Full wwPDB X-ray Structure Validation Report (i)

Nov 13, 2023 – 01:48 PM JST

PDB ID	:	5XC2
Title	:	Crystal structure of GH family 81 beta-1,3-glucanase from Rhizomucr miehei complexed with laminarihexaose
Authors	:	Qin, Z.; Yang, S.; Peng, Z.; Yan, Q.; Jiang, Z.
Deposited on	:	2017-03-22
Resolution	:	2.70 Å(reported)

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

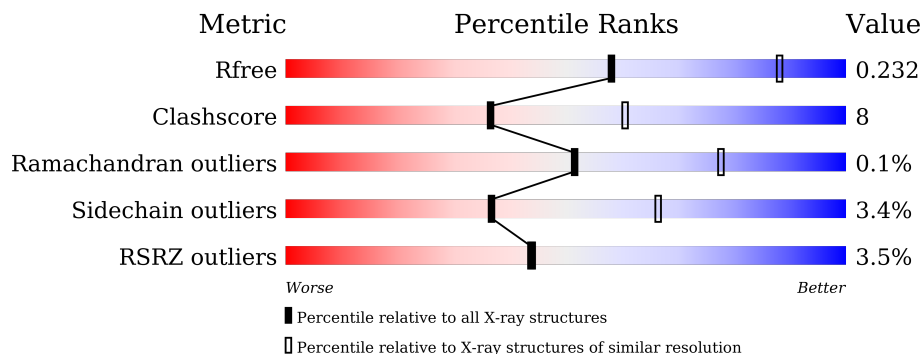|		
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.36
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36

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 2.70 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.
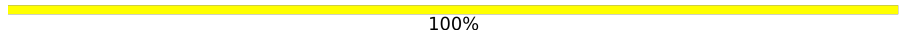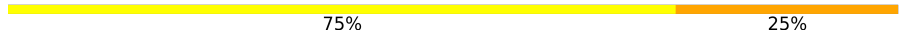
Metric	Percentile Ranks	Value
Rfree		0.232
Clashscore		8
Ramachandran outliers		0.1%
Sidechain outliers		3.4%
RSRZ outliers		3.5%

Worse ← → Better

▌ Percentile relative to all X-ray structures

▯ Percentile relative to X-ray structures of similar resolution
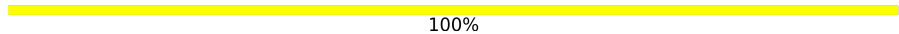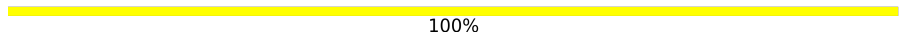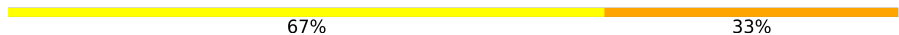
Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R$_{free}$	130704	2808 (2.70-2.70)
Clashscore	141614	3122 (2.70-2.70)
Ramachandran outliers	138981	3069 (2.70-2.70)
Sidechain outliers	138945	3069 (2.70-2.70)
RSRZ outliers	127900	2737 (2.70-2.70)

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	796	2% / 77% / 12% · 10%
1	B	796	% / 74% / 15% · 10%
1	C	796	4% / 67% / 20% · 11%
1	D	796	5% / 66% / 15% · 19%
2	E	6	50% / 50%
3	F	5	80% / 20%

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Mol	Chain	Length	Quality of chain
3	M	5	40% / 60%
4	G	4	75% / 25%
4	L	4	100%
4	O	4	75% / 25%
4	P	4	50% / 50%
4	Q	4	25% / 75%
5	H	3	100%
5	I	3	100%
5	N	3	33% / 67%
5	R	3	67% / 33%
6	J	2	50% / 50%
6	K	2	50% / 50%

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

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
6	BGC	J	1	-	X	-	-
6	BGC	J	2	-	X	-	-

2 Entry composition ⓘ

There are 7 unique types of molecules in this entry. The entry contains 23075 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 Endo-beta-1,3-glucanase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	717	Total 5661	C 3624	N 947	O 1077	S 13	0	0	0
1	B	720	Total 5687	C 3638	N 951	O 1085	S 13	0	1	0
1	C	705	Total 5545	C 3553	N 923	O 1056	S 13	0	1	0
1	D	648	Total 5120	C 3298	N 851	O 959	S 12	0	1	0

- Molecule 2 is an oligosaccharide called beta-D-glucopyranose-(1-3)-beta-D-glucopyranose-(1 -3)-beta-D-glucopyranose-(1-3)-beta-D-glucopyranose-(1-3)-beta-D-glucopyranose-(1-3)-bet a-D-glucopyranose.

Mol	Chain	Residues	Atoms			ZeroOcc	AltConf	Trace
2	E	6	Total 67	C 36	O 31	0	0	0

- Molecule 3 is an oligosaccharide called beta-D-glucopyranose-(1-3)-beta-D-glucopyranose-(1 -3)-beta-D-glucopyranose-(1-3)-beta-D-glucopyranose-(1-3)-beta-D-glucopyranose.
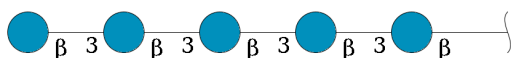
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf	Trace
3	F	5	Total 56	C 30	O 26	0	0	0

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Mol	Chain	Residues	Atoms			ZeroOcc	AltConf	Trace
3	M	5	Total 56	C 30	O 26	0	0	0

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

Mol	Chain	Residues	Atoms			ZeroOcc	AltConf	Trace
4	G	4	Total 45	C 24	O 21	0	0	0
4	L	4	Total 45	C 24	O 21	0	0	0
4	O	4	Total 45	C 24	O 21	0	0	0
4	P	4	Total 45	C 24	O 21	0	0	0
4	Q	4	Total 45	C 24	O 21	0	0	0

- Molecule 5 is an oligosaccharide called beta-D-glucopyranose-(1-3)-beta-D-glucopyranose-(1-3)-beta-D-glucopyranose.
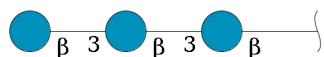
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf	Trace
5	H	3	Total 33	C 18	O 15	0	0	0
5	I	3	Total 34	C 18	O 16	0	0	0
5	N	3	Total 34	C 18	O 16	0	0	0
5	R	3	Total 34	C 18	O 16	0	0	0

- Molecule 6 is an oligosaccharide called beta-D-glucopyranose-(1-3)-beta-D-glucopyranose.
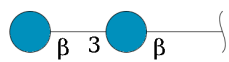
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf	Trace
6	J	2	Total 22	C 12	O 10	0	0	0
6	K	2	Total 22	C 12	O 10	0	0	0

- Molecule 7 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
7	A	185	Total 185	O 185	0	0
7	B	143	Total 143	O 143	0	0
7	C	57	Total 57	O 57	0	0
7	D	94	Total 94	O 94	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: Endo-beta-1,3-glucanase

Chain A:

• Molecule 1: Endo-beta-1,3-glucanase

Chain B:

L633 H637 R653 W662 I669 A670 V673 Y685 P690 A691 E692 A693 Y694 P695 R698 F721 F722 R723 R724 SER LEU LEU ALA ALA LEU ALA ARG HIS GLY SER THR ARG ARG PRO SER LEU PRO SER SER GLY ASP ASP LYS HIS GLU ASP GLY PHE LEU LEU

ARG PHE ARG ARG LEU ASN PRO PHE ASN LEU LYS HIS ARG ILE TYR

• Molecule 1: Endo-beta-1,3-glucanase

Chain C:

4%

67%   20% • 11%

MET ARG PHE GLN VAL ILE VAL ALA ALA THR ILE THR MET ILE THR SER TYR ILE PRO GLY VAL ALA SER GLN SER THR SER ASP G5 D6 D7 S13 I24 K25 H26 P27 P30 N34 N37 V41 P42 I47 P63 D64 L70 G73 G76 N77

P78 Q84 P85 S86 A87 K88 Y93 P94 P95 T96 N97 D98 V99 PRO TYR THR ASP A104 V112 L115 R116 L117 T118 W122 V126 P127 D128 R129 H136 L141 T145 P146 Q147 D148 S149 D154 N167 N170 Q174 F175 A180 I181 I182 S183 A186

K189 LYS SER ASP ASP THR SER T197 K202 I205 T212 S213 I216 D222 K223 E226 L227 R228 N232 S233 S238 T242 R246 V247 A248 K249 L250 L258 L259 D260 W266 R275 S276 A282 T290 L298 Y302 T307 S308 I309

T317 D318 A324 T325 K326 G327 T338 S345 P346 W349 L350 P351 LEU GLN A354 A355 P358 I361 M365 T366 Y376 T380 D384 N385 Y386 K394 F395 L400 I401 L402 N403 K404 S405 D406 Q407 T408 Q409 E414 L415 I418 D421 K422 L423 K424

A425 A426 F427 L428 I448 M458 S465 H470 Y473 H476 I489 L493 D494 W497 K503 T506 E507 I510 K542 R550 D551 S558 W563 L567 T572 G573 N574 T575 P576 L577 Y593 E594 Y595 M598 L599 D600 G601 R605 P606

E607 N608 I609 V610 R611 N612 K613 Y618 K622 T623 D624 Y625 T626 T627 G630 L633 I636 H637 M644 T645 P646 E647 L648 M649 E650 Y651 I652 R653 T654 P655 Q660 K665 Y685 A686 I687 P690 A691 E692 P695 A696 L697 R698 K699 V700 T707 R708 L712

Y713 L714 T715 P719 H720 F721 F722 ARG ARG SER LEU LEU ALA ALA LEU ALA ARG HIS GLY SER THR ARG ARG PRO SER LEU PRO SER SER GLY ASP ASP LYS HIS ASP GLY PHE LEU LEU ARG PHE ARG ARG LEU ASN PRO PHE ASN LEU LYS HIS ARG ILE TYR

• Molecule 1: Endo-beta-1,3-glucanase

Chain D:

5%

66%   15% • 19%

MET ARG PHE GLN VAL ILE VAL ALA ALA THR ILE THR MET ILE THR SER TYR ILE PRO GLY VAL ALA SER GLN SER THR SER ASP G5 D6 D7 P17 K25 H26 P27 M31 Y32 A33 N37 I40 V41 P42 I47 F51 A55 D56 N57 L58 D64

L71 ASP GLY TYR GLY GLY ASN PRO G79 L80 T81 I82 R83 Q84 L90 G91 P94 PRO THR ASN ASP VAL PRO TYR THR ASP A104 G105 Y106 M107 I108 N109 S110 V111 V112 V113 D114 L117 THR SER GLU TRP SER ASP VAL VAL PRO D128 L141 R142 L143 SER THR PRO GLN

ASP S149 N150 F155 Y163 L171 T172 F175 L176 S177 GLN HIS ALA ILE ILE SER VAL GLU ALA ASP GLU LYS LYS SER ASP ASP THR SER THR SER THR PHE S199 G200 R201 K202 F203 K204 I205 THR MET ASN ASP PRO T212 S213 T214 F215 I216 I217 Y218 S219 D222 K223 P224

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

Chain E:

• Molecule 3: beta-D-glucopyranose-(1-3)-beta-D-glucopyranose-(1-3)-beta-D-glucopyranose-(1-3)
-beta-D-glucopyranose-(1-3)-beta-D-glucopyranose

Chain F:

• Molecule 3: beta-D-glucopyranose-(1-3)-beta-D-glucopyranose-(1-3)-beta-D-glucopyranose-(1-3)
-beta-D-glucopyranose-(1-3)-beta-D-glucopyranose

Chain M:

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

Chain G:

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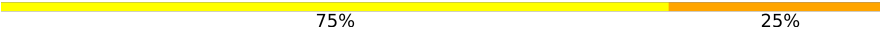-beta-D-glucopyranose

Chain L:

BGC1 BGC2 BGC3 BGC4

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

Chain O: 75% 25%

BGC1 BGC2 BGC3 BGC4

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

Chain P: 50% 50%

BGC1 BGC2 BGC3 BGC4

• Molecule 4: beta-D-glucopyranose-(1-3)-beta-D-glucopyranose-(1-3)-beta-D-glucopyranose-(1-3)-beta-D-glucopyranose
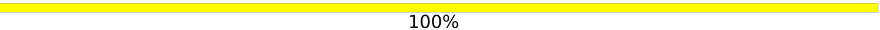
Chain Q: 25% 75%

BGC1 BGC2 BGC3 BGC4

• Molecule 5: beta-D-glucopyranose-(1-3)-beta-D-glucopyranose-(1-3)-beta-D-glucopyranose

Chain H: 100%

BGC1 BGC2 BGC3

• Molecule 5: beta-D-glucopyranose-(1-3)-beta-D-glucopyranose-(1-3)-beta-D-glucopyranose

Chain I: 100%

BGC1 BGC2 BGC3

• Molecule 5: beta-D-glucopyranose-(1-3)-beta-D-glucopyranose-(1-3)-beta-D-glucopyranose

Chain N: 33% 67%

BGC1 BGC2 BGC3

• Molecule 5: beta-D-glucopyranose-(1-3)-beta-D-glucopyranose-(1-3)-beta-D-glucopyranose

Chain R:

67%　　　　　33%

BGC1 BGC2 BGC3

• Molecule 6: beta-D-glucopyranose-(1-3)-beta-D-glucopyranose

Chain J:

50%　　　　　50%

BGC1 BGC2

• Molecule 6: beta-D-glucopyranose-(1-3)-beta-D-glucopyranose

Chain K:

50%　　　　　50%

BGC1 BGC2

4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 1 21 1	Depositor
Cell constants a, b, c, α, β, γ	108.70Å 99.02Å 138.43Å 90.00° 111.35° 90.00°	Depositor
Resolution (Å)	29.73 – 2.70 29.73 – 2.70	Depositor EDS
% Data completeness (in resolution range)	99.5 (29.73-2.70) 99.6 (29.73-2.70)	Depositor EDS
R_{merge}	0.10	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.72 (at 2.68Å)	Xtriage
Refinement program	PHENIX 1.8.2_1309	Depositor
R, R_{free}	0.176 , 0.232 0.180 , 0.232	Depositor DCC
R_{free} test set	2005 reflections (2.68%)	wwPDB-VP
Wilson B-factor (Å^2)	46.6	Xtriage
Anisotropy	0.284	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.35 , 45.3	EDS
L-test for twinning[2]	$< |L| > = 0.46, < L^2 > = 0.28$	Xtriage
Estimated twinning fraction	0.035 for h,-k,-h-l	Xtriage
F_o,F_c correlation	0.94	EDS
Total number of atoms	23075	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 18.53% 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: BGC

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	0.53	0/5821	0.68	1/7949 (0.0%)
1	B	0.49	0/5851	0.67	0/7991
1	C	0.45	0/5704	0.67	1/7791 (0.0%)
1	D	0.44	0/5265	0.66	0/7180
All	All	0.48	0/22641	0.67	2/30911 (0.0%)

There are no bond length outliers.

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	A	316	ARG	NE-CZ-NH1	5.36	122.98	120.30
1	C	415	LEU	CA-CB-CG	5.25	127.37	115.30

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	5661	0	5451	64	0
1	B	5687	0	5470	84	0
1	C	5545	0	5311	126	0
1	D	5120	0	4938	65	0
2	E	67	0	56	4	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
3	F	56	0	48	1	0
3	M	56	0	48	2	0
4	G	45	0	39	1	0
4	L	45	0	39	0	0
4	O	45	0	39	1	0
4	P	45	0	38	2	0
4	Q	45	0	38	4	0
5	H	33	0	27	0	0
5	I	34	0	28	0	0
5	N	34	0	30	4	0
5	R	34	0	30	3	0
6	J	22	0	13	4	0
6	K	22	0	17	1	0
7	A	185	0	0	5	1
7	B	143	0	0	7	0
7	C	57	0	0	10	0
7	D	94	0	0	4	1
All	All	23075	0	21660	349	1

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

All (349) 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)
6:J:1:BGC:C5	6:J:1:BGC:O5	1.64	1.42
1:C:64:ASP:OD2	1:C:302:TYR:OH	1.70	1.09
1:C:644:MET:HG3	1:C:649:MET:HE3	1.40	1.02
1:C:644:MET:HG3	1:C:649:MET:CE	1.93	0.98
1:B:363:GLU:OE1	1:B:698:ARG:NH2	2.07	0.88
1:C:170:ASN:H	1:C:242:THR:HG22	1.44	0.82
1:B:353:GLN:NE2	1:B:355:ALA:O	2.12	0.81
1:C:630:GLY:H	5:N:3:BGC:H6C1	1.48	0.79
1:C:644:MET:CG	1:C:649:MET:CE	2.60	0.79
1:C:630:GLY:N	5:N:3:BGC:H6C1	1.97	0.78
1:C:104:ALA:HB2	1:C:608:ASN:HB3	1.67	0.77
1:D:90:LEU:HD13	1:D:608:ASN:HD21	1.49	0.76
1:C:99:VAL:HG12	1:C:99:VAL:O	1.85	0.76
1:C:598:MET:HE1	1:C:610:VAL:HA	1.68	0.75
1:D:406:ASP:HA	1:D:411:ARG:HH22	1.51	0.74
1:C:551:ASP:OD2	7:C:904:HOH:O	2.08	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:34:ASN:HB3	1:C:37:ASN:ND2	2.06	0.71
1:B:74:TYR:O	1:B:116:ARG:NH1	2.25	0.70
1:D:150:ASN:OD1	1:D:150:ASN:N	2.18	0.68
6:J:1:BGC:O5	6:J:1:BGC:C6	2.38	0.67
1:C:222:ASP:OD1	1:C:223:LYS:N	2.27	0.67
1:B:692:GLU:OE2	1:B:724:ARG:NH1	2.29	0.66
1:C:400:LEU:HA	1:C:493:LEU:HD11	1.77	0.65
1:D:251:PRO:HG3	1:D:321:LEU:HD11	1.79	0.65
1:C:115:LEU:HD11	1:C:175:PHE:HB3	1.78	0.65
6:J:1:BGC:C5	6:J:1:BGC:C1	2.74	0.65
1:B:621:GLN:NE2	7:B:909:HOH:O	2.30	0.64
1:A:633:LEU:HD22	1:A:669:ILE:HG13	1.80	0.64
1:D:415:LEU:HD12	1:D:418:ILE:HD11	1.80	0.64
1:C:63:PRO:O	1:C:64:ASP:HB2	1.96	0.63
1:C:258:LEU:HG	1:C:298:LEU:HD21	1.81	0.63
1:A:101:TYR:HE2	1:A:669:ILE:HD11	1.64	0.62
1:D:454:LEU:HB3	1:D:458:MET:HE3	1.81	0.62
1:D:424:LYS:NZ	1:D:494:ASP:OD2	2.27	0.62
1:D:566:LYS:HG3	1:D:578:THR:HG23	1.80	0.62
1:C:625:TYR:OH	1:C:637:HIS:NE2	2.27	0.61
1:D:81:THR:HG23	1:D:113:VAL:HG13	1.82	0.61
1:D:91:GLY:HA3	1:D:106:TYR:CE1	2.35	0.61
1:A:104:ALA:HB2	1:A:608:ASN:HB3	1.81	0.61
1:A:103:ASP:CG	1:A:611:ARG:HH12	2.04	0.60
7:C:903:HOH:O	5:N:3:BGC:O3	2.04	0.60
1:C:317:THR:HG22	1:C:318:ASP:H	1.67	0.60
1:B:456:THR:HG23	1:B:462:ASP:HB2	1.83	0.60
4:Q:2:BGC:O4	5:R:2:BGC:H6C1	2.02	0.60
1:B:181:ILE:HB	1:B:229:LYS:HE3	1.84	0.59
1:C:380:THR:HG21	1:C:426:ALA:HB1	1.83	0.59
1:B:117:LEU:HD11	1:B:247:VAL:HG11	1.85	0.59
1:B:690:PRO:HB2	1:B:721:PHE:HD1	1.67	0.59
1:D:83:ARG:NH2	1:D:110:SER:OG	2.35	0.59
1:C:563:TRP:CD1	1:C:647:GLU:HB2	2.37	0.59
1:B:190:LYS:N	1:B:190:LYS:HD3	2.18	0.59
1:C:644:MET:CG	1:C:649:MET:HE3	2.22	0.58
1:A:440:ARG:NH2	1:A:451:LYS:HD3	2.18	0.58
1:B:190:LYS:NZ	1:B:190:LYS:H	2.02	0.58
1:C:593:TYR:OH	1:C:652:ILE:O	2.15	0.58
1:D:276:SER:HA	1:D:282:ALA:HA	1.87	0.56
1:A:306:LEU:HD11	1:A:330:THR:HB	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:258:LEU:HD22	1:C:317:THR:HG21	1.88	0.56
1:C:574:ASN:HB3	1:C:577:LEU:HB3	1.87	0.56
1:D:455:PRO:HD2	1:D:458:MET:HE2	1.88	0.56
1:A:103:ASP:OD1	1:A:103:ASP:N	2.39	0.55
1:C:400:LEU:HD23	1:C:400:LEU:C	2.26	0.55
1:C:510:ILE:HD11	1:C:577:LEU:HD11	1.87	0.55
1:B:306:LEU:HD11	1:B:330:THR:HB	1.88	0.55
1:C:349:TRP:CH2	1:C:567:LEU:HB3	2.41	0.55
1:B:627:THR:O	6:J:1:BGC:O6	2.25	0.55
1:D:33:ALA:HB2	1:D:51:PHE:HD1	1.71	0.55
1:D:251:PRO:HG2	1:D:319:MET:CG	2.37	0.55
1:D:689:ASN:ND2	1:D:692:GLU:OE1	2.40	0.55
1:C:695:PRO:HA	1:C:698:ARG:HD3	1.89	0.54
1:C:400:LEU:HD22	1:C:401:ILE:HA	1.90	0.54
1:B:116:ARG:HB3	1:B:176:LEU:HG	1.89	0.54
1:B:669:ILE:O	1:B:673:VAL:HG23	2.08	0.54
1:B:379:GLU:HA	1:B:382:LYS:NZ	2.22	0.54
1:C:506:THR:O	1:C:510:ILE:HG22	2.07	0.53
1:A:631:ARG:NH1	7:A:909:HOH:O	2.34	0.53
1:B:71:LEU:HD22	1:B:78:PRO:HB2	1.90	0.53
1:A:42:PRO:HG3	1:A:47:ILE:HD11	1.90	0.53
1:C:712:LEU:O	1:C:715:THR:OG1	2.22	0.53
1:C:276:SER:HA	1:C:282:ALA:HA	1.91	0.53
1:C:42:PRO:HG3	1:C:47:ILE:HD11	1.91	0.53
1:C:226:GLU:HB3	1:C:238:SER:OG	2.09	0.53
1:A:118:THR:OG1	1:A:119:SER:N	2.38	0.52
1:A:675:SER:HB2	1:A:676:PRO:HD2	1.89	0.52
1:A:26:HIS:CG	1:A:27:PRO:HD2	2.45	0.52
1:C:606:PRO:O	1:C:610:VAL:HG23	2.09	0.52
1:D:201:ARG:CZ	1:D:224:PRO:HG3	2.39	0.52
1:D:386:TYR:OH	4:P:3:BGC:O6	2.27	0.52
1:C:30:PRO:HG3	1:C:41:VAL:HG21	1.92	0.52
1:A:548:ASP:OD2	4:G:1:BGC:H6C2	2.10	0.52
1:C:685:TYR:HE2	1:C:692:GLU:HB2	1.75	0.52
1:A:179:HIS:HB2	1:A:207:MET:HG2	1.92	0.51
1:C:180:ALA:HA	1:C:233:SER:OG	2.11	0.51
1:D:633:LEU:HD23	1:D:637:HIS:CD2	2.46	0.51
1:A:614:VAL:HB	7:A:988:HOH:O	2.11	0.51
1:C:345:SER:HB2	1:C:651:TYR:CE2	2.46	0.51
1:B:624:ASP:OD2	6:K:2:BGC:O6	2.26	0.51
1:C:88:LYS:HE3	1:C:324:ALA:O	2.11	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:494:ASP:OD2	1:C:497:TRP:HB2	2.11	0.51
1:C:575:THR:N	1:C:576:PRO:HD2	2.26	0.51
1:C:645:THR:HG23	1:C:647:GLU:H	1.76	0.51
1:A:597:TRP:CZ3	1:A:653:ARG:HG2	2.46	0.51
1:B:63:PRO:HD2	1:B:66:TYR:O	2.11	0.51
1:D:393:GLN:O	1:D:397:MET:HG2	2.11	0.51
1:D:548:ASP:OD1	4:Q:1:BGC:O6	2.27	0.51
4:P:2:BGC:H6C1	4:P:2:BGC:H2	1.92	0.51
1:C:563:TRP:O	1:C:567:LEU:HG	2.10	0.51
1:C:574:ASN:OD1	1:C:576:PRO:HG2	2.10	0.51
1:A:57:ASN:HB3	1:A:70:LEU:O	2.10	0.50
1:B:518:ASP:HB2	2:E:6:BGC:H6C2	1.92	0.50
1:C:401:ILE:HD11	1:C:713:TYR:CG	2.46	0.50
1:C:563:TRP:CE2	1:C:567:LEU:HD11	2.47	0.50
1:A:108:ILE:HG13	1:A:109:ASN:H	1.75	0.50
1:B:102:THR:HG23	1:B:612:ASN:OD1	2.12	0.50
1:B:95:PRO:N	7:B:917:HOH:O	2.44	0.50
1:C:84:GLN:HB3	1:C:249:LYS:NZ	2.27	0.50
1:C:104:ALA:CB	1:C:608:ASN:HB3	2.41	0.50
1:D:317:THR:OG1	1:D:331:ALA:HB3	2.12	0.50
1:B:135:ASP:OD1	1:B:138:SER:N	2.44	0.50
1:D:325:THR:O	1:D:325:THR:OG1	2.21	0.50
1:A:100:PRO:HD2	1:A:633:LEU:HD13	1.93	0.50
1:B:100:PRO:HD2	1:B:633:LEU:HG	1.94	0.50
1:B:411:ARG:HH11	1:B:411:ARG:HB2	1.77	0.50
1:C:202:LYS:NZ	1:C:260:ASP:OD1	2.40	0.50
1:C:654:THR:HB	1:C:655:PRO:HD2	1.92	0.49
1:A:108:ILE:HD12	1:A:622:LYS:HB3	1.94	0.49
1:A:384:ASP:HB2	1:A:467:GLU:OE2	2.12	0.49
1:C:686:ALA:CB	1:C:715:THR:HG22	2.41	0.49
7:C:901:HOH:O	5:N:1:BGC:O1	2.01	0.49
1:D:269:GLY:HA3	1:D:289:LYS:HD2	1.94	0.49
1:C:129:ARG:HD3	7:C:924:HOH:O	2.13	0.49
1:D:275:ARG:NH1	7:D:915:HOH:O	2.45	0.49
1:A:287:LYS:HE3	1:A:336:GLU:OE1	2.13	0.49
1:C:386:TYR:OH	3:M:4:BGC:H6C2	2.12	0.49
1:D:718:ARG:HB3	1:D:720:HIS:CE1	2.48	0.49
1:A:72:ASP:OD2	1:A:72:ASP:N	2.46	0.48
1:C:181:ILE:N	1:C:232:ASN:O	2.41	0.48
1:B:299:THR:HB	1:B:337:TRP:HZ2	1.78	0.48
1:B:365:MET:O	1:B:368:ILE:HG22	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:Q:2:BGC:H3	5:R:2:BGC:H2	1.94	0.48
1:B:8:LEU:HD12	1:B:274:ALA:HB1	1.96	0.48
1:C:645:THR:HG23	1:C:647:GLU:N	2.28	0.48
1:C:414:GLU:O	1:C:418:ILE:HD12	2.13	0.48
1:D:287:LYS:HG2	1:D:336:GLU:HG2	1.95	0.48
1:D:249:LYS:O	1:D:251:PRO:HD3	2.14	0.48
1:A:43:THR:HG21	1:A:473:TYR:CD2	2.49	0.48
1:D:80:LEU:HD13	1:D:155:PHE:CD2	2.49	0.48
1:D:448:ILE:O	1:D:476:HIS:HE1	1.97	0.48
1:D:583:LEU:O	1:D:587:VAL:HG23	2.14	0.48
1:B:694:TYR:HB3	1:B:695:PRO:HD3	1.96	0.47
1:B:26:HIS:CG	1:B:27:PRO:HD2	2.49	0.47
1:B:222:ASP:HB2	1:B:223:LYS:HD2	1.96	0.47
1:B:226:GLU:HB3	1:B:238:SER:OG	2.15	0.47
1:B:606:PRO:O	1:B:610:VAL:HG23	2.14	0.47
1:A:104:ALA:CB	1:A:608:ASN:HB3	2.44	0.47
1:A:99:VAL:HG13	1:A:633:LEU:HD12	1.96	0.47
1:A:251:PRO:HG2	1:A:319:MET:CG	2.45	0.47
1:C:327:GLY:HA2	7:C:920:HOH:O	2.13	0.47
1:C:400:LEU:C	1:C:400:LEU:CD2	2.83	0.47
1:D:90:LEU:HD21	1:D:606:PRO:HG2	1.96	0.47
1:D:104:ALA:HB2	1:D:608:ASN:ND2	2.29	0.47
1:A:690:PRO:HB2	1:A:721:PHE:HD1	1.79	0.47
1:A:251:PRO:HG2	1:A:319:MET:HG2	1.96	0.47
1:A:692:GLU:OE2	7:A:902:HOH:O	2.20	0.47
1:B:118:THR:OG1	1:B:119:SER:N	2.46	0.47
1:B:384:ASP:HB2	1:B:467:GLU:OE2	2.15	0.47
1:C:618:TYR:HD1	1:C:623:THR:HG22	1.79	0.47
1:D:40:ILE:HG21	1:D:524:ALA:HB2	1.95	0.47
1:D:163:TYR:HB2	1:D:246:ARG:NH2	2.29	0.47
1:C:542:LYS:HB2	7:C:916:HOH:O	2.15	0.47
1:A:363:GLU:OE2	1:A:698:ARG:NE	2.48	0.47
1:C:34:ASN:HB3	1:C:37:ASN:HD22	1.80	0.47
1:C:97:ASN:N	1:C:97:ASN:OD1	2.47	0.47
1:C:136:HIS:HB3	7:C:930:HOH:O	2.15	0.47
1:C:622:LYS:NZ	4:O:1:BGC:O4	2.44	0.47
1:B:251:PRO:HG2	1:B:319:MET:CG	2.45	0.46
1:C:700:VAL:O	1:C:708:ARG:NH1	2.44	0.46
1:B:95:PRO:HD2	7:B:917:HOH:O	2.14	0.46
1:B:103:ASP:OD1	1:B:103:ASP:N	2.45	0.46
1:C:216:ILE:HD11	1:C:250:LEU:HD22	1.96	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:645:THR:HG21	7:C:928:HOH:O	2.15	0.46
1:D:142:ARG:HD3	7:D:935:HOH:O	2.14	0.46
1:A:313:ASN:ND2	7:A:914:HOH:O	2.39	0.46
1:C:644:MET:HG3	1:C:649:MET:HE1	1.90	0.46
1:B:371:ASP:OD1	7:B:904:HOH:O	2.20	0.46
1:B:448:ILE:O	1:B:476:HIS:HE1	1.99	0.46
1:C:96:THR:N	7:C:913:HOH:O	2.42	0.46
1:B:115:LEU:HD23	1:B:247:VAL:HG21	1.98	0.46
1:C:644:MET:SD	1:C:648:LEU:HD23	2.56	0.46
1:D:685:TYR:CE2	1:D:689:ASN:HB3	2.51	0.46
1:B:304:HIS:HB3	1:B:594:GLU:HG3	1.98	0.46
1:B:607:GLU:HG3	1:B:608:ASN:N	2.28	0.46
1:A:723:ARG:HD3	1:A:723:ARG:HA	1.78	0.46
1:C:126:VAL:HA	1:C:127:PRO:HD3	1.77	0.46
1:C:470:HIS:CD2	1:C:476:HIS:CD2	3.04	0.46
1:D:603:LYS:HE2	1:D:603:LYS:HB3	1.38	0.46
1:A:249:LYS:O	1:A:251:PRO:HD3	2.15	0.46
1:B:302:TYR:CE1	1:B:326:LYS:HD2	2.51	0.46
1:A:481:GLY:HA3	7:A:971:HOH:O	2.16	0.45
1:B:597:TRP:CZ3	1:B:653:ARG:HG2	2.51	0.45
1:B:391:GLY:O	1:B:394:LYS:HG2	2.16	0.45
1:C:358:PRO:O	1:C:361:ILE:HG22	2.16	0.45
1:B:249:LYS:O	1:B:251:PRO:HD3	2.16	0.45
1:C:354:ALA:HB1	1:C:407:GLN:HB3	1.97	0.45
1:B:274:ALA:O	1:B:275:ARG:HD2	2.15	0.45
1:D:201:ARG:HA	1:D:219:SER:HB2	1.98	0.45
1:A:115:LEU:HD11	1:A:175:PHE:HB3	1.98	0.45
1:B:108:ILE:HG22	1:B:622:LYS:HB2	1.99	0.45
1:B:363:GLU:O	1:B:366:THR:HB	2.17	0.45
1:A:116:ARG:HH11	1:A:116:ARG:HG2	1.82	0.45
1:A:440:ARG:HH21	1:A:451:LYS:HD3	1.82	0.45
1:C:326:LYS:HD3	1:C:595:TYR:CZ	2.52	0.45
1:C:503:LYS:HB3	1:C:503:LYS:HE2	1.71	0.45
1:D:326:LYS:HD3	1:D:595:TYR:CZ	2.52	0.45
1:B:82:ILE:O	1:B:114:ASP:HB2	2.16	0.45
1:D:560:ASN:HA	7:D:957:HOH:O	2.15	0.45
1:C:309:ILE:HD12	1:C:338:THR:O	2.16	0.44
1:C:421:ASP:O	1:C:424:LYS:HB2	2.17	0.44
1:D:424:LYS:NZ	7:D:922:HOH:O	2.49	0.44
1:D:613:LYS:NZ	1:D:660:GLN:HB3	2.32	0.44
1:B:57:ASN:HB3	1:B:70:LEU:O	2.17	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:384:ASP:HB2	1:B:467:GLU:OE1	2.17	0.44
1:C:400:LEU:O	1:C:403:ASN:N	2.36	0.44
1:B:103:ASP:OD1	1:B:611:ARG:NH1	2.50	0.44
1:C:350:LEU:HB2	1:C:351:PRO:HD2	1.99	0.44
1:B:95:PRO:CD	7:B:917:HOH:O	2.66	0.44
1:C:70:LEU:HD11	1:C:141:LEU:HD11	2.00	0.44
1:C:197:THR:HG22	1:C:228:ARG:HG3	2.00	0.44
1:B:179:HIS:HB2	1:B:207:MET:HG2	1.99	0.44
1:B:473:TYR:HA	1:B:476:HIS:NE2	2.33	0.44
1:C:384:ASP:OD1	1:C:384:ASP:N	2.51	0.44
1:D:225:LEU:HD23	1:D:225:LEU:HA	1.74	0.44
1:A:103:ASP:OD1	1:A:611:ARG:NH1	2.40	0.44
1:C:26:HIS:HA	1:C:27:PRO:HD3	1.88	0.44
1:C:404:LYS:HA	1:C:404:LYS:HD3	1.75	0.44
1:A:694:TYR:HB3	1:A:695:PRO:HD3	2.00	0.44
1:B:355:ALA:HA	1:B:356:PRO:HD3	1.78	0.44
1:D:615:ILE:HG13	1:D:623:THR:HB	1.99	0.44
1:B:382:LYS:HG2	1:B:387:PHE:HB3	2.00	0.43
1:C:507:GLU:HA	1:C:510:ILE:CG2	2.48	0.43
1:A:171:LEU:O	1:A:173:PRO:HD3	2.18	0.43
1:A:518:ASP:OD1	1:A:518:ASP:N	2.50	0.43
1:C:598:MET:CE	1:C:610:VAL:HA	2.43	0.43
1:B:669:ILE:HG13	1:B:670:ALA:N	2.32	0.43
1:B:449:VAL:HB	1:B:471:SER:HA	2.00	0.43
1:D:203:PHE:HB2	1:D:217:ILE:HB	2.01	0.43
1:C:349:TRP:CZ3	1:C:567:LEU:HB3	2.54	0.43
1:C:625:TYR:CE1	1:C:636:ILE:HG21	2.54	0.43
1:D:537:TRP:CH2	1:D:618:TYR:HE2	2.37	0.43
1:B:30:PRO:HG3	1:B:41:VAL:HG21	2.00	0.43
1:B:216:ILE:HG21	1:B:218:TYR:CZ	2.54	0.43
1:D:285:THR:HA	1:D:337:TRP:O	2.19	0.43
1:D:694:TYR:HB3	1:D:695:PRO:HD3	1.99	0.43
1:C:154:ASP:HB2	1:C:167:ASN:HB3	2.00	0.43
1:C:563:TRP:CZ2	1:C:567:LEU:HD11	2.54	0.43
1:C:601:GLY:N	7:C:902:HOH:O	2.03	0.43
1:C:613:LYS:HZ1	1:C:660:GLN:HB3	1.84	0.43
1:C:695:PRO:O	1:C:698:ARG:HB2	2.19	0.43
1:A:451:LYS:HE2	1:A:451:LYS:HB3	1.81	0.43
1:C:394:LYS:HE3	1:C:395:PHE:CZ	2.54	0.43
1:B:631:ARG:HD3	7:B:907:HOH:O	2.19	0.42
1:A:126:VAL:HA	1:A:127:PRO:HD3	1.81	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:C:448:ILE:O	1:C:476:HIS:HE1	2.02	0.42
1:D:675:SER:HB2	1:D:676:PRO:HD2	2.01	0.42
1:A:617:ILE:HD12	3:F:3:BGC:H6C2	2.01	0.42
1:B:158:VAL:HG11	1:B:267:PRO:HB2	2.00	0.42
1:B:384:ASP:HB2	1:B:467:GLU:CD	2.39	0.42
1:C:473:TYR:HA	1:C:476:HIS:NE2	2.34	0.42
1:C:690:PRO:HB2	1:C:721:PHE:HD1	1.83	0.42
1:D:42:PRO:HG3	1:D:47:ILE:HD11	2.01	0.42
1:B:74:TYR:C	1:B:74:TYR:CD2	2.93	0.42
1:B:228:ARG:NH2	1:B:230:GLN:HB2	2.34	0.42
1:C:99:VAL:O	1:C:99:VAL:CG1	2.56	0.42
1:B:42:PRO:HG3	1:B:47:ILE:HD11	2.02	0.42
1:C:117:LEU:HD11	1:C:247:VAL:HG11	2.00	0.42
1:D:84:GLN:O	1:D:84:GLN:NE2	2.52	0.42
1:A:461:THR:O	1:A:462:ASP:HB3	2.20	0.42
1:B:115:LEU:CD2	1:B:247:VAL:HG21	2.50	0.42
1:C:424:LYS:HD3	1:C:497:TRP:NE1	2.34	0.42
1:C:627:THR:OG1	1:C:630:GLY:O	2.32	0.42
1:C:645:THR:CG2	1:C:648:LEU:H	2.33	0.42
1:D:17:PRO:HG3	1:D:523:PHE:HE1	1.84	0.42
1:A:163:TYR:CD1	1:A:248:ALA:HB2	2.55	0.42
1:B:225:LEU:HD23	1:B:225:LEU:HA	1.82	0.42
1:C:400:LEU:HD22	1:C:401:ILE:N	2.35	0.42
1:D:535:HIS:HE1	1:D:537:TRP:CH2	2.38	0.42
4:Q:3:BGC:H5	5:R:2:BGC:H4	2.02	0.42
1:A:81:THR:OG1	1:A:116:ARG:NE	2.30	0.42
1:B:122:TRP:HA	1:B:125:VAL:HG12	2.02	0.42
1:B:379:GLU:HA	1:B:382:LYS:HZ3	1.84	0.41
1:B:567:LEU:HD23	1:B:570:LEU:HD12	2.02	0.41
1:C:550:ARG:HA	1:C:550:ARG:HD3	1.66	0.41
1:C:686:ALA:HB2	1:C:715:THR:HG22	2.02	0.41
1:C:692:GLU:O	1:C:695:PRO:HD2	2.20	0.41
1:A:121:GLU:OE1	1:A:121:GLU:N	2.53	0.41
1:A:229:LYS:HA	1:A:235:LEU:HD23	2.01	0.41
1:A:506:THR:HG21	1:A:568:TRP:CE3	2.55	0.41
1:B:633:LEU:HD22	1:B:637:HIS:CD2	2.55	0.41
1:C:400:LEU:HD22	1:C:401:ILE:CA	2.51	0.41
1:D:597:TRP:CZ3	1:D:653:ARG:HG2	2.55	0.41
1:A:115:LEU:HD23	1:A:247:VAL:HG21	2.02	0.41
1:A:182:ILE:HD11	1:A:206:THR:HG22	2.03	0.41
1:A:355:ALA:HA	1:A:356:PRO:HD3	1.74	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:80:LEU:HD22	1:B:155:PHE:CD2	2.56	0.41
1:B:100:PRO:HB2	1:B:101:TYR:CE2	2.55	0.41
1:C:400:LEU:O	1:C:402:LEU:N	2.54	0.41
1:D:563:TRP:CD1	1:D:647:GLU:HB2	2.56	0.41
1:D:90:LEU:HD13	1:D:608:ASN:ND2	2.27	0.41
1:A:58:LEU:HD23	1:A:58:LEU:HA	1.94	0.41
1:B:61:THR:O	1:B:63:PRO:HD3	2.20	0.41
1:B:91:GLY:HA3	1:B:106:TYR:CZ	2.56	0.41
1:D:298:LEU:HD12	1:D:298:LEU:HA	1.87	0.41
3:M:2:BGC:O3	3:M:3:BGC:H6C2	2.21	0.41
1:A:203:PHE:HB2	1:A:217:ILE:HB	2.02	0.41
1:B:662:TRP:CZ3	1:B:685:TYR:HB2	2.55	0.41
1:C:258:LEU:HD11	1:C:298:LEU:HD11	2.02	0.41
1:C:404:LYS:HD2	1:C:407:GLN:HB2	2.03	0.41
1:C:428:LEU:HD12	1:C:428:LEU:HA	1.85	0.41
1:A:34:ASN:HB3	1:A:37:ASN:ND2	2.36	0.41
1:A:94:PRO:HA	1:A:95:PRO:HD3	1.87	0.41
1:A:396:ALA:HA	1:A:423:LEU:HD22	2.03	0.41
1:B:70:LEU:HD13	1:B:70:LEU:HA	1.92	0.41
1:B:590:ARG:HG3	7:B:982:HOH:O	2.20	0.41
1:C:598:MET:HE3	1:C:605:ARG:CG	2.51	0.41
1:C:598:MET:HE3	1:C:605:ARG:HD3	2.03	0.41
1:D:563:TRP:CZ2	1:D:567:LEU:HD11	2.56	0.41
1:D:575:THR:N	1:D:576:PRO:HD2	2.36	0.41
1:A:474:SER:HB3	2:E:2:BGC:H6C1	2.01	0.41
1:B:302:TYR:CZ	1:B:326:LYS:HD2	2.56	0.41
1:C:7:ASP:HB2	1:C:275:ARG:HH22	1.86	0.41
1:C:118:THR:HG23	1:C:174:GLN:HB3	2.03	0.41
1:B:567:LEU:HD23	1:B:567:LEU:HA	1.85	0.40
1:C:78:PRO:HD2	1:C:122:TRP:O	2.22	0.40
1:D:429:PRO:O	1:D:434:GLU:HG2	2.21	0.40
1:D:456:THR:HG23	1:D:462:ASP:HB2	2.02	0.40
1:A:386:TYR:CD1	2:E:3:BGC:H6C2	2.57	0.40
1:A:583:LEU:O	1:A:587:VAL:HG23	2.21	0.40
1:C:24:ILE:HB	1:C:458:MET:CE	2.51	0.40
1:C:613:LYS:HD2	1:C:613:LYS:HA	1.91	0.40
1:C:697:LEU:HD23	1:C:715:THR:HG21	2.03	0.40
1:C:612:ASN:HA	1:C:665:LYS:NZ	2.36	0.40
1:D:26:HIS:HA	1:D:27:PRO:HD3	1.83	0.40
1:D:258:LEU:HD21	1:D:317:THR:HG21	2.04	0.40
1:D:294:GLU:H	1:D:294:GLU:HG2	1.52	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:116:ARG:HB3	1:A:176:LEU:HG	2.03	0.40
1:A:386:TYR:CE1	2:E:3:BGC:H6C2	2.57	0.40
1:C:246:ARG:CZ	1:C:266:TRP:HB3	2.51	0.40
1:C:376:TYR:O	1:C:380:THR:HB	2.22	0.40
1:C:400:LEU:CD2	1:C:401:ILE:N	2.85	0.40

All (1) symmetry-related close contacts are listed below. The label for Atom-2 includes the symmetry operator and encoded unit-cell translations to be applied.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:A:1068:HOH:O	7:D:952:HOH:O[2_848]	2.17	0.03

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	713/796 (90%)	678 (95%)	34 (5%)	1 (0%)	51	78
1	B	719/796 (90%)	678 (94%)	40 (6%)	1 (0%)	51	78
1	C	698/796 (88%)	656 (94%)	41 (6%)	1 (0%)	51	78
1	D	633/796 (80%)	604 (95%)	28 (4%)	1 (0%)	47	73
All	All	2763/3184 (87%)	2616 (95%)	143 (5%)	4 (0%)	51	78

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	64	ASP
1	B	64	ASP
1	D	64	ASP
1	C	64	ASP

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	603/685 (88%)	589 (98%)	14 (2%)	50	78
1	B	606/685 (88%)	588 (97%)	18 (3%)	41	70
1	C	587/685 (86%)	563 (96%)	24 (4%)	30	59
1	D	539/685 (79%)	514 (95%)	25 (5%)	27	54
All	All	2335/2740 (85%)	2254 (96%)	81 (4%)	37	65

All (81) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	19	SER
1	A	103	ASP
1	A	108	ILE
1	A	141	LEU
1	A	150	ASN
1	A	199	SER
1	A	456	THR
1	A	477	HIS
1	A	518	ASP
1	A	521	GLU
1	A	536	SER
1	A	548	ASP
1	A	633	LEU
1	A	674	GLN
1	B	14	ASN
1	B	74	TYR
1	B	86	SER
1	B	102	THR
1	B	190	LYS
1	B	194	ASN
1	B	207	MET
1	B	230	GLN
1	B	247	VAL
1	B	336	GLU

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Mol	Chain	Res	Type
1	B	368	ILE
1	B	406	ASP
1	B	409	GLN
1	B	458	MET
1	B	582	SER
1	B	607	GLU
1	B	633	LEU
1	B	723	ARG
1	C	13	SER
1	C	86	SER
1	C	96	THR
1	C	112	VAL
1	C	183	SER
1	C	205	ILE
1	C	212	THR
1	C	290	THR
1	C	307	THR
1	C	366	THR
1	C	400	LEU
1	C	402	LEU
1	C	404	LYS
1	C	406	ASP
1	C	415	LEU
1	C	421	ASP
1	C	428	LEU
1	C	465	SER
1	C	489	ILE
1	C	572	THR
1	C	574	ASN
1	C	633	LEU
1	C	697	LEU
1	C	707	THR
1	D	84	GLN
1	D	108	ILE
1	D	114	ASP
1	D	141	LEU
1	D	150	ASN
1	D	176	LEU
1	D	212	THR
1	D	223	LYS
1	D	239	LYS
1	D	263	ARG

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Mol	Chain	Res	Type
1	D	272	ILE
1	D	325	THR
1	D	335	ASN
1	D	368	ILE
1	D	372	ILE
1	D	477	HIS
1	D	502	LEU
1	D	518	ASP
1	D	558[A]	SER
1	D	558[B]	SER
1	D	603	LYS
1	D	633	LEU
1	D	639	ILE
1	D	644	MET
1	D	720	HIS

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

Mol	Chain	Res	Type
1	A	34	ASN
1	C	14	ASN
1	C	491	HIS
1	D	608	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 ⓘ

52 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	BGC	E	1	2	12,12,12	0.85	0	17,17,17	2.46	4 (23%)
2	BGC	E	2	2	11,11,12	1.67	3 (27%)	15,15,17	1.33	3 (20%)
2	BGC	E	3	2	11,11,12	1.79	2 (18%)	15,15,17	2.17	6 (40%)
2	BGC	E	4	2	11,11,12	2.59	4 (36%)	15,15,17	2.79	6 (40%)
2	BGC	E	5	2	11,11,12	1.64	3 (27%)	15,15,17	1.49	2 (13%)
2	BGC	E	6	2	11,11,12	1.74	3 (27%)	15,15,17	1.69	3 (20%)
3	BGC	F	1	3	12,12,12	0.98	1 (8%)	17,17,17	2.38	7 (41%)
3	BGC	F	2	3	11,11,12	1.89	1 (9%)	15,15,17	3.73	4 (26%)
3	BGC	F	3	3	11,11,12	1.51	2 (18%)	15,15,17	1.25	2 (13%)
3	BGC	F	4	3	11,11,12	1.59	2 (18%)	15,15,17	1.16	1 (6%)
3	BGC	F	5	3	11,11,12	1.85	3 (27%)	15,15,17	1.41	2 (13%)
4	BGC	G	1	4	12,12,12	1.16	1 (8%)	17,17,17	0.69	0
4	BGC	G	2	4	11,11,12	1.37	2 (18%)	15,15,17	1.49	3 (20%)
4	BGC	G	3	4	11,11,12	1.68	3 (27%)	15,15,17	1.18	1 (6%)
4	BGC	G	4	4	11,11,12	1.76	2 (18%)	15,15,17	1.26	2 (13%)
5	BGC	H	1	5	11,11,12	4.09	7 (63%)	15,15,17	4.96	10 (66%)
5	BGC	H	2	5	11,11,12	1.75	3 (27%)	15,15,17	2.55	6 (40%)
5	BGC	H	3	5	11,11,12	0.80	0	15,15,17	2.93	7 (46%)
5	BGC	I	1	5	12,12,12	1.23	1 (8%)	17,17,17	1.87	5 (29%)
5	BGC	I	2	5	11,11,12	3.59	4 (36%)	15,15,17	2.57	4 (26%)
5	BGC	I	3	5	11,11,12	2.02	1 (9%)	15,15,17	4.49	10 (66%)
6	BGC	J	1	6	11,11,12	5.99	8 (72%)	15,15,17	3.60	10 (66%)
6	BGC	J	2	6	11,11,12	7.56	9 (81%)	15,15,17	5.64	10 (66%)
6	BGC	K	1	6	11,11,12	1.73	3 (27%)	15,15,17	2.32	4 (26%)
6	BGC	K	2	6	11,11,12	1.94	3 (27%)	15,15,17	3.28	5 (33%)
4	BGC	L	1	4	12,12,12	1.10	1 (8%)	17,17,17	2.36	5 (29%)
4	BGC	L	2	4	11,11,12	1.82	2 (18%)	15,15,17	2.46	6 (40%)
4	BGC	L	3	4	11,11,12	1.61	1 (9%)	15,15,17	2.29	6 (40%)
4	BGC	L	4	4	11,11,12	1.85	3 (27%)	15,15,17	1.13	1 (6%)
3	BGC	M	1	3	12,12,12	0.76	0	17,17,17	2.07	5 (29%)
3	BGC	M	2	3	11,11,12	1.73	3 (27%)	15,15,17	1.29	1 (6%)
3	BGC	M	3	3	11,11,12	1.70	3 (27%)	15,15,17	3.28	7 (46%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#|Z| > 2	Counts	RMSZ	#|Z| > 2
3	BGC	M	4	3	11,11,12	1.91	2 (18%)	15,15,17	2.16	6 (40%)
3	BGC	M	5	3	11,11,12	1.52	2 (18%)	15,15,17	1.28	3 (20%)
5	BGC	N	1	5	12,12,12	1.35	1 (8%)	17,17,17	1.96	7 (41%)
5	BGC	N	2	5	11,11,12	2.63	2 (18%)	15,15,17	5.49	4 (26%)
5	BGC	N	3	5	11,11,12	1.99	5 (45%)	15,15,17	2.13	6 (40%)
4	BGC	O	1	4	12,12,12	1.18	1 (8%)	17,17,17	1.02	1 (5%)
4	BGC	O	2	4	11,11,12	1.75	2 (18%)	15,15,17	1.17	1 (6%)
4	BGC	O	3	4	11,11,12	1.64	2 (18%)	15,15,17	1.31	3 (20%)
4	BGC	O	4	4	11,11,12	1.55	2 (18%)	15,15,17	1.75	4 (26%)
4	BGC	P	1	4	12,12,12	1.47	2 (16%)	17,17,17	2.14	5 (29%)
4	BGC	P	2	4	11,11,12	1.47	2 (18%)	15,15,17	3.17	6 (40%)
4	BGC	P	3	4	11,11,12	1.59	1 (9%)	15,15,17	2.60	7 (46%)
4	BGC	P	4	4	11,11,12	1.94	3 (27%)	15,15,17	1.48	4 (26%)
4	BGC	Q	1	4	12,12,12	1.08	1 (8%)	17,17,17	2.28	5 (29%)
4	BGC	Q	2	4	11,11,12	1.34	2 (18%)	15,15,17	2.27	4 (26%)
4	BGC	Q	3	4	11,11,12	1.87	6 (54%)	15,15,17	2.63	6 (40%)
4	BGC	Q	4	4	11,11,12	1.54	2 (18%)	15,15,17	3.53	6 (40%)
5	BGC	R	1	5	12,12,12	1.19	1 (8%)	17,17,17	0.78	1 (5%)
5	BGC	R	2	5	11,11,12	1.85	2 (18%)	15,15,17	3.34	8 (53%)
5	BGC	R	3	5	11,11,12	1.21	1 (9%)	15,15,17	1.88	5 (33%)

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	BGC	E	1	2	-	2/2/22/22	0/1/1/1
2	BGC	E	2	2	-	0/2/19/22	0/1/1/1
2	BGC	E	3	2	-	2/2/19/22	0/1/1/1
2	BGC	E	4	2	-	2/2/19/22	0/1/1/1
2	BGC	E	5	2	-	1/2/19/22	0/1/1/1
2	BGC	E	6	2	-	0/2/19/22	0/1/1/1
3	BGC	F	1	3	-	0/2/22/22	0/1/1/1
3	BGC	F	2	3	-	2/2/19/22	0/1/1/1
3	BGC	F	3	3	-	2/2/19/22	0/1/1/1
3	BGC	F	4	3	-	2/2/19/22	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	BGC	F	5	3	-	2/2/19/22	0/1/1/1
4	BGC	G	1	4	-	2/2/22/22	0/1/1/1
4	BGC	G	2	4	-	2/2/19/22	0/1/1/1
4	BGC	G	3	4	-	0/2/19/22	0/1/1/1
4	BGC	G	4	4	-	2/2/19/22	0/1/1/1
5	BGC	H	1	5	-	1/2/19/22	0/1/1/1
5	BGC	H	2	5	-	2/2/19/22	0/1/1/1
5	BGC	H	3	5	-	1/2/19/22	0/1/1/1
5	BGC	I	1	5	-	0/2/22/22	0/1/1/1
5	BGC	I	2	5	-	0/2/19/22	0/1/1/1
5	BGC	I	3	5	-	2/2/19/22	0/1/1/1
6	BGC	J	1	6	-	2/2/19/22	0/1/1/1
6	BGC	J	2	6	-	2/2/19/22	0/1/1/1
6	BGC	K	1	6	-	0/2/19/22	0/1/1/1
6	BGC	K	2	6	-	2/2/19/22	0/1/1/1
4	BGC	L	1	4	-	0/2/22/22	0/1/1/1
4	BGC	L	2	4	-	0/2/19/22	0/1/1/1
4	BGC	L	3	4	-	0/2/19/22	0/1/1/1
4	BGC	L	4	4	-	0/2/19/22	0/1/1/1
3	BGC	M	1	3	-	2/2/22/22	0/1/1/1
3	BGC	M	2	3	-	0/2/19/22	0/1/1/1
3	BGC	M	3	3	-	1/2/19/22	0/1/1/1
3	BGC	M	4	3	-	2/2/19/22	0/1/1/1
3	BGC	M	5	3	-	2/2/19/22	0/1/1/1
5	BGC	N	1	5	-	0/2/22/22	0/1/1/1
5	BGC	N	2	5	-	0/2/19/22	0/1/1/1
5	BGC	N	3	5	-	2/2/19/22	0/1/1/1
4	BGC	O	1	4	-	0/2/22/22	0/1/1/1
4	BGC	O	2	4	-	2/2/19/22	0/1/1/1
4	BGC	O	3	4	-	0/2/19/22	0/1/1/1
4	BGC	O	4	4	-	0/2/19/22	0/1/1/1
4	BGC	P	1	4	-	2/2/22/22	0/1/1/1
4	BGC	P	2	4	-	1/2/19/22	0/1/1/1
4	BGC	P	3	4	-	1/2/19/22	0/1/1/1
4	BGC	P	4	4	-	2/2/19/22	0/1/1/1
4	BGC	Q	1	4	-	2/2/22/22	0/1/1/1
4	BGC	Q	2	4	-	2/2/19/22	0/1/1/1
4	BGC	Q	3	4	-	2/2/19/22	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
4	BGC	Q	4	4	-	2/2/19/22	0/1/1/1
5	BGC	R	1	5	-	2/2/22/22	0/1/1/1
5	BGC	R	2	5	-	2/2/19/22	0/1/1/1
5	BGC	R	3	5	-	0/2/19/22	0/1/1/1

All (126) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
6	J	2	BGC	O2-C2	-17.75	1.05	1.43
6	J	1	BGC	O3-C3	-12.78	1.12	1.43
6	J	1	BGC	O5-C5	10.53	1.64	1.43
5	I	2	BGC	O3-C3	-9.73	1.20	1.43
6	J	2	BGC	O5-C1	8.84	1.57	1.43
6	J	2	BGC	O3-C3	-8.48	1.23	1.43
6	J	1	BGC	O5-C1	8.07	1.56	1.43
5	N	2	BGC	O5-C5	7.64	1.58	1.43
5	H	1	BGC	O5-C5	-7.32	1.28	1.43
2	E	4	BGC	O5-C1	-6.46	1.33	1.43
6	J	2	BGC	C2-C3	6.46	1.62	1.52
6	J	2	BGC	O5-C5	6.13	1.55	1.43
5	H	1	BGC	O5-C1	6.08	1.53	1.43
5	I	3	BGC	C1-C2	-6.08	1.38	1.52
6	J	2	BGC	O4-C4	-5.94	1.29	1.43
6	J	2	BGC	C6-C5	-5.80	1.32	1.51
5	H	1	BGC	O6-C6	-5.64	1.18	1.42
3	F	2	BGC	O5-C1	-5.30	1.35	1.43
5	I	2	BGC	O5-C1	-5.00	1.35	1.43
5	H	1	BGC	C1-C2	4.94	1.63	1.52
5	N	3	BGC	O5-C1	-4.77	1.36	1.43
3	M	4	BGC	O5-C1	-4.70	1.36	1.43
4	L	4	BGC	O5-C1	4.56	1.51	1.43
5	R	2	BGC	O5-C1	-4.54	1.36	1.43
4	L	2	BGC	O5-C1	-4.53	1.36	1.43
6	J	1	BGC	C1-C2	4.37	1.62	1.52
4	L	3	BGC	O5-C1	-4.30	1.36	1.43
4	P	3	BGC	O5-C1	-4.29	1.36	1.43
4	P	4	BGC	O5-C1	4.28	1.50	1.43
3	F	5	BGC	O5-C1	4.26	1.50	1.43
4	G	4	BGC	O5-C1	4.24	1.50	1.43
4	G	3	BGC	O5-C1	4.13	1.50	1.43
2	E	3	BGC	O5-C1	4.00	1.50	1.43
3	M	2	BGC	O5-C1	-3.95	1.37	1.43

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	F	3	BGC	O5-C1	3.81	1.49	1.43
4	O	3	BGC	O5-C1	3.79	1.49	1.43
4	O	2	BGC	O5-C1	3.77	1.49	1.43
6	K	1	BGC	O5-C1	-3.75	1.37	1.43
2	E	5	BGC	O5-C1	3.69	1.49	1.43
4	O	4	BGC	O5-C1	3.64	1.49	1.43
6	K	2	BGC	O5-C1	-3.64	1.37	1.43
4	Q	4	BGC	O5-C1	-3.63	1.37	1.43
2	E	6	BGC	C2-C3	-3.61	1.47	1.52
5	H	1	BGC	C6-C5	-3.61	1.39	1.51
2	E	3	BGC	C2-C3	-3.59	1.47	1.52
4	P	4	BGC	C2-C3	-3.59	1.47	1.52
4	P	2	BGC	O5-C1	-3.46	1.38	1.43
3	F	4	BGC	O5-C1	3.45	1.49	1.43
2	E	2	BGC	O5-C1	3.42	1.49	1.43
4	P	1	BGC	O5-C1	-3.42	1.34	1.42
3	M	5	BGC	O5-C1	3.41	1.49	1.43
5	H	1	BGC	C2-C3	3.40	1.57	1.52
4	O	2	BGC	C2-C3	-3.32	1.47	1.52
2	E	6	BGC	O5-C1	3.31	1.49	1.43
6	J	2	BGC	C4-C5	-3.27	1.46	1.53
4	P	1	BGC	O5-C5	-3.22	1.36	1.44
5	I	1	BGC	O5-C5	-3.20	1.36	1.44
6	J	1	BGC	C4-C5	3.16	1.59	1.53
6	K	2	BGC	O2-C2	-3.12	1.36	1.43
6	K	2	BGC	O5-C5	-3.11	1.37	1.43
2	E	4	BGC	O5-C5	-3.09	1.37	1.43
6	J	1	BGC	C6-C5	-3.08	1.41	1.51
4	O	1	BGC	O5-C1	3.05	1.50	1.42
5	H	2	BGC	C2-C3	-3.04	1.48	1.52
3	M	3	BGC	O5-C1	-3.01	1.38	1.43
4	G	1	BGC	O5-C1	2.87	1.50	1.42
4	O	3	BGC	C2-C3	-2.87	1.48	1.52
2	E	2	BGC	C2-C3	-2.86	1.48	1.52
5	R	1	BGC	O5-C1	2.86	1.50	1.42
3	F	5	BGC	C2-C3	-2.85	1.48	1.52
3	M	3	BGC	O5-C5	-2.82	1.37	1.43
2	E	5	BGC	C2-C3	-2.77	1.48	1.52
5	N	2	BGC	O5-C1	2.74	1.48	1.43
5	H	2	BGC	O5-C1	-2.72	1.39	1.43
4	Q	3	BGC	C4-C5	-2.71	1.47	1.53
3	F	5	BGC	O5-C5	2.70	1.48	1.43

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	M	5	BGC	C2-C3	-2.69	1.48	1.52
4	L	2	BGC	O5-C5	-2.66	1.38	1.43
4	G	4	BGC	O5-C5	2.65	1.48	1.43
5	N	1	BGC	O5-C5	-2.65	1.37	1.44
4	Q	2	BGC	O5-C1	-2.63	1.39	1.43
3	F	4	BGC	C2-C3	-2.56	1.48	1.52
4	G	2	BGC	O5-C1	2.54	1.47	1.43
4	O	4	BGC	C2-C3	-2.54	1.48	1.52
4	Q	3	BGC	C2-C3	-2.54	1.48	1.52
3	F	1	BGC	O2-C2	-2.53	1.37	1.43
4	G	3	BGC	C2-C3	-2.53	1.48	1.52
4	G	2	BGC	C2-C3	-2.51	1.48	1.52
5	H	1	BGC	C4-C5	-2.51	1.47	1.53
6	J	1	BGC	O6-C6	-2.50	1.31	1.42
3	M	3	BGC	O2-C2	-2.50	1.38	1.43
4	L	4	BGC	C2-C3	-2.48	1.48	1.52
3	M	2	BGC	O5-C5	-2.45	1.38	1.43
4	L	4	BGC	O5-C5	2.45	1.48	1.43
2	E	4	BGC	O4-C4	-2.43	1.37	1.43
5	I	2	BGC	O2-C2	-2.39	1.38	1.43
6	K	1	BGC	O2-C2	-2.37	1.38	1.43
4	P	4	BGC	O5-C5	2.36	1.48	1.43
6	J	1	BGC	O2-C2	-2.36	1.38	1.43
2	E	6	BGC	O5-C5	2.36	1.48	1.43
5	H	2	BGC	O2-C2	-2.34	1.38	1.43
2	E	4	BGC	C4-C5	-2.34	1.48	1.53
3	F	3	BGC	C2-C3	-2.30	1.49	1.52
4	Q	3	BGC	O3-C3	-2.29	1.37	1.43
2	E	5	BGC	O5-C5	2.29	1.48	1.43
6	K	1	BGC	O5-C5	-2.28	1.38	1.43
4	Q	3	BGC	O5-C1	-2.26	1.40	1.43
5	R	3	BGC	O5-C1	-2.22	1.40	1.43
4	Q	3	BGC	C1-C2	-2.17	1.47	1.52
5	N	3	BGC	C4-C5	-2.16	1.48	1.53
4	Q	4	BGC	C2-C3	-2.15	1.49	1.52
2	E	2	BGC	O5-C5	2.14	1.47	1.43
5	N	3	BGC	O4-C4	-2.13	1.38	1.43
5	N	3	BGC	O5-C5	-2.13	1.39	1.43
3	M	2	BGC	O2-C2	-2.12	1.38	1.43
4	Q	1	BGC	O5-C5	-2.12	1.39	1.44
4	L	1	BGC	O5-C5	-2.11	1.39	1.44
5	N	3	BGC	C4-C3	-2.10	1.47	1.52

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
4	Q	3	BGC	C4-C3	-2.09	1.47	1.52
4	P	2	BGC	O5-C5	-2.07	1.39	1.43
4	Q	2	BGC	O4-C4	-2.07	1.38	1.43
5	R	2	BGC	O5-C5	-2.06	1.39	1.43
6	J	2	BGC	C1-C2	2.06	1.56	1.52
5	I	2	BGC	O4-C4	-2.04	1.38	1.43
3	M	4	BGC	C4-C5	-2.04	1.48	1.53
4	G	3	BGC	O5-C5	2.02	1.47	1.43

All (240) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	N	2	BGC	O5-C5-C6	-16.52	81.30	107.20
5	H	1	BGC	O5-C5-C6	-16.32	81.62	107.20
3	F	2	BGC	O5-C1-C2	-13.40	90.08	110.77
6	J	2	BGC	O5-C5-C6	-13.09	86.69	107.20
6	J	2	BGC	C1-C2-C3	10.95	123.12	109.67
4	Q	4	BGC	C1-C2-C3	-10.55	96.70	109.67
5	N	2	BGC	O2-C2-C1	-9.57	89.56	109.15
5	I	3	BGC	C1-C2-C3	9.16	120.93	109.67
5	N	2	BGC	C1-C2-C3	8.59	120.22	109.67
4	P	2	BGC	C1-C2-C3	8.40	119.99	109.67
4	L	1	BGC	C4-C3-C2	-7.91	97.01	110.82
5	I	3	BGC	O5-C5-C6	7.52	119.00	107.20
6	K	2	BGC	C1-O5-C5	7.47	122.31	112.19
3	M	3	BGC	C1-C2-C3	7.39	118.75	109.67
6	J	1	BGC	C1-C2-C3	7.27	118.60	109.67
5	H	3	BGC	C1-O5-C5	7.04	121.73	112.19
5	R	2	BGC	O5-C5-C6	-6.72	96.67	107.20
3	F	1	BGC	O3-C3-C4	6.70	125.84	110.35
2	E	4	BGC	O5-C1-C2	-6.59	100.61	110.77
4	Q	2	BGC	O4-C4-C3	-6.56	95.18	110.35
5	R	2	BGC	O5-C1-C2	-6.49	100.76	110.77
5	I	2	BGC	C2-C3-C4	-6.40	99.82	110.89
6	K	2	BGC	O5-C5-C6	-6.39	97.19	107.20
4	Q	1	BGC	C4-C3-C2	-6.35	99.74	110.82
5	H	2	BGC	C2-C3-C4	-6.12	100.30	110.89
6	J	2	BGC	O3-C3-C4	6.09	124.43	110.35
6	J	2	BGC	O6-C6-C5	6.06	132.09	111.29
6	J	2	BGC	C3-C4-C5	5.88	120.73	110.24
6	J	1	BGC	O2-C2-C1	-5.88	97.12	109.15
4	P	2	BGC	C1-O5-C5	5.82	120.08	112.19

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	M	3	BGC	O2-C2-C1	-5.80	97.28	109.15
6	K	1	BGC	C1-C2-C3	5.78	116.77	109.67
5	I	3	BGC	O5-C1-C2	5.70	119.58	110.77
4	P	3	BGC	C1-O5-C5	5.57	119.74	112.19
5	I	3	BGC	O5-C5-C4	5.54	124.30	110.83
4	L	2	BGC	O3-C3-C2	5.50	120.54	109.99
2	E	1	BGC	C4-C3-C2	-5.48	101.26	110.82
4	Q	3	BGC	O3-C3-C4	-5.41	97.83	110.35
5	H	2	BGC	C1-O5-C5	5.37	119.47	112.19
2	E	1	BGC	C3-C4-C5	5.26	119.62	110.24
6	K	1	BGC	O5-C1-C2	-5.18	102.78	110.77
4	P	1	BGC	O5-C5-C4	-4.98	100.65	109.69
2	E	4	BGC	O3-C3-C2	4.92	119.42	109.99
6	J	2	BGC	C6-C5-C4	-4.83	101.70	113.00
4	L	3	BGC	O3-C3-C2	4.79	119.17	109.99
5	H	1	BGC	O2-C2-C3	-4.78	100.56	110.14
6	K	2	BGC	C2-C3-C4	-4.75	102.68	110.89
5	R	2	BGC	C2-C3-C4	-4.72	102.73	110.89
4	Q	4	BGC	O5-C1-C2	-4.64	103.62	110.77
5	I	3	BGC	C1-O5-C5	-4.63	105.92	112.19
6	J	1	BGC	C3-C4-C5	4.61	118.46	110.24
5	I	2	BGC	O5-C1-C2	-4.57	103.72	110.77
5	H	3	BGC	C3-C4-C5	-4.55	102.13	110.24
6	J	1	BGC	C6-C5-C4	4.49	123.51	113.00
4	P	2	BGC	O3-C3-C2	-4.48	101.42	109.99
5	I	3	BGC	C6-C5-C4	-4.44	102.61	113.00
6	K	2	BGC	C1-C2-C3	4.43	115.11	109.67
5	R	2	BGC	C1-O5-C5	4.37	118.12	112.19
5	H	3	BGC	C2-C3-C4	-4.36	103.35	110.89
4	L	2	BGC	C2-C3-C4	-4.29	103.47	110.89
4	Q	3	BGC	O3-C3-C2	-4.26	101.83	109.99
6	J	2	BGC	O5-C5-C4	4.26	121.18	110.83
4	L	3	BGC	O5-C1-C2	-4.25	104.22	110.77
4	O	4	BGC	C3-C4-C5	4.24	117.80	110.24
4	Q	3	BGC	C6-C5-C4	-4.18	103.21	113.00
4	Q	4	BGC	C2-C3-C4	-4.18	103.66	110.89
3	M	1	BGC	O5-C5-C4	4.15	117.23	109.69
3	M	1	BGC	C1-O5-C5	4.11	121.42	113.66
4	P	3	BGC	O5-C1-C2	4.11	117.12	110.77
5	I	3	BGC	C2-C3-C4	-4.08	103.83	110.89
5	R	3	BGC	C2-C3-C4	-4.07	103.85	110.89
5	H	1	BGC	C2-C3-C4	-4.04	103.90	110.89

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	P	1	BGC	C1-O5-C5	-4.03	106.06	113.66
3	M	3	BGC	C1-O5-C5	4.02	117.64	112.19
2	E	3	BGC	C3-C4-C5	3.96	117.30	110.24
5	N	3	BGC	C1-O5-C5	3.92	117.50	112.19
2	E	1	BGC	O5-C5-C4	3.90	116.78	109.69
5	N	3	BGC	C6-C5-C4	-3.90	103.87	113.00
6	J	1	BGC	C1-O5-C5	3.86	117.42	112.19
3	M	4	BGC	C1-C2-C3	3.83	114.37	109.67
4	P	3	BGC	C2-C3-C4	-3.82	104.29	110.89
2	E	6	BGC	C3-C4-C5	3.81	117.04	110.24
4	Q	1	BGC	O5-C1-C2	-3.81	103.49	110.28
3	M	3	BGC	C3-C4-C5	3.78	116.98	110.24
6	J	1	BGC	O6-C6-C5	3.78	124.25	111.29
3	M	1	BGC	C4-C3-C2	-3.73	104.31	110.82
6	J	2	BGC	O3-C3-C2	3.68	117.05	109.99
4	Q	1	BGC	O3-C3-C2	-3.68	101.83	110.35
2	E	5	BGC	O5-C1-C2	-3.66	105.11	110.77
6	K	2	BGC	O3-C3-C2	3.66	117.00	109.99
5	I	1	BGC	C1-O5-C5	-3.65	106.77	113.66
2	E	4	BGC	O6-C6-C5	-3.58	99.00	111.29
4	Q	3	BGC	O5-C5-C6	3.57	112.80	107.20
5	N	1	BGC	O3-C3-C2	-3.56	102.11	110.35
3	M	3	BGC	O3-C3-C2	-3.53	103.24	109.99
3	F	1	BGC	O2-C2-C1	-3.47	101.11	109.16
5	H	3	BGC	O5-C1-C2	3.46	116.11	110.77
2	E	3	BGC	O5-C1-C2	3.44	116.08	110.77
5	I	2	BGC	O4-C4-C5	-3.44	100.76	109.30
5	I	3	BGC	O3-C3-C2	3.43	116.57	109.99
5	N	3	BGC	C2-C3-C4	-3.40	105.02	110.89
5	H	1	BGC	C6-C5-C4	-3.39	105.06	113.00
3	F	5	BGC	C2-C3-C4	-3.39	105.03	110.89
3	M	4	BGC	C2-C3-C4	-3.39	105.03	110.89
5	I	3	BGC	O2-C2-C3	-3.37	103.38	110.14
4	P	1	BGC	O2-C2-C1	-3.37	101.34	109.16
5	I	1	BGC	O3-C3-C4	3.35	118.10	110.35
2	E	4	BGC	O3-C3-C4	-3.35	102.60	110.35
3	M	3	BGC	O2-C2-C3	-3.34	103.44	110.14
5	N	1	BGC	C4-C3-C2	-3.33	105.02	110.82
4	L	3	BGC	O3-C3-C4	-3.32	102.67	110.35
5	I	3	BGC	C3-C4-C5	3.32	116.16	110.24
4	Q	4	BGC	O2-C2-C3	3.26	116.67	110.14
5	R	3	BGC	C1-O5-C5	3.26	116.60	112.19

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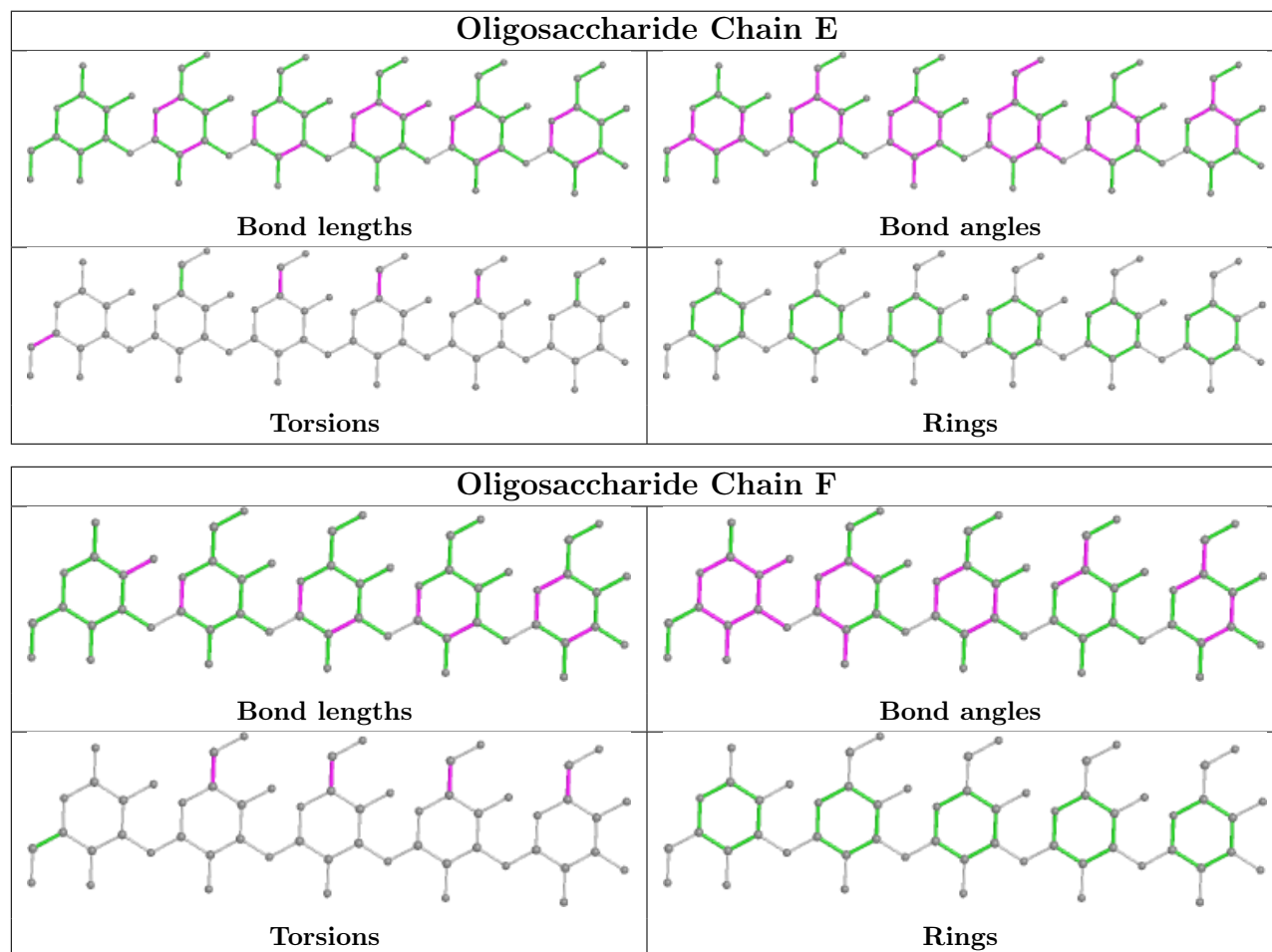| Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	E	6	BGC	O5-C5-C4	3.22	118.67	110.83
4	L	3	BGC	O2-C2-C3	3.22	116.58	110.14
2	E	2	BGC	C1-O5-C5	3.21	116.54	112.19
4	O	4	BGC	C2-C3-C4	3.18	116.39	110.89
4	L	2	BGC	O5-C1-C2	-3.17	105.88	110.77
5	H	3	BGC	O3-C3-C2	3.16	116.05	109.99
6	J	1	BGC	O3-C3-C4	3.15	117.62	110.35
5	H	1	BGC	O6-C6-C5	3.14	122.08	111.29
4	P	4	BGC	C1-O5-C5	3.12	116.42	112.19
6	J	1	BGC	O5-C5-C6	-3.10	102.34	107.20
2	E	3	BGC	C1-O5-C5	3.10	116.40	112.19
2	E	1	BGC	O5-C5-C6	-3.08	98.77	106.44
3	F	1	BGC	C1-C2-C3	-3.08	103.92	110.31
4	Q	3	BGC	C1-O5-C5	3.08	116.36	112.19
5	H	1	BGC	O3-C3-C2	3.08	115.88	109.99
3	M	4	BGC	C1-O5-C5	3.07	116.36	112.19
4	G	4	BGC	C1-O5-C5	3.07	116.35	112.19
5	R	2	BGC	C6-C5-C4	-3.06	105.83	113.00
5	I	2	BGC	O6-C6-C5	-3.02	100.94	111.29
4	L	1	BGC	O1-C1-O5	-3.00	101.36	110.38
3	F	2	BGC	C1-O5-C5	-3.00	108.13	112.19
3	M	3	BGC	O4-C4-C5	-2.96	101.94	109.30
4	P	4	BGC	C3-C4-C5	2.96	115.52	110.24
5	N	2	BGC	C1-O5-C5	2.95	116.19	112.19
3	M	5	BGC	C3-C4-C5	2.95	115.50	110.24
2	E	4	BGC	O5-C5-C6	-2.95	102.59	107.20
5	R	2	BGC	O5-C5-C4	2.92	117.94	110.83
4	Q	2	BGC	C6-C5-C4	2.92	119.85	113.00
6	J	1	BGC	O4-C4-C5	-2.91	102.06	109.30
4	Q	4	BGC	C3-C4-C5	-2.91	105.04	110.24
3	F	2	BGC	O2-C2-C1	2.90	115.09	109.15
3	M	4	BGC	O2-C2-C3	-2.88	104.38	110.14
4	L	2	BGC	O3-C3-C4	-2.84	103.78	110.35
3	M	2	BGC	C1-O5-C5	2.84	116.04	112.19
5	R	2	BGC	C3-C4-C5	2.83	115.29	110.24
3	M	4	BGC	O4-C4-C5	-2.83	102.27	109.30
5	R	3	BGC	O2-C2-C3	-2.81	104.50	110.14
5	I	1	BGC	O2-C2-C1	-2.80	102.67	109.16
5	I	1	BGC	C4-C3-C2	-2.80	105.94	110.82
5	N	1	BGC	O5-C1-C2	-2.77	105.33	110.28
4	P	2	BGC	C3-C4-C5	2.77	115.19	110.24
4	P	3	BGC	O5-C5-C4	2.77	117.57	110.83

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	M	4	BGC	O5-C1-C2	-2.76	106.51	110.77
2	E	3	BGC	O2-C2-C3	-2.75	104.62	110.14
2	E	5	BGC	C3-C4-C5	2.75	115.14	110.24
3	M	1	BGC	C3-C4-C5	2.75	115.14	110.24
6	J	2	BGC	O2-C2-C1	-2.74	103.55	109.15
3	M	1	BGC	C1-C2-C3	-2.73	104.64	110.31
5	H	2	BGC	O5-C5-C6	2.70	111.44	107.20
3	F	1	BGC	C4-C3-C2	-2.69	106.12	110.82
4	P	3	BGC	O2-C2-C3	-2.69	104.75	110.14
5	H	1	BGC	O4-C4-C3	-2.67	104.17	110.35
4	P	3	BGC	O3-C3-C2	2.67	115.10	109.99
6	K	1	BGC	O2-C2-C1	-2.67	103.70	109.15
5	H	1	BGC	C3-C4-C5	2.66	114.99	110.24
4	P	3	BGC	C1-C2-C3	2.65	112.92	109.67
5	N	1	BGC	O3-C3-C4	2.60	116.35	110.35
5	H	2	BGC	C1-C2-C3	-2.54	106.54	109.67
4	Q	4	BGC	O5-C5-C6	2.52	111.16	107.20
2	E	4	BGC	C1-C2-C3	-2.51	106.58	109.67
5	R	3	BGC	O3-C3-C2	2.51	114.80	109.99
4	L	1	BGC	O3-C3-C4	-2.51	104.55	110.35
4	L	1	BGC	O5-C1-C2	2.51	114.76	110.28
4	Q	2	BGC	C2-C3-C4	-2.51	106.56	110.89
5	H	1	BGC	O3-C3-C4	-2.49	104.58	110.35
5	R	2	BGC	C1-C2-C3	2.49	112.73	109.67
5	H	3	BGC	O4-C4-C5	2.49	115.48	109.30
4	L	2	BGC	C1-O5-C5	2.49	115.56	112.19
4	G	4	BGC	O5-C5-C6	2.49	111.10	107.20
2	E	3	BGC	C2-C3-C4	2.48	115.19	110.89
4	G	3	BGC	C1-C2-C3	2.46	112.69	109.67
6	J	2	BGC	C1-O5-C5	2.40	115.45	112.19
3	F	3	BGC	C1-O5-C5	-2.37	108.98	112.19
4	G	2	BGC	O5-C5-C4	-2.37	105.06	110.83
4	G	2	BGC	O2-C2-C1	-2.37	104.30	109.15
2	E	3	BGC	O5-C5-C4	2.36	116.57	110.83
4	Q	1	BGC	O2-C2-C3	2.35	115.78	110.35
5	N	1	BGC	O1-C1-C2	2.35	115.64	109.03
3	F	4	BGC	O5-C5-C6	2.34	110.88	107.20
5	H	2	BGC	C6-C5-C4	-2.34	107.52	113.00
4	Q	2	BGC	O6-C6-C5	2.31	119.21	111.29
4	L	3	BGC	C2-C3-C4	-2.31	106.90	110.89
4	L	2	BGC	C1-C2-C3	2.29	112.48	109.67
5	N	1	BGC	O4-C4-C5	-2.28	103.62	109.30

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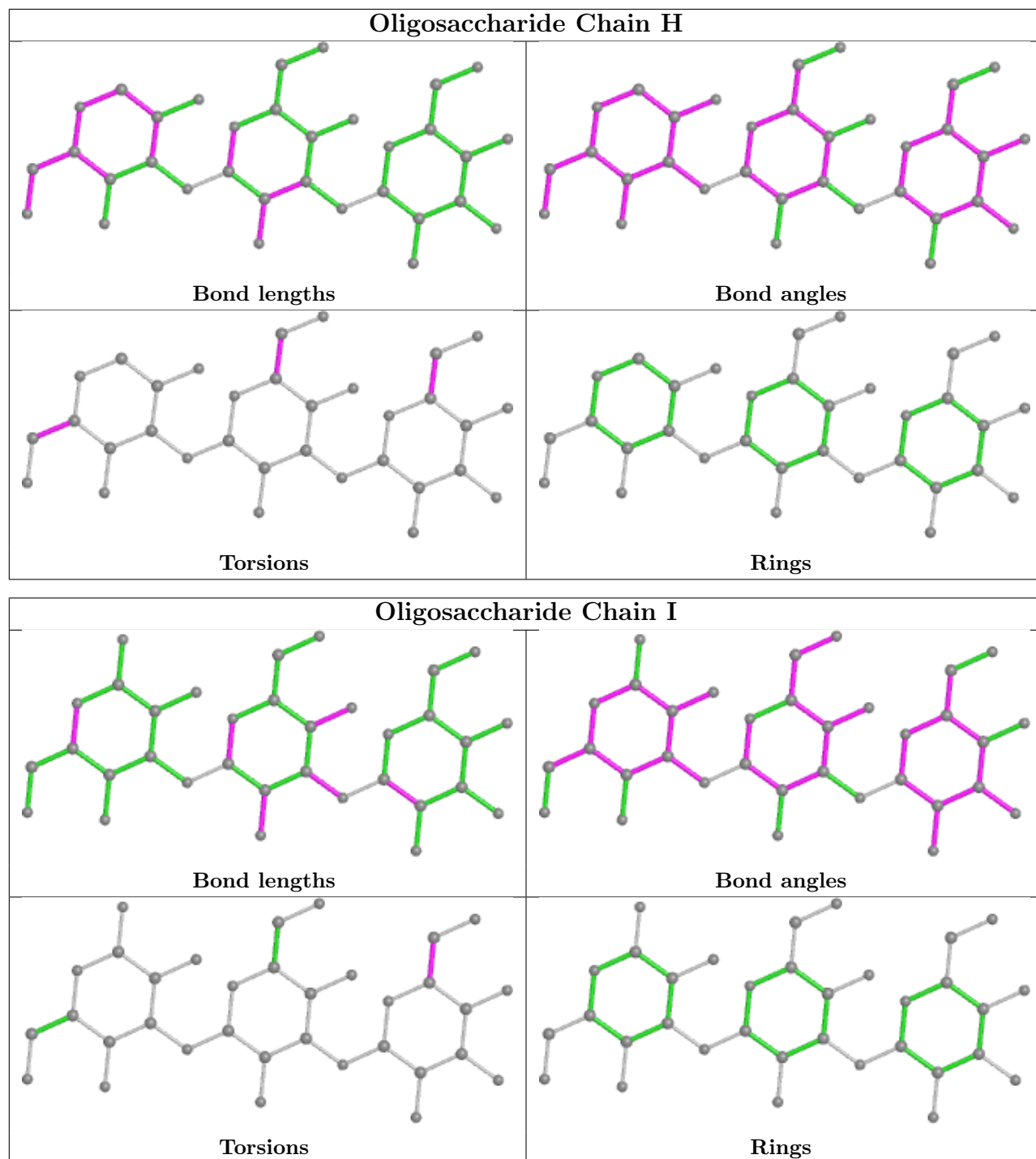
Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
4	O	4	BGC	C1-C2-C3	2.25	112.43	109.67
5	N	3	BGC	O3-C3-C4	-2.25	105.16	110.35
4	L	3	BGC	O2-C2-C1	-2.24	104.56	109.15
4	Q	1	BGC	C3-C4-C5	2.24	114.24	110.24
5	I	1	BGC	C6-C5-C4	2.24	118.25	113.00
5	N	1	BGC	O5-C5-C6	-2.23	100.88	106.44
4	O	1	BGC	O5-C1-C2	2.23	114.26	110.28
2	E	6	BGC	C6-C5-C4	-2.23	107.78	113.00
3	F	1	BGC	O4-C4-C3	2.22	115.49	110.35
3	M	5	BGC	C2-C3-C4	2.20	114.71	110.89
3	F	3	BGC	C2-C3-C4	2.20	114.70	110.89
5	H	3	BGC	C6-C5-C4	2.20	118.15	113.00
4	Q	3	BGC	O2-C2-C3	-2.20	105.74	110.14
4	P	2	BGC	O4-C4-C3	2.19	115.42	110.35
5	N	3	BGC	O2-C2-C1	2.18	113.62	109.15
5	H	2	BGC	C3-C4-C5	-2.18	106.35	110.24
4	P	4	BGC	O5-C5-C4	2.18	116.13	110.83
3	F	1	BGC	C1-O5-C5	2.18	117.77	113.66
2	E	2	BGC	O5-C5-C6	2.18	110.61	107.20
4	P	4	BGC	C6-C5-C4	-2.16	107.95	113.00
4	L	1	BGC	C6-C5-C4	-2.16	107.95	113.00
6	K	1	BGC	C3-C4-C5	2.15	114.08	110.24
5	H	1	BGC	O5-C1-C2	-2.15	107.45	110.77
5	R	1	BGC	C6-C5-C4	-2.14	108.00	113.00
4	O	3	BGC	O6-C6-C5	-2.13	103.97	111.29
4	O	3	BGC	C3-C4-C5	2.13	114.04	110.24
4	G	2	BGC	C6-C5-C4	-2.13	108.02	113.00
3	F	5	BGC	O5-C5-C6	2.12	110.53	107.20
4	O	2	BGC	O5-C5-C6	2.11	110.52	107.20
4	P	1	BGC	O4-C4-C5	2.11	114.53	109.30
6	J	1	BGC	O3-C3-C2	2.09	114.00	109.99
4	O	4	BGC	C6-C5-C4	-2.08	108.14	113.00
4	P	2	BGC	O4-C4-C5	-2.07	104.15	109.30
4	O	3	BGC	C6-C5-C4	-2.07	108.16	113.00
3	F	1	BGC	O4-C4-C5	-2.06	104.18	109.30
4	P	1	BGC	O1-C1-O5	-2.06	104.20	110.38
5	R	3	BGC	O5-C5-C4	-2.05	105.84	110.83
2	E	2	BGC	C3-C4-C5	-2.04	106.61	110.24
3	F	2	BGC	O5-C5-C4	-2.02	105.92	110.83
3	M	5	BGC	C6-C5-C4	-2.02	108.28	113.00
5	N	3	BGC	O3-C3-C2	2.01	113.84	109.99
4	L	4	BGC	O3-C3-C2	2.00	113.83	109.99

There are no chirality outliers.

All (62) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
4	P	4	BGC	O5-C5-C6-O6
4	O	2	BGC	C4-C5-C6-O6
4	P	1	BGC	O5-C5-C6-O6
4	Q	1	BGC	O5-C5-C6-O6
2	E	3	BGC	O5-C5-C6-O6
4	Q	4	BGC	O5-C5-C6-O6
5	I	3	BGC	O5-C5-C6-O6
4	Q	1	BGC	C4-C5-C6-O6
3	M	4	BGC	O5-C5-C6-O6
4	G	1	BGC	O5-C5-C6-O6
4	O	2	BGC	O5-C5-C6-O6
5	R	2	BGC	O5-C5-C6-O6
4	G	1	BGC	C4-C5-C6-O6
4	G	4	BGC	C4-C5-C6-O6
4	P	4	BGC	C4-C5-C6-O6
3	M	1	BGC	O5-C5-C6-O6
4	G	4	BGC	O5-C5-C6-O6
4	P	1	BGC	C4-C5-C6-O6
5	R	2	BGC	C4-C5-C6-O6
3	F	5	BGC	O5-C5-C6-O6
4	Q	2	BGC	O5-C5-C6-O6
2	E	1	BGC	C4-C5-C6-O6
4	Q	4	BGC	C4-C5-C6-O6
2	E	3	BGC	C4-C5-C6-O6
3	M	5	BGC	O5-C5-C6-O6
3	M	1	BGC	C4-C5-C6-O6
4	Q	3	BGC	O5-C5-C6-O6
5	H	2	BGC	O5-C5-C6-O6
3	F	5	BGC	C4-C5-C6-O6
5	N	3	BGC	O5-C5-C6-O6
4	Q	2	BGC	C4-C5-C6-O6
5	H	2	BGC	C4-C5-C6-O6
5	N	3	BGC	C4-C5-C6-O6
4	G	2	BGC	O5-C5-C6-O6
5	R	1	BGC	O5-C5-C6-O6
4	Q	3	BGC	C4-C5-C6-O6
3	M	4	BGC	C4-C5-C6-O6
3	F	3	BGC	C4-C5-C6-O6
5	R	1	BGC	C4-C5-C6-O6
2	E	1	BGC	O5-C5-C6-O6

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Mol	Chain	Res	Type	Atoms
2	E	4	BGC	O5-C5-C6-O6
3	M	3	BGC	O5-C5-C6-O6
2	E	4	BGC	C4-C5-C6-O6
3	M	5	BGC	C4-C5-C6-O6
4	P	3	BGC	C4-C5-C6-O6
6	K	2	BGC	C4-C5-C6-O6
2	E	5	BGC	O5-C5-C6-O6
6	K	2	BGC	O5-C5-C6-O6
5	H	1	BGC	O5-C5-C6-O6
6	J	2	BGC	C4-C5-C6-O6
5	H	3	BGC	O5-C5-C6-O6
5	I	3	BGC	C4-C5-C6-O6
3	F	3	BGC	O5-C5-C6-O6
3	F	2	BGC	O5-C5-C6-O6
4	G	2	BGC	C4-C5-C6-O6
6	J	2	BGC	O5-C5-C6-O6
3	F	4	BGC	O5-C5-C6-O6
3	F	4	BGC	C4-C5-C6-O6
4	P	2	BGC	C4-C5-C6-O6
3	F	2	BGC	C4-C5-C6-O6
6	J	1	BGC	C4-C5-C6-O6
6	J	1	BGC	O5-C5-C6-O6

There are no ring outliers.

19 monomers are involved in 24 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	M	3	BGC	1	0
4	P	2	BGC	1	0
2	E	3	BGC	2	0
2	E	2	BGC	1	0
2	E	6	BGC	1	0
4	O	1	BGC	1	0
3	M	4	BGC	1	0
6	K	2	BGC	1	0
4	P	3	BGC	1	0
4	Q	2	BGC	2	0
5	N	1	BGC	1	0
4	Q	1	BGC	1	0
5	N	3	BGC	3	0
6	J	1	BGC	4	0
3	F	3	BGC	1	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	M	2	BGC	1	0
5	R	2	BGC	3	0
4	G	1	BGC	1	0
4	Q	3	BGC	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

Oligosaccharide Chain F

Bond lengths — Bond angles — Torsions — Rings

Oligosaccharide Chain M

Bond lengths

Bond angles

Torsions

Rings

Oligosaccharide Chain G

Bond lengths

Bond angles

Torsions

Rings

Oligosaccharide Chain L

Bond lengths

Bond angles

Torsions

Rings

Oligosaccharide Chain O

Bond lengths

Bond angles

Torsions

Rings

Oligosaccharide Chain P

Bond lengths

Bond angles

Torsions

Rings

Oligosaccharide Chain Q

Bond lengths

Bond angles

Torsions

Rings

Oligosaccharide Chain H

Bond lengths

Bond angles

Torsions

Rings

Oligosaccharide Chain I

Bond lengths

Bond angles

Torsions

Rings

Oligosaccharide Chain N

Bond lengths

Bond angles

Torsions

Rings

Oligosaccharide Chain R

Bond lengths

Bond angles

Torsions

Rings

Oligosaccharide Chain J

Bond lengths

Bond angles

Torsions

Rings

Oligosaccharide Chain K

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(Å^2)	Q<0.9
1	A	717/796 (90%)	-0.27	14 (1%)	65	67	2, 10, 33, 60	0
1	B	720/796 (90%)	-0.26	6 (0%)	86	87	4, 16, 37, 69	0
1	C	705/796 (88%)	0.36	34 (4%)	30	28	11, 37, 68, 83	0
1	D	648/796 (81%)	0.19	43 (6%)	18	16	6, 29, 63, 82	0
All	All	2790/3184 (87%)	-0.00	97 (3%)	44	44	2, 21, 59, 83	0

All (97) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	D	5	GLY	5.7
1	D	175	PHE	5.7
1	C	720	HIS	4.6
1	C	6	ASP	4.1
1	C	365	MET	3.8
1	A	74	TYR	3.8
1	D	91	GLY	3.8
1	D	37	ASN	3.7
1	D	203	PHE	3.6
1	B	5	GLY	3.6
1	A	147	GLN	3.5
1	C	426	ALA	3.5
1	D	458	MET	3.4
1	D	112	VAL	3.2
1	C	722	PHE	3.2
1	D	7	ASP	3.2
1	D	56	ASP	3.1
1	C	95	PRO	3.1
1	C	719	PRO	3.1
1	D	31	MET	3.1
1	B	278	ASP	3.1

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Mol	Chain	Res	Type	RSRZ
1	C	228	ARG	3.0
1	D	25	LYS	3.0
1	C	99	VAL	3.0
1	B	192	ASP	3.0
1	C	145	THR	3.0
1	C	76	GLY	3.0
1	D	296	PRO	2.9
1	C	213	SER	2.9
1	D	277	ASP	2.8
1	D	90	LEU	2.8
1	C	558[A]	SER	2.8
1	D	459	GLY	2.8
1	A	31	MET	2.7
1	C	73	GLY	2.7
1	D	215	PHE	2.7
1	C	275	ARG	2.7
1	D	295	ALA	2.7
1	D	114	ASP	2.7
1	C	147	GLN	2.7
1	A	195	THR	2.7
1	C	5	GLY	2.6
1	D	294	GLU	2.6
1	D	225	LEU	2.5
1	D	310	ASP	2.5
1	D	457	SER	2.5
1	D	6	ASP	2.5
1	B	191	SER	2.5
1	C	600	ASP	2.5
1	D	55	ALA	2.5
1	A	149	SER	2.5
1	C	409	GLN	2.4
1	C	189	LYS	2.4
1	D	111	VAL	2.4
1	A	148	ASP	2.4
1	B	222	ASP	2.4
1	C	687	ILE	2.4
1	A	128	ASP	2.4
1	D	171	LEU	2.4
1	A	222	ASP	2.3
1	C	418	ILE	2.3
1	D	279	ASN	2.3
1	C	148	ASP	2.3

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Mol	Chain	Res	Type	RSRZ
1	D	517	ASN	2.3
1	D	559	VAL	2.2
1	D	278	ASP	2.2
1	C	422	LYS	2.2
1	D	58	LEU	2.2
1	D	201	ARG	2.2
1	D	214	THR	2.2
1	C	93	TYR	2.2
1	C	346	PRO	2.2
1	A	55	ALA	2.2
1	D	239	LYS	2.2
1	A	38	GLY	2.2
1	D	222	ASP	2.2
1	D	26	HIS	2.2
1	C	355	ALA	2.2
1	D	631	ARG	2.2
1	D	199	SER	2.1
1	C	222	ASP	2.1
1	D	172	THR	2.1
1	A	279	ASN	2.1
1	C	149	SER	2.1
1	B	7	ASP	2.1
1	C	94	PRO	2.1
1	A	280	ASN	2.1
1	D	454	LEU	2.1
1	C	186	ALA	2.1
1	C	354	ALA	2.1
1	C	405	SER	2.1
1	A	68	LEU	2.0
1	D	143	LEU	2.0
1	D	252	ALA	2.0
1	D	176	LEU	2.0
1	A	37	ASN	2.0
1	C	223	LYS	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, 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	BGC	F	1	12/12	0.81	0.31	28,40,46,52	0
4	BGC	Q	4	11/12	0.81	0.24	34,41,53,63	0
2	BGC	E	1	12/12	0.84	0.21	13,30,41,42	0
6	BGC	J	2	11/12	0.84	0.35	30,45,52,59	0
4	BGC	G	4	11/12	0.86	0.21	9,25,34,39	0
5	BGC	H	3	11/12	0.87	0.38	46,50,63,64	0
6	BGC	J	1	11/12	0.88	0.20	12,14,24,25	0
4	BGC	O	1	12/12	0.88	0.32	27,32,47,52	0
3	BGC	M	5	11/12	0.89	0.18	27,35,42,44	0
4	BGC	O	4	11/12	0.90	0.30	28,37,45,47	0
5	BGC	H	2	11/12	0.92	0.24	17,27,46,46	0
4	BGC	L	4	11/12	0.92	0.24	21,29,37,47	0
4	BGC	Q	1	12/12	0.92	0.12	26,30,43,45	0
4	BGC	G	1	12/12	0.92	0.20	18,28,42,48	0
4	BGC	Q	3	11/12	0.93	0.19	20,24,31,32	0
3	BGC	F	5	11/12	0.93	0.22	21,28,31,33	0
3	BGC	M	1	12/12	0.94	0.15	24,29,35,41	0
4	BGC	O	3	11/12	0.94	0.23	20,23,34,34	0
4	BGC	L	1	12/12	0.94	0.17	18,26,38,46	0
4	BGC	P	2	11/12	0.94	0.13	15,18,22,24	0
5	BGC	I	1	12/12	0.94	0.15	12,16,26,28	0
5	BGC	N	3	11/12	0.94	0.17	21,22,28,34	0
5	BGC	R	1	12/12	0.94	0.14	19,23,26,28	0
5	BGC	R	3	11/12	0.94	0.29	18,32,38,53	0
4	BGC	P	4	11/12	0.94	0.17	15,20,30,33	0
3	BGC	M	2	11/12	0.94	0.14	12,17,22,22	0
6	BGC	K	1	11/12	0.94	0.13	9,15,24,33	0
2	BGC	E	6	11/12	0.95	0.16	27,33,36,46	0
5	BGC	I	3	11/12	0.95	0.12	8,11,14,15	0
4	BGC	Q	2	11/12	0.95	0.12	21,23,28,29	0
3	BGC	M	3	11/12	0.95	0.15	19,22,27,30	0
5	BGC	R	2	11/12	0.95	0.24	24,29,36,46	0
3	BGC	M	4	11/12	0.95	0.12	21,25,28,29	0
5	BGC	H	1	11/12	0.95	0.14	7,12,15,18	0
4	BGC	P	3	11/12	0.95	0.10	11,15,17,20	0
4	BGC	O	2	11/12	0.95	0.16	14,20,24,25	0
6	BGC	K	2	11/12	0.95	0.11	7,9,13,13	0

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Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\mathring{A}^2$)	Q<0.9
5	BGC	N	2	11/12	0.96	0.16	12,16,21,23	0
3	BGC	F	2	11/12	0.96	0.14	14,19,22,23	0
4	BGC	P	1	12/12	0.96	0.10	21,28,33,36	0
4	BGC	L	3	11/12	0.96	0.13	11,15,20,23	0
3	BGC	F	3	11/12	0.96	0.13	6,11,16,17	0
2	BGC	E	5	11/12	0.96	0.15	10,15,18,19	0
2	BGC	E	2	11/12	0.96	0.13	4,10,16,18	0
5	BGC	I	2	11/12	0.96	0.12	7,9,14,15	0
2	BGC	E	4	11/12	0.96	0.12	6,8,10,12	0
4	BGC	G	2	11/12	0.97	0.12	8,10,12,16	0
4	BGC	G	3	11/12	0.97	0.10	7,9,13,14	0
5	BGC	N	1	12/12	0.97	0.11	18,25,28,35	0
3	BGC	F	4	11/12	0.98	0.13	9,11,19,19	0
2	BGC	E	3	11/12	0.98	0.09	7,9,11,12	0
4	BGC	L	2	11/12	0.98	0.18	8,11,13,14	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)
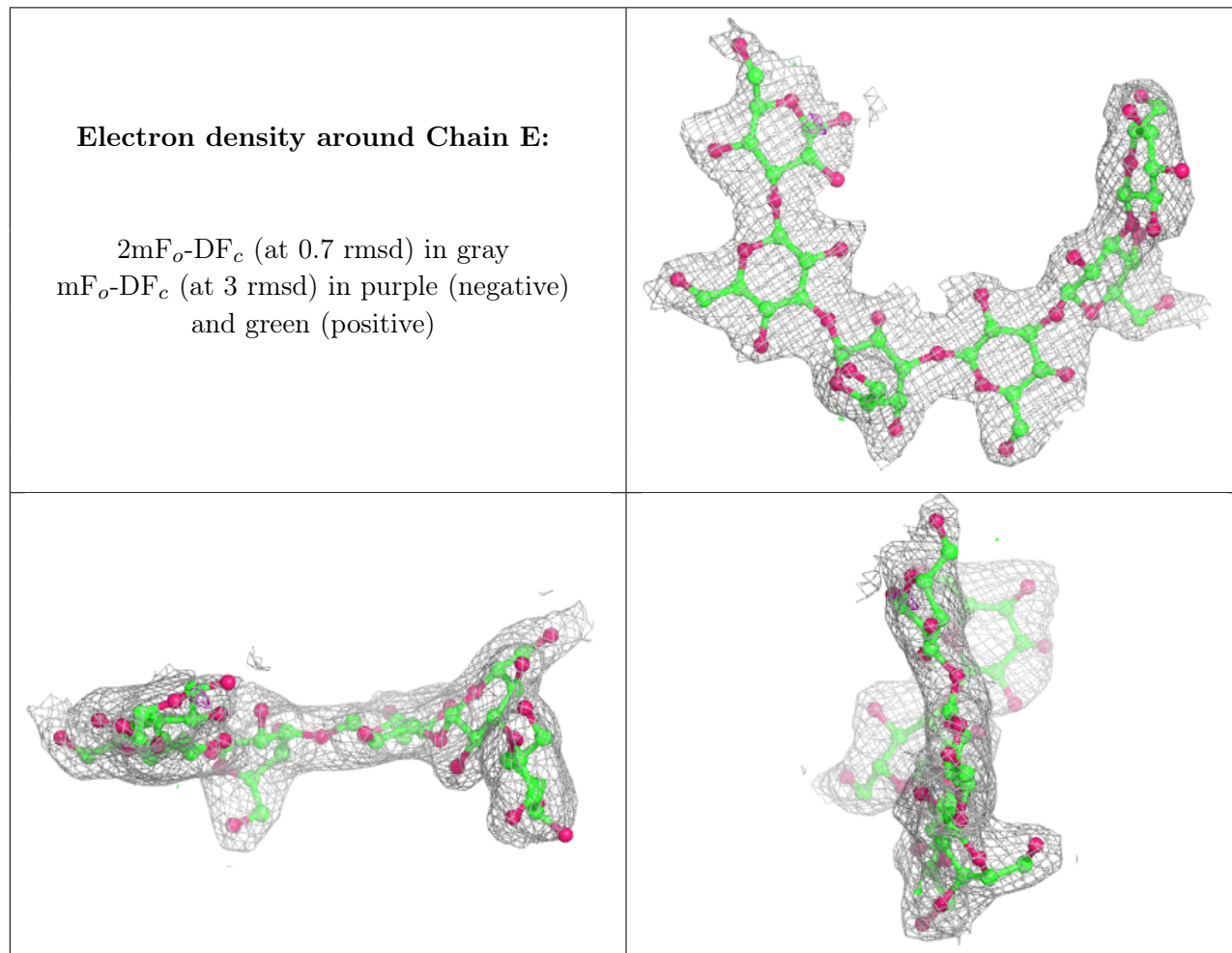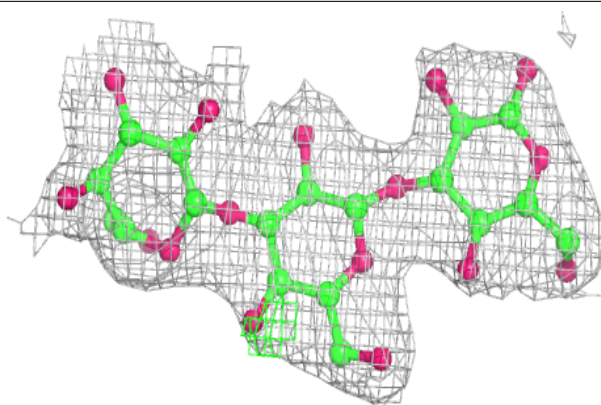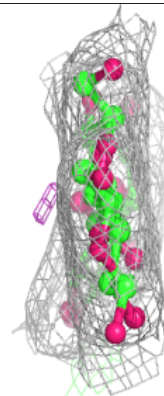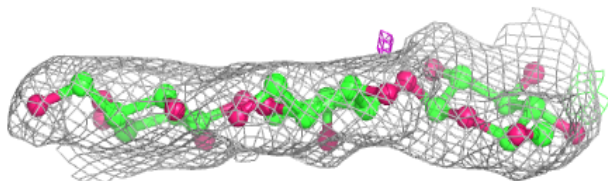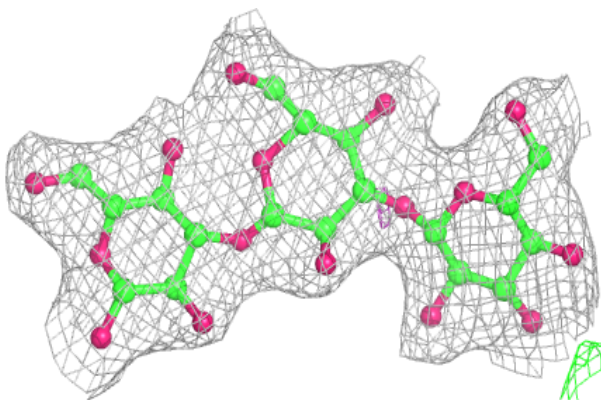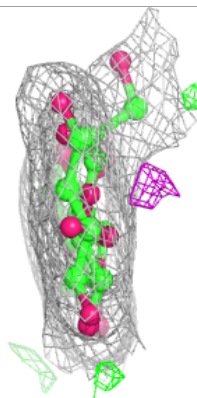
Electron density around Chain F:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative)
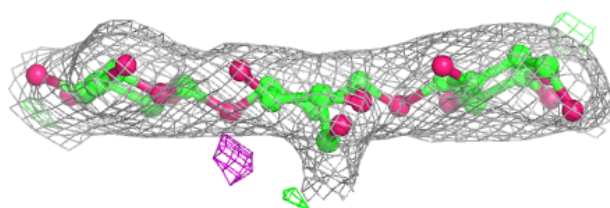and green (positive)
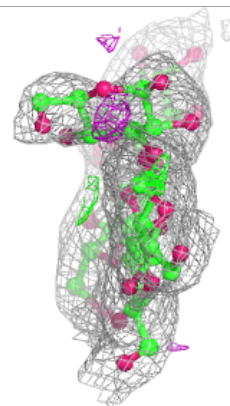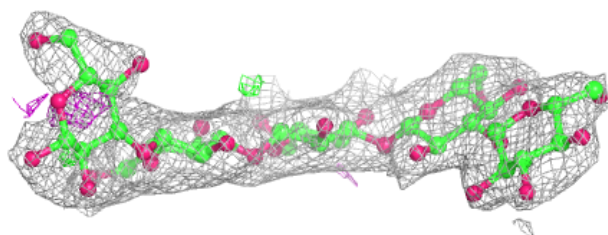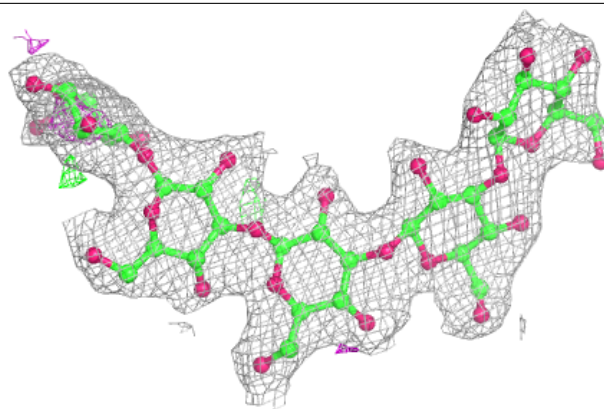
Electron density around Chain M:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)
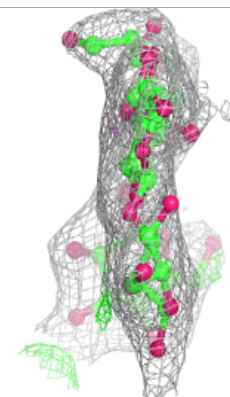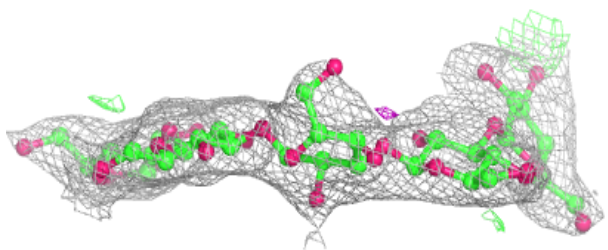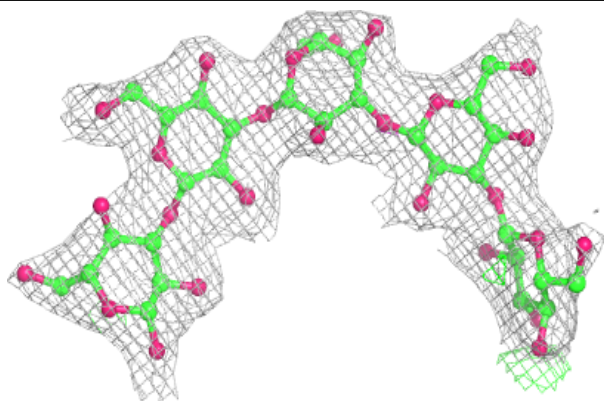
Electron density around Chain G:

2mF$_o$-DF$_c$ (at 0.7 rmsd) in gray
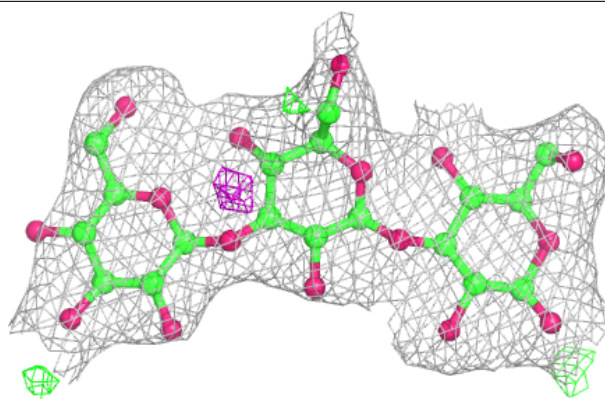mF$_o$-DF$_c$ (at 3 rmsd) in purple (negative)
and green (positive)
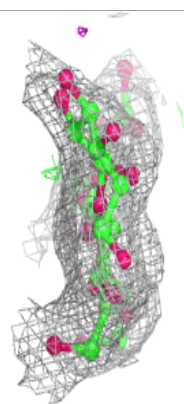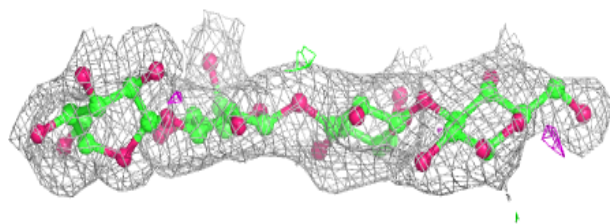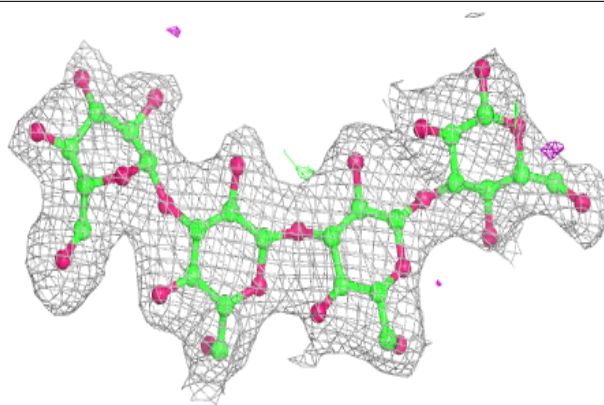
Electron density around Chain L:

2mF$_o$-DF$_c$ (at 0.7 rmsd) in gray
mF$_o$-DF$_c$ (at 3 rmsd) in purple (negative)
and green (positive)
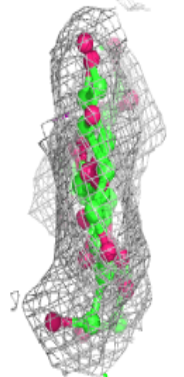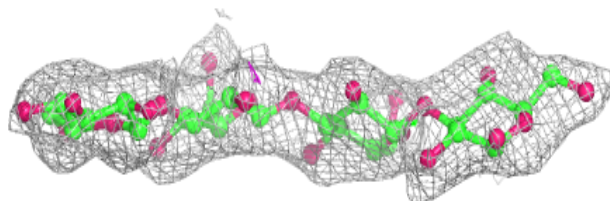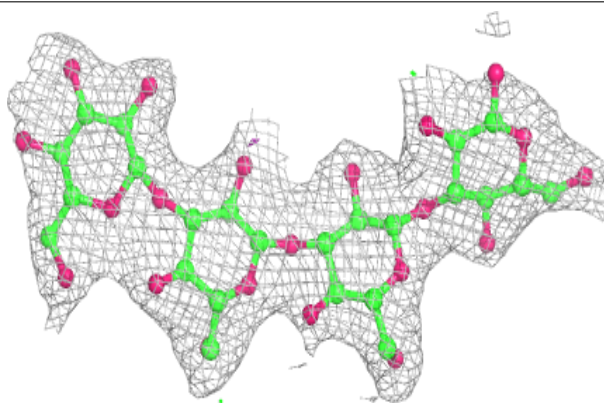
Electron density around Chain O:

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
and green (positive)
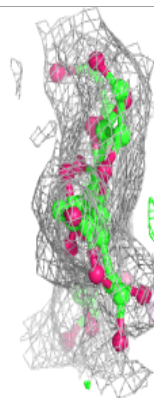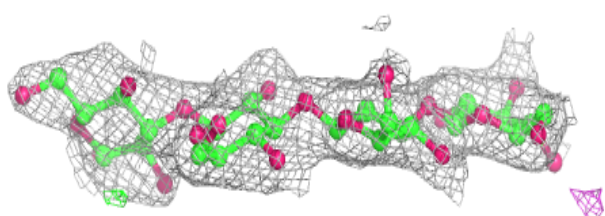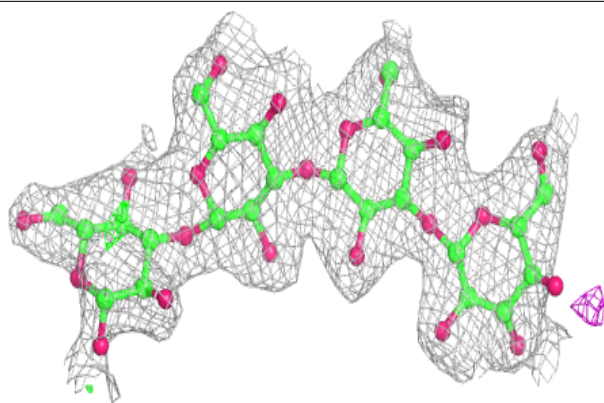
Electron density around Chain P:

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
and green (positive)
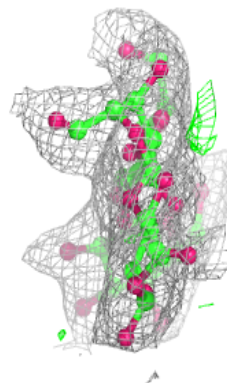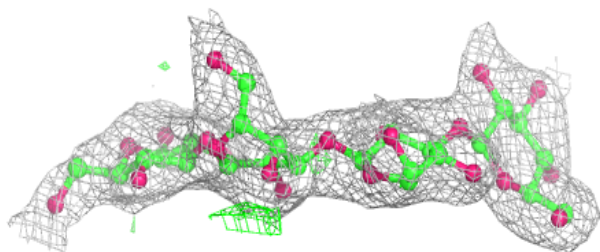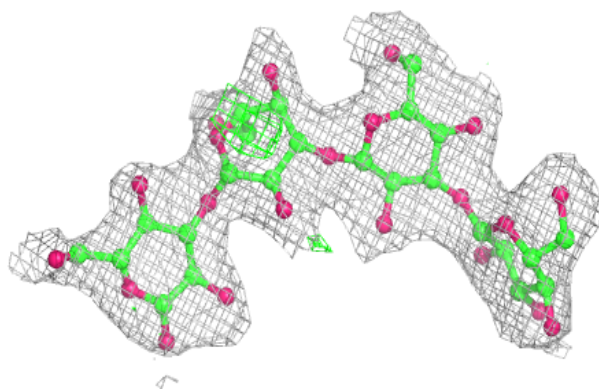
Electron density around Chain Q:

2mF$_o$-DF$_c$ (at 0.7 rmsd) in gray
mF$_o$-DF$_c$ (at 3 rmsd) in purple (negative)
and green (positive)
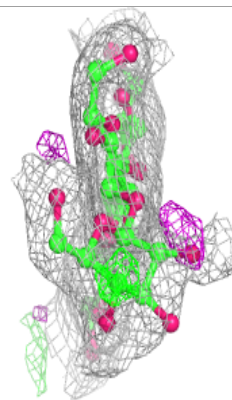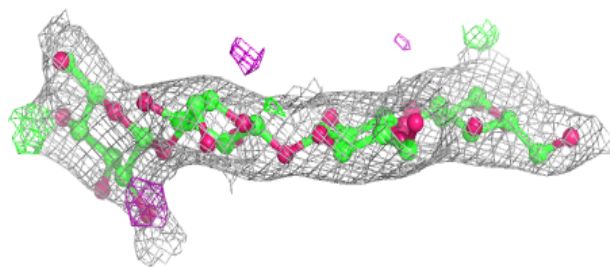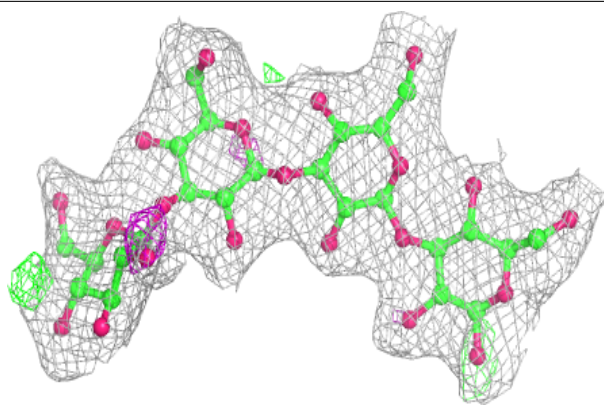
Electron density around Chain H:

2mF$_o$-DF$_c$ (at 0.7 rmsd) in gray
mF$_o$-DF$_c$ (at 3 rmsd) in purple (negative)
and green (positive)
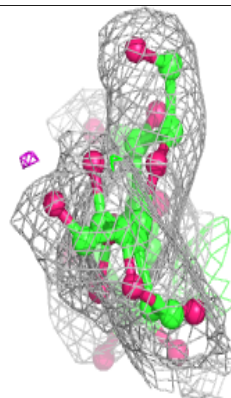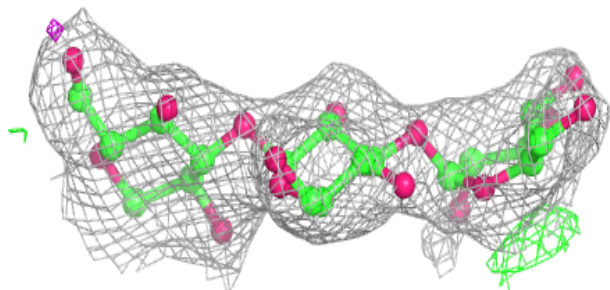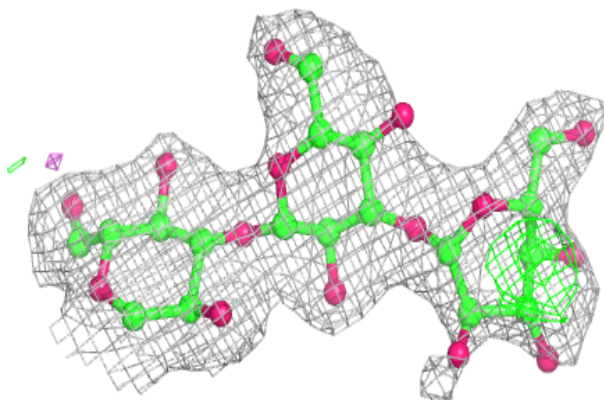
Electron density around Chain I:

$2mF_o\text{-}DF_c$ (at 0.7 rmsd) in gray
$mF_o\text{-}DF_c$ (at 3 rmsd) in purple (negative)
and green (positive)
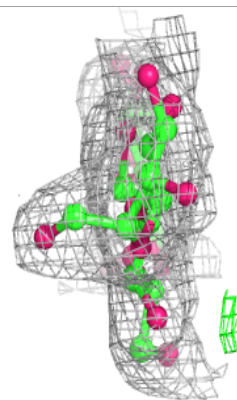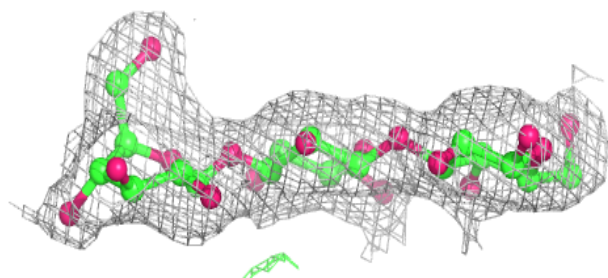
Electron density around Chain N:

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

Electron density around Chain R:

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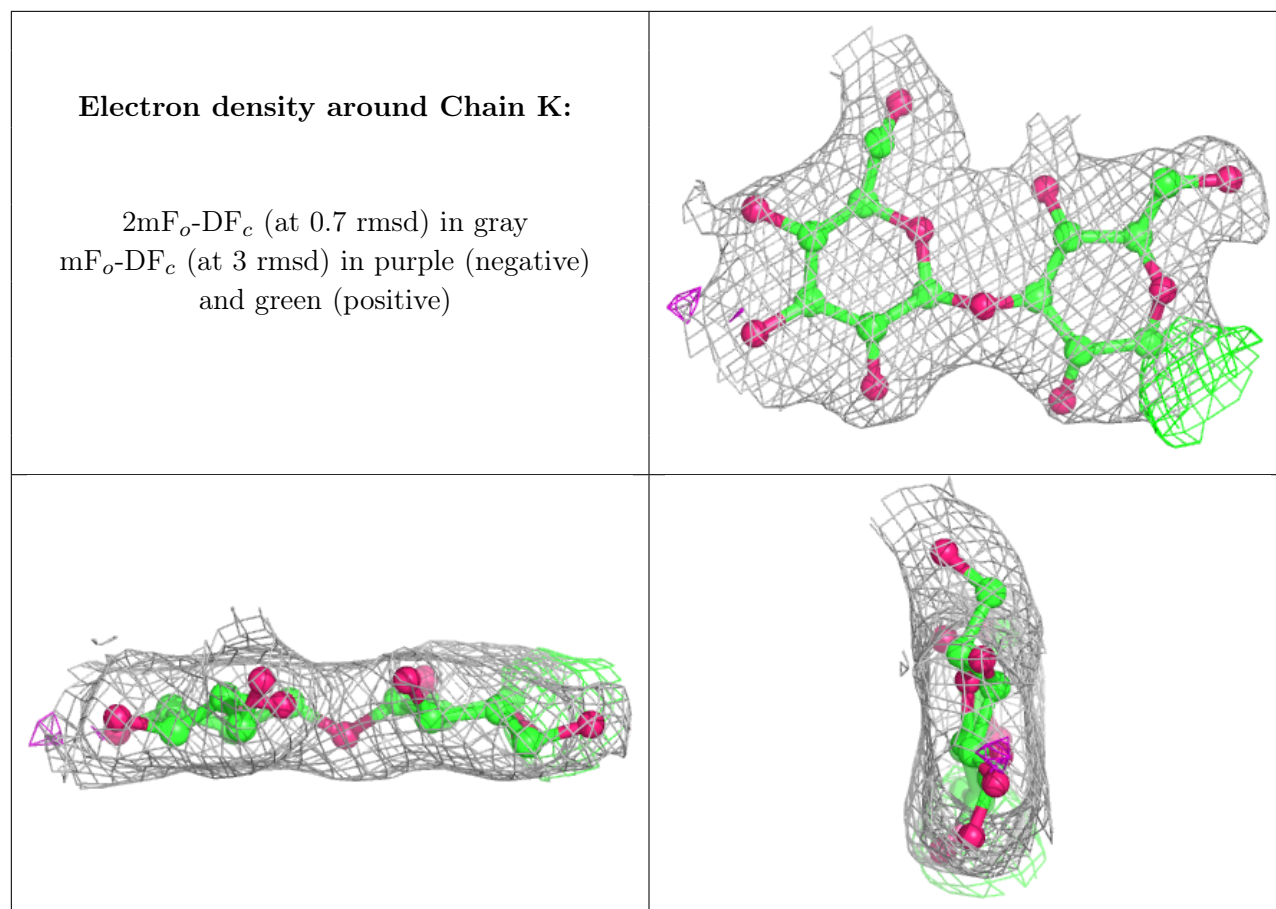mF$_o$-DF$_c$ (at 3 rmsd) in purple (negative)
and green (positive)

Electron density around Chain J:

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 K:

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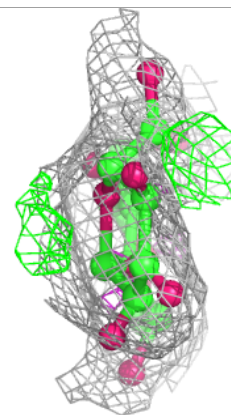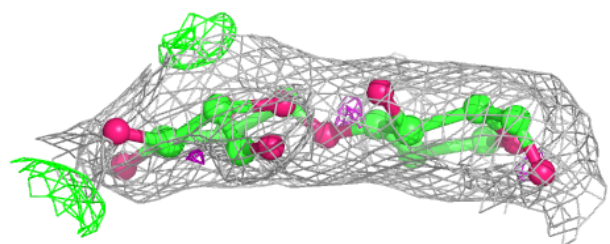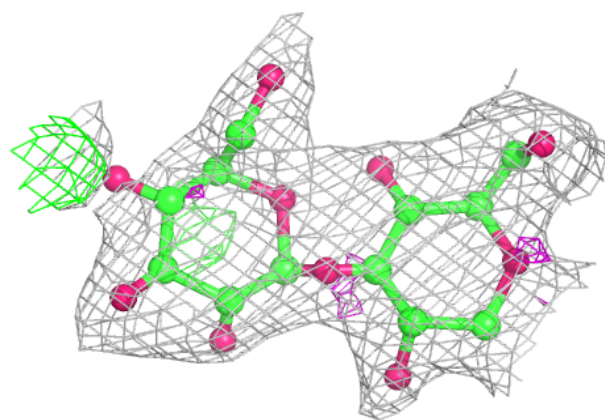
6.4 Ligands ⓘ

There are no ligands in this entry.

6.5 Other polymers ⓘ

There are no such residues in this entry.