wwPDB X-ray Structure Validation Summary Report (i)

Nov 21, 2023 – 03:42 pm GMT

PDB ID	:	6GV2
Title	:	Sulfolobus solfataricus 2-keto-3-deoxygluconate aldolase Y103F,Y130F,A198F variant in complex with L-2-keto, 3-deoxy-galactonate
Authors	:	Crennell, S.J.; Danson, M.J.; Royer, S.
Deposited on	:	2018-06-20
Resolution	:	2.10 Å(reported)

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

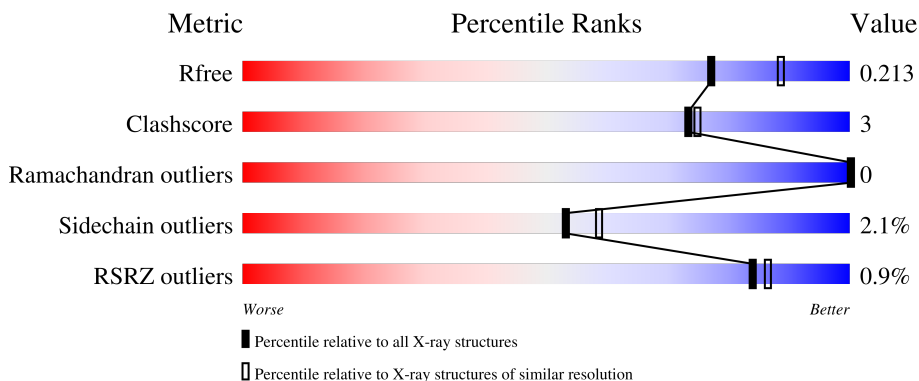|		
MolProbity	:	4.02b-467
Mogul	:	1.8.4, CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.36
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	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 2.10 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		0.213
Clashscore		3
Ramachandran outliers		0
Sidechain outliers		2.1%
RSRZ outliers		0.9%

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	5197 (2.10-2.10)
Clashscore	141614	5710 (2.10-2.10)
Ramachandran outliers	138981	5647 (2.10-2.10)
Sidechain outliers	138945	5648 (2.10-2.10)
RSRZ outliers	127900	5083 (2.10-2.10)

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	295	91% 8% ·
1	B	295	91% 7% ·

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:

WORLDWIDE
wwPDB
PROTEIN DATA BANK

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
2	SSH	A	301[B]	X	-	-	-
2	SSH	B	301[B]	X	-	-	-

2 Entry composition ⓘ

There are 6 unique types of molecules in this entry. The entry contains 10278 atoms, of which 5026 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 2-dehydro-3-deoxy-phosphogluconate/2-dehydro-3-deoxy-6-phosphogalactonate aldolase.

Mol	Chain	Residues	Atoms						ZeroOcc	AltConf	Trace
1	A	293	Total	C	H	N	O	S	0	14	0
			4884	1559	2475	396	448	6			
1	B	293	Total	C	H	N	O	S	0	8	0
			4856	1553	2458	392	447	6			

There are 6 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	103	PHE	TYR	engineered mutation	UNP O54288
A	130	PHE	TYR	engineered mutation	UNP O54288
A	198	PHE	ALA	engineered mutation	UNP O54288
B	103	PHE	TYR	engineered mutation	UNP O54288
B	130	PHE	TYR	engineered mutation	UNP O54288
B	198	PHE	ALA	engineered mutation	UNP O54288

- Molecule 2 is 3-DEOXY-D-ARABINO-HEXONIC ACID (three-letter code: SSH) (formula: $C_6H_{12}O_6$).
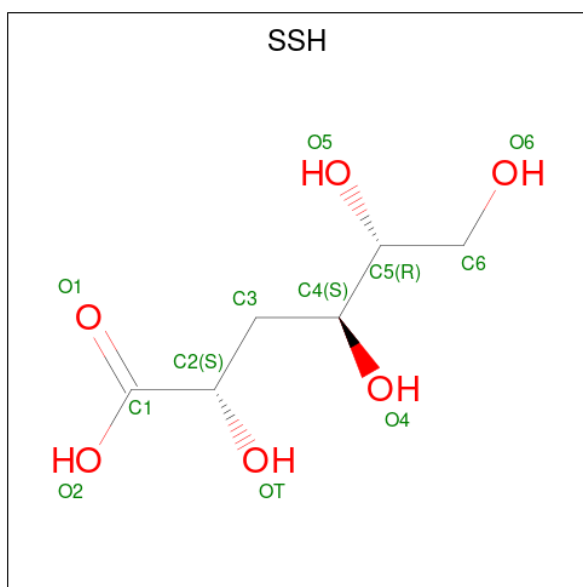
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
2	A	1	Total 20	C 6	H 9	O 5	0	1
2	B	1	Total 20	C 6	H 9	O 5	0	1

• Molecule 3 is L-glyceraldehyde (three-letter code: GXV) (formula: $C_3H_6O_3$).
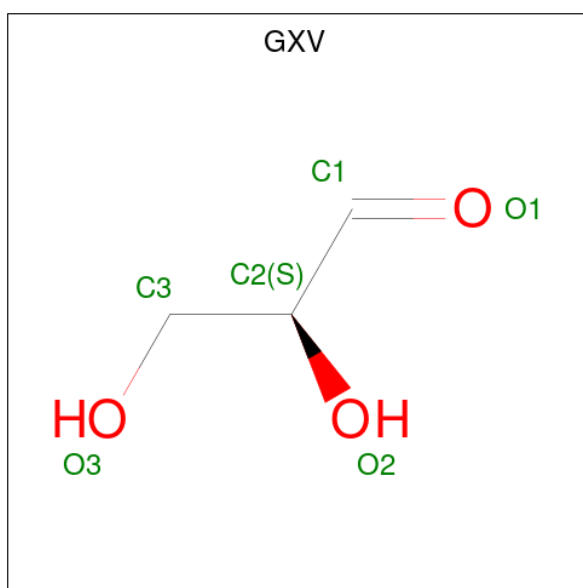
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
3	A	1	Total 12	C 3	H 6	O 3	0	1
3	B	1	Total 12	C 3	H 6	O 3	0	1

- Molecule 4 is 1,2-ETHANEDIOL (three-letter code: EDO) (formula: $C_2H_6O_2$).
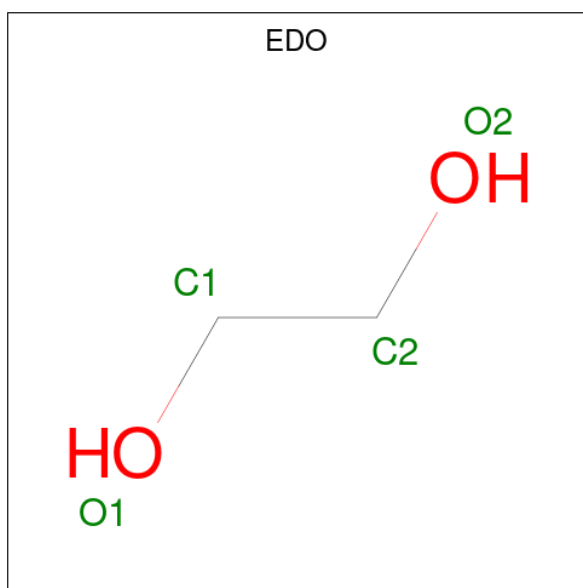
Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
4	A	1	Total 10	C 2	H 6	O 2	0	0
4	B	1	Total 10	C 2	H 6	O 2	0	0

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

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

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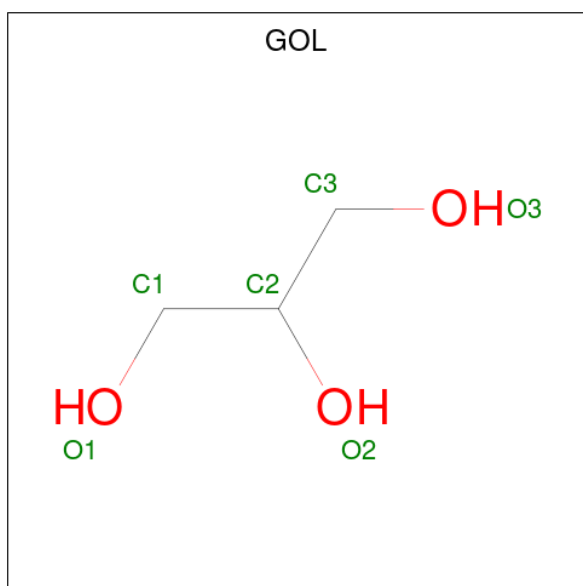
Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
5	A	1	Total	C	H	O		0	0
			12	3	6	3			
5	A	1	Total	C	H	O		0	0
			14	3	8	3			
5	B	1	Total	C	H	O		0	0
			12	3	6	3			
5	B	1	Total	C	H	O		0	0
			14	3	8	3			
5	B	1	Total	C	H	O		0	0
			14	3	8	3			
5	B	1	Total	C	H	O		0	0
			13	3	7	3			

- Molecule 6 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	A	186	Total	O	0	0
			186	186		
6	B	175	Total	O	0	0
			175	175		

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: 2-dehydro-3-deoxy-phosphogluconate/2-dehydro-3-deoxy-6-phosphogalactonate aldolase
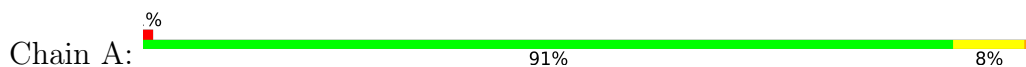
• Molecule 1: 2-dehydro-3-deoxy-phosphogluconate/2-dehydro-3-deoxy-6-phosphogalactonate aldolase
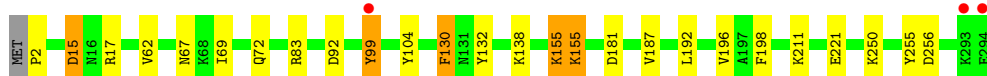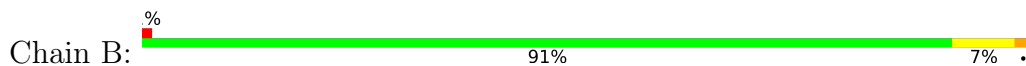
4 Data and refinement statistics ⓘ

Property	Value	Source
Space group	P 65 2 2	Depositor
Cell constants a, b, c, α, β, γ	103.48Å 103.48Å 245.55Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	42.09 – 2.10 42.09 – 2.10	Depositor EDS
% Data completeness (in resolution range)	100.0 (42.09-2.10) 100.0 (42.09-2.10)	Depositor EDS
R_{merge}	0.09	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	3.28 (at 2.10Å)	Xtriage
Refinement program	PHENIX (1.13_2998: ???)	Depositor
R, R_{free}	0.164 , 0.212 0.164 , 0.213	Depositor DCC
R_{free} test set	2346 reflections (5.08%)	wwPDB-VP
Wilson B-factor (Å^2)	29.8	Xtriage
Anisotropy	0.366	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.40 , 49.1	EDS
L-test for twinning[2]	$< |L| > = 0.44$, $< L^2 > = 0.26$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.96	EDS
Total number of atoms	10278	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 4.19% 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: GXV, KPI, EDO, GOL, SSH

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	0.39	0/2500	0.56	0/3375
1	B	0.39	0/2445	0.54	0/3303
All	All	0.39	0/4945	0.55	0/6678

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	2409	2475	2412	17	0
1	B	2398	2458	2440	14	0
2	A	11	9	6	0	0
2	B	11	9	6	2	0
3	A	6	6	0	0	0
3	B	6	6	0	0	0
4	A	4	6	6	0	0
4	B	4	6	6	0	0
5	A	18	22	24	0	0
5	B	24	29	31	0	0
6	A	186	0	0	4	1

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
6	B	175	0	0	4	1
All	All	5252	5026	4931	31	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 3.

The worst 5 of 31 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:B:221:GLU:OE1	6:B:401:HOH:O	2.09	0.69
1:A:146:LYS:NZ	6:A:402:HOH:O	2.30	0.64
1:A:270:GLU:OE1	1:A:273[A]:ARG:NH2	2.30	0.64
1:B:67:ASN:HB2	1:B:92:ASP:O	2.00	0.62
1:A:130[B]:PHE:CD1	1:A:155[B]:LYS:HD3	2.35	0.61

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:503:HOH:O	6:B:531:HOH:O[12_544]	2.00	0.20

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	303/295 (103%)	297 (98%)	6 (2%)	0	100	100
1	B	297/295 (101%)	291 (98%)	6 (2%)	0	100	100
All	All	600/590 (102%)	588 (98%)	12 (2%)	0	100	100

There are no Ramachandran outliers to report.

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	271/260 (104%)	266 (98%)	5 (2%)	59	65
1	B	265/260 (102%)	256 (97%)	9 (3%)	37	39
All	All	536/520 (103%)	522 (97%)	14 (3%)	53	50

5 of 14 residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	B	99[A]	TYR
1	B	99[B]	TYR
1	B	256	ASP
1	B	132	TYR
1	B	181	ASP

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 ⓘ

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	KPI	B	155[A]	1	11,13,14	2.99	3 (27%)	10,15,17	2.33	4 (40%)
1	KPI	A	155[A]	1	11,13,14	2.76	3 (27%)	10,15,17	2.03	4 (40%)

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	KPI	B	155[A]	1	-	8/13/14/16	-
1	KPI	A	155[A]	1	-	0/13/14/16	-

The worst 5 of 6 bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	155[A]	KPI	CX2-CX1	-8.55	1.39	1.49
1	A	155[A]	KPI	CX2-CX1	-7.95	1.40	1.49
1	B	155[A]	KPI	O2-CX2	3.40	1.31	1.22
1	A	155[A]	KPI	O2-CX2	3.34	1.31	1.22
1	B	155[A]	KPI	CE-NZ	2.58	1.54	1.46

The worst 5 of 8 bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	155[A]	KPI	CD-CE-NZ	4.43	118.72	110.66
1	A	155[A]	KPI	CE-NZ-CX1	4.40	133.68	121.70
1	B	155[A]	KPI	C1-CX1-NZ	3.43	132.07	123.11
1	B	155[A]	KPI	CX2-CX1-NZ	-3.17	107.27	114.98
1	A	155[A]	KPI	C1-CX1-CX2	2.77	120.85	118.17

There are no chirality outliers.

5 of 8 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
1	B	155[A]	KPI	C1-CX1-NZ-CE
1	B	155[A]	KPI	CX2-CX1-NZ-CE
1	B	155[A]	KPI	NZ-CX1-CX2-O1
1	B	155[A]	KPI	NZ-CX1-CX2-O2
1	B	155[A]	KPI	C1-CX1-CX2-O1

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 ⓘ

13 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
5	GOL	A	305	-	5,5,5	0.89	0	5,5,5	0.92	0
5	GOL	B	305	-	5,5,5	0.80	0	5,5,5	1.00	0
5	GOL	B	306	-	5,5,5	0.69	0	5,5,5	1.02	0
3	GXV	A	302[B]	2	4,5,5	1.51	1 (25%)	4,5,5	0.44	0
4	EDO	A	303	-	3,3,3	0.43	0	2,2,2	0.57	0
5	GOL	A	304	-	5,5,5	1.14	0	5,5,5	0.87	0
4	EDO	B	303	-	3,3,3	0.54	0	2,2,2	0.09	0
5	GOL	B	304	-	5,5,5	1.27	1 (20%)	5,5,5	1.06	0
2	SSH	B	301[B]	3	10,10,11	0.74	0	11,12,14	1.19	1 (9%)
5	GOL	A	306	-	5,5,5	0.91	0	5,5,5	0.89	0
3	GXV	B	302[B]	2	4,5,5	1.39	1 (25%)	4,5,5	0.89	0
5	GOL	B	307	-	5,5,5	0.76	0	5,5,5	1.03	0
2	SSH	A	301[B]	3	10,10,11	0.86	0	11,12,14	1.34	1 (9%)

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	305	-	-	1/4/4/4	-
5	GOL	B	305	-	-	0/4/4/4	-
5	GOL	B	306	-	-	0/4/4/4	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
3	GXV	A	302[B]	2	-	2/3/4/4	-
4	EDO	A	303	-	-	1/1/1/1	-
5	GOL	A	304	-	-	1/4/4/4	-
4	EDO	B	303	-	-	1/1/1/1	-
5	GOL	B	304	-	-	2/4/4/4	-
2	SSH	B	301[B]	3	1/1/3/4	2/11/11/14	-
5	GOL	A	306	-	-	1/4/4/4	-
3	GXV	B	302[B]	2	-	3/3/4/4	-
5	GOL	B	307	-	-	2/4/4/4	-
2	SSH	A	301[B]	3	1/1/3/4	1/11/11/14	-

All (3) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	A	302[B]	GXV	C3-C2	2.59	1.54	1.50
5	B	304	GOL	O2-C2	-2.52	1.35	1.43
3	B	302[B]	GXV	C3-C2	2.43	1.54	1.50

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	A	301[B]	SSH	C3-C2-C1	3.57	121.99	112.51
2	B	301[B]	SSH	O2-C1-C2	2.21	121.12	114.03

All (2) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
2	A	301[B]	SSH	C5
2	B	301[B]	SSH	C5

5 of 17 torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	301[B]	SSH	C1-C2-C3-C4
2	B	301[B]	SSH	C2-C3-C4-O4
3	A	302[B]	GXV	O2-C2-C3-O3
3	A	302[B]	GXV	C1-C2-C3-O3
3	B	302[B]	GXV	O2-C2-C3-O3

There are no ring outliers.

1 monomer is involved in 2 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
2	B	301[B]	SSH	2	0

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(Å²)	Q<0.9
1	A	292/295 (98%)	-0.29	2 (0%)	87	89	22, 31, 52, 101	0
1	B	292/295 (98%)	-0.17	3 (1%)	82	85	22, 30, 54, 95	0
All	All	584/590 (98%)	-0.23	5 (0%)	84	86	22, 30, 53, 101	0

All (5) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	B	293	LYS	3.8
1	A	294	GLU	3.2
1	A	273[A]	ARG	2.4
1	B	294	GLU	2.4
1	B	99[A]	TYR	2.1

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, 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(Å²)	Q<0.9
1	KPI	A	155[A]	14/15	0.95	0.15	21,32,46,52	27
1	KPI	B	155[A]	14/15	0.96	0.16	21,35,58,59	27

6.3 Carbohydrates ⓘ

There are no monosaccharides in this entry.

6.4 Ligands ⓘ

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	GXV	A	302[B]	6/6	0.69	0.31	42,53,58,67	12
3	GXV	B	302[B]	6/6	0.78	0.30	38,55,66,66	12
5	GOL	A	306	6/6	0.82	0.35	53,67,77,93	0
4	EDO	A	303	4/4	0.83	0.14	60,72,103,103	0
5	GOL	B	305	6/6	0.85	0.19	53,74,102,123	0
2	SSH	B	301[B]	11/12	0.89	0.24	22,51,64,64	20
5	GOL	B	306	6/6	0.90	0.20	42,59,67,81	0
2	SSH	A	301[B]	11/12	0.92	0.19	22,42,55,55	20
5	GOL	B	307	6/6	0.92	0.13	47,67,89,90	0
5	GOL	A	305	6/6	0.93	0.28	43,56,73,79	0
4	EDO	B	303	4/4	0.93	0.21	28,52,78,78	0
5	GOL	B	304	6/6	0.93	0.21	32,52,73,73	0
5	GOL	A	304	6/6	0.94	0.21	32,49,62,62	0

6.5 Other polymers ⓘ

There are no such residues in this entry.