



Full wwPDB X-ray Structure Validation Report ⓘ

May 22, 2020 – 03:22 pm BST

PDB ID : 4IQ1
Title : Crystal structure of glutathione s-transferase MHA_0454 (TARGET EFI-507015) FROM *Mannheimia haemolytica*, SUBSTRATE-FREE
Authors : Patskovsky, Y.; Toro, R.; Bhosle, R.; Hillerich, B.; Seidel, R.D.; Washington, E.; Scott Glenn, A.; Chowdhury, S.; Evans, B.; Hammonds, J.; Zencheck, W.D.; Imker, H.J.; AL Obaidi, N.F.; Stead, M.; Love, J.; Gerlt, J.A.; Armstrong, R.N.; Almo, S.C.; Enzyme Function Initiative (EFI)
Deposited on : 2013-01-10
Resolution : 1.85 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 : 1.8.5 (274361), CSD as541be (2020)
Xtriage (Phenix) : 1.13
EDS : 2.11
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) : 2.11

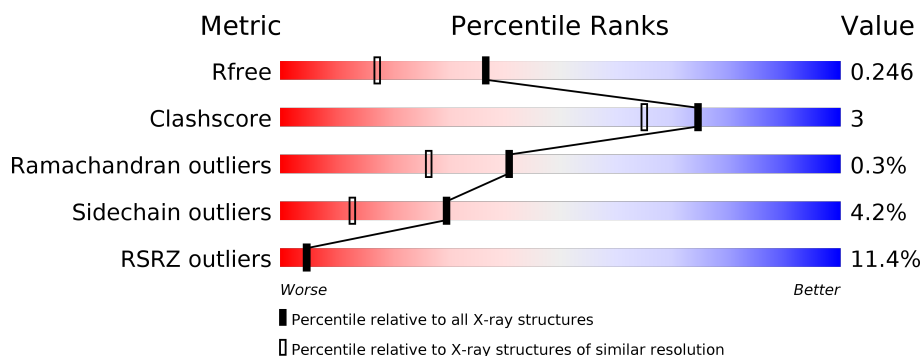
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 1.85 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	2469 (1.86-1.86)
Clashscore	141614	2625 (1.86-1.86)
Ramachandran outliers	138981	2592 (1.86-1.86)
Sidechain outliers	138945	2592 (1.86-1.86)
RSRZ outliers	127900	2436 (1.86-1.86)

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 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 $\leq 5\%$. 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	231	<div> <div>2%</div> <div> <div></div> <div>84%</div> <div>6%</div> <div>10%</div> </div> </div>
1	B	231	<div> <div>%</div> <div> <div></div> <div>87%</div> <div>5%</div> <div>7%</div> </div> </div>
1	C	231	<div> <div>28%</div> <div> <div></div> <div>74%</div> <div>16%</div> <div>9%</div> </div> </div>

2 Entry composition

There are 4 unique types of molecules in this entry. The entry contains 5484 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 Glutathione transferase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	209	Total	C	N	O	S	0	2	0
			1684	1081	289	309	5			
1	B	214	Total	C	N	O	S	0	2	0
			1728	1110	295	318	5			
1	C	211	Total	C	N	O	S	0	2	0
			1676	1074	289	308	5			

There are 66 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-21	MET	-	EXPRESSION TAG	UNP A7JQU5
A	-20	HIS	-	EXPRESSION TAG	UNP A7JQU5
A	-19	HIS	-	EXPRESSION TAG	UNP A7JQU5
A	-18	HIS	-	EXPRESSION TAG	UNP A7JQU5
A	-17	HIS	-	EXPRESSION TAG	UNP A7JQU5
A	-16	HIS	-	EXPRESSION TAG	UNP A7JQU5
A	-15	HIS	-	EXPRESSION TAG	UNP A7JQU5
A	-14	SER	-	EXPRESSION TAG	UNP A7JQU5
A	-13	SER	-	EXPRESSION TAG	UNP A7JQU5
A	-12	GLY	-	EXPRESSION TAG	UNP A7JQU5
A	-11	VAL	-	EXPRESSION TAG	UNP A7JQU5
A	-10	ASP	-	EXPRESSION TAG	UNP A7JQU5
A	-9	LEU	-	EXPRESSION TAG	UNP A7JQU5
A	-8	GLY	-	EXPRESSION TAG	UNP A7JQU5
A	-7	THR	-	EXPRESSION TAG	UNP A7JQU5
A	-6	GLU	-	EXPRESSION TAG	UNP A7JQU5
A	-5	ASN	-	EXPRESSION TAG	UNP A7JQU5
A	-4	LEU	-	EXPRESSION TAG	UNP A7JQU5
A	-3	TYR	-	EXPRESSION TAG	UNP A7JQU5
A	-2	PHE	-	EXPRESSION TAG	UNP A7JQU5
A	-1	GLN	-	EXPRESSION TAG	UNP A7JQU5
A	0	SER	-	EXPRESSION TAG	UNP A7JQU5
B	-21	MET	-	EXPRESSION TAG	UNP A7JQU5

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Chain	Residue	Modelled	Actual	Comment	Reference
B	-20	HIS	-	EXPRESSION TAG	UNP A7JQU5
B	-19	HIS	-	EXPRESSION TAG	UNP A7JQU5
B	-18	HIS	-	EXPRESSION TAG	UNP A7JQU5
B	-17	HIS	-	EXPRESSION TAG	UNP A7JQU5
B	-16	HIS	-	EXPRESSION TAG	UNP A7JQU5
B	-15	HIS	-	EXPRESSION TAG	UNP A7JQU5
B	-14	SER	-	EXPRESSION TAG	UNP A7JQU5
B	-13	SER	-	EXPRESSION TAG	UNP A7JQU5
B	-12	GLY	-	EXPRESSION TAG	UNP A7JQU5
B	-11	VAL	-	EXPRESSION TAG	UNP A7JQU5
B	-10	ASP	-	EXPRESSION TAG	UNP A7JQU5
B	-9	LEU	-	EXPRESSION TAG	UNP A7JQU5
B	-8	GLY	-	EXPRESSION TAG	UNP A7JQU5
B	-7	THR	-	EXPRESSION TAG	UNP A7JQU5
B	-6	GLU	-	EXPRESSION TAG	UNP A7JQU5
B	-5	ASN	-	EXPRESSION TAG	UNP A7JQU5
B	-4	LEU	-	EXPRESSION TAG	UNP A7JQU5
B	-3	TYR	-	EXPRESSION TAG	UNP A7JQU5
B	-2	PHE	-	EXPRESSION TAG	UNP A7JQU5
B	-1	GLN	-	EXPRESSION TAG	UNP A7JQU5
B	0	SER	-	EXPRESSION TAG	UNP A7JQU5
C	-21	MET	-	EXPRESSION TAG	UNP A7JQU5
C	-20	HIS	-	EXPRESSION TAG	UNP A7JQU5
C	-19	HIS	-	EXPRESSION TAG	UNP A7JQU5
C	-18	HIS	-	EXPRESSION TAG	UNP A7JQU5
C	-17	HIS	-	EXPRESSION TAG	UNP A7JQU5
C	-16	HIS	-	EXPRESSION TAG	UNP A7JQU5
C	-15	HIS	-	EXPRESSION TAG	UNP A7JQU5
C	-14	SER	-	EXPRESSION TAG	UNP A7JQU5
C	-13	SER	-	EXPRESSION TAG	UNP A7JQU5
C	-12	GLY	-	EXPRESSION TAG	UNP A7JQU5
C	-11	VAL	-	EXPRESSION TAG	UNP A7JQU5
C	-10	ASP	-	EXPRESSION TAG	UNP A7JQU5
C	-9	LEU	-	EXPRESSION TAG	UNP A7JQU5
C	-8	GLY	-	EXPRESSION TAG	UNP A7JQU5
C	-7	THR	-	EXPRESSION TAG	UNP A7JQU5
C	-6	GLU	-	EXPRESSION TAG	UNP A7JQU5
C	-5	ASN	-	EXPRESSION TAG	UNP A7JQU5
C	-4	LEU	-	EXPRESSION TAG	UNP A7JQU5
C	-3	TYR	-	EXPRESSION TAG	UNP A7JQU5
C	-2	PHE	-	EXPRESSION TAG	UNP A7JQU5
C	-1	GLN	-	EXPRESSION TAG	UNP A7JQU5

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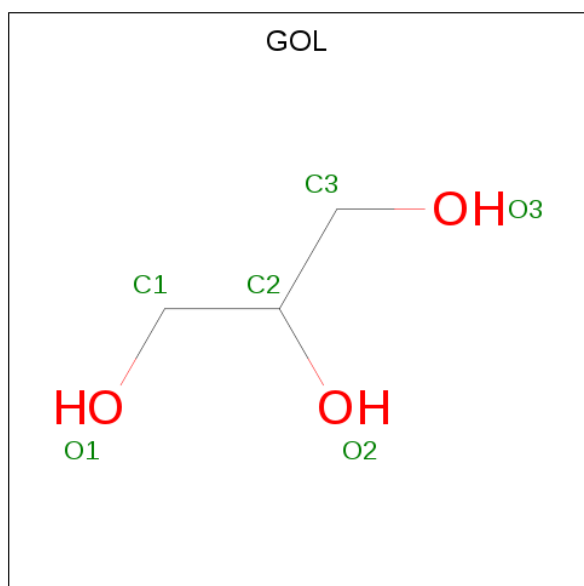
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Chain	Residue	Modelled	Actual	Comment	Reference
C	0	SER	-	EXPRESSION TAG	UNP A7JQU5

- Molecule 2 is CHLORIDE ION (three-letter code: CL) (formula: Cl).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
2	B	1	Total Cl 1 1	0	0
2	A	1	Total Cl 1 1	0	0

- Molecule 3 is GLYCEROL (three-letter code: GOL) (formula: C₃H₈O₃).



Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
3	A	1	Total C O 12 6 6	0	1

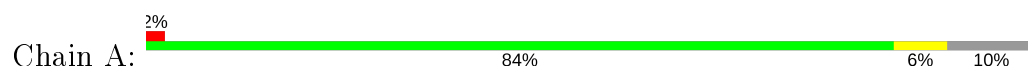
- Molecule 4 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	173	Total O 173 173	0	0
4	B	166	Total O 166 166	0	0
4	C	43	Total O 43 43	0	0

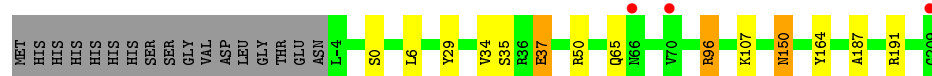
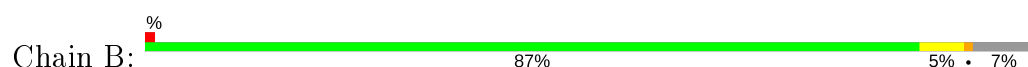
3 Residue-property plots [i](#)

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.

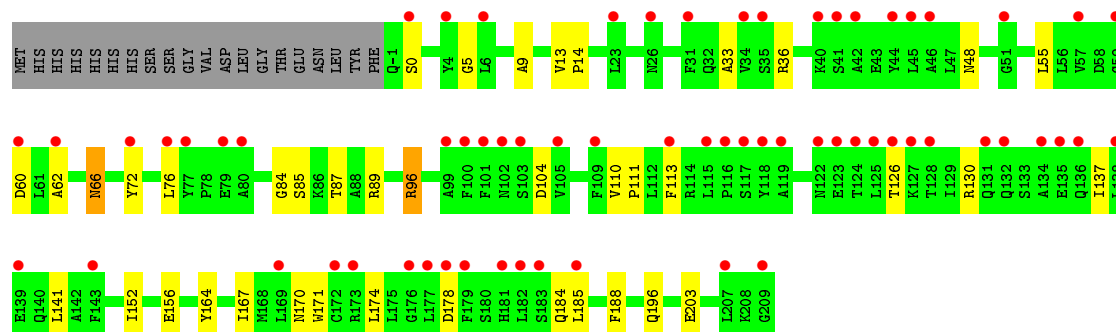
- Molecule 1: Glutathione transferase



- Molecule 1: Glutathione transferase



- Molecule 1: Glutathione transferase



4 Data and refinement statistics

Property	Value	Source
Space group	C 2 2 21	Depositor
Cell constants a, b, c, α , β , γ	66.02Å 81.78Å 288.65Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	37.66 – 1.85 37.63 – 1.85	Depositor EDS
% Data completeness (in resolution range)	91.2 (37.66-1.85) 91.2 (37.63-1.85)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	0.09	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.10 (at 1.85Å)	Xtriage
Refinement program	REFMAC 5.7.0025	Depositor
R, R_{free}	0.174 , 0.247 0.174 , 0.246	Depositor DCC
R_{free} test set	1882 reflections (3.07%)	wwPDB-VP
Wilson B-factor (Å ²)	27.6	Xtriage
Anisotropy	0.099	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.34 , 48.5	EDS
L-test for twinning ²	$\langle L \rangle = 0.46$, $\langle L^2 \rangle = 0.29$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.96	EDS
Total number of atoms	5484	wwPDB-VP
Average B, all atoms (Å ²)	38.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 4.55% 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 [i](#)

5.1 Standard geometry [i](#)

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

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	0.59	0/1728	0.68	1/2339 (0.0%)
1	B	0.62	0/1774	0.64	0/2400
1	C	0.51	0/1716	0.62	0/2323
All	All	0.57	0/5218	0.65	1/7062 (0.0%)

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	191	ARG	NE-CZ-NH1	5.14	122.87	120.30

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	A	1684	0	1665	6	0
1	B	1728	0	1695	8	0
1	C	1676	0	1639	21	0
2	A	1	0	0	0	0
2	B	1	0	0	0	0
3	A	12	0	16	0	0
4	A	173	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
4	B	166	0	0	0	0
4	C	43	0	0	2	0
All	All	5484	0	5015	32	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 (32) 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:C:13:VAL:HB	1:C:66:ASN:HD21	1.66	0.60
1:B:191:ARG:HH11	1:C:184:GLN:HE22	1.49	0.59
1:C:126:THR:O	1:C:130:ARG:HG2	2.10	0.51
1:C:9:ALA:HA	1:C:171:TRP:HZ2	1.75	0.51
1:C:110:VAL:N	1:C:111:PRO:HD2	2.26	0.50
1:B:187:ALA:HB1	1:C:184:GLN:NE2	2.26	0.50
1:C:196:GLN:HB2	4:C:311:HOH:O	2.10	0.50
1:C:72:TYR:CZ	1:C:76:LEU:HD11	2.47	0.50
1:C:84:GLY:O	1:C:85:SER:HB2	2.12	0.49
1:C:96:ARG:HD2	4:C:343:HOH:O	2.12	0.49
1:C:137:ILE:O	1:C:141:LEU:HG	2.14	0.48
1:C:13:VAL:HG21	1:C:164:TYR:CD2	2.47	0.48
1:C:14:PRO:HD3	1:C:66:ASN:ND2	2.29	0.47
1:C:185:LEU:O	1:C:188:PHE:HB3	2.14	0.47
1:C:48:ASN:HB2	1:C:55:LEU:HD22	1.97	0.47
1:A:50:ARG:HD2	1:A:50:ARG:HA	1.67	0.47
1:B:35:SER:OG	1:B:37:GLU:HG2	2.14	0.47
1:C:13:VAL:HB	1:C:66:ASN:ND2	2.30	0.47
1:C:5:GLY:O	1:C:33:ALA:HA	2.15	0.46
1:A:168:MET:HG2	1:A:171:TRP:CZ3	2.51	0.46
1:A:53:VAL:HB	1:A:54:PRO:HA	1.98	0.45
1:B:150:ASN:HA	1:C:152:ILE:HD11	1.99	0.45
1:B:96:ARG:HD3	1:B:96:ARG:C	2.38	0.45
1:C:55:LEU:HD11	1:C:62:ALA:HB1	2.00	0.44
1:A:14:PRO:HD3	1:A:66:ASN:OD1	2.18	0.43
1:C:167:ILE:O	1:C:170:ASN:HB3	2.19	0.43
1:B:0:SER:HB2	1:B:29:TYR:HA	2.01	0.43
1:B:6:LEU:HD23	1:B:34:VAL:O	2.19	0.43
1:C:84:GLY:O	1:C:156:GLU:N	2.42	0.42
1:B:50:ARG:HA	1:B:50:ARG:HD2	1.79	0.41
1:A:96:ARG:HD3	1:A:96:ARG:C	2.41	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:6:LEU:HD23	1:A:34:VAL:O	2.21	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	209/231 (90%)	208 (100%)	0	1 (0%)	29	15
1	B	214/231 (93%)	213 (100%)	0	1 (0%)	29	15
1	C	211/231 (91%)	199 (94%)	12 (6%)	0	100	100
All	All	634/693 (92%)	620 (98%)	12 (2%)	2 (0%)	41	26

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	65	GLN
1	B	65	GLN

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	177/194 (91%)	172 (97%)	5 (3%)	43	27
1	B	180/194 (93%)	175 (97%)	5 (3%)	43	27

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	C	172/194 (89%)	159 (92%)	13 (8%)	13	3
All	All	529/582 (91%)	506 (96%)	23 (4%)	30	12

All (23) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	26	ASN
1	A	60	ASP
1	A	96	ARG
1	A	107	LYS
1	A	164	TYR
1	B	37	GLU
1	B	96	ARG
1	B	107	LYS
1	B	150	ASN
1	B	164	TYR
1	C	0	SER
1	C	36[A]	ARG
1	C	36[B]	ARG
1	C	60	ASP
1	C	66	ASN
1	C	87	THR
1	C	89	ARG
1	C	96	ARG
1	C	104	ASP
1	C	113	PHE
1	C	174	LEU
1	C	178	ASP
1	C	203	GLU

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (7) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	132	GLN
1	A	184	GLN
1	B	150	ASN
1	B	190	GLN
1	C	66	ASN
1	C	184	GLN
1	C	204	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 ⓘ

There are no carbohydrates in this entry.

5.6 Ligand geometry ⓘ

Of 4 ligands modelled in this entry, 2 are monoatomic - leaving 2 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	$\# Z > 2$
3	GOL	A	302[B]	-	5,5,5	0.55	0	5,5,5	0.35	0
3	GOL	A	302[A]	-	5,5,5	0.37	0	5,5,5	0.28	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
3	GOL	A	302[B]	-	-	4/4/4/4	-
3	GOL	A	302[A]	-	-	4/4/4/4	-

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (8) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	A	302[B]	GOL	C1-C2-C3-O3
3	A	302[B]	GOL	O2-C2-C3-O3
3	A	302[A]	GOL	O1-C1-C2-O2
3	A	302[A]	GOL	O1-C1-C2-C3
3	A	302[A]	GOL	C1-C2-C3-O3
3	A	302[B]	GOL	O1-C1-C2-C3
3	A	302[B]	GOL	O1-C1-C2-O2
3	A	302[A]	GOL	O2-C2-C3-O3

There are no ring outliers.

No monomer is involved in short contacts.

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(Å ²)	Q<0.9
1	A	209/231 (90%)	0.01	4 (1%) 66 66	16, 24, 53, 74	0
1	B	214/231 (92%)	-0.11	3 (1%) 75 76	16, 26, 49, 72	0
1	C	211/231 (91%)	1.51	65 (30%) 0 0	24, 55, 96, 108	0
All	All	634/693 (91%)	0.47	72 (11%) 5 5	16, 31, 79, 108	0

All (72) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	C	42	ALA	9.0
1	C	34	VAL	7.5
1	C	4	TYR	7.0
1	C	119	ALA	7.0
1	C	209	GLY	6.1
1	C	125	LEU	6.1
1	C	124	THR	5.5
1	B	209	GLY	5.5
1	C	116	PRO	5.4
1	C	118	TYR	5.4
1	C	60	ASP	5.3
1	C	23	LEU	5.1
1	C	41	SER	4.9
1	C	79	GLU	4.7
1	C	62	ALA	4.6
1	C	181	HIS	4.5
1	C	31	PHE	4.5
1	C	173	ARG	4.4
1	C	128	THR	4.2
1	C	35	SER	4.1
1	C	115	LEU	4.1
1	C	117	SER	3.9
1	C	113	PHE	3.8

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Mol	Chain	Res	Type	RSRZ
1	C	123	GLU	3.8
1	C	45	LEU	3.7
1	C	57	VAL	3.7
1	C	131	GLN	3.7
1	C	6	LEU	3.6
1	A	98	LEU	3.6
1	C	103	SER	3.5
1	C	136	GLN	3.5
1	C	182	LEU	3.4
1	C	178	ASP	3.4
1	C	179	PHE	3.2
1	C	76	LEU	3.2
1	C	143	PHE	3.2
1	C	138	LEU	3.2
1	C	100	PHE	3.1
1	C	0	SER	3.0
1	C	177	LEU	3.0
1	C	126	THR	2.9
1	C	207	LEU	2.9
1	C	102	ASN	2.8
1	C	135	GLU	2.8
1	C	72	TYR	2.8
1	C	169	LEU	2.7
1	C	183	SER	2.6
1	B	70	VAL	2.6
1	C	44	TYR	2.6
1	C	46	ALA	2.6
1	C	26	ASN	2.5
1	C	127	LYS	2.5
1	C	176	GLY	2.5
1	A	40	LYS	2.5
1	C	99	ALA	2.5
1	C	51	GLY	2.5
1	C	77	TYR	2.4
1	C	185	LEU	2.4
1	C	134	ALA	2.4
1	C	109	PHE	2.4
1	C	40	LYS	2.4
1	C	101	PHE	2.3
1	C	80	ALA	2.3
1	A	99	ALA	2.3
1	C	59	GLY	2.2

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Mol	Chain	Res	Type	RSRZ
1	B	66	ASN	2.2
1	C	105	VAL	2.1
1	C	122	ASN	2.1
1	C	172	CYS	2.1
1	C	139	GLU	2.1
1	A	164	TYR	2.1
1	C	132	GLN	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
3	GOL	A	302[B]	6/6	0.85	0.26	19,33,39,40	6
3	GOL	A	302[A]	6/6	0.85	0.26	21,25,40,44	6
2	CL	A	301	1/1	1.00	0.07	32,32,32,32	0
2	CL	B	301	1/1	1.00	0.12	30,30,30,30	0

6.5 Other polymers [i](#)

There are no such residues in this entry.