Full wwPDB X-ray Structure Validation Report (i)

Aug 8, 2020 – 10:41 AM BST

PDB ID	:	4A2F
Title	:	Coriolopsis gallica laccase collected at 12.65 keV
Authors	:	De la Mora, E.; Rudino-Pinera, E.
Deposited on	:	2011-09-26
Resolution	:	1.90 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
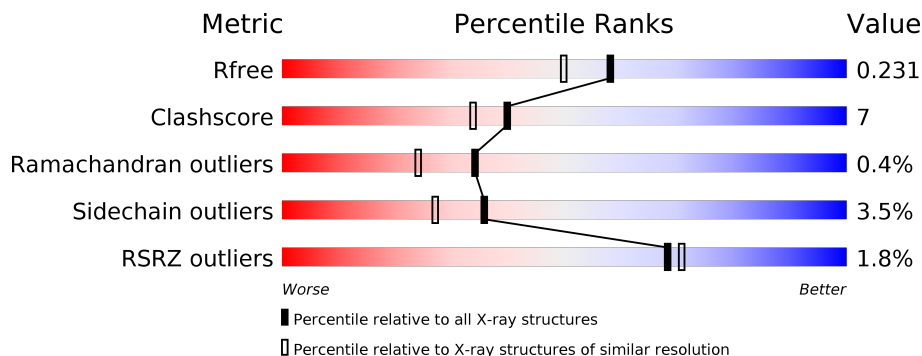with specific help available everywhere you see the (i) symbol.

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 1.90 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	Percentile Ranks	Value
Rfree		0.231
Clashscore		7
Ramachandran outliers		0.4%
Sidechain outliers		3.5%
RSRZ outliers		1.8%

Worse   Better

■ Percentile relative to all X-ray structures

▯ Percentile relative to X-ray structures of similar resolution

Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	6207 (1.90-1.90)
Clashscore	141614	6847 (1.90-1.90)
Ramachandran outliers	138981	6760 (1.90-1.90)
Sidechain outliers	138945	6760 (1.90-1.90)
RSRZ outliers	127900	6082 (1.90-1.90)

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 on 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	497	2% 83% 15% •
2	B	2	100%
2	C	2	100%

2 Entry composition (i)

There are 4 unique types of molecules in this entry. The entry contains 4273 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 LACCASE.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	496	Total 3799	C 2411	N 640	O 739	S 9	0	10	0

There are 27 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	39	ASP	TYR	conflict	UNP Q1W6B1
A	151	ASN	GLN	conflict	UNP Q1W6B1
A	155	ALA	LYS	conflict	UNP Q1W6B1
A	178	LYS	ARG	conflict	UNP Q1W6B1
A	181	ALA	PRO	conflict	UNP Q1W6B1
A	182	PRO	ALA	conflict	UNP Q1W6B1
A	183	VAL	ILE	conflict	UNP Q1W6B1
A	198	ALA	ILE	conflict	UNP Q1W6B1
A	199	ALA	ASN	conflict	UNP Q1W6B1
A	202	ALA	ASN	conflict	UNP Q1W6B1
A	229	TYR	HIS	conflict	UNP Q1W6B1
A	256	LEU	ILE	conflict	UNP Q1W6B1
A	287	THR	ASN	conflict	UNP Q1W6B1
A	288	GLN	THR	conflict	UNP Q1W6B1
A	291	ALA	ASP	conflict	UNP Q1W6B1
A	294	THR	VAL	conflict	UNP Q1W6B1
A	314	THR	ALA	conflict	UNP Q1W6B1
A	329	LYS	GLU	conflict	UNP Q1W6B1
A	356	ASN	ARG	conflict	UNP Q1W6B1
A	358	THR	SER	conflict	UNP Q1W6B1
A	383	ALA	GLN	conflict	UNP Q1W6B1
A	388	ALA	THR	conflict	UNP Q1W6B1
A	408	ALA	THR	conflict	UNP Q1W6B1
A	423	VAL	ALA	conflict	UNP Q1W6B1
A	438	ALA	GLU	conflict	UNP Q1W6B1
A	450	ALA	SER	conflict	UNP Q1W6B1
A	518	UNK	-	expression tag	UNP Q1W6B1

- Molecule 2 is an oligosaccharide called 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose.
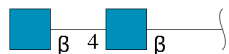
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
2	B	2	Total 28	C 16	N 2	O 10	0	0	0
2	C	2	Total 28	C 16	N 2	O 10	0	0	0

- Molecule 3 is COPPER (II) ION (three-letter code: CU) (formula: Cu).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	3	Total 3	Cu 3	0	0

- Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	415	Total 415	O 415	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.
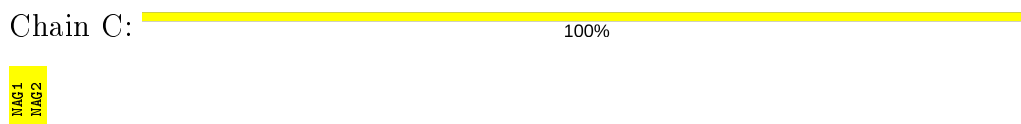
• Molecule 1: LACCASE
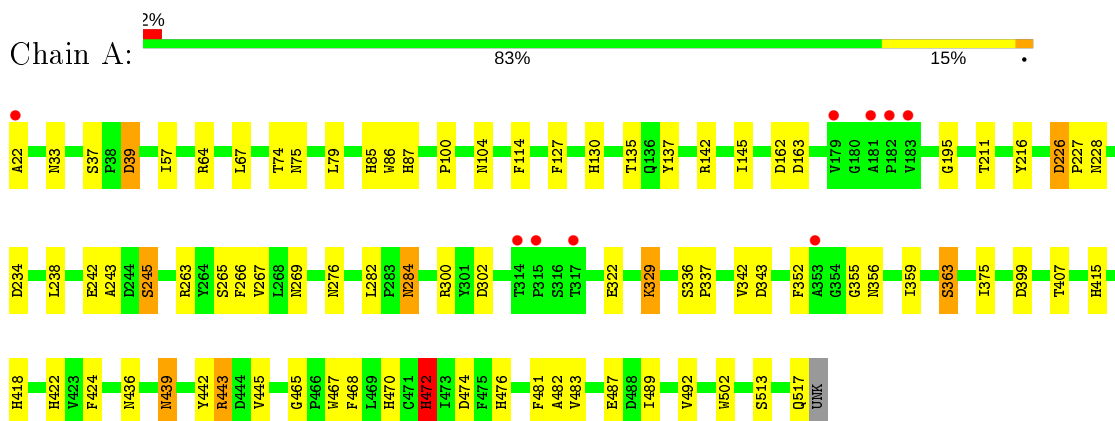
• Molecule 2: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose
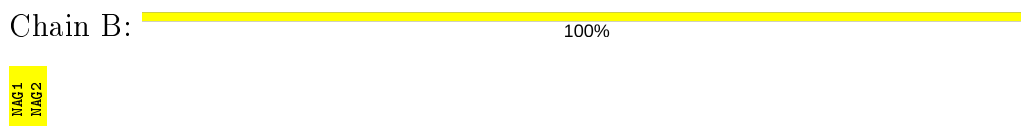
• Molecule 2: 2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	56.05Å　　85.50Å　　151.60Å 90.00°　　90.00°　　90.00°	Depositor
Resolution (Å)	75.80　–　1.90	Depositor
	25.40　–　1.90	EDS
% Data completeness	85.2 (75.80-1.90)	Depositor
(in resolution range)	85.2 (25.40-1.90)	EDS
R_{merge}	0.12	Depositor
R_{sym}	(Not available)	Depositor
$<I/\sigma(I)>$ [1]	3.42 (at 1.91Å)	Xtriage
Refinement program	REFMAC 5.5.0110	Depositor
R, R_{free}	0.186　,　0.224	Depositor
	0.191　,　0.231	DCC
R_{free} test set	2528 reflections (5.09%)	wwPDB-VP
Wilson B-factor (Å^2)	20.7	Xtriage
Anisotropy	0.138	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.41 , 56.6	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	0.95	EDS
Total number of atoms	4273	wwPDB-VP
Average B, all atoms (Å^2)	24.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 8.34% of the height of the origin peak. No significant pseudotranslation is detected.*

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[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, CU

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	1.20	6/3924 (0.2%)	1.04	9/5398 (0.2%)

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

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

All (6) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	517	GLN	C-O	15.34	1.52	1.23
1	A	127	PHE	CE1-CZ	7.37	1.51	1.37
1	A	245	SER	CB-OG	5.83	1.49	1.42
1	A	502	TRP	CE3-CZ3	5.71	1.48	1.38
1	A	114	PHE	CE2-CZ	5.34	1.47	1.37
1	A	467	TRP	CE3-CZ3	5.22	1.47	1.38

All (9) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	443	ARG	NE-CZ-NH2	-7.82	116.39	120.30
1	A	234	ASP	CB-CG-OD2	-6.88	112.11	118.30
1	A	343[A]	ASP	CB-CG-OD2	6.74	124.37	118.30
1	A	343[B]	ASP	CB-CG-OD2	6.74	124.37	118.30
1	A	142	ARG	NE-CZ-NH2	-6.21	117.20	120.30
1	A	443	ARG	NE-CZ-NH1	5.70	123.15	120.30
1	A	64	ARG	NE-CZ-NH2	-5.53	117.54	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	64	ARG	NE-CZ-NH1	5.27	122.94	120.30
1	A	39	ASP	CB-CG-OD1	5.08	122.87	118.30

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	472	HIS	Peptide

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	3799	0	3601	55	0
2	B	28	0	25	0	0
2	C	28	0	25	0	0
3	A	3	0	0	0	0
4	A	415	0	0	3	0
All	All	4273	0	3651	55	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 7.

All (55) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:418[B]:HIS:CE1	1:A:472:HIS:CD2	2.61	0.88
1:A:329:LYS:HE2	1:A:329:LYS:H	1.39	0.87
1:A:276:ASN:HD21	1:A:300:ARG:HE	1.31	0.78
1:A:284:ASN:HD22	1:A:284:ASN:H	1.34	0.75
1:A:22:ALA:HB2	1:A:163:ASP:OD2	1.85	0.75
1:A:418[B]:HIS:NE2	4:A:2147:HOH:O	2.20	0.75
1:A:135:THR:HA	1:A:474:ASP:OD2	1.91	0.71
1:A:418[B]:HIS:ND1	1:A:472:HIS:CD2	2.61	0.68
1:A:418[B]:HIS:HB3	1:A:445:VAL:HG22	1.75	0.68

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:33:ASN:ND2	1:A:74:THR:H	1.92	0.67
1:A:418[B]:HIS:ND1	1:A:472:HIS:HD2	1.93	0.67
1:A:418[B]:HIS:CE1	1:A:470:HIS:NE2	2.66	0.64
1:A:33:ASN:HD22	1:A:74:THR:H	1.48	0.62
1:A:276:ASN:ND2	1:A:300:ARG:HE	1.97	0.61
1:A:418[B]:HIS:CE1	1:A:470:HIS:CE1	2.89	0.60
1:A:322:GLU:OE2	1:A:443:ARG:NH1	2.35	0.58
1:A:227:PRO:HA	1:A:284:ASN:HD21	1.70	0.57
1:A:342:VAL:HB	1:A:399[B]:ASP:O	2.04	0.57
1:A:356:ASN:HB3	1:A:363:SER:OG	2.08	0.54
1:A:242:GLU:HB3	1:A:265:SER:HB2	1.90	0.53
1:A:39:ASP:HA	1:A:195:GLY:O	2.09	0.52
1:A:422:HIS:HE1	1:A:487:GLU:OE1	1.92	0.52
1:A:359:ILE:HD12	1:A:483:VAL:HG13	1.92	0.50
1:A:424:PHE:O	1:A:442:TYR:HA	2.11	0.50
1:A:329:LYS:HE2	1:A:329:LYS:N	2.18	0.50
1:A:418[B]:HIS:CB	1:A:445:VAL:HG22	2.42	0.49
1:A:238:LEU:HD22	1:A:266:PHE:CE2	2.48	0.48
1:A:422:HIS:CE1	1:A:487:GLU:OE1	2.67	0.48
1:A:57:ILE:HB	1:A:145:ILE:HG12	1.95	0.47
1:A:22:ALA:HB3	4:A:2002:HOH:O	2.14	0.47
1:A:352:PHE:CZ	1:A:355:GLY:HA2	2.50	0.47
1:A:470:HIS:HB3	1:A:482:ALA:CB	2.44	0.47
1:A:100:PRO:HD2	1:A:104:ASN:ND2	2.30	0.47
1:A:162:ASP:HB2	4:A:2184:HOH:O	2.14	0.46
1:A:216:TYR:O	1:A:267:VAL:HA	2.16	0.46
1:A:85:HIS:NE2	1:A:87:HIS:HA	2.31	0.45
1:A:418[B]:HIS:CE1	1:A:472:HIS:HD2	2.22	0.45
1:A:415:HIS:HE1	1:A:476:HIS:CE1	2.33	0.45
1:A:33:ASN:ND2	1:A:75:ASN:H	2.15	0.44
1:A:242:GLU:HG2	1:A:243:ALA:N	2.32	0.44
1:A:211:THR:OG1	1:A:302[B]:ASP:OD2	2.23	0.44
1:A:465:GLY:HA2	1:A:492:VAL:HG22	2.00	0.43
1:A:375:ILE:HG23	1:A:489:ILE:HG23	2.02	0.42
1:A:67:LEU:HD13	1:A:86:TRP:CZ3	2.54	0.42
1:A:226:ASP:HB3	1:A:227:PRO:CD	2.49	0.42
1:A:336:SER:HA	1:A:337:PRO:HD3	1.90	0.41
1:A:284:ASN:N	1:A:284:ASN:HD22	2.08	0.41
1:A:228:ASN:H	1:A:284:ASN:ND2	2.19	0.41
1:A:415:HIS:CE1	1:A:476:HIS:CE1	3.07	0.41
1:A:87:HIS:CE1	1:A:418[A]:HIS:CE1	3.08	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:87:HIS:CD2	1:A:87:HIS:C	2.93	0.41
1:A:100:PRO:HD2	1:A:104:ASN:HD22	1.85	0.41
1:A:57:ILE:O	1:A:145:ILE:HA	2.21	0.41
1:A:130:HIS:HB2	1:A:137:TYR:HB2	2.03	0.40
1:A:436:ASN:HD21	1:A:439:ASN:ND2	2.19	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	504/497 (101%)	484 (96%)	18 (4%)	2 (0%)	34 24

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	226	ASP
1	A	79	LEU

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	411/401 (102%)	397 (97%)	14 (3%)	37 28

All (14) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	37	SER
1	A	245	SER
1	A	263	ARG
1	A	269	ASN
1	A	282	LEU
1	A	284	ASN
1	A	329	LYS
1	A	363	SER
1	A	407	THR
1	A	439	ASN
1	A	468	PHE
1	A	472	HIS
1	A	481	PHE
1	A	513	SER

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (12) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	33	ASN
1	A	44	GLN
1	A	91	GLN
1	A	104	ASN
1	A	269	ASN
1	A	272	GLN
1	A	276	ASN
1	A	284	ASN
1	A	318	ASN
1	A	422	HIS
1	A	439	ASN
1	A	517	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	$\#|Z| > 2$
2	NAG	B	1	1,2	14,14,15	0.90	1 (7%)	17,19,21	1.69	5 (29%)
2	NAG	B	2	2	14,14,15	1.16	1 (7%)	17,19,21	1.58	3 (17%)
2	NAG	C	1	1,2	14,14,15	0.59	0	17,19,21	1.49	4 (23%)
2	NAG	C	2	2	14,14,15	0.96	1 (7%)	17,19,21	1.30	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
2	NAG	B	1	1,2	-	0/6/23/26	0/1/1/1
2	NAG	B	2	2	-	2/6/23/26	0/1/1/1
2	NAG	C	1	1,2	-	0/6/23/26	0/1/1/1
2	NAG	C	2	2	-	0/6/23/26	0/1/1/1

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	B	2	NAG	C2-N2	2.99	1.51	1.46
2	C	2	NAG	C3-C2	2.16	1.57	1.52
2	B	1	NAG	O5-C1	-2.05	1.40	1.43

All (13) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	2	NAG	O5-C5-C6	4.21	113.81	107.20
2	C	1	NAG	C3-C4-C5	-3.59	103.84	110.24
2	C	2	NAG	C4-C3-C2	3.18	115.68	111.02
2	B	1	NAG	O7-C7-N2	2.95	127.38	121.95

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	B	1	NAG	O4-C4-C5	-2.79	102.37	109.30
2	B	1	NAG	C2-N2-C7	2.59	126.59	122.90
2	C	1	NAG	O4-C4-C3	-2.52	104.53	110.35
2	B	1	NAG	C4-C3-C2	-2.41	107.49	111.02
2	B	2	NAG	C4-C3-C2	2.41	114.54	111.02
2	C	1	NAG	O4-C4-C5	2.26	114.91	109.30
2	B	2	NAG	C1-O5-C5	2.13	115.08	112.19
2	C	1	NAG	C4-C3-C2	-2.04	108.03	111.02
2	B	1	NAG	O6-C6-C5	-2.04	104.30	111.29

There are no chirality outliers.

All (2) torsion outliers are listed below:

| Mol	Chain	Res	Type	Atoms
2	B	2	NAG	C4-C5-C6-O6
2	B	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 B

Bond lengths

Bond angles

Torsions

Rings

Oligosaccharide Chain C

Bond lengths   Bond angles

Torsions   Rings
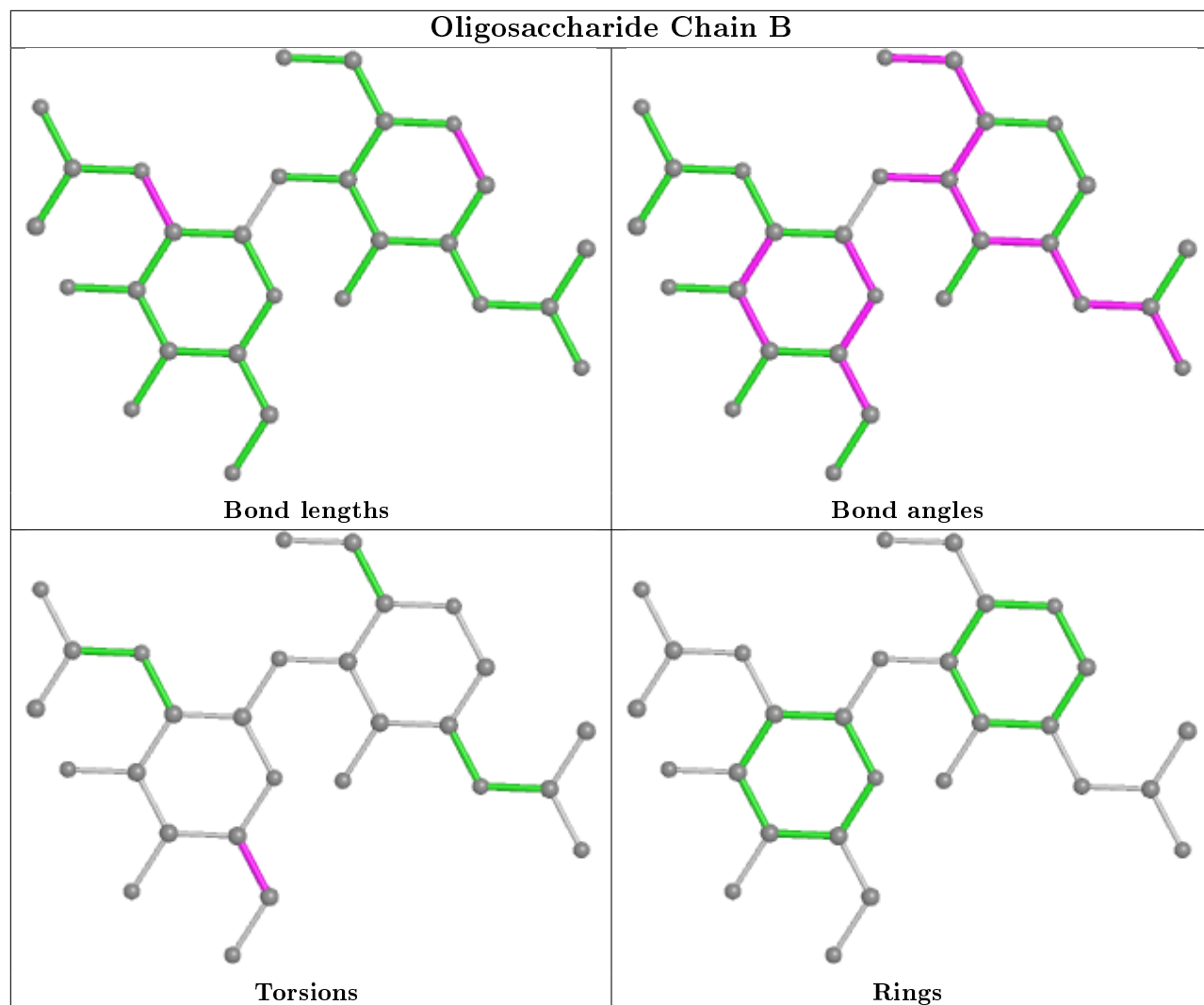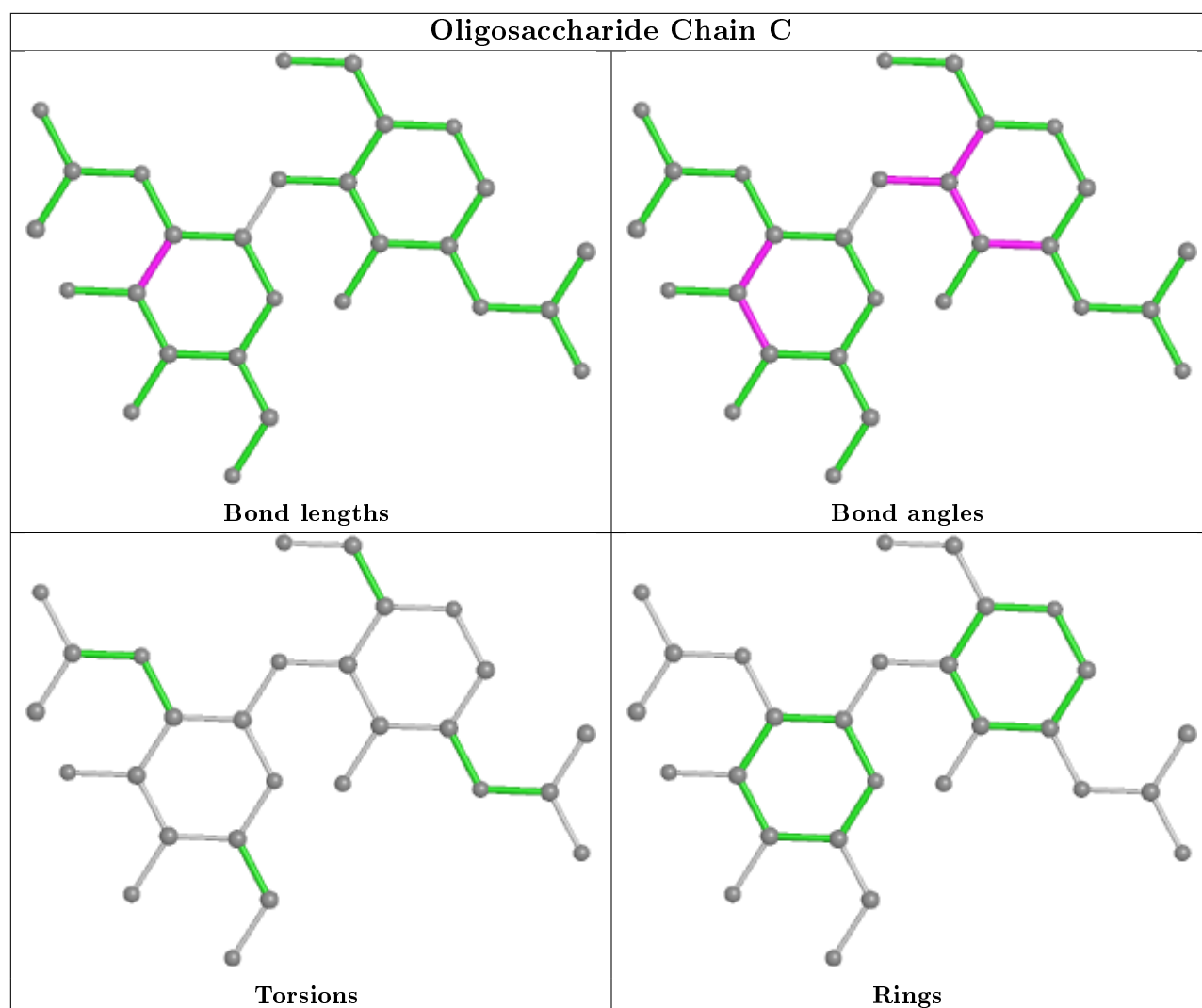
5.6 Ligand geometry (i)

Of 3 ligands modelled in this entry, 3 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

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 (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, 95th 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(Å²)	Q<0.9
1	A	496/497 (99%)	-0.32	9 (1%)	68	71	13, 22, 38, 56	0

All (9) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	182	PRO	4.5
1	A	22	ALA	4.3
1	A	181	ALA	4.2
1	A	183	VAL	3.9
1	A	179	VAL	3.3
1	A	353	ALA	3.1
1	A	315	PRO	2.5
1	A	314	THR	2.1
1	A	317	THR	2.1

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, 95th 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.
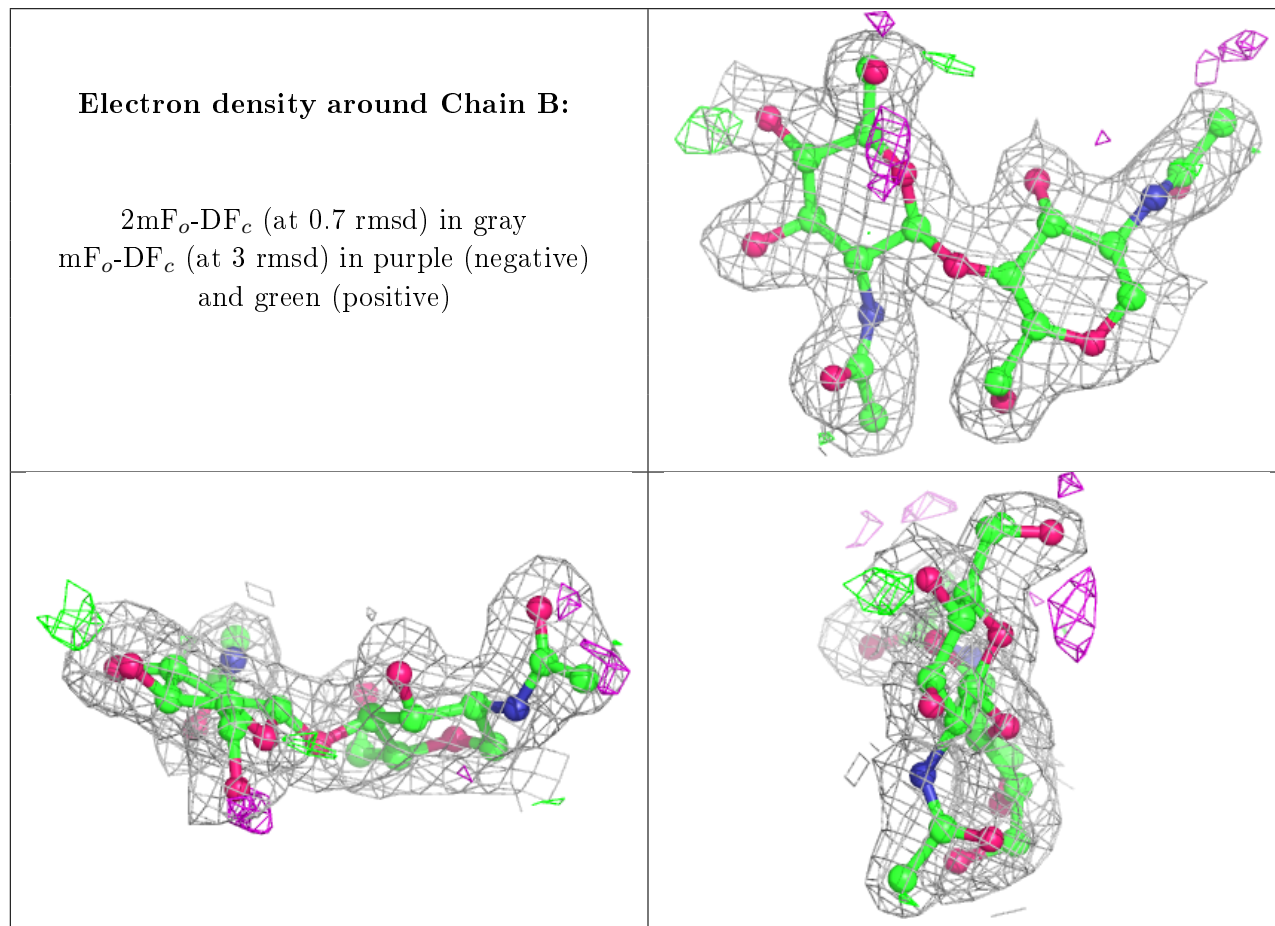
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å²)	Q<0.9
2	NAG	B	2	14/15	0.92	0.13	23,28,33,36	0
2	NAG	C	2	14/15	0.92	0.22	29,46,51,52	0
2	NAG	C	1	14/15	0.96	0.09	23,32,37,38	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
2	NAG	B	1	14/15	0.97	0.07	23,27,32,32	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 B:

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

Electron density around Chain C:

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
and green (positive)
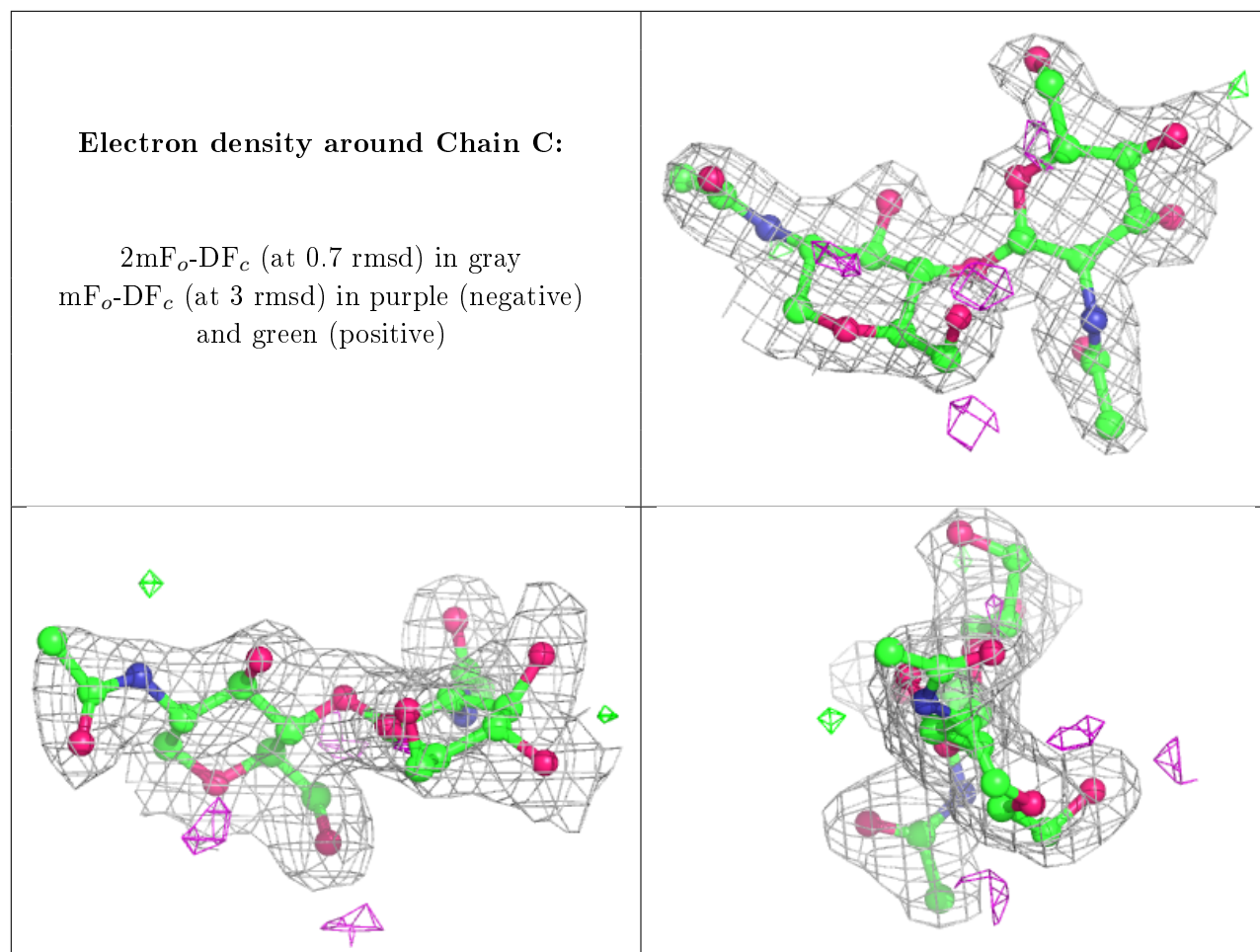
6.4 Ligands (i)

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, 95th 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	CU	A	1518	1/1	0.92	0.09	23,23,23,23	1
3	CU	A	1519	1/1	0.99	0.04	27,27,27,27	1
3	CU	A	1520	1/1	0.99	0.05	29,29,29,29	1

6.5 Other polymers (i)

There are no such residues in this entry.