 14	C 8	N 1	O 5	0
15	J	1	Total 14	C 8	N 1	O 5	0
15	J	1	Total 14	C 8	N 1	O 5	0
15	J	1	Total 14	C 8	N 1	O 5	0
15	K	1	Total 14	C 8	N 1	O 5	0

3 Residue-property plots (i)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry 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.

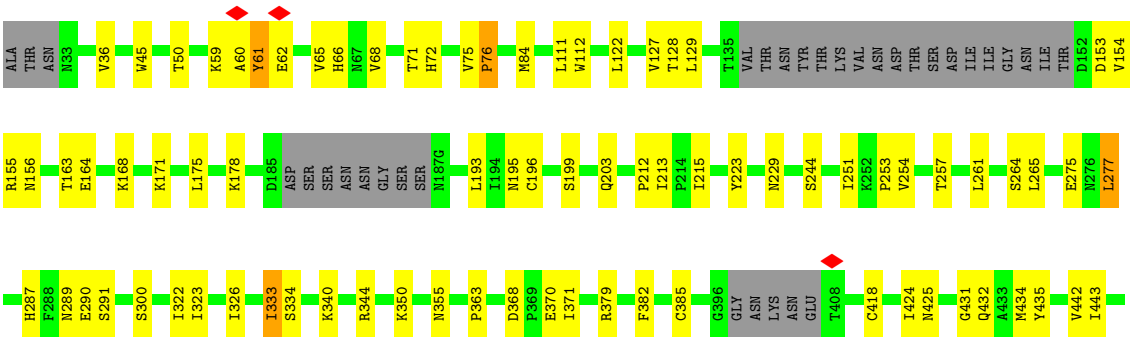
• Molecule 1: CRF01_AE T/F100 HIV-1 gp120

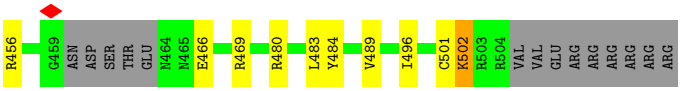
Chain A:



• Molecule 1: CRF01_AE T/F100 HIV-1 gp120

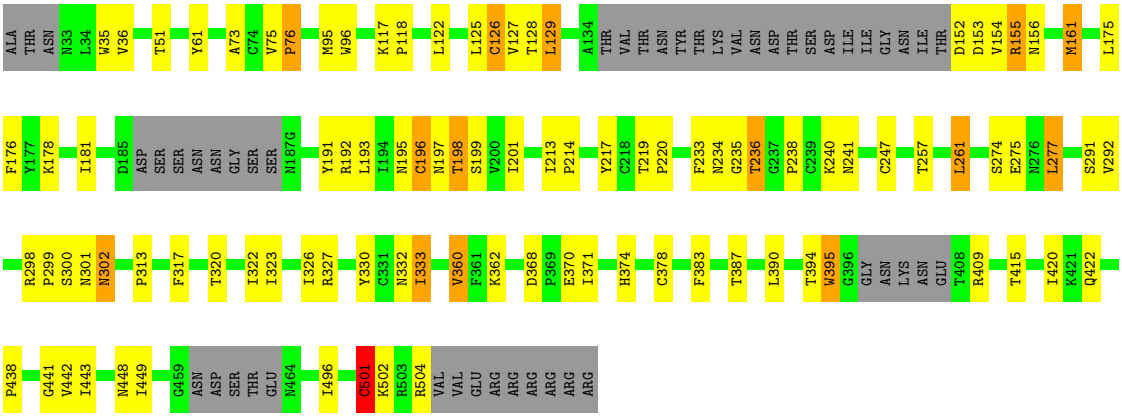
Chain E:





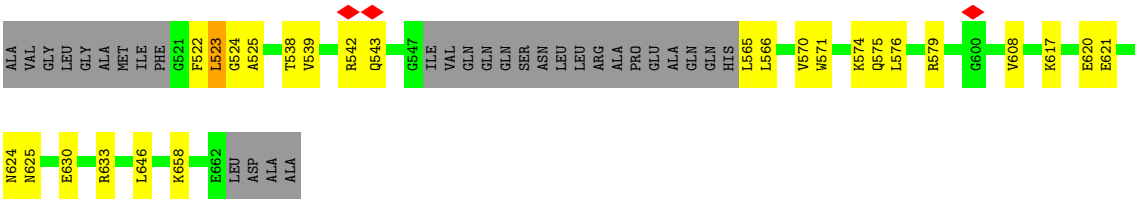
• Molecule 1: CRF01_AE T/F100 HIV-1 gp120

Chain I:



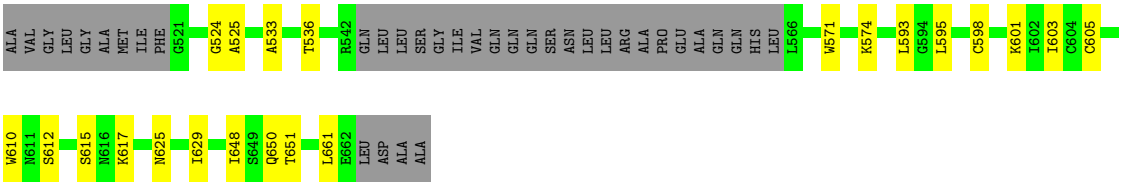
• Molecule 2: CRF-1_AE T/F100 HIV-1 gp41

Chain B:



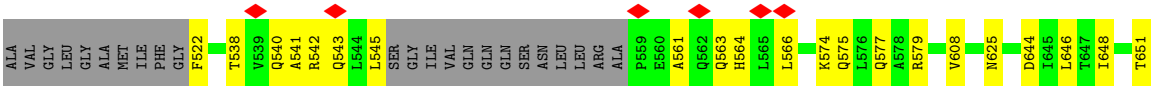
• Molecule 2: CRF-1_AE T/F100 HIV-1 gp41

Chain F:



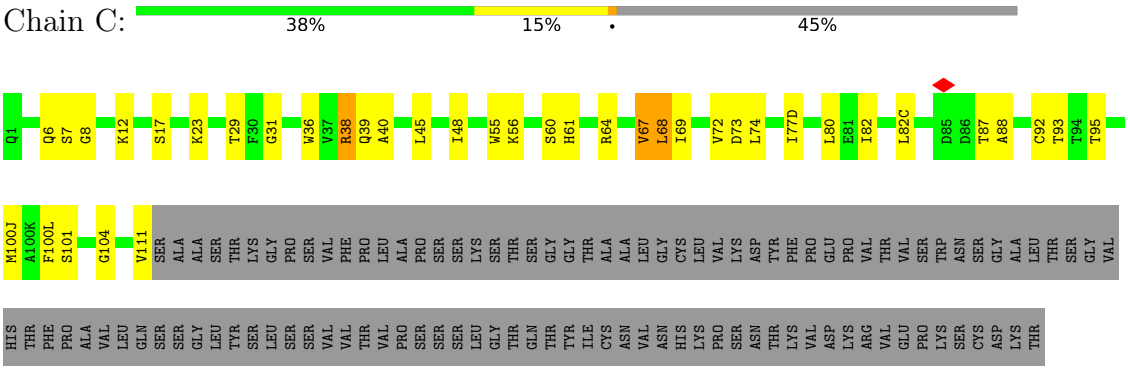
• Molecule 2: CRF-1_AE T/F100 HIV-1 gp41

Chain J:



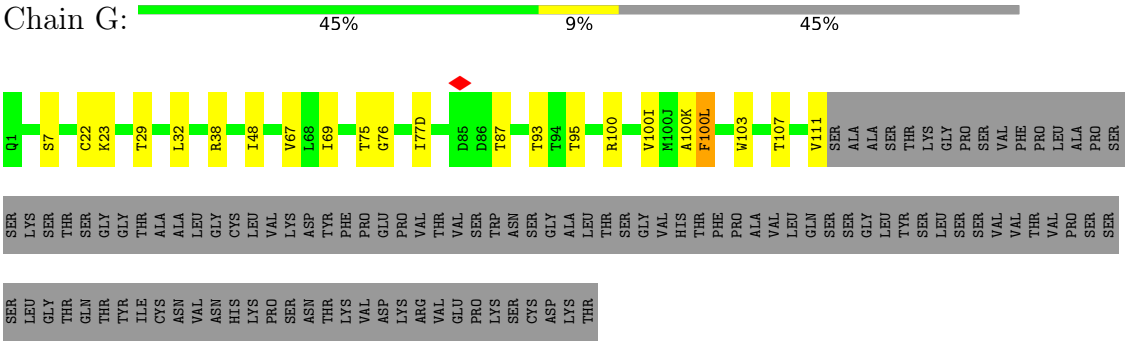
• Molecule 3: Heavy chain of 8ANC195 Fab

Chain C:



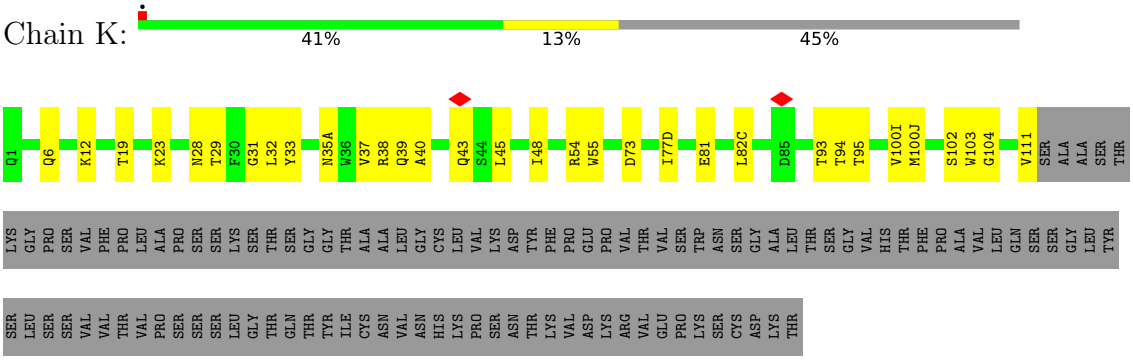
• Molecule 3: Heavy chain of 8ANC195 Fab

Chain G:



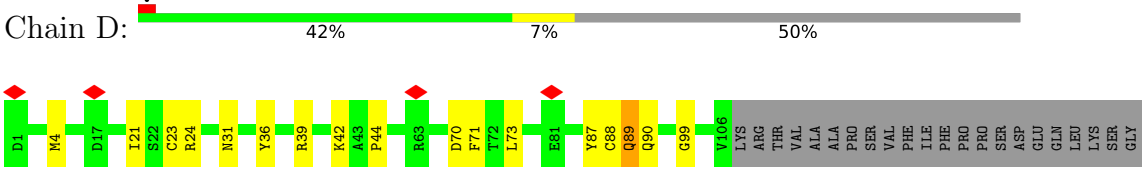
• Molecule 3: Heavy chain of 8ANC195 Fab

Chain K:



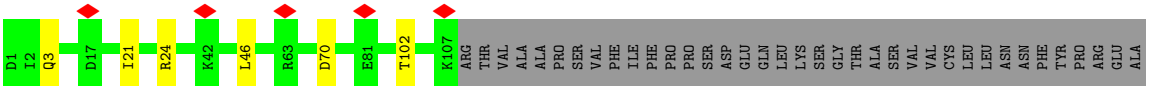
• Molecule 4: Light chain of 8ANC195 Fab

Chain D:



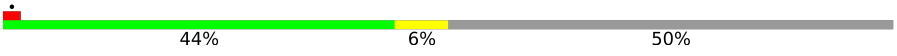
• Molecule 4: Light chain of 8ANC195 Fab

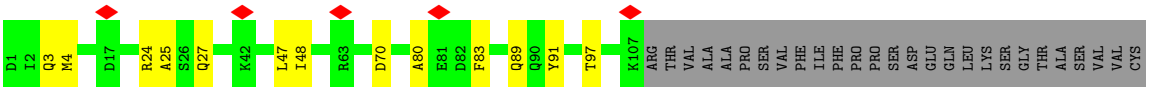
Chain H:



• Molecule 4: Light chain of 8ANC195 Fab

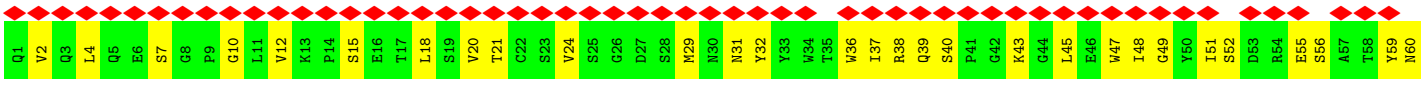
Chain L:

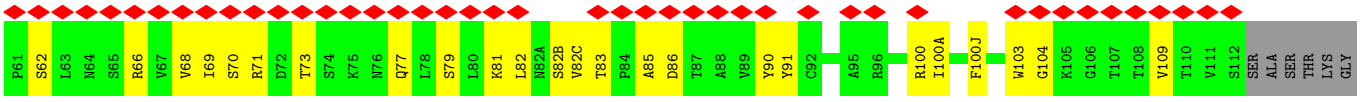




• Molecule 5: Heavy chain of 10-1074 Fab

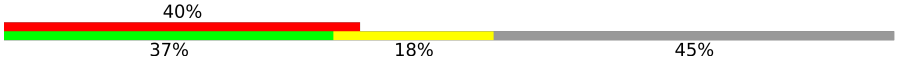
Chain M:

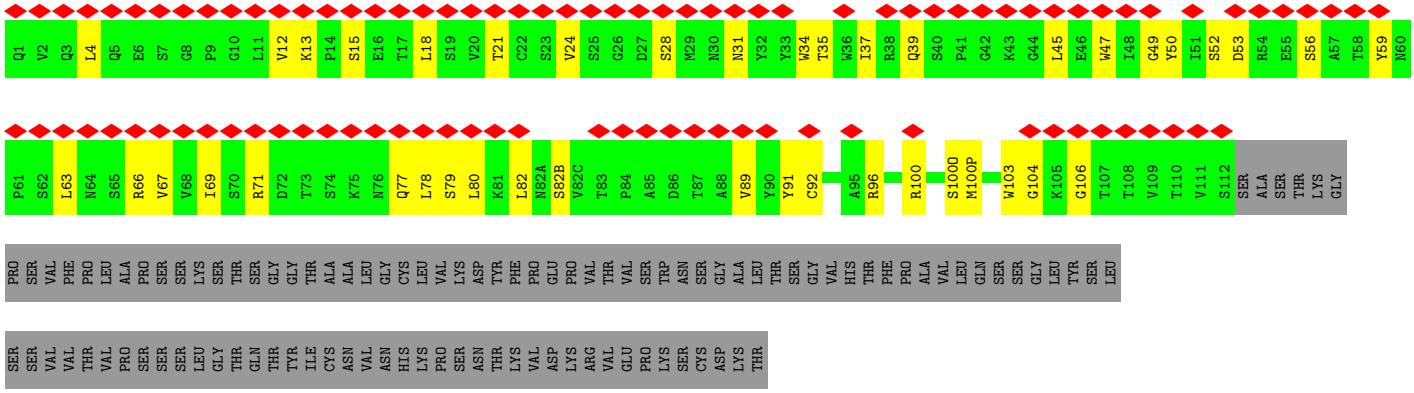




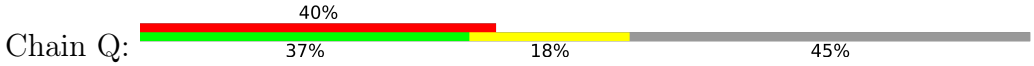
• Molecule 5: Heavy chain of 10-1074 Fab

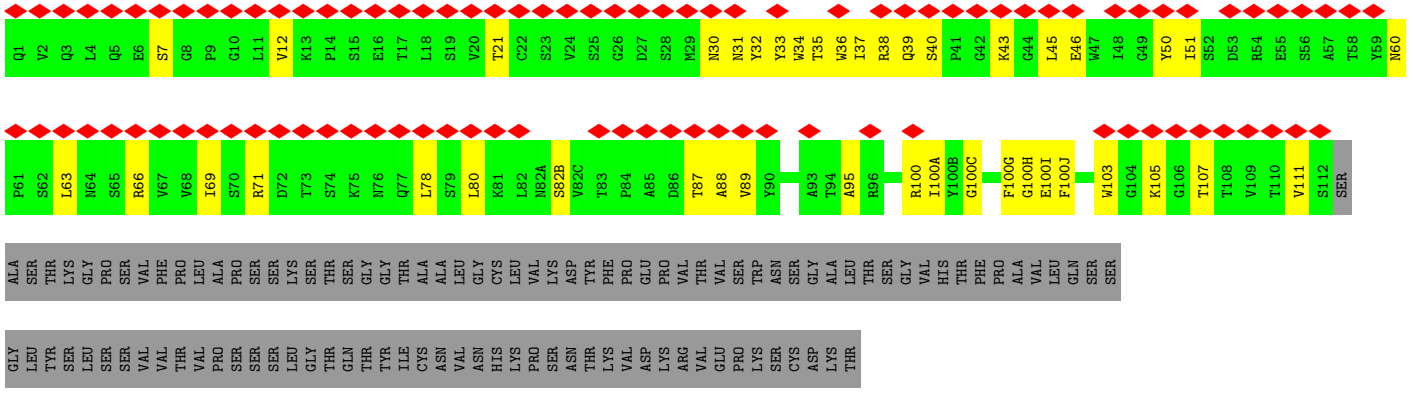
Chain O:



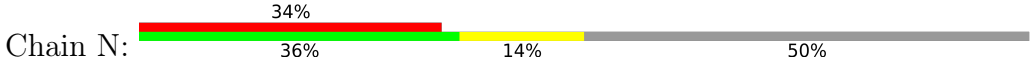


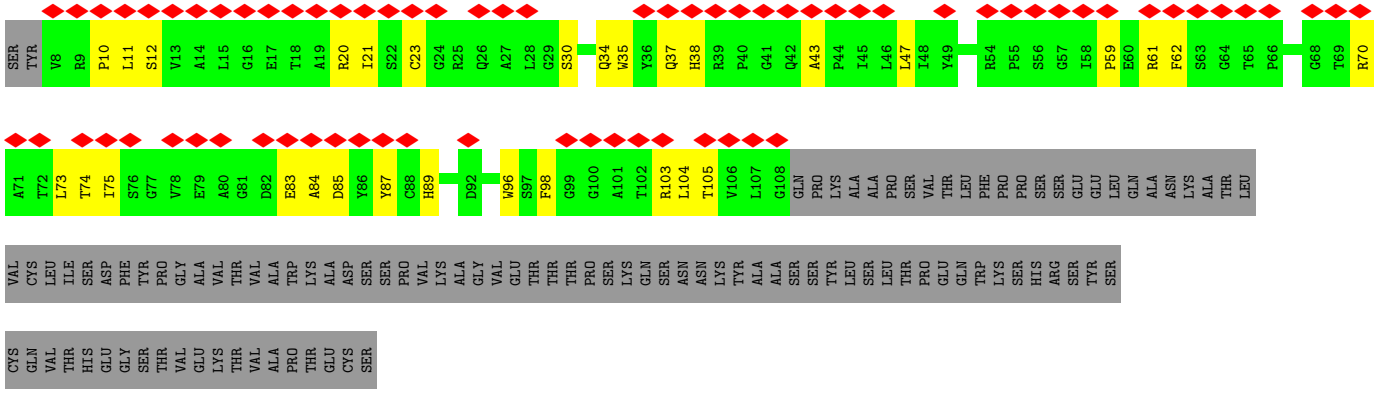
• Molecule 5: Heavy chain of 10-1074 Fab



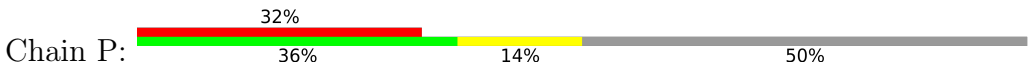


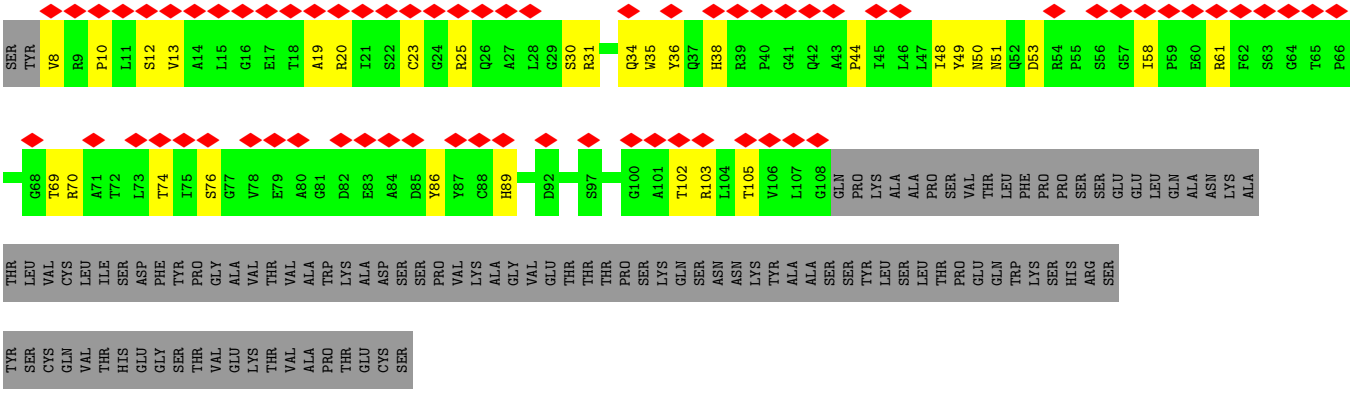
• Molecule 6: Light chain of 10-1074 Fab





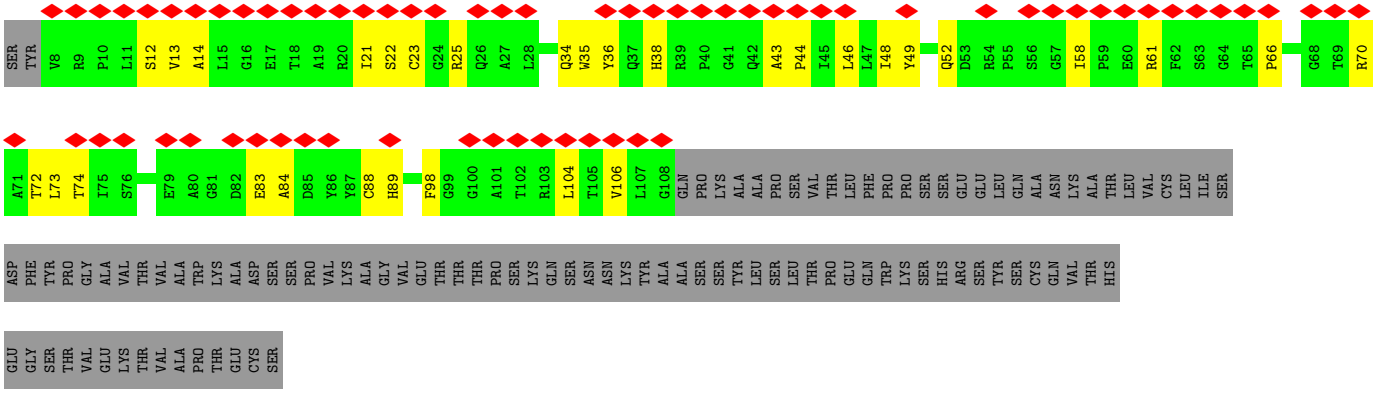
• Molecule 6: Light chain of 10-1074 Fab





• Molecule 6: Light chain of 10-1074 Fab

Chain R:



• Molecule 7: alpha-D-mannopyranose-(1-2)-alpha-D-mannopyranose-(1-2)-alpha-D-mannopyranose-(1-3)-[alpha-D-mannopyranose-(1-2)-alpha-D-mannopyranose-(1-6)-alpha-D-mannopyranose-(1-6)]beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain S:

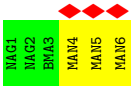
• Molecule 7: alpha-D-mannopyranose-(1-2)-alpha-D-mannopyranose-(1-2)-alpha-D-mannopyranose-(1-3)-[alpha-D-mannopyranose-(1-2)-alpha-D-mannopyranose-(1-6)-alpha-D-mannopyranose-(1-6)]beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain j:

• Molecule 8: alpha-D-mannopyranose-(1-2)-alpha-D-mannopyranose-(1-3)-[alpha-D-mannopyranose-(1-6)]beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetam

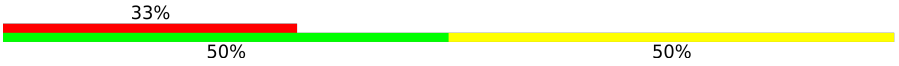
ido-2-deoxy-beta-D-glucopyranose

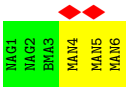
Chain T:



• Molecule 8: alpha-D-mannopyranose-(1-2)-alpha-D-mannopyranose-(1-3)-[alpha-D-mannopyranose-(1-6)]beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

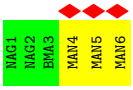
Chain b:





• Molecule 8: alpha-D-mannopyranose-(1-2)-alpha-D-mannopyranose-(1-3)-[alpha-D-mannopyranose-(1-6)]beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain k:

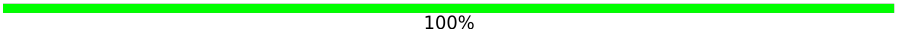


• Molecule 9: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain U:

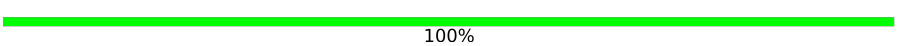
• Molecule 9: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain d:



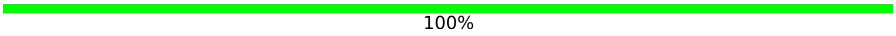
• Molecule 9: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain n:



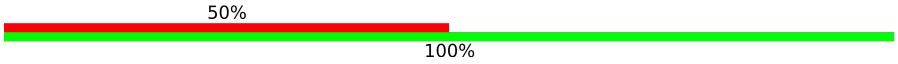
• Molecule 10: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain V:



• Molecule 10: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain W:

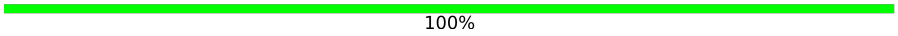


• Molecule 10: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain X:

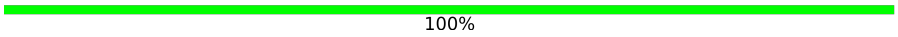
• Molecule 10: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain c:



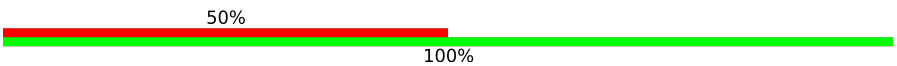
• Molecule 10: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain e:

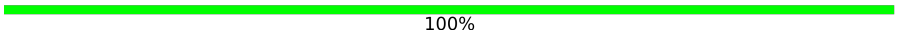


• Molecule 10: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain f:



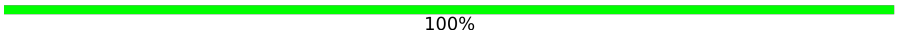
• Molecule 10: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain g: 

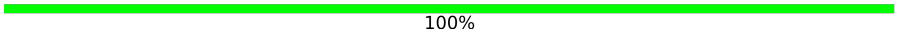
• Molecule 10: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain l: 

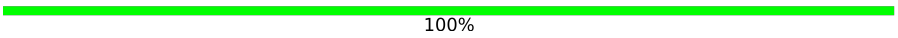
• Molecule 10: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain m: 

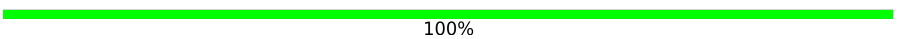
• Molecule 10: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain o: 

• Molecule 10: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

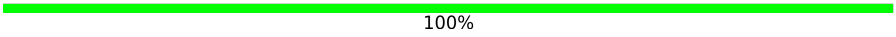
Chain p: 

• Molecule 10: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain q: 

• Molecule 11: beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain Y:



• Molecule 11: beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain Z:

• Molecule 11: beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

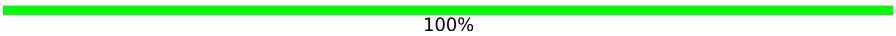
Chain h:

• Molecule 11: beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain i:

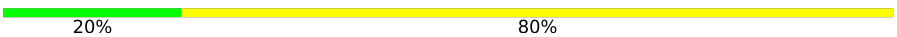
• Molecule 11: beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain r:



• Molecule 12: alpha-D-mannopyranose-(1-2)-alpha-D-mannopyranose-(1-2)-alpha-D-mannopyranose-(1-3)-[alpha-D-mannopyranose-(1-2)-alpha-D-mannopyranose-(1-6)-[alpha-D-mannopyranose-(1-3)]alpha-D-mannopyranose-(1-6)]beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain a:



• Molecule 13: alpha-D-mannopyranose-(1-3)-beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain s:


NAG1
NAG2
BMA3
MAN4

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C3	Depositor
Number of particles used	234547	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS GLACIOS	Depositor
Voltage (kV)	200	Depositor
Electron dose ($e^-/Å^2$)	58.14	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	2700	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	1.297	Depositor
Minimum map value	-0.876	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	0.033	Depositor
Recommended contour level	0.1	Depositor
Map size (Å)	288.1332, 288.1332, 288.1332	wwPDB
Map dimensions	324, 324, 324	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.88930005, 0.88930005, 0.88930005	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: 83J, BMA, NAG, MAN

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	0.62	0/3556	0.82	1/4823 (0.0%)
1	E	0.44	1/3539 (0.0%)	0.63	0/4800
1	I	0.53	0/3532	0.75	1/4790 (0.0%)
2	B	0.43	0/1018	0.59	0/1380
2	F	0.53	0/975	0.69	0/1322
2	J	0.29	0/1055	0.47	0/1431
3	C	0.35	0/1030	0.63	0/1403
3	G	0.46	0/1030	0.68	0/1403
3	K	0.29	0/1030	0.55	0/1403
4	D	0.32	0/832	0.62	0/1130
4	H	0.27	0/841	0.53	0/1141
4	L	0.25	0/841	0.54	0/1141
5	M	0.26	0/1055	0.50	0/1436
5	O	0.27	0/1055	0.51	0/1436
5	Q	0.27	0/1055	0.56	1/1436 (0.1%)
6	N	0.24	0/845	0.54	0/1148
6	P	0.24	0/845	0.55	0/1148
6	R	0.24	0/845	0.55	0/1148
All	All	0.43	1/24979 (0.0%)	0.65	3/33919 (0.0%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	E	156	ASN	C-N	6.31	1.48	1.34

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	76	PRO	N-CA-C	-7.23	93.31	112.10
5	Q	100(H)	GLY	N-CA-C	7.19	131.08	113.10

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	I	501	CYS	CB-CA-C	6.11	122.62	110.40

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	3479	0	3416	105	0
1	E	3462	0	3399	74	0
1	I	3455	0	3393	116	0
2	B	999	0	983	46	0
2	F	956	0	934	23	0
2	J	1034	0	1013	33	0
3	C	1003	0	973	33	0
3	G	1003	0	973	11	0
3	K	1003	0	973	19	0
4	D	814	0	787	14	0
4	H	823	0	800	4	0
4	L	823	0	800	9	0
5	M	1030	0	995	41	0
5	O	1030	0	995	31	0
5	Q	1030	0	995	30	0
6	N	824	0	788	20	0
6	P	824	0	788	24	0
6	R	824	0	788	20	0
7	S	105	0	88	4	0
7	j	105	0	88	0	0
8	T	72	0	61	0	0
8	b	72	0	61	0	0
8	k	72	0	61	0	0
9	U	56	0	49	4	0
9	d	56	0	49	0	0
9	n	56	0	49	0	0
10	V	28	0	25	0	0
10	W	28	0	25	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
10	X	28	0	25	2	0
10	c	28	0	25	0	0
10	e	28	0	25	0	0
10	f	28	0	25	0	0
10	g	28	0	25	0	0
10	l	28	0	25	0	0
10	m	28	0	25	0	0
10	o	28	0	25	0	0
10	p	28	0	25	0	0
10	q	28	0	25	0	0
11	Y	39	0	34	0	0
11	Z	39	0	34	1	0
11	h	39	0	34	0	0
11	i	39	0	34	0	0
11	r	39	0	34	0	0
12	a	116	0	97	0	0
13	s	50	0	43	0	0
14	A	35	0	0	0	0
14	E	35	0	0	0	0
14	I	35	0	0	0	0
15	A	112	0	104	1	0
15	B	28	0	26	2	0
15	C	14	0	13	0	0
15	E	112	0	104	3	0
15	F	42	0	39	1	0
15	G	14	0	13	0	0
15	I	98	0	91	1	0
15	J	42	0	39	3	0
15	K	14	0	13	0	0
All	All	26288	0	25351	590	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 12.

All (590) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:333:ILE:CD1	1:A:390:LEU:HD21	1.57	1.33
1:I:156:ASN:HB3	1:I:175:LEU:CD1	1.67	1.23
2:B:566:LEU:CD1	1:I:51:THR:HG21	1.75	1.15
1:I:156:ASN:HB3	1:I:175:LEU:HD13	1.16	1.15

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:333:ILE:CD1	1:I:390:LEU:HD21	1.77	1.15
1:I:156:ASN:CB	1:I:175:LEU:HD13	1.78	1.14
1:A:383:PHE:CD1	1:A:420:ILE:HG22	1.83	1.13
1:A:383:PHE:HD1	1:A:420:ILE:HG22	1.15	1.11
1:A:37:THR:HG21	1:A:499:THR:OG1	1.52	1.09
1:I:302:ASN:N	1:I:302:ASN:HD22	1.49	1.06
5:O:71:ARG:HD2	5:O:78:LEU:HD22	1.35	1.06
2:B:566:LEU:HD11	1:I:51:THR:HG21	1.30	1.05
1:I:333:ILE:HD12	1:I:390:LEU:HD21	1.10	1.04
1:I:332:ASN:OD1	1:I:415:THR:HG22	1.58	1.01
1:A:333:ILE:HD12	1:A:390:LEU:CD2	1.89	1.01
1:E:501:CYS:O	1:E:502:LYS:HG3	1.61	1.00
1:A:332:ASN:OD1	1:A:415:THR:HG22	1.65	0.96
1:A:333:ILE:CD1	1:A:390:LEU:CD2	2.43	0.96
1:I:197:ASN:OD1	1:I:198:THR:HG22	1.67	0.95
5:O:28:SER:H	5:O:31:ASN:HD21	1.17	0.93
1:A:74:CYS:O	1:A:74:CYS:SG	2.25	0.93
1:A:333:ILE:HD12	1:A:390:LEU:HD21	0.92	0.91
1:I:327:ARG:NH2	1:I:330:TYR:HD1	1.70	0.90
1:A:383:PHE:CD1	1:A:420:ILE:CG2	2.58	0.86
1:A:37:THR:CG2	1:A:499:THR:OG1	2.24	0.85
1:I:154:VAL:O	1:I:155:ARG:O	1.95	0.85
1:A:45:TRP:CD1	1:A:489:VAL:HG11	2.12	0.84
1:I:333:ILE:HD12	1:I:390:LEU:CD2	2.03	0.84
3:C:93:THR:HG21	3:C:100(L):PHE:HB3	1.59	0.84
3:C:68:LEU:HA	7:S:9:MAN:H62	1.59	0.83
2:B:566:LEU:CD1	1:I:51:THR:CG2	2.56	0.83
1:I:302:ASN:N	1:I:302:ASN:ND2	2.26	0.82
1:A:198:THR:O	1:A:199:SER:OG	1.95	0.82
1:A:126:CYS:HG	1:A:196:CYS:HG	0.91	0.81
2:F:661:LEU:HD12	1:I:501:CYS:SG	2.20	0.81
1:A:128:THR:HG21	1:E:168:LYS:NZ	1.95	0.80
1:I:96:TRP:CG	1:I:275:GLU:OE2	2.35	0.79
1:A:232:LYS:HA	1:A:271:ILE:HD11	1.63	0.79
1:A:251:ILE:HG23	1:A:482:GLU:OE1	1.83	0.79
1:I:333:ILE:HD13	1:I:390:LEU:HD11	1.64	0.78
1:A:302:ASN:OD1	1:A:302:ASN:N	2.16	0.78
2:B:566:LEU:CD2	2:J:574:LYS:HA	2.14	0.78
3:C:6:GLN:HE22	3:C:104:GLY:HA3	1.48	0.78
1:I:327:ARG:HH21	1:I:330:TYR:HD1	1.32	0.77
1:I:129:LEU:N	1:I:129:LEU:HD23	1.99	0.77

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:O:71:ARG:HD2	5:O:78:LEU:CD2	2.16	0.75
5:M:18:LEU:HB2	5:M:82:LEU:HB2	1.68	0.74
2:F:574:LYS:HG2	2:J:566:LEU:HD21	1.68	0.74
1:I:127:VAL:O	1:I:129:LEU:HD23	1.86	0.74
1:I:333:ILE:CD1	1:I:390:LEU:CD2	2.63	0.74
2:B:539:VAL:HA	2:B:542:ARG:HB2	1.70	0.74
6:N:38:HIS:HB3	6:N:84:ALA:HB1	1.70	0.73
5:Q:40:SER:HB3	5:Q:43:LYS:HB3	1.71	0.73
1:I:155:ARG:NH2	1:I:178:LYS:HG3	2.03	0.73
6:N:34:GLN:HB2	6:N:89:HIS:HB3	1.70	0.72
4:L:89:GLN:HG3	4:L:97:THR:O	1.89	0.72
2:B:566:LEU:HD21	2:J:574:LYS:HA	1.70	0.72
1:I:152:ASP:CG	1:I:153:ASP:H	1.91	0.72
6:N:20:ARG:HH21	6:N:75:ILE:H	1.38	0.72
2:J:542:ARG:HG3	2:J:543:GLN:HG3	1.71	0.72
2:B:542:ARG:HE	2:J:651:THR:CG2	2.02	0.71
1:A:128:THR:HG21	1:E:168:LYS:HZ1	1.53	0.71
2:B:566:LEU:HD12	1:I:51:THR:HG21	1.72	0.71
1:A:275:GLU:HG3	1:A:275:GLU:O	1.89	0.71
1:E:501:CYS:HG	2:F:605:CYS:HG	0.77	0.71
3:K:23:LYS:HG2	3:K:77(D):ILE:HG12	1.73	0.71
3:C:95:THR:OG1	3:C:100(J):MET:SD	2.49	0.71
5:M:47:TRP:O	5:M:60:ASN:ND2	2.23	0.70
6:R:52:GLN:HE21	6:R:66:PRO:HA	1.57	0.70
4:D:4:MET:HE1	4:D:90:GLN:HB3	1.73	0.70
1:A:265:LEU:HD21	1:A:450:THR:HG22	1.74	0.70
1:I:127:VAL:O	1:I:129:LEU:CD2	2.39	0.69
1:I:156:ASN:HB2	1:I:175:LEU:HD13	1.72	0.69
6:N:83:GLU:HA	6:N:104:LEU:HB3	1.75	0.69
1:A:330:TYR:HE2	9:U:1:NAG:HN2	1.40	0.68
1:A:198:THR:C	1:A:199:SER:OG	2.31	0.68
1:A:428:GLN:HB3	1:A:430:VAL:HG23	1.75	0.67
1:A:261:LEU:HD23	1:A:449:ILE:HG22	1.75	0.67
1:I:298:ARG:NH1	1:I:302:ASN:OD1	2.28	0.67
1:I:333:ILE:CD1	1:I:390:LEU:HD11	2.24	0.67
6:N:10:PRO:HB3	6:N:103:ARG:HB3	1.75	0.67
3:K:6:GLN:HE22	3:K:104:GLY:HA3	1.59	0.67
6:N:59:PRO:HB2	6:N:61:ARG:HG3	1.77	0.67
1:E:291:SER:HB3	15:E:606:NAG:H82	1.76	0.67
3:C:87:THR:HG22	3:C:111:VAL:H	1.60	0.66
3:G:95:THR:HG22	3:G:100(L):PHE:HA	1.77	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:45:TRP:CD1	1:A:489:VAL:CG1	2.78	0.66
3:K:12:LYS:HA	3:K:12:LYS:HE3	1.78	0.66
1:A:383:PHE:CE1	1:A:420:ILE:CG2	2.79	0.66
1:A:179:LEU:HG	1:A:421:LYS:HD3	1.78	0.66
1:E:501:CYS:O	1:E:502:LYS:CG	2.42	0.65
3:C:23:LYS:HG2	3:C:77(D):ILE:HG12	1.78	0.65
1:I:327:ARG:HD2	5:Q:100(G):PHE:HB2	1.78	0.65
3:K:95:THR:HG21	3:K:100(J):MET:SD	2.37	0.65
3:C:39:GLN:HA	3:C:45:LEU:HD23	1.78	0.65
5:M:38:ARG:HB2	5:M:48:ILE:HD13	1.79	0.65
1:I:274:SER:OG	1:I:277:LEU:HD23	1.97	0.64
1:I:327:ARG:NH2	1:I:330:TYR:CD1	2.60	0.64
6:P:34:GLN:HG3	6:P:49:TYR:HB2	1.78	0.64
1:I:213:ILE:HG23	1:I:214:PRO:HD2	1.80	0.63
1:A:333:ILE:HD13	1:A:390:LEU:CD2	2.28	0.63
2:B:630:GLU:OE2	2:B:633:ARG:NH2	2.31	0.63
2:J:644:ASP:O	2:J:648:ILE:HG12	1.98	0.63
5:Q:66:ARG:NH1	5:Q:82(B):SER:O	2.31	0.63
6:R:22:SER:HB2	6:R:70:ARG:HH21	1.63	0.63
1:A:75:VAL:HG12	1:A:75:VAL:O	1.96	0.63
2:F:593:LEU:HG	2:F:598:CYS:HB2	1.79	0.63
3:K:40:ALA:HB3	3:K:43:GLN:HB3	1.80	0.63
5:O:37:ILE:HB	5:O:91:TYR:HB2	1.81	0.63
6:R:38:HIS:HB3	6:R:84:ALA:HB1	1.81	0.63
3:C:12:LYS:NZ	3:C:17:SER:O	2.30	0.62
6:P:38:HIS:HA	6:P:44:PRO:HB3	1.81	0.62
5:Q:105:LYS:NZ	5:Q:107:THR:OG1	2.32	0.62
5:M:39:GLN:HB2	5:M:45:LEU:HG	1.82	0.62
1:A:201:ILE:HD13	1:A:423:ILE:HD12	1.80	0.62
1:I:154:VAL:O	1:I:155:ARG:C	2.35	0.62
2:F:661:LEU:CD1	1:I:501:CYS:SG	2.87	0.62
2:B:538:THR:C	2:B:542:ARG:HD2	2.20	0.62
1:A:74:CYS:HB3	2:B:571:TRP:CD1	2.35	0.62
1:I:152:ASP:OD1	1:I:153:ASP:N	2.33	0.61
5:O:47:TRP:HH2	6:P:89:HIS:HE1	1.48	0.61
3:C:45:LEU:HD11	4:D:44:PRO:HG3	1.82	0.61
5:M:29:MET:HG2	5:M:73:THR:HG23	1.82	0.61
1:A:391:PHE:CD2	1:A:470:PRO:HG3	2.35	0.61
1:I:302:ASN:HD22	1:I:302:ASN:H	1.40	0.61
1:E:363:PRO:O	1:E:469:ARG:NH1	2.34	0.61
4:L:4:MET:HG2	4:L:25:ALA:HA	1.83	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:251:ILE:CG2	1:A:482:GLU:OE1	2.48	0.61
1:I:195:ASN:HB3	1:I:199:SER:OG	2.01	0.61
6:N:23:CYS:O	6:N:70:ARG:NH2	2.34	0.61
1:A:199:SER:CB	1:A:431:GLY:O	2.49	0.60
1:I:233:PHE:O	1:I:235:GLY:N	2.28	0.60
1:I:320:THR:CG2	1:I:422:GLN:HE22	2.13	0.60
1:A:502:LYS:HG3	1:A:502:LYS:O	1.99	0.60
1:A:501:CYS:O	1:A:502:LYS:HB3	2.00	0.60
3:G:95:THR:CG2	3:G:100(L):PHE:HA	2.31	0.60
2:B:617:LYS:HB3	2:B:621:GLU:HG3	1.83	0.60
1:E:75:VAL:O	1:E:76:PRO:C	2.38	0.60
5:O:4:LEU:HG	5:O:104:GLY:HA2	1.83	0.60
1:A:50:THR:HG21	1:A:223:TYR:CD2	2.36	0.60
1:E:129:LEU:HD21	1:E:193:LEU:CD2	2.31	0.60
1:E:300:SER:O	1:E:442:VAL:HG12	2.01	0.60
1:I:233:PHE:C	1:I:235:GLY:H	2.05	0.60
5:Q:100(C):GLY:HA3	5:Q:100(I):GLU:OE2	2.02	0.60
1:A:128:THR:CG2	1:E:168:LYS:NZ	2.65	0.60
4:D:21:ILE:HD11	4:D:73:LEU:HD23	1.82	0.60
1:I:301:ASN:HD22	1:I:323:ILE:HD11	1.66	0.60
1:A:383:PHE:CE1	1:A:420:ILE:HG21	2.36	0.59
1:A:75:VAL:HG12	1:A:77:THR:OG1	2.01	0.59
5:Q:39:GLN:HA	5:Q:45:LEU:HA	1.83	0.59
1:E:264:SER:O	1:E:287:HIS:NE2	2.28	0.59
3:G:7:SER:O	3:G:107:THR:HG22	2.03	0.59
6:R:34:GLN:HB2	6:R:89:HIS:HB3	1.84	0.59
2:B:625:ASN:HB3	15:B:702:NAG:N2	2.18	0.59
5:Q:35:THR:HA	5:Q:50:TYR:HB2	1.84	0.59
1:A:344:ARG:NH1	15:A:608:NAG:O7	2.35	0.59
6:R:83:GLU:HA	6:R:104:LEU:HB3	1.85	0.59
2:B:566:LEU:HD11	1:I:51:THR:CG2	2.18	0.59
2:B:566:LEU:HG	2:J:577:GLN:CB	2.33	0.59
1:A:111:LEU:HD11	2:B:571:TRP:CZ2	2.37	0.59
5:Q:63:LEU:HD12	5:Q:66:ARG:HH21	1.68	0.58
1:A:251:ILE:HG23	1:A:482:GLU:CD	2.23	0.58
1:A:333:ILE:CD1	1:A:390:LEU:HD11	2.33	0.58
1:A:395:TRP:HA	1:A:407:GLU:HG2	1.85	0.58
1:A:197:ASN:OD1	1:A:198:THR:HG22	2.03	0.58
5:M:68:VAL:O	5:M:81:LYS:N	2.35	0.58
1:I:333:ILE:HD13	1:I:390:LEU:HD21	1.80	0.58
1:E:127:VAL:O	1:E:129:LEU:CD1	2.51	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:39:ARG:HB2	4:D:42:LYS:HD2	1.86	0.58
6:R:48:ILE:HD11	6:R:58:ILE:HG21	1.86	0.58
2:J:625:ASN:HB3	15:J:703:NAG:N2	2.18	0.58
2:F:612:SER:O	2:F:615:SER:O	2.22	0.58
1:A:45:TRP:HB2	1:A:489:VAL:HG12	1.85	0.57
5:Q:51:ILE:HG12	5:Q:71:ARG:HD3	1.84	0.57
1:E:61:TYR:HE1	1:E:66:HIS:CD2	2.22	0.57
1:I:152:ASP:CG	1:I:153:ASP:N	2.57	0.57
1:I:233:PHE:CE2	1:I:235:GLY:HA2	2.39	0.57
4:L:3:GLN:N	4:L:3:GLN:OE1	2.37	0.57
6:P:31:ARG:NH2	6:P:69:THR:OG1	2.33	0.57
1:I:128:THR:C	1:I:129:LEU:HD23	2.24	0.57
2:B:566:LEU:HG	2:J:577:GLN:HG2	1.86	0.57
1:I:96:TRP:CD2	1:I:275:GLU:OE2	2.56	0.57
6:P:48:ILE:HD11	6:P:58:ILE:HG21	1.85	0.57
6:R:61:ARG:O	6:R:74:THR:OG1	2.22	0.57
1:A:257:THR:HG21	1:A:370:GLU:O	2.04	0.57
2:J:561:ALA:HA	2:J:575:GLN:HE21	1.69	0.57
3:K:82(C):LEU:HD21	3:K:111:VAL:HG21	1.86	0.57
1:A:37:THR:HG21	1:A:499:THR:HG1	1.69	0.57
1:E:501:CYS:CB	2:F:605:CYS:HG	2.17	0.56
5:O:35:THR:HA	5:O:50:TYR:HB2	1.88	0.56
1:E:350:LYS:HE2	1:E:355:ASN:ND2	2.20	0.56
1:I:125:LEU:HD21	1:I:317:PHE:CE1	2.40	0.56
1:I:320:THR:HG23	1:I:422:GLN:HE22	1.71	0.56
1:I:333:ILE:HD13	1:I:390:LEU:CD1	2.35	0.56
6:N:35:TRP:HB3	6:N:47:LEU:HD12	1.88	0.56
1:A:199:SER:HB3	1:A:431:GLY:O	2.06	0.56
2:B:566:LEU:HD22	2:J:574:LYS:HA	1.88	0.56
6:R:23:CYS:O	6:R:70:ARG:NH2	2.38	0.56
6:R:35:TRP:CZ3	6:R:73:LEU:HB2	2.41	0.56
1:I:155:ARG:CZ	1:I:178:LYS:HG3	2.34	0.56
5:M:31:ASN:OD1	5:M:32:TYR:N	2.38	0.56
5:Q:37:ILE:HD12	5:Q:45:LEU:HD22	1.87	0.56
5:Q:43:LYS:NZ	5:Q:46:GLU:OE1	2.38	0.56
2:B:565:LEU:HD21	2:B:576:LEU:HA	1.87	0.56
1:A:265:LEU:CD2	1:A:450:THR:HG22	2.35	0.56
1:E:265:LEU:HD12	1:E:289:ASN:O	2.06	0.56
6:N:37:GLN:HB2	6:N:47:LEU:HD21	1.87	0.56
5:O:96:ARG:HG3	5:O:100(O):SER:HB2	1.87	0.56
1:I:291:SER:HB2	1:I:448:ASN:HB3	1.88	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:I:292:VAL:HB	1:I:449:ILE:HD11	1.88	0.56
1:E:61:TYR:HB2	1:E:72:HIS:HD2	1.71	0.55
1:I:154:VAL:O	1:I:176:PHE:O	2.24	0.55
1:I:300:SER:O	1:I:442:VAL:HG12	2.06	0.55
6:N:38:HIS:HB3	6:N:85:ASP:H	1.71	0.55
2:B:566:LEU:HG	2:J:577:GLN:HB2	1.87	0.55
5:M:83:THR:HG23	5:M:85:ALA:H	1.71	0.55
6:P:34:GLN:HB2	6:P:89:HIS:HB3	1.89	0.55
1:A:50:THR:CG2	1:A:223:TYR:CE2	2.89	0.55
1:E:45:TRP:CD1	1:E:489:VAL:HG21	2.42	0.55
2:B:566:LEU:HG	2:J:577:GLN:CG	2.36	0.55
5:M:100:ARG:NH1	9:U:4:NAG:H2	2.21	0.55
1:E:84:MET:HG3	1:E:244:SER:HB3	1.89	0.55
3:K:19:THR:HA	3:K:81:GLU:HG2	1.88	0.55
3:K:100(I):VAL:HG12	4:L:91:TYR:HB2	1.88	0.55
5:O:71:ARG:CD	5:O:78:LEU:HD22	2.23	0.55
6:P:86:TYR:N	6:P:102:THR:O	2.40	0.55
9:U:2:NAG:H3	9:U:2:NAG:H83	1.89	0.55
3:G:87:THR:HG22	3:G:111:VAL:H	1.72	0.54
4:L:80:ALA:HA	4:L:83:PHE:HD2	1.71	0.54
5:O:103:TRP:CG	6:P:44:PRO:HD2	2.42	0.54
6:P:23:CYS:O	6:P:70:ARG:NH2	2.39	0.54
1:E:501:CYS:HG	2:F:605:CYS:CB	2.18	0.54
1:I:36:VAL:HG13	1:I:496:ILE:HG23	1.89	0.54
5:M:21:THR:HB	5:M:77:GLN:HB3	1.88	0.54
1:A:225:ILE:HG12	1:A:488:VAL:HG22	1.88	0.54
5:O:24:VAL:HG11	5:O:34:TRP:HH2	1.71	0.54
1:A:301:ASN:HB3	1:A:442:VAL:HG13	1.88	0.54
1:A:37:THR:OG1	1:A:499:THR:HG23	2.08	0.54
2:B:608:VAL:HG21	2:B:646:LEU:HD12	1.89	0.54
4:H:21:ILE:HG21	4:H:102:THR:HG21	1.88	0.54
1:E:196:CYS:HB2	1:I:313:PRO:HB3	1.90	0.54
1:E:501:CYS:HB2	2:F:605:CYS:SG	2.48	0.54
1:I:300:SER:HB3	1:I:326:ILE:HG22	1.88	0.54
1:I:299:PRO:HB2	1:I:326:ILE:HG12	1.90	0.54
1:E:501:CYS:CB	2:F:605:CYS:SG	2.96	0.53
5:O:53:ASP:HA	5:O:71:ARG:NH2	2.23	0.53
1:A:338:TRP:HZ3	1:A:449:ILE:CD1	2.21	0.53
1:E:251:ILE:HD13	1:E:483:LEU:HD21	1.89	0.53
6:P:61:ARG:NH1	6:P:76:SER:O	2.41	0.53
5:M:103:TRP:HB2	6:N:43:ALA:HB1	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:N:87:TYR:HB3	6:N:98:PHE:HB3	1.89	0.53
2:J:541:ALA:HA	2:J:545:LEU:HD22	1.90	0.53
5:Q:40:SER:HA	5:Q:88:ALA:HB1	1.90	0.53
1:I:387:THR:O	1:I:387:THR:OG1	2.24	0.53
1:A:474:ASP:OD1	1:A:476:ARG:HG3	2.08	0.53
1:E:129:LEU:CD1	1:E:129:LEU:N	2.72	0.53
3:C:39:GLN:HG3	3:C:45:LEU:HD23	1.91	0.53
4:H:24:ARG:NH2	4:H:70:ASP:OD1	2.42	0.53
5:Q:34:TRP:HE3	5:Q:78:LEU:HD21	1.74	0.53
6:R:21:ILE:O	6:R:72:THR:OG1	2.25	0.53
1:I:274:SER:OG	1:I:277:LEU:CD2	2.57	0.52
2:F:625:ASN:HB3	15:F:703:NAG:HN2	1.74	0.52
5:M:60:ASN:ND2	5:M:62:SER:OG	2.42	0.52
4:D:24:ARG:NH2	4:D:70:ASP:OD1	2.42	0.52
2:F:524:GLY:O	2:F:525:ALA:HB3	2.09	0.52
2:F:648:ILE:HD11	2:J:542:ARG:HD2	1.90	0.52
5:O:12:VAL:HB	5:O:18:LEU:HD21	1.92	0.52
1:A:122:LEU:HG	1:A:125:LEU:HD21	1.92	0.52
2:B:542:ARG:HE	2:J:651:THR:HG21	1.74	0.52
2:J:563:GLN:O	2:J:579:ARG:NH2	2.42	0.52
6:N:35:TRP:CE2	6:N:73:LEU:HD22	2.44	0.52
5:Q:36:TRP:CD1	5:Q:80:LEU:HD13	2.44	0.52
1:E:323:ILE:HD11	15:E:604:NAG:O5	2.10	0.52
1:A:300:SER:O	1:A:300:SER:OG	2.28	0.52
1:A:333:ILE:HD11	1:A:390:LEU:HD11	1.92	0.52
1:E:195:ASN:ND2	1:E:425:ASN:OD1	2.43	0.52
1:I:301:ASN:ND2	1:I:323:ILE:HD11	2.25	0.52
5:M:38:ARG:HD3	5:M:48:ILE:HD13	1.92	0.52
6:P:35:TRP:HB2	6:P:48:ILE:O	2.10	0.52
6:R:12:SER:HB2	6:R:104:LEU:HA	1.92	0.52
6:R:25:ARG:O	6:R:70:ARG:NH1	2.41	0.52
1:A:339:HIS:CE1	1:A:408:THR:HG23	2.45	0.52
2:B:658:LYS:HD2	2:F:603:ILE:HG21	1.90	0.51
1:I:129:LEU:N	1:I:129:LEU:CD2	2.72	0.51
5:M:4:LEU:HG	5:M:104:GLY:HA2	1.92	0.51
4:D:4:MET:HE1	4:D:90:GLN:CB	2.40	0.51
5:O:49:GLY:HA2	5:O:59:TYR:HA	1.91	0.51
1:I:298:ARG:NH2	1:I:441:GLY:O	2.44	0.51
5:M:51:ILE:HD11	5:M:55:GLU:HG3	1.93	0.51
1:A:278:THR:HG23	3:C:74:LEU:HD22	1.92	0.51
1:I:360:VAL:HB	1:I:394:THR:HG22	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:182:VAL:CG1	10:X:2:NAG:H82	2.40	0.51
1:E:257:THR:HG21	1:E:370:GLU:O	2.10	0.51
1:E:122:LEU:HD11	1:E:203:GLN:HB2	1.92	0.51
1:E:154:VAL:HB	1:E:175:LEU:HD12	1.92	0.50
2:F:574:LYS:HA	2:J:566:LEU:HD11	1.92	0.50
5:M:70:SER:O	5:M:79:SER:N	2.44	0.50
6:P:25:ARG:O	6:P:70:ARG:NH1	2.43	0.50
1:I:320:THR:HG22	1:I:438:PRO:HG3	1.94	0.50
1:E:289:ASN:OD1	1:E:290:GLU:N	2.45	0.50
5:M:49:GLY:HA2	5:M:59:TYR:HA	1.93	0.50
1:A:182:VAL:HG12	10:X:2:NAG:H82	1.92	0.49
3:G:23:LYS:HG2	3:G:77(D):ILE:HG12	1.93	0.49
1:I:368:ASP:H	1:I:371:ILE:HD12	1.77	0.49
5:O:69:ILE:HD12	5:O:80:LEU:HG	1.94	0.49
6:P:34:GLN:NE2	6:P:49:TYR:O	2.39	0.49
1:A:54:CYS:SG	1:A:215:ILE:HG23	2.52	0.49
1:A:204:ALA:HB3	1:A:437:PRO:HD3	1.93	0.49
1:I:75:VAL:N	1:I:76:PRO:CD	2.75	0.49
1:I:327:ARG:HD2	5:Q:100(G):PHE:CB	2.41	0.49
5:M:100:ARG:HE	6:N:30:SER:HB2	1.76	0.49
5:M:18:LEU:HD13	5:M:82(C):VAL:HG11	1.94	0.49
5:M:29:MET:SD	5:M:29:MET:N	2.85	0.49
5:M:51:ILE:HD11	5:M:55:GLU:HA	1.95	0.49
6:P:20:ARG:HG2	6:P:74:THR:HB	1.95	0.49
1:E:61:TYR:CD1	1:E:72:HIS:HB2	2.47	0.49
1:I:327:ARG:HB2	5:Q:100(I):GLU:CD	2.32	0.49
1:E:215:ILE:HD12	1:E:253:PRO:HG3	1.94	0.49
2:J:625:ASN:HB3	15:J:703:NAG:HN2	1.77	0.49
5:Q:100(A):ILE:HG22	5:Q:100(J):PHE:HB3	1.95	0.49
1:E:154:VAL:O	1:E:155:ARG:O	2.30	0.49
1:E:322:ILE:HD11	1:E:326:ILE:HG12	1.94	0.49
1:A:45:TRP:CE3	2:B:523:LEU:HD11	2.47	0.49
3:C:68:LEU:HG	3:C:69:ILE:N	2.28	0.49
3:K:39:GLN:HB2	3:K:45:LEU:HD23	1.94	0.49
1:A:386:ASN:O	1:A:416:ILE:HB	2.13	0.48
2:B:566:LEU:CD2	2:J:577:GLN:HB2	2.43	0.48
4:D:88:CYS:O	4:D:99:GLY:N	2.46	0.48
1:A:276:ASN:OD1	1:A:278:THR:OG1	2.24	0.48
2:B:620:GLU:O	2:B:624:ASN:HB2	2.13	0.48
1:E:379:ARG:HE	1:E:443:ILE:HG22	1.77	0.48
2:B:566:LEU:HD21	2:J:577:GLN:HB3	1.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:61:HIS:CE1	3:C:64:ARG:HH21	2.31	0.48
1:E:502:LYS:O	1:E:502:LYS:HD3	2.13	0.48
1:I:96:TRP:CB	1:I:275:GLU:OE2	2.62	0.48
6:P:36:TYR:HB2	6:P:38:HIS:CE1	2.48	0.48
2:B:542:ARG:NE	2:J:651:THR:HG21	2.28	0.48
1:E:122:LEU:CD1	1:E:203:GLN:HB2	2.43	0.48
3:G:75:THR:O	3:G:76:GLY:C	2.52	0.48
1:I:155:ARG:NH2	1:I:178:LYS:CG	2.75	0.48
2:J:522:PHE:O	2:J:540:GLN:NE2	2.37	0.48
3:K:35(A):ASN:O	3:K:93:THR:OG1	2.31	0.48
5:M:10:GLY:HA2	5:M:109:VAL:HA	1.96	0.48
5:O:67:VAL:HB	5:O:82:LEU:HA	1.94	0.48
4:D:89:GLN:HG2	4:D:90:GLN:N	2.29	0.48
1:E:36:VAL:HG13	1:E:496:ILE:HG23	1.95	0.48
1:I:300:SER:N	1:I:326:ILE:HG21	2.29	0.48
3:K:55:TRP:HH2	3:K:73:ASP:HB3	1.77	0.48
1:A:62:GLU:OE1	1:A:211:ASP:HB3	2.14	0.48
2:B:625:ASN:HB3	15:B:702:NAG:HN2	1.79	0.48
1:I:374:HIS:HB2	1:I:387:THR:HG21	1.96	0.48
1:E:50:THR:HG21	1:E:223:TYR:CZ	2.49	0.48
5:M:7:SER:OG	5:M:21:THR:OG1	2.32	0.48
5:M:38:ARG:NH2	5:M:86:ASP:O	2.47	0.48
1:E:128:THR:C	1:E:129:LEU:HD12	2.33	0.47
1:I:156:ASN:CB	1:I:175:LEU:CD1	2.54	0.47
5:O:24:VAL:HG11	5:O:34:TRP:CH2	2.48	0.47
1:E:129:LEU:HD21	1:E:193:LEU:HD22	1.97	0.47
1:E:129:LEU:N	1:E:129:LEU:HD12	2.28	0.47
1:I:127:VAL:O	1:I:129:LEU:HD21	2.15	0.47
5:M:12:VAL:HG21	5:M:18:LEU:HD21	1.96	0.47
2:J:575:GLN:O	2:J:579:ARG:HG3	2.15	0.47
6:R:34:GLN:NE2	6:R:49:TYR:HB2	2.29	0.47
6:R:35:TRP:CD1	6:R:88:CYS:HA	2.49	0.47
3:C:69:ILE:N	7:S:9:MAN:O6	2.45	0.47
5:O:21:THR:HB	5:O:77:GLN:HB3	1.97	0.47
2:B:542:ARG:NE	2:J:651:THR:CG2	2.75	0.47
1:E:59:LYS:O	1:E:60:ALA:C	2.50	0.47
1:E:111:LEU:HD11	2:F:571:TRP:CZ2	2.50	0.47
1:E:154:VAL:O	1:E:155:ARG:C	2.53	0.47
2:F:598:CYS:O	2:F:601:LYS:HG2	2.14	0.47
5:Q:45:LEU:HD21	6:R:98:PHE:CD1	2.50	0.47
1:A:449:ILE:HG13	1:A:449:ILE:O	2.15	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:595:LEU:O	2:F:650:GLN:HG2	2.15	0.47
5:Q:103:TRP:HB2	6:R:43:ALA:HB1	1.97	0.47
1:A:265:LEU:HD13	1:A:290:GLU:HA	1.96	0.47
1:I:122:LEU:HB2	1:I:201:ILE:O	2.16	0.46
3:C:39:GLN:O	3:C:88:ALA:HB1	2.16	0.46
2:B:524:GLY:O	2:B:525:ALA:HB3	2.15	0.46
1:E:127:VAL:O	1:E:129:LEU:HD13	2.14	0.46
1:I:238:PRO:HG3	3:K:54:ARG:HG2	1.97	0.46
2:B:566:LEU:HD21	2:J:577:GLN:CB	2.45	0.46
1:E:340:LYS:HE2	1:E:344:ARG:HH21	1.81	0.46
2:F:651:THR:HG21	2:J:538:THR:HA	1.96	0.46
1:I:126:CYS:SG	1:I:196:CYS:HA	2.55	0.46
15:J:702:NAG:H83	4:L:27:GLN:OE1	2.16	0.46
3:K:29:THR:HG23	3:K:31:GLY:H	1.79	0.46
5:M:40:SER:HB2	5:M:43:LYS:HB3	1.97	0.46
6:N:12:SER:HB2	6:N:105:THR:H	1.81	0.46
6:R:36:TYR:HA	6:R:46:LEU:HA	1.98	0.46
1:E:333:ILE:HG13	1:E:334:SER:N	2.31	0.46
1:I:395:TRP:CZ2	1:I:409:ARG:HD2	2.50	0.46
2:J:561:ALA:HA	2:J:575:GLN:NE2	2.30	0.46
3:C:67:VAL:CG2	3:C:82:ILE:HD13	2.45	0.46
3:K:32:LEU:HD12	3:K:33:TYR:HD1	1.79	0.46
1:A:75:VAL:CG1	1:A:77:THR:OG1	2.64	0.46
1:E:129:LEU:HD21	1:E:193:LEU:HD21	1.98	0.46
1:I:126:CYS:CB	1:I:196:CYS:HG	2.24	0.46
1:I:161:MET:HE2	1:I:161:MET:HB3	1.74	0.46
1:I:378:CYS:HB3	1:I:443:ILE:HD12	1.97	0.46
3:C:56:LYS:HE3	3:C:56:LYS:HA	1.98	0.45
1:E:265:LEU:HD23	1:E:265:LEU:H	1.81	0.45
5:O:4:LEU:HD12	5:O:92:CYS:HB3	1.99	0.45
1:A:179:LEU:HG	1:A:421:LYS:CD	2.45	0.45
2:J:608:VAL:HG21	2:J:646:LEU:HD23	1.97	0.45
6:N:20:ARG:HE	6:N:74:THR:HA	1.80	0.45
5:Q:33:TYR:O	5:Q:95:ALA:HB3	2.17	0.45
1:A:111:LEU:HD23	1:A:114:GLN:NE2	2.32	0.45
3:C:39:GLN:CA	3:C:45:LEU:HD23	2.46	0.45
3:C:39:GLN:CB	3:C:45:LEU:HD23	2.46	0.45
3:C:72:VAL:HG23	7:S:5:MAN:H61	1.99	0.45
5:M:47:TRP:CZ3	6:N:96:TRP:HD1	2.34	0.45
3:C:38:ARG:HG2	3:C:39:GLN:O	2.17	0.45
3:K:28:ASN:OD1	3:K:29:THR:N	2.50	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:G:38:ARG:HB3	3:G:48:ILE:HD11	1.99	0.45
5:M:100(A):ILE:HG22	5:M:100(J):PHE:HB3	1.99	0.45
4:L:80:ALA:HA	4:L:83:PHE:CD2	2.51	0.45
5:M:15:SER:HA	5:M:82(B):SER:HA	1.98	0.45
5:O:89:VAL:HG22	5:O:106:GLY:HA3	1.98	0.45
1:E:229:ASN:O	15:E:602:NAG:H62	2.16	0.45
1:E:290:GLU:OE1	1:E:340:LYS:NZ	2.49	0.45
2:B:522:PHE:CE2	2:B:524:GLY:O	2.70	0.45
1:A:229:ASN:HB2	1:A:241:ASN:O	2.17	0.45
1:I:257:THR:HG21	1:I:370:GLU:O	2.16	0.45
5:Q:30:ASN:OD1	5:Q:31:ASN:N	2.50	0.45
3:C:48:ILE:O	3:C:60:SER:N	2.41	0.44
1:I:117:LYS:HG3	1:I:118:PRO:HD3	1.99	0.44
1:I:300:SER:HB2	1:I:322:ILE:CG2	2.46	0.44
6:R:14:ALA:HA	6:R:106:VAL:HG23	1.99	0.44
1:A:95:MET:HE3	1:A:273:ARG:HB3	2.00	0.44
1:A:227:ARG:HA	1:A:485:LYS:O	2.17	0.44
2:B:566:LEU:CG	2:J:577:GLN:CB	2.95	0.44
1:E:171:LYS:HE2	1:E:171:LYS:HB3	1.81	0.44
3:K:32:LEU:HD12	3:K:33:TYR:CD1	2.52	0.44
6:P:34:GLN:HA	6:P:49:TYR:HA	1.99	0.44
1:E:277:LEU:HD23	1:E:277:LEU:HA	1.77	0.44
5:M:36:TRP:HZ3	5:M:90:TYR:HB3	1.82	0.44
2:B:539:VAL:HG13	2:B:543:GLN:HG2	1.99	0.44
3:C:82(C):LEU:HD21	3:C:111:VAL:HG11	2.00	0.44
3:G:29:THR:HG23	3:G:32:LEU:H	1.82	0.44
1:I:362:LYS:HE2	1:I:362:LYS:HB3	1.66	0.44
1:A:383:PHE:HE1	1:A:420:ILE:HG21	1.80	0.44
2:F:629:ILE:HG21	3:G:100:ARG:HH21	1.83	0.44
5:M:52:SER:HB2	5:M:56:SER:HB2	1.99	0.44
4:D:36:TYR:HB2	4:D:87:TYR:HB2	1.99	0.44
6:N:38:HIS:HB2	6:N:85:ASP:HB2	1.99	0.44
5:Q:89:VAL:HG23	5:Q:107:THR:C	2.38	0.44
1:A:288:PHE:CE2	1:A:341:VAL:HG11	2.53	0.44
1:A:481:ASN:O	1:A:484:TYR:HD1	2.01	0.44
1:I:73:ALA:O	1:I:75:VAL:N	2.49	0.44
5:O:45:LEU:HD21	5:O:103:TRP:HH2	1.83	0.44
2:B:542:ARG:HG2	2:J:648:ILE:HD13	1.99	0.43
1:I:261:LEU:HD23	1:I:449:ILE:HG22	2.00	0.43
1:I:241:ASN:HB3	15:I:602:NAG:HN2	1.82	0.43
5:M:20:VAL:HG11	5:M:90:TYR:CG	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:M:37:ILE:HG21	5:M:103:TRP:HZ3	1.83	0.43
3:C:29:THR:HG23	3:C:31:GLY:H	1.84	0.43
3:C:67:VAL:HG22	3:C:82:ILE:HD13	1.99	0.43
3:C:67:VAL:O	7:S:9:MAN:O4	2.23	0.43
1:E:129:LEU:CD2	1:E:193:LEU:HD22	2.49	0.43
3:G:93:THR:HG22	3:G:103:TRP:HA	1.99	0.43
5:O:13:LYS:HA	5:O:13:LYS:HD3	1.79	0.43
5:O:100:ARG:HE	6:P:30:SER:HB2	1.83	0.43
4:H:3:GLN:OE1	4:H:3:GLN:N	2.52	0.43
5:M:66:ARG:HH12	5:M:85:ALA:HB3	1.83	0.43
1:A:71:THR:HG21	1:A:213:ILE:HD11	1.99	0.43
2:B:565:LEU:HG	2:B:575:GLN:HB3	2.00	0.43
6:P:10:PRO:HG3	6:P:103:ARG:CZ	2.48	0.43
6:P:31:ARG:NH1	6:P:51:ASN:OD1	2.52	0.43
1:E:62:GLU:O	1:E:65:VAL:HG12	2.18	0.43
3:K:38:ARG:HB2	3:K:48:ILE:HD11	2.01	0.43
5:O:100(P):MET:HB3	6:P:36:TYR:CE2	2.54	0.43
6:R:12:SER:OG	6:R:13:VAL:N	2.52	0.43
1:I:240:LYS:HD3	1:I:240:LYS:HA	1.86	0.43
1:A:36:VAL:HG11	2:B:646:LEU:HD11	2.00	0.43
1:A:177:TYR:OH	1:A:420:ILE:HD11	2.18	0.43
1:I:181:ILE:CG2	1:I:191:TYR:HB3	2.49	0.43
1:A:290:GLU:OE2	1:A:340:LYS:NZ	2.52	0.42
1:E:153:ASP:HB2	1:E:178:LYS:HE3	2.00	0.42
1:E:382:PHE:CE2	1:E:424:ILE:HD13	2.54	0.42
1:I:326:ILE:HG23	1:I:327:ARG:O	2.18	0.42
1:I:333:ILE:CD1	1:I:390:LEU:CD1	2.97	0.42
5:M:2:VAL:HG13	5:M:24:VAL:HG13	2.02	0.42
1:A:321(A):ASP:OD1	1:A:322:ILE:N	2.52	0.42
1:A:333:ILE:CD1	1:A:390:LEU:CD1	2.98	0.42
3:C:69:ILE:HG12	3:C:80:LEU:HD12	2.01	0.42
1:I:96:TRP:HB3	1:I:275:GLU:OE2	2.19	0.42
2:J:564:HIS:HA	2:J:579:ARG:HH22	1.84	0.42
5:M:51:ILE:HB	5:M:69:ILE:HG12	2.02	0.42
5:Q:7:SER:O	5:Q:21:THR:OG1	2.29	0.42
1:A:325:ASP:OD1	1:A:325:ASP:O	2.36	0.42
1:A:392:ASN:O	1:A:393:SER:OG	2.34	0.42
1:I:213:ILE:CG2	1:I:214:PRO:HD2	2.47	0.42
5:Q:12:VAL:HB	5:Q:111:VAL:HG12	2.02	0.42
4:D:23:CYS:N	4:D:71:PHE:O	2.51	0.42
1:E:71:THR:HG21	1:E:213:ILE:HD11	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:212:PRO:HG2	1:E:254:VAL:HG12	2.02	0.42
1:E:431:GLY:O	1:E:432:GLN:HG3	2.19	0.42
3:C:55:TRP:HH2	3:C:73:ASP:HB3	1.84	0.42
4:D:4:MET:CE	4:D:90:GLN:HB3	2.47	0.42
1:I:217:TYR:O	1:I:247:CYS:HB2	2.19	0.42
5:M:66:ARG:HG3	5:M:86:ASP:HB3	2.01	0.42
1:I:192:ARG:HH11	1:I:196:CYS:CB	2.32	0.42
5:M:37:ILE:O	5:M:91:TYR:HB2	2.19	0.42
5:Q:103:TRP:CD2	6:R:44:PRO:HD2	2.54	0.42
1:A:45:TRP:HH2	1:A:89:VAL:HG11	1.85	0.42
1:A:293:LYS:HE2	1:A:293:LYS:HB3	1.84	0.42
2:B:538:THR:O	2:B:542:ARG:HG3	2.20	0.42
1:I:95:MET:HG2	1:I:235:GLY:O	2.20	0.42
1:A:333:ILE:HD13	1:A:390:LEU:HD11	2.01	0.42
1:E:196:CYS:HA	1:E:199:SER:O	2.20	0.42
1:A:350:LYS:HE3	1:A:355:ASN:OD1	2.20	0.42
1:E:61:TYR:CE1	1:E:66:HIS:CD2	3.04	0.42
1:I:298:ARG:HE	1:I:298:ARG:HB3	1.47	0.42
1:A:50:THR:HG21	1:A:223:TYR:CE2	2.55	0.41
2:B:570:VAL:O	2:B:574:LYS:HG3	2.20	0.41
1:E:36:VAL:HG22	2:F:610:TRP:CE3	2.55	0.41
1:I:73:ALA:C	1:I:75:VAL:N	2.73	0.41
1:I:235:GLY:O	1:I:236:THR:OG1	2.29	0.41
1:I:320:THR:CG2	1:I:422:GLN:NE2	2.83	0.41
1:A:178:LYS:HE3	1:A:178:LYS:HB2	1.92	0.41
3:C:39:GLN:HG2	3:C:40:ALA:N	2.35	0.41
3:C:95:THR:HG22	3:C:101:SER:H	1.85	0.41
1:E:368:ASP:H	1:E:371:ILE:HD12	1.85	0.41
4:D:31:ASN:ND2	11:Z:1:NAG:H82	2.36	0.41
1:E:340:LYS:HZ1	1:E:344:ARG:HH21	1.69	0.41
1:I:378:CYS:HB2	1:I:383:PHE:CE1	2.55	0.41
4:L:47:LEU:O	4:L:48:ILE:HD13	2.21	0.41
1:A:387:THR:HG23	1:A:387:THR:O	2.21	0.41
1:A:392:ASN:C	1:A:393:SER:OG	2.58	0.41
3:C:7:SER:OG	3:C:8:GLY:N	2.52	0.41
3:C:39:GLN:HG2	3:C:40:ALA:H	1.86	0.41
1:E:385:CYS:HA	1:E:418:CYS:HA	2.02	0.41
1:I:277:LEU:HD23	1:I:277:LEU:HA	1.92	0.41
5:M:51:ILE:HD13	5:M:71:ARG:HB3	2.02	0.41
5:O:53:ASP:OD1	5:O:53:ASP:N	2.54	0.41
1:A:340:LYS:HE2	1:A:344:ARG:HH21	1.84	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:E:480:ARG:O	1:E:484:TYR:HB3	2.20	0.41
1:I:129:LEU:HD11	1:I:193:LEU:CD1	2.51	0.41
5:O:71:ARG:HB3	5:O:79:SER:H	1.86	0.41
6:P:13:VAL:HG12	6:P:19:ALA:HB2	2.02	0.41
6:P:50:ASN:HB2	6:P:53:ASP:HB2	2.03	0.41
1:A:207:LYS:HE2	1:A:207:LYS:HB2	1.93	0.41
4:D:4:MET:HE3	4:D:4:MET:HB2	1.70	0.41
3:G:100(K):ALA:HB1	4:H:46:LEU:HD11	2.01	0.41
1:I:333:ILE:HD13	1:I:390:LEU:CD2	2.46	0.41
5:Q:34:TRP:CE3	5:Q:78:LEU:HD11	2.56	0.41
5:Q:38:ARG:HH21	5:Q:87:THR:HA	1.86	0.41
2:B:523:LEU:HD13	2:B:523:LEU:HA	1.69	0.41
1:E:112:TRP:HZ3	1:E:434:MET:SD	2.44	0.41
1:I:178:LYS:HE3	1:I:178:LYS:HB2	1.89	0.41
1:I:192:ARG:HH11	1:I:196:CYS:HB2	1.85	0.41
6:N:11:LEU:HD22	6:N:21:ILE:HD13	2.01	0.41
5:O:52:SER:HB2	5:O:56:SER:HB2	2.02	0.41
5:O:92:CYS:H	5:O:104:GLY:HA3	1.86	0.41
1:A:203:GLN:HG3	1:A:435:TYR:HD2	1.86	0.41
1:A:416:ILE:HA	1:A:417:PRO:HD3	1.96	0.41
2:B:565:LEU:HD21	2:B:579:ARG:HD2	2.03	0.41
1:E:163:THR:HG22	1:E:164:GLU:N	2.36	0.41
2:F:533:ALA:HA	2:F:536:THR:HG22	2.02	0.41
1:I:219:THR:HA	1:I:220:PRO:HD3	1.91	0.41
1:I:383:PHE:HA	1:I:420:ILE:HA	2.03	0.41
6:N:62:PHE:HB3	6:N:73:LEU:HD21	2.02	0.41
5:O:39:GLN:O	5:O:89:VAL:HG12	2.20	0.41
1:A:289:ASN:OD1	1:A:289:ASN:N	2.54	0.41
5:Q:32:TYR:HB2	5:Q:34:TRP:NE1	2.36	0.41
5:Q:69:ILE:HD12	5:Q:80:LEU:HD12	2.03	0.41
1:E:456:ARG:NH1	1:E:466:GLU:OE2	2.53	0.40
1:I:301:ASN:C	1:I:302:ASN:HD22	2.16	0.40
5:M:39:GLN:HA	5:M:45:LEU:HA	2.03	0.40
6:P:12:SER:OG	6:P:105:THR:OG1	2.24	0.40
5:Q:60:ASN:HB2	5:Q:63:LEU:HD23	2.03	0.40
2:B:522:PHE:CD2	2:B:524:GLY:O	2.74	0.40
2:B:542:ARG:CG	2:J:651:THR:HG21	2.52	0.40
2:F:661:LEU:HD11	1:I:504:ARG:HH22	1.86	0.40
3:K:37:VAL:HG11	3:K:103:TRP:CZ3	2.57	0.40
3:K:94:THR:OG1	3:K:102:SER:HB2	2.21	0.40
1:A:181:ILE:HG23	1:A:191:TYR:HB3	2.02	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:333:ILE:HD13	1:A:390:LEU:CD1	2.51	0.40
3:C:36:TRP:CZ3	3:C:92:CYS:HB2	2.57	0.40
1:E:203:GLN:HG3	1:E:435:TYR:HD2	1.86	0.40
4:L:24:ARG:NH2	4:L:70:ASP:OD1	2.54	0.40
5:O:63:LEU:O	5:O:66:ARG:HG3	2.20	0.40
4:D:90:GLN:HG3	4:D:90:GLN:O	2.20	0.40
1:I:181:ILE:HG22	1:I:191:TYR:HB3	2.04	0.40
5:O:15:SER:HA	5:O:82(B):SER:HA	2.03	0.40
6:P:8:VAL:HG12	6:P:103:ARG:HE	1.87	0.40
2:B:658:LYS:HB3	2:B:658:LYS:HE2	1.81	0.40
1:I:35:TRP:CD1	1:I:502:LYS:HB2	2.56	0.40
5:M:100(A):ILE:O	9:U:3:NAG:H5	2.21	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	430/486 (88%)	415 (96%)	15 (4%)	0	100	100
1	E	428/486 (88%)	404 (94%)	24 (6%)	0	100	100
1	I	427/486 (88%)	403 (94%)	20 (5%)	4 (1%)	17	50
2	B	121/155 (78%)	117 (97%)	4 (3%)	0	100	100
2	F	115/155 (74%)	112 (97%)	3 (3%)	0	100	100
2	J	124/155 (80%)	121 (98%)	3 (2%)	0	100	100
3	C	128/238 (54%)	120 (94%)	8 (6%)	0	100	100
3	G	128/238 (54%)	126 (98%)	2 (2%)	0	100	100
3	K	128/238 (54%)	124 (97%)	4 (3%)	0	100	100
4	D	105/215 (49%)	103 (98%)	2 (2%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
4	H	106/215 (49%)	105 (99%)	1 (1%)	0	100	100
4	L	106/215 (49%)	105 (99%)	1 (1%)	0	100	100
5	M	129/238 (54%)	126 (98%)	3 (2%)	0	100	100
5	O	129/238 (54%)	127 (98%)	2 (2%)	0	100	100
5	Q	129/238 (54%)	124 (96%)	5 (4%)	0	100	100
6	N	105/214 (49%)	97 (92%)	8 (8%)	0	100	100
6	P	105/214 (49%)	100 (95%)	5 (5%)	0	100	100
6	R	105/214 (49%)	96 (91%)	9 (9%)	0	100	100
All	All	3048/4638 (66%)	2925 (96%)	119 (4%)	4 (0%)	54	82

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	I	234	ASN
1	I	155	ARG
1	I	236	THR
1	I	76	PRO

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	392/434 (90%)	380 (97%)	12 (3%)	40	69
1	E	390/434 (90%)	382 (98%)	8 (2%)	53	78
1	I	389/434 (90%)	376 (97%)	13 (3%)	38	68
2	B	108/130 (83%)	107 (99%)	1 (1%)	78	90
2	F	103/130 (79%)	102 (99%)	1 (1%)	76	89
2	J	112/130 (86%)	112 (100%)	0	100	100
3	C	111/204 (54%)	108 (97%)	3 (3%)	44	72
3	G	111/204 (54%)	106 (96%)	5 (4%)	27	59

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
3	K	111/204 (54%)	111 (100%)	0	100 100
4	D	85/182 (47%)	84 (99%)	1 (1%)	71 87
4	H	86/182 (47%)	86 (100%)	0	100 100
4	L	86/182 (47%)	86 (100%)	0	100 100
5	M	115/208 (55%)	115 (100%)	0	100 100
5	O	115/208 (55%)	115 (100%)	0	100 100
5	Q	115/208 (55%)	114 (99%)	1 (1%)	78 90
6	N	85/178 (48%)	85 (100%)	0	100 100
6	P	85/178 (48%)	85 (100%)	0	100 100
6	R	85/178 (48%)	85 (100%)	0	100 100
All	All	2684/4008 (67%)	2639 (98%)	45 (2%)	62 82

All (45) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	74	CYS
1	A	125	LEU
1	A	126	CYS
1	A	155	ARG
1	A	179	LEU
1	A	198	THR
1	A	261	LEU
1	A	277	LEU
1	A	302	ASN
1	A	333	ILE
1	A	387	THR
1	A	393	SER
2	B	523	LEU
3	C	38	ARG
3	C	67	VAL
3	C	68	LEU
4	D	89	GLN
1	E	61	TYR
1	E	68	VAL
1	E	76	PRO
1	E	261	LEU
1	E	275	GLU
1	E	277	LEU

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Mol	Chain	Res	Type
1	E	333	ILE
1	E	502	LYS
2	F	617	LYS
3	G	22	CYS
3	G	67	VAL
3	G	69	ILE
3	G	100(I)	VAL
3	G	100(L)	PHE
1	I	61	TYR
1	I	126	CYS
1	I	129	LEU
1	I	161	MET
1	I	196	CYS
1	I	198	THR
1	I	261	LEU
1	I	277	LEU
1	I	302	ASN
1	I	333	ILE
1	I	360	VAL
1	I	395	TRP
1	I	501	CYS
5	Q	100	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (25) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	99	ASN
1	A	169	GLN
1	A	195	ASN
1	A	203	GLN
1	A	229	ASN
1	A	339	HIS
1	A	425	ASN
3	C	61	HIS
4	D	38	GLN
1	E	66	HIS
1	E	67	ASN
1	E	72	HIS
1	E	99	ASN
1	E	203	GLN
3	G	61	HIS
1	I	33	ASN

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Mol	Chain	Res	Type
1	I	99	ASN
1	I	195	ASN
1	I	302	ASN
1	I	422	GLN
4	L	6	GLN
4	L	31	ASN
5	O	31	ASN
6	P	89	HIS
6	R	52	GLN

5.3.3 RNA

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates

101 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	$\#\|Z\| > 2$
7	NAG	S	1	1,7	14,14,15	0.16	0	17,19,21	0.39	0
7	NAG	S	2	7	14,14,15	0.34	0	17,19,21	0.48	0
7	BMA	S	3	7	11,11,12	0.60	0	15,15,17	1.01	0
7	MAN	S	4	7	11,11,12	0.59	0	15,15,17	0.96	2 (13%)
7	MAN	S	5	7	11,11,12	0.54	0	15,15,17	1.19	2 (13%)
7	MAN	S	6	7	11,11,12	0.62	0	15,15,17	0.98	2 (13%)
7	MAN	S	7	7	11,11,12	0.64	0	15,15,17	1.01	2 (13%)
7	MAN	S	8	7	11,11,12	0.61	0	15,15,17	1.07	2 (13%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
7	MAN	S	9	7	11,11,12	0.61	0	15,15,17	0.97	2 (13%)
8	NAG	T	1	1,8	14,14,15	0.35	0	17,19,21	0.39	0
8	NAG	T	2	8	14,14,15	0.24	0	17,19,21	0.43	0
8	BMA	T	3	8	11,11,12	0.57	0	15,15,17	0.86	0
8	MAN	T	4	8	11,11,12	0.78	0	15,15,17	1.04	2 (13%)
8	MAN	T	5	8	11,11,12	0.81	0	15,15,17	1.28	2 (13%)
8	MAN	T	6	8	11,11,12	0.62	0	15,15,17	0.98	2 (13%)
9	NAG	U	1	1,9	14,14,15	0.37	0	17,19,21	0.39	0
9	NAG	U	2	9	14,14,15	0.39	0	17,19,21	1.30	2 (11%)
9	NAG	U	3	9	14,14,15	0.20	0	17,19,21	0.53	0
9	NAG	U	4	9	14,14,15	0.24	0	17,19,21	0.46	0
10	NAG	V	1	1,10	14,14,15	0.25	0	17,19,21	0.68	0
10	NAG	V	2	10	14,14,15	0.21	0	17,19,21	0.47	0
10	NAG	W	1	1,10	14,14,15	0.44	0	17,19,21	0.40	0
10	NAG	W	2	10	14,14,15	0.39	0	17,19,21	0.36	0
10	NAG	X	1	1,10	14,14,15	0.23	0	17,19,21	0.56	0
10	NAG	X	2	10	14,14,15	0.25	0	17,19,21	0.40	0
11	NAG	Y	1	1,11	14,14,15	0.30	0	17,19,21	0.47	0
11	NAG	Y	2	11	14,14,15	0.19	0	17,19,21	0.45	0
11	BMA	Y	3	11	11,11,12	0.55	0	15,15,17	0.71	0
11	NAG	Z	1	2,11	14,14,15	0.25	0	17,19,21	0.47	0
11	NAG	Z	2	11	14,14,15	0.25	0	17,19,21	0.41	0
11	BMA	Z	3	11	11,11,12	0.53	0	15,15,17	0.78	0
12	NAG	a	1	1,12	14,14,15	0.43	0	17,19,21	0.46	0
12	MAN	a	10	12	11,11,12	0.70	0	15,15,17	0.88	1 (6%)
12	NAG	a	2	12	14,14,15	0.20	0	17,19,21	0.47	0
12	BMA	a	3	12	11,11,12	0.59	0	15,15,17	1.06	1 (6%)
12	MAN	a	4	12	11,11,12	0.60	0	15,15,17	0.99	2 (13%)
12	MAN	a	5	12	11,11,12	0.50	0	15,15,17	1.07	2 (13%)
12	MAN	a	6	12	11,11,12	0.56	0	15,15,17	1.07	2 (13%)
12	MAN	a	7	12	11,11,12	0.63	0	15,15,17	1.06	2 (13%)
12	MAN	a	8	12	11,11,12	0.67	0	15,15,17	1.08	2 (13%)
12	MAN	a	9	12	11,11,12	0.59	0	15,15,17	1.00	2 (13%)
8	NAG	b	1	1,8	14,14,15	0.29	0	17,19,21	0.40	0
8	NAG	b	2	8	14,14,15	0.22	0	17,19,21	0.44	0
8	BMA	b	3	8	11,11,12	0.54	0	15,15,17	0.88	0
8	MAN	b	4	8	11,11,12	0.82	0	15,15,17	1.03	1 (6%)
8	MAN	b	5	8	11,11,12	0.83	1 (9%)	15,15,17	1.30	2 (13%)
8	MAN	b	6	8	11,11,12	0.67	0	15,15,17	0.90	1 (6%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
10	NAG	c	1	1,10	14,14,15	0.16	0	17,19,21	0.53	0
10	NAG	c	2	10	14,14,15	0.23	0	17,19,21	0.43	0
9	NAG	d	1	1,9	14,14,15	0.38	0	17,19,21	0.39	0
9	NAG	d	2	9	14,14,15	0.22	0	17,19,21	0.59	0
9	NAG	d	3	9	14,14,15	0.18	0	17,19,21	0.53	0
9	NAG	d	4	9	14,14,15	0.27	0	17,19,21	0.55	0
10	NAG	e	1	1,10	14,14,15	0.24	0	17,19,21	0.56	0
10	NAG	e	2	10	14,14,15	0.21	0	17,19,21	0.46	0
10	NAG	f	1	1,10	14,14,15	0.55	0	17,19,21	0.48	0
10	NAG	f	2	10	14,14,15	0.27	0	17,19,21	0.54	0
10	NAG	g	1	1,10	14,14,15	0.22	0	17,19,21	0.46	0
10	NAG	g	2	10	14,14,15	0.24	0	17,19,21	0.40	0
11	NAG	h	1	1,11	14,14,15	0.30	0	17,19,21	0.46	0
11	NAG	h	2	11	14,14,15	0.18	0	17,19,21	0.45	0
11	BMA	h	3	11	11,11,12	0.54	0	15,15,17	0.71	0
11	NAG	i	1	2,11	14,14,15	0.26	0	17,19,21	0.50	0
11	NAG	i	2	11	14,14,15	0.28	0	17,19,21	0.43	0
11	BMA	i	3	11	11,11,12	0.50	0	15,15,17	0.77	0
7	NAG	j	1	1,7	14,14,15	0.19	0	17,19,21	0.54	0
7	NAG	j	2	7	14,14,15	0.41	0	17,19,21	0.49	0
7	BMA	j	3	7	11,11,12	0.53	0	15,15,17	0.89	0
7	MAN	j	4	7	11,11,12	0.52	0	15,15,17	0.94	2 (13%)
7	MAN	j	5	7	11,11,12	0.61	0	15,15,17	1.18	2 (13%)
7	MAN	j	6	7	11,11,12	0.59	0	15,15,17	0.94	2 (13%)
7	MAN	j	7	7	11,11,12	0.64	0	15,15,17	1.00	2 (13%)
7	MAN	j	8	7	11,11,12	0.63	0	15,15,17	1.10	2 (13%)
7	MAN	j	9	7	11,11,12	0.68	0	15,15,17	0.96	1 (6%)
8	NAG	k	1	1,8	14,14,15	0.29	0	17,19,21	0.42	0
8	NAG	k	2	8	14,14,15	0.24	0	17,19,21	0.44	0
8	BMA	k	3	8	11,11,12	0.59	0	15,15,17	0.88	0
8	MAN	k	4	8	11,11,12	0.74	0	15,15,17	0.98	2 (13%)
8	MAN	k	5	8	11,11,12	0.87	1 (9%)	15,15,17	1.36	2 (13%)
8	MAN	k	6	8	11,11,12	0.68	0	15,15,17	0.95	2 (13%)
10	NAG	l	1	1,10	14,14,15	0.82	1 (7%)	17,19,21	0.80	0
10	NAG	l	2	10	14,14,15	0.20	0	17,19,21	0.48	0
10	NAG	m	1	1,10	14,14,15	0.43	0	17,19,21	0.50	0
10	NAG	m	2	10	14,14,15	0.18	0	17,19,21	0.51	0
9	NAG	n	1	1,9	14,14,15	0.31	0	17,19,21	0.65	0
9	NAG	n	2	9	14,14,15	0.37	0	17,19,21	0.43	0
9	NAG	n	3	9	14,14,15	0.18	0	17,19,21	0.56	0
9	NAG	n	4	9	14,14,15	0.28	0	17,19,21	0.44	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
10	NAG	o	1	1,10	14,14,15	0.18	0	17,19,21	0.62	0
10	NAG	o	2	10	14,14,15	0.27	0	17,19,21	0.45	0
10	NAG	p	1	1,10	14,14,15	0.34	0	17,19,21	0.53	0
10	NAG	p	2	10	14,14,15	0.26	0	17,19,21	0.42	0
10	NAG	q	1	1,10	14,14,15	0.23	0	17,19,21	0.40	0
10	NAG	q	2	10	14,14,15	0.20	0	17,19,21	0.44	0
11	NAG	r	1	1,11	14,14,15	0.27	0	17,19,21	0.50	0
11	NAG	r	2	11	14,14,15	0.19	0	17,19,21	0.45	0
11	BMA	r	3	11	11,11,12	0.58	0	15,15,17	0.71	0
13	NAG	s	1	2,13	14,14,15	0.22	0	17,19,21	0.49	0
13	NAG	s	2	13	14,14,15	0.28	0	17,19,21	0.40	0
13	BMA	s	3	13	11,11,12	0.53	0	15,15,17	0.81	0
13	MAN	s	4	13	11,11,12	0.70	0	15,15,17	0.93	2 (13%)

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
7	NAG	S	1	1,7	-	0/6/23/26	0/1/1/1
7	NAG	S	2	7	-	0/6/23/26	0/1/1/1
7	BMA	S	3	7	-	2/2/19/22	0/1/1/1
7	MAN	S	4	7	-	0/2/19/22	0/1/1/1
7	MAN	S	5	7	-	2/2/19/22	0/1/1/1
7	MAN	S	6	7	-	0/2/19/22	0/1/1/1
7	MAN	S	7	7	-	0/2/19/22	0/1/1/1
7	MAN	S	8	7	-	2/2/19/22	0/1/1/1
7	MAN	S	9	7	-	0/2/19/22	0/1/1/1
8	NAG	T	1	1,8	-	0/6/23/26	0/1/1/1
8	NAG	T	2	8	-	0/6/23/26	0/1/1/1
8	BMA	T	3	8	-	0/2/19/22	0/1/1/1
8	MAN	T	4	8	-	0/2/19/22	0/1/1/1
8	MAN	T	5	8	-	0/2/19/22	0/1/1/1
8	MAN	T	6	8	-	0/2/19/22	0/1/1/1
9	NAG	U	1	1,9	-	2/6/23/26	0/1/1/1
9	NAG	U	2	9	-	5/6/23/26	0/1/1/1
9	NAG	U	3	9	-	3/6/23/26	0/1/1/1
9	NAG	U	4	9	-	2/6/23/26	0/1/1/1
10	NAG	V	1	1,10	-	3/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
10	NAG	V	2	10	-	2/6/23/26	0/1/1/1
10	NAG	W	1	1,10	-	2/6/23/26	0/1/1/1
10	NAG	W	2	10	-	4/6/23/26	0/1/1/1
10	NAG	X	1	1,10	-	2/6/23/26	0/1/1/1
10	NAG	X	2	10	-	2/6/23/26	0/1/1/1
11	NAG	Y	1	1,11	-	0/6/23/26	0/1/1/1
11	NAG	Y	2	11	-	1/6/23/26	0/1/1/1
11	BMA	Y	3	11	-	0/2/19/22	0/1/1/1
11	NAG	Z	1	2,11	-	2/6/23/26	0/1/1/1
11	NAG	Z	2	11	-	1/6/23/26	0/1/1/1
11	BMA	Z	3	11	-	1/2/19/22	0/1/1/1
12	NAG	a	1	1,12	-	1/6/23/26	0/1/1/1
12	MAN	a	10	12	-	0/2/19/22	0/1/1/1
12	NAG	a	2	12	-	0/6/23/26	0/1/1/1
12	BMA	a	3	12	-	2/2/19/22	0/1/1/1
12	MAN	a	4	12	-	0/2/19/22	0/1/1/1
12	MAN	a	5	12	-	2/2/19/22	0/1/1/1
12	MAN	a	6	12	-	2/2/19/22	0/1/1/1
12	MAN	a	7	12	-	0/2/19/22	0/1/1/1
12	MAN	a	8	12	-	2/2/19/22	0/1/1/1
12	MAN	a	9	12	-	0/2/19/22	0/1/1/1
8	NAG	b	1	1,8	-	0/6/23/26	0/1/1/1
8	NAG	b	2	8	-	0/6/23/26	0/1/1/1
8	BMA	b	3	8	-	0/2/19/22	0/1/1/1
8	MAN	b	4	8	-	0/2/19/22	0/1/1/1
8	MAN	b	5	8	-	0/2/19/22	0/1/1/1
8	MAN	b	6	8	-	0/2/19/22	0/1/1/1
10	NAG	c	1	1,10	-	2/6/23/26	0/1/1/1
10	NAG	c	2	10	-	2/6/23/26	0/1/1/1
9	NAG	d	1	1,9	-	0/6/23/26	0/1/1/1
9	NAG	d	2	9	-	3/6/23/26	0/1/1/1
9	NAG	d	3	9	-	2/6/23/26	0/1/1/1
9	NAG	d	4	9	-	3/6/23/26	0/1/1/1
10	NAG	e	1	1,10	-	3/6/23/26	0/1/1/1
10	NAG	e	2	10	-	2/6/23/26	0/1/1/1
10	NAG	f	1	1,10	-	2/6/23/26	0/1/1/1
10	NAG	f	2	10	-	3/6/23/26	0/1/1/1
10	NAG	g	1	1,10	-	0/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
10	NAG	g	2	10	-	0/6/23/26	0/1/1/1
11	NAG	h	1	1,11	-	0/6/23/26	0/1/1/1
11	NAG	h	2	11	-	1/6/23/26	0/1/1/1
11	BMA	h	3	11	-	0/2/19/22	0/1/1/1
11	NAG	i	1	2,11	-	2/6/23/26	0/1/1/1
11	NAG	i	2	11	-	1/6/23/26	0/1/1/1
11	BMA	i	3	11	-	1/2/19/22	0/1/1/1
7	NAG	j	1	1,7	-	0/6/23/26	0/1/1/1
7	NAG	j	2	7	-	0/6/23/26	0/1/1/1
7	BMA	j	3	7	-	2/2/19/22	0/1/1/1
7	MAN	j	4	7	-	0/2/19/22	0/1/1/1
7	MAN	j	5	7	-	2/2/19/22	0/1/1/1
7	MAN	j	6	7	-	0/2/19/22	0/1/1/1
7	MAN	j	7	7	-	0/2/19/22	0/1/1/1
7	MAN	j	8	7	-	2/2/19/22	0/1/1/1
7	MAN	j	9	7	-	0/2/19/22	0/1/1/1
8	NAG	k	1	1,8	-	0/6/23/26	0/1/1/1
8	NAG	k	2	8	-	0/6/23/26	0/1/1/1
8	BMA	k	3	8	-	0/2/19/22	0/1/1/1
8	MAN	k	4	8	-	0/2/19/22	0/1/1/1
8	MAN	k	5	8	-	0/2/19/22	0/1/1/1
8	MAN	k	6	8	-	0/2/19/22	0/1/1/1
10	NAG	l	1	1,10	-	0/6/23/26	0/1/1/1
10	NAG	l	2	10	-	2/6/23/26	0/1/1/1
10	NAG	m	1	1,10	-	4/6/23/26	0/1/1/1
10	NAG	m	2	10	-	2/6/23/26	0/1/1/1
9	NAG	n	1	1,9	-	2/6/23/26	0/1/1/1
9	NAG	n	2	9	-	2/6/23/26	0/1/1/1
9	NAG	n	3	9	-	2/6/23/26	0/1/1/1
9	NAG	n	4	9	-	4/6/23/26	0/1/1/1
10	NAG	o	1	1,10	-	3/6/23/26	0/1/1/1
10	NAG	o	2	10	-	2/6/23/26	0/1/1/1
10	NAG	p	1	1,10	-	2/6/23/26	0/1/1/1
10	NAG	p	2	10	-	0/6/23/26	0/1/1/1
10	NAG	q	1	1,10	-	2/6/23/26	0/1/1/1
10	NAG	q	2	10	-	2/6/23/26	0/1/1/1
11	NAG	r	1	1,11	-	2/6/23/26	0/1/1/1
11	NAG	r	2	11	-	0/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
11	BMA	r	3	11	-	0/2/19/22	0/1/1/1
13	NAG	s	1	2,13	-	0/6/23/26	0/1/1/1
13	NAG	s	2	13	-	2/6/23/26	0/1/1/1
13	BMA	s	3	13	-	2/2/19/22	0/1/1/1
13	MAN	s	4	13	-	0/2/19/22	0/1/1/1

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
10	l	1	NAG	O5-C1	-2.73	1.39	1.43
8	k	5	MAN	C1-C2	2.22	1.57	1.52
8	b	5	MAN	C1-C2	2.05	1.56	1.52

All (57) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
9	U	2	NAG	C2-N2-C7	4.37	129.13	122.90
8	k	5	MAN	C1-O5-C5	3.55	117.01	112.19
8	b	5	MAN	C1-O5-C5	3.48	116.91	112.19
8	T	5	MAN	C1-O5-C5	3.42	116.83	112.19
7	S	5	MAN	C1-O5-C5	2.98	116.23	112.19
12	a	5	MAN	C1-O5-C5	2.89	116.10	112.19
7	S	5	MAN	O2-C2-C3	-2.78	104.56	110.14
12	a	6	MAN	C1-O5-C5	2.76	115.94	112.19
7	j	8	MAN	C1-O5-C5	2.76	115.93	112.19
12	a	8	MAN	C1-O5-C5	2.75	115.91	112.19
7	S	8	MAN	C1-O5-C5	2.68	115.82	112.19
7	j	5	MAN	C1-O5-C5	2.64	115.77	112.19
12	a	7	MAN	C1-O5-C5	2.51	115.59	112.19
7	j	8	MAN	O2-C2-C3	-2.50	105.12	110.14
7	j	5	MAN	O2-C2-C3	-2.47	105.20	110.14
7	S	7	MAN	C1-O5-C5	2.44	115.50	112.19
12	a	9	MAN	C1-O5-C5	2.44	115.50	112.19
7	j	7	MAN	C1-O5-C5	2.40	115.44	112.19
7	S	8	MAN	O2-C2-C3	-2.38	105.37	110.14
12	a	4	MAN	C1-O5-C5	2.37	115.40	112.19
12	a	5	MAN	O2-C2-C3	-2.35	105.44	110.14
7	j	4	MAN	C1-O5-C5	2.33	115.35	112.19
12	a	3	BMA	C1-C2-C3	2.32	112.52	109.67
8	k	5	MAN	O2-C2-C3	-2.32	105.49	110.14
8	T	6	MAN	C1-O5-C5	2.31	115.32	112.19
12	a	7	MAN	O2-C2-C3	-2.30	105.52	110.14

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
8	T	6	MAN	O2-C2-C3	-2.29	105.54	110.14
8	k	6	MAN	O2-C2-C3	-2.29	105.55	110.14
8	b	5	MAN	O2-C2-C3	-2.28	105.57	110.14
7	S	6	MAN	O2-C2-C3	-2.27	105.59	110.14
8	b	6	MAN	O2-C2-C3	-2.27	105.59	110.14
7	j	6	MAN	O2-C2-C3	-2.26	105.62	110.14
12	a	9	MAN	O2-C2-C3	-2.25	105.62	110.14
7	S	7	MAN	O2-C2-C3	-2.25	105.63	110.14
7	j	7	MAN	O2-C2-C3	-2.25	105.63	110.14
12	a	6	MAN	O2-C2-C3	-2.25	105.64	110.14
7	S	4	MAN	C1-O5-C5	2.24	115.23	112.19
8	k	4	MAN	O2-C2-C3	-2.23	105.67	110.14
8	T	5	MAN	O2-C2-C3	-2.22	105.70	110.14
7	S	6	MAN	C1-O5-C5	2.21	115.19	112.19
7	S	9	MAN	O2-C2-C3	-2.20	105.73	110.14
12	a	10	MAN	O2-C2-C3	-2.19	105.75	110.14
8	T	4	MAN	C1-O5-C5	2.16	115.11	112.19
7	S	4	MAN	O2-C2-C3	-2.14	105.86	110.14
8	T	4	MAN	O2-C2-C3	-2.13	105.87	110.14
8	b	4	MAN	O2-C2-C3	-2.12	105.89	110.14
7	S	9	MAN	C1-O5-C5	2.12	115.06	112.19
7	j	9	MAN	O2-C2-C3	-2.11	105.90	110.14
7	j	6	MAN	C1-O5-C5	2.11	115.06	112.19
7	j	4	MAN	O2-C2-C3	-2.11	105.92	110.14
13	s	4	MAN	C1-O5-C5	2.10	115.04	112.19
9	U	2	NAG	C1-C2-N2	2.09	114.06	110.49
12	a	8	MAN	O2-C2-C3	-2.09	105.96	110.14
13	s	4	MAN	O2-C2-C3	-2.06	106.02	110.14
8	k	6	MAN	C1-O5-C5	2.05	114.97	112.19
8	k	4	MAN	C1-O5-C5	2.05	114.97	112.19
12	a	4	MAN	O2-C2-C3	-2.02	106.09	110.14

There are no chirality outliers.

All (115) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
9	n	1	NAG	C3-C2-N2-C7
9	U	4	NAG	O5-C5-C6-O6
9	d	3	NAG	O5-C5-C6-O6
10	V	2	NAG	C4-C5-C6-O6
10	o	2	NAG	C4-C5-C6-O6
10	l	2	NAG	O5-C5-C6-O6

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Mol	Chain	Res	Type	Atoms
9	n	3	NAG	O5-C5-C6-O6
7	S	5	MAN	C4-C5-C6-O6
9	d	4	NAG	O5-C5-C6-O6
10	V	1	NAG	O5-C5-C6-O6
10	f	1	NAG	O5-C5-C6-O6
10	q	1	NAG	O5-C5-C6-O6
10	e	2	NAG	C4-C5-C6-O6
10	m	2	NAG	O5-C5-C6-O6
9	U	4	NAG	C4-C5-C6-O6
10	X	2	NAG	O5-C5-C6-O6
10	f	2	NAG	O5-C5-C6-O6
12	a	3	BMA	C4-C5-C6-O6
12	a	5	MAN	C4-C5-C6-O6
9	n	3	NAG	C4-C5-C6-O6
10	X	2	NAG	C4-C5-C6-O6
10	l	2	NAG	C4-C5-C6-O6
9	d	3	NAG	C4-C5-C6-O6
10	V	2	NAG	O5-C5-C6-O6
10	e	2	NAG	O5-C5-C6-O6
10	o	2	NAG	O5-C5-C6-O6
12	a	5	MAN	O5-C5-C6-O6
7	j	5	MAN	C4-C5-C6-O6
7	S	5	MAN	O5-C5-C6-O6
9	d	2	NAG	O5-C5-C6-O6
9	n	4	NAG	O5-C5-C6-O6
10	c	2	NAG	O5-C5-C6-O6
10	e	1	NAG	O5-C5-C6-O6
9	d	4	NAG	C4-C5-C6-O6
13	s	3	BMA	O5-C5-C6-O6
9	d	2	NAG	C4-C5-C6-O6
10	e	1	NAG	C4-C5-C6-O6
10	m	1	NAG	O5-C5-C6-O6
10	V	1	NAG	C4-C5-C6-O6
10	f	2	NAG	C4-C5-C6-O6
9	U	1	NAG	C8-C7-N2-C2
9	U	1	NAG	O7-C7-N2-C2
9	U	2	NAG	C8-C7-N2-C2
9	U	2	NAG	O7-C7-N2-C2
9	U	3	NAG	C8-C7-N2-C2
9	U	3	NAG	O7-C7-N2-C2
9	n	2	NAG	C8-C7-N2-C2
9	n	2	NAG	O7-C7-N2-C2

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Mol	Chain	Res	Type	Atoms
9	n	4	NAG	C8-C7-N2-C2
9	n	4	NAG	O7-C7-N2-C2
10	W	1	NAG	C8-C7-N2-C2
10	W	1	NAG	O7-C7-N2-C2
10	W	2	NAG	C8-C7-N2-C2
10	W	2	NAG	O7-C7-N2-C2
10	W	2	NAG	O5-C5-C6-O6
10	f	1	NAG	C4-C5-C6-O6
7	j	3	BMA	C4-C5-C6-O6
7	j	8	MAN	O5-C5-C6-O6
10	c	1	NAG	O5-C5-C6-O6
10	q	1	NAG	C4-C5-C6-O6
7	S	8	MAN	O5-C5-C6-O6
11	Z	1	NAG	O5-C5-C6-O6
11	r	1	NAG	O5-C5-C6-O6
9	n	4	NAG	C4-C5-C6-O6
10	c	2	NAG	C4-C5-C6-O6
10	m	2	NAG	C4-C5-C6-O6
9	U	2	NAG	O5-C5-C6-O6
10	W	2	NAG	C4-C5-C6-O6
10	c	1	NAG	C4-C5-C6-O6
10	o	1	NAG	C4-C5-C6-O6
11	Z	1	NAG	C4-C5-C6-O6
7	j	8	MAN	C4-C5-C6-O6
10	q	2	NAG	O5-C5-C6-O6
7	S	8	MAN	C4-C5-C6-O6
9	U	2	NAG	C4-C5-C6-O6
11	r	1	NAG	C4-C5-C6-O6
10	m	1	NAG	C4-C5-C6-O6
12	a	3	BMA	O5-C5-C6-O6
7	j	5	MAN	O5-C5-C6-O6
11	Y	2	NAG	O5-C5-C6-O6
11	Z	3	BMA	O5-C5-C6-O6
10	o	1	NAG	O5-C5-C6-O6
7	S	3	BMA	C4-C5-C6-O6
11	Z	2	NAG	O5-C5-C6-O6
11	i	3	BMA	O5-C5-C6-O6
9	U	3	NAG	O5-C5-C6-O6
9	n	1	NAG	O5-C5-C6-O6
11	h	2	NAG	O5-C5-C6-O6
10	m	1	NAG	C1-C2-N2-C7
7	j	3	BMA	O5-C5-C6-O6

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Mol	Chain	Res	Type	Atoms
10	V	1	NAG	C3-C2-N2-C7
11	i	1	NAG	O5-C5-C6-O6
11	i	1	NAG	C4-C5-C6-O6
13	s	2	NAG	C4-C5-C6-O6
12	a	8	MAN	C4-C5-C6-O6
10	q	2	NAG	C4-C5-C6-O6
12	a	8	MAN	O5-C5-C6-O6
12	a	6	MAN	C4-C5-C6-O6
11	i	2	NAG	C4-C5-C6-O6
12	a	1	NAG	C4-C5-C6-O6
9	d	2	NAG	C3-C2-N2-C7
10	e	1	NAG	C3-C2-N2-C7
10	f	2	NAG	C3-C2-N2-C7
10	o	1	NAG	C3-C2-N2-C7
7	S	3	BMA	O5-C5-C6-O6
10	X	1	NAG	C4-C5-C6-O6
13	s	2	NAG	O5-C5-C6-O6
10	p	1	NAG	C4-C5-C6-O6
10	X	1	NAG	O5-C5-C6-O6
9	U	2	NAG	C3-C2-N2-C7
9	d	4	NAG	C3-C2-N2-C7
10	m	1	NAG	C3-C2-N2-C7
10	p	1	NAG	O5-C5-C6-O6
13	s	3	BMA	C4-C5-C6-O6
12	a	6	MAN	O5-C5-C6-O6

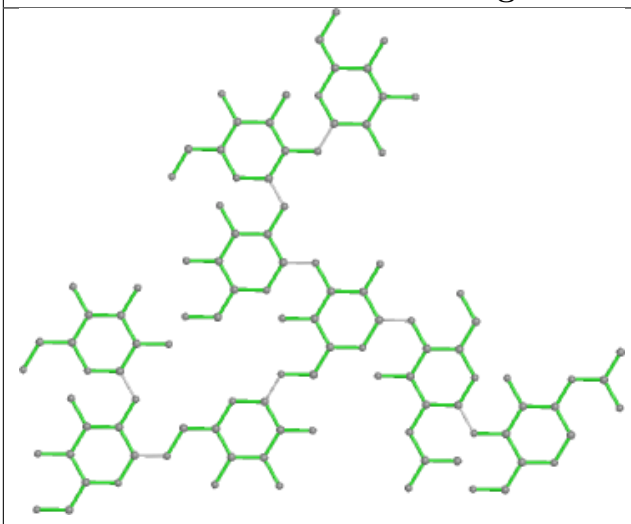
There are no ring outliers.

8 monomers are involved in 11 short contacts:

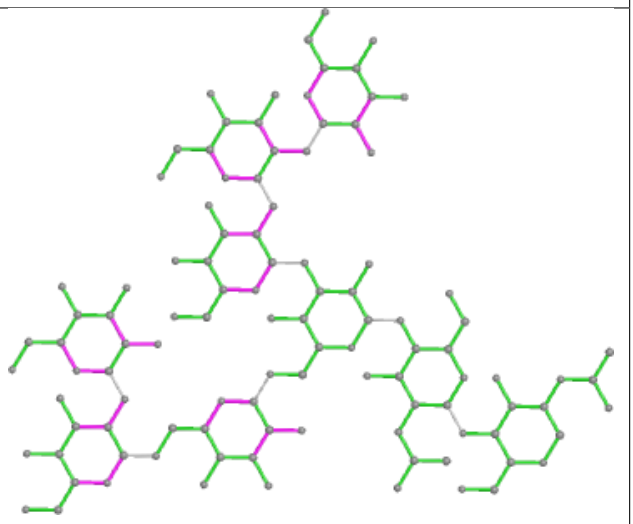
Mol	Chain	Res	Type	Clashes	Symm-Clashes
11	Z	1	NAG	1	0
7	S	9	MAN	3	0
9	U	3	NAG	1	0
9	U	4	NAG	1	0
9	U	1	NAG	1	0
9	U	2	NAG	1	0
7	S	5	MAN	1	0
10	X	2	NAG	2	0

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

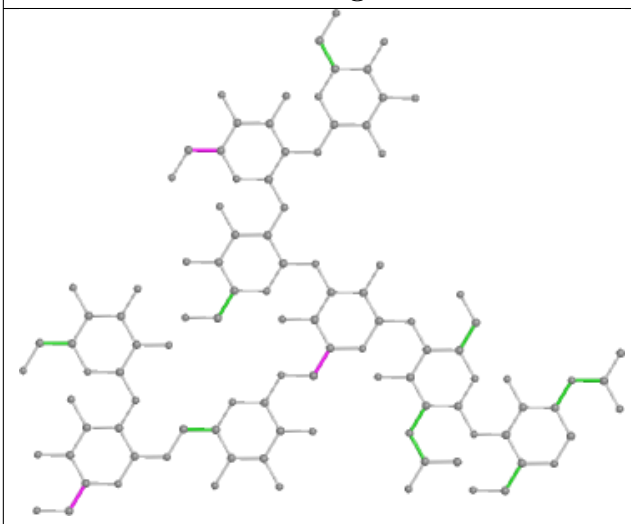
Oligosaccharide Chain S



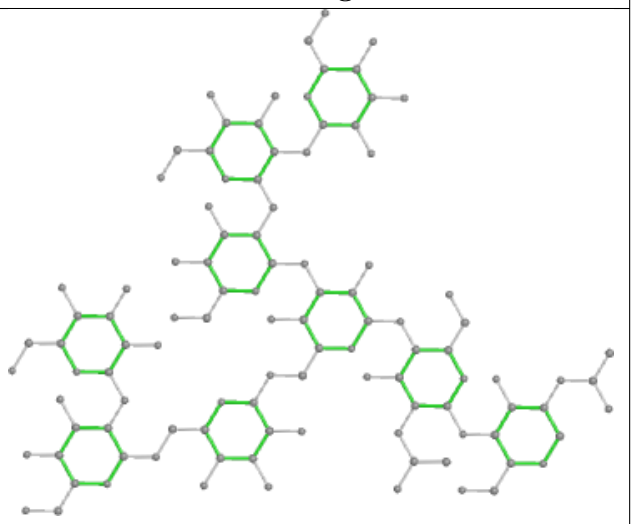
Bond lengths



Bond angles

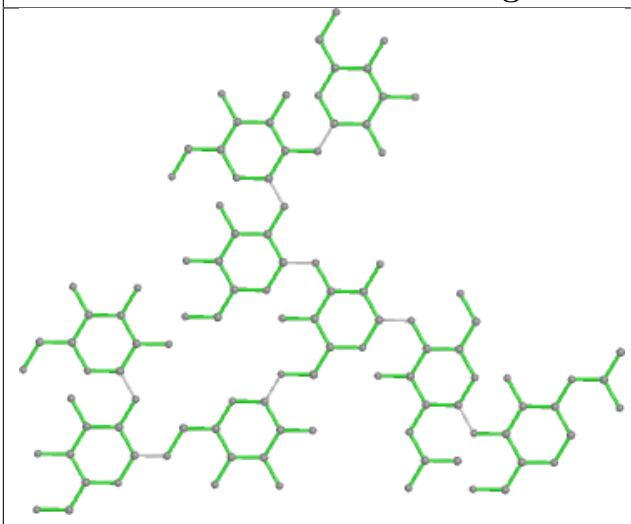


Torsions

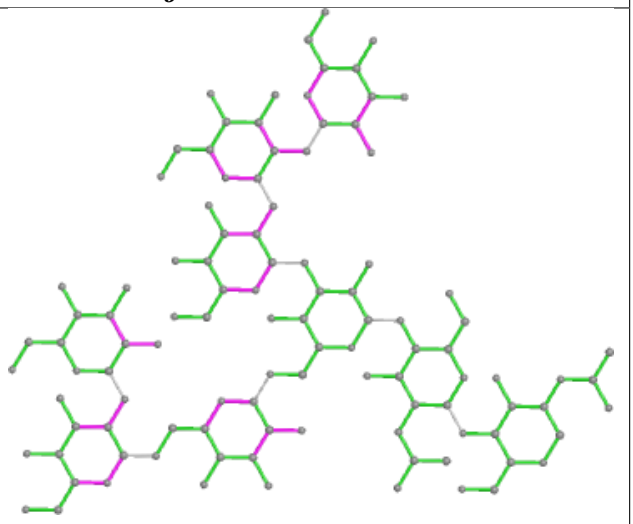


Rings

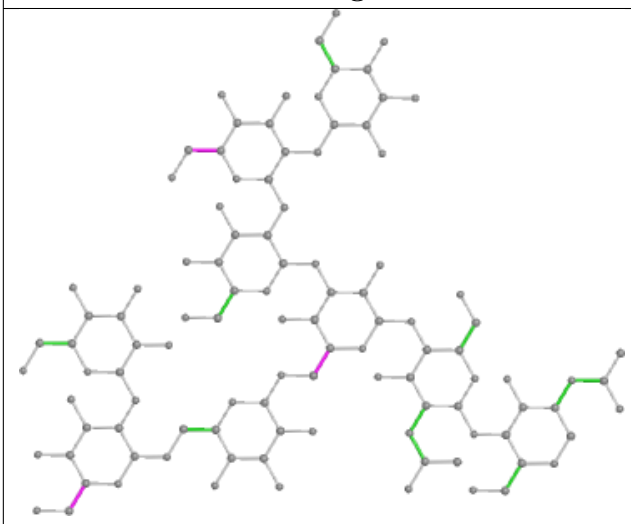
Oligosaccharide Chain j



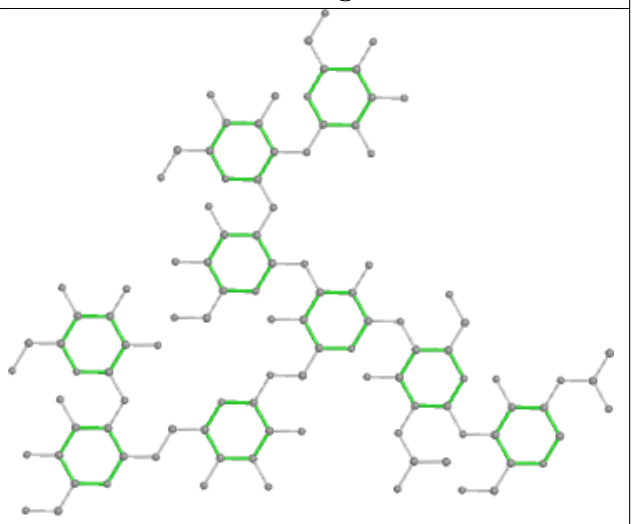
Bond lengths



Bond angles

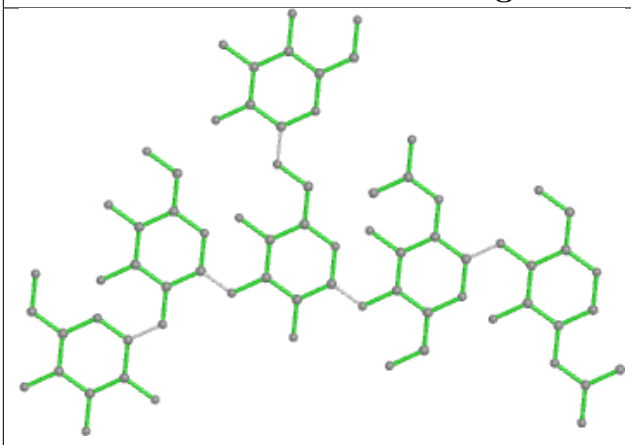


Torsions

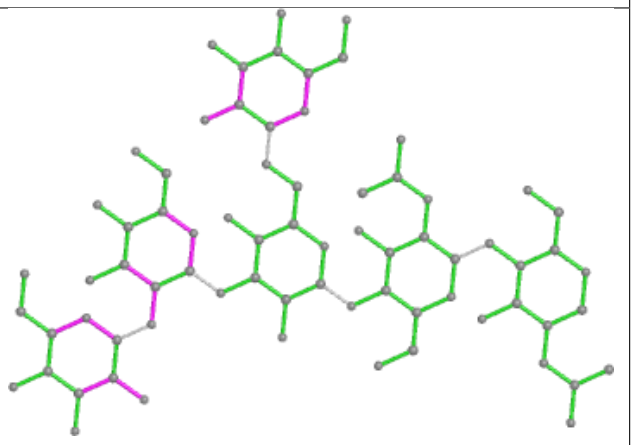


Rings

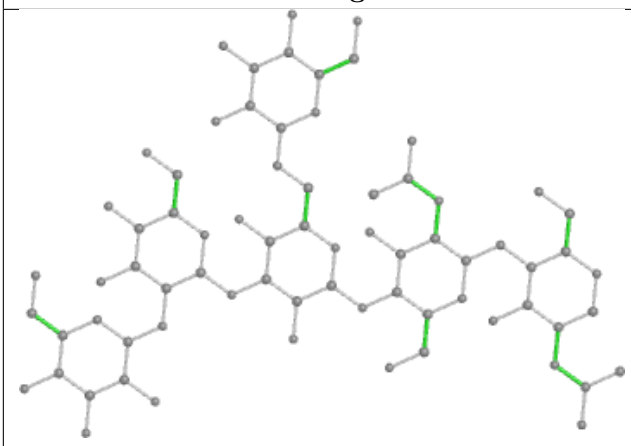
Oligosaccharide Chain T



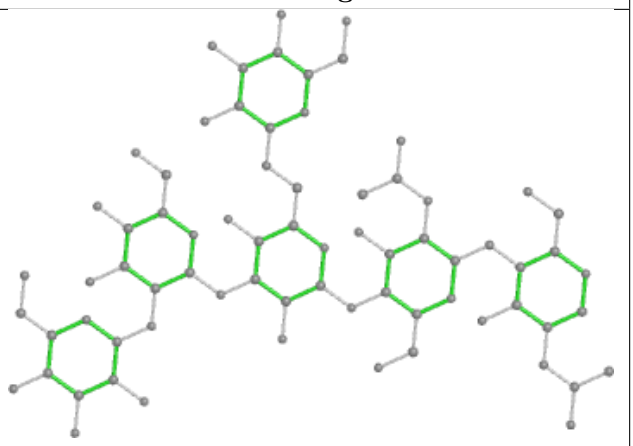
Bond lengths



Bond angles

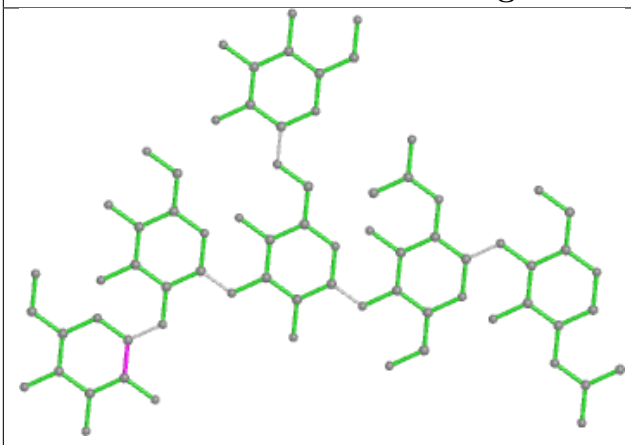


Torsions

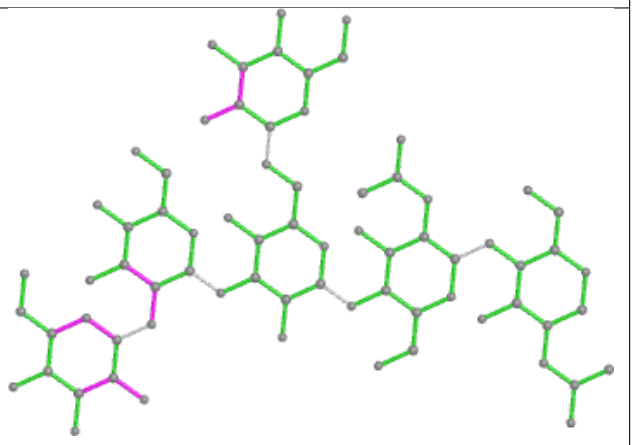


Rings

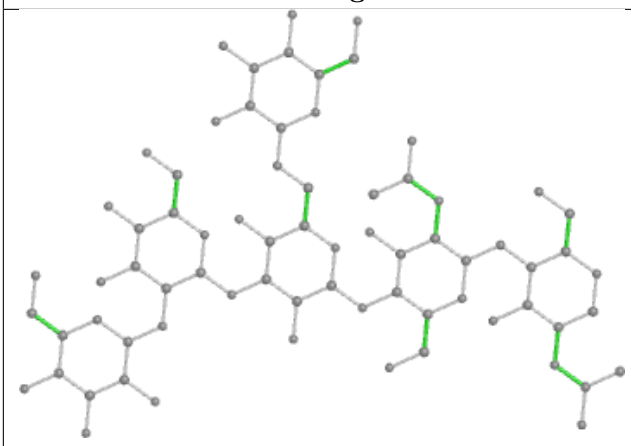
Oligosaccharide Chain b



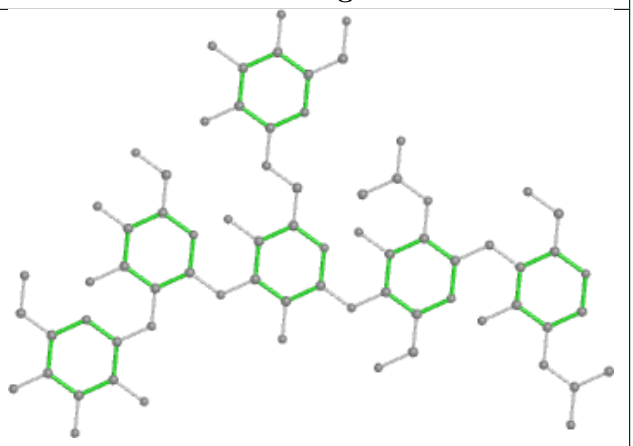
Bond lengths



Bond angles

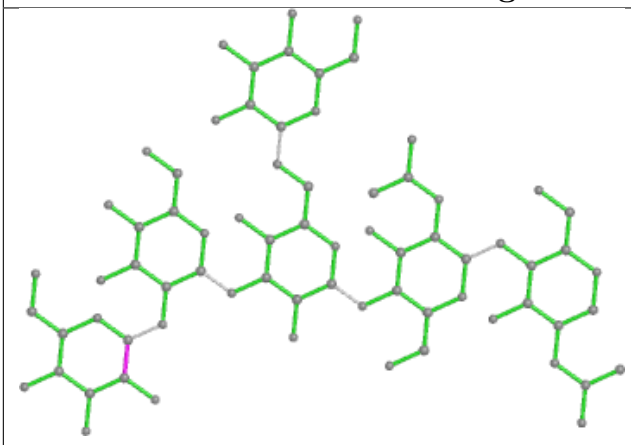


Torsions

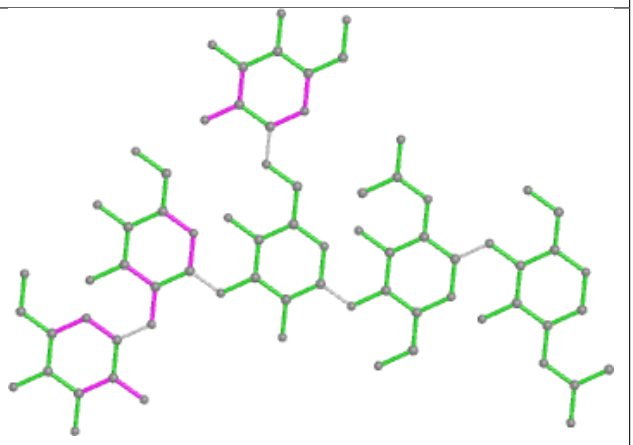


Rings

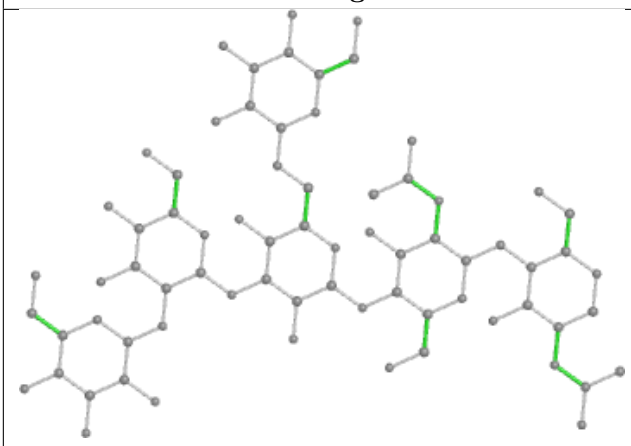
Oligosaccharide Chain k



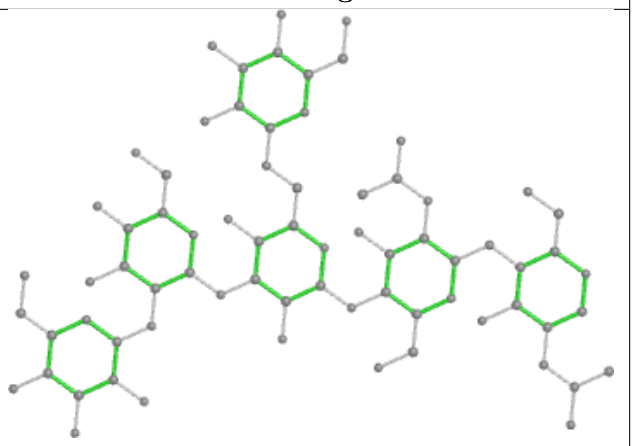
Bond lengths



Bond angles

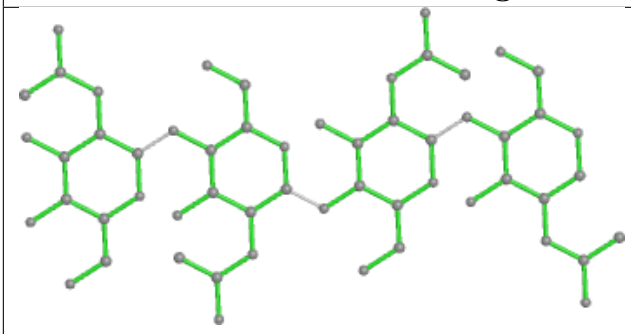


Torsions

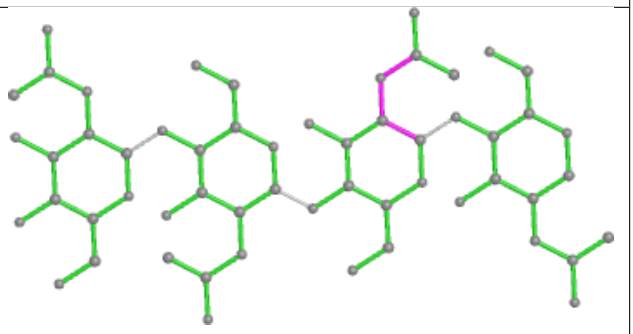


Rings

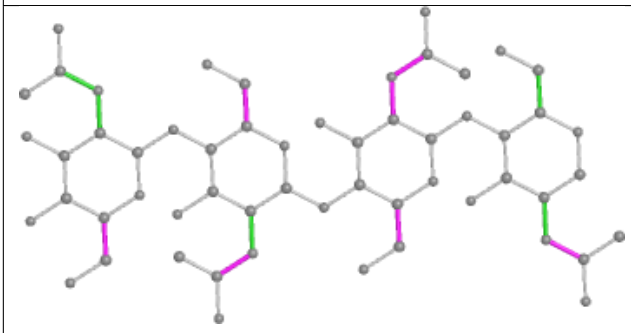
Oligosaccharide Chain U



Bond lengths



Bond angles



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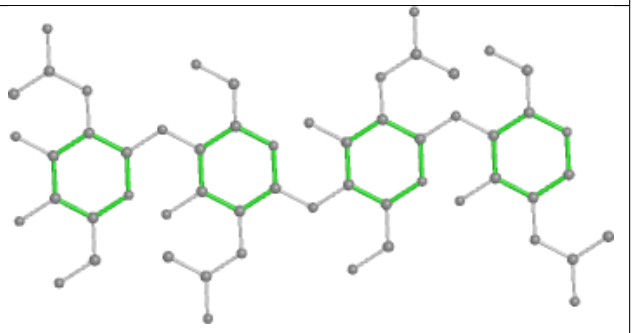
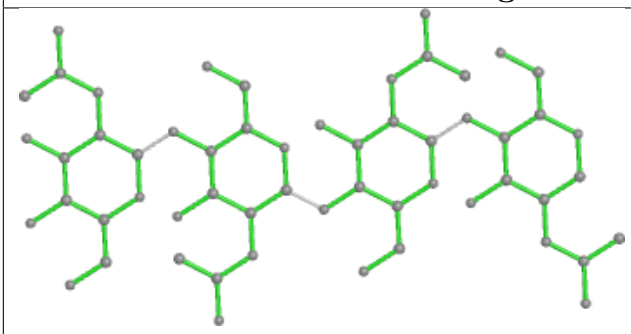
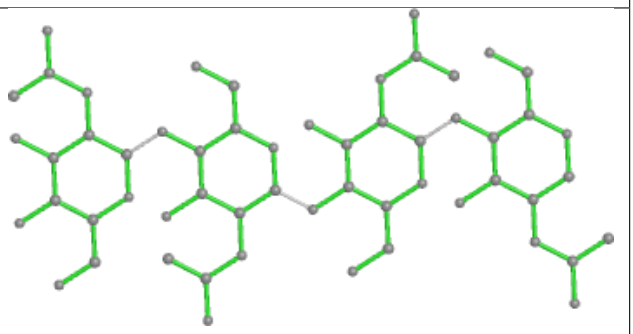


Rings

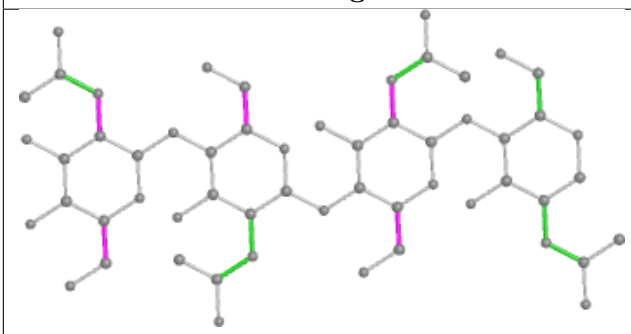
Oligosaccharide Chain d



Bond lengths



Bond angles



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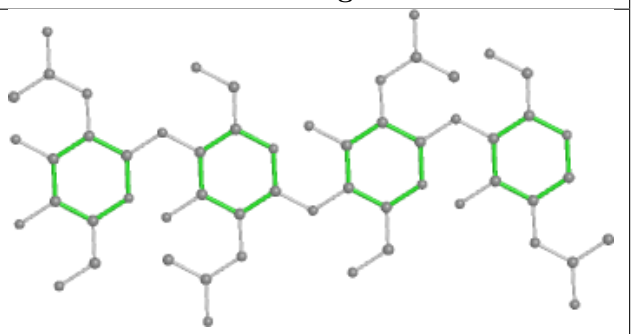
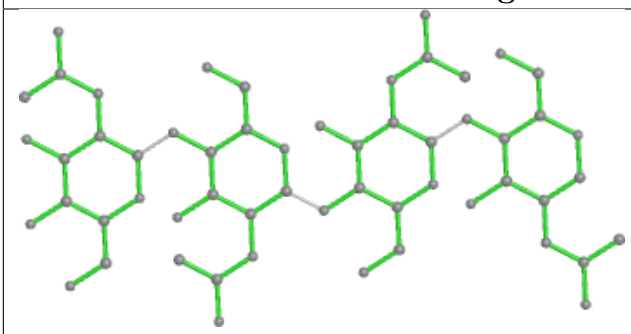
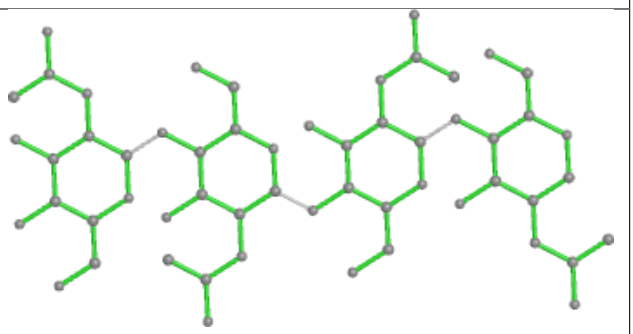


Rings

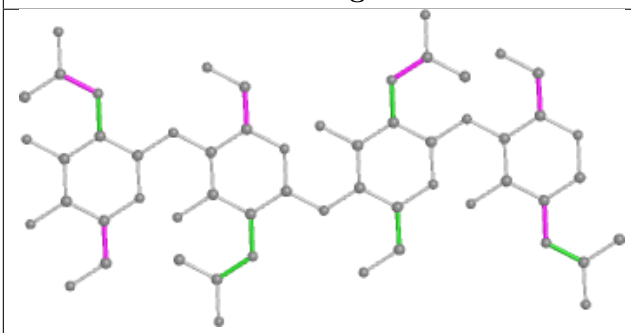
Oligosaccharide Chain n



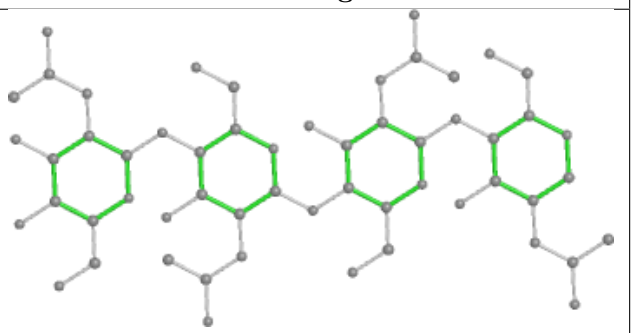
Bond lengths



Bond angles

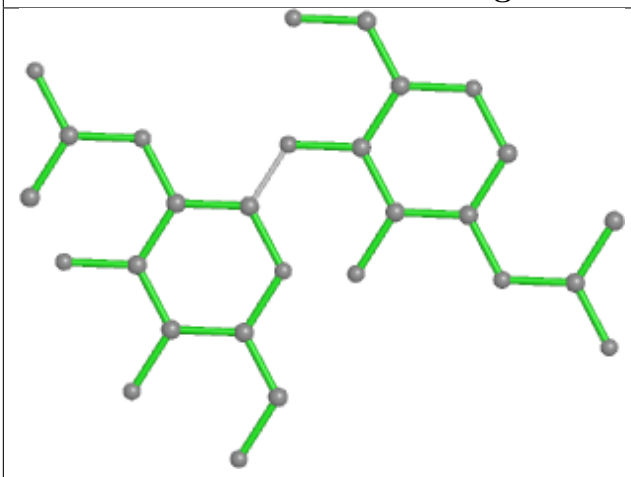


Torsions

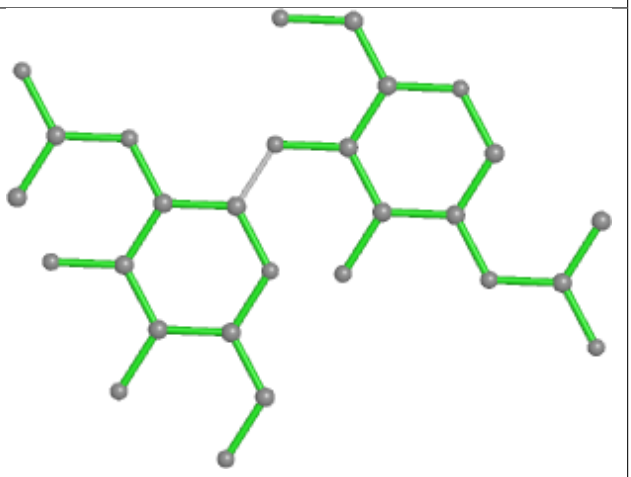


Rings

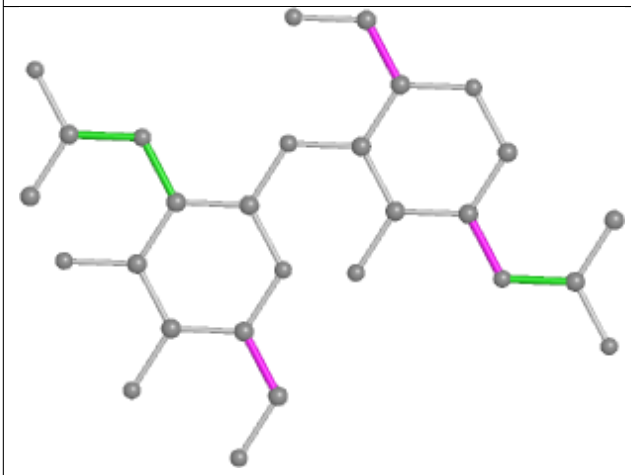
Oligosaccharide Chain V



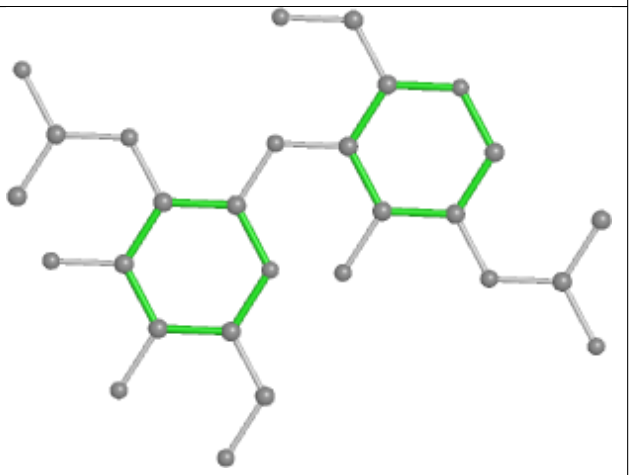
Bond lengths



Bond angles

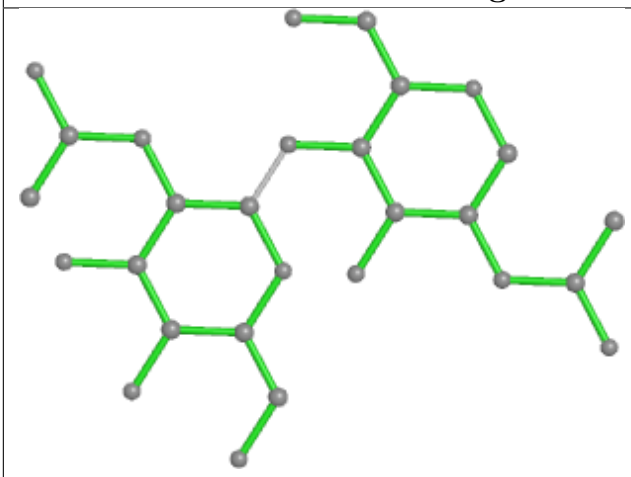


Torsions



Rings

Oligosaccharide Chain W



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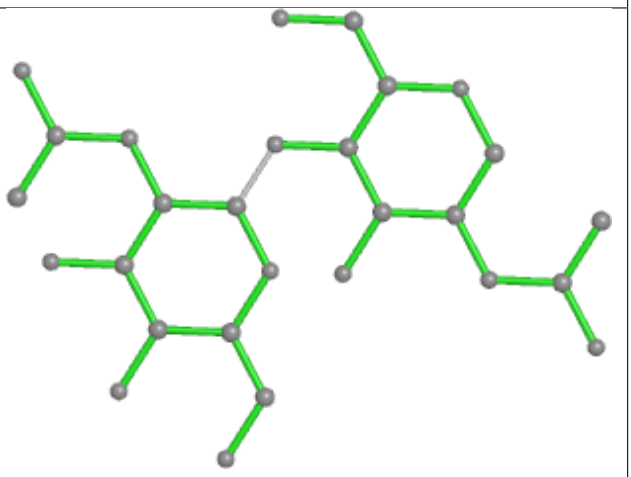

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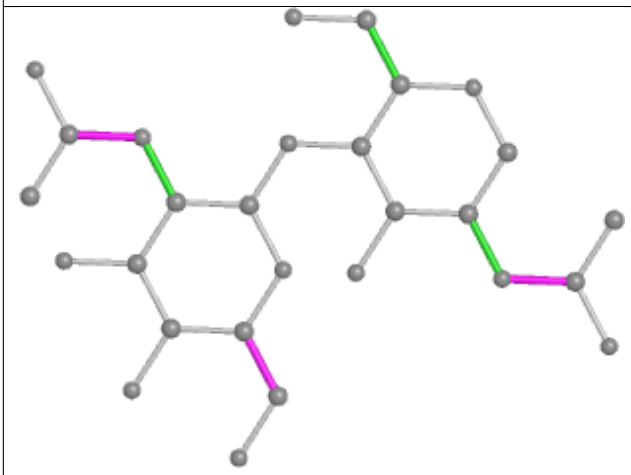
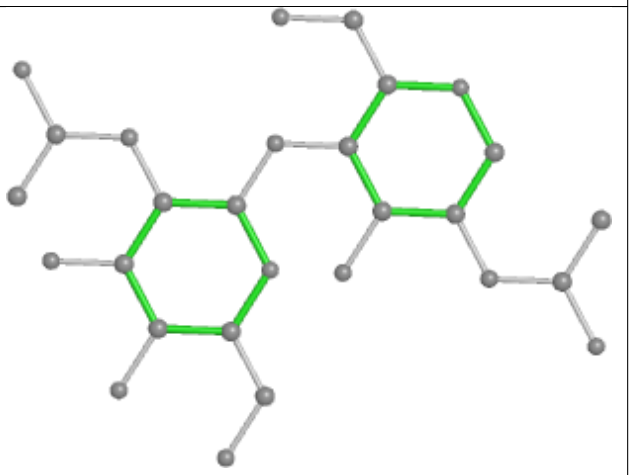
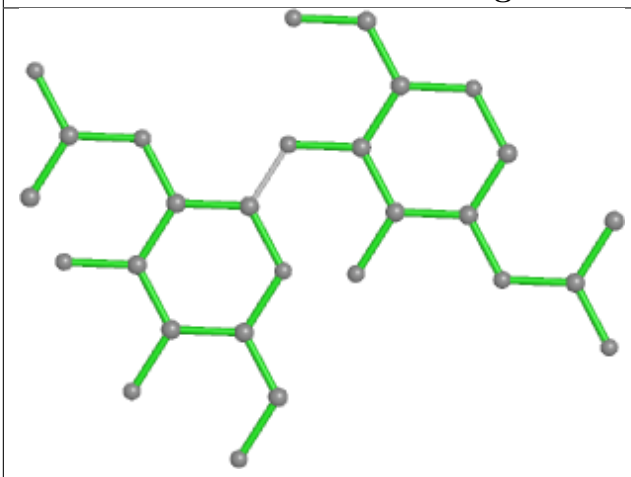


Torsions



Rings

Oligosaccharide Chain X



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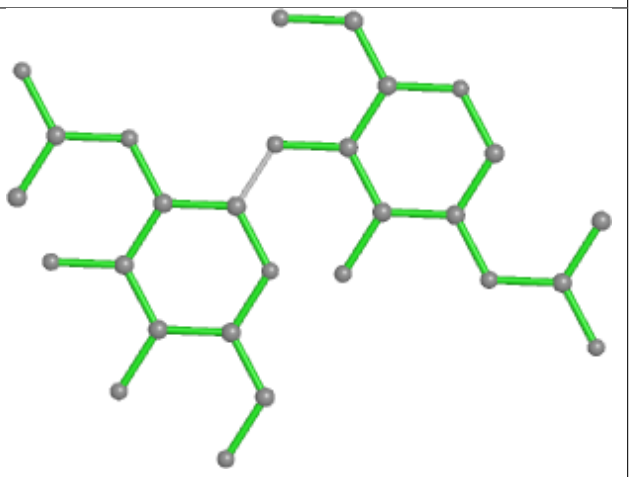

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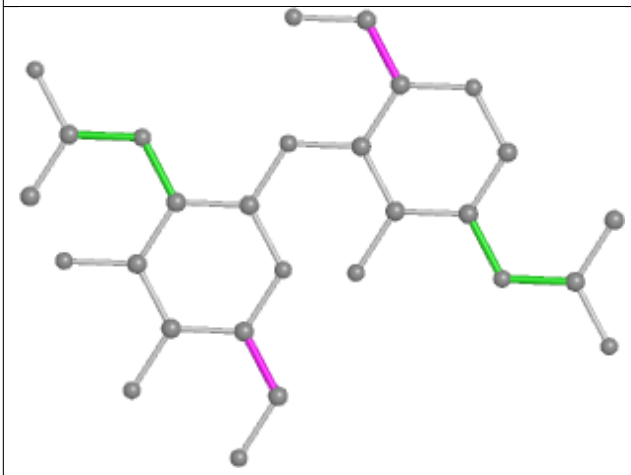

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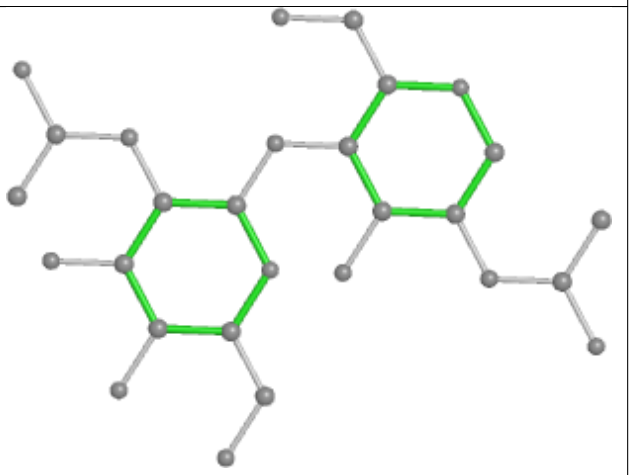
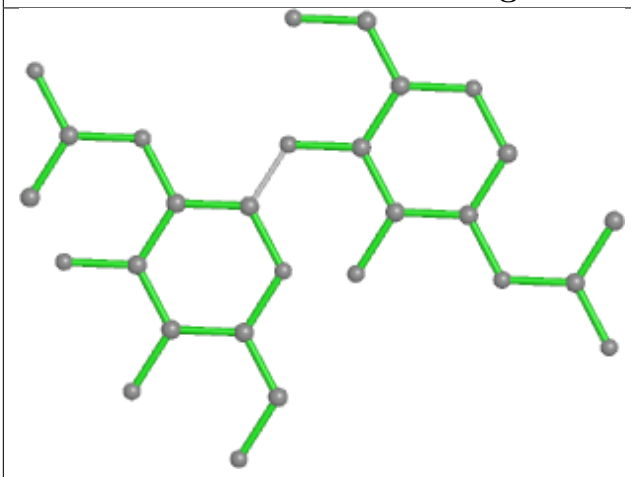


Rings

Oligosaccharide Chain c



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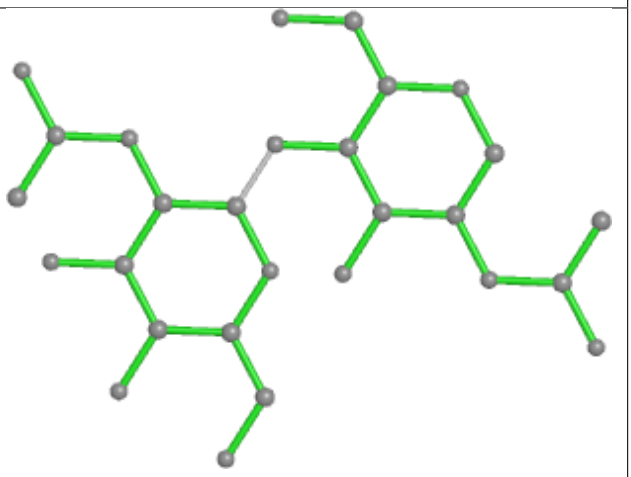
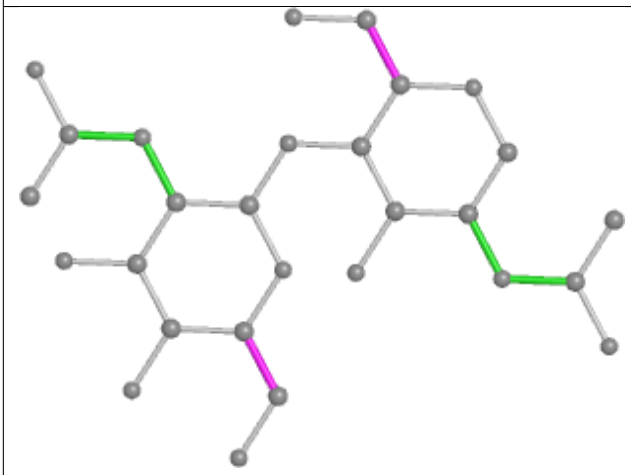


Bond angles



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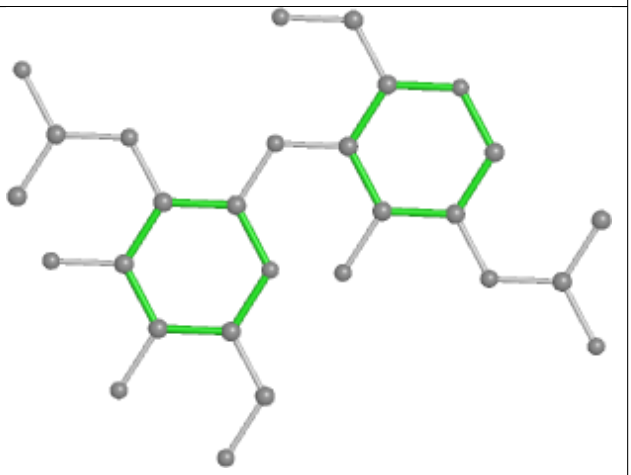
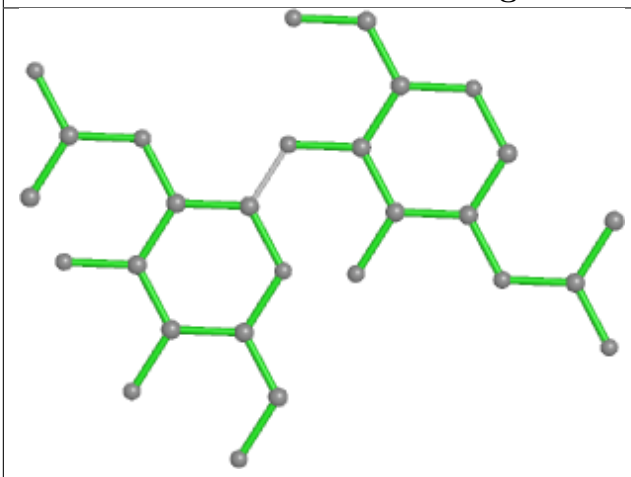


Rings

Oligosaccharide Chain e



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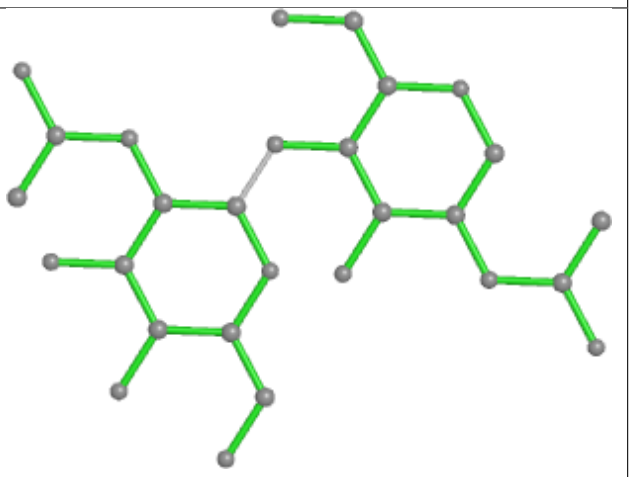

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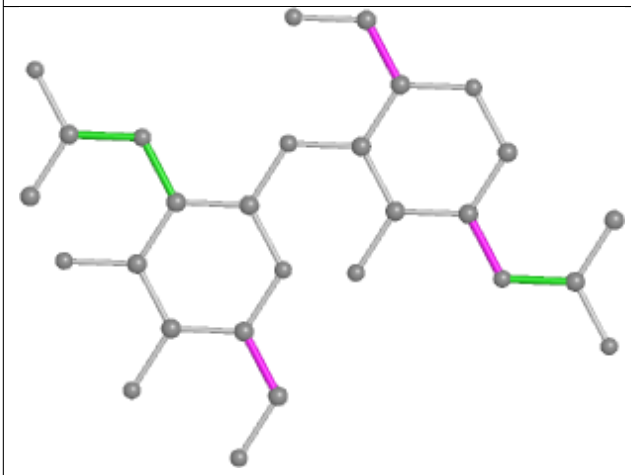

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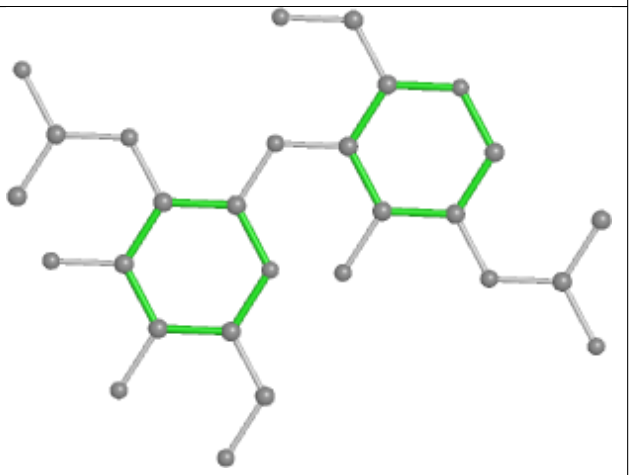
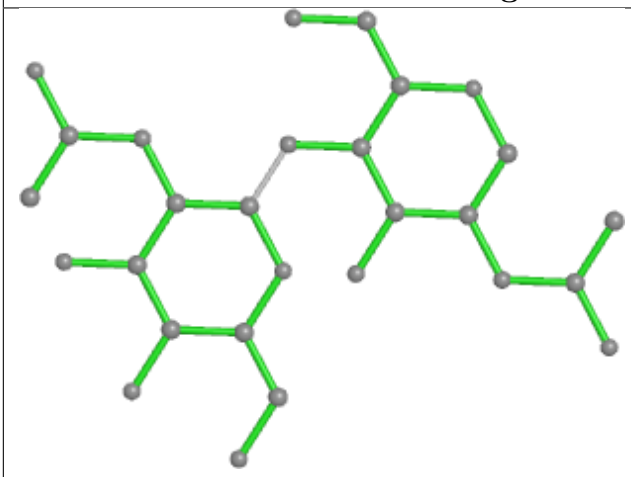


Rings

Oligosaccharide Chain f



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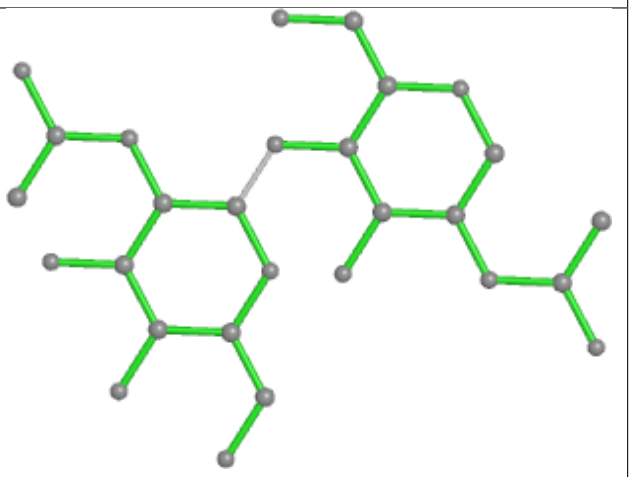
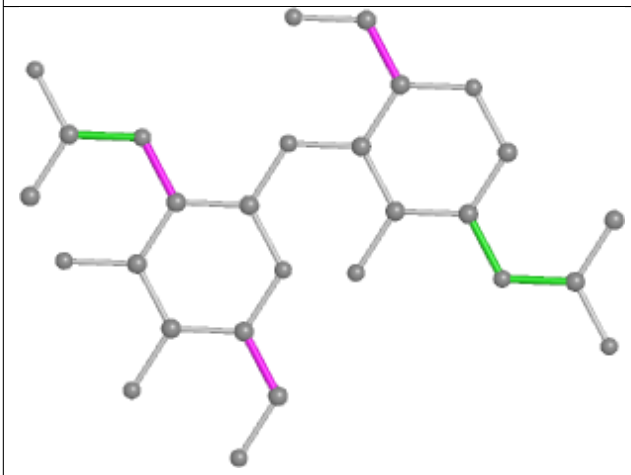


Bond angles



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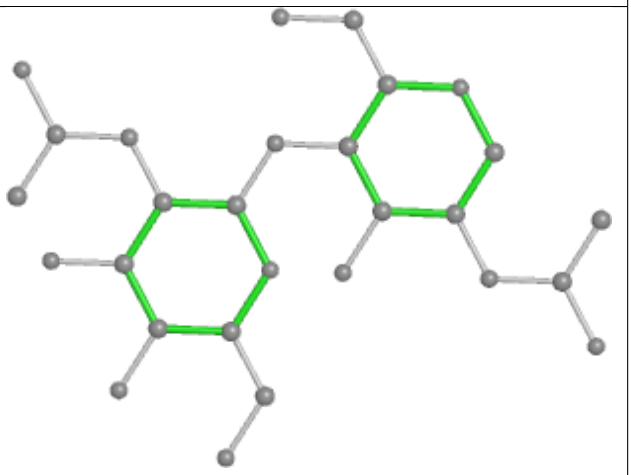
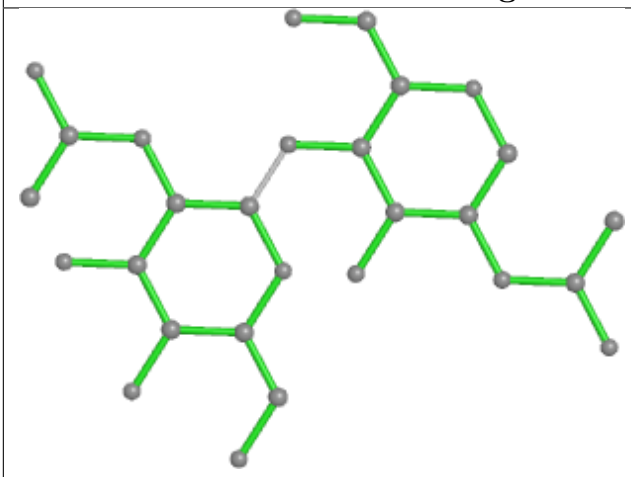


Rings

Oligosaccharide Chain g



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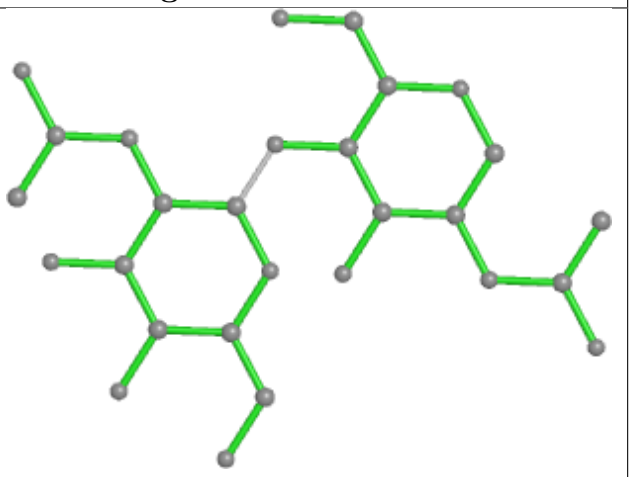
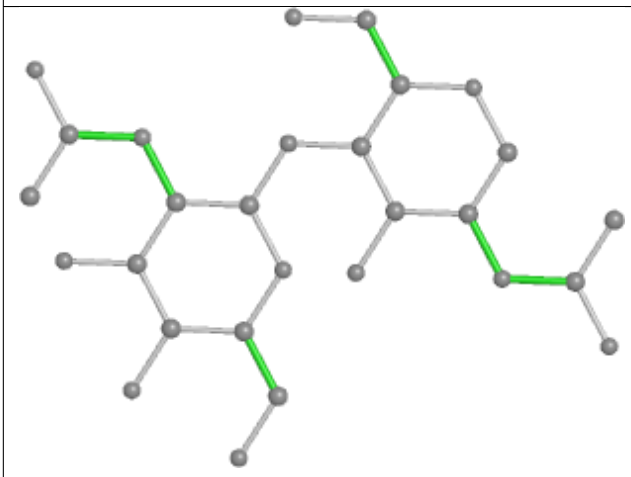


Bond angles



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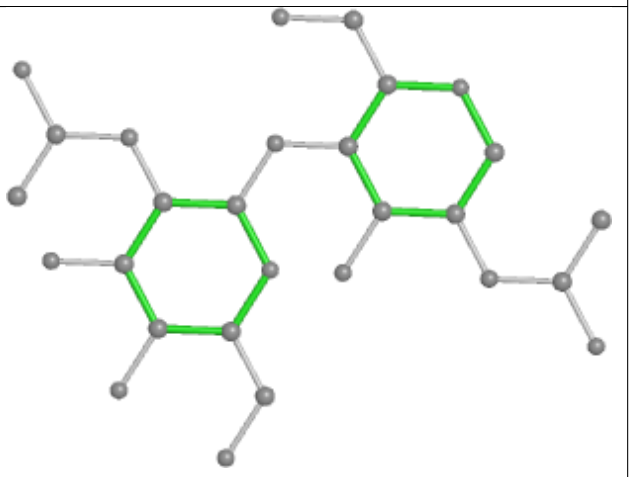
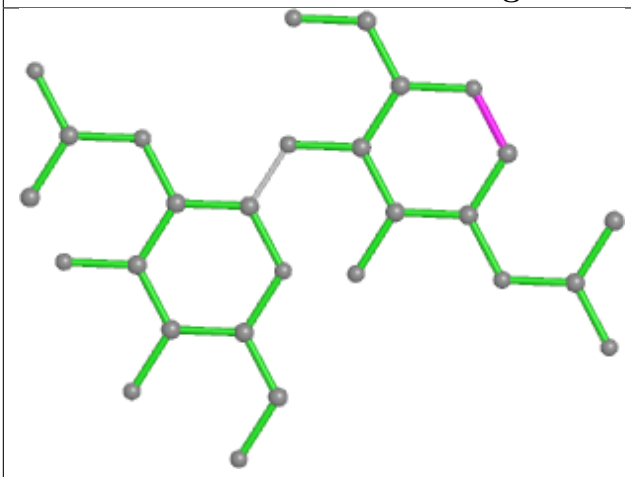


Rings

Oligosaccharide Chain l



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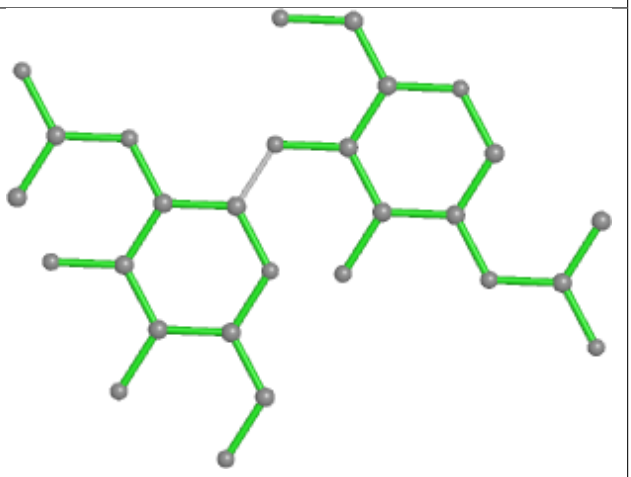
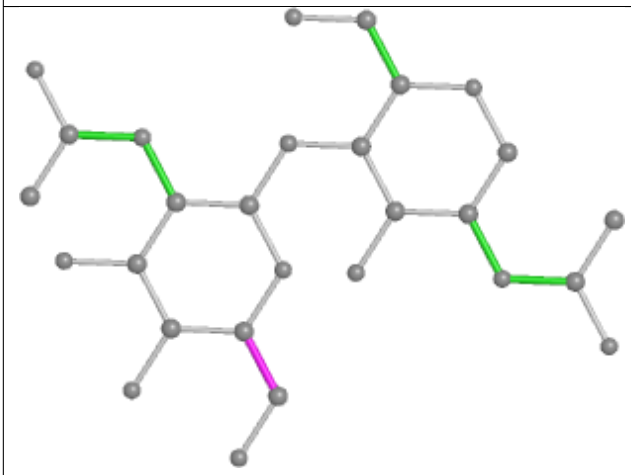


Bond angles



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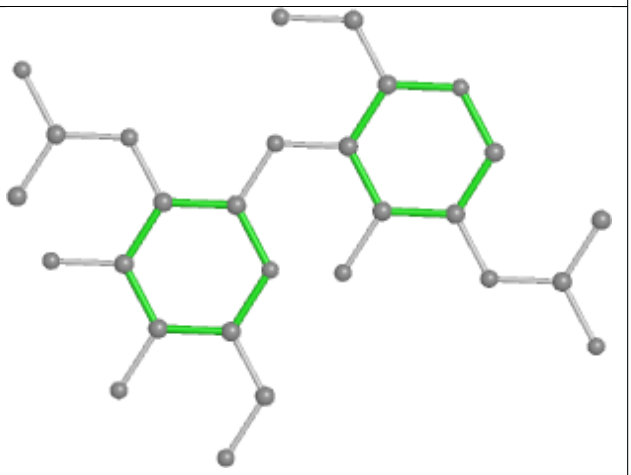
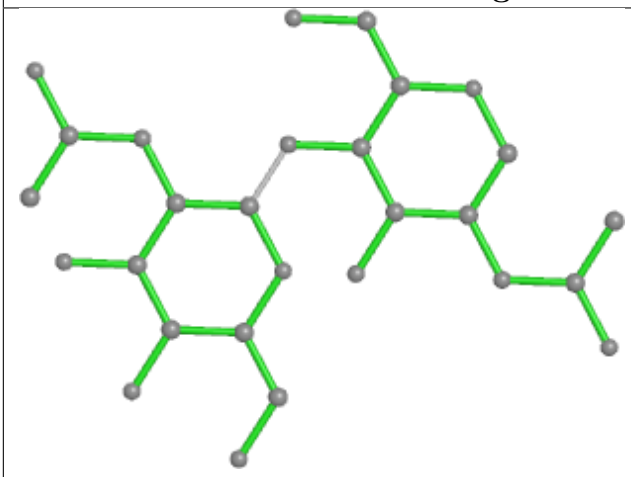


Rings

Oligosaccharide Chain m



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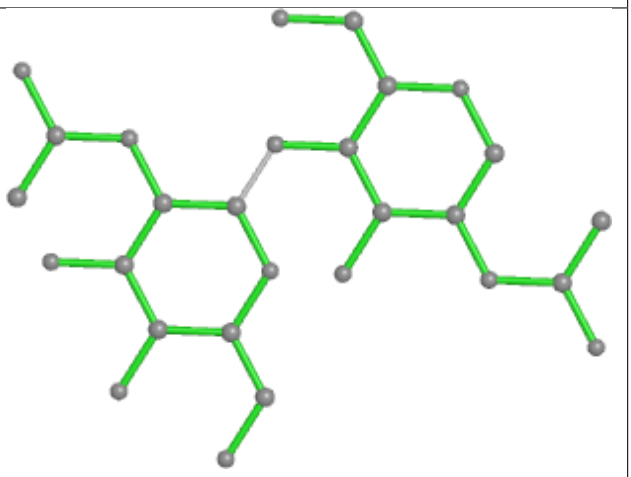
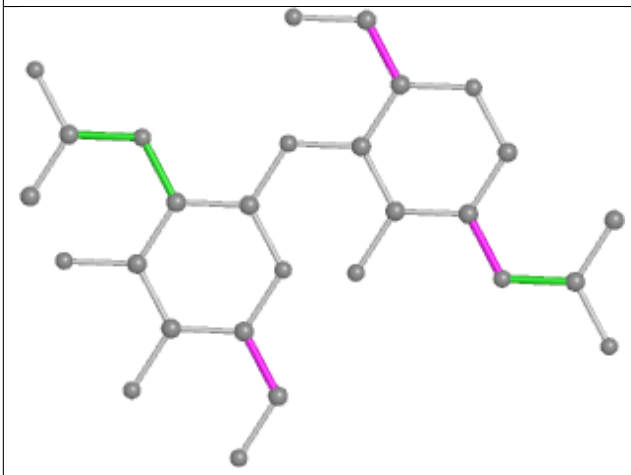


Bond angles



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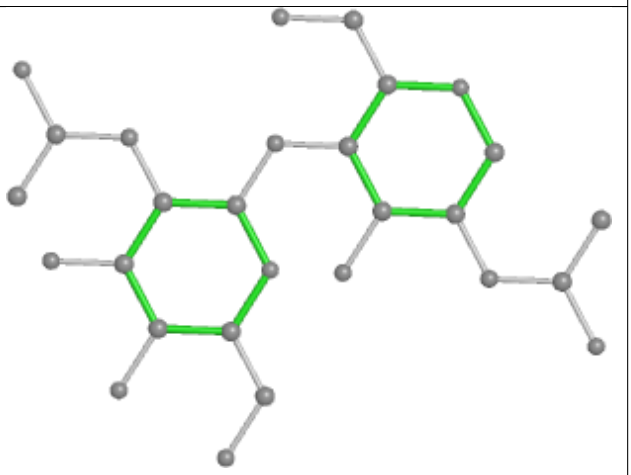
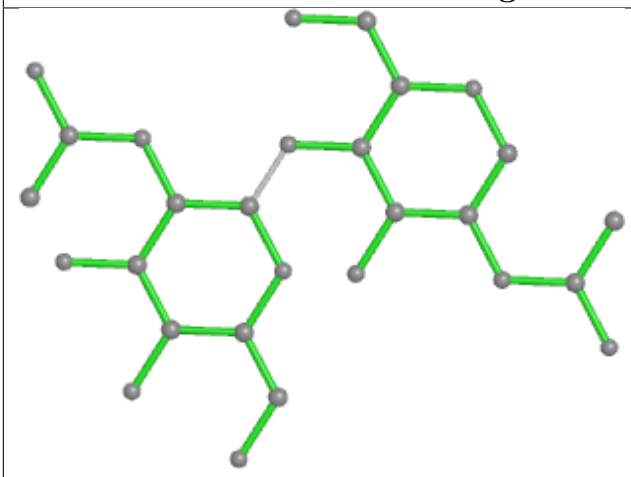


Rings

Oligosaccharide Chain o



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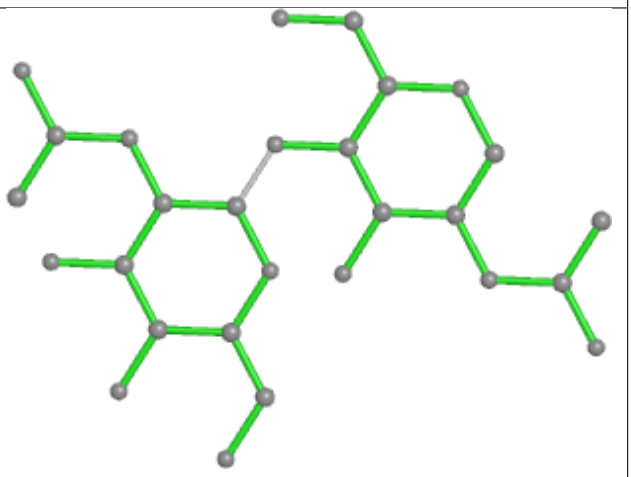

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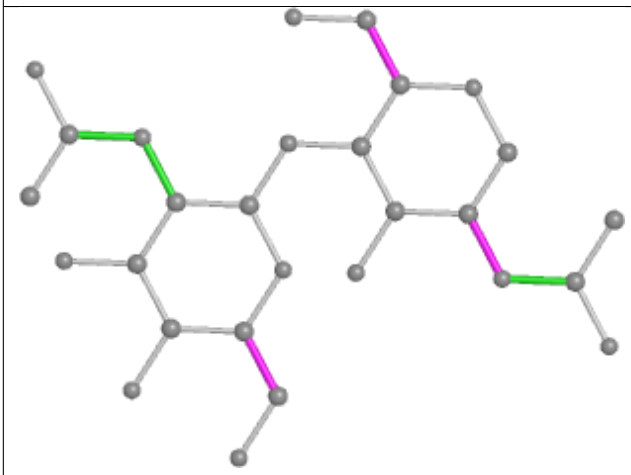
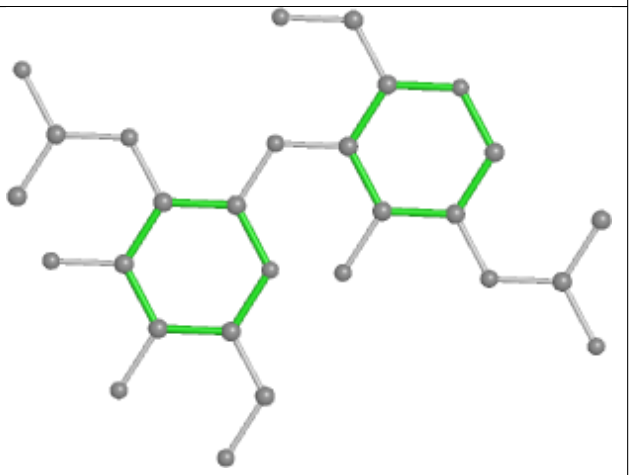
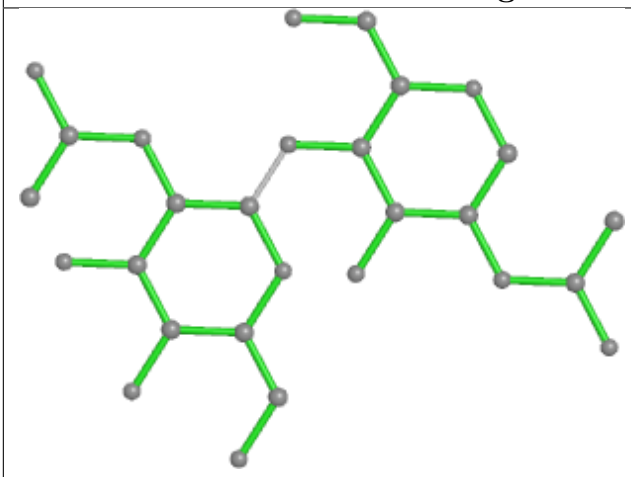


Torsions



Rings

Oligosaccharide Chain p



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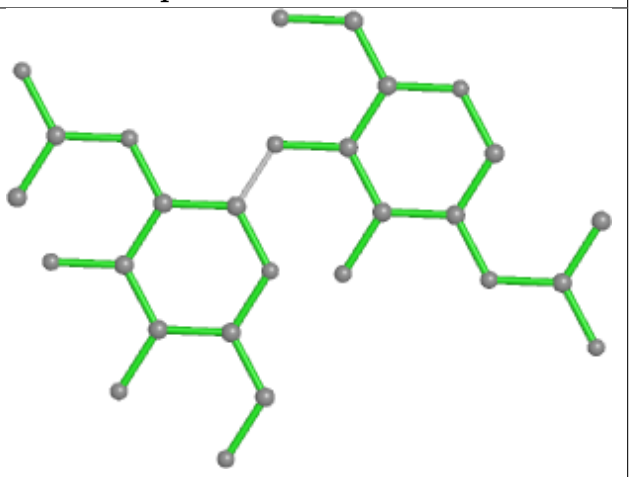
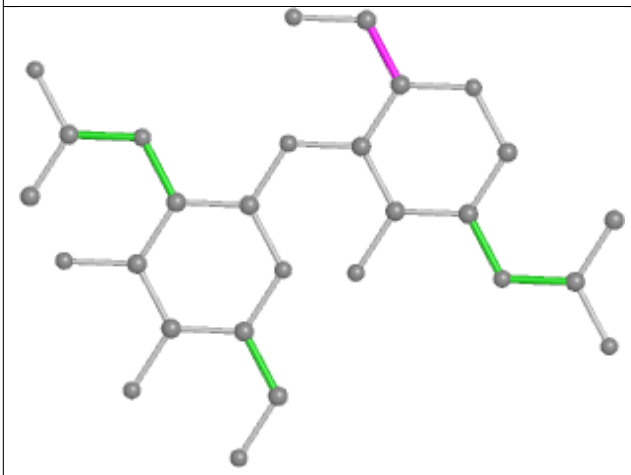


Bond angles



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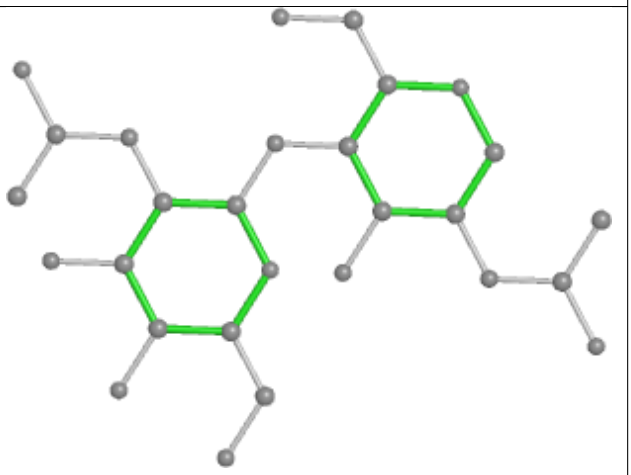
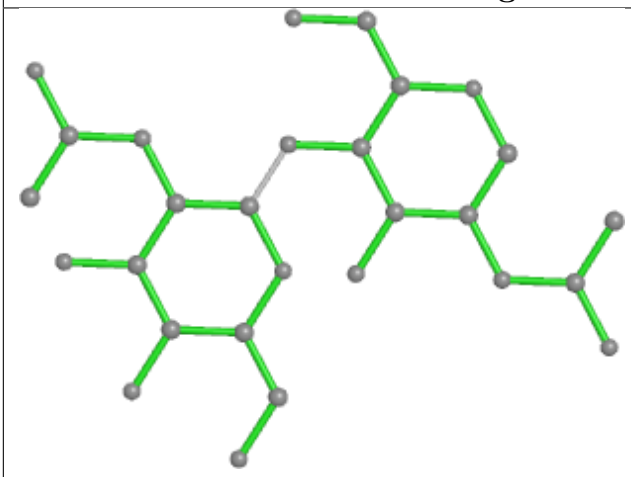


Rings

Oligosaccharide Chain q



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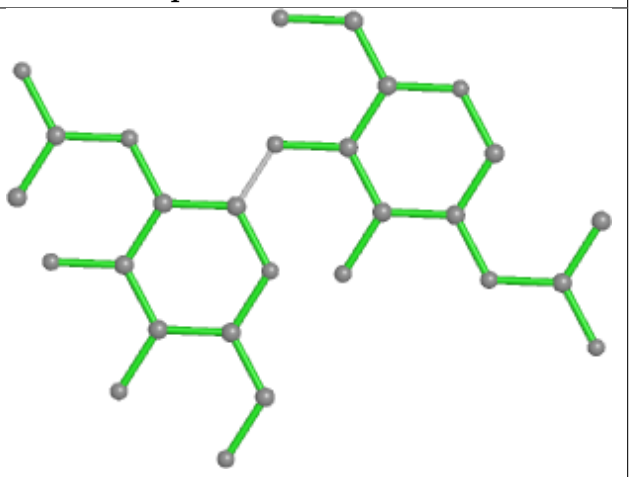
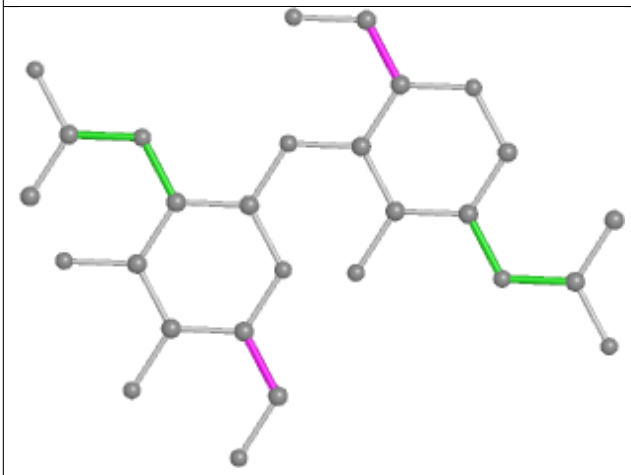
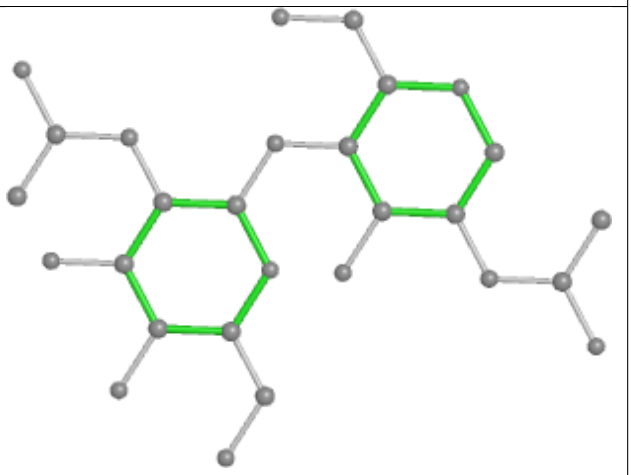


Bond angles

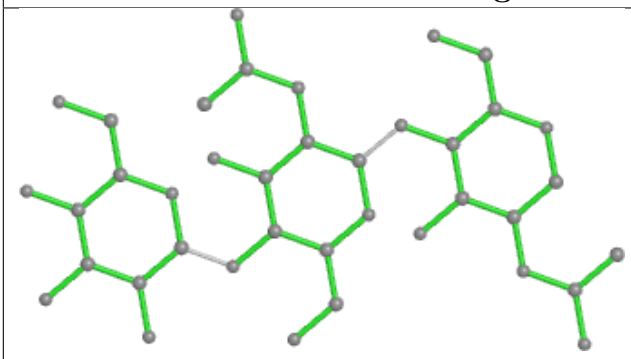


Torsions



Rings

Oligosaccharide Chain Y



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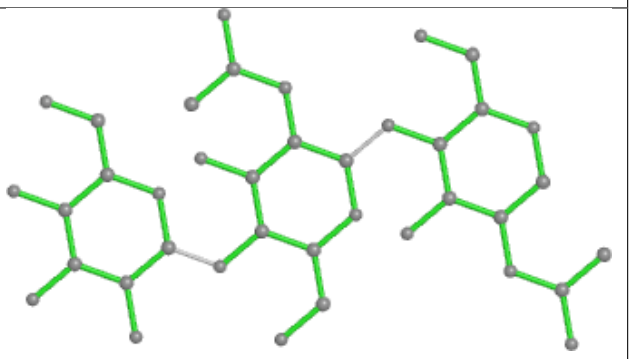
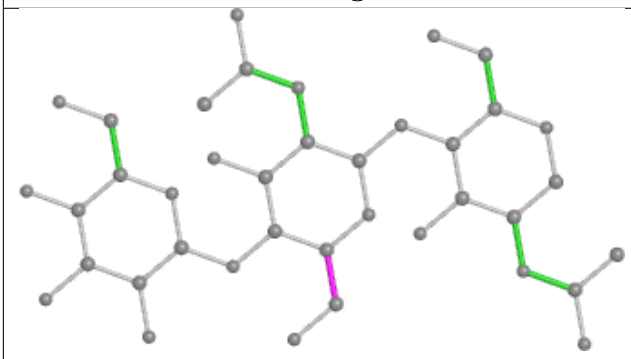


Bond angles



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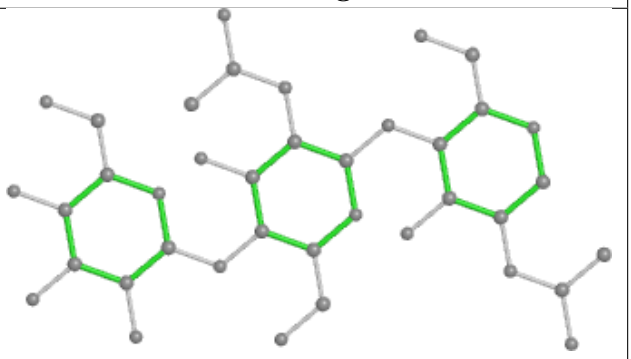
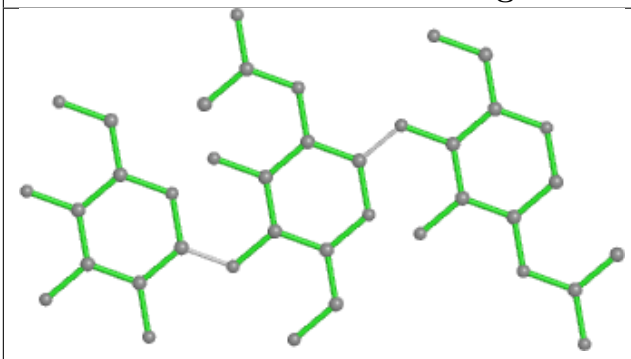
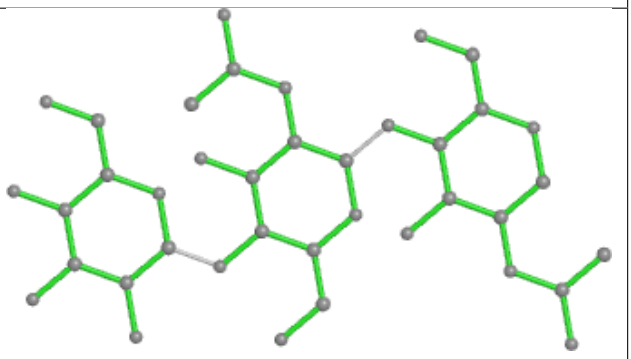


Rings

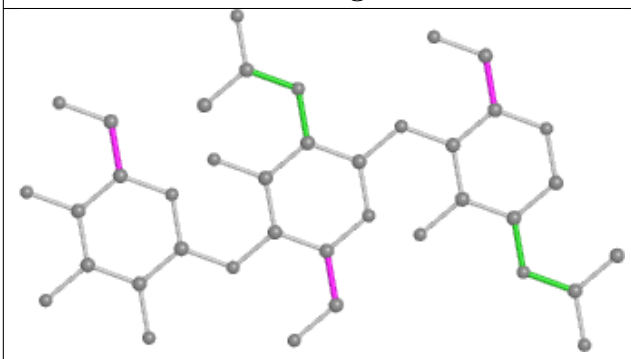
Oligosaccharide Chain Z



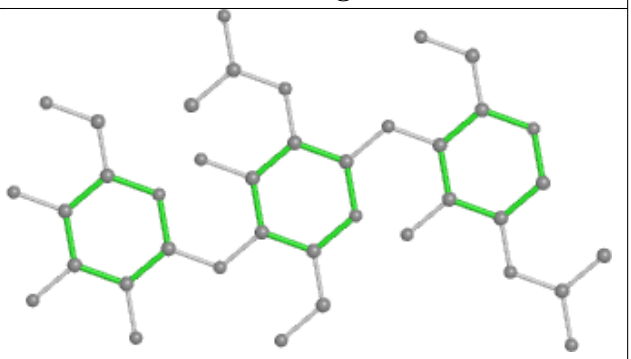
Bond lengths



Bond angles

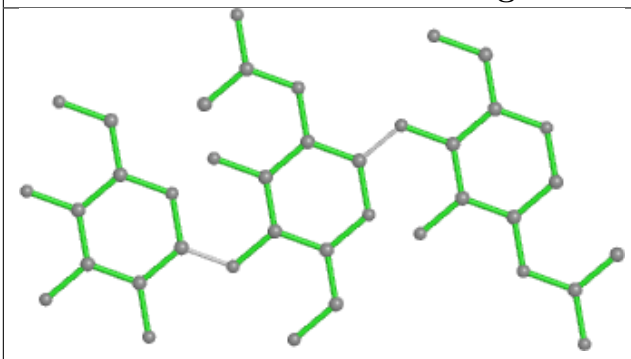


Torsions

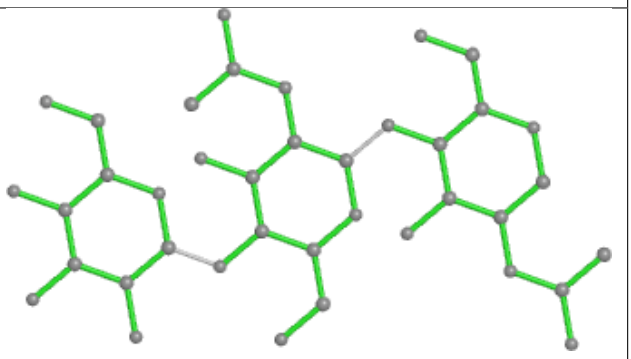


Rings

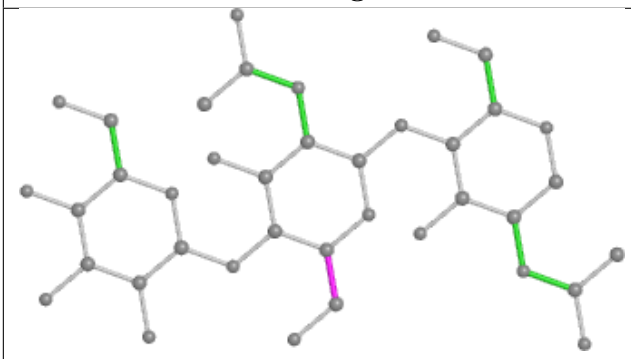
Oligosaccharide Chain h



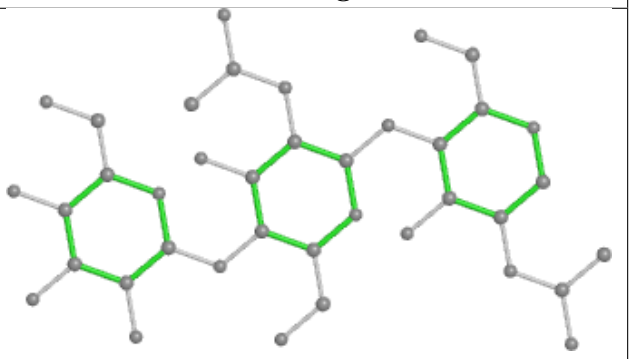
Bond lengths



Bond angles

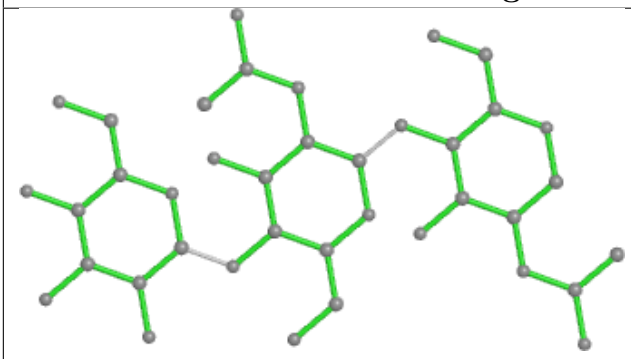


Torsions

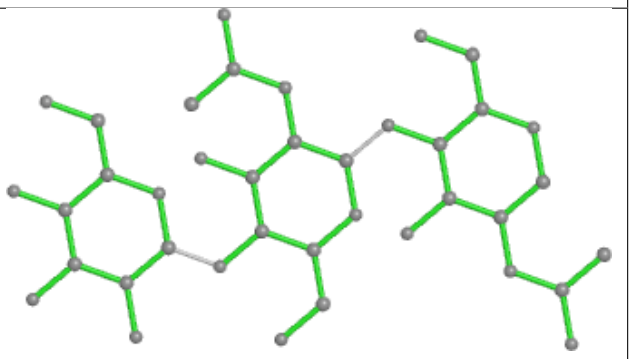


Rings

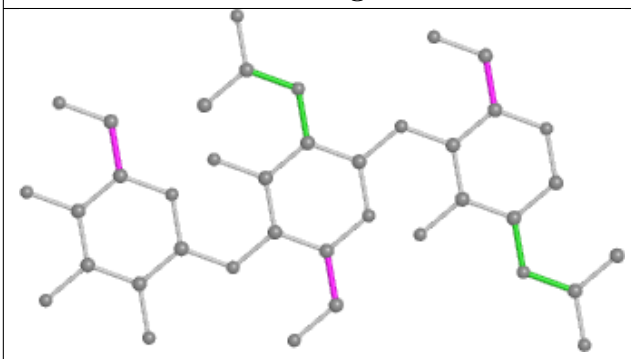
Oligosaccharide Chain i



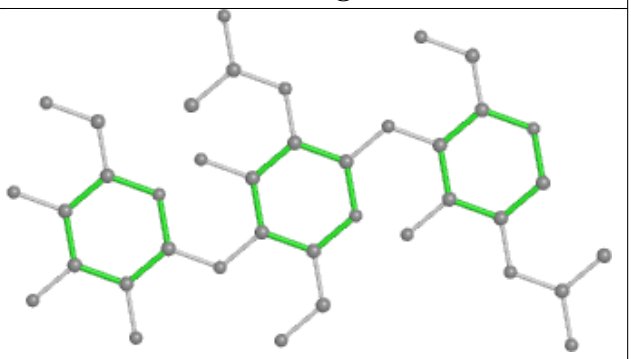
Bond lengths



Bond angles

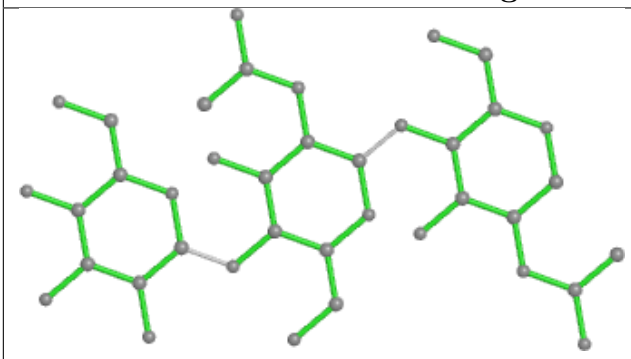


Torsions

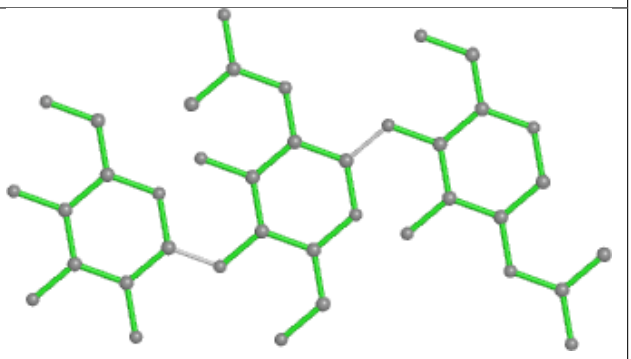


Rings

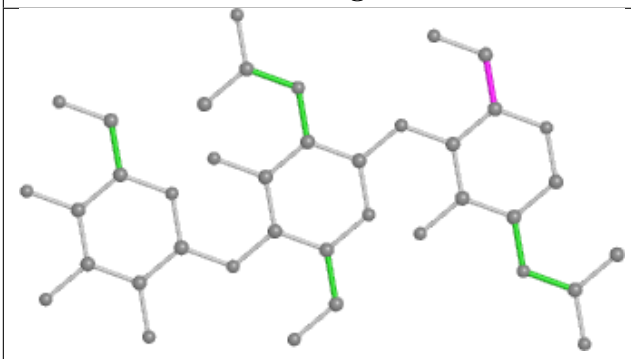
Oligosaccharide Chain r



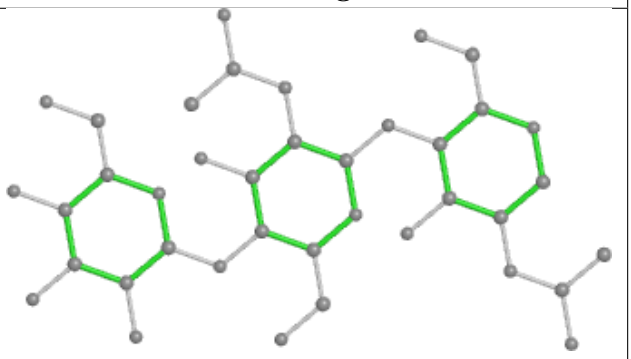
Bond lengths



Bond angles

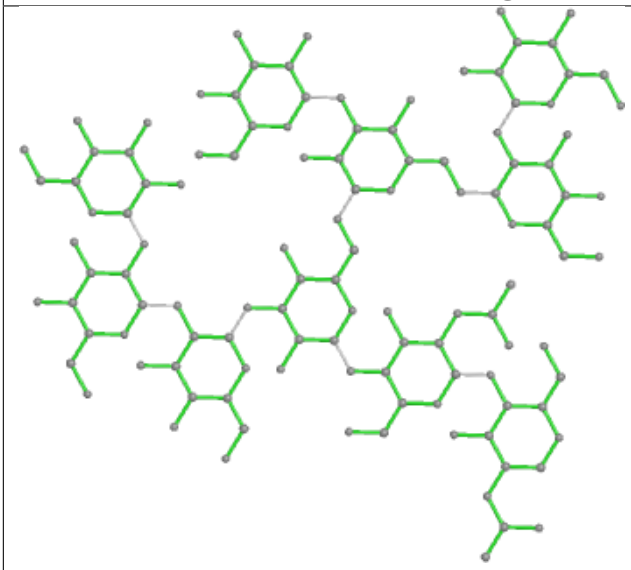


Torsions

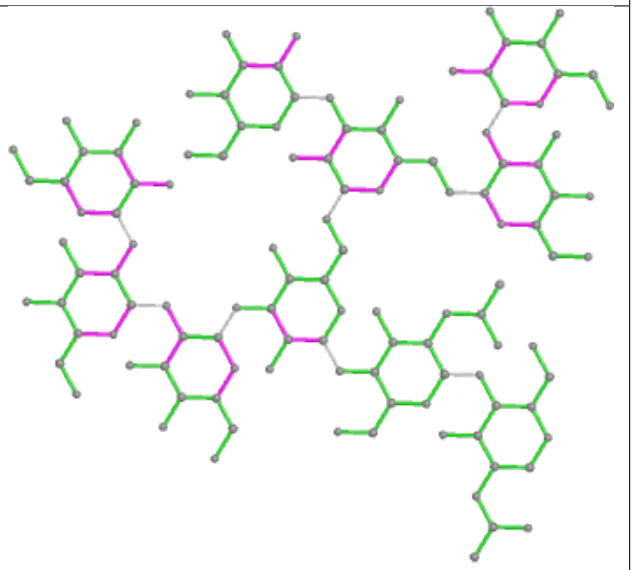


Rings

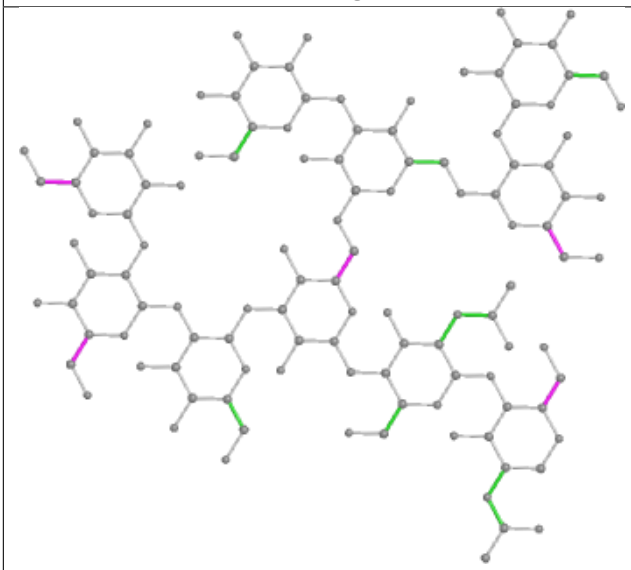
Oligosaccharide Chain a



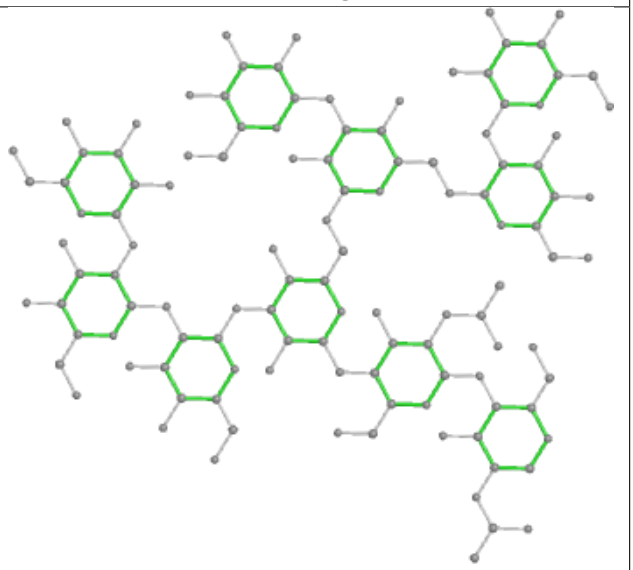
Bond lengths



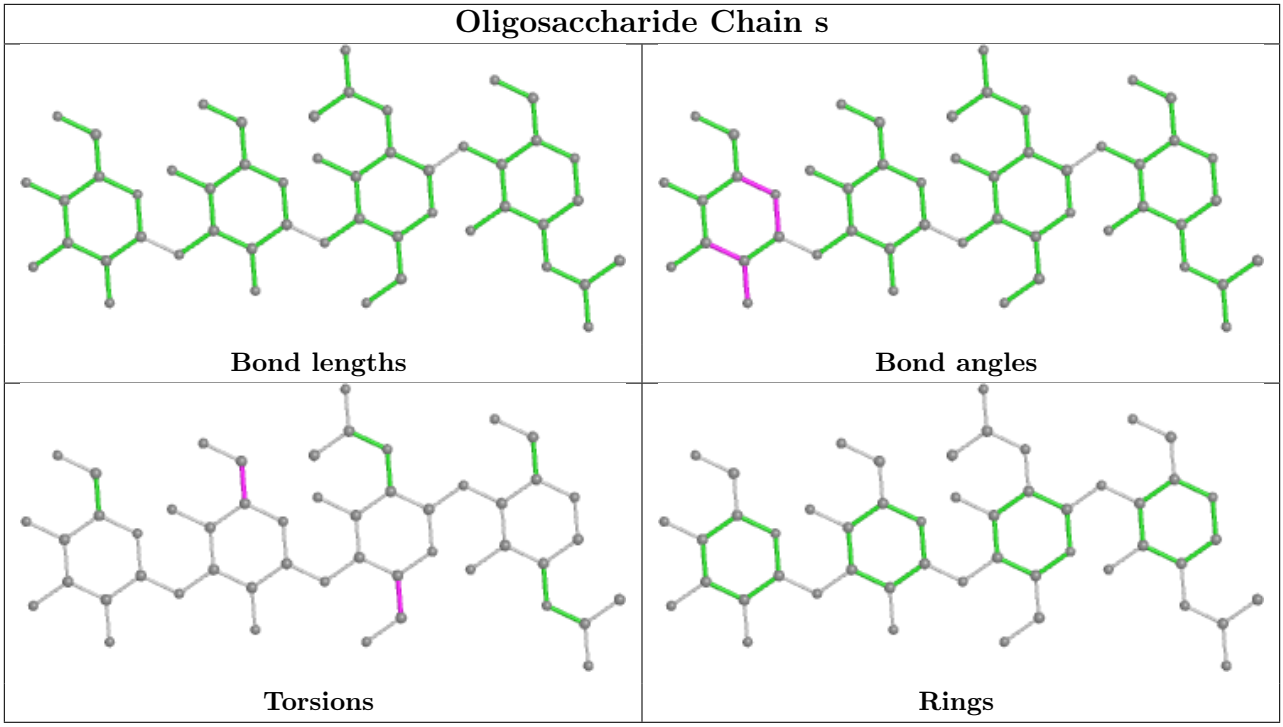
Bond angles



Torsions



Rings



5.6 Ligand geometry (i)

37 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	$\#\|Z\| > 2$
15	NAG	E	608	1	14,14,15	1.04	1 (7%)	17,19,21	1.27	1 (5%)
15	NAG	B	701	2	14,14,15	0.63	0	17,19,21	0.49	0
15	NAG	I	604	1	14,14,15	0.21	0	17,19,21	0.44	0
15	NAG	A	609	1	14,14,15	0.26	0	17,19,21	0.76	0
15	NAG	A	604	1	14,14,15	0.28	0	17,19,21	0.45	0
14	83J	E	607	-	35,39,39	2.13	10 (28%)	43,56,56	4.32	18 (41%)
15	NAG	E	606	1	14,14,15	0.52	0	17,19,21	0.45	0
15	NAG	A	608	1	14,14,15	0.26	0	17,19,21	0.57	0
15	NAG	E	609	1	14,14,15	0.22	0	17,19,21	0.34	0
15	NAG	B	702	2	14,14,15	0.60	0	17,19,21	0.71	1 (5%)
15	NAG	F	703	2	14,14,15	0.32	0	17,19,21	0.47	0
15	NAG	E	605	1	14,14,15	0.20	0	17,19,21	0.55	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
15	NAG	E	603	1	14,14,15	0.22	0	17,19,21	0.45	0
15	NAG	E	601	1	14,14,15	0.22	0	17,19,21	0.39	0
15	NAG	A	607	1	14,14,15	0.38	0	17,19,21	1.77	4 (23%)
15	NAG	I	601	1	14,14,15	0.22	0	17,19,21	0.38	0
15	NAG	E	604	1	14,14,15	0.22	0	17,19,21	0.43	0
14	83J	I	607	-	35,39,39	2.18	11 (31%)	43,56,56	4.16	21 (48%)
15	NAG	G	301	3	14,14,15	0.25	0	17,19,21	0.45	0
15	NAG	I	602	1	14,14,15	0.25	0	17,19,21	0.43	0
15	NAG	I	605	1	14,14,15	0.21	0	17,19,21	0.38	0
15	NAG	I	606	1	14,14,15	0.30	0	17,19,21	0.33	0
15	NAG	J	701	2	14,14,15	0.26	0	17,19,21	0.48	0
15	NAG	A	606	1	14,14,15	0.25	0	17,19,21	0.49	0
15	NAG	E	602	1	14,14,15	0.23	0	17,19,21	0.35	0
15	NAG	A	602	1	14,14,15	0.22	0	17,19,21	0.40	0
15	NAG	A	605	1	14,14,15	0.24	0	17,19,21	0.47	0
15	NAG	F	702	2	14,14,15	0.28	0	17,19,21	0.40	0
15	NAG	I	603	1	14,14,15	0.24	0	17,19,21	0.43	0
15	NAG	K	301	3	14,14,15	0.34	0	17,19,21	1.02	1 (5%)
15	NAG	J	703	2	14,14,15	0.60	0	17,19,21	0.73	1 (5%)
15	NAG	A	603	1	14,14,15	0.24	0	17,19,21	0.44	0
14	83J	A	601	-	35,39,39	2.08	11 (31%)	43,56,56	4.18	18 (41%)
15	NAG	J	702	2	14,14,15	0.28	0	17,19,21	0.51	0
15	NAG	C	301	3	14,14,15	0.26	0	17,19,21	0.42	0
15	NAG	F	701	2	14,14,15	0.22	0	17,19,21	0.49	0
15	NAG	I	608	1	14,14,15	0.72	1 (7%)	17,19,21	0.90	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
15	NAG	E	608	1	-	2/6/23/26	0/1/1/1
15	NAG	B	701	2	-	2/6/23/26	0/1/1/1
15	NAG	I	604	1	-	2/6/23/26	0/1/1/1
15	NAG	A	609	1	-	3/6/23/26	0/1/1/1
15	NAG	A	604	1	-	2/6/23/26	0/1/1/1
14	83J	E	607	-	-	2/18/36/36	0/5/5/5
15	NAG	E	606	1	-	4/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
15	NAG	A	608	1	-	2/6/23/26	0/1/1/1
15	NAG	E	609	1	-	0/6/23/26	0/1/1/1
15	NAG	B	702	2	-	2/6/23/26	0/1/1/1
15	NAG	F	703	2	-	3/6/23/26	0/1/1/1
15	NAG	E	605	1	-	2/6/23/26	0/1/1/1
15	NAG	E	603	1	-	2/6/23/26	0/1/1/1
15	NAG	E	601	1	-	2/6/23/26	0/1/1/1
15	NAG	A	607	1	-	4/6/23/26	0/1/1/1
15	NAG	I	601	1	-	2/6/23/26	0/1/1/1
15	NAG	E	604	1	-	2/6/23/26	0/1/1/1
14	83J	I	607	-	-	2/18/36/36	0/5/5/5
15	NAG	G	301	3	-	2/6/23/26	0/1/1/1
15	NAG	I	602	1	-	2/6/23/26	0/1/1/1
15	NAG	I	605	1	-	2/6/23/26	0/1/1/1
15	NAG	I	606	1	-	3/6/23/26	0/1/1/1
15	NAG	J	701	2	-	2/6/23/26	0/1/1/1
15	NAG	A	606	1	-	2/6/23/26	0/1/1/1
15	NAG	E	602	1	-	2/6/23/26	0/1/1/1
15	NAG	A	602	1	-	2/6/23/26	0/1/1/1
15	NAG	A	605	1	-	0/6/23/26	0/1/1/1
15	NAG	F	702	2	-	3/6/23/26	0/1/1/1
15	NAG	I	603	1	-	2/6/23/26	0/1/1/1
15	NAG	K	301	3	-	2/6/23/26	0/1/1/1
15	NAG	J	703	2	-	2/6/23/26	0/1/1/1
15	NAG	A	603	1	-	2/6/23/26	0/1/1/1
14	83J	A	601	-	-	2/18/36/36	0/5/5/5
15	NAG	J	702	2	-	2/6/23/26	0/1/1/1
15	NAG	C	301	3	-	0/6/23/26	0/1/1/1
15	NAG	F	701	2	-	2/6/23/26	0/1/1/1
15	NAG	I	608	1	-	4/6/23/26	0/1/1/1

All (34) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
14	E	607	83J	C12-N02	5.81	1.45	1.34
14	I	607	83J	C12-N02	5.77	1.45	1.34

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
14	I	607	83J	C13-N05	5.32	1.46	1.34
14	E	607	83J	C13-N05	5.11	1.46	1.34
14	A	601	83J	C12-N02	5.01	1.44	1.34
14	A	601	83J	C13-N05	4.87	1.45	1.34
14	I	607	83J	C16-C17	-4.79	1.35	1.42
14	A	601	83J	C16-C17	-4.55	1.35	1.42
14	A	601	83J	C29-N28	4.47	1.34	1.31
14	I	607	83J	C29-N28	4.45	1.34	1.31
14	E	607	83J	C16-C17	-4.40	1.36	1.42
14	E	607	83J	C29-N28	4.39	1.34	1.31
15	E	608	NAG	O5-C1	3.59	1.49	1.43
14	A	601	83J	N34-N30	-2.91	1.33	1.39
14	I	607	83J	N34-N30	-2.87	1.34	1.39
14	E	607	83J	N34-N30	-2.79	1.34	1.39
14	A	601	83J	O09-C14	-2.71	1.17	1.23
14	I	607	83J	C15-C13	2.70	1.54	1.50
14	I	607	83J	O09-C14	-2.68	1.17	1.23
14	E	607	83J	O09-C14	-2.67	1.17	1.23
14	E	607	83J	C15-C13	2.45	1.54	1.50
14	I	607	83J	C22-C17	-2.44	1.37	1.42
15	I	608	NAG	O5-C1	2.42	1.47	1.43
14	A	601	83J	O03-C12	-2.40	1.18	1.23
14	E	607	83J	C22-C17	-2.37	1.37	1.42
14	E	607	83J	O03-C12	-2.36	1.18	1.23
14	I	607	83J	O03-C12	-2.33	1.18	1.23
14	A	601	83J	C15-C13	2.31	1.53	1.50
14	A	601	83J	C22-C17	-2.30	1.37	1.42
14	E	607	83J	C07-N02	-2.19	1.43	1.47
14	A	601	83J	C04-N05	-2.16	1.43	1.47
14	I	607	83J	C07-N02	-2.13	1.43	1.47
14	A	601	83J	O06-C13	-2.12	1.18	1.22
14	I	607	83J	O06-C13	-2.00	1.18	1.22

All (66) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
14	E	607	83J	C18-C16-C14	-15.00	100.44	127.45
14	I	607	83J	C18-C16-C14	-14.96	100.53	127.45
14	A	601	83J	C18-C16-C14	-14.64	101.11	127.45
14	A	601	83J	O11-C22-C17	10.95	132.00	115.89
14	E	607	83J	O11-C22-C17	10.92	131.96	115.89
14	I	607	83J	O11-C22-C17	10.77	131.73	115.89

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
14	E	607	83J	C20-C15-C13	-9.16	97.06	120.29
14	E	607	83J	O11-C22-C25	-8.98	104.22	125.08
14	A	601	83J	O11-C22-C25	-8.86	104.51	125.08
14	E	607	83J	C21-C15-C13	8.78	142.53	120.29
14	A	601	83J	C20-C15-C13	-8.73	98.16	120.29
14	I	607	83J	O11-C22-C25	-8.69	104.89	125.08
14	A	601	83J	C21-C15-C13	8.20	141.08	120.29
14	I	607	83J	C20-C15-C13	-7.82	100.47	120.29
14	I	607	83J	C21-C15-C13	7.63	139.62	120.29
14	E	607	83J	N28-C29-N30	-7.19	107.82	114.33
14	I	607	83J	N28-C29-N30	-6.76	108.21	114.33
14	A	601	83J	N28-C29-N30	-6.40	108.54	114.33
14	A	601	83J	C16-C17-C19	-5.95	102.79	107.54
14	I	607	83J	C16-C17-C19	-5.50	103.14	107.54
14	E	607	83J	C16-C17-C19	-5.45	103.19	107.54
15	E	608	NAG	C1-O5-C5	4.98	118.94	112.19
15	A	607	NAG	O5-C1-C2	-4.78	103.74	111.29
14	E	607	83J	C01-C04-N05	4.28	119.61	110.44
14	I	607	83J	C15-C13-N05	3.95	123.73	118.72
14	E	607	83J	C27-O11-C22	-3.84	112.37	117.75
14	A	601	83J	C16-C18-N08	-3.63	101.89	108.91
14	E	607	83J	C14-C12-N02	3.50	121.97	118.52
15	I	608	NAG	C1-O5-C5	3.43	116.84	112.19
14	I	607	83J	C16-C18-N08	-3.34	102.45	108.91
14	A	601	83J	C27-O11-C22	-3.32	113.10	117.75
14	A	601	83J	O03-C12-C14	3.24	121.79	116.91
14	A	601	83J	C22-C25-N28	-3.21	117.90	122.73
14	I	607	83J	C22-C25-N28	-3.19	117.93	122.73
14	E	607	83J	C16-C18-N08	-3.19	102.75	108.91
14	I	607	83J	C01-C04-N05	3.14	117.16	110.44
14	E	607	83J	C19-C29-N28	3.12	127.69	118.92
15	A	607	NAG	C4-C3-C2	-3.10	106.48	111.02
14	E	607	83J	C22-C25-N28	-3.07	118.12	122.73
14	A	601	83J	C19-C29-N28	3.01	127.38	118.92
15	K	301	NAG	C1-O5-C5	3.01	116.27	112.19
14	I	607	83J	C27-O11-C22	-2.98	113.57	117.75
14	I	607	83J	C19-C29-N28	2.96	127.25	118.92
14	E	607	83J	O03-C12-N02	-2.95	117.96	122.67
14	A	601	83J	O09-C14-C12	2.89	121.94	117.74
15	A	607	NAG	C2-N2-C7	-2.88	118.80	122.90
14	E	607	83J	C16-C14-C12	2.85	122.70	118.61
14	I	607	83J	C16-C14-C12	2.66	122.43	118.61

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
15	J	703	NAG	C1-O5-C5	2.61	115.73	112.19
14	A	601	83J	C35-C33-N32	2.61	127.01	120.49
15	A	607	NAG	C1-O5-C5	2.59	115.70	112.19
14	A	601	83J	C04-N05-C10	-2.56	107.69	112.62
14	I	607	83J	O06-C13-N05	-2.54	118.14	122.34
14	I	607	83J	C35-C33-N32	2.53	126.83	120.49
15	B	702	NAG	C1-O5-C5	2.51	115.59	112.19
14	I	607	83J	C14-C12-N02	2.50	120.98	118.52
14	I	607	83J	C07-N02-C01	-2.46	107.89	112.62
14	I	607	83J	C07-C10-N05	2.45	115.70	110.44
14	I	607	83J	O03-C12-N02	-2.40	118.83	122.67
14	E	607	83J	C07-N02-C01	-2.39	108.03	112.62
14	E	607	83J	C35-C33-N32	2.34	126.36	120.49
14	A	601	83J	O03-C12-N02	-2.28	119.04	122.67
14	A	601	83J	C04-C01-N02	2.18	115.11	110.44
14	I	607	83J	O03-C12-C14	2.17	120.17	116.91
14	E	607	83J	O03-C12-C14	2.09	120.06	116.91
14	A	601	83J	O06-C13-N05	-2.03	118.98	122.34

There are no chirality outliers.

All (78) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
15	A	609	NAG	C8-C7-N2-C2
15	A	609	NAG	O7-C7-N2-C2
15	E	602	NAG	C4-C5-C6-O6
15	I	608	NAG	C4-C5-C6-O6
15	A	607	NAG	C8-C7-N2-C2
15	A	607	NAG	O7-C7-N2-C2
14	A	601	83J	C17-C22-O11-C27
14	E	607	83J	C17-C22-O11-C27
15	I	608	NAG	O5-C5-C6-O6
15	E	602	NAG	O5-C5-C6-O6
15	I	601	NAG	O5-C5-C6-O6
15	J	702	NAG	O5-C5-C6-O6
15	E	601	NAG	O5-C5-C6-O6
15	E	604	NAG	C4-C5-C6-O6
15	B	702	NAG	O5-C5-C6-O6
15	F	703	NAG	O5-C5-C6-O6
15	I	605	NAG	O5-C5-C6-O6
15	A	603	NAG	O5-C5-C6-O6
15	I	604	NAG	O5-C5-C6-O6

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Mol	Chain	Res	Type	Atoms
15	E	601	NAG	C4-C5-C6-O6
15	I	601	NAG	C4-C5-C6-O6
15	A	602	NAG	O5-C5-C6-O6
15	A	606	NAG	O5-C5-C6-O6
15	A	607	NAG	O5-C5-C6-O6
15	I	602	NAG	O5-C5-C6-O6
15	J	702	NAG	C4-C5-C6-O6
14	I	607	83J	C17-C22-O11-C27
15	F	701	NAG	O5-C5-C6-O6
15	A	602	NAG	C4-C5-C6-O6
15	I	606	NAG	O5-C5-C6-O6
15	J	703	NAG	O5-C5-C6-O6
15	E	608	NAG	C4-C5-C6-O6
14	A	601	83J	C25-C22-O11-C27
14	I	607	83J	C25-C22-O11-C27
15	E	606	NAG	O5-C5-C6-O6
15	G	301	NAG	O5-C5-C6-O6
15	F	701	NAG	C4-C5-C6-O6
15	B	702	NAG	C4-C5-C6-O6
15	E	606	NAG	C4-C5-C6-O6
15	I	602	NAG	C4-C5-C6-O6
15	F	702	NAG	O5-C5-C6-O6
15	I	603	NAG	O5-C5-C6-O6
15	F	703	NAG	C4-C5-C6-O6
15	I	605	NAG	C4-C5-C6-O6
15	K	301	NAG	C8-C7-N2-C2
15	G	301	NAG	C4-C5-C6-O6
15	A	608	NAG	O5-C5-C6-O6
15	E	608	NAG	O5-C5-C6-O6
15	A	603	NAG	C4-C5-C6-O6
15	A	607	NAG	C4-C5-C6-O6
15	E	604	NAG	O5-C5-C6-O6
15	E	605	NAG	O5-C5-C6-O6
15	I	606	NAG	C4-C5-C6-O6
15	A	604	NAG	O5-C5-C6-O6
15	I	603	NAG	C4-C5-C6-O6
15	I	604	NAG	C4-C5-C6-O6
15	J	701	NAG	C4-C5-C6-O6
15	E	603	NAG	O5-C5-C6-O6
15	E	605	NAG	C4-C5-C6-O6
14	E	607	83J	C25-C22-O11-C27
15	A	604	NAG	C4-C5-C6-O6

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Mol	Chain	Res	Type	Atoms
15	E	603	NAG	C4-C5-C6-O6
15	F	702	NAG	C4-C5-C6-O6
15	B	701	NAG	C4-C5-C6-O6
15	K	301	NAG	O7-C7-N2-C2
15	J	703	NAG	C4-C5-C6-O6
15	E	606	NAG	C1-C2-N2-C7
15	I	608	NAG	C1-C2-N2-C7
15	A	608	NAG	C4-C5-C6-O6
15	J	701	NAG	O5-C5-C6-O6
15	B	701	NAG	O5-C5-C6-O6
15	A	606	NAG	C4-C5-C6-O6
15	A	609	NAG	C4-C5-C6-O6
15	I	608	NAG	C3-C2-N2-C7
15	F	702	NAG	C1-C2-N2-C7
15	F	703	NAG	C1-C2-N2-C7
15	E	606	NAG	C3-C2-N2-C7
15	I	606	NAG	C1-C2-N2-C7

There are no ring outliers.

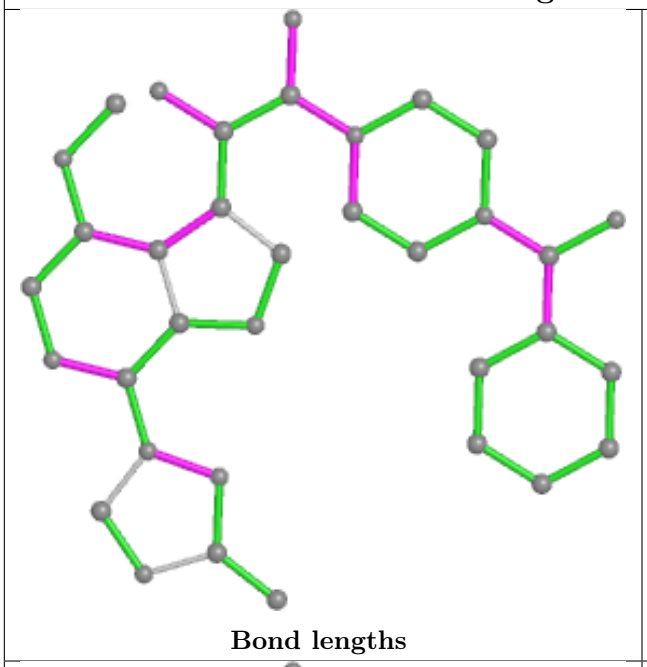
9 monomers are involved in 11 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
15	E	606	NAG	1	0
15	A	608	NAG	1	0
15	B	702	NAG	2	0
15	F	703	NAG	1	0
15	E	604	NAG	1	0
15	I	602	NAG	1	0
15	E	602	NAG	1	0
15	J	703	NAG	2	0
15	J	702	NAG	1	0

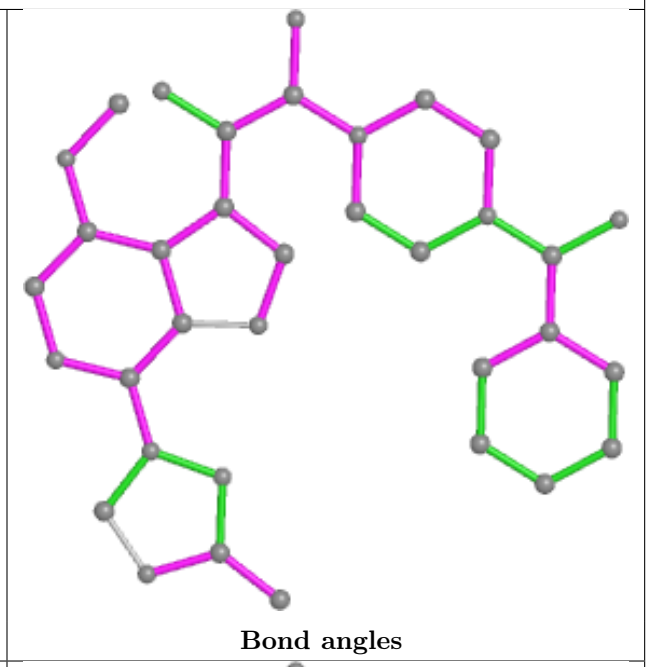
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier.

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

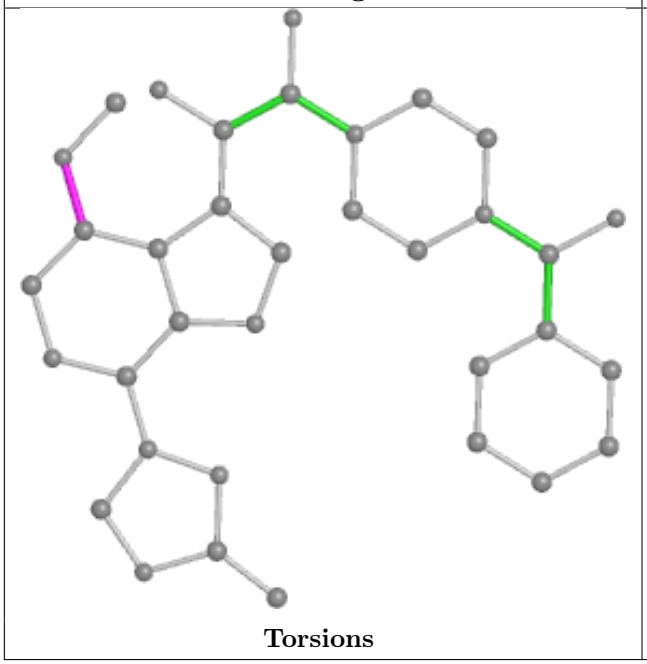
Ligand 83J E 607



Bond lengths



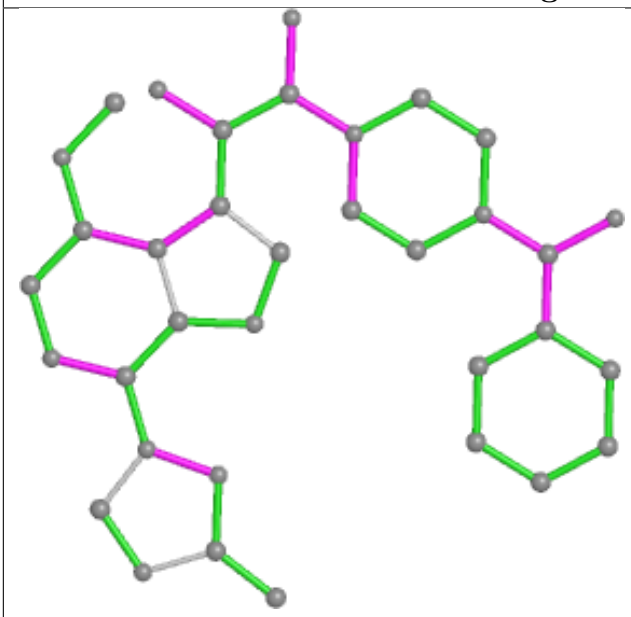
Bond angles



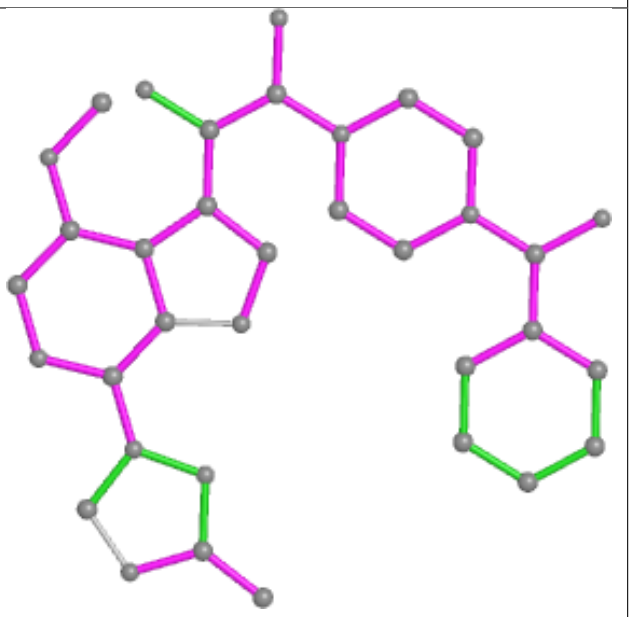
Torsions

Rings

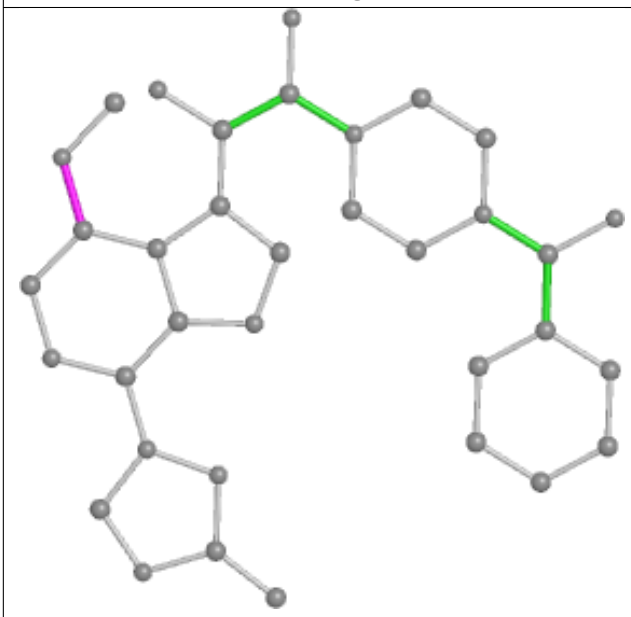
Ligand 83J I 607



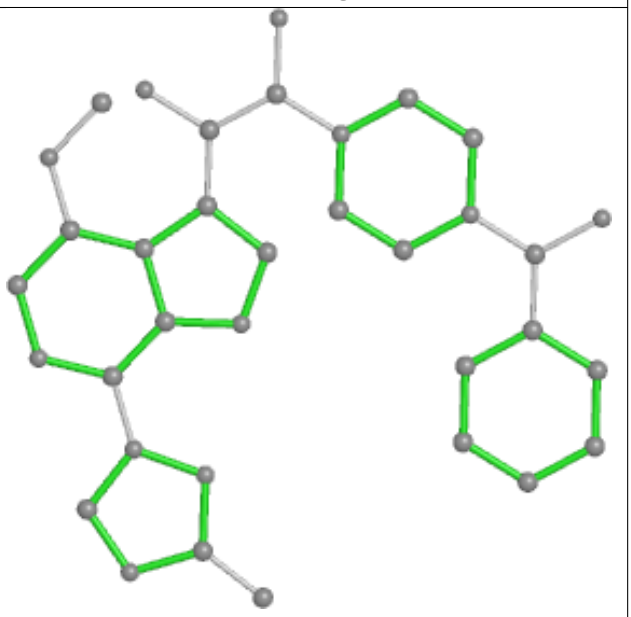
Bond lengths



Bond angles

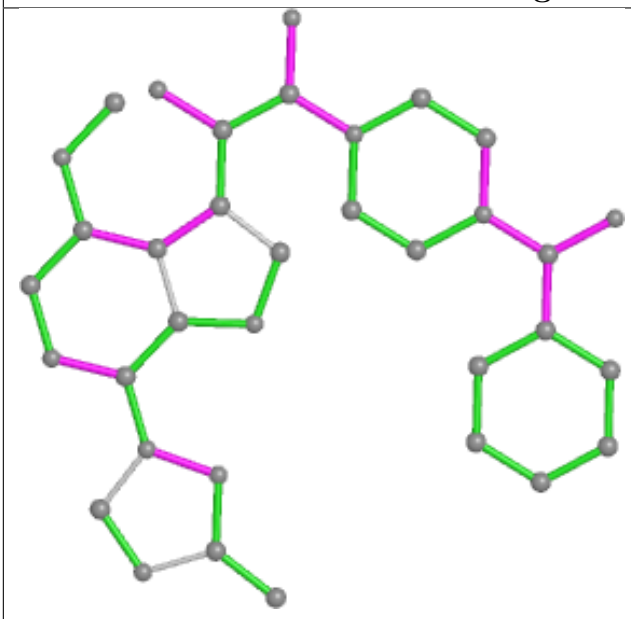


Torsions

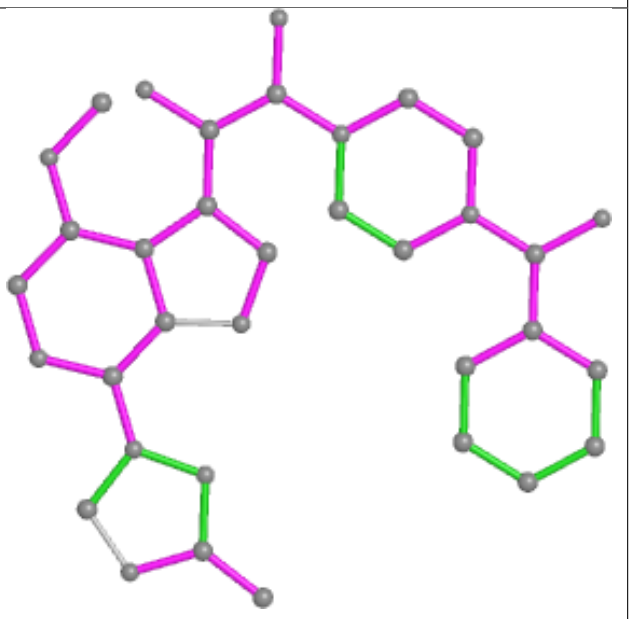


Rings

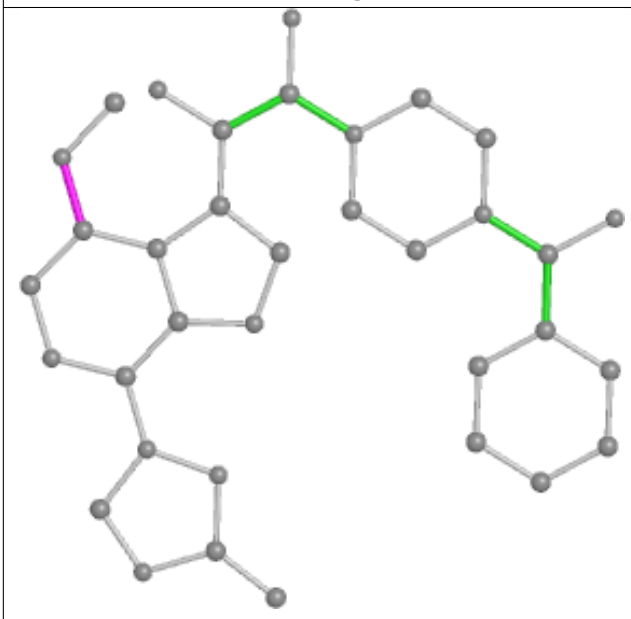
Ligand 83J A 601



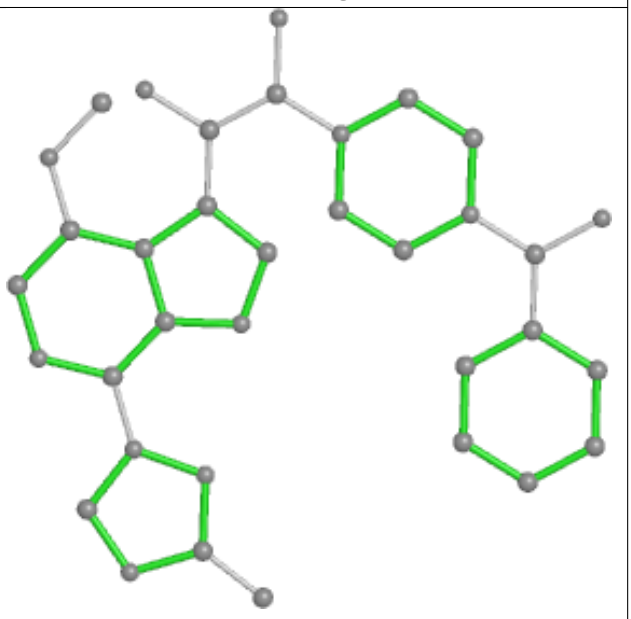
Bond lengths



Bond angles



Torsions



Rings

5.7 Other polymers

There are no such residues in this entry.

5.8 Polymer linkage issues

There are no chain breaks in this entry.

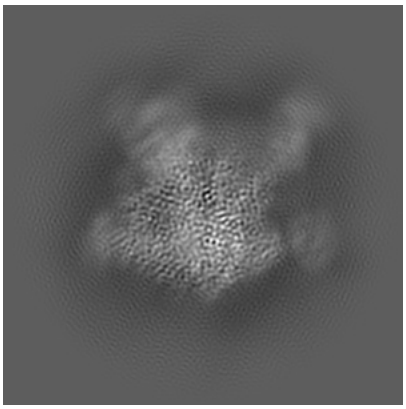
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-27103. These allow visual inspection of the internal detail of the map and identification of artifacts.

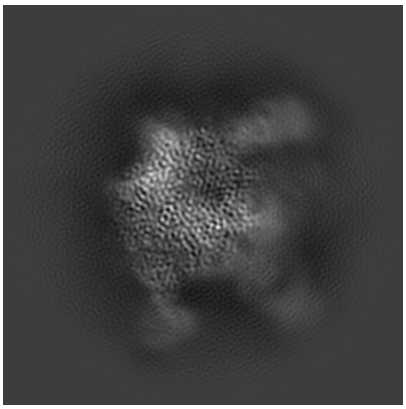
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

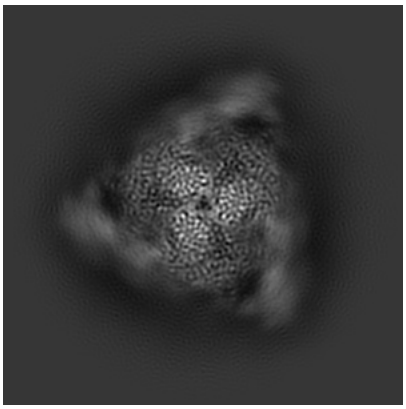
6.1.1 Primary map



X

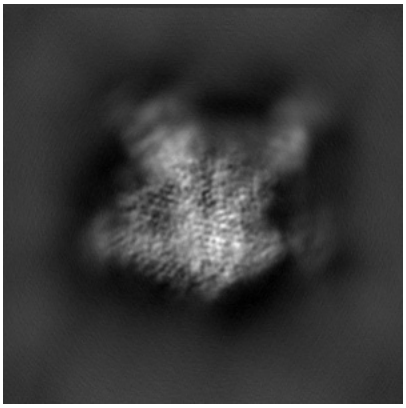


Y

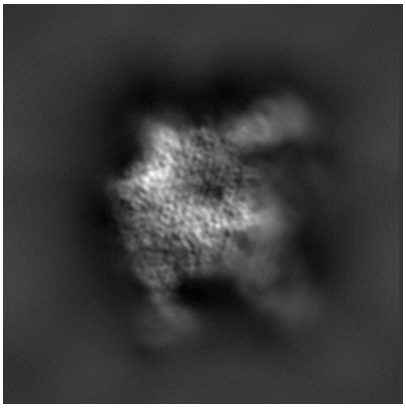


Z

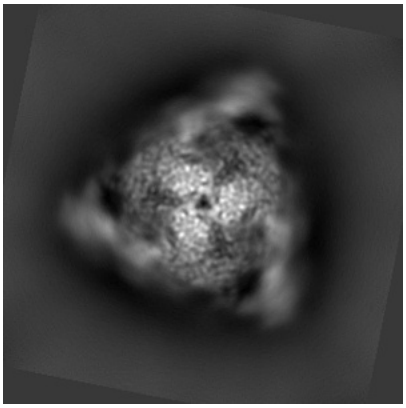
6.1.2 Raw map



X



Y

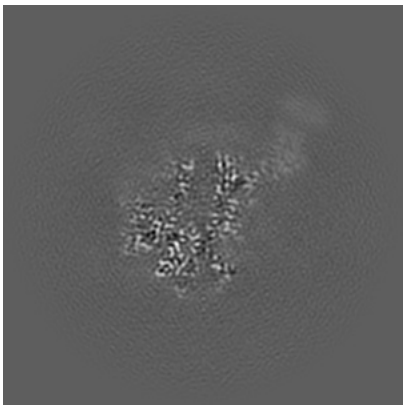


Z

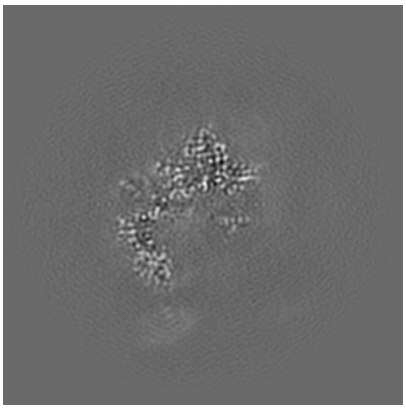
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

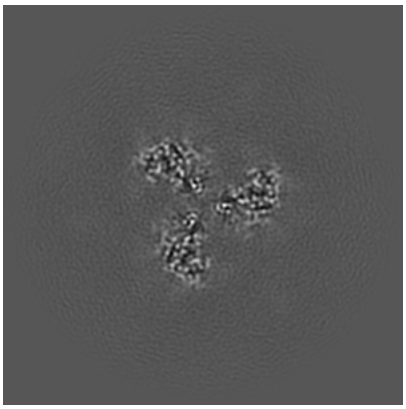
6.2.1 Primary map



X Index: 162

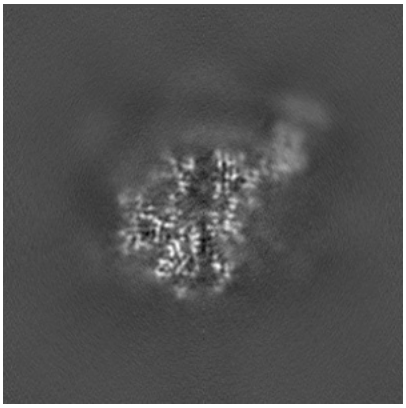


Y Index: 162

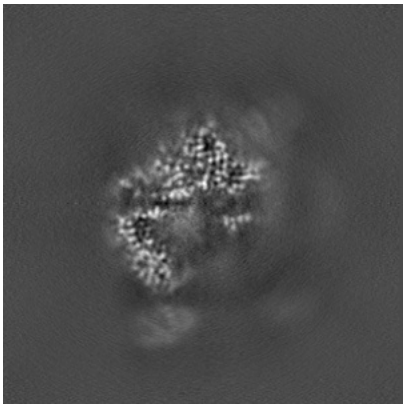


Z Index: 162

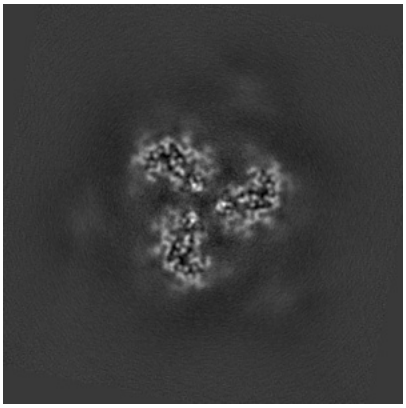
6.2.2 Raw map



X Index: 162



Y Index: 162

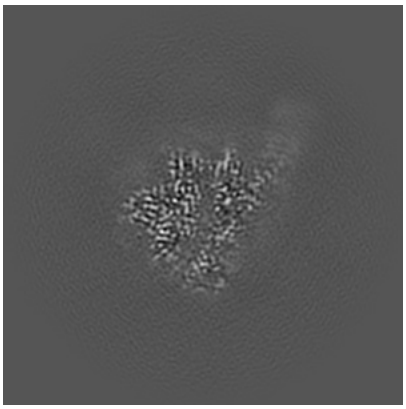


Z Index: 162

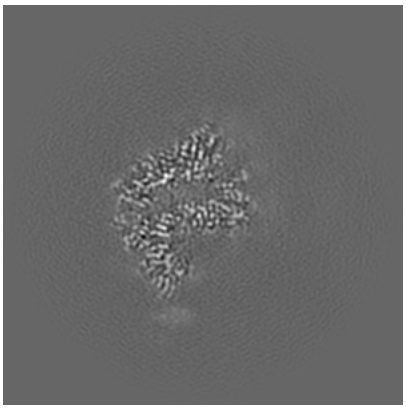
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

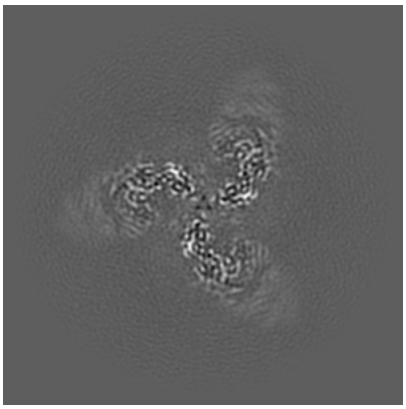
6.3.1 Primary map



X Index: 152

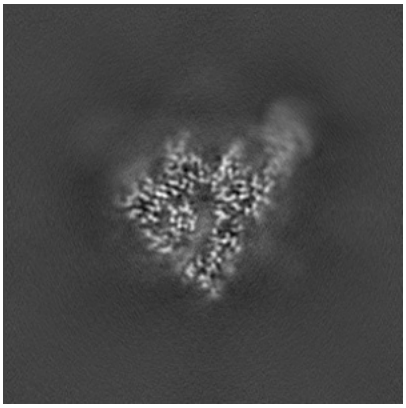


Y Index: 173

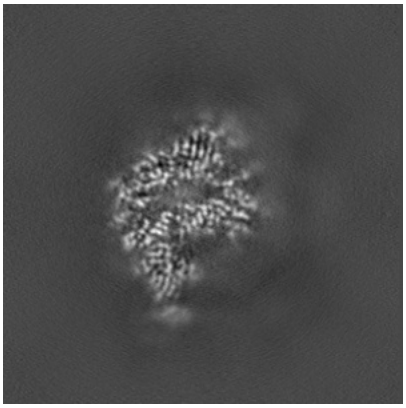


Z Index: 134

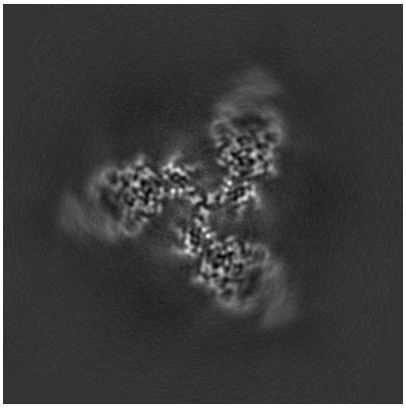
6.3.2 Raw map



X Index: 146



Y Index: 174

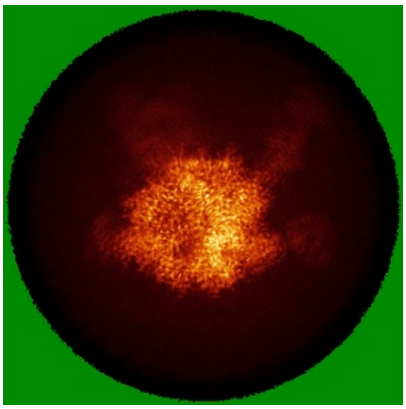


Z Index: 129

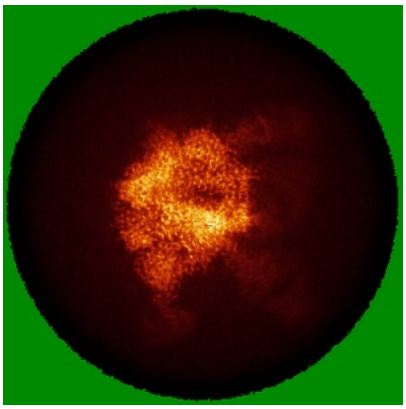
The images above show the largest variance slices of the map in three orthogonal directions.

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

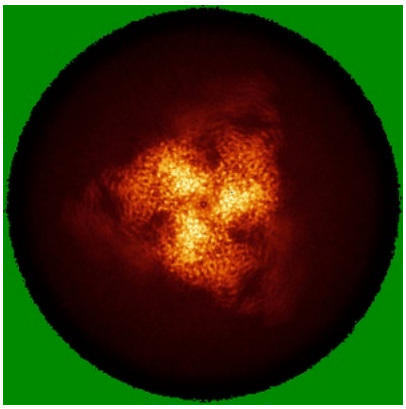
6.4.1 Primary map



X

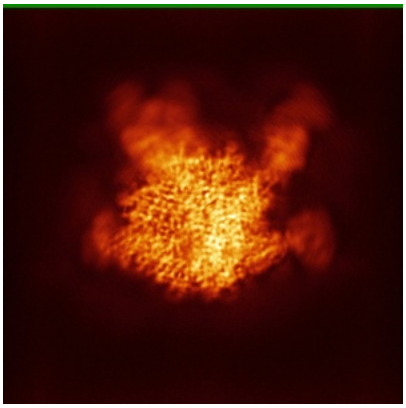


Y

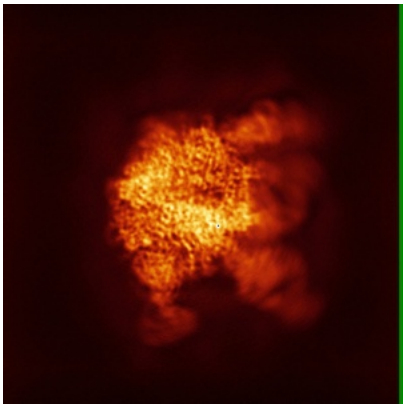


Z

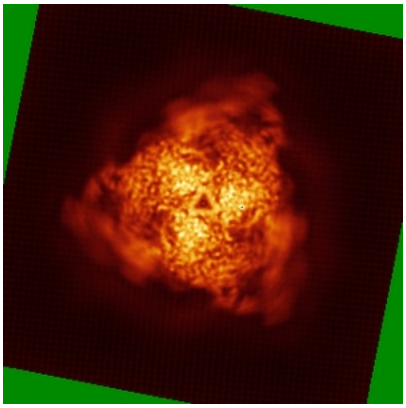
6.4.2 Raw map



X



Y

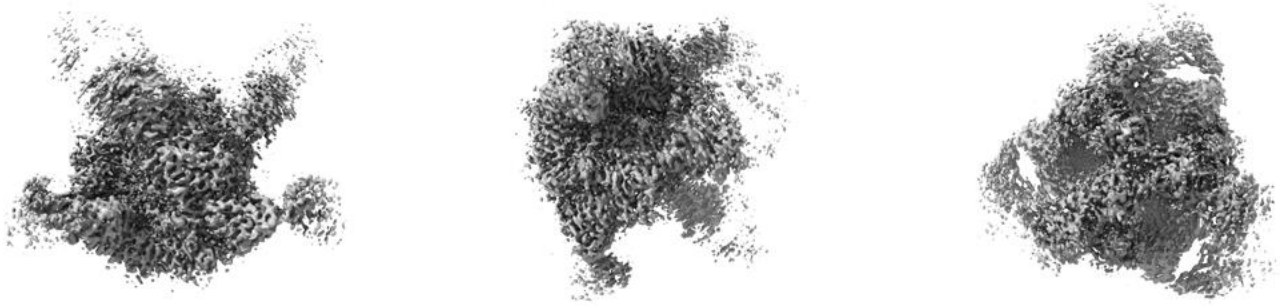


Z

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

6.5 Orthogonal surface views (i)

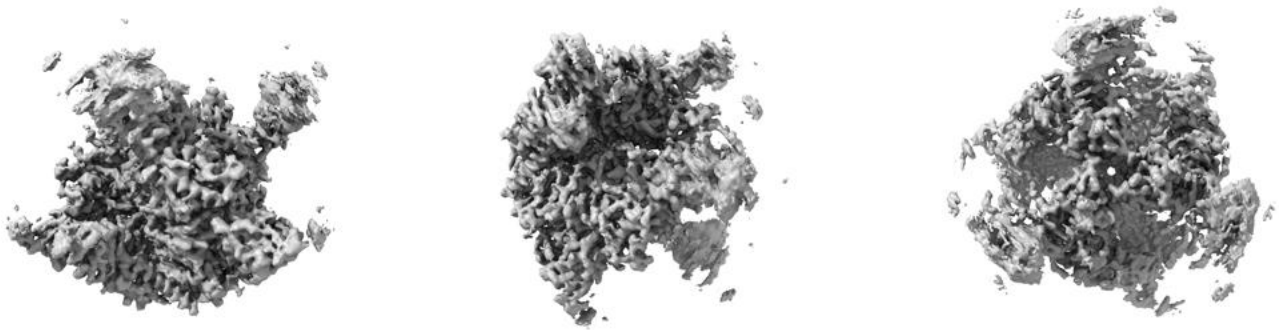
6.5.1 Primary map



X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.1. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



X Y Z

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

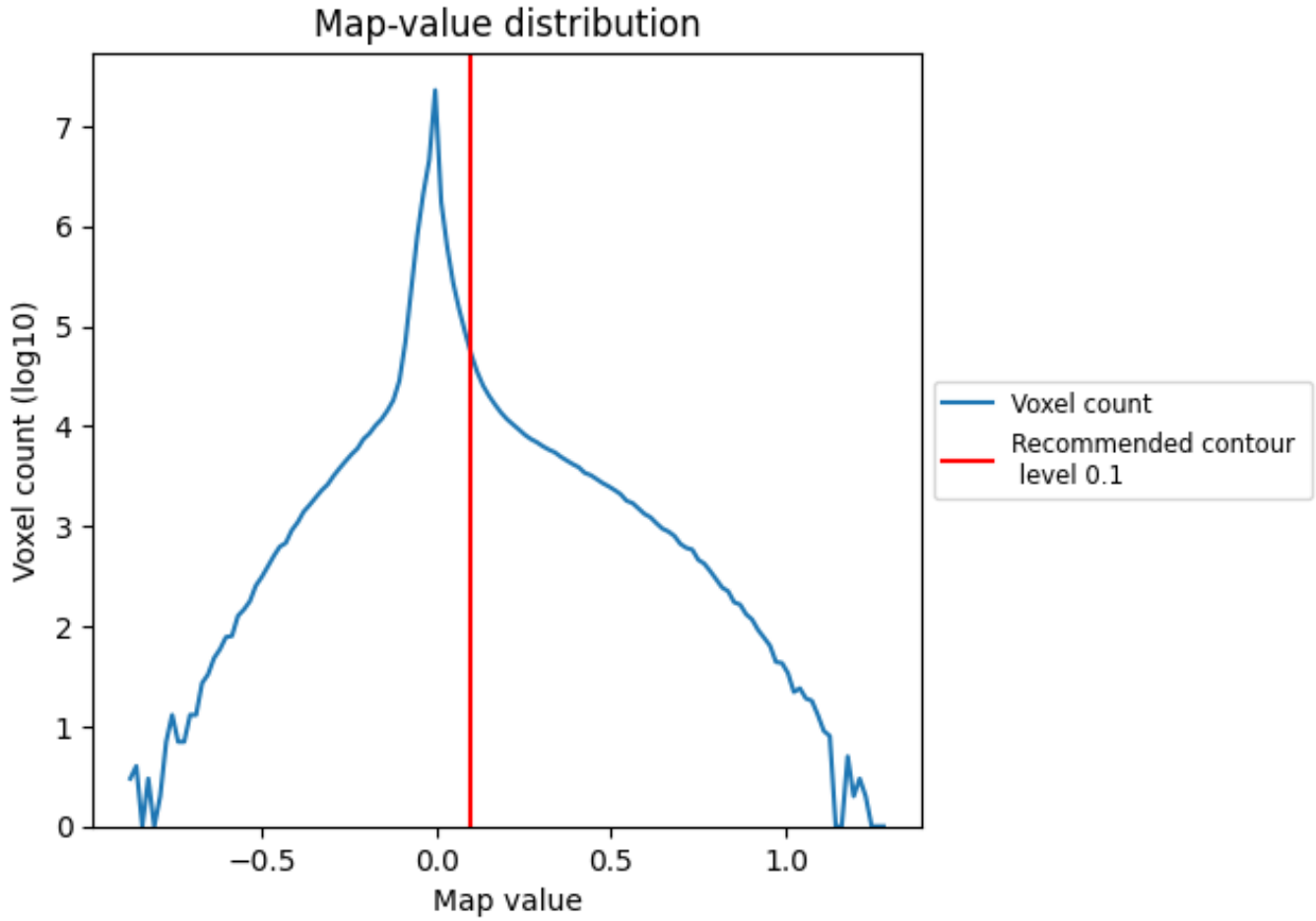
6.6 Mask visualisation (i)

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

7 Map analysis

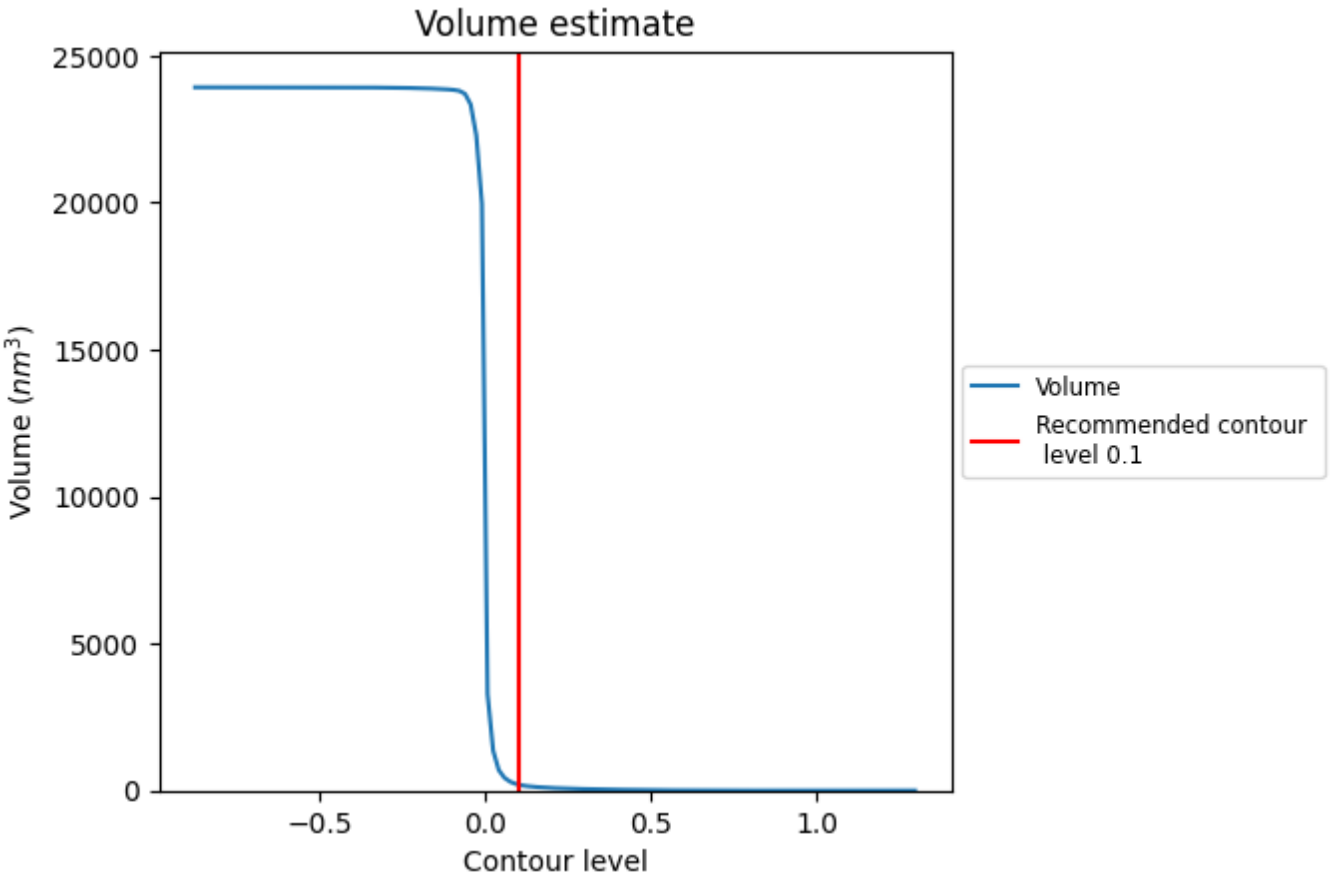
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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

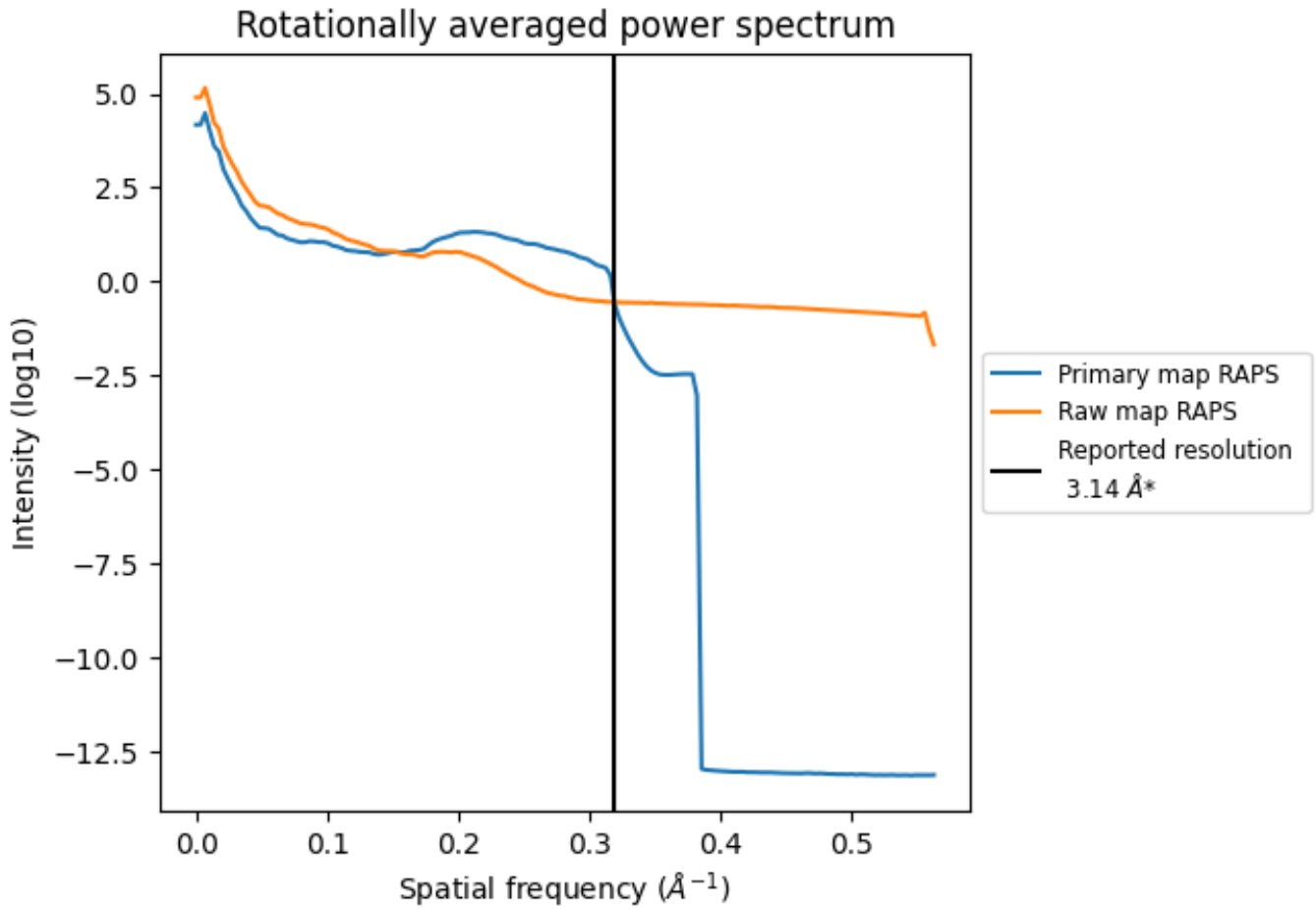
7.2 Volume estimate



The volume at the recommended contour level is 204 nm^3; this corresponds to an approximate mass of 184 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)

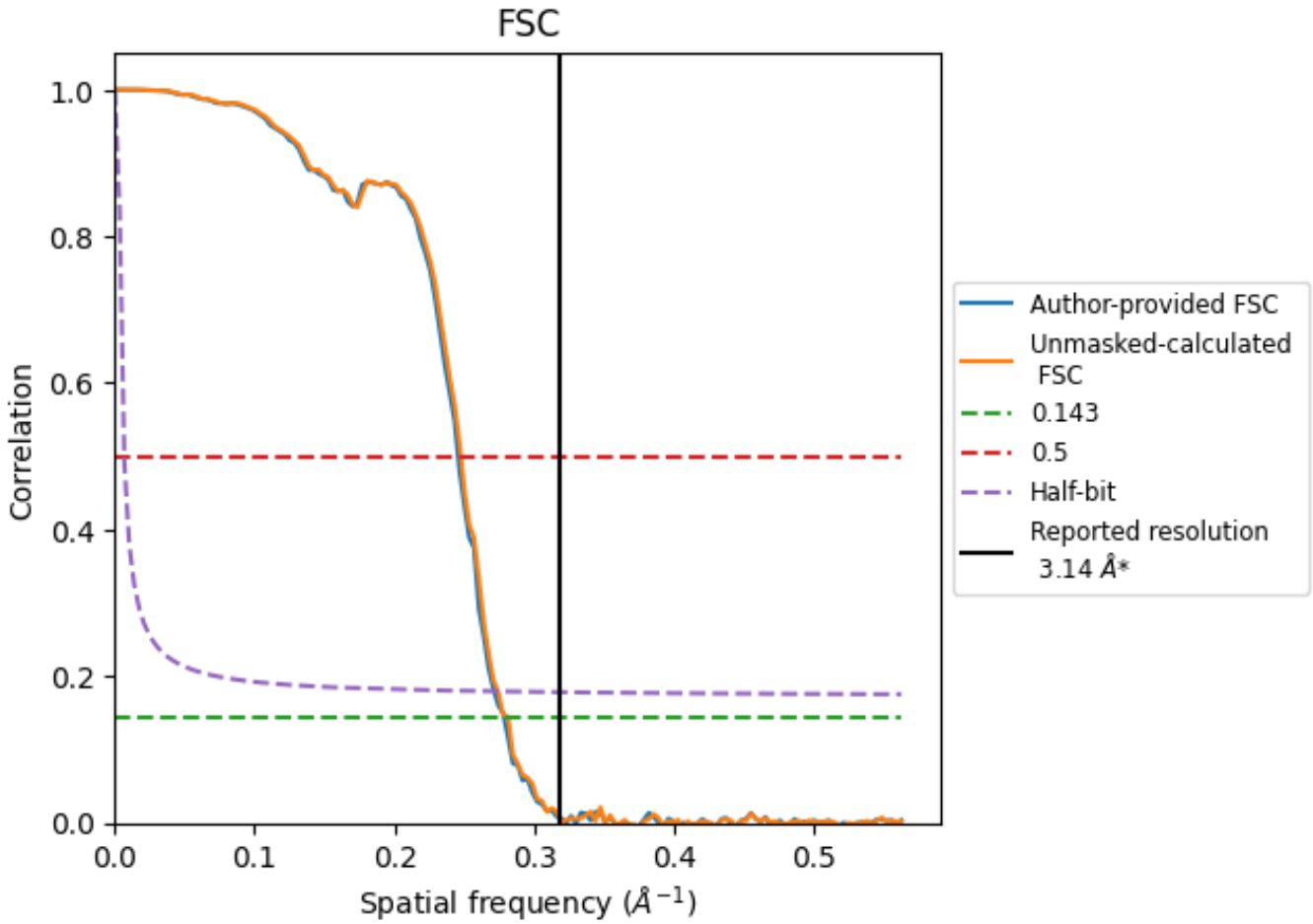


*Reported resolution corresponds to spatial frequency of 0.318 $Å^{-1}$

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 0.318 Å^{-1}

8.2 Resolution estimates (i)

Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.14	-	-
Author-provided FSC curve	3.59	4.07	3.69
Unmasked-calculated*	3.56	4.04	3.65

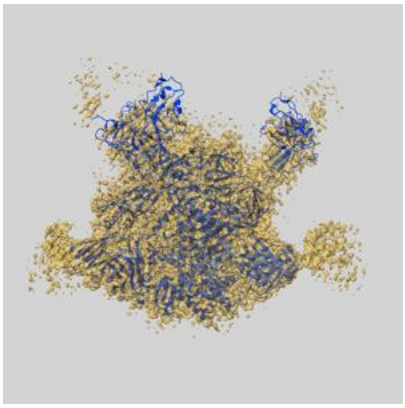
*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from author-provided FSC intersecting FSC 0.143 CUT-OFF 3.59 differs from the reported value 3.14 by more than 10 %

The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.56 differs from the reported value 3.14 by more than 10 %

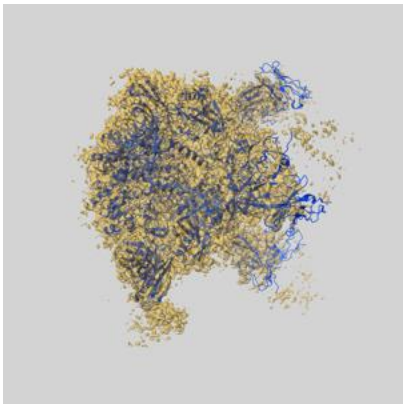
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-27103 and PDB model 8CZZ. Per-residue inclusion information can be found in section 3 on page 14.

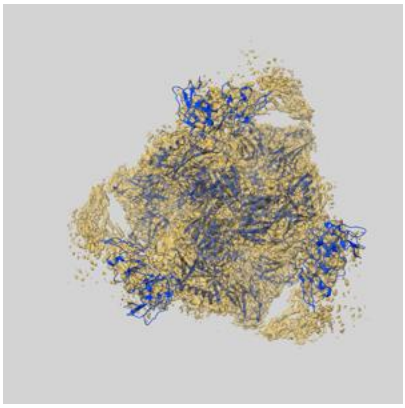
9.1 Map-model overlay



X



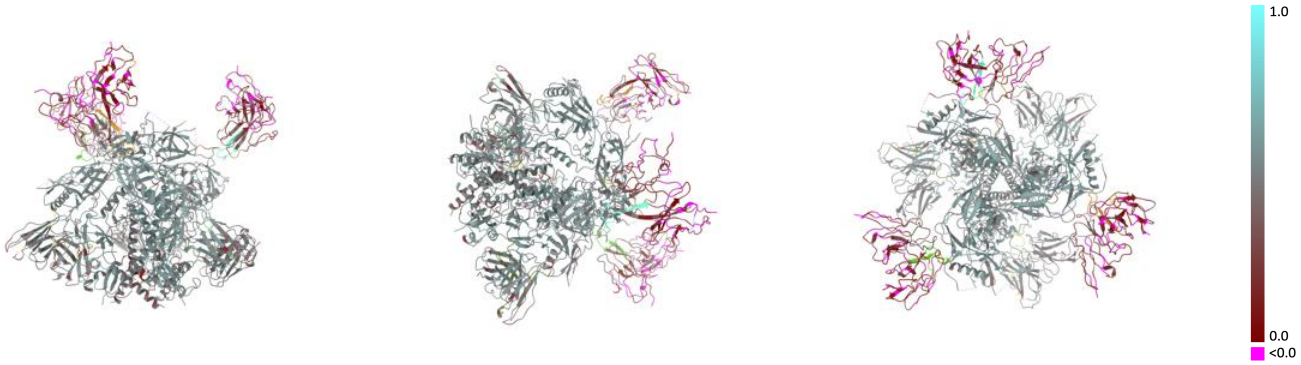
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.1 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.

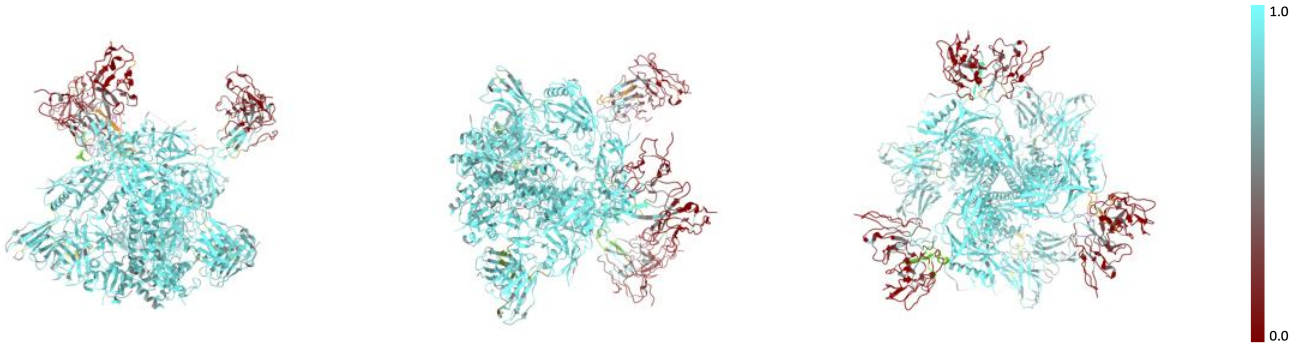
9.2 Q-score mapped to coordinate model (i)



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.

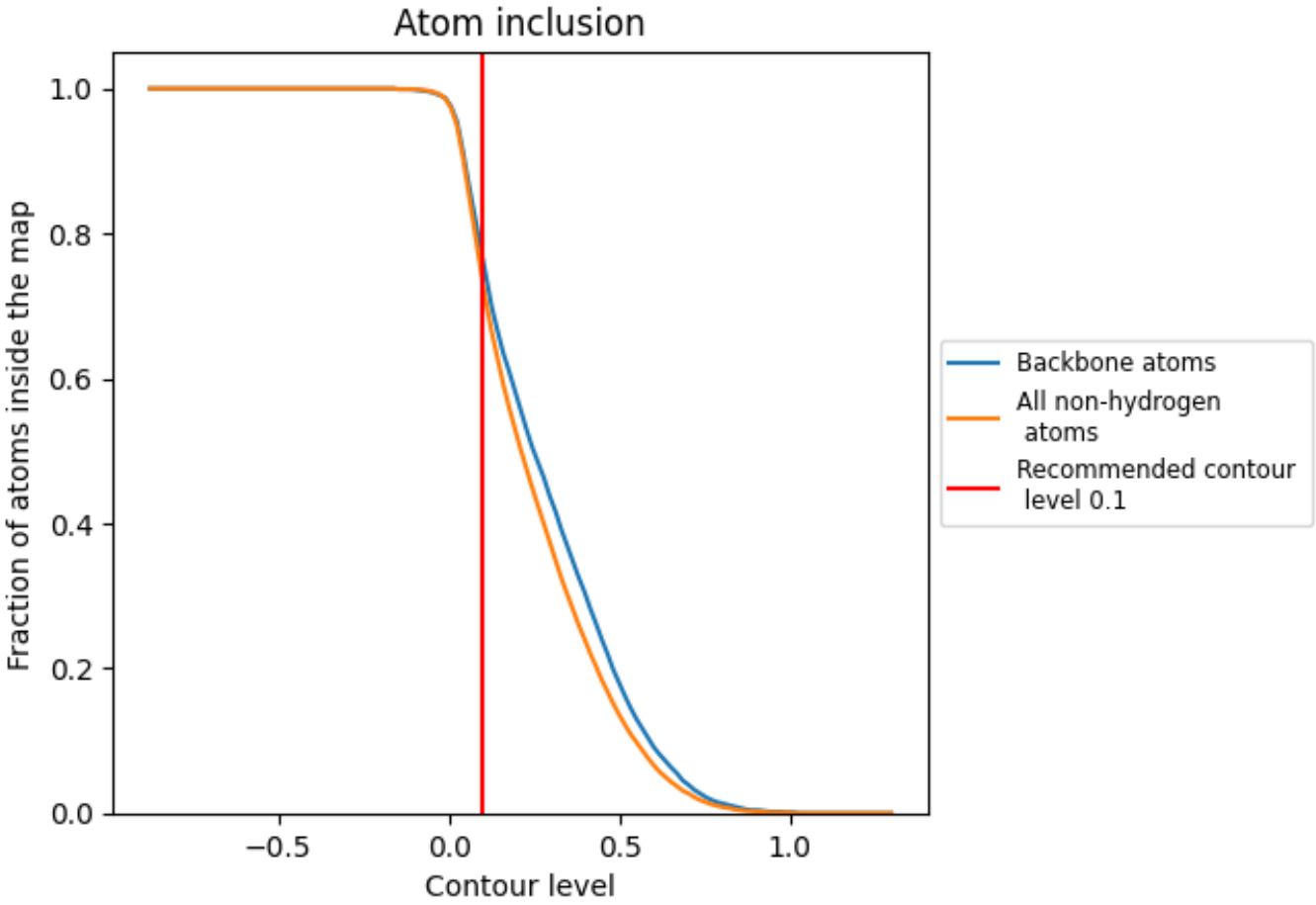
9.3 Atom inclusion mapped to coordinate model (i)



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 (0.1).

9.4 Atom inclusion (i)



At the recommended contour level, 76% of all backbone atoms, 73% 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 (0.1) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.7300	0.4280
A	0.8970	0.5340
B	0.8430	0.4850
C	0.8410	0.4890
D	0.8010	0.4750
E	0.8770	0.5150
F	0.8550	0.5050
G	0.8420	0.5010
H	0.7980	0.4760
I	0.8870	0.5260
J	0.7970	0.4600
K	0.8320	0.4860
L	0.7850	0.4610
M	0.2410	0.1530
N	0.3070	0.1710
O	0.2450	0.1420
P	0.3060	0.1620
Q	0.2370	0.1430
R	0.3210	0.1630
S	0.8480	0.5110
T	0.5970	0.4000
U	0.7320	0.3570
V	0.7500	0.4280
W	0.2140	0.1030
X	0.6430	0.4180
Y	0.9230	0.5140
Z	0.9230	0.5320
a	0.8280	0.4820
b	0.5970	0.3920
c	0.6790	0.4590
d	0.7680	0.3770
e	0.7860	0.3900
f	0.3210	0.2260
g	0.5710	0.3490
h	0.9230	0.5050

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Chain	Atom inclusion	Q-score
i	0.9230	0.5240
j	0.8570	0.5040
k	0.5420	0.3840
l	0.6430	0.4160
m	0.6430	0.3320
n	0.7500	0.3570
o	0.7500	0.4240
p	0.7140	0.4140
q	0.7860	0.3870
r	0.8720	0.4920
s	0.7200	0.4560