Full wwPDB X-ray Structure Validation Report (i)

Nov 22, 2023 – 06:12 PM JST

PDB ID	:	7XBG
Title	:	The crystal structure of RshSTT182/200 RBD-insert2-T346R-Y496G mutant in complex with human ACE2
Authors	:	Hu, Y.; Liu, K.F.; Han, P.; Qi, J.X.
Deposited on	:	2022-03-21
Resolution	:	3.37 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 (i) 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 (i)) were used in the production of this report:

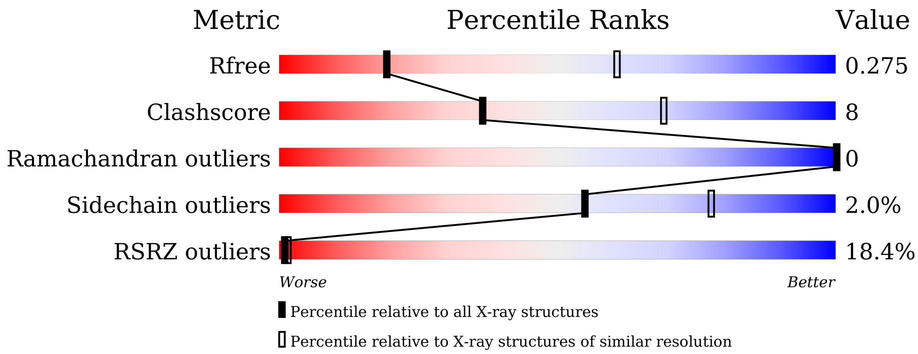
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.36
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (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 3.37 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	1691 (3.46-3.30)
Clashscore	141614	1762 (3.46-3.30)
Ramachandran outliers	138981	1732 (3.46-3.30)
Sidechain outliers	138945	1731 (3.46-3.30)
RSRZ outliers	127900	1635 (3.46-3.30)

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	598	14% 78% 21% •
1	C	598	12% 84% 15%
2	B	242	31% 58% 23% 19%
2	D	242	24% 56% 25% 19%
3	E	2	50% 50%
3	F	2	50% 50%

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

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
4	NAG	A	705	-	-	-	X
4	NAG	C	701	-	-	-	X

2 Entry composition

There are 5 unique types of molecules in this entry. The entry contains 13024 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.

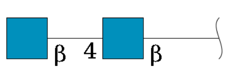
- Molecule 1 is a protein called Processed angiotensin-converting enzyme 2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	596	4862	3111	805	917	29	0	0	0
1	C	596	4862	3111	805	917	29	0	0	0

- Molecule 2 is a protein called RshSTT182/200 coronavirus receptor binding domain insert2 mutant.

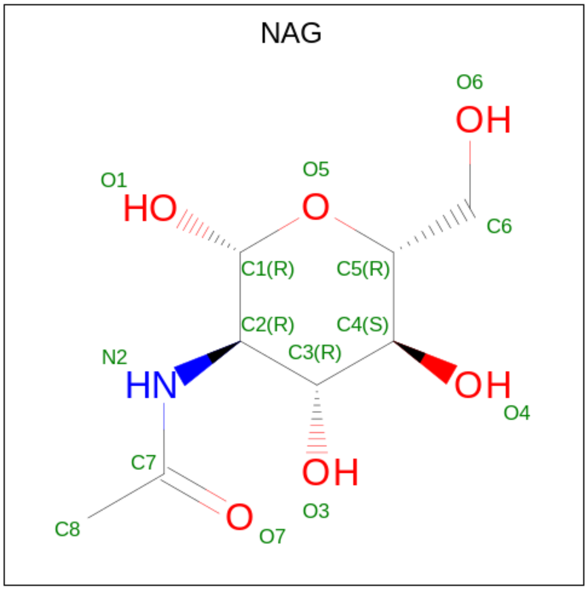
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	B	196	1558	1000	258	291	9	0	0	0
2	D	196	1558	1000	258	291	9	0	0	0

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



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

- Molecule 4 is 2-acetamido-2-deoxy-beta-D-glucopyranose (three-letter code: NAG) (formula: $C_8H_{15}NO_6$) (labeled as "Ligand of Interest" by depositor).



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

- Molecule 5 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	A	1	Total Zn 1 1	0	0
5	C	1	Total Zn 1 1	0	0

3 Residue-property plots

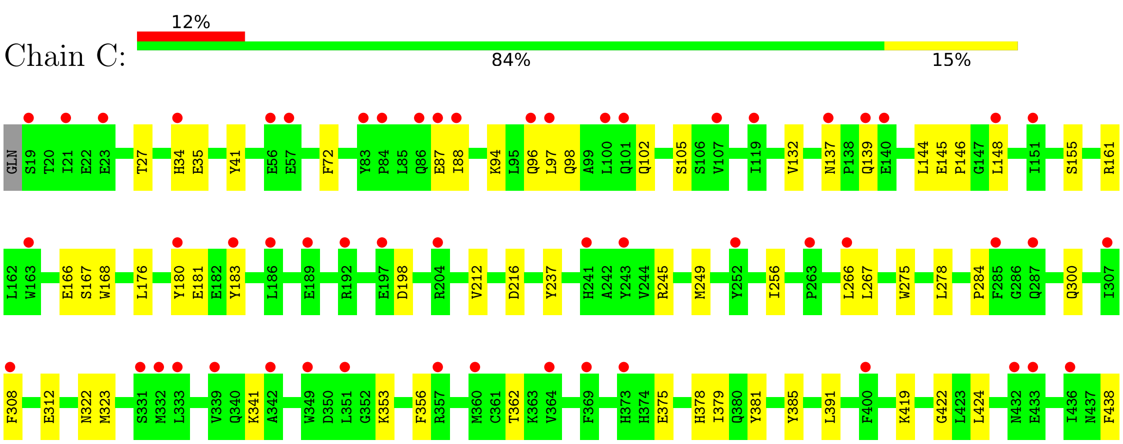
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density.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

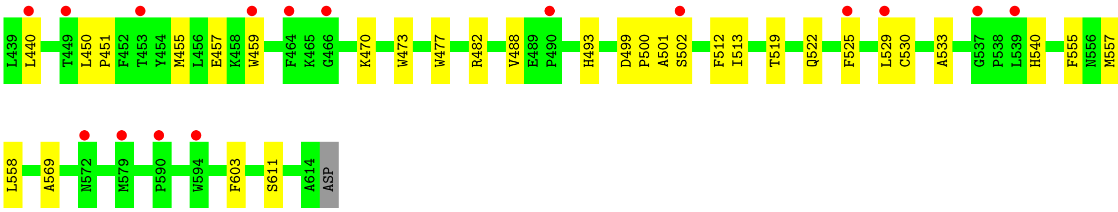
- Molecule 1: Processed angiotensin-converting enzyme 2

Chain A:

- Molecule 1: Processed angiotensin-converting enzyme 2

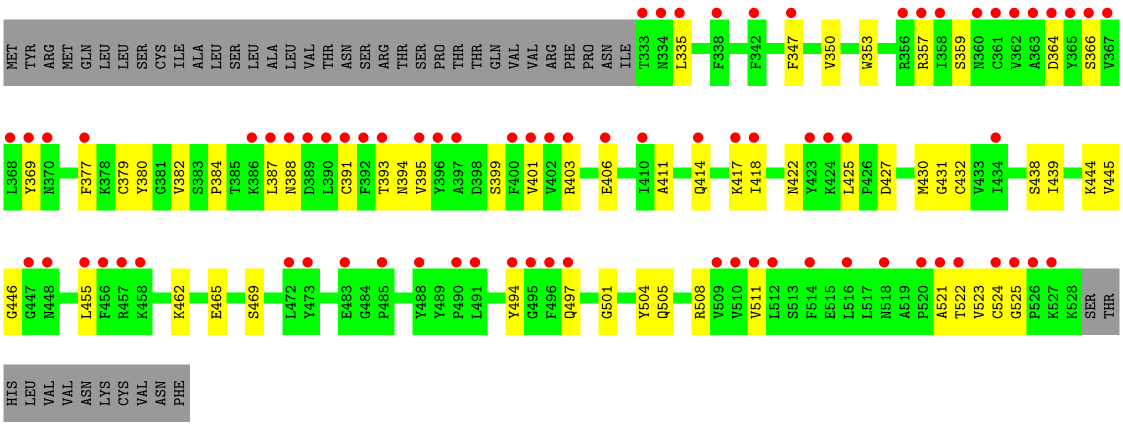
Chain C:





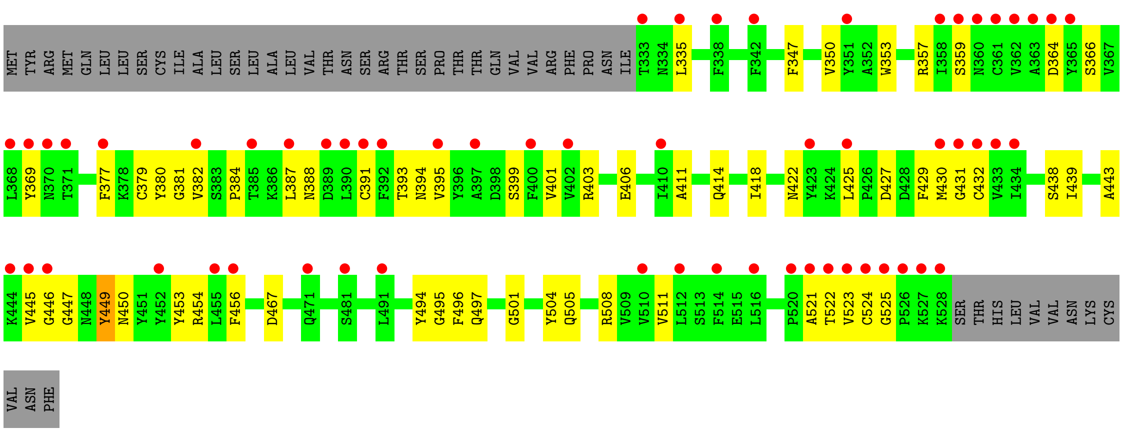
• Molecule 2: RshSTT182/200 coronavirus receptor binding domain insert2 mutant

Chain B:

• Molecule 2: RshSTT182/200 coronavirus receptor binding domain insert2 mutant

Chain D:

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

Chain E:


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

Chain F: 50% 50%

NAG1 NAG2

4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	81.13Å 121.44Å 110.49Å 90.00° 92.01° 90.00°	Depositor
Resolution (Å)	46.40 – 3.37 48.60 – 3.36	Depositor EDS
% Data completeness (in resolution range)	99.0 (46.40-3.37) 88.2 (48.60-3.36)	Depositor EDS
R_{merge}	0.15	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.09 (at 3.40Å)	Xtriage
Refinement program	PHENIX 1.19rc3_4028	Depositor
R, R_{free}	0.269 , 0.274 0.268 , 0.275	Depositor DCC
R_{free} test set	2008 reflections (6.62%)	wwPDB-VP
Wilson B-factor (Å^2)	101.3	Xtriage
Anisotropy	0.298	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.29 , 67.7	EDS
L-test for twinning[2]	$< \|L\| > = 0.47$, $< L^2 > = 0.30$	Xtriage
Estimated twinning fraction	0.035 for h,-k,-l	Xtriage
F_o,F_c correlation	0.90	EDS
Total number of atoms	13024	wwPDB-VP
Average B, all atoms (Å^2)	156.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.81% 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 (i)

5.1 Standard geometry (i)

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

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\#\|Z\| > 5$	RMSZ	$\#\|Z\| > 5$
1	A	0.25	0/4999	0.44	1/6792 (0.0%)
1	C	0.25	0/4999	0.44	0/6792
2	B	0.28	0/1601	0.53	0/2178
2	D	0.28	0/1601	0.52	0/2178
All	All	0.26	0/13200	0.46	1/17940 (0.0%)

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	143	LEU	CA-CB-CG	5.43	127.79	115.30

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	4862	0	4636	81	0
1	C	4862	0	4635	55	0
2	B	1558	0	1490	32	0
2	D	1558	0	1490	36	0
3	E	28	0	25	0	0
3	F	28	0	25	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
4	A	70	0	65	0	0
4	B	14	0	13	0	0
4	C	42	0	39	0	0
5	A	1	0	0	0	0
5	C	1	0	0	0	0
All	All	13024	0	12418	202	0

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

All (202) 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:C:132:VAL:HG21	1:C:167:SER:HB3	1.63	0.80
2:D:379:CYS:HA	2:D:432:CYS:HA	1.64	0.79
1:A:406:GLU:HG3	1:A:518:ARG:HD3	1.65	0.78
2:B:439:ILE:HD11	2:B:505:GLN:HG2	1.67	0.77
2:D:439:ILE:HD11	2:D:505:GLN:HG2	1.68	0.76
2:D:350:VAL:HG12	2:D:422:ASN:HB3	1.67	0.76
1:A:197:GLU:HB2	1:A:201:ASP:OD2	1.87	0.75
1:A:500:PRO:O	1:A:506:VAL:HG21	1.92	0.70
2:B:350:VAL:HG12	2:B:422:ASN:HB3	1.71	0.70
1:C:457:GLU:HG2	1:C:513:ILE:HB	1.75	0.68
2:B:379:CYS:HA	2:B:432:CYS:HA	1.76	0.68
1:C:438:PHE:HD2	1:C:540:HIS:HE2	1.40	0.67
2:D:446:GLY:HA2	2:D:497:GLN:HG2	1.78	0.65
1:A:493:HIS:ND1	1:A:499:ASP:OD2	2.30	0.65
1:A:410:LEU:HD23	1:A:526:GLN:HG3	1.78	0.65
2:D:445:VAL:HG13	2:D:447:GLY:H	1.63	0.64
2:D:380:TYR:N	2:D:431:GLY:O	2.31	0.63
1:C:482:ARG:HE	1:C:488:VAL:HG23	1.64	0.62
1:C:493:HIS:ND1	1:C:499:ASP:OD2	2.33	0.61
1:C:557:MET:HG3	1:C:569:ALA:HB1	1.83	0.60
2:B:401:VAL:HG22	2:B:508:ARG:HG2	1.82	0.60
1:C:375:GLU:HA	1:C:378:HIS:HD2	1.66	0.60
2:D:382:VAL:HG21	2:D:387:LEU:HD21	1.85	0.59
1:C:166:GLU:OE1	1:C:493:HIS:NE2	2.27	0.59
1:C:300:GLN:NE2	1:C:422:GLY:O	2.36	0.58
2:D:401:VAL:HG22	2:D:508:ARG:HG2	1.84	0.58
2:D:443:ALA:HB2	2:D:496:PHE:HB3	1.86	0.58
1:A:249:MET:HE1	1:A:258:PRO:HA	1.87	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:144:LEU:HA	1:A:148:LEU:HB3	1.87	0.56
1:A:116:LEU:HD11	1:A:187:LYS:HG2	1.86	0.56
1:A:406:GLU:HB3	1:A:522:GLN:NE2	2.19	0.56
1:A:143:LEU:HD22	1:A:146:PRO:HD3	1.87	0.56
2:D:350:VAL:CG1	2:D:422:ASN:HB3	2.36	0.56
1:C:137:ASN:OD1	1:C:139:GLN:HG2	2.05	0.55
1:A:404:VAL:HA	1:A:407:ILE:HD12	1.88	0.55
1:A:22:GLU:HG2	1:A:26:LYS:HE3	1.89	0.55
2:B:501:GLY:O	2:B:505:GLN:HG3	2.07	0.54
1:C:198:ASP:OD1	1:C:198:ASP:N	2.40	0.54
1:A:425:SER:OG	1:A:427:ASP:OD1	2.24	0.54
2:B:382:VAL:HG21	2:B:387:LEU:HD21	1.89	0.54
1:A:220:GLY:O	1:A:223:ILE:HG22	2.07	0.54
1:C:41:TYR:CD1	1:C:353:LYS:HB2	2.43	0.54
1:A:204:ARG:HG2	1:A:222:LEU:HD23	1.90	0.53
2:B:446:GLY:O	2:B:497:GLN:HG2	2.08	0.53
1:A:382:ASP:OD1	1:A:385:TYR:OH	2.17	0.53
1:A:526:GLN:HE22	1:A:542:CYS:HB3	1.73	0.52
2:B:350:VAL:CG1	2:B:422:ASN:HB3	2.39	0.52
2:B:357:ARG:HH11	2:B:394:ASN:HD21	1.56	0.52
1:A:398:GLU:HB3	1:A:514:ARG:HB3	1.91	0.52
1:A:526:GLN:NE2	1:A:542:CYS:HB3	2.24	0.52
1:C:312:GLU:OE2	1:C:322:ASN:HB2	2.09	0.52
1:A:519:THR:O	1:A:522:GLN:HG2	2.09	0.52
1:C:438:PHE:HD2	1:C:540:HIS:NE2	2.07	0.52
2:D:357:ARG:HH11	2:D:394:ASN:HD21	1.58	0.52
2:B:406:GLU:OE1	2:B:494:TYR:OH	2.18	0.52
1:A:183:TYR:OH	1:A:509:ASP:OD1	2.19	0.52
1:A:291:ILE:HD12	1:A:415:PRO:HG3	1.92	0.51
1:A:477:TRP:CD2	1:A:500:PRO:HG3	2.45	0.51
1:A:233:ILE:HD13	1:A:450:LEU:HD13	1.92	0.51
2:B:382:VAL:HG13	2:B:430:MET:HG3	1.93	0.51
1:A:239:HIS:CE1	1:A:596:LYS:HG2	2.45	0.51
1:C:180:TYR:HA	1:C:183:TYR:HB3	1.91	0.51
1:A:411:SER:HB3	1:A:543:ASP:HA	1.91	0.51
1:C:34:HIS:HD1	2:D:453:TYR:HH	1.57	0.51
1:C:88:ILE:HD13	1:C:97:LEU:HD13	1.92	0.51
1:C:144:LEU:HB2	1:C:168:TRP:CH2	2.46	0.51
2:B:417:LYS:NZ	2:B:455:LEU:O	2.35	0.51
1:C:308:PHE:HE2	1:C:362:THR:HG21	1.75	0.51
2:D:369:TYR:OH	2:D:384:PRO:O	2.16	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:501:GLY:O	2:D:505:GLN:HG3	2.11	0.50
1:A:245:ARG:NH2	1:A:605:GLY:O	2.43	0.50
1:A:161:ARG:NH1	1:A:265:HIS:O	2.44	0.50
1:A:144:LEU:HD22	1:A:168:TRP:CZ2	2.47	0.50
1:A:419:LYS:HD2	1:A:428:PHE:HB3	1.92	0.50
2:D:335:LEU:HD11	2:D:364:ASP:HB2	1.94	0.50
2:D:438:SER:HB3	2:D:508:ARG:HG3	1.94	0.50
2:B:335:LEU:HD11	2:B:364:ASP:HB2	1.94	0.49
1:A:208:GLU:OE1	1:A:219:ARG:NE	2.45	0.49
2:B:369:TYR:OH	2:B:384:PRO:O	2.17	0.49
2:D:388:ASN:O	2:D:525:GLY:HA3	2.12	0.49
1:A:315:PHE:CD1	1:A:380:GLN:HG3	2.47	0.48
1:C:267:LEU:HA	1:C:278:LEU:HD11	1.95	0.48
1:A:201:ASP:OD1	1:A:204:ARG:NH2	2.46	0.48
1:A:493:HIS:CE1	1:A:499:ASP:OD2	2.66	0.48
2:B:388:ASN:O	2:B:525:GLY:HA3	2.13	0.48
2:D:382:VAL:HG13	2:D:430:MET:HG3	1.95	0.48
1:C:245:ARG:NH2	1:C:603:PHE:O	2.46	0.48
1:A:83:TYR:O	1:A:101:GLN:NE2	2.45	0.48
1:A:206:ASP:OD2	1:A:398:GLU:HG3	2.14	0.48
2:D:406:GLU:OE1	2:D:494:TYR:OH	2.17	0.48
2:B:403:ARG:HG2	2:B:504:TYR:HA	1.94	0.48
1:A:177:ARG:NH2	1:A:495:GLU:OE1	2.46	0.48
2:B:439:ILE:HD11	2:B:505:GLN:CG	2.41	0.48
1:A:285:PHE:HB2	1:A:437:ASN:HD21	1.79	0.48
2:D:403:ARG:HG2	2:D:504:TYR:HA	1.96	0.47
1:C:284:PRO:HD3	1:C:440:LEU:HD22	1.97	0.47
1:A:25:ALA:HB1	1:A:97:LEU:HD11	1.95	0.47
2:D:347:PHE:HB3	2:D:401:VAL:HG23	1.95	0.47
2:B:438:SER:HB3	2:B:508:ARG:HG3	1.96	0.47
1:A:431:ASP:OD1	1:A:432:ASN:N	2.46	0.47
2:B:393:THR:O	2:B:522:THR:OG1	2.23	0.47
1:A:477:TRP:CE3	1:A:500:PRO:HG3	2.51	0.46
2:D:350:VAL:HG11	2:D:418:ILE:HG23	1.97	0.46
1:C:212:VAL:O	1:C:216:ASP:OD1	2.34	0.46
2:D:411:ALA:HB3	2:D:414:GLN:HG3	1.98	0.46
1:A:143:LEU:HD23	1:A:144:LEU:N	2.31	0.46
2:D:446:GLY:HA2	2:D:497:GLN:HE21	1.80	0.46
2:B:411:ALA:HB3	2:B:414:GLN:HG3	1.98	0.45
1:A:431:ASP:HB3	1:A:434:THR:HG23	1.98	0.45
1:A:446:ILE:HD13	1:A:523:PHE:HZ	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:450:LEU:HB2	1:C:451:PRO:HD3	1.98	0.45
1:C:237:TYR:CD1	1:C:451:PRO:HG2	2.52	0.45
1:A:54:ILE:HD11	1:A:343:VAL:HG23	1.99	0.45
1:A:398:GLU:HB3	1:A:514:ARG:CB	2.47	0.45
1:A:403:ALA:O	1:A:407:ILE:HG13	2.17	0.45
1:A:378:HIS:HE1	1:A:402:GLU:HA	1.82	0.45
1:A:247:LYS:HD3	1:A:282:THR:HA	1.99	0.45
1:C:356:PHE:HB3	1:C:379:ILE:HD12	1.98	0.45
2:D:449:TYR:HD1	2:D:495:GLY:HA2	1.82	0.45
2:D:393:THR:O	2:D:522:THR:OG1	2.23	0.44
1:C:419:LYS:HG3	1:C:424:LEU:HB3	1.99	0.44
1:C:488:VAL:HG21	1:C:611:SER:HA	2.00	0.44
1:C:161:ARG:HH21	1:C:266:LEU:HA	1.83	0.44
1:C:341:LYS:HD3	1:C:341:LYS:HA	1.70	0.44
1:C:245:ARG:O	1:C:249:MET:HG3	2.18	0.44
1:A:315:PHE:CZ	1:A:408:MET:HG3	2.52	0.44
1:A:261:CYS:HB2	1:A:488:VAL:HB	2.00	0.44
1:A:535:HIS:NE2	1:A:541:LYS:O	2.45	0.44
2:D:381:GLY:HA3	2:D:430:MET:HA	2.00	0.44
1:A:39:LEU:HB3	1:A:69:TRP:HE3	1.81	0.44
1:A:98:GLN:O	1:A:102:GLN:HG2	2.18	0.43
1:C:525:PHE:O	1:C:529:LEU:HG	2.19	0.43
1:A:143:LEU:CD2	1:A:145:GLU:H	2.32	0.43
1:C:155:SER:O	1:C:161:ARG:NH1	2.51	0.43
1:A:123:MET:HE2	1:A:176:LEU:HD22	2.00	0.43
1:A:521:TYR:HB3	1:A:525:PHE:CE2	2.53	0.43
1:C:98:GLN:O	1:C:102:GLN:NE2	2.33	0.43
2:D:380:TYR:HB2	2:D:429:PHE:CD2	2.54	0.43
2:D:391:CYS:HB3	2:D:521:ALA:HB1	2.01	0.43
1:C:308:PHE:CE2	1:C:362:THR:HG21	2.53	0.43
2:B:347:PHE:HB3	2:B:401:VAL:HG23	2.00	0.43
1:C:181:GLU:HG2	1:C:470:LYS:HD3	1.99	0.43
1:A:427:ASP:OD1	1:A:427:ASP:N	2.35	0.43
1:A:450:LEU:HD21	1:A:519:THR:HG21	2.01	0.43
1:A:515:TYR:HD1	1:A:518:ARG:NH2	2.16	0.43
2:B:347:PHE:CE2	2:B:399:SER:HB2	2.54	0.43
2:B:359:SER:HA	2:B:523:VAL:HG23	2.01	0.43
1:A:296:ALA:O	1:A:300:GLN:HG3	2.19	0.43
2:B:366:SER:HA	2:B:369:TYR:CD2	2.53	0.43
1:C:249:MET:HG2	1:C:256:ILE:HB	2.01	0.43
1:A:446:ILE:O	1:A:449:THR:HG22	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:312:GLU:OE2	1:C:323:MET:N	2.50	0.42
1:C:499:ASP:N	1:C:500:PRO:HD2	2.34	0.42
1:A:134:ASN:ND2	1:A:136:ASP:O	2.53	0.42
1:A:371:THR:HA	1:A:374:HIS:HB3	2.01	0.42
1:C:519:THR:O	1:C:522:GLN:HG2	2.19	0.42
2:D:366:SER:HA	2:D:369:TYR:CD2	2.55	0.42
1:A:56:GLU:HA	1:A:59:VAL:HG22	2.01	0.42
1:A:394:ASN:OD1	1:A:395:GLY:N	2.52	0.42
1:A:48:TRP:CE2	1:A:52:THR:HG21	2.55	0.42
1:A:145:GLU:HB3	1:A:146:PRO:HD3	2.01	0.42
2:B:444:LYS:HA	2:B:444:LYS:HD2	1.83	0.42
2:B:445:VAL:O	2:B:446:GLY:C	2.57	0.42
1:A:284:PRO:HB3	1:A:594:TRP:CH2	2.55	0.42
1:A:492:PRO:HD3	1:A:613:TYR:CG	2.55	0.42
1:C:96:GLN:HB3	1:C:391:LEU:HD12	2.02	0.42
1:C:555:PHE:HA	1:C:558:LEU:HD12	2.02	0.42
1:A:247:LYS:HB2	1:A:282:THR:HG22	2.01	0.42
1:A:501:ALA:O	1:A:507:SER:OG	2.38	0.42
1:A:155:SER:O	1:A:161:ARG:NE	2.42	0.42
1:A:519:THR:HA	1:A:522:GLN:OE1	2.19	0.42
2:B:391:CYS:HB3	2:B:521:ALA:HB1	2.00	0.42
1:C:237:TYR:CG	1:C:451:PRO:HG2	2.55	0.42
1:C:176:LEU:HD23	1:C:501:ALA:HB1	2.02	0.41
1:C:27:THR:HG23	2:D:456:PHE:CE1	2.55	0.41
2:D:359:SER:HA	2:D:523:VAL:HG23	2.01	0.41
1:C:168:TRP:CD1	1:C:502:SER:HB2	2.55	0.41
2:D:347:PHE:CE2	2:D:399:SER:HB2	2.55	0.41
1:C:459:TRP:NE1	1:C:477:TRP:HB2	2.35	0.41
1:A:143:LEU:HD23	1:A:145:GLU:H	1.84	0.41
1:C:88:ILE:O	1:C:94:LYS:HE2	2.20	0.41
1:A:450:LEU:HB2	1:A:451:PRO:HD3	2.02	0.41
2:D:395:VAL:HG21	2:D:523:VAL:HG11	2.03	0.41
2:D:454:ARG:NH2	2:D:467:ASP:O	2.49	0.41
1:A:284:PRO:HB2	1:A:285:PHE:CD1	2.55	0.41
1:A:377:GLY:HA3	1:A:405:GLY:HA2	2.02	0.41
2:B:350:VAL:HG11	2:B:418:ILE:HG23	2.03	0.41
2:B:425:LEU:HD21	2:B:511:VAL:HG11	2.03	0.41
2:B:462:LYS:HD2	2:B:465:GLU:OE1	2.21	0.41
1:C:145:GLU:HA	1:C:146:PRO:HA	1.73	0.41
1:C:457:GLU:OE2	1:C:512:PHE:N	2.44	0.41
2:D:425:LEU:HD21	2:D:511:VAL:HG11	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:530:CYS:HA	1:C:533:ALA:HB3	2.03	0.41
1:C:132:VAL:HG12	1:C:148:LEU:HD11	2.03	0.40
1:A:269:ASP:OD1	1:A:272:GLY:N	2.54	0.40
2:B:395:VAL:HG21	2:B:523:VAL:HG11	2.03	0.40
2:B:380:TYR:N	2:B:431:GLY:O	2.40	0.40
1:C:35:GLU:HG2	1:C:72:PHE:CE1	2.55	0.40
1:C:155:SER:O	1:C:161:ARG:HD2	2.21	0.40
1:A:273:ARG:HD2	1:A:512:PHE:HZ	1.86	0.40
1:A:111:ASP:OD1	1:A:111:ASP:N	2.54	0.40
1:C:275:TRP:N	1:C:275:TRP:CD1	2.89	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	594/598 (99%)	570 (96%)	24 (4%)	0	100	100
1	C	594/598 (99%)	581 (98%)	13 (2%)	0	100	100
2	B	194/242 (80%)	185 (95%)	9 (5%)	0	100	100
2	D	194/242 (80%)	188 (97%)	6 (3%)	0	100	100
All	All	1576/1680 (94%)	1524 (97%)	52 (3%)	0	100	100

There are no Ramachandran outliers to report.

5.3.2 Protein sidechains (i)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all 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	526/528 (100%)	515 (98%)	11 (2%)	53	77
1	C	526/528 (100%)	520 (99%)	6 (1%)	73	86
2	B	170/214 (79%)	165 (97%)	5 (3%)	42	70
2	D	170/214 (79%)	164 (96%)	6 (4%)	36	65
All	All	1392/1484 (94%)	1364 (98%)	28 (2%)	55	77

All (28) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	42	GLN
1	A	43	SER
1	A	111	ASP
1	A	170	SER
1	A	202	TYR
1	A	219	ARG
1	A	361	CYS
1	A	381	TYR
1	A	385	TYR
1	A	542	CYS
1	A	555	PHE
2	B	353	TRP
2	B	377	PHE
2	B	427	ASP
2	B	469	SER
2	B	524	CYS
1	C	87	GLU
1	C	105	SER
1	C	381	TYR
1	C	385	TYR
1	C	455	MET
1	C	473	TRP
2	D	353	TRP
2	D	377	PHE
2	D	427	ASP
2	D	449	TYR
2	D	450	ASN
2	D	524	CYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (4) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	239	HIS
1	A	599	ASN
2	B	450	ASN
1	C	42	GLN

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates (i)

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	$\#\|Z\| > 2$
3	NAG	E	1	3,1	14,14,15	0.34	0	17,19,21	0.60	1 (5%)
3	NAG	E	2	3	14,14,15	0.38	0	17,19,21	0.66	0
3	NAG	F	1	2,3	14,14,15	0.43	0	17,19,21	0.64	1 (5%)
3	NAG	F	2	3	14,14,15	0.27	0	17,19,21	0.74	0

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	NAG	E	1	3,1	-	2/6/23/26	0/1/1/1
3	NAG	E	2	3	-	1/6/23/26	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	NAG	F	1	2,3	-	0/6/23/26	0/1/1/1
3	NAG	F	2	3	-	0/6/23/26	0/1/1/1

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	F	1	NAG	C1-O5-C5	2.16	115.11	112.19
3	E	1	NAG	C1-O5-C5	2.10	115.04	112.19

There are no chirality outliers.

All (3) torsion outliers are listed below:

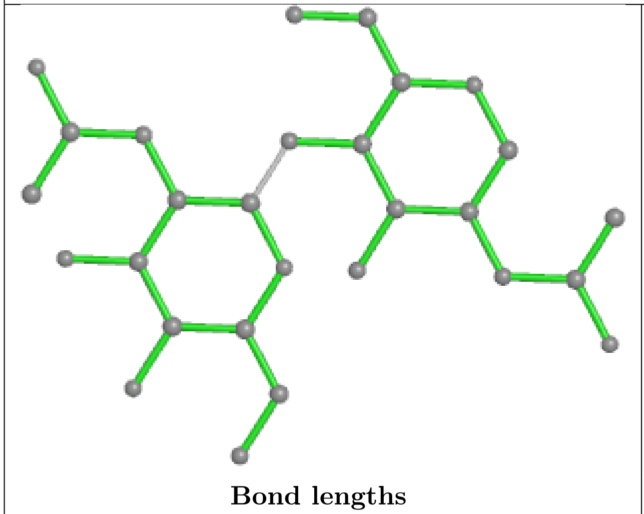
Mol	Chain	Res	Type	Atoms
3	E	1	NAG	O5-C5-C6-O6
3	E	1	NAG	C4-C5-C6-O6
3	E	2	NAG	C3-C2-N2-C7

There are no ring outliers.

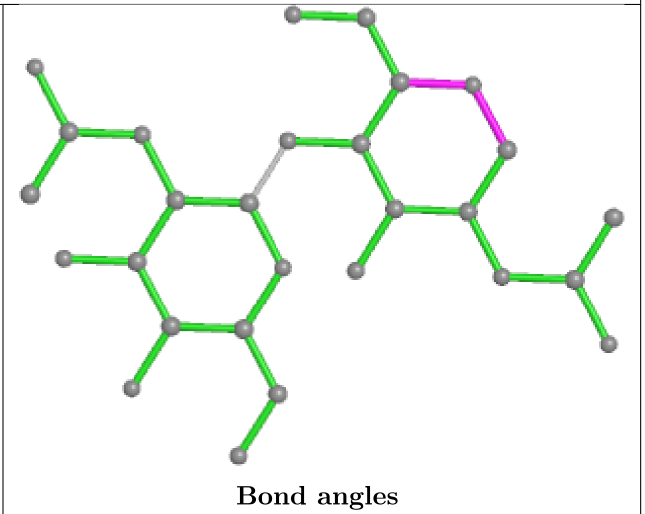
No monomer is involved in short contacts.

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

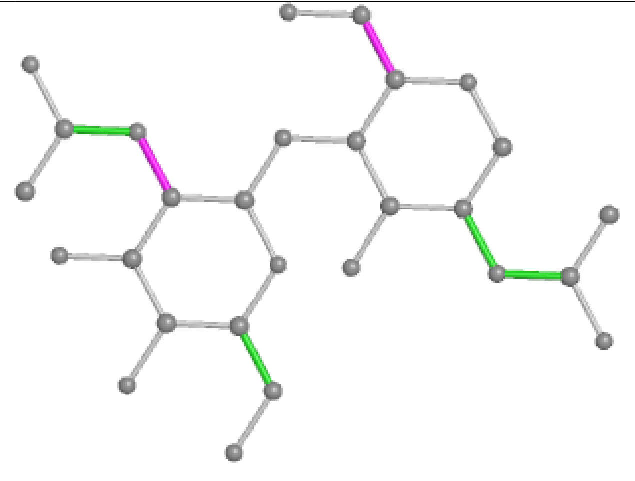
Oligosaccharide Chain E



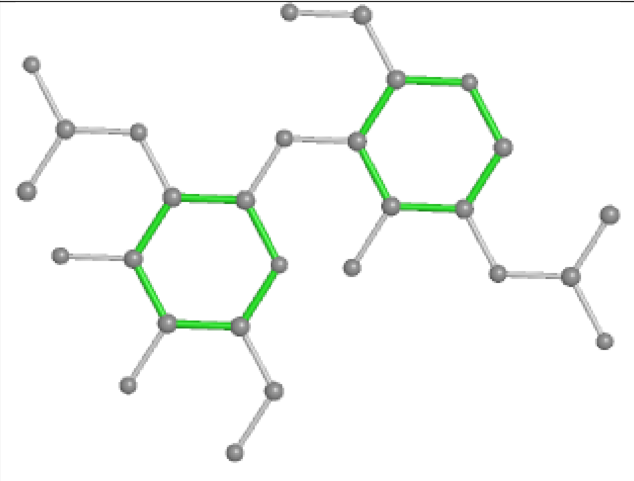
Bond lengths



Bond angles

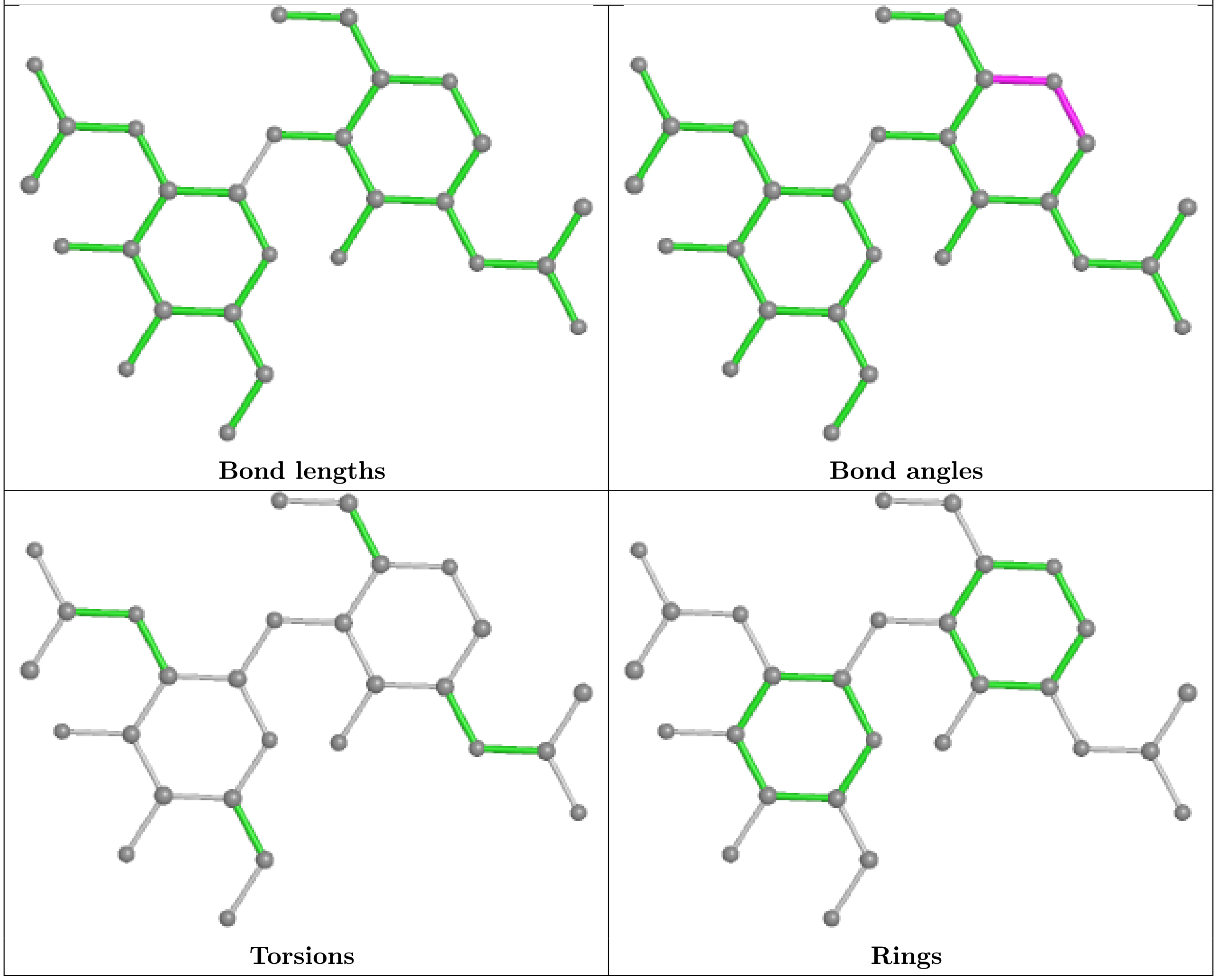


Torsions



Rings

Oligosaccharide Chain F



5.6 Ligand geometry (i)

Of 11 ligands modelled in this entry, 2 are monoatomic - leaving 9 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\| > 2$	Counts	RMSZ	$\#\|Z\| > 2$
4	NAG	B	601	2	14,14,15	0.37	0	17,19,21	0.57	0
4	NAG	C	702	1	14,14,15	0.18	0	17,19,21	0.47	0
4	NAG	A	702	1	14,14,15	0.25	0	17,19,21	0.48	0
4	NAG	A	701	1	14,14,15	0.32	0	17,19,21	0.52	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#|Z| > 2	Counts	RMSZ	#|Z| > 2
4	NAG	A	704	1	14,14,15	0.35	0	17,19,21	0.53	0
4	NAG	C	703	1	14,14,15	0.25	0	17,19,21	0.44	0
4	NAG	A	705	1	14,14,15	0.39	0	17,19,21	0.63	1 (5%)
4	NAG	A	703	1	14,14,15	0.35	0	17,19,21	0.40	0
4	NAG	C	701	1	14,14,15	0.36	0	17,19,21	0.70	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
4	NAG	B	601	2	-	2/6/23/26	0/1/1/1
4	NAG	C	702	1	-	2/6/23/26	0/1/1/1
4	NAG	A	702	1	-	1/6/23/26	0/1/1/1
4	NAG	A	701	1	-	0/6/23/26	0/1/1/1
4	NAG	A	704	1	-	2/6/23/26	0/1/1/1
4	NAG	C	703	1	-	2/6/23/26	0/1/1/1
4	NAG	A	705	1	-	2/6/23/26	0/1/1/1
4	NAG	A	703	1	-	2/6/23/26	0/1/1/1
4	NAG	C	701	1	-	2/6/23/26	0/1/1/1

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	C	701	NAG	C1-O5-C5	2.50	115.57	112.19
4	A	705	NAG	C1-O5-C5	2.15	115.10	112.19

There are no chirality outliers.

All (15) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	B	601	NAG	O5-C5-C6-O6
4	C	701	NAG	O5-C5-C6-O6
4	A	705	NAG	C4-C5-C6-O6
4	A	704	NAG	O5-C5-C6-O6
4	A	703	NAG	C4-C5-C6-O6
4	C	701	NAG	C4-C5-C6-O6

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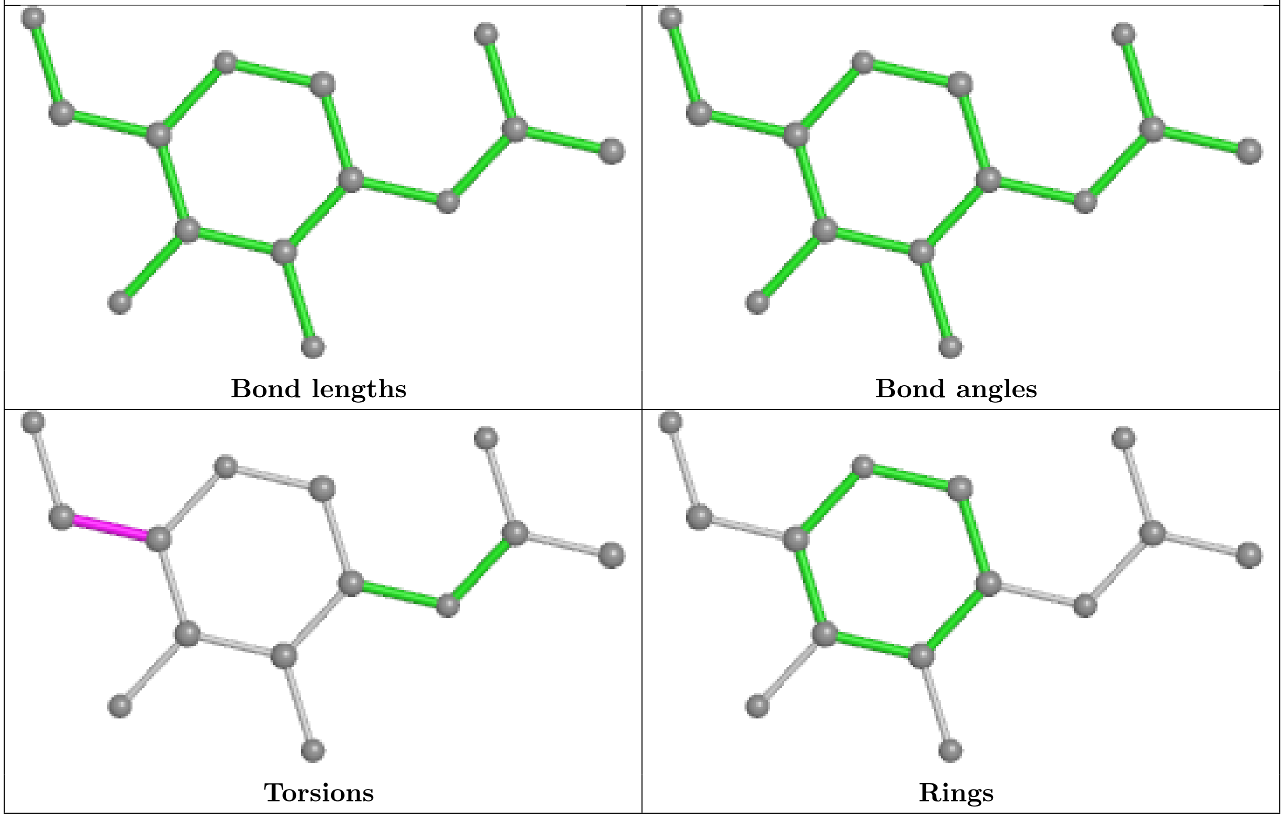
Mol	Chain	Res	Type	Atoms
4	B	601	NAG	C4-C5-C6-O6
4	A	704	NAG	C4-C5-C6-O6
4	A	705	NAG	O5-C5-C6-O6
4	A	703	NAG	O5-C5-C6-O6
4	C	702	NAG	O5-C5-C6-O6
4	C	702	NAG	C4-C5-C6-O6
4	A	702	NAG	O5-C5-C6-O6
4	C	703	NAG	C4-C5-C6-O6
4	C	703	NAG	O5-C5-C6-O6

There are no ring outliers.

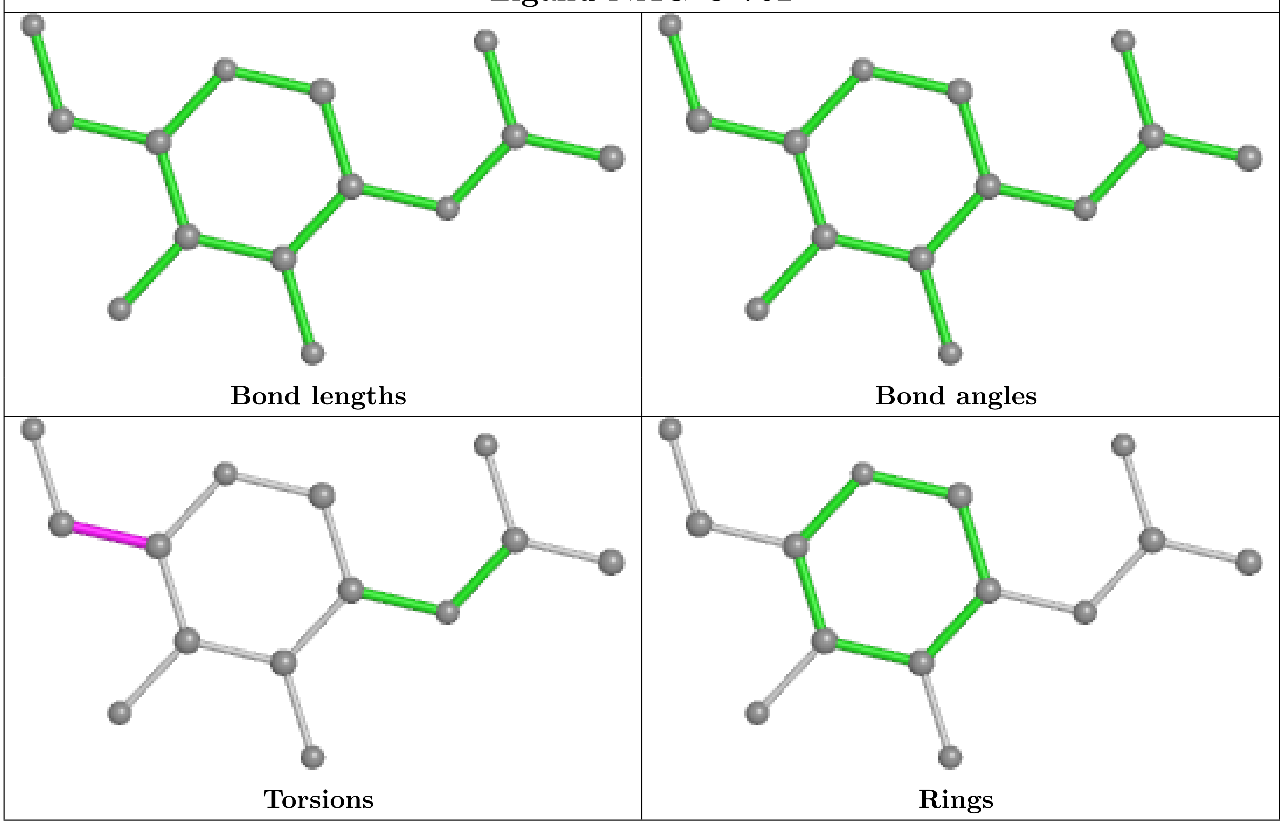
No monomer is involved in short contacts.

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

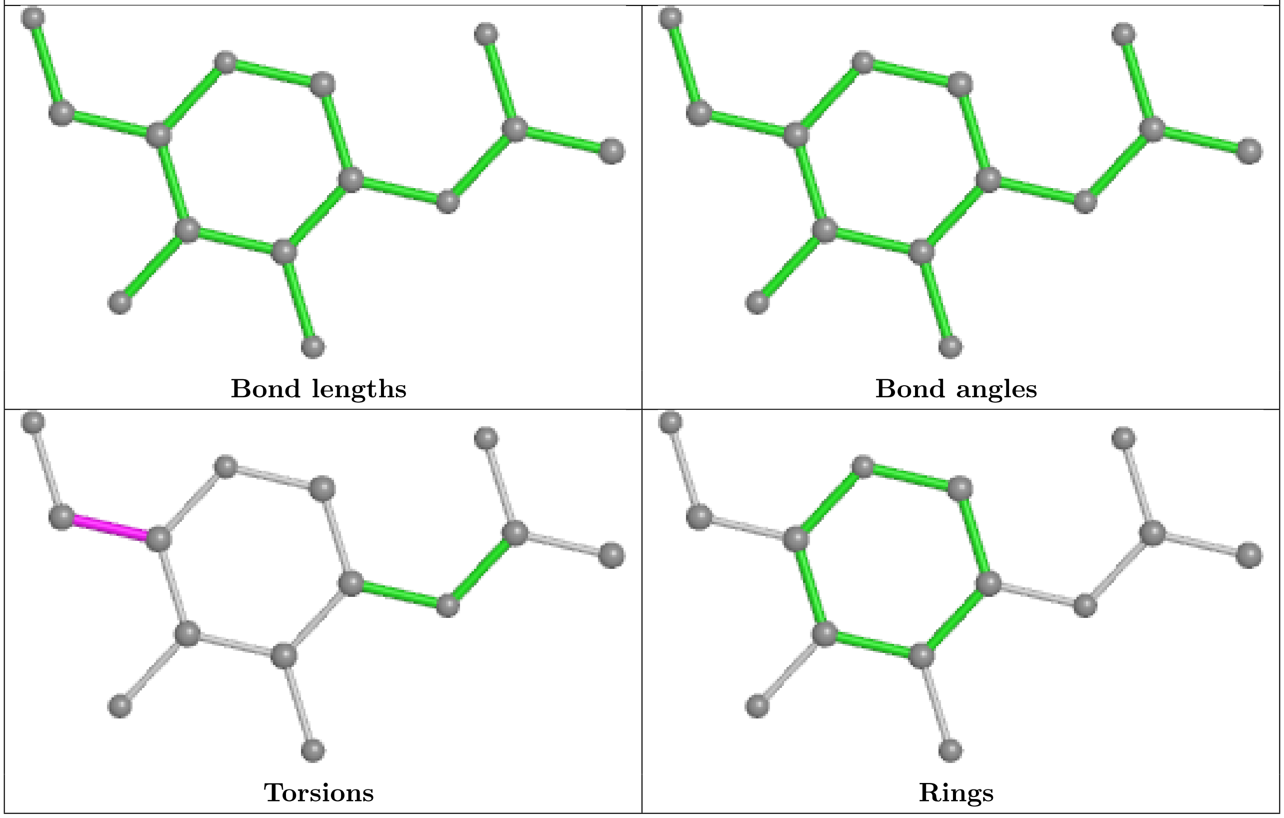
Ligand NAG B 601



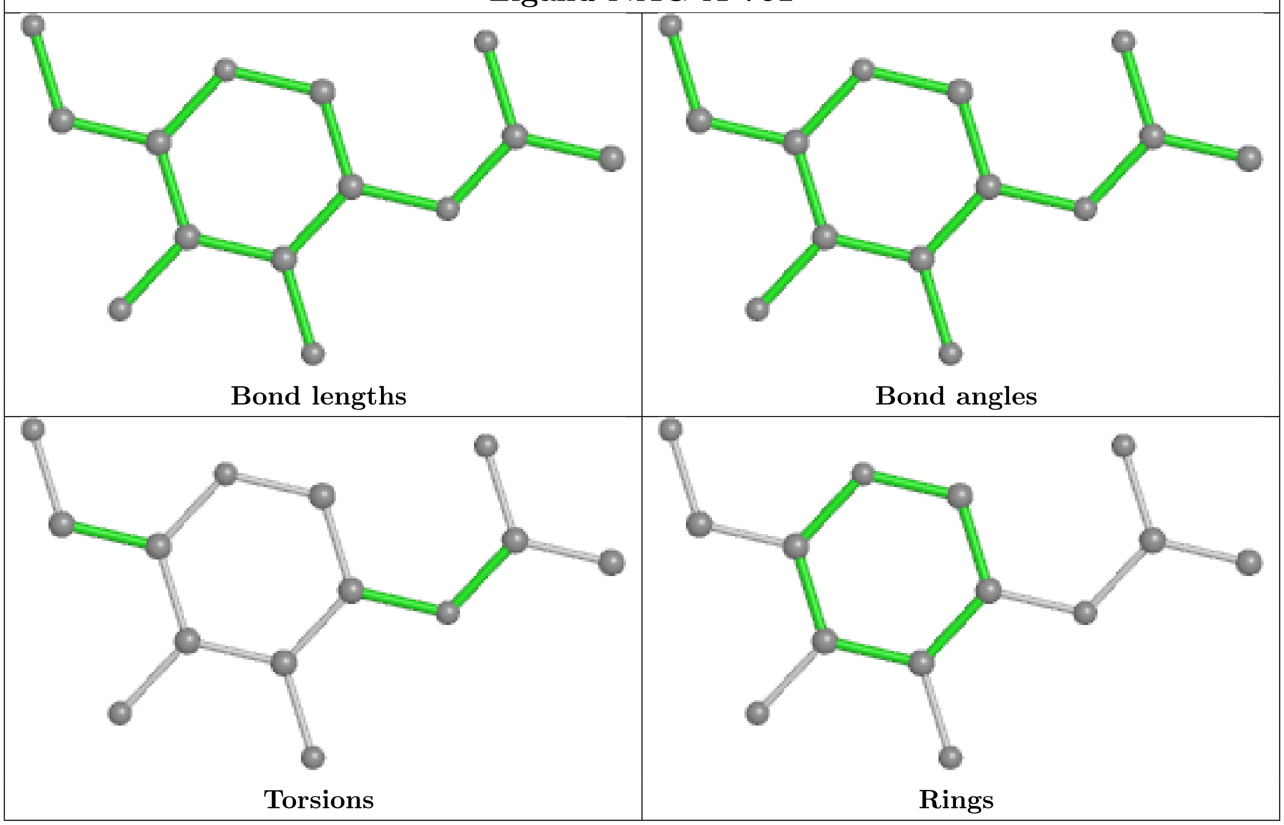
Ligand NAG C 702



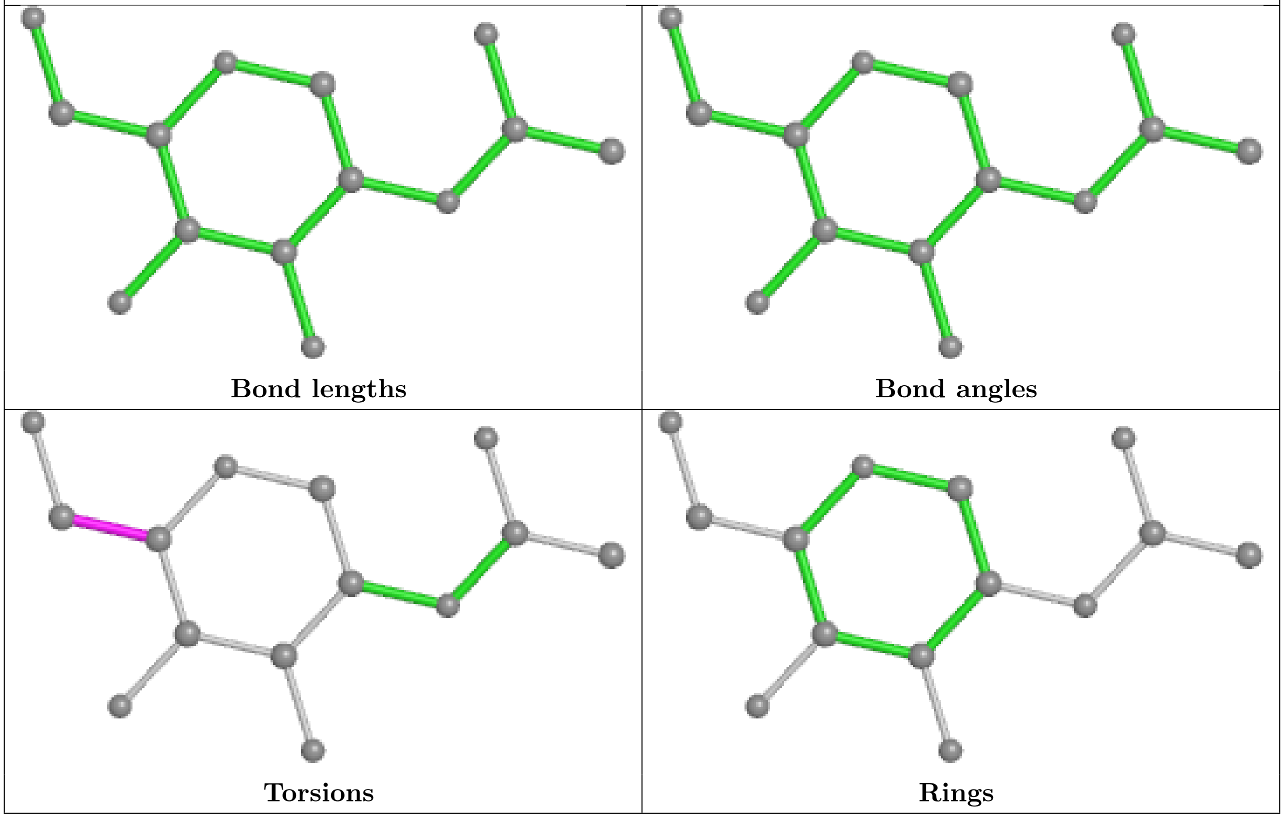
Ligand NAG A 702



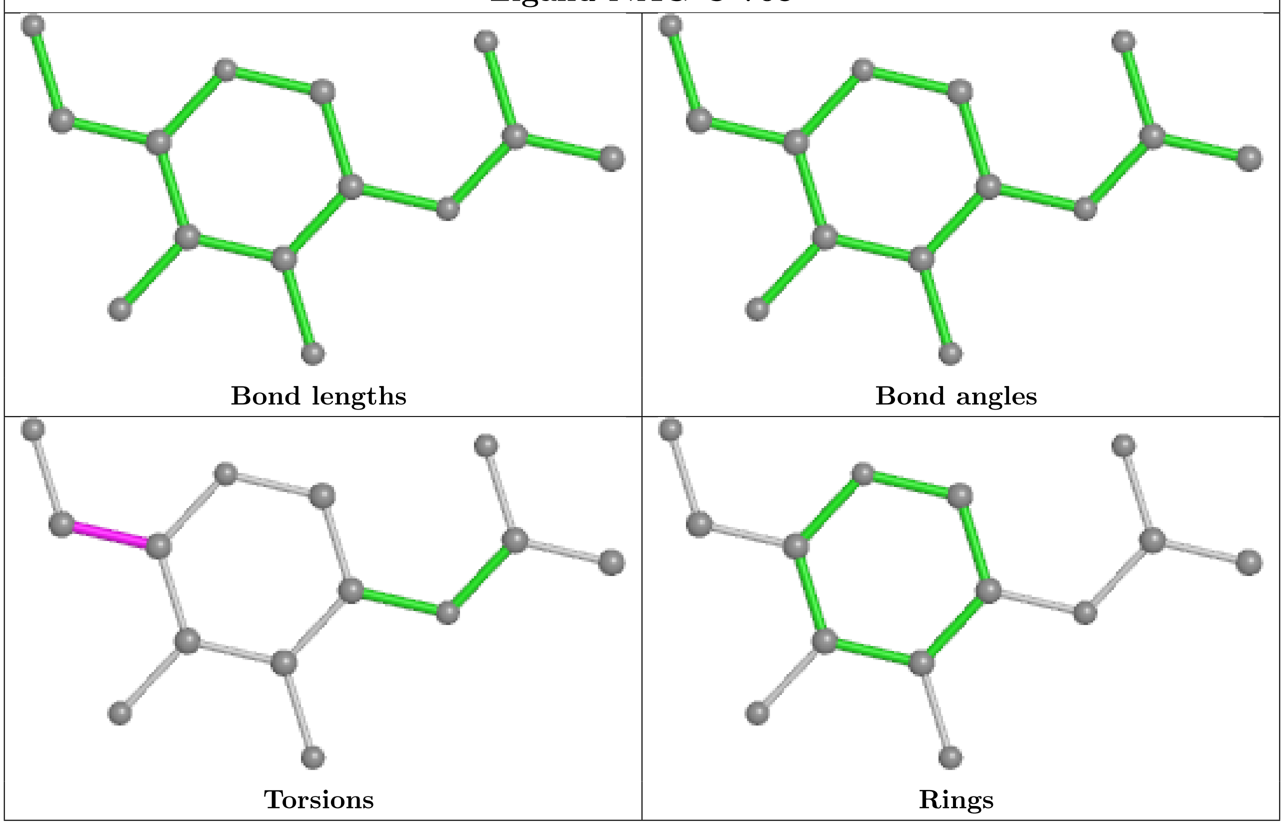
Ligand NAG A 701



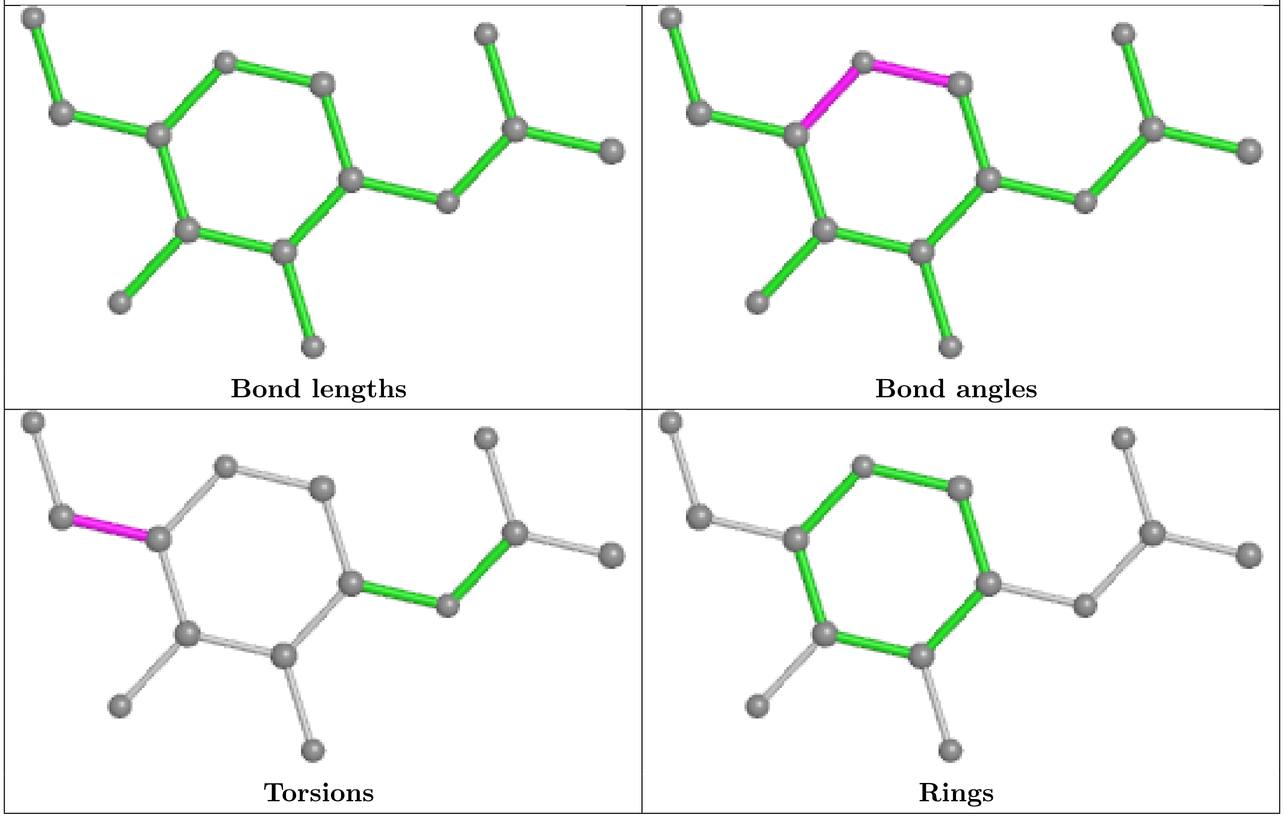
Ligand NAG A 704



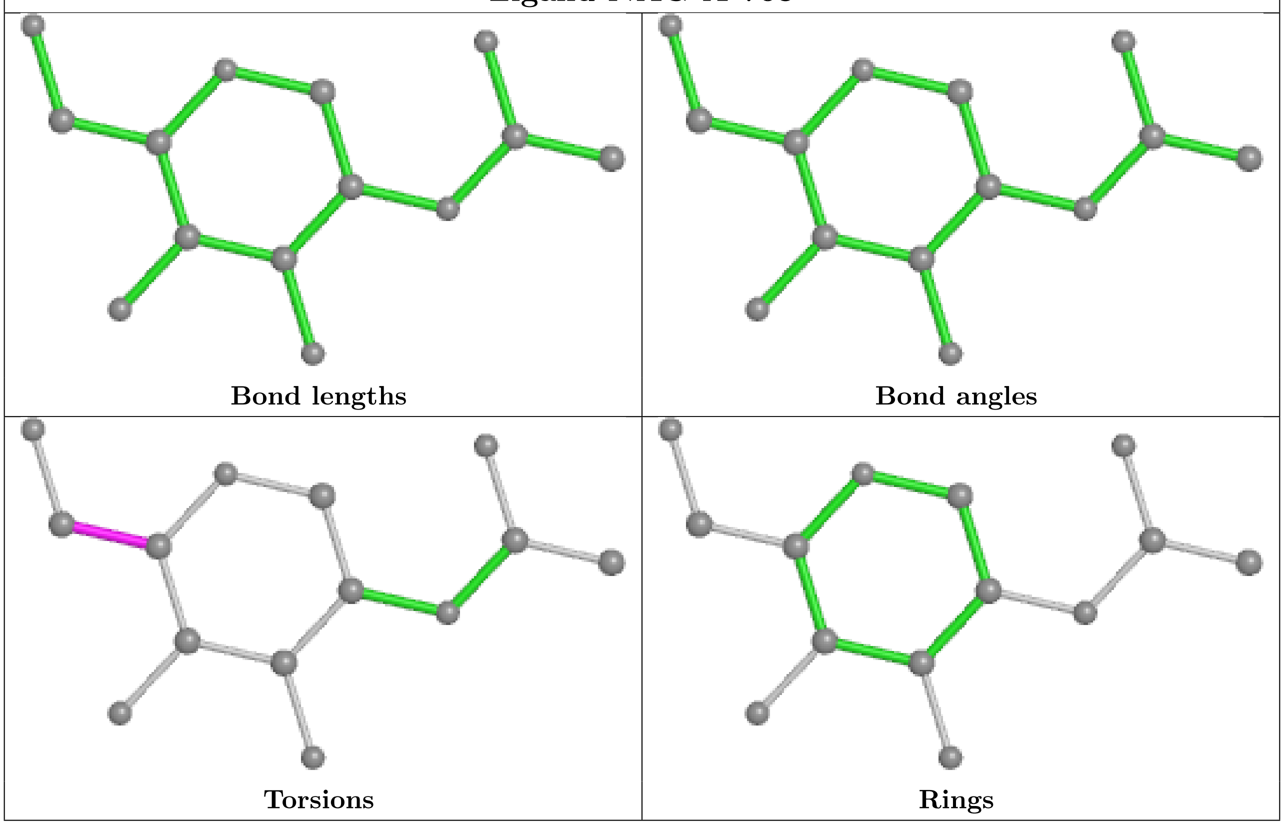
Ligand NAG C 703

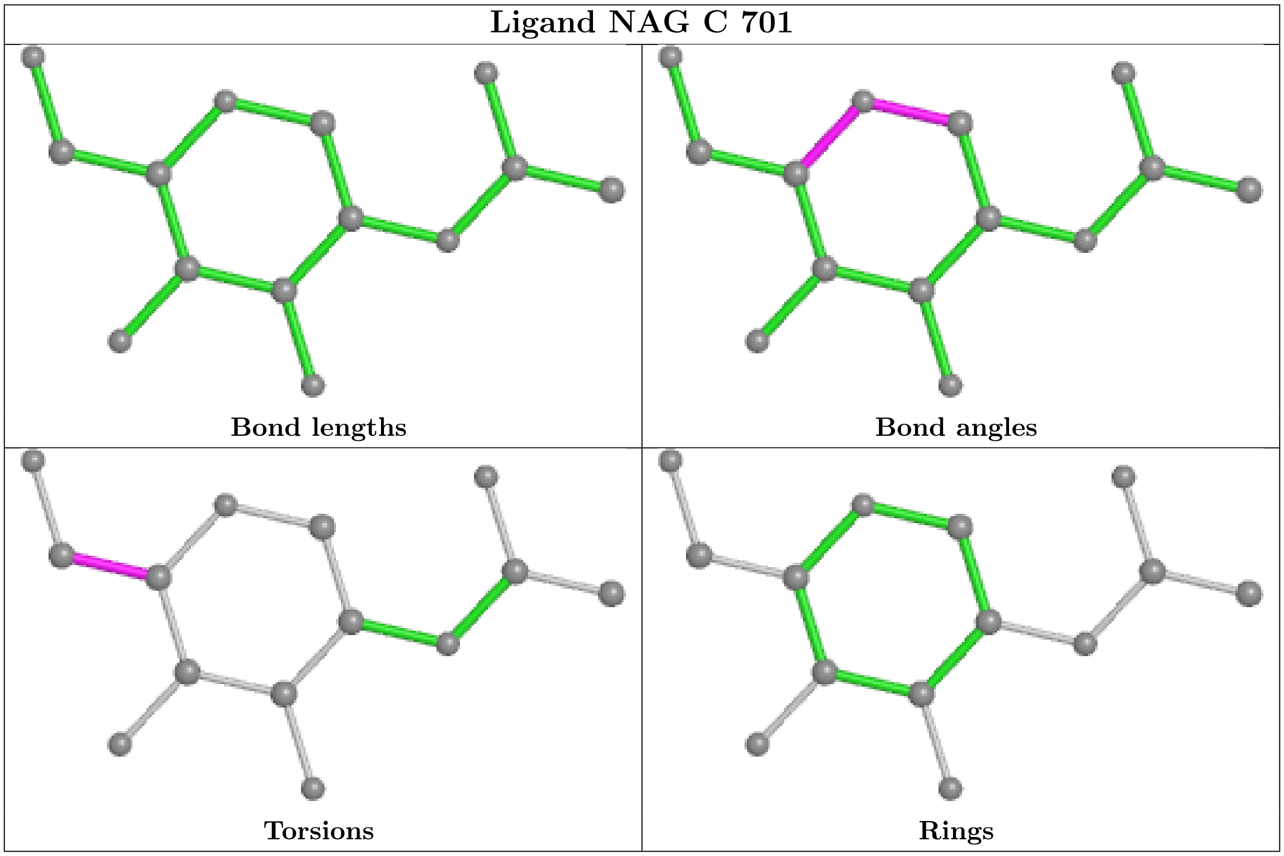


Ligand NAG A 705



Ligand NAG A 703





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 (i)

6.1 Protein, DNA and RNA chains (i)

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	596/598 (99%)	0.90	86 (14%)	2	3	86, 145, 206, 275	0
1	C	596/598 (99%)	0.83	71 (11%)	4	5	101, 148, 194, 225	0
2	B	196/242 (80%)	1.85	76 (38%)	0	0	132, 186, 274, 308	0
2	D	196/242 (80%)	1.44	59 (30%)	0	0	108, 148, 208, 235	0
All	All	1584/1680 (94%)	1.06	292 (18%)	1	1	86, 152, 216, 308	0

All (292) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
2	B	456	PHE	11.2
2	D	362	VAL	8.8
2	B	364	ASP	8.8
2	B	389	ASP	8.7
2	D	528	LYS	8.3
1	C	433	GLU	8.2
2	D	391	CYS	7.9
2	B	365	TYR	7.7
2	D	524	CYS	7.2
2	D	514	PHE	7.0
2	B	338	PHE	6.5
2	B	402	VAL	6.5
2	D	395	VAL	6.3
1	A	87	GLU	6.3
1	A	79	LEU	6.2
2	B	335	LEU	6.2
2	B	358	ILE	6.0
2	B	488	TYR	5.9
1	A	84	PRO	5.9
1	A	202	TYR	5.8
2	B	495	GLY	5.7

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Mol	Chain	Res	Type	RSRZ
1	A	130	GLY	5.7
2	B	521	ALA	5.7
1	A	82	MET	5.6
1	A	196	TYR	5.6
2	D	521	ALA	5.5
2	B	512	LEU	5.5
2	B	333	THR	5.4
1	A	75	GLU	5.3
1	C	19	SER	5.3
2	D	333	THR	5.3
1	C	436	ILE	5.2
2	D	516	LEU	5.2
1	C	466	GLY	5.2
2	B	368	LEU	5.1
1	A	168	TRP	5.0
2	B	362	VAL	4.9
2	D	338	PHE	4.9
1	A	139	GLN	4.8
2	D	389	ASP	4.8
1	C	332	MET	4.8
1	A	192	ARG	4.7
2	D	434	ILE	4.7
2	B	363	ALA	4.6
2	B	366	SER	4.4
2	B	388	ASN	4.4
2	B	434	ILE	4.4
2	D	363	ALA	4.4
2	B	455	LEU	4.3
2	B	514	PHE	4.3
2	B	511	VAL	4.3
2	D	525	GLY	4.3
1	A	194	ASN	4.3
2	D	392	PHE	4.3
1	C	572	ASN	4.3
1	A	133	CYS	4.2
2	B	423	TYR	4.2
1	A	97	LEU	4.2
1	A	353	LYS	4.2
2	D	360	ASN	4.1
1	C	590	PRO	4.1
1	A	151	ILE	4.1
2	D	430	MET	4.0

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Mol	Chain	Res	Type	RSRZ
2	B	377	PHE	4.0
2	D	520	PRO	4.0
2	B	370	ASN	4.0
2	B	496	PHE	4.0
1	A	415	PRO	3.9
2	B	526	PRO	3.9
2	D	523	VAL	3.9
2	B	403	ARG	3.9
1	A	142	LEU	3.9
1	A	31	LYS	3.8
2	B	520	PRO	3.8
1	C	140	GLU	3.8
1	C	87	GLU	3.8
2	B	392	PHE	3.7
1	A	195	HIS	3.6
1	C	186	LEU	3.6
2	B	525	GLY	3.6
1	C	86	GLN	3.5
2	B	527	LYS	3.5
2	B	334	ASN	3.5
2	D	377	PHE	3.5
1	C	285	PHE	3.5
1	C	252	TYR	3.5
2	D	526	PRO	3.4
2	D	423	TYR	3.4
1	A	85	LEU	3.4
2	D	512	LEU	3.4
1	A	263	PRO	3.4
1	A	539	LEU	3.4
1	A	351	LEU	3.4
2	B	524	CYS	3.4
1	C	339	VAL	3.4
1	C	459	TRP	3.3
1	A	86	GLN	3.3
1	A	76	GLN	3.3
2	B	472	LEU	3.3
2	D	335	LEU	3.3
2	B	473	TYR	3.3
2	D	365	TYR	3.3
1	A	101	GLN	3.3
2	B	401	VAL	3.3
2	B	424	LYS	3.3

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Mol	Chain	Res	Type	RSRZ
1	A	81	GLN	3.3
2	B	494	TYR	3.3
2	B	518	ASN	3.2
2	B	483	GLU	3.2
1	C	342	ALA	3.2
1	C	137	ASN	3.2
2	B	396	TYR	3.2
1	A	507	SER	3.2
1	A	131	LYS	3.2
2	B	393	THR	3.2
2	D	359	SER	3.2
2	D	522	THR	3.2
1	C	502	SER	3.2
1	C	241	HIS	3.1
2	D	471	GLN	3.1
2	D	410	ILE	3.1
1	A	193	ALA	3.1
2	B	357	ARG	3.1
1	A	135	PRO	3.1
2	D	361	CYS	3.1
2	D	510	VAL	3.1
1	A	83	TYR	3.0
2	B	342	PHE	3.0
1	C	97	LEU	3.0
2	B	522	THR	3.0
1	C	364	VAL	3.0
1	A	436	ILE	3.0
2	B	491	LEU	3.0
1	C	57	GLU	3.0
2	D	432	CYS	3.0
1	A	88	ILE	3.0
1	C	579	MET	3.0
1	C	464	PHE	2.9
1	C	84	PRO	2.9
2	B	510	VAL	2.9
1	C	197	GLU	2.9
2	B	369	TYR	2.9
1	A	266	LEU	2.9
2	B	356	ARG	2.9
1	C	263	PRO	2.9
2	D	342	PHE	2.9
2	D	433	VAL	2.9

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Mol	Chain	Res	Type	RSRZ
1	A	207	TYR	2.9
2	B	447	GLY	2.9
1	A	367	ASP	2.8
1	A	148	LEU	2.8
2	B	360	ASN	2.8
2	B	395	VAL	2.8
1	A	459	TRP	2.8
2	B	367	VAL	2.8
2	B	410	ILE	2.8
2	B	390	LEU	2.8
1	A	601	ASN	2.8
1	C	88	ILE	2.7
1	A	536	GLU	2.7
1	C	83	TYR	2.7
1	C	525	PHE	2.7
1	A	137	ASN	2.7
2	D	358	ILE	2.7
2	D	397	ALA	2.7
1	C	307	ILE	2.7
1	A	498	CYS	2.7
2	D	456	PHE	2.7
2	D	431	GLY	2.7
1	A	45	LEU	2.7
2	B	425	LEU	2.7
1	A	132	VAL	2.7
2	B	448	ASN	2.6
1	C	139	GLN	2.6
1	C	331	SER	2.6
1	A	78	THR	2.6
1	C	56	GLU	2.6
1	A	127	TYR	2.6
2	B	400	PHE	2.6
1	C	539	LEU	2.6
1	C	333	LEU	2.6
1	C	432	ASN	2.6
1	C	34	HIS	2.6
2	D	445	VAL	2.6
2	D	481	SER	2.6
1	A	534	LYS	2.6
1	C	163	TRP	2.6
1	A	217	TYR	2.6
2	B	485	PRO	2.6

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Mol	Chain	Res	Type	RSRZ
1	C	440	LEU	2.6
1	C	400	PHE	2.6
2	D	491	LEU	2.6
2	D	371	THR	2.6
2	B	386	LYS	2.5
1	A	96	GLN	2.5
1	C	287	GLN	2.5
2	D	387	LEU	2.5
2	D	402	VAL	2.5
1	C	189	GLU	2.5
1	C	490	PRO	2.5
1	C	373	HIS	2.5
2	B	414	GLN	2.5
2	D	351	TYR	2.5
2	D	527	LYS	2.5
2	D	455	LEU	2.5
1	C	449	THR	2.5
2	D	368	LEU	2.5
1	A	357	ARG	2.4
1	C	151	ILE	2.4
2	B	387	LEU	2.4
2	D	370	ASN	2.4
1	A	140	GLU	2.4
2	D	400	PHE	2.4
1	A	435	GLU	2.4
1	A	430	GLU	2.4
1	C	360	MET	2.4
1	C	101	GLN	2.4
1	A	400	PHE	2.4
2	B	417	LYS	2.4
2	B	406	GLU	2.4
1	C	96	GLN	2.4
1	C	453	THR	2.4
1	C	107	VAL	2.4
1	A	494	ASP	2.4
2	B	397	ALA	2.4
1	C	351	LEU	2.4
1	A	453	THR	2.4
1	C	119	ILE	2.4
1	C	594	TRP	2.3
1	A	521	TYR	2.3
1	C	183	TYR	2.3

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Mol	Chain	Res	Type	RSRZ
1	A	490	PRO	2.3
1	A	171	GLU	2.3
1	C	192	ARG	2.3
1	C	369	PHE	2.3
1	A	349	TRP	2.3
1	C	308	PHE	2.3
2	D	369	TYR	2.3
1	A	557	MET	2.2
2	D	425	LEU	2.2
1	A	107	VAL	2.2
1	C	180	TYR	2.2
2	B	497	GLN	2.2
2	D	390	LEU	2.2
1	C	537	GLY	2.2
2	B	457	ARG	2.2
1	C	148	LEU	2.2
2	B	516	LEU	2.2
1	A	136	ASP	2.2
2	B	361	CYS	2.2
1	C	349	TRP	2.2
2	B	458	LYS	2.2
2	B	490	PRO	2.2
1	C	266	LEU	2.2
1	A	163	TRP	2.2
1	A	27	THR	2.2
1	C	100	LEU	2.2
2	D	444	LYS	2.2
2	D	382	VAL	2.2
1	A	123	MET	2.2
1	A	100	LEU	2.1
1	A	180	TYR	2.1
1	A	568	LEU	2.1
1	A	21	ILE	2.1
1	A	404	VAL	2.1
1	A	449	THR	2.1
2	B	347	PHE	2.1
2	B	509	VAL	2.1
1	A	478	TRP	2.1
2	D	446	GLY	2.1
2	B	418	ILE	2.1
1	A	356	PHE	2.1
1	A	275	TRP	2.1

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Mol	Chain	Res	Type	RSRZ
1	A	468	ILE	2.1
1	A	423	LEU	2.1
1	C	243	TYR	2.1
1	C	204	ARG	2.1
1	C	357	ARG	2.1
2	B	391	CYS	2.1
2	D	364	ASP	2.1
1	C	23	GLU	2.0
1	A	52	THR	2.0
2	D	385	THR	2.0
1	A	141	CYS	2.0
1	A	262	LEU	2.0
1	A	572	ASN	2.0
1	A	167	SER	2.0
1	C	21	ILE	2.0
1	A	166	GLU	2.0
2	D	452	TYR	2.0
1	A	472	GLN	2.0
1	C	529	LEU	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)

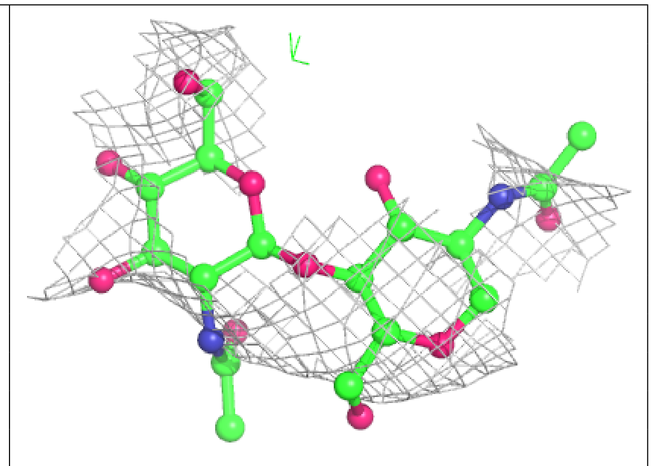
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95^{th} percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9'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

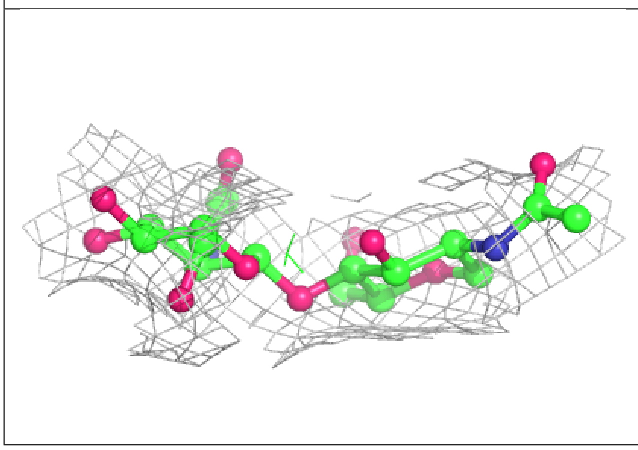
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\AA^2$)	Q<0.9
3	NAG	E	2	14/15	0.66	0.31	190,199,204,205	0
3	NAG	F	1	14/15	0.82	0.16	144,156,173,175	0
3	NAG	E	1	14/15	0.84	0.26	168,179,196,201	0
3	NAG	F	2	14/15	0.84	0.21	189,198,206,207	0

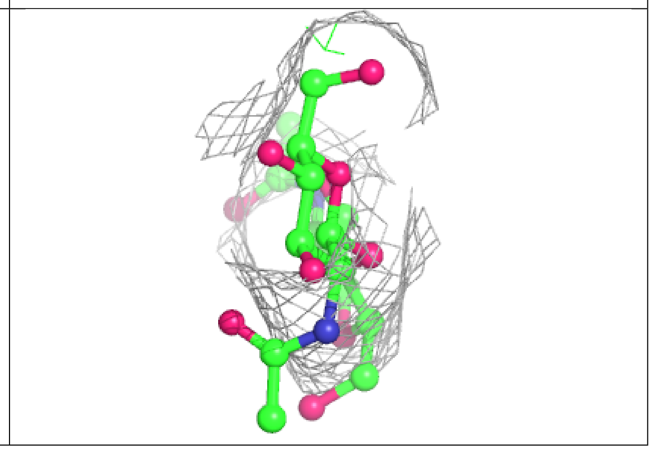
The following is a graphical depiction of the model fit to experimental electron density for oligosaccharide. Each fit is shown from different orientation to approximate a three-dimensional view.

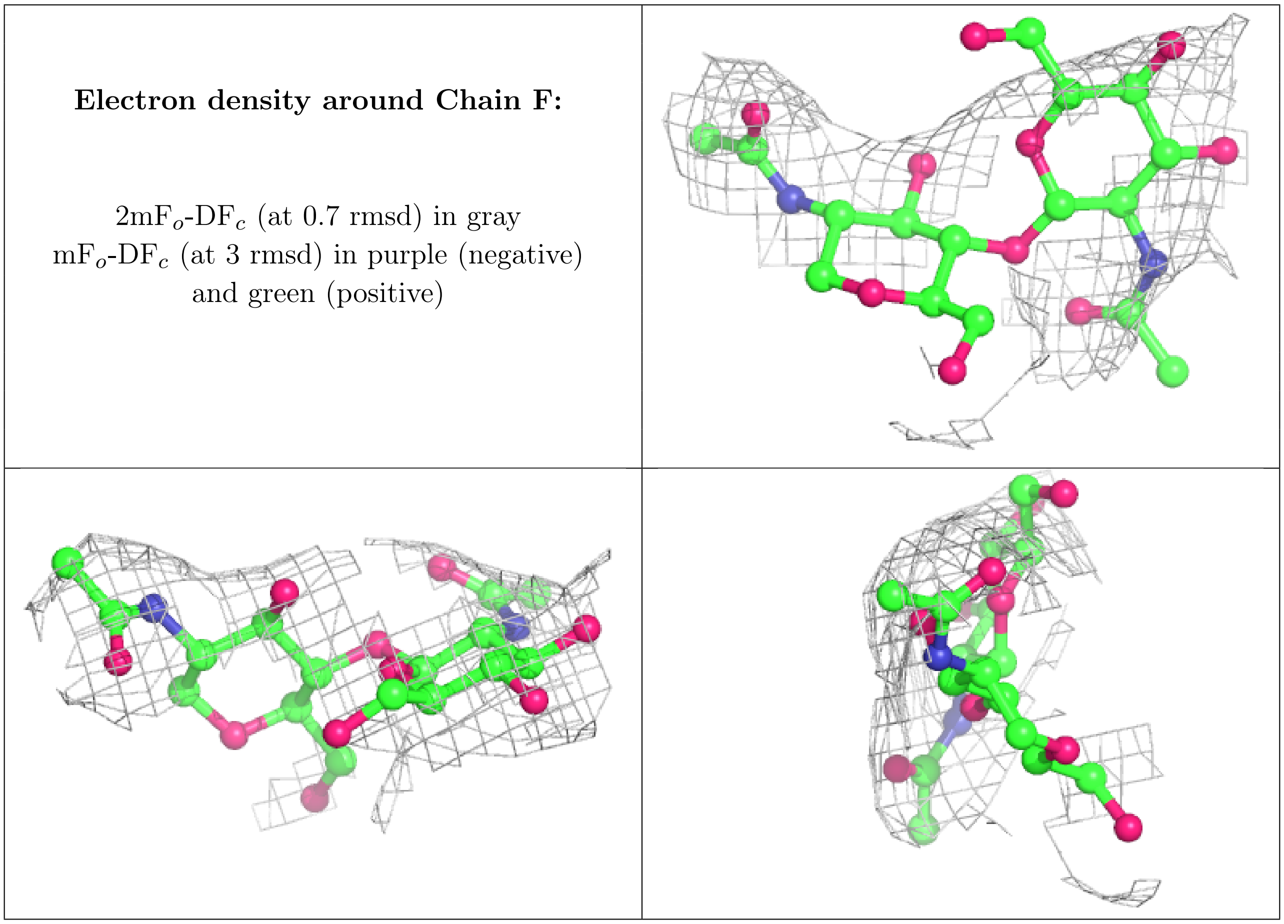
Electron density around Chain E:

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









6.4 Ligands ⓘ

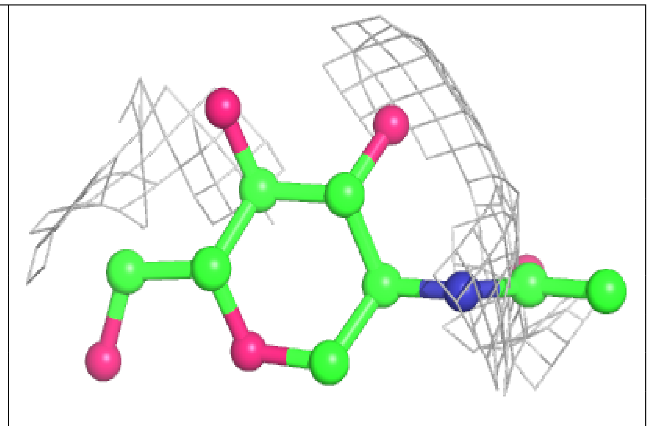
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95^{th} percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9'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

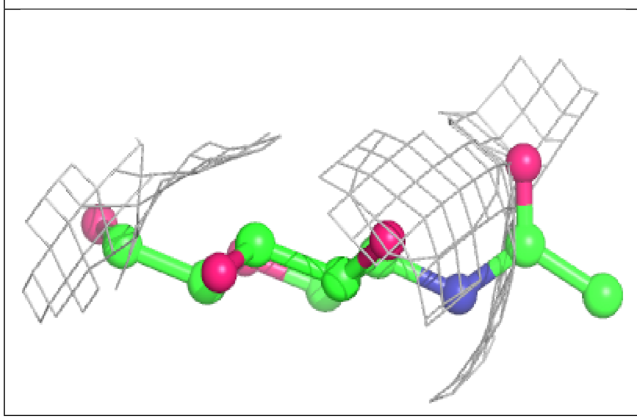
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($Å^2$)	Q<0.9
4	NAG	B	601	14/15	0.51	0.27	205,215,225,229	0
4	NAG	C	701	14/15	0.58	0.41	164,176,185,186	0
4	NAG	C	702	14/15	0.59	0.32	182,198,204,207	0
4	NAG	A	705	14/15	0.61	0.49	162,178,189,191	0
4	NAG	A	701	14/15	0.71	0.26	153,183,194,194	0
4	NAG	A	703	14/15	0.77	0.20	126,146,157,168	0
4	NAG	C	703	14/15	0.77	0.26	144,151,156,162	0
4	NAG	A	704	14/15	0.85	0.20	212,221,224,226	0
4	NAG	A	702	14/15	0.88	0.15	136,143,150,155	0
5	ZN	A	706	1/1	0.88	0.35	107,107,107,107	0
5	ZN	C	704	1/1	0.90	0.28	161,161,161,161	0

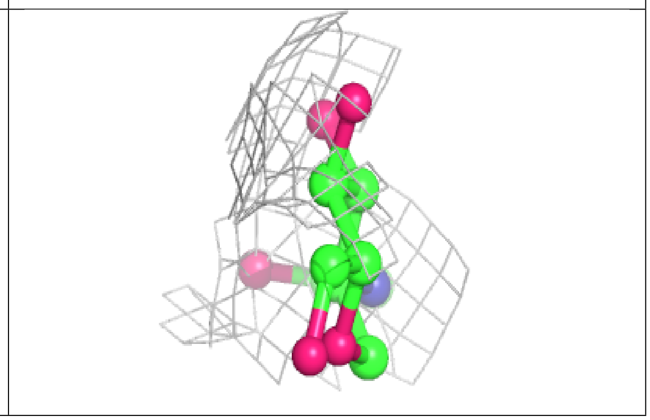
The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation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

Electron density around NAG B 601:

2mF$_o$-DF$_c$ (at 0.7 rmsd) in gray
mF$_o$-DF$_c$ (at 3 rmsd) in purple (negative)
and green (positive)

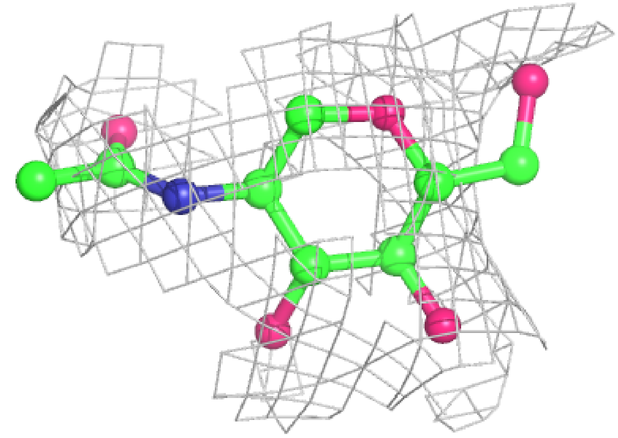


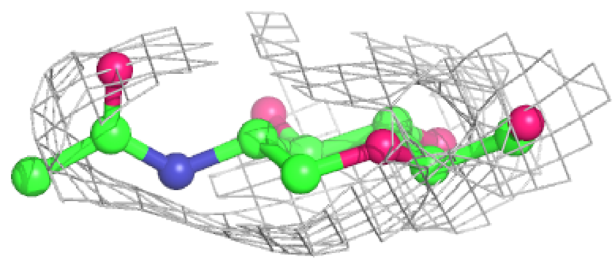


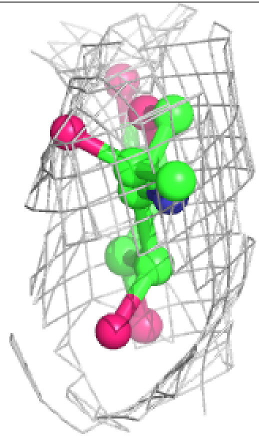


Electron density around NAG C 701:

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

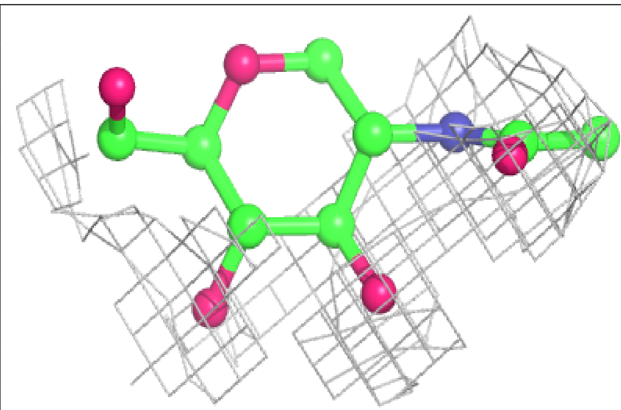


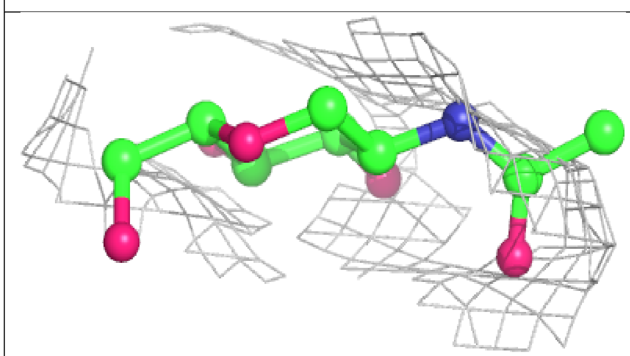


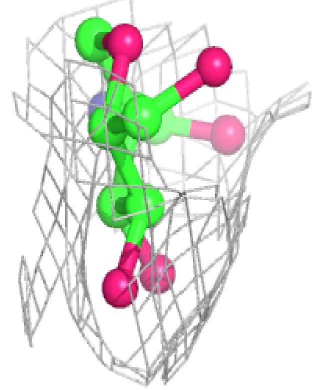


Electron density around NAG C 702:

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

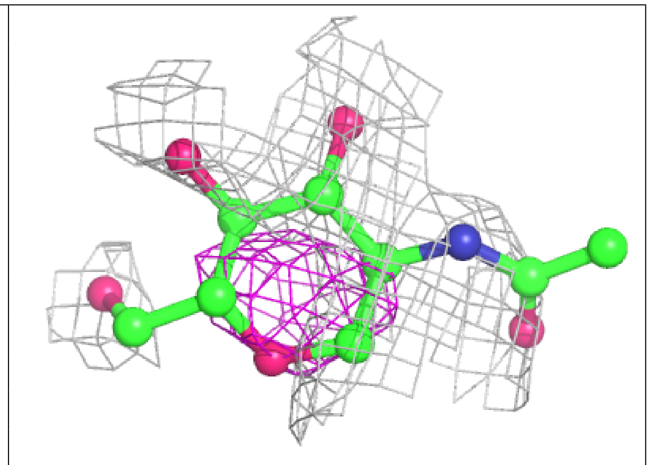


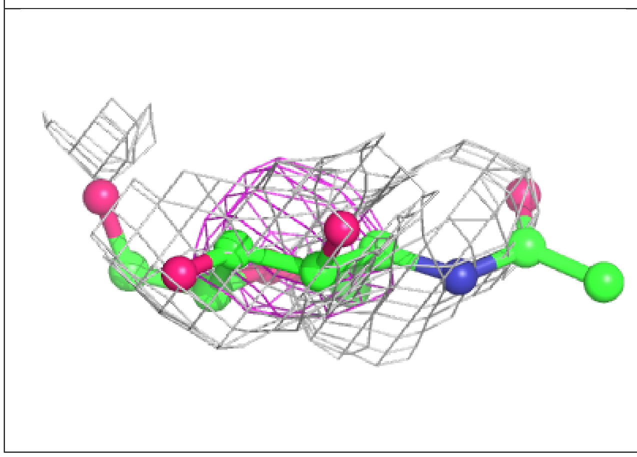


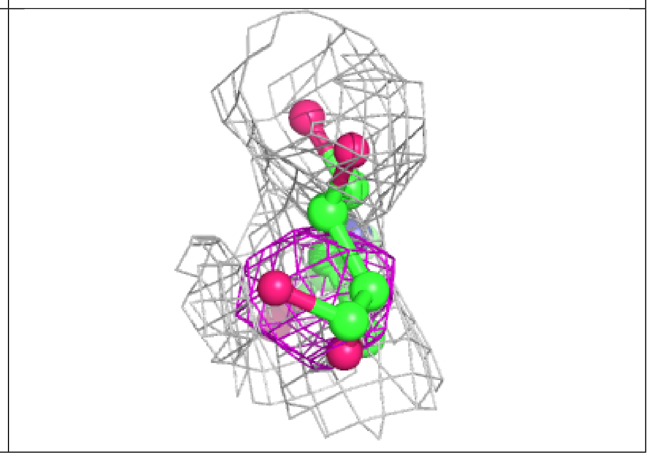


Electron density around NAG A 705:

2mF$_o$-DF$_c$ (at 0.7 rmsd) in gray
mF$_o$-DF$_c$ (at 3 rmsd) in purple (negative)
and green (positive)

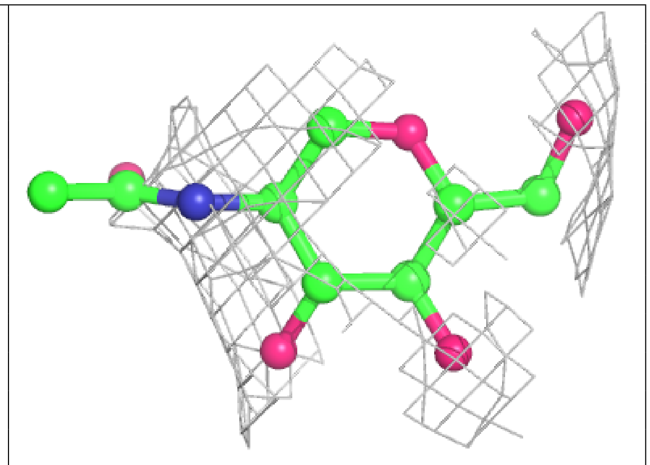


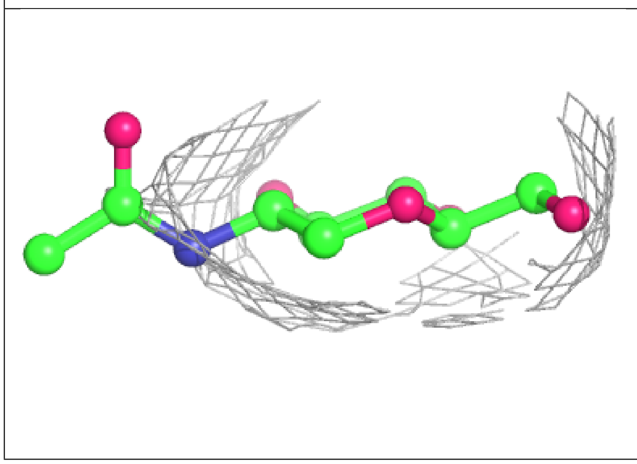


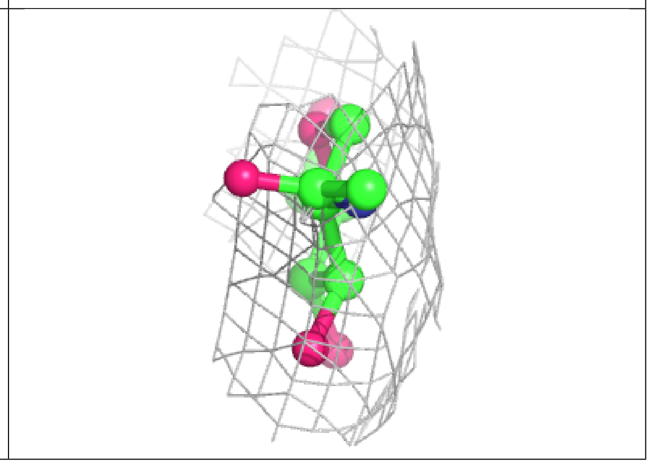


Electron density around NAG A 701:

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

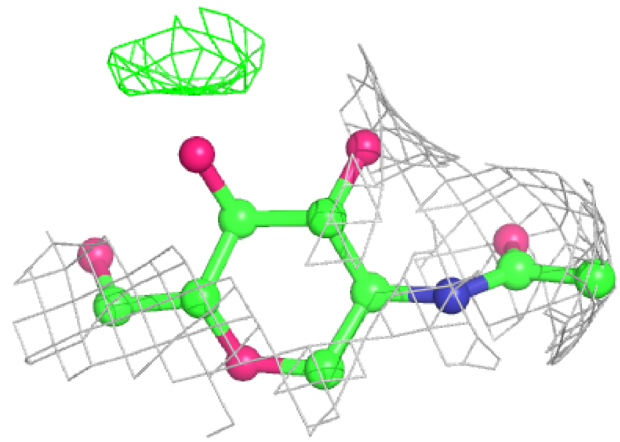


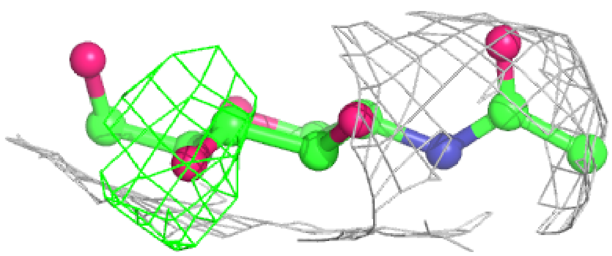


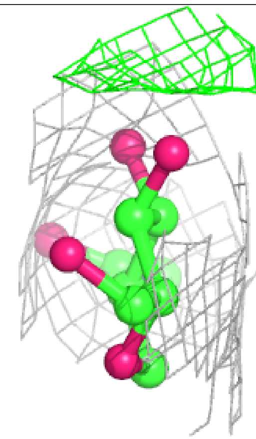


Electron density around NAG A 703:

2mF$_o$-DF$_c$ (at 0.7 rmsd) in gray
mF$_o$-DF$_c$ (at 3 rmsd) in purple (negative)
and green (positive)

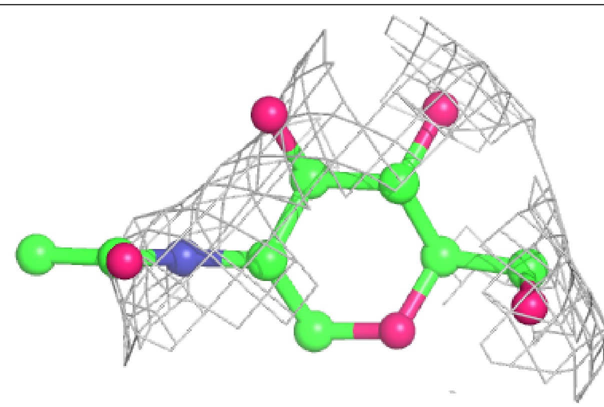


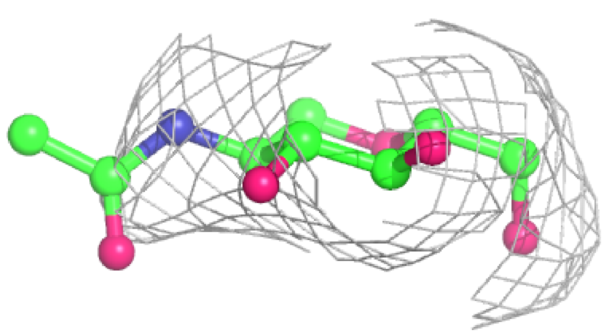


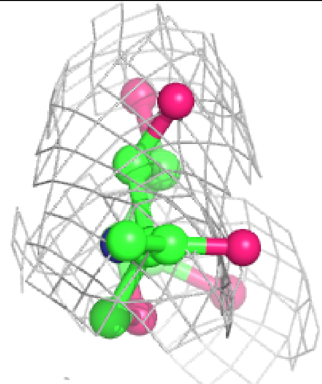


Electron density around NAG C 703:

2mF$_o$-DF$_c$ (at 0.7 rmsd) in gray
mF$_o$-DF$_c$ (at 3 rmsd) in purple (negative)
and green (positive)

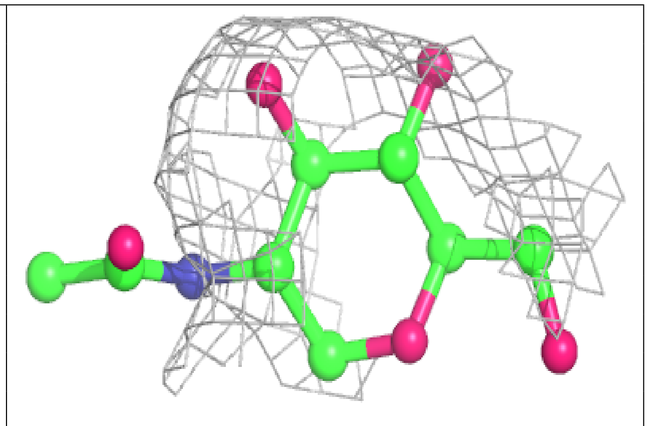


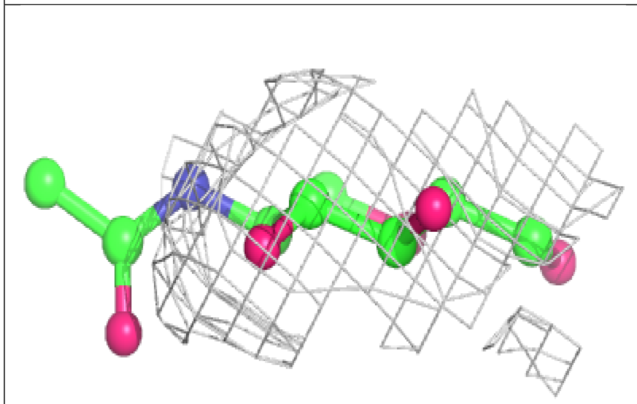


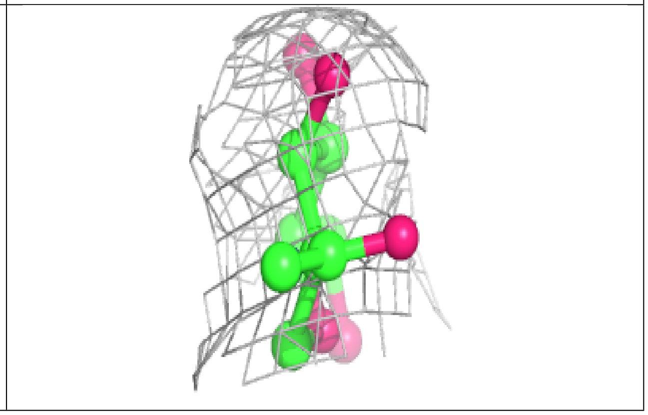


Electron density around NAG A 704:

2mF$_o$-DF$_c$ (at 0.7 rmsd) in gray
mF$_o$-DF$_c$ (at 3 rmsd) in purple (negative)
and green (positive)

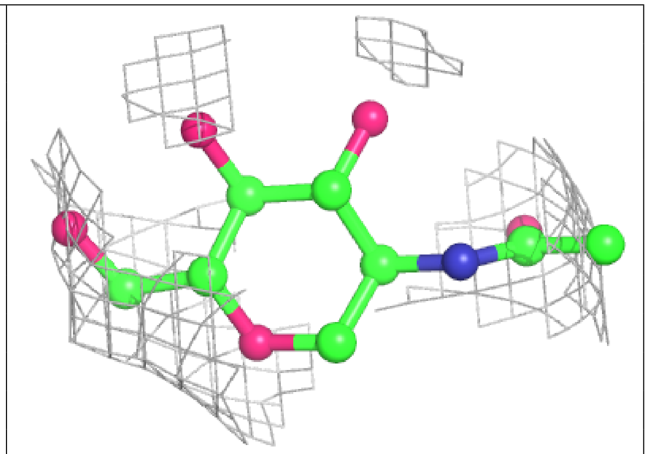


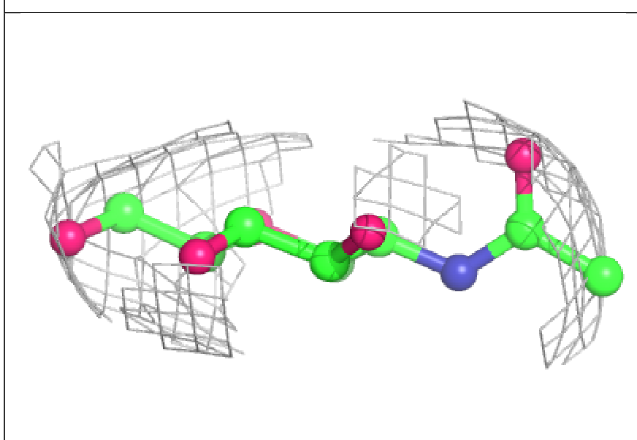


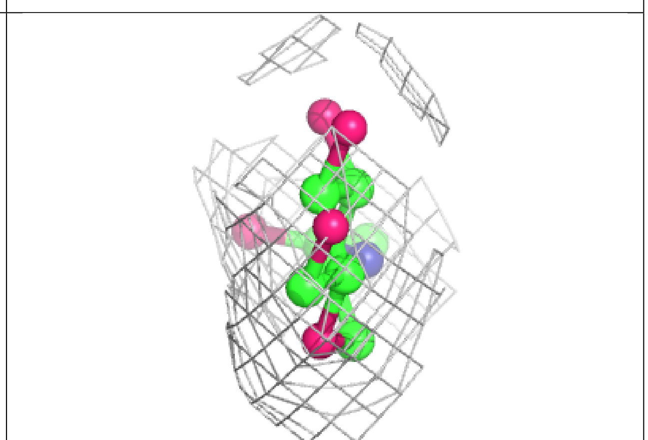


Electron density around NAG A 702:

2mF$_o$-DF$_c$ (at 0.7 rmsd) in gray
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.