



Full wwPDB X-ray Structure Validation Report ⓘ

Mar 9, 2026 – 03:42 PM UTC

PDB ID : 4DRS / pdb_00004drs
Title : Crystal structure of Cryptosporidium parvum pyruvate kinase
Authors : Cook, W.J.; Chattopadhyay, D.
Deposited on : 2012-02-17
Resolution : 2.50 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 types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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

MolProbity : 4-5-2 with Phenix2.0
Mogul : 2022.3.0, CSD as543be (2022)
Xtriage (Phenix) : 2.0
EDS : 3.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
CCP4 : 9.0.010 (Gargrove)
Density-Fitness : 1.0.12
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

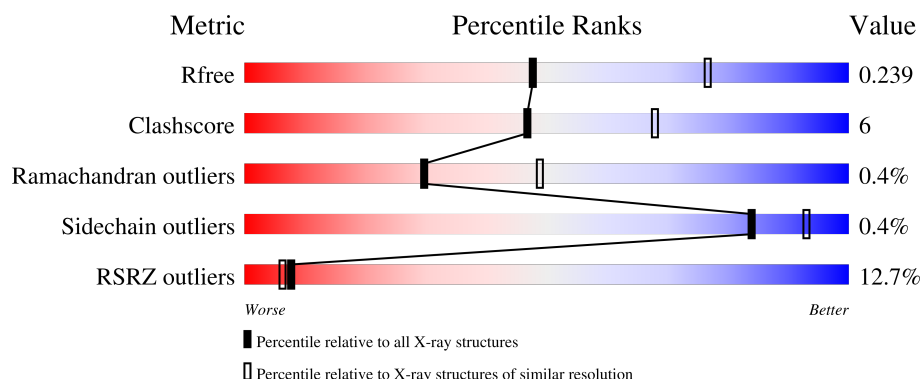
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

X-RAY DIFFRACTION

The reported resolution of this entry is 2.50 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}	180053	5829 (2.50-2.50)
Clashscore	190562	6492 (2.50-2.50)
Ramachandran outliers	187476	6378 (2.50-2.50)
Sidechain outliers	187428	6380 (2.50-2.50)
RSRZ outliers	180081	5833 (2.50-2.50)

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 $\leq 5\%$. 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	526	 10% 81% 11% 8%
1	B	526	 14% 81% 11% 8%

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	GOL	B	604	-	-	X	-

2 Entry composition [i](#)

There are 5 unique types of molecules in this entry. The entry contains 7505 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 Pyruvate kinase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	485	Total	C	N	O	S	0	0	0
			3644	2279	629	704	32			
1	B	485	Total	C	N	O	S	0	0	0
			3644	2279	629	704	32			

- Molecule 2 is SULFATE ION (CCD ID: SO4) (formula: O₄S).



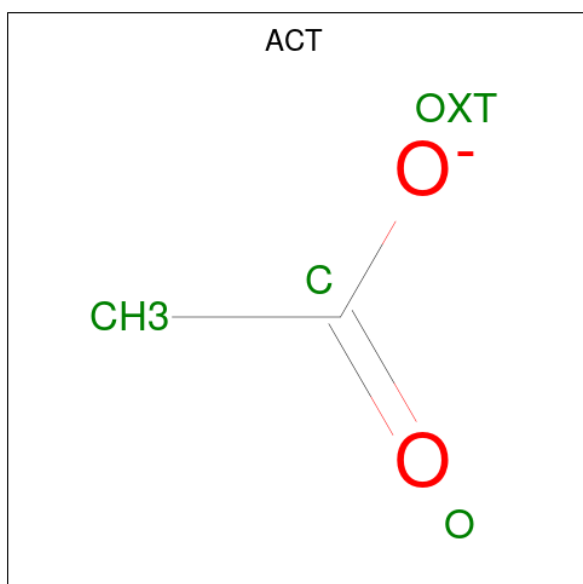
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
2	A	1	Total	O	S	0	0
			5	4	1		
2	A	1	Total	O	S	0	0
			5	4	1		
2	B	1	Total	O	S	0	0
			5	4	1		
2	B	1	Total	O	S	0	0
			5	4	1		

- Molecule 3 is GLYCEROL (CCD ID: GOL) (formula: $C_3H_8O_3$).



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

- Molecule 4 is ACETATE ION (CCD ID: ACT) (formula: $C_2H_3O_2$).



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

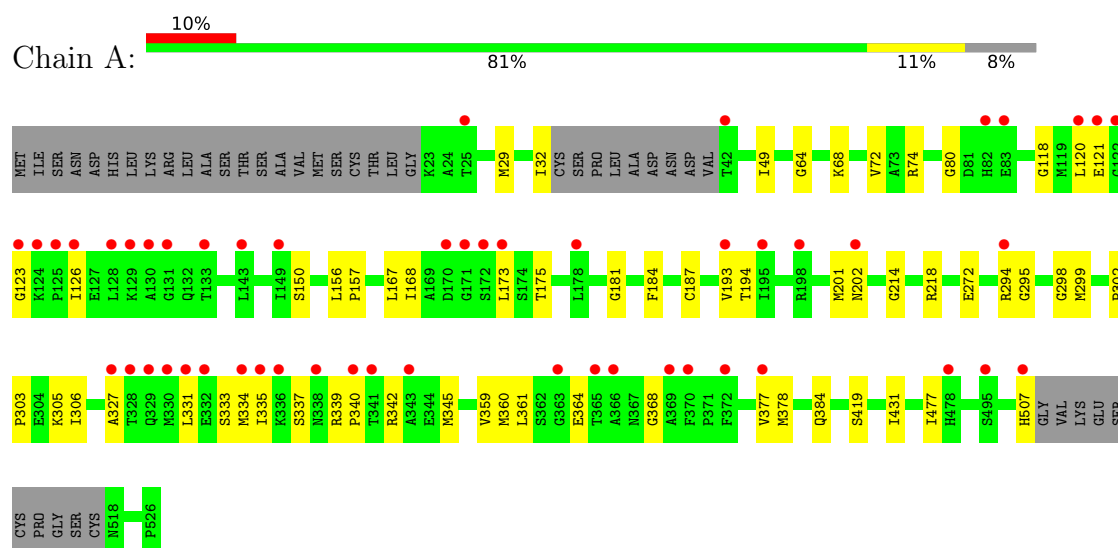
- Molecule 5 is water.

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	A	74	Total O 74 74	0	0
5	B	75	Total O 75 75	0	0

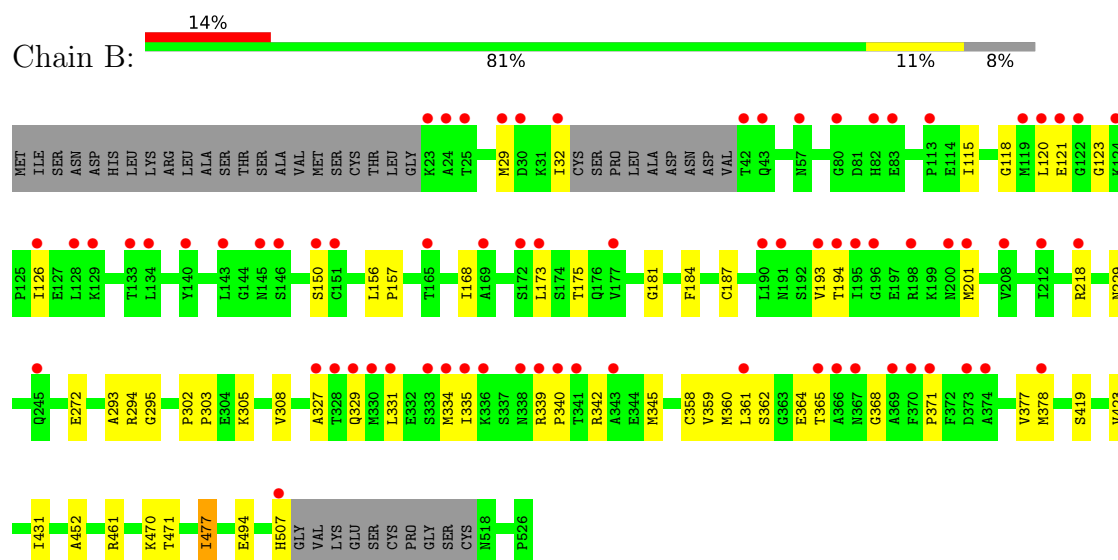
3 Residue-property plots

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: Pyruvate kinase



• Molecule 1: Pyruvate kinase



4 Data and refinement statistics

Property	Value	Source
Space group	P 21 21 2	Depositor
Cell constants a, b, c, α , β , γ	129.90Å 136.94Å 77.23Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	49.71 – 2.50 49.71 – 2.50	Depositor EDS
% Data completeness (in resolution range)	97.8 (49.71-2.50) 97.8 (49.71-2.50)	Depositor EDS
R_{merge}	0.06	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	3.39 (at 2.51Å)	Xtriage
Refinement program	REFMAC 5.5.0109, CNS	Depositor
R, R_{free}	0.213 , 0.249 (Not available) , 0.239	Depositor DCC
R_{free} test set	2392 reflections (4.94%)	wwPDB-VP
Wilson B-factor (Å ²)	47.3	Xtriage
Anisotropy	0.133	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.35 , 34.8	EDS
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.32$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o, F_c correlation	0.94	EDS
Total number of atoms	7505	wwPDB-VP
Average B, all atoms (Å ²)	62.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 5.46% 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: SO4, ACT, GOL

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	0.56	0/3692	0.78	0/4991
1	B	0.55	0/3692	0.78	0/4991
All	All	0.56	0/7384	0.78	0/9982

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	3644	0	3733	44	0
1	B	3644	0	3733	47	0
2	A	10	0	0	0	0
2	B	10	0	0	0	0
3	A	12	0	16	1	0
3	B	12	0	16	4	0
4	A	12	0	9	1	0
4	B	12	0	9	0	0
5	A	74	0	0	0	0
5	B	75	0	0	0	0
All	All	7505	0	7516	84	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 6.

All (84) 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:334:MET:HE3	1:B:339:ARG:HA	1.70	0.74
1:B:229:ASN:HD21	3:B:604:GOL:H31	1.52	0.73
1:B:339:ARG:HG2	1:B:340:PRO:HD2	1.71	0.72
1:B:229:ASN:ND2	3:B:604:GOL:H31	2.06	0.69
1:B:229:ASN:HD21	3:B:604:GOL:C3	2.05	0.69
1:A:175:THR:HB	1:A:187:CYS:HB3	1.79	0.65
1:A:168:ILE:HD12	1:A:173:LEU:HD23	1.78	0.65
1:B:327:ALA:HB1	1:B:360:MET:HE2	1.79	0.65
1:B:331:LEU:HD12	1:B:361:LEU:HD21	1.78	0.64
1:B:168:ILE:HG12	1:B:201:MET:HG3	1.80	0.64
1:B:335:ILE:HG23	1:B:368:GLY:HA2	1.81	0.62
1:A:339:ARG:HG2	1:A:340:PRO:HD2	1.81	0.62
1:A:32:ILE:HG12	1:B:305:LYS:HD3	1.81	0.62
1:B:175:THR:HB	1:B:187:CYS:HB3	1.81	0.61
1:A:331:LEU:HB2	1:A:364:GLU:HG2	1.82	0.60
1:A:431:ILE:HB	1:A:507:HIS:HB3	1.84	0.60
1:A:193:VAL:HG12	1:A:194:THR:N	2.16	0.59
1:A:335:ILE:HG23	1:A:368:GLY:HA2	1.84	0.59
1:A:334:MET:HE3	1:A:339:ARG:HA	1.83	0.59
1:B:359:VAL:HG23	1:B:378:MET:HE3	1.84	0.58
1:B:168:ILE:HB	1:B:173:LEU:HB3	1.87	0.57
1:B:327:ALA:HB2	1:B:360:MET:HB3	1.86	0.57
1:A:298:GLY:HA2	1:A:306:ILE:HD11	1.87	0.57
1:A:384:GLN:HG3	1:B:308:VAL:HG21	1.88	0.56
1:A:345:MET:HE1	1:B:303:PRO:HB2	1.88	0.56
1:A:120:LEU:HD22	1:A:126:ILE:HD12	1.87	0.56
1:A:331:LEU:HD12	1:A:361:LEU:HD21	1.88	0.55
1:A:168:ILE:HG12	1:A:201:MET:HG3	1.89	0.55
1:A:345:MET:HE3	1:A:377:VAL:HG13	1.90	0.54
1:A:359:VAL:HG23	1:A:378:MET:HE3	1.90	0.53
1:A:168:ILE:HB	1:A:173:LEU:HB3	1.91	0.53
1:B:361:LEU:HG	1:B:378:MET:HE1	1.91	0.53
1:A:305:LYS:HD3	1:B:32:ILE:HG12	1.91	0.52
1:A:361:LEU:HG	1:A:378:MET:HE1	1.90	0.52
1:B:361:LEU:HG	1:B:378:MET:CE	2.40	0.52
1:B:168:ILE:HD12	1:B:173:LEU:HD23	1.91	0.52
1:B:193:VAL:HG12	1:B:194:THR:N	2.25	0.52

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:361:LEU:HG	1:A:378:MET:CE	2.40	0.52
1:A:64:GLY:O	1:A:68:LYS:HG2	2.09	0.52
1:A:80:GLY:H	4:A:606:ACT:H3	1.75	0.52
1:A:193:VAL:HG12	1:A:194:THR:H	1.74	0.51
1:B:461:ARG:NH2	3:B:604:GOL:H11	2.26	0.51
1:A:202:ASN:HB3	1:A:299:MET:HE1	1.92	0.50
1:A:342:ARG:CZ	1:B:294:ARG:HG3	2.40	0.50
1:B:120:LEU:HD22	1:B:126:ILE:HD12	1.93	0.50
1:A:167:LEU:HB2	1:A:202:ASN:HB2	1.94	0.49
1:B:331:LEU:HB2	1:B:364:GLU:HG2	1.95	0.49
1:B:327:ALA:CB	1:B:360:MET:HB3	2.43	0.48
1:B:452:ALA:HB3	1:B:471:THR:HG22	1.95	0.48
1:A:294:ARG:HG3	1:B:342:ARG:CZ	2.44	0.48
1:A:156:LEU:N	1:A:157:PRO:HD2	2.29	0.47
1:A:49:ILE:HG12	1:A:72:VAL:HB	1.95	0.47
1:A:118:GLY:HA3	1:A:150:SER:HB3	1.96	0.47
1:A:29:MET:HA	1:A:32:ILE:HD12	1.97	0.46
1:B:329:GLN:HG3	1:B:362:SER:HB2	1.97	0.46
1:A:214:GLY:O	1:A:218:ARG:HG3	2.16	0.46
1:A:74:ARG:HH22	3:A:603:GOL:H2	1.81	0.46
1:A:327:ALA:HB2	1:A:360:MET:HB3	1.97	0.45
1:A:327:ALA:HB1	1:A:360:MET:HE2	1.98	0.45
1:A:181:GLY:HA3	1:A:184:PHE:CE1	2.51	0.45
1:B:431:ILE:HB	1:B:507:HIS:HB3	1.98	0.45
1:A:431:ILE:HG23	1:A:477:ILE:HG13	2.00	0.44
1:A:193:VAL:CG1	1:A:194:THR:N	2.80	0.44
1:B:156:LEU:N	1:B:157:PRO:HD2	2.33	0.43
1:A:303:PRO:HB2	1:B:345:MET:HE1	1.98	0.43
1:B:365:THR:HA	1:B:371:PRO:HB3	2.01	0.43
1:B:431:ILE:HG23	1:B:477:ILE:HG13	2.00	0.43
1:B:302:PRO:HA	1:B:303:PRO:HD3	1.87	0.43
1:B:470:LYS:HE2	1:B:494:GLU:OE1	2.19	0.43
1:A:193:VAL:CG1	1:A:194:THR:H	2.32	0.42
1:B:345:MET:HE3	1:B:377:VAL:HG13	2.00	0.42
1:B:29:MET:HA	1:B:32:ILE:HD12	2.02	0.42
1:B:118:GLY:HA3	1:B:150:SER:HB3	2.02	0.41
1:A:272:GLU:HB3	1:A:295:GLY:HA3	2.03	0.41
1:B:419:SER:O	1:B:423:VAL:HG22	2.20	0.41
1:B:181:GLY:HA3	1:B:184:PHE:CE1	2.55	0.41
1:B:218:ARG:HH11	1:B:218:ARG:HB3	1.84	0.41
1:B:339:ARG:HG2	1:B:340:PRO:CD	2.46	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:B:115:ILE:HG21	1:B:201:MET:HE2	2.02	0.41
1:A:333:SER:O	1:A:337:SER:HB3	2.21	0.41
1:B:218:ARG:HB3	1:B:218:ARG:NH1	2.35	0.41
1:B:272:GLU:HB3	1:B:295:GLY:HA3	2.01	0.41
1:A:302:PRO:HA	1:A:303:PRO:HD3	1.83	0.41
1:B:272:GLU:HG2	1:B:293:ALA:HB3	2.02	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	479/526 (91%)	463 (97%)	14 (3%)	2 (0%)	30	49
1	B	479/526 (91%)	460 (96%)	17 (4%)	2 (0%)	30	49
All	All	958/1052 (91%)	923 (96%)	31 (3%)	4 (0%)	30	49

All (4) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	121	GLU
1	A	123	GLY
1	B	121	GLU
1	B	123	GLY

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	414/449 (92%)	413 (100%)	1 (0%)	87	95
1	B	414/449 (92%)	412 (100%)	2 (0%)	81	92
All	All	828/898 (92%)	825 (100%)	3 (0%)	84	93

All (3) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	419	SER
1	B	358	CYS
1	B	477	ILE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (11) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	90	GLN
1	A	240	ASN
1	A	421	HIS
1	A	478	HIS
1	B	43	GLN
1	B	79	HIS
1	B	191	ASN
1	B	219	HIS
1	B	229	ASN
1	B	249	GLN
1	B	384	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 oligosaccharides in this entry.

5.6 Ligand geometry

14 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	$\# Z > 2$
4	ACT	B	606	-	3,3,3	0.84	0	3,3,3	0.72	0
2	SO4	B	601	-	4,4,4	0.42	0	6,6,6	0.07	0
4	ACT	A	605	-	3,3,3	0.88	0	3,3,3	0.58	0
2	SO4	B	602	-	4,4,4	0.43	0	6,6,6	0.16	0
4	ACT	A	607	-	3,3,3	0.82	0	3,3,3	0.71	0
3	GOL	A	604	-	5,5,5	0.26	0	5,5,5	0.45	0
3	GOL	B	603	-	5,5,5	0.34	0	5,5,5	0.35	0
3	GOL	B	604	-	5,5,5	0.24	0	5,5,5	0.41	0
4	ACT	A	606	-	3,3,3	0.81	0	3,3,3	0.76	0
4	ACT	B	605	-	3,3,3	0.84	0	3,3,3	0.63	0
4	ACT	B	607	-	3,3,3	0.83	0	3,3,3	0.75	0
2	SO4	A	602	-	4,4,4	0.43	0	6,6,6	0.21	0
3	GOL	A	603	-	5,5,5	0.34	0	5,5,5	0.30	0
2	SO4	A	601	-	4,4,4	0.37	0	6,6,6	0.13	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	604	-	-	0/4/4/4	-
3	GOL	A	603	-	-	2/4/4/4	-
3	GOL	B	603	-	-	3/4/4/4	-
3	GOL	B	604	-	-	1/4/4/4	-

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (6) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
3	A	603	GOL	C1-C2-C3-O3
3	B	603	GOL	O1-C1-C2-C3
3	B	603	GOL	C1-C2-C3-O3
3	A	603	GOL	O2-C2-C3-O3
3	B	603	GOL	O2-C2-C3-O3
3	B	604	GOL	O1-C1-C2-O2

There are no ring outliers.

3 monomers are involved in 6 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	B	604	GOL	4	0
4	A	606	ACT	1	0
3	A	603	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(Å ²)	Q<0.9
1	A	485/526 (92%)	0.55	51 (10%)	11 10	32, 51, 111, 142	0
1	B	485/526 (92%)	0.70	72 (14%)	5 4	33, 50, 139, 176	0
All	All	970/1052 (92%)	0.62	123 (12%)	8 6	32, 51, 125, 176	0

All (123) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	330	MET	5.6
1	B	190	LEU	4.8
1	B	133	THR	4.7
1	B	140	TYR	4.6
1	A	122	GLY	4.3
1	B	341	THR	4.2
1	A	133	THR	4.1
1	B	146	SER	3.9
1	A	327	ALA	3.9
1	A	363	GLY	3.8
1	B	126	ILE	3.8
1	A	328	THR	3.7
1	B	194	THR	3.7
1	A	193	VAL	3.6
1	A	365	THR	3.6
1	B	331	LEU	3.6
1	B	25	THR	3.6
1	B	327	ALA	3.6
1	A	341	THR	3.5
1	A	129	LYS	3.5
1	B	193	VAL	3.5
1	A	126	ILE	3.5
1	B	128	LEU	3.5
1	B	150	SER	3.5

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	B	195	ILE	3.5
1	B	42	THR	3.3
1	B	43	GLN	3.3
1	B	507	HIS	3.3
1	A	149	ILE	3.3
1	A	377	VAL	3.2
1	A	195	ILE	3.2
1	A	366	ALA	3.2
1	B	196	GLY	3.2
1	B	122	GLY	3.1
1	A	332	GLU	3.1
1	A	331	LEU	3.1
1	B	82	HIS	3.0
1	A	170	ASP	3.0
1	B	370	PHE	3.0
1	A	338	ASN	3.0
1	B	113	PRO	2.9
1	A	370	PHE	2.9
1	A	334	MET	2.9
1	B	119	MET	2.9
1	A	143	LEU	2.9
1	B	169	ALA	2.9
1	B	369	ALA	2.9
1	B	143	LEU	2.9
1	A	507	HIS	2.8
1	B	365	THR	2.8
1	A	294	ARG	2.8
1	B	336	LYS	2.8
1	B	338	ASN	2.8
1	A	128	LEU	2.8
1	B	198	ARG	2.7
1	B	83	GLU	2.7
1	B	172	SER	2.7
1	B	330	MET	2.7
1	B	57	ASN	2.6
1	B	378	MET	2.6
1	B	24	ALA	2.6
1	A	202	ASN	2.6
1	A	329	GLN	2.6
1	B	208	VAL	2.6
1	A	130	ALA	2.6
1	B	343	ALA	2.6

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	A	173	LEU	2.5
1	B	129	LYS	2.5
1	B	32	ILE	2.5
1	B	335	ILE	2.5
1	A	82	HIS	2.5
1	B	366	ALA	2.5
1	B	30	ASP	2.5
1	A	335	ILE	2.5
1	A	495	SER	2.5
1	A	171	GLY	2.5
1	A	178	LEU	2.5
1	A	343	ALA	2.5
1	B	374	ALA	2.5
1	A	121	GLU	2.4
1	A	198	ARG	2.4
1	A	25	THR	2.4
1	A	83	GLU	2.4
1	B	245	GLN	2.4
1	A	372	PHE	2.4
1	B	334	MET	2.4
1	A	124	LYS	2.4
1	A	340	PRO	2.4
1	B	329	GLN	2.4
1	B	145	ASN	2.4
1	B	371	PRO	2.3
1	A	131	GLY	2.3
1	A	120	LEU	2.3
1	B	361	LEU	2.3
1	B	120	LEU	2.3
1	B	124	LYS	2.3
1	A	42	THR	2.3
1	A	172	SER	2.3
1	B	134	LEU	2.3
1	B	23	LYS	2.3
1	A	123	GLY	2.2
1	B	373	ASP	2.2
1	B	339	ARG	2.2
1	B	367	ASN	2.2
1	B	340	PRO	2.2
1	B	333	SER	2.2
1	A	478	HIS	2.1
1	B	151	CYS	2.1

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	RSRZ
1	B	121	GLU	2.1
1	A	369	ALA	2.1
1	A	336	LYS	2.1
1	A	125	PRO	2.1
1	B	191	ASN	2.1
1	B	200	ASN	2.1
1	B	173	LEU	2.1
1	B	218	ARG	2.1
1	B	212	ILE	2.1
1	B	177	VAL	2.1
1	B	80	GLY	2.0
1	B	29	MET	2.0
1	B	201	MET	2.0
1	B	165	THR	2.0
1	B	328	THR	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 oligosaccharides 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
4	ACT	B	607	4/4	0.61	0.29	69,69,70,71	0
4	ACT	B	606	4/4	0.74	0.22	71,73,73,74	0
3	GOL	A	603	6/6	0.76	0.17	62,63,65,66	0
4	ACT	A	605	4/4	0.78	0.20	64,66,67,68	0
2	SO4	B	602	5/5	0.79	0.20	78,82,84,85	0
4	ACT	B	605	4/4	0.81	0.19	65,67,67,68	0
3	GOL	A	604	6/6	0.81	0.16	47,49,51,53	0
4	ACT	A	606	4/4	0.81	0.26	68,68,70,70	0

Continued on next page...

Continued from previous page...

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors($\text{\AA}^2$)	Q<0.9
3	GOL	B	603	6/6	0.83	0.15	72,73,75,77	0
4	ACT	A	607	4/4	0.85	0.25	65,65,67,67	0
3	GOL	B	604	6/6	0.86	0.19	55,55,58,58	0
2	SO4	A	602	5/5	0.94	0.13	59,63,66,66	0
2	SO4	A	601	5/5	0.94	0.08	54,54,56,57	0
2	SO4	B	601	5/5	0.96	0.08	59,59,61,61	0

6.5 Other polymers [i](#)

There are no such residues in this entry.