Full wwPDB X-ray Structure Validation Report ⓘ

Jan 20, 2024 – 07:43 pm GMT

PDB ID	:	7NE1
Title	:	Structure of the complex between Netrin-1 and its receptor Neogenin
Authors	:	Robinson, R.A.; Griffiths, S.C.; van de Haar, L.L.; Malinauskas, T.; van Battum, E.Y.; Zelina, P.; Schwab, R.A.; Karia, D.; Malinauskaite, L.; Brignani, S.; van den Munkhof, M.; Dudukcu, O.; De Ruiter, A.A.; Van den Heuvel, D.M.A.; Bishop, B.; Elegheert, J.; Aricescu, A.R.; Pasterkamp, R.J.; Siebold, C.
Deposited on	:	2021-02-02
Resolution	:	3.15 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:

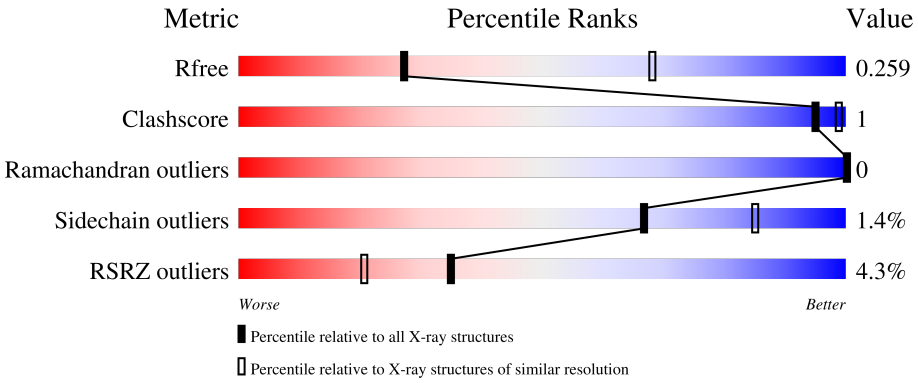
MolProbity	:	4.02b-467
Mogul	:	1.8.4, CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.36
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)

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 3.15 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	1665 (3.20-3.12)
Clashscore	141614	1804 (3.20-3.12)
Ramachandran outliers	138981	1770 (3.20-3.12)
Sidechain outliers	138945	1769 (3.20-3.12)
RSRZ outliers	127900	1616 (3.20-3.12)

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	444	88% 5% 7%
2	B	354	9% 84% . 14%
3	G	2	50% 50%

2 Entry composition (i)

There are 6 unique types of molecules in this entry. The entry contains 5778 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 Netrin-1.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	414	Total	C	N	O	S	0	0	0
			3250	1984	620	606	40			

There are 14 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	22	GLU	-	expression tag	UNP O95631
A	23	THR	-	expression tag	UNP O95631
A	454	GLY	-	expression tag	UNP O95631
A	455	THR	-	expression tag	UNP O95631
A	456	LYS	-	expression tag	UNP O95631
A	457	THR	-	expression tag	UNP O95631
A	458	GLU	-	expression tag	UNP O95631
A	459	THR	-	expression tag	UNP O95631
A	460	SER	-	expression tag	UNP O95631
A	461	GLN	-	expression tag	UNP O95631
A	462	VAL	-	expression tag	UNP O95631
A	463	ALA	-	expression tag	UNP O95631
A	464	PRO	-	expression tag	UNP O95631
A	465	ALA	-	expression tag	UNP O95631

- Molecule 2 is a protein called Neogenin.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	305	Total	C	N	O	S	0	0	0
			2404	1535	414	449	6			

There are 12 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	763	GLU	-	expression tag	UNP Q7TQG5
B	764	THR	-	expression tag	UNP Q7TQG5

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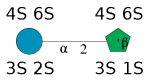
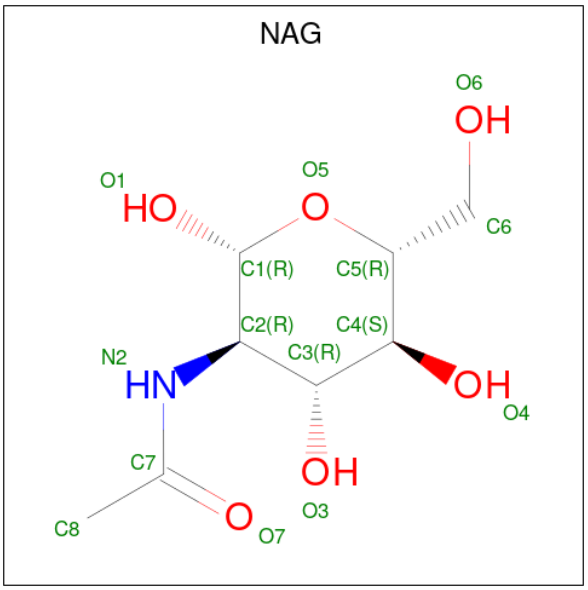
Chain	Residue	Modelled	Actual	Comment	Reference
B	765	GLY	-	expression tag	UNP Q7TQG5
B	1108	GLY	-	expression tag	UNP Q7TQG5
B	1109	THR	-	expression tag	UNP Q7TQG5
B	1110	LYS	-	expression tag	UNP Q7TQG5
B	1111	HIS	-	expression tag	UNP Q7TQG5
B	1112	HIS	-	expression tag	UNP Q7TQG5
B	1113	HIS	-	expression tag	UNP Q7TQG5
B	1114	HIS	-	expression tag	UNP Q7TQG5
B	1115	HIS	-	expression tag	UNP Q7TQG5
B	1116	HIS	-	expression tag	UNP Q7TQG5

- Molecule 3 is an oligosaccharide called 1,3,4,6-tetra-O-sulfo-beta-D-fructofuranose-(2-1)-2,3,4,6-tetra-O-sulfonato-alpha-D-glucopyranose.



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
			Total	C	O	S			
3	G	2	55	12	35	8	0	0	0

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

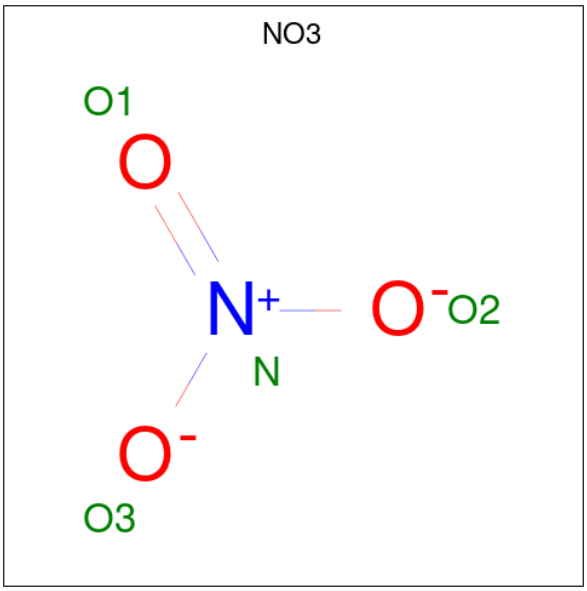


Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	1	Total C N O 14 8 1 5	0	0
4	A	1	Total C N O 14 8 1 5	0	0
4	A	1	Total C N O 14 8 1 5	0	0
4	B	1	Total C N O 14 8 1 5	0	0

- Molecule 5 is CALCIUM ION (three-letter code: CA) (formula: Ca).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	A	1	Total Ca 1 1	0	0

- Molecule 6 is NITRATE ION (three-letter code: NO3) (formula: NO_3).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
6	A	1	Total N O 4 1 3	0	0
6	A	1	Total N O 4 1 3	0	0
6	A	1	Total N O 4 1 3	0	0

3 Residue-property plots (i)

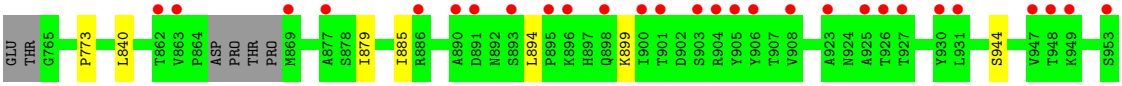
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density.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

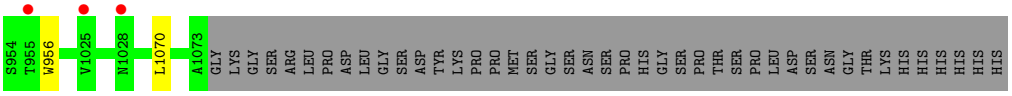
• Molecule 1: Netrin-1

Chain A:

• Molecule 2: Neogenin

Chain B:





• Molecule 3: 1,3,4,6-tetra-O-sulfo-beta-D-fructofuranose-(2-1)-2,3,4,6-tetra-O-sulfonato-alpha-D-glucopyranose

Chain G:

4 Data and refinement statistics (i)

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α, β, γ	150.95Å 49.60Å 157.25Å 90.00° 99.38° 90.00°	Depositor
Resolution (Å)	74.47 – 3.15 77.57 – 3.15	Depositor EDS
% Data completeness (in resolution range)	97.2 (74.47-3.15) 97.2 (77.57-3.15)	Depositor EDS
R_{merge}	0.12	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.38 (at 3.13Å)	Xtriage
Refinement program	BUSTER 2.10.3	Depositor
R, R_{free}	0.212 , 0.239 0.232 , 0.259	Depositor DCC
R_{free} test set	1015 reflections (5.12%)	wwPDB-VP
Wilson B-factor (Å^2)	85.4	Xtriage
Anisotropy	0.245	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.28 , 76.1	EDS
L-test for twinning[2]	$< \|L\| > = 0.46$, $< L^2 > = 0.29$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.92	EDS
Total number of atoms	5778	wwPDB-VP
Average B, all atoms (Å^2)	114.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.17% 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: CA, YYJ, NO3, NAG, GU4

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	0.35	0/3332	0.57	0/4509
2	B	0.38	0/2470	0.53	0/3378
All	All	0.36	0/5802	0.55	0/7887

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	3250	0	3048	8	0
2	B	2404	0	2401	4	0
3	G	55	0	6	1	0
4	A	42	0	39	0	0
4	B	14	0	13	0	0
5	A	1	0	0	0	0
6	A	12	0	0	0	0
All	All	5778	0	5507	13	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 1.

All (13) 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)
3:G:2:YYJ:C2	3:G:2:YYJ:O5	1.65	1.28
1:A:119:CYS:HB3	1:A:277:SER:HA	1.60	0.84
1:A:119:CYS:HB3	1:A:277:SER:CA	2.34	0.54
1:A:157:GLU:HB3	1:A:253:ARG:HB3	1.90	0.53
2:B:773:PRO:HG2	2:B:840:LEU:HD23	1.95	0.48
2:B:944:SER:HB3	2:B:956:TRP:HB3	1.96	0.48
1:A:353:ASN:HB3	1:A:356:LEU:HD12	1.95	0.48
2:B:879:ILE:HG22	2:B:885:ILE:HG12	1.96	0.48
2:B:894:LEU:HD22	2:B:899:LYS:HB3	1.95	0.48
1:A:322:HIS:HA	1:A:340:ALA:HA	1.97	0.46
1:A:254:LEU:HG	1:A:274:TYR:CZ	2.52	0.44
1:A:367:VAL:HG22	1:A:378:ARG:HG3	2.02	0.42
1:A:199:GLN:HG2	1:A:241:TRP:HB2	2.02	0.41

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	412/444 (93%)	390 (95%)	22 (5%)	0	100	100
2	B	301/354 (85%)	292 (97%)	9 (3%)	0	100	100
All	All	713/798 (89%)	682 (96%)	31 (4%)	0	100	100

There are no Ramachandran outliers to report.

5.3.2 Protein sidechains (i)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all 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	358/378 (95%)	350 (98%)	8 (2%)	52 77
2	B	270/313 (86%)	269 (100%)	1 (0%)	91 96
All	All	628/691 (91%)	619 (99%)	9 (1%)	67 85

All (9) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	131	ASN
1	A	138	LEU
1	A	174	PHE
1	A	179	THR
1	A	209	ASP
1	A	246	ASP
1	A	285	CYS
1	A	294	CYS
2	B	1070	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (2) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	115	HIS
2	B	794	ASN

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

2 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	GU4	G	1	3	27,27,28	2.20	6 (22%)	29,43,45	1.91	9 (31%)
3	YYJ	G	2	3	27,28,28	3.93	11 (40%)	28,46,46	1.30	5 (17%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	GU4	G	1	3	-	3/21/38/41	0/1/1/1
3	YYJ	G	2	3	-	3/23/42/42	0/1/1/1

All (17) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	G	2	YYJ	O5-C2	14.54	1.65	1.43
3	G	2	YYJ	C2-C3	-7.05	1.35	1.53
3	G	1	GU4	O5-C1	6.15	1.53	1.43
3	G	2	YYJ	O4-C4	-5.92	1.34	1.46
3	G	2	YYJ	O5-C5	-5.75	1.31	1.43
3	G	1	GU4	O6-S6	4.25	1.68	1.56
3	G	1	GU4	O3-S3	4.02	1.69	1.57
3	G	2	YYJ	O1-S1	3.95	1.67	1.56
3	G	1	GU4	O4-S4	3.78	1.68	1.57
3	G	2	YYJ	O6-S6	3.54	1.66	1.56
3	G	1	GU4	O5-C5	3.41	1.50	1.43
3	G	2	YYJ	O2-C2	3.40	1.46	1.40
3	G	2	YYJ	O1-C1	-3.09	1.40	1.45
3	G	2	YYJ	O3-S3	2.92	1.65	1.57
3	G	2	YYJ	O4-S4	2.74	1.65	1.57
3	G	1	GU4	O2-S2	2.73	1.65	1.57
3	G	2	YYJ	C4-C5	2.35	1.59	1.52

All (14) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	G	1	GU4	C1-O5-C5	4.37	118.11	112.19
3	G	1	GU4	O5-C5-C4	4.25	118.04	110.07
3	G	1	GU4	O2-C2-C3	3.91	110.98	106.65
3	G	1	GU4	O26-S4-O25	-2.95	100.39	112.22
3	G	1	GU4	O12-S2-O11	-2.89	100.61	112.22
3	G	2	YYJ	O3S3-S3-O2S3	-2.79	101.01	112.22
3	G	1	GU4	C3-C4-C5	2.36	115.49	110.55
3	G	2	YYJ	O1S4-S4-O2S4	-2.26	100.64	108.49
3	G	1	GU4	O21-S6-O22	-2.18	100.91	108.49
3	G	2	YYJ	O1S6-S6-O2S6	-2.17	100.95	108.49
3	G	2	YYJ	O5-C5-C4	2.15	107.09	103.49
3	G	1	GU4	O29-S3-O27	-2.15	101.01	108.49
3	G	1	GU4	C4-C3-C2	2.11	114.96	110.55
3	G	2	YYJ	O6-C6-C5	2.06	111.47	107.62

There are no chirality outliers.

All (6) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	G	1	GU4	C4-C5-C6-O6
3	G	2	YYJ	O1-C1-C2-O2
3	G	2	YYJ	O1-C1-C2-O5
3	G	2	YYJ	O1-C1-C2-C3
3	G	1	GU4	C2-O2-S2-O10
3	G	1	GU4	O5-C5-C6-O6

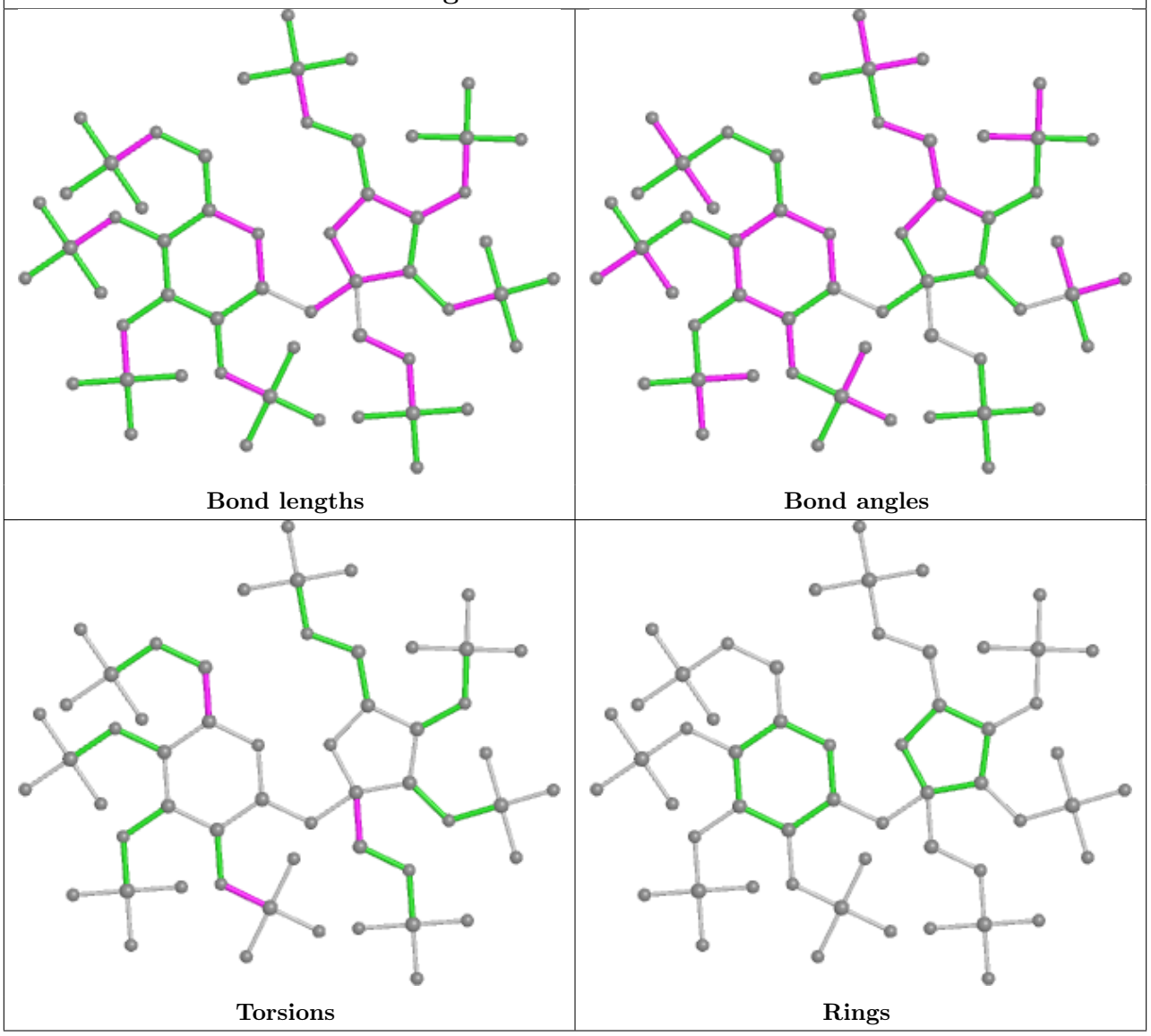
There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	G	2	YYJ	1	0

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

Oligosaccharide Chain G



5.6 Ligand geometry (i)

Of 8 ligands modelled in this entry, 1 is monoatomic - leaving 7 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	A	502	1	14,14,15	0.32	0	17,19,21	0.81	1 (5%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#\|Z\|>2$	Counts	RMSZ	$\#\|Z\|>2$
6	NO3	A	505	-	1,3,3	0.42	0	0,3,3	-	-
4	NAG	A	503	1	14,14,15	0.31	0	17,19,21	0.77	1 (5%)
4	NAG	B	1201	2	14,14,15	0.31	0	17,19,21	0.50	0
6	NO3	A	507	-	1,3,3	0.44	0	0,3,3	-	-
6	NO3	A	506	-	1,3,3	0.65	0	0,3,3	-	-
4	NAG	A	501	1	14,14,15	0.34	0	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
4	NAG	A	502	1	-	1/6/23/26	0/1/1/1
4	NAG	B	1201	2	-	1/6/23/26	0/1/1/1
4	NAG	A	501	1	-	1/6/23/26	0/1/1/1
4	NAG	A	503	1	-	0/6/23/26	0/1/1/1

There are no bond length outliers.

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	A	503	NAG	C1-O5-C5	2.66	115.80	112.19
4	A	502	NAG	C2-N2-C7	2.09	125.88	122.90
4	A	501	NAG	C1-C2-N2	2.03	113.95	110.49

There are no chirality outliers.

All (3) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	B	1201	NAG	O5-C5-C6-O6
4	A	502	NAG	C3-C2-N2-C7
4	A	501	NAG	C3-C2-N2-C7

There are no ring outliers.

No monomer is involved in short contacts.

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	414/444 (93%)	0.00	0 100 100	58, 84, 152, 183	0
2	B	305/354 (86%)	0.41	31 (10%) 6 3	66, 139, 195, 215	0
All	All	719/798 (90%)	0.17	31 (4%) 35 21	58, 98, 184, 215	0

All (31) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
2	B	931	LEU	6.8
2	B	901	THR	5.2
2	B	900	ILE	4.4
2	B	903	SER	4.2
2	B	862	THR	4.0
2	B	895	PRO	3.9
2	B	949	LYS	3.7
2	B	953	SER	3.7
2	B	898	GLN	3.3
2	B	863	VAL	3.1
2	B	1025	VAL	3.1
2	B	904	ARG	3.1
2	B	890	ALA	3.1
2	B	877	ALA	3.0
2	B	925	ALA	2.9
2	B	926	THR	2.9
2	B	1028	ASN	2.9
2	B	893	SER	2.8
2	B	906	TYR	2.7
2	B	955	THR	2.7
2	B	948	THR	2.6
2	B	905	TYR	2.6
2	B	930	TYR	2.4
2	B	896	LYS	2.3

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Mol	Chain	Res	Type	RSRZ
2	B	891	ASP	2.3
2	B	886	ARG	2.3
2	B	908	VAL	2.2
2	B	927	THR	2.1
2	B	947	VAL	2.1
2	B	869	MET	2.0
2	B	923	ALA	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)

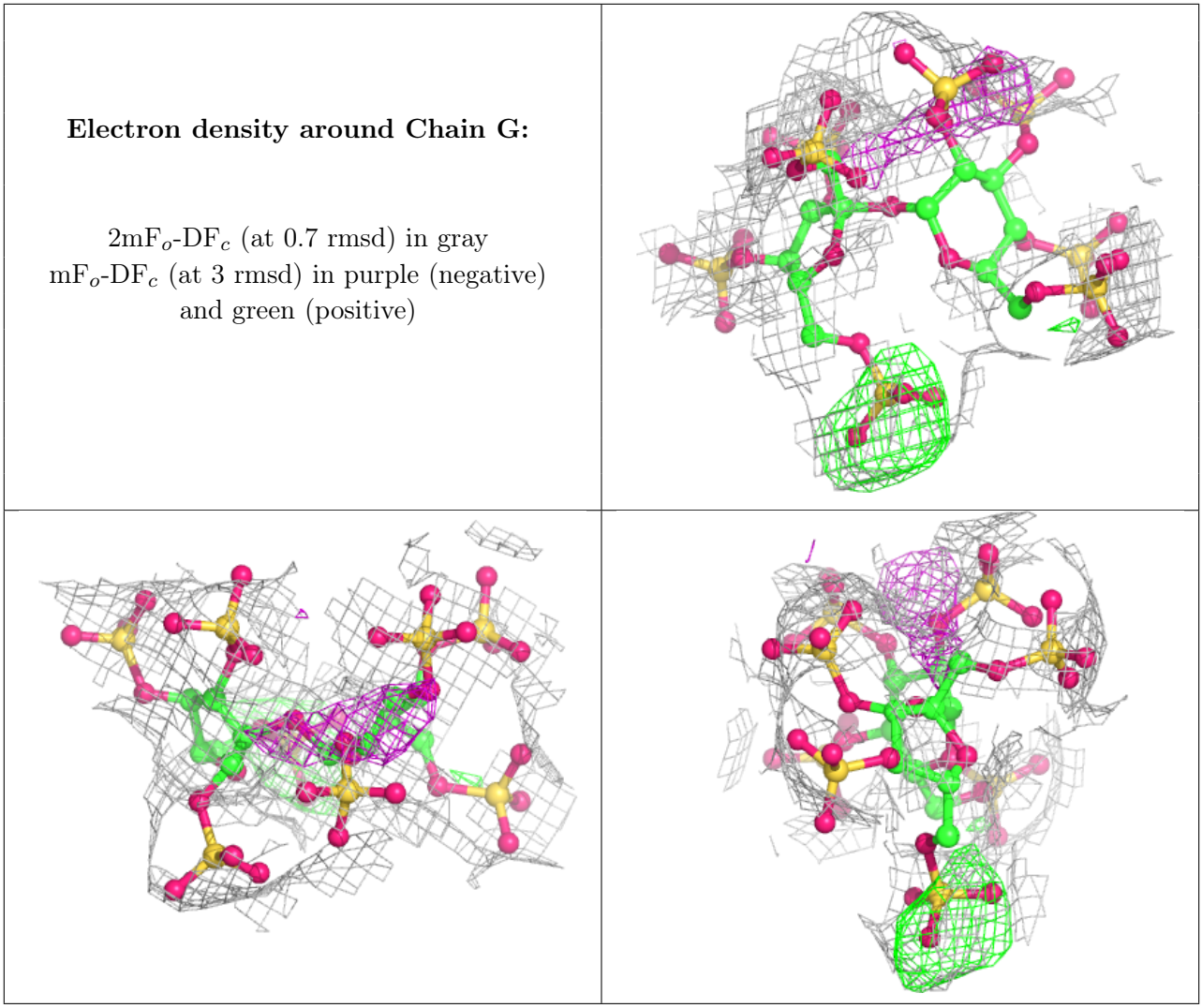
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95^{th} percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' 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
3	GU4	G	1	27/28	0.63	0.19	229,233,234,234	0
3	YYJ	G	2	28/28	0.64	0.20	225,228,229,231	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 G:

$2mF_o$-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	A	502	14/15	0.76	0.34	123,124,128,129	0
4	NAG	B	1201	14/15	0.81	0.33	190,192,192,192	0
4	NAG	A	501	14/15	0.83	0.21	110,111,113,113	0
6	NO3	A	507	4/4	0.90	0.12	116,116,116,116	0
4	NAG	A	503	14/15	0.94	0.23	79,80,81,82	0
6	NO3	A	505	4/4	0.97	0.29	49,51,51,53	0
5	CA	A	504	1/1	0.98	0.29	70,70,70,70	0
6	NO3	A	506	4/4	0.99	0.29	12,12,13,15	0

6.5 Other polymers (i)

There are no such residues in this entry.