



Full wwPDB X-ray Structure Validation Report ⓘ

Apr 1, 2019 – 04:52 PM EDT

PDB ID : 6HS4
Title : Crystal structure of Ebolavirus glycoprotein in complex with inhibitor 118
Authors : Ren, J.; Zhao, Y.; Stuart, D.I.
Deposited on : 2018-09-28
Resolution : 2.05 Å(reported)

This is a Full wwPDB X-ray Structure Validation Report for a publicly released PDB entry.

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

<https://www.wwpdb.org/validation/2017/XrayValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

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

MolProbity : 4.02b-467
Mogul : 1.8.0 (224370), CSD as540be (2019)
Xtriage (Phenix) : 1.13
EDS : rb-20031633
Percentile statistics : 20171227.v01 (using entries in the PDB archive December 27th 2017)
Refmac : 5.8.0158
CCP4 : 7.0 (Gargrove)
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : rb-20031633

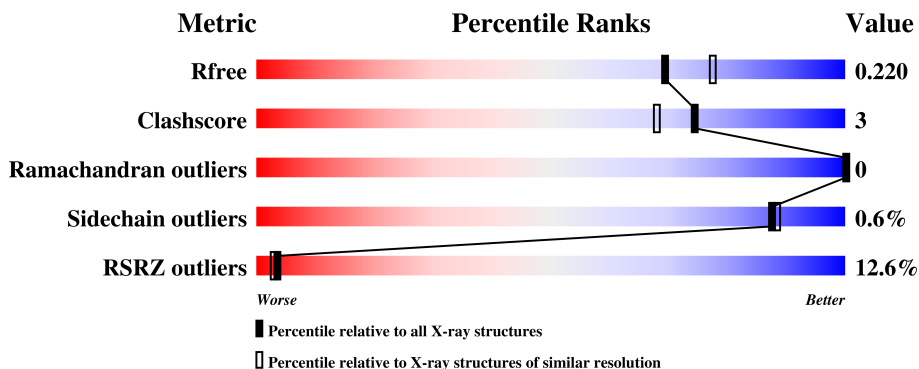
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.05 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}	111664	1449 (2.04-2.04)
Clashscore	122126	1524 (2.04-2.04)
Ramachandran outliers	120053	1512 (2.04-2.04)
Sidechain outliers	120020	1512 (2.04-2.04)
RSRZ outliers	108989	1429 (2.04-2.04)

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 on the lower bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria. 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 $\leq 5\%$. 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	331	 8% 72% 6% 22%
2	B	168	 13% 70% 7% 23%

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
3	NAG	A	603	-	-	-	X
3	NAG	A	604	-	-	-	X
3	NAG	B	701	-	-	-	X
8	MAN	B	706	-	-	-	X

2 Entry composition [i](#)

There are 9 unique types of molecules in this entry. The entry contains 3416 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 Envelope glycoprotein,GP1,Envelope glycoprotein.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	258	2011	1282	339	385	5	0	2	0

There are 6 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	28	GLU	-	expression tag	UNP Q05320
A	29	THR	-	expression tag	UNP Q05320
A	30	GLY	-	expression tag	UNP Q05320
A	31	ARG	-	expression tag	UNP Q05320
A	42	ALA	THR	engineered mutation	UNP Q05320
A	479	SER	ASN	conflict	UNP Q05320

- Molecule 2 is a protein called Envelope glycoprotein.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
2	B	130	1027	656	176	189	6	0	0	0

There are 38 discrepancies between the modelled and reference sequences:

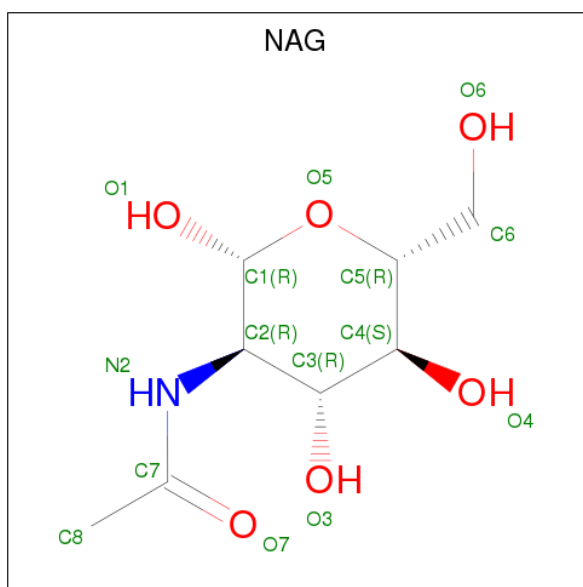
Chain	Residue	Modelled	Actual	Comment	Reference
B	613	ALA	HIS	engineered mutation	UNP Q05320
B	633	GLY	-	expression tag	UNP Q05320
B	634	SER	-	expression tag	UNP Q05320
B	635	GLY	-	expression tag	UNP Q05320
B	636	TYR	-	expression tag	UNP Q05320
B	637	ILE	-	expression tag	UNP Q05320
B	638	PRO	-	expression tag	UNP Q05320
B	639	GLU	-	expression tag	UNP Q05320
B	640	ALA	-	expression tag	UNP Q05320
B	641	PRO	-	expression tag	UNP Q05320

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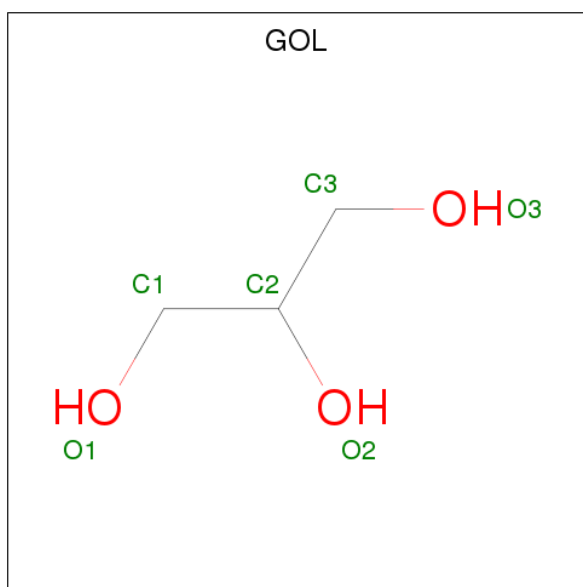
Chain	Residue	Modelled	Actual	Comment	Reference
B	642	ARG	-	expression tag	UNP Q05320
B	643	ASP	-	expression tag	UNP Q05320
B	644	GLY	-	expression tag	UNP Q05320
B	645	GLN	-	expression tag	UNP Q05320
B	646	ALA	-	expression tag	UNP Q05320
B	647	TYR	-	expression tag	UNP Q05320
B	648	VAL	-	expression tag	UNP Q05320
B	649	ARG	-	expression tag	UNP Q05320
B	650	LYS	-	expression tag	UNP Q05320
B	651	ASP	-	expression tag	UNP Q05320
B	652	GLY	-	expression tag	UNP Q05320
B	653	GLU	-	expression tag	UNP Q05320
B	654	TRP	-	expression tag	UNP Q05320
B	655	VAL	-	expression tag	UNP Q05320
B	656	LEU	-	expression tag	UNP Q05320
B	657	LEU	-	expression tag	UNP Q05320
B	658	SER	-	expression tag	UNP Q05320
B	659	THR	-	expression tag	UNP Q05320
B	660	PHE	-	expression tag	UNP Q05320
B	661	LEU	-	expression tag	UNP Q05320
B	662	GLY	-	expression tag	UNP Q05320
B	663	THR	-	expression tag	UNP Q05320
B	664	HIS	-	expression tag	UNP Q05320
B	665	HIS	-	expression tag	UNP Q05320
B	666	HIS	-	expression tag	UNP Q05320
B	667	HIS	-	expression tag	UNP Q05320
B	668	HIS	-	expression tag	UNP Q05320
B	669	HIS	-	expression tag	UNP Q05320

- Molecule 3 is N-ACETYL-D-GLUCOSAMINE (three-letter code: NAG) (formula: C₈H₁₅NO₆).



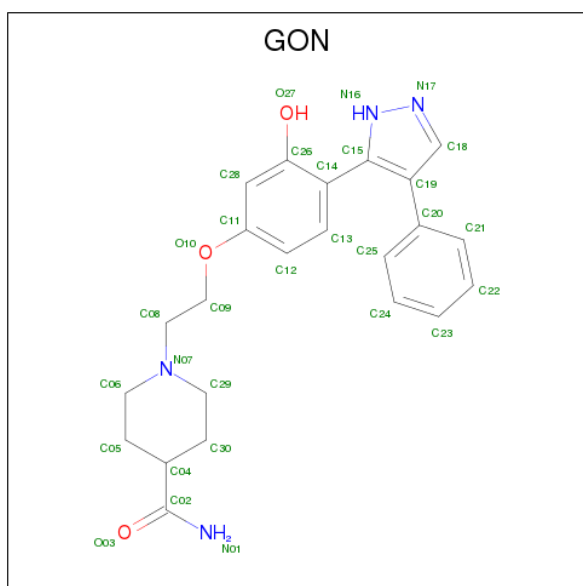
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
			Total	C	N	O		
3	A	1	14	8	1	5	0	0
3	A	1	14	8	1	5	0	0
3	A	1	14	8	1	5	0	0
3	A	1	14	8	1	5	0	0
3	B	1	14	8	1	5	0	0
3	B	1	14	8	1	5	0	0
3	B	1	14	8	1	5	0	0

- Molecule 4 is GLYCEROL (three-letter code: GOL) (formula: C₃H₈O₃).



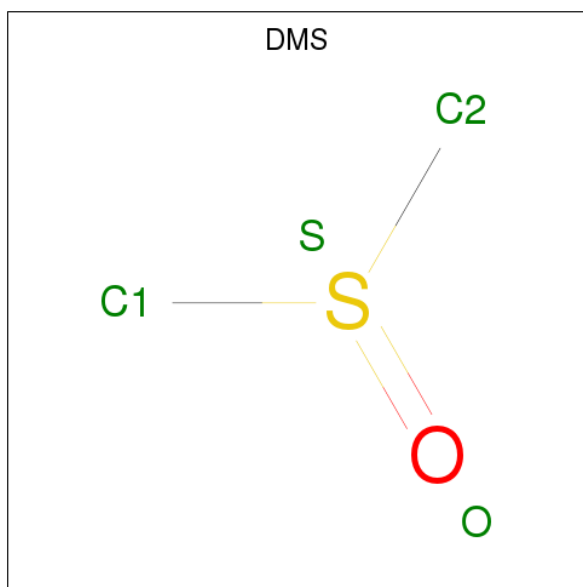
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	1	Total C O 6 3 3	0	0
4	A	1	Total C O 6 3 3	0	0
4	B	1	Total C O 6 3 3	0	0

- Molecule 5 is 1-[2-[3-oxidanyl-4-(4-phenyl-1 {H}-pyrazol-5-yl)phenoxy]ethyl]piperidine-4-carboxamide (three-letter code: GON) (formula: $C_{23}H_{26}N_4O_3$).



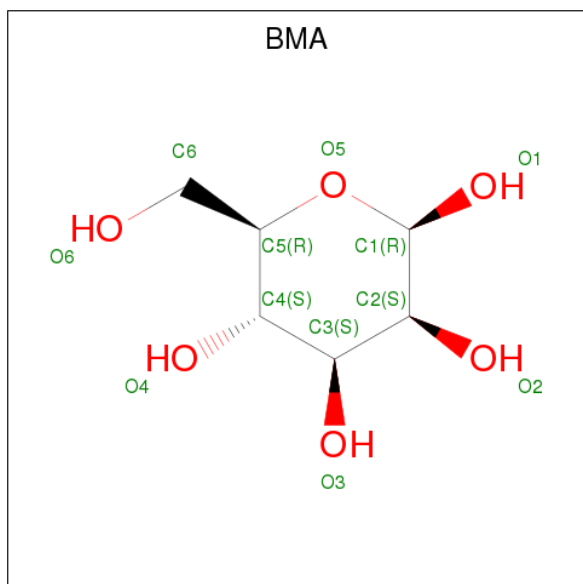
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
5	A	1	Total	C	N	O	0	0
			30	23	4	3		
5	A	1	Total	C	N	O	0	0
			30	23	4	3		

- Molecule 6 is DIMETHYL SULFOXIDE (three-letter code: DMS) (formula: C₂H₆OS).



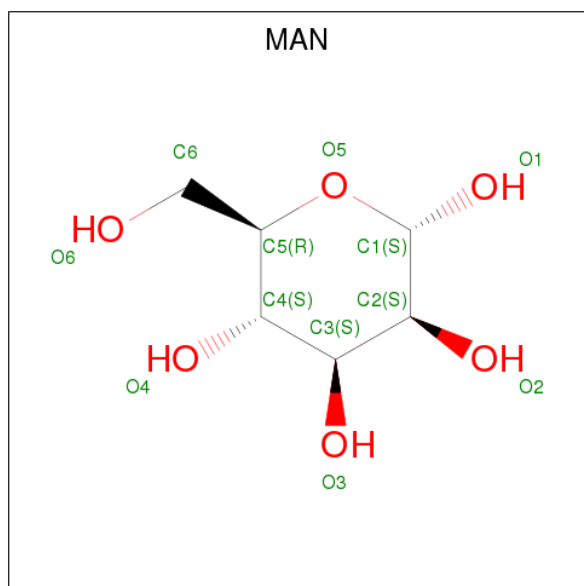
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
6	A	1	Total	C	O	S	0	0
			4	2	1	1		

- Molecule 7 is BETA-D-MANNOSE (three-letter code: BMA) (formula: C₆H₁₂O₆).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
7	B	1	Total	C	O	0	0
			11	6	5		

- Molecule 8 is ALPHA-D-MANNOSE (three-letter code: MAN) (formula: C₆H₁₂O₆).



Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
8	B	1	Total	C	O	0	0
			11	6	5		
8	B	1	Total	C	O	0	0
			11	6	5		

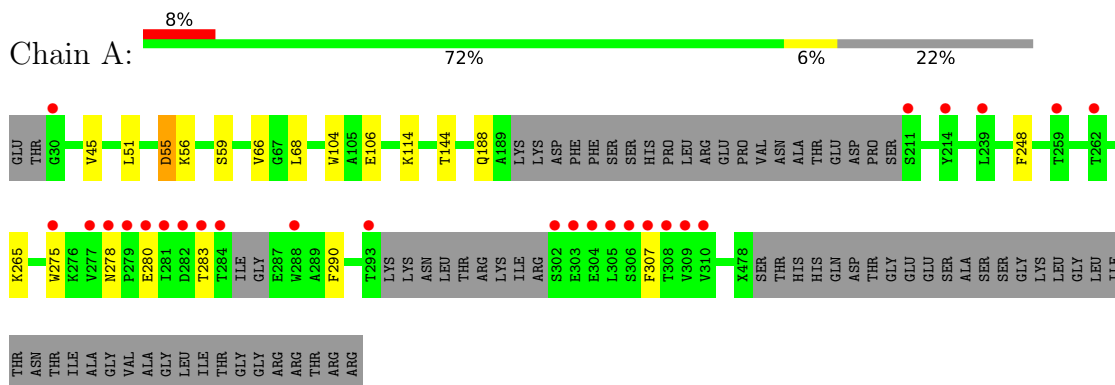
- Molecule 9 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
9	A	102	Total	O	0	0
			102	102		
9	B	63	Total	O	0	0
			63	63		

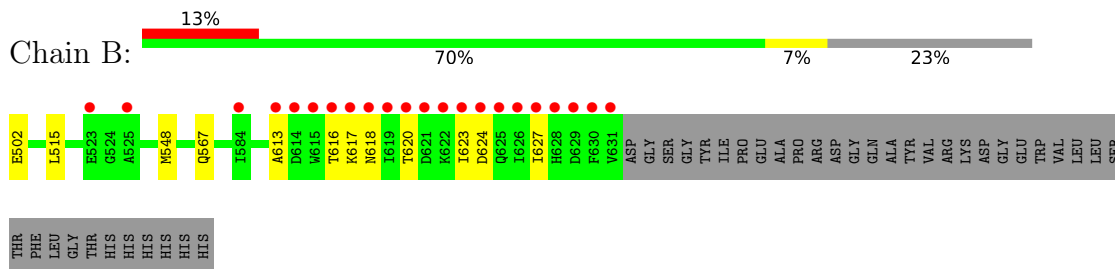
3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA and DNA 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: Envelope glycoprotein, GP1, Envelope glycoprotein



- Molecule 2: Envelope glycoprotein



4 Data and refinement statistics

Property	Value	Source
Space group	H 3 2	Depositor
Cell constants a, b, c, α , β , γ	114.16Å 114.16Å 305.46Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	57.08 – 2.05 57.08 – 2.05	Depositor EDS
% Data completeness (in resolution range)	97.6 (57.08-2.05) 97.8 (57.08-2.05)	Depositor EDS
R_{merge}	0.06	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	1.51 (at 2.05Å)	Xtrriage
Refinement program	PHENIX (1.13_2998: ???)	Depositor
R, R_{free}	0.190 , 0.220 0.192 , 0.220	Depositor DCC
R_{free} test set	2289 reflections (4.83%)	wwPDB-VP
Wilson B-factor (Å ²)	42.3	Xtrriage
Anisotropy	0.295	Xtrriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.34 , 58.5	EDS
L-test for twinning ²	$\langle L \rangle = 0.51$, $\langle L^2 \rangle = 0.34$	Xtrriage
Estimated twinning fraction	No twinning to report.	Xtrriage
F_o, F_c correlation	0.96	EDS
Total number of atoms	3416	wwPDB-VP
Average B, all atoms (Å ²)	67.0	wwPDB-VP

Xtrriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.13% of the height of the origin peak. No significant pseudotranslation is detected.*

¹Intensities estimated from amplitudes.

²Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ 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, BMA, NAG, DMS, GON, MAN

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	0.32	0/2023	0.51	0/2748
2	B	0.31	0/1052	0.48	0/1434
All	All	0.32	0/3075	0.50	0/4182

There are no bond length outliers.

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	2011	0	1920	14	0
2	B	1027	0	996	9	0
3	A	56	0	52	0	0
3	B	42	0	37	1	0
4	A	12	0	16	1	0
4	B	6	0	8	1	0
5	A	60	0	0	3	0
6	A	4	0	6	1	0
7	B	11	0	8	0	0
8	B	22	0	20	0	0
9	A	102	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
9	B	63	0	0	0	0
All	All	3416	0	3063	22	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 3.

All (22) 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:106:GLU:HG3	1:A:290:PHE:CD1	2.25	0.71
1:A:248:PHE:HA	1:A:283:THR:HG21	1.74	0.67
2:B:617:LYS:HA	2:B:620:THR:HG22	1.86	0.58
5:A:608:GON:C18	2:B:548:MET:SD	2.93	0.57
1:A:45:VAL:HG13	2:B:502:GLU:HB2	1.86	0.56
2:B:613:ALA:O	2:B:616:THR:OG1	2.22	0.55
5:A:608:GON:C23	2:B:515:LEU:HD21	2.38	0.54
1:A:66[A]:VAL:HG11	5:A:608:GON:C23	2.42	0.50
1:A:104:TRP:HB2	4:A:605:GOL:H2	1.93	0.50
1:A:66[A]:VAL:HG12	1:A:68:LEU:HD22	1.93	0.50
1:A:278:ASN:ND2	1:A:280:GLU:OE2	2.45	0.49
2:B:567:GLN:HB2	4:B:702:GOL:H11	1.94	0.49
2:B:618:ASN:OD1	3:B:701:NAG:N2	2.46	0.48
1:A:265:LYS:HG3	1:A:307:PHE:CD2	2.50	0.45
1:A:56:LYS:HD2	1:A:188:GLN:OE1	2.18	0.44
1:A:275:TRP:CZ3	1:A:307:PHE:HB3	2.54	0.43
1:A:114:LYS:O	1:A:144:THR:HA	2.18	0.43
1:A:51:LEU:HD22	1:A:55:ASP:OD2	2.18	0.43
1:A:56:LYS:H	6:A:609:DMS:H12	1.85	0.42
1:A:278:ASN:OD1	1:A:278:ASN:N	2.41	0.41
2:B:623:ILE:HG13	2:B:624:ASP:N	2.36	0.40
2:B:623:ILE:O	2:B:627:ILE:HG22	2.22	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	A	244/331 (74%)	237 (97%)	7 (3%)	0	100	100
2	B	128/168 (76%)	124 (97%)	4 (3%)	0	100	100
All	All	372/499 (74%)	361 (97%)	11 (3%)	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	214/273 (78%)	212 (99%)	2 (1%)	81	81
2	B	108/139 (78%)	108 (100%)	0	100	100
All	All	322/412 (78%)	320 (99%)	2 (1%)	87	88

All (2) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	55	ASP
1	A	59	SER

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (1) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	107	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](#)

There are no carbohydrates in this entry.

5.6 Ligand geometry [i](#)

16 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	NAG	A	601	1	14,14,15	0.23	0	17,19,21	0.51	0
3	NAG	A	602	1	14,14,15	0.32	0	17,19,21	0.48	0
3	NAG	A	603	1	14,14,15	0.98	1 (7%)	17,19,21	1.11	1 (5%)
3	NAG	A	604	1	14,14,15	0.29	0	17,19,21	0.43	0
4	GOL	A	605	-	5,5,5	1.09	0	5,5,5	0.93	0
4	GOL	A	606	-	5,5,5	0.85	0	5,5,5	0.95	0
5	GON	A	607	-	31,33,33	3.12	8 (25%)	39,45,45	1.16	5 (12%)
5	GON	A	608	-	31,33,33	3.47	8 (25%)	39,45,45	1.44	6 (15%)
6	DMS	A	609	-	3,3,3	0.69	0	3,3,3	0.36	0
3	NAG	B	701	2	14,14,15	0.51	0	17,19,21	0.57	0
4	GOL	B	702	-	5,5,5	1.04	0	5,5,5	0.98	0
3	NAG	B	703	3,2	14,14,15	0.20	0	17,19,21	0.67	1 (5%)
3	NAG	B	704	3,7	14,14,15	0.15	0	17,19,21	0.59	0
7	BMA	B	705	8,3	11,11,12	0.54	0	15,15,17	0.90	0
8	MAN	B	706	7	11,11,12	0.79	0	15,15,17	1.18	2 (13%)
8	MAN	B	707	7	11,11,12	0.76	0	15,15,17	1.09	2 (13%)

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
3	NAG	A	601	1	-	0/6/23/26	0/1/1/1
3	NAG	A	602	1	-	0/6/23/26	0/1/1/1
3	NAG	A	603	1	-	0/6/23/26	0/1/1/1
3	NAG	A	604	1	-	0/6/23/26	0/1/1/1
4	GOL	A	605	-	-	0/4/4/4	0/0/0/0
4	GOL	A	606	-	-	0/4/4/4	0/0/0/0
5	GON	A	607	-	-	0/16/28/28	0/4/4/4
5	GON	A	608	-	-	0/16/28/28	0/4/4/4
6	DMS	A	609	-	-	0/0/0/0	0/0/0/0
3	NAG	B	701	2	-	0/6/23/26	0/1/1/1
4	GOL	B	702	-	-	0/4/4/4	0/0/0/0
3	NAG	B	703	3,2	-	0/6/23/26	0/1/1/1
3	NAG	B	704	3,7	-	0/6/23/26	0/1/1/1
7	BMA	B	705	8,3	-	0/2/19/22	0/1/1/1
8	MAN	B	706	7	-	0/2/19/22	1/1/1/1
8	MAN	B	707	7	-	0/2/19/22	0/1/1/1

All (17) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
5	A	608	GON	C14-C15	-12.07	1.37	1.49
5	A	608	GON	C08-N07	-11.16	1.21	1.47
5	A	607	GON	C08-N07	-10.85	1.22	1.47
5	A	607	GON	C14-C15	-9.71	1.39	1.49
5	A	608	GON	C19-C20	-6.00	1.38	1.49
5	A	607	GON	C19-C20	-5.26	1.40	1.49
5	A	608	GON	C30-C04	-3.18	1.44	1.53
5	A	608	GON	C05-C04	-3.04	1.45	1.53
5	A	607	GON	C30-C04	-2.92	1.45	1.53
5	A	607	GON	C05-C04	-2.91	1.45	1.53
5	A	607	GON	O03-C02	-2.50	1.19	1.23
5	A	608	GON	O03-C02	-2.46	1.19	1.23
5	A	607	GON	O27-C26	2.15	1.40	1.36
5	A	608	GON	O27-C26	2.29	1.41	1.36
3	A	603	NAG	O5-C1	3.36	1.49	1.43
5	A	607	GON	C02-N01	5.02	1.45	1.32
5	A	608	GON	C02-N01	5.14	1.46	1.32

All (17) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	A	608	GON	C26-C14-C15	-3.76	117.39	121.38
5	A	608	GON	C28-C26-C14	-2.54	118.46	120.85

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
8	B	707	MAN	O2-C2-C3	-2.13	106.01	110.16
8	B	706	MAN	O2-C2-C3	-2.12	106.02	110.16
5	A	608	GON	C20-C19-C15	2.00	131.77	127.43
3	B	703	NAG	C1-O5-C5	2.12	115.08	112.20
5	A	607	GON	C14-C15-N16	2.23	124.58	120.82
5	A	608	GON	C06-C05-C04	2.26	114.19	110.41
5	A	608	GON	C13-C14-C26	2.26	121.81	117.43
5	A	607	GON	C08-N07-C29	2.40	117.37	111.23
5	A	607	GON	C05-C04-C30	2.64	115.63	109.97
8	B	707	MAN	C1-O5-C5	2.67	115.84	112.20
5	A	607	GON	C06-C05-C04	2.69	114.92	110.41
5	A	607	GON	C29-C30-C04	2.78	115.06	110.41
5	A	608	GON	C05-C04-C30	2.84	116.07	109.97
8	B	706	MAN	C1-O5-C5	3.13	116.46	112.20
3	A	603	NAG	C1-O5-C5	4.33	118.08	112.20

There are no chirality outliers.

There are no torsion outliers.

All (1) ring outliers are listed below:

Mol	Chain	Res	Type	Atoms
8	B	706	MAN	C1-C2-C3-C4-C5-O5

5 monomers are involved in 7 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
4	A	605	GOL	1	0
5	A	608	GON	3	0
6	A	609	DMS	1	0
3	B	701	NAG	1	0
4	B	702	GOL	1	0

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
1	A	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	A	310:VAL	C	471:UNK	N	10.87

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	250/331 (75%)	0.62	26 (10%) 6 7	32, 52, 127, 164	0
2	B	130/168 (77%)	1.23	22 (16%) 1 1	34, 47, 159, 180	0
All	All	380/499 (76%)	0.83	48 (12%) 3 3	32, 50, 145, 180	0

All (48) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
2	B	623	ILE	10.4
2	B	626	ILE	10.1
2	B	630	PHE	9.4
2	B	628	HIS	7.8
2	B	631	VAL	7.7
2	B	629	ASP	7.5
2	B	621	ASP	7.3
2	B	627	ILE	7.1
1	A	307	PHE	6.9
2	B	620	THR	6.7
1	A	309	VAL	6.7
2	B	619	ILE	6.6
2	B	625	GLN	6.6
1	A	284	THR	6.1
2	B	617	LYS	6.0
1	A	283	THR	5.9
1	A	305	LEU	5.2
1	A	308	THR	5.0
2	B	613	ALA	5.0
1	A	293	THR	4.9
2	B	615	TRP	4.8
1	A	304	GLU	4.8
1	A	288	TRP	4.7
1	A	211	SER	4.6

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Mol	Chain	Res	Type	RSRZ
1	A	303	GLU	4.6
1	A	278	ASN	4.2
2	B	618	ASN	4.1
2	B	616	THR	4.0
2	B	624	ASP	3.9
1	A	310	VAL	3.9
1	A	281	ILE	3.8
1	A	282	ASP	3.8
1	A	30	GLY	3.7
1	A	214	TYR	3.7
1	A	280	GLU	3.4
2	B	525	ALA	3.4
2	B	622	LYS	3.3
1	A	302	SER	3.3
2	B	523	GLU	3.3
1	A	306	SER	2.9
1	A	279	PRO	2.8
1	A	277	VAL	2.6
1	A	262	THR	2.4
1	A	259	THR	2.3
2	B	584	ILE	2.2
2	B	614	ASP	2.1
1	A	239	LEU	2.1
1	A	275	TRP	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 carbohydrates 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
8	MAN	B	706	11/12	0.49	0.49	140,147,149,151	0
8	MAN	B	707	11/12	0.53	0.36	122,133,139,139	0
6	DMS	A	609	4/4	0.65	0.34	144,144,145,155	0
7	BMA	B	705	11/12	0.67	0.21	111,116,126,133	0
4	GOL	A	605	6/6	0.69	0.29	78,81,82,84	0
3	NAG	A	603	14/15	0.70	0.63	131,143,146,146	0
5	GON	A	608	30/30	0.70	0.26	78,90,115,119	0
3	NAG	A	604	14/15	0.72	0.53	103,123,127,130	0
3	NAG	B	701	14/15	0.72	0.67	114,138,146,147	0
4	GOL	A	606	6/6	0.72	0.29	80,88,91,93	0
5	GON	A	607	30/30	0.78	0.24	68,91,148,149	0
3	NAG	B	704	14/15	0.86	0.17	74,88,93,105	0
3	NAG	A	602	14/15	0.87	0.25	87,105,115,115	0
3	NAG	A	601	14/15	0.93	0.14	55,71,77,77	0
4	GOL	B	702	6/6	0.94	0.17	52,64,71,75	0
3	NAG	B	703	14/15	0.96	0.11	34,42,49,62	0

6.5 Other polymers [i](#)

There are no such residues in this entry.