Full wwPDB X-ray Structure Validation Report ⓘ

Mar 5, 2024 – 02:17 PM JST

PDB ID	:	6IF5
Title	:	Crystal structure of monkey TLR7 in complex with 2',3'-cGMP (Guanosine 2',3'-cyclic phosphate)
Authors	:	Zhang, Z.; Ohto, U.; Shimizu, T.
Deposited on	:	2018-09-18
Resolution	:	2.00 Å(reported)

This is a Full wwPDB X-ray Structure 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/XrayValidationReportHelp
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:

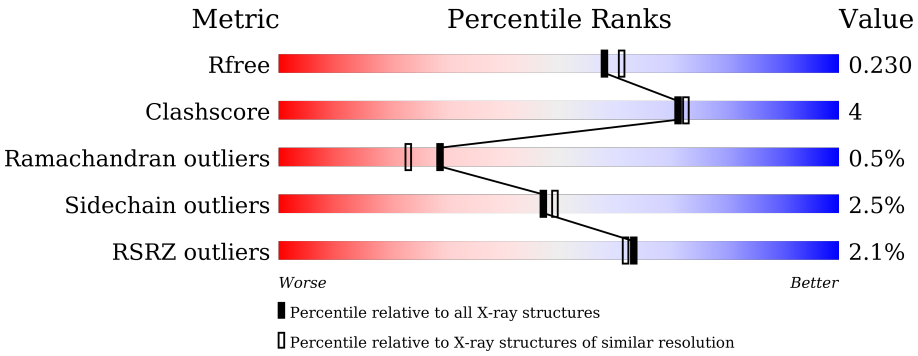
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.36
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (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:
X-RAY DIFFRACTION

The reported resolution of this entry is 2.00 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)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	8085 (2.00-2.00)
Clashscore	141614	9178 (2.00-2.00)
Ramachandran outliers	138981	9054 (2.00-2.00)
Sidechain outliers	138945	9053 (2.00-2.00)
RSRZ outliers	127900	7900 (2.00-2.00)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the electron density. The red, orange, yellow and green segments of the lower 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 electron density. The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	823	3% 84% 9% • 6%
1	B	823	% 83% 9% • 6%
2	C	2	100%
2	D	2	100%

2 Entry composition (i)

There are 6 unique types of molecules in this entry. The entry contains 13821 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the ZeroOcc column contains the number of atoms modelled with zero occupancy, 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 Toll-like receptor 7.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	B	773	Total	C	N	O	S	0	3	0
			6291	4031	1075	1155	30			
1	A	774	Total	C	N	O	S	0	3	0
			6303	4041	1075	1157	30			

There are 40 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	23	ARG	-	expression tag	UNP B3Y653
B	24	SER	-	expression tag	UNP B3Y653
B	25	PRO	-	expression tag	UNP B3Y653
B	26	TRP	-	expression tag	UNP B3Y653
B	167	GLN	ASN	engineered mutation	UNP B3Y653
B	389	GLN	ASN	engineered mutation	UNP B3Y653
B	440	LEU	SER	see sequence details	UNP B3Y653
B	441	VAL	GLU	see sequence details	UNP B3Y653
B	442	PRO	VAL	see sequence details	UNP B3Y653
B	443	ARG	GLY	see sequence details	UNP B3Y653
B	444	GLY	PHE	see sequence details	UNP B3Y653
B	445	SER	CYS	see sequence details	UNP B3Y653
B	488	GLN	ASN	engineered mutation	UNP B3Y653
B	799	GLN	ASN	engineered mutation	UNP B3Y653
B	840	GLU	-	expression tag	UNP B3Y653
B	841	PHE	-	expression tag	UNP B3Y653
B	842	LEU	-	expression tag	UNP B3Y653
B	843	VAL	-	expression tag	UNP B3Y653
B	844	PRO	-	expression tag	UNP B3Y653
B	845	ARG	-	expression tag	UNP B3Y653
A	23	ARG	-	expression tag	UNP B3Y653
A	24	SER	-	expression tag	UNP B3Y653
A	25	PRO	-	expression tag	UNP B3Y653
A	26	TRP	-	expression tag	UNP B3Y653
A	167	GLN	ASN	engineered mutation	UNP B3Y653

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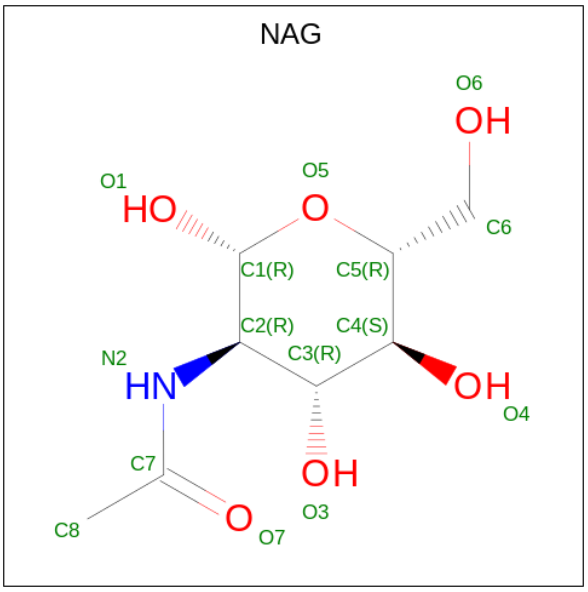
Chain	Residue	Modelled	Actual	Comment	Reference
A	389	GLN	ASN	engineered mutation	UNP B3Y653
A	440	LEU	SER	see sequence details	UNP B3Y653
A	441	VAL	GLU	see sequence details	UNP B3Y653
A	442	PRO	VAL	see sequence details	UNP B3Y653
A	443	ARG	GLY	see sequence details	UNP B3Y653
A	444	GLY	PHE	see sequence details	UNP B3Y653
A	445	SER	CYS	see sequence details	UNP B3Y653
A	488	GLN	ASN	engineered mutation	UNP B3Y653
A	799	GLN	ASN	engineered mutation	UNP B3Y653
A	840	GLU	-	expression tag	UNP B3Y653
A	841	PHE	-	expression tag	UNP B3Y653
A	842	LEU	-	expression tag	UNP B3Y653
A	843	VAL	-	expression tag	UNP B3Y653
A	844	PRO	-	expression tag	UNP B3Y653
A	845	ARG	-	expression tag	UNP B3Y653

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

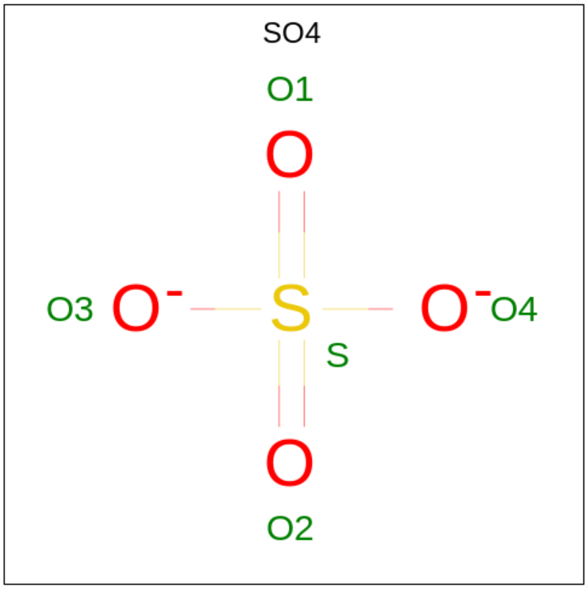
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
2	C	2	Total	C	N	O	0	0	0
			28	16	2	10			
2	D	2	Total	C	N	O	0	0	0
			28	16	2	10			

- Molecule 3 is 2-acetamido-2-deoxy-beta-D-glucopyranose (three-letter code: NAG) (formula: $C_8H_{15}NO_6$).



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

- Molecule 4 is SULFATE ION (three-letter code: SO4) (formula: O_4S).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	B	1	Total O S 5 4 1	0	0
4	B	1	Total O S 5 4 1	0	0
4	B	1	Total O S 5 4 1	0	0
4	B	1	Total O S 5 4 1	0	0
4	B	1	Total O S 5 4 1	0	0
4	B	1	Total O S 5 4 1	0	0
4	B	1	Total O S 5 4 1	0	0
4	B	1	Total O S 5 4 1	0	0
4	B	1	Total O S 5 4 1	0	0
4	B	1	Total O S 5 4 1	0	0
4	B	1	Total O S 5 4 1	0	0
4	B	1	Total O S 5 4 1	0	0
4	B	1	Total O S 5 4 1	0	0

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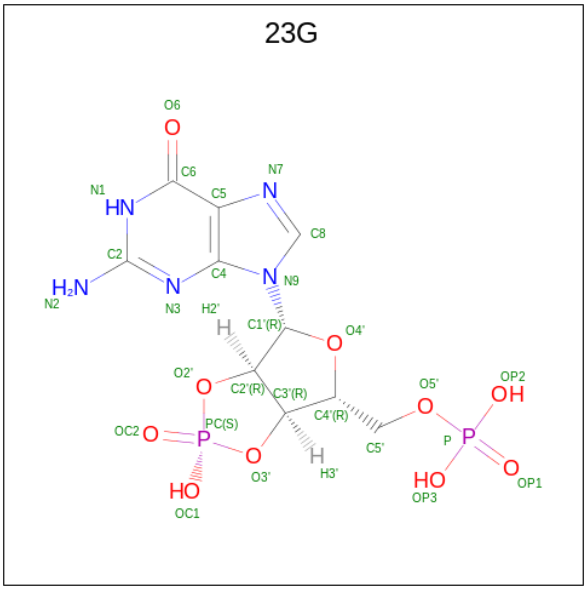
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	1	Total O S 5 4 1	0	0
4	A	1	Total O S 5 4 1	0	0
4	A	1	Total O S 5 4 1	0	0
4	A	1	Total O S 5 4 1	0	0
4	A	1	Total O S 5 4 1	0	0
4	A	1	Total O S 5 4 1	0	0
4	A	1	Total O S 5 4 1	0	0
4	A	1	Total O S 5 4 1	0	0

- Molecule 5 is GUANOSINE-5'-PHOSPHATE-2',3'-CYCLIC PHOSPHATE (three-letter code: 23G) (formula: $C_{10}H_{13}N_5O_{10}P_2$).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	A	1	Total C N O P 23 10 5 7 1	0	0
5	A	1	Total C N O P 23 10 5 7 1	0	0

- Molecule 6 is water.

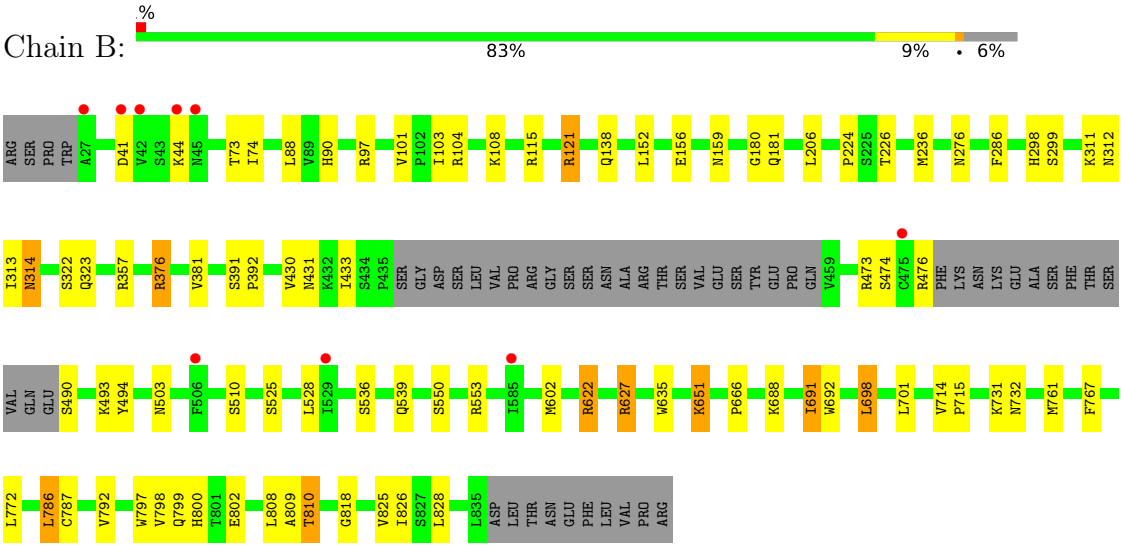
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
6	B	456	Total O 456 456	0	0
6	A	368	Total O 368 368	0	0

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 electron 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 dot above a residue indicates a poor fit to the electron density (RSRZ > 2). 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.

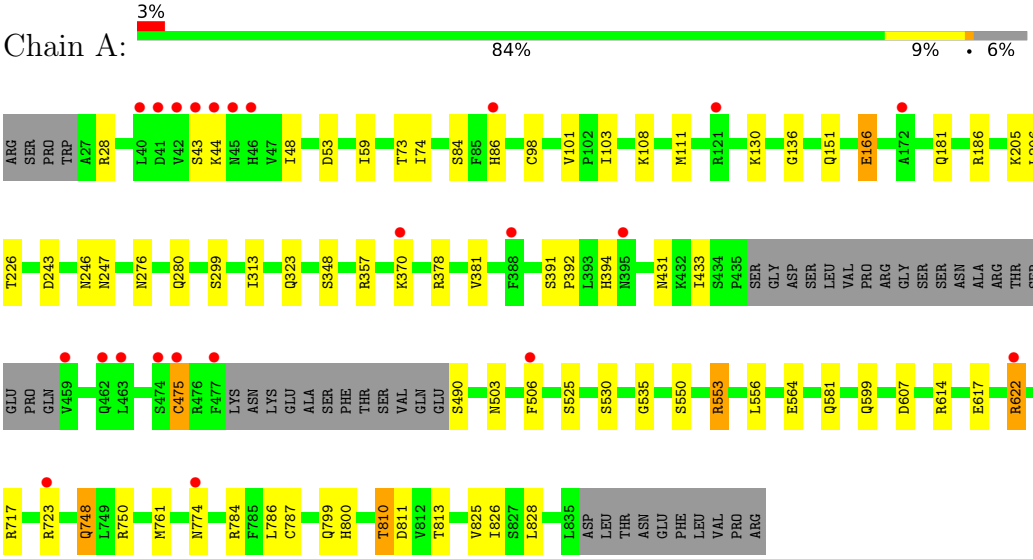
• Molecule 1: Toll-like receptor 7

Chain B:



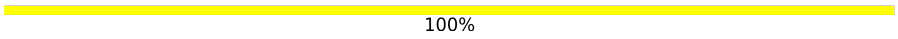
• Molecule 1: Toll-like receptor 7

Chain A:



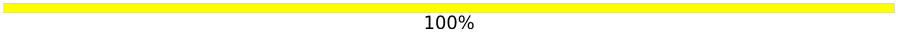
• Molecule 2: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain C:



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

Chain D:



4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	99.28Å 139.04Å 150.30Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	47.18 – 2.00 47.13 – 2.00	Depositor EDS
% Data completeness (in resolution range)	100.0 (47.18-2.00) 100.0 (47.13-2.00)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	2.58 (at 2.00Å)	Xtriage
Refinement program	REFMAC 5.8.0230	Depositor
R, R_{free}	0.178 , 0.222 0.188 , 0.230	Depositor DCC
R_{free} test set	6843 reflections (4.87%)	wwPDB-VP
Wilson B-factor (Å^2)	37.5	Xtriage
Anisotropy	0.034	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.36 , 47.6	EDS
L-test for twinning[2]	$< \|L\| > = 0.50$, $< L^2 > = 0.33$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.96	EDS
Total number of atoms	13821	wwPDB-VP
Average B, all atoms (Å^2)	43.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.36% of the height of the origin peak. No significant pseudotranslation is detected.*

[1] Intensities estimated from amplitudes.

[2] Theoretical values of $< |L| >$, $< L^2 >$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: SO4, 23G, NAG

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#$\|Z\|>5$	RMSZ	#$\|Z\|>5$
1	A	0.62	0/6436	0.75	1/8718 (0.0%)
1	B	0.62	0/6423	0.79	4/8701 (0.0%)
All	All	0.62	0/12859	0.77	5/17419 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	8
1	B	0	8
All	All	0	16

There are no bond length outliers.

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	376	ARG	NE-CZ-NH1	-6.63	116.98	120.30
1	B	602	MET	CG-SD-CE	-6.21	90.26	100.20
1	B	627	ARG	NE-CZ-NH1	-5.79	117.41	120.30
1	B	115	ARG	NE-CZ-NH2	5.73	123.16	120.30
1	A	246	ASN	CB-CA-C	-5.52	99.35	110.40

There are no chirality outliers.

All (16) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	186	ARG	Sidechain

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Mol	Chain	Res	Type	Group
1	A	28	ARG	Sidechain
1	A	357	ARG	Sidechain
1	A	475	CYS	Peptide
1	A	553[A]	ARG	Sidechain
1	A	614	ARG	Sidechain
1	A	622	ARG	Sidechain
1	A	750	ARG	Sidechain
1	B	104	ARG	Sidechain
1	B	357	ARG	Sidechain
1	B	473	ARG	Sidechain
1	B	476	ARG	Sidechain
1	B	553[A]	ARG	Sidechain
1	B	622	ARG	Sidechain
1	B	627	ARG	Sidechain
1	B	97	ARG	Sidechain

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	6303	0	6343	41	0
1	B	6291	0	6334	53	0
2	C	28	0	25	0	0
2	D	28	0	25	0	0
3	A	98	0	91	1	0
3	B	98	0	91	0	0
4	A	40	0	0	0	0
4	B	65	0	0	1	0
5	A	46	0	20	0	0
6	A	368	0	0	4	0
6	B	456	0	0	9	0
All	All	13821	0	12929	91	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 4.

All (91) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:236:MET:SD	6:B:1483:HOH:O	2.13	1.04
1:B:622:ARG:HH12	1:B:651:LYS:HE3	1.35	0.89
1:B:622:ARG:HH12	1:B:651:LYS:CE	1.94	0.80
1:A:530:SER:OG	1:A:553[B]:ARG:HD3	1.84	0.78
1:A:130:LYS:HE3	1:A:151:GLN:HE22	1.48	0.78
1:A:433:ILE:H	1:A:503:ASN:HD22	1.31	0.76
1:A:723:ARG:O	1:A:748:GLN:HG2	1.92	0.70
1:B:433:ILE:H	1:B:503:ASN:HD22	1.40	0.69
1:A:431:ASN:HB2	1:A:503:ASN:HD21	1.57	0.69
1:A:717:ARG:NH2	6:A:1101:HOH:O	2.25	0.69
1:B:528:LEU:HD21	1:A:553[B]:ARG:HD2	1.77	0.67
1:B:206:LEU:O	1:B:226:THR:HG23	1.94	0.67
1:B:431:ASN:HB2	1:B:503:ASN:HD21	1.60	0.66
1:A:206:LEU:O	1:A:226:THR:HG23	1.96	0.66
1:B:800:HIS:HE1	6:B:1108:HOH:O	1.78	0.65
1:A:800:HIS:HE1	6:A:1189:HOH:O	1.79	0.64
1:B:311:LYS:HE3	1:B:312:ASN:OD1	1.98	0.64
1:B:493:LYS:HE2	1:B:494:TYR:CE2	2.34	0.62
1:A:431:ASN:CB	1:A:503:ASN:HD21	2.12	0.61
1:A:599:GLN:HE22	1:A:622:ARG:HE	1.49	0.61
1:B:376:ARG:NH2	4:B:1020:SO4:O1	2.35	0.59
1:B:798:VAL:HG13	1:B:808:LEU:HD11	1.85	0.58
1:B:528:LEU:HD21	1:A:553[B]:ARG:CD	2.34	0.58
1:A:787:CYS:HB3	1:A:828:LEU:HD21	1.85	0.57
1:B:787:CYS:HB3	1:B:828:LEU:HD21	1.86	0.57
1:B:299:SER:HA	1:B:323:GLN:O	2.05	0.56
1:A:103:ILE:CD1	1:A:111:MET:SD	2.94	0.56
1:A:506[B]:PHE:O	1:A:506[B]:PHE:CG	2.59	0.56
1:B:431:ASN:CB	1:B:503:ASN:HD21	2.20	0.54
1:A:698:LEU:HB3	1:A:701:LEU:HB2	1.89	0.54
1:A:599:GLN:NE2	1:A:622:ARG:HE	2.05	0.54
1:B:90:HIS:HB2	6:B:1133:HOH:O	2.07	0.54
1:B:493:LYS:HE2	1:B:494:TYR:HE2	1.74	0.53
1:B:88:LEU:HA	6:B:1300:HOH:O	2.07	0.53
1:A:103:ILE:HD11	1:A:111:MET:SD	2.49	0.52
1:B:286:PHE:HB3	1:B:313:ILE:HD11	1.91	0.52
1:A:433:ILE:H	1:A:503:ASN:ND2	2.05	0.51
1:B:809:ALA:O	1:B:810:THR:OG1	2.28	0.51
1:B:622:ARG:NH1	1:B:651:LYS:HE3	2.17	0.51
1:A:391:SER:OG	1:A:392:PRO:HD3	2.11	0.50
1:B:635:TRP:HB3	1:B:666:PRO:HG2	1.92	0.50
1:B:691:ILE:N	1:B:691:ILE:HD13	2.26	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:692:TRP:CE2	1:B:715:PRO:HD3	2.49	0.48
1:B:772:LEU:HD13	1:B:797:TRP:CZ2	2.47	0.48
1:B:799:GLN:HA	1:B:826:ILE:HD12	1.95	0.48
1:A:181:GLN:NE2	6:A:1113:HOH:O	2.46	0.48
1:B:761:MET:HE2	1:B:786:LEU:HB3	1.95	0.47
1:B:88:LEU:CA	6:B:1300:HOH:O	2.63	0.47
1:B:731:LYS:HG3	1:B:732:ASN:HD22	1.80	0.46
1:B:314:ASN:HD22	1:B:314:ASN:N	2.12	0.46
1:B:688:LYS:NZ	6:B:1110:HOH:O	2.43	0.46
1:B:528:LEU:CD2	1:A:553[B]:ARG:HD2	2.44	0.46
1:A:810:THR:HG22	1:A:811:ASP:HB2	1.96	0.46
1:B:73:THR:HG22	1:B:74:ILE:HG13	1.99	0.45
1:A:299:SER:HA	1:A:323:GLN:O	2.15	0.45
1:A:748:GLN:CD	1:A:748:GLN:H	2.20	0.45
1:A:723:ARG:HG2	1:A:723:ARG:HH11	1.82	0.45
1:B:156:GLU:HA	1:B:180:GLY:O	2.17	0.45
1:B:525:SER:HA	1:B:550:SER:O	2.18	0.44
1:B:41:ASP:OD2	1:B:44:LYS:HB2	2.18	0.43
1:A:535:GLY:HA2	1:A:564:GLU:OE2	2.18	0.43
1:B:181:GLN:NE2	6:B:1123:HOH:O	2.50	0.43
1:B:510:SER:OG	1:B:536:SER:O	2.36	0.43
1:A:166:GLU:OE1	1:A:166:GLU:C	2.57	0.43
1:A:391:SER:HA	1:A:394:HIS:CE1	2.53	0.43
1:B:138:GLN:HA	1:B:159:ASN:ND2	2.34	0.43
1:B:88:LEU:C	6:B:1300:HOH:O	2.57	0.43
1:A:581:GLN:HG2	1:A:607:ASP:OD2	2.19	0.43
1:B:103:ILE:HD12	6:B:1344:HOH:O	2.18	0.43
1:A:784:ARG:HD2	6:A:1410:HOH:O	2.19	0.43
1:B:74:ILE:HG22	1:B:74:ILE:O	2.19	0.42
1:A:48:ILE:HD13	3:A:1008:NAG:H82	2.01	0.42
1:B:224:PRO:HB2	1:B:226:THR:HG22	2.01	0.42
1:A:98:CYS:HA	1:A:136:GLY:O	2.20	0.42
1:A:525:SER:HA	1:A:550:SER:O	2.19	0.42
1:B:692:TRP:CD2	1:B:715:PRO:HD3	2.55	0.42
1:B:714:VAL:HB	1:B:715:PRO:HD2	2.02	0.41
1:A:59:ILE:HD12	1:A:84:SER:HB3	2.00	0.41
1:A:73:THR:HG22	1:A:74:ILE:HG13	2.01	0.41
1:B:391:SER:N	1:B:392:PRO:CD	2.83	0.41
1:A:53:ASP:HA	1:A:74:ILE:O	2.20	0.41
1:B:121:ARG:HH11	1:B:121:ARG:HB3	1.85	0.41
1:A:223:LEU:O	1:A:247:ASN:ND2	2.45	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:298:HIS:HA	1:B:322:SER:O	2.19	0.41
1:B:152:LEU:C	1:B:152:LEU:HD23	2.41	0.41
1:A:348:SER:HA	1:A:378:ARG:O	2.20	0.40
1:B:103:ILE:HD12	1:B:103:ILE:O	2.22	0.40
1:B:698:LEU:HB3	1:B:701:LEU:HB2	2.03	0.40
1:B:767:PHE:HB3	1:B:772:LEU:HD11	2.04	0.40
1:A:799:GLN:HA	1:A:826:ILE:HD12	2.03	0.40
1:A:761:MET:HE2	1:A:786:LEU:HB3	2.03	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

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	771/823 (94%)	728 (94%)	41 (5%)	2 (0%)	41	37
1	B	770/823 (94%)	726 (94%)	39 (5%)	5 (1%)	25	19
All	All	1541/1646 (94%)	1454 (94%)	80 (5%)	7 (0%)	29	23

All (7) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	B	276	ASN
1	B	810	THR
1	A	86	HIS
1	B	381	VAL
1	A	381	VAL
1	B	818	GLY
1	B	430	VAL

5.3.2 Protein sidechains (i)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

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	730/774 (94%)	708 (97%)	22 (3%)	41	41
1	B	729/774 (94%)	715 (98%)	14 (2%)	57	61
All	All	1459/1548 (94%)	1423 (98%)	36 (2%)	47	49

All (36) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	B	101	VAL
1	B	108	LYS
1	B	121	ARG
1	B	314	ASN
1	B	474	SER
1	B	490	SER
1	B	539	GLN
1	B	651	LYS
1	B	691	ILE
1	B	698	LEU
1	B	786	LEU
1	B	792	VAL
1	B	802	GLU
1	B	825	VAL
1	A	43	SER
1	A	44	LYS
1	A	101	VAL
1	A	108	LYS
1	A	166	GLU
1	A	205	LYS
1	A	207	LYS
1	A	243	ASP
1	A	276	ASN
1	A	280	GLN
1	A	313	ILE
1	A	370	LYS
1	A	475	CYS

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Mol	Chain	Res	Type
1	A	490	SER
1	A	556	LEU
1	A	617	GLU
1	A	698	LEU
1	A	748	GLN
1	A	774	ASN
1	A	810	THR
1	A	813	THR
1	A	825	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (26) such sidechains are listed below:

Mol	Chain	Res	Type
1	B	66	ASN
1	B	76	HIS
1	B	110	ASN
1	B	159	ASN
1	B	173	ASN
1	B	181	GLN
1	B	252	GLN
1	B	303	GLN
1	B	314	ASN
1	B	503	ASN
1	B	599	GLN
1	B	732	ASN
1	B	734	GLN
1	B	800	HIS
1	A	66	ASN
1	A	76	HIS
1	A	90	HIS
1	A	151	GLN
1	A	173	ASN
1	A	181	GLN
1	A	252	GLN
1	A	503	ASN
1	A	599	GLN
1	A	720	ASN
1	A	734	GLN
1	A	800	HIS

5.3.3 RNA

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates

4 monosaccharides are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
2	NAG	C	1	2,1	14,14,15	0.81	0	17,19,21	1.24	2 (11%)
2	NAG	C	2	2	14,14,15	0.80	0	17,19,21	1.54	2 (11%)
2	NAG	D	1	2,1	14,14,15	0.73	0	17,19,21	1.60	2 (11%)
2	NAG	D	2	2	14,14,15	0.45	0	17,19,21	1.26	2 (11%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
2	NAG	C	1	2,1	-	0/6/23/26	0/1/1/1
2	NAG	C	2	2	-	2/6/23/26	0/1/1/1
2	NAG	D	1	2,1	-	0/6/23/26	0/1/1/1
2	NAG	D	2	2	-	0/6/23/26	0/1/1/1

There are no bond length outliers.

All (8) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	D	1	NAG	O5-C5-C6	4.36	114.04	107.20
2	D	2	NAG	C1-O5-C5	3.30	116.67	112.19
2	C	2	NAG	O5-C5-C6	2.84	111.66	107.20
2	D	1	NAG	C6-C5-C4	-2.69	106.70	113.00
2	C	2	NAG	O5-C1-C2	-2.63	107.14	111.29
2	C	1	NAG	C6-C5-C4	-2.59	106.94	113.00
2	C	1	NAG	C4-C3-C2	-2.10	107.94	111.02
2	D	2	NAG	O3-C3-C2	-2.03	105.27	109.47

There are no chirality outliers.

All (2) torsion outliers are listed below:

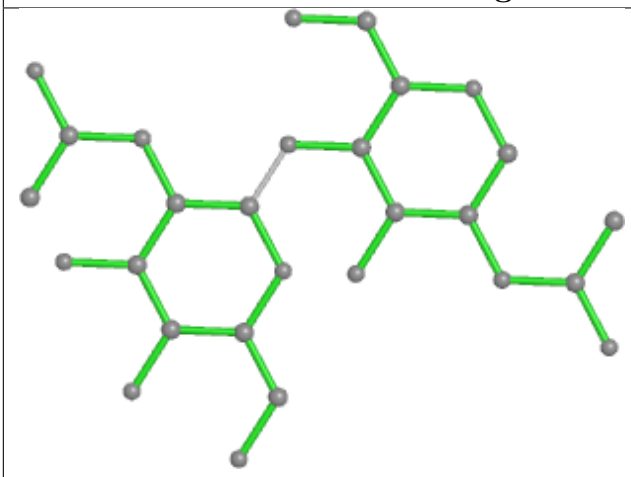
Mol	Chain	Res	Type	Atoms
2	C	2	NAG	C4-C5-C6-O6
2	C	2	NAG	O5-C5-C6-O6

There are no ring outliers.

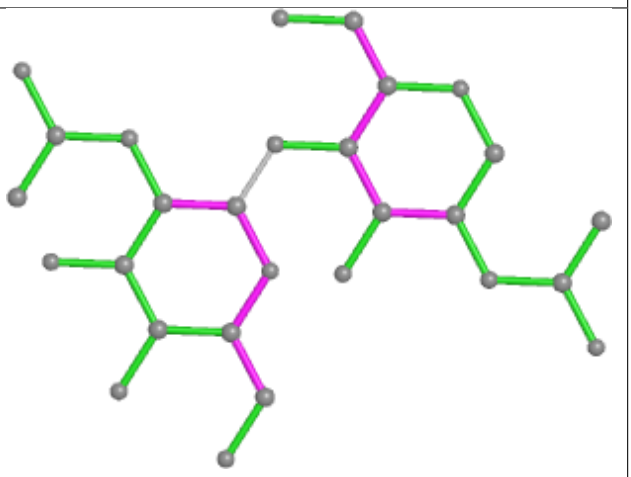
No monomer is involved in short contacts.

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

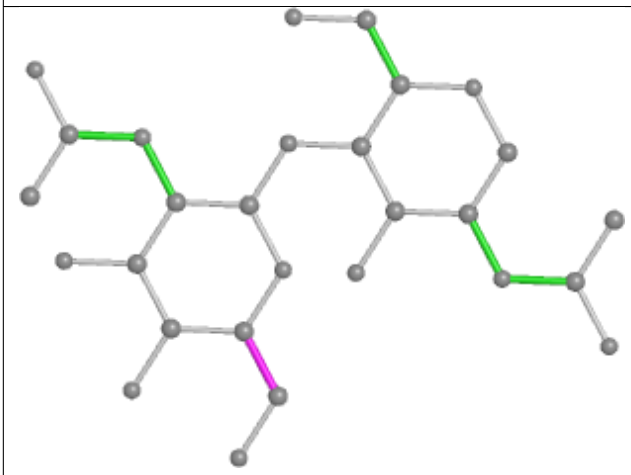
Oligosaccharide Chain C



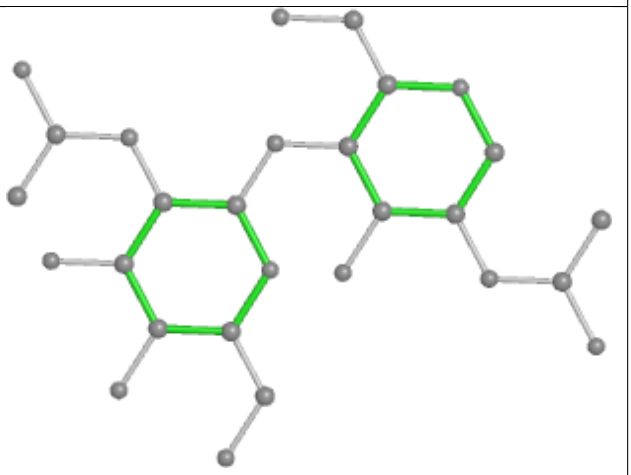
Bond lengths



Bond angles

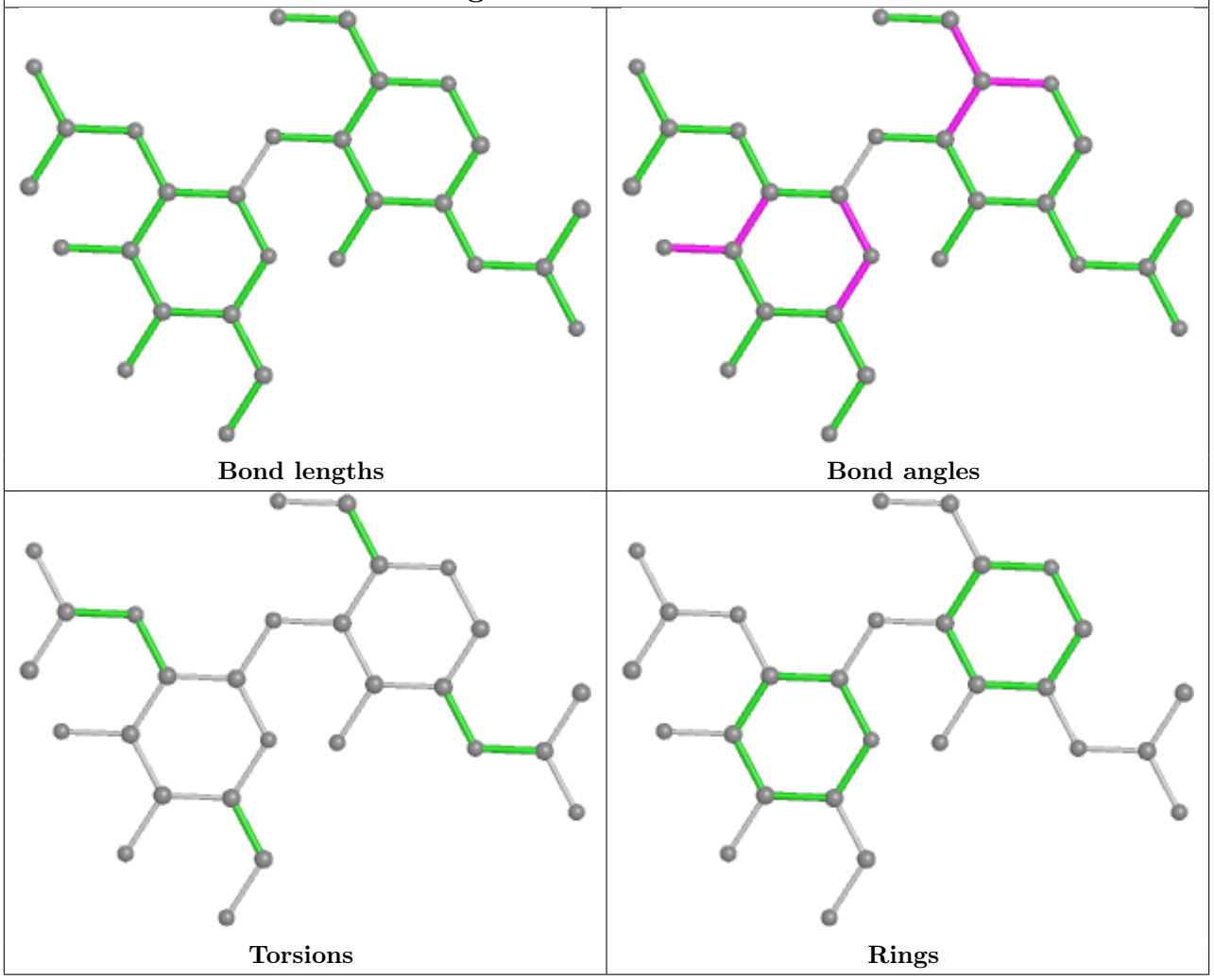


Torsions



Rings

Oligosaccharide Chain D



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	$\#\|Z\| > 2$
4	SO4	B	1010	-	4,4,4	0.46	0	6,6,6	0.68	0
5	23G	A	1010	-	19,26,30	1.25	1 (5%)	20,41,48	1.82	7 (35%)
3	NAG	A	1006	1	14,14,15	0.36	0	17,19,21	1.56	3 (17%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
3	NAG	A	1005	1	14,14,15	0.72	0	17,19,21	1.10	1 (5%)
4	SO4	B	1018	-	4,4,4	0.51	0	6,6,6	0.75	0
4	SO4	B	1012	-	4,4,4	0.49	0	6,6,6	0.29	0
3	NAG	B	1003	1	14,14,15	0.59	0	17,19,21	1.34	3 (17%)
4	SO4	A	1018	-	4,4,4	0.44	0	6,6,6	0.22	0
4	SO4	B	1021	-	4,4,4	0.54	0	6,6,6	0.70	0
3	NAG	A	1008	1	14,14,15	0.63	0	17,19,21	1.21	2 (11%)
3	NAG	B	1004	1	14,14,15	0.77	0	17,19,21	1.51	3 (17%)
3	NAG	A	1001	1	14,14,15	0.94	1 (7%)	17,19,21	1.28	3 (17%)
4	SO4	B	1016	-	4,4,4	0.39	0	6,6,6	0.47	0
4	SO4	B	1017	-	4,4,4	0.38	0	6,6,6	0.40	0
4	SO4	A	1012	-	4,4,4	0.30	0	6,6,6	1.68	2 (33%)
4	SO4	A	1015	-	4,4,4	0.41	0	6,6,6	0.42	0
3	NAG	B	1001	1	14,14,15	0.84	0	17,19,21	1.49	3 (17%)
4	SO4	A	1019	-	4,4,4	0.42	0	6,6,6	0.14	0
4	SO4	B	1015	-	4,4,4	0.41	0	6,6,6	0.39	0
4	SO4	A	1017	-	4,4,4	0.41	0	6,6,6	0.28	0
4	SO4	B	1022	-	4,4,4	0.45	0	6,6,6	0.65	0
3	NAG	B	1008	1	14,14,15	0.69	0	17,19,21	1.19	3 (17%)
4	SO4	B	1013	-	4,4,4	0.47	0	6,6,6	0.36	0
3	NAG	A	1007	1	14,14,15	0.69	0	17,19,21	2.06	5 (29%)
3	NAG	A	1009	1	14,14,15	0.55	0	17,19,21	1.04	1 (5%)
4	SO4	A	1014	-	4,4,4	0.56	0	6,6,6	0.65	0
4	SO4	B	1019	-	4,4,4	0.58	0	6,6,6	0.82	0
3	NAG	B	1007	1	14,14,15	1.19	2 (14%)	17,19,21	1.37	2 (11%)
4	SO4	A	1013	-	4,4,4	0.50	0	6,6,6	0.75	0
3	NAG	B	1002	1	14,14,15	0.63	0	17,19,21	1.48	2 (11%)
3	NAG	A	1004	1	14,14,15	0.87	1 (7%)	17,19,21	1.99	6 (35%)
5	23G	A	1011	-	19,26,30	0.92	0	20,41,48	1.81	8 (40%)
4	SO4	B	1014	-	4,4,4	0.56	0	6,6,6	0.95	0
4	SO4	B	1011	-	4,4,4	0.53	0	6,6,6	0.31	0
4	SO4	B	1020	-	4,4,4	0.94	0	6,6,6	0.87	0
4	SO4	A	1016	-	4,4,4	0.35	0	6,6,6	0.40	0
3	NAG	B	1009	1	14,14,15	0.49	0	17,19,21	1.74	4 (23%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	NAG	B	1008	1	-	0/6/23/26	0/1/1/1
3	NAG	A	1008	1	-	0/6/23/26	0/1/1/1
3	NAG	B	1004	1	-	0/6/23/26	0/1/1/1
3	NAG	A	1001	1	-	0/6/23/26	0/1/1/1
3	NAG	A	1007	1	-	0/6/23/26	0/1/1/1
5	23G	A	1011	-	-	0/2/32/36	0/4/4/4
3	NAG	A	1009	1	-	2/6/23/26	0/1/1/1
3	NAG	B	1001	1	-	0/6/23/26	0/1/1/1
3	NAG	B	1009	1	-	0/6/23/26	0/1/1/1
3	NAG	B	1007	1	-	0/6/23/26	0/1/1/1
5	23G	A	1010	-	-	0/2/32/36	0/4/4/4
3	NAG	A	1006	1	-	2/6/23/26	0/1/1/1
3	NAG	A	1005	1	-	0/6/23/26	0/1/1/1
3	NAG	B	1002	1	-	0/6/23/26	0/1/1/1
3	NAG	A	1004	1	-	0/6/23/26	0/1/1/1
3	NAG	B	1003	1	-	1/6/23/26	0/1/1/1

All (5) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	A	1010	23G	O4'-C1'	3.92	1.46	1.41
3	B	1007	NAG	O5-C1	3.17	1.48	1.43
3	B	1007	NAG	C1-C2	2.54	1.56	1.52
3	A	1001	NAG	C1-C2	-2.50	1.48	1.52
3	A	1004	NAG	C1-C2	2.09	1.55	1.52

All (58) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	A	1007	NAG	C2-N2-C7	4.51	129.33	122.90
3	B	1007	NAG	C4-C3-C2	-4.24	104.80	111.02
3	A	1004	NAG	C6-C5-C4	-4.16	103.27	113.00
3	B	1002	NAG	O5-C5-C6	4.16	113.72	107.20
3	A	1007	NAG	O5-C1-C2	3.75	117.21	111.29
3	B	1009	NAG	C4-C3-C2	3.56	116.23	111.02
4	A	1012	SO4	O4-S-O3	3.38	123.50	109.06
3	A	1007	NAG	O5-C5-C4	-3.28	102.84	110.83
3	B	1004	NAG	O5-C5-C6	3.19	112.21	107.20
3	B	1009	NAG	O5-C1-C2	-3.18	106.27	111.29
5	A	1011	23G	O6-C6-C5	-3.12	118.28	124.37
3	A	1007	NAG	C4-C3-C2	3.06	115.50	111.02
3	A	1004	NAG	O5-C5-C6	3.05	111.99	107.20
3	A	1004	NAG	C1-C2-N2	3.02	115.65	110.49

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
5	A	1010	23G	O2'-PC-OC2	-2.99	107.86	115.76
3	A	1001	NAG	O5-C5-C6	2.95	111.82	107.20
5	A	1010	23G	O3'-PC-OC2	-2.92	108.04	115.76
3	A	1006	NAG	C1-O5-C5	2.91	116.13	112.19
5	A	1011	23G	O3'-PC-OC2	-2.87	108.19	115.76
5	A	1010	23G	O4'-C1'-C2'	2.83	111.49	106.59
5	A	1010	23G	O3'-C3'-C2'	2.80	110.22	105.08
5	A	1011	23G	O6-C6-N1	2.77	123.92	120.65
3	A	1004	NAG	O4-C4-C3	-2.77	103.95	110.35
3	A	1006	NAG	O5-C5-C4	-2.76	104.11	110.83
3	B	1003	NAG	O5-C1-C2	2.68	115.51	111.29
5	A	1011	23G	O3'-C3'-C2'	2.67	109.97	105.08
3	A	1001	NAG	C1-C2-N2	-2.57	106.10	110.49
3	B	1009	NAG	C3-C4-C5	2.53	114.75	110.24
3	B	1004	NAG	O5-C5-C4	-2.50	104.75	110.83
3	B	1009	NAG	C1-C2-N2	-2.46	106.29	110.49
5	A	1010	23G	OC1-PC-OC2	2.45	117.81	109.89
3	A	1009	NAG	C2-N2-C7	2.44	126.38	122.90
5	A	1011	23G	OC1-PC-OC2	2.43	117.73	109.89
3	A	1004	NAG	O3-C3-C4	-2.40	104.81	110.35
3	B	1001	NAG	C1-O5-C5	2.35	115.38	112.19
3	B	1002	NAG	C4-C3-C2	-2.33	107.60	111.02
3	B	1003	NAG	O3-C3-C2	-2.33	104.65	109.47
5	A	1011	23G	N2-C2-N1	2.33	121.67	116.71
3	B	1008	NAG	O5-C1-C2	-2.32	107.62	111.29
3	B	1001	NAG	C6-C5-C4	2.31	118.41	113.00
3	A	1004	NAG	O6-C6-C5	-2.31	103.38	111.29
3	A	1006	NAG	C3-C4-C5	-2.30	106.13	110.24
3	B	1001	NAG	C2-N2-C7	2.29	126.17	122.90
3	A	1008	NAG	C1-O5-C5	2.29	115.30	112.19
3	A	1008	NAG	O3-C3-C2	-2.23	104.85	109.47
3	B	1008	NAG	C1-C2-N2	2.20	114.24	110.49
3	A	1007	NAG	C1-C2-N2	-2.18	106.76	110.49
5	A	1011	23G	C5-C6-N1	2.17	117.79	113.95
3	B	1008	NAG	O3-C3-C2	-2.14	105.03	109.47
3	A	1001	NAG	O5-C5-C4	-2.13	105.63	110.83
5	A	1010	23G	N2-C2-N3	-2.12	115.60	119.74
3	B	1003	NAG	C1-O5-C5	-2.11	109.33	112.19
5	A	1010	23G	N2-C2-N1	2.05	121.08	116.71
3	B	1004	NAG	C1-C2-N2	2.04	113.98	110.49
5	A	1011	23G	O4'-C1'-C2'	2.04	110.13	106.59
3	B	1007	NAG	O5-C5-C6	2.03	110.39	107.20

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	A	1005	NAG	C1-C2-N2	-2.03	107.02	110.49
4	A	1012	SO4	O4-S-O1	-2.01	98.82	109.31

There are no chirality outliers.

All (5) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	A	1009	NAG	O5-C5-C6-O6
3	A	1006	NAG	O5-C5-C6-O6
3	B	1003	NAG	C4-C5-C6-O6
3	A	1009	NAG	C4-C5-C6-O6
3	A	1006	NAG	C4-C5-C6-O6

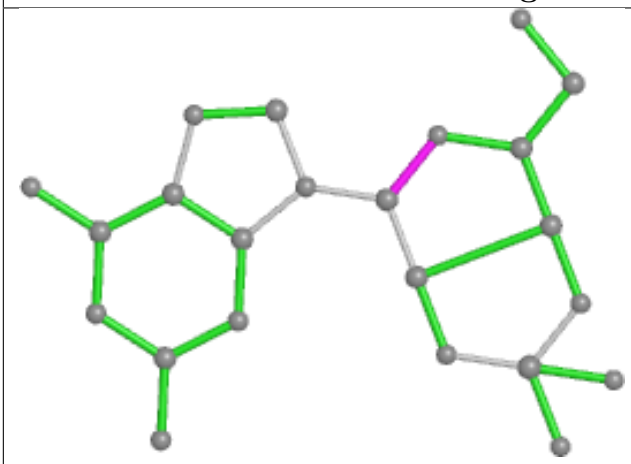
There are no ring outliers.

2 monomers are involved in 2 short contacts:

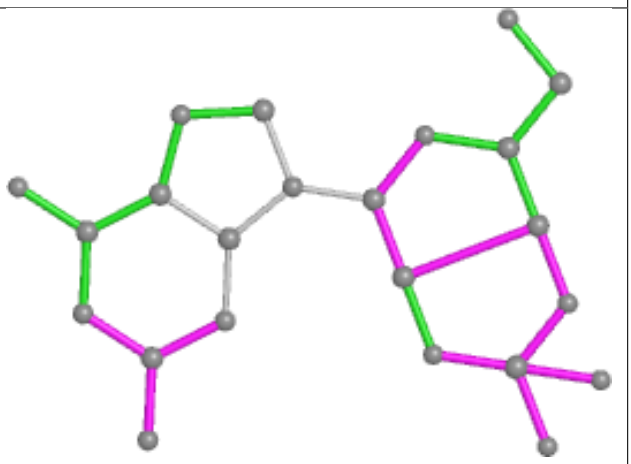
Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	A	1008	NAG	1	0
4	B	1020	SO4	1	0

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.

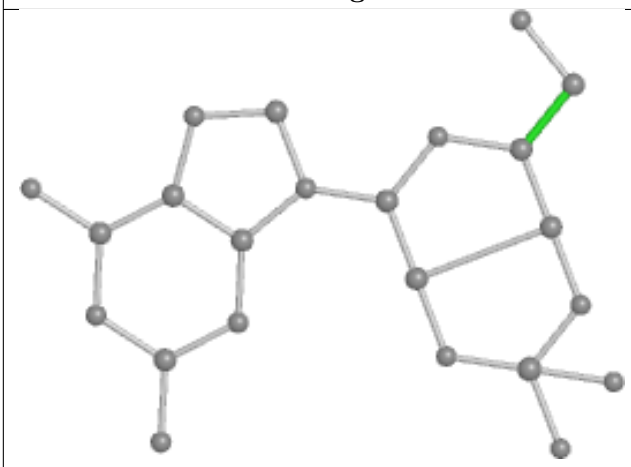
Ligand 23G A 1010



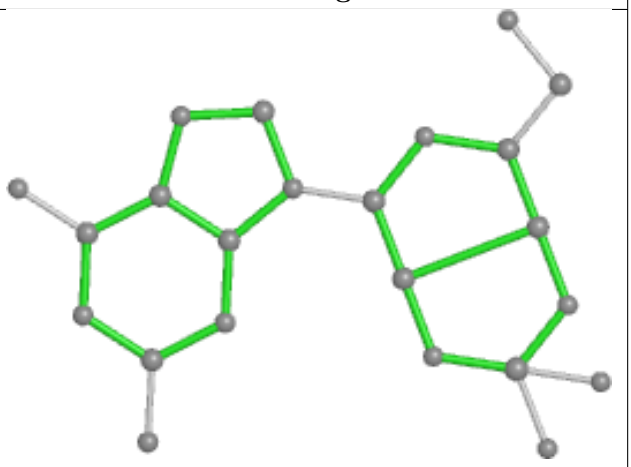
Bond lengths



Bond angles

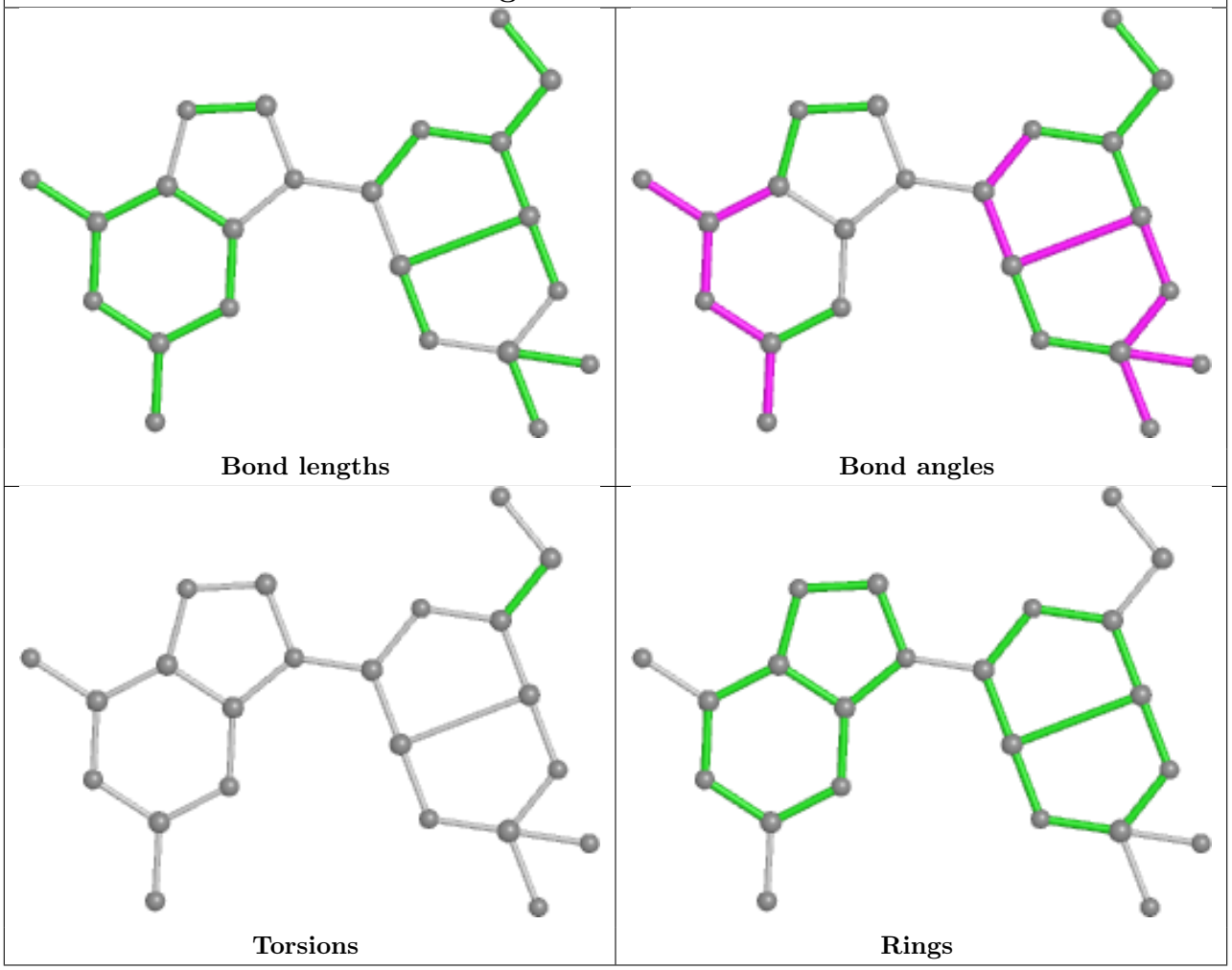


Torsions



Rings

Ligand 23G A 1011



5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

In the following table, the column labelled '#RSRZ> 2' contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95^{th} percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled 'Q< 0.9' lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2	OWAB(Å^2)	Q<0.9
1	A	774/823 (94%)	0.12	23 (2%) 50 49	26, 43, 63, 119	0
1	B	773/823 (93%)	0.07	9 (1%) 79 78	24, 37, 60, 95	0
All	All	1547/1646 (93%)	0.10	32 (2%) 63 62	24, 40, 62, 119	0

All (32) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	477	PHE	4.5
1	A	475	CYS	4.4
1	A	462	GLN	4.1
1	A	40	LEU	3.8
1	B	475	CYS	3.6
1	A	121	ARG	3.6
1	A	42	VAL	3.5
1	A	723	ARG	3.3
1	A	41	ASP	3.2
1	B	506[A]	PHE	3.1
1	A	463	LEU	3.0
1	A	45	ASN	2.9
1	B	27	ALA	2.9
1	A	474	SER	2.8
1	A	506[A]	PHE	2.6
1	A	43	SER	2.6
1	A	44	LYS	2.6
1	A	774	ASN	2.5
1	A	86	HIS	2.5
1	A	46	HIS	2.4
1	A	459	VAL	2.4
1	A	172	ALA	2.4
1	B	585	ILE	2.4
1	B	45	ASN	2.3

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Mol	Chain	Res	Type	RSRZ
1	A	370	LYS	2.3
1	B	41	ASP	2.2
1	B	44	LYS	2.1
1	A	395	ASN	2.1
1	A	622	ARG	2.1
1	B	529	ILE	2.1
1	B	42	VAL	2.1
1	A	388	PHE	2.0

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

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

6.3 Carbohydrates (i)

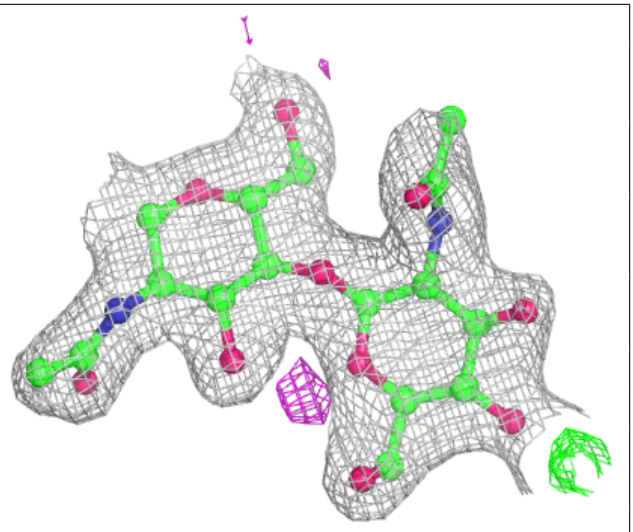
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95^{th} percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

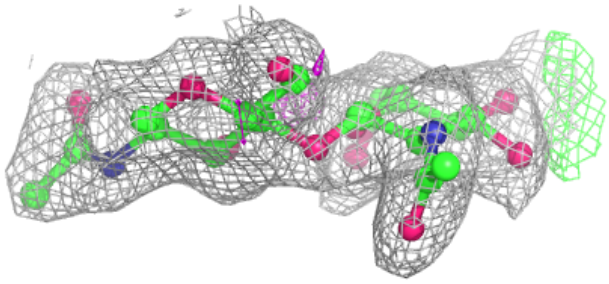
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
2	NAG	C	2	14/15	0.89	0.15	52,62,68,78	0
2	NAG	D	2	14/15	0.91	0.10	57,63,71,74	0
2	NAG	C	1	14/15	0.95	0.10	34,38,43,44	0
2	NAG	D	1	14/15	0.96	0.10	37,41,46,47	0

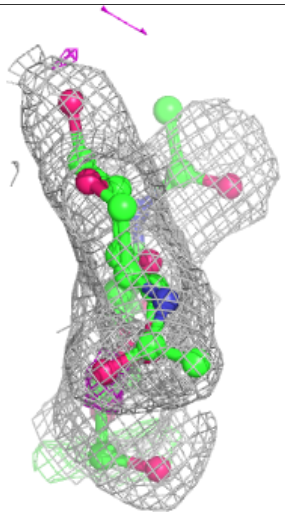
The following is a graphical depiction of the model fit to experimental electron density for oligosaccharide. Each fit is shown from different orientation to approximate a three-dimensional view.

Electron density around Chain C:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)

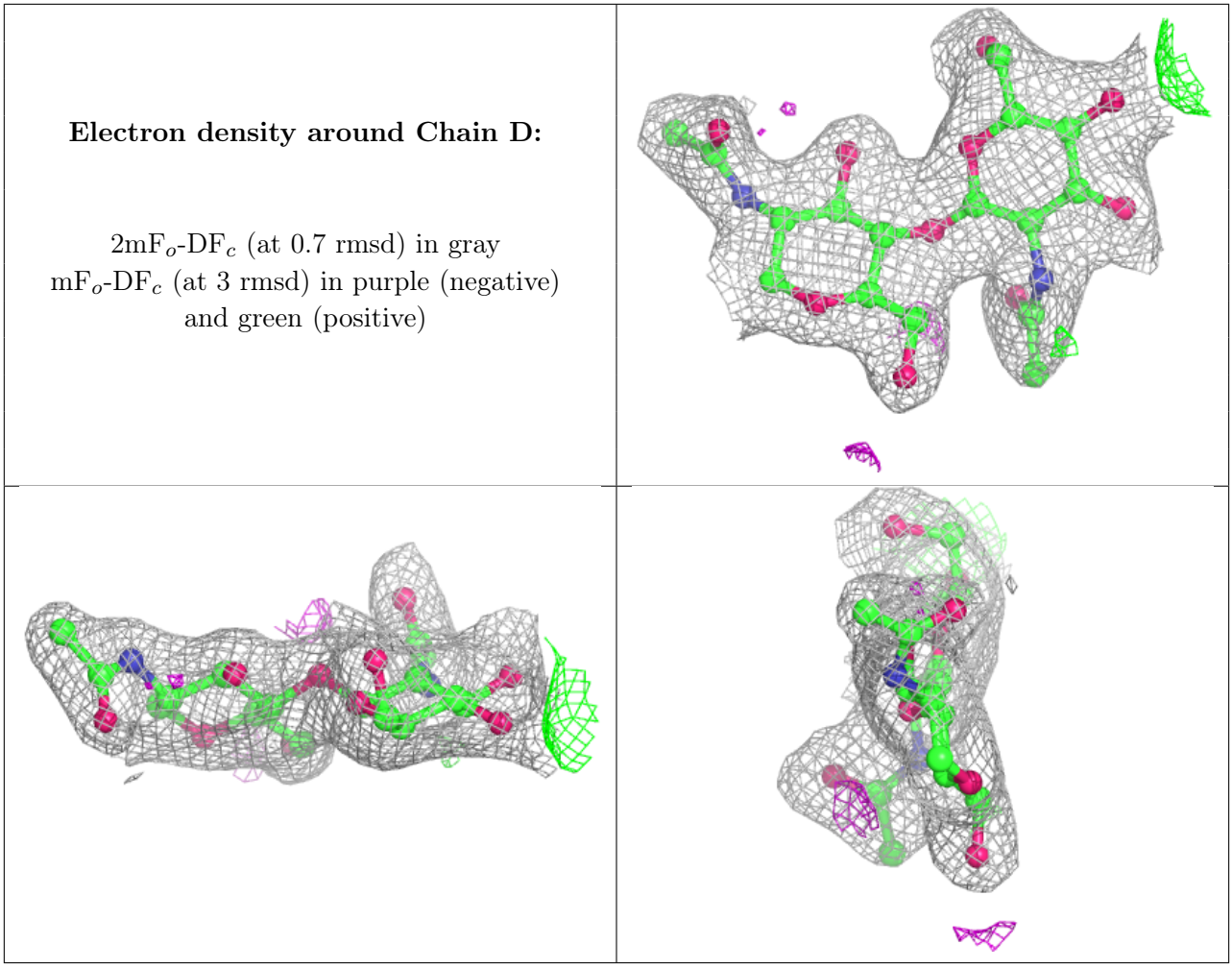






Electron density around Chain D:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)



6.4 Ligands

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95^{th} percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
4	SO4	B	1020	5/5	0.66	0.25	67,69,98,101	0
3	NAG	A	1009	14/15	0.75	0.37	77,85,98,101	0
4	SO4	A	1019	5/5	0.75	0.24	94,109,111,121	0
4	SO4	B	1022	5/5	0.77	0.31	88,100,109,118	0
4	SO4	A	1016	5/5	0.78	0.39	111,112,116,120	0
3	NAG	B	1009	14/15	0.80	0.20	71,84,89,90	0
4	SO4	B	1021	5/5	0.82	0.33	72,89,94,102	0
4	SO4	B	1013	5/5	0.83	0.29	88,91,97,100	0
4	SO4	A	1014	5/5	0.83	0.20	57,77,101,105	0
3	NAG	A	1007	14/15	0.84	0.16	73,82,94,101	0

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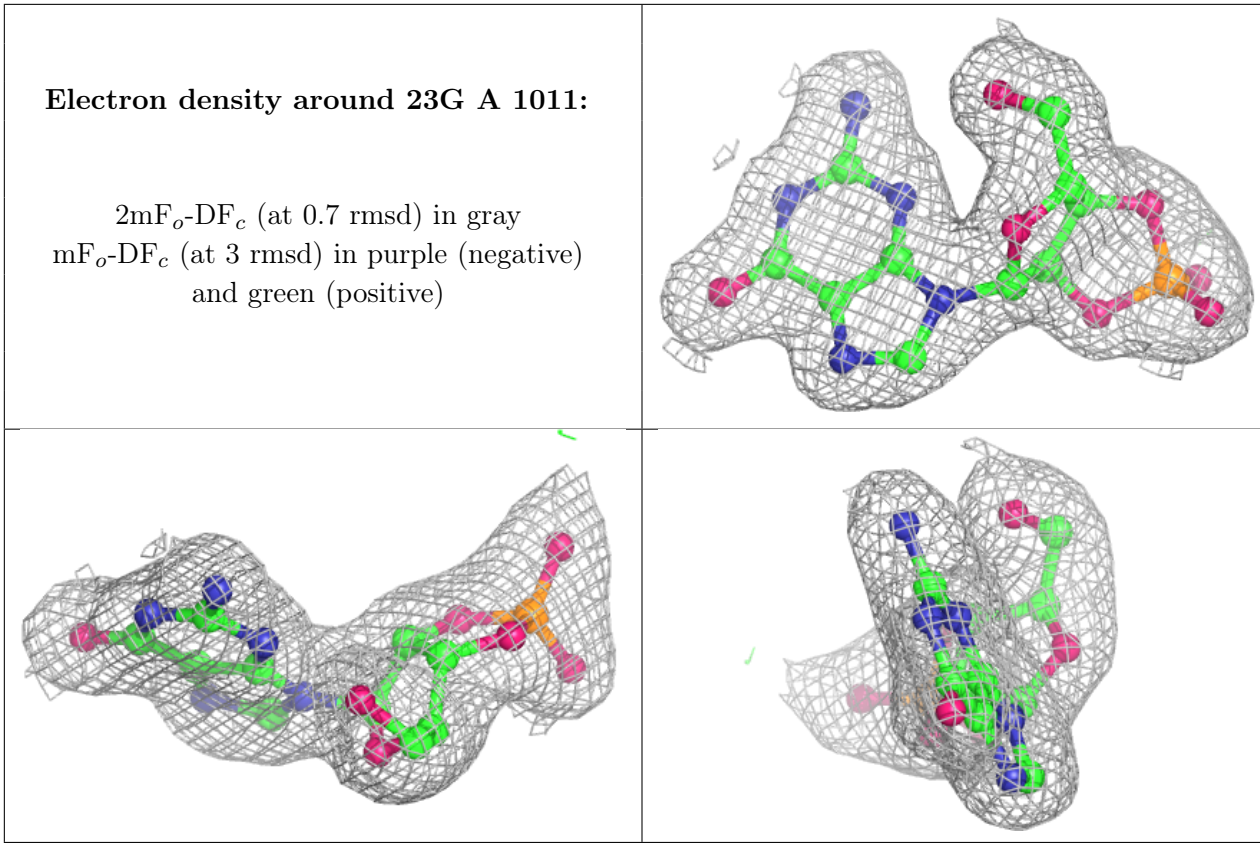
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
4	SO4	B	1016	5/5	0.84	0.17	90,100,103,107	0
4	SO4	A	1017	5/5	0.86	0.33	96,99,112,116	0
3	NAG	A	1008	14/15	0.88	0.16	63,67,70,70	0
4	SO4	B	1015	5/5	0.88	0.33	89,93,98,101	0
4	SO4	B	1017	5/5	0.89	0.14	84,96,98,101	0
3	NAG	A	1006	14/15	0.89	0.29	62,74,80,83	0
4	SO4	B	1014	5/5	0.90	0.25	50,51,85,94	0
3	NAG	B	1008	14/15	0.91	0.15	54,57,64,64	0
3	NAG	A	1005	14/15	0.91	0.15	44,56,67,68	0
4	SO4	A	1018	5/5	0.91	0.16	89,91,96,97	0
4	SO4	B	1012	5/5	0.91	0.18	81,87,88,93	0
3	NAG	B	1007	14/15	0.92	0.14	46,51,56,58	0
4	SO4	B	1019	5/5	0.92	0.24	49,76,83,83	0
4	SO4	A	1015	5/5	0.93	0.30	82,82,90,99	0
3	NAG	B	1003	14/15	0.94	0.11	42,51,57,58	0
3	NAG	B	1004	14/15	0.94	0.11	41,48,52,53	0
3	NAG	A	1001	14/15	0.95	0.10	32,37,42,44	0
3	NAG	A	1004	14/15	0.95	0.09	40,46,53,59	0
3	NAG	B	1002	14/15	0.95	0.10	39,47,52,56	0
4	SO4	B	1010	5/5	0.95	0.13	45,50,66,71	0
3	NAG	B	1001	14/15	0.95	0.10	28,33,38,38	0
4	SO4	B	1011	5/5	0.96	0.17	63,67,81,83	0
4	SO4	B	1018	5/5	0.97	0.15	59,62,65,67	0
5	23G	A	1011	23/27	0.97	0.16	27,31,36,45	0
4	SO4	A	1013	5/5	0.98	0.14	50,53,58,60	0
5	23G	A	1010	23/27	0.98	0.15	27,31,38,42	0
4	SO4	A	1012	5/5	0.98	0.13	49,52,60,65	0

The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.

Electron density around 23G A 1011:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)



Electron density around 23G A 1010:

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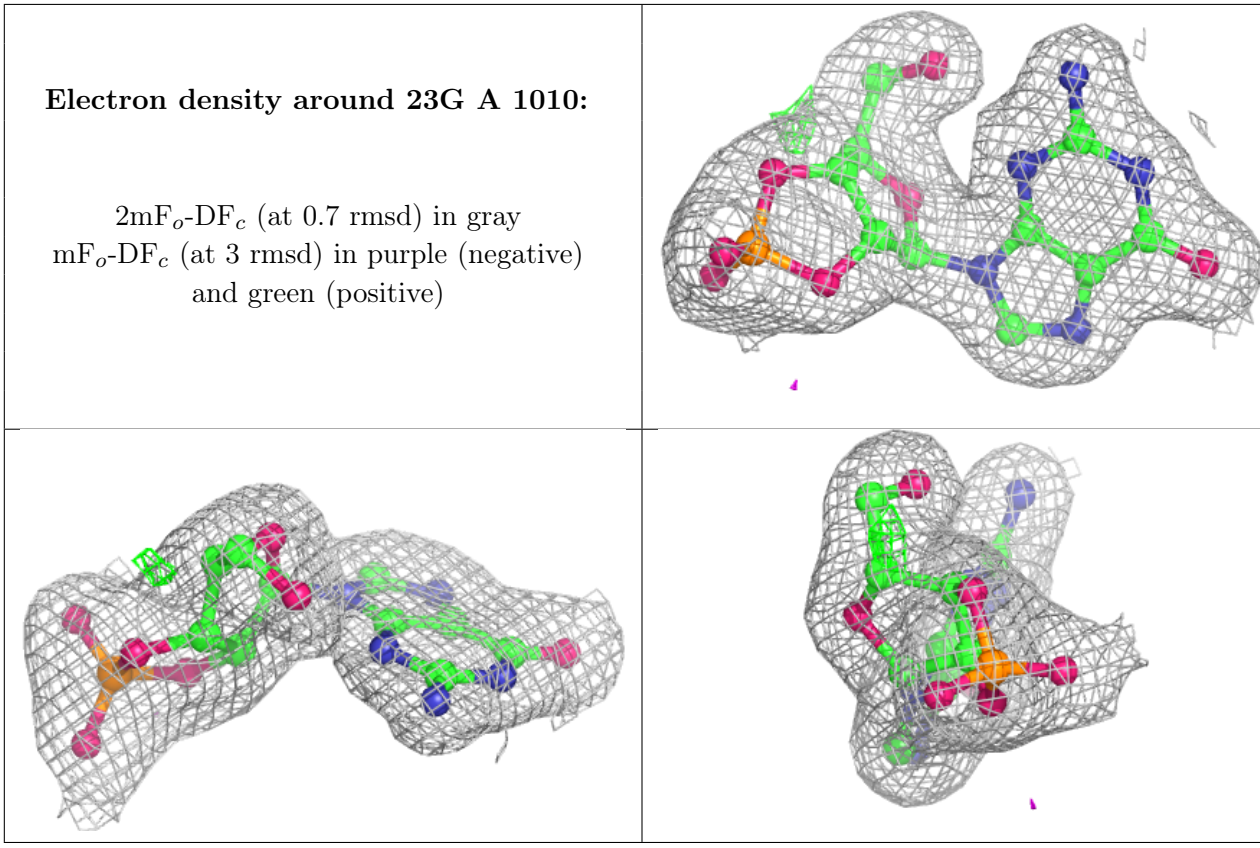
mF_o-DF_c (at 3 rmsd) in purple (negative) and green (positive)



6.5 Other polymers (i)

There are no such residues in this entry.