Full wwPDB X-ray Structure Validation Report (i)

Jan 3, 2024 – 02:01 pm GMT

PDB ID	:	5FRM
Title	:	Crystal structure of the Prototype Foamy Virus (PFV) intasome in complex with magnesium and the INSTI XZ384 (compound 4a)
Authors	:	Maskell, D.P.; Pye, V.E.; Cherepanov, P.
Deposited on	:	2015-12-18
Resolution	:	2.58 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 (i) 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 (i)) were used in the production of this report:

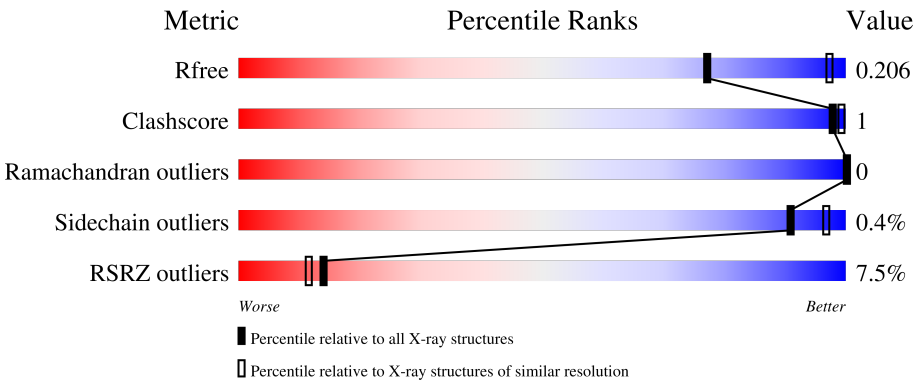
MolProbity	:	4.02b-467
Mogul	:	1.8.4, CSD as541be (2020)
Xtriage (Phenix)	:	1.13
EDS	:	2.36
buster-report	:	1.1.7 (2018)
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
Refmac	:	5.8.0158
CCP4	:	7.0.044 (Gargrove)
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.36

1 Overall quality at a glance (i)

The following experimental techniques were used to determine the structure:
X-RAY DIFFRACTION

The reported resolution of this entry is 2.58 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	3676 (2.60-2.56)
Clashscore	141614	4049 (2.60-2.56)
Ramachandran outliers	138981	3979 (2.60-2.56)
Sidechain outliers	138945	3979 (2.60-2.56)
RSRZ outliers	127900	3614 (2.60-2.56)

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	395	6% 91% • 7%
1	B	395	5% 45% • 54%
2	C	19	5% 100%
3	D	17	100%

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
9	WA5	D	1018	X	-	-	-

2 Entry composition (i)

There are 10 unique types of molecules in this entry. The entry contains 5338 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 PFV INTEGRASE.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	S			
1	A	367	2919	1872	512	531	4	0	0	0
1	B	183	1439	931	236	271	1	0	0	0

There are 10 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
A	-2	GLY	-	expression tag	UNP P14350
A	-1	PRO	-	expression tag	UNP P14350
A	0	GLY	-	expression tag	UNP P14350
A	217	SER	GLY	variant	UNP P14350
A	218	GLY	SER	variant	UNP P14350
B	-2	GLY	-	expression tag	UNP P14350
B	-1	PRO	-	expression tag	UNP P14350
B	0	GLY	-	expression tag	UNP P14350
B	217	SER	GLY	variant	UNP P14350
B	218	GLY	SER	variant	UNP P14350

- Molecule 2 is a DNA chain called 5'-D(*AP*TP*TP*GP*TP*CP*AP*TP*GP*GP*AP*AP*TP*TP *TP*CP*GP*CP*A)-3'.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
2	C	19	387	187	68	114	18	0	0	0

- Molecule 3 is a DNA chain called 5'-D(*TP*GP*CP*GP*AP*AP*AP*TP*TP*CP*CP*AP*TP*GP *AP*CP*A)-3'.

Mol	Chain	Residues	Atoms					ZeroOcc	AltConf	Trace
			Total	C	N	O	P			
3	D	17	345	166	65	98	16	0	0	0

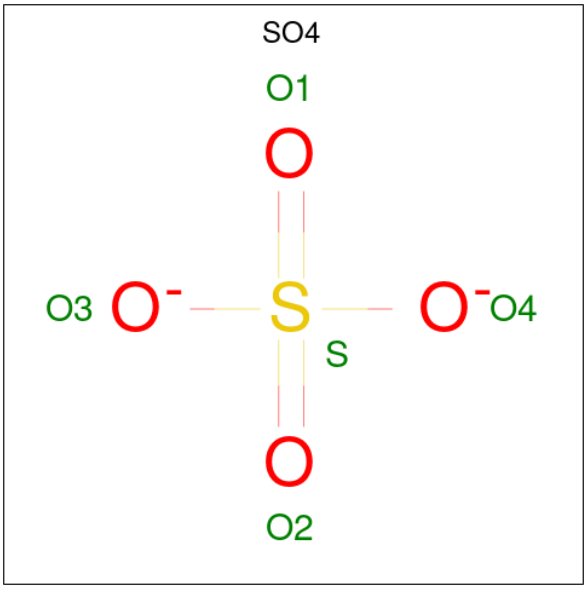
- Molecule 4 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
4	A	1	Total Zn 1 1	0	0

- Molecule 5 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

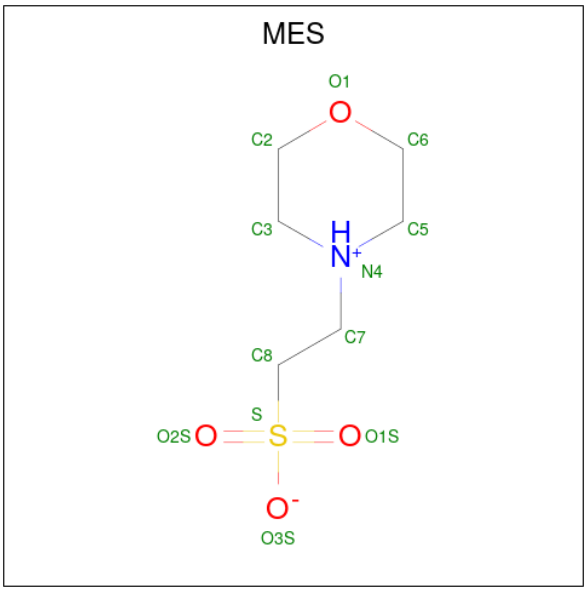
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
5	A	2	Total Mg 2 2	0	0

- Molecule 6 is SULFATE ION (three-letter code: SO4) (formula: O_4S).



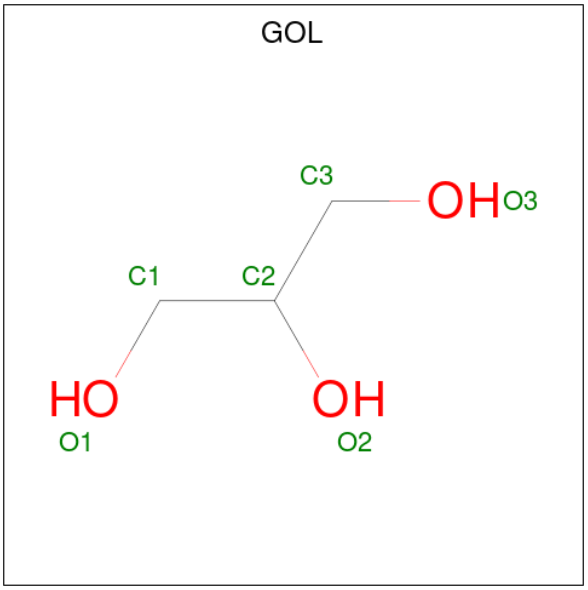
Mol	Chain	Residues	Atoms	ZeroOcc	AltConf
6	A	1	Total O S 5 4 1	0	0
6	A	1	Total O S 5 4 1	0	0
6	A	1	Total O S 5 4 1	0	0
6	A	1	Total O S 5 4 1	0	0
6	B	1	Total O S 5 4 1	0	0

- Molecule 7 is 2-(N-MORPHOLINO)-ETHANESULFONIC ACID (three-letter code: MES) (formula: $C_6H_{13}NO_4S$).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
			Total	C	N	O	S		
7	A	1	12	6	1	4	1	0	0

- Molecule 8 is GLYCEROL (three-letter code: GOL) (formula: $C_3H_8O_3$).



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

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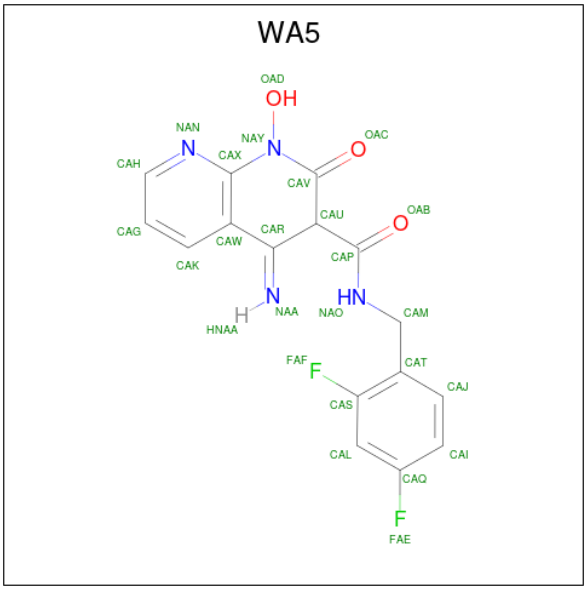
Mol	Chain	Residues	Atoms			ZeroOcc	AltConf
			Total	C	O		
8	A	1	6	3	3	0	0
			Total	C	O		
8	A	1	6	3	3	0	0
			Total	C	O		
8	B	1	6	3	3	0	0
			Total	C	O		
8	B	1	6	3	3	0	0
			Total	C	O		
8	C	1	6	3	3	0	0

- Molecule 9 is 4-azanylidene-N-[[2,4-bis(fluoranyl)phenyl]methyl]-1-oxidanyl-2-oxidanylidene -1,8-naphthyridine-3-carboxamide (three-letter code: WA5) (formula: $C_{16}H_{12}F_2N_4O_3$).



Mol	Chain	Residues	Atoms					ZeroOcc	AltConf
			Total	C	F	N	O		
9	D	1	25	16	2	4	3	0	0

- Molecule 10 is water.

Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	O		
10	A	95	95	95	0	0
			Total	O		
10	B	20	20	20	0	0
			Total	O		
10	C	14	14	14	0	0

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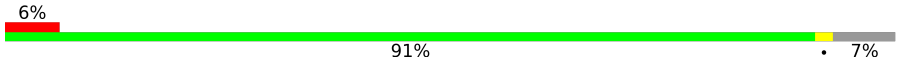
Mol	Chain	Residues	Atoms		ZeroOcc	AltConf
			Total	O		
10	D	6	6	6	0	0

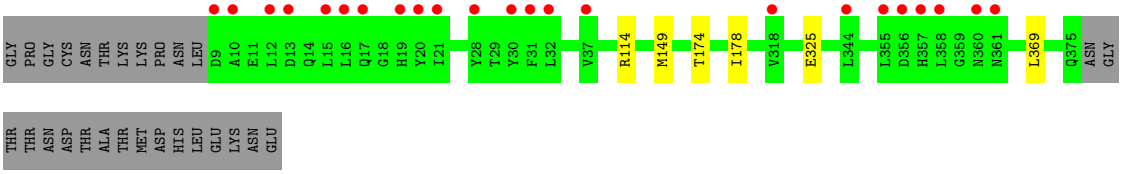
3 Residue-property plots (i)

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: PFV INTEGRASE

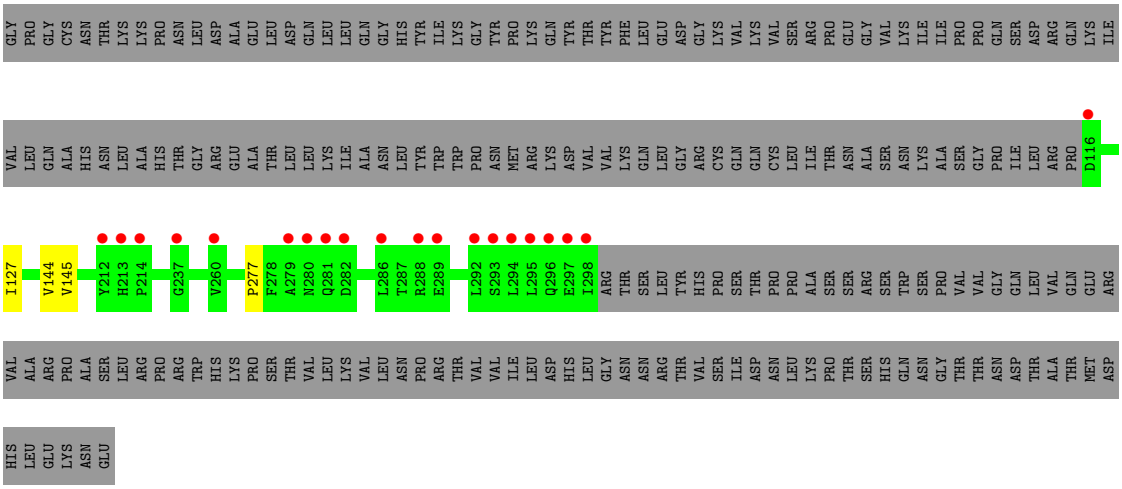
Chain A:





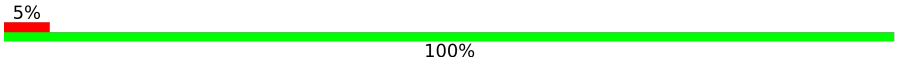
• Molecule 1: PFV INTEGRASE

Chain B:



• Molecule 2: 5'-D(*AP*TP*TP*GP*TP*CP*AP*TP*GP*GP*AP*AP*TP*TP *TP*CP*GP*CP*A)-3'

Chain C:



• Molecule 3: 5'-D(*TP*GP*CP*GP*AP*AP*AP*TP*TP*CP*CP*AP*TP*GP *AP*CP*A)-3'

Chain D: 100%

There are no outlier residues recorded for this chain.

4 Data and refinement statistics (i)

Property	Value	Source
Space group	P 41 21 2	Depositor
Cell constants a, b, c, α, β, γ	159.74Å 159.74Å 123.53Å 90.00° 90.00° 90.00°	Depositor
Resolution (Å)	48.90 – 2.58 48.90 – 2.58	Depositor EDS
% Data completeness (in resolution range)	99.9 (48.90-2.58) 99.9 (48.90-2.58)	Depositor EDS
R_{merge}	0.08	Depositor
R_{sym}	(Not available)	Depositor
$< I/\sigma(I) >$ [1]	1.94 (at 2.58Å)	Xtriage
Refinement program	PHENIX (PHENIX.REFINE)	Depositor
R, R_{free}	0.185 , 0.203 0.189 , 0.206	Depositor DCC
R_{free} test set	2573 reflections (5.07%)	wwPDB-VP
Wilson B-factor (Å^2)	69.8	Xtriage
Anisotropy	0.400	Xtriage
Bulk solvent k_{sol}(e/Å^3), B_{sol}(Å^2)	0.32 , 48.7	EDS
L-test for twinning[2]	$< \|L\| > = 0.49$, $< L^2 > = 0.33$	Xtriage
Estimated twinning fraction	No twinning to report.	Xtriage
F_o,F_c correlation	0.96	EDS
Total number of atoms	5338	wwPDB-VP
Average B, all atoms (Å^2)	79.0	wwPDB-VP

Xtriage's analysis on translational NCS is as follows: *The largest off-origin peak in the Patterson function is 2.43% of the height of the origin peak. No significant pseudotranslation is detected.*

[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 (i)

5.1 Standard geometry (i)

Bond lengths and bond angles in the following residue types are not validated in this section: ZN, MES, SO4, MG, GOL, WA5

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	0.24	0/2998	0.44	0/4091
1	B	0.25	0/1480	0.42	0/2023
2	C	0.58	0/433	0.95	0/667
3	D	0.59	0/387	0.90	0/595
All	All	0.32	0/5298	0.55	0/7376

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 (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	2919	0	2954	4	0
1	B	1439	0	1412	2	0
2	C	387	0	218	0	0
3	D	345	0	193	0	0
4	A	1	0	0	0	0
5	A	2	0	0	0	0
6	A	20	0	0	0	0
6	B	5	0	0	0	0
7	A	12	0	12	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
8	A	30	0	40	2	0
8	B	12	0	16	0	0
8	C	6	0	8	0	0
9	D	25	0	9	1	0
10	A	95	0	0	0	0
10	B	20	0	0	0	0
10	C	14	0	0	0	0
10	D	6	0	0	0	0
All	All	5338	0	4862	7	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 1.

All (7) 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)
9:D:1018:WA5:OAB	9:D:1018:WA5:NAA	2.42	0.50
1:A:114:ARG:NH1	8:A:1388:GOL:O3	2.41	0.46
1:B:127:ILE:HG22	1:B:145:VAL:HG22	1.98	0.46
1:A:114:ARG:HH12	8:A:1388:GOL:HO3	1.59	0.45
1:A:325:GLU:HA	1:A:369:LEU:HD23	1.97	0.45
1:B:127:ILE:HA	1:B:144:VAL:O	2.18	0.43
1:A:174:THR:HB	1:A:178:ILE:HD13	2.03	0.41

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	365/395 (92%)	360 (99%)	5 (1%)	0	100 100
1	B	181/395 (46%)	174 (96%)	7 (4%)	0	100 100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles
All	All	546/790 (69%)	534 (98%)	12 (2%)	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	328/354 (93%)	327 (100%)	1 (0%)	92 97
1	B	159/354 (45%)	158 (99%)	1 (1%)	86 94
All	All	487/708 (69%)	485 (100%)	2 (0%)	91 97

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

Mol	Chain	Res	Type
1	A	149	MET
1	B	277	PRO

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

Mol	Chain	Res	Type
1	A	19	HIS

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 monosaccharides in this entry.

5.6 Ligand geometry (i)

Of 18 ligands modelled in this entry, 3 are monoatomic - leaving 15 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	$\#\|Z\| > 2$
6	SO4	A	1384	-	4,4,4	0.14	0	6,6,6	0.05	0
7	MES	A	1380	-	12,12,12	2.18	1 (8%)	14,16,16	1.87	3 (21%)
8	GOL	A	1388	-	5,5,5	0.34	0	5,5,5	0.27	0
9	WA5	D	1018	5	24,27,27	2.78	7 (29%)	27,39,39	1.76	7 (25%)
8	GOL	A	1387	-	5,5,5	0.35	0	5,5,5	0.23	0
6	SO4	A	1383	-	4,4,4	0.14	0	6,6,6	0.05	0
8	GOL	A	1381	-	5,5,5	0.33	0	5,5,5	0.33	0
8	GOL	B	1300	-	5,5,5	0.36	0	5,5,5	0.25	0
6	SO4	A	1379	-	4,4,4	0.14	0	6,6,6	0.05	0
6	SO4	A	1385	-	4,4,4	0.14	0	6,6,6	0.05	0
8	GOL	C	1020	-	5,5,5	0.32	0	5,5,5	0.37	0
8	GOL	A	1382	-	5,5,5	0.34	0	5,5,5	0.29	0
8	GOL	A	1386	-	5,5,5	0.34	0	5,5,5	0.27	0
8	GOL	B	1301	-	5,5,5	0.35	0	5,5,5	0.36	0
6	SO4	B	1299	-	4,4,4	0.14	0	6,6,6	0.05	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
7	MES	A	1380	-	-	1/6/14/14	0/1/1/1
8	GOL	A	1388	-	-	2/4/4/4	-
9	WA5	D	1018	5	1/1/5/6	3/9/29/29	0/3/3/3
8	GOL	A	1381	-	-	2/4/4/4	-

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
8	GOL	B	1300	-	-	0/4/4/4	-
8	GOL	C	1020	-	-	2/4/4/4	-
8	GOL	A	1382	-	-	0/4/4/4	-
8	GOL	A	1386	-	-	2/4/4/4	-
8	GOL	B	1301	-	-	0/4/4/4	-
8	GOL	A	1387	-	-	2/4/4/4	-

All (8) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
9	D	1018	WA5	CAU-CAR	-10.80	1.39	1.52
7	A	1380	MES	C8-S	-7.29	1.67	1.77
9	D	1018	WA5	CAW-CAR	-3.44	1.39	1.47
9	D	1018	WA5	CAX-NAY	-3.39	1.34	1.38
9	D	1018	WA5	CAM-CAT	-3.26	1.40	1.50
9	D	1018	WA5	CAH-NAN	3.15	1.41	1.34
9	D	1018	WA5	CAR-NAA	2.89	1.33	1.27
9	D	1018	WA5	OAD-NAY	-2.50	1.36	1.39

All (10) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
7	A	1380	MES	C5-N4-C3	4.41	118.76	108.83
9	D	1018	WA5	CAU-CAV-NAY	3.70	120.69	116.83
9	D	1018	WA5	CAS-CAL-CAQ	3.29	120.08	116.62
9	D	1018	WA5	CAK-CAW-CAX	3.24	120.55	117.34
7	A	1380	MES	O2S-S-C8	3.02	110.55	106.92
9	D	1018	WA5	OAD-NAY-CAV	2.90	119.83	116.94
9	D	1018	WA5	CAL-CAS-CAT	-2.68	120.47	123.98
7	A	1380	MES	O3S-S-C8	2.66	110.07	105.77
9	D	1018	WA5	CAI-CAQ-CAL	-2.61	119.90	123.29
9	D	1018	WA5	CAP-CAU-CAR	2.56	120.59	111.83

All (1) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
9	D	1018	WA5	CAU

All (14) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
8	A	1381	GOL	C1-C2-C3-O3
8	A	1386	GOL	C1-C2-C3-O3
8	A	1387	GOL	C1-C2-C3-O3
8	A	1387	GOL	O2-C2-C3-O3
8	C	1020	GOL	O1-C1-C2-C3
9	D	1018	WA5	OAB-CAP-CAU-CAR
9	D	1018	WA5	NAO-CAP-CAU-CAR
8	A	1388	GOL	C1-C2-C3-O3
8	A	1381	GOL	O2-C2-C3-O3
8	A	1386	GOL	O2-C2-C3-O3
8	C	1020	GOL	O1-C1-C2-O2
8	A	1388	GOL	O2-C2-C3-O3
7	A	1380	MES	C8-C7-N4-C3
9	D	1018	WA5	NAO-CAP-CAU-CAV

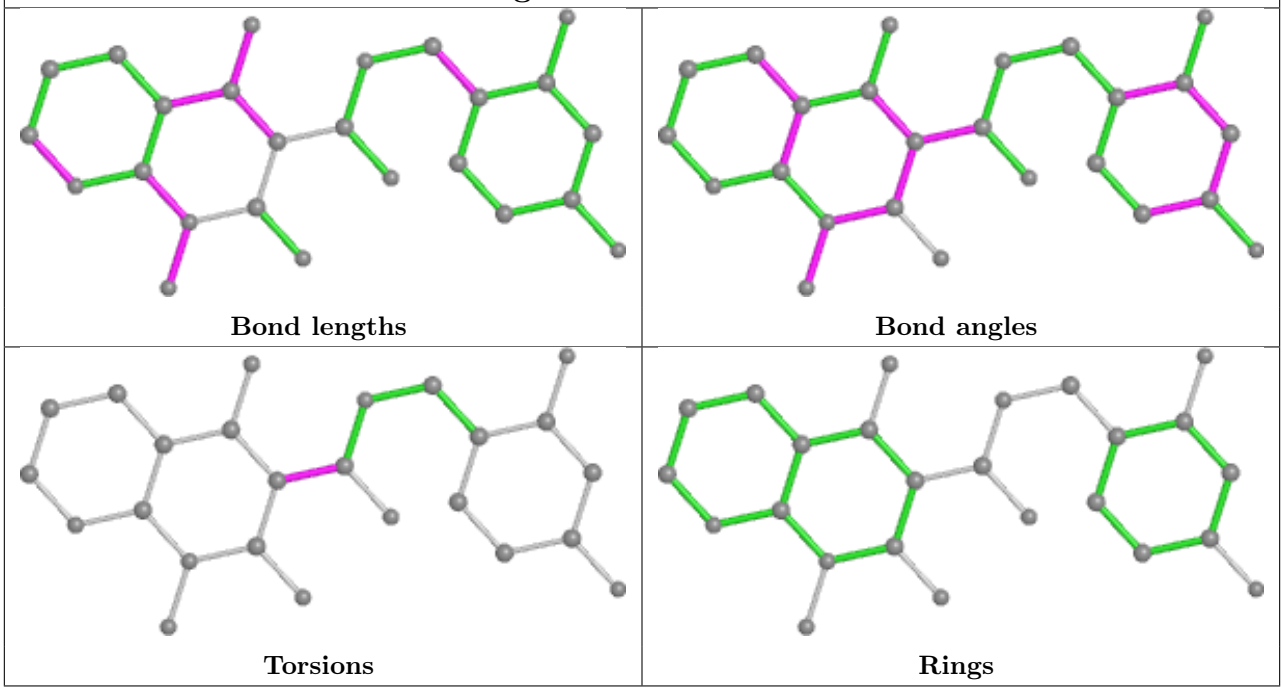
There are no ring outliers.

2 monomers are involved in 3 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
8	A	1388	GOL	2	0
9	D	1018	WA5	1	0

The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less then 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.

Ligand WA5 D 1018



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	367/395 (92%)	0.47	23 (6%) 20 17	54, 69, 116, 158	0
1	B	183/395 (46%)	0.48	20 (10%) 5 4	60, 77, 148, 186	0
2	C	19/19 (100%)	0.21	1 (5%) 26 22	59, 76, 102, 146	0
3	D	17/17 (100%)	0.06	0 100 100	64, 69, 97, 135	0
All	All	586/826 (70%)	0.45	44 (7%) 14 11	54, 71, 135, 186	0

All (44) RSRZ outliers are listed below:

Mol	Chain	Res	Type	RSRZ
1	A	358	LEU	6.2
1	A	16	LEU	6.1
1	A	357	HIS	5.3
1	B	280	ASN	5.2
1	A	15	LEU	4.9
1	B	292	LEU	3.9
1	B	298	ILE	3.6
1	B	260	VAL	3.4
1	A	13	ASP	3.4
1	A	21	ILE	3.4
1	A	30	TYR	3.4
1	A	356	ASP	3.3
1	B	293	SER	3.3
1	A	32	LEU	3.2
1	A	17	GLN	3.2
1	A	344	LEU	3.2
1	B	282	ASP	3.1
1	A	355	LEU	3.1
1	A	31	PHE	3.0
1	B	295	LEU	3.0
1	B	286	LEU	2.9

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Mol	Chain	Res	Type	RSRZ
1	B	297	GLU	2.9
1	B	214	PRO	2.9
1	A	19	HIS	2.9
1	A	20	TYR	2.9
1	B	279	ALA	2.8
1	A	28	TYR	2.7
1	B	212	TYR	2.7
1	B	296	GLN	2.7
1	B	116	ASP	2.6
1	A	10	ALA	2.6
2	C	1	DA	2.5
1	B	237	GLY	2.5
1	A	12	LEU	2.4
1	A	318	VAL	2.4
1	B	213	HIS	2.3
1	B	289	GLU	2.3
1	A	361	ASN	2.3
1	A	9	ASP	2.3
1	B	294	LEU	2.2
1	A	360	ASN	2.2
1	A	37	VAL	2.2
1	B	288	ARG	2.2
1	B	281	GLN	2.1

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 monosaccharides 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.

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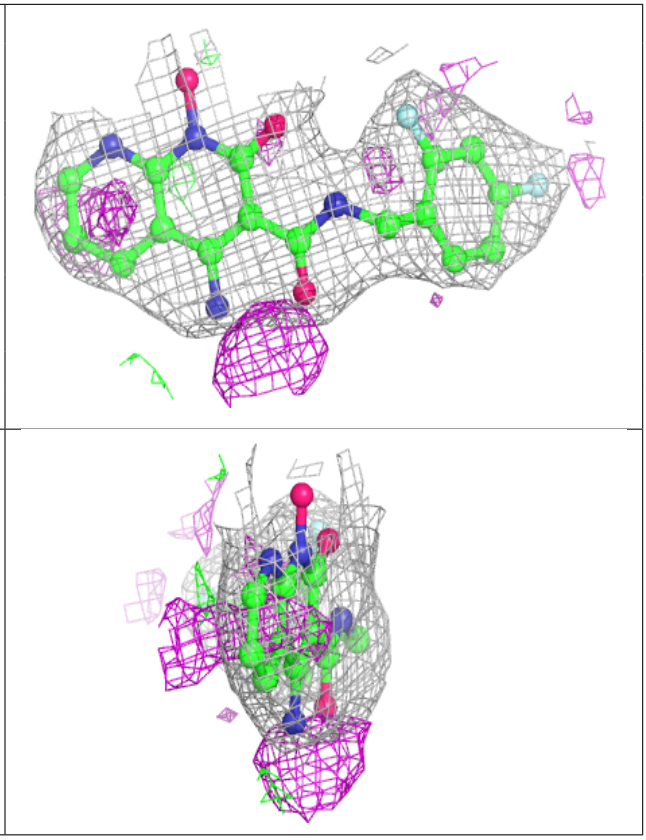
Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9

Mol	Type	Chain	Res	Atoms	RSCC	RSR	B-factors(Å^2)	Q<0.9
8	GOL	A	1387	6/6	0.77	0.25	77,93,104,105	0
8	GOL	A	1386	6/6	0.79	0.19	95,103,106,112	0
8	GOL	B	1301	6/6	0.80	0.27	91,95,101,107	0
8	GOL	A	1388	6/6	0.86	0.29	79,96,105,106	0
6	SO4	A	1384	5/5	0.86	0.23	130,133,142,146	0
8	GOL	A	1382	6/6	0.87	0.24	93,99,105,115	0
6	SO4	A	1379	5/5	0.89	0.21	106,122,128,133	0
8	GOL	A	1381	6/6	0.91	0.26	87,93,99,100	0
8	GOL	B	1300	6/6	0.91	0.40	82,95,97,110	0
6	SO4	B	1299	5/5	0.91	0.20	110,111,118,130	0
8	GOL	C	1020	6/6	0.93	0.21	65,72,76,94	0
7	MES	A	1380	12/12	0.95	0.28	98,108,117,121	0
6	SO4	A	1385	5/5	0.95	0.23	112,113,119,121	0
6	SO4	A	1383	5/5	0.95	0.16	81,90,94,102	5
5	MG	A	1378	1/1	0.96	0.20	61,61,61,61	0
5	MG	A	1377	1/1	0.97	0.14	59,59,59,59	0
9	WA5	D	1018	25/25	0.97	0.16	54,59,70,81	0
4	ZN	A	1376	1/1	0.99	0.15	61,61,61,61	0

The following is a graphical depiction of the model fit to experimental electron density of all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the geometry validation Tables will also be included. Each fit is shown from different orientation to approximate a three-dimensional view.

Electron density around WA5 D 1018:

$2mF_o$-DF_c (at 0.7 rmsd) in gray
mF_o-DF_c (at 3 rmsd) in purple (negative)
and green (positive)



6.5 Other polymers (i)

There are no such residues in this entry.