Full wwPDB X-ray Structure Validation Report ⓘ

Jun 18, 2024 – 11:29 PM EDT

PDB ID	:	4AMG
Title	:	Crystal structure of the glycosyltransferase SnogD from Streptomyces nogalater
Authors	:	Claesson, M.; Siitonen, V.; Dobritzsch, D.; Metsa-Ketela, M.; Schneider, G.
Deposited on	:	2012-03-09
Resolution	:	2.59 Å(reported)

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

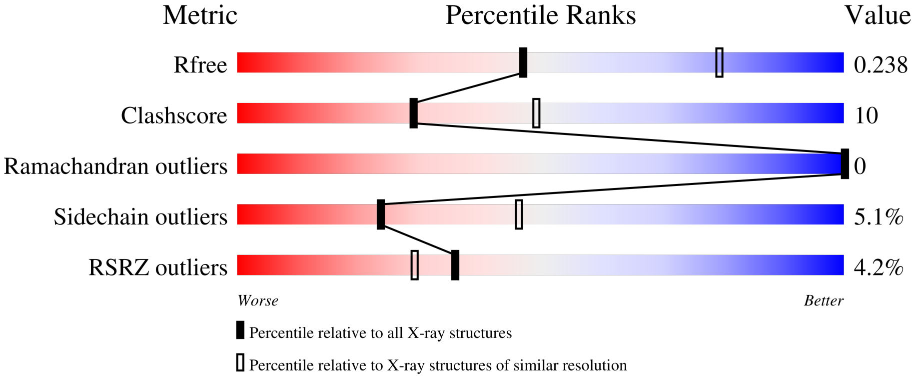
MolProbity	:	4.02b-467
Mogul	:	2022.3.0, CSD as543be (2022)
Xtriage (Phenix)	:	1.20.1
EDS	:	2.37.1
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.37.1

1 Overall quality at a glance ⓘ

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

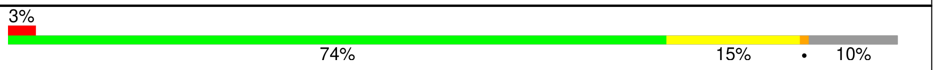
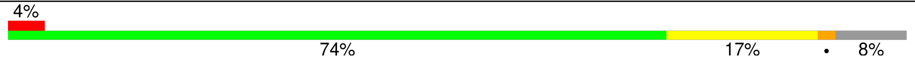
The reported resolution of this entry is 2.59 Å.

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}	130704	3163 (2.60-2.60)
Clashscore	141614	3518 (2.60-2.60)
Ramachandran outliers	138981	3455 (2.60-2.60)
Sidechain outliers	138945	3455 (2.60-2.60)
RSRZ outliers	127900	3104 (2.60-2.60)

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	400	
1	B	400	

2 Entry composition (i)

There are 2 unique types of molecules in this entry. The entry contains 5437 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 SNOGD.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	362	Total 2663	C 1680	N 474	O 498	S 11	0	1	0
1	B	370	Total 2707	C 1709	N 480	O 506	S 12	0	0	0

There are 44 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-9	MET	-	expression tag	UNP Q9RN61
A	-8	HIS	-	expression tag	UNP Q9RN61
A	-7	HIS	-	expression tag	UNP Q9RN61
A	-6	HIS	-	expression tag	UNP Q9RN61
A	-5	HIS	-	expression tag	UNP Q9RN61
A	-4	HIS	-	expression tag	UNP Q9RN61
A	-3	HIS	-	expression tag	UNP Q9RN61
A	-2	SER	-	expression tag	UNP Q9RN61
A	-1	SER	-	expression tag	UNP Q9RN61
A	0	GLY	-	expression tag	UNP Q9RN61
A	1	VAL	-	expression tag	UNP Q9RN61
A	2	ASP	-	expression tag	UNP Q9RN61
A	3	LEU	-	expression tag	UNP Q9RN61
A	4	GLY	-	expression tag	UNP Q9RN61
A	5	THR	-	expression tag	UNP Q9RN61
A	6	GLU	-	expression tag	UNP Q9RN61
A	7	ASN	-	expression tag	UNP Q9RN61
A	8	LEU	-	expression tag	UNP Q9RN61
A	9	TYR	-	expression tag	UNP Q9RN61
A	10	PHE	-	expression tag	UNP Q9RN61
A	11	GLN	-	expression tag	UNP Q9RN61
A	12	SER	-	expression tag	UNP Q9RN61
B	-9	MET	-	expression tag	UNP Q9RN61
B	-8	HIS	-	expression tag	UNP Q9RN61
B	-7	HIS	-	expression tag	UNP Q9RN61

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Chain	Residue	Modelled	Actual	Comment	Reference
B	-6	HIS	-	expression tag	UNP Q9RN61
B	-5	HIS	-	expression tag	UNP Q9RN61
B	-4	HIS	-	expression tag	UNP Q9RN61
B	-3	HIS	-	expression tag	UNP Q9RN61
B	-2	SER	-	expression tag	UNP Q9RN61
B	-1	SER	-	expression tag	UNP Q9RN61
B	0	GLY	-	expression tag	UNP Q9RN61
B	1	VAL	-	expression tag	UNP Q9RN61
B	2	ASP	-	expression tag	UNP Q9RN61
B	3	LEU	-	expression tag	UNP Q9RN61
B	4	GLY	-	expression tag	UNP Q9RN61
B	5	THR	-	expression tag	UNP Q9RN61
B	6	GLU	-	expression tag	UNP Q9RN61
B	7	ASN	-	expression tag	UNP Q9RN61
B	8	LEU	-	expression tag	UNP Q9RN61
B	9	TYR	-	expression tag	UNP Q9RN61
B	10	PHE	-	expression tag	UNP Q9RN61
B	11	GLN	-	expression tag	UNP Q9RN61
B	12	SER	-	expression tag	UNP Q9RN61

- Molecule 2 is water.

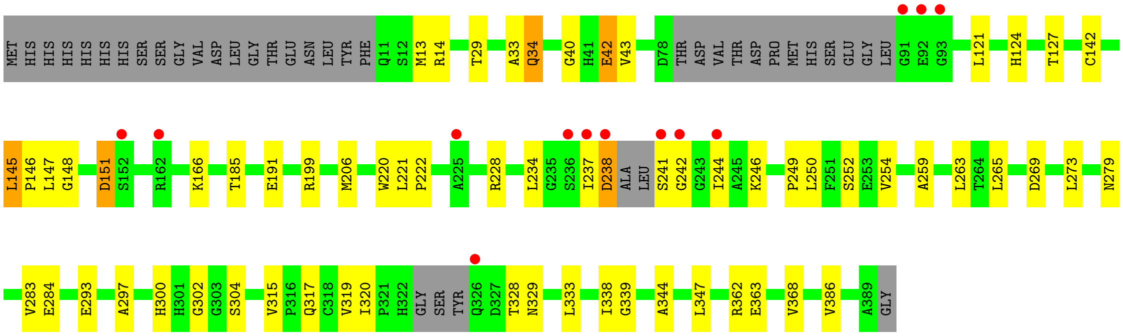
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	A	40	Total O 40 40	0	0
2	B	27	Total O 27 27	0	0

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.

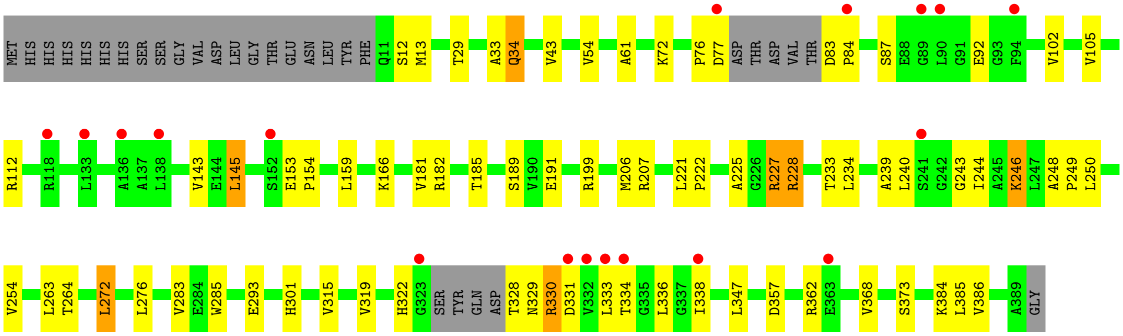
- Molecule 1: SNOGD

Chain A:



- Molecule 1: SNOGD

Chain B:



4 Data and refinement statistics

Property	**Value**	**Source**
Space group	P 21 21 2	Depositor
Cell constants a, b, c, α, β, γ	66.68Å 179.80Å 70.25Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	60.00 – 2.59 48.36 – 2.59	Depositor EDS
% Data completeness (in resolution range)	96.2 (60.00-2.59) 96.2 (48.36-2.59)	Depositor EDS
R_{merge}	0.06	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.97 (at 2.58Å)	Xtriage
Refinement program	REFMAC 5.6.0119	Depositor
R, R_{free}	0.221 , 0.243 0.217 , 0.238	Depositor DCC
R_{free} test set	1300 reflections (4.99%)	wwPDB-VP
Wilson B-factor (Å^2)	56.2	Xtriage
Anisotropy	0.239	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.32 , 35.3	EDS
L-test for twinning[2]	$< \|L\| > = 0.47$, $< L^2 > = 0.30$	Xtriage
Estimated twinning fraction	0.026 for l,-k,h	Xtriage
F_o,F_c correlation	0.94	EDS
Total number of atoms	5437	wwPDB-VP
Average B, all atoms (Å^2)	54.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.40% 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: MLY

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	0.58	0/2709	0.72	0/3698
1	B	0.56	1/2753 (0.0%)	0.70	0/3760
All	All	0.57	1/5462 (0.0%)	0.71	0/7458

All (1) bond length outliers are listed below:

Mol	**Chain**	**Res**	**Type**	**Atoms**	**Z**	**Observed(Å)**	**Ideal(Å)**
1	B	285	TRP	CD2-CE2	5.26	1.47	1.41

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts ⓘ

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

Mol	**Chain**	**Non-H**	**H(model)**	**H(added)**	**Clashes**	**Symm-Clashes**
1	A	2663	0	2683	51	0
1	B	2707	0	2726	58	0
2	A	40	0	0	1	0
2	B	27	0	0	1	0
All	All	5437	0	5409	103	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 (103) 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:124:HIS:HE1	1:A:142:CYS:SG	1.93	0.92
1:B:72:LYS:NZ	1:B:77:ASP:OD2	2.07	0.86
1:B:244:ILE:HD11	1:B:272:LEU:HD11	1.58	0.86
1:B:338:ILE:HD11	1:B:368:VAL:HG21	1.61	0.83
1:B:328:THR:N	1:B:330:ARG:HD3	1.93	0.82
1:A:234:LEU:HG	1:A:263:LEU:HD11	1.65	0.77
1:A:250:LEU:O	1:A:254:VAL:HG13	1.88	0.74
1:A:283:VAL:HG12	1:A:284:GLU:O	1.87	0.74
1:A:244:ILE:H	1:A:244:ILE:HD12	1.53	0.74
1:A:241:SER:OG	1:A:242:GLY:N	2.23	0.70
1:A:13:MET:HE2	1:A:386:VAL:HG22	1.75	0.69
1:B:272:LEU:HD22	1:B:276:LEU:HD11	1.75	0.69
1:B:234:LEU:CD1	1:B:263:LEU:HD11	2.23	0.68
1:A:249:PRO:O	1:A:252:SER:OG	2.13	0.65
1:A:237:ILE:HG22	1:A:238:ASP:CG	2.17	0.64
1:B:153:GLU:OE2	1:B:154:PRO:O	2.14	0.64
1:B:243:GLY:O	1:B:246:LYS:HB2	1.97	0.64
1:B:319:VAL:HG23	1:B:333:LEU:HD11	1.79	0.64
1:A:34:GLN:HG3	1:B:34:GLN:HG2	1.79	0.63
1:A:13:MET:CE	1:A:386:VAL:HG22	2.29	0.63
1:A:241:SER:HB2	1:A:344:ALA:HB2	1.81	0.63
1:B:338:ILE:HD11	1:B:368:VAL:CG2	2.26	0.63
1:B:234:LEU:HD11	1:B:263:LEU:HD11	1.81	0.62
1:A:319:VAL:HG23	1:A:333:LEU:CD1	2.29	0.62
1:A:34:GLN:HG2	1:B:34:GLN:HG3	1.82	0.62
1:B:264:THR:HG22	1:B:283:VAL:CG1	2.30	0.62
1:B:244:ILE:HD11	1:B:272:LEU:CD1	2.31	0.61
1:B:250:LEU:O	1:B:254:VAL:HG13	2.01	0.60
1:A:124:HIS:CE1	1:A:142:CYS:SG	2.85	0.60
1:A:34:GLN:CG	1:B:34:GLN:HG3	2.32	0.59
1:B:112:ARG:NH1	2:B:2015:HOH:O	2.35	0.59
1:B:13:MET:HE3	1:B:386:VAL:HG22	1.86	0.58
1:A:34:GLN:HG3	1:B:34:GLN:CG	2.33	0.57
1:B:33:ALA:HB1	1:B:43:VAL:HG11	1.87	0.56
1:B:319:VAL:HG23	1:B:333:LEU:CD1	2.35	0.56
1:A:244:ILE:HD12	1:A:244:ILE:N	2.20	0.55
1:A:319:VAL:HG23	1:A:333:LEU:HD11	1.87	0.55
1:A:34:GLN:CG	1:B:34:GLN:CG	2.84	0.55
1:B:234:LEU:HD12	1:B:263:LEU:HD11	1.89	0.54
1:A:33:ALA:HB1	1:A:43:VAL:HG11	1.89	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:272:LEU:CD2	1:B:276:LEU:HD11	2.37	0.53
1:B:248:ALA:N	1:B:249:PRO:CD	2.72	0.52
1:A:146:PRO:HB3	1:A:151:ASP:HB3	1.90	0.52
1:A:273:LEU:C	1:A:273:LEU:HD23	2.30	0.52
1:B:29:THR:HA	1:B:145:LEU:HD13	1.93	0.51
1:A:302:GLY:O	1:A:329:ASN:ND2	2.44	0.51
1:B:328:THR:O	1:B:329:ASN:HB2	2.09	0.51
1:A:297:ALA:HA	1:A:315:VAL:HG13	1.92	0.51
1:A:40:GLY:HA3	1:B:207:ARG:HH21	1.74	0.51
1:B:338:ILE:CD1	1:B:368:VAL:HG21	2.37	0.51
1:A:220:TRP:HZ2	1:A:283:VAL:HG11	1.75	0.50
1:B:191:GLU:OE2	1:B:199:ARG:HB2	2.12	0.50
1:A:319:VAL:HG23	1:A:333:LEU:HD12	1.93	0.49
1:A:300:HIS:CE1	1:A:319:VAL:HG22	2.47	0.49
1:B:228:ARG:NH2	1:B:357:ASP:OD1	2.37	0.49
1:A:265:LEU:HB3	1:A:269:ASP:OD1	2.13	0.49
1:B:54:VAL:HG11	1:B:61:ALA:HB2	1.94	0.48
1:A:241:SER:HB3	1:A:320:ILE:HG21	1.95	0.48
1:A:29:THR:HA	1:A:145:LEU:HD13	1.96	0.48
1:A:237:ILE:HG22	1:A:238:ASP:OD1	2.12	0.48
1:B:319:VAL:CG2	1:B:333:LEU:HD11	2.43	0.48
1:A:191:GLU:OE2	1:A:199:ARG:HB2	2.13	0.48
1:A:259:ALA:O	1:A:279:ASN:ND2	2.47	0.48
1:B:221:LEU:HB3	1:B:222:PRO:HD3	1.96	0.48
1:A:221:LEU:HB3	1:A:222:PRO:HD3	1.96	0.47
1:B:83:ASP:HB3	1:B:84:PRO:CA	2.44	0.47
1:B:225:ALA:O	1:B:227:ARG:N	2.47	0.47
1:A:338:ILE:HD11	1:A:368:VAL:CG2	2.44	0.47
1:A:127:THR:HG23	2:A:2007:HOH:O	2.14	0.47
1:A:241:SER:HB2	1:A:344:ALA:CB	2.43	0.47
1:B:207:ARG:HD2	1:B:373:SER:HA	1.97	0.46
1:B:322:HIS:N	1:B:322:HIS:ND1	2.63	0.46
1:B:189:SER:HB2	1:B:336:LEU:HD21	1.98	0.46
1:B:92:GLU:HB3	1:B:159:LEU:HD13	1.97	0.46
1:B:72:LYS:O	1:B:76:PRO:HA	2.16	0.46
1:A:14:ARG:HG2	1:A:42:GLU:HB3	1.98	0.45
1:B:181:VAL:HG12	1:B:182:ARG:N	2.32	0.45
1:B:239:ALA:HA	1:B:240:LEU:HA	1.70	0.45
1:A:13:MET:HE2	1:A:386:VAL:HA	1.97	0.44
1:A:147:LEU:HD12	1:A:148:GLY:N	2.31	0.44
1:B:244:ILE:CD1	1:B:272:LEU:HD11	2.39	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:185:THR:HA	1:A:206:MET:O	2.18	0.43
1:B:83:ASP:HB3	1:B:84:PRO:HA	2.00	0.43
1:A:147:LEU:HD12	1:A:147:LEU:C	2.38	0.43
1:B:244:ILE:CD1	1:B:272:LEU:CD1	2.96	0.43
1:A:338:ILE:HD11	1:A:368:VAL:HG21	2.00	0.42
1:B:233:THR:O	1:B:301:HIS:CE1	2.71	0.42
1:B:248:ALA:HB3	1:B:249:PRO:HD3	2.00	0.42
1:B:83:ASP:CB	1:B:84:PRO:HA	2.49	0.42
1:A:317:GLN:O	1:A:339:GLY:HA3	2.19	0.42
1:A:220:TRP:CZ2	1:A:283:VAL:HG21	2.54	0.42
1:A:250:LEU:HD13	1:A:347:LEU:HG	2.02	0.41
1:A:246:LYS:HD3	1:A:246:LYS:HA	1.80	0.41
1:B:143:VAL:HG21	1:B:385:LEU:HD22	2.02	0.41
1:B:328:THR:N	1:B:330:ARG:HH11	2.18	0.41
1:A:238:ASP:OD1	1:A:238:ASP:N	2.53	0.41
1:B:185:THR:HA	1:B:206:MET:O	2.20	0.41
1:B:250:LEU:HD13	1:B:347:LEU:HG	2.02	0.41
1:B:328:THR:N	1:B:330:ARG:NH1	2.69	0.41
1:A:244:ILE:H	1:A:244:ILE:CD1	2.26	0.40
1:B:83:ASP:N	1:B:84:PRO:HA	2.36	0.40
1:B:207:ARG:CD	1:B:373:SER:HA	2.51	0.40
1:B:102:VAL:O	1:B:105:VAL:HG22	2.22	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	354/400 (88%)	341 (96%)	13 (4%)	0	100	100
1	B	363/400 (91%)	349 (96%)	14 (4%)	0	100	100
All	All	717/800 (90%)	690 (96%)	27 (4%)	0	100	100

There are no Ramachandran outliers to report.

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	272/303 (90%)	259 (95%)	13 (5%)	25	49
1	B	276/303 (91%)	261 (95%)	15 (5%)	22	44
All	All	548/606 (90%)	520 (95%)	28 (5%)	24	46

All (28) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	34	GLN
1	A	42	GLU
1	A	121	LEU
1	A	145	LEU
1	A	151	ASP
1	A	166	LYS
1	A	228	ARG
1	A	238	ASP
1	A	293	GLU
1	A	304	SER
1	A	328	THR
1	A	362	ARG
1	A	363	GLU
1	B	12	SER
1	B	34	GLN
1	B	87	SER
1	B	145	LEU
1	B	166	LYS
1	B	227	ARG
1	B	228	ARG
1	B	246	LYS
1	B	272	LEU
1	B	293	GLU
1	B	315	VAL
1	B	330	ARG

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Mol	Chain	Res	Type
1	B	331	ASP
1	B	334	THR
1	B	362	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (3) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	124	HIS
1	A	326	GLN
1	B	301	HIS

5.3.3 RNA ⓘ

There are no RNA molecules in this entry.

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

2 non-standard protein/DNA/RNA residues 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	$\#\|Z\| > 2$
1	MLY	B	384	1	9,10,11	0.54	0	6,11,13	1.30	1 (16%)
1	MLY	A	384	1	9,10,11	0.59	0	6,11,13	0.64	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
1	MLY	B	384	1	-	3/8/9/11	-
1	MLY	A	384	1	-	4/8/9/11	-

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	B	384	MLY	CD-CE-NZ	-2.89	106.23	113.71

There are no chirality outliers.

All (7) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	A	384	MLY	C-CA-CB-CG
1	A	384	MLY	CD-CE-NZ-CH1
1	A	384	MLY	CD-CE-NZ-CH2
1	B	384	MLY	CG-CD-CE-NZ
1	A	384	MLY	CE-CD-CG-CB
1	B	384	MLY	C-CA-CB-CG
1	B	384	MLY	CE-CD-CG-CB

There are no ring outliers.

No monomer is involved in short contacts.

5.5 Carbohydrates ⓘ

There are no monosaccharides in this entry.

5.6 Ligand geometry ⓘ

There are no ligands in this entry.

5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

There are no chain breaks in this entry.

6 Fit of model and data

6.1 Protein, DNA and RNA chains

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

Mol	Chain	Analysed	<RSRZ>	#RSRZ>2			OWAB(Å^2)	Q<0.9
1	A	361/400 (90%)	0.28	13 (3%)	42	35	25, 47, 87, 123	0
1	B	369/400 (92%)	0.37	18 (4%)	29	23	29, 56, 91, 110	0
All	All	730/800 (91%)	0.33	31 (4%)	36	29	25, 51, 91, 123	0

All (31) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	241	SER	7.4
1	A	244	ILE	5.8
1	A	326	GLN	5.3
1	A	238	ASP	4.7
1	B	89	GLY	4.5
1	A	236	SER	4.2
1	A	93	GLY	3.9
1	B	333	LEU	3.4
1	A	237	ILE	3.3
1	B	241	SER	3.3
1	B	323	GLY	3.1
1	B	94	PHE	2.9
1	A	242	GLY	2.9
1	B	77	ASP	2.8
1	B	331	ASP	2.8
1	A	92	GLU	2.8
1	B	136	ALA	2.7
1	B	90	LEU	2.6
1	A	162	ARG	2.6
1	A	225	ALA	2.6
1	B	334	THR	2.5
1	B	118	ARG	2.3
1	B	363	GLU	2.2
1	B	332	VAL	2.2

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Mol	Chain	Res	Type	RSRZ
1	B	152	SER	2.2
1	B	338	ILE	2.2
1	B	84	PRO	2.1
1	A	152	SER	2.1
1	B	133	LEU	2.1
1	B	138	LEU	2.0
1	A	91	GLY	2.0

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

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, 95^{th} 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
1	MLY	B	384	11/12	0.94	0.17	46,49,52,53	0
1	MLY	A	384	11/12	0.97	0.20	36,39,43,43	0

6.3 Carbohydrates ⓘ

There are no monosaccharides in this entry.

6.4 Ligands ⓘ

There are no ligands in this entry.

6.5 Other polymers ⓘ

There are no such residues in this entry.