WORLDWIDE PDB
PROTEIN DATA BANK

Full wwPDB X-ray Structure Validation Report (i)

Jun 29, 2025 – 08:52 am BST

PDB ID	:	9FHW / pdb_00009fhw
Title	:	Bacteroides ovatus polysaccharide lyase family 38 (BoPL38) wild type in complex tetraguluronic acid at pH 8
Authors	:	Tandrup, T.; Wilkens, C.
Deposited on	:	2024-05-28
Resolution	:	2.54 Å(reported)

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

|		
MolProbity	:	4-5-2 with Phenix2.0rc1
Mogul	:	1.8.4, CSD as541be (2020)
Xtriage (Phenix)	:	2.0rc1
EDS	:	3.0
Percentile statistics	:	20231227.v01 (using entries in the PDB archive December 27th 2023)
CCP4	:	9.0.003 (Gargrove)
Density-Fitness	:	1.0.11
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.44
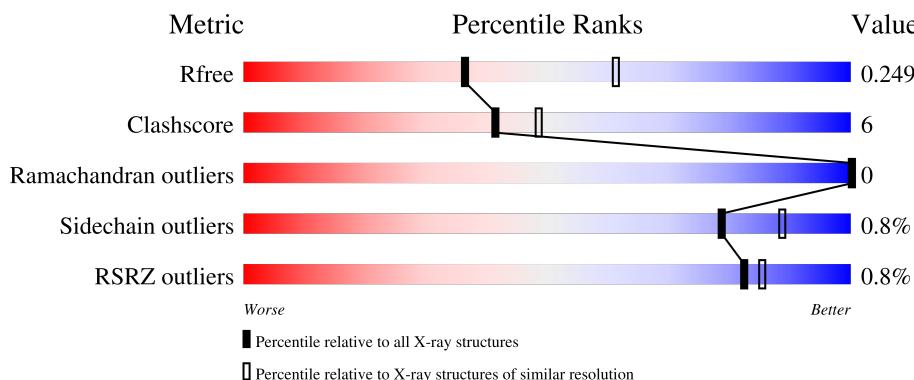
1 Overall quality at a glance ⓘ

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

The reported resolution of this entry is 2.54 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.

Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	164625	1004 (2.54-2.54)
Clashscore	180529	1055 (2.54-2.54)
Ramachandran outliers	177936	1048 (2.54-2.54)
Sidechain outliers	177891	1048 (2.54-2.54)
RSRZ outliers	164620	1004 (2.54-2.54)

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	404	82% · · · 12% 6%
1	B	404	79% 15% 6%
1	C	404	80% · · · 14% 6%
1	D	404	78% 16% 6%
2	E	4	50% 50%

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Mol	Chain	Length	Quality of chain
2	F	4	75%　　　　　　　　　25%
2	G	4	75%　　　　　　　　　25%
2	H	4	75%　　　　　　　　　25%

2   Entry composition ⓘ

There are 4 unique types of molecules in this entry. The entry contains 12745 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 Alginate lyase family protein.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	379	Total 3046	C 1949	N 515	O 569	S 13	0	0	0
1	B	380	Total 3052	C 1952	N 516	O 571	S 13	0	0	0
1	C	380	Total 3052	C 1952	N 516	O 571	S 13	0	0	0
1	D	380	Total 3052	C 1952	N 516	O 571	S 13	0	0	0

There are 92 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	1	MET	-	initiating methionine	UNP A0A5M5BWR5
A	2	GLY	-	expression tag	UNP A0A5M5BWR5
A	3	SER	-	expression tag	UNP A0A5M5BWR5
A	4	SER	-	expression tag	UNP A0A5M5BWR5
A	5	HIS	-	expression tag	UNP A0A5M5BWR5
A	6	HIS	-	expression tag	UNP A0A5M5BWR5
A	7	HIS	-	expression tag	UNP A0A5M5BWR5
A	8	HIS	-	expression tag	UNP A0A5M5BWR5
A	9	HIS	-	expression tag	UNP A0A5M5BWR5
A	10	HIS	-	expression tag	UNP A0A5M5BWR5
A	11	SER	-	expression tag	UNP A0A5M5BWR5
A	12	SER	-	expression tag	UNP A0A5M5BWR5
A	13	GLY	-	expression tag	UNP A0A5M5BWR5
A	14	LEU	-	expression tag	UNP A0A5M5BWR5
A	15	VAL	-	expression tag	UNP A0A5M5BWR5
A	16	PRO	-	expression tag	UNP A0A5M5BWR5
A	17	ARG	-	expression tag	UNP A0A5M5BWR5
A	18	GLY	-	expression tag	UNP A0A5M5BWR5
A	19	SER	-	expression tag	UNP A0A5M5BWR5
A	20	HIS	-	expression tag	UNP A0A5M5BWR5
A	21	MET	-	expression tag	UNP A0A5M5BWR5

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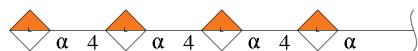
Chain	Residue	Modelled	Actual	Comment	Reference
A	22	ALA	-	expression tag	UNP A0A5M5BWR5
A	23	SER	-	expression tag	UNP A0A5M5BWR5
B	1	MET	-	initiating methionine	UNP A0A5M5BWR5
B	2	GLY	-	expression tag	UNP A0A5M5BWR5
B	3	SER	-	expression tag	UNP A0A5M5BWR5
B	4	SER	-	expression tag	UNP A0A5M5BWR5
B	5	HIS	-	expression tag	UNP A0A5M5BWR5
B	6	HIS	-	expression tag	UNP A0A5M5BWR5
B	7	HIS	-	expression tag	UNP A0A5M5BWR5
B	8	HIS	-	expression tag	UNP A0A5M5BWR5
B	9	HIS	-	expression tag	UNP A0A5M5BWR5
B	10	HIS	-	expression tag	UNP A0A5M5BWR5
B	11	SER	-	expression tag	UNP A0A5M5BWR5
B	12	SER	-	expression tag	UNP A0A5M5BWR5
B	13	GLY	-	expression tag	UNP A0A5M5BWR5
B	14	LEU	-	expression tag	UNP A0A5M5BWR5
B	15	VAL	-	expression tag	UNP A0A5M5BWR5
B	16	PRO	-	expression tag	UNP A0A5M5BWR5
B	17	ARG	-	expression tag	UNP A0A5M5BWR5
B	18	GLY	-	expression tag	UNP A0A5M5BWR5
B	19	SER	-	expression tag	UNP A0A5M5BWR5
B	20	HIS	-	expression tag	UNP A0A5M5BWR5
B	21	MET	-	expression tag	UNP A0A5M5BWR5
B	22	ALA	-	expression tag	UNP A0A5M5BWR5
B	23	SER	-	expression tag	UNP A0A5M5BWR5
C	1	MET	-	initiating methionine	UNP A0A5M5BWR5
C	2	GLY	-	expression tag	UNP A0A5M5BWR5
C	3	SER	-	expression tag	UNP A0A5M5BWR5
C	4	SER	-	expression tag	UNP A0A5M5BWR5
C	5	HIS	-	expression tag	UNP A0A5M5BWR5
C	6	HIS	-	expression tag	UNP A0A5M5BWR5
C	7	HIS	-	expression tag	UNP A0A5M5BWR5
C	8	HIS	-	expression tag	UNP A0A5M5BWR5
C	9	HIS	-	expression tag	UNP A0A5M5BWR5
C	10	HIS	-	expression tag	UNP A0A5M5BWR5
C	11	SER	-	expression tag	UNP A0A5M5BWR5
C	12	SER	-	expression tag	UNP A0A5M5BWR5
C	13	GLY	-	expression tag	UNP A0A5M5BWR5
C	14	LEU	-	expression tag	UNP A0A5M5BWR5
C	15	VAL	-	expression tag	UNP A0A5M5BWR5
C	16	PRO	-	expression tag	UNP A0A5M5BWR5
C	17	ARG	-	expression tag	UNP A0A5M5BWR5

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Chain	Residue	Modelled	Actual	Comment	Reference
C	18	GLY	-	expression tag	UNP A0A5M5BWR5
C	19	SER	-	expression tag	UNP A0A5M5BWR5
C	20	HIS	-	expression tag	UNP A0A5M5BWR5
C	21	MET	-	expression tag	UNP A0A5M5BWR5
C	22	ALA	-	expression tag	UNP A0A5M5BWR5
C	23	SER	-	expression tag	UNP A0A5M5BWR5
D	1	MET	-	initiating methionine	UNP A0A5M5BWR5
D	2	GLY	-	expression tag	UNP A0A5M5BWR5
D	3	SER	-	expression tag	UNP A0A5M5BWR5
D	4	SER	-	expression tag	UNP A0A5M5BWR5
D	5	HIS	-	expression tag	UNP A0A5M5BWR5
D	6	HIS	-	expression tag	UNP A0A5M5BWR5
D	7	HIS	-	expression tag	UNP A0A5M5BWR5
D	8	HIS	-	expression tag	UNP A0A5M5BWR5
D	9	HIS	-	expression tag	UNP A0A5M5BWR5
D	10	HIS	-	expression tag	UNP A0A5M5BWR5
D	11	SER	-	expression tag	UNP A0A5M5BWR5
D	12	SER	-	expression tag	UNP A0A5M5BWR5
D	13	GLY	-	expression tag	UNP A0A5M5BWR5
D	14	LEU	-	expression tag	UNP A0A5M5BWR5
D	15	VAL	-	expression tag	UNP A0A5M5BWR5
D	16	PRO	-	expression tag	UNP A0A5M5BWR5
D	17	ARG	-	expression tag	UNP A0A5M5BWR5
D	18	GLY	-	expression tag	UNP A0A5M5BWR5
D	19	SER	-	expression tag	UNP A0A5M5BWR5
D	20	HIS	-	expression tag	UNP A0A5M5BWR5
D	21	MET	-	expression tag	UNP A0A5M5BWR5
D	22	ALA	-	expression tag	UNP A0A5M5BWR5
D	23	SER	-	expression tag	UNP A0A5M5BWR5

- Molecule 2 is an oligosaccharide called alpha-L-gulopyranuronic acid-(1-4)-alpha-L-gulopyr anuronic acid-(1-4)-alpha-L-gulopyranuronic acid-(1-4)-alpha-L-gulopyranuronic acid.
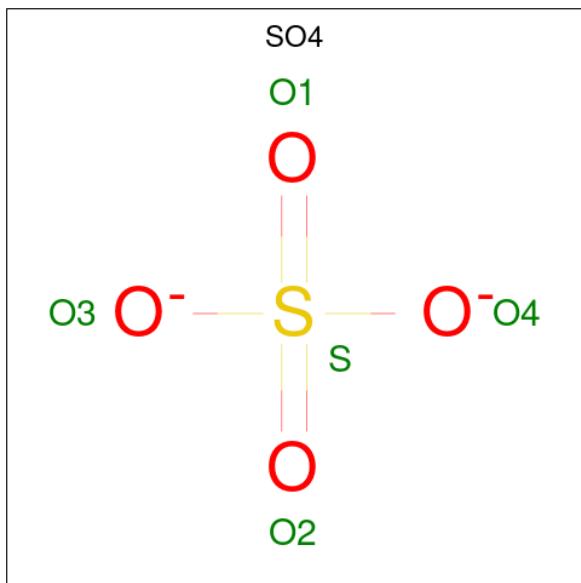
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf	Trace
2	E	4	Total 49	C 24	O 25	0	0	0
2	F	4	Total 49	C 24	O 25	0	0	0

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Mol	Chain	Residues	Atoms			ZeroOcc	AltConf	Trace
2	G	4	Total 49	C 24	O 25	0	0	0
2	H	4	Total 49	C 24	O 25	0	0	0

• Molecule 3 is SULFATE ION (CCD ID: SO4) (formula: O_4S).

Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
3	A	1	Total 5	O 4	S 1	0	0
3	B	1	Total 5	O 4	S 1	0	0
3	C	1	Total 5	O 4	S 1	0	0
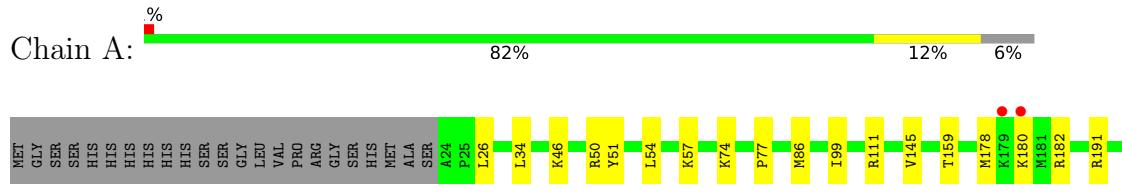
• Molecule 4 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
4	A	109	Total 109	O 109	0	0
4	B	96	Total 96	O 96	0	0
4	C	60	Total 60	O 60	0	0
4	D	67	Total 67	O 67	0	0
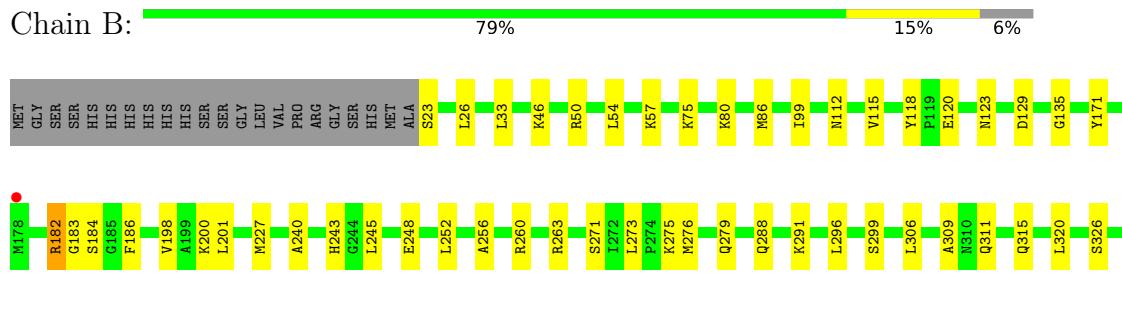
3 Residue-property plots ⓘ

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: Alginate lyase family protein

Chain A:

• Molecule 1: Alginate lyase family protein

Chain B:

• Molecule 1: Alginate lyase family protein

Chain C:

• Molecule 1: Alginate lyase family protein

Chain D:

| 78% | 16% | 6% |

MET GLY SER SER HIS HIS HIS HIS HIS HIS SER SER GLY LEU VAL PRO ARG GLY SER HIS MET ALA S23 L34 E35 K38 V48 Y51 I52 E53 L54 Q55 E56 K61 Y62 K74 M86 T87 L88 S89 W92 W93 P94 Y104 K107 E110 R111 Y118

R121 N125 Y139 M178 K179 I187 R190 R194 V198 C224 M227 Q234 S237 H243 E248 L258 D259 R260 T261 D262 R265 E266 Q270 M276 S285 L296 F301 L306 Y337 Y342 D347 W348 K349 P355

F356 A361 A362 I363 L364 L365 Y366 E367 Y388 S389 T390 S391 D392 T395 Y398 L399 K402 LYS LYS

• Molecule 2: alpha-L-gulopyranuronic acid-(1-4)-alpha-L-gulopyranuronic acid-(1-4)-alpha-L-gulopyranuronic acid-(1-4)-alpha-L-gulopyranuronic acid

Chain E:

| 50% | 50% |

LGU1 LGU2 LGU3 LGU4

• Molecule 2: alpha-L-gulopyranuronic acid-(1-4)-alpha-L-gulopyranuronic acid-(1-4)-alpha-L-gulopyranuronic acid-(1-4)-alpha-L-gulopyranuronic acid

Chain F:

| 75% | 25% |

LGU1 LGU2 LGU3 LGU4

• Molecule 2: alpha-L-gulopyranuronic acid-(1-4)-alpha-L-gulopyranuronic acid-(1-4)-alpha-L-gulopyranuronic acid-(1-4)-alpha-L-gulopyranuronic acid

Chain G:

| 75% | 25% |

LGU1 LGU2 LGU3 LGU4

• Molecule 2: alpha-L-gulopyranuronic acid-(1-4)-alpha-L-gulopyranuronic acid-(1-4)-alpha-L-gulopyranuronic acid-(1-4)-alpha-L-gulopyranuronic acid

Chain H:

| 75% | 25% |

LGU1 LGU2 LGU3 LGU4

4   Data and refinement statistics   ⓘ

Property	Value	Source
Space group	C 1 2 1	Depositor
Cell constants a, b, c, α, β, γ	196.94Å 89.03Å 145.91Å 90.00° 120.36° 90.00°	Depositor
Resolution (Å)	62.95 – 2.54 62.95 – 2.54	Depositor EDS
% Data completeness (in resolution range)	99.7 (62.95-2.54) 99.7 (62.95-2.54)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$<I/\sigma(I)>$ [1]	1.47 (at 2.55Å)	Xtriage
Refinement program	PHENIX 1.21_5207	Depositor
R, R_{free}	0.205 , 0.248 0.205 , 0.249	Depositor DCC
R_{free} test set	3661 reflections (5.09%)	wwPDB-VP
Wilson B-factor (Å^2)	61.0	Xtriage
Anisotropy	0.003	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.36 , 48.6	EDS
L-test for twinning[2]	$<\|L\|>\ =0.49,\ <L^2>\ =0.33$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.94	EDS
Total number of atoms	12745	wwPDB-VP
Average B, all atoms (Å^2)	64.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 11.39% of the height of the origin peak. No significant pseudotranslation is detected.*

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[1]Intensities estimated from amplitudes.
[2]Theoretical values of $<\|L\|>$, $<L^2>$ for acentric reflections are 0.5, 0.333 respectively for untwinned datasets, and 0.375, 0.2 for perfectly twinned datasets.

5 Model quality (i)

5.1 Standard geometry (i)

Bond lengths and bond angles in the following residue types are not validated in this section: LGU, SO4

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	0.42	0/3124	0.62	2/4234 (0.0%)
1	B	0.43	0/3130	0.63	2/4242 (0.0%)
1	C	0.40	0/3130	0.62	0/4242
1	D	0.36	0/3130	0.51	0/4242
All	All	0.40	0/12514	0.60	4/16960 (0.0%)

There are no bond length outliers.

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	182	ARG	CD-NE-CZ	-6.60	115.16	124.40
1	B	182	ARG	NE-CZ-NH1	-5.86	115.64	121.50
1	A	227	MET	CA-CB-CG	5.32	124.74	114.10
1	A	227	MET	CB-CA-C	-5.31	101.98	110.79

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	3046	0	3017	35	0
1	B	3052	0	3022	41	0
1	C	3052	0	3022	38	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	D	3052	0	3022	43	0
2	E	49	0	27	2	0
2	F	49	0	27	1	0
2	G	49	0	27	1	0
2	H	49	0	27	1	0
3	A	5	0	0	0	0
3	B	5	0	0	0	0
3	C	5	0	0	0	0
4	A	109	0	0	4	0
4	B	96	0	0	4	0
4	C	60	0	0	2	0
4	D	67	0	0	1	0
All	All	12745	0	12191	154	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 6.

All (154) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:77:PRO:HA	1:A:86:MET:HE1	1.64	0.78
1:B:182:ARG:NH1	4:B:601:HOH:O	2.07	0.77
1:A:336:ASP:OD1	1:A:377:TYR:OH	2.10	0.69
1:D:276:MET:HE2	1:D:306:LEU:HD13	1.74	0.69
1:B:336:ASP:OD1	1:B:377:TYR:OH	2.12	0.68
1:A:228:GLU:OE2	1:A:251:HIS:NE2	2.25	0.68
1:A:111:ARG:NH1	2:E:4:LGU:O6B	2.28	0.67
1:D:276:MET:HE3	1:D:306:LEU:HD22	1.76	0.67
1:B:276:MET:HE3	1:B:306:LEU:HD13	1.78	0.65
1:B:182:ARG:HG3	1:B:184:SER:H	1.61	0.65
1:A:327:ASN:HD21	1:A:329:LYS:HD2	1.61	0.65
1:D:361:ALA:HB1	1:D:365:LEU:HD23	1.78	0.65
1:C:336:ASP:OD1	1:C:377:TYR:OH	2.16	0.64
1:D:86:MET:HE3	1:D:118:TYR:HE2	1.63	0.64
1:C:394:GLU:OE2	1:C:394:GLU:N	2.22	0.63
1:D:243:HIS:NE2	2:H:3:LGU:H5	2.14	0.62
1:D:234:GLN:O	1:D:237:SER:OG	2.13	0.62
1:C:392:ASP:HB3	1:C:394:GLU:OE1	1.99	0.61
1:B:186:PHE:CZ	1:B:227:MET:HE3	2.35	0.60
1:C:232:GLN:HG3	4:C:636:HOH:O	2.00	0.60
1:C:388:TYR:HA	1:C:402:LYS:HB3	1.84	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:306:LEU:HD11	1:B:320:LEU:HB3	1.84	0.60
1:C:276:MET:SD	1:C:306:LEU:HD13	2.42	0.59
1:B:54:LEU:HD21	1:B:389:SER:HA	1.85	0.59
1:B:245:LEU:HD13	1:B:276:MET:HE1	1.85	0.58
1:B:260:ARG:NH1	4:B:605:HOH:O	2.36	0.57
1:D:86:MET:HE3	1:D:118:TYR:CE2	2.41	0.56
1:D:265:ARG:HD3	4:D:516:HOH:O	2.06	0.56
1:B:275:LYS:O	1:B:279:GLN:HG3	2.06	0.55
1:B:120:GLU:HA	1:B:123:ASN:HB2	1.88	0.55
1:B:388:TYR:HA	1:B:402:LYS:HB3	1.88	0.55
1:D:342:TYR:CD2	1:D:365:LEU:HD21	2.43	0.54
1:D:285:SER:HB3	1:D:337:TYR:CE1	2.43	0.53
1:D:190:ARG:O	1:D:194:ARG:HD2	2.09	0.53
1:D:367:GLU:OE2	1:D:398:TYR:OH	2.23	0.53
1:B:243:HIS:NE2	2:F:3:LGU:H5	2.23	0.53
1:C:223:PHE:O	1:C:227:MET:HG3	2.09	0.53
1:B:75:LYS:HZ1	1:B:118:TYR:HE2	1.55	0.52
1:B:271:SER:OG	1:B:275:LYS:NZ	2.38	0.52
1:B:112:ASN:O	1:B:115:VAL:HG22	2.10	0.52
1:A:327:ASN:ND2	1:A:329:LYS:HD2	2.24	0.52
1:A:46:LYS:O	1:A:50:ARG:HG3	2.10	0.52
1:C:269:GLU:HG3	4:C:654:HOH:O	2.09	0.52
1:C:54:LEU:HD21	1:C:389:SER:HA	1.91	0.52
1:D:89:SER:HG	1:D:92:TRP:CD1	2.28	0.52
1:D:347:ASP:O	1:D:349:LYS:HD2	2.11	0.51
1:A:248:GLU:HA	1:A:248:GLU:OE1	2.10	0.51
1:D:23:SER:HA	1:D:35:GLU:OE2	2.09	0.51
1:D:266:GLU:HB3	1:D:270:GLN:OE1	2.11	0.51
1:A:159:THR:HG23	4:A:696:HOH:O	2.10	0.51
1:C:394:GLU:H	1:C:394:GLU:CD	2.17	0.51
1:C:195:ALA:O	1:C:198:VAL:HG12	2.11	0.50
1:D:111:ARG:HH11	1:D:121:ARG:NH2	2.09	0.50
1:A:54:LEU:HD21	1:A:389:SER:HA	1.92	0.50
1:C:86:MET:HE3	1:C:118:TYR:CE2	2.47	0.50
1:D:363:ILE:HD11	1:D:395:THR:HG22	1.94	0.50
1:D:390:THR:OG1	1:D:392:ASP:OD1	2.30	0.49
1:B:392:ASP:HB3	1:B:394:GLU:OE1	2.12	0.49
1:C:299:SER:HB3	1:C:338:LEU:HD11	1.93	0.49
1:A:392:ASP:HB3	1:A:394:GLU:OE1	2.12	0.49
1:A:191:ARG:HD2	4:A:628:HOH:O	2.11	0.49
1:B:46:LYS:O	1:B:50:ARG:HG2	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:54:LEU:HD21	1:D:389:SER:HA	1.94	0.49
1:A:229:ASN:HB3	4:A:677:HOH:O	2.12	0.49
1:C:296:LEU:HD13	1:C:348:TRP:CE3	2.48	0.49
1:D:107:LYS:HB3	1:D:110:GLU:OE1	2.13	0.49
1:D:296:LEU:HD22	1:D:356:PHE:CE2	2.48	0.49
1:A:51:TYR:CD1	1:A:399:LEU:HD13	2.47	0.48
1:B:326:SER:HB2	4:B:651:HOH:O	2.13	0.48
1:A:296:LEU:HD13	1:A:348:TRP:CE3	2.48	0.48
1:C:241:ASN:HA	1:C:279:GLN:NE2	2.29	0.48
1:A:178:MET:SD	1:A:182:ARG:HD3	2.54	0.48
1:C:86:MET:HE3	1:C:118:TYR:HE2	1.78	0.48
1:C:248:GLU:HA	1:C:248:GLU:OE1	2.12	0.48
1:C:262:ASP:OD2	1:C:262:ASP:N	2.46	0.48
1:B:129:ASP:HA	1:B:393:VAL:HG21	1.96	0.47
1:C:186:PHE:CZ	1:C:227:MET:HE3	2.49	0.47
1:B:311:GLN:O	1:B:315:GLN:NE2	2.45	0.47
1:B:182:ARG:HH11	1:B:182:ARG:HD2	1.35	0.47
1:C:243:HIS:NE2	2:G:3:LGU:H5	2.29	0.47
1:B:80:LYS:HB2	1:B:80:LYS:HE3	1.45	0.47
1:B:288:GLN:HA	1:B:291:LYS:HE3	1.97	0.47
1:C:175:VAL:HB	1:C:178:MET:HE2	1.96	0.47
1:C:297:HIS:ND1	1:C:360:ARG:NH2	2.62	0.47
1:D:52:ILE:O	1:D:56:GLU:HG3	2.15	0.47
1:A:34:LEU:HA	1:A:34:LEU:HD23	1.69	0.47
1:D:262:ASP:OD1	1:D:262:ASP:N	2.48	0.47
1:A:74:LYS:HD3	1:A:74:LYS:HA	1.68	0.46
1:C:349:LYS:O	1:C:349:LYS:HD2	2.15	0.46
1:A:227:MET:HE2	1:A:227:MET:HB3	1.78	0.46
1:D:276:MET:CE	1:D:306:LEU:HD13	2.45	0.46
1:D:94:PRO:HG3	1:D:104:TYR:CZ	2.51	0.46
1:D:34:LEU:HD23	1:D:34:LEU:HA	1.78	0.46
1:A:243:HIS:NE2	2:E:3:LGU:H5	2.30	0.46
1:D:48:VAL:O	1:D:52:ILE:HG12	2.15	0.46
1:D:61:LYS:HE2	1:D:62:TYR:CZ	2.51	0.45
1:D:392:ASP:OD1	1:D:392:ASP:N	2.49	0.45
1:C:375:GLN:NE2	1:C:379:ASP:OD1	2.47	0.45
1:B:248:GLU:HA	1:B:248:GLU:OE1	2.16	0.45
1:B:183:GLY:N	4:B:601:HOH:O	2.42	0.45
1:D:361:ALA:HB1	1:D:365:LEU:CD2	2.46	0.45
1:D:388:TYR:HA	1:D:402:LYS:HB3	1.98	0.45
1:A:26:LEU:HA	1:A:315:GLN:OE1	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:D:399:LEU:HD12	1:D:399:LEU:O	2.17	0.44
1:C:86:MET:HA	1:C:171:TYR:O	2.15	0.44
1:A:57:LYS:C	1:B:99:ILE:HD11	2.42	0.44
1:B:200:LYS:NZ	1:B:256:ALA:O	2.48	0.44
1:D:38:LYS:HE3	1:D:139:TYR:O	2.17	0.44
1:C:284:GLY:O	1:C:334:ALA:HA	2.18	0.44
1:B:296:LEU:HD13	1:B:348:TRP:CE3	2.52	0.44
1:D:260:ARG:NH1	1:D:262:ASP:OD2	2.51	0.44
1:C:288:GLN:HA	1:C:291:LYS:HE3	1.99	0.44
1:A:227:MET:HE1	1:A:251:HIS:HB2	2.00	0.43
1:A:145:VAL:HG23	4:A:697:HOH:O	2.17	0.43
1:B:198:VAL:HG13	1:B:201:LEU:HD12	2.00	0.43
1:C:353:ILE:HB	1:D:355:PRO:HD3	1.98	0.43
1:A:339:TYR:CE2	1:A:376:LYS:HE3	2.53	0.43
1:C:227:MET:HE2	1:C:227:MET:HB3	1.69	0.43
1:B:118:TYR:CD1	1:B:118:TYR:N	2.85	0.43
1:C:247:TYR:CD1	1:C:247:TYR:C	2.97	0.43
1:A:77:PRO:HA	1:A:86:MET:CE	2.42	0.43
1:B:135:GLY:HA3	1:B:198:VAL:CG1	2.48	0.43
1:B:252:LEU:HD12	1:B:309:ALA:HB1	2.01	0.43
1:B:386:LEU:HD13	1:B:395:THR:HB	2.00	0.43
1:C:33:LEU:HD23	1:C:33:LEU:HA	1.88	0.43
1:D:51:TYR:CG	1:D:399:LEU:HD22	2.54	0.43
1:A:200:LYS:HE3	1:A:203:GLU:OE1	2.20	0.42
1:B:33:LEU:HD23	1:B:33:LEU:HA	1.82	0.42
1:C:259:ASP:OD2	1:C:259:ASP:O	2.38	0.42
1:A:180:LYS:HE2	1:A:180:LYS:HB3	1.84	0.42
1:C:39:ASN:OD1	1:C:43:LYS:HE3	2.20	0.42
1:D:51:TYR:O	1:D:55:GLN:HG2	2.20	0.42
1:B:299:SER:HB3	1:B:338:LEU:HD11	2.01	0.41
1:D:88:LEU:HB2	1:D:118:TYR:CE1	2.56	0.41
1:C:112:ASN:O	1:C:115:VAL:HG22	2.20	0.41
1:C:252:LEU:HD12	1:C:309:ALA:HB1	2.02	0.41
1:B:86:MET:HA	1:B:171:TYR:O	2.21	0.41
1:C:120:GLU:HA	1:C:123:ASN:HB2	2.02	0.41
1:D:258:LEU:HA	1:D:258:LEU:HD23	1.88	0.41
1:A:386:LEU:HD13	1:A:395:THR:HB	2.01	0.41
1:B:26:LEU:HA	1:B:315:GLN:OE1	2.21	0.41
1:C:180:LYS:HE2	1:C:182:ARG:CG	2.51	0.41
1:A:99:ILE:HD11	1:B:57:LYS:HB3	2.02	0.41
1:A:194:ARG:NH2	1:A:308:GLU:OE2	2.53	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:240:ALA:C	1:B:279:GLN:HE21	2.29	0.41
1:D:224:CYS:O	1:D:227:MET:HG2	2.20	0.41
1:D:248:GLU:HA	1:D:248:GLU:OE1	2.20	0.41
1:A:198:VAL:HG22	1:A:201:LEU:HD12	2.03	0.41
1:A:159:THR:OG1	1:A:215:LYS:HB3	2.21	0.40
1:A:26:LEU:HG	1:A:256:ALA:HB1	2.01	0.40
1:A:388:TYR:HA	1:A:402:LYS:HB3	2.04	0.40
1:D:187:ILE:HD11	1:D:301:PHE:HE2	1.86	0.40
1:C:137:LEU:HD23	1:C:137:LEU:HA	1.80	0.40
1:B:273:LEU:HD23	1:B:273:LEU:HA	1.89	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	377/404 (93%)	367 (97%)	10 (3%)	0	100	100
1	B	378/404 (94%)	368 (97%)	10 (3%)	0	100	100
1	C	378/404 (94%)	369 (98%)	9 (2%)	0	100	100
1	D	378/404 (94%)	366 (97%)	12 (3%)	0	100	100
All	All	1511/1616 (94%)	1470 (97%)	41 (3%)	0	100	100

There are no Ramachandran outliers to report.

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	323/344 (94%)	322 (100%)	1 (0%)	91	96
1	B	324/344 (94%)	322 (99%)	2 (1%)	84	92
1	C	324/344 (94%)	321 (99%)	3 (1%)	75	87
1	D	324/344 (94%)	320 (99%)	4 (1%)	67	80
All	All	1295/1376 (94%)	1285 (99%)	10 (1%)	79	89

All (10) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	198	VAL
1	B	23	SER
1	B	263	ARG
1	C	23	SER
1	C	200	LYS
1	C	349	LYS
1	D	74	LYS
1	D	125	ASN
1	D	198	VAL
1	D	296	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (8) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	344	ASN
1	A	358	GLN
1	B	36	GLN
1	B	279	GLN
1	C	125	ASN
1	C	152	ASN
1	C	238	HIS
1	D	125	ASN

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates (i)

16 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	LGU	E	1	2	13,13,13	1.06	0	18,19,19	1.03	1 (5%)
2	LGU	E	2	2	12,12,13	1.19	1 (8%)	14,17,19	1.62	2 (14%)
2	LGU	E	3	2	12,12,13	1.12	1 (8%)	14,17,19	1.51	4 (28%)
2	LGU	E	4	2	12,12,13	1.26	1 (8%)	14,17,19	1.56	3 (21%)
2	LGU	F	1	2	13,13,13	1.02	0	18,19,19	1.52	3 (16%)
2	LGU	F	2	2	12,12,13	1.12	1 (8%)	14,17,19	1.28	1 (7%)
2	LGU	F	3	2	12,12,13	1.28	2 (16%)	14,17,19	1.94	5 (35%)
2	LGU	F	4	2	12,12,13	1.20	2 (16%)	14,17,19	1.36	3 (21%)
2	LGU	G	1	2	13,13,13	0.97	1 (7%)	18,19,19	1.51	3 (16%)
2	LGU	G	2	2	12,12,13	1.12	0	14,17,19	1.36	2 (14%)
2	LGU	G	3	2	12,12,13	1.23	1 (8%)	14,17,19	1.72	5 (35%)
2	LGU	G	4	2	12,12,13	1.02	1 (8%)	14,17,19	1.52	3 (21%)
2	LGU	H	1	2	13,13,13	1.02	0	18,19,19	1.13	3 (16%)
2	LGU	H	2	2	12,12,13	1.17	1 (8%)	14,17,19	1.85	4 (28%)
2	LGU	H	3	2	12,12,13	1.03	0	14,17,19	1.55	3 (21%)
2	LGU	H	4	2	12,12,13	1.09	1 (8%)	14,17,19	1.33	2 (14%)

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	LGU	E	1	2	-	0/4/24/24	0/1/1/1
2	LGU	E	2	2	-	0/4/21/24	0/1/1/1
2	LGU	E	3	2	-	1/4/21/24	0/1/1/1
2	LGU	E	4	2	-	0/4/21/24	0/1/1/1
2	LGU	F	1	2	-	0/4/24/24	0/1/1/1
2	LGU	F	2	2	-	0/4/21/24	0/1/1/1
2	LGU	F	3	2	-	0/4/21/24	0/1/1/1
2	LGU	F	4	2	-	0/4/21/24	0/1/1/1
2	LGU	G	1	2	-	2/4/24/24	0/1/1/1
2	LGU	G	2	2	-	0/4/21/24	0/1/1/1
2	LGU	G	3	2	-	0/4/21/24	0/1/1/1
2	LGU	G	4	2	-	0/4/21/24	0/1/1/1
2	LGU	H	1	2	-	0/4/24/24	0/1/1/1
2	LGU	H	2	2	-	1/4/21/24	0/1/1/1
2	LGU	H	3	2	-	1/4/21/24	0/1/1/1
2	LGU	H	4	2	-	0/4/21/24	0/1/1/1

All (13) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	G	3	LGU	O6B-C6	-2.67	1.21	1.30
2	F	4	LGU	C1-C2	2.64	1.58	1.52
2	E	4	LGU	O6B-C6	-2.61	1.22	1.30
2	H	2	LGU	O6B-C6	-2.42	1.22	1.30
2	F	4	LGU	O6B-C6	-2.30	1.23	1.30
2	F	3	LGU	O6B-C6	-2.16	1.23	1.30
2	E	3	LGU	O6B-C6	-2.13	1.23	1.30
2	G	4	LGU	O6B-C6	-2.12	1.23	1.30
2	E	2	LGU	O6B-C6	-2.10	1.23	1.30
2	F	2	LGU	O5-C1	-2.07	1.40	1.43
2	G	1	LGU	O6B-C6	-2.03	1.23	1.30
2	H	4	LGU	O6B-C6	-2.03	1.23	1.30
2	F	3	LGU	C2-C3	2.01	1.55	1.52

All (47) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	H	2	LGU	O2-C2-C1	4.26	117.88	109.15
2	G	1	LGU	C1-O5-C5	3.85	117.89	112.22
2	F	3	LGU	O3-C3-C2	3.75	117.17	109.99
2	F	3	LGU	O3-C3-C4	-3.58	102.06	110.35
2	G	3	LGU	O3-C3-C4	-3.57	102.09	110.35
2	G	2	LGU	O2-C2-C1	3.40	116.11	109.15

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	E	2	LGU	O2-C2-C1	3.40	116.11	109.15
2	E	4	LGU	O2-C2-C1	3.37	116.04	109.15
2	E	4	LGU	O3-C3-C2	-3.30	103.67	109.99
2	F	4	LGU	O2-C2-C1	3.26	115.83	109.15
2	H	4	LGU	O2-C2-C1	3.17	115.65	109.15
2	E	3	LGU	O2-C2-C1	3.16	115.61	109.15
2	H	2	LGU	C2-C3-C4	-3.03	105.66	110.89
2	F	1	LGU	C1-O5-C5	2.99	116.63	112.22
2	G	3	LGU	C1-C2-C3	2.85	113.17	109.67
2	F	2	LGU	O2-C2-C1	2.82	114.91	109.15
2	G	4	LGU	O2-C2-C3	-2.76	104.60	110.14
2	G	1	LGU	O3-C3-C4	-2.75	104.00	110.35
2	E	2	LGU	C1-C2-C3	2.74	113.03	109.67
2	G	4	LGU	O2-C2-C1	2.72	114.71	109.15
2	H	3	LGU	O2-C2-C1	2.68	114.63	109.15
2	F	1	LGU	O1-C1-C2	2.68	116.56	109.03
2	F	3	LGU	O4-C4-C3	-2.66	104.19	110.35
2	F	3	LGU	O4-C4-C5	2.62	115.61	109.74
2	G	3	LGU	O3-C3-C2	2.56	114.90	109.99
2	G	4	LGU	C1-C2-C3	2.51	112.75	109.67
2	F	1	LGU	O2-C2-C1	2.46	114.87	109.16
2	H	2	LGU	O3-C3-C2	2.41	114.61	109.99
2	H	2	LGU	O4-C4-C3	-2.38	104.86	110.35
2	H	1	LGU	O1-C1-C2	2.34	115.62	109.03
2	E	4	LGU	O2-C2-C3	-2.23	105.67	110.14
2	H	3	LGU	O4-C4-C3	-2.20	105.26	110.35
2	H	3	LGU	O2-C2-C3	-2.20	105.73	110.14
2	H	4	LGU	O2-C2-C3	-2.18	105.77	110.14
2	F	4	LGU	C1-C2-C3	2.16	112.32	109.67
2	E	3	LGU	O2-C2-C3	-2.15	105.84	110.14
2	E	3	LGU	O4-C4-C3	-2.14	105.41	110.35
2	G	1	LGU	O4-C4-C5	2.11	114.47	109.74
2	H	1	LGU	C1-O5-C5	2.09	115.30	112.22
2	E	3	LGU	C1-C2-C3	2.08	112.23	109.67
2	G	3	LGU	O4-C4-C3	-2.08	105.54	110.35
2	G	3	LGU	O4-C4-C5	2.08	114.40	109.74
2	F	4	LGU	O2-C2-C3	-2.06	106.01	110.14
2	G	2	LGU	O6B-C6-O6A	2.05	128.75	124.09
2	H	1	LGU	O2-C2-C1	2.05	113.90	109.16
2	F	3	LGU	C1-C2-C3	2.03	112.16	109.67
2	E	1	LGU	C1-C2-C3	2.02	114.50	110.31

There are no chirality outliers.

All (5) torsion outliers are listed below:
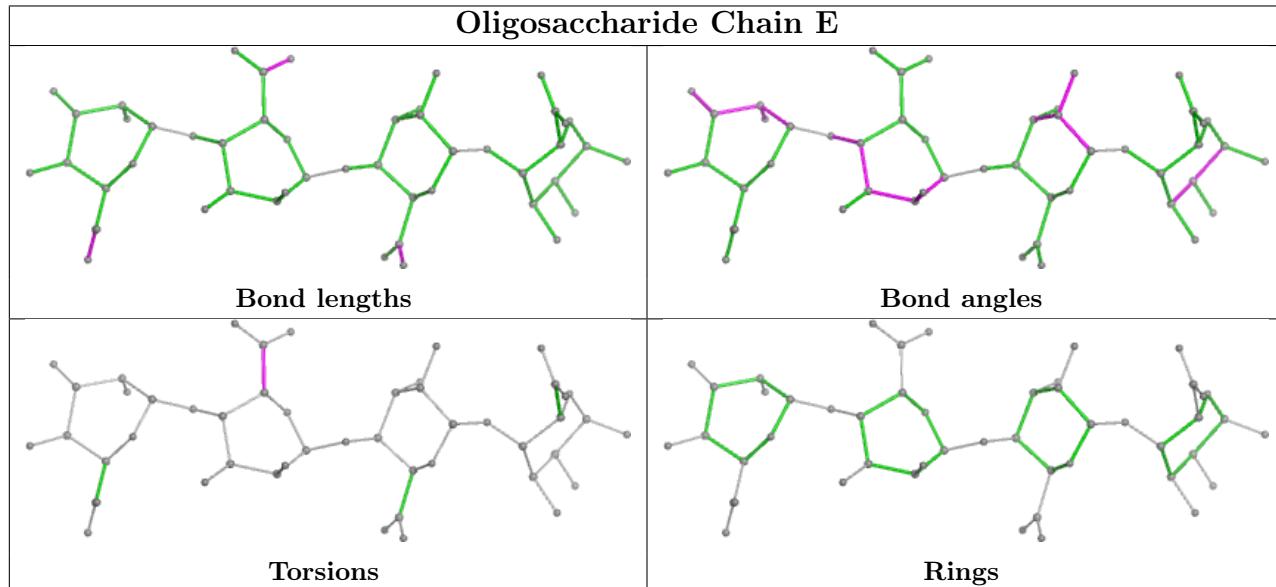
Mol	Chain	Res	Type	Atoms
2	G	1	LGU	C4-C5-C6-O6B
2	G	1	LGU	C4-C5-C6-O6A
2	H	2	LGU	O5-C5-C6-O6B
2	H	3	LGU	O5-C5-C6-O6B
2	E	3	LGU	C4-C5-C6-O6B
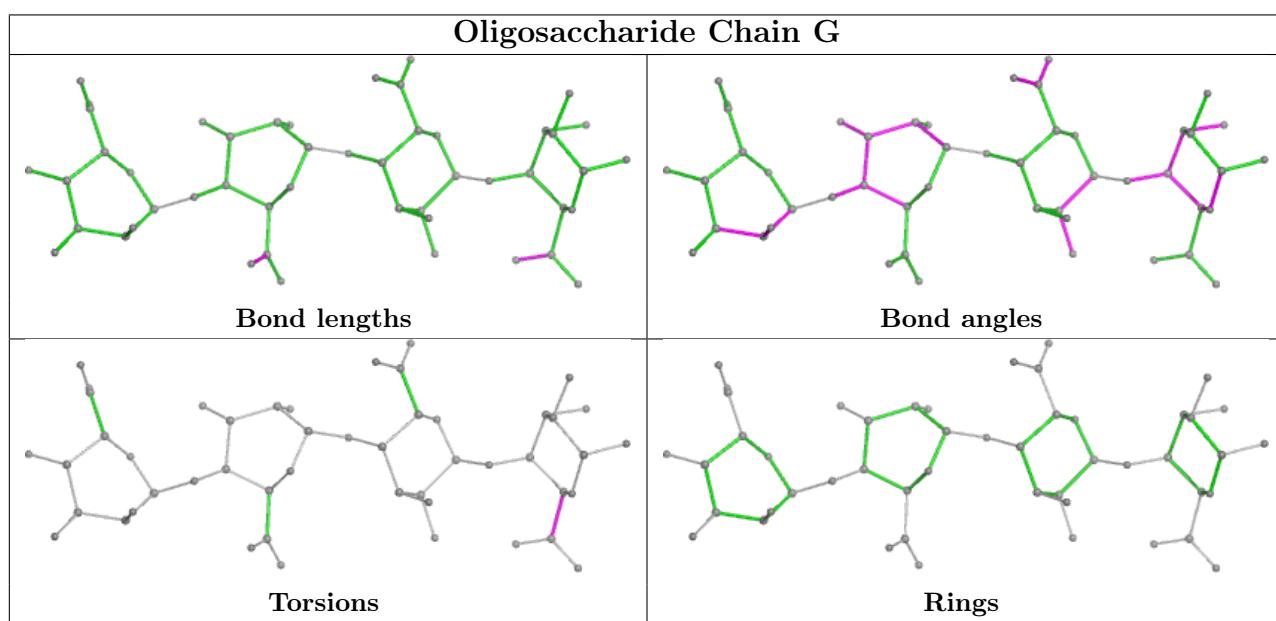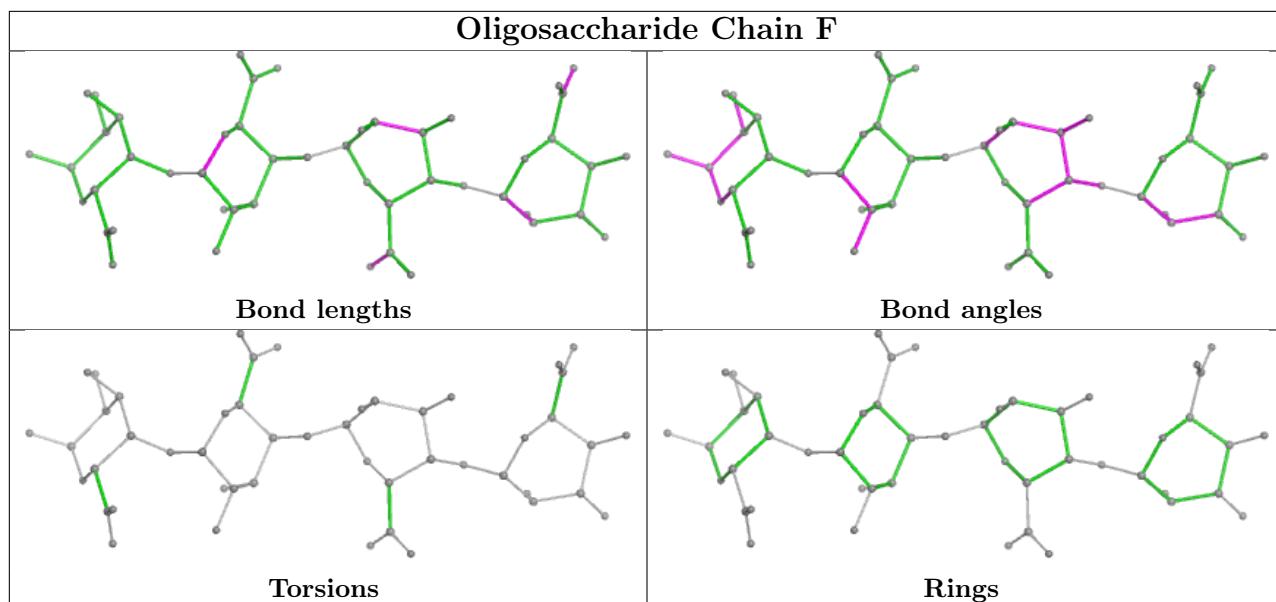
There are no ring outliers.
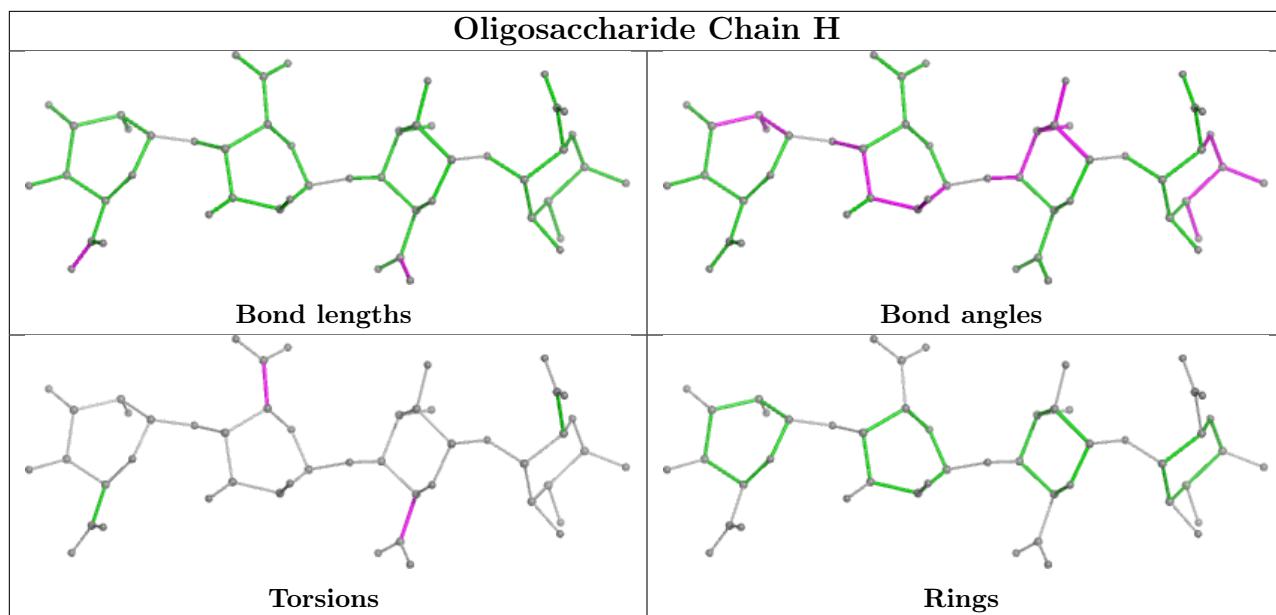
5 monomers are involved in 5 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	E	4	LGU	1	0
2	E	3	LGU	1	0
2	F	3	LGU	1	0
2	G	3	LGU	1	0
2	H	3	LGU	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 G

Bond lengths

Bond angles

Torsions

Rings

Oligosaccharide Chain H

Bond lengths

Bond angles

Torsions

Rings

5.6 Ligand geometry ⓘ

3 ligands are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	#$|Z| > 2$	Counts	RMSZ	#$|Z| > 2$
3	SO4	A	501	-	4,4,4	0.70	0	6,6,6	0.16	0
3	SO4	C	501	-	4,4,4	0.69	0	6,6,6	0.22	0
3	SO4	B	501	-	4,4,4	0.78	0	6,6,6	0.19	0

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7   Other polymers ⓘ

There are no such residues in this entry.

5.8   Polymer linkage issues ⓘ

There are no chain breaks in this entry.

6 Fit of model and data ⓘ

6.1 Protein, DNA and RNA chains ⓘ

In the following table, the column labelled '#RSRZ> 2' contains the number (and percentage) of RSRZ outliers, followed by percent RSRZ outliers for the chain as percentile scores relative to all X-ray entries and entries of similar resolution. The OWAB column contains the minimum, median, 95th percentile and maximum values of the occupancy-weighted average B-factor per residue. The column labelled 'Q< 0.9' lists the number of (and percentage) of residues with an average occupancy less than 0.9.

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2			OWAB(Å²)	Q<0.9
1	A	379/404 (93%)	-0.08	3 (0%)	82	85	43, 59, 82, 101	0
1	B	380/404 (94%)	-0.03	2 (0%)	87	90	42, 61, 82, 104	0
1	C	380/404 (94%)	0.08	5 (1%)	74	77	43, 64, 88, 105	0
1	D	380/404 (94%)	0.08	2 (0%)	87	90	44, 68, 94, 122	0
All	All	1519/1616 (93%)	0.01	12 (0%)	82	85	42, 62, 88, 122	0

All (12) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	179	LYS	3.2
1	A	276	MET	2.5
1	B	349	LYS	2.4
1	C	45	GLU	2.4
1	D	179	LYS	2.4
1	D	178	MET	2.3
1	C	46	LYS	2.2
1	C	176	PRO	2.2
1	C	74	LYS	2.1
1	B	178	MET	2.1
1	A	180	LYS	2.1
1	C	343	LEU	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 (i)
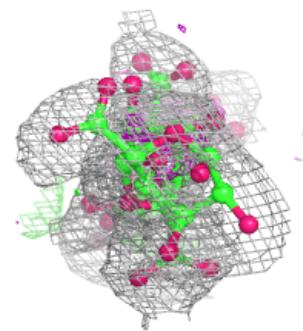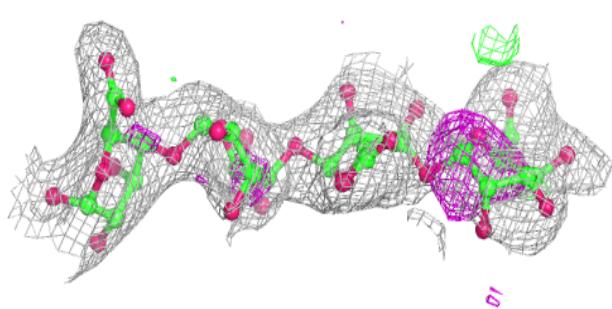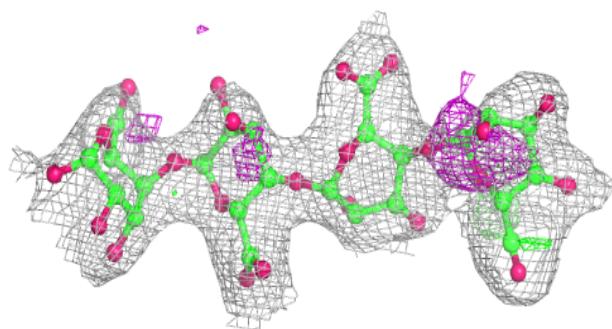
In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

| Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
2	LGU	G	1	13/13	0.64	0.13	87,92,97,98	0
2	LGU	F	1	13/13	0.68	0.13	78,89,96,99	0
2	LGU	H	1	13/13	0.70	0.12	84,91,94,96	0
2	LGU	H	4	12/13	0.71	0.18	73,82,86,88	0
2	LGU	E	1	13/13	0.78	0.11	76,82,88,91	0
2	LGU	E	4	12/13	0.78	0.18	65,75,81,85	0
2	LGU	G	4	12/13	0.80	0.14	76,78,86,87	0
2	LGU	F	4	12/13	0.86	0.13	67,78,80,80	0
2	LGU	H	2	12/13	0.88	0.10	72,81,85,86	0
2	LGU	G	3	12/13	0.89	0.11	63,77,84,88	0
2	LGU	E	2	12/13	0.90	0.11	61,73,78,83	0
2	LGU	G	2	12/13	0.92	0.10	77,82,86,91	0
2	LGU	H	3	12/13	0.93	0.08	77,79,82,88	0
2	LGU	F	2	12/13	0.93	0.08	71,76,85,88	0
2	LGU	F	3	12/13	0.95	0.08	63,72,74,82	0
2	LGU	E	3	12/13	0.95	0.08	63,67,72,77	0
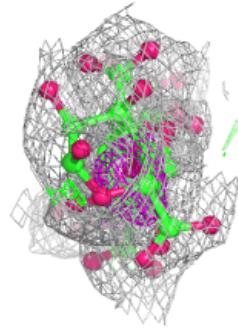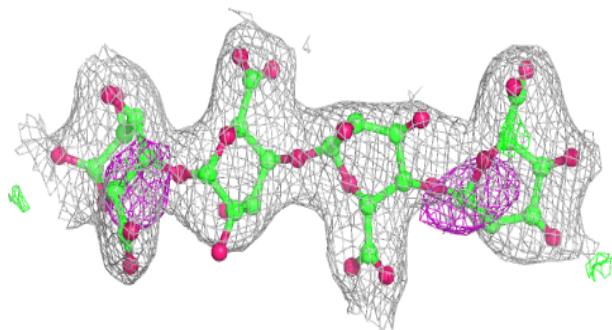
The following is a graphical depiction of the model fit to experimental electron density for oligosaccharide. Each fit is shown from different orientation to approximate a three-dimensional view.

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)
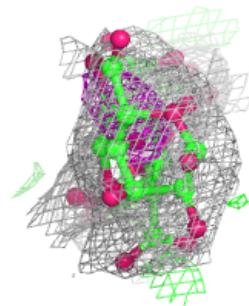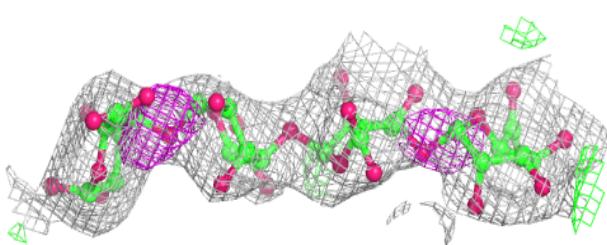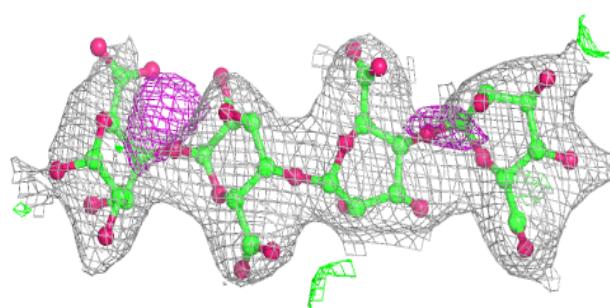
Electron density around Chain F:

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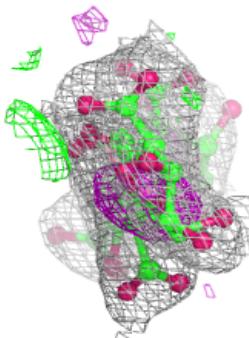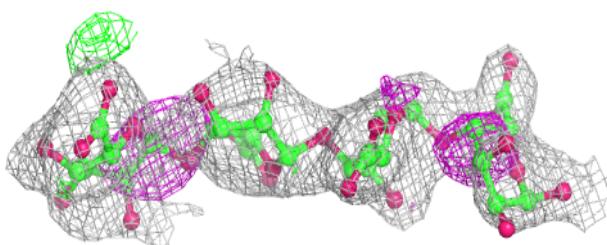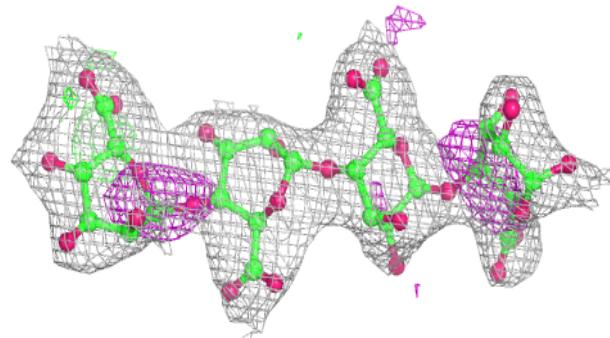
Electron density around Chain G:

$2mF_o$-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 H:

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

6.4 Ligands ⓘ

In the following table, the Atoms column lists the number of modelled atoms in the group and the number defined in the chemical component dictionary. The B-factors column lists the minimum, median, 95th percentile and maximum values of B factors of atoms in the group. The column labelled 'Q< 0.9' lists the number of atoms with occupancy less than 0.9.

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
3	SO4	B	501	5/5	0.74	0.13	65,75,87,92	5
3	SO4	C	501	5/5	0.85	0.13	69,73,81,85	5
3	SO4	A	501	5/5	0.88	0.11	62,66,72,75	5

6.5 Other polymers ⓘ

There are no such residues in this entry.