W O R L D W I D E
wwPDB
P R O T E I N   D A T A   B A N K

Full wwPDB X-ray Structure Validation Report (i)

Oct 9, 2023 – 02:56 AM EDT

PDB ID	:	7KQH
Title	:	Antibodies that engage the hemagglutinin receptor-binding site of influenza B viruses
Authors	:	Bajic, G.; Harrison, S.C.
Deposited on	:	2020-11-16
Resolution	:	3.50 Å(reported)

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

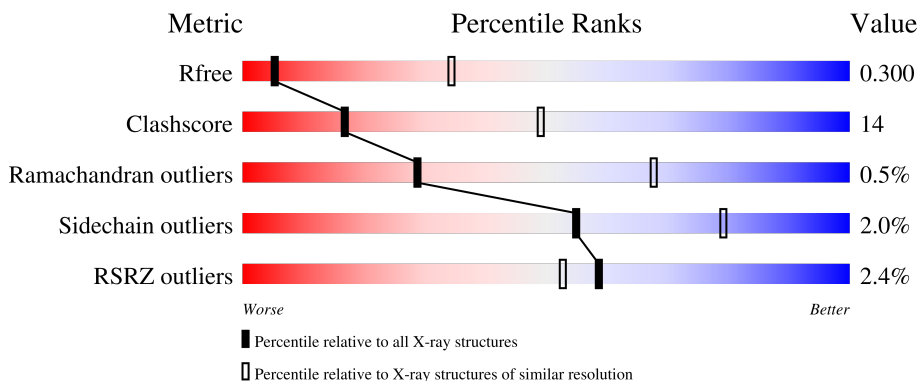|		
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.35.1
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.35.1

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 3.50 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.
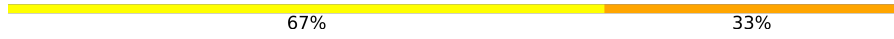
Metric	Percentile Ranks	Value
Rfree		0.300
Clashscore		14
Ramachandran outliers		0.5%
Sidechain outliers		2.0%
RSRZ outliers		2.4%

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	1659 (3.60-3.40)
Clashscore	141614	1036 (3.58-3.42)
Ramachandran outliers	138981	1005 (3.58-3.42)
Sidechain outliers	138945	1006 (3.58-3.42)
RSRZ outliers	127900	1559 (3.60-3.40)

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	299	% 60% 19% • 21%
1	B	299	3% 54% 24% • 21%
2	C	240	5% 62% 26% • 11%
2	H	240	63% 29% • 6%
3	D	216	2% 71% 24% • •

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Mol	Chain	Length	Quality of chain
3	L	216	3% 70% 26%
4	E	3	67% 33%
5	F	4	25% 75%

2   Entry composition ⓘ

There are 5 unique types of molecules in this entry. The entry contains 10271 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 Hemagglutinin.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	237	Total 1810	C 1133	N 320	O 343	S 14	0	0	0
1	B	237	Total 1810	C 1133	N 320	O 343	S 14	0	0	0

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	196	ILE	THR	conflict	UNP A0A4P8YRB6
B	196	ILE	THR	conflict	UNP A0A4P8YRB6

- Molecule 2 is a protein called 2365 Fab heavy chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	H	225	Total 1692	C 1060	N 287	O 336	S 9	0	0	0
2	C	214	Total 1626	C 1023	N 275	O 319	S 9	0	0	0

- Molecule 3 is a protein called 2365 Fab light chain.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	L	215	Total 1650	C 1029	N 277	O 338	S 6	0	0	0
3	D	207	Total 1594	C 996	N 266	O 326	S 6	0	0	0

- Molecule 4 is an oligosaccharide called beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose.
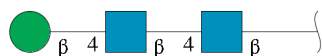
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf	Trace
			Total	C	N	O			
4	E	3	39	22	2	15	0	0	0

- Molecule 5 is an oligosaccharide called alpha-D-mannopyranose-(1-6)-beta-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	F	4	50	28	2	20	0	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: Hemagglutinin

Chain A:

- Molecule 1: Hemagglutinin

Chain B:

- Molecule 2: 2365 Fab heavy chain

Chain H:

A98 S99 S100 S101 Y104 Y105 Y106 Y107 S108 G109 M110 D111 V112 T120 V121 S122 G123 G144 S130 L134 T141 S142 G143 G144 L148 G149 K153 D154 P157 W164 L169 P177 A178 V179 L180 Q181 S187 V191 V192 S196 L199 H210 K219 R220

V221 GLU PRO LYS SER CYS ASP LYS HIS HIS HIS HIS HIS HIS

• Molecule 2: 2365 Fab heavy chain

Chain C:

5%

62%   26%   11%

ALA SER E1 E6 S7 V12 L18 S21 D30 P33 Q39 W47 I51 N52 W52A S62 R66 I69 S70 R71 D72 N73 A74 R75 M82 L82C T87 A88 L89 D95 L96 R97 A98 S101 M102 D103 Y104 Y105 Y106 Y107 S108 G109 M110

D111 V112 W113 T120 V121 SER G123 K127 V131 F132 P133 L134 ALA PRO SER SER LYS SER THR SER GLY GLY T145 L148 G149 V152 K153 D154 Y155 F156 P157 E158 P159 V162 S163 L169 F176 P177 A178 V179 L180 Q181 S187 L188 V191 V192 T193 Y204

N207 H210 K211 P212 S213 V217 V221 GLU PRO LYS SER CYS ASP LYS HIS HIS HIS HIS HIS HIS

• Molecule 3: 2365 Fab light chain

Chain L:

3%

70%   26%

ALA S0 D1 I2 P8 A13 S14 I21 Y31 L32 N33 V45 D49 A50 R60 F61 D69 F70 I71 F72 S76 L77 K78 Q88 Q89 Y90 E91 N92 V93 P94 I95 D104 I105 K106 R107 T108 V109 P112 S113 V114 F117 A129 L135 N136 N137

F138 Y139 P140 R141 E142 A143 K148 L153 S161 V162 T163 E164 Q165 S170 T171 Y172 S173 L174 S175 L180 K189 V190 Y191 A192 C193 E194 V195 T196 H197 Q198 S202 P203 V204 F208 N209 C213

• Molecule 3: 2365 Fab light chain

Chain D:

2%

71%   24%

ALA SER D1 I2 S9 I21 Y31 L32 N33 I47 Y48 N52 L53 Q54 V57 R60 G65 F70 S76 P79 V82 Q88 Q89 Y90 E91 N92 V93 P94 T101 K106 R107 T108 V109 A110 A111 P112 V132 C133 L134 L135 N136 N137 F138 Y139

P140 R141 K144 V145 Q146 Q159 E160 S161 V162 T163 D166 S167 T171 Y172 S173 L174 S175 S176 Y191 E194 V195 T196 HIS GLN GLY LEU SER SER PRO V204 F208 N209 E212 C213

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

Chain E: 67%   33%

NAG1 NAG2 BMA3

• Molecule 5: alpha-D-mannopyranose-(1-6)-beta-D-mannopyranose-(1-4)-2-acetamido-2-deoxy-b eta-D-glucopyranose-(1-4)-2-acetamido-2-deoxy-beta-D-glucopyranose
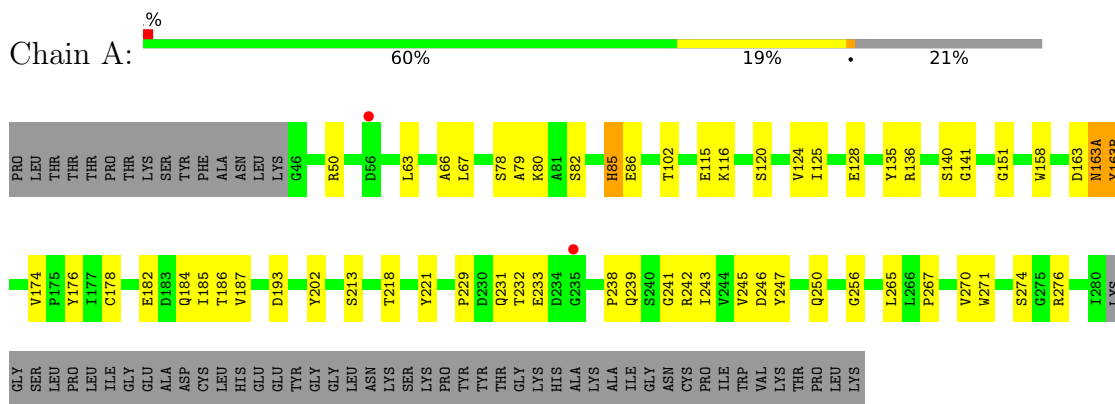
Chain F:

25%   75%

NAG1 NAG2 BMA3 MAN4

4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 31	Depositor
Cell constants a, b, c, α, β, γ	132.66Å 132.66Å 93.13Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	114.89 – 3.50 114.89 – 3.50	Depositor EDS
% Data completeness (in resolution range)	99.7 (114.89-3.50) 99.7 (114.89-3.50)	Depositor EDS
R_{merge}	0.25	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	0.97 (at 3.49Å)	Xtriage
Refinement program	PHENIX 1.18.2_3874	Depositor
R, R_{free}	0.252 , 0.300 0.252 , 0.300	Depositor DCC
R_{free} test set	977 reflections (4.24%)	wwPDB-VP
Wilson B-factor (Å^2)	180.5	Xtriage
Anisotropy	0.124	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.31 , 149.2	EDS
L-test for twinning[2]	$< |L| > = 0.41, < L^2 > = 0.24$	Xtriage
Estimated twinning fraction	0.114 for -h,-k,l 0.126 for h,-h-k,-l 0.124 for -k,-h,-l	Xtriage
F_o,F_c correlation	0.94	EDS
Total number of atoms	10271	wwPDB-VP
Average B, all atoms (Å^2)	180.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.96% 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: BMA, NAG, MAN

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	0/1850	0.46	0/2511
1	B	0.25	0/1850	0.47	0/2511
2	C	0.32	0/1664	0.50	0/2262
2	H	0.27	0/1733	0.52	0/2358
3	D	0.29	0/1625	0.50	0/2207
3	L	0.31	0/1684	0.53	0/2289
All	All	0.28	0/10406	0.50	0/14138

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	1810	0	1797	40	0
1	B	1810	0	1797	51	0
2	C	1626	0	1569	59	0
2	H	1692	0	1634	57	0
3	D	1594	0	1540	42	0
3	L	1650	0	1592	58	0
4	E	39	0	34	2	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
5	F	50	0	43	1	0
All	All	10271	0	10006	286	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 14.

All (286) 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:L:138:PHE:CE1	3:L:171:THR:HG23	1.90	1.06
3:L:138:PHE:HE1	3:L:171:THR:HG23	1.22	1.02
2:H:177:PRO:HD3	3:L:163:THR:HG22	1.50	0.93
3:L:2:ILE:HG13	3:L:92:ASN:HD22	1.32	0.93
3:L:93:VAL:HG23	3:L:94:PRO:HD3	1.51	0.92
2:C:155:TYR:OH	2:C:187:SER:HA	1.83	0.78
3:L:14:SER:HA	3:L:105:ILE:HG12	1.66	0.78
3:L:137:ASN:N	3:L:171:THR:OG1	2.19	0.75
1:B:243:ILE:HD12	1:B:265:LEU:HD11	1.68	0.74
1:A:243:ILE:HD12	1:A:265:LEU:HD11	1.70	0.72
2:C:178:ALA:HA	2:C:188:LEU:HB3	1.71	0.72
2:H:87:THR:HG23	2:H:120:THR:HA	1.72	0.72
3:L:189:LYS:HE3	3:L:209:ASN:HB3	1.72	0.71
3:L:31:TYR:HD2	3:L:91:GLU:HG3	1.55	0.71
2:C:33:PRO:HB3	2:C:52:ASN:HA	1.71	0.71
3:L:171:THR:HG22	3:L:173:SER:N	2.06	0.70
3:L:31:TYR:CD2	3:L:91:GLU:HG3	2.26	0.70
2:H:98:ALA:O	1:B:136:ARG:NH2	2.23	0.70
2:C:210:HIS:HD1	2:C:213:SER:HG	1.40	0.69
1:B:182:GLU:HA	1:B:274:SER:HB3	1.75	0.69
2:H:149:GLY:HA2	2:H:164:TRP:HH2	1.59	0.68
2:C:179:VAL:HG22	2:C:187:SER:HB3	1.75	0.68
1:A:136:ARG:NH2	2:C:98:ALA:O	2.25	0.68
2:H:108:SER:O	3:L:90:TYR:CD2	2.47	0.68
3:L:93:VAL:CG2	3:L:94:PRO:HD3	2.24	0.67
3:D:79:PRO:O	3:D:167:SER:OG	2.13	0.67
1:A:163:ASP:OD2	2:C:73:ASN:ND2	2.28	0.66
3:L:109:VAL:HG23	3:L:140:PRO:HD3	1.77	0.65
2:C:152:VAL:C	2:C:155:TYR:HE1	2.00	0.65
2:H:51:ILE:HG13	2:H:57:THR:HG22	1.79	0.64
2:H:101:SER:OG	2:H:104:TYR:O	2.10	0.64
3:L:104:ASP:HB2	3:L:165:GLN:HE22	1.64	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:L:170:SER:OG	3:L:171:THR:N	2.31	0.63
1:A:50:ARG:HG2	1:A:79:ALA:HB3	1.79	0.63
1:B:70:PRO:HB2	1:B:145:ASN:HB3	1.80	0.63
1:B:232:THR:HG22	1:B:233:GLU:HG3	1.81	0.63
3:L:139:TYR:N	3:L:140:PRO:HD2	2.14	0.62
3:D:144:LYS:HB3	3:D:196:THR:HB	1.82	0.62
3:L:114:VAL:HG21	3:L:195:VAL:HG12	1.80	0.62
2:C:152:VAL:HG12	2:C:155:TYR:CE1	2.35	0.62
3:D:92:ASN:OD1	3:D:93:VAL:N	2.31	0.62
1:B:71:MET:HG2	1:B:145:ASN:HA	1.81	0.62
2:C:72:ASP:OD2	2:C:75:ARG:NH1	2.32	0.61
3:D:133:CYS:HB3	3:D:176:SER:HB3	1.81	0.61
3:L:139:TYR:O	3:L:141:ARG:N	2.34	0.61
2:H:59:HIS:HB3	2:H:63:VAL:HG23	1.83	0.61
1:A:151:GLY:HA2	4:E:1:NAG:H82	1.83	0.61
3:D:93:VAL:HB	3:D:94:PRO:HD2	1.82	0.61
1:B:184:GLN:HB3	1:B:250:GLN:HB2	1.83	0.61
2:C:95:ASP:OD1	2:C:108:SER:OG	2.17	0.61
2:H:134:LEU:HD12	3:L:117:PHE:HD2	1.66	0.60
1:A:185:ILE:HB	1:A:271:TRP:HB2	1.83	0.60
2:H:35:HIS:CD2	2:H:110:MET:HE3	2.36	0.60
2:H:73:ASN:HB2	1:B:163:ASP:HB3	1.84	0.60
1:B:195:LYS:HG3	1:B:205:SER:HB3	1.84	0.60
2:C:155:TYR:CZ	2:C:187:SER:HA	2.37	0.59
2:H:196:SER:HA	2:H:199:LEU:HG	1.85	0.59
2:C:71:ARG:NH2	2:C:73:ASN:OD1	2.35	0.58
3:L:143:ALA:HB2	3:L:197:HIS:CE1	2.38	0.58
1:B:178:CYS:SG	1:B:184:GLN:NE2	2.75	0.58
2:C:149:GLY:HA3	2:C:191:VAL:HG12	1.84	0.58
2:C:156:PHE:HB3	2:C:157:PRO:HD3	1.86	0.58
1:A:163:ASP:HB2	2:C:73:ASN:HB2	1.85	0.57
3:L:135:LEU:HD13	3:L:174:LEU:HD22	1.86	0.57
1:B:193:ASP:OD1	1:B:194:ASN:N	2.29	0.57
1:B:251:LYS:HD2	1:B:252:PRO:HD2	1.87	0.57
1:B:123:ASN:ND2	1:B:268:GLN:OE1	2.38	0.57
3:D:107:ARG:O	3:D:108:THR:OG1	2.21	0.57
2:H:111:ASP:HB3	3:L:45:VAL:HB	1.86	0.56
2:H:142:SER:O	2:H:196:SER:OG	2.23	0.56
3:L:162:VAL:HG22	3:L:174:LEU:HG	1.87	0.56
2:H:111:ASP:O	2:H:112:VAL:HG23	2.05	0.56
2:C:101:SER:HB3	2:C:106:TYR:HB3	1.88	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:66:ARG:NH2	2:H:86:ASP:OD2	2.39	0.56
1:A:229:PRO:O	1:A:242:ARG:NH2	2.39	0.55
2:H:40:VAL:HG13	2:H:43:LYS:HB2	1.88	0.55
2:H:101:SER:HB3	2:H:106:TYR:HB3	1.88	0.55
3:D:106:LYS:HA	3:D:139:TYR:OH	2.06	0.55
3:D:112:PRO:HB3	3:D:138:PHE:HB3	1.87	0.55
3:L:8:PRO:HG3	3:L:21:ILE:HG12	1.86	0.55
1:A:184:GLN:HB3	1:A:250:GLN:HB2	1.87	0.55
3:D:108:THR:HB	3:D:139:TYR:HB2	1.88	0.55
2:C:148:LEU:HD12	2:C:221:VAL:HG21	1.88	0.55
1:A:182:GLU:HA	1:A:274:SER:HB3	1.88	0.55
3:D:21:ILE:HD13	3:D:101:THR:HG21	1.89	0.55
3:D:139:TYR:HA	3:D:171:THR:HB	1.89	0.54
1:A:67:LEU:HD11	1:A:245:VAL:HG11	1.88	0.54
2:H:49:SER:HB2	2:H:69:ILE:HD11	1.90	0.54
3:L:112:PRO:HB3	3:L:138:PHE:HB3	1.90	0.54
2:H:52(A):TRP:HE1	2:H:100:SER:HA	1.72	0.54
1:B:50:ARG:NH2	1:B:115:GLU:O	2.41	0.54
3:L:88:GLN:HE21	3:L:95:ILE:HG23	1.73	0.54
3:L:138:PHE:CD1	3:L:171:THR:HG23	2.40	0.54
2:C:95:ASP:OD1	2:C:96:LEU:N	2.41	0.54
1:A:174:VAL:N	1:A:256:GLY:O	2.41	0.53
1:B:98:MET:HB2	1:B:244:VAL:HG22	1.89	0.53
1:B:116:LYS:NZ	1:B:182:GLU:OE2	2.41	0.53
2:C:47:TRP:CZ3	3:D:94:PRO:HB3	2.43	0.53
2:H:122:SER:OG	2:H:123:GLY:N	2.42	0.53
2:C:210:HIS:CD2	2:C:212:PRO:HD2	2.44	0.53
3:L:196:THR:O	3:L:202:SER:HB3	2.09	0.53
2:C:155:TYR:OH	2:C:188:LEU:N	2.41	0.53
1:B:229:PRO:O	1:B:242:ARG:NH2	2.35	0.53
1:A:120:SER:N	1:A:270:VAL:O	2.42	0.52
2:H:95:ASP:OD1	2:H:109:GLY:N	2.30	0.52
3:D:138:PHE:HD2	3:D:140:PRO:HD2	1.74	0.52
3:L:191:TYR:HB2	3:L:208:PHE:CE1	2.45	0.52
1:B:206:ASN:O	1:B:208:GLN:NE2	2.42	0.52
2:C:62:SER:O	2:C:66:ARG:NH2	2.40	0.52
1:B:91:THR:OG1	1:B:233:GLU:O	2.26	0.52
1:B:63:LEU:HB2	1:B:89:PRO:HB2	1.92	0.52
2:C:179:VAL:N	2:C:187:SER:O	2.28	0.52
3:L:8:PRO:HG3	3:L:21:ILE:HG23	1.92	0.51
2:C:52:ASN:HD22	2:C:102:MET:HA	1.75	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:L:13:ALA:O	3:L:105:ILE:HG21	2.11	0.51
1:A:163(B):TYR:HE2	1:A:202:TYR:HA	1.75	0.51
2:C:87:THR:HG23	2:C:120:THR:HA	1.92	0.51
3:D:163:THR:HG1	3:D:173:SER:H	1.56	0.51
1:A:246:ASP:OD1	1:A:247:TYR:N	2.40	0.51
1:B:194:ASN:OD1	1:B:195:LYS:N	2.43	0.51
2:C:7:SER:HG	2:C:21:SER:HG	1.59	0.51
3:D:135:LEU:O	3:D:174:LEU:N	2.43	0.51
1:B:213:SER:HB2	1:B:218:THR:HG23	1.93	0.51
2:H:97:ARG:NH1	3:L:49:ASP:OD1	2.34	0.51
2:H:16:ARG:HG2	2:H:17:SER:H	1.75	0.51
1:A:50:ARG:NH2	1:A:115:GLU:O	2.44	0.50
3:L:113:SER:OG	3:L:136:ASN:O	2.23	0.50
1:B:104:ILE:HD12	1:B:247:TYR:HD2	1.76	0.50
3:L:31:TYR:CD1	3:L:90:TYR:HE1	2.30	0.50
3:L:32:LEU:HB3	3:L:50:ALA:HB2	1.93	0.50
3:L:49:ASP:OD1	3:L:90:TYR:OH	2.26	0.50
1:B:65:VAL:HG22	1:B:72:CYS:HB3	1.94	0.50
1:A:186:THR:HA	1:A:270:VAL:HG12	1.94	0.50
1:B:120:SER:HB3	1:B:269:LYS:HG3	1.94	0.50
1:B:231:GLN:OE1	1:B:239:GLN:N	2.31	0.50
1:A:78:SER:HB3	1:A:116:LYS:HD2	1.94	0.50
2:H:35:HIS:CE1	2:H:107:TYR:HB3	2.47	0.50
3:D:48:TYR:O	3:D:52:ASN:HB2	2.12	0.50
3:D:136:ASN:HA	3:D:173:SER:HB3	1.94	0.50
1:B:176:TYR:CZ	1:B:252:PRO:HA	2.46	0.50
3:L:139:TYR:H	3:L:140:PRO:HD2	1.76	0.50
2:H:219:LYS:NZ	2:H:220:ARG:O	2.46	0.49
2:C:153:LYS:N	2:C:155:TYR:HE1	2.10	0.49
3:D:31:TYR:CD2	3:D:91:GLU:HG2	2.48	0.49
1:A:193:ASP:HA	1:A:241:GLY:HA2	1.95	0.49
1:B:123:ASN:OD1	1:B:269:LYS:NZ	2.32	0.49
3:L:60:ARG:HD2	3:L:76:SER:O	2.12	0.49
3:L:171:THR:O	3:L:172:TYR:HB2	2.12	0.49
2:C:152:VAL:C	2:C:155:TYR:CE1	2.85	0.49
3:L:33:ASN:HD21	3:L:90:TYR:HD2	1.60	0.49
1:A:232:THR:HG22	1:A:233:GLU:HG3	1.93	0.48
3:L:31:TYR:CD1	3:L:90:TYR:CE1	3.01	0.48
3:D:47:ILE:HD13	3:D:53:LEU:HA	1.94	0.48
2:H:148:LEU:HD12	2:H:221:VAL:HG11	1.96	0.48
3:L:140:PRO:HG3	3:L:198:GLN:HB3	1.94	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:141:GLY:H	2:C:103:ASP:HB2	1.78	0.48
2:H:141:THR:HG22	2:H:144:GLY:H	1.78	0.48
2:H:111:ASP:CB	3:L:45:VAL:HB	2.43	0.48
2:C:82:MET:HB3	2:C:82(C):LEU:HD21	1.96	0.48
1:A:140:SER:OG	2:C:103:ASP:OD2	2.26	0.48
1:B:120:SER:OG	1:B:122:GLN:O	2.28	0.48
2:H:55:GLY:O	1:B:197:GLN:NE2	2.47	0.47
2:H:95:ASP:CG	2:H:110:MET:HE1	2.34	0.47
3:D:65:GLY:HA3	3:D:70:PHE:HA	1.97	0.47
3:D:140:PRO:O	3:D:141:ARG:HB3	2.15	0.47
2:C:176:PHE:CE2	3:D:175:SER:HB3	2.50	0.47
1:B:64:ASP:OD1	1:B:91:THR:HA	2.15	0.47
3:D:9:SER:HA	3:D:101:THR:HA	1.97	0.47
1:B:187:VAL:O	1:B:267:PRO:HB3	2.15	0.47
1:A:124:VAL:HG22	1:A:125:ILE:HG23	1.97	0.46
2:C:133:PRO:HB2	2:C:221:VAL:HG22	1.97	0.46
3:D:21:ILE:HG21	3:D:101:THR:HG21	1.97	0.46
2:H:95:ASP:HA	2:H:109:GLY:O	2.16	0.46
2:H:149:GLY:HA3	2:H:191:VAL:HA	1.98	0.46
1:A:80:LYS:NZ	1:A:276:ARG:O	2.48	0.46
2:C:163:SER:N	2:C:207:ASN:O	2.34	0.46
2:H:17:SER:OG	2:H:82:MET:O	2.34	0.46
1:B:64:ASP:HB3	1:B:69:ARG:HD3	1.98	0.46
2:C:105:TYR:OH	3:D:92:ASN:ND2	2.49	0.46
1:B:156:MET:HA	1:B:267:PRO:HA	1.98	0.46
2:H:35:HIS:CD2	2:H:50:SER:HG	2.34	0.45
3:L:163:THR:CG2	3:L:173:SER:HB2	2.46	0.45
1:A:231:GLN:OE1	1:A:239:GLN:N	2.39	0.45
2:H:6:GLU:N	2:H:6:GLU:OE1	2.49	0.45
2:H:11:LEU:HA	2:H:120:THR:O	2.16	0.45
2:H:67:PHE:CD2	2:H:82:MET:HG2	2.51	0.45
2:C:12:VAL:HG11	2:C:18:LEU:HG	1.96	0.45
2:C:52:ASN:OD1	2:C:52:ASN:N	2.49	0.45
3:D:160:GLU:HB3	3:D:174:LEU:HD21	1.99	0.45
1:A:128:GLU:HA	1:A:135:TYR:HB2	1.98	0.45
1:A:238:PRO:O	2:C:104:TYR:OH	2.18	0.45
1:A:85:HIS:ND1	1:A:86:GLU:HG3	2.31	0.45
2:C:211:LYS:HB2	2:C:212:PRO:HD3	1.97	0.45
1:B:128:GLU:O	1:B:134:PRO:HA	2.15	0.45
1:A:158:TRP:HA	1:A:265:LEU:HD23	1.98	0.45
2:C:134:LEU:HB2	2:C:149:GLY:H	1.82	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:176:PHE:CD2	3:D:163:THR:HG22	2.52	0.45
2:H:83:LYS:HA	2:H:83:LYS:HD3	1.84	0.45
2:C:110:MET:O	2:C:111:ASP:HB3	2.17	0.45
2:H:32:TYR:CD2	2:H:94:LYS:HE2	2.52	0.45
3:L:2:ILE:HG13	3:L:92:ASN:ND2	2.16	0.45
3:L:161:SER:O	3:L:174:LEU:HA	2.17	0.45
1:B:54:CYS:HB3	1:B:65:VAL:HG11	1.98	0.45
2:C:181:GLN:HA	3:D:159:GLN:HE22	1.82	0.45
1:B:64:ASP:OD1	1:B:64:ASP:N	2.50	0.45
2:C:52:ASN:ND2	2:C:102:MET:HA	2.31	0.44
3:D:33:ASN:N	3:D:88:GLN:O	2.43	0.44
1:B:83:ILE:O	1:B:112:ARG:NH1	2.51	0.44
2:H:4:LEU:HG	2:H:112:VAL:HG11	1.99	0.44
3:L:163:THR:N	3:L:172:TYR:O	2.50	0.44
1:B:246:ASP:OD1	1:B:247:TYR:N	2.50	0.44
1:A:50:ARG:NH1	1:A:82:SER:OG	2.51	0.44
2:H:64:LYS:HE2	2:H:64:LYS:HB3	1.78	0.44
1:B:243:ILE:HD13	1:B:243:ILE:HA	1.85	0.44
1:A:63:LEU:HD12	1:A:66:ALA:HB3	1.99	0.43
2:C:52(A):TRP:HA	2:C:71:ARG:NH1	2.33	0.43
3:D:139:TYR:HA	3:D:171:THR:CB	2.47	0.43
3:L:32:LEU:HD22	3:L:70:PHE:CG	2.53	0.43
2:C:110:MET:HG3	2:C:113:TRP:CZ2	2.53	0.43
2:H:52(A):TRP:HA	2:H:71:ARG:NH1	2.33	0.43
2:H:63:VAL:HB	2:H:67:PHE:HB2	2.00	0.43
2:H:108:SER:O	3:L:90:TYR:HD2	1.98	0.43
2:H:179:VAL:N	2:H:187:SER:O	2.43	0.43
2:C:158:GLU:N	2:C:159:PRO:HD2	2.34	0.43
2:H:157:PRO:HB2	2:H:210:HIS:HE2	1.84	0.43
2:C:210:HIS:ND1	2:C:213:SER:OG	2.34	0.43
1:A:163(A):ASN:OD1	1:A:163(A):ASN:N	2.52	0.43
2:C:6:GLU:N	2:C:6:GLU:OE1	2.52	0.43
2:C:47:TRP:CE3	3:D:94:PRO:HB3	2.53	0.43
3:D:54:GLN:O	3:D:57:VAL:HG22	2.19	0.43
3:D:91:GLU:CD	3:D:92:ASN:H	2.22	0.43
3:D:191:TYR:HB2	3:D:208:PHE:CE1	2.54	0.43
4:E:1:NAG:O3	4:E:2:NAG:O5	2.37	0.43
3:L:140:PRO:HG3	3:L:198:GLN:CB	2.49	0.43
1:B:118:ARG:HH21	1:B:179:THR:HG23	1.84	0.43
3:L:109:VAL:HA	3:L:139:TYR:HB3	2.00	0.42
2:C:157:PRO:HD2	2:C:210:HIS:CE1	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:D:108:THR:HG22	3:D:110:ALA:H	1.84	0.42
1:B:61:THR:OG1	1:B:64:ASP:OD1	2.28	0.42
1:B:158:TRP:HD1	1:B:159:ALA:N	2.18	0.42
2:H:157:PRO:HG2	2:H:210:HIS:HE1	1.84	0.42
3:D:146:GLN:O	3:D:194:GLU:N	2.50	0.42
2:H:35:HIS:HE1	2:H:107:TYR:HB3	1.82	0.42
3:D:31:TYR:HD1	3:D:90:TYR:CZ	2.37	0.42
1:B:194:ASN:O	1:B:198:MET:HG2	2.20	0.42
2:H:96:LEU:CD2	2:H:109:GLY:HA3	2.50	0.42
3:L:140:PRO:HB3	3:L:198:GLN:HG2	2.02	0.42
3:D:89:GLN:OE1	3:D:91:GLU:N	2.49	0.42
1:A:63:LEU:HD12	1:A:63:LEU:HA	1.91	0.42
3:D:2:ILE:HD12	3:D:93:VAL:HG22	2.02	0.42
1:A:120:SER:CB	1:A:270:VAL:H	2.33	0.42
2:C:127:LYS:HB3	2:C:127:LYS:HE3	1.89	0.42
5:F:1:NAG:H61	5:F:2:NAG:C7	2.49	0.42
3:L:171:THR:HG21	3:L:174:LEU:H	1.85	0.41
3:L:195:VAL:HG22	3:L:204:VAL:O	2.21	0.41
2:H:68:THR:N	2:H:81:GLU:O	2.53	0.41
2:C:30:ASP:OD1	2:C:30:ASP:N	2.53	0.41
2:C:152:VAL:HG12	2:C:155:TYR:CD1	2.54	0.41
2:C:178:ALA:HB2	2:C:188:LEU:HD23	2.02	0.41
3:L:60:ARG:NH1	3:L:78:LYS:HD3	2.35	0.41
2:C:39:GLN:N	2:C:89:LEU:O	2.50	0.41
1:B:62:ASP:HB2	1:B:86:GLU:OE2	2.21	0.41
1:B:53:LEU:O	1:B:77:PRO:HD2	2.20	0.41
1:B:93:GLY:O	1:B:235:GLY:N	2.53	0.41
2:H:96:LEU:H	2:H:96:LEU:HD23	1.85	0.41
1:B:204:ASP:OD1	1:B:205:SER:N	2.53	0.41
2:H:20:LEU:HD23	2:H:82:MET:SD	2.61	0.41
2:C:51:ILE:HB	2:C:69:ILE:HG21	2.02	0.41
2:H:169:LEU:HD21	2:H:192:VAL:HG21	2.02	0.41
3:L:61:PHE:HD2	3:L:72:PHE:HZ	1.67	0.41
1:A:102:THR:HG22	1:A:221:TYR:CE1	2.56	0.41
1:B:50:ARG:NH1	1:B:112:ARG:O	2.54	0.41
2:H:154:ASP:OD1	2:H:181:GLN:NE2	2.52	0.41
1:A:176:TYR:HD1	1:A:184:GLN:HB2	1.85	0.40
1:A:178:CYS:SG	1:A:184:GLN:NE2	2.94	0.40
1:A:120:SER:HB2	1:A:270:VAL:H	1.86	0.40
3:D:82:VAL:HG12	3:D:167:SER:OG	2.21	0.40
1:A:213:SER:HB2	1:A:218:THR:HG23	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:187:VAL:O	1:A:267:PRO:HB3	2.21	0.40
2:C:176:PHE:CE2	3:D:163:THR:HG22	2.56	0.40
3:D:60:ARG:HD2	3:D:76:SER:O	2.20	0.40
1:B:68:GLY:HA3	1:B:155:THR:HG23	2.04	0.40
2:H:130:SER:HB2	2:H:153:LYS:O	2.21	0.40
2:H:149:GLY:HA2	2:H:164:TRP:CH2	2.49	0.40
3:L:174:LEU:HD23	3:L:175:SER:N	2.36	0.40
1:B:95:PHE:CD1	1:B:243:ILE:HG12	2.56	0.40

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	235/299 (79%)	221 (94%)	14 (6%)	0	100	100
1	B	235/299 (79%)	215 (92%)	20 (8%)	0	100	100
2	C	208/240 (87%)	194 (93%)	13 (6%)	1 (0%)	29	68
2	H	223/240 (93%)	203 (91%)	19 (8%)	1 (0%)	34	72
3	D	203/216 (94%)	180 (89%)	22 (11%)	1 (0%)	29	68
3	L	213/216 (99%)	191 (90%)	19 (9%)	3 (1%)	11	46
All	All	1317/1510 (87%)	1204 (91%)	107 (8%)	6 (0%)	29	68

All (6) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	H	112	VAL
2	C	156	PHE
3	L	173	SER
3	L	94	PRO

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Mol	Chain	Res	Type
3	L	140	PRO
3	D	93	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	202/254 (80%)	199 (98%)	3 (2%)	65	84
1	B	202/254 (80%)	199 (98%)	3 (2%)	65	84
2	C	182/204 (89%)	180 (99%)	2 (1%)	73	88
2	H	190/204 (93%)	186 (98%)	4 (2%)	53	79
3	D	182/190 (96%)	178 (98%)	4 (2%)	52	78
3	L	189/190 (100%)	182 (96%)	7 (4%)	34	65
All	All	1147/1296 (88%)	1124 (98%)	23 (2%)	55	79

All (23) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	85	HIS
1	A	163(A)	ASN
1	A	163(B)	TYR
2	H	16	ARG
2	H	18	LEU
2	H	95	ASP
2	H	96	LEU
3	L	69	ASP
3	L	90	TYR
3	L	107	ARG
3	L	141	ARG
3	L	153	LEU
3	L	171	THR
3	L	193	CYS
2	C	12	VAL
2	C	107	TYR

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Mol	Chain	Res	Type
3	D	137	ASN
3	D	166	ASP
3	D	167	SER
3	D	174	LEU
1	B	64	ASP
1	B	69	ARG
1	B	209	LYS

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

Mol	Chain	Res	Type
3	L	197	HIS
1	B	208	GLN

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 ⓘ

7 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	#$|Z| > 2$
4	NAG	E	1	4,1	14,14,15	0.47	0	17,19,21	0.77	0
4	NAG	E	2	4	14,14,15	0.80	1 (7%)	17,19,21	1.00	1 (5%)
4	BMA	E	3	4	11,11,12	0.63	0	15,15,17	1.12	1 (6%)
5	NAG	F	1	5,1	14,14,15	0.33	0	17,19,21	0.41	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#$\|Z\|>2$	Counts	RMSZ	#$\|Z\|>2$
5	NAG	F	2	5	14,14,15	0.25	0	17,19,21	0.52	0
5	BMA	F	3	5	11,11,12	0.65	0	15,15,17	0.76	0
5	MAN	F	4	5	11,11,12	0.79	1 (9%)	15,15,17	1.03	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
4	NAG	E	1	4,1	-	2/6/23/26	0/1/1/1
4	NAG	E	2	4	-	0/6/23/26	0/1/1/1
4	BMA	E	3	4	-	0/2/19/22	0/1/1/1
5	NAG	F	1	5,1	-	2/6/23/26	0/1/1/1
5	NAG	F	2	5	-	2/6/23/26	0/1/1/1
5	BMA	F	3	5	-	0/2/19/22	0/1/1/1
5	MAN	F	4	5	-	1/2/19/22	0/1/1/1

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	E	2	NAG	O5-C1	2.44	1.47	1.43
5	F	4	MAN	C1-C2	2.01	1.56	1.52

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
4	E	2	NAG	C1-O5-C5	3.12	116.42	112.19
5	F	4	MAN	C1-O5-C5	2.65	115.78	112.19
4	E	3	BMA	C1-O5-C5	2.52	115.61	112.19

There are no chirality outliers.

All (7) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	F	1	NAG	C8-C7-N2-C2
5	F	1	NAG	O7-C7-N2-C2
4	E	1	NAG	C1-C2-N2-C7
5	F	4	MAN	O5-C5-C6-O6
5	F	2	NAG	C3-C2-N2-C7

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Mol	Chain	Res	Type	Atoms
5	F	2	NAG	C4-C5-C6-O6
4	E	1	NAG	C3-C2-N2-C7

There are no ring outliers.

4 monomers are involved in 3 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	E	2	NAG	1	0
4	E	1	NAG	2	0
5	F	1	NAG	1	0
5	F	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 E

Bond lengths

Bond angles

Torsions

Rings
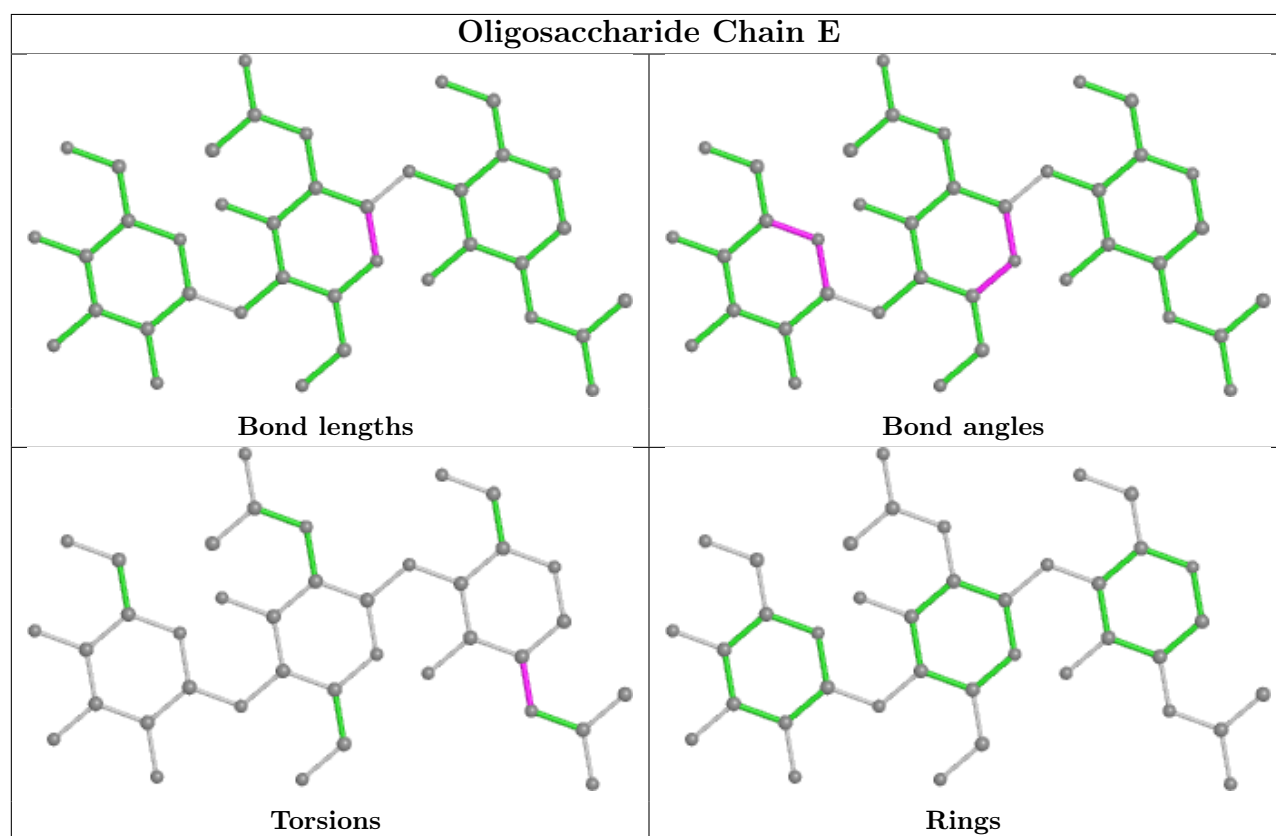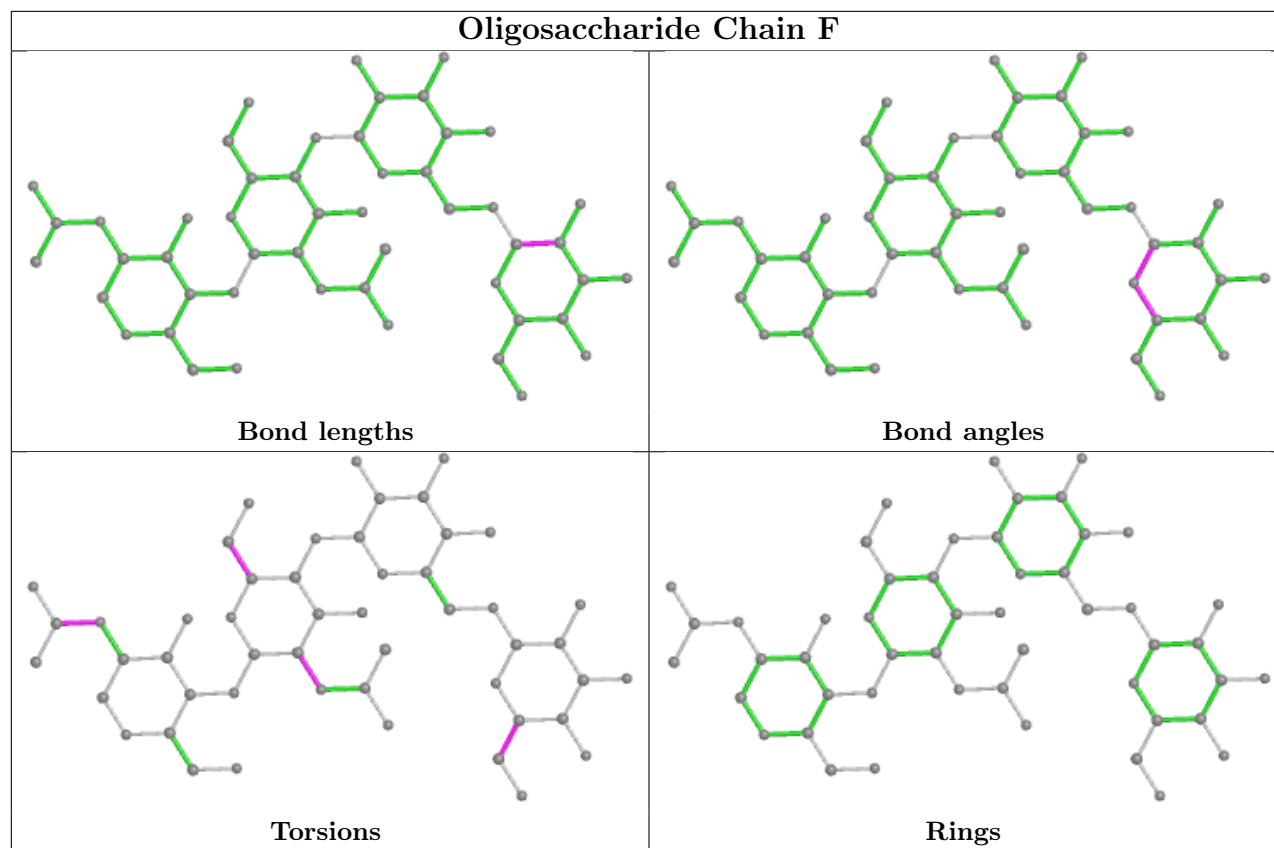
5.6 Ligand geometry ⓘ

There are no ligands in this entry.

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	237/299 (79%)	0.10	2 (0%)	86	81	139, 178, 227, 253	0
1	B	237/299 (79%)	0.15	8 (3%)	45	40	152, 189, 233, 274	0
2	C	214/240 (89%)	0.20	11 (5%)	28	25	129, 196, 244, 277	0
2	H	225/240 (93%)	0.06	0	100	100	105, 160, 210, 261	0
3	D	207/216 (95%)	0.07	5 (2%)	59	53	106, 185, 240, 275	0
3	L	215/216 (99%)	0.16	6 (2%)	53	47	105, 173, 221, 239	0
All	All	1335/1510 (88%)	0.12	32 (2%)	59	53	105, 178, 235, 277	0

All (32) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	46	GLY	4.7
1	B	47	THR	3.9
3	L	180	LEU	3.3
2	C	169	LEU	3.3
2	C	162	VAL	3.3
2	C	133	PRO	3.0
1	A	56	ASP	3.0
2	C	131	VAL	2.9
3	L	129	ALA	2.8
3	L	107	ARG	2.8
1	A	235	GLY	2.8
1	B	163(B)	TYR	2.7
3	L	148	LYS	2.6
1	B	186	THR	2.4
1	B	248	MET	2.4
3	L	173	SER	2.4
2	C	148	LEU	2.4
2	C	204	TYR	2.4
3	D	162	VAL	2.3

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Mol	Chain	Res	Type	RSRZ
2	C	154	ASP	2.3
3	D	212	GLU	2.3
2	C	111	ASP	2.3
2	C	153	LYS	2.2
1	B	184	GLN	2.2
1	B	67	LEU	2.1
3	D	160	GLU	2.1
2	C	217	VAL	2.1
3	D	209	ASN	2.1
3	D	132	VAL	2.1
1	B	266	LEU	2.0
3	L	0	SER	2.0
2	C	193	THR	2.0

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

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

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
4	BMA	E	3	11/12	0.69	0.25	239,275,292,293	0
5	MAN	F	4	11/12	0.70	0.25	216,221,239,239	0
5	BMA	F	3	11/12	0.75	0.16	229,252,263,269	0
4	NAG	E	1	14/15	0.77	0.32	197,197,221,236	0
4	NAG	E	2	14/15	0.82	0.22	237,268,274,282	0
5	NAG	F	1	14/15	0.88	0.21	231,234,242,249	0
5	NAG	F	2	14/15	0.88	0.19	230,260,283,284	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)
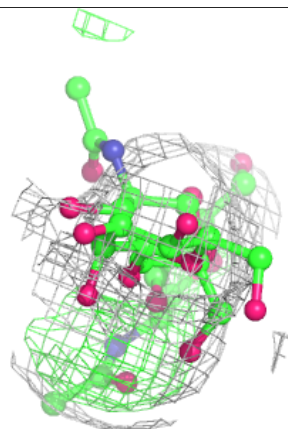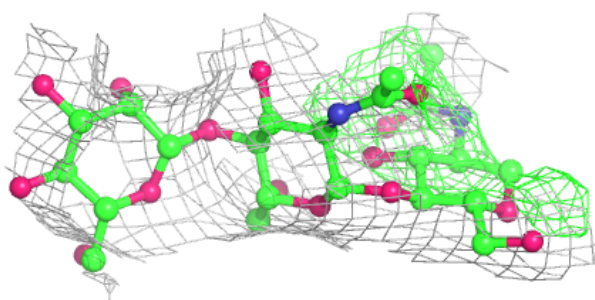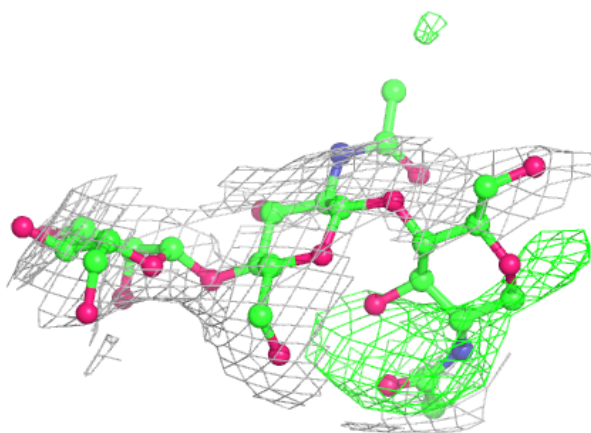
Electron density around Chain F:

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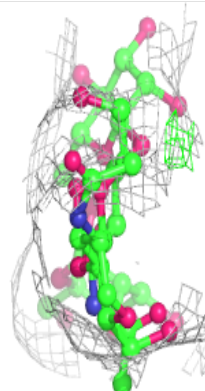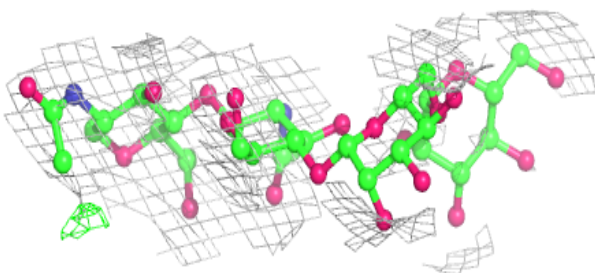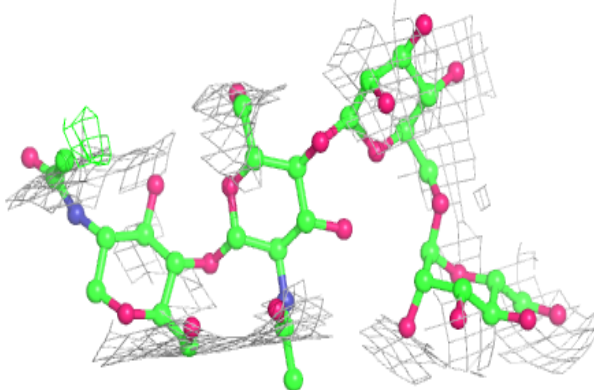
6.4 Ligands ⓘ

There are no ligands in this entry.

6.5 Other polymers ⓘ

There are no such residues in this entry.