Full wwPDB X-ray Structure Validation Report (i)

Jan 14, 2024 – 04:13 am GMT

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PDB ID	:	6QTA
Title	:	Crystal structure of Rea1-MIDAS/Rsa4-UBL complex from Chaetomium thermophilum
Authors	:	Ahmed, Y.L.; Thoms, M.; Hurt, E.; Sinning, I.
Deposited on	:	2019-02-22
Resolution	:	1.89 Å(reported)

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 1.89 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		0.212
Clashscore		7
Ramachandran outliers		0.3%
Sidechain outliers		3.5%
RSRZ outliers		14.5%

Worse   *Better*

▌ Percentile relative to all X-ray structures

▐ Percentile relative to X-ray structures of similar resolution
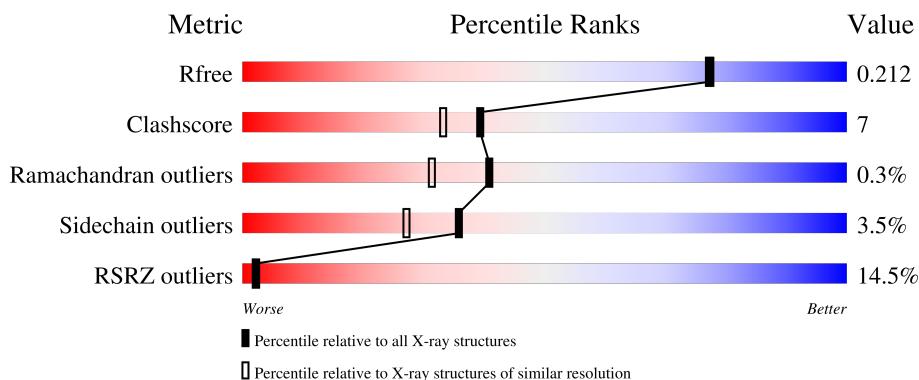
Metric	Whole archive (#Entries)	Similar resolution (#Entries, resolution range(Å))
R_{free}	130704	6207 (1.90-1.90)
Clashscore	141614	6847 (1.90-1.90)
Ramachandran outliers	138981	6760 (1.90-1.90)
Sidechain outliers	138945	6760 (1.90-1.90)
RSRZ outliers	127900	6082 (1.90-1.90)

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	280	13% 75% 15% · 8%
2	B	108	15% 83% 9% · 6%
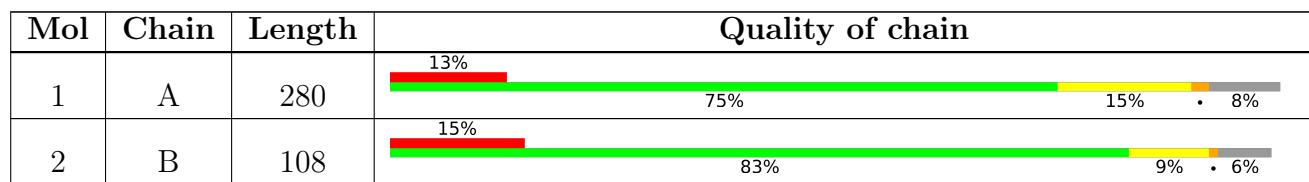
The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
5	GOL	A	5111	-	X	-	-

2 Entry composition ⓘ

There are 6 unique types of molecules in this entry. The entry contains 3140 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 Midasin,Midasin.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	258	Total 2062	C 1303	N 369	O 381	S 9	0	3	0

There are 12 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	4689	MET	-	initiating methionine	UNP G0SHE6
A	4734	GLY	-	linker	UNP G0SHE6
A	4735	SER	-	linker	UNP G0SHE6
A	4736	GLY	-	linker	UNP G0SHE6
A	4998	GLY	-	expression tag	UNP G0SHE6
A	4999	SER	-	expression tag	UNP G0SHE6
A	5000	HIS	-	expression tag	UNP G0SHE6
A	5001	HIS	-	expression tag	UNP G0SHE6
A	5002	HIS	-	expression tag	UNP G0SHE6
A	5003	HIS	-	expression tag	UNP G0SHE6
A	5004	HIS	-	expression tag	UNP G0SHE6
A	5005	HIS	-	expression tag	UNP G0SHE6

- Molecule 2 is a protein called Ribosome assembly protein 4.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
2	B	101	Total 801	C 504	N 135	O 160	S 2	0	0	0

There are 10 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	21	MET	-	initiating methionine	UNP G0SC29
B	22	LYS	-	expression tag	UNP G0SC29
B	23	HIS	-	expression tag	UNP G0SC29
B	24	HIS	-	expression tag	UNP G0SC29

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Chain	Residue	Modelled	Actual	Comment	Reference
B	25	HIS	-	expression tag	UNP G0SC29
B	26	HIS	-	expression tag	UNP G0SC29
B	27	HIS	-	expression tag	UNP G0SC29
B	28	HIS	-	expression tag	UNP G0SC29
B	29	PRO	-	expression tag	UNP G0SC29
B	30	MET	VAL	conflict	UNP G0SC29

- Molecule 3 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
3	A	1	Total 1	Mg 1	0	0

- Molecule 4 is SULFATE ION (three-letter code: SO4) (formula: O_4S).
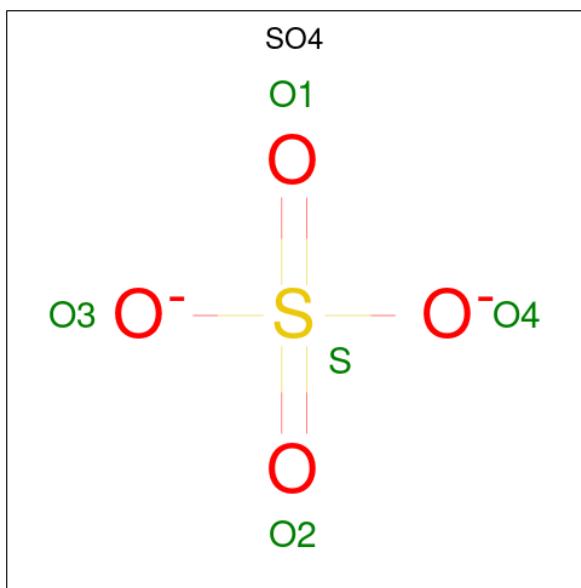
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
4	A	1	Total 5	O 4	S 1	0	0
4	A	1	Total 5	O 4	S 1	0	0
4	A	1	Total 5	O 4	S 1	0	0

- Molecule 5 is GLYCEROL (three-letter code: GOL) (formula: $C_3H_8O_3$).

GOL

C3

OH O3

C1   C2

HO

O1

OH

O2

Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
5	A	1	Total 6	C 3	O 3	0	0
5	A	1	Total 6	C 3	O 3	0	0
5	A	1	Total 6	C 3	O 3	0	0
5	A	1	Total 6	C 3	O 3	0	0
5	A	1	Total 6	C 3	O 3	0	0
5	A	1	Total 6	C 3	O 3	0	0
5	A	1	Total 6	C 3	O 3	0	0

• Molecule 6 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	A	165	Total 165	O 165	0	0
6	B	54	Total 54	O 54	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: Midasin,Midasin

Chain A:
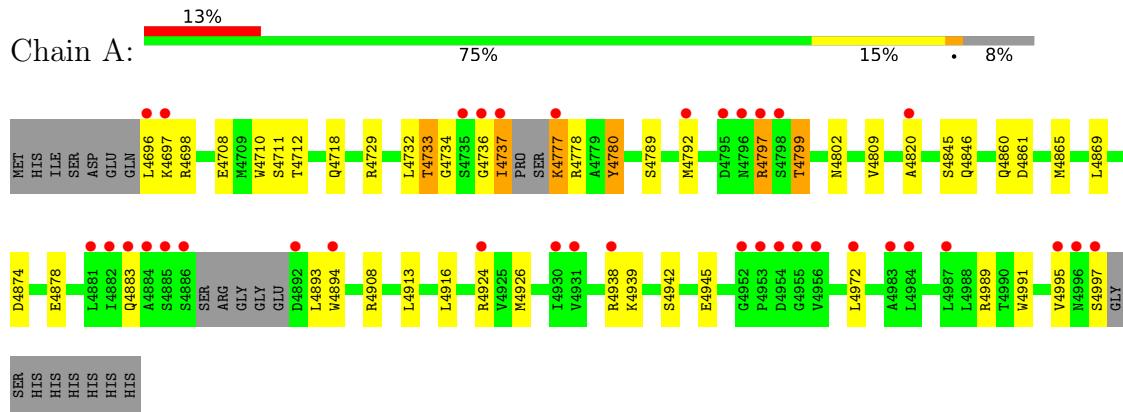
• Molecule 2: Ribosome assembly protein 4

Chain B:
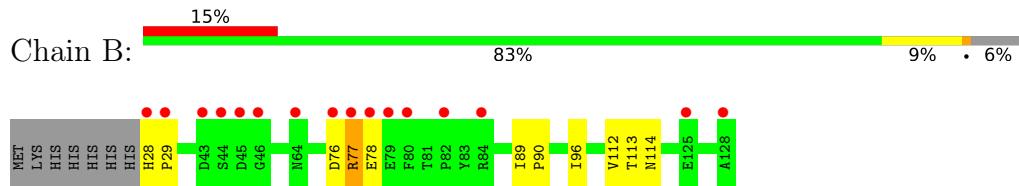
4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 43 21 2	Depositor
Cell constants a, b, c, α, β, γ	115.67Å 115.67Å 74.62Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	36.58 – 1.89 45.71 – 1.89	Depositor EDS
% Data completeness (in resolution range)	100.0 (36.58-1.89) 100.0 (45.71-1.89)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.20 (at 1.89Å)	Xtriage
Refinement program	PHENIX 1.12_2829	Depositor
R, R_{free}	0.176 , 0.211 0.176 , 0.212	Depositor DCC
R_{free} test set	2122 reflections (5.17%)	wwPDB-VP
Wilson B-factor (Å²)	29.6	Xtriage
Anisotropy	0.249	Xtriage
Bulk solvent k_{sol}(e/Å³), B_{sol}(Å²)	0.35 , 59.3	EDS
L-test for twinning[2]	$< |L| > = 0.48, < L^2 > = 0.31$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.96	EDS
Total number of atoms	3140	wwPDB-VP
Average B, all atoms (Å²)	42.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.59% 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: GOL, SO4, MG

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	0.89	2/2098 (0.1%)	0.92	5/2838 (0.2%)
2	B	0.63	0/817	0.67	0/1109
All	All	0.83	2/2915 (0.1%)	0.86	5/3947 (0.1%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand.A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	1

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	4797	ARG	CZ-NH1	6.07	1.41	1.33
1	A	4989	ARG	CG-CD	5.06	1.64	1.51

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	4797	ARG	NE-CZ-NH2	-13.99	113.30	120.30
1	A	4797	ARG	NE-CZ-NH1	7.89	124.24	120.30
1	A	4924	ARG	CD-NE-CZ	7.88	134.63	123.60
1	A	4865	MET	CG-SD-CE	-7.36	88.43	100.20
1	A	4924	ARG	NE-CZ-NH2	-6.98	116.81	120.30

There are no chirality outliers.

All (1) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	4733	THR	Peptide

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	2062	0	2067	33	0
2	B	801	0	777	9	0
3	A	1	0	0	0	0
4	A	15	0	0	1	0
5	A	42	0	54	5	0
6	A	165	0	0	6	1
6	B	54	0	0	2	0
All	All	3140	0	2898	43	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 7.

All (43) 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:4894:TRP:HZ3	6:A:5239:HOH:O	1.08	1.27
1:A:4799:THR:HG22	1:A:4802:ASN:H	1.39	0.86
1:A:4860:GLN:HG2	5:A:5111:GOL:H12	1.58	0.84
1:A:4861[B]:ASP:OD2	2:B:113:THR:OG1	1.98	0.80
1:A:4894:TRP:CZ3	6:A:5239:HOH:O	1.96	0.79
1:A:4846:GLN:H	5:A:5109:GOL:H11	1.47	0.79
1:A:4883:GLN:HG3	1:A:4893:LEU:HD21	1.68	0.75
1:A:4845:SER:HB2	5:A:5109:GOL:H31	1.70	0.73
1:A:4894:TRP:CH2	1:A:4926:MET:HB2	2.24	0.73
2:B:28:HIS:HB3	2:B:29:PRO:CD	2.24	0.67
1:A:4874:ASP:O	1:A:4878:GLU:HG3	1.95	0.66
2:B:28:HIS:N	6:B:202:HOH:O	2.31	0.63
1:A:4869:LEU:HD22	1:A:4913:LEU:HD22	1.82	0.62
1:A:4718:GLN:OE1	6:A:5201:HOH:O	2.16	0.61
1:A:4733:THR:HA	1:A:4737:ILE:HG23	1.84	0.59
4:A:5102:SO4:O4	5:A:5106:GOL:O3	2.22	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:4732:LEU:O	1:A:4737:ILE:HG22	2.06	0.56
1:A:4697:LYS:HG3	6:A:5252:HOH:O	2.08	0.52
1:A:4894:TRP:CH2	1:A:4926:MET:CB	2.93	0.51
1:A:4789:SER:O	1:A:4792:MET:HG2	2.10	0.51
1:A:4736:GLY:O	1:A:4777:LYS:N	2.45	0.50
1:A:4697:LYS:HE2	1:A:4697:LYS:HA	1.93	0.50
1:A:4780:TYR:CE2	1:A:4820:ALA:HB3	2.46	0.49
2:B:28:HIS:HB3	2:B:29:PRO:HD3	1.92	0.49
5:A:5107:GOL:H31	6:A:5255:HOH:O	2.12	0.49
1:A:4991:TRP:CZ2	1:A:4995:VAL:HG21	2.48	0.49
1:A:4894:TRP:CH2	1:A:4991:TRP:CH2	3.02	0.48
1:A:4894:TRP:HH2	1:A:4926:MET:HB2	1.74	0.48
1:A:4708:GLU:O	1:A:4712[B]:THR:HG22	2.14	0.47
2:B:89:ILE:HD11	2:B:96:ILE:HD12	1.96	0.47
2:B:90:PRO:HD2	2:B:112:VAL:HG21	1.96	0.47
2:B:114:ASN:HB2	6:B:250:HOH:O	2.16	0.45
1:A:4797:ARG:HD2	6:A:5298:HOH:O	2.15	0.45
1:A:4729:ARG:O	1:A:4733:THR:HB	2.17	0.45
1:A:4991:TRP:CE2	1:A:4995:VAL:HG21	2.53	0.44
1:A:4697:LYS:HD3	1:A:4698:ARG:H	1.82	0.44
1:A:4869:LEU:HD22	1:A:4913:LEU:CD2	2.47	0.44
1:A:4938:ARG:HG3	1:A:4939:LYS:N	2.33	0.44
1:A:4710:TRP:CZ3	1:A:4809:VAL:HG22	2.53	0.43
2:B:76:ASP:OD2	2:B:77:ARG:CZ	2.67	0.43
1:A:4942:SER:HB3	1:A:4945:GLU:OE1	2.18	0.42
2:B:78:GLU:HG3	2:B:78:GLU:O	2.20	0.42
1:A:4732:LEU:O	1:A:4734:GLY:O	2.39	0.41

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)
6:A:5336:HOH:O	6:A:5362:HOH:O[7_555]	2.13	0.07

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	255/280 (91%)	249 (98%)	5 (2%)	1 (0%)	34	24
2	B	99/108 (92%)	98 (99%)	1 (1%)	0	100	100
All	All	354/388 (91%)	347 (98%)	6 (2%)	1 (0%)	41	31

All (1) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	4799	THR

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	224/240 (93%)	214 (96%)	10 (4%)	27	18
2	B	90/97 (93%)	89 (99%)	1 (1%)	73	73
All	All	314/337 (93%)	303 (96%)	11 (4%)	36	27

All (11) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	4696	LEU
1	A	4711	SER
1	A	4737	ILE
1	A	4777	LYS
1	A	4778	ARG
1	A	4780	TYR
1	A	4908	ARG
1	A	4916	LEU
1	A	4972	LEU
1	A	4997	SER
2	B	77	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. There are no such sidechains identified.

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 ⓘ

There are no monosaccharides in this entry.

5.6 Ligand geometry ⓘ

Of 11 ligands modelled in this entry, 1 is monoatomic - leaving 10 for Mogul analysis.

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\#|Z| > 2$	Counts	RMSZ	$\#|Z| > 2$
4	SO4	A	5104	-	4,4,4	0.09	0	6,6,6	0.56	0
5	GOL	A	5110	-	5,5,5	1.30	1 (20%)	5,5,5	1.11	0
5	GOL	A	5105	-	5,5,5	0.96	0	5,5,5	1.94	2 (40%)
4	SO4	A	5102	-	4,4,4	0.37	0	6,6,6	0.55	0
5	GOL	A	5107	-	5,5,5	1.23	0	5,5,5	0.83	0
5	GOL	A	5111	-	5,5,5	1.58	2 (40%)	5,5,5	0.72	0
5	GOL	A	5108	-	5,5,5	1.28	0	5,5,5	0.66	0
5	GOL	A	5109	-	5,5,5	1.03	0	5,5,5	0.94	0
4	SO4	A	5103	-	4,4,4	0.15	0	6,6,6	0.24	0
5	GOL	A	5106	-	5,5,5	1.42	1 (20%)	5,5,5	0.70	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	GOL	A	5110	-	-	2/4/4/4	-
5	GOL	A	5105	-	-	2/4/4/4	-
5	GOL	A	5107	-	-	4/4/4/4	-
5	GOL	A	5106	-	-	1/4/4/4	-
5	GOL	A	5111	-	-	4/4/4/4	-
5	GOL	A	5109	-	-	4/4/4/4	-
5	GOL	A	5108	-	-	2/4/4/4	-

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	A	5106	GOL	O2-C2	-2.55	1.35	1.43
5	A	5111	GOL	C1-C2	2.35	1.61	1.51
5	A	5110	GOL	C3-C2	2.30	1.61	1.51
5	A	5111	GOL	C3-C2	2.14	1.60	1.51

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
5	A	5105	GOL	O2-C2-C3	3.03	122.45	109.12
5	A	5105	GOL	O2-C2-C1	3.01	122.37	109.12

There are no chirality outliers.

All (19) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
5	A	5107	GOL	O1-C1-C2-C3
5	A	5107	GOL	C1-C2-C3-O3
5	A	5109	GOL	O1-C1-C2-C3
5	A	5110	GOL	O1-C1-C2-C3
5	A	5108	GOL	O1-C1-C2-O2
5	A	5110	GOL	O1-C1-C2-O2
5	A	5111	GOL	O2-C2-C3-O3
5	A	5108	GOL	O1-C1-C2-C3
5	A	5109	GOL	C1-C2-C3-O3
5	A	5111	GOL	C1-C2-C3-O3
5	A	5105	GOL	O2-C2-C3-O3
5	A	5107	GOL	O1-C1-C2-O2

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Mol	Chain	Res	Type	Atoms
5	A	5109	GOL	O2-C2-C3-O3
5	A	5107	GOL	O2-C2-C3-O3
5	A	5106	GOL	O2-C2-C3-O3
5	A	5111	GOL	O1-C1-C2-O2
5	A	5105	GOL	O1-C1-C2-O2
5	A	5109	GOL	O1-C1-C2-O2
5	A	5111	GOL	O1-C1-C2-C3

There are no ring outliers.

5 monomers are involved in 5 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	A	5102	SO4	1	0
5	A	5107	GOL	1	0
5	A	5111	GOL	1	0
5	A	5109	GOL	2	0
5	A	5106	GOL	1	0

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

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	258/280 (92%)	0.75	36 (13%)	2	2	20, 30, 84, 113	0
2	B	101/108 (93%)	0.60	16 (15%)	2	2	26, 45, 84, 118	0
All	All	359/388 (92%)	0.71	52 (14%)	2	2	20, 36, 85, 118	0

All (52) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	4696	LEU	12.6
1	A	4884	ALA	8.1
1	A	4881	LEU	6.3
1	A	4885	SER	5.9
1	A	4995	VAL	5.7
2	B	77	ARG	5.4
1	A	4996	ASN	5.3
1	A	4953	PRO	4.6
1	A	4736	GLY	4.5
1	A	4956	VAL	4.4
1	A	4886	SER	4.4
1	A	4737	ILE	4.2
1	A	4892	ASP	3.8
1	A	4735	SER	3.7
1	A	4954	ASP	3.7
2	B	76	ASP	3.5
1	A	4894	TRP	3.4
1	A	4955	GLY	3.4
2	B	80	PHE	3.3
1	A	4795	ASP	3.3
1	A	4777	LYS	3.2
1	A	4882	ILE	3.2
1	A	4883	GLN	3.2
1	A	4997	SER	3.2

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Mol	Chain	Res	Type	RSRZ
2	B	28	HIS	3.2
2	B	78	GLU	3.1
2	B	128	ALA	3.0
2	B	45	ASP	3.0
1	A	4792	MET	2.8
1	A	4820	ALA	2.7
2	B	125	GLU	2.7
1	A	4797	ARG	2.7
1	A	4796	ASN	2.6
2	B	82	PRO	2.6
2	B	79	GLU	2.6
1	A	4938	ARG	2.5
1	A	4930	ILE	2.5
1	A	4984	LEU	2.4
2	B	84	ARG	2.4
2	B	44	SER	2.4
2	B	46	GLY	2.4
1	A	4697	LYS	2.3
2	B	43	ASP	2.3
1	A	4931	VAL	2.3
1	A	4924	ARG	2.2
1	A	4983	ALA	2.2
1	A	4987	LEU	2.2
2	B	29	PRO	2.1
1	A	4972	LEU	2.1
1	A	4952	GLY	2.1
1	A	4798	SER	2.1
2	B	64	ASN	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)

There are no monosaccharides in this entry.

6.4 Ligands (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
5	GOL	A	5111	6/6	0.69	0.24	58,66,68,71	0
5	GOL	A	5107	6/6	0.72	0.28	73,78,80,81	0
5	GOL	A	5110	6/6	0.73	0.21	58,71,72,72	0
5	GOL	A	5106	6/6	0.83	0.17	48,59,70,71	0
5	GOL	A	5108	6/6	0.85	0.19	65,74,78,87	0
5	GOL	A	5109	6/6	0.85	0.17	73,80,84,87	0
4	SO4	A	5104	5/5	0.90	0.17	72,79,82,83	0
4	SO4	A	5102	5/5	0.94	0.15	53,63,75,81	0
4	SO4	A	5103	5/5	0.97	0.27	86,87,89,90	0
5	GOL	A	5105	6/6	0.97	0.11	32,34,36,38	0
3	MG	A	5101	1/1	0.99	0.13	25,25,25,25	0

6.5　Other polymers ⓘ

There are no such residues in this entry.