Full wwPDB X-ray Structure Validation Report ⓘ

Oct 30, 2023 – 06:52 PM JST

PDB ID	:	4XTC
Title	:	Crystal structure of bacterial alginate ABC transporter in complex with alginate pentasaccharide-bound periplasmic protein
Authors	:	Kaneko, A.; Maruyama, Y.; Mizuno, N.; Baba, S.; Kumasaka, T.; Mikami, B.; Murata, K.; Hashimoto, W.
Deposited on	:	2015-01-23
Resolution	:	3.60 Å(reported)

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

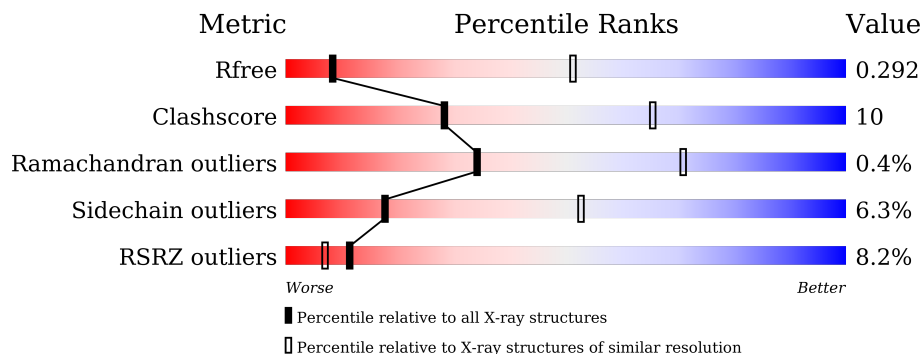|		
MolProbity	:	4.02b-467
Mogul	:	1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.36
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (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 3.60 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		0.292
Clashscore		10
Ramachandran outliers		0.4%
Sidechain outliers		6.3%
RSRZ outliers		8.2%

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	1257 (3.70-3.50)
Clashscore	141614	1353 (3.70-3.50)
Ramachandran outliers	138981	1307 (3.70-3.50)
Sidechain outliers	138945	1307 (3.70-3.50)
RSRZ outliers	127900	1161 (3.70-3.50)

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	M	301	6% / 70% / 24% / • •
2	N	305	6% / 72% / 19% / • / 6%
3	S	363	7% / 68% / 28% / •
3	T	363	8% / 69% / 28% / •
4	Q	516	11% / 71% / 23% / • / 5%
5	A	5	60% / 40%

2 Entry composition ⓘ

There are 5 unique types of molecules in this entry. The entry contains 14264 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 AlgM1.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	M	288	2323	1554	369	390	10	0	0	0

There are 23 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
M	?	-	THR	deletion	UNP Q9KWT8
M	?	-	SER	deletion	UNP Q9KWT8
M	?	-	ALA	deletion	UNP Q9KWT8
M	?	-	THR	deletion	UNP Q9KWT8
M	?	-	LYS	deletion	UNP Q9KWT8
M	?	-	ALA	deletion	UNP Q9KWT8
M	?	-	GLN	deletion	UNP Q9KWT8
M	?	-	SER	deletion	UNP Q9KWT8
M	?	-	ILE	deletion	UNP Q9KWT8
M	?	-	PRO	deletion	UNP Q9KWT8
M	?	-	LEU	deletion	UNP Q9KWT8
M	?	-	PRO	deletion	UNP Q9KWT8
M	?	-	ALA	deletion	UNP Q9KWT8
M	?	-	ALA	deletion	UNP Q9KWT8
M	?	-	THR	deletion	UNP Q9KWT8
M	?	-	LEU	deletion	UNP Q9KWT8
M	?	-	ASP	deletion	UNP Q9KWT8
M	?	-	VAL	deletion	UNP Q9KWT8
M	?	-	ARG	deletion	UNP Q9KWT8
M	?	-	SER	deletion	UNP Q9KWT8
M	?	-	LYS	deletion	UNP Q9KWT8
M	?	-	PRO	deletion	UNP Q9KWT8
M	?	-	LEU	deletion	UNP Q9KWT8

- Molecule 2 is a protein called AlgM2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	N	287	Total 2278	C 1521	N 362	O 382	S 13	0	0	0

There are 12 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
N	294	LEU	-	expression tag	UNP Q9KWT7
N	295	GLU	-	expression tag	UNP Q9KWT7
N	296	HIS	-	expression tag	UNP Q9KWT7
N	297	HIS	-	expression tag	UNP Q9KWT7
N	298	HIS	-	expression tag	UNP Q9KWT7
N	299	HIS	-	expression tag	UNP Q9KWT7
N	300	HIS	-	expression tag	UNP Q9KWT7
N	301	HIS	-	expression tag	UNP Q9KWT7
N	302	HIS	-	expression tag	UNP Q9KWT7
N	303	HIS	-	expression tag	UNP Q9KWT7
N	304	HIS	-	expression tag	UNP Q9KWT7
N	305	HIS	-	expression tag	UNP Q9KWT7

- Molecule 3 is a protein called AlgS.

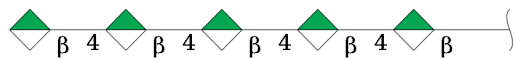| Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
3	S	363	Total 2777	C 1745	N 503	O 518	S 11	0	0	0
3	T	363	Total 2777	C 1745	N 503	O 518	S 11	0	0	0

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
S	160	GLN	GLU	engineered mutation	UNP Q9KWT9
T	160	GLN	GLU	engineered mutation	UNP Q9KWT9

- Molecule 4 is a protein called AlgQ2.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
4	Q	492	Total 4048	C 2604	N 693	O 735	S 16	0	0	0

- Molecule 5 is an oligosaccharide called beta-D-mannopyranuronic acid-(1-4)-beta-D-manno pyranuronic acid-(1-4)-beta-D-mannopyranuronic acid-(1-4)-beta-D-mannopyranuronic aci d-(1-4)-beta-D-mannopyranuronic acid.

| Mol	Chain	Residues	Atoms			ZeroOcc	AltConf	Trace
5	A	5	Total 61	C 30	O 31	0	0	0

3 Residue-property plots ⓘ

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and electron density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red dot above a residue indicates a poor fit to the electron density (RSRZ > 2). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.
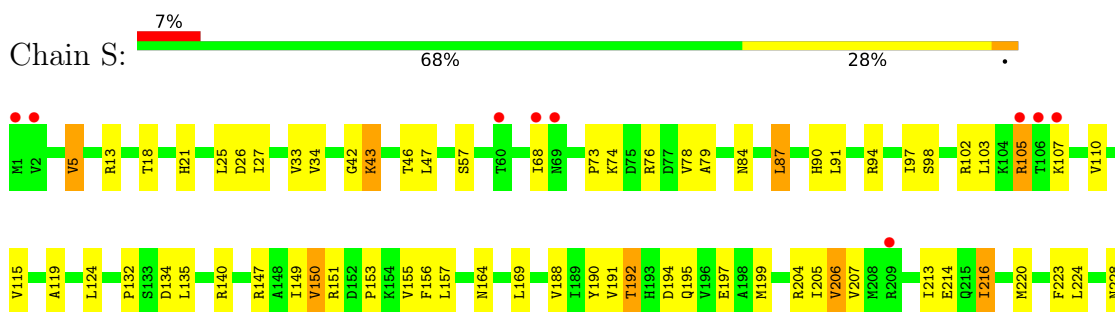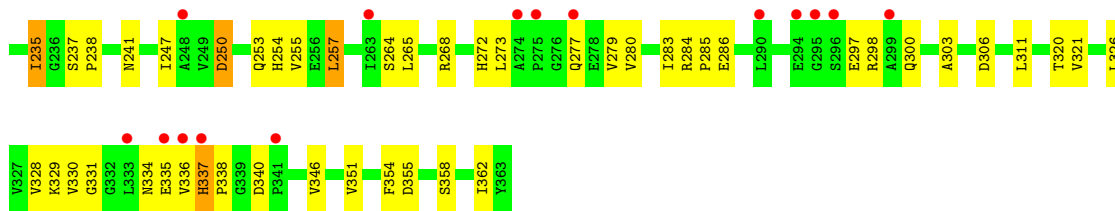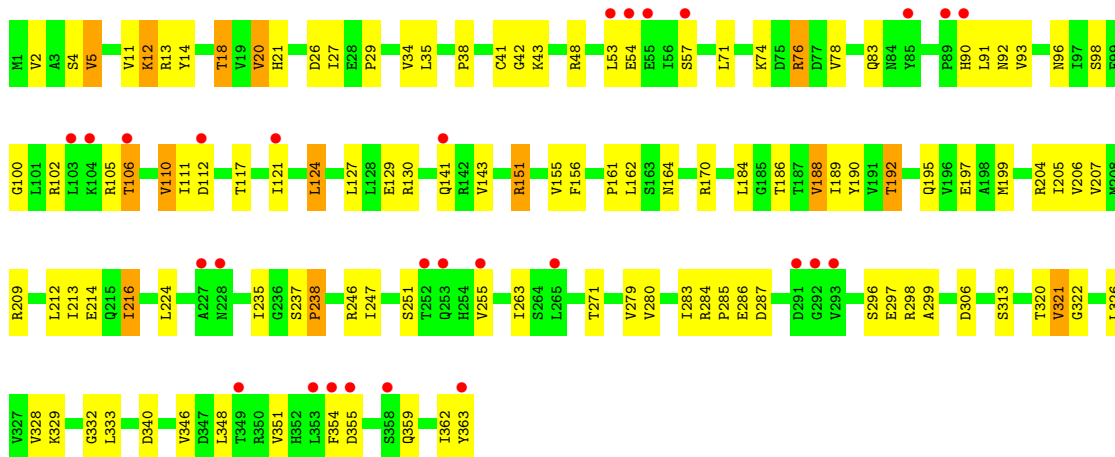
- Molecule 1: AlgM1
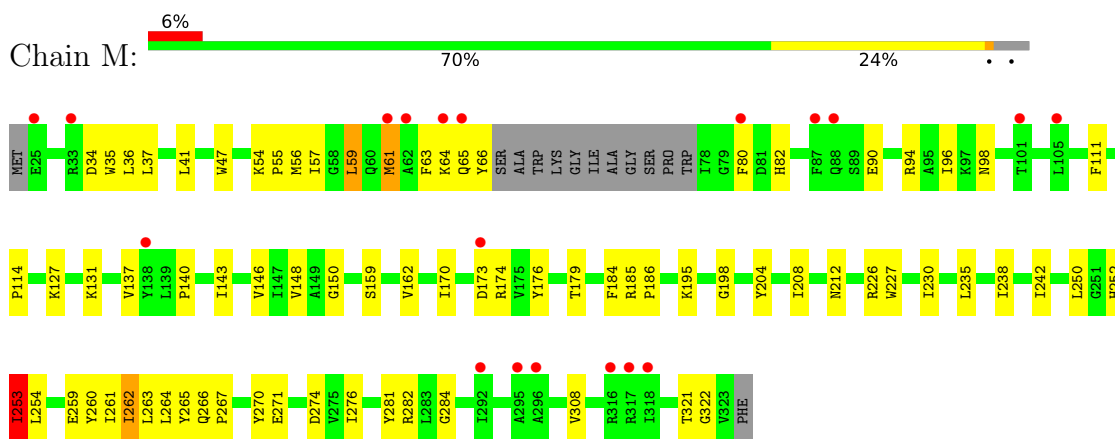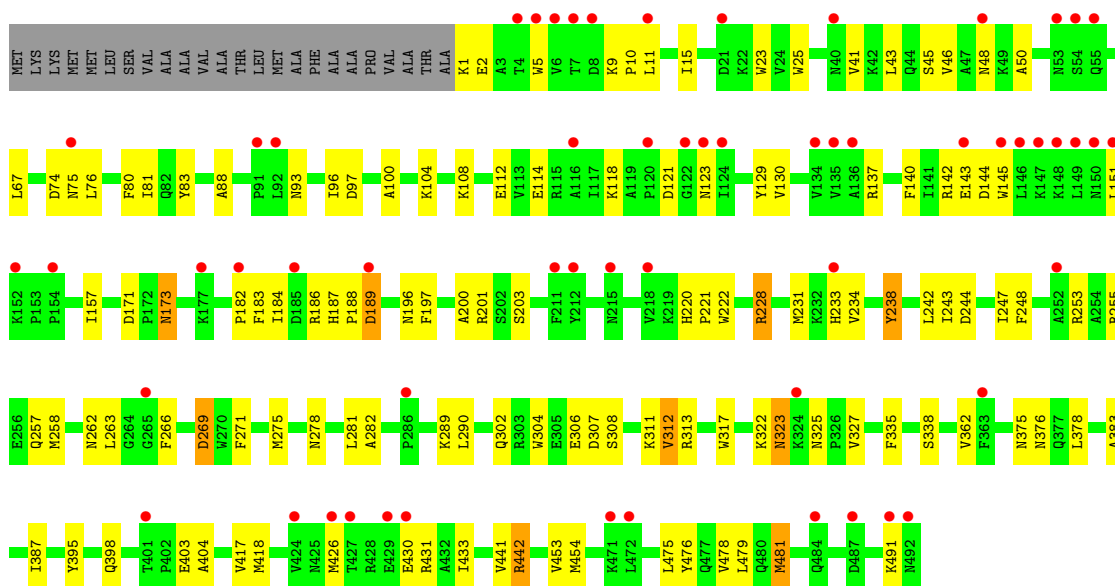

- Molecule 2: AlgM2
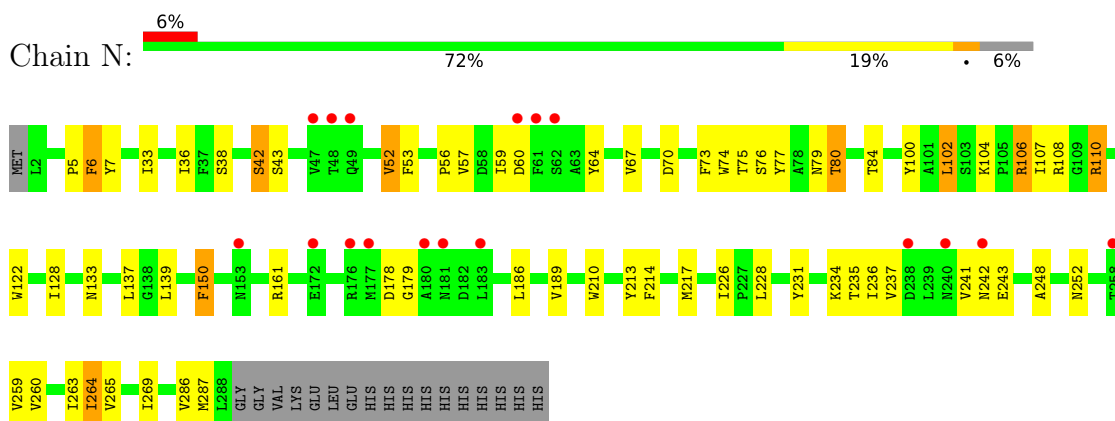
- Molecule 3: AlgS

● Molecule 3: AlgS

● Molecule 4: AlgQ2

● Molecule 5: beta-D-mannopyranuronic acid-(1-4)-beta-D-mannopyranuronic acid-(1-4)-beta-D-mannopyranuronic acid-(1-4)-beta-D-mannopyranuronic acid-(1-4)-beta-D-mannopyranuronic acid

Chain A:

60%　　　　　　　40%

BEM1 BEM2 BEM3 BEM4 BEM5

4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 21 21 21	Depositor
Cell constants a, b, c, α, β, γ	71.61Å 132.96Å 272.97Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	37.42 – 3.60 49.40 – 3.58	Depositor EDS
% Data completeness (in resolution range)	95.2 (37.42-3.60) 95.1 (49.40-3.58)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	3.45 (at 3.57Å)	Xtriage
Refinement program	PHENIX (phenix.refine: 1.9_1692)	Depositor
R, R_{free}	0.238 , 0.288 0.246 , 0.292	Depositor DCC
R_{free} test set	1516 reflections (5.04%)	wwPDB-VP
Wilson B-factor (Å^2)	108.1	Xtriage
Anisotropy	0.214	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.33 , 78.6	EDS
L-test for twinning[2]	$< |L| > = 0.50, < L^2 > = 0.34$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.87	EDS
Total number of atoms	14264	wwPDB-VP
Average B, all atoms (Å^2)	122.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.89% of the height of the origin peak. No significant pseudotranslation is detected.*

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

5 Model quality (i)

5.1 Standard geometry (i)

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

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	M	0.23	0/2384	0.42	0/3250
2	N	0.24	0/2337	0.42	0/3178
3	S	0.22	0/2822	0.48	1/3826 (0.0%)
3	T	0.21	0/2822	0.46	0/3826
4	Q	0.21	0/4168	0.37	0/5640
All	All	0.22	0/14533	0.43	1/19720 (0.0%)

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
3	S	257	LEU	CA-CB-CG	5.34	127.58	115.30

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	M	2323	0	2412	46	0
2	N	2278	0	2347	51	0
3	S	2777	0	2854	60	0
3	T	2777	0	2854	67	0
4	Q	4048	0	3920	78	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
5	A	61	0	33	2	0
All	All	14264	0	14420	280	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 10.

All (280) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:S:34:VAL:HG22	3:S:190:TYR:HB3	1.63	0.79
3:T:34:VAL:HG22	3:T:190:TYR:HB3	1.63	0.79
3:S:235:ILE:HD11	3:S:284:ARG:HH12	1.50	0.76
3:S:192:THR:HG22	3:S:194:ASP:H	1.55	0.72
4:Q:201:ARG:NH1	4:Q:418:MET:SD	2.64	0.71
2:N:52:VAL:HG13	2:N:53:PHE:H	1.55	0.71
3:T:141:GLN:NE2	3:T:161:PRO:O	2.25	0.69
1:M:34:ASP:OD1	2:N:106:ARG:NH1	2.25	0.69
1:M:98:ASN:ND2	1:M:271:GLU:O	2.26	0.69
3:T:48:ARG:HG3	3:T:53:LEU:HB2	1.74	0.68
3:S:102:ARG:O	3:S:105:ARG:NH1	2.27	0.68
2:N:43:SER:HA	2:N:60:ASP:HB2	1.75	0.67
2:N:234:LYS:HD2	4:Q:50:ALA:HA	1.77	0.67
1:M:179:THR:OG1	4:Q:454:MET:SD	2.54	0.66
2:N:248:ALA:O	2:N:252:ASN:ND2	2.29	0.66
3:T:195:GLN:HG3	3:T:235:ILE:HA	1.78	0.65
4:Q:81:ILE:HD12	4:Q:431:ARG:HH21	1.62	0.64
4:Q:97:ASP:HA	4:Q:104:LYS:HD3	1.80	0.64
4:Q:255:ARG:NH1	4:Q:269:ASP:OD2	2.31	0.63
2:N:178:ASP:OD1	3:T:151:ARG:NH2	2.32	0.63
3:S:84:ASN:OD1	3:S:164:ASN:ND2	2.29	0.63
3:T:41:CYS:SG	3:T:42:GLY:N	2.72	0.63
1:M:148:VAL:HG21	1:M:195:LYS:HD2	1.80	0.63
3:S:195:GLN:HG3	3:S:235:ILE:HA	1.81	0.63
3:S:5:VAL:HG13	3:S:27:ILE:HB	1.81	0.63
3:T:4:SER:HB3	3:T:29:PRO:HD3	1.80	0.63
3:S:286:GLU:HG3	3:S:329:LYS:HD3	1.80	0.62
3:S:26:ASP:O	3:S:204:ARG:NH2	2.32	0.62
3:S:241:ASN:ND2	3:S:283:ILE:O	2.32	0.62
3:T:237:SER:HB3	3:T:238:PRO:HD3	1.80	0.62
2:N:80:THR:HG23	2:N:228:LEU:H	1.64	0.62
4:Q:157:ILE:HD13	4:Q:197:PHE:HB3	1.81	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:T:13:ARG:HG2	3:T:18:THR:HB	1.80	0.62
2:N:107:ILE:HB	2:N:110:ARG:HB2	1.82	0.61
4:Q:313:ARG:NH2	5:A:3:BEM:O3	2.34	0.61
4:Q:142:ARG:NH2	4:Q:262:ASN:OD1	2.33	0.61
3:T:5:VAL:HG13	3:T:27:ILE:HB	1.83	0.60
3:S:78:VAL:HG12	3:S:155:VAL:HB	1.82	0.60
3:S:223:PHE:O	3:S:284:ARG:NH1	2.30	0.60
3:T:207:VAL:HG23	3:T:214:GLU:HB3	1.82	0.60
3:S:206:VAL:HB	3:S:216:ILE:HG23	1.83	0.60
4:Q:323:ASN:HD22	4:Q:325:ASN:H	1.48	0.60
3:S:97:ILE:HA	3:S:147:ARG:HB3	1.84	0.60
4:Q:130:VAL:HA	4:Q:312:VAL:HA	1.83	0.60
4:Q:143:GLU:HG2	4:Q:289:LYS:HD2	1.83	0.60
3:S:213:ILE:HD11	3:S:216:ILE:HG12	1.83	0.59
3:T:286:GLU:HG3	3:T:329:LYS:HD2	1.83	0.59
1:M:143:ILE:O	1:M:195:LYS:NZ	2.29	0.59
4:Q:238:TYR:HD2	4:Q:453:VAL:HG12	1.68	0.59
4:Q:96:ILE:HA	4:Q:100:ALA:HB3	1.84	0.59
2:N:84:THR:HG21	2:N:210:TRP:HE3	1.68	0.58
3:T:110:VAL:O	3:T:112:ASP:N	2.37	0.58
3:S:107:LYS:HB3	3:S:110:VAL:HG23	1.86	0.58
4:Q:171:ASP:OD1	4:Q:173:ASN:ND2	2.37	0.58
2:N:102:LEU:HB3	2:N:161:ARG:HD3	1.86	0.58
3:T:12:LYS:H	3:T:20:VAL:HG23	1.69	0.58
3:S:247:ILE:HG12	3:S:255:VAL:HG22	1.86	0.57
3:S:250:ASP:OD2	3:S:254:HIS:N	2.29	0.57
3:T:298:ARG:HB3	3:T:348:LEU:HB2	1.87	0.57
2:N:42:SER:HG	2:N:57:VAL:H	1.51	0.57
3:S:253:GLN:O	3:S:265:LEU:N	2.33	0.57
3:T:298:ARG:HB3	3:T:348:LEU:H	1.70	0.56
3:T:238:PRO:HB2	3:T:285:PRO:HG2	1.86	0.56
3:S:18:THR:O	3:S:21:HIS:NE2	2.38	0.56
4:Q:362:VAL:HA	4:Q:398:GLN:HE22	1.70	0.56
3:S:87:LEU:HD11	3:S:140:ARG:HB3	1.88	0.56
3:T:2:VAL:HG12	3:T:29:PRO:HB2	1.88	0.56
3:T:20:VAL:HG13	3:T:42:GLY:HA3	1.88	0.56
3:S:273:LEU:HD23	3:S:273:LEU:H	1.71	0.56
3:T:162:LEU:HB3	3:T:170:ARG:HG3	1.88	0.56
2:N:36:ILE:HD13	2:N:264:ILE:HD11	1.89	0.55
3:T:78:VAL:HG12	3:T:155:VAL:HB	1.86	0.55
3:S:94:ARG:HG3	3:S:115:VAL:HG11	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:Q:441:VAL:HG11	4:Q:475:LEU:HD13	1.89	0.55
2:N:33:ILE:HA	2:N:36:ILE:HD12	1.88	0.55
3:T:110:VAL:C	3:T:112:ASP:H	2.10	0.55
3:T:11:VAL:O	3:T:57:SER:OG	2.17	0.54
4:Q:378:LEU:HB3	4:Q:383:ALA:HB3	1.89	0.54
3:T:124:LEU:HD23	3:T:124:LEU:H	1.72	0.54
3:T:156:PHE:HB2	3:T:188:VAL:HB	1.90	0.54
1:M:159:SER:H	1:M:174:ARG:HE	1.54	0.54
3:S:102:ARG:HA	3:S:105:ARG:HA	1.89	0.54
3:T:41:CYS:HB3	3:T:43:LYS:HZ3	1.72	0.53
3:S:220:MET:HG3	3:S:224:LEU:HD13	1.91	0.53
3:S:223:PHE:HD2	3:S:224:LEU:HD12	1.73	0.53
2:N:75:THR:O	2:N:79:ASN:ND2	2.41	0.53
3:S:74:LYS:O	3:S:151:ARG:NH2	2.33	0.53
4:Q:188:PRO:HB3	4:Q:248:PHE:HA	1.91	0.53
3:T:48:ARG:HG2	3:T:54:GLU:HG3	1.90	0.53
2:N:287:MET:SD	2:N:287:MET:N	2.82	0.53
3:T:355:ASP:HB2	3:T:362:ILE:HD11	1.91	0.53
4:Q:142:ARG:NH1	4:Q:144:ASP:OD1	2.42	0.52
3:T:263:ILE:HD12	3:T:299:ALA:HB1	1.91	0.52
2:N:242:ASN:HB3	4:Q:23:TRP:CZ2	2.45	0.52
4:Q:143:GLU:HB3	4:Q:289:LYS:HB3	1.91	0.52
3:S:238:PRO:HB2	3:S:285:PRO:HG2	1.91	0.52
4:Q:203:SER:N	4:Q:306:GLU:OE1	2.43	0.52
4:Q:196:ASN:ND2	4:Q:200:ALA:O	2.43	0.52
4:Q:140:PHE:HB3	4:Q:290:LEU:HD22	1.92	0.51
4:Q:140:PHE:CZ	4:Q:271:PHE:HA	2.45	0.51
3:T:124:LEU:HD12	3:T:127:LEU:HB2	1.93	0.51
4:Q:130:VAL:HG22	4:Q:312:VAL:HG23	1.90	0.51
1:M:41:LEU:HD11	2:N:102:LEU:HD23	1.92	0.51
2:N:64:TYR:HA	2:N:67:VAL:HG12	1.93	0.51
4:Q:74:ASP:OD2	4:Q:75:ASN:ND2	2.35	0.51
1:M:37:LEU:HD23	2:N:107:ILE:HD11	1.91	0.51
1:M:47:TRP:HZ2	2:N:150:PHE:HA	1.74	0.51
3:T:199:MET:HA	3:T:205:ILE:HD11	1.92	0.51
4:Q:244:ASP:HB3	4:Q:247:ILE:HB	1.92	0.51
4:Q:312:VAL:HG22	4:Q:313:ARG:H	1.75	0.51
4:Q:83:TYR:HB3	4:Q:88:ALA:HB3	1.93	0.51
4:Q:183:PHE:HD2	4:Q:243:ILE:HG23	1.76	0.51
4:Q:430:GLU:HB2	4:Q:481:MET:HG3	1.93	0.51
4:Q:203:SER:HA	4:Q:221:PRO:HG3	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:M:146:VAL:HG12	1:M:263:LEU:HD21	1.93	0.50
3:S:132:PRO:HA	3:S:135:LEU:HD12	1.92	0.50
4:Q:173:ASN:HD22	4:Q:173:ASN:H	1.60	0.50
2:N:38:SER:HA	2:N:56:PRO:HG3	1.92	0.50
1:M:162:VAL:HG23	2:N:53:PHE:HD2	1.75	0.50
3:T:92:ASN:O	3:T:96:ASN:ND2	2.42	0.50
1:M:96:ILE:HG13	1:M:276:ILE:HD11	1.93	0.49
3:T:38:PRO:HG3	3:T:209:ARG:HG3	1.93	0.49
1:M:140:PRO:HB2	1:M:195:LYS:HA	1.95	0.49
3:S:277:GLN:NE2	3:S:355:ASP:OD1	2.42	0.49
3:S:280:VAL:HG13	3:S:354:PHE:HB2	1.95	0.49
2:N:7:TYR:CE2	3:S:73:PRO:HD3	2.47	0.49
3:S:330:VAL:HG22	3:S:331:GLY:H	1.77	0.49
1:M:35:TRP:CG	1:M:36:LEU:N	2.81	0.49
3:S:199:MET:HA	3:S:205:ILE:HD11	1.95	0.49
3:T:280:VAL:HG13	3:T:354:PHE:HB2	1.95	0.49
3:T:306:ASP:HB2	3:T:320:THR:HG23	1.95	0.49
3:T:26:ASP:O	3:T:204:ARG:NH2	2.45	0.48
3:T:71:LEU:HB3	3:T:76:ARG:HH21	1.78	0.48
4:Q:426:MET:HB3	4:Q:430:GLU:HG3	1.95	0.48
3:T:90:HIS:CE1	3:T:91:LEU:HG	2.48	0.48
3:T:98:SER:O	3:T:102:ARG:HG2	2.14	0.48
3:T:255:VAL:HG13	3:T:263:ILE:HB	1.96	0.48
1:M:61:MET:C	1:M:63:PHE:H	2.17	0.48
3:S:207:VAL:HG13	3:S:214:GLU:HB3	1.96	0.48
3:S:334:ASN:O	3:S:334:ASN:ND2	2.47	0.48
4:Q:114:GLU:HG2	4:Q:118:LYS:HE3	1.96	0.47
3:T:93:VAL:HG13	3:T:143:VAL:HG21	1.95	0.47
3:T:117:THR:O	3:T:121:ILE:HG12	2.13	0.47
3:S:68:ILE:HB	3:S:76:ARG:HG2	1.96	0.47
3:S:272:HIS:O	3:S:272:HIS:ND1	2.47	0.47
1:M:64:LYS:HG3	1:M:65:GLN:H	1.79	0.47
4:Q:308:SER:HB3	4:Q:417:VAL:HG13	1.96	0.47
3:S:300:GLN:HG3	3:S:346:VAL:H	1.79	0.47
1:M:250:LEU:HD23	1:M:253:ILE:HD12	1.95	0.47
3:S:149:ILE:HG22	3:S:156:PHE:CZ	2.50	0.47
4:Q:228:ARG:HA	4:Q:231:MET:HB2	1.95	0.47
2:N:213:TYR:CG	2:N:214:PHE:N	2.82	0.47
3:S:192:THR:HG21	3:S:197:GLU:HB2	1.95	0.47
3:T:12:LYS:HD3	3:T:14:TYR:HE1	1.79	0.47
3:T:184:LEU:HG	3:T:186:THR:HG23	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:N:178:ASP:HB3	3:T:100:GLY:HA2	1.97	0.47
3:S:214:GLU:HG3	3:S:228:ASN:HD21	1.80	0.47
1:M:227:TRP:HA	1:M:230:ILE:HG12	1.97	0.47
4:Q:275:MET:HG3	4:Q:404:ALA:HB2	1.96	0.47
3:T:83:GLN:O	3:T:164:ASN:ND2	2.49	0.46
3:T:283:ILE:HD13	3:T:351:VAL:HG12	1.98	0.46
1:M:284:GLY:HA3	2:N:128:ILE:HD11	1.97	0.46
4:Q:11:LEU:HB3	4:Q:41:VAL:HG22	1.96	0.46
4:Q:433:ILE:HG22	4:Q:478:VAL:HG22	1.97	0.46
3:T:129:GLU:O	3:T:130:ARG:HG2	2.15	0.46
4:Q:302:GLN:OE1	4:Q:304:TRP:NE1	2.38	0.46
3:S:25:LEU:HD21	3:S:33:VAL:HG21	1.98	0.46
3:S:223:PHE:HA	3:S:235:ILE:HG13	1.96	0.46
3:T:12:LYS:NZ	3:T:54:GLU:HB3	2.31	0.46
1:M:111:PHE:O	1:M:114:PRO:HD2	2.16	0.46
4:Q:184:ILE:HG21	4:Q:258:MET:HG3	1.96	0.46
3:T:35:LEU:HD11	3:T:189:ILE:HD11	1.98	0.46
2:N:36:ILE:HG21	2:N:264:ILE:HD11	1.98	0.45
2:N:286:VAL:HG12	2:N:287:MET:HG2	1.99	0.45
4:Q:137:ARG:NH1	4:Q:307:ASP:OD2	2.48	0.45
4:Q:335:PHE:O	4:Q:338:SER:OG	2.25	0.45
4:Q:93:ASN:HD21	4:Q:123:ASN:HA	1.81	0.45
1:M:55:PRO:HD3	2:N:133:ASN:ND2	2.32	0.45
4:Q:476:TYR:HA	4:Q:479:LEU:HB2	1.98	0.45
4:Q:2:GLU:HB2	4:Q:5:TRP:CD1	2.52	0.45
1:M:150:GLY:HA3	2:N:236:ILE:HG22	1.99	0.45
4:Q:442:ARG:NE	5:A:1:BEM:O2	2.50	0.45
1:M:54:LYS:HD2	1:M:57:ILE:HD12	1.99	0.45
1:M:252:HIS:C	1:M:254:LEU:H	2.20	0.45
2:N:42:SER:OG	2:N:57:VAL:N	2.37	0.45
2:N:70:ASP:OD2	2:N:231:TYR:OH	2.21	0.44
2:N:243:GLU:HG2	4:Q:23:TRP:CZ3	2.52	0.44
3:T:192:THR:HG21	3:T:197:GLU:HB2	1.98	0.44
4:Q:15:ILE:HG21	4:Q:43:LEU:HB3	1.99	0.44
3:S:119:ALA:HA	3:S:124:LEU:HB2	1.99	0.44
4:Q:25:TRP:HD1	4:Q:45:SER:HB2	1.82	0.44
4:Q:278:ASN:ND2	4:Q:290:LEU:O	2.45	0.44
1:M:208:ILE:HG23	1:M:238:ILE:HD12	1.99	0.44
2:N:100:TYR:CD1	2:N:186:LEU:HD13	2.52	0.44
3:T:284:ARG:HB2	3:T:287:ASP:OD2	2.17	0.44
2:N:137:LEU:HB3	2:N:139:LEU:HG	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:M:260:TYR:CZ	1:M:264:LEU:HD12	2.52	0.44
1:M:321:THR:OG1	1:M:322:GLY:N	2.50	0.44
4:Q:186:ARG:HG3	4:Q:187:HIS:ND1	2.32	0.44
4:Q:253:ARG:HH11	4:Q:257:GLN:HE22	1.65	0.44
1:M:259:GLU:HB3	2:N:213:TYR:HE2	1.83	0.44
4:Q:129:TYR:CE2	4:Q:313:ARG:HD3	2.53	0.44
1:M:162:VAL:HG23	2:N:53:PHE:CD2	2.53	0.43
2:N:231:TYR:O	2:N:235:THR:HG22	2.18	0.43
3:S:355:ASP:HB3	3:S:358:SER:O	2.17	0.43
3:S:147:ARG:O	3:S:150:VAL:HG12	2.18	0.43
4:Q:182:PRO:HG2	4:Q:242:LEU:HA	1.99	0.43
4:Q:231:MET:HA	4:Q:234:VAL:HG22	2.00	0.43
4:Q:278:ASN:OD1	4:Q:290:LEU:N	2.42	0.43
3:S:79:ALA:HB3	3:S:153:PRO:HG3	1.99	0.43
3:S:98:SER:O	3:S:102:ARG:HG3	2.19	0.43
2:N:73:PHE:HD2	2:N:74:TRP:HD1	1.66	0.43
2:N:236:ILE:HD12	2:N:260:VAL:HG13	2.00	0.43
4:Q:258:MET:O	4:Q:263:LEU:N	2.51	0.43
3:S:47:LEU:HD11	3:S:157:LEU:HB3	2.01	0.43
4:Q:76:LEU:O	4:Q:80:PHE:N	2.43	0.43
4:Q:220:HIS:CD2	4:Q:222:TRP:HB2	2.53	0.43
2:N:179:GLY:HA2	3:T:74:LYS:HB2	2.01	0.43
3:S:43:LYS:HD3	3:S:191:VAL:HG13	2.00	0.43
3:T:156:PHE:HE2	3:T:184:LEU:HD23	1.83	0.43
1:M:90:GLU:O	1:M:94:ARG:HG2	2.19	0.42
3:S:264:SER:HB2	3:S:298:ARG:HG2	2.00	0.42
4:Q:312:VAL:HG13	4:Q:313:ARG:N	2.34	0.42
2:N:76:SER:HB3	2:N:228:LEU:HA	2.01	0.42
1:M:185:ARG:HB2	1:M:186:PRO:HD3	2.02	0.42
2:N:6:PHE:HB3	2:N:7:TYR:H	1.59	0.42
3:S:306:ASP:HB2	3:S:320:THR:HG23	2.01	0.42
3:S:337:HIS:HA	3:S:338:PRO:HD3	1.88	0.42
4:Q:221:PRO:HG2	4:Q:222:TRP:HD1	1.84	0.42
1:M:226:ARG:HH12	2:N:5:PRO:HG2	1.85	0.42
1:M:274:ASP:OD2	1:M:282:ARG:NH2	2.46	0.42
3:S:42:GLY:O	3:S:46:THR:N	2.46	0.42
4:Q:67:LEU:HB2	4:Q:322:LYS:HD2	2.00	0.42
2:N:265:VAL:O	2:N:269:ILE:HG13	2.20	0.42
3:S:264:SER:CB	3:S:298:ARG:HG2	2.50	0.42
2:N:235:THR:HG23	2:N:236:ILE:HG12	2.00	0.42
1:M:65:GLN:HB3	1:M:66:TYR:CD2	2.53	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:N:260:VAL:O	2:N:264:ILE:HG23	2.20	0.42
1:M:227:TRP:CD1	1:M:230:ILE:HD11	2.55	0.42
1:M:184:PHE:HZ	1:M:261:ILE:HG12	1.85	0.42
4:Q:375:ASN:ND2	4:Q:376:ASN:OD1	2.53	0.42
3:T:321:VAL:HG23	3:T:322:GLY:H	1.83	0.42
3:T:235:ILE:O	3:T:284:ARG:NH2	2.33	0.41
3:S:283:ILE:HD13	3:S:351:VAL:HA	2.01	0.41
4:Q:114:GLU:O	4:Q:118:LYS:HG3	2.19	0.41
1:M:37:LEU:HD21	2:N:104:LYS:HB2	2.02	0.41
3:S:13:ARG:NH1	3:S:57:SER:HB3	2.35	0.41
3:T:313:SER:O	3:T:332:GLY:N	2.51	0.41
3:S:90:HIS:CD2	3:S:91:LEU:HG	2.54	0.41
3:T:247:ILE:HG21	3:T:251:SER:HA	2.02	0.41
3:T:105:ARG:HB3	3:T:106:THR:H	1.65	0.41
3:T:271:THR:HG22	3:T:363:TYR:HA	2.03	0.41
2:N:259:VAL:O	2:N:263:ILE:HG13	2.20	0.41
1:M:238:ILE:O	1:M:242:ILE:HG23	2.20	0.41
4:Q:142:ARG:HB2	4:Q:145:TRP:HB2	2.02	0.41
4:Q:275:MET:HE2	4:Q:403:GLU:HB2	2.02	0.41
1:M:56:MET:HA	1:M:59:LEU:HB3	2.02	0.41
1:M:212:ASN:OD1	1:M:212:ASN:N	2.54	0.41
1:M:267:PRO:HA	1:M:270:TYR:CD2	2.56	0.41
2:N:178:ASP:HA	3:T:151:ARG:HH21	1.86	0.41
3:T:21:HIS:HB2	3:T:212:LEU:HD23	2.01	0.41
3:T:284:ARG:HA	3:T:285:PRO:HD3	1.95	0.41
4:Q:9:LYS:HA	4:Q:10:PRO:HD3	1.99	0.41
4:Q:278:ASN:O	4:Q:282:ALA:HB2	2.20	0.41
1:M:131:LYS:HE2	1:M:131:LYS:HB3	1.90	0.40
1:M:137:VAL:HG12	1:M:198:GLY:HA3	2.02	0.40
1:M:262:ILE:HD11	1:M:281:TYR:CZ	2.57	0.40
4:Q:183:PHE:HD1	4:Q:266:PHE:HD2	1.70	0.40
3:T:102:ARG:HA	3:T:102:ARG:HD2	1.89	0.40
1:M:308:VAL:HG21	2:N:122:TRP:CE3	2.57	0.40
4:Q:129:TYR:CD2	4:Q:313:ARG:HD3	2.56	0.40
4:Q:189:ASP:N	4:Q:189:ASP:OD1	2.54	0.40
4:Q:311:LYS:O	4:Q:312:VAL:HG12	2.21	0.40
3:T:90:HIS:ND1	3:T:91:LEU:HG	2.36	0.40
4:Q:129:TYR:HB2	4:Q:387:ILE:O	2.21	0.40
3:T:296:SER:N	3:T:297:GLU:HA	2.36	0.40
1:M:204:TYR:CE1	1:M:242:ILE:HG22	2.56	0.40
3:S:303:ALA:HB2	3:S:321:VAL:HG22	2.02	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:Q:25:TRP:CD1	4:Q:45:SER:HB2	2.56	0.40
3:T:213:ILE:HD11	3:T:216:ILE:HG12	2.03	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all X-ray entries followed by that with respect to entries of similar resolution.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	M	284/301 (94%)	264 (93%)	19 (7%)	1 (0%)	34	71
2	N	285/305 (93%)	263 (92%)	20 (7%)	2 (1%)	22	61
3	S	361/363 (99%)	336 (93%)	23 (6%)	2 (1%)	25	64
3	T	361/363 (99%)	335 (93%)	24 (7%)	2 (1%)	25	64
4	Q	490/516 (95%)	464 (95%)	25 (5%)	1 (0%)	47	79
All	All	1781/1848 (96%)	1662 (93%)	111 (6%)	8 (0%)	34	71

All (8) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	M	253	ILE
3	S	362	ILE
3	T	111	ILE
4	Q	312	VAL
3	T	110	VAL
2	N	52	VAL
3	S	336	VAL
2	N	59	ILE

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	M	251/260 (96%)	238 (95%)	13 (5%)	23	58
2	N	242/258 (94%)	227 (94%)	15 (6%)	18	53
3	S	307/307 (100%)	282 (92%)	25 (8%)	11	43
3	T	307/307 (100%)	284 (92%)	23 (8%)	13	45
4	Q	424/440 (96%)	403 (95%)	21 (5%)	24	59
All	All	1531/1572 (97%)	1434 (94%)	97 (6%)	18	53

All (97) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	M	59	LEU
1	M	61	MET
1	M	80	PHE
1	M	82	HIS
1	M	127	LYS
1	M	170	ILE
1	M	173	ASP
1	M	176	TYR
1	M	235	LEU
1	M	253	ILE
1	M	262	ILE
1	M	265	TYR
1	M	266	GLN
2	N	6	PHE
2	N	42	SER
2	N	77	TYR
2	N	80	THR
2	N	102	LEU
2	N	106	ARG
2	N	108	ARG
2	N	110	ARG
2	N	150	PHE
2	N	189	VAL

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Mol	Chain	Res	Type
2	N	217	MET
2	N	226	ILE
2	N	237	VAL
2	N	241	VAL
2	N	264	ILE
3	S	5	VAL
3	S	43	LYS
3	S	87	LEU
3	S	103	LEU
3	S	105	ARG
3	S	134	ASP
3	S	150	VAL
3	S	169	LEU
3	S	188	VAL
3	S	192	THR
3	S	206	VAL
3	S	216	ILE
3	S	235	ILE
3	S	237	SER
3	S	250	ASP
3	S	257	LEU
3	S	268	ARG
3	S	279	VAL
3	S	297	GLU
3	S	311	LEU
3	S	326	LEU
3	S	328	VAL
3	S	335	GLU
3	S	337	HIS
3	S	340	ASP
4	Q	1	LYS
4	Q	46	VAL
4	Q	48	ASN
4	Q	108	LYS
4	Q	112	GLU
4	Q	121	ASP
4	Q	151	LEU
4	Q	173	ASN
4	Q	189	ASP
4	Q	228	ARG
4	Q	233	HIS
4	Q	238	TYR

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Mol	Chain	Res	Type
4	Q	269	ASP
4	Q	281	LEU
4	Q	317	TRP
4	Q	323	ASN
4	Q	327	VAL
4	Q	395	TYR
4	Q	442	ARG
4	Q	481	MET
4	Q	491	LYS
3	T	5	VAL
3	T	12	LYS
3	T	18	THR
3	T	20	VAL
3	T	76	ARG
3	T	106	THR
3	T	124	LEU
3	T	151	ARG
3	T	188	VAL
3	T	192	THR
3	T	206	VAL
3	T	216	ILE
3	T	224	LEU
3	T	238	PRO
3	T	246	ARG
3	T	279	VAL
3	T	321	VAL
3	T	326	LEU
3	T	328	VAL
3	T	333	LEU
3	T	340	ASP
3	T	346	VAL
3	T	359	GLN

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (10) such sidechains are listed below:

Mol	Chain	Res	Type
2	N	133	ASN
2	N	252	ASN
3	S	160	GLN
3	S	193	HIS
4	Q	55	GLN
4	Q	323	ASN

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Mol	Chain	Res	Type
4	Q	372	GLN
4	Q	375	ASN
4	Q	450	GLN
3	T	359	GLN

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates ⓘ

5 monosaccharides are modelled in this entry.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#|Z| > 2$	Counts	RMSZ	$\#|Z| > 2$
5	BEM	A	1	5	13,13,13	0.72	0	18,19,19	0.69	0
5	BEM	A	2	5	12,12,13	0.68	0	14,17,19	0.69	0
5	BEM	A	3	5	12,12,13	0.66	0	14,17,19	0.77	0
5	BEM	A	4	5	12,12,13	0.67	0	14,17,19	0.63	0
5	BEM	A	5	5	12,12,13	0.70	0	14,17,19	0.69	0

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
5	BEM	A	1	5	-	0/4/24/24	0/1/1/1
5	BEM	A	2	5	-	0/4/21/24	0/1/1/1

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
5	BEM	A	3	5	-	0/4/21/24	0/1/1/1
5	BEM	A	4	5	-	0/4/21/24	0/1/1/1
5	BEM	A	5	5	-	1/4/21/24	0/1/1/1

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (1) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	A	5	BEM	C4-C5-C6-O6B

There are no ring outliers.

2 monomers are involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
5	A	1	BEM	1	0
5	A	3	BEM	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 A

Bond lengths

Bond angles

Torsions

Rings
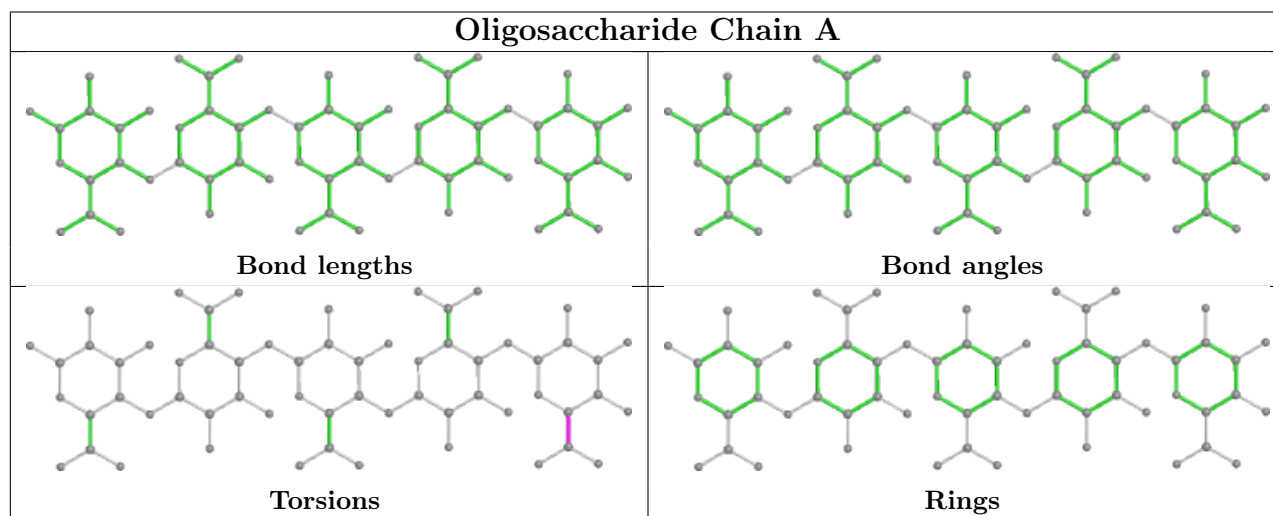
5.6 Ligand geometry ⓘ

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	M	288/301 (95%)	0.29	19 (6%)	18	10	58, 103, 179, 224	0
2	N	287/305 (94%)	0.17	17 (5%)	22	13	60, 99, 148, 213	0
3	S	363/363 (100%)	0.28	24 (6%)	18	10	59, 103, 178, 259	0
3	T	363/363 (100%)	0.44	28 (7%)	13	8	75, 126, 201, 281	0
4	Q	492/516 (95%)	0.64	59 (11%)	4	3	89, 137, 196, 252	0
All	All	1793/1848 (97%)	0.40	147 (8%)	11	7	58, 118, 186, 281	0

All (147) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	M	317	ARG	6.9
4	Q	150	ASN	6.7
3	S	1	MET	6.4
3	S	295	GLY	6.1
3	S	106	THR	5.4
1	M	318	ILE	5.4
4	Q	5	TRP	5.3
4	Q	492	ASN	5.0
4	Q	91	PRO	5.0
4	Q	136	ALA	4.8
4	Q	491	LYS	4.8
4	Q	152	LYS	4.7
2	N	180	ALA	4.7
4	Q	7	THR	4.7
4	Q	8	ASP	4.7
2	N	238	ASP	4.7
3	T	253	GLN	4.6
4	Q	135	VAL	4.6
1	M	25	GLU	4.5
3	T	292	GLY	4.5

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WORLDWIDE wwPDB PROTEIN DATA BANK

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Mol	Chain	Res	Type	RSRZ
3	T	293	VAL	4.3
4	Q	6	VAL	4.1
3	T	106	THR	4.0
4	Q	426	MET	4.0
2	N	181	ASN	3.9
3	S	299	ALA	3.9
4	Q	429	GLU	3.7
2	N	176	ARG	3.7
4	Q	122	GLY	3.6
4	Q	154	PRO	3.5
3	S	274	ALA	3.5
4	Q	487	ASP	3.5
4	Q	145	TRP	3.4
3	T	112	ASP	3.4
2	N	240	ASN	3.4
4	Q	149	LEU	3.3
4	Q	182	PRO	3.3
4	Q	218	VAL	3.3
1	M	295	ALA	3.3
3	T	141	GLN	3.2
4	Q	233	HIS	3.2
3	T	89	PRO	3.2
4	Q	427	THR	3.2
3	T	252	THR	3.1
4	Q	11	LEU	3.1
2	N	47	VAL	3.0
3	S	296	SER	3.0
3	S	263	ILE	3.0
3	S	294	GLU	3.0
4	Q	21	ASP	3.0
4	Q	48	ASN	2.9
3	T	90	HIS	2.9
3	T	53	LEU	2.9
1	M	173	ASP	2.9
4	Q	148	LYS	2.9
4	Q	177	LYS	2.9
4	Q	151	LEU	2.9
4	Q	53	ASN	2.8
3	T	265	LEU	2.8
3	T	353	LEU	2.8
3	S	275	PRO	2.8
3	S	290	LEU	2.8

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Mol	Chain	Res	Type	RSRZ
3	S	2	VAL	2.8
1	M	33	ARG	2.8
1	M	316	ARG	2.7
4	Q	55	GLN	2.7
3	T	355	ASP	2.7
3	S	248	ALA	2.7
2	N	242	ASN	2.7
1	M	105	LEU	2.7
3	T	55	GLU	2.7
4	Q	252	ALA	2.7
3	S	209	ARG	2.6
4	Q	401	THR	2.6
4	Q	123	ASN	2.6
4	Q	4	THR	2.6
1	M	88	GLN	2.6
3	S	105	ARG	2.6
3	S	335	GLU	2.6
4	Q	134	VAL	2.6
1	M	292	ILE	2.6
4	Q	212	TYR	2.6
4	Q	120	PRO	2.6
2	N	183	LEU	2.6
3	S	107	LYS	2.6
3	T	121	ILE	2.5
4	Q	146	LEU	2.5
3	S	337	HIS	2.5
1	M	138	TYR	2.5
4	Q	472	LEU	2.5
1	M	64	LYS	2.4
2	N	61	PHE	2.4
4	Q	286	PRO	2.4
1	M	87	PHE	2.4
2	N	49	GLN	2.4
1	M	65	GLN	2.4
1	M	80	PHE	2.4
3	T	228	ASN	2.4
4	Q	143	GLU	2.4
3	S	333	LEU	2.4
3	T	103	LEU	2.4
4	Q	424	VAL	2.3
4	Q	40	ASN	2.3
3	T	363	TYR	2.3

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Mol	Chain	Res	Type	RSRZ
4	Q	54	SER	2.3
2	N	172	GLU	2.3
3	T	358	SER	2.3
3	T	227	ALA	2.3
4	Q	185	ASP	2.3
3	T	349	THR	2.3
3	S	68	ILE	2.3
4	Q	147	LYS	2.3
2	N	258	THR	2.3
1	M	61	MET	2.3
4	Q	189	ASP	2.3
4	Q	92	LEU	2.2
3	S	69	ASN	2.2
2	N	48	THR	2.2
3	T	255	VAL	2.2
4	Q	124	ILE	2.2
3	S	341	PRO	2.2
2	N	177	MET	2.2
4	Q	116	ALA	2.2
3	T	85	TYR	2.2
1	M	296	ALA	2.2
4	Q	211	PHE	2.2
2	N	62	SER	2.2
4	Q	324	LYS	2.2
1	M	101	THR	2.1
4	Q	471	LYS	2.1
3	T	354	PHE	2.1
4	Q	484	GLN	2.1
4	Q	265	GLY	2.1
2	N	60	ASP	2.1
3	T	291	ASP	2.1
4	Q	363	PHE	2.1
1	M	62	ALA	2.1
4	Q	215	ASN	2.1
3	S	336	VAL	2.1
3	T	54	GLU	2.1
4	Q	430	GLU	2.1
3	T	104	LYS	2.1
4	Q	75	ASN	2.1
3	S	60	THR	2.0
2	N	153	ASN	2.0
3	T	57	SER	2.0

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Mol	Chain	Res	Type	RSRZ
3	S	277	GLN	2.0

6.2 Non-standard residues in protein, DNA, RNA chains ⓘ
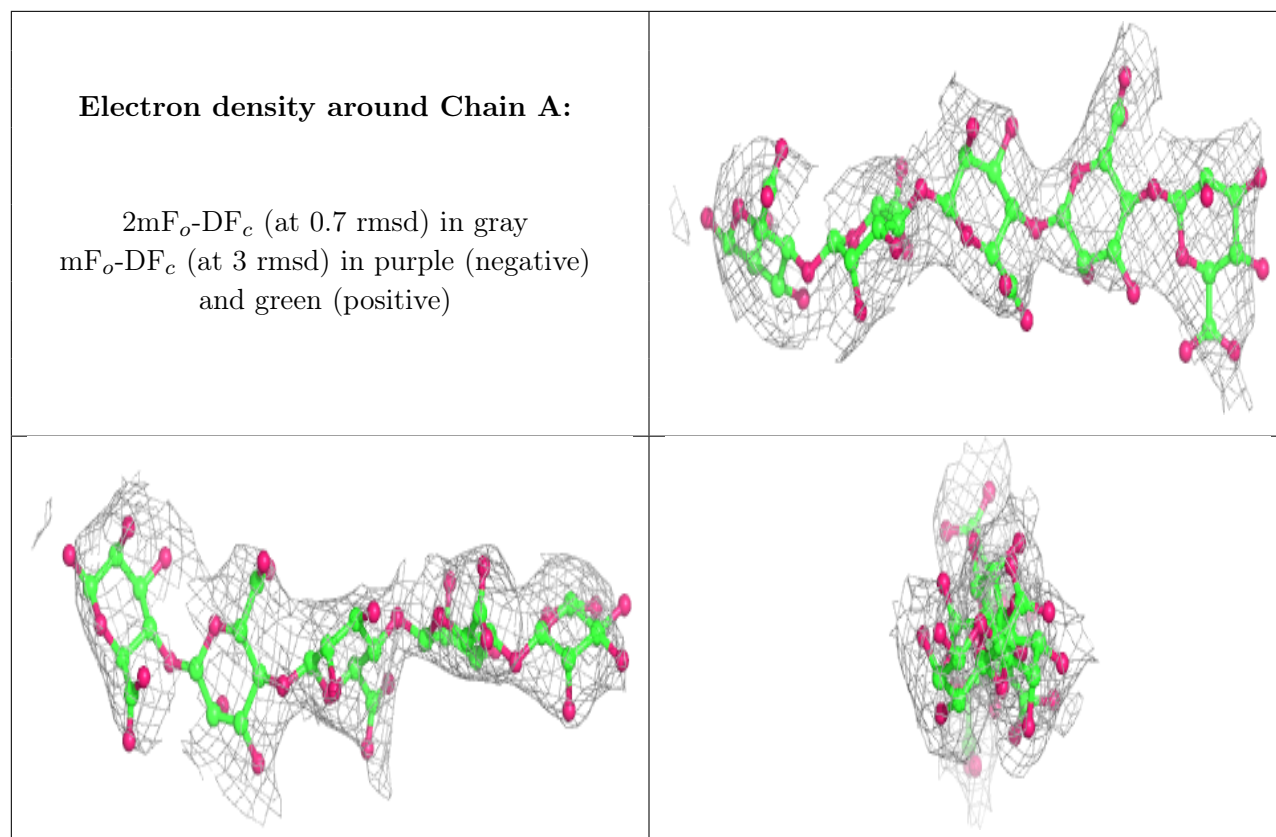
There are no non-standard protein/DNA/RNA residues in this entry.

6.3 Carbohydrates ⓘ

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

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\mathring{A}^2$)	Q<0.9
5	BEM	A	4	12/13	0.82	0.34	100,116,124,125	0
5	BEM	A	2	12/13	0.84	0.80	87,122,132,136	0
5	BEM	A	3	12/13	0.86	0.46	93,114,122,125	0
5	BEM	A	1	13/13	0.88	0.83	119,137,147,156	0
5	BEM	A	5	12/13	0.89	0.29	95,121,135,144	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 A:

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

6.4 Ligands (i)

There are no ligands in this entry.

6.5 Other polymers (i)

There are no such residues in this entry.