



Full wwPDB X-ray Structure Validation Report ⓘ

Feb 1, 2016 – 08:16 PM GMT

PDB ID : 4RDY
Title : Crystal structure of VmoLac bound to 3-oxo-C10 AHL
Authors : Hiblot, J.; Bzdrenga, J.; Champion, C.; Gotthard, G.; Gonzalez, D.; Chabriere, E.; Elias, M.
Deposited on : 2014-09-20
Resolution : 2.00 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
<http://wwpdb.org/validation/2016/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 : 1.7 (RC4), CSD as536be (2015)
Xtriage (Phenix) : 1.9-1692
EDS : rb-20026688
Percentile statistics : 20151230.v01 (using entries in the PDB archive December 30th 2015)
Refmac : 5.8.0135
CCP4 : 6.5.0
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : trunk26865

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
3	3M5	A	403	-	-	-	X
3	3M5	B	403	-	-	X	X
4	GOL	A	404	-	-	X	X
4	GOL	A	405	-	-	-	X
4	GOL	A	408	-	-	X	X
4	GOL	A	409	-	-	-	X
4	GOL	A	410	-	-	-	X
4	GOL	A	411	-	-	X	-
4	GOL	B	404	-	-	-	X
4	GOL	B	405	-	-	-	X
4	GOL	B	406	-	-	-	X
4	GOL	B	407	-	-	-	X
5	SO4	A	412	-	-	-	X
5	SO4	B	409	-	-	-	X

2 Entry composition

There are 6 unique types of molecules in this entry. The entry contains 5831 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 Parathion hydrolase.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
1	A	313	Total	C	N	O	S	0	3	0
			2503	1604	432	460	7			
1	B	314	Total	C	N	O	S	0	9	0
			2539	1632	431	468	8			

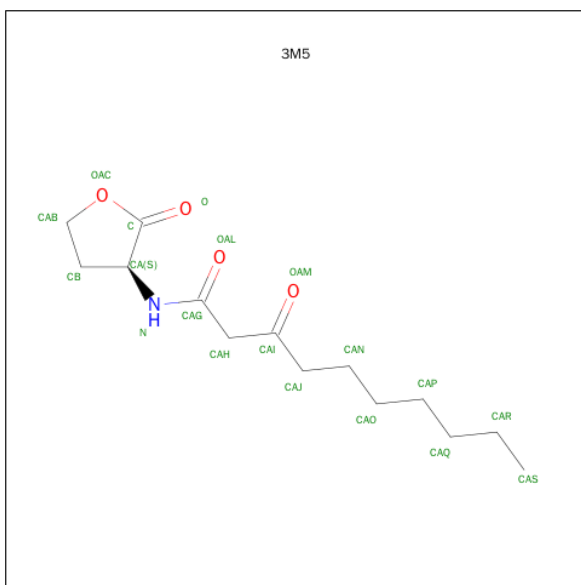
There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	0	GLY	-	EXPRESSION TAG	UNP F0QXN6
B	0	GLY	-	EXPRESSION TAG	UNP F0QXN6

- Molecule 2 is COBALT (II) ION (three-letter code: CO) (formula: Co).

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
2	B	2	Total	Co	0	0
			2	2		
2	A	2	Total	Co	0	0
			2	2		

- Molecule 3 is 3-OXO-N-[(3S)-2-OXOTETRAHYDROFURAN-3-YL]DECANAMIDE (three-letter code: 3M5) (formula: C₁₄H₂₃NO₄).



Mol	Chain	Residues	Atoms				ZeroOcc	AltConf
3	A	1	Total	C	N	O	0	0
			19	14	1	4		
3	B	1	Total	C	N	O	0	0
			19	14	1	4		

- Molecule 4 is GLYCEROL (three-letter code: GOL) (formula: $C_3H_8O_3$).



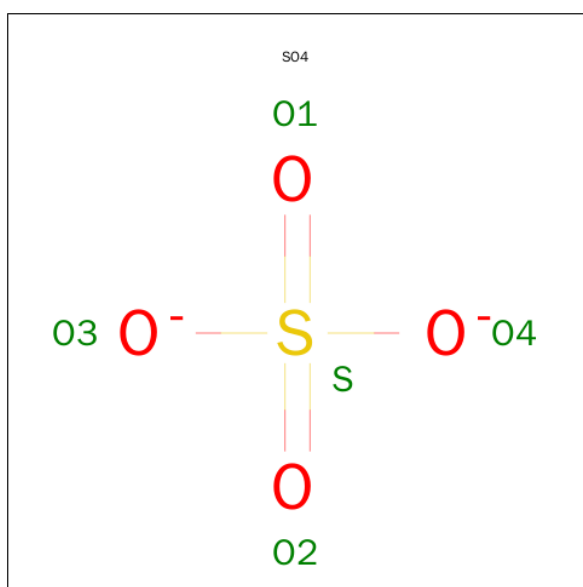
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
4	A	1	Total	C	O	0	0
			6	3	3		
4	A	1	Total	C	O	0	0
			6	3	3		

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

- Molecule 5 is SULFATE ION (three-letter code: SO4) (formula: O₄S).



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

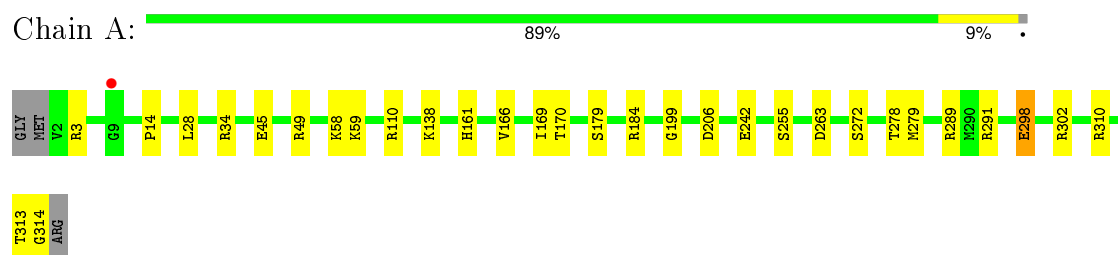
- Molecule 6 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
6	A	330	Total	O	0	0
			330	330		
6	B	329	Total	O	0	0
			329	329		

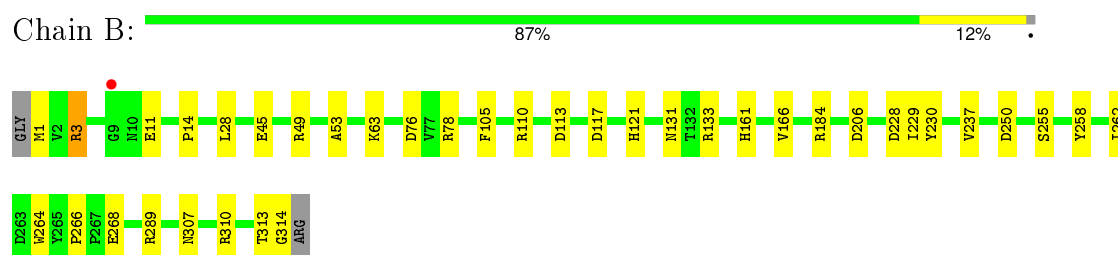
3 Residue-property plots

These plots are drawn for all protein, RNA and DNA chains in the entry. The first graphic for a chain summarises the proportions of errors 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 ($\text{RSRZ} > 2$). 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: Parathion hydrolase



- Molecule 1: Parathion hydrolase



4 Data and refinement statistics

Property	Value	Source
Space group	P 64	Depositor
Cell constants a, b, c, α , β , γ	174.74 Å 174.74 Å 61.55 Å 90.00° 90.00° 120.00°	Depositor
Resolution (Å)	47.75 – 2.00 47.75 – 2.00	Depositor EDS
% Data completeness (in resolution range)	99.8 (47.75-2.00) 99.8 (47.75-2.00)	Depositor EDS
R_{merge}	(Not available)	Depositor
R_{sym}	(Not available)	Depositor
$\langle I/\sigma(I) \rangle$ ¹	2.61 (at 2.00 Å)	Xtriage
Refinement program	REFMAC 5.7.0032	Depositor
R, R_{free}	0.139 , 0.174 0.151 , 0.184	Depositor DCC
R_{free} test set	3630 reflections (5.26%)	DCC
Wilson B-factor (Å ²)	22.1	Xtriage
Anisotropy	0.037	Xtriage
Bulk solvent k_{sol} (e/Å ³), B_{sol} (Å ²)	0.38 , 56.9	EDS
Estimated twinning fraction	0.032 for h,-h-k,-l	Xtriage
L-test for twinning ²	$\langle L \rangle = 0.49$, $\langle L^2 \rangle = 0.32$	Xtriage
Outliers	0 of 72593 reflections	Xtriage
F_o, F_c correlation	0.97	EDS
Total number of atoms	5831	wwPDB-VP
Average B, all atoms (Å ²)	25.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 3.03% of the height of the origin peak. No significant pseudotranslation is detected.*

¹ Intensities estimated from amplitudes.

² Theoretical values of $\langle |L| \rangle$, $\langle L^2 \rangle$ for acentric reflections are 0.5, 0.375 respectively for untwinned datasets, and 0.333, 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, 3M5, CO, SO4, KCX

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	1.09	3/2549 (0.1%)	1.02	5/3455 (0.1%)
1	B	1.09	1/2603 (0.0%)	1.04	7/3527 (0.2%)
All	All	1.09	4/5152 (0.1%)	1.03	12/6982 (0.2%)

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	A	242	GLU	CD-OE1	5.99	1.32	1.25
1	B	258	TYR	CG-CD2	-5.94	1.31	1.39
1	A	272	SER	CB-OG	-5.16	1.35	1.42
1	A	298	GLU	CD-OE2	-5.04	1.20	1.25

All (12) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	291	ARG	NE-CZ-NH1	6.95	123.78	120.30
1	B	110	ARG	NE-CZ-NH2	-6.71	116.95	120.30
1	A	263	ASP	CB-CG-OD1	6.24	123.92	118.30
1	B	206	ASP	CB-CG-OD1	6.17	123.85	118.30
1	A	206	ASP	CB-CG-OD1	5.86	123.57	118.30
1	B	78	ARG	NE-CZ-NH1	5.61	123.10	120.30
1	B	228	ASP	CB-CG-OD1	5.45	123.20	118.30
1	A	272	SER	N-CA-CB	-5.41	102.38	110.50
1	A	263	ASP	CB-CG-OD2	-5.41	113.43	118.30
1	B	76	ASP	CB-CG-OD1	5.38	123.14	118.30
1	B	250	ASP	CB-CG-OD2	-5.37	113.46	118.30
1	B	117	ASP	CB-CG-OD1	5.20	122.98	118.30

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	2503	0	2541	34	0
1	B	2539	0	2596	35	0
2	A	2	0	0	0	0
2	B	2	0	0	0	0
3	A	19	0	23	8	0
3	B	19	0	23	9	0
4	A	48	0	64	20	0
4	B	30	0	39	9	0
5	A	5	0	0	0	0
5	B	5	0	0	0	0
6	A	330	0	0	15	4
6	B	329	0	0	19	4
All	All	5831	0	5286	86	4

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 8.

All (86) 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:131:ASN:HB3	6:B:815:HOH:O	1.58	1.03
1:B:28:LEU:HD11	3:B:403:3M5:H3	1.53	0.90
1:A:59:LYS:HD2	6:A:613:HOH:O	1.74	0.85
1:B:28:LEU:CD1	3:B:403:3M5:H3	2.06	0.85
1:B:268[A]:GLU:HG2	6:B:820:HOH:O	1.79	0.82
1:A:161:HIS:HD2	1:A:166:VAL:O	1.65	0.79
1:B:161:HIS:HD2	1:B:166:VAL:O	1.64	0.79
1:A:28:LEU:HD11	3:A:403:3M5:H3	1.64	0.78
1:B:45[A]:GLU:HG3	1:B:49:ARG:NH1	1.98	0.77
3:A:403:3M5:H2	3:A:403:3M5:OAL	1.87	0.74
3:A:403:3M5:OAL	3:A:403:3M5:CB	2.35	0.73
1:A:298:GLU:OE1	6:A:787:HOH:O	2.06	0.73
1:A:45:GLU:HG3	1:A:49:ARG:NH1	2.07	0.70
1:B:63:LYS:HE2	6:B:823:HOH:O	1.90	0.70
1:A:3:ARG:HG3	6:A:823:HOH:O	1.91	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:A:403:3M5:OAC	6:A:830:HOH:O	2.11	0.68
3:B:403:3M5:OAL	3:B:403:3M5:H2	1.92	0.68
3:B:403:3M5:OAL	3:B:403:3M5:CB	2.41	0.67
1:A:310[A]:ARG:NH2	4:A:409:GOL:O2	2.29	0.65
1:B:1:MET:N	6:B:811:HOH:O	2.25	0.63
1:A:310[A]:ARG:HD2	6:A:781:HOH:O	1.99	0.62
1:A:28:LEU:CD1	3:A:403:3M5:H3	2.30	0.61
1:B:14:PRO:HG2	1:B:313:THR:HG22	1.82	0.61
1:B:310[A]:ARG:NH2	4:B:404:GOL:O2	2.34	0.60
1:A:110:ARG:HE	4:A:408:GOL:H32	1.66	0.60
4:B:407:GOL:H2	6:B:709:HOH:O	2.01	0.60
1:A:184:ARG:HD3	4:A:405:GOL:O3	2.01	0.60
1:A:314:GLY:C	6:A:790:HOH:O	2.40	0.60
1:A:45:GLU:OE1	6:A:803:HOH:O	2.17	0.58
1:B:310[A]:ARG:HH22	4:B:404:GOL:C2	2.16	0.58
4:B:408:GOL:O2	6:B:576:HOH:O	1.98	0.57
3:A:403:3M5:CAB	3:A:403:3M5:OAL	2.53	0.57
4:A:406:GOL:H11	1:B:105:PHE:CE2	2.39	0.57
1:B:28:LEU:CD1	3:B:403:3M5:CB	2.82	0.56
1:B:310[B]:ARG:HD3	6:B:824:HOH:O	2.05	0.56
1:A:161:HIS:HE1	6:A:536:HOH:O	1.89	0.55
1:A:34:ARG:HE	4:A:411:GOL:C2	2.20	0.55
3:B:403:3M5:OAL	3:B:403:3M5:H4	2.08	0.54
3:A:403:3M5:H4	3:A:403:3M5:OAL	2.08	0.54
1:B:229:ILE:HG23	6:B:789:HOH:O	2.07	0.54
1:A:58:LYS:NZ	6:A:775:HOH:O	2.41	0.54
1:A:34:ARG:HG3	4:A:411:GOL:H32	1.90	0.54
1:B:45[A]:GLU:CG	1:B:49:ARG:NH1	2.69	0.54
1:B:11:GLU:OE2	1:B:133:ARG:NH2	2.41	0.53
1:B:161:HIS:HE1	6:B:538:HOH:O	1.91	0.53
1:A:110:ARG:HH21	4:A:408:GOL:H12	1.72	0.53
4:A:410:GOL:H11	6:A:698:HOH:O	2.09	0.52
3:B:403:3M5:OAL	3:B:403:3M5:CAB	2.58	0.52
1:B:121:HIS:HE1	6:B:636:HOH:O	1.93	0.52
4:A:411:GOL:C1	6:A:685:HOH:O	2.58	0.52
1:B:237:VAL:HG11	1:B:289:ARG:HD2	1.92	0.51
1:B:314:GLY:C	6:B:794:HOH:O	2.49	0.51
1:B:53:ALA:HA	4:B:405:GOL:H12	1.94	0.50
3:B:403:3M5:C	6:B:829:HOH:O	2.61	0.49
1:A:28:LEU:CD1	3:A:403:3M5:CB	2.91	0.48
4:B:407:GOL:H32	6:B:709:HOH:O	2.13	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:A:408:GOL:C1	6:A:795:HOH:O	2.61	0.48
4:A:408:GOL:H11	1:B:266:PRO:HB3	1.95	0.48
1:A:184:ARG:CD	4:A:405:GOL:O3	2.62	0.48
1:A:302:ARG:HD2	6:A:617:HOH:O	2.14	0.48
1:B:113:ASP:HB2	6:B:825:HOH:O	2.14	0.47
1:A:110:ARG:NE	4:A:408:GOL:H32	2.30	0.47
1:A:289[B]:ARG:NH2	6:A:705:HOH:O	2.15	0.47
6:A:561:HOH:O	4:B:406:GOL:H12	2.14	0.46
1:B:184:ARG:HD2	6:B:800:HOH:O	2.14	0.46
1:A:138:KCX:HA	1:A:169:ILE:O	2.15	0.46
1:B:229:ILE:HD12	1:B:230:TYR:CD2	2.50	0.45
1:B:289:ARG:HG2	6:B:819:HOH:O	2.15	0.45
1:B:3:ARG:HA	1:B:3:ARG:HD2	1.79	0.45
1:A:14:PRO:HG2	1:A:313:THR:HG22	1.99	0.45
1:A:161:HIS:CD2	1:A:166:VAL:O	2.57	0.44
1:B:310[A]:ARG:NH2	4:B:404:GOL:C2	2.80	0.44
1:B:184:ARG:CD	6:B:800:HOH:O	2.65	0.44
1:B:3:ARG:HG3	6:B:787:HOH:O	2.17	0.44
1:A:170:THR:O	1:A:199:GLY:HA3	2.18	0.43
1:A:278:THR:HB	4:A:404:GOL:C3	2.48	0.42
1:A:110:ARG:HE	4:A:408:GOL:H12	1.83	0.42
1:B:264:TRP:CH2	3:B:403:3M5:H1	2.55	0.42
1:B:262:ILE:HG22	4:B:407:GOL:H11	2.01	0.42
1:A:34:ARG:HE	4:A:411:GOL:C1	2.33	0.41
1:A:34:ARG:HE	4:A:411:GOL:H2	1.84	0.41
1:A:279:MET:H	4:A:404:GOL:H31	1.86	0.41
1:B:3:ARG:CG	6:B:787:HOH:O	2.69	0.41
1:A:279:MET:H	4:A:404:GOL:C3	2.33	0.41
1:B:307:ASN:OD1	1:B:310[B]:ARG:NH2	2.48	0.40
1:A:278:THR:HB	4:A:404:GOL:H32	2.03	0.40

All (4) 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:812:HOH:O	6:B:812:HOH:O[3_455]	1.82	0.38
6:A:815:HOH:O	6:B:699:HOH:O[6_665]	2.05	0.15
6:A:791:HOH:O	6:B:574:HOH:O[6_665]	2.09	0.11
6:A:636:HOH:O	6:B:806:HOH:O[6_665]	2.14	0.06

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	313/316 (99%)	308 (98%)	5 (2%)	0	100	100
1	B	320/316 (101%)	315 (98%)	5 (2%)	0	100	100
All	All	633/632 (100%)	623 (98%)	10 (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	271/270 (100%)	269 (99%)	2 (1%)	88	91
1	B	278/270 (103%)	276 (99%)	2 (1%)	88	91
All	All	549/540 (102%)	545 (99%)	4 (1%)	88	91

All (4) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	179	SER
1	A	255	SER
1	B	3	ARG
1	B	255	SER

Some sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (8) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	36	ASN
1	A	90	ASN
1	A	161	HIS
1	A	251	GLN
1	B	36	ASN
1	B	90	ASN
1	B	161	HIS
1	B	251	GLN

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	KCX	A	138	1,2	7,11,12	0.94	1 (14%)	7,12,14	1.39	1 (14%)
1	KCX	B	138	1,2	7,11,12	1.79	1 (14%)	7,12,14	1.21	1 (14%)

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	KCX	A	138	1,2	-	0/6/10/12	0/0/0/0
1	KCX	B	138	1,2	-	0/6/10/12	0/0/0/0

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	138	KCX	CB-CA	-4.48	1.49	1.53
1	A	138	KCX	CB-CA	-2.16	1.51	1.53

All (2) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	138	KCX	CE-NZ-CX	-2.20	121.00	123.49
1	A	138	KCX	CE-NZ-CX	3.35	127.28	123.49

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
1	A	138	KCX	1	0

5.5 Carbohydrates [i](#)

There are no carbohydrates in this entry.

5.6 Ligand geometry [i](#)

Of 21 ligands modelled in this entry, 4 are monoatomic - leaving 17 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	3M5	A	403	2	19,19,19	1.78	4 (21%)	18,23,23	3.33	7 (38%)
4	GOL	A	404	-	5,5,5	1.08	1 (20%)	5,5,5	1.49	1 (20%)
4	GOL	A	405	-	5,5,5	0.34	0	5,5,5	1.01	0
4	GOL	A	406	-	5,5,5	1.06	0	5,5,5	1.43	2 (40%)
4	GOL	A	407	-	5,5,5	0.27	0	5,5,5	0.55	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
4	GOL	A	408	-	5,5,5	0.87	0	5,5,5	2.10	1 (20%)
4	GOL	A	409	-	5,5,5	0.90	0	5,5,5	0.82	0
4	GOL	A	410	-	5,5,5	0.69	0	5,5,5	0.87	0
4	GOL	A	411	-	5,5,5	0.92	0	5,5,5	1.89	1 (20%)
5	SO4	A	412	-	4,4,4	1.15	0	6,6,6	1.02	1 (16%)
3	3M5	B	403	2	19,19,19	1.74	3 (15%)	18,23,23	3.23	7 (38%)
4	GOL	B	404	-	5,5,5	0.78	0	5,5,5	1.32	0
4	GOL	B	405	-	5,5,5	1.45	1 (20%)	5,5,5	0.68	0
4	GOL	B	406	-	5,5,5	0.55	0	5,5,5	1.83	2 (40%)
4	GOL	B	407	-	5,5,5	0.68	0	5,5,5	0.42	0
4	GOL	B	408	-	5,5,5	0.38	0	5,5,5	0.87	0
5	SO4	B	409	-	4,4,4	0.78	0	6,6,6	0.25	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	3M5	A	403	2	-	0/15/25/25	0/1/1/1
4	GOL	A	404	-	-	0/4/4/4	0/0/0/0
4	GOL	A	405	-	-	0/4/4/4	0/0/0/0
4	GOL	A	406	-	-	0/4/4/4	0/0/0/0
4	GOL	A	407	-	-	0/4/4/4	0/0/0/0
4	GOL	A	408	-	-	0/4/4/4	0/0/0/0
4	GOL	A	409	-	-	0/4/4/4	0/0/0/0
4	GOL	A	410	-	-	0/4/4/4	0/0/0/0
4	GOL	A	411	-	-	0/4/4/4	0/0/0/0
5	SO4	A	412	-	-	0/0/0/0	0/0/0/0
3	3M5	B	403	2	-	0/15/25/25	0/1/1/1
4	GOL	B	404	-	-	0/4/4/4	0/0/0/0
4	GOL	B	405	-	-	0/4/4/4	0/0/0/0
4	GOL	B	406	-	-	0/4/4/4	0/0/0/0
4	GOL	B	407	-	-	0/4/4/4	0/0/0/0
4	GOL	B	408	-	-	0/4/4/4	0/0/0/0
5	SO4	B	409	-	-	0/0/0/0	0/0/0/0

All (9) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	B	403	3M5	CA-C	-5.80	1.37	1.52

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	A	403	3M5	CA-C	-5.03	1.39	1.52
3	B	403	3M5	OAC-CAB	-3.06	1.38	1.46
4	B	405	GOL	C1-C2	-2.64	1.42	1.52
3	A	403	3M5	OAL-CAG	-2.32	1.18	1.23
3	A	403	3M5	OAC-CAB	-2.20	1.40	1.46
4	A	404	GOL	C3-C2	-2.18	1.44	1.52
3	B	403	3M5	OAL-CAG	-2.04	1.19	1.23
3	A	403	3M5	CA-N	2.74	1.52	1.45

All (22) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	B	403	3M5	OAC-CAB-CB	-9.66	91.63	105.83
3	A	403	3M5	OAC-CAB-CB	-9.50	91.87	105.83
4	A	408	GOL	O2-C2-C1	-3.93	90.64	108.65
3	A	403	3M5	CAB-OAC-C	-3.78	107.18	110.62
3	A	403	3M5	OAL-CAG-CAH	-3.72	116.47	121.48
3	A	403	3M5	CAO-CAN-CAJ	-3.36	100.98	113.29
3	B	403	3M5	CAB-OAC-C	-3.26	107.65	110.62
3	B	403	3M5	OAL-CAG-CAH	-3.05	117.38	121.48
4	A	404	GOL	C3-C2-C1	-2.68	100.63	111.12
5	A	412	SO4	O2-S-O1	-2.29	102.24	109.50
4	B	406	GOL	O2-C2-C1	-2.27	98.25	108.65
3	A	403	3M5	CAG-CAH-CAI	-2.14	104.34	112.93
4	B	406	GOL	C3-C2-C1	-2.09	102.91	111.12
3	B	403	3M5	CAO-CAN-CAJ	-2.06	105.72	113.29
4	A	406	GOL	O1-C1-C2	2.00	119.89	110.18
4	A	406	GOL	O3-C3-C2	2.16	120.65	110.18
3	B	403	3M5	CAH-CAG-N	2.46	119.32	115.93
3	B	403	3M5	OAC-C-O	2.64	124.36	121.44
4	A	411	GOL	O3-C3-C2	3.45	126.94	110.18
3	A	403	3M5	CAH-CAG-N	4.57	122.23	115.93
3	A	403	3M5	C-CA-N	5.94	121.42	112.78
3	B	403	3M5	C-CA-N	6.60	122.38	112.78

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

14 monomers are involved in 46 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
3	A	403	3M5	8	0
4	A	404	GOL	4	0
4	A	405	GOL	2	0
4	A	406	GOL	1	0
4	A	408	GOL	6	0
4	A	409	GOL	1	0
4	A	410	GOL	1	0
4	A	411	GOL	5	0
3	B	403	3M5	9	0
4	B	404	GOL	3	0
4	B	405	GOL	1	0
4	B	406	GOL	1	0
4	B	407	GOL	3	0
4	B	408	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 [i](#)

6.1 Protein, DNA and RNA chains [i](#)

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	312/316 (98%)	-0.64	1 (0%) 94 94	13, 20, 36, 51	0
1	B	313/316 (99%)	-0.67	1 (0%) 94 94	13, 20, 38, 67	0
All	All	625/632 (98%)	-0.66	2 (0%) 94 94	13, 20, 37, 67	0

All (2) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	9	GLY	3.0
1	B	9	GLY	2.4

6.2 Non-standard residues in protein, DNA, RNA chains [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. LLDF column lists the quality of electron density of the group with respect to its neighbouring residues in protein, DNA or RNA chains. 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	LLDF	B-factors(Å ²)	Q<0.9
1	KCX	B	138	12/13	0.98	0.09	-	12,14,17,18	0
1	KCX	A	138	12/13	0.99	0.09	-	13,14,15,15	0

6.3 Carbohydrates [i](#)

There are no carbohydrates 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. LLDF column lists the quality of electron density of the group with respect to its neighbouring residues in protein, DNA or RNA chains. 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	LLDF	B-factors(Å ²)	Q<0.9
3	3M5	A	403	19/19	0.85	0.26	12.51	25,33,49,61	19
3	3M5	B	403	19/19	0.85	0.29	9.41	29,42,55,69	19
4	GOL	A	410	6/6	0.88	0.20	8.11	38,49,53,55	0
4	GOL	A	409	6/6	0.92	0.19	7.57	33,43,48,48	0
4	GOL	A	408	6/6	0.87	0.23	5.27	40,51,59,59	0
5	SO4	B	409	5/5	0.93	0.24	4.42	64,64,74,82	0
4	GOL	A	404	6/6	0.95	0.19	4.10	26,34,43,47	0
5	SO4	A	412	5/5	0.96	0.16	3.63	41,47,58,61	0
4	GOL	B	407	6/6	0.94	0.15	3.54	38,41,59,66	0
4	GOL	A	405	6/6	0.89	0.28	3.23	55,59,63,67	0
4	GOL	B	404	6/6	0.94	0.16	2.55	37,40,43,52	0
4	GOL	B	405	6/6	0.96	0.13	2.33	27,32,41,47	0
4	GOL	B	406	6/6	0.94	0.13	2.15	37,46,49,50	0
4	GOL	A	406	6/6	0.96	0.13	1.70	27,40,41,51	0
2	CO	B	402	1/1	1.00	0.07	-1.21	17,17,17,17	0
2	CO	A	402	1/1	1.00	0.07	-1.63	18,18,18,18	0
4	GOL	B	408	6/6	0.76	0.20	-	52,59,62,62	0
2	CO	A	401	1/1	1.00	0.07	-	17,17,17,17	0
4	GOL	A	407	6/6	0.92	0.28	-	60,66,70,75	0
2	CO	B	401	1/1	1.00	0.09	-	16,16,16,16	0
4	GOL	A	411	6/6	0.86	0.15	-	38,49,56,60	0

6.5 Other polymers ⓘ

There are no such residues in this entry.