WORLDWIDE wwPDB PROTEIN DATA BANK

wwPDB X-ray Structure Validation Summary Report (i)

Oct 16, 2021 – 10:34 PM EDT

PDB ID	:	1OOK
Title	:	Crystal Structure of the Complex of Platelet Receptor GPIb-alpha and Human alpha-Thrombin
Authors	:	Varughese, K.I.; Celikel, R.; Ruggeri, Z.M.
Deposited on	:	2003-03-03
Resolution	:	2.30 Å(reported)

The following versions of software and data (see references (i)) were used in the production of this report:

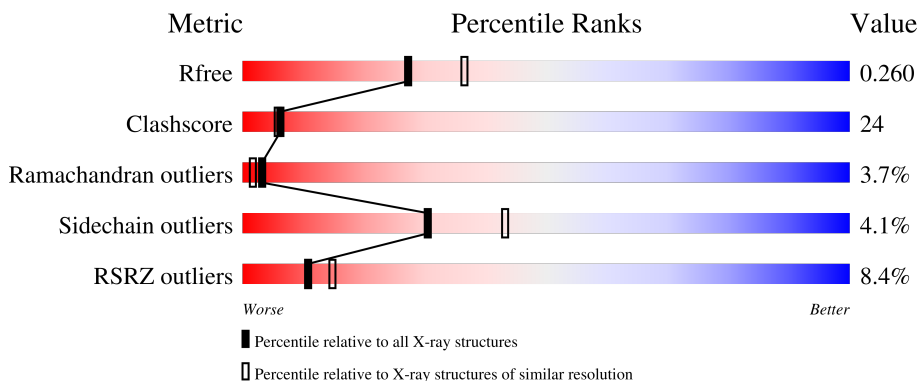|		
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.23.2
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.23.2

1   Overall quality at a glance ⓘ

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

The reported resolution of this entry is 2.30 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		0.260
Clashscore		24
Ramachandran outliers		3.7%
Sidechain outliers		4.1%
RSRZ outliers		8.4%

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	5042 (2.30-2.30)
Clashscore	141614	5643 (2.30-2.30)
Ramachandran outliers	138981	5575 (2.30-2.30)
Sidechain outliers	138945	5575 (2.30-2.30)
RSRZ outliers	127900	4938 (2.30-2.30)

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	36	17% / 64% / 33% / •
2	B	259	70% / 27% / •
3	P	3	100%
4	G	290	14% / 50% / 41% / 7% / •
5	C	5	40% / 40% / 20%

2 Entry composition ⓘ

There are 8 unique types of molecules in this entry. The entry contains 5111 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 Human Alpha Thrombin.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	36	Total	C	N	O	S	0	0	0
			287	177	48	61	1			

- Molecule 2 is a protein called Human Alpha Thrombin.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	259	Total	C	N	O	S	0	0	0
			2093	1334	370	375	14			

- Molecule 3 is a protein called PHE-PRO-ARG-Chloromethylketone.

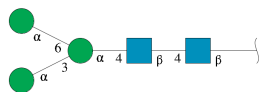| Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
3	P	3	Total	C	N	O	0	0	0
			30	20	6	4			

- Molecule 4 is a protein called Platelet glycoprotein Ib alpha chain precursor.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
4	G	284	Total	C	N	O	S	0	0	0
			2233	1427	363	433	10			

There are 3 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
G	65	ALA	CYS	engineered mutation	UNP P07359
G	276	TYS	TYR	modified residue	UNP P07359
G	279	TYS	TYR	modified residue	UNP P07359

- Molecule 5 is an oligosaccharide called alpha-D-mannopyranose-(1-3)-[alpha-D-mannopyranose-(1-6)]alpha-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose.
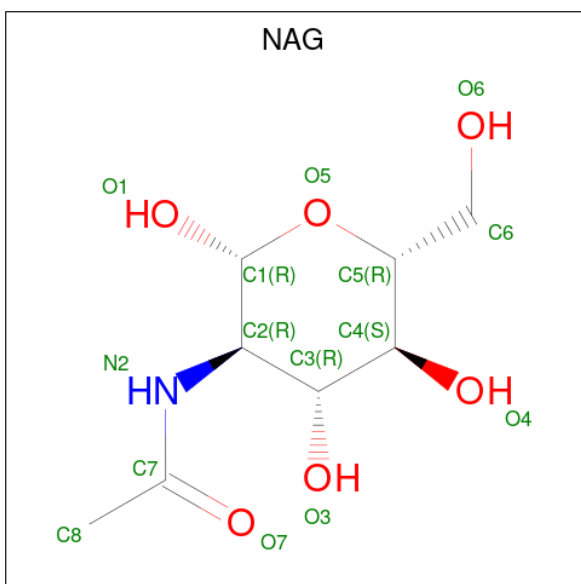
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
			Total	C	N	O			
5	C	5	61	34	2	25	0	0	0

- Molecule 6 is CHLORIDE ION (three-letter code: CL) (formula: Cl).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	Cl		
6	B	1	1	1	0	0

- Molecule 7 is 2-acetamido-2-deoxy-beta-D-glucopyranose (three-letter code: NAG) (formula: $C_8H_{15}NO_6$).

Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
			Total	C	N	O		
7	G	1	14	8	1	5	0	0

- Molecule 8 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	O		
8	A	33	33	33	0	0
8	B	239	Total	O	0	0
			239	239		

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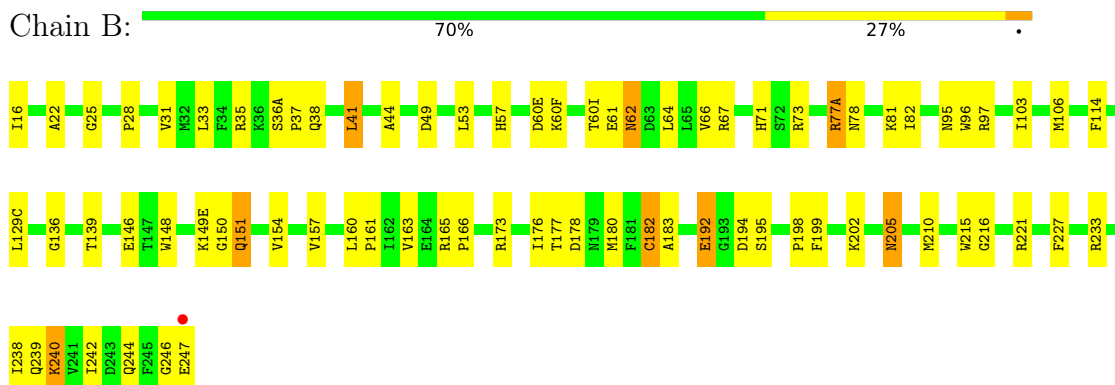| Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
8	P	1	Total 1	O 1	0	0
8	G	119	Total 119	O 119	0	0

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.
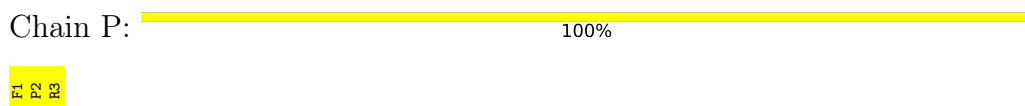
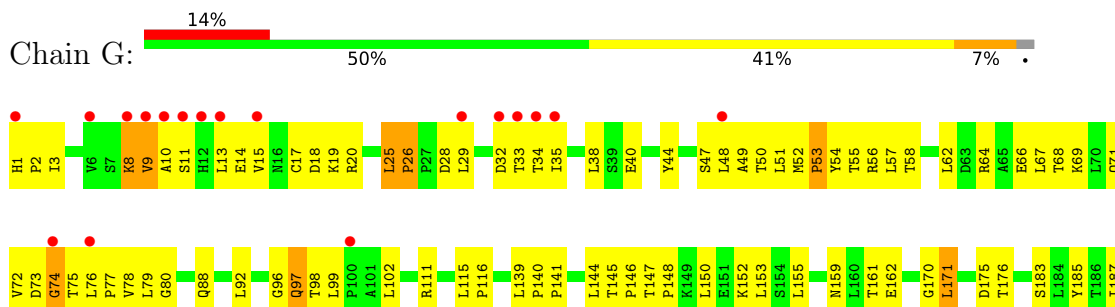- Molecule 1: Human Alpha Thrombin

Chain A:
17%
64%
33%

T1H F1G G1F S1E G1D E1C A1B D1A L6 K14A T14B E14C R14D L14G E14H G14M R15
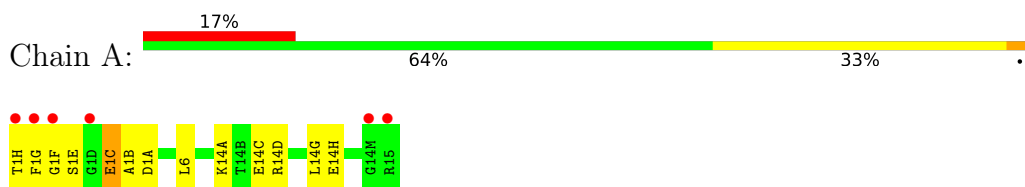
- Molecule 2: Human Alpha Thrombin

Chain B:
70%
27%

I16 A22 G25 P28 V31 M32 L33 F34 R35 K36 S36A P37 Q38 L41 A44 D49 L53 H57 D60E K60F T60I E61 N62 D63 L64 L65 V66 R67 H71 S72 R73 R77A N78 K81 I82 N95 W96 R97 I103 M106 F114

L129C G136 T139 E146 T147 W148 K149E G150 Q151 V154 V157 L160 P161 I162 V163 E164 R165 P166 R173 I176 T177 D178 N179 M180 F181 C182 A183 E192 G193 D194 S195 P198 F199 K202 N205 M210 W215 G216 R221 F227 R233

I238 Q239 K240 V241 I242 D243 Q244 F245 G246 E247

- Molecule 3: PHE-PRO-ARG-Chloromethylketone

Chain P:
100%

F1 P2 R3

- Molecule 4: Platelet glycoprotein Ib alpha chain precursor

Chain G:
14%
50%
41%
7%

H1 P2 I3 V6 S7 K8 V9 A10 S11 H12 L13 E14 V15 N16 C17 D18 K19 R20 L25 P26 P27 D28 L29 D32 T33 T34 I35 L38 S39 E40 Y44 S47 L48 A49 T50 L51 M52 P53 Y54 T55 R56 L57 T58 L62 D63 R64 A65 E66 L67 T68 K69 L70 Q71

V72 D73 G74 T75 L76 P77 V78 L79 G80 Q88 L92 G96 Q97 T98 L99 P100 A101 L102 R111 L115 P116 L139 P140 P141 L144 T145 P146 T147 P148 K149 L150 E151 K152 L153 S154 L155 N159 L160 T161 E162 G170 L171 D175 T176 S183 L184 Y185 T186 I187

P188 K189 L196 L197 P198 F201 W207 L208 C209 I213 L214 Y215 F216 R217 R218 Q221 D222 N226 K231 Q232 G233 V234 D235 V236 K237 A238 M239 T240 V246 Q247 C248 D249 N250 S251 D252 K253 F254 P255 V256 Y257 P260 G261 K262 G263 C264 P265 T266 L267 G268 D269 E270

G271 D272 T273 D274 L275 Y276 Y279 P280 E281 E282 D283 T284 GLU GLY ASP LYS VAL ARG

• Molecule 5: alpha-D-mannopyranose-(1-3)-[alpha-D-mannopyranose-(1-6)]alpha-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose

Chain C:

40%　　　　　　40%　　　　　20%

NAG1 NAG2 MAN3 MAN4 MAN5
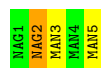
4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 43 21 2	Depositor
Cell constants a, b, c, α, β, γ	67.65Å 67.65Å 328.58Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	15.00 – 2.30 47.84 – 2.30	Depositor EDS
% Data completeness (in resolution range)	98.2 (15.00-2.30) 98.3 (47.84-2.30)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	0.07	Depositor
$< I/\sigma(I) >$ [1]	3.66 (at 2.29Å)	Xtriage
Refinement program	CNS	Depositor
R, R_{free}	0.212 , 0.260 0.211 , 0.260	Depositor DCC
R_{free} test set	1722 reflections (4.88%)	wwPDB-VP
Wilson B-factor (Å^2)	37.7	Xtriage
Anisotropy	0.023	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.32 , 63.3	EDS
L-test for twinning[2]	$< \|L\| > = 0.48, < L^2 > = 0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.94	EDS
Total number of atoms	5111	wwPDB-VP
Average B, all atoms (Å^2)	48.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.89% 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 ⓘ

5.1 Standard geometry ⓘ

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

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
1	A	0.34	0/290	0.56	0/384
2	B	0.35	0/2148	0.65	0/2903
3	P	0.63	0/31	0.76	0/39
4	G	0.31	0/2248	0.58	0/3068
All	All	0.34	0/4717	0.61	0/6394

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	287	0	278	14	0
2	B	2093	0	2063	76	0
3	P	30	0	31	13	0
4	G	2233	0	2224	147	0
5	C	61	0	52	1	0
6	B	1	0	0	1	0
7	G	14	0	13	0	0
8	A	33	0	0	3	0
8	B	239	0	0	11	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
8	G	119	0	0	4	0
8	P	1	0	0	2	0
All	All	5111	0	4661	229	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 24.

The worst 5 of 229 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)
4:G:25:LEU:HD23	4:G:25:LEU:H	1.13	1.11
2:B:149(E):LYS:HG3	4:G:283:ASP:HB3	1.47	0.95
4:G:49:ALA:HB2	4:G:73:ASP:HB2	1.47	0.95
3:P:1:PHE:HB3	3:P:2:PRO:HD3	1.52	0.92
4:G:273:THR:HG22	4:G:274:ASP:H	1.35	0.92

There are no symmetry-related clashes.

5.3   Torsion angles ⓘ

5.3.1   Protein backbone ⓘ

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	34/36 (94%)	27 (79%)	7 (21%)	0	100	100
2	B	257/259 (99%)	246 (96%)	10 (4%)	1 (0%)	34	42
3	P	1/3 (33%)	1 (100%)	0	0	100	100
4	G	280/290 (97%)	220 (79%)	40 (14%)	20 (7%)	1	0
All	All	572/588 (97%)	494 (86%)	57 (10%)	21 (4%)	3	2

5 of 21 Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	B	77(A)	ARG
4	G	9	VAL
4	G	28	ASP
4	G	189	LYS
4	G	234	VAL

5.3.2　Protein sidechains　ⓘ

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	31/31 (100%)	30 (97%)	1 (3%)	39	54
2	B	225/225 (100%)	213 (95%)	12 (5%)	22	31
3	P	3/3 (100%)	3 (100%)	0	100	100
4	G	252/257 (98%)	244 (97%)	8 (3%)	39	54
All	All	511/516 (99%)	490 (96%)	21 (4%)	30	43

5 of 21 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
4	G	25	LEU
4	G	217	ARG
4	G	255	PRO
4	G	235	ASP
4	G	162	GLU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. 5 of 8 such sidechains are listed below:

Mol	Chain	Res	Type
4	G	250	ASN
4	G	247	GLN
4	G	97	GLN
4	G	71	GLN
4	G	226	ASN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

2 non-standard protein/DNA/RNA residues are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#|Z| > 2$	Counts	RMSZ	$\#|Z| > 2$
4	TYS	G	276	4	15,16,17	1.22	2 (13%)	18,22,24	1.22	2 (11%)
4	TYS	G	279	4	15,16,17	1.18	2 (13%)	18,22,24	1.05	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	TYS	G	276	4	-	3/10/11/13	0/1/1/1
4	TYS	G	279	4	-	4/10/11/13	0/1/1/1

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	G	276	TYS	OH-S	-3.32	1.53	1.58
4	G	279	TYS	OH-S	-3.12	1.53	1.58
4	G	276	TYS	OH-CZ	-2.46	1.38	1.42
4	G	279	TYS	OH-CZ	-2.43	1.38	1.42

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	G	276	TYS	OH-CZ-CE1	3.17	124.88	118.64
4	G	279	TYS	OH-CZ-CE1	2.42	123.39	118.64

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	G	276	TYS	OH-CZ-CE2	-2.13	114.46	118.64

There are no chirality outliers.

5 of 7 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	G	276	TYS	CE2-CZ-OH-S
4	G	279	TYS	CE2-CZ-OH-S
4	G	276	TYS	N-CA-CB-CG
4	G	279	TYS	C-CA-CB-CG
4	G	276	TYS	CE1-CZ-OH-S

There are no ring outliers.

1 monomer is involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	G	279	TYS	2	0

5.5 Carbohydrates ⓘ

5 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	$\#\|Z\| > 2$
5	NAG	C	1	2,5	14,14,15	0.59	0	17,19,21	0.59	0
5	NAG	C	2	5	14,14,15	0.69	0	17,19,21	0.88	1 (5%)
5	MAN	C	3	5	11,11,12	0.69	0	15,15,17	0.71	0
5	MAN	C	4	5	11,11,12	0.53	0	15,15,17	0.50	0
5	MAN	C	5	5	11,11,12	0.50	0	15,15,17	0.61	1 (6%)

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
5	NAG	C	1	2,5	-	2/6/23/26	0/1/1/1
5	NAG	C	2	5	-	0/6/23/26	0/1/1/1
5	MAN	C	3	5	-	0/2/19/22	0/1/1/1
5	MAN	C	4	5	-	0/2/19/22	0/1/1/1
5	MAN	C	5	5	-	0/2/19/22	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})
5	C	5	MAN	C1-O5-C5	2.16	115.11	112.19
5	C	2	NAG	C2-N2-C7	-2.12	119.88	122.90

There are no chirality outliers.

All (2) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	C	1	NAG	O5-C5-C6-O6
5	C	1	NAG	C4-C5-C6-O6

There are no ring outliers.

2 monomers are involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	C	3	MAN	1	0
5	C	2	NAG	1	0

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

Oligosaccharide Chain C

Bond lengths

Bond angles

Torsions

Rings
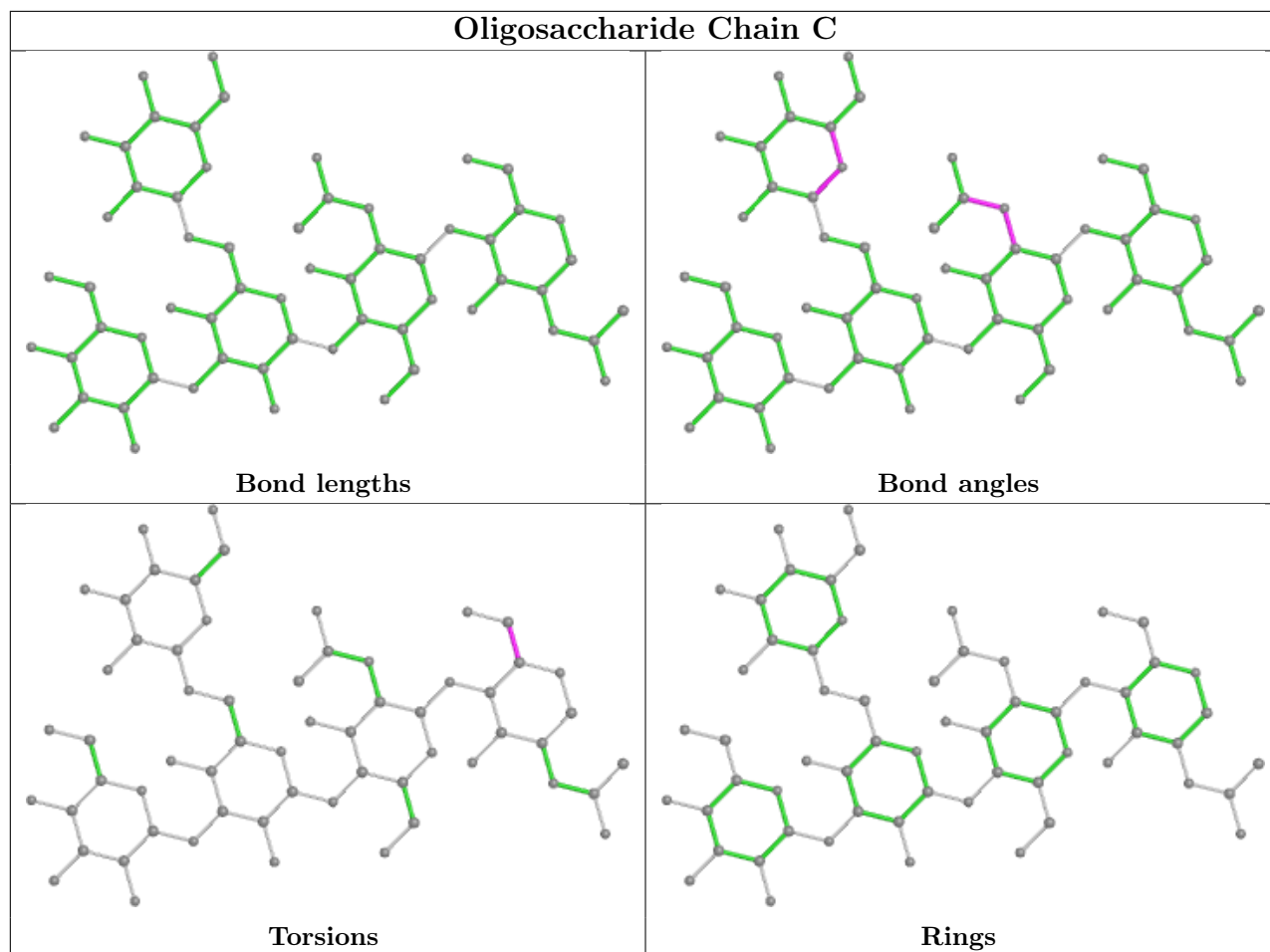
5.6 Ligand geometry ⓘ

Of 2 ligands modelled in this entry, 1 is monoatomic - leaving 1 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	$\#|Z| > 2$
7	NAG	G	601	4	14,14,15	0.60	0	17,19,21	0.62	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
7	NAG	G	601	4	-	0/6/23/26	0/1/1/1

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 ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

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, 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	36/36 (100%)	0.88	6 (16%)	1	2	24, 45, 115, 119	0
2	B	259/259 (100%)	-0.05	1 (0%)	92	95	17, 31, 52, 86	0
3	P	3/3 (100%)	0.35	0	100	100	23, 23, 24, 25	0
4	G	282/290 (97%)	0.88	42 (14%)	2	3	29, 56, 113, 124	0
All	All	580/588 (98%)	0.46	49 (8%)	11	15	17, 43, 101, 124	0

The worst 5 of 49 RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
4	G	234	VAL	11.9
4	G	12	HIS	7.8
1	A	1(H)	THR	7.2
4	G	284	THR	7.0
4	G	11	SER	6.5

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

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.
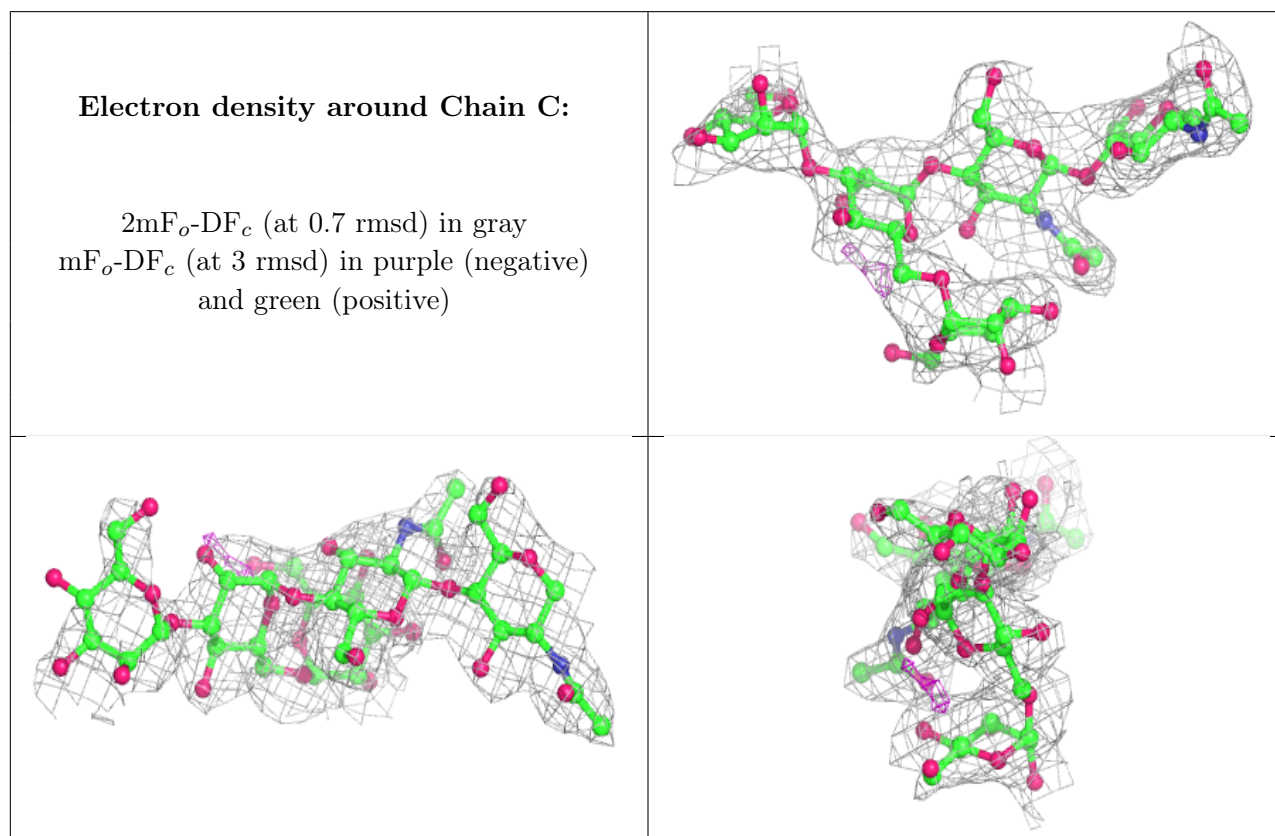
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å²)	Q<0.9
4	TYS	G	276	16/17	0.92	0.16	41,50,75,76	0
4	TYS	G	279	16/17	0.95	0.16	30,42,56,59	0

6.3 Carbohydrates ⓘ

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
5	MAN	C	3	11/12	0.74	0.22	83,89,92,96	0
5	NAG	C	2	14/15	0.79	0.17	69,80,85,86	0
5	MAN	C	4	11/12	0.81	0.38	93,99,102,102	0
5	MAN	C	5	11/12	0.85	0.19	74,78,82,85	0
5	NAG	C	1	14/15	0.88	0.13	61,68,79,79	0

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

Electron density around Chain C:

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

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, 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
7	NAG	G	601	14/15	0.77	0.20	66,78,82,82	0
6	CL	B	400	1/1	0.98	0.33	35,35,35,35	0

6.5 Other polymers ⓘ

There are no such residues in this entry.